The Scientific Farmer

Will paint his buildings and preserve from decay.

USE

WADSWORTH

DOUBLE THICK PAINT

AND SAVE MONEY

The paint formulated upon scientific principles. Remarkable for covering capacity, of great durability and economical in cost.

Tried and proved a full half century. You may profit by our State Fair Advertising Offer, even at this late date, by addressing a postal card to—

EDWARD JOSLIN

GENERAL ADVERTISING AGENT

No. 11 South First St. FULTON, N. Y.

Special Offer during October on our Impervious Barn and Silo Paint.

Had you any trouble with the MARCH WIND coming through crack or crevice in the Greenhouse?

TWEMLOW’S

Old English Glazing Putty

SEMI-LIQUID and ELASTIC

Will stop the trouble. Put up in 16 pound cans; 50 and 80 pound buckets.

Hammond’s Greenhouse White, A SUPERB PAINT, with years’ record to back it up, for wear and tear and looks on either wood or iron Greenhouses. It stays where you put it. In 5, 10, 15, 20, 25, or 30 Gallons.

HAMMOND’S PAINT AND SLUG SHOT WORKS, Fishkill-on-Hudson, New York.

Should You or Your Friends WANT A FARM—

CALL ON US!

W. B. GEORGIA & SON REAL ESTATE

156 E. State St. ITHACA, N. Y.

The beautiful lake region of Central New York offers you an ideal home. Let us locate you where you will be more than satisfied. Write us for a list of satisfied customers.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
OFFICIAL PUBLICATIONS of CORNELL UNIVERSITY

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second-class matter at the post office at Ithaca, N. Y., pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and postfree on request:

- General Circular of Information for prospective students,
- Announcement of the College of Arts and Sciences,
- Courses of Instruction in the College of Arts and Sciences,
- Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts,
- Announcement of the College of Civil Engineering,
- Announcement of the College of Law,
- Announcement of the College of Agriculture,
- Announcement of the Medical College,
- Announcement of the New York State College of Agriculture,
- Announcement of the Winter-Courses in the College of Agriculture,
- Announcement of the New York State Veterinary College,
- Announcement of the Graduate School,
- Announcement of the Summer Session,
- The President's Annual Report,
- Pamphlet on prizes, samples of entrance and scholarship examination papers, special departmental announcements, etc.

Correspondence concerning the publications of the University should be addressed to

The Registrar of Cornell University

ITHACA, N. Y.

New York State College of Agriculture at Cornell University

W. A. Stocking, Acting Director.

The College of Agriculture is one of several co-ordinate colleges comprising Cornell University. The work of the College is of three general kinds: The regular teaching work of undergraduate and graduate grade; the experiment work; the extension work. The resident instruction falls in the following groups:

1. Four-year course, leading to the degree Bachelor of Science (B.S.). When desired the last two years may be chosen in subjects pertaining to landscape architecture and out-door art, or to home economics. In the Graduate School of the University students may secure the Master's and Doctor's degrees (M.S. and Ph.D.).

2. Special work, comprising one or two years: (a) Agriculture special; (b) Nature-study special or normal course.

3. Winter-Courses of 12 weeks: (a) General Agriculture; (b) Dairy Industry; (c) Poultry Husbandry; (d) Horticulture; (e) Home Economics.

THE INSTRUCTION IS DIVIDED AMONG TWENTY-TWO DEPARTMENTS AS FOLLOWS:

- Farm Practice and Farm Crops
- Farm Management
- Agricultural Chemistry
- Plant Physiology
- Plant Pathology
- Soil Technology
- Plant-Breeding
- Entomology, Biology and Nature-Study
- Horticulture
- Pomology

- Animal Husbandry
- Poultry Husbandry
- Dairy Industry
- Farm Mechanics
- Forestry
- Rural Art
- Drawing
- Home Economics
- Meteorology
- Rural Economy
- Rural Education
- Extension Teaching
# BUYERS' GUIDE

**TO OUR READERS:** The following well known business firms are boosters of the Countryman and deserve your patronage. Phone or postal will bring prompt service.

<table>
<thead>
<tr>
<th>Category</th>
<th>Business</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATHLETIC GOODS</td>
<td>Treman King &amp; Co</td>
<td>6</td>
</tr>
<tr>
<td>BANKS</td>
<td>First National</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Tompkins County National</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Ithaca Savings</td>
<td>39</td>
</tr>
<tr>
<td>BOOKS AND MAGAZINES</td>
<td>The Corner Book Stores</td>
<td>18</td>
</tr>
<tr>
<td>BOOK BINDING</td>
<td>J. Will Tree</td>
<td>22</td>
</tr>
<tr>
<td>CLEANING AND PRESSING</td>
<td>L. J. Carpenter</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>W. F. Fletcher</td>
<td>26</td>
</tr>
<tr>
<td>CUTS AND ENGRAVING</td>
<td>Christie Engraving Co</td>
<td>16</td>
</tr>
<tr>
<td>DAIRY SUPPLIES</td>
<td>Vermont Farm Machine Co</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>D. H. Burrell &amp; Co</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>De Laval Separator Co. (back cover)</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>The J. B. Ford Co</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Chr. Hansen’s Laboratory</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Thatcher Mfg. Co</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>P. Groff &amp; Son</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Wisner Mfg. Co</td>
<td>22</td>
</tr>
<tr>
<td>DRUGS</td>
<td>White &amp; Burdick</td>
<td>26</td>
</tr>
<tr>
<td>FEEDS</td>
<td>S. R. Feil Co</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>The H.-O. Co. Mills</td>
<td>15</td>
</tr>
<tr>
<td>FERTILIZERS</td>
<td>The German Kali Works</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Humphreys-Godwin Co</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Consumers’ Fertilizer Co</td>
<td>23</td>
</tr>
<tr>
<td>FLORIST</td>
<td>The Bool Floral Co</td>
<td>25</td>
</tr>
<tr>
<td>FURNITURE</td>
<td>H. J. Bool Co</td>
<td>30</td>
</tr>
<tr>
<td>GREENHOUSES</td>
<td>Lord &amp; Burnham Co</td>
<td>18</td>
</tr>
<tr>
<td>GROCERIES AND MEATS</td>
<td>Larkin Bros</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>D. S. O’Brien</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Wanzer &amp; Howell</td>
<td>30</td>
</tr>
<tr>
<td>GUNS</td>
<td>Ithaca Gun Co</td>
<td>21</td>
</tr>
<tr>
<td>HOTEL</td>
<td>Ithaca Hotel and Cafes</td>
<td>24</td>
</tr>
<tr>
<td>IMPLEMENTS AND MACHINERY</td>
<td>Gould’s Mfg. Co</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>International Harvester Co</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Holt Caterpillar Co</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Kent Vacuum Cleaner Co</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Davis Brown Co</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Chicago Flexible Shaft Co</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Williams Bros</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>W. L. Scott Lumber Co</td>
<td>17</td>
</tr>
<tr>
<td>INSURANCE</td>
<td>New York Life Ins. Co</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Traveler’s Life Ins. Co</td>
<td>27</td>
</tr>
<tr>
<td>JEWELRY</td>
<td>R. A. Heggie &amp; Bro. Co</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>A. B. Kennedy</td>
<td>24</td>
</tr>
<tr>
<td>LAUNDRIES</td>
<td>Forest City Laundry</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Palace Laundry</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Modern Method Laundry</td>
<td>24</td>
</tr>
<tr>
<td>MEN’S FURNISHINGS</td>
<td>E. B. Baxter</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>L. C. Bement</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Buttrick &amp; Frawley</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Ben Mintz</td>
<td>22</td>
</tr>
<tr>
<td>MUSIC STORE</td>
<td>Lent’s</td>
<td>25</td>
</tr>
<tr>
<td>NURSERIES</td>
<td>Samuel Frazer</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Harrison’s</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>W. &amp; T. Smith</td>
<td>5</td>
</tr>
<tr>
<td>PAINTS AND OILS</td>
<td>King Paint Mfg. Co</td>
<td>2</td>
</tr>
<tr>
<td>PHOTOGRAPHER</td>
<td>Conlon</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Robinson</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Van Buren</td>
<td>25</td>
</tr>
<tr>
<td>PICTURE FRAMING, ETC.</td>
<td>H. C. Cable Art Store</td>
<td>25</td>
</tr>
<tr>
<td>POULTRY AND STOCK</td>
<td>C. U. Dept. of Poultry Husbandry</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>C. U. Dept. of Animal Husbandry</td>
<td>26</td>
</tr>
<tr>
<td>PRINTING</td>
<td>Norton Printing Co</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Wise</td>
<td>24</td>
</tr>
<tr>
<td>REAL ESTATE</td>
<td>Rural Life Co</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>W. B. Georgia &amp; Co</td>
<td>2</td>
</tr>
<tr>
<td>SCHOOLS AND COLLEGES</td>
<td>Cornell University</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>New York State College of Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>SHOES AND REPAIRING</td>
<td>P. J. Herron</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Peter Scusa</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Ithaca Boot Shop</td>
<td>20</td>
</tr>
<tr>
<td>SPRAY MATERIALS</td>
<td>B. G. Pratt Co</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Benjamin Hammond</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Rex Co.</td>
<td>2 and 17</td>
</tr>
<tr>
<td>STUDENT SUPPLIES</td>
<td>The Co-op</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Rothschild Bros</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Student Supply Store</td>
<td>29</td>
</tr>
<tr>
<td>TAILORS</td>
<td>Carr &amp; Stoddard</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Urband</td>
<td>28</td>
</tr>
</tbody>
</table>
The Geneva Nursery Co.

A complete assortment of Hardy
Fruit Trees, Ornamental Trees,
Shrubs, Evergreens, Roses and

Varieties for Commercial Orchards
a Specialty

WRITE FOR OUR
SPECIAL PRICES TO PLANTERS

W. & T. SMITH CO.
GENEVA, N. Y.

Established 1846 1000 Acres

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Outfitters of Every Varsity Major and Minor Sports Team

Foot-ball
Track
Base-Ball
Basket-Ball
Cross Country

The Crews
Tennis
Lacrosse
Hockey
Soccer

Outfitters of the Ag. Base-Ball Team—
We solicit the business from your college—

Treman, King & Co.

The finest line of Sweaters and Mackinaws shown in Ithaca

---

More Water for Less Money

FAIRBANKS-MORSE

ECLIPSE ENGINES

WILL FIT ANY PUMP

200 to 4000 gallons per hour, depending on depth of well and style of pump. Easily carried from place to place by one man. So simple a child can start it.

COMPLETE CATALOG ON REQUEST

DAVIS-BROWN ELECTRIC CO.

Water, Power, Light, Pumping, Laundry and Ventilating Equipment

115-117 South Cayuga Street

ITHACA, N. Y.
Once Upon a Time

Once there was really no way out of it for the farmer. Plodding home from the field with his team at close of day, he saw before him the waiting small jobs about the house, barn, and yard, jobs that took time and labor, and never seemed to end. There was water to be pumped, wood to be sawed, various machines to be run by hand. But that was once upon a time. Today he lets the engine do it.

Every I H C engine is economical, simple, steady and reliable. Whether you want it for sawing, pumping, spraying, electric light plant, for running separator, or repair shop, or for all sorts of tiresome energy-wasting small farm jobs, you have need of an

I H C Oil and Gas Engine

I H C engines are built vertical, horizontal, stationary, portable, skidded, air-cooled and water-cooled; sawing, pumping and spraying outfits. Sizes from 1 to 50-horse power. They operate on gas, gasoline, kerosene, naphtha, distillate and alcohol. I H C oil tractors range in size from 12 to 60-horse power.

Have the I H C local dealer demonstrate the engine to you and explain its various points. Get catalogues from him, or write the

International Harvester Company of America (Incorporated) USA

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Your Dividend at the Co-op.

Do you realize that it is there and you need only sign your dividend slips to get the dividend at the proper time? The Co-op. does business for the students. The necessary profits above expenses come back to you. Get a copy of the Co-op. booklet.

The things you need

Your books, notebooks, pencils and erasers should be the Co-op. kind. For instance, the Simplex note cover is sold exclusively by the Co-op. and has been accepted as the standard. The good-quality goods with our good service are attractive to students.

The Co-op.
Morrill Hall
# Table of Contents

**October, 1913**

<table>
<thead>
<tr>
<th>Cover—Harvesting Rod Rows of Wheat.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontispiece—George C. Caldwell. Photo of painting by Olaf. Brauner.</td>
<td>Page</td>
</tr>
<tr>
<td>George C. Caldwell</td>
<td>3</td>
</tr>
<tr>
<td>Soil Experiments on Caldwell Field. Professor T. L. Lyon</td>
<td>4</td>
</tr>
<tr>
<td>Investigations Conducted by the Department of Plant Breeding. Dr. H. H. Love and Dr. C. H. Myers</td>
<td>11</td>
</tr>
<tr>
<td>Editorials</td>
<td>24</td>
</tr>
<tr>
<td>Book Reviews</td>
<td>27</td>
</tr>
<tr>
<td>Campus Notes</td>
<td>28</td>
</tr>
<tr>
<td>Former Students</td>
<td>31</td>
</tr>
</tbody>
</table>

**Subscription Price, $1.00 per Year**

- Canada, $1.15
- Foreign, $1.30

Entered as second-class matter at the Post Office, Ithaca, N. Y.

Copyright by The Cornell Countryman
GEORGE C. CALDWELL.
GEORGE C. CALDWELL

When ex-President Andrew D. White was first appointed he traveled extensively in search of professors. At Antioch College, Ohio, he found a man who was destined to play a very important part in the development of the new university, and whose name like those of White, Goldwin Smith, Agassiz, cannot be separate from an account of its early history. Caldwell Field is named for George C. Caldwell, the first professor appointed at Cornell University. It is fitting that a field which is contributing so much to scientific agriculture should be named for such a scientist.

Professor Caldwell's contributions were chiefly in the field of agricultural chemistry and he was a pioneer in this field. Liebig, had written quite extensively on agricultural chemistry in Germany, but Agricultural Chemical Analysis, written by Professor Caldwell was the first book on this subject in the English language. He published books in other branches of chemistry which were widely accepted as texts and helped to build up the reputation of the University. He was a member of the Federal Sanitary Commission in the Civil War, one of the founders of the Society for the Promotion of Agricultural Science, a member of the American Association for the Advancement of Science. At one time he was president of the American Chemical Society.

Although Professor Caldwell was pre-eminently a scholar, he was remarkably successful as an Administrator. Under his guidance the Department of Chemistry developed from a poorly equipped department with very cramped quarters in the basement of Morrill Hall until during the last part of his administration Morse Hall was built with a floor space of 65,000 square feet and enrolling on the average 1,400 students per term. From 1872 to 1886 he was the Secretary of the University Faculty. He rendered services to Cornell at the time when a stout heart was just as essential as a keen mind.

Professor Caldwell was also a teacher. Many of his pupils are now distinguished scientists. One can scarcely realize the powerful influence which he exerted, an influence which does not die with the man but lives on.
THE field came into the possession of the University in 1903. It was part of a farm belonging to Mr. Mitchell and this part of the college land sometimes goes by the name of the Mitchell farm. That division of the farm which has been enclosed by a high wire fence and set apart for experiments contains forty-five acres. It is this area that has been given the name Caldwell Field.

The surface of the field is rolling, which quality it shares with most of the college land, and indeed, with most of southern New York. It is not an ideal piece of ground for the purpose intended, but it is the best that the College owned at the time it was selected for its present use. The soil is a rather heavy clay requiring very careful management to prevent it from becoming compact. When properly worked it produces most excellent crops of hay, wheat and other small grains, but is not well adapted to corn and potatoes unless very heavily manured. Being undulating in topography, the surface has been washed and eroded carrying the organic matter to the lower levels, exposing clay in places and causing it to be quite non-uniform in productivity. It might be considered that this would unfit it for experiments in which the yields of crops on small areas of land are to be taken to be indicative of a certain variety of plant or of a special kind of fertilizer. It is true that it makes experimentation more difficult than might be the case on some fields, but we have now come to realize that no area of land is uniform, notwithstanding the fact that it may appear so to the casual observer, and difficulties of the kind that exist here serve to keep the experimenter alert to combat possible error, which is an excellent state of mind for him to maintain. It means that methods must be devised for preventing error and this is now one of the most important phases of field plat experimentation in all those parts of the world in which work of this nature is conducted.

THE EXPERIMENTS FOR SOIL STUDY

The object sought in almost all of the experiments conducted by the Department of Soil Technology is to ascertain the effect of some particular method of soil treatment on some property of the soil. The treatment may consist of a particular form of tillage or manure or of plant growth and the effect on the soil may be measured by the yield of the plants grown on it, or by some property that
is measured by chemical or bacteriological methods. If the yield of crop is taken as the indicator there must be some comparison between the tested treatment and some standard treatment in order that the effect of the treatment that it is desired to test shall be determined. A difficulty that always presents itself is to know that the result of the comparison is really due to the factors controlled by the experimenter, and not to contributing causes that were not intentionally introduced.

If we take a measured area of soil and apply a certain fertilizer to it the resulting crop may be greater or less than that which grows on a contiguous plat of the same dimensions and treated in the same way. A discrepancy is usually due to inherent differences in the soil of a part or all of the two areas. It occurs on all land, but on some fields the difference will be more than on others. There are two ways in which the difficulty may be decreased, one of which is to use a larger area of land for each test and the other is to multiply the number of tests at different places in the field, the object of both being to secure an average soil.

On this field the system of using small plats and multiplying them has been used as experiments with large and small plats on the field have shown that greater accuracy can be obtained with four plats of one hundredth acre each scattered over the area used in an experiment, than with only one plat one tenth acre in size. This, of course, means a great economy of space. As another precaution a standard treatment is given every third plat and each test plat is compared with the standard plats nearest it. The system is shown in the accompanying diagram.

Almost all of the one hundredth acre plats are now tile drained. The main drains, which are composed of four or six-inch tiles, follow the roadways. The laterals, of three-inch tile, are laid between every other plat, making a distance of twenty-four feet between laterals. By this arrangement all plats receive the same drainage.

In the roadways at the east and west ends of the rows of plats concrete monuments are buried in the ground to mark the line of plats and from these the location of each plat may be determined. These monuments are three feet high, eighteen inches square at the base and six inches at the top. On the top are two bisecting lines and from the point of intersection the corners of the plats may be located.

TANKS FOR SOIL INVESTIGATION

One of the difficulties that has always been experienced in conducting experiments with soils has been to maintain, in the soil under experimentation, conditions similar to those in the field. To meet these requirements a series of large concrete tanks has been constructed. Each tank is four feet two inches square with a maximum depth of four feet six inches and a minimum depth of four feet. The capacity of a tank is about three and one-half tons of soil. There are twenty-four tanks placed in two rows of twelve tanks each. Between the rows of tanks is a tunnel and from the bottom of each tank a tube for carrying off the drainage water runs into the tunnel. The drainage water is collected in galvanized iron cylinders which are also measures, and the volume of the drainage water and its composition are determined.

FIG. I. ARRANGEMENT OF PLATS FOR A SERIES OF FIVE TESTS.

C indicates check, or untreated plats; numerals indicates test plats. Each test repeated on the plats bearing the same number, making four replicate plats.
In the process of filling, the funnel-shaped bottom of each tank was first filled with sand. The soil from the fourth foot in depth, as the soil lay in the field, was then placed in a corresponding position in the tank, then the third foot, the second foot and finally the surface foot so that the soil layers were in their natural positions. The volume of soil is large enough to pack firmly after it has stood for some months, and the temperature and moisture content are similar to those of the surrounding soil. It is quite probable that the biological and chemical processes of the soil in these tanks are analogous to those which occur under field conditions.

The experiment was undertaken for the purpose of studying the conditions under which lime is lost from the soil and the changes that accompany it. A loss of lime develops a sour condition of the soil that is injurious to most of the ordinary farm crops. It has been found in the course of these experiments that less lime is removed from the soil when plants grow on it than when it is unplanted even including the lime removed by the plants. The reason for this is that nitric acid is continually being produced in the soil by certain bacteria and this acid unites with lime to form a soluble compound that is carried off in the drainage water unless prevented by the growth of plants that absorb the nitric acid through their roots and leave most of the lime in the soil in an insoluble condition.

A series of plats on similar soil are treated in a manner to duplicate the experiments in the tanks. This is done for the purpose of ascertaining whether the changes in the soil through a series of years correspond under the conditions of the field and tanks. In the tanks no upward movement of soil water is possible below a depth of four feet. In the field there may be such a movement brought about by the rise of water in the soil or by other agents. These field plats are maintained as a check on the tank experiments.

THE APPARENT INFLUENCE OF SOME HIGHER PLANTS ON CERTAIN BACTERIOLOGICAL PROCESSES IN THE SOIL

Determinations of the nitrate nitrogen content of soils on which maize, oats and timothy were growing showed that each is characterized by a distinctive relation to the soil nitrates, these always being highest under
maize, next under oats and lowest under timothy. In order to reduce the error due to inherent differences in the nitrate forming properties of the soils of the different plots the nitrate content of the soil under each crop was compared with an unplanted section occupying about the middle third of each plot. Nitrates under maize were sometimes higher than in the unplanted soil during certain stages in the growth of this crop. They then rapidly decreased in quantity with the ripening of the plants and did not again recover until the land was plowed. Under oats the nitrates gradually declined after growth started, and at harvest were generally lower than under maize when the latter was mature. Although oats are harvested here early in August the nitrates never rose materially during the remainder of the summer and autumn if the stubble was allowed to remain undisturbed. Oat land plowed after harvest and a part planted to maize increased more rapidly in nitrates in the planted than in the unplanted soil.

Timothy soil possessed a uniformly low content of nitrates throughout the entire growing season. These phenomena together with laboratory investigations may be explained on the hypotheses, (1) that certain plants during their early stages of growth have a stimulating influence on nitrate formation in the soil; (2) that during the later stages of growth certain plants exert a depressing action on the process of nitrate formation.

This influence of higher plants on the biological processes of the soil is a new conception and the means through which it is carried out must be discovered before it can be fully demonstrated. This part of the investigation is now in progress.

Another feature of this subject is the possible influence that a crop may exert on the process of nitrate formation during the year following its growth. Experiments in this field have given some indication that such an influence obtains, but it has not been fully demonstrated. It is possible that this is one of the factors in crop rotations.

NITROGEN BALANCE UNDER TIMOTHY AND UNDER ALFALFA

It is now well known that organisms exist in the soil that are capable of transferring the gaseous nitrogen of the air into the form or organic matter. Certain of these organisms live in nodules on the roots of leguminous plants like clover and alfalfa; others exist in the soil without any apparent relation to higher plants. Both may contribute to the nitrogen supply of the soil, a thing much to be desired, because nitrogenous fertilizers are the most expensive ones that the farmer has to buy.

It is generally considered that the organisms' associated legumes are more active in securing nitrogen than are the other kind. This is the accepted reason for the benefit derived from the growth of legumes. Plants like alfalfa and clover are very rich in nitrogen and as they yield large crops they require very large quantities of nitrogen for their growth. But legumes may absorb the combined nitrogen of the soil and incorporate this in the plant tissue, and sometimes when the soil supply of nitrogen is large they apparently utilize it to a great extent. The conditions under which legumes leave a considerable balance of nitrogen in the soil is, therefore, a subject that deserves investigation. Alfalfa is being used as a permanent crop and plots are being fertilized in different ways and also limed to see whether large yields and good fertilization are conducive to a large nitrogen balance in the soil.

Experiments on Caldwell Field have shown that soil on which alfalfa has grown for a number of years nitrifies more quickly than does soil on which timothy has grown for an equal length of time, although analyses of the two soils showed little difference in the quantities of nitrogen they contained. The land had raised the
TUNNEL UNDER SOIL TANKS SHOWING THE GALVANIZED CYLINDERS INTO WHICH THE DRAINAGE FROM THE SOIL TANKS IS RECEIVED.

two crops for six years before they were plowed up. No analyses of the soil before planting are available; hence it is impossible to say that one plat had or had not gained more nitrogen than the other, but the data raise the question whether the large removal of nitrogen from the soil by crops like alfalfa sometimes results in a nitrogen balance not greater than that remaining after timothy, and whether the better growth of crops after the legume may not be due to the more ready availability of the soil nitrogen following the growth of that crop rather than to the higher nitrogen content of the soil. Investigations covering these questions are now being conducted with both timothy and alfalfa under different fertilizer treatments and with and without lime, analyses of the soil having been made before the experiment was begun.

THE USE OF FERTILIZERS ON TIMOTHY

In recognition of the importance of the growth of timothy, in respect to which New York exceeds all the other States, a number of experiments with timothy alone and with timothy and clover are under way. A series of plats with timothy in rotation with corn, oats and wheat have been under experiment for nine years. These serve as a good illustration of the benefit that timothy may derive from top dressing it with commercial fertilizers or with farm manure. Yields of four tons per acre have been secured by this means on land that without such treatment gave only one and one-fourth tons. The net gain per acre from use of commercial fertilizers in their most profitable combination amounted to $65 for the six-year rotation and the most profitable quantity of farm manure gave a net return of $78. The hay crops only were
fertilized and the plats giving the largest yields of timothy produced the best grain crops.

Experiments now in progress are designed to show to what extent clover grown with timothy can take the place of nitrogen in the fertilizer, also whether it is more profitable in a rotation to fertilize only the hay crops, or only the grain crops or to fertilize both. The experiments have also illustrated the fact that mineral fertilizers may be made to contribute large quantities of organic matter to the soil through the larger quantity of sod that is formed on the timothy land to which they are applied. As farm manure is a product that will probably not increase much in output, the problem of securing organic matter for the soil is an important one.

**TOP DRESSING ALFALFA**

Alfalfa that had been seeded down for six years was used for an experiment in top dressing. A set of plats were top dressed with farm manure, another set with a mixture of one hundred pounds acid phosphate and sixteen pounds muriate of potash, and still another set with one hundred pounds of acid phosphate alone. All of these treatments increased the yields over the untreated plats, but only the commercial fertilizers proved profitable, in which respect the acid phosphate was superior to the combination of that fertilizer and muriate of potash.

**TESTS OF ACID PHOSPHATE AND RAW ROCK PHOSPHATE**

This is a test of the effect of acid phosphate and raw rock phosphate on the yields of certain crops, when these fertilizers are used with fairly heavy applications of farm manure, and when used with only mineral fertilizers, as for instance, nitrate of soda and muriate of potash. It is particularly desired to ascertain whether the incorporation of farm manure under these conditions increases the effectiveness of the raw phosphate.

A six-year rotation is in progress of which the courses are maize, oats, wheat each one year and hay three years. Plats receiving the raw phosphate have a three-years' supply applied before seeding to grass. The grain crops receive this fertilizer annually and all crops receive acid phosphate annually. Farm manure is applied to the grass and corn at the rate of fifteen tons per acre.

**EXPERIMENTS WITH DIFFERENT FORMS OF LIME**

Lime may be purchased in the form of burned lime or in the form of limestone, which instead of being burned is ground to a powder. The relative cost of these forms of lime varies in different localities, but it is desirable to know something of their relative efficiency in providing the soil with the basic material for which the lime is valuable. Another consideration is the degree of fineness of the ground limestone. Obviously the smaller the particles the greater the surface exposed to the solvent liquids in the soil. Burned lime does not need to be ground but slakes when it is added to the soil. Three sizes of limestone particles are used in the experiment. The size is determined by the sieve that the particles will pass through, the sieves having respectively ten, fifty and two hundred meshes to the inch.

In addition to the forms of lime already mentioned, gypsum, marl, dolomite, magnesite and Solvay lime are being tested. The last named is a mixture of oxide and hydrate. Ground limestone is also being used in different quantities per acre, as is also caustic lime. Applications of these substances have only been made once except on the plats that are receiving burned lime biennially.

Sorghum, oats and wheat have been raised on the flats treated with these various forms of lime. No legumes and no sod crops are being used as they might introduce secondary effects occasioned by the manurial value of the residue remaining from the crop. The organic matter in the soil is
The chief differences brought out by the experiment so far are the better yields on the plats treated with caustic lime than on those treated with ground limestone, and the depression of plant growth on the plats receiving magnesite. As this is a heavy clay soil the burned lime might be expected to have an ameliorating effect on the structure.

CONTINUOUS CROPPING WITHOUT MANURES

This is an experiment designed to ascertain the effect on the productivity of this soil when it is cropped continuously without replacing any of the mineral nutrients removed in the crops. It is intended, however, to maintain a liberal quantity of organic matter in the soil by means of grass or legumes. Thus a series of five plats will each year have three of the plats in timothy, one plat in maize and one in oats seeded with timothy. The next year the maize plat will be seeded and one of the timothy plats will be planted to maize. In this way each plat will be in timothy three years, maize one year and oats and timothy seeding one year. In another series the seeded crop is alfalfa, and in another series it is timothy and clover. Each series is duplicated.

The feature in this experiment in which it differs from continuous cropping experiments generally conducted is in the attempt at the maintenance of the supply of organic matter without the addition of any mineral nutrients. An incidental result of the experiment will be to compare the manurial value of timothy, alfalfa and timothy and clover sod. It will, of course, be a great many years before the data begin to contribute to the main object of the experiment.

HIGH GRADE NITROGEN FERTILIZERS

The value of nitrate of soda applied to timothy on this soil has been well demonstrated. It is now intended to test two other high grade carriers of nitrogen in comparison with nitrate of soda in a rotation, but particularly on timothy hay. The fertilizers being tested are ammonium sulphate and calcium cyanamid. The latter is of recent invention, but is now being extensively manufactured in Europe, and to some extent in this country. In its manufacture atmospheric nitro-
Ammonium sulphate has a constantly increasing output, as it is a by-product in the manufacture of illuminating gas and in the production of coke, and while formerly wasted is now being saved by a constantly increasing number of these plants. These two fertilizers are being tested singly and in combination with sodium nitrate. As is customary where a single fertilizer ingredient is to be tested the other ingredients are used in excessive quantities. No definite results have yet been obtained.

INVESTIGATIONS CONDUCTED BY THE DEPARTMENT OF PLANT-BREEDING

By Dr. H. H. Love and Dr. C. H. Myers

The Plant-Breeding Department was organized in 1907 and supported entirely by Hatch and Adams funds.

The primary object of the department was to work upon the principles and methods underlying the general subject of plant-breeding or plant evolution. As time has passed the work has developed in two general lines. One, which may be called practical, is the development of better yielding strains of the various farm crops for distribution among the farmers of the state; and the other, scientific, consists of work on the principles and laws which form the basis for plant improvement.

Since it has been the primary object of the department to work on the scientific phases of the subject of plant-breeding, the plants with which the work has been done have been both of economic importance and of no economic value. That is, when it has been possible to use some wild plant or weed with greater economy this has been done. For example, the chickweed (Stellaria media) has been used as a plant with which to study the influence of environment. The facts obtained from such experimentation are of course, applicable to the economic crops, and, therefore, the problems have not been conducted in vain.

At the present time the research work of the department is divided between two professors, who with their assistants are conducting the experiments. The division of the work between these two men has been largely along the line of crops; each man specializing with different crops. This is especially true in the case of the problems of economic importance.

THE WORK WITH TIMOTHY

The timothy breeding work at Cornell was started in 1903 by Professor T. F. Hunt. He was assisted in this work by Professor J. W. Gilmore, Samuel Fraser, and Dr. C. F. Clark. Dr. H. J. Webber was placed in charge of the work in 1907 and continued the direction of the experiment until he severed his connection with the College in 1913.

In the beginning a large number of letters were sent to agricultural workers in all parts of the civilized world, asking for a small quantity of timothy seed. In this manner seed was obtained from more than two hundred places. The larger number of these lots was from the United States, but there were a goodly number of samples from foreign countries, including Austria,
GENERAL VIEW OF PLANT BREEDING GARDENS.
Canada, Denmark, Ireland, England, Norway, Germany, Scotland, Hungary, Sweden, and Switzerland. The purpose of collecting all of these lots of seed was to take an inventory, as it were, of this important member of the grass family, to see of just what it was constituted in the way of types and strains.

After this seed had been collected, a portion of each of the different samples was sown in pots of sterilized soil in the greenhouse. The soil was sterilized in order that no stray seed of timothy could germinate along with the seed that was sown there. After the seedlings had reached a sufficient growth, they were transplanted to the field in rows three feet apart each way. It has since been found more convenient to make the rows four feet apart and to place the plants three feet apart in the row. By having these arranged in this manner there is opportunity for the plants to develop to the fullest extent, and they may also be observed to better advantage. (See Fig. 2). In this first planting there were 12,516 plants.

Up to that time no varieties of timothy had been isolated. "Timothy was timothy," and about the only effort towards improvement was to get bright, well cleaned seed. But, when a careful study was made of these several thousands of plants grown separately, great variation was found. Following are some of the characters observed: height of plant as tall or dwarf; erect and spreading habit; fine stems; coarse stems; scant foliage; dense foliage; wide leaves, narrow leaves; variation in color of stems, heads, and leaves; slender heads; short, blunt heads, cylindrical heads, nodding heads (Fig. 1); date of maturity; length of blooming period; amount of aftergrowth, rust resistance, and the like.

In order to study these variations of single plants more carefully, the selected plant was propagated vegetatively by cuttings or slips of the bulbs formed in the stooling. In this manner a large number of plants can be obtained which are in reality transplanted parts of the same individual. It is possible that bud variation may occur among these cuttings from the same plant. Experiments are now in progress to determine the amount of this. But in general, the clons (cuttings) from a single parental plant are quite uniform, and they furnish an excellent means for a more complete study of different types.

The important thing the plant-breeder has to determine about the characteristics of any crop with which he is working is to what extent they are transmitted to the offspring. The variations that are not inherited are of no particular value.

In order to study the transmission of these different types, inbred seed was obtained by covering a bunch of heads with a paper bag before blooming time. This inbred seed was carefully germinated in flats of sterilized soil, and the young seedlings were transplanted to the field in the manner previously described. In this test were included a large number of promising hay types as well as many others of no apparent value. The latter were included for their scientific interest. Not all of the varying characters observed in the original selections were inherited, but there have been more than two hundred and fifty definite types of timothy isolated.

It should be observed in this connection that timothy is an open-fertilized plant, and consequently none of these types is absolutely pure in the sense of the pure line theory. They are probably only pure for certain gross characters.

As soon as the seed transmission of desirable types was determined, the next thing in order was to increase the seed of the promising types, so that they could be tested in broadcast plots in comparison with each other and with commercial seed. To do this, either inbred seed or cuttings from the desired types were planted in isolated beds. These beds should be, at least, two hundred feet
apart, and it is still better if they can be surrounded by some tall growing crop, such as rye. In these beds the plants were placed eighteen inches apart each way so as to allow of some cultivation. Such a bed, containing four to five hundred plants, under proper conditions, furnishes from two to three bushels of seed, and with some care can be maintained for a number of years, thus furnishing a constant pure supply.

A large number of varieties have thus been tested in fortieth acre broadcast plats (Fig. 3), some for four years, some for two, and still others have produced but one cutting. As rapidly as possible others will be placed in the test to replace those which have failed to show their superiority. A broadcast test, to be of value, should continue for a period of from four to six years.

From the series of plats which have been grown for four years, some gratifying results have been obtained. In this test, including sixteen new varieties, the four year average gain of the five best varieties over their checks has been 2100 pounds per acre. Five others have given over 1000 pounds per acre average increase, five others have ranged between 284 and 975 pounds per acre, while one was inferior to its check. In each case the check used was the best grade of commercial seed available. Equally promising results are given by the later series of plats, but they need to be grown two or three years longer before definite conclusions can be drawn.

The next problem in this work is a further test of these new varieties under other conditions and the increasing of the seed so that it may be available in commercial quantities. This is being accomplished by cooperative tests and by the distribution of small amounts of seed to applicants who are willing to handle it carefully. Only a beginning has been made in this work, but so far it gives promise of excellent results. It is expected that
within a comparatively short time the best of these new varieties will be available in commercial quantities for general use.

The further testing of new varieties will be continued. In addition to this there remain many problems of scientific interest. One of the most interesting of these is the one of bud variation, previously mentioned. From the biometrical standpoint the correlation of various characters will furnish interesting material for study. As yet no hybridization studies have been made. These should furnish material for a study of the analysis of unit characters. These and other problems will continue to add considerable scientific interest to these experiments, which are already of so much practical value.

POTATO BREEDING

The potato breeding work was begun in 1908 by Dr. Webber. The experiment was designed primarily for a scientific study of bud variation, and the effect of selection within pure tuber lines. Incidentally, it has thrown light upon some of the practical methods of hill selection.

The method of starting this experiment was very much like that used with the timothy. First, a large number of different commercial varieties were obtained from various sources. These sources were not as widely distributed as those from which the timothy came, but they represented a large variety of conditions.

From these lots of seed individual tubers were planted by a four hill unit method or by some modification of this method, so that the progeny of each tuber was kept separate. This system has been followed year after year, so that now each parental tuber is represented by a large progeny. These progenies constitute the pure lines. A careful study has been made
of the characteristics of the parental tubers as well as of the pure lines coming from those parents. In every case the propagation has been made by cuttings. Thus the variations that occur must be bud variations.

The experiment has not been conducted sufficiently long to warrant the publication of many definite conclusions. However, some interesting and suggestive observations have been made. It might be expected that the offspring of a single parental tuber, propagated by cuttings, would be uniformly true to the parental type. This seems to be true to a certain extent. The pure tuber lines are remarkably uniform in regard to habit of growth, vigor, yielding capacity, shape and color of tuber and the like. But within these pure tuber lines there have occurred variations pronounced and definite enough to constitute a new line, and the progeny of this line has continued true to the new type (Fig. 4). In this manner there have been isolated a good yielding, a medium yielding, and a poor yielding strain, all from the same pure line. This kind of variation has also occurred with respect to the shape, size, and color of the tuber.

In this experiment a comparison has been made between the apical (seed) and basal (stem) end of each tuber. It has been observed that a large number of the low yielding or degenerate strains have sprung from the basal cuts. To draw a practical comparison, in a test of twenty-two varieties for two years, the apical hills gave an average yield of 180 bushels per acre, while the basal hills yielded 151 bushels.

More data will be accumulated in regard to the amount and nature of the bud variation within these pure lines. The results herein given can only be considered as preliminary. Several years more must elapse before
any definite information will be available concerning the accumulative effect of selection within a pure line.

From the practical standpoint the experiment has justified the method of hill selection for the improvement of potatoes. Although these offshoots of varying types occur they probably are infrequent enough to be of little consequence to the grower who is practicing hill selection. As an example of this, the four year average of selections from three low yielding strains is 93.8 bushels per acre as against 231.3 bushels per acre for the selections from three high yielding strains. Several promising strains have been isolated. These will be tested in comparison with commercial varieties, and if they prove superior will be distributed for general use.

**NUTRITION STUDIES**

In the Plant-Breeding Garden are three series of beds, planned for the purpose of a long time experiment on the effect of growing plants under different degrees of fertility (Fig. 5). In each series there is a bed of sand, one of ordinary garden soil and another of highly fertilized soil. Seed from the same plants are sown on each bed of a series and pedigree records are kept, so that the inheritance from year to year can be traced. Statistical measurements of each crop are taken and are biometrically treated.

The study is divided into three parts. First, the variation that occurs under these different conditions; second, the effect of these conditions on the correlation of various characters; third, the inheritance of charac-

**FIG. 4—VARIATION OF YIELDING CAPACITY WITHIN A PURE TUBER LINE OF RURAL NEW YORKER. TWO UPPER HILLS, GOOD YIELD; LOWER HILLS, POOR YIELD.**
I8

The Cornell Countryman

ters from year to year under different conditions of fertility. There is a practical consideration in this connection upon which the experiment will shed light. That is the practice, fairly common among seedsmen, of producing seed under conditions which are more favorable than those under which it will be used. No publication of conclusions can be given until five or more years of data have been accumulated.

CORN BREEDING

Corn breeding experiments have been conducted by this Department with cooperators on farms located in different parts of the state. Selection plats of Pride of the North, at Aurora, and Funk’s Ninety Day, at Ballston Lake, have been under way for five years.

At Bedford Hills an experiment in the selection of Funk’s Ninety Day is also being conducted, having been started in 1910, from seed of the plat at Ballston Lake. In fact, the seed from the ears which were used for planting the Ballston Lake plat in 1910 was divided and part of each ear was planted at Bedford Hills and part at Ballston Lake.

The main object of these experiments is to obtain earlier varieties of corn which will mature seed under New York conditions and also give a high yield of grain (Fig. 6). These different sorts are responding to the selection for earliness very markedly. The effect of selection was well demonstrated in the following manner at the Ballston Lake plat in 1911. A general lot of select seed was obtained by taking a small quantity of seed from each of the ears selected for planting. This was used to compare the gain in earliness by planting it in alternate rows with the original seed with which the selection was started. The original seed used in the test was obtained by mixing kernels from each of the ears planted in starting the selection the first year, 1908. The crop from these alternate rows was harvested and carefully compared with reference to earliness. It

FIG. 5—VIEW OF NUTRITION PLATS IN PLANT BREEDING GARDEN.
was found that in the rows grown from the improved seed 72 per cent of the ears were fully ripe when husked, while in rows grown from the original seed only 13 per cent of the ears were graded as ripe and, in fact, these few were not so ripe as the ripe ears of the dent corn which will mature seed would be of as great value for silage purposes as strains which are later and do not mature seed under New York conditions. With this in mind an experiment was started in 1911 to compare the silage value of these improved strain. This degree in ripeness so far as could be judged by observation represents a gain of at least two weeks in earliness or time of maturing. During the selection careful attention has also been given to productivity, and the early strain remains fully as productive as the original.

In connection with this corn breeding work it is thought well to determine whether these new strains of selected sorts with some of the common silage corn. This experiment is still being continued. It is thought that such a study conducted for two or three years will show whether it is possible to obtain an all-purpose variety; in other words a variety which will be desirable both for silage and grain.

While these breeding tests have been under way many notes hav
been taken on the parent ears, to learn if possible whether there are any visible seed ear characters which may indicate high yield or earliness. Such notes as length, weight, circumference of ear, weight of grain, percentage of grain, length and breadth of the kernels and the like, have been taken and will be correlated with yield. If any of these characters indicate a high yielding strain, then it will be possible to use these in seed corn selection, thus adding to the possibility of obtaining higher yields.

None of these corn experiments has as yet been completed, but the selection for earliness and high production has proceeded far enough so that some of the seed of these earlier sorts is being distributed to the farmers for a further test.

**CEREAL BREEDING INVESTIGATIONS**

**Oat breeding.** The experiments in the breeding of oats have been under way since 1907. The earlier work consisted of making yield tests of a large number of hybrids and selections from commercial varieties which had been made by J. B. Norton, of the Bureau of Plant Industry, U. S. Department of Agriculture. The method used for making these yield comparisons has been the so-called rod row system (Fig. 7). This system consists of planting the grain one foot apart in rows about one rod in length. The different strains are repeated a number of times in the test, that is, there are several rows of the same strain growing in different parts of the field.

When the work had been under way long enough to judge which strains were the best yielding ones the poorer sorts were discarded and many commercial varieties were brought into the test to compare with the hybrids and selections. This is still being done.

The results obtained from these tests have shown the possibility of increasing the yield of oats by selection and hybridization. This is clearly shown in the following table. The yields of the new sorts are directly compared with the yields of the commercial varieties from which they were obtained.

It will be seen that the Welcome selection shows a gain of 14.3 bushels per acre over the variety. Two selections from the Sixty Day variety made gains of 11.9 and 9.6 bushels per acre, respectively, over the yield of the variety. The average yield for the Burt and Sixty Day varieties was 49.6 bushels, while the hybrid between the two yielded 57.7 bushels, giving a gain of 11.1 bushels per acre in favor of the hybrid.

Since the work was begun many new selections have been made from...
different commercial varieties. These are now being tested to determine their value as high yielders when compared with the varieties from which they were selected and also with other commercial varieties.

These selections were made in two ways. One method was to go into a field of oats and select a large number of good heads. Care was taken to make these selections from the field where the seeding was normal and where the plants were not favored by more moisture or plant food. The other method was to grow a great many plants of the same variety in a plat where each plant had the same amount of space in which to develop. The plan of planting followed was to mark the ground into squares one foot apart each way and then plant a seed in a place. This plan gives each plant an equal chance in the field and makes it possible to select an entire plant which will give more seed with which to begin the selection than is possible when only a single head is selected from the field. These heads or plants are now multiplied either in head-rows or plant-rows as the case may be and then put into the regular test. In every case a composite lot of seed of the variety from which the selection was made is grown in order to compare the selection with the variety, and only those selections which yield better than the varieties themselves are saved.

A great many new hybrids of oats have been made. These consist of a large number of crosses of widely different varieties. The primary object of this work is to make a careful study of the Mendelian segregation and inheritance of the different characters. This experiment is not completed so that no definite statements can be made as to the final results. Throughout the experiment the practical value of the new types obtained through crossing will be studied so that if any new combinations are of value as high yielders they will be multiplied and used as such.

Any new high yielding strains are

FIG. 7—HARVESTING ROWS OF OATS.
to be distributed to the farmers for further seed testing and later put out as seed in a commercial way. Some distribution has already been made.

Another line of investigation with oats has been that of the study of correlations. It has seemed advisable to study the different measurable characters of the oat plant to determine if possible whether any of the general characters may be correlated with high yield to such an extent that they may be kept in mind when making selections or passing judgment on different strains of oats. This experiment has not been conducted long enough to draw any definite conclusions.

While studying these correlations the question arose as to whether environment may not have a very marked effect on the amount of correlation. With this in mind a cooperative experiment was begun with the Montana Experiment Station. The same pure line of oats is being grown at both places and the same characters are being studied. This experiment will be continued for some time.

Wheat breeding. The work in wheat breeding is along the same general lines as is the work with oats. For several years a large number of selections from some of the well known commercial varieties have been tested in regard to their ability to yield. These tests have been made in a manner similar to those of oats, that is, by using the rod row system. The poorer strains have gradually been eliminated from year to year, until now only a few of the higher yielding ones remain. These are being compared with a large number of commercial varieties to determine whether any of them are superior to varieties already on the market. Results are now available which show that certain of these strains have given very good yields for the last four years. Some of the strains have given the following yields as an average for the years 1910-1913 inclusive, 39.1, 37.2, 36.9 bushels per acre.

The difference in quality is also an important point with wheat. For milling purposes a hard wheat is important, while for other purposes a softer wheat is more desirable. One of the aims of this work is to breed a good type of white wheat, which is the type desired by the Shredded Wheat Biscuit Company. Cooperative wheat breeding with this company and some farmers is now under way.

An extensive study in the hybridization of a large number of different varieties of wheat is also under way. The first generation of these hybrids will be grown in the greenhouse this winter. This study deals first, with the segregation and inheritance of characters and later, if any new sorts of a commercial value are obtained these will be distributed to the farmers of the state.

DAISY WORK

As stated in the beginning of this article, this department was established to work on principles and methods, and that sometimes plants of no economic value were used to make such studies. Such an experiment is that being conducted with the common field daisy (Fig. 8).

The main study with this plant is to isolate the many different types and determine what ones transmit their characters to their offspring. While observing daisies as they grow in the field it was noticed that there were many different types of plants. They differed in their habit of growth, as in stature, branching, and the like, as well as in their foliage characters. There were also great differences in regard to their flowers. Many of these forms have been isolated and vegetative rows of them have been planted. They are now being carefully studied and seed will be sown next year to determine what types produce their particular characters. This part of the study has proceeded far enough to know that there are certain characters which are transmitted.

Another study with the daisy is that of the effect of environment on
the ray-florets. Populations were collected from hill tops, valleys, and cultivated areas, to learn the difference in variation. Some very interesting data have been obtained, showing that some striking differences are found in the different localities.

Another study combining a determination of the place variation and the change in variation throughout the growing season has been under way for four years. In this study all the daisy heads from a given area are collected every day throughout the blooming season and the number of ray-florets on each head determined. There have been from 12,000 to 43,000 heads studied each year. Some striking changes have been observed, yet the studies are not complete enough to justify making any generalization at this time. However, there is a gradual decrease in the number of ray-florets as the season advances.
A Greeting

We are beginning a college year which promises to be eventful in many ways. The College of Agriculture has continued to grow during the summer, new buildings are rising about us, new faculty members have joined us with enviable reputations at other institutions, new departments have been organized, a new Acting Director has begun his administration.

The COUNTRYMAN extends a greeting to both the new and old students. In this busy college of ours there is opportunity for every one of you. We would remind you that you are not only here to gain a knowledge of scientific agriculture but to become real men and women. You have come to what a recent writer has called our "Welfare College" where the real problem is the human problem. Our college stands not only for better farming but for a better country life. We urge you to engage in her activities and get into the spirit of it all.

Do not forget that a great university has opened her doors to you as well as a great college of agriculture. A very essential factor in a successful college career is to be alive to your advantages while you are here.

During the summer Dean Bailey resigned from the Directorship of the College of Agriculture, his resignation taking effect on July 31, 1913. The Agricultural Council at its meeting on July 26th adopted the following minute:

"In view of the fact that the present meeting of the council is the last during the incumbency of Director L. H. Bailey whose resignation takes place July 31, 1913, the council desires to express its regret at his resignation and express its appreciation of his services to the University and to the State of New York.

The council was called into being on the sixteenth of December, 1911, and was intended to represent the various interests of the state, the university and the college. Its members during the brief term of its existence have been brought into intimate relations with the director and have admired the breadth of his views and his grasp of the complicated business of the college.

The extraordinary growth of the college rendered possible by the enlightened bounty of the state, is in a large measure due to Director Bailey's genius and far reaching plans.

The personal intercourse of the council with the Director has been most pleasant and its members deeply
regret that official relations with him must cease. They trust, however, that their friendly connection strengthened by the co-operation of the last two years may continue unbroken, and that they may still enjoy for the sake of the University and College, Director Bailey's advice and sympathetic interest.

They wish finally to assure him that he takes with him into his well earned retirement their cordial wishes for his future usefulness and happiness."

The minute of the Agricultural College Council expresses also the sentiment of the student body. The student body has often expressed its regard for Director Bailey in more suitable ways for such a regard cannot be best expressed in type. The COUNTRYMAN whose valued friend Director Bailey has always been, wishes him many full and successful years.

On July 29, the Board of Trustees of the University, on the recommendation of the Agricultural College Council, appointed William Alonzo Stocking, jr., acting director of the College of Agriculture for one year or until a director is appointed permanently by the Board of Trustees.

Professor Stocking graduated from the Connecticut Agricultural College in 1895 with the degree of Bachelor of Agriculture and in 1898 received the degree of Bachelor of Science in Agriculture from Cornell University. From 1901 till 1904 while teaching at the Connecticut Agricultural College, he was registered as a graduate student at Cornell in dairy bacteriology receiving a master's degree in 1904. In 1906 he became assistant professor in Department of Dairy Industry at Cornell and three years later became a full professor. When Professor R. A. Pearson resigned as the head of the Department of Dairy Industry, Professor Stocking was appointed.

We extend a greeting to Acting Director Stocking and we assure him that he has the support and backing of the student body in his difficult task. Judging by his ability at the head of the Department of Dairy Industry, the College of Agriculture will continue on its successful career under his guidance.

This number is devoted to the experimental work which is being done at the college. All the experimental work which the college is doing could not be described in one issue, the articles describing just the work which is being carried on at the experimental field on the college farm, i.e. Caldwell Field.

Of the three functions of the college; teaching, extension and experimental work, the last is the most obscure. It is not a common practice among students or farmers to visit the experimental field so that very little is known of the different experiments until they are finished and the results published. The work done at Cornell can be favorably compared with that done at any of the agricultural colleges. There is much to be gained by a visit to Caldwell Field if only to study the experimental methods. Ex-Dean Bailey has often urged a better acquaintance with the college farm. We believe that this advice applies to
the experimental fields very strongly and that our present and future farmers of New York State should be more familiar with them.

A Competition

A competition is just starting for positions as Associate Editor and Assistant Manager of the COUNTRYMAN. There are to be three separate competitions, one for freshmen and one for sophomores on the editorial side and one for freshmen on the business side. All three competitions will be decided directly after the Christmas recess.

These competitions are fairly short and do not require previous experience. We believe they are worth while in themselves for the competitors. Here is a chance to get in touch with what is going on at the college, to make friends and to acquire a considerable amount of valuable knowledge. We urge you to come out and try.

The President of the University has just returned from Greece where he has served his country as Ambassador. THE COUNTRYMAN welcomes President Schurman back to Cornell.

BOOK REVIEWS

Roman Farm Management, a translation from the treatises of Cato and Varro by an anonymous author. 351 pages. Published by the Macmillan Co., 66 Fifth Ave., New York City. Price $2.00 net.

A very instructive and amusing book having considerable literary merit.


This book covers admirably the subject of animal husbandry considering the space allowed. It is full of practical knowledge and exceptionally well illustrated.


Giving the result of survey principles applied to the country church. Surveys were made in Tompkins County, New York and Windsor County, Vermont. This book is full of startling facts which should be of much value to students of country life.

Electricity for the Farm and Home, by Frank Koester. The Farmer's Practical Library Series. 274 pages. Published by the Sturgis & Walton Company, New York. Price, $1.00 net.

Discusses the generation of electrical power, practicability and the use to which it can be put. It is well worth reading for its suggestive value.
The Department of Vegetable Gardening begins this term as a separate department. Mr. Work will be superintendent of the department. Mr. Wilkinson will have charge of the extension work. C. E. Dimon, '13 and H. W. Schenck, Wisconsin '13, will be instructors and there is one position yet to be filled.

The courses are re-arranged so that students can specialize in the subject as well as to gain elementary knowledge. There will be a new course lasting all through the year in outdoor commercial gardening intended for specialists. The Department is building a new greenhouse, 34 by 50, which is the beginning of a teaching range to occupy the north side of the greenhouse compound and eventually there will be 12,000 square feet of glass.

The field work is to be done on the Bool farm. It was decided during the summer that the vegetable gardening field should be known as Craig Field. The students will work in the early soil of the East Ithaca garden.

A new Department of Botany has been organized in the college, under the leadership of Professor Weigand. It is planned to develop the department broadly so that in a few years it will represent all branches of botany. During the first year most of the attention will be given to the introductory course and the required course, afterwards the advanced and special courses will be developed. The Department will ultimately have a museum and a complete herbarium of wild and cultivated plants, weeds, etc. The Department will include the present Plant Physiology Department and will occupy its quarters and those of the Plant Pathology Department which has moved to the new Auditorium.

The Home Economics Department during the month of July had a car equipped belonging to the Lehigh Valley Railroad and offered to the College of Agriculture for extension purposes along its lines. The exhibition of the Department of Home Economics consisted of illustrative material showing the teaching of the department in foods, sanitation and household art. Demonstrations and lectures were given in the car each day for a period of three weeks. The car was moved to the State Fair at Syracuse with its equipment in Home Economics.

A building has been constructed for the Department of Plant Breeding for storing breeding rows of timothy, oats, wheat and other crops until they can be threshed. The building has a concrete floor and wire mesh sides, being rat and bird proof. A gasoline engine is used for power and the seed is threshed by small machines made especially for the purpose. This will greatly increase the efficiency of the plant breeding work.

The Student Loan Fund Committee was able to raise $500 last June as the nucleus of a permanent fund to be
administered by a faculty committee. At the meeting of the committee in June, R. C. Shoemaker, '14, was elected chairman for this year.

* * *

Ralph W. Curtis, B.S.A., '01, who was for four years assistant superintendent of the Arnold Arboretum of Harvard University at Jamaica Plains, Mass., has been appointed assistant professor of landscape art in the College of Agriculture. Professor Curtis was born at Burlington, Wis., in 1878. He entered Cornell with the class of 1900, but his course was interrupted by a year of absence and he graduated in 1901. Three years afterward he received the master’s degree and was then, for a year, assistant in nature study in the College of Agriculture. He left Ithaca to become connected with the department of parks of Boston, Mass. In 1909, when assistant superintendent of parks, he resigned to accept an appointment as assistant superintendent of the Arnold Arboretum. Since April 1st last he has been in the office of Warren H. Manning, landscape architect, in Boston.

* * *

An organ has been ordered for the auditorium of the College of Agriculture, after a long and careful investigation by Dr. Andrew D. White and the trustees’ committee on music. It will be built by the J. W. Steere Organ Company of Springfield, Mass., and will cost about $20,000. It is to be completed before April 2, 1914. The money for its purchase was given by Mr. Andrew Carnegie, Dr. White, and other friends of the University. Although it will be placed in a building belonging to the State of New York the understanding is that the organ will remain the property of the University.

* * *

The Plant Breeding Department is making plans for a demonstration car to be run in cooperation with the New York Central during the fall. Plans are also being made for a second distribution of timothy seed to applicants and for a distribution of seed from improved varieties of wheat.

* * *

The old poultry building near the Home Economics Building is being re-modeled for the use of the Landscape Art Department.

* * *

At the June meeting of the Board of Trustees Professor Frank B. Moody was appointed to fill a fifth professorship in the Department of Forestry. He was formerly Assistant Professor in Forestry at the University of Wisconsin, graduating from the University of Michigan in 1906. He was Assistant State Forester of Wisconsin from 1906-12. Professor Moody will have charge of the University Extension Work in Forestry and will give a course in the care of the farm woodlot.

* * *

Farmers Week will be held February 9-14.

* * *

The different departments in the college will be represented at 28 county fairs besides the state fair during the fall months.

* * *

The new Auditorium will be occupied this year by the Plant Pathology, Rural Economy and Vegetable Gardening Departments.

* * *

The attendance at the summer school this year showed an increase of 110 students, the total attendance being 333.

* * *

Mr. R. D. Anthony is assistant horticulturist at the Geneva Station.

* * *

Professor Edward A. White will have charge of the teaching in floriculture. Professor White comes from the Amherst Agricultural College. Professor Beal will have charge of the research work in the new Department of Floriculture.

* * *

Professor T. L. Lyon sailed September 20, for Germany, being on a sabbatical leave of absence. He will
make a thorough inspection of the German experiment stations spending most of his time at the University of Leipsic. Professor Lyon will also visit several French and English stations returning home at the beginning of the second term.

The Farm Crops Department has been conducting a potato survey this summer in charge of Mr. E. V. Hardenburg. A survey of Long Island was made beginning in June and survey of Steuben County was made in August. Although no figures have yet been obtained from the data, the results promise to be very successful in showing both the facts in regard to potato growers and the problems of the grower. Mr. Fox of the Farm Management Department has been figuring cost accounts in connection with this survey.

The Soils Department has been making soil surveys in Chautauqua and Oneida Counties. The party in Chautauqua County is in charge of Mr. Morrison. Part of the county has already been surveyed and is now being re-surveyed. Mr. Maxon has charge of the party in Oneida County. The southern part of this county has already been surveyed.

Professor Chandler from the University of Missouri has arrived to do research work in pomology.

Mr. L. W. Army will teach in the Department of Pomology this year. Mr. Army is a graduate of Pennsylvania State College and has been connected with the Pennsylvania Farmer.

Mr. E. L. Markell of the Department of Pomology has taken a position with the Department of Pomology at Washington.

The class in "The School" which attended the Summer Session gave an extemporary drama August 7 in front of the Rural Schoolhouse. The play "Sleeping Beauty" was given as a demonstration of the idea of dramatic expression in children.

The Landscape Art Department has made a map of the grounds and farm belonging to the College of Agriculture. The map will furnish a basis for a permanent road system and the landscape work which is to be done.

The Department of Farm Mechanics has made a topographical survey of the grounds and farm belonging to the College of Agriculture.

A summer meeting of potato growers was held on August 20 at the farm of T. E. Martin, West Rush. There was an attendance of 300 potato growers from all over the state and several men from the College, Professors Montgomery and Gilbert, Assistant Professors Myers, Barrus and Robb; Messrs. Hardenburg, Whitcomb, Wilkinson and Ladd.

Professor E. G. Montgomery was chairman of the meeting. Short talks were given and the meeting adjourned to the field where Mr. Martin explained a system of underdrainage which he has established. It is expected that during the coming winter a potato growers association will be formed.

Several of the Home Economics graduates of 1913 have been engaged as teachers of home economics for the next year. Miss Pearl Boynton will teach in the public schools of Medina, N. Y., Miss Dora Earl will teach home economics and science at the Pennsylvania State Normal School, Indiana, Pa. Miss Ruth Graham has been engaged as the teacher of domestic science at Stamford, N. Y., Miss Sarah Haswell in the public schools of LeRoy, N. Y., Miss Caroline Higgins has taken a position in the Massachusetts General Hospital, Boston; and Miss Celia M. McKay, in a State Institution, Syracuse. Miss Margaret Robinson has a position at Proctor Academy, Andover, N. H.
A little later the demand for information regarding the methods and practices of successful market gardeners and truck farmers led to the formation of an office in the Bureau of Plant Industry of the Department of Agriculture for meeting the problems of the vegetable gardeners who at the time were unorganized and without even so much as a popular organ to represent their great industry. For ten years information regarding the industry has been accumulated and the work is still going on with no cessation of interest, although it has recently been combined with pomology under a single administrative office. The new office is known as the Office of Horticultural and Pomological Investigations which was under Professor Corbett’s direction until he was drafted into his present duties.

A little later Professor Corbett is to announce two books. One he has spent many years in preparing. It is being published by the Ginn Company of Boston and will be entitled “Garden Farming.” The other was prepared for the Outing people of New York and will be called “Intensive Farming.”

'74, B. S. in Agr.—William R. Lazenby has been the head of the Department of Horticulture and Forestry in Ohio State University for the last 32 years. He attended the meeting of the Cornellian Council and Cornell Alumni Association and also the exercises at the last June commencement. He was the guest of his classmate, Professor J. H. Comstock while in Ithaca.

'90, B. S. in Agr., M. S. in Agr, '96.—Professor L. C. Corbett since early in March has been Assistant Chief of the Bureau of Plant Industry which is the largest organization in the world giving attention to plant problems. The Arlington Farm which he has developed as a field laboratory for the United States Department of Agriculture is often commented upon as a model for similar laboratories for governmental and educational institutions. The key to the success of this enterprise rests in the fact that the man charged with the immediate control of the farm conducts no personal investigations, his only project being the maintenance of the farm. That implies putting it into the best possible condition to meet the needs of 30 or more investigators who are carrying on research work at the place. A special appropriation is provided for the maintenance of the Farm but each investigator meets the actual cost of his field work. This enterprise was undertaken in 1901 and has steadily grown from that day to this.

'91, B. S. in Agr.—Clarence W. Mathews has been, since January 1892, Professor in Kentucky State College, now Kentucky State University. He was formerly Professor of Horticulture and Botany, now of Horticulture and Horticulturist of the Kentucky Agricultural Experiment Station.

'98, B. S. in Agr.—Mr. E. L. Andrews who has been registered as a graduate student, specializing in
Poultry Husbandry, has accepted a position as Assistant Professor in Poultry Husbandry in the West Virginia Agricultural College, Morgantown, W. Va.

'06, B. S. A.—W. G. Brierly received the degree of M. S. in Hort. at the Washington State College and has taken a position as Assistant Professor of Horticulture at the University of Minnesota.

'06,—F. S. Jacoby and Miss Ruth McManamy were married on June first.

'06, W. C.—A. C. Herrick and Miss Loraine Heyer were married on June 4th and are living at Ossining, N. Y.

'06, Sp.—R. H. Dayton is manager of a farm of 350 acres owned by Paul T. Brady and situated between Patterson and Pauling, N. Y.

'07, B. S. A.—C. B. Tilson has accepted a position in Farm Bureau Work in Clinton County. His headquarters are at the Chamber of Commerce, Plattsburg, N. Y.

'07, B. S. A.—Professor H. C. Pierce is in charge of the field laboratory of the Bureau of Chemistry, United States Department of Agriculture, Washington, D. C., located at Sedalia, Mo., where, with a corps of specialists, he is investigating the market conditions and transportation of dressed poultry.

'07, B. S. A.—J. B. Shepard has resigned his position as Secretary-Treasurer of the San Marcos Utilities Company and has taken a position as Agricultural Engineer with the J. G. White Companies, 43 Exchange Place, New York.

'08, B.S.A.—The address of Edwin Earle, jr., is changed to Carters Bridge P. O., Virginia.

'08, B. S. A.—Andrew William McKay was married to Miss Margaret Curtis (A.B., '09), daughter of Mr. and Mrs. Gram Curtis, at Newcastle, Pa., on July 23. McKay is in the Bureau of Pomology of the U. S. Department of Agriculture and will be located in Portland, Oregon, for at least a year to come.

'08, B. S. in Agr.—T. H. Desmond has opened offices at Hartford, Conn., for the general practice of landscape design.

'06, '08, Sp.—O. F. Ross is manager of the Franklin County Farm Bureau with headquarters at Malone, N. Y.

'09, B. S. A.—Dr. and Mrs. Lewis L. Rogers of Kingston, Penn., announce the engagement of their daughter Mary Cushing to Sherman P. Hollister.

'10, W. C.—George H. Sprague has severed his connection with the Lyndon School of Agriculture at Lyndon Center, Vt., and is Farm Superintendent at the Turner Hill Farm, Ipswich, Mass.

'11, B. S. A.—Mr. L. H. Schwartz, is in charge of the poultry department of the Milwaukee County School of Agriculture and Domestic Economy at Wauwatosa, Wis.

'12, B. S. A.—G. M. Butler has been appointed Farm Bureau Agent in Allegany County.

'11, B. S. A.—Jackson Demarv is agricultural county agent for Orange County, Vermont, since July 9.

'11, B. S. A.—Mr. J. E. Dougherty is in charge of the Poultry Department of the State Agricultural College at Davis, Cal.

'12, B. S. A.—Mr. Harry Embleton is instructor in Poultry Husbandry at Purdue University, Lafayette, Ind., where Professor A. G. Phillips, W.P.C., '08, is in charge of the Poultry Department.

'12, B. S.—Gustavus Edward Bentley was married to Miss Lesbia Harriet Andrews (Special, '12), daughter of Mr. and Mrs. Earle Deloss Andrews, at Busti, N. Y., on July 26. Their home will be at Fluvanna, N. Y.
Holstein Friesian Bull—which won the Grand Champion Prize at the New York State Fair, Syracuse, N. Y., September 8-13, 1913, being groomed by The Kent Stationary Vacuum Groomer.

Should be in every dairy which produces milk in the sanitary way, because it eliminates all dust, improves the condition of the stock by removing all dead hair, dust, dandruff and vermin. Greatly reduces time, labor and expense incident to hand grooming.

For further information address

The Kent Vacuum Cleaner Co.
INCORPORATED
111 So. Washington St.
ROME, N. Y.

Also manufacturers of Built-in Vacuum Cleaners for residences, schools, churches, office buildings, etc.
One of the greatest Guernsey Breeders in the country says:

Athens, Wis., Mar. 7, 1913

In reply to your favor of Feb. 24, 1913, our men tell me that the new Mechanical Washer you recently sent us is the best device for washing separator bowls we ever had on the farm. Not only does it do splendid work, but it is a great saver of time and labor.

HELENDALE FARMS by WM. E. ERBACH.

Please write us for further details and prices.

Vermont Farm Machine Co.
Bellows Falls, Vt. 657 Monadnock Bldg., Chicago, Ill.

The Improved Simplex
Link Blade
Cream Separator

LIGHTEST RUNNING
LARGEST CAPACITIES
CLOSEST SKIMMING

The Only Practical Large Capacity Separators

Has more exclusive patented features of merit than all others—Has all the desirable points that can be put into a cream separator.

500 lbs., $75.00 900 lbs., $90.00
700 lbs., 80.00 1100 lbs., 100.00

D. H. BURRELL & CO.
LITTLE FALLS, NEW YORK
Manufacturers of Creamery, Dairy and Cheese Factory Apparatus
Also "B-L-K" COW MILKERS

In writing to advertisers please mention THE CORNELL COUNTRYMAN
I'll Feed Your Stock
60 Days
Before You Pay

I'll Show You How
To make them grow faster—thrive better—look better—
Put on flesh on no more feed—stop losses from worms—

I have done it for thousands of farmers and stockmen—I'll do it for you. All I ask is the privilege of sending you enough Sal-Vet to last your stock 60 days. I simply want to show you what a remarkable change Sal-Vet will work on your sheep, your hogs, your horses and cattle. I want to show you how it will improve their condition—rid them of all stomach and free intestinal worms which are the biggest drain on your stock profits. I don't ask a penny of pay in advance. I prove all my claims first—and if you are not satisfied at the end of 60 days, you do not pay me a cent.

The Great Worm Destroyer
Sal-Vet is first a worm destroyer; second, a conditioner; a medicated salt. It contains several medicinal elements which promptly kill and expel stomach and free intestinal worms and in the meantime puts the digestive organs in a healthy, vigorous condition. It sharpens the appetite—tones the blood—puts life and vitality into the whole system. It aids digestion—helps the animal to derive more good from its feed.

No Drenching—No Handling—They Doctor Themselves
It is easy to feed Sal-Vet—you feed it just as you do salt. Put it where all your stock—sheep, lambs, hogs, horses and cattle, can get at it daily and they will doctor themselves. It will keep your hogs, sheep and lambs from dying—make your horses and cattle look better, thrive better—save you money in saving feed—make you more profitable by making your stock more valuable. I want to prove all this on your own farm and before you pay me one cent. You cannot afford not to accept this open, liberal offer. You pay the small freight charge when it arrives and I will send you enough Sal-Vet to feed your stock 60 days, after that you pay if pleased. Read this letter:

From Sec'y Amer. Hampshire Swine Record Ass'n.
"I write to say that I have been a free user of Sal-Vet ever since its introduction and find that it is a perfect worm exterminator. I feed Sal-Vet as I would salt and it positively does all that you claim for it. There is nothing within my knowledge as good and reliable as cheap. It expels worms and puts stock in fine condition." E. C. STONE, Pontiac, Ill.

Send No Money — Simply Send Coupon
If you could open and read the letters I get, voicing the appreciation of hundreds of stockmen and farmers—who have taken advantage of my liberal offer, you would not delay a minute in sending me the coupon requesting enough Sal-Vet to feed your stock 60 days, especially when I do it before you pay. Now fill in the coupon, telling how many head of stock you are feeding—mail at once. Sal-Vet costs but one-twelfth of a cent per day for each hog or sheep.

SIDNEY R. FEIL, President
THE S. R. FEIL CO., Dept. CC, Cleveland, O.

Prices: 40 lbs., $2.25; 100 lbs., $5.00; 200 lbs., $9.00; 300 lbs., $13.00; 600 lbs., $20.12. No orders filled for less than 40 lbs.

In writing to advertisers please mention The Cornell Countryman.
More Feed Per Acre

The cost of producing meat or milk would be much less if it required less acres to produce the feed.

Both the quantity and quality of the feed improve when the right plant foods are used to supplement the manure and clover. They improve enough to yield a handsome profit on the expenditure.

The right plant food includes enough

POTASH

in available form. Supplement the manure and phosphate with 50 to 100 pounds of Muriate of Potash, or 200 to 400 pounds of Kainit, per acre, and you will raise big corn and fine clover after the grain and at the same time improve the fertility of the soil.

Try Potash salts alone on the swamp land pasture and note the clover and good grasses crowd out the wild hay.

Write us for prices of Potash, one bag up.

GERMAN KALI WORKS, Inc., 42 Broadway, New York
Whitney Bank Bldg., New Orleans, La., Empire Bldg., Atlanta, Ga.

To Make First-Class Butter and Cheese use
CHR. HANSEN’S
CELEBRATED DAIRY PREPARATIONS

Rennet Extract, Cheese Color, Butter Color, Rennet Tablets, Cheese Color Tablets, Lactic Ferment Culture.

Always Uniform, Superior in Strength and Quality and are unexcelled in Reliability.

CHR. HANSEN’S LABORATORY
Box 1095, Little Falls, N. Y.

CORNELL POULTRY

Breeding Stock: A good supply of Single Comb White Leghorn breeders is available and poultrymen should let us know their needs. A few good breeders of the following varieties may also be furnished: Barred, White and Buff Plymouth Rocks, Rhode Island Reds, Mottled Anconas, Pekin, Rouen and Indian Runner Ducks and Toulouse Geese.

Four Good Records by S. C. White Leghorns

<table>
<thead>
<tr>
<th>Breed</th>
<th>Eggs laid 1st year</th>
<th>Eggs laid 2nd year</th>
<th>Eggs laid 3rd year</th>
<th>Total Eggs laid 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lady Cornell</td>
<td>257</td>
<td>200</td>
<td>191</td>
<td>648</td>
</tr>
<tr>
<td>Madam Cornell</td>
<td>245</td>
<td>131</td>
<td>136</td>
<td>530</td>
</tr>
<tr>
<td>Cornell Surprise</td>
<td>180</td>
<td>186</td>
<td>196</td>
<td>562</td>
</tr>
<tr>
<td>Cornell Supreme</td>
<td>242</td>
<td>200</td>
<td>200</td>
<td>660</td>
</tr>
</tbody>
</table>

Laying Stock: A limited supply of layers of the above mentioned varieties may be supplied. Persons interested should send in their requests early.

Market Eggs, Poultry, Feathers, etc., are always available at the Sales Room.

DEPARTMENT OF POULTRY HUSBANDRY

New York State College of Agriculture

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The caterpillar works where no other engine can work

The Caterpillar Tractor will work in any soil without slipping and packing the top soil. The increased bearing surface—giving greater draw bar pull—with the Caterpillar you can do the plowing, harrowing and seeding without leaving damaging wheel tracks in the crop. The Caterpillar will meet every demand. Operated most effectively in soft, loose, sandy, ashy soil, as well as in the hills, mud, snow and ice.

Note the construction of the Caterpillar Steel Tracks—this is one of our great features—doesn't it stand to reason that by using steel tracks instead of wheels your results are bound to be better in every way? The weight of the Caterpillar is so evenly distributed that the pressure per square inch cannot exceed 7 pounds.

Our catalog and full information will interest you. Be sure and write for it to-day.

THE HOLT MANUFACTURING CO.
DEPARTMENT 25
PEORIA, ILLINOIS
NEW YORK OFFICE:
No. 50 Church St.
If we could once get squarely before the sheepmen of New York, all the good points of this

Stewart Little Wonder Shearing Machine

we are confident that every owner of 200 sheep or more would have one of these outfits.

There is a two-horse power gasoline engine that is truly a marvel of compactness and energy. It will not only work to shear sheep, but will do any other work that two-horse power can accomplish.

It will earn its own way and pay a profit on any farm.

The two shearing machines supplied on it are our latest model and carry the celebrated Stewart wide shear.

It is worth your while to look into the merits of this outfit. Write for our complete Catalogue on it.

Send now, and if you decide to get one, order early.

Chicago Flexible Shaft Co.
127 La Salle Ave., CHICAGO
BE ON THE SAFE SIDE!

You needn't fear a visit from the Sealer of Weights and Measures if you use . . .

THATCHER MILK BOTTLES

You won't give over-capacity either, because they are accurate!

Send for our free book. It tells exactly why Thatcher bottles add to your profits.

THATCHER MFG. CO.
103 Market St. ELMIRA, N. Y.

Solving cold-weather worries about poultry is largely a matter of securing the right scratching feed. Be sure you secure the only kind which contains hulled oats or oat groats—that's H-O Scratching Feed.

It is the most stable feed in its class and has a remarkable balance.

H-O Poultry Feeds Include

Steam-Cooked Chick Feed
Poultry Feed Chick Feed
Dry Poultry Mash Scratching Feed

JOHN J. CAMPBELL, Gen. Sales Agt.
Hartford, Conn.
The H-O Company Mills, Buffalo, N.Y.

Now is the time to install the

Simplicity Cow Milkers

the Milkers that drew the largest crowd of farmers at the New York State Fair, and with the Milking Machine outfit put in a SIMPLICITY VACUUM CLEANER to keep the horses and cattle clean this winter.

For full particulars, write

F. GROFF & SON
St. Johnsville, N. Y.
Christy Engraving Co.

WHERE QUALITY COUNTS

Halftones       Illustrations
Line Etchings    Designing

and

Embossing Plates

We are Specialists in

Color Plate Engraving and
Color Printing

If you want to increase the selling power of your next catalogue, if you want to make your advertising as effective as possible, you should look into the question of using color reproductions. Our success lies, not alone in the making of proper plates, but in printing them as they should be. Our product is used by companies of international reputation. We shall be pleased to submit estimates or samples of work.

611-18 Central Building
Rochester, N. Y.
SAMUEL FRASER  
Geneseo, N. Y.  
Consulting Agriculturist, Fruitgrower and Nurseryman  

We have 250 acres of orchards under our direct management and propagate nursery stock from selected bearing trees of merit. 500,000 first class fruit trees from which to select.  
No scale. True to name. Healthy, vigorous trees. Catalog free.  

“HAMMOND’S GRAPE DUST”  
Used effectively to kill Mildews on Roses and other Plants...  
Sold by the Seed Dealers. For pamphlet on Bugs and Blights address  
HAMMOND’S PAINT & SLUG SHOT WORKS  
BEACON, N. Y. (Fishkill-on-Hudson, N. Y.)  

“SCALECIDE”  
TRADE MARK REG. U. S. PAT. OFFICE  
DON’T NEGLECT FALL SPRAYING. GET READY NOW.  
Many trees can be saved that would die before Spring if unsprayed. “SCALECIDE” will positively destroy San Jose and Cottony Maple Scale, Pear Psylla, etc., without injury to the trees.  
Many of the finest orchards in the country have been sprayed with “SCALECIDE” for the past eight years, producing record crops and prize winning fruit. It costs less to spray with “SCALECIDE” than Lime-Sulfur, and does better work. We stake our reputation on this assertion. Write today for our booklet, “Scalecide, the Tree Saver.” Sent free on request.  
Tell us your needs. B. G. PRATT Co., 50 Church St., New York City.  

Dixie Brand  
COTTON SEED MEAL  
THE CHEAPEST SOURCE OF PROTEIN FOR DAIRY COWS  
HUMPHREYS-GODWIN CO., Memphis, Tenn.  

In writing to advertisers please mention THE CORNELL COUNTRYMAN
72 Feet Wide, Iron Frame Lettuce House

Erected for J. H. West & Sons, Irondequoit, N. Y.

They started with our 30 feet Pipe Frame houses and after building five, jumped to one 72 feet wide, of Iron Frame construction.

Mr. West says he is convinced that wide houses are cheaper per square foot than small ones.

With houses from 30 feet up he claims that "the proportionate expense decreases rapidly."

And he's right! Erection costs are considerably less.

Mr. West made the rather amazing statement that "not a single bolt hole was drilled untrue" in the materials of his new house; everything actually went together like clockwork, just as we said it would.

He also claims that these wide houses are both lighter and airy. They overcome that heaviness and stuffiness found in small houses, which most certainly retards a free natural growth.

Tomatoes and cucumbers being very sensitive to sudden chills, the fact that the air is warmed before it reached the plants is a particularly valuable feature.

But to be both practical and highly productive, wide houses must be constructed with the greatest care.

The wind strain on them is terrific.

We took more orders for wide houses the past year than in any two previous years combined.

Before you put a dollar into another house let us go over the construction question with you from A to Z. We will send one of our representatives tomorrow if you say so.

Be sure to send for our catalogue anyway.

Lord & Burnham Co.

SALES OFFICES

NEW YORK BOSTON PHILADELPHIA CHICAGO
42nd Street Bldg. Tremont Bldg. Franklin Bank Bldg. Rookery Bldg.
ROCHESTER, Granite Bldg.

FACTORIES

Irvington, N. Y. Des Plaines, Ill.

A postal card request will bring you a copy of our list of some hundreds of Practical Agricultural Books compiled from our lists of regular and recommended books as used at the N. Y. State Agricultural College here at Cornell:

The Corner Bookstores

ITHACA, N. Y.
EXPERTS

If you should speak to butter experts about dairy cleanliness or sanitation they would immediately think of—

Wyandotte
dairyman's
Cleaner and Cleanser

With them the two are synonymous. They know the requirements of the one are most thoroughly and safely met by the properties of the other.

Buttermakers know they cannot work with "certainty" if their utensils are cleaned with a soapy cleaner as milk is an excellent detector of soapy odors. The slightest trace of soapy grease on milk utensils is absorbed, and consequently the milk quality is destroyed and the butter quality lessened.

Neither is the buttermaker certain of the results unless he is positively sure all utensils are sanitary. "Wyandotte" has proved to him time and time again that it does clean sanitarily. Its purity and its sanitary cleaning, these two factors have made Wyandotte Dairyman’s Cleaner and Cleanser the one first choice of thousands of buttermakers and of dairy college authorities who teach the scientific principles of buttermaking.

Ask your dealer for a sack or write your supply house for a keg or barrel.

THE J. B. FORD CO., Sole Manufacturers
Wyandotte, Mich., U. S. A.

This Cleaner has been awarded the highest prize wherever exhibited.
It's very human for one to buy his shoes from the store that can offer the most inducements in the way of style, assortment, quality and big value. For that reason we expect to see you in this store very soon now.

THE NEW

Fall Styles

are priced at $4.00 to $5.00

Banister make $6.00 to $10.00

ITHACA BOOTH SHOP, Inc.
204 E. State Street

New York Life
Insurance Company

C. H. WEBSTER, Agent

OFFICE: Student Supply Store
RESIDENCE: 121 Catherine St.
We have been led to believe that through the medium of "The Cornell Countryman" an appeal would reach the most progressive and successful fruit growers in New York State. We are one of the many soliciting patronage from readers of this publication, but our success has been made possible by catering to the demands of orchardists who seek quality first—then ask the price, and we think through this advertisement we will find prospective users of spray material that are of this kind. Fortunately we have the distinction of being called the "high-priced people," which we accept as a supreme compliment, for we submit the proposition to you and ask if it would be at all possible for us to secure re-orders for our product every year for the past four years from users of spray material, and, in addition very largely increase our output each season, if we had nothing to recommend us but a high price. We are not a peculiar people, but offer Lime and Sulphur Solution of a distinctive, peculiar kind—a particular product for particular people. Ask us something about it and mention "The Cornell Countryman."

The Rex Company
ROCHESTER, N. Y.

P. O. BOX 712

Lock speed is a big element of success in making high scores at the trap or in the field. When you pull the trigger you want it to go with lightning speed. Flying birds and targets will not wait for a hang fire load or a slow lock. Our lock was carefully and scientifically timed at the University of Cornell. Test was made by means of a fly wheel traveling 577.1715 inches per second. By means of a special device it was found that the fly wheel traveled .935 inches while hammer was falling. Dividing .935 by $\sqrt{577.1715}$ gives the time it took the hammer to fall .0016 + or expressed in fractional form of a second.

When hammer struck it was traveling 233 inches per second.

We figure that this greased lightning speed will increase your score at least 5 per cent. The slower the lock and the slower the load the farther you have to lead your birds.

Brand new catalogue FREE—describes 18 grades guns—$17.75 net to $400.00 list.

New edition to the Ithaca family is a little 28 bore, weight 3 3/4 to 5 1/2 pounds.

Our little 3 1/2 pound 20 bore is a howling success.

Ithaca Guns

ADDRESS—ITHACA GUN COMPANY

ITHACA—NEW YORK

In writing to advertisers please mention THE CORNELL COUNTRYMAN
An Innovation

that has proven very popular among the boys—namely this—any clothing purchased here will be cleaned, pressed and repaired free of charge for one year.

MINTZ’S

129--East State Street--131

The

L. J. Carpenter
Tailor Shop

Sanitary Steam Pressing

205 North Aurora Street

Cleaning, Pressing, Dyeing, Repairing, Etc.

Bell 'Phone 567  Ithaca 'Phone 420-x

WISNER STEEL HAND CART

Platform hangs low, rides level. Will hold four 40qt. milk cans. Tipped forward like warehouse truck. Will turn clear over to dump load. Fitted with large body for farmers.

...Write for Prices...

WISNER MFG. CO.,
230 Greenwich St., New York

Established 1887

LARKIN BROS.
RETAILING, WHOLESALING AND JOBING GROCERS

JOHN J. LARKIN, Proprietor and Manager
408 Eddy Street, Ithaca, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
MAK-GRO Odorless PLANT FOOD for FLORISTS and GENERAL GREENHOUSE WORK

A Scientific, Improved, Concentrated, Quick-Acting, Complete Fertilizer, made in Non-Acid Granular Form from the Highest Grade Materials obtainable.

Especially adapted to Greenhouse Work for Flowers, Fruits and Vegetables.

Special Formulas for General and Special Greenhouse Crops, prepared by men who have made a life study of Greenhouse Work—not only in this country but abroad.

The services and advice of our experts is at your disposal on all matters pertaining to your Greenhouse problems.

MAK-GRO ODORLESS PLANT FOOD is put up in various sized packages, and is sold in lots of from one pound to a carload. The one-pound cans and small packages make a splendid side line for Florists having their own stores. Write us for further particulars.

CONSUMERS FERTILIZER CO.,

Investigate the advantages of the Kinderhook Country

Do not wait until our large fruit plantings come into bearing. Come and help develop the most promising community in the Hudson River Valley.

Land from $75 to $100 per acre

Send for booklet to

Rural Life Co.

Kinderhook, N. Y.

SPRAYING is effective only when well done. Goulds Sprayers are famous all over the world—even at slightly higher price—because they are best designed and built for effective spraying, and made proof against the corrosion of spray solutions.

Write for Our Book
"How to Spray—When to Spray—What Sprayer to Use"
Full of valuable spray formulas and interesting information.

GOULDS MFG. CO.
16 W. Fall St., Seneca Falls, N. Y.
WISE
THE PRINTER

Is at your service for all classes of Fine
PRINTING
ENGRAVING
ETC.

Buffalo Street,
Next to Post Office,
ITHACA, N.Y.

Ithaca Phone 76x

ITHACA HOTEL

Ithaca's Leading Hotel

American and European Plan

All rooms have running hot and cold water,
electric lights, local and long distance tele-
phones. Our feature is the modified European
plan, served in the Dutch Kitchen at the
most reasonable prices obtainable.

RATES
American Plan, $3.00 and up.
European Plan, 1.25 and up.

J. A. and J. N. CAUSER, Props.

The Palace
Laundry ...

323 and 325 Eddy Street

F. C. BARNARD, Prop.

STUDENT SUPPLY STORE

The Modern Method Laundry
JOHN REAMER, Prop.

A. B. KENNEDY
Dealer in Watches and Jewelry,
Cut Glass and Fine Silver for
Weddings. Cornell Pins, Fobs, Souvenir Goods, etc.

EAST STATE ST., ITHACA, N. Y.

Opp. New Ithaca Hotel

We keep a fine line of dia-
monds and jewelry and do all
kinds of repairing neatly at :

Heggies' Jewelry
Store ===

136 E. State St.
The beauty of our character is generally the result of our environment. ART plays an important part in its influence upon the human mind. The HOME MADE BEAUTIFUL is the function of THE H. C. CABLE ART STORE. To you we extend a welcome at 405 College avenue.

Photographer and Kodak Dealer

All the latest in Photos
Kodaks for sale, rent or exchange
Developing and Printing

Both Phones Over 115 and 117 E. State St.

WE DO YOUR MENDING FREE

FOREST CITY LAUNDRY

E. M. MERRILL

PHONE 209 NORTH AURORA STREET

CUT FLOWERS, DECORATIVE PLANTS, ETC.
THE BOOL FLORAL CO.
215 East State St., Ithaca, N. Y.

PETER SCUSA
MODERN SHOE REPAIRING
Neatly and Promptly Done
Shoes called for and delivered in any part of the City
Ithaca Phone 428-C 405 Eddy St., ITHACA, N. Y.

TYPEWRITERS

Special Rates for the College Year

H. L. O’DANIEL, 204 N. Tioga St.

C. T. KELLEY

CUT FLOWERS, DECORATIVE PLANTS, ETC.

PETER SCUSA
MODERN SHOE REPAIRING
Neatly and Promptly Done
Shoes called for and delivered in any part of the City
Ithaca Phone 428-C 405 Eddy St., ITHACA, N. Y.

New and Rebuilt
Any Make
Sold, Rented and Repaired

H. L. O’DANIEL, 204 N. Tioga St.

C. T. KELLEY

LIVERY

ITHACA, N. Y.

PIANOS, MANDOLINS, GUITARS, BANJOS and VIOLINS
Rented or sold on Easy Payments. “Songs of Cornell.” All the latest music; Strings and supplies for all instruments at lowest prices.

LENT’S MUSIC STORE 122 N. Aurora Street

Established 1887

LARKIN BROS.
Retailing, Wholesaling and Jobbing Grocers

JOHN J. LARKIN, Proprietor and Manager 408 Eddy St., Ithaca, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
Your Appreciation

Has been our Success

New Process Dry-Cleaning did it
Because it Cleans Clean

Modern Dry Cleaning and Pressing Works

W. F. FLETCHER CO., INC., 103 Dryden Road

Norton Printing Co. 317 E. State St.

COLLEGE, FRATERNITY and COMMERCIAL PRINTING

Engraved Cards and Invitations Rubber and Metal Hand Printing Stamps

Robinson's Photograph Shop

214 East State Street

Photographer for the Senior Class

White & Burdick Co.

The oldest and largest Drug Store in the City

Supplies for Agricultural Students — a Specialty

New York State College of Agriculture at Cornell University

THE DEPARTMENT OF ANIMAL HUSBANDRY

Breeds Percheron Horses, Holstein, Jersey, Guernsey, Ayrshire, Short Horn Cattle, Dorset, Shropshire, Rambouillet Sheep, Cheshire Swine.

Regular Public Sale of all Surplus Young Stock, except Swine, on FRIDAY OF FARMERS' WEEK EACH YEAR

In writing to advertisers please mention THE CORNELL COUNTRYMAN
“If you get it from us it's right”

BUTTRICK & FRAWLEY
One Price Clothiers and Furnishers

This fall season finds us more fully equipped to satisfy your wants than ever before. Special attention has been paid to get best material at minimum price. Suits and Overcoats, $10.00 to $30.00; Raincoats, $5.00 to $30.00; Mackinaws, $6.00 to $12.00. We make Suits to measure and save you from $5.00 to $10.00.

VISIT OUR SHOE DEPARTMENT

Hats, Gloves, Shirts, Sweaters, Underwear, and all other articles you'd find in a first class shop. Full Dress and Tuxedo Suits for sale and to rent.

“If not we make it right”

134 East State Street

PROFESSORS, STUDENTS, INSTRUCTORS, you will get MORE INSURANCE for LESS MONEY if you have a policy with

The Travelers Life Insurance Company
OF HARTFORD, CONN.

J. J. SINSABAUGH, Agent
149 East State Street
ITHACA, N. Y.

INSURANCE OF ALL KINDS

Ithaca 'Phone

Williams Brothers

ITHACA, NEW YORK

WELL DRILLING
MACHINERY AND
TOOLS

Shoes For All

Yes, we have shoes for all and to suit all pocket-books Prices ranging from $4.00 to $8.00. Quality, workmanship and fit guaranteed. We invite your inspection.

HERRON

Opposite Tompkins County Bank

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Conlon
PHOTOGRAPHER
OPOSITE TOMPKINS COUNTY BANK
High-Grade Work Only

CARR & STODDARD
MERCHANT TAILORS
UP-TO-DATE STYLES AND WORK
SENeca AND AURORA, NEXT LENT'S MUSIC STORE

BAXTER'S
Clothing and Furnishings

have pleased hundreds of CORNELL students during the last Five Years. Why? Because we sell only first class merchandise and guarantee every dollar's worth of it; we fit our clothing to please; our service is unexcelled, and last but not least, we sell at One Price to All.

Please consider this "Shop," "Your Shop." You get your money's worth here.

E. B. BAXTER,
ONE PRICE TO ALL
"The Quality Shop"
Satisfaction guaranteed
150 E. State St., Ithaca, N.Y.

Gentlemen—
You are cordially invited to inspect our excellent variety of WOOLENS in both Foreign and Domestic and they are exclusive in Styles for Suits and Overcoats, also are approved for all occasions for Fall and Winter.

Urband & Son
Tailors
Opposite City Hall

D. S. O'BRIEN
MARKETS
222 North Aurora Street
430 North Cayuga Street
DEALER IN
FRESH, SALT AND SMOKED MEATS
Poultry and Game in Season

D. S. O'BRIEN

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Pennants
Banners
Pillow Tops

18" x 36" at $.98
24" x 48" at $1.75
36" x 72" at $2.97

In Leather, Felt and Satin

Why not take a look at our College Color Exhibit? The quality is classy and terms most reasonable. You will save money and get what you seek by calling on us.

Room Furnishings

The decoration of students' rooms has been our specialty for years. Allow us to make some helpful suggestions in your selection if undecided. It costs nothing and we like to do it.

One Call Will Make Your Confidence Absolute in

Rothschild Bros.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
**The Shops of Shops**

Come right in to headquarters where you can find everything for man’s wear at lowest prices.

Leave your measure for **ONE HALF DOZEN SHIRTS** for **ONE DOZEN DOLLARS**.

We have a whale of a stock of Furnishing Goods, Hats and Caps.

**TOWN SHOP,**
142 E. State St.

**L. C. BEMENT**
The Toggery Shops

**HILL SHOP,**
413 College Ave.

---

**THE TOMPKINS COUNTY NATIONAL BANK**

135-137 E. State St.

**Capital $100,000**

**Safe Deposit Boxes for Rent**

**THE FIRST NATIONAL BANK**
Cornell Library Building

**Capital, Surplus and Profits, $350,000.00**

**Oldest National Bank**

**Safe Deposit Boxes for Rent**

**ITHACA SAVINGS BANK**

**INCORPORATED 1868**

Tioga Street, cor. Seneca

**ITHACA, N. Y.**

When wanting

**QUALITY, SERVICE AND CLEANLINESS**

**go to**

**WANZER & HOWELL, The Grocers**

---

**PICTURES**

**PICTURE FRAMES**

**STUDENTS’ FURNITURE**

Manufacturers of Special Furniture for

**FRATERNITIES AND CLUB ROOMS**

**H. J. BOOL CO.**

(Opposite Tompkins County Bank)

---

In writing to advertisers please mention **THE CORNELL COUNTRYMAN**
Every Orchardist and Student Should Have These Three Harrison Books

Out of the wealth of our experience with more than three hundred thousand fruit trees that are bearing, and more than twenty-five hundred acres of land in young fruit trees, we publish three books.

OUR COMPLETE NEW CATALOG FOR 1914. One of the new kind of catalogs that tells the truth about the goods they describe, and which gives the facts that every buyer needs. Contains a wealth of condensed information. Describes faithfully all leading varieties of fruits and ornamentals. This book is free.

HOW TO GROW AND MARKET FRUIT. A complete guide book for fruit growers, written especially to inform orchardists of up-to-date practices. Tells why each operation should be done. Shows how to handle an orchard properly in 1914. Endorsed by many experiment stations and used as a text book in colleges. 150 pages, 90 pictures, flexible covers. Price 50 cents and that amount rebated with your first $5 order for our products.

THE WHY AND HOW OF SHADE TREES AND EVERGREENS. A guide book for those who plant home grounds. Analyzes the planting problem, classifies all trees, vines, etc., according to their uses and purposes, and makes clear what to select and how to plant it. This book is free.

"GET" THESE POINTS AND SALT THEM DOWN

We Bud our Fruit Trees from Bearing Orchards. We don't propose that planters of Harrison trees shall have drone orchards or drone trees. The parents of Harrison-grown trees are selected for superior bearing habits. Harrison trees are true to name, and they regularly produce heavy, flawless crops.

Only Trees we Grow are Sold by Us. In no other way can we be sure that the trees we sell are true to name and have bearing habits and abilities to meet our customers' needs. Remember, we grow all the trees we sell!

Come to Berlin. You can see for yourself the truth of all our claims for superiority of product if you will come to Berlin for a visit. Come from Philadelphia or Baltimore. No education is complete without personal knowledge of the fertile, famous EASTERN SHORE. You pass through the length of it when coming to Berlin. The Atlantic Ocean is only seven miles from here. Come, and we will pay your hotel bill while in our town.

Place Orders Early for 1914 Planting. There are many sound reasons why you get better trees and better service in their delivery when your specifications and reservations reach us early. We will explain them to you if you ask. Write today for catalog, and get the other books. Tell us what you are interested in if possible.

HARRISON'S NURSERIES, Cornell Street, BERLIN, MARYLAND
Almost invariably the man who goes without a separator or buys an inferior one does so to "save the cost" of a De Laval.

No reasoning could possibly be more deceptive. No greater mistake could possibly be made.

The only way to actually save the cost of a De Laval Cream Separator is through the purchase and use of one.

In that way you save the cost the first year, and the same saving goes into your pocket every year afterward for twenty years or more.

Without a separator you don't "save" anything—you waste the cost of a De Laval every year in quantity and quality of product and have nothing to show for it.

And so too with a poor separator, you waste the slight first cost saving over a De Laval half a dozen times over every year and still have only the poor machine in the end.

You "pay" for a DeLaval separator every year whether you want to or not. With a De Laval it goes into your pocket every year after the first one. Without a De Laval the same amount goes to waste every year and benefits no one.

Will you pay for your De Laval and have it or go on paying for it every year and not have it?

A new De Laval catalog to be had for the asking may help you to decide.
62 years of successful paint making is the history of Wadsworth Paint Works of Brooklyn, N. Y.

The Wadsworth Idea

Two gallons of liquid Paint ready for the brush at a saving of at least—50c. per gallon

A gallon of Wadsworth Double-Thick Paint, a gallon of Pure Linseed Oil; stir the two together and what is the result?

We want you to try Wadsworth Double-Thick Paint on at least one of your buildings, and compare the difference in cost between Wadsworth and the paint you used before, therefore, we will sell you a trial order at the wholesale factory price. Order through—

EDWARD JOSLIN
GENERAL ADVERTISING AGENT

No. 11 South First St. FULTON, N. Y.

Had you any trouble with the MARCH WIND coming through crack or crevice in the Greenhouse?

TWEMLOW'S

Old English Glazing Putty

SEMI-LIQUID and ELASTIC

Will stop the trouble. Put up in 16 pound cans; 50 and 80 pound buck-ts.

Hammond's Greenhouse White,

A SUPÉRB PAINT, with years' record to back it up, for warp and tear and looks on either wood or iron Greenhouses. It stays where you put it. In 5, 10, 15, 20, 25, or 30 Gallons.

HAMMOND'S PAINT AND SLUG SHOT WORKS, Fishkill-on-Hudson, New York.

Should You or Your Friends WANT A FARM

The beautiful lake region of Central New York offers you an ideal home. Let us locate you where you will be more than satisfied. Write us for a list of satisfied customers.

W. B. GEORGIA & SON
REAL ESTATE

156 E. State St. ITHACA, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
OFFICIAL PUBLICATIONS of CORNELL UNIVERSITY

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second-class matter at the post office at Ithaca N. Y. pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and post free on request:

- General Circular of Information for prospective students,
- Announcement of the College of Arts and Sciences,
- Courses of Instruction in the College of Arts and Sciences,
- Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts,
- Announcement of the College of Law,
- Announcement of the College of Agriculture,
- Announcement of the Medical College,
- Announcement of the New York State College of Agriculture,
- Announcement of the Winter-Courses in the College of Agriculture,
- Announcement of the New York State Veterinary College,
- Announcement of the Graduate School,
- Announcement of the Summer Session,
- Pamphlet on prizes, samples of entrance and scholarship examination papers, special departmental announcements, etc.

Correspondence concerning the publications of the University should be addressed to

The Registrar of Cornell University
ITHACA, N. Y.

New York State College of Agriculture at Cornell University
W. A. Stocking, Acting Director.

The College of Agriculture is one of several co-ordinate colleges comprising Cornell University. The work of the College is of three general kinds: The regular teaching work of undergraduate and graduate grade; the experiment work; the extension work. The resident instruction falls in the following groups:

1. Four-year course, leading to the degree Bachelor of Science in Agriculture (B. S. in Agr.). When desired, the last two years may be chosen in subjects pertaining to landscape architecture and outdoor art, or to home economics. In the Graduate School of the University students may secure the Master's and Doctor's degrees (M.S. in Agr. and Ph.D.).

2. Special work, comprising one or two years: (a) Agriculture special; (b) Nature-study special or normal course.

3. Winter-Courses of 12 weeks: (a) General Agriculture; (b) Dairy Industry; (c) Poultry Husbandry; (d) Horticulture; (e) Home Economics.

The Instruction is divided among twenty-two departments as follows:

<table>
<thead>
<tr>
<th>Department</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Practice and Farm Crops</td>
<td>Animal Husbandry</td>
</tr>
<tr>
<td>Farm Management</td>
<td>Poultry Husbandry</td>
</tr>
<tr>
<td>Agricultural Chemistry</td>
<td>Dairy Industry</td>
</tr>
<tr>
<td>Plant Physiology</td>
<td>Farm Mechanics</td>
</tr>
<tr>
<td>Plant Pathology</td>
<td>Forestry</td>
</tr>
<tr>
<td>Soil Technology</td>
<td>Rural Art</td>
</tr>
<tr>
<td>Plant-Breeding</td>
<td>Drawing</td>
</tr>
<tr>
<td>Entomology, Biology and Nature-Study</td>
<td>Home Economics</td>
</tr>
<tr>
<td>Horticulture</td>
<td>Meteorology</td>
</tr>
<tr>
<td>Pomology</td>
<td>Rural Economy</td>
</tr>
<tr>
<td></td>
<td>Rural Education</td>
</tr>
<tr>
<td></td>
<td>Extension Teaching</td>
</tr>
</tbody>
</table>
Never Again Will These Prices be Offered

PRICES MARKED * GO UP ON NOV. 10th.

<table>
<thead>
<tr>
<th></th>
<th>With Cornell Countryman</th>
</tr>
</thead>
<tbody>
<tr>
<td>American</td>
<td>$1.50</td>
</tr>
<tr>
<td>McClure's</td>
<td>&quot;</td>
</tr>
<tr>
<td>Cosmopolitan</td>
<td></td>
</tr>
<tr>
<td>Delineator</td>
<td></td>
</tr>
<tr>
<td>Everybody's</td>
<td></td>
</tr>
<tr>
<td>Good Housekeeping</td>
<td></td>
</tr>
<tr>
<td>Hearst's</td>
<td></td>
</tr>
</tbody>
</table>

Any one of the above

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 years for $2.00 *</td>
<td></td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tribune Farmer</td>
<td>$1.00</td>
</tr>
<tr>
<td>(Trial Offer, 5 mths. 25c.)</td>
<td>1.85</td>
</tr>
<tr>
<td>Breeder's Gazette</td>
<td>$1.75</td>
</tr>
<tr>
<td>Review of Reviews</td>
<td>$3.00</td>
</tr>
<tr>
<td>With one of the above,</td>
<td>$3.00*</td>
</tr>
<tr>
<td>World's Work</td>
<td>$3.00</td>
</tr>
<tr>
<td>With one of the above,</td>
<td>$3.00*</td>
</tr>
</tbody>
</table>

Write us for prices on any other combinations.

The Cornell Countryman

ITHACA, N. Y.
New Times, New Things

The old fertilizer formulas are giving way to the new. At every farmers' meeting, one subject should be the fertilizer formula that will furnish a balanced ration to the crop and keep up the fertility of the soil. To do this the fertilizer should contain at least as much POTASH as Phosphoric Acid. Our note book has condensed facts essential in farmers' meetings and plenty of space to record the new things that you hear. Let us send one to you before your Institute meets.

A supply of these is furnished by request to every institute held in several states. We will be glad to send a supply delivered free of charge to every Institute, Grange or Farmers' Club Officer on request. It contains no advertising matter.

German Kali Works, Inc., 42 Broadway, New York

German Kali Works, Inc., 42 Broadway, New York

Lord & Burnham Practical Practice

Advice is one thing. Counsel quite another. For instance: You make up your mind to do a certain thing a certain way. Then you go over to your neighbor and ask his advice. You ask it, not because you really want advice, but because you think he will agree with you, and it's pleasant to be agreed with. Whether he agreed or not, you wouldn't take his advice.

But when it comes to counsel—that's different. You go to a man whom you know knows more about the question than you do. You consider his considerations seriously. You shape your actions accordingly.

Advice then would seem like sort of jollifying one along. Counsel is the good, solid, dependable opinions that are based on time-tried experience.

If you have a greenhouse problem that you want counsel on, we will be glad to hear from you.

Such counsel will be decidedly impersonal and based entirely on a knowledge gained by a half-century's planning, designing, manufacturing, equipping and building greenhouses.

If it's counsel you want—you want us.

Lord & Burnham Co.

SALES OFFICES

NEW YORK
42nd Street Bldg.
Rochester, Granite Bldg.

PHILADELPHIA
Tremont Bldg.

CHICAGO
Franklin Bank Bldg.

TORONTO, CANADA, 12 Queen St. E.

FACTORIES

Irvington, N. Y.
Des Plaines, Ill.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
We have been led to believe that through the medium of "The Cornell Countryman" an appeal would reach the most progressive and successful fruit growers in New York State. We are one of the many soliciting patronage from readers of this publication, but our success has been made possible by catering to the demands of orchardists who seek quality first—then ask the price, and we think through this advertisement we will find prospective users of spray material that are of this kind. Fortunately we have the distinction of being called the "high-priced people," which we accept as a supreme compliment, for we submit the proposition to you and ask if it would be at all possible for us to secure re-orders for our product every year for the past four years from users of spray material, and, in addition very largely increase our output each season, if we had nothing to recommend us but a high price. We are not a peculiar people, but offer Lime and Sulphur Solution of a distinctive, peculiar kind—a particular product for particular people. Ask us something about it and mention "The Cornell Countryman."

The Rex Company
ROCHESTER, N. Y.
P. O. BOX 712

The BIG CHEESE at the NEW YORK STATE FAIR, weighing 3 tons, was made with

Chr. Hansen's Rennet Extract and Cheese Color
The GOODS of QUALITY Always UNIFORM and RELIABLE

Chr. Hansen's DANISH BUTTER COLOR and LACTIC FERMENT CULTURE have stood the test of time

CHR. HANSEN'S LABORATORY
Box 1095, Little Falls, N. Y.

CORNELL POULTRY

Breeding Stock: A good supply of Single Comb White Leghorn breeders is available and poultrymen should let us know their needs. A few good breeders of the following varieties may also be furnished: Barred, White and Buff Plymouth Rocks, Rhode Island Reds, Mottled Anconas, Pekin, Rouen and Indian Runner Ducks and Toulouse Geese.

Four Good Records by S. C. White Leghorns

<table>
<thead>
<tr>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Total Eggs laid 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st year</td>
<td>2nd year</td>
<td>3rd year</td>
</tr>
<tr>
<td>Lady Cornell</td>
<td>257</td>
<td>200</td>
<td>191</td>
</tr>
<tr>
<td>Madam Cornell</td>
<td>245</td>
<td>131</td>
<td>136</td>
</tr>
<tr>
<td>Cornell Surprise</td>
<td>180</td>
<td>186</td>
<td>193</td>
</tr>
<tr>
<td>Cornell Supreme</td>
<td>242</td>
<td>198</td>
<td>220</td>
</tr>
</tbody>
</table>

Laying Stock: A limited supply of layers of the above mentioned varieties may be supplied. Persons interested should send in their requests early.

Market Eggs, Poultry, Feathers, etc., are always available at the Sales Room.

DEPARTMENT OF POULTRY HUSBANDRY
New York State College of Agriculture

ITHACA, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Have You A Good Sheep Shearing Machine?

If not, we ask you to try out thoroughly this season, one of our

Stewart No. 9 Ball Bearing Machines

We are confident you will find it superior to anything else in a hand operated machine. It is the best machine we have been able to produce after twenty years of experience in making clipping and shearing machines, and we offer it to you with the distinct understanding that it must do your work satisfactory to you or it may be returned at our expense for refund of all paid out.

It has large, enclosed gear case containing extra size balance wheel; it has ball bearings throughout, including ball bearing shearing shaft and ball bearing shearing head.

Price, all complete, with four sets of knives, only...... $1150

Get one from your dealer or send $2.00 and we will ship C. O. D. for balance, subject to above agreement.

Write for new 1913 catalogue showing the world’s largest and most modern line of shearing and clipping machines.

SEND NOW

Chicago Flexible Shaft Company
127 La Salle Avenue, Chicago, Ill.
For Short Course Men as Well as the Regular Students

The Co-op. is a store for students. It is located on the campus and can serve you best. The profits of the store are divided among the students. Do all your trading at the Co-op.

Books

Before you get here we have information regarding the books you will have to have and also those which are good and recommended. The largest part of our stock is books for student use. Try the Co-op. first when you need a book.

Stationery

The Simplex loose leaf notebook is used most by students and all lecture notes are taken in one book and sorted later. When you are at the Co-op. select your writing paper, fountain pen and the other supplies you need.

The Co-op.

Morrill Hall on The Campus

In writing to advertisers please mention THE CORNELL COUNTRYMAN
# Table of Contents

**November, 1913**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Results of a Coöperative Organization of Poultry and Egg Producers in New York State. <em>Earl W. Benjamin</em></td>
<td>35</td>
</tr>
<tr>
<td>Egg Laying Contests. <em>George A. Cosgrove</em></td>
<td>42</td>
</tr>
<tr>
<td>The Cornell Dairy Herd. <em>H. H. Wing</em></td>
<td>44</td>
</tr>
<tr>
<td>The Effects of Fertilizer Other than that of Adding Plant Food.</td>
<td>51</td>
</tr>
<tr>
<td>Greenhouse Construction. <em>W. R. Cobb</em></td>
<td>53</td>
</tr>
<tr>
<td>Address Delivered to Director Bailey on July 31, 1913 by Members of the Faculty then in the City</td>
<td>57</td>
</tr>
<tr>
<td>Editorials</td>
<td>58</td>
</tr>
<tr>
<td>Campus Notes</td>
<td>60</td>
</tr>
<tr>
<td>Former Students</td>
<td>63</td>
</tr>
</tbody>
</table>

**Subscription Price.** $1.00 per year

Canada, $1.15

Foreign, $1.30

Entered as second-class matter at the Post Office Ithaca N Y.

Copyright by The Cornell Countryman
GLISTA CORA 117997.

Official record as a senior three years old, 24.129 pounds butter fat in seven days.
EARLY RESULTS OF A COöPERATIVE ORGANIZATION OF POULTRY AND EGG PRODUCERS IN NEW YORK STATE

By Earl W. Benjamin
Cornell University, Ithaca, N. Y.

THE Poultry Producers' Association of Ithaca, N. Y., is an organization of the farmers for the purpose of increasing their profits from the production of their poultry products. The operations of this Association were really started about March 15, 1913, although the plan had been under careful discussion for a considerable time previous and a definite organization was not affected until about two months later.

While the writer was engaged in some Poultry Farm Survey work under the supervision of Professor Rice and later while making various studies of the present methods of handling the products in the large eastern markets, he was impressed with the great loss due to inefficient organization of the marketing agencies lying between the producer and the consumer. Our present systems of buying and selling in the United States seemed to be for the most part the old methods of barter and trade, slightly modified to serve the more stringent modern requirements of our pure food laws, expanded to handle many times more products, diversified to serve a greater variety of twentieth century tastes, and further complicated, thus allowing the maintenance of several times more marketmen than are needed for the efficient handling of our products. These conditions were especially noted in New York State considering New York City as the principal market for the farm products, but this same condition holds true in about every other part of the United States.

By spending quite a bit of time upon the New York, Boston, and Philadelphia markets and personally visiting many different types of marketmen or buyers, one is bound to be impressed with the complexity of the problem. After a general consideration of all the information it seemed apparent that the most immediate relief could be afforded to the farmer by helping him to get in touch with a trade whereby his products would be handled the least possible number of times before being delivered to the final customer. This might be a wholesale dealer who has a special trade, a retail store, a hotel, restaurant, private family, or even a commission man would be an improvement over the present method by which the farmers sell their eggs and poultry to country peddlers. Upon several occasions the writer had an opportunity to aid poultrymen in locating hotels, restaurants...
or other desirable trades whereby much of the customary handling of their products was avoided.

Just as soon as we began to consider the farmer sending his eggs direct to some desirable trade we realized one fundamental reason for the present methods of their selling their eggs to country peddlers. The average farmer in New York has only 35 to 50 hens and this number is inadequate to pay him to take much trouble in selling his eggs, especially when no more is paid in the local markets for good eggs than is paid for poor ones. The farmer may not have any eggs at all during certain seasons. These conditions unfit him for dealing individually with any of the above mentioned desirable trades.

The next question was, how could we get several farmers, a whole community, if you please, to combine so that enough eggs could be supplied during the period of scarcity to hold the trade and to make such a desirable supply during this fall and winter period, that the customers would be willing to inconvenience themselves by accepting more eggs during the spring and summer months? So the idea of cooperation took root.

**EARLY DEVELOPMENT**

It was, therefore, decided that the Poultry Department of the New York State College of Agriculture should develop an organization at Ithaca, N. Y. with the purposes mentioned, and that so far as possible, this organization should serve as a clear example of the possibilities in many other parts of the state. It was thought that the unit of organization should be an area within driving distance of the shipping points. This would make it convenient for the farmers to bring in their products when they came to the village to do their week's trading. Interest in the organization was started by sending notices of meetings to the local papers and to the local granges. At these meetings talks were given by different members of the Poultry Department Staff and by outside speakers who told of other cooperative organizations and cited the probable reasons for the successes or failures. One interesting talk with the discussion which always followed, proved to be enough for each meeting. Many different subjects were discussed such as the organization among the Western Grain Producers, the Fruit Growers Associations, the European Methods...
of Cooperation, etc. The meetings were at first held at intervals of two weeks and while the attendance was small because of so much work to be done on the farms during the spring months, everyone present was vitally interested and some very valuable discussions took place.

After the first meeting it was announced that eggs would be received at the Poultry Building from anyone who cared to bring them in. These eggs were brought to the egg room of the New Poultry Building where there were facilities for grading, candling, and packing. The work was done by one person who understood the work and who was able to look after the cooperative products as well as the University Poultry Farm products. This served as quite an economy during the early stages of the organization.

These eggs were at first sent to a single wholesale house and this house gave us one cent per dozen above top quotations net. This was a very good price for the wholesale trade and all went very well until our supply of eggs increased considerably and the wholesale house began to lower their returns because eggs were becoming more plentiful, and they thought that they had the Association trade anyway. This occurrence made it necessary for a representative to go personally to New York and investigate every possible outlet for the continually increasing supply of eggs. This trip was made in April which is the hardest time of the year in which to contract new outlets for eggs, but after following up at least 25 special references to stewards or managers of the most desirable hotels, restaurants or large retail agencies the salesman obtained permission to send samples and await orders from several of the hotels. As a result of this an outlet was obtained for several cases of fancy eggs per week as well as all the fowls or broilers that could be produced.

The fancy eggs as well as the fowls and broilers were sold at a consider-
visions, with such alterations as were thought desirable considering the fact that the Ithaca Association is under the direct supervision of the Poultry Department of the college.

DETAILS OF OPERATION

Soon after the producer's association began operations it was found that for the routine work of receiving and handling the eggs, picking chickens, looking after retail sales, answering telephone calls, keeping records of receipts and sales, and other similar duties, women were more satisfactory than men. Women are now employed for much of the work.

When the eggs or poultry are brought in by the producers a receipt bearing a serial number is immediately given showing the name and address of the producer, the amount received, date, name of person delivering goods to the receiver and name of receiver. This serial number is the lot number for this particular lot of eggs or poultry and a tag bearing this number is securely tacked to each package of the lot. This tag identifies the contents of the packages, no matter where they may be found.

If the lot consists of poultry all previous lots are placed to one side or in the cooler before work is begun on any new lot and a tag is placed with each lot of dressed birds, showing the lot number so the grader and packer can give credit due to each producer for the quality of the birds which he brings in. This credit is allowed upon two more Sales Room Record sheets, duplicates of the “receipt” sheet originally given to the producer. When the grader finishes his work on any particular lot he completes the other two copies of the Sales Room Record Sheets, with the amount of each grade of poultry brought in. The total of the birds in the several grades must check with the total which was noted on the “receipt” sheet of the same lot. The more common grades of poultry received during August, are: Fowls, First quality; Second quality; Broilers, Fancy, two pounds or more apiece; First, one and a quarter to two pounds apiece; Seconds, less than one and a quarter pounds apiece, or second quality; Thirds, very poor quality.

If the lot consists of eggs, it is immediately placed in the candling

![Diagram](image-url)

**FIGURE 1.**—EVERY TIME THE EGGS ARE HANDLED THEIR COST IS INCREASED WHILE THEIR QUALITY IS LOWERED.
room, which is cooled by means of ice placed upon a rack in the upper part of one end of the room. This room will usually be at a temperature of 60 to 70 degrees F. and is found to be better for very short holding, than a lower temperature, because any possible sweating and consequent dampness is avoided. These eggs are then candled, as soon as possible, and at the time of candling are divided into the following grades: Clean Fancy, 2.1 oz. or more, very fresh; Dirty Fancy; Clean Firsts, 1.8 oz. to 2.1 oz., fresh; Dirty Firsts; Seconds, second quality and under 1.8 oz. but still of marketable size; checks, cracked; loss eggs, rots, blood clots, meat spots, grass eggs, etc. Each grade of eggs found in the same lot must bear a tag with the lot number upon it; the eggs then go to the packer who has a collecting sheet upon which he can rapidly note the number of eggs of each grade for any particular lot. From this sheet the total number of eggs packed must be checked with the total number of eggs marked upon the original "receipt" sheet. All Dirty Fancies, and Dirty Firsts, are cleaned before packing, no Seconds are cleaned. The packer further separates the Browns, Fancies and Firsts, from the white eggs, as these are sold to different customers. The packer then fills in the two other sheets the same as for the poultry, the producer receiving different prices for each of the different grades.

METHODS OF PAYMENT
When the association started it was undertaken to make returns on the basis of a certain number of days after
The receipt of the eggs and each individual lot was calculated separately. It was immediately seen, however, that this would soon mean a very complicated system and one involving a great amount of labor with many opportunities for mistakes. It was necessary to pay at some regular intervals, and it has been found possible to pay on the 1st and 15th of each month. All products received during the 15 days period, instead of paying for each lot according to the market quotations for that particular day. The checks are mailed to the patrons and with each check is included the Sales Room Record for each lot brought in by that producer during the half month period. Nearly all the farmers are cleaning their own eggs as they can do it more cheaply than the Association. The Association buys poultry boxes and second-hand egg cases in large lots; some farmers supply their own egg cases.

MISCELLANEOUS MATTERS OF MANAGEMENT

After about a month of operation we found that it was much more satisfactory to prepay all express charges. We then deal with the local agent only and it is an easy matter to check over the monthly statement and get refunds for any
over-charges. When the receiver paid the charges, he always charged back to the association the same amount that he paid the express company. If this was an overcharge the association had to file a claim with the express company. The company would pay the refund to the receiver and then the association would have to see to it that they themselves obtained this refund from the receiver. The association was continually having trouble with overcharges until it started to prepay charges and since then there has not been one claim. It was also found advisable to try out the various express companies to see which gave the earliest deliveries, which gave the roughest handling, and which had the most courteous deliverymen.

If very much dressed poultry is to be shipped it is almost necessary to get refrigerator express service for this. The association is able to avail itself of this service at no extra cost when the individual probably could not. Be sure to keep the eggs out of the refrigerator cars, as they will sweat too much.

When very many helpers are hired it was found advisable to put all possible operations on the piece work basis. In this way there is no lost time for the association and it is quite an incentive to fast work. By a careful supervision careless work can be easily noted and the worker corrected.

SUB-COLLECTING STATIONS

Because of the fact that the Poultry Producers’ Association of Ithaca is under the direct supervision of the Poultry Department of the College it is necessary that the products be brought to the Poultry Building to be handled. The Poultry building is unfortunately located at the top of a one and one-half mile haul up a steep hill so it is very inconvenient for the patrons from the opposite side of the city to bring their products to the building. For this reason arrangements were made with a transfer company to have eggs and poultry left at their stables from which they are delivered regularly to the Poultry Building and the cases returned, for a low charge. In this case the transfer man must give a receipt for the eggs and is credited when he leaves them with the association clerk.

As soon as the egg production began to drop off in the late spring the association began sending a wagon out on a regular route once a week to collect eggs and poultry from those who did not have enough to pay to bring them to the Poultry Building or Transfer Office. It was found that one horse and an express wagon could do the work very economically. This makes hauling cost about one cent per dozen for the eggs and one cent per pound for the poultry. This route is working so satisfactorily that at least two more will be established very soon. In this way the benefits of the organization will be made available to most of the farmers within a distance of ten miles from Ithaca.

FACILITIES FOR HANDLING POULTRY

The Poultry Producers’ Association of Ithaca is perhaps especially favored in having a modern refrigeration plant available for chilling and holding the dressed poultry. This is quite necessary if much poultry is to be handled although at first ice refrigeration may be used very satisfactorily. In other localities, perhaps arrangements could be made with some already established refrigeration plant. Arrangements must also be made for holding live poultry while waiting to be killed. This should consist of a series of coops convenient to the killers or better yet, have these coops upon trucks and wheel them in from an adjoining room as needed. Everything should be kept absolutely sanitary, and all by-products such as feathers and blood should be saved. These items amount to considerable to an association handling large amounts of products. At the Ithaca Association a record is kept of the patrons promising to send in live
poultry for future killing; this makes it possible for the patrons to telephone to the office and learn just when to bring in their birds, when to begin starving them, etc.

**PRESENT STATUS AND FUTURE PROSPECTS**

At the present time there are about 100 patrons supplying eggs or poultry to the association and this number will be considerably increased when the new routes are established. The returns have been liberal and yet during the five months that the association has been in operation a very satisfactory reserve fund has been accumulated. This reserve fund will be held and as it increases dividends will be rendered in proportion to the value of the products which the individuals have sold through the association.

It is planned that at the end of each month each patron shall receive a sheet showing the months business of the association and comparing the patron’s percentage number of eggs of the various grades with the average percentage of all of the patrons. This will show the patrons whether his eggs are relatively poorer or better than the average and will serve as a very strong educational feature.

Form letters are sent to the patrons giving them directions along various lines such as caring for their flocks, fattening the cockerels or preparing their eggs. These tend to keep up the interest in the organization itself as well as in the financial benefits to be derived by sending the products to it.

The Poultry Producers’ Association of Ithaca is working satisfactorily as a unit. As soon as the Poultry Department is sufficiently assured of the success of this association it is hoped that other similar associations may be established in other parts of the state. These various Poultry Producers’ Associations working together may then be able to handle larger contracts and to give better service to the trade than could any single association.

This Association is now in its infancy. It is being improved every week and must continue for at least a year before it can be called a success in any sense of the word. It has been established under New York State conditions and planned with the idea of meeting New York State needs. The Association will be very glad to have visitors look over its methods of operation and suggestions for improvements are always welcome. For further information readers may address the Poultry Producers’ Association of Ithaca, N. Y.

---

**EGG LAYING CONTESTS**

*By George A. Cosgrove*

When we consider the importance of the poultry industry as one of the great food supplies of the country, and the universal distribution of poultry throughout all parts of the country, it is really remarkable that the practical “Yankee” has been satisfied all these years to devote his attention to poultry shows where the markings on the feathers was the highly important point and utility had little or no consideration. That a fowl should be valuable if it had feathers on its middle toe, and of comparatively little value if it didn’t may look all right from the fancier’s point of view, but from the utility man’s standpoint, it looks like rank nonsense. But it is just such useless fads American breeders have been working on for years. Of course we all knew that there were egg laying
contests in Australia and in England, but for some unaccountable reason, no one started such a contest in this country, so far as I am aware, until the Philadelphia North American persuaded the authorities of the Connecticut Agricultural College at Storrs to join with them in holding such a contest.

The result has been a surprise to all concerned. The interest in the contest which the general public has taken, was not anticipated by anyone. No one expected that the newspapers, city dailies, and country weeklies alike would give reports of the contest each week but they were compelled to do so by the interest of the public in the results. Probably no event has happened in a hundred years that has so stimulated interest in poultry keeping.

The performance of different breeds under precisely similar conditions as to housing, feeding, care, etc., has radically changed the ideas of many poultrymen, and the demonstration of the great difference in laying ability of certain strains or families of the same breed, has shown the value of careful selection and breeding for utility purposes. Wherever egg laying contests have been held for a number of years in succession, each year has usually shown an increased number of eggs laid by the leading pens; the world’s record being held by Australia, with an average for the six birds in the leading pen of 264.8 eggs in one year.

Egg laying contests have been held in England for years, sometimes for the winter months only, sometimes for the entire year. The desire to win at these contests with the valuable advertising that winning carries, has led to more trapnesting, more care in mating, more keeping of records, and as would naturally follow, an increased egg production. The evidence of this is clearly shown by the performance of the English birds in the contest at Storrs. Mr. Edward Cam’s White Wyandottes from England have outlaided all the American White Wyandottes, while Mr. Tom Barron’s White Leghorns are 150 eggs ahead of any American bred pen of any breed and at the contest at Mountain Grove, Missouri, are 256 eggs ahead of any other pen of any breed. For the first time in the history of poultry keeping in America fowls bred for utility alone are sold at prices that compare with those obtained by the fancier. One of Mr. Barron’s White Leghorns at the Storrs contest has laid 250 eggs in ten months, and the average for the five birds is over 217 eggs apiece, in the ten months. The third egg laying contest at Storrs will commence November 1st. It is proposed to put ten birds in a pen this year and the entrance fee will be the same as before, $25, which means that a breeder can get ten birds trapnested for a year and a certified record of the eggs laid and food consumed for $2.50 apiece.
HERE are important and interesting historical connections in relation to improved livestock and the present site of the College of Agriculture. The original "University Farm" now all included in the campus was a part of the large holdings of land owned in the neighborhood by the founder of the University. Mr. Cornell, quite a time before the founding of the University had established and become very much interested in a herd of Short Horns, then practically the only improved breed of cattle in the United States. His herd was among those of note in New York State and about 1865 he sold for export to England the young bull, 3rd Lord of Oxford, 4958, for $3000 in gold. * This bull before Mr. Cornell owned him was the sire of the famous 8th Duchess of Geneva that sold for $40,600 at the New York Mills Sale of 1873 at which sale Mr. Cornell is noted in the press reports as one of the important interested spectators though the sale occurred only a few months before his death. It should be an incentive to us of the present day to remember that before Cornell University was founded or perhaps more than even vaguely thought of, Mr. Cornell was actively engaged in improving the livestock industry of the state, a labor which still occupies so large a part of our efforts and in which there is abundant room for further advancement.

Very little information is available as to the earliest developments of the herds on the University farms. There were improved animals in the college herds probably from the very outset and it is known that at least a few pure bred animals were in the first herds but no appreciable progress was made and no permanent policy adopted until Professor Isaac Phillips Roberts became the head of the Department of Agriculture in the University in 1873. At this time interest in dairy husbandry was beginning to develop in the state and the present leading dairy breeds, notably Jerseys and Ayrshires, were beginning to come into general public notice. Professor Roberts came to Cornell from the middle west and had seen and taken part in the introduction of the Short Horn and the consequent improvement of beef cattle on the fertile plains of the corn belt but he soon recognized the importance of a breed especially adapted for dairy production under eastern conditions. He had foresight enough to see that the general introduction of improved working dairy animals capable of greater production would be through the mating of purely bred bulls of a distinctively dairy type upon common cows and through their grade descendants developing herds of higher and more uniform productive capacity. A third fundamental principle was the recognition of the importance of systematic records of production as a basis not only for the selection of animals capable of present profitable production but also for breeding purposes. Acting upon these ideas the College herd was founded and has ever since been maintained, though now for many years purely bred animals have gradually replaced grades.

Systematic effort to improve the herd was begun by Professor Roberts in 1875. He had already determined by actual weighings that the herd, largely composed of as good native and common cows as could be purchased in the neighborhood, was producing at a rate not to exceed 3000 pounds of milk per cow per annum. Holstein cattle were at that time almost unknown though a few herds had been established as early as 1860. By 1875 there were probably less than 500 purely bred Holsteins in the country almost entirely in New England and

*Allen—"History of Short Horns," p. 223.
New York. Professor Roberts has left no record as to the way in which his attention was called to this breed but in 1875 he purchased of Mr. W. W. Chenery of Belmont, Mass., the young bull, Sixth Earl of Middlesex, 156, born June 21, 1874. Mr. Chenery was the first importer of Holsteins to the United States and the sire and dam of this bull were both of Mr. Chenery’s original importation. There are three descendants of Sixth Earl of Middlesex in the College herd at the present time so that they in person through their pedigrees epitomize the history of the breed in this country. Very few animals, grade or pure bred, inferior. Since then the improvement has been more largely in increased uniformity than in actual increase of production.

The writer assumed charge of the herd in 1889 and beginning in 1891 after the Babcock Test had been invented, systematic records of both milk and fat production have been kept and in 1892–3 a record of the cost of food was kept as well. The results of that year’s work were published in bulletin No. 52 of the Agricultural Experiment Station and show an average yield of 7240 pounds of milk per cow per annum, or an increase of 108 per cent in seventeen years. Since then the fluctuations in production are well shown in the following table, for though some purely bred animals were introduced about this time, the principles of breeding and selection have not been materially changed.

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of cows</th>
<th>Milk, pounds</th>
<th>Fat, pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1892-3</td>
<td>20</td>
<td>7240</td>
<td>285.6</td>
</tr>
<tr>
<td>1893-4</td>
<td>20</td>
<td>7470</td>
<td>289.3</td>
</tr>
<tr>
<td>1894-5</td>
<td>19</td>
<td>7370</td>
<td>280</td>
</tr>
<tr>
<td>1895-6</td>
<td>17</td>
<td>7600</td>
<td>274</td>
</tr>
<tr>
<td>1896-7</td>
<td>19</td>
<td>7685</td>
<td>270</td>
</tr>
<tr>
<td>1897-8</td>
<td>19</td>
<td>7561</td>
<td>278</td>
</tr>
<tr>
<td>1898-9</td>
<td>19</td>
<td>7697</td>
<td>282</td>
</tr>
<tr>
<td>1899-1900</td>
<td>22</td>
<td>7128</td>
<td>264.7</td>
</tr>
<tr>
<td>1900-1</td>
<td>15</td>
<td>7671</td>
<td>291.8</td>
</tr>
<tr>
<td>1901-2</td>
<td>14</td>
<td>6638</td>
<td>256.4</td>
</tr>
<tr>
<td>1902-3</td>
<td>16</td>
<td>8037</td>
<td>284.5</td>
</tr>
<tr>
<td>1903-4</td>
<td>24</td>
<td>7652</td>
<td>296.4</td>
</tr>
<tr>
<td>1904-5</td>
<td>23</td>
<td>8004</td>
<td>290.5</td>
</tr>
<tr>
<td>1905-6</td>
<td>22</td>
<td>6580</td>
<td>245.6</td>
</tr>
<tr>
<td>1906-7</td>
<td>34</td>
<td>6822</td>
<td>257.3</td>
</tr>
<tr>
<td>1907-8</td>
<td>37</td>
<td>6773</td>
<td>268.7</td>
</tr>
</tbody>
</table>

The most impressive sire used in the herd. He now has 50 A. R. O. daughters and 11 sons that have sired A. R. O. daughters.
In the progress of development the sires used have of course played a most important part. These sires were for the most part rather carefully selected though in no case were extreme prices paid and the cost of several was quite moderate. The following is a complete list of the Holstein sires used with the date of their birth.

1. Sixth Earl of Middlesex 156, born June 21, 1874
2. Van Horn 361, born March 2, 1878
3. Robinson Crusoe 1471, born April 3, 1882
4. Netherland Remus 6276, born July 8, 1887
5. Netherland Statesman’s Excelsior 19036, born December 17, 1891
6. Sir Beets DeKol 21422, born March 26, 1894
7. Earl Korndyke DeKol 24954, born November 28, 1897
8. Dutch Hengerveld Korndyke 31155, born December 27, 1901
9. Small Hopes Korndyke DeKol 32260, born January 21, 1903
11. Woodcrest Pietje Ormsby 54909, born September 5, 1908

It will thus be seen that in the 39 years 1875-1913 inclusive, eleven sires have been in the herd. Of these one, Netherland Statesman’s Excelsior, died before leaving any offspring in the herd. The average approximate life of the ten fruitful bulls was therefore almost four years. Of the ten, Van Horn and Dutch Hengerveld Korndyke were the least successful though each left some good daughters. All things considered, Earl Korndyke De Kol was the most impressive as a sire though the 1st, 3rd, 4th, 6th, 10th and 11th all proved very useful animals.

It is often urged against the use of pure bred bulls that the first cost is prohibitive and the results are uncertain. It is not known what was paid for the first three bulls but the other eight cost from $50 to $350 each and the average was a little less than $150 each. When it is considered that seven of the ten fruitful bulls were decidedly successful as breeders, that the other three were by no means failures, and that the average period of usefulness was four years, the moderate investment of $150 each may be considered to have given good returns and to be within the reasonable expectation of anyone starting out on a line of similar improvement.
GLISTA ERNESTINE 117999.

The best cow yet produced in the herd. As a junior four year-old, she produced 24,410 pounds of fat in seven days; 98,948 pounds fat in 30 days and in 36 weeks has produced 503 pounds of fat.
writer took charge of the herd a single granddaughter of Dena, a two-year-old heifer, known as Glista 7857, sired by Robinson Crusoe was the only descendant of Dena and the only pure bred Holstein in the herd. She was not very prepossessing in appearance, rather coarse in bone and heavy and masculine in general appearance. She proved to be rather unproductive but she produced three heifer calves in succession, each sired by Netherland Remus. Glista and her daughters were not as productive as the grade three-quarters and seven-eighths bloods that made up the larger part of the herd at this time. It seemed, however, to be desirable to work into purely bred animals. Available funds were low and the policy was adopted of raising all the pure bred females, keeping them in the herd even though they were not as productive as some of the grades until their capabilities were thoroughly tested, seeking to improve the stock as rapidly as possible through the influence of the sire. At first progress was quite slow; an undue proportion of males was born, Glista 3rd producing three bull calves in succession and no heifers and Glista 4th producing four bull calves before her first heifer was dropped. When the bull Sir Beets DeKol was purchased his daughters showed the first marked improvement among the purely bred animals and following him, Earl Korn-dyke DeKol gave a marked impetus to the productive capacity through the seven or eight daughters which he left in the herd. Since that time, the herd has increased rapidly in numbers and improved in general productive capacity. The course of this improvement is well shown in the following table:

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of cows</th>
<th>Milk, pounds</th>
<th>Fat, pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1889-90</td>
<td>3</td>
<td>8662</td>
<td>287</td>
</tr>
<tr>
<td>1890-91</td>
<td>4</td>
<td>8848</td>
<td>292</td>
</tr>
<tr>
<td>1891-2</td>
<td>4</td>
<td>7233</td>
<td>255</td>
</tr>
<tr>
<td>1892-3</td>
<td>6</td>
<td>9342</td>
<td>322</td>
</tr>
<tr>
<td>1893-4</td>
<td>7</td>
<td>9377</td>
<td>331</td>
</tr>
<tr>
<td>1894-5</td>
<td>9</td>
<td>9549</td>
<td>325</td>
</tr>
<tr>
<td>1895-6</td>
<td>11</td>
<td>7682</td>
<td>265</td>
</tr>
<tr>
<td>1896-7</td>
<td>18</td>
<td>7343</td>
<td>254</td>
</tr>
<tr>
<td>1897-8</td>
<td>19</td>
<td>8276</td>
<td>292</td>
</tr>
<tr>
<td>1898-9</td>
<td>21</td>
<td>8415</td>
<td>300</td>
</tr>
<tr>
<td>1899-10</td>
<td>24</td>
<td>9068</td>
<td>374</td>
</tr>
<tr>
<td>1900-11</td>
<td>25</td>
<td>9297</td>
<td>334</td>
</tr>
<tr>
<td>1901-12</td>
<td>15</td>
<td>8679</td>
<td>304</td>
</tr>
<tr>
<td>1902-13</td>
<td>14</td>
<td>9497</td>
<td>328</td>
</tr>
</tbody>
</table>

Not all the later born animals have shown uniformly good qualities. There have been a number of "weeds" but these have been eliminated from the herd and their number is not larger than would normally be expected in any course of breeding. In the table on page 49 the relationship of all the individuals in the family is shown in the line of female descent, together with the length of time they remained in the herd and their average yield in pounds of fat per year during the time they were in the herd. Those marked with a star are at present members of the herd; most of them young and many of them will undoubtedly increase their present record. The figures, however, are given as of present date for the sake of making the table as complete as possible.

The influence of the sires on the development of the herd is of course of great importance. The improvement has undoubtedly come largely through the sires and in the table above there is no indication of this. It is difficult to give any indication of the influence of the sires other than by giving a list of their daughters with the production of each and the average production which is shown in the table below.

Sired by Netherland Remus  
Glista 2nd .......................... 188 lbs.  
Glista 3rd .......................... 252 lbs.  
Glista 4th .......................... 274 lbs.  
Av. ................................ 238 lbs.

Sired by Sir Beets DeKol  
Glista Beta .................................. 309 lbs.  
Glista DeKol ................................ 303 lbs.  
Glista Alpha ................................ 294 lbs.  
Av. ................................ 302 lbs.
Glista
3 Yrs. Av. 188 lbs.

Glista 2d
1 Yr. Av. 188 lbs.

Glista 3d
2 Yrs. Av. 252 lbs.

Glista 4th
8 Yrs. Av. 274 lbs.

Gl. Netherland
5 Yrs. Av. 286 lbs.

Gl. Alpha
10 Yrs. Av. 294 lbs.

Gl. Beta
10 Yrs. Av. 309 lbs.

Gl. Delta
9 Yrs. Av. 348 lbs.

Gl. Theta
7 Yrs. Av. 302 lbs.

Gl. Epsilon
9 Yrs. Av. 312 lbs.

Gl. Lambda
4 Yrs. Av. 292 lbs.

Gl. Carlotta
3 Yrs. Av. 299 lbs.

Gl. Cora
2 Yrs. Av. 413 lbs.

Gl. Coreva
2 Yrs. Av. 223 lbs.

Gl. Rho
4 Yrs. Av. 301 lbs.

*Gl. Psi
6 Yrs. Av. 345 lbs.

*Gl. Candida
4 Yrs. Av. 259 lbs.

Gl. Coriander
1 Yr. Av. 233 lbs.

Gl. Corinne
3 Yrs. Av. 253 lbs.

Gl. Xi
1 Yr. Av. 180 lbs.

Gl. Sigma
5 Yrs. Av. 341 lbs.

Average by Generations 188 lbs.

238 lbs.

314 lbs.

289 lbs.
<table>
<thead>
<tr>
<th>Name</th>
<th>Age Av.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gl. Gamma</td>
<td>8</td>
<td>336 lbs.</td>
</tr>
<tr>
<td>Gl. Iota</td>
<td>7</td>
<td>381 lbs.</td>
</tr>
<tr>
<td>*Gl. Omicron</td>
<td>7</td>
<td>359 lbs.</td>
</tr>
<tr>
<td>Gl. Tau</td>
<td>5</td>
<td>255 lbs.</td>
</tr>
<tr>
<td>Gl. Pi</td>
<td>2</td>
<td>198 lbs.</td>
</tr>
<tr>
<td>Gl. Phi</td>
<td>1</td>
<td>231 lbs.</td>
</tr>
<tr>
<td>Gl. Alpha 2d</td>
<td>1</td>
<td>204 lbs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Age Av.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gl. Mu</td>
<td>6</td>
<td>285 lbs.</td>
</tr>
<tr>
<td>*Gl. Ernestine</td>
<td>3</td>
<td>377 lbs.</td>
</tr>
<tr>
<td>*Gl. Elgantine</td>
<td>3</td>
<td>264 lbs.</td>
</tr>
<tr>
<td>Gl. Eloise</td>
<td>2</td>
<td>283 lbs.</td>
</tr>
<tr>
<td>Gl. Eleanor</td>
<td>1</td>
<td>286 lbs.</td>
</tr>
<tr>
<td>Gl. Omega</td>
<td>3</td>
<td>309 lbs.</td>
</tr>
<tr>
<td>*Gl. Echo</td>
<td>3</td>
<td>338 lbs.</td>
</tr>
<tr>
<td>Gl. Ebony</td>
<td>1</td>
<td>304 lbs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Age Av.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Gl. Francesca</td>
<td>3</td>
<td>322 lbs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Age Av.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Gl. Erda</td>
<td>3</td>
<td>322 lbs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Age Av.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gl. Nu</td>
<td>5</td>
<td>317 lbs.</td>
</tr>
<tr>
<td>Gl. Upsilon</td>
<td>3</td>
<td>163 lbs.</td>
</tr>
<tr>
<td>Gl. Chi</td>
<td>4</td>
<td>281 lbs.</td>
</tr>
<tr>
<td>Gl. Dora</td>
<td>1</td>
<td>239 lbs.</td>
</tr>
<tr>
<td>*Gl. Elora</td>
<td>2</td>
<td>310 lbs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Age Av.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gl. Duchess</td>
<td>1</td>
<td>220 lbs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Age Av.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Gl. Draba</td>
<td>2</td>
<td>298 lbs.</td>
</tr>
</tbody>
</table>

268 lbs. 303 lbs. 265 lbs.
<table>
<thead>
<tr>
<th>Sired by Earl Korndyke DeKol</th>
<th>Sired by Small Hopes Korndyke DeKol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glista Delta ........................................</td>
<td>Glista Carlotta ...............................................</td>
</tr>
<tr>
<td>......................................................</td>
<td>348 lbs. ..................................................................</td>
</tr>
<tr>
<td>Glista Theta ...........................................</td>
<td>Glista Psi ..........................................................</td>
</tr>
<tr>
<td>......................................................</td>
<td>302 &quot; ..................................................................</td>
</tr>
<tr>
<td>Glista Eta ..............................................</td>
<td>Glista Candida ....................................................</td>
</tr>
<tr>
<td>......................................................</td>
<td>327 &quot; ..................................................................</td>
</tr>
<tr>
<td>Glista Epsilon .........................................</td>
<td>Glista Coriander ...................................................</td>
</tr>
<tr>
<td>......................................................</td>
<td>312 &quot; ..................................................................</td>
</tr>
<tr>
<td>Glista Lambda ...........................................</td>
<td>Glista Corinne .....................................................</td>
</tr>
<tr>
<td>......................................................</td>
<td>292 &quot; ..................................................................</td>
</tr>
<tr>
<td>Glista Gamma ............................................</td>
<td>Glista Chi ...........................................................</td>
</tr>
<tr>
<td>......................................................</td>
<td>336 &quot; ..................................................................</td>
</tr>
<tr>
<td>Glista Iota ...............................................</td>
<td>Glista Eloise ........................................................</td>
</tr>
<tr>
<td>......................................................</td>
<td>381 &quot; ..................................................................</td>
</tr>
<tr>
<td>Glista Nu ..................................................</td>
<td>Glista Eleanor ......................................................</td>
</tr>
<tr>
<td>......................................................</td>
<td>317 &quot; ..................................................................</td>
</tr>
<tr>
<td>Glista Mu ..................................................</td>
<td>Glista Omega .......................................................</td>
</tr>
<tr>
<td>......................................................</td>
<td>285 &quot; ..................................................................</td>
</tr>
<tr>
<td>Av. ................................................................</td>
<td>Av. ......................................................................</td>
</tr>
<tr>
<td>..................................................................</td>
<td>323 &quot; ..................................................................</td>
</tr>
<tr>
<td>..................................................................</td>
<td>285 &quot; ..................................................................</td>
</tr>
</tbody>
</table>

**GLISTA 7857.**

The original cow of the Glista family. Note her coarse and inferior appearance in comparison with her descendants Glista Cora and Glista Ernestine.

<table>
<thead>
<tr>
<th>Sired by Dutch Hengerveld Korndyke</th>
<th>Sired by A. &amp; G. Netherland Piebe DeKol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glista Rho ................................</td>
<td>Glista Alpha 2nd ................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>301 lbs. ........................................</td>
</tr>
<tr>
<td>Glista Xi ................................</td>
<td>Glista Echo .....................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>180 &quot; .............................................</td>
</tr>
<tr>
<td>Glista Sigma ................................</td>
<td>Glista Ebony .....................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>341 &quot; .............................................</td>
</tr>
<tr>
<td>Glista Omicron ................................</td>
<td>................................................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>359 &quot; .............................................</td>
</tr>
<tr>
<td>Glista Taur ................................</td>
<td>................................................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>255 &quot; .............................................</td>
</tr>
<tr>
<td>Glista Pi ................................</td>
<td>................................................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>198 &quot; .............................................</td>
</tr>
<tr>
<td>Glista Phi ................................</td>
<td>................................................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>231 &quot; .............................................</td>
</tr>
<tr>
<td>Glista Upsilon ................................</td>
<td>................................................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>163 &quot; .............................................</td>
</tr>
<tr>
<td>Av. ..........................................</td>
<td>................................................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>254 &quot; .............................................</td>
</tr>
</tbody>
</table>

**PRESS**

7/8 HOLSTEIN.

One of the best looking cows ever bred in the herd. She was also a large producer. Her best yearly record was 11,900 pounds of milk and 415 lbs. of fat. She also was sired by Robinson Crusoe.

<table>
<thead>
<tr>
<th>Sired by Prince Ymba Spofford 6th</th>
<th>Sired by A. &amp; G. Netherland Piebe DeKol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glista Cora ................................</td>
<td>Glista Alpha 2nd ................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>413 lbs. ........................................</td>
</tr>
<tr>
<td>Glista Coreva ................................</td>
<td>Glista Echo .....................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>223 &quot; .............................................</td>
</tr>
<tr>
<td>Glista Dora ................................</td>
<td>Glista Ebony .....................................</td>
</tr>
<tr>
<td>...........................................</td>
<td>239 &quot; .............................................</td>
</tr>
</tbody>
</table>
THE CORNELL COUNTRYMAN

Glista Duchess .................................. 220 lbs.
Glista Draba ...................................... 298 "
Glista Ernestine .................................... 377 "
Glista Eglantine .................................... 264 "
Glista Flora ....................................... 207 "
Glista Elora ........................................ 310 "
Av. ............................................... 283 "

Jersyes were introduced into the herd about 1885. The bulls used have been Cornell Valentine, a son of Ramapo; Cornell Exile, a son of Exile of St. Lambert; Marvel's Pogis, a descendant of Emma's Pearl; and Oonan's Count third. The present sire, Blue Belle Experimenter, a gift of the State Experiment Station at Geneva, descended through the herd of Mr. George W. Sisson, from an imported cow, Blue Belle, as is good a representative of the breed as has ever been in the herd.

Guernseys were first introduced in 1903, but they have not been remarkably prolific. The present herd bull, Ledyard's Warwick, is a full brother of Otto W. Post's cow, Azucena's Pride 2nd, the champion of her class (two and a half and four years) in the Advanced Registry of the American Guernsey Cattle Club. Her record is 856 pounds of butter fat in one year.

In 1905, it was thought wise to introduce the so-called Dairy Short Horns and two cows and a heifer were purchased from the herd of Innes and May, of Pennsylvania. Afterward a bull, Frederick Clay, was purchased from the same herd. The descendants of these animals have proved prolific and quite productive, particularly the cow, Lady Clay 3rd, to which attention is called. The present herd bull, Royal Oxford, bred by Horace W. Avery, is descended from the best milking strains in Vermont.

The last additions to the herd have been Ayrshires, which were introduced in 1911, largely from importations made directly from Scotland by Mr. F. S. Peer, of Ithaca. One of the cows comes from the noted producing herd of S. S. Karr and Son, of Alleghany County.

THE EFFECTS OF FERTILIZERS OTHER THAN THAT OF ADDING PLANT FOOD

L. L. Van Slyke
New York State Agricultural Experiment Station, Geneva, N. Y.

WE ARE recently coming to understand that the application of a fertilizing material to the soil may, and usually does, do much more than furnish plant-food. What we may call secondary effects take place, and these often influence the chemical, physical and biological conditions of the soil and, therefore, the crops in a way not expected. Many of these secondary changes have received little recognition in these practical relations. It is true that the effects of organic matter upon soil structure, warmth, water-holding power, modification of availability of mineral plant-food compounds, and activity of micro-organisms has been well recognized in agricultural practice; and the same is true also of the influence of calcium (lime) compounds. It is, however, less true of special chemical compounds, such as are commonly used in commercial fertilizers, among which for illustration we can mention sodium nitrate, ammonium sulphate, superphosphate, potassium chloride, potassium sulphate, etc. We will now consider in detail some typical cases which will illustrate the subject of this article.

Sodium nitrate (often called nitrate of soda) serves excellently to furnish an example of the secondary effects
of fertilizing material upon soils. In using this compound, the purpose is, of course, application of nitrate nitrogen, which is taken into the plants during crop growth; but the sodium is mostly left behind in the soil and is not inert. This sodium residue may be beneficial in its action and it may be injurious. We will consider (1) its beneficial action, (2) its harmful action and (3) its effect on soil acidity.

**Beneficial action.** The sodium nitrate has the power of exchanging places with potassium in certain insoluble potassium compounds, resulting in the formation of a soluble potassium compound. In many clay soils, this action may be so extensive that application of sodium nitrate furnishes all the available potassium required for crops, and this latter constituent can in such cases be omitted from the fertilizer applied, so long as the soil continues to contain an abundance of potassium compounds that can be rendered available in this way.

**Injurious action.** When sodium nitrate is used continuously and extensively on a soil for a series of years, it may destroy the granular or crumb structure. This effect is due to the sodium residue left in the soil. This residue combines with carbon dioxide in the soil water to form sodium bicarbonate, which possesses a strong deflocculating power, causing the soil grains or crumbs to fall apart into very fine particles. Under such conditions, a soil puddles badly, if worked when wet, and after rain dries into hard unmanageable lumps, seriously reducing the crop producing power of the soil. If this condition continues, the finest material of the soil is gradually removed in the course of years, and the crop producing power decreases also. Such a condition while difficult to remedy, can be most effectively changed by the application of some material that is already acid or capable of combining with and changing the alkaline sodium bicarbonate into some harmless compound. Acid phosphate, ammonium sulphate and calcium sulphate (gypsum) are effective in thus changing the sodium bicarbonate. Basic substances such as a calcium carbonate (ground lime), calcium hydrate (slaked lime), etc., should never be applied under these conditions because they will only make a bad matter worse.

**Effect on soil acidity.** Sodium bicarbonate resulting from the use of sodium nitrate neutralizes acids and prevents a soil becoming acid. It will, therefore, save loss of calcium carbonate in the soils. It may be said, in addition to the effects already mentioned, that sodium nitrate renders insoluble calcium phosphate more easily soluble.

**Ammonium sulphate,** tends to render a soil acid, an action just the reverse of that of sodium nitrate. The ammonium is changed to nitric acid leaving as a soil residue, free or uncombined sulphuric acid, which combines with the calcium carbonate present in the soil. With long-continued use of ammonium sulphate on soils, the calcium carbonate is gradually used up and there then results an acid soil. The simplest remedy for this condition is the application of either calcium carbonate or hydroxide. The condition can be prevented by keeping in the soil a good supply of ground limestone or by using sodium or calcium nitrate or cyanamid along with ammonium sulphate.

**Superphosphates.** In these materials we have two different chemical compounds to consider, the soluble or acid calcium phosphate and the calcium sulphate (gypsum). In the case of the calcium phosphate, it is sooner or later utilized by the plant and if any residue is left in the soil, it is calcium, which becomes carbonate under normal soil conditions. The residual gypsum of the acid phosphate may have several different effects on the soil; at least this is true theoretically. The one of most interest here is the tendency to have free sulphuric acid in the soil, which is rendered harmless when the soil contains enough calcium carbonate. In the absence of such basic materials, gypsum ultimately makes an acid soil. Super-
phosphates have gained the reputation of producing "sour soils" and the popular explanation has been that it was due to the soluble phosphate, which is known to be an acid salt, while in reality it is due rather to the calcium sulphate present in the superphosphates.

Potassium chloride and sulphate. In soils containing an abundance of calcium carbonate, the free hydrochloric and sulphuric acids left in the soil, after the potassium has been taken into the plants, will be at once neutralized and rendered harmless. In many soils, an exchange takes place between the soluble potassium chloride or sulphate and compounds present in the soil, by which the potassium is converted into less soluble forms, while the acid part (chloride or sulphate) combines with some soil constituent especially calcium and magnesium. In soils in which neither of the foregoing conditions exists, free hydrochloric or sulphuric acid may accumulate and cause an acid condition in time.

The examples given above are sufficient to illustrate the fact that in applying commercial fertilizers to the soils, some account must be taken of the effects other than those of supplying plant-food. If this is not done, not only may the applied plant-food fail to produce the desired effect but even act injuriously.

GREENHOUSE CONSTRUCTION

W. R. Cobb

COMPARATIVELY few people are aware of the tremendous improvements which have been made in the past thirty years in the construction of greenhouses, and few realize the extensive and rapid growth of the building of greenhouses as a specialty.

There are a number of firms in the United States who do nothing else, and it is owing to the specializing of this class of construction that the light and airy greenhouse structures of today have been evolved.

Fifty years ago the greenhouse was generally built against a high wall, with one slope of roof. The wall was on the north side and the glass roof faced the south. The roofs were constructed with a number of independent sash, supported by heavy wood rafters, and the sash glazed with glass, not over six inches wide. This form of construction was seldom tight, and the amount of wood used gave only about 50 percent of light. They were seldom heated, and if heated at all, it was by running a brick flue through the house, attached to a hot air furnace. The results of this method of heating were far from satisfactory; one end of the house would be too warm and the other end too cool. Later, hot water and steam were introduced as heating mediums, and this opened the way for extensive improvements in the construction of the greenhouse itself, and also for an increase in size and a larger latitude in the variety and extent of same.

Mr. Lord, the founder of Lord & Burnham Company, was a great lover of flowers, and also a thorough mechanic. He became dissatisfied with the results obtained in the greenhouse which he had on his place, built with sash in the roof, and made up his mind that in order to make any advances in floral culture under glass, improvement in the construction of the greenhouse itself must be made. So he constructed a greenhouse, having a permanent glass roof; that is, in the space between the rafters, wood bars were placed, supported by purlins running from rafter to rafter, and then the glass placed between the bars. He also arranged
a mechanical device for operating the sash used for ventilating at the ridge. The results obtained in this type of house were so far ahead of anything then known, that his services were soon in demand, and from that time on improvement, both in the construction and shape of the greenhouse, was rapid, until today we have the cobwebby structure.

The roof was made curved, which gave the plants on the side of the house more headroom. Later, the sides of the houses were increased in height, two feet of glass being placed between the top of the plant beds and the gutters. This allowed the roof to be made straight, instead of curved, which reduced the cost. As improvement in construction continued, ranges of glass or several greenhouses united in one, began to be built and today there are a large number of ranges on private estates, where almost any variety of flowers, vegetables, and fruit can be grown.

Up to about thirty-five years ago, the sills, rafters, and purlins; in fact, all parts of the superstructure were built of wood. As the desire for wider and more permanent houses increased, the greenhouse designers and builders began to look around for better materials. At about this time steel and iron had begun to be used in general building, and to these metals the builders turned their attention. Cast iron sills were substituted for wood; steel rafters, and purlins took the place of the cumbersome wooden ones, and throughout, wood was replaced with metal as far as possible.

In this climate to secure a tight greenhouse roof, all the year round, it is necessary to have all glass rest on wood. As yet, there has been no other satisfactory method invented. While wood is still used, it has been possible to greatly diminish the size of the members, owing to the fact that the steel and iron members furnish the desired strength, and with
The superstructure of a greenhouse should last indefinitely.

In proper construction the steel rafters and purlins are exposed only to the inside temperature of the house, thus insuring freedom from contraction and expansion. This principle adopted thirty-five years ago has been, and is today the base and fundamental principle of all first class construction.

From time to time the size of the glass used has been increased: First, 6 inch, then 8 inch, 10 inch, 12 inch, 14 inch, 16 inch and 24 inch. Today glass 16 inches and 24 inches wide is used almost exclusively. As far as growing qualities are concerned, there is no choice between the 16 inch and 24 inch; the 16 inch gives less trouble in glazing.

Today there are several constructions on the market. They vary only in details. All constructions are based on the principle of using steel and iron as a support for the wood roof, bars, sash, etc. It is in the details that the endurance, stability, etc. lie. It is well to look carefully into these details, and also into the sizes, etc. of the steel members. It is not a difficult matter to build a greenhouse that will stand a few years; the thing is to get one that will be good twenty-five or thirty years, with a minimum of repairs.

The lines and shape of the roofs have also undergone many changes, until today three standard shapes are used almost exclusively, viz.: the straight roof, having cast iron gutters at the eave line; the curved roof, which varies only from the gutter line; the curved eave roof, being straight until it about reaches the side walls where it is curved sharply to meet the glass on sides of house. In this case, a combination cast iron sill and gutter caps the masonry walls. This type of roof is particularly adapted to localities having heavy snows, as having no obstruction at the eave line, the snow readily slides from the roof.

Glass has also improved in quality, and today double strength "A" quality is standard. If glass is over 16 inches wide, what is known as 26 ounce should be used. "B" glass, except in rare cases is avoided.

The plant benches used were at first made entirely of wood; then a combination of steel and wood; and
now we have the plant benches with galvanized steel frames, terra cotta bottoms, with slate or wood sides. A plant bench constructed entirely of cast iron is on the market. This is the most durable and presents a neat appearance.

At first greenhouses were not heated. They were simply used to enable one to have fruit and flowers a little earlier and a little later than could be grown outside. After a short time, stoves were placed in the houses; then brick flues built, running the length of the house, through which hot air, generated in a furnace was carried. Both of these methods were unsatisfactory, but were much better than no heat of any kind. Finally a system of pipes through which hot water circulated, was adopted, and this has continued to be used to the present day. While there has been a great improvement in the arrangement of the pipes, fittings, and valves, the original principle of circulating hot water by gravity, still remains and has proved the best heating medium, not excepting steam, for plant life.

Brick, stone, or concrete are suitable for foundation walls. Brick was the material formerly used. Today, concrete, plastered with a light colored cement is more extensively used. It makes a cheap wall, and at the same time presents a neat appearance.

Walks constructed of concrete, finished with cement, make ideal walks, and these have been used continuously for thirty years.
ADDRESS DELIVERED TO DIRECTOR BAILEY
ON JULY 31, 1913, BY MEMBERS OF
FACULTY THEN IN CITY

"ITHACA, N. Y., July 31, 1913.
Professor L. H. Bailey,
Director of the New York State Col-
lege of Agriculture.

Dear Friend and Colleague:

We come as representatives of the
Faculty of Agriculture to express the
regrets of this Faculty that you are
about to retire from the position of
Director of this College.

The Faculty would have come in a
body to bring this message, for every
member of it shares these regrets, but
it was felt that a less formal procedure
would be more acceptable to you. Still
we could not let this day pass
without expressing to you our feelings.

The present successful condition of
this College is due to the combined
efforts of many earnest men and wo-
men devoted to the cause of agri-
cultural education; but every one of
these workers realizes that the oppor-
tunity for doing this work in so suc-
cessful a way is due more largely to
your efforts than to any other cause.

The confidence which the people
of the State have in you is the chief
cause of the magnificent material sup-
port that has been given the College.

Your breadth of view in organizing
and administering the College has
enabled your colleagues to work in a
much more efficient manner than
would have been possible under less
wise leadership.

You have laid the foundation of a
broad College of Agriculture and have
built on this foundation an institution
that stands forth as an ideal of what a
College of Agriculture should be.

The practical phases of agricultural
education are well cared for. Instruction
in the sciences upon which intelli-
gent agricultural practice must be
based is provided. Opportunity for
original investigation is offered, and
the means of publishing the informa-
tion obtained is well systematized.

Not only are the needs of the stu-
dents that come to the College pro-
vided for; but through the extension
department and the cooperation of
members of the staff with that depart-
ment any tiller of the soil in need of
help can obtain the best available
information.

This is the kind of institution that
you have organized and brought to a
high degree of efficiency.

We wish that it were possible for us
to continue to work under your wise
leadership. But we are sure that
your influence will remain with us;
that we shall continue to try to realize
the ideals that you have established.

The momentum obtained is so great
that the institution is bound to con-
tinue its work along the lines laid out
by you.

We know that your work here has
not been an easy task; that there
has been much to trouble and perplex
you. But the head of a college never
had a more loyal and devoted follow-
ing in his faculty than you have had.

And while you are to leave us for
the sake of a freer life, do not think
we are jealous of what takes you away
from us. Although we are borne
down by the sense of our loss and the
loss of the College, every heart re-
joices that you are to have what you
have longed for during these years
when you have been fettered by
administrative work.

We shall hope that you will keep us
close to you as friends, though we may
no longer be colleagues, and that
through our sympathy with your
ideals we may proudly share your
future work."
This is a red letter day at the College of Agriculture.

There are three events which the College of Agriculture cannot afford to lose. They give to the college an atmosphere. They are the Assemblies, Farmer’s Week and the Agricultural Banquet.

There are many people who ask whether we have not paid the penalty of rapid growth in losing what is extremely valuable, an intimate personal touch with our faculty and with each other which gives the relation of neighbors in an ideal rural community. A pretty good answer to this question is the Agricultural Banquet. One is liable to forget such obstacles at a gathering which has all the advantages of a barn warming or a grange picnic but is a little better than either.

This year the banquet will be just as attractive as of old. There are some upperclassmen as well as all the Freshmen who have never been at an Agricultural Banquet. It is something you cannot afford to miss. When you have pulled your chair away from a square meal seasoned with laughter and music to hear an imposing row of speakers, even the grouchest man in the college will admit that it is good to be there.

Considerable discussion has arisen recently concerning the relation of the College of Agriculture to the University. The College has been accused of segregation from the rest of the University and consequent non-participation in University activities.

There is truth in the statement that we are segregated to a certain extent. But there are two points which we wish to emphasize. The first point is that the College of Agriculture was created to serve the farmers of New York State. There is a great work that must be done apart from the University which accounts for many of our non-university activities. The second point is that the rest of the University has not encouraged the students of this college to enter into University activities. We question whether the attitude of the students at the college of Agriculture is seriously at fault.

The Sun which started the discussion has seemed to adopt the very laudable policy of giving more space to the College of Agriculture. We look forward to a time when the students at the college are more active in University activities not only for the good of the University but for their own development and when the University as a whole fully realizes the high ideals and accomplishments of the College of Agriculture.
We have been much disappointed with the scarcity of replies to our letters asking for former student notes. We were hoping that our Former Student column would be stronger than we can make it now with so little material. The trouble lies with nine out of ten former students. Each of them is glad enough to read of what the others are doing but does not realize that he ought to send in his own notes. Whether you are a subscriber is not the point. Send them anyway.

The Annual Fruit Show of the Department of Pomology will be given on November 6, 7, and 8th. It will be composed of fruits in season, mainly apples. Last year there were 125 varieties of apples and two of pears. All the fruit growing regions in United States will be represented.

There are two purposes of these shows. One purpose is to afford students an opportunity to be familiar with the different varieties and the variations in the variety when grown under different conditions. Another purpose is to demonstrate to the public the practical nature of the work given to students. The show is put up by the students and the varieties are judged by them.

To those who are not familiar with these shows it is sufficient to say that they are models for shows of their sort and have a fine educational value.

---

**AMYNTICHS**

Dear Earth, Amyntichus the aged take
Unto thyself; mindful how for thy sake
He toiled so much. For all his life, in thee
He planted seedlings of the olive-tree
Ofttimes with vine-slips, too, did he adorn
Thy hillsides and thy valleys fill with corn;
And, leading streams of water here and there,
Made herbs and fruitage plenteous everywhere.
Round his gray brows, then, do thou softly cling,
And put forth tender grasses of the spring.

From the Greek Anthology. (Trans. by G. S. B.)
CAMPUS NOTES

On Thursday, October 2, Acting Director Stocking spoke to the students of the College at the monthly Assembly. Among other things, he called attention to certain facts in regard to the college. He said that the total number of students registered to date is 1342 as against 1168 at the same time last year, giving a total increase of 174. These figures do not include graduate students since it is not yet possible to ascertain from the records the registration of the graduate students. He gave a brief sketch of Director Bailey's early life and of his work since coming to Cornell University in 1888. He called attention to the phenomenal growth of the College of Agriculture which has taken place under the leadership of Director Bailey. In 1903, when Professor Bailey was made Director, the College of Agriculture was housed in a portion of Morrill Hall and the old dairy building, which is now a portion of the north wing of Goldwin Smith Hall, and in the old horticultural greenhouses on the present site of the new athletic field. At that time there were 252 students in the College of Agriculture with nine persons on the faculty above the grade of assistants. At that time there were four departments in the college as against twenty-four at the present time. It was pointed out that this material development in equipment and teaching facilities is a fine tribute to Director Bailey's ability as an organizer and administrator. His ability as an educator is shown by the great increase in the number of the teaching staff and student body, which numbered last year more than two thousand. The Acting Director called attention to some of the qualities which have contributed to Director Bailey's great success and urged the students to study his life and follow it as an example of untiring devotion to productive work. The attention of the students was called to various matters in connection with the College of Agriculture and the development of various portions of its work. The status of the new buildings was discussed, as was also the various student organizations and activities in the College of Agriculture. The students were urged to affiliate themselves actively with some student organization which would give them an opportunity to develop themselves in lines of work which they could not secure in the class-room. They were urged to cultivate the habit of making good use of their time as a foundation for a useful productive life. The Acting Director called attention to the splendid spirit existing in the student body in the College of Agriculture and hoped to see this spirit continue unabated. He called attention, however, to the fact that the College of Agriculture is an integral part of Cornell University and emphasized the importance of the students recognizing their relation to the university as a whole. He said, "while we are proud of the spirit of loyalty and devotion in our student body, we do not want to separate ourselves from the rest of the university."
With the rapidly increasing number of students and the large number and variety of student activities now existing in the College of Agriculture, we should not forget our close relations with the university as a whole. He hoped the students would take an active part in university activities as well as in the activities of the College of Agriculture.

* * *

One of the independent departments which separated from the old department of Horticulture, and which will take up its work this fall, is the Department of Floriculture. Professor Edward A. White will be in charge of the work, while Dr. Alvin C. Beal, former head of the department, will do investigational work. The New York State Legislature recently appropriated $30,000 which will be used in constructing a new greenhouse, and in extending the old ranges. The new range will be designed especially for roses, although it is likely that other floricultural experiments will be carried on there. The houses now occupied by the Departments of Vegetable Gardening, Soils, Plant Breeding, and Plant Pathology will each be extended twenty-five feet. The commencement of work on these houses is only awaiting the approval of the state architect. The study of floriculture has been growing in importance during the past few years and the new department has been established to meet the popular demand.

Professor White, the new head of the department, comes from Amherst where for six years he was engaged in instructional work at the Massachusetts State College of Agriculture.

* * *

Professor Tenny, in charge of the Farm Bureaux in New York State now has eighteen men working on county bureaux throughout the state. This farm bureau work, which takes scientific agriculture direct to the door of the farmer, is being directed from Professor Tenny's office at the College of Agriculture. The New York State Department of Agriculture and the United States Department of Agriculture are cooperating with Professor Tenny in this very important work, and much practical good has already been accomplished.

* * *

Miss Annette J. Warner has been appointed Assistant Professor in the Department of Home Economics to introduce a course in Decorative Design which aims to teach art as applied to every-day living.

Miss Warner was formerly Assistant Principal and Director of the Department of Art at Rogers Hall School, Lowell, Mass. She has held important teaching positions, including the supervisiorship of drawing in Pittsfield, Mass., directorship of the Art Department of the State Normal School, Fitchburg, Mass., principalship of the John Herron Art Institute School of Art, Indianapolis. She has had broad training in art in the art schools of this country and abroad; possesses rare qualities as a teacher and is preeminently fitted to occupy the position she now holds.

* * *

The girls' club has already secured $575 towards the fund of $1000 which they propose to raise by the beginning of next term for the new club house. It is hoped that this club house will be placed on the girls' campus at the rear of the Home Economics Building. It is intended to be used for holding meetings and for purposes of recreation. Officers for the first semester are: President, Claribel Nye; Vice-President, Grace Chapman; Treasurer, Lucia Burbank; Club Historian, Natalie Thompson; Life Secretary, Elizabeth F. Genung.

* * *

A new Hubbard portable oven with a capacity of 240 one-pound loaves has been installed in the cafeteria. The baking surface is of heavy tile.
The inside of the oven is lighted by an electric light which works automatically whenever the door is opened.

The cafeteria is now conceded to be the best equipped of any place of its size in the country. Vegetables and soups are cooked in steam cookers in the most modern approved method. All machinery is run by electricity including a cake-mixer, bread-mixer, food chopper, potato-parer and dish-washer.

* * *

Following out a suggestion which originated in the present senior class, a number of out-of-town speakers have been secured to speak at our monthly assemblies. Arrangements have been made for the following dates:

November 14—Professor Claxton, U. S. Commissioner of Education.
December 4—L. H. Bailey.
January 9—Hon. J. W. Wadsworth, Mount Morris, N. Y.
February 27—Joseph E. Wing, of Ohio State University.
March 26—H. W. Foight, from the Agricultural Department at Washington, D. C.
Sometime in the spring, date not yet decided, Dean Davenport, of the University of Illinois.

* * *

Prof. Ross announces that several important repairs are being made in the Dairy Department. The separator room is being replastered, and a stairway is being cut from the bacteriological laboratory to the room immediately below. This room is to be converted into a sterilizing and washing room to relieve the congestion in the laboratory above.

* * *

Mr. K. P. Schmidt, from Lake Forest College, Illinois, is one of the new members of the faculty. Mr. Schmidt has recently spent six years on a farm in Northern Wisconsin, and comes as an assistant to Dr. Needham in the new Farm Course which proved so successful last year. He studied under Dr. Needham before the latter joined our faculty. Mr. Schmidt is also studying in the Arts College for his A.B. degree.

Three new men have been added to the instructing staff of the Extension Department. They are: George A. Everett, Assistant Professor; Cass W. Whitney, '13, Instructor; Montgomery Robinson, Assistant.

Professor Everett comes from the College of Arts and Sciences, Mr. Whitney was elected to the faculty after his graduation in June, and Mr. Robinson is a graduate of Princeton and is taking work at Cornell for an advanced degree.

* * *

At the last regular meeting of the Senior class, the following were elected officers for the coming year: President, L. E. Card; Vice-president, Miss G. G. Bristol; Secretary, M. C. Wilson; Treasurer, J. G. Wilkin; Rep. to Agricultural Association, E. S. Bird; Members of Honor System Committee: D. Alleman, L. E. Card, M. F. Abell.

* * *

The outlook for a successful soccer season this fall is encouraging. Of the team of last year only five have come out this fall. While this necessitates a complete team reorganization yet there are enough capable men on the field to make competition for the places keen. There are seven forward line men of experience in the game competing for five positions. The backfield situation is identically the same. Agr. has more material on the job than any other of the colleges and has put in a third more practice than the nearest competitor.

* * *

During the summer the old poultry plant was moved to its new quarters at Forest Home. Last year the University purchased the 30 acres north of and adjoining the Hasbrook farm, so that at present the Poultry Department has 80 acres with which to perform its many experiments.

* * *

Due to the new ruling in the College of Agriculture that no new student can enter the college with any conditions, at least fifty students were turned away. Nevertheless the registration of all students reached 1342, an increase of 174 over the same date of last year.
FORMER STUDENTS

F. S. JACOBY

'06, B.S. in Agr.—Professor Freman S. Jacoby graduated from Ithaca High School in 1906 and entered Cornell the following year. He specialized in Poultry Husbandry and during his senior year was student assistant in that department, also was a member of Hebs-sa, President of the Poultry Association and Agricultural Cheer Leader. Immediately after graduation Mr. Jacoby went to Kansas State Agricultural College as Instructor in Poultry Husbandry. The following year he went to Ohio State University as Instructor and the next year was promoted to Assistant Professor. Since going to Ohio State he has been actively connected with the poultry affairs of the state as Director of the Ohio State Poultry Association and was a member of the Board of Advisers of the first egg laying contest held at Mt. Grove, Mo.

Professor Jacoby has conducted extensive experiments in cooperation with the Veterinary Department on the practicability of the use of a serum for the prevention and cure of roup. During the past summer he has been connected with the Bureau of Chemistry as assistant in poultry and egg investigations. He also devoted considerable time to an educational campaign in Missouri in an effort to improve Missouri eggs.

The authorities at Ohio State turned to Cornell for the selection of instructors for their Poultry Department and from the alumni they chose Professor Jacoby because of his natural qualifications. With the means at his disposal he has accomplished splendid results at Ohio.

'89, B.S.A.—Hoxie W. Smith, who has been seventeen years with Borden’s Condensed Milk Company in Wisconsin and Illinois, is now located at 298 Bryant street, Buffalo, N. Y., with the Buffalo Gas Mantle Company.

'00, Ph.D.—Kary C. Davis, who has been Professor of Agronomy and Principal of the Short Course at Rutgers, has resigned his position and after September first will be head of the Leman A. Knapp School of Country Life at Nashville, Tenn.

'05, B.S.A.—H. W. Hochbaum has recently been placed in charge of agriculture in the Boise, Idaho, High School. This school is giving four years work in agriculture and had an enrollment of 160 during the past year. At present he has seventy acres of land which is to be increased. This will be completely stocked and run as a school farm. Three other persons are to assist in teaching agriculture. Mr. Hochbaum is also farm adviser for his county.

'05, W.P.C.—Gustav Walters is in charge of the mammoth poultry farm of the Johnston Stock and Farming Company of Marion, N. D., where he has been developing one of the largest poultry farms in the United States. Each year he has employed several of the Cornell Winter Poultry Course students, who report excellent opportunities for gaining experience.

'06, Sp.—Ernest Kelly, who is in charge of market milk investigations of the Dairy Division of the United States Department of Agriculture has just completed an investigation of the prices paid for milk to farmers supplying
26 of the leading cities of the United States during the year 1912.

'05, '06, Grad.—Paul Leslie Fairbanks, Professor at Colorado Agricultural College was in Ithaca during the latter part of September and the first of October visiting the Agricultural College.

'05, B.S.A., '07, M.S.—Dr. Robert Matheson has been teaching entomology at the Agricultural College in Truro, Nova Scotia. He now returns to Cornell to take up work in Entomological Investigation.

'07, Grad.—William Moore has recently returned from Transvaal, So. Africa where for the past three years he has been teaching entomology in the Agricultural College. He will now take up his work with the Department of Entomology at the University of Minnesota.

'07, B.S. in Agr., '08, M.S. in Agr.—N. H. Grubb has resigned his position in the Bureau of Plant Industry at Washington. He expects to take up commercial fruit growing in Kent, England. His address is 26 Avondale Road, Corydon, England.

'08, B.S.A.; '09, A.B.—Announcement has been made of the engagement of Miss Eunice Willice Jackson and Royal Gilkey. Miss Jackson is teaching in the Ithaca High School. Mr. Gilkey is supervisor of the farmers' reading course in the College of Agriculture.

THE PRODUCTIVE LIFE FELLOWSHIP

THOMAS NIXON CARVER

It offers to young men days of toil and nights of study. It offers frugal fare and plain clothes. It offers lean bodies, hard muscles, horny hands, or furrowed brows. It offers wholesome recreation to the extent necessary to maintain the highest efficiency. It offers the burdens of bringing up large families and training them in the productive life. It offers the obligation of using all wealth as tools and not as means of self-gratification. It does not offer the insult of ease, or aesthetic enjoyment, or graceful consumption, or emotional ecstasy. It offers, instead, the joy of productive achievement, of participating in the building of the Kingdom of God.
Short Course Students

Should Read This Carefully

The majority of the students are buying their pennants, pillows, skins, posters, etc. for room decorations and gifts from

The A & B Novelty Stores

316 College Ave. 321 Eddy St.

C. D. ABBOTT, '15
R. B BEAN, '15
W. W. BUCKBEE, '16

They have been well satisfied.
Why not gain this satisfaction yourself?
There are several reasons why you should give us your business:

1. OUR PRICES ARE THE LOWEST IN THE CITY.
2. OUR STOCK IS THE LARGEST ON THE HILL.
3. OUR STORES ARE CONVENIENTLY LOCATED.
4. WE AND OUR REPRESENTATIVES ARE ALL STUDENTS.

Also come to our College Ave. Store for Fountain Pens, Stationery, Card Indexes, Picture Framing, Cornell Jewelry, Drawing Instruments, Mackinaws and Sweaters, Cigars and Cigarettes.

SPECIAL

During your first week in Ithaca we offer an 18-in. x 48-in. pennant bearing the official short-course lettering for only 75c.
The Geneva Nursery Co.

A complete assortment of Hardy Fruit Trees, Ornamental Trees, Shrubs, Evergreens, Roses and Berries:

Varieties for Commercial Orchards a Specialty

WRITE FOR OUR SPECIAL PRICES TO PLANTERS

W. & T. SMITH CO.

GENEVA, N. Y.

Established 1846 1000 Acres
THE GROOMING TEST

Holstein-Friesian Bull, which won the Grand Champion Prize at the New York State Fair, Syracuse, N.Y., September 8 to 13, 1913, being groomed by The Kent Stationary Vacuum Groomer.

This Groomer is adapted to perfectly clean horses, cattle, etc. Animals groomed by the Vacuum Process are made more vigorous and can be kept in the best condition for less, as the process stimulates them, promotes the growth of hair and makes them generally cleaner and healthier. The building in which it is installed and nearby buildings can also be cleaned in THE SANITARY WAY by its use.

ADAPTED TO ALL KINDS OF POWER.

The Kent Vacuum Cleaner Company, Inc.
111 S. Washington St.
ROME, N.Y.
Also Manufacturers of Stationary Vacuum Cleaners.

WANTED—A MAN!

We deal with merchants and farmers. We want an office man to help sell, to help advertise, to help in correspondence and to grow up to a responsible position. If he was brought up on a farm, with some scientific and newspaper training, so much the better. No bonanza in salary to begin with, but an active, interesting and basic occupation with good people and a great future depending on the man. Address, with the fullest of particulars, stating age and references, which will be regarded as confidential, “President”, Box 229, Boston, Mass.

The Improved Simplex Link Blade Cream Separator

LIGHTEST RUNNING
LARGEST CAPACITIES
CLOSEST SKIMMING

The Only Practical Large Capacity Separators

Has more exclusive patented features of merit than all others—Has all the desirable points that can be put into a cream separator.

500 lbs., $75.00 900 lbs., $90.00
700 lbs., $80.00 1100 lbs., $100.00

D. H. BURRELL & CO.
LITTLE FALLS, NEW YORK
Manufacturers of Creamery, Dairy and Cheese Factory Apparatus
Also “B-L-K” COW MILKERS

In writing to advertisers please mention THE CORNELL COUNTRYMAN
FAVORITISM

Favoritism may be partial or favoritism may be merited.

Those closely in touch with the facts never question for a moment that the favoritism shown for

**Wyandotte**

by an overwhelming majority of buttermakers and dairy authorities is anything less than merited favoritism.

"Wyandotte" cleanliness is known the world around. It is protective. It insures milk and its products against contamination. It is the arch enemy of milk bacteria. It is the champion of purity and sanitary excellence. It is the standard of dairy cleanliness.

Who allows anything less than "Wyandotte" cleanliness where milk is kept is inviting the bacteria germ, lessened milk quality and a lower grade of butter or cheese. Buttermakers who have discovered this fact naturally favor "Wyandotte" Dairyman's Cleaner and Cleanser and they number three out of every four.

No person is ever asked to favor "Wyandotte" until he is absolutely convinced of every claim for it. This always has been the understanding and why we always say, if not what we claim for it, it costs you nothing.

Ask your dealer for a sack, or write your supply house.

**THE J. B. FORD CO., Sole Manufacturers**

**Wyandotte, Mich., U. S. A.**

This Cleaner has been awarded the highest prize wherever exhibited.
I'll Feed Your Stock 60 Days Before You Pay

I'll Show You How

To make them grow faster—thrive better—look better—
Put on a set on no more feed—stop losses from worms—
I have done it for thousands of farmers and stockmen—I'll do it for you. All I ask is the privilege of sending you enough Sal-Vet to last your stock 60 days. I simply want to show you what a remarkable change Sal-Vet will work on your sheep, your hogs, your horses and cattle. I want to show you how it will improve their condition—rid them of all stomach and free intestinal worms which are the big drain on your stock profits. I don't ask a penny of pay in advance. I prove all my claims first—and if you are not satisfied at the end of 60 days, you do not pay me a cent.

The Great Worm Destroyer and Stock Conditioner

Sal-Vet is first a worm destroyer; second, a conditioner; a medicated salt. It contains several medicinal elements which promptly kill and expel stomach and free intestinal worms and in the meantime puts the digestive organs in a healthy, vigorous condition. It sharpens the appetite—it turns the blood—puts life and vitality into the whole system. It aids digestion—helps the animal to derive more good from its feed.

No Drenching—No Handling—They Doctor Themselves

It is easy to feed Sal-Vet—you feed it just as you do salt. Put it where all your stock—sheep, lambs, hogs, horses and cattle, can get at it daily and they will doctor themselves. It will keep your hogs, sheep and lambs from dying—make your horses and cattle look better, thrive better—save you money in saving feed—make you more profit by making your stock more valuable.

Send No Money—Simply Send Coupon

No orders filled for less than 40 lbs. on this 60 day trial offer.

In writing to advertisers please mention The Cornell Countryman
Best-Hated of Farm Tasks

ON the spreaderless farm the thought of the great heaps of manure piling up constantly in barn yards, stables, and stalls, is a gloomy one. Those piles mean much disagreeable and hard work. Three times every bit must be handled. It must all be loaded onto high wagons. It must be raked off in piles in the fields. Then every forkful must be shaken apart and spread.

Compare that old-fashioned method with the spreader way. You pitch the manure into the spreader box, only waist high, drive out and — the machine does all the rest.

And, far more important, if you buy an I H C spreader one ton of manure will go as far as two tons spread by hand, with the same good effect on the soil, and it will all be spread evenly.

I H C Manure Spreaders

are farm necessities. The man who uses one will get the price of it back in increased crops before its newness has worn off.

I H C spreaders are constructed according to plans in which every detail, every feature, is made to count. They are built to do best work under all circumstances, and to stand every strain for years. They are made in all styles and sizes, for small farms and large, low and high machines, frames of braced and trussed steel. Uphill or down, or on the level, the apron drive assures even spreading, and the covering of corners is assured by rear axle differentials. In all styles the rear axle is placed so that it carries near three-fourths of the load. This, with the wide-rimmed wheels with Z-shaped lugs, makes for plenty of tractive power. Winding of the beater is prevented by large diameter and the beater teeth are long, strong and chisel pointed.

A thorough examination of the I H C spreader line, at the store of the local dealer who sells them, will interest you. Have him show you all these points and many more. Study the catalogues you can get from him, or, write the

International Harvester Company of America
(Incorporated)

Chicago USA

In writing to advertisers please mention THE CORNELL COUNTRYMAN
BE ON THE
SAFE SIDE!

You needn't fear a visit from the Sealer of Weights and Measures if you use . . . .

THATCHER
MILK
BOTTLES

You won't give over-capacity either, because they are accurate!
Send for our free book. It tells exactly why Thatcher bottles add to your profits.

THATCHER MFG. CO.
103 Market St. ELMIRA, N. Y.

To every bag of H-O Scratching Feed we fasten a guaranteed analysis tag which shows that this feed contains hulled oats or oat groats and no weed seeds.
For no other Scratching Feed can such a claim be made.

H-O POULTRY FEEDS
INCLUDE
Steam-Cooked Chick Feed
Poultry Feed Chick Feed
Dry Poultry Mash Scratching Feed

JOHN J. CAMPBELL, Gen. Sales Agt.
Hartford, Conn.

The H-O Company Mills, Buffalo, N.Y.

Now is the time to install the
Simplicity Cow Milkers

the Milkers that drew the largest crowd of farmers at the New York State Fair, and with the Milking Machine outfit put in a SIMPLICITY VACUUM CLEANER to keep the horses and cattle clean this winter.

For full particulars, write

F. GROFF & SON
St. Johnsville, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Christy Engraving Co.
WHERE QUALITY COUNTS

Halftones    Illustrations
Line Etchings  Designing
and
Embossing Plates

We are Specialists in

Color Plate Engraving and
Color Printing

If you want to increase the selling power of your next catalogue, if you want to make your advertising as effective as possible, you should look into the question of using color reproductions. Our success lies, not alone in the making of proper plates, but in printing them as they should be. Our product is used by companies of international reputation. We shall be pleased to submit estimates or samples of work.

611-18 Central Building
Rochester, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
FRUIT TREES — FOR FALL PLANTING —

We have one of the finest blocks of Apples, Pears, Cherries, Plums we have ever grown. No scale. Write for free illustrated catalog and fall prices.

SAMUEL FRASER
Geneseo, N. Y.

Air-Tight Frost-Proof Permanent

No hoops to tighten or loosen.
Don't order your Silo before you get our free catalog.

CRAINE Patent Triple Wall Silo
3 Walls — therefore 3 times as warm and 3 times as strong.
Let us tell you more.

The W. L. Scott Lumber Co.
Norwich, N. Y.
Milwaukee, Wis.

"HAMMOND'S GRAPE DUST"

Used effectively to kill Mildews on Roses and other Plants...

Sold by the Seed Dealers.
For pamphlet on Bugs and Blights address
HAMMOND'S PAINT & SLUG SHOT WORKS
BEACON, N. Y. (Fishkill-on-Hudson, N. Y.)

"SCALECIDE"

TRADE MARK REG. U. S. PAT. OFFICE
DON'T NEGLECT FALL SPRAYING. GET READY NOW.

Many trees can be saved that would die before Spring if unsprayed.
"SCALECIDE" will positively destroy San Jose and Cottony Maple Scale, Pear Psylla, etc., without injury to the trees.

Many of the finest orchards in the country have been sprayed with "SCALECIDE" for the past eight years, producing record crops and prize winning fruit. It costs less to spray with "SCALECIDE" than Lime-Sulfur, and does better work. We stake our reputation on this assertion. Write today for our booklet, "Scalecide, the Tree Saver." Sent free on request.

B. G. PRATT Co., 50 Church St., New York City.

Dixie Brand

COTTON SEED MEAL

THE CHEAPEST SOURCE OF PROTEIN FOR DAIRY COWS

HUMPHREYS-GODWIN CO., Memphis, Tenn.
Spray Book Free

It tells
"How to Spray, When to Spray, Which Sprayer to Use"

The spray formulas in this book make it a valuable guide for you no matter how large or small your acreage.

Send for it now and have it at hand for ready reference.

16 West Fall Street
Seneca Falls, N. Y.

PURE BEEF CRACKLINGS

TRADE MARK REGISTERED

THIS BRAND HAS ESTABLISHED
A NEW STANDARD FOR

BEEF SCRAP

THE FLAVELL CO.
Asbury Park, N. J.

More for Less
Water Money

FAIRBANKS-MORSE
ECLIPSE ENGINES
WILL FIT ANY PUMP

200 to 4000 gallons per hour, depending on depth of well and style of pump. Easily carried from place to place by one man. So simple a child can start it.

COMPLETE CATALOG ON REQUEST

DAVIS-BROWN ELECTRIC CO.
Water, Power, Light, Pumping, Laundry and Ventilating Equipment
115-117 South Cayuga Street
ITHACA, N. Y.
The very best that can be grown. Ours are all budded on whole-root French seedlings. All the leading varieties, absolutely true to name. Send list of wants and let us quote you special prices. Will be glad to send samples to interested parties.

REFERENCES: Any bank or business house in Geneva.

The R. G. Chase Company

Geneva, N. Y.
Spray Book Free
It tells
"How to Spray, When to Spray, Which Sprayer to Use"

The spray formulas in this book make it a valuable guide for you no matter how large or small your acreage.

Send for it now and have it at hand for ready reference.

16 West Fall Street
Seneca Falls, N. Y.

The Flavell Co.
Asbury Park, N. J.

More Water for Less Money

Eclipse Engines
WILL FIT ANY PUMP

200 to 4000 gallons per hour, depending on depth of well and style of pump. Easily carried from place to place by one man. So simple a child can start it.

COMPLETE CATALOG ON REQUEST

Davis-Brown Electric Co.
Water, Power, Light, Pumping, Laundry and Ventilating Equipment
115-117 South Cayuga Street

In writing to advertisers please mention The Cornell Countryman
THE PROCEEDINGS OF THE
NEW YORK STATE DRAINAGE ASSOCIATION

VOLUME I FOR THE YEARS 1910 AND 1911

Contains eighty-five pages of Solid, Practical Experience, Special Papers, Discussion and Prize Reports, dealing with Successful Systems of Farm Drainage.

PRICE 25 CENTS, postage paid. Five Prizes consisting of Valuable Cups and Medals are offered for comprehensive reports on Farm Drainage Systems in operation in the state. Competing papers should be submitted to the secretary by January 15, 1914.

GET A DESCRIPTIVE CIRCULAR.

ELMER O. FIPPIN, Secretary - ITHACA, N. Y.

MAK-GRO
Odorless
PLANT
FOOD for
FLORISTS
and
GENERAL GREENHOUSE WORK

A Scientific, Improved, Concentrated, Quick-Acting, Complete Fertilizer, made in Non-Acid Granular Form from the Highest Grade Materials obtainable.

Especially adapted to Greenhouse Work for Flowers, Fruits and Vegetables.

Special Formulas for General and Special Greenhouse Crops, prepared by men who have made a life study of Greenhouse Work—not only in this country but abroad.

The services and advice of our experts is at your disposal on all matters pertaining to your Greenhouse problems.

MAK-GRO ODORLESS PLANT FOOD is put up in various sized packages, and is sold in lots of from one pound to a carload.

The one-pound cans and small packages make a splendid side line for Florists having their own stores.

Write us for further particulars.

CONSUMERS FERTILIZER CO., Longacre Building
Suite E, New York

APPLE TREES

The very best that can be grown. Ours are all budded on whole-root French seedlings. All the leading varieties, absolutely true to name. Send list of wants and let us quote you special prices. Will be glad to send samples to interested parties.

REFERENCES: Any bank or business house in Geneva.

The R. G. Chase Company Geneva, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
BOOK BINDERY

START RIGHT
HAVE YOUR COUNTRYMAN BOUND
WE BIND ANYTHING

J. WILL TREE’S
113 N. Tioga Street

MILK CAN COVER EXPANDER
MAKES OLD COVERS NEW
TIGHTENS LOOSE RIMS
AND STRAIGHTENS DENTED ONES INSTANTLY
GUARANTEED TO PLEASE
PRICE, $8.50 EACH
WISNER MFG. CO., New York City
“Everything For Dairymen Always In Stock.”

Established 1887
LARKIN BROS.
RETAILING, WHOLESALING AND
JOBING GROCERS
JOHN J. LARKIN, Proprietor and Manager
408 Eddy Street, Ithaca, N. Y.

AT MINTZ’S
YOU WILL ALWAYS FIND COMPLETE ASSORTMENTS OF MACKINAWS,
SUITS, RAINCOATS, SWEATERS, FLANNEL SHIRTS, HATS,
CAPS, PAJAMAS, UNDERWEAR AND OVERCOATS.

129--East State Street--131

If you are a Cornellian you will eventually have to have this picture.

WHY NOT GET IT NOW?

FROM
G. F. MORGAN
THE UNIVERSITY
PHOTOGRAPH SHOP
314 College Avenue
ITHACA - - - NEW YORK

Cafeteria
HOME ECONOMICS BUILDING
THREE MEALS DAILY

In writing to advertisers please mention THE CORNELL COUNTRYMAN
SWEATERS

CLEANED BY THE NEW PROCESS
HAVE THAT NEW LOOK

IT'S THE PROCESS
THAT CLEANS CLEAN

Modern Dry Cleaning and Pressing Works

W. F. FLETCHER & CO., 103 Dryden Road

Norton Printing Co. 317 E. State St.
COLLEGE, FRATERNITY and COMMERCIAL PRINTING
Engraved Cards and Invitations Rubber and Metal Hand Printing Stamps

Robinson's Photograph Shop 214 East State Street
Photographer for the Senior Class

White & Burdick Co.
The oldest and largest
Drug Store in the City

Supplies for Agricultural Students
a Specialty

New York State College of Agriculture at Cornell University
THE DEPARTMENT OF ANIMAL HUSBANDRY

Breed Percheron Horses, Holstein, Jersey, Guernsey, Ayrshire,
Short Horn Cattle, Dorset, Shropshire, Rambouillet Sheep, Cheshire Swine.
Regular Public Sale of all Surplus Young Stock, except Swine, on

FRIDAY OF FARMERS' WEEK EACH YEAR
It's very human for one to buy his shoes from the store that can offer the most inducements in the way of style, assortment, quality and big value. For that reason we expect to see you in this store very soon now.

THE NEW

Fall Styles

are priced at $4.00 to $5.00

Banister make $6.00 to $10.00

ITHACA BOOT SHOP, Inc.
204 E. State Street

New York Life
Insurance Company

C. H. WEBSTER, Agent

OFFICE: Student Supply Store
RESIDENCE: 121 Catherine St.

BOTH PHONES
WISE
THE PRINTER
Is at your service for all classes of Fine
PRINTING ENGRAVING ETC.
Buffalo Street, Next to Post Office, ITHACA, N.Y.

Ithaca Phone 76x

The Palace Laundry ...
323 and 325 Eddy Street

F. C. BARNARD, Prop.

ITHACA HOTEL
Ithaca's Leading Hotel

American and European Plan

All rooms have running hot and cold water, electric lights, local and long distance telephones. Our feature is the modified European plan, served in the Dutch Kitchen at the most reasonable prices obtainable.

RATES
American Plan, $3.00 and up.
European Plan, 1.25 and up.

J. A. and J. N. CAUSER, Props.

STUDENT SUPPLY STORE

The Modern Method Laundry
JOHN REAMER, Prop.

A. B. KENNEDY Dealer in Watches and Jewelry, Cut Glass and Fine Silver for Weddings. Cornell Pins, Fobs, Souvenir Goods, etc.

EAST STATE ST., ITHACA, N. Y. Opp. New Ithaca Hotel

We keep a fine line of diamonds and jewelry and do all kinds of repairing neatly at : :

Heggies' Jewelry Store ===

136 E. State St.
THE H. C. CABLE ART STORE
The Emporium of Decorative Beauty
405 COLLEGE AVE.

PHOTO FACTS

25 years in the business. 14 years at present stand (longer than any other Photographer in Ithaca.) We have made Photos of a great many students and pleased them and we guarantee to please you. We make just what you want from $1.00 per doz. up. Make engagements by either phone.

Van Buren
Photographer

WE DO YOUR MENDING FREE

FOREST CITY LAUNDRY
E. M. MERRILL

PHONE 209 NORTH AURORA STREET

CUT FLOWERS, DECORATIVE PLANTS, ETC.
THE BOOL FLORAL CO.
215 East State St., Ithaca, N. Y.

PETER SCUSA
MODERN SHOE REPAIRING
Neatly and Promptly Done
Shoes called for and delivered in any part of the City
Ithaca Phone 428-C 405 Eddy St., ITHACA, N. Y.

TYPEWRITERS

New and Rebuilt
Any Make
Sold, Rented and Repaired

Special Rates for the College Year

H. L. O’DANIEL,
Both Phones. 204 N Tioga St.

C. T. KELLEY

LIVERY

ITHACA, N. Y.

PIANOS, MANDOLINS, GUITARS, BANJOS and VIOLINS
Rented or sold on Easy Payments. “Songs of Cornell.” All the latest music; Strings and supplies for all instruments at lowest prices.

LENT’S MUSIC STORE
122 N. Aurora Street
Victor Talking Machines, Records, Etc.

KOHM & BRUNNE

THE LATEST STYLES
AT MODERATE PRICES

TAILORS
222 East State Street

In writing to advertisers please mention THE CORNELL COUNTRYMAN
"If you get it from us it's right"

**BUTTRICK & FRAWLEY**

One Price Clothiers and Furnishers

This fall season finds us more fully equipped to satisfy your wants than ever before. Special attention has been paid to get best material at minimum price. Suits and Overcoats, $10.00 to $30.00; Raincoats, $5.00 to $30.00; Mackinaws, $6.00 to $12.00. We make Suits to measure and save you from $5.00 to $10.00.

**VISIT OUR SHOE DEPARTMENT**

Hats, Gloves, Shirts, Sweaters, Underwear, and all other articles you'd find in a first class shop. Full Dress and Tuxedo Suits for sale and to rent.

"If not we make it right" 134 East State Street

**PROFESSORS, STUDENTS, INSTRUCTORS**, you will get **MORE INSURANCE FOR LESS MONEY**

IF YOU HAVE A POLICY WITH

The Travelers Life Insurance Company

OF HARTFORD, CONN.

J. J. SINSABAUGH, Agent,

149 East State Street ITHACA, N. Y.

INSURANCE OF ALL KINDS

* * * * * * * * * * * * * * * * *

Williams Brothers

ITHACA, NEW YORK

**WELL DRILLING**

**MACHINERY AND TOOLS**

The

Clinton House

Corner Cayuga and Seneca Sts.

TABLE D'HOTE SERVICE

Cuisine and Service Unexcelled

Luncheon, 12 to 2 - - - $0.75
Dinner, 6 to 8 - - - - .75
Sunday Dinner, 1 to 2:30 - 1.00

SPECIAL HOLIDAY DINNERS

"Ithaca's Popular Hotel"

---

In writing to advertisers please mention THE CORNELL COUNTRYMAN
**BAXTER’S**

Clothing and Furnishings

have pleased hundreds of CORNELL students during the last Five Years. Why? Because we sell only first class merchandise and guarantee every dollar's worth of it; we fit our clothing to please; our service is unexcelled, and last but not least, we sell at One Price to All.

Please consider this “Shop,” “Your Shop.” You get your money's worth here.

**E. B. BAXTER,**
**ONE PRICE TO ALL**

“The Quality Shop”
Satisfaction guaranteed

150 E. State St., Ithaca, N.Y.
**The Shops of Shops**

Come right in to headquarters where you can find everything for man's wear at lowest prices.

Leave your measure for **ONE HALF DOZEN SHIRTS** for **ONE DOZEN DOLLARS**.

We have a whale of a stock of Furnishing Goods, Hats and Caps.

**TOWN SHOP,**
**L. C. BEMENT**
142 E. State St.
**HILL SHOP, The Toggery Shops**
413 College Ave.

---

**THE TOMPKINS COUNTY NATIONAL BANK**

135-137 E. State St.

Capital $100,000

Established 1836

Safe Deposit Boxes for Rent

Surplus and Undivided Profits $165,000

---

**THE FIRST NATIONAL BANK**

Cornell Library Building

Capital, Surplus and Profits, $350,000.00

Oldest National Bank

Safe Deposit Boxes for Rent

---

**ITHACA SAVINGS BANK**

INcorporated 1868

Tioga Street, cor. Seneca

ITHACA, N. Y.

---

When wanting

**QUALITY, SERVICE AND CLEANLINESS**

go to

**WANZER & HOWELL, The Grocers**

---

**PICTURES**

**PICTURE FRAMES**

**STUDENTS' FURNITURE**

Manufacturers of Special Furniture for

**FRATERNITIES AND CLUB ROOMS**

**H. J. BOOL CO.**

(Opposite Tompkins County Bank)

---

In writing to advertisers please mention **THE CORNELL COUNTRYMAN**.
OUR CHRISTMAS STOCK OF

CARDS  BOOKS
TOYS and GAMES

IS MUCH LARGER THAN EVER BEFORE

FRESH CANDY AND SALTED NUTS
EVERY DAY

R. C. OSBORNE & CO.
119-121 East State Street

A postal card request will bring you a copy of our list of some hundreds of

Practical Agricultural Books

compiled from our lists of regular and recommended books as used at the N. Y. State Agricultural College here at Cornell :

The Corner Bookstores

ITHACA, N. Y.
You can’t afford Not to study and use the Guide Book
“How to Grow and Market Fruit”

A fruit growers' guide book that really gives the late and correct orcharding practices, from dynamiting soil to box packing and selling direct to consumers.

Many of our best orchardists tell us they keep this book on their desks all the time, and refer to it whenever they are not sure—and that it almost always tells them exactly what to do.

Has been adopted as a text book in two or three colleges, is recommended by dozens of others, and is endorsed by half the Experiment Stations and Horticultural Departments in the country.

“How to Grow and Market Fruit” is a 5½ x 9 inch book of 150 pages (very neat and concise) and 90 pictures. It is sold at the low price of 50 cents—and even that amount is rebated whenever you send us a $5 order for trees and plants.

NEWS FROM HARRISONS, BERLIN


Last season we began a new policy which never will be departed from. We sell only trees we grow ourselves. Only with these can we be sure of variety, vitality, health and bearing characteristics. Our fruit trees are budded from bearing orchards to get maximum inherent bearing habits and abilities.

COME TO BERLIN. You will be welcomed at our office, and we will give you two or three days as full of education as any others you ever passed. Eastern Shore farms of great worth are for sale at low figures. Have a look at them!

Harrisons' Nurseries, 
Cornell Street,
BERLIN, MD.
Are equipped with a perfect oiling system

In a machine which is operated at the speed required for a cream separator perfect oiling is very necessary. The new system of De Laval automatic oiling provides for a constant and liberal supply of CLEAN oil to every wearing surface of the machine at all times. There are no oil holes to fill up with dirt or perhaps to be neglected altogether, and every part is supplied with clean oil from the oil reservoir automatically and constantly.

In other, so-called, automatic oiling systems some of the parts have to be oiled by hand and no provision is made for getting rid of dirt that may get into the oil from the outside or of small particles of metal that come from wear, so that after a short time the oil supply becomes foul and injurious to the finely adjusted wearing parts. **DE LAVAL CREAM SEPARATORS** have the only automatic oiling system which provides for a constant supply of fresh oil and at the same time the constant discharge of the used oil together with all worn metal particles or dirt which may have gotten into the used oil.

The perfect system of De Laval lubrication means an easier running and a much longer wearing machine. Visit the local De Laval agent and ask him to explain the advantages of De Laval automatic oiling.

The new 72-page De Laval Dairy Hand Book, in which important dairy questions are ably discussed by the best authorities, is a book that every cow owner should have. Mailed free upon request if you mention this paper. New 1913 De Laval catalog also mailed upon request. Write to nearest office.

**The De Laval Separator Co.**

New York  Chicago  San Francisco  Seattle
The successful farmer of today has gained success through the study and application of scientific principle plus the practice of economic methods.

**WADSWORTH DOUBLE-THICK PAINT**

is formulated on scientific chemistry, is economical in cost, remarkable for covering capacity and of many years' durability when properly applied.

Tried and proved for more than half a century. A postal card will bring you our booklet “Common-Sense Rules for the Application of Paint,” by one who knows.

**EDWARD JOSLIN**

GENERAL SALES AGENT

No. 11 South First St. FULTON, N. Y.

---

Abe Martin says: “Success did not succeed”. Maybe so, but the orchard grower that succeeds in spraying his fruit trees this fall with REX Lime and Sulphur Solution will be successful in preventing a mighty big lot of trouble that might be awaiting him because of spore life that is active all during the dormant period. We stake the reputation of thousands of the best fruit growers in the United States on the assertion that a good, thorough wash with REX Lime and Sulphur Solution about one week or ten days after the leaves drop will banish San Jose Scale and build up the trees with less expense and more satisfaction than any spray material that could possibly be used.

Woodman spare the tree; do not oil it but spray it and save it!

We were creators of Commercial Lime and Sulphur Solution and are now the only EXCLUSIVE manufacturers of it in the United States. The Rochester office would be pleased to have your inquiries. Address

**The Rex Company**

ROCHESTER, N. Y.

P. O. BOX 712

---

In writing to advertisers please mention THE CORNELL COUNTRYMAN
OFFICIAL PUBLICATIONS of CORNELL UNIVERSITY

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second-class matter at the post office at Ithaca, N. Y. pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and postfree on request:

- General Circular of Information for prospective students,
- Announcement of the College of Arts and Sciences,
- Courses of Instruction in the College of Arts and Sciences,
- Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts,
- Announcement of the College of Civil Engineering,
- Announcement of the College of Law,
- Announcement of the College of Agriculture,
- Announcement of the Medical College,
- Announcement of the New York State College of Agriculture,
- Announcement of the Winter-Courses in the College of Agriculture,
- Announcement of the New York State Veterinary College,
- Announcement of the Graduate School,
- Announcement of the Summer Session,
- The President’s Annual Report,
- Pamphlet on prizes, samples of entrance and scholarship examination papers, special departmental announcements, etc.

Correspondence concerning the publications of the University should be addressed to

The Registrar of Cornell University

ITHACA, N. Y.

New York State College of Agriculture at Cornell University

W. A. Stocking, Acting Director.

The College of Agriculture is one of several co-ordinate colleges comprising Cornell University. The work of the College is of three general kinds: The regular teaching work of undergraduate and graduate grade; the experiment work; the extension work. The resident instruction falls in the following groups:

1. Four-year course, leading to the degree Bachelor of Science in Agriculture (B.S. in Agr.). When desired, the last two years may be chosen in subjects pertaining to landscape architecture and out-door art, or to home economics. In the Graduate School of the University students may secure the Master’s and Doctor’s degrees (M.S. in Agr. and Ph.D.).

2. Special work, comprising one or two years: (a) Agriculture special; (b) Nature-study special or normal course.

3. Winter-Courses of 12 weeks: (a) General Agriculture; (b) Dairy Industry; (c) Poultry Husbandry; (d) Horticulture; (e) Home Economics.

THE INSTRUCTION IS DIVIDED AMONG TWENTY-TWO DEPARTMENTS AS FOLLOWS:

| Farm Practice and Farm Crops | Animal Husbandry |
| Farm Management | Poultry Husbandry |
| Agricultural Chemistry | Dairy Industry |
| Plant Physiology | Farm Mechanics |
| Plant Pathology | Forestry |
| Soil Technology | Rural Art |
| Plant Breeding | Drawing |
| Entomology, Biology and Nature-Study | Home Economics |
| Horticulture | Meteorology |
| Pomology | Rural Economy |
|                     | Rural Education |
|                     | Extension Teaching |
The Cornell Countryman

BUYERS’ GUIDE

TO OUR READERS: The following well known business firms are boosters of the Countryman and deserve your patronage. 'Phone or postal will bring prompt service.

<table>
<thead>
<tr>
<th>ATHLETIC GOODS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treman King &amp; Co</td>
<td>31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BANKS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>First National</td>
<td>26</td>
</tr>
<tr>
<td>Tompkins County National</td>
<td>26</td>
</tr>
<tr>
<td>Ithaca Savings</td>
<td>26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BOOKS AND MAGAZINES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Corner Book Stores</td>
<td>22</td>
</tr>
<tr>
<td>N. Y. State Drainage Association</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BOOK BINDING</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Will Tree</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CLEANING AND PRESSING</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>W. F. Fletcher</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CUTS AND ENGRAVING</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christy Engraving Co</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DAIRY SUPPLIES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. H. Burnett &amp; Co</td>
<td>12</td>
</tr>
<tr>
<td>De Laval Separator Co</td>
<td>11</td>
</tr>
<tr>
<td>The J. B. Ford Co</td>
<td>6</td>
</tr>
<tr>
<td>Chr. Hansen's Laboratory</td>
<td>11</td>
</tr>
<tr>
<td>Thatcher Mfg. Co</td>
<td>14</td>
</tr>
<tr>
<td>F. Groff &amp; Son</td>
<td>12</td>
</tr>
<tr>
<td>Wisner Mfg. Co</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DRUGS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>White &amp; Burdick</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FEEDS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. R. Feil Co</td>
<td>19</td>
</tr>
<tr>
<td>The H.-O. Co. Mills</td>
<td>19</td>
</tr>
<tr>
<td>Flavell Co</td>
<td>21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FERTILIZERS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The German Kali Works</td>
<td>18</td>
</tr>
<tr>
<td>Humphreys-Godwin Co</td>
<td>17</td>
</tr>
<tr>
<td>Consumers' Fertilizer Co</td>
<td>7</td>
</tr>
<tr>
<td>Bowker Fertilizer Co</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FLORIST</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Bool Floral Co</td>
<td>29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FURNITURE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. J. Bool Co</td>
<td>26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GREENHOUSES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lord &amp; Burnham Co</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GROCERIES AND MEATS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. S. O'Brien</td>
<td>20</td>
</tr>
<tr>
<td>Wanzer &amp; Howell</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOTEL</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ithaca Hotel and Cafes</td>
<td>28</td>
</tr>
<tr>
<td>Clinton House</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMPLEMENTS AND MACHINERY</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gould's Mfg. Co</td>
<td>21</td>
</tr>
<tr>
<td>International Harvester Co</td>
<td>16</td>
</tr>
<tr>
<td>Kent Vacuum Cleaner Co</td>
<td>11</td>
</tr>
<tr>
<td>Davis-Brown Co</td>
<td>21</td>
</tr>
<tr>
<td>Chicago Flexible Shaft Co</td>
<td>10</td>
</tr>
<tr>
<td>Williams Bros</td>
<td>30</td>
</tr>
<tr>
<td>W. L. Scott Lumber Co</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INSURANCE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York Life Ins. Co</td>
<td>32</td>
</tr>
<tr>
<td>Traveler's Life Ins. Co</td>
<td>30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>JEWELRY</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. A. Heggie &amp; Bro. Co</td>
<td>28</td>
</tr>
<tr>
<td>A. B. Kennedy</td>
<td>28</td>
</tr>
<tr>
<td>J. Hauserman</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LAUNDRIES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest City Laundry</td>
<td>29</td>
</tr>
<tr>
<td>Palace Laundry</td>
<td>28</td>
</tr>
<tr>
<td>Modern Method Laundry</td>
<td>28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEN'S FURNISHINGS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. B. Baxter</td>
<td>27</td>
</tr>
<tr>
<td>L. C. Bennett</td>
<td>26</td>
</tr>
<tr>
<td>Buttrick &amp; Frawley</td>
<td>30</td>
</tr>
<tr>
<td>University Haberdashery</td>
<td>31</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MUSIC STORE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hickey's</td>
<td>31</td>
</tr>
<tr>
<td>Lent's</td>
<td>29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NURSERY</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wm. P. Stark Nurseries</td>
<td>13</td>
</tr>
<tr>
<td>Maloney Bros. &amp; Wells Co</td>
<td>14</td>
</tr>
<tr>
<td>Samuel Frazer</td>
<td>13</td>
</tr>
<tr>
<td>Harrison's</td>
<td>37</td>
</tr>
<tr>
<td>W. &amp; T. Smith</td>
<td>14</td>
</tr>
<tr>
<td>R. G. Chase Co</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PAINTS AND OILS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>King Paint Mfg. Co</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHOTOGRAPHER</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conlon</td>
<td>27</td>
</tr>
<tr>
<td>Robinson</td>
<td>24</td>
</tr>
<tr>
<td>Van Buren</td>
<td>29</td>
</tr>
<tr>
<td>Morgan</td>
<td>29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PICTURE FRAMING, ETC.</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. C. Cable Art Store</td>
<td>29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>POULTRY AND STOCK</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. U. Dept. of Poultry Husbandry</td>
<td>22</td>
</tr>
<tr>
<td>C. U. Dept. of Animal Husbandry</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRINTING</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norton Printing Co</td>
<td>24</td>
</tr>
<tr>
<td>Wise</td>
<td>28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RAILROADS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lehigh Valley</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REAL ESTATE</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Life Co</td>
<td>11</td>
</tr>
<tr>
<td>W. B. Georgia &amp; Co</td>
<td>29</td>
</tr>
<tr>
<td>Ithaca Realty Co</td>
<td>22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEEDS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wing Seed Co</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SCHOOLS AND COLLEGES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornell University</td>
<td>3</td>
</tr>
<tr>
<td>New York State College of Agriculture</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SHOES AND REPAIRING</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peter Scusa</td>
<td>29</td>
</tr>
<tr>
<td>Ithaca Boot Shop</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPRAY MATERIALS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. G. Pratt Co</td>
<td>17 and 20</td>
</tr>
<tr>
<td>Benjamin Hammond</td>
<td>17 and 20</td>
</tr>
<tr>
<td>Rex Co</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STUDENT SUPPLIES</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Co-op</td>
<td>8</td>
</tr>
<tr>
<td>Rothschild Bros</td>
<td>25</td>
</tr>
<tr>
<td>Student Supply Store</td>
<td>28</td>
</tr>
<tr>
<td>A and B Store</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TAILORS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carr &amp; Stoddard</td>
<td>27</td>
</tr>
<tr>
<td>Schultz</td>
<td>25</td>
</tr>
<tr>
<td>Kohn &amp; Brunne</td>
<td>29</td>
</tr>
</tbody>
</table>
A Better Silo for Better Farmers

You prize the instruction in modern agriculture received at Old Cornell, and try to put into practice back on the farm, the many better ways you’ve learned to do things. As a progressive farmer or dairyman, you are interested in better ensilage. You will surely appreciate, if you investigate, the many advantages offered by the

NATCO IMPERISHABLE SILO

Here’s the new type of silo—the silo that has raised the standard of quality of ensilage for feeding. The silo whose walls are moistureproof and air-tight and consequently keep ensilage from becoming sour, moldy or rotten.

The Natco Imperishable Silo is built of hollow vitrified-clay blocks, reinforced by two continuous steel bands between each layer of blocks. There are no staves to warp, shrink or split. No hoops to tighten. No repair bills. Never needs painting. The Natco Imperishable Silo is

Weatherproof Decayproof Fireproof

It will last a lifetime and the first cost is the last cost. It can be erected by any mason as easily as a carpenter builds the old type of silo. When completed you have a very attractive as well as an efficient and durable silo added to your permanent farm building assets.

SEND TODAY FOR NATCO SILO BOOK. We have an attractively illustrated book which we will be glad to send free to Cornell men or to any farmer interested in keeping ensilage fresh, sweet and succulent. Write for a copy now and names of owners of Natco Imperishable Silos in your locality.

NATIONAL FIRE PROOFING COMPANY
SYRACUSE NEW YORK
Cleanliness is “Prolific”

Benjamin Franklin says: “Money is of a prolific, generating nature. Money can beget money, and its offspring can beget more, and so on.”

So with "Wyandotte" cleanliness. It is of a generating nature, for the protection it gives to milk and cream not only insures a better quality of milk and cream but makes possible a higher grade of butter or cheese, and for higher grade butter or cheese there is a big demand, and demand in turn means higher price, and higher price means bigger pay for your labor.

"Wyandotte's" success in cleaning the factory is predetermined. It is made to remove bacteria, to freshen all staleness and to produce a sanitary condition that protects milk from deteriorating influences. Other benefits are derived from the excellent condition in which it keeps the utensils and the containers, for "Wyandotte" is not an injurious chemical which will corrode or rust. It is equally harmless to the thing cleaned as well as to the milk quality.

Ask your dealer for "Wyandotte" or write your supply house. Give it a thorough trial and then you, too, will appreciate why it is used steadily by 85% of the factorymen as well as by hundreds of dairymen and milk dealers. All claims always guaranteed.

THE J. B. FORD CO., Sole Manufacturers
Wyandotte, Mich., U. S. A.

This Cleaner has been awarded the highest prize wherever exhibited.
THE PROCEEDINGS OF THE
NEW YORK STATE DRAINAGE ASSOCIATION
VOLUME I FOR THE YEARS 1910 AND 1911
Contains eighty-five pages of Solid, Practical Experience, Special Papers, Discussion and Prize Reports, dealing with Successful Systems of Farm Drainage.

PRICE 25 CENTS, postage paid. Five Prizes consisting of Valuable Cups and Medals are offered for comprehensive reports on Farm Drainage Systems in operation in the state. Competing papers should be submitted to the secretary by January 15, 1914.

GET A DESCRIPTIVE CIRCULAR.

ELMER O. FIPPIN, Secretary - ITHACA, N. Y.

MAK-GRO Odorless PLANT FOOD for FLORISTS and GENERAL GREENHOUSE WORK
A Scientific, Improved, Concentrated, Quick-Acting, Complete Fertilizer, made in Non-Acid Granular Form from the Highest Grade Materials obtainable.
Especially adapted to Greenhouse Work for Flowers, Fruits and Vegetables.
Special Formulas for General and Special Greenhouse Crops, prepared by men who have made a life study of Greenhouse Work—not only in this country but abroad.
The services and advice of our experts is at your disposal on all matters pertaining to your Greenhouse problems.

MAK-GRO ODORLESS PLANT FOOD is put up in various sized packages, and is sold in lots of from one pound to a carload.
The one-pound cans and small packages make a splendid side line for Florists having their own stores.
Write us for further particulars.

CONSUMERS FERTILIZER CO., Longacre Building
Suite E, New York

APPLE TREES
The very best that can be grown. Ours are all budded on whole-root French seedlings. All the leading varieties, absolutely true to name. Send list of wants and let us quote you special prices. Will be glad to send samples to interested parties.

REFERENCES: Any bank or business house in Geneva.

The R. G. Chase Company
Geneva, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
For Christmas This Year

We feel sure that our greetings and small things for Christmas are better than usual. We have built a reputation for this class of goods that we feel we must maintain. Our customers are the judges in the matter. Remember, too, that the Co-op. is a good place to buy college Christmas goods.

CALENDARS

There will be three Cornell calendars on the market this year selling at one dollar each. They are good and will make a good gift. We will have calendars as low as ten cents each.

At the Co-op.
In Morrill Hall
# Table of Contents

**DECEMBER, 1913**

<table>
<thead>
<tr>
<th>Cover—From Photographs by Corner Book Store and Mr. Troy.</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontispiece—L. H. Bailey.</td>
<td></td>
</tr>
<tr>
<td>Life of Liberty Hyde Bailey.</td>
<td>A. R. Mann</td>
</tr>
<tr>
<td>L. H. Bailey as a Student.</td>
<td>H. W. Collingwood</td>
</tr>
<tr>
<td>L. H. Bailey as a Teacher.</td>
<td>G. N. Lauman</td>
</tr>
<tr>
<td>L. H. Bailey as an Investigator.</td>
<td>J. G. Needham</td>
</tr>
<tr>
<td>L. H. Bailey as an Naturalist.</td>
<td>Anna Botsford Comstock</td>
</tr>
<tr>
<td>L. H. Bailey as Poet, Editor and Writer.</td>
<td>J. Horace MacFarland</td>
</tr>
<tr>
<td>L. H. Bailey as a Horticulturist.</td>
<td>A. V. Stubenrauch</td>
</tr>
<tr>
<td>L. H. Bailey as a Co-worker.</td>
<td>I. P. Roberts</td>
</tr>
<tr>
<td>L. H. Bailey as Director of the Experiment Station.</td>
<td>J. H. Comstock</td>
</tr>
<tr>
<td>L. H. Bailey as a Rural Educator.</td>
<td>A. D. Dean</td>
</tr>
<tr>
<td>Letter from Charles E. Hughes.</td>
<td></td>
</tr>
<tr>
<td>L. H. Bailey as a Citizen.</td>
<td>J. M. Clapp</td>
</tr>
<tr>
<td>Letter from Theodore Roosevelt</td>
<td></td>
</tr>
<tr>
<td>L. H. Bailey as Chairman of the Country Life Commission.</td>
<td>K. L. Butterfield</td>
</tr>
<tr>
<td>Statement by Dr. Andrew D. White at the Last Meeting of the Cayuga Bird Club</td>
<td></td>
</tr>
<tr>
<td>Director Bailey from the Standpoint of the Faculty.</td>
<td>W. A. Stocking, Jr.</td>
</tr>
<tr>
<td>Director Bailey from the Standpoint of a Farmer.</td>
<td>Jared Van Wagenen, Jr.</td>
</tr>
<tr>
<td>Director Bailey from the Standpoint of a Student.</td>
<td>H. B. Knapp</td>
</tr>
<tr>
<td>L. H. Bailey as a Man.</td>
<td>C. H. Tuck</td>
</tr>
<tr>
<td>A Partial Bibliography of Books and Pamphlets Written and Edited by L. H. Bailey</td>
<td></td>
</tr>
<tr>
<td>Some Honors Which Have Been Bestowed Upon L. H. Bailey and Resolutions Which Have Been Presented to Him.</td>
<td>J. E. Rice</td>
</tr>
<tr>
<td>Editorials</td>
<td></td>
</tr>
<tr>
<td>Campus Notes</td>
<td></td>
</tr>
<tr>
<td>Former Students</td>
<td></td>
</tr>
</tbody>
</table>

**SUBSCRIPTION PRICE, $1.00 PER YEAR**

Canada, $1.15  
Foreign, $1.30

Entered as second-class matter at the Post Office, Ithaca, N. Y.  
Copyright by The Cornell Countryman
This number is dedicated to

**Liberty Hyde Bailey**

in appreciation of his services to the State and Nation. In appreciation of the inspiration which he is to the students now in the College of Agriculture and those who have gone before.
The Farthermost Hills

L. H. Bailey

Come over the plains to the hilltops high,
Come over, come over and rest;
Stay not on the plains where soft zephyrs lie
But come to the heights where the clouds sweep by
And the world-round gales through the heavens fly,
Come over, come over and rest.

There's wonder-strong music where the storms sweep by
Where the forests are rent and the earth-woes cry,
There's a grand old song where things suffer and die
And the struggle is on 'twixt the earth and sky;
Escape your calm levels and on to the West,
Come out with your cares to the uttermost crest,
Come over, come over and rest.
LIFE OF LIBERTY HYDE BAILEY

LIBERTY Hyde Bailey, Jr., was born on a farm at South Haven, Van Buren County, Michigan, on March 15, 1858. He came of rugged stock. His father was a man of marked character, with strong attributes of body, mind, and heart; a successful farmer and fruit grower, one who blazed his way through original trails, a pioneer of the aggressive and purposeful type. South Haven is a lake-shore town, long famous for its fine fruit. The Bailey apple orchard was for many years easily the best in the state—so good that the father lamented that he had lost $1,500 one season by “not having apples enough to fill my orders.”

On the home farm, amidst premier horticultural conditions, Professor Bailey was reared. At five years of age he entered the village school about a mile from his home; and he continued his education in the local schools until he was prepared for admission to the Michigan Agricultural College. When not in school he helped his father with the farm work. The years of youth and young manhood spent on the farm gave him the foundation and the background for his later work.

From earliest youth the lad was possessed with a desire to know the little world in which he lived. It was a pioneer country, then being cut from the great woods. Most of the larger wild animals were scarce, but the woods sheltered many smaller animals and birds. To know how these creatures lived, to explore the caves and holes and trees where they hid, to see them in their natural surroundings, was his constant desire. He fell in with the birds and with the strange creatures that lived in the streams and ponds. His spare moments were spent wandering, in his cowhide boots, through the woods, following the creeks, and climbing the hills in search of specimens of nature. The long, daily horse-back rides through fields and swamps and woods in search of the cattle were his great delight, and he always brought back with him a plant or insect that he had found. He was largely self-taught. He had a passion to classify, to know how one animal or plant was related to another. In this way he built up a large collection of insects, which he mounted and subsequently gave to the South Haven and Casco Pomological Society of which he was a member. It was his nature to be alone to think and study, and often did he steal away to Dyckman’s thicket, a short distance from home, to collect plants and study them.

Seed catalogs had always an absorbing interest to him. Not until fourteen years of age had he seen a botany. At that time, on a visit a few miles from home, he found a friend studying a botany. It was the first book that he had ever seen that described, named and classified many kinds of plants. He borrowed the book. It was Asa Gray’s “Field, Forest, and Garden Botany,” which many years later he had the privilege of revising. It opened a new world to him which he eagerly explored.
While yet a mere school boy Professor Bailey presented essays before the local Pomological Society which attracted marked attention, not alone for their content but as well for their graceful yet simple and forceful language.

In 1877, at the age of nineteen, he entered the Michigan Agricultural College. His professors characterized him at once as "diligent, quick, and accurate." He had no time to waste, for, as his father once remarked, "he was born in the wrong time of the moon for that." His thirst for natural science was keen, persistent, and never satisfied. His memory was excellent, his work always at the top. His imagination was fertile and creative, and added vividness and an artistic touch to his writings. Perhaps it helped him in his college class in horticulture to carry off the honors when the class was required by Professor Beal to write essays on "Stealing Fruit."

About the time young Bailey was finishing his course at Michigan, Dr. Asa Gray of Harvard was casting about for a young man to help him in his laboratory, with small pay, "mainly for the love of the work." Bailey was appointed to the place. His associations with Dr. Gray were clearly evident in subsequent years. Here he received an impulse to develop his already keen botanical sense. During his two years at Harvard he prepared the best account of the genus Carex that had ever been published in this country. During these years he largely supported himself by contribu-
Professor Bailey had received his Bachelor of Science degree at Michigan in 1882. On June 6, 1883, he married Annette L. Smith. In 1885 he was called back from Harvard to become Professor of Horticulture and Landscape Gardening in the Michigan Agricultural College. In 1886, his Alma Mater conferred on him the degree of Master in Science. During this same year he was employed on a geological and natural history survey of Minnesota. In 1888 he accepted a call to come to Cornell University as Professor of General and Experimental Horticulture, which position he reluctantly yielded up in 1903 to become Director of the College of Agriculture. He continued as Director until the time of his resignation, July 31, 1913.

Director Bailey's work since coming to Cornell University is well known and will be presented in some detail elsewhere in this issue; therefore, it is purposely omitted from this account. Suffice it to say that he became the foremost horticulturist in America. As an educator he has come to the foremost place, establishing new and accepted ideals in education. In no small degree has he been responsible for the direction in which agricultural education has been developed. He has persistently accompanied his teaching and later educational work with investigations which have supplied the stimulus for much of his work. His remarkable command of English, his well-known ability as a platform speaker, the versatility of his pen, which speaks of the practical, the philosophical, and the poetic with equal mastery, have all combined to carry his ideals to rural workers everywhere. It is not too much to say that the writings of this one man alone have lifted agriculture as a life profession into a new plane. They breathe a spirit of hopefulness and dignity which create a like spirit in the toiler who reads.

No better testimony to Director Bailey's ability as an administrator is needed than is found in the great growth in the standard of scholarship, registration, and material equipment of the New York State College of Agriculture under his leadership.
When he became Director in 1903, the buildings were valued at about $60,000, the faculty consisted of nine persons, twenty-five courses were offered, the total enrollment of students of all grades was 252. In 1913, the buildings were valued at about $1,125,000; the faculty consisted of 104 persons, two hundred and twenty-four courses were offered, and the total enrollment was 2,305 students of all grades.

Other men may excel in a single line, but who knows a man other than L. H. Bailey who combines in one such an amazing array of abilities that he can touch life at all points with equal mastery, dignifying and enriching all that he does with his magnetic personality and his inspiring confidence. It is his rare combination of qualities that enables him to stand without a question as the leader in the forward movement in country life in America today. And the crowning glory of it all is that he is a man whom men love.

A. R. Mann.
The Farmer's Challenge

L. H. Bailey

Blow ye winds and lay on ye storms
And come ye pests in rabble swarms
And fall ye blights in legion forms—
I am here: I surrender not
Nor yield my place one piece or jot;
For these are my lands
And these are my hands
And I am bone of the folk that resistlessly stands.

The blood of old ploughmen runs hard in my arm
Of axmen and yeomen and battlemen all
Who fought and who flinched not by marish and wall
Who met the bold day and chased ev'ry alarm;
My father-kind sleep, but I hear the old call
And fight the hot battle by forge and by farm;—
For these are my lands
And these are my hands
And I am bone of the folk that resistlessly stands.
L. H. BAILEY AS A STUDENT

WHEN I entered College as a Freshman, Bailey was a Junior. The upper classes were small in those days, and we Freshmen looked upon the upper students as great men, until we found how small some of them were. With one accord, I think our Freshmen decided that Bailey was the leading student in College. I never saw him play baseball, or engage in any of the rougher sports. His College power was derived entirely from his work as a student and the mastery of his subjects in the class room. At every College there are half a dozen men who seem to have an instinct for grasping the essential points of a subject. They do not seem obliged to grind out their work as many do, nor do the facts come to them in a flash of light, but somehow the instinct of study shows them just where to go and obtain the facts with the least effort. Bailey impressed me as a man of this type. He was always dignified, and was not what I would call a good "mixer" among the other students, yet he had the ability to command their respect. From the first time I saw Bailey up to the present he has seemed to me to carry an immense power in reserve. No matter what he did, or how brilliant his work might seem, you always got the idea that "the half had never been told," and that he had never struck bottom or run short of material. Many students at College were brilliant and forcible. During a crisis they seemed to empty all their mental pockets and turn them inside out. Bailey never did this, but there was always that suggestion of power in reserve. Then there were strong men who seemed to realize their strength, and thought over that knowledge until it ran into a case of "big head." We never dreamed of such a thing with Bailey, for with all his ability and brilliant powers as a student he seemed to realize that after all the small slice of wisdom which one man can get hold of in the ordinary human life, is not worth bragging about. So far as I know Bailey never took the tongue out of a college bell, or shaved the gardener's cat, or emptied the barrel of water on a luckless Professor. I remember him rather as a studious, serious man, who knew what he went to College for, with fair training to take the course and the instinctive ability to go right to the heart of the subject and cover the essential fact.

H. W. COLLINGWOOD, 
Editor Rural New Yorker.

L. H. BAILEY AS A TEACHER

MORRILL Hall, at the north end, was the scene of most of the teaching efforts of Director Bailey. When the College of Agriculture had but five or six rooms in which to carry on its work the teaching in horticulture as well as agriculture was carried on on the second floor, at the south side of the hall. Perhaps his most effective teaching was that in the courses of evolution of cultivated plants, pomology and in the botany of cultivated plants.

During many years the glory of the instruction in the horticultural department was centered in the course in evolution. In its day it was the most effective presentation of evolution given in Cornell University and attracted students from all colleges. By gradual and easy steps the student was led from the simple facts of variation to the most profound problems of evolution. Between a Socratic method of his own and a wealth of illustration especially physical, wher-
ever possible, the student finished the course with a point of view, not necessarily that of the instructor, giving him a grasp of the conditions in the biological world as few students outside of this course attained. As a forerunner of the courses in evolution and breeding now given in and out of agricultural colleges it has a foremost place in the history of such development.

The course in pomology was based on Professor Bailey's textbook, but the skill with which the principles were instilled into the student was not a textbook foundation, and the delights of the walks and talks in the orchards, gardens and laboratories and the excursions to other regions which came as a part of the laboratory work will never be forgotten by those who had the good fortune to be members of these classes.

To the advanced and graduate student the course in the botany of cultivated plants was a rare treat. Not only did he get the theory and practice of systematic botany as applied to the cultivated plants but here in the intimacy of a small group the restraint of the class room was absent and the sketches of such men as Asa Gray or Edward Drinker Cope, the narratives of his own finds or the expounding of some philosophical conception in the field of biology made these hours unforgettable.

G. N. Lauman.

I Plow
L. H. Bailey

Quick smell of the earth, I am come once more
To the feel of th' soil and the sky before
To the tang of th' ditch and wist of the bough
With stamp of my team and grip of my plow.

I am blowing again with th' wind and rain
I am falling with frost and snow
Yearning once more with the fields that have lain
Through the months of the broth and snow,—
You shall hear the clank of my plow and chain
Where my hard-harnessed horses throw
And follow the wells that I rip in twain
As I turn up the lands below.

Jangle and crunch in the far-windy morn
Cut and grind through the singing sod
Stone and high-hummock and thistle and thorn
Root and stubble and rolling clod
Puddles that break into furrows foreshorn
Helm of the handles, plow-point's prod,—
With hale of great harvests my bouts are borne
Over th' bases of the glebes of God.

Mete to the mark are my furrows full-set
Hard with the muscle and marrow and sweat
Straightforth is the way and the fields are rife
High over the heights of the hills of life.
L. H. BAILEY AS AN INVESTIGATOR

There are many kinds of investigators—all of them useful. The most typical sort is the one who shuts himself up with his problem and digs away at it to the permanent exclusion of all other interests. Bailey is not of this sort. His love of truth and desire for accuracy in all details are as great as any man’s; but he has interests that will not be shut up to await the discovery of the last small detail. We are glad that this is so.

Doubtless, his investigations began on the old farm in Michigan. Studies of bramble-patches and orchards and meadows and coon-trees and swimming holes are about the best sort of subjects with which youth may begin. Doubtless his most important discovery in school was that there are improved ways of finding out about things: for he soon set out for college, and from college went at once to work with Asa Gray. It was entirely characteristic of him under the guidance of this foremost of American botanists, he should tackle the investigation of the biggest genus of our flora, the genus Carex of sedges, then in hopeless confusion. There was no harder task in sight; there was no service to American botany more needed.

Dr. Bailey is best known as an investigator for his work on Carex; the work fate permitted him to pursue longest. He brought order out of confusion in this genus. He published a synopsis in the Proceedings of the Sciences, a long series of “Notes on Carex” in the Botanical Gazette, and other papers in the Contributions to the U. S. National Herbarium; and he revised the genus for the sixth edition of Gray’s Manual of Botany. He also revised the grape family (Vitaceae) for Gray’s Synoptic Flora of the U. S. The by-products of these early investigations appear in nearly all his books—notably in “The Survival of the Unlike” and the “Evolution of our Native Fruits.”

Fortunately, the habit of the investigator reappears whenever the pressure of other duties allows. His last vacation was largely spent while in the Kew Gardens and in the West Indies investigating the genus Begonia—another vast genus that he found in sad confusion. Dr. Bailey would have been a great investigator if the world had let him spend his days studying plants. As it is, he has been a most useful and helpful one, notwithstanding that we have all been insisting that he should spend his time studying men and colleges and things.

James G. Needham.

L. H. BAILEY AS A NATURALIST

The true naturalist, like the poet, is born not made, and often the two are one; that is what happened when Liberty Hyde Bailey was born. From early childhood he loved Nature and studied her ways; and one of his boyhood treasures was a notebook in which he wrote his observations of birds, plants, and of the miracles wrought by the changing seasons. Of his playmate, the brook, he writes: “As a boy I explored it, but never found its source. It came somewhere from the Beyond, and its name was mystery.” “It became my teacher.” “I remember that I was anxious for spring to come that I might see it again.” “I watched for the suckers that came up from the river to spawn. I made a note when the first frog peeped. I waited for the unfolding spray to soften the bare trunks, I watched the greening of the banks and looked eagerly for the bluebird when I heard his curling note somewhere high in the air.”
As with the boy, so it has been with the man. Through his intimacy with Nature, gained by daily companionship, he has achieved his broad vision and profound understanding. Her storms are as welcome to him as her sunshine, for he loves the rain; and the brown earth turned in the furrow is as beautiful in itself to him as are flowery fields. Thus, has he been made a naturalist, not because of his knowledge of one phase, but because of his sympathetic comprehension of God’s earth as an entirety.

Although he became a specialist it did not narrow his interests or limit his vision. Nature as a whole was ever worthy of his best thought, and this found expression in The Survival of the Unlike, a most important contribution to the literature of evolution. But his special message of appeal to the world is found in The Nature-Study Idea and The Outlook to Nature, books brimful of inspiration and profound truths,—clarion calls from a leader, who has by his work and his personality proven himself the foremost prophet of Nature in his generation.

Anna Botsford Comstock.

---

A Rainy Day
L. H. Bailey

The soft, gray rain comes slowly down,
Settling the mists on marshes brown,
Narrowing the world on wood and hill,
Drifting the fog down dale and rill.
The weed-stalks bend with pearly drops,
The grasses hang their misty tops,
The clean leaves drip with tiny spheres,
The fence rails run with pleasant tears.

Away with care! I walk to-day
In meadows wet and forests gray;
Neath heavy trees with branches low,
Cross splashy fields where wild things grow.
Past shining reeds in knee-deep tarns,
By soaking crops and black-wet barns,
On mossy stones in dripping nooks,
Up rainy pools and brimming brooks
With waterfalls and cascadills
Fed by the new-born grassy rills;—
And then return across the lots
Through all the soft and watery spots.

Away with care! I walk to-day
In meadows wet and forests gray.
L. H. BAILEY AS POET, EDITOR AND WRITER

AS POET? My knowledge is worth just as much as my opinion, and that is worthless. The fault, the deficiency, is entirely mine, and the loss. Poet Bailey's poems will speak for themselves through the selections here-in reprinted.

As Editor? In the old days of The American Garden, and in the younger days of Country Life in America, his editorial quality, as the printer sees it, was ideal. He could "cut" remorselessly; he could "fill" endlessly. His work fitted; his make-up really made up. He knew the mechanics of editing. Once I asked him to condense a statement of 130 words written by that master of clear English, Dr. Lyman Abbott. As Editor Bailey returned it, the statement, all there, sparklingly terse, had 60 words.

Again as Editor? When the first issue of his monumental Cyclopedia of Horticulture was making, he supplied a tree-fern engraving with a meandering stem. The "make-up man" slyly squeezed it enough to get it between the columns of the page. The proof came back with this pertinent note: If you pull a dog's hind leg straight, is it a dog's hind leg any more?" No wonder the printers love him!

As Writer? Why say anything of his marvelous forcefulness, his notable simplicity, his singularly engaging quality? His writings are him; they talk as he does, lacking—not always—the smile. He is a master of his facile tool, the English language. And he is a greater master, in that this mastery is always used for the right, for the best, for growth, uplift, advance. Great is Writer Bailey!

J. HORACE MCFARLAND.

L. H. BAILEY AS A HORTICULTURALIST

TO DEAN Bailey, more than to any other man, we owe the creation of a distinct American horticultural literature. No other writer has been so profuse or has covered so diligently the entire field of horticultural science. Dean Bailey possesses to a wonderful extent the faculty of perceiving and appreciating the relationship of the different factors involved in a discussion and he imparts to his writings a clearness of expression not reached by many authors.

Dean Bailey's works include discourses on evolution, textbooks on elementary botany and various phases of horticultural practice, and the general principles of the different branches of horticultural effort. In nature-study he is a pioneer. He has taken a leading part in arousing popular interest in rural work and country life.

His later works deal with economic rural questions. In an editorial way he has had an intimate connection and influence upon a large number of important works, the most noteworthy of these being the Cyclopedia of American Horticulture and Agriculture. The accomplishment of either of such monumental works would be sufficient for most men; Dean Bailey has not only not been satisfied with accomplishing both, but in addition has to his credit more individual works than any other American horticultural writer.

Dean Bailey has had a very wide influence upon the progress of American horticultural science. His fine personality as a teacher and as a man has influenced and inspired his many students, especially those who, like the writer, have had the good fortune to come into close personal association
with him. Well may we pray that he be long spared to us to complete in a manner satisfactory to himself some of the things which the writer once heard him express the hope to do. The greatest consolation we have in Dean Bailey's retirement from active work at Cornell is in the knowledge that the relief from administrative duties will enable him to devote his wonderful talents as a student, thinker and writer wholly to the cause of American agricultural progress.

A. V. STUBENRAUCH.

L. H. BAILEY AS A CO-WORKER

WHEN the authorities of Cornell University, many years ago, wrote to the President of the Agricultural College of Michigan to ask his opinion of Liberty Hyde Bailey, he replied that he scarcely knew what he thought because he had never been able to move fast enough to catch up with him. After Professor Bailey had been a while at Cornell, we came to understand. Here was a young man who did not wait for things to happen—he made them happen. While the frost was still in the ground he built a forcing house by digging into a clay hillside with a southern exposure and locating his beds over trenches filled with water. He couldn't wait for the ground to thaw, he just laid some planks on stilts and went to work.

In those days we all thought him a man of wonderful possibilities, but we did not do justice to his originality. Sometimes, he had a great many more ideas than he could use. I remember his planting a garden that first year, with everything on earth that would grow and the next year saying in surprise at himself: "I don't know what I planted some of that stuff for." It was part of his abundance of ideas not to be afraid of trying anything which promised to be of the least use in his line of work. He would graft tomatoes on potatoes or the reverse just to see how it would turn out. And he was neither discouraged by failure nor unduly elated by success. He had so much that was interesting in mind to do that he threw his failures aside and eagerly hastened on to replace any successful venture with another still more inviting.

He had, a good-humored adaptability which often stood him in good stead in place of appropriations and equipment. At a time when he seemed to be fairly staggering with work, he found time to undertake the editing of Country Life in America; and as there were no rooms on the campus available for this work, he opened editorial offices and installed two assistants in the upper story of what had been Mr. Henry Sage's barn. To Bailey nothing is a serious obstacle.

I might go on indefinitely reminiscing about those earlier and more picturesque days when Professor Bailey was growing so fast that we could not keep up with him, but I wish to speak of his larger and more rarely human qualities. He always manages to work harmoniously and he does not waste his time finding fault. He is able to leave the mistakes of others behind as well as his own. He has always had the ability to use all his time advantageously, thus doing twice the work of an ordinary man. In literary and editorial work he is especially gifted with sympathetic insight. For one illustration out of many, read the opening chapter of his latest book in which he illuminates the subject of agricultural education for boys with rare grasp and clarity of thought.

As for personal qualities he likes a joke but his habitual speech breathes purity of mind and devotion to high aims. There is, indeed, nothing petty or mean, jealous or ungracious about
DEAN BAILEY AND THE LAZY CLUB. MANY FAMOUS HORTICULTURISTS HAVE BEEN MEMBERS OF THIS CLUB.
him. He can bear disapproval and he is willing that others should have their own opinions. During fifteen years of close association we never had a misunderstanding. Above all, he is generous, always showing a fine appreciation of the work of other men in his own field, in this respect he is like Andrew D. White.

To this expression of my estimate of a man so constructive in mind and so artistic in temperament, I can only add my hope that his life may be as fruitful and inspiring in the future as it has been in these rich years at Cornell. What the University loses, the world may gain manyfold when he is set free from executive cares and details, and can devote himself to work both broader and more intensive.

My Purple Hills

L. H. Bailey

Far over the valley are purple hills
Afloat in a twilight of haze;
I think there are fountains and falling rills
And aisles a-dream in th' forest ways;
I think there are birds with a song that thrills
And winds that roam in th' quiet days.

But the space between has a deep morass
With tangles and bogs that I fear to pass;
There are quaking hollows and sinking sands
And white burning suns on the sterile lands;
There are bottomless streams with luckless shores
And hedges of briars on the log-piled floors;
Blind depths I must cross and cliffs I must scale
That stand like walls in the dread interpale.

Yet I think that I see the falling rills
In the depths of the twilight bar,
And I listen to catch the song that thrills
Falling down from the aisles afar;
I am journying on to my purple hills,
And over the hills is a star.
L. H. BAILEY AS DIRECTOR OF THE EXPERIMENT STATION

Almost immediately after Professor Bailey became Director of the College of Agriculture, the facilities for carrying on the work of the Experiment Station were greatly improved. In the first year of his administration the University acquired the Mitchell farm, and thus was made possible the setting aside of the forty-five acres, known as the Caldwell Field, for experiments. A year later, in 1904, the New York State College of Agriculture was established, which resulted in greatly increased opportunities for research. And in 1906 the "Adams Fund" for the support of research became available.

The planning of the expansion of the work of the Experiment Station made possible by these agencies devolved upon Professor Bailey and his colleagues in the staff of the College. To Professor Bailey fell especially the task of deciding how best to strengthen the work already being carried on, what new fields of research should be added, and the selection of the additions to the staff of the station to carry on the additional work.

His wide knowledge of the needs of agriculture and the breadth of his sympathies made our Director exceedingly efficient in planning the expansion of the work; and his extensive acquaintance with the workers in this field enabled him to select the additions to the staff wisely. In the securing of the services of new men he was aided by the general confidence felt in him, which made a position on the staff of a college of which he was the head a very attractive one.

In his management of the station he followed the plan of carefully selecting the men to do the work, and then giving them large responsibilities and expecting good results. In short, Professor Bailey has shown a remarkable grasp of the varied interests involved; he has called strong men to carry on the work; he has stood for the doing of fundamental work; he has thought out new lines of investigation; and has always lent sympathetic aid to his colleagues.

J. H. Comstock.

L. H. BAILEY AS A RURAL EDUCATOR

A former student at Cornell has just been telling me about Dean Bailey. I have pencilled notes of the young man's remarks. They are positive phrases and, like the Dean himself, they lack negations. Often, I fear, we speak of men for what they are not rather than for what they are. In response to a query regarding a man we usually say, "Oh! he's a good fellow, but—." One side of the record sheet has a single statement of positive good and the other a column of "Buts." However, people do not speak of Bailey with a "but" addenda.

"He always sees a lot of problems in every piece of work he takes up," said the former Cornellian. One reason for his effectiveness in rural education rests upon the fact that he does see there are problems in open country education. He sees the problem of relating educational practice to environment; to child experience; to future occupation; to community needs. To him it is always a problem of relationship to other activities and interests. To him every factor in the open country contributes to the education of a child. He would up-build the church, the grange, the woman's club, the places of amusement and recreation. He would have the voter at the district meeting believe in the educa-
Mr. Frank W. Lathrop,
Editor, The Cornell Countryman,
College of Agriculture,
Cornell University,
Ithaca, New York.

Dear Sir:

Your letter reached me after the term of Court had begun and at a time when it was impossible for me to give attention to any outside matters. While I have been unable to write such an article as you requested, I must at least give an expression -- though brief -- to my admiration for the work of Director Liberty Hyde Bailey.

During my administration I counted it a high privilege to have his counsel, not simply because of his intellectual power, his technical knowledge and his wide experience, but by reason of his broad sympathies and prophetic vision. He was a powerful aid in every effort to promote honorable and efficient administration, and with his remarkable understanding of the needs of our rural communities he constantly directed the attention of the people to deficiencies in existing conditions and to the methods by which these conditions might be improved.

The State is under lasting obligation to him on account of the excellence of his administrative work in connection with the College of Agriculture and still more because of his inspiring leadership in the movement for better country life. I take the greatest pleasure in extending to him, through you, my heartiest congratulations.

Sincerely yours,

[Signature]

WASHINGTON, D.C., November 3, 1913
GOVERNOR HUGHES AND DIRECTOR BAILEY ON THE STEPS OF THE AGRICULTURAL MAIN BUILDING, MAY 27, 1907.
tive process. He would have the parent see that the home and the school must cooperate. He would have the grange and the club include youth in their membership. He would have the boy and girl of eighteen go to the continuation farm and homemaking school during the winter months. He would have the community feel as he feels—that education used in its broad and rightful sense is not a matter concerning one 24 x 36 school room, one school teacher, thirty-two weeks, $565 school tax; but rather that it is a life process for old and young, for every agency working for betterment; for all forces, for all people, for all time.

And again, “He always makes his students see that there is a problem,” to quote my friend. Some folks would say, “Rural education is a problem.” Bailey says, “A problem for us is rural education.” The first point of view leaves you with an intellectual wrinkle, the latter gives you the Bailey spirit. The first makes you see the difficulty. The last brings to your attention the thing itself. “Redirected education” is his phrase. A choice one too. Not an education turned upside down. Not exactly rebuilt from bottom to top; but just “redirected.” It now means well. It is trying hard. Its spirit is good. I can just hear Dean Bailey saying to it, “Now, my good fellow, let me re-direct you. Your path is now cityward—away from nature, away from the business of the community, away from child’s experience. I will re-direct you to the fields of living things, to the pathways of your sturdy forefathers, to the hills of growing trees, to the wonderful stories of nature. I want you to see the science in the soil, the physics in the plowshare, the mechanics in the reaper, the economics of farm production, the history of man in its relation to open country activities. I want you to hear the song of the brook, to gaze upon masterpieces of color and composition on the canvas of the sky, to listen to the voice of God in the world of nature.”

“He is able to give a fellow the inspiration to tackle problems.” How well I can agree, for as a stranger to the State I came eight years ago to Cornell. I saw a great extension movement revamping the theory of the laboratory to the practice of the farm. It was an inspiration. “If I could only do as much for the industrial workers of the city; if the technique of the craftsman could be reborn; if only technical knowledge of the trade could be made available to the mechanical-minded men of a machine age.” These were the words I poured out to the ear of Dean Bailey—the stranger. And then Bailey, the friend, said, “Wishing hard, my boy, will bring it to you.” And adding in his half whimsical, half philosophical way, “Wish carefully, for we surely get what we desire.”

“He is a sympathetic helper while a fellow is solving the problem” is a statement of fact for which from experience I can vouch. “How’s the work going,” is his greeting. “If I can help,” is his parting word. It is always backed up with every sort of aid. No high school in the state that needs help in its agricultural outlines is ever refused. Every rural school teacher has on his desk leaflets on nature study. Every teacher of homemaking knows that bulletins on decoration, scientific cooking and sanitation, are hers for the asking. A State College in one respect at least, is like a newspaper. It needs money to start. Given a start it gets experts who cater to the needs of the public—this brings subscribers to the movement—this means more advertisers—this means funds. And funds mean a new start—more experts—larger clientele—more advertisers. A spiral-like series of causes and effects.

I do not know whether Bailey produced the extension idea in rural education or whether the extension idea produced Bailey. It is always hard to tell whether the man makes the work or whether an inspiring work makes the man. I only know that in Liberty Hyde Bailey’s mind, to solve every educational problem means always to serve the people.

ARTHUR D. DEAN.
L. H. BAILEY AS A CITIZEN

THE Hon. J. J. Woodman, Master of the National Grange, visiting with the writer, back in Michigan several years ago, said, "Well, how is Bailey, the man you and I and every other native of old Van Buren County, are so proud of?"

And then he told me this story: "At one time we trustees of our University, were considering men who might possibly be obtainable to head a new Agricultural College. I had the temerity to suggest Liberty Hyde Bailey, when a man jumped to his feet and said, "What! that curly headed farmer boy from the South Haven Woods? Never!"

"Your great Agricultural College at Cornell is to be the greatest institution of its kind in the world and has already become, under Bailey's hand, a pattern and an inspiration to every other similar institution."

As a citizen, Mr. Bailey is one of the most public spirited, approachable and neighborly men of the many noble men connected with our University.

Ever ready to give of his time and his money to assist in any enterprise which makes for civic improvement, he is never too busy to attend committee meetings and always takes more than his full share of detail work.

As an outcome of the City Improvement Society, of which he was so long president, came the movements which have deepened, walled and bridged our creeks, filled up our marshes and made our city a terminal of the great canal system.

J. M. Clapp.
My dear Mr Lathrop:

I wish I could write at length upon the admirable work that Director Bailey did as chairman of the Country Life Commission. I regard that as on the whole the most important commission of any kind that I appointed during my term as President, with one exception. I doubt if I should have undertaken to appoint the commission if I had not been able to get Director Bailey for its head, and no man in our country did better work for the country than he did on that commission.

With heartiest good wishes for the success of your number, and expressing my gratitude to Director Bailey, I am,

Faithfully yours,

Theodore Roosevelt

Mr Frank W. Lathrop,
The Cornell Countryman,
Cornell University,
Ithaca, N.Y.
THE COUNTRY LIFE COMMISSION AND PARTY WHICH VISITED ITHACA ON DECEMBER 16, 1908. THE FIVE MEMBERS OF THE COMMISSION PRESENT OCCUPY THE CENTER OF THE LOWER ROW.
L. H. BAILEY AS CHAIRMAN OF THE COUNTRY LIFE COMMISSION

PROFESSOR Bailey brought to the chairmanship of President Roosevelt's Country Life Commission a number of highly important qualifications. The first was a point of view. As one of his friends once said, Professor Bailey looks at the rural problem with two eyes. He saw the significance both of the scientific and the human, of the practical and the philosophical, of the individual and the social, of the material and the spiritual. He saw the relationships between these elements. He balanced them in a large philosophy of the whole rural question. His phrase for this question was "The building of a new rural civilization."

Professor Bailey's method of arriving at this point of view was vital and not academic. He had not gained his philosophy from books of sociology or economics. He began as a student of science; he had gained his hold upon men as a teacher of horticulture; and he had the experience of an administrator in agricultural education. These experiences had led him to see the whole breadth and scope of the rural problem. Hence, he insisted on a first-hand exploration by the Commission. Under his leadership, the Commission came into contact with men and women who were a part of the rural problem.

As Chairman of the Commission, Professor Bailey not only commanded the confidence of his associates, but of the public. There were many farmers who were prejudiced against the Commission. They resented an apparent attempt to put them in the category of people to be investigated and uplifted. But all who knew Professor Bailey knew that he had no such thought, and that the work to be done was done in the spirit of service and helpfulness along important lines.

The charm characteristic of Professor Bailey's writings was an element of strength, when the Commission came to the task of preparing its report. I venture to say that no matter how much is written in the coming years on the rural problem, the report of the Country Life Commission will be one of the classics in this field, and largely because of the Chairman's responsibility for the phrasing of the report.

Professor Bailey has rendered many conspicuous services in the field of agricultural education and development. I am inclined to believe that his work as Chairman of the Country Life Commission is likely to prove the most far reaching in its effects of any of these great services.

PRESIDENT K. L. BUTTERFIELD, Massachusetts Agricultural College.

Snow Storm

"With windy haste and wild halloo
the sheeting snow comes down
And drives itself through bush and swale
and leagues of stubble brown.
Blessings on the waiting fields when
the sheeting snow comes down."—L. H. B.
STATEMENT BY DR. ANDREW D. WHITE AT THE LAST MEETING OF THE CAYUGA BIRD CLUB

"The coming of Director Bailey to Cornell marked a distinct epoch in the history of the University. Director Bailey has given us our clearest expression of the relationship between life and nature."

[Signature]

BAILIWK, DEAN BAILEY'S SUMMER HOME OVERLOOKING CAYUGA LAKE.

ANOTHER VIEW OF BAILIWK.
DIRECTOR BAILEY GUIDING THE PLOW WHEN GROUND WAS BROKEN FOR THE AGRICULTURAL BUILDINGS ON MAY 1, 1905.

DR. ANDREW D. WHITE, CORNELL'S FIRST PRESIDENT, BENEFACITOR AND FRIEND OF AGRICULTURE, BREAKING GROUND FOR THE FIRST BUILDING FOR THE STATE COLLEGE OF AGRICULTURE.
DIRECTOR BAILEY FROM THE STANDPOINT OF THE FACULTY

NO MAN ever had a more devoted and loyal faculty than Director Bailey has had in the College of Agriculture. This is perhaps the greatest tribute which can be paid to his success as director of a large faculty made up, as it is, of men with widely differing points of view and diversified lines of work. The ideals of a great leader are reflected in the lives of the men whom he gathers around him. In selecting members of his faculty, Director Bailey never lost sight of the importance of character and high ideals. To this fact perhaps more than to any other one thing is due the fine spirit of cooperation and devotion to work which characterizes the College of Agriculture.

The greatest general is the man who leads but does not command. Charged with great responsibilities himself, he placed great responsibilities upon members of his staff and gave them great freedom in working out the solution of educational problems and the administration of state funds. The members of his staff have worked untiringly not because it was required of them but because of the inspiration received from their great leader; not because they knew certain results were expected of them but because they appreciated the opportunities and desired to give the best that was in them to their fellowmen.

It is seldom that one man combines with the other great qualities which characterize Director Bailey, marked ability as a business manager and administrator. The best evidence of his administrative ability is found in the records of his office which show the care and wisdom with which he administered the funds entrusted to him and his ability to use successfully and to secure the greatest results from the large appropriations for which he was responsible.

With marvellous ability to recognize and grasp fundamental principles, Director Bailey was able to quickly analyze the situation and give wise counsel to the ablest of his staff; at the same time he could see the problem of the youngest man and give to him sympathy and advice. No member of his faculty ever went to him with the feeling that he was imposing upon the Director’s time and no one ever left him without an inspiration and a renewed desire to give to his fellows the best that was in him. This feeling of devotion to work and inspiration to live for the welfare of society has pervaded not only his faculty but the student body. His ability to inspire men is Director Bailey’s greatest gift to mankind and has endeared him to all who have been privileged to work under his wise guidance.

W. A. Stocking, Jr.

Release

One day
I went
To the fields to rest.
The sun
Hung low
On the rim of the West.
A sparrow
Chirped
As it dropped to its nest.
And my soul
Had found
The boon of its quest.—L. H. B.
L. H. BAILEY FROM THE STANDPOINT OF A FARMER

THE Cornell College of Agriculture has been twice fortunate in that it has had as its head two men each of whom did a unique and fundamental work in his generation.

It was Robert's happy lot to come to his task just when it was necessary that a man should arise to interpret the findings of a new agriculture to common men, who were sometimes contemptuous and often suspicious and unconvincing.

And Bailey has done for us a later and a very different work, for just when those who were teachers babbled of fertility and crops and cattle as the end and the highest good of agriculture, Bailey lifted up his voice to insist that these were not the only things worth while.

And so it has come to pass that in remote mountain hamlets hard-handed men from the furrows speak with heartiest admiration his name—not as a horticulturist or even as the head of a great college but rather as the Prophet of the Soil. We can never know how much he has done to found a new philosophy of country living and to make men see how well worth while are the church and the school and the other agencies that speak to the hearts of men.

And we think of him not as one who dwelt apart, but as one who has not forgotten nor is out of fellowship with him

"Who plows with pain his native lea,
And reaps the labor of his hands."

This is not too much to say—that he has done more than any man to build a working creed of the doctrine that the farmer is greater than the farm, and for this the farmers of this state and other states give him honor and God-Speed.

JARED VAN WAGENEN, JR.

L. H. BAILEY FROM THE STANDPOINT OF A STUDENT

DIRECTOR Bailey has accomplished much in the field of Agriculture. Many and varied have been his interests and activities. But whatever the future may bring to us from him, in no manner will his work be longer perpetuated than through the impression that he has left on the minds and hearts of the men and women who labored under his guidance during the years of their college life. This is his best and noblest work.

It is not easy to analyze this impression and the writer has no intention of attempting to do so. It is sufficient to say that we all have felt it and have been the better because of it. The hold that he has and shall always have on his students has been demonstrated in a manner that leaves no doubt as to its genuine nature. He has taught us that there is something more to farm life than the endless round from milking time to milking time; that there is the sky and the hills, the birds and the flowers, and that there is the soil with all its possibilities given us in trust to till, but never to despoil. We have welcomed the monthly assemblies because we came away with new thoughts new points of view, and resolves more high and worthy. We shall miss the familiar figure in his office at the right as we enter the main building, where we all were wont to look. But there remains to us as a priceless heritage the memory of those days our Dean worked and wrought so nobly among us because he worked with men and women.

H. B. KNAPP.
L. H. BAILEY AS A MAN

THE world will remember Dean Bailey in many ways: as a student, an author, a broad educator, who injected effectively into American education a new type of school effort in keeping with the outlook and work of the common day. But to his neighbors and friends this greatness of achievement recedes into the background to give way to those deep feelings of esteem for him as a man. His quiet, patient, unceasing toil from day to day has left a monument to the force of persistence. No task was too difficult; no day too long for legitimate and effective toil.

Patience under all circumstances made Dean Bailey a great teacher and administrator. Perhaps no one can fully realize the difficulties that a man in his position is compelled to meet, but patience carried him on with each day bringing its justification.

A student of life and men of all classes, living close to them, "Our Dean" intuitively expressed that definition of culture "to see from the other man's point of view;" and so no trace of inherited or environmental prejudice ever dulled his understanding of the other man's philosophy of life here or hereafter.

But his great catholic spirit held itself in check in accordance with the material requirements of the day: he was never a revolutionist but slowly, in keeping with the capacity of those with whom he labored, he directed and "re-directed" evolutionary processes. He would not break with the old until the new had proven itself. So doing he left a lesson of loyalty to friends and to officials that remains a priceless heritage for succeeding generations.

Such a spirit is not to be analyzed any more than some rare bit of nature's handiwork. It must be seen: it must be felt. His neighbors know: his friends know. When the stately figure walks the Campus some will say, "There is an educator!" Others will say, "There is a scientist!" But as he walks the paths and roads among his people who do the day's work, his neighbors will say, "There walks a man."

C. H. TUCK.
A PARTIAL BIBLIOGRAPHY OF BOOKS AND PAMPHLETS WRITTEN AND EDITED
BY L. H. BAILEY

BOOKS AND PAMPHLETS WRITTEN
Agricultural Education in New York State.
Agricultural Education, It’s Place in a University Curriculum.
Apples.
Beginner’s Botany.
College of Agriculture and the State, The
Cross Breeding and Hybridizing with a Brief Bibliography on the Subject.
Elementary Textbook of Botany.
Evolution of our Native Fruits.
Evolution of the Strawberry, The.
Evolutionist’s View on Apple Culture.
Farm and Garden Rule Book (The Rural Manuals).
Field, Forest and Garden Botany, by Asa Gray (revised by L. H. B.)
Field Notes on Apple Culture.
First Course in Biology.
First Lessons with Plants.
Fundamental Question in American Country Life, The
Garden Craft Series:
Horticulturist’s Rule Book.
Nursery Book (Rural Science Series)
Plant Breeding (Rural Science Series).
Forcing Book (Rural Science Series).
Pruning Book (Rural Science Series)
Garden Making.
Practical Garden Making (Joint author with C. E. Hunn.)
Amateur’s Practical Garden Book (Joint author with C. E. Hunn).
Manual of Gardening (The Rural Manuals).
Miscellaneous Pamphlets.
Nature Portraits.
Philosophy of the Crossing of Plants (Lecture).
Poems.
Principles of Agriculture (Rural Science Series).
Principles of Fruit Growing (Rural Science Series).

Principles of Vegetable Growing (Rural Science Series).
Rural Outlook Series.
Country Life Movement.
Outlook to Nature.
Nature-Study Idea.
The State and the Farmer.
Studies of the Types of the Various Species of the Genus Carex.
Survey Idea in Country Life, The
Survival of the Unlike.
Talks Afield about Plants and the Science of Plants.
Training of Persons to Teach Agriculture in Public Schools.
Training of Farmers, The
York State Rural Problems, Volume I.

BOOKS EDITED
American Garden (Former Editor of Magazine).
Country Life in America (First Editor of Magazine).
Cyclopedia of American Agriculture. Four volumes.
Cyclopedia of American Horticulture. Four volumes.
Rural Science Series.
The Soil. By F. H. King.
The Spraying of Plants. By E. G. LODEMAN.
Milk and its Products. By H. H. Wing.
The Fertility of the Land. By I. P. Roberts.
The Principles of Fruit Growing. By L. H. BAILEY.
Fertilizers. By E. B. Voorhees.
The Principles of Agriculture. By L. H. BAILEY.
Irrigation and Drainage. F. H. King.
The Farmstead. I. P. Roberts.
DEAN BAILEY WITH A CLASS IN THE FIELD.
Farm Poultry. George C. Watson.
Diseases of Animals. By N. S. Mayo.
The Horse. By I. P. Roberts.
How to Choose a Farm. By T. F. Hunt.
Forage Crops. By E. B. Voorhees.
Bacteria in Relation to Country Life. By J. G. Lipman.
Fruit Growing in Arid Regions. By W. Paddock and O. B. Whipple.
Rural Hygiene. By B. N. Ogden.
Dry Farming. By John Widtsoe.
Law for the American Farmer. By J. B. Green.
Farm Forestry. By S. B. Breen and Professors Cheyney and Wentling.
Coöperation. By G. H. Powell.
Southern Forage Crops. By S. M. Tracy.
The Rural Community. By K. L. Butterfield.
Fruit Insects. By C. R. Crosby.
Domestic Insects. By G. W. Herrick.
The Strawberry. By S. W. Fletcher

The Rural Manuals:
Rural Manuals in preparation.
The Rural Text Book Series:
Beginnings in Agriculture. By A. R. Mann.
Plant Physiology with Relation to Crop Production. By B. M. Duggar.
Corn Crops. By E. G. Montgomery.
The Breeding of Animals. By F. B. Mumford.
Principles of Plant Breeding. By Webber, Gilbert and Love.
Irrigation. By J. A. Widtsoe.
Beef Production. By H. J. Waters.
Western Field Crops. By R. S. Shaw.
Standard Cyclopædia of Horticulture.
Four volumes by L. H. Bailey.

EDITOR'S NOTE.—Dean Bailey also wrote 60 Experiment Station bulletins and edited many more than this at Cornell.
SOME OF THE HONORS THAT HAVE BEEN CONFERRED UPON L. H. BAILEY

Liberty Hyde Bailey:

President Roosevelt has appointed the first Federal Commission on Country Life. He has chosen you leader of this movement. We desire to express our feeling of pride in this recognition of you, our Dean.

Appreciating the influence of your administration of our College and the inspiration of your counsel, we present this expression of our esteem.

This Third day of December, One Thousand Nine Hundred and Eight.

[Scroll presented by the Student Body when Dean Bailey was appointed Chairman of the Country Life Commission.]
DIRECTOR Bailey seeks results rather than honors. This is distinctly characteristic. It stands out conspicuously to all who know him. The greatness of his accomplishments and the wide range of his activities have brought Director Bailey unusual recognition from many organizations, institutions, and individuals. These indicate, more accurately than any...
other form of action could do, the estimate that men of science, literature and business place upon Director Bailey's contributions to the world. They represent the spontaneous desire of leaders, in their respective fields, to do honor to one who has earned the right to bear the title or enjoy membership which they confer.

A partial list of formal honors here enumerated indicate Director Bailey's versatility and the wide range of his activities.*

Memberships:
Honorable and Corresponding member of the Royal Horticultural Society of England.
Honorable member of the Horticultural Society of Norway.
Honorable member of the American Philosophical Society.
Honorable member of the Philadelphia College of Pharmacy.
Honorable member of the Rhode Island Horticultural Society.
Member of the American Association for the Advancement of Science.
Trustee of the American Scenic and Historic Preservation Society.
Corresponding member of the Massachusetts Horticultural Society.
Member of the American Pomological Society.
Member (Ex-President) of American Association of Agricultural Colleges and Experiment Stations.
Member of the New York State Grange.
Member of the New York State Agricultural Society.
Member of the Western New York Horticultural Society.
Member of the Michigan Horticultural Association.
Fellow of the American Academy of Arts and Sciences.

Medals:
Veitchian medal of the Royal Horticultural Society.
Wilder Medal of the American Pomological Society.

*The list is as complete as could be secured without consultation with Director Bailey.

Commissions:
Chairman of the Roosevelt Country Life Commission.
Chairman of the New York State Park Commission.
Chairman of the New York State Agricultural Advisory Board.

Degrees:
B.S. Agriculture, Michigan Agricultural College.
M.S. Michigan Agricultural College.
L.L.D. of Alfred University.
L.L.D. of Wisconsin University.

Positions:
Professor of Horticulture Cornell University, 1888-1903.
Dean and Director New York State College of Agriculture at Cornell University, 1903 to 1913.

More valuable and more significant than degrees from great Universities, or medals from scientific societies, or honorable membership in international organizations, or chairmanships of national and state commissions, are the expressions of appreciation, loyalty and love from his associates, as manifested by tokens, words and deeds. These are personal. They are from the heart. The greatest honor that has come to Director Bailey is the loyalty of his co-workers.

RESOLUTION PRESENTED TO DEAN BAILEY BY HIS COLLEAGUES ON JUNE 17, 1913, BEFORE IT WAS KNOWN THAT HE HAD RESIGNED THE DEAN AND DIRECTORSHIP.

To Dean Bailey:
We, the Faculty of Agriculture, wish to express to you, Dean Bailey, our keen appreciation of your labors for the College of Agriculture before the Legislature and elsewhere during the past year, and to congratulate you on your success in securing for the College the means by which its work can be carried forward. We recognize that the task has been accomplished this year under peculiarly trying circumstances.

We believe that the policy for agricultural education in New York State for which you have stood is sound and in the end must prevail.

We wish again to pledge to you our most earnest support and cooperation in the work that is still to be done. We assure you of our desire to promote the welfare and service of the College under your leadership, so as to justify the confidence of the people of the State as expressed by the generous support they have given to the College under your administration.
Because of his high ideals of manhood and womanhood, his exceptional executive ability, his prophetic vision, his fortitude under trying circumstances, his courage to stand steadfast for what he believes to be right, and because of his broad human sympathy and faith in humanity, Director Bailey has inspired a type of loyalty from his associates that manifests itself in a desire for accomplishments on the part of faculty, students and others, that will be worthy of the confidence and friendship of a great leader: It is a live loyalty rather than a blind adoration that Director Bailey inspires. It is a loyalty that feels, thinks and acts. The resolutions that have been presented and the tributes that have been paid to Director Bailey, by the faculty and students of the Agricultural College, provide the key to the lock which reveals the secret of his great success as teacher, investigator, editor, poet, Dean and Director. The resolutions and gifts represent spontaneous expressions on occasions of special rejoicing or grave crises in the history of the State College of Agriculture.

This loyalty is but the reflection of Director Bailey's own attitude toward his superiors. Loyalty is the dominant note of his life. It was clearly exemplified in his administration of the College of Agriculture.

J. E. Rice.

ADDRESS DELIVERED TO DIRECTOR BAILEY ON JULY 31, 1913, THE DAY THAT HE RELINQUISHED THE DEAN AND DIRECTORSHIP, BY MEMBERS OF FACULTY THEN IN CITY.

"ITHACA, N. Y., July 31, 1913.
Professor L. H. Bailey,
Director of the New York State College of Agriculture.
Dear Friend and Colleague:

We come as representatives of the Faculty of Agriculture to express the regrets of this Faculty that you are about to retire from the position of Director of this College.

The Faculty would have come in a body to bring this message for every member of it shares these regrets, but it was felt that a less formal procedure would be more acceptable to you. Still we could not let this day pass without expressing to you our feelings.

The present successful condition of this College is due to the combined efforts of many earnest men and women devoted to the cause of agricultural education; but every one of these workers realizes that the opportunity for doing this work is in no way to be attributed largely to your efforts than to any other cause.

The confidence which the people of the State have in you is the chief cause of the magnificent material support that has been given the College.

Your breadth of view in organizing and administering the College has enabled your colleagues to work in a more efficient manner than would have been possible under less wise leadership.

You have laid the foundation of a broad College of Agriculture and have built on this foundation an institution that stands forth as an ideal of what a College of Agriculture should be.

The practical phases of agricultural education are well cared for. In instruction in the sciences upon which intelligent agricultural practice must be based is provided. Opportunity for original investigation is offered, and the means of publishing the information obtained is well systematized.

Not only are the needs of the students that come to the College provided for; but through the extension department and the cooperation of members of the staff with that department any tiller of the soil in need of help can obtain the best available information.

This is the kind of institution that you have organized and brought to a high degree of efficiency.

We know that your work here has not been an easy task, that there has been much to trouble and perplex you. But the head of a college never had a more loyal and devoted following in his faculty than you have had.

And while you are to leave us for the sake of a freer life so do not think we are jealous of what takes you away from us. Although we are borne down by the sense of our loss and the loss of the College, every heart rejoices that you are to have what you have longed for during these years when you have been fettered by administrative work.

We shall hope that you will keep us close to you as friends, though we may no longer be colleagues, and that through our sympathy with your ideals we may proudly share your future work.

ABSTRACT AND QUOTATIONS FROM THE CORNELL COUNTRYMAN, VOL. VI, NO. 2

On the occasion of the 25th marriage anniversary of Director and Mrs. Bailey the instructing and investigating staff of the New York State College of Agriculture and their wives visited the Bailey home enmass and in true surprise party form presented a silver candelabrum and a scroll on which had been placed the greetings and the signatures of every member of the staff.

The occasion was one ever to be remembered by all who had the privilege of witnessing this magnificent testimony to Director and Mrs. Bailey.

It was pointed out that the five lights of the candelabrum symbolized most appropriately five distinct fields.
THE CANDELABRUM PRESENTED BY THE FACULTY OF THE NEW YORK STATE COLLEGE OF AGRICULTURE, JUNE 6, 1908 TO DIRECTOR AND MRS. BAILEY ON THEIR 25TH MARRIAGE ANNIVERSARY.
One light stood for literary achievement,—the trenchout pen that had written or edited more than fifty books. His other publications alone would have constituted a great life work.

Another light represented the educator. It reflected Director Bailey as a teacher, lecturer, scholar, where he excelled because of his great power to establish ideals and inspire effort in others.

A third light represented the investigator. It symbolized Director Bailey's rare power of generalization by which he had enunciated principles and revealed laws of life.

The fourth light symbolized the Director as administrator. Clearly the mind recalled the great growth of the Agricultural College since its reorganization: the massive buildings, the splendid equipment, the large Faculty, the five hundred students, and realized that Director Bailey more than any other person, was responsible for this great development, due to his ability as an educator, to his persistence, patience and courage, frankness, well balanced judgment and enormous capacity for work.

The open hearth, good cheer and warm welcome found by every one who ever went to the Bailey home was typified by another candle, appropriately placed in the center.

The response by Director Bailey was characteristic, modest, and inspiring. He expressed his appreciation for the renewed evidence of confidence and friendship and stated that the loyal support, the harmonious and universal good feeling which had always prevailed in the Agricultural Faculty at Cornell was a source of great satisfaction and strength, without which, substantial progress could not have been made. He stated that his policy had always been to encourage rather than to direct; that he advised freely with the whole Faculty and did not believe in "star chamber" administration; that on account of the pride which he felt in what he believed to be the strongest Faculty in any Agricultural College, his part in the organization of the College of Agriculture was pleasant.

Director Bailey then paid a glowing and generous tribute to his predecessor as Dean and Director, Professor I. P. Roberts, whose years of faithful, patient, effective work as teacher, farmer, and administrator, he said, made possible the recent growth of the College.
The Country School.

There certainly will come a day
As men become simple and wise,
When schools will put their books away
Till they train the hands and the eyes;
Then the school from its heart will say
In love of the winds and the skies:

I teach
The earth and soil
To them that toil,
The hill and fen
To common men
That live just here;

The plants that grow,
The winds that blow,
The streams that run
In rain and sun
Throughout the year;

The shop and mart,
The craft and art,
The men to-day,
The part they play
In humble sphere;

And then I lead
Thro' wood and mead
By bench and rod
Out unto God
With love and cheer.
I teach.

—L. H. B.
In planning this number we had to gather the material without Dean Bailey’s knowledge. The material is, therefore, incomplete in some cases. The poems were taken from the Rural Leaflets.

The advice and help of Dean Bailey’s friends was very essential, especially from certain members of the faculty. Without exception, this help and advice has been given generously and gladly. We take this opportunity to express our gratitude.

It is characteristic of the College of Agriculture to welcome any person who earnestly seeks after knowledge. Ezra Cornell stated that his purpose in founding this University was to provide instruction for any man in any subject. If he were alive today, the earnestness of the Winter Course Students as a whole would be a source of satisfaction to him.

In this spirit THE COUNTRYMAN welcomes the Winter Course Students. Absorb enough of the spirit of this institution to take some of it back to your communities. In order that you may do this, we urge you to partake in all the activities of the college.

Published by the J. B. Lyon Company, Albany, N. Y. Price $1.00.

An attractive collection of Dean Bailey’s lectures and short writings. The chapters have grown out of the author’s personal experience and are the result of definite work and study when the problems were up for consideration. There is a wonderful amount of agricultural statesmanship contained between the two covers of this book.


Copies of the book have been placed for inspection at various places in the college.

A meeting was recently held in order to discuss the social activities of the college. Those present were the President of the
Agricultural Association, three representatives from the Girls’ Club, and the presidents of the classes.

The following conclusions were reached:

(1) That it should not be taken for granted that dancing is absolutely essential to a class meeting. That it should not be the major part of a class meeting.

(2) That the attention of the classes should be directed toward the development of other amusements and toward getting all the students acquainted with each other. Several suggestions were made.

(3) That about 75 per cent. of the students dance but a part of these do not dance at social functions because an effective system of introduction is usually lacking.

(4) That class meetings are held too often in some cases; that they should not interfere with assemblies and other university or college activities. Bi-monthly meetings were recommended instead of monthly meetings. It was suggested that more frequent meetings of sophomores and freshmen may be reasonable in order to get these underclassmen acquainted with their classmates. That the meetings if less frequent could be worked out more successfully and be less dependent upon dancing.

(5) That the division of classes because of dancing has not become serious.
On Thursday, November 6, the second monthly Assembly of the College was held. One of the pleasing features was the very pretty floral decoration, which consisted of a background of palms with settings of white and yellow chrysanthemums. After a short musical program, Acting Director Stocking spoke to the students. He thought the corrected total registration in the College of interest and stated the following figures. Of those enrolled there are 401 Freshmen, 341 Sophomores, 294 Juniors, 205 Seniors and 113 Specials, making a total of 1354. This registration makes the Agricultural College the largest in the University, the College of Arts and Sciences coming next with a registration of 1120. In addition to the undergraduate body there are 136 graduate students which brings the total number up to 1490. It was also interesting to note the number of women registered in the College. Of these there are 176 regulars and 19 specials making a total of 195. One hundred and sixty are taking Home Economics, 30 General Agriculture and 5 Landscape Art. Compared with the registration of last year, which was 169, this shows an increase of 26. The Acting Director stated that there was a general idea prevalent, that the rapid and large growth of the College was due to the free tuition given to those who live in the State. To refute this idea he stated that while the increase in this year's registration over last year was only 14.5%, the increase in the number of students paying tuition was 115.5%.

As in politics so too in agriculture the people of the State know what they want and get it. The young people of the state know that training in agriculture is a very desirable kind of education to have, and they are getting it, which is a very good indication of the agricultural future of this country.

The Director called attention to the student activities, particularly those of a social nature. The students had been asked to consider the matter, especially in relation to the method of conducting class meetings and the like. The attitude which they took in deciding the general policy was very gratifying and was something of which the College should be proud. He pointed out that a true democracy was one in which everyone had a part, but in social units there was a tendency for groups to form, some caring for one thing and some for another. A condition results where one faction leads and the other either sits back doing nothing or stays at home. He applauded the present attitude which makes this condition of affairs impossible, and which will not allow a person to stay away because the entertainment was interesting only to a few.

The attention of the students was called to the change in the method of celebrating Halloween. Twenty years ago it was customary to "find things where they were not the night before." The conduct of the boys particularly, merged into rowdyism and generally vandalism. In contrast to this he warmly praised the party which was held in the Home Economics Building. He said that the change in the type of entertainment indicated a general and wholesome evolution in the ideals of manhood and deportment. The attitude of the students in entertaining was also to be praised, for the work was carried on entirely by the students, who arranged the preparations, conducted the affair and cleaned up afterward. This was worthy of notice because the general tendency at this time is to have everything arranged by someone hired from the outside, and this means that half the joy of active participation is lost. It was pointed out that the tendency to tie up student activities in teams was losing its force, and that now activities of the playground type were coming to the front. There is a movement on foot to have a playground for the women students in the College. He said that another habit of great value was the tendency
of the students to do the work in connection with social functions. This was shown in the floral decorations of the evening and the very successful Flower Show which was held on Saturday. It was also shown in the Fruit Show, then in progress. He urged the students to get people to come to the Farmer’s Week, especially the young people because it would give them a different outlook on life, making them see the greater possibilities in agriculture and look forward to something more than the daily routine. A little thing like this might change their entire idea of training. The Director called especial attention to the fact that quality does not depend on size, and while the College has had a rapid growth it did not mean that its ultimate efficiency or total value had increased the same way. There were not enough men in the United States to take up the work of teaching, and this made the election of younger men to the faculty necessary. This naturally tends to give a lower grade of work, and it can only be offset by the personal attitude of the students. The point was made that a man’s efficiency depended on three things. First, the natural ability of the man, which is fixed, second, the preparation he has had, which although in his own hands is largely past history, and third, the energy and faithfulness with which he applies himself.

The latter factor is in his own hands and is the one he must exercise in order to keep up the standard. While the entrance work is laid down, the personal attitude is not, and it is the attitude in the students, to do good work, which will make the College a success.

* * *

Professor D. Reddick addressed the Maine State Pomological Society at their annual meeting held at Lewiston, November 19, taking for the subject of his address “Some Essential Factors in Effective Orchard Spraying.”

* * *

For three years in succession, the New York State Federation of Woman’s Clubs has given a scholarship of $200 to a student in the Home Economics Department. This scholarship has been awarded this year to Miss Claribel Nye. The award is made on the basis of scholarship, and the ability to carry the work of the Department out among the women of the state.

* * *

A prize of $25.00 was offered last year to a junior or senior of the Department of Home Economics for the best essay on the subject of “Child Welfare.” The prize was given by the New York State Mother’s Assembly. It was awarded to Miss Natalie Thompson, ’14. Her essay was a discussion of the reform methods employed at Sleighton Farms in Pennsylvania, to which place hundreds of juvenile offenders are sent annually by the juvenile courts of that state. The subject of the essay was “Sleighton Farms.”

* * *

The sixth annual meeting of the American Home Economics Association was held at Cornell University, Ithaca, N. Y., June 27th, to July 4th, 1913. The meeting was the largest and the most enthusiastic ever held by the Association. There were representatives from thirty of the states, the District of Columbia, from the Provinces of Canada and from France, Scotland and Russia. The sessions were so arranged that no day held more than two and they rarely exceeded the planned two hours.

The President of the Association is Miss Sarah Louise Arnold, Dean of Simmons College, Boston; the secretary is Miss Isabel Ely Lord, in charge of Domestic Science, Pratt Institute, Brooklyn. Other officers of the Association represent leading institutions in the country.

The program was divided into institution economics, social economics and the interests of the home. The methods of teaching Home Economics occupied a good share of the program, while practical subjects were constantly interspersed.
The complete list of Hebs-sa is as follows: Max Flavel Abell, Harry Devoe Bauder, Lawrence Julius Benson, Errol Stanley Bird, Francis Henry Durkan, Theodore Osborne Gavitt, Edward George Greening, Harold Francis Keyes, Frank Waldo Lathrop, Mark Emerson Maxon, Benjamin Patterson, Jr., Francis Elton Rogers, Bernard William Shaper, Robert Charles Shoemaker, Raymond Frederic Steve, John Judson Swift, John Robert Teale, Stanley Hedrick Watson.


Prof. H. H. Whetzel who is on sabbatical leave spent two weeks in June on a botanical excursion in Denmark and in visiting Dr. F. Kolpin Ravn in Copenhagen. In July he visited numerous pathologists and florists in Holland where he searched especially for peony diseases. Most of the summer was spent in the Harz Mountains learning to speak German and collecting fungi. In Copenhagen and Berlin Prof. Whetzel purchased for his department a number of rare books of pathological interest, some of which have already been shipped to Ithaca. Professor Whetzel is now located at 22 Uferstrasse Pension Schlossblick, Heidelberg, where he is doing special work in plant physiology under Prof. Klebs.

The Roundup Club has adopted the plan of appointing three members at each meeting to read the publications of the week and report anything of interest to the club at the following meeting. The speakers at the club through the month were Professors Harper, Rice, and Wing. An account of their experiences at the National Dairy Show at Chicago was given by the members of the Stock-Judging Team. Professor Wing followed in a discussion of the show and the element of chance in the judging of stock.

The Department of Farm Mechanics has obtained a new gas engine “Mogul” tractor. The machine is a new type and the smallest of a series of tractors which have been developed as a result of research work on the gas engine. It is a low slung and more compact machine than the ordinary form, two cycle opposed, with 12 draw-bar, and 25 engine horsepower. It was bought from the International Harvester Co., and will be used by advanced students for practice in adjustment and handling.

Mr. Frank B. Moody, of the Department of Forestry, is inspecting the reforestation work of the city of Rochester, N.Y., which is going on at Hemlock Lake, and he will probably make some suggestions for the future development of this city’s activity. About 200,000 trees have been planted on the shores of the lake during the past few years and the seedlings, first planted, have grown rapidly. The same plan will be followed at a future date along the shores of Canadice Lake.

Mr. Alfred C. Hottes, B.S., ’13, has been appointed assistant to Prof. White in the new Floriculture Department. Mr. Hottes was assistant in the Farm Course last year. He is working for his M.S.A. degree.

The fruit growing contest in Washington on November 18 was won by Missouri. The Cornell team placed second. The members of the team were D. Alleman, H. C. Knandel and D. B. Perry. D. Alleman won a purse offered to the individual making the best rating. A full account of the contest will be given in a later number.
FORMER STUDENT NOTES

'07, B.S.A. and '08, A.M.—Alfred G. Hammar was accidentally shot and instantly killed, while on a hunting trip near Roswell, New Mexico, October 15, 1913.

Mr. Hammer was born May 19, 1880, at Brömestad, Sweden. As a boy he was much interested in natural history and at the age of sixteen, full of desire to study first-hand the tropical fauna of which he had read marvelous accounts, he went to Brazil. There he obtained employment in a drug store in the State of Sao Paulo and immediately improved his opportunities to study not only the zoology, but also the botany of the region. He quickly attracted the attention of prominent scientific workers and, before long, secured a position with the Comissão Geográfica e Geológica of Sao Paulo, in the Division of Botany and Meteorology. He also accompanied a German scientific expedition on an exploring trip through parts of Brazil.

His interests had always been along entomological lines and he showed so much promise that his chief, Orville A. Derby, C. U., '73, advised him to come to Cornell to study with Professor Comstock. This he did, arriving here in the spring of 1903.

Though Mr. Hammar was handicapped by the facts that he knew practically no English and that he was wholly self-supporting, his ability and zeal were such that he completed his course with honor in the minimum period and graduated with the class of 1907. He was then appointed Assistant in Entomology and, carrying on his graduate work in the summer of 1907 and the following year, received the degree of Master of Arts in 1908.

In the spring of 1908 he secured a position with the United States Bureau of Entomology and very soon was regarded as one of the most reliable and promising of the young men in the service. He was given assignments of increasing responsibility and had carried on special investigations in the States of New York, Michigan, and California. At the time of his death he was in charge of an important substation maintained in New Mexico. He had published a number of valuable researches dealing primarily with insects affecting deciduous fruits.

He had been married only two months before his death, to Miss Marion Hornor, of Parkersburg, West Virginia. He and his bride were to have left in a few days to visit her parents in West Virginia and from there they were to sail for Sweden, his boyhood home.

Mr. Hammar was by no means a narrow specialist but was broadly trained and interested. He was a skilled artist, and used readily seven different languages. While here he was prominent in student activities. He was one of the organizers and leading spirits of the Cosmopolitan Club and editor of the first Cosmopolitan Annual. He was also active in the organization of the Agassiz Club, a member of Sigma Xi and of the graduate scientific fraternity, Gamma Alpha. Wherever he went he was beloved and his death is felt as a personal loss by the many who knew him.

'85, B.S.A.—C. E. Amorosa, of Lima, Peru, announces that he has given up practical agriculture after several years of experimental work on his estate. Mr. Amorosa has embodied the results of his experiments in a book, "Diario Rural."

'01, W.C.—Mr. Bert Van Vleet is now pastor of churches in the Adirondacks with headquarters at Umsteadville, N. Y. He is much interested in the improvement of agricultural conditions in his region.

'03, B.S.A.—Arthur W. Cowell, who since his graduation has been engaged in practical work in Pittsburg and Philadelphia, is now professor of Landscape Gardening at Pennsylvania State College.
Mr. J. O. Hopwood has been appointed assistant professor in Biology in the Central High School of Philadelphia.

Dr. John P. Stewart was married early in September to Miss Isabel Montgomery of Milton, Pa. Dr. Stewart is Professor of Experimental Pomology at the Pennsylvania State College of Agriculture.

Mr. W. F. Fletcher has since graduation been engaged in the Fruit District and Fruit Production Investigations. He is at present in charge of the B. P. I. Experimental Farms at Arlington, which is just across the Potomac River from Washington, D. C.

George Bush has recently been appointed "Farm Doctor" of Oneida County, N. Y. His practice consists in visiting the farms in that community and prescribing scientific methods for curing poor crop yields.

Alfred E. Boicourt was married last February to Miss Emma Worden. They now live at Ambler, Pa., where Mr. Boicourt is Instructor in Poultry Husbandry at the Pennsylvania School of Horticulture for Women.

The agricultural department of the Good Will School at Hinckley, Me., in charge of E. M. Santee, made an excellent showing at the recent Waterville Fair. Among the prizes won were: two firsts by his cattle, every first in their class by his six horses, a blue ribbon by a two year old Ayrshire, three firsts by poultry, a second and two thirds on butter, and numerous other prizes.

Waldemar H. Fries is with the International Agricultural Corporation, Marine Bank Building, Buffalo, N. Y.

Thomas Bradlee, who has been an instructor at the Smith Agricultural School at Northampton, Mass., for several years, has been appointed director of the agricultural extension service, which has been inaugurated at the University of Vermont this fall, in accordance with an act of the General Assembly.

E. S. Parsons has charge of the extensive poultry enterprise of the Honorable Seth Low, Ex-Mayor of New York, at Bedford Hills, N. Y.

Gilmore D. Clarke is in the office of Charles D. Lay, landscape architect, 15 East Fortyeth Street, New York.

Mr. C. S. Stowell has charge of a large market milk plant at Cooperstown, N. Y.

Some of the former students employed in the Department of Farm Management of the U. S. Department of Agriculture are: '07, M.S.A.—L. G. Dodge; '09, M.S.A.—H. R. Cox; '09, B.S.A.—E. H. Thomson; '09, B.S.—C. M. Bennett; '09, B.S.—G. H. Miller; '10, Sp.—H. R. Cates; '11, B.S.—H. N. Humphry; '11, B.S.A.—A. K. Rothenberger; '12, M.S.A.—L. G. Connor; '12, B.S.—H. B. Munger; '12, Sp.—H. G. Straight; '13, B.S.—R. W. Jones.

Some of the former students who are county agents in the Farm Advisory work are: '05, B.S.A.—G. W. Bush, Oneida County; '07, B.S.A.—C. B. Tillson, Clinton County; '08, B.S.A.—C. J. Grant, Mansfield County, Mass.; '09, B.S.—F. E. Robertson, Jefferson County; '10, B.S.—G. P. Scoville, Chemung County; '12, B.S.—Jay Coryell, Windsor County, Vt.; '12, B.S.—H. B. Rogers, Chautauqua County.
CHRISTMAS GREETINGS FROM

The A & B Novelty Stores

316 College Ave. 321 Eddy St.
(Pennants and Posters only)

DO YOU realize Xmas is nearly here? Have you decided what to take to the folks at home, or what to give those girls to keep in their good graces?

Don’t worry if you have neglected this very important yearly duty of choosing Xmas presents, but just come into—THE A AND B NOVELTY STORE. We have many articles from which to pick choice presents.

A FEW SUGGESTIONS AND PRICES

<table>
<thead>
<tr>
<th>CORNELL PILLOWS</th>
<th>SATIN ($3.50 value)</th>
<th>$2.50</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RUGBY LEATHER</td>
<td>3.50</td>
</tr>
<tr>
<td></td>
<td>FULL SKIN (red or white, regular $5)</td>
<td>4.50</td>
</tr>
<tr>
<td></td>
<td>FELT, 10 styles to pick from</td>
<td></td>
</tr>
</tbody>
</table>

Jewelry

Seal Pins, Gold or Silver
Rings, Fobs, or Hat Pins, New or Old Seal

Calendars

Agency for every calendar published in the city.
We will show you them all.

MAKE YOURSELF A PRESENT OF A

Mackinaw Sweater Toboggan
Patrick or Duxbak Shaker Knit Spaulding 7 foot one, $6.00

BUY A SHORT COURSE PENNANT BEFORE THEY ARE GONE
Remember we carry Athletic Goods and Student Supplies

In writing to advertisers please mention The Cornell Countryman
If we could once get squarely before the sheepmen of New York, all the good points of this

Stewart Little Wonder Shearing Machine

we are confident that every owner of 200 sheep or more would have one of these outfits.

There is a two-horse power gasoline engine that is truly a marvel of compactness and energy. It will not only work to shear sheep, but will do any other work that two-horse power can accomplish.

It will earn its own way and pay a profit on any farm.

The two shearing machines supplied on it are our latest model and carry the celebrated Stewart wide shear.

It is worth your while to look into the merits of this outfit. Write for our complete Catalogue on it.

Send now, and if you decide to get one, order early.

Chicago Flexible Shaft Co.
127 La Salle Ave., CHICAGO
THE GROOMING TEST

Holstein-Friesian Bull, which won the Grand Champion Prize at the New York and Illinois State Fairs, 1913, being groomed by The Kent Stationary Vacuum Groomer. This Groomer is adapted to perfectly clean horses, cattle, etc. Animals groomed by the Vacuum Process are made more vigorous and can be kept in the best condition for less, as the process stimulates them, promotes the growth of hair and makes them generally cleaner and healthier. The building in which it is installed and nearby buildings can also be cleaned in THE SANITARY WAY by its use.

ADAPTED TO ALL KINDS OF POWER.

The Kent Vacuum Cleaner Company, Inc.
111 S. Washington St.
ROME, N. Y.
Also Manufacturers of Stationary Vacuum Cleaners.

WHY NOT

Investigate some of the available

FARM BARGAINS
IN THE
HUDSON RIVER VALLEY
AND THE
KINDERHOOK COUNTRY

RURAL LIFE CO.

KINDERHOOK
NEW YORK

THEY WIN ON MERIT

FOR PURITY, STRENGTH AND RELIABILITY

Chr. Hansen's Danish Dairy Preparations
Butter Color
Danish Cheese Color
Rennet Extract
LACTIC FERMENT CULTURE CHEESE COLOR TABLETS RENNET TABLETS
are the Leaders and indorsed by most of the Prize-Winning Butter and Cheese Makers.

THE BEST IS ALWAYS THE CHEAPEST

Chr. Hansen's Laboratory
BOX 1095
LITTLE FALLS, N. Y.

FRUIT TREES

Grown by Maloney Brothers & Wells Company are the results of many years' experience; no disappointment when they come into fruiting for our varieties have been tested 29 years.

We offer for spring planting 975,000 apple, 850,000 peach, 600,000 cherry, and thousands of plum, pear and quince trees as well as thousands of currants, grape vines and a big assortment of ornamentals, roses and shrubs. You will save considerable when dealing with an old established firm. Write today for our FREE, wholesale, illustrated catalogue of guaranteed true to name trees.

MALONEY BROS. & WELLS CO., Dansville, N. Y.
Dansville's Pioneer Wholesale Nurseries

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The Simplicity Milker

The most important question today with the dairy farmer is how can he get his milking done?

This can be easily solved by his using a Simplicity Milking Machine which would be ready for each milking, is simple in construction, easily kept clean, and produces clean milk.

The Simplicity Milker is the only one that the cow gets her relief the same as when a calf sucks her.

Write for full particulars to

F. GROFF & SON
St. Johnsville, N. Y.

The Improved Simplex Link Blade Cream Separator
LIGHTEST RUNNING
LARGEST CAPACITIES
CLOSEST SKIMMING

The Only Practical Large Capacity Separators
Has more exclusive patented features of merit than all others—Has all the desirable points that can be put into a cream separator.

500 lbs., $75.00  900 lbs., $90.00
700 lbs., $80.00 1100 lbs., 100.00

D. H. BURRELL & CO.
LITTLE FALLS, NEW YORK
Manufacturers of Creamery, Dairy and Cheese Factory Apparatus
Also “B-L-K” COW MILKERS
Save ½ on Your Fruit Trees

Buy direct from our nurseries and save 20 to 50 per cent agents' charges. Highest grade trees—apples, plums, pears, cherries, peaches, etc., including the most profitable J. H. Hale peach trees, better quality, harder, better shipper, larger fruit than Elberta, propagated directly from Mr. Hale's bearing orchards. All trees are doubly guaranteed true to name.

Write for New Catalog. 190 pages, handsomely illustrated. Describes every standard variety of tested fruit—apricot trees, quinces, grapes, blackberries, raspberries, currants, gooseberries, roses, shrubs, shade trees, vines—everything. Low prices, plain figures. Catalog sent only on request. Write today.

WILLIAM P. STARK NURSERIES
Station Cl2, Stark City, Missouri

FRUIT TREES
FOR FALL PLANTING

We have one of the finest blocks of Apples, Pears, Cherries, Plums we have ever grown. No scale. Write for free illustrated catalog and fall prices.

SAMUEL FRASER
Geneseo, N.Y.

Alfalfa and How to Grow It

This little booklet gives in complete form, and yet briefly so that a busy man has time to read it, the very best known methods for securing stand and maximum crop with the great ALFALFA plant. It also has chapters devoted to soil fertility, to the use of the greatest legumes for building soils, including Soy Beans, the Clovers, Melilotus and Vetches.

Those who are interested in these subjects should write to

The Wing Seed Company
OF MECHANICSBURG, OHIO

For this free booklet

In writing to advertisers please mention The Cornell Countryman
BE ON THE SAFE SIDE!

You needn’t fear a visit from the Sealer of Weights and Measures if you use....

THATCHER MILK BOTTLES

You won’t give over-capacity either, because they are accurate!
Send for our free book. It tells exactly why Thatcher bottles add to your profits.

THATCHER MFG. CO.
103 Market St. ELMIRA, N.Y.

When they scratch around, give them something worth scratching for. The only scratching feed which contains oat hulls and oat groats, is H-O Scratching Feed. A guaranteed analysis tag is on every bag of

H-O POULTRY FEEDS WHICH INCLUDE

- Steam-Cooked Chick Feed
- Poultry Feed
- Chick Feed
- Dry Poultry Mash
- Scratching Feed

THE H-O COMPANY MILLS
BUFFALO, N.Y.

J. J. CAMPBELL
Gen. Sales Agt.
Hartford, Conn.

TREES AT WHOLESALE

W. & T. Smith Company
GENEVA, N.Y.

WRITE FOR CATALOGUE AND PRICES

Our trees are not lowest in price, but we guarantee QUALITY and PURITY of varieties, and such nursery stock is the cheapest

In writing to advertisers please mention THE CORNELL COUNTRYMAN
CHRISTY ENGRAVING CO.

WE are SPECIALISTS IN
COLOR PLATE ENGRAVING & COLOR PRINTING

If you want to increase the selling power of your next catalogue, if you want to make your advertising as effective as possible, you should look into the question of using color reproductions. Our success lies, not alone in the making of proper plates, but in printing them as they should be. Our product is used by companies of international reputation. We shall be pleased to submit estimates or samples of work.

CHRISTY ENGRAVING COMPANY, 611 18 Central Bldg., Rochester, N. Y.
Once Upon a Time

Once there was really no way out of it for the farmer. Plodding home from the field with his team at close of day, he saw before him the waiting small jobs about the house, barn, and yard, jobs that took time and labor, and never seemed to end. There was water to be pumped, wood to be sawed, various machines to be run by hand. But that was once upon a time. Today he lets the engine do it.

Every IHC engine is economical, simple, steady and reliable. Whether you want it for sawing, pumping, spraying, electric light plant, for running separator, or repair shop, or for all sorts of tiresome energy-wasting small farm jobs, you have need of an

IHC Oil and Gas Engine

IHC engines are built vertical, horizontal, stationary, portable, skidded, air-cooled and water-cooled; sawing, pumping and spraying outfits. Sizes from 1 to 50-horse power. They operate on gas, gasoline, kerosene, naphtha, distillate and alcohol. IHC oil tractors range in size from 12 to 60-horse power.

Have the IHC local dealer demonstrate the engine to you and explain its various points. Get catalogues from him, or write the

International Harvester Company of America
Chicago
USA

In writing to advertisers please mention The Cornell Countryman
F. J. HAUSNER
Jeweler

Watches, Diamonds and Jewelry
205 E. State St.

“HAMMOND’S GRAPE DUST”
Used effectively to kill Mildews on Roses and other Plants...

Sold by the Seed Dealers. For pamphlets on Bugs and Blights address
HAMMOND’S PAINT & SLUG SHOT WORKS
BEACON, N. Y. (Fishkill-on-Hudson, N. Y.)

“SCALECIDE”
TRADE MARK REG. U. S. PAT. OFFICE
DON’T NEGLECT FALL SPRAYING. GET READY NOW.
Many trees can be saved that would die before Spring if unsprayed.
“SCALECIDE” will positively destroy San Jose and Cottony Maple Scale,
Pear Psylla, etc., without injury to the trees.
Many of the finest orchards in the country have been sprayed with “SCALECIDE” for the
past eight years, producing record crops and prize winning fruit. It costs less to spray with
“SCALECIDE” than Lime-Sulfur, and does better work. We stake our reputation on this
assertion. Write today for our booklet, “Scalecide, the Tree Saver.” Sent free on request.
Our Service Department furnishes everything for the orchard at money-saving prices.
Tell us your needs.

B. G. PRATT Co., 50 Church St., New York City.

Dixie Brand
COTTON SEED MEAL

THE CHEAPEST SOURCE OF PROTEIN FOR DAIRY COWS

HUMPHREYS-GODWIN CO., Memphis, Tenn.
Educational Trains

now bring the facts from the Experiment Station direct to the Farmer.

The Experiment Station men are anxious to discuss the questions of most value to the people along the routes. Ask them to bring along an exhibit of fertilizer materials and to tell you how to get the most plant-food for your money.

Recently one train gave demonstrations of actual fertilizer mixing. Soon many will do so. Take your fertilizer dealer to these trains. Ask him to sell Potash Salts and brands containing six to ten per cent. Potash.

We shall be glad to send you, free, pamphlets prepared by the best practical authorities on fertilizers for various crops and soils. Write today, mentioning crops and soils that you wish to improve.

German Kali Works, Inc., 42 Broadway, New York


Empire Bldg., Atlanta, Ga.

The Relation of Light to Greenhouse Culture

Being extracts from a series of experiments made by the Mass. Agricultural Experiment Station.

In July, The Mass. Agricultural Experiment Station published a Bulletin making for the first time public—the results of a series of exhaustive experiments conducted by them for the past few years. Many of the results are so intensely vital to greenhouse owners and prospective builders, that we have made selections here and there from the text and are giving them below.

1. Lack of light is responsible for many greenhouse diseases.
2. The old type of greenhouse was crude in construction, especially as regards light. The modern tendency is to build larger houses; to use stronger material, casting less shade; and to use larger and better quality glass.
3. Large houses can be constructed relatively more cheaply and managed more easily because there is a less rapid change of atmospheric conditions, etc. This helps to eliminate many greenhouse troubles.
4. Morning light is more intense than afternoon light, our experiments showing a difference of 10 per cent, and ranging as high as 30 per cent for some houses.
5. The location of a house as regards points of the compass has a bearing on the practice of syringing plants, the yield of the crop, and to a certain extent on fungus infection.
6. To obtain the best results in a house running east and west, the house should be from 15 to 30 degrees north of east. This enables the plant to take advantage of the more intense morning light and the crop can be syringed with less danger from infection.
7. There appear to be no important differences in the light in a greenhouse at different distances from the glass, practically the same light being obtained at 5 feet as at 30 feet.

The Experiment Station Bulletin contains over forty pages devoted to the subject. You should read it from cover to cover. The Experiment Station has just written us that they will be very glad to mail copies of the Bulletin to all who may write for them.

Lord & Burnham Co.

SALES OFFICES

NEW YORK  BOSTON  PHILADELPHIA
42nd Street Bldg.  Tremont Bldg.  Franklin Bank Bldg.

ROCHESTER, Granite Bldg.

CHICAGO  ROCKFORD  CANADA
Rookery Bldg.

TORONTO, CANADA, 12 Queen St. E.

FACTORIES

Irvington, N. Y.
Des Plaines, Ill.

In writing to advertisers please mention The Cornell Countryman
The Great Worm Destroyer and Stock Conditioner

Sal-Vet is first a worm destroyer; second, a conditioner; a medicated salt. It contains several medicinal elements which promptly kill and expel stomach and free intestinal worms and in the meantime puts the digestive organs in a healthy, vigorous condition. It sharpens the appetite—tones the blood—puts life and vitality into the whole system. It aids digestion—helps the animal to derive more good from its feed.

No Drenching—No Handling—They Doctor Themselves

It is easy to feed Sal-Vet—you feed it just as you do salt. Put it where all your stock—sheep, lambs, hogs, horses and cattle, can get at it daily and they will doctor themselves. It will keep your hogs, sheep and lambs from dying—make your horses and cattle look better, thrive better—save you money in saving feed—make you more profit by making your stock more valuable.
BOOK BINDERY

START RIGHT

HAVE YOUR COUNTRYMAN BOUND
WE BIND ANYTHING

J. WILL TREE'S
113 N. Tioga Street

DAIRY SUPPLIES

We are headquarters for Milk Bottles, Cans, Caps, Carriers, Churns, Drainers, Pasteurizers, Separators, Ice Creamers, etc., and everything used by handlers of milk, cream, butter, eggs, ice cream or cheese. Best goods, fair prices, prompt shipments. Satisfaction guaranteed. Send us today your list of needs. No order too small.

WISNER MFG. CO., 230 Greenwich St., N.Y.

Everything For Dairymen Always In Stock

LEHIGH VALLEY RAILROAD
BLACK DIAMOND EXPRESS ROUTE

The only line to and from Ithaca Cornell University with through trains to New York, Philadelphia, Rochester, Buffalo and Chicago. With Stone Ballast, Automatic Electric Block Signals, Steel Coaches, Steel Sleeping Cars, Steel Parlor Cars, Steel Buffet, Library, Smoking Cars, Steel Dining Cars—Service a la Carte.

COMFORT, SAFETY AND CLEANLINESS

CALL AT LEHIGH VALLEY CITY OFFICE FOR FULL INFORMATION

Had you any trouble with the MARCH WIND coming through crack or crevice in the Greenhouse?

TWEMLOW'S

Old English

Semi-Liquid

Glazing Putty

and Elastic

Will stop the trouble. Put up in 16 pound cans; 50 and 80 pound buckets.

Hammond's Greenhouse White, a SUPERB PAINT, with years' record to back it up, for use on wood or iron Greenhouses. It stays where you put it. In 5, 10, 15, 20, 25, or 30 Gallons.

HAMMOND'S PAINT AND SLUG SHOT WORKS, Fishkill-on-Hudson, New York.

The University Photo Shop, G. F. Morgan
314 College Ave.

SPECIAL ATTENTION GIVEN TO FRAMING

10 per cent. off on Frames when furnished with the pictures we make

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Running Water
AT Little Expense!

Don't think that running water on your farm means big expense and lots of trouble. You can now have running water in every building at small first cost and almost no upkeep expense. Save work, money and time by installing one of the 300 Goulds Reliable Pumps.

You and your family can enjoy the luxury and protection of running water. No more tramping through the snow on a winter's morning to reach the well or spring. No more big risk of fire. The water can be right on tap in the house or barn ready for instant use. You can have a private waterworks system at very little expense. Just the twist of a faucet and the water will gush forth.

Goulds Reliable Pumps

Get the Facts

Our big illustrated book, "Water Supply for the Country Home," is packed from cover to cover with good ideas for every farmer with a water problem on his hands. Write for it today. NOW. Tells things that you want to know about water and pumps. A postal brings it free.

16 West Fall St.
SENECA FALLS, N. Y.

PURE BEEF CRACKLINGS

TRADE MARK REGISTERED

THIS BRAND HAS ESTABLISHED
A NEW STANDARD FOR

BEEF SCRAP

The Flavell Co.
Asbury Park, N. J.

CORONA TYPEWRITER

Price, $50.00

Is not only the lightest type bar machine made, but is also the most compact.

- Weighs 6 lbs. -

Showing machine in case.

VISIBLE WRITING

UNIVERSAL KEYBOARD

BALL-BEARING CARRIAGE

FULL WIDTH

TWO-COLOR RIBBON

BACK SPACER

Will positively do anything that may be done on any $100 machine. Fully guaranteed. Fully protected. Especially desirable for the student, professor, physician and clergyman.

SOLD ON EASY TERMS TO SUIT PURCHASER

DAVIS-BROWN ELECTRIC CO.
213 East State Street

In writing to advertisers please mention THE CORNELL COUNTRYMAN
CORNELL POULTRY

Breeding Stock: A good supply of Single Comb White Leghorn breeders is available and poultrymen should let us know their needs. A few good breeders of the following varieties may also be furnished: Barred, White and Buff Plymouth Rocks, Rhode Island Reds, Mottled Anconas, Pekin, Rouen and Indian Runner Ducks and Toulouse Geese.

Four Good Records by S. C. White Leghorns

<table>
<thead>
<tr>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Total Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>2nd year</td>
<td>3rd year</td>
<td>laid 3 years</td>
</tr>
<tr>
<td>Lady Cornell</td>
<td>257</td>
<td>200</td>
<td>191</td>
</tr>
<tr>
<td>Madam Cornell</td>
<td>245</td>
<td>131</td>
<td>130</td>
</tr>
<tr>
<td>Cornell Surprise</td>
<td>186</td>
<td>136</td>
<td>539</td>
</tr>
<tr>
<td>Cornell Supreme</td>
<td>182</td>
<td>196</td>
<td>562</td>
</tr>
</tbody>
</table>

Laying Stock: A limited supply of layers of the above mentioned varieties may be supplied. Persons interested should send in their requests early.

Market Eggs, Poultry, Feathers, etc., are always available at the Sales Room.

DEPARTMENT OF POULTRY HUSBANDRY
New York State College of Agriculture

“BACK TO THE FARM”

That is just what must take place in this country, and the sooner the better, or other countries will be obliged to feed us. This publication is doing all it can to make this movement pleasurable and profitable, and after you are persuaded—well, that is where we come in.

We can find that farm for you

We have probably the largest list to select from in Central New York State.

Ithaca Realty Company
202 N. Tioga St., Ithaca, N. Y. “You’re Safe in Our Hands”

A postal card request will bring you a copy of our list of some hundreds of Practical Agricultural Books

compiled from our lists of regular and recommended books as used at the N. Y. State Agricultural College here at Cornell

The Corner Bookstores
ITHACA, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
THE

Most Attractive Gifts

TO GIVE OR SEND A FRIEND

Satin Pennants or Banners either maroon or white

Pennants, 12 x 30, 98c.  Banners, 18 x 36, $1.98
15 x 36, $1.49

New Designs in Pillow Covers, Fell, Satin or Leather
From $2.00 to $7.50

Featuring the new seal in many new forms.
You will find a most complete and exclusive assortment at The Very Lowest Prices.

Be sure and investigate before purchasing

Rothschild Bros.
Ithaca, N. Y.
It's a part of your education
Don't neglect it!

LEARN the manner in which your garments
are scientifically cleaned by the New
Process. Your garments will tell. Come in
and we will show you.

Modern Dry-Cleaning and Pressing Works

W. F. FLETCHER CO., Inc. 103 Dryden Road

Norton Printing Co. 317 E. State St.
COLLEGE, FRATERNITY and COMMERCIAL PRINTING
Engraved Cards and Invitations Rubber and Metal Hand Printing Stamps

Robinson’s Photograph Shop White & Burdick Co.
214 East State Street
Photographer for the Senior Class Supplies for Agricultural Students

New York State College of Agriculture at Cornell University

THE DEPARTMENT OF ANIMAL HUSBANDRY

BREEDS Percheron Horses, Holstein, Jersey, Guernsey, Ayrshire,
Short Horn Cattle, Dorset, Shropshire, Rambouillet Sheep, Cheshire Swine.
Regular Public Sale of all Surplus Young Stock, except Swine, on

FRIDAY OF FARMERS’ WEEK EACH YEAR

In writing to advertisers please mention The Cornell Countryman
FOR THE LATEST OF ORIGINAL STYLES

SEE

Sheltz The Tailor

Maker of Fine Clothes

A LARGE ASSORTMENT OF WOOLENS FOR

Suits
Dress Suits
Overcoats

AND ALL OTHER GARMENTS

Raincoats
Mackinaws
Neckwear

PHOENIX SILK HOSE

FOR MEN AND WOMEN
The Shops of Shops
Come right in to headquarters where you can find everything for man’s wear at lowest prices.
Leave your measure for ONE HALF DOZEN SHIRTS for ONE DOZEN DOLLARS.
We have a whale of a stock of Furnishing Goods, Hats and Caps.
TOWN SHOP, L. C. BEMENT HILL SHOP,
142 E. State St. The Toggery Shops 413 College Ave.

THE TOMPKINS COUNTY NATIONAL BANK
135-137 E. State St. ESTABLISHED 1836
Capital $100,000 Surplus and Undivided Profits $165,000
Safe Deposit Boxes for Rent

THE FIRST NATIONAL BANK
Cornell Library Building
Capital, Surplus and Profits, $350,000.00
Oldest National Bank Safe Deposit Boxes for Rent

ITHACA SAVINGS BANK
INCORPORATED 1868
Tioga Street, cor. Seneca ITHACA, N. Y.

When wanting QUALITY, SERVICE AND CLEANLINESS go to
WANZER & HOWELL, The Grocers

PICTURES PICTURE FRAMES
STUDENTS’ FURNITURE
Manufacturers of Special Furniture for FRATERNITIES AND CLUB ROOMS

H. J. BOOL CO.
(Opposite Tompkins County Bank)

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Cafeteria

HOME ECONOMICS BUILDING
THREE MEALS DAILY

Conlon
PHOTOGRAPHER
OPPOSITE TOMPKINS COUNTY BANK
High-Grade Work Only
Bell Phone, 173-W

CARR & STODDARD
MERCHANT TAILORS
UP-TO-DATE STYLES AND WORK
SENeca AND AURORA, NEXT LENT'S MUSIC STORE

BAXTER'S
Clothing and Furnishings

have pleased hundreds of CORNELL students during the last Five Years. Why? Because we sell only first class merchandise and guarantee every dollar's worth of it; we fit our clothing to please; our service is unexcelled, and last but not least, we sell at One Price to All.

Please consiers this "Shop," "Your Shop." You get your money's worth here.

E. B. BAXTER, ONE PRICE TO ALL
"The Quality Shop"
Satisfaction guaranteed
150 E. State St., Ithaca, N.Y.

D. S. O'BRIEN
MARKETS
222 North Aurora Street
430 North Cayuga Street
DEALER IN
FRESH, SALT AND SMOKED MEATS
Poultry and Game in Season
D. S. O'BRIEN

In writing to advertisers please mention THE CORNELL COUNTRYMAN
WISE THE PRINTER

Is at your service for all classes of Fine PRINTING ENGRAVING ETC.

Buffalo Street, Next to Post Office, ITHACA, N.Y.

Ithaca Phone 76x

The Palace Laundry...

323 and 325 Eddy Street

F. C. BARNARD, Prop.

ITHACA HOTEL

Ithaca's Leading Hotel

American and European Plan

All rooms have running hot and cold water, electric lights, local and long distance telephones. Our feature is the modified European plan, served in the Dutch Kitchen at the most reasonable prices obtainable.

RATES

American Plan, $3.00 and up.
European Plan, 1.25 and up.

J. A. and J. N. CAUSER, Props.

STUDENT SUPPLY STORE

The Modern Method Laundry

JOHN REAMER, Prop.

A. B. KENNEDY Dealer in Watches and Jewelry, Cut Glass and Fine Silver for Weddings. Cornell Pins, Fobs, Souvenir Goods, etc.

EAST STATE ST., ITHACA, N. Y. Opp. New Ithaca Hotel

We keep a fine line of diamonds and jewelry and do all kinds of repairing neatly at:

Heggies' Jewelry Store ===

136 E. State St.
The ART store is the Xmas shoppers' mecca. Our display is of a DECEMBER morn.

THE H. C. CABLE ART STORE
Ithaca Phone 180-X
405 COLLEGE AVE.

Things are changing—so are you—and it's time you visited the PHOTOGRAPHER.

KODAKS
SUPPLIES and
AMATEUR
FINISHING

WE DO YOUR MENDING FREE
FOREST CITY LAUNDRY
E. M. MERRILL
PHONE
209 NORTH AURORA STREET

Cut flowers, decorative plants, etc.
THE BOOL FLORAL CO.
215 East State St., Ithaca, N. Y.

Peter Scusa
MODERN SHOE REPAIRING
Neatly and Promptly Done

Shoes called for and delivered in any part of the City

H. L. O’DANIEL,
Both Phones. 204 N Tioga St.

Should You or Your Friends WANT A FARM

CALL ON US!

The beautiful lake region of Central New York offers you an ideal home. Let us locate you where you will be more than satisfied. Write us for a list of satisfied customers.

W. B. GEORGIA & SON
REAL ESTATE

156 E. State St. ITHACA, N. Y.

PIANOS, MANDOLINS, GUITARS, BANJOS and VIOLINS
Rented or sold on Easy Payments. “Songs of Cornell.” All the latest music; Strings and supplies for all instruments at lowest prices.

LENT’S MUSIC STORE
122 N. Aurora Street
Victor Talking Machines, Records, Etc.

KOHM & BRUNNE
THE LATEST STYLES
AT MODERATE PRICES

TAILORS
222 East State Street
"If you get it from us it's right"

**BUTTRICK & FRAWLEY**

One Price Clothiers and Furnishers

This fall season finds us more fully equipped to satisfy your wants than ever before. Special attention has been paid to get best material at minimum price. Suits and Overcoats, $10.00 to $30.00; Raincoats, $5.00 to $30.00; Mackinaws, $6.00 to $12.00. We make Suits to measure and save you from $5.00 to $10.00.

**VISIT OUR SHOE DEPARTMENT**

Hats, Gloves, Shirts, Sweaters, Underwear, and all other articles you'd find in a first class shop. Full Dress and Tuxedo Suits for sale and to rent.

"If not we make it right" 134 East State Street

---

**PROFESSORS, STUDENTS, INSTRUCTORS,** you will get MORE INSURANCE FOR LESS MONEY IF YOU HAVE A POLICY WITH The Travelers Life Insurance Company OF HARTFORD, CONN.

J. J. SINSABAUGH, Agent,

149 East State Street ITHACA, N. Y.

INSURANCE OF ALL KINDS

---

**Williams Brothers**

ITHACA, NEW YORK

WELL DRILLING MACHINERY AND TOOLS

---

**The Clinton House**

Corner Cayuga and Seneca Sts.

TABLE D'HOTE SERVICE

Cuisine and Service Unexcelled

Luncheon, 12 to 2 - - - $0.75
Dinner, 6 to 8 - - - .75
Sunday Dinner, 1 to 2:30 - .75

SPECIAL HOLIDAY DINNERS

"Ithaca's Popular Hotel"

---

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Ithaca's Greatest Showing of Out-Door Winter Equipment

**SKATES**
Outfitters of the Varsity Hockey Team. We carry the full line of "Spalding" and "Peck and Snyder" skates, 75c to $5.00. Ours is the most complete and largest stock of skating shoes priced from $3.00 to $6.00.

**Sweaters and Mackinaws**
Our "Patrick" Mackinaws are the warmest and best made, as well as the most popular coats sold in Ithaca. An enormous stock of Mackinaws, $5 to $10. Our "Cayuga" Sweaters have been chosen for use by the Varsity Baseball Teams for the past two seasons as against all competitors. Big, warm roll-collar Sweaters, $5 to $8.50.

Treman King & Co.

Skiis, Basket Ball Outfits, Board Track Outfits, etc. Manufacturers of "Cornell Brooder Heaters".

Mackinaws
Sweaters
Overcoats
Suitings
Shoes
Complete Lines of FURNISHINGS AND FULL-DRESS ACCESSORIES

OUR SALESMEN WILL BE GLAD TO SHOW YOU

THE UNIVERSITY HABERDASHERY
320-322 College Ave.
A. F. STURM, Mgr.

Victor Victrola Parlors

with the most complete stock in the various woods and finishes.

Complete stock of Records
WE HAVE THEM WHEN YOU WANT THEM
YOU DON'T HAVE TO WAIT AT

HICKEY'S LYCEUM MUSIC STORES
It's very human for one to buy his shoes from the store that can offer the most inducements in the way of style, assortment, quality and big value. For that reason we expect to see you in this store very soon now.

**THE NEW**

**Fall Styles**

are priced at $4.00 to $5.00

Banister make $6.00 to $10.00

**ITHACA BOOT SHOP, Inc.**

204 E. State Street

---

**New York Life Insurance Company**

C. H. WEBSTER, Agent

OFFICE: Student Supply Store
RESIDENCE: 121 Catherine St.

*Both phones*
Harrisons' Nurseries Sell Only Trees They Themselves Grow

This announces a policy which we began this season and which we will continue to pursue. Harrisons' Nurseries grow all the fruit trees that they sell to their own customers. The only trees you can buy from Harrisons' Nurseries will be those grown by Harrisons'.

This step was decided upon after years of experience and investigation. We stand behind every tree that leaves our packing shed. It must be true to name, must have good growth, big fibrous roots, an absolutely clean bill of health, and must possess superior bearing habits and abilities. To produce such trees requires the best of care and the best of soil and climate. The only way we would be absolutely certain about the trees we offered to our customers was to grow them ourselves and give them the required care and natural advantages.

THINGS ABOUT HARRISONS' THAT YOU OUGHT TO KNOW

All fruit trees grown and sold by us are budded from bearing orchards. OUR COMPLETE NEW CATALOG of all trees and plants we grow is ready now for 1914. A mighty interesting story of peach growing appears on pages 13 and 14. It tells what was done in the face of disaster to save a crop of peaches this year, and is proof positive that spraying and pruning pay the planter.

"The Why and How of Shade Trees and Evergreens", a book for all home planters, is sent free on request.

"How to Grow and Market Fruit", the complete guide book, is sold at 50 cents a copy, and that 50 cents is rebated with your first $5 order for trees and plants.

Splendid farms are for sale at low prices, on the Eastern Shore. Write for particulars.

Harrisons' Nurseries, Cornell Street, Berlin, Md.
The construction of the De Laval bowl is such that it can be completely taken apart for washing.

The discs, bowl parts and tinware have no tubes, crevices, holes or corrugated surfaces such as are found in other machines and which are very hard to clean.

The De Laval discs are washed as a single piece and the whole machine can be thoroughly

CLEANED IN FIVE MINUTES

There is no part of the De Laval bowl which cannot be easily reached and seen, so that the operator can always tell whether or not every part has been properly cleaned.

The ease with which the De Laval can be thoroughly washed and kept in a sanitary condition is one reason why creamerymen prefer De Laval to other separator cream, and is likewise one of the reasons why butter made from De Laval cream has always scored highest at the National Dairy Show for over 20 years.

The 72-page De Laval Dairy Hand Book, in which important dairy questions are ably discussed by the best authorities, is a book that every cow owner should have. Mailed free upon request if you mention this paper. Big De Laval catalog also mailed upon request. Write to nearest office.

THE DE LAVAL SEPARATOR CO.

NEW YORK CHICAGO SAN FRANCISCO SEATTLE

PRESS OF W. F. HUMPHREY, GENEVA, N. Y.
The Cornell Countryman

JANUARY, 1914
The successful farmer of today has gained success through the study and application of scientific principal plus the practice of economic methods.

**WADSWORTH**

**DOUBLE-THICK PAINT**

is formulated on scientific chemistry, is economical in cost, remarkable for covering capacity and of many years’ durability when properly applied.

Tried and proved for more than half a century. A postal card will bring you our booklet “Common-Sense Rules for the Application of Paint,” by one who knows.

**EDWARD JOSLIN**

GENERAL SALES AGENT

No. 11 South First St.  FULTON, N. Y.

Abe Martin says: “Success did not succeed”. Maybe so, but the orchard grower that succeeds in spraying his fruit trees this fall with REX Lime and Sulphur Solution will be successful in preventing a mighty big lot of trouble that might be awaiting him because of spore life that is active all during the dormant period. We stake the reputation of thousands of the best fruit growers in the United States on the assertion that a good, thorough wash with REX Lime and Sulphur Solution about one week or ten days after the leaves drop will banish San Jose Scale and build up the trees with less expense and more satisfaction than any spray material that could possibly be used.

Woodman spare the tree; do not oil it but spray it and save it!

We were creators of Commercial Lime and Sulphur Solution and are now the only EXCLUSIVE manufacturers of it in the United States. The Rochester office would be pleased to have your inquiries. Address

**The Rex Company**

ROCHESTER, N. Y.

P. O. BOX 712
OFFICIAL PUBLICATIONS of CORNELL UNIVERSITY

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second-class matter at the post office at Ithaca N. Y. pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and postfree on request:

General Circular of Information for prospective students,
Announcement of the College of Arts and Sciences,
Courses of Instruction in the College of Arts and Sciences,
Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts,
Announcement of the College of Civil Engineering,
Announcement of the College of Agriculture,
Announcement of the Medical College,
Announcement of the New York State College of Agriculture,
Announcement of the Winter-Courses in the College of Agriculture,
Announcement of the New York State Veterinary College,
Announcement of the Graduate School,
Announcement of the Summer Session,
The President's Annual Report,
Pamphlet on prizes, samples of entrance and scholarship examination papers, special departmental announcements, etc.

Correspondence concerning the publications of the University should be addressed to

The Registrar of Cornell University
ITHACA, N. Y.

New York State College of Agriculture at Cornell University
W. A. Stocking, Jr., Acting Director.

The College of Agriculture is one of several co-ordinate colleges comprising Cornell University. The work of the College is of three general kinds: The regular teaching work of undergraduate and graduate grade; the experiment work; the extension work. The resident instruction falls in the following groups:

1. Four-year course, leading to the degree Bachelor of Science in Agriculture (B. S. in Agr.). When desired, the last two years may be chosen in subjects pertaining to landscape architecture and out-door art, or to home economics. In the Graduate School of the University students may secure the Master's and Doctor's degrees (M.S. in Agr. and Ph.D.).

2. Special work, comprising one or two years: (a) Agriculture special; (b) Nature-study special or normal course.

3. Winter-Courses of 12 weeks: (a) General Agriculture; (b) Dairy Industry; (c) Poultry Husbandry; (d) Horticulture; (e) Home Economics.

THE INSTRUCTION IS DIVIDED AMONG TWENTY-TWO DEPARTMENTS AS FOLLOWS

| FARM PRACTICE and FARM CROPS | ANIMAL HUSBANDRY |
| FARM MANAGEMENT | POUPLTRY HUSBANDRY |
| AGRICULTURAL CHEMISTRY | DAIRY INDUSTRY |
| PLANT PHYSIOLOGY | FARM MECHANICS |
| PLANT PATHOLOGY | FORESTRY |
| SOIL TECHNOLOGY | RURAL ART |
| PLANT-BREEDING | DRAWING |
| ENTOMOLOGY, BIOLOGY and NATURE-STUDY | HOME ECONOMICS |
| HORTICULTURE | METEOROLOGY |
| POMOLOGY | RURAL ECONOMY |
| | RURAL EDUCATION |
| | EXTENSION TEACHING |
BE ON THE
SAFE SIDE!

You needn't fear a visit from the Sealer of Weights and Measures if you use . . .

THATCHER
MILK
BOTTLES

You won’t give over-capacity either, because they are accurate!
Send for our free book. It tells exactly why Thatcher bottles add to your profits.

THATCHER MFG. CO.
103 Market St. ELMIRA, N.Y.

Whether you aim for profit on eggs or broilers, you'll find H-O Scratching Feed one of the most profitable investments you ever made. It contains oat hulls or oat groats, and this gives it a stability not found in other scratching feeds.

H-O POULTRY FEEDS
INCLUDE
Steam-Cooked Chick Feed
Poultry Feed Chick Feed
Dry Poultry Mash Scratching Feed

THE H-O COMPANY
J. J. CAMPBELL
MILLS
BUFFALO, N.Y.
Gen. Sales Agt.
Hartford, Conn.

Dixie Brand
COTTON SEED MEAL

THE CHEAPEST SOURCE OF PROTEIN FOR DAIRY COWS

HUMPHREYS-GODWIN CO., Memphis, Tenn.

CORNELL POULTRY

Breeding Stock: A good supply of Single Comb White Leghorn breeders is available and poultrymen should let us know their needs. A few good breeders of the following varieties may also be furnished: Barred, White and Buff Plymouth Rocks, Rhode Island Reds, Mottled Anconas, Pekin, Rouen and Indian Runner Ducks and Toulouse Geese.

Four Good Records by S. C. White Leghorns

<table>
<thead>
<tr>
<th>Breed</th>
<th>1st year Eggs laid</th>
<th>2nd year Eggs laid</th>
<th>3rd year Eggs laid</th>
<th>Total Eggs laid 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lady Cornell</td>
<td>227</td>
<td>200</td>
<td>191</td>
<td>648</td>
</tr>
<tr>
<td>Madam Cornell</td>
<td>245</td>
<td>131</td>
<td>136</td>
<td>539</td>
</tr>
<tr>
<td>Cornell Surprise</td>
<td>180</td>
<td>186</td>
<td>195</td>
<td>562</td>
</tr>
<tr>
<td>Cornell Supreme</td>
<td>242</td>
<td>198</td>
<td>220</td>
<td>660</td>
</tr>
</tbody>
</table>

Laying Stock: A limited supply of layers of the above mentioned varieties may be supplied. Persons interested should send in their requests early.

Market Eggs, Poultry, Feathers, etc., are always available at the Sales Room.

DEPARTMENT OF POULTRY HUSBANDRY
New York State College of Agriculture
ITHACA, N.Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
The improved processes used in delinting and crushing cottonseed have rendered it impossible (or at least commercially impracticable) to make a meal which can be guaranteed to contain 8% ammonia, which guarantee has been given with all of this Company's meal bearing The A. C. O. Co's well known "Red Tag."

For this reason we have decided to change the "Red Tag" to a basis of 7 1/2% ammonia rather than to issue a tag showing a sliding scale or minimum and maximum percentages which leaves the buyer in doubt as to what is sold. We feel that this definite statement of content will appeal to users of cottonseed meal generally and that our "Red Tag" as revised will be recognized in the future as the previous form of "Red Tag" has been in the past as representing an absolutely trustworthy grade.

**NET WEIGHTS:**

Cottonseed meal has been, heretofore, sold upon gross weight, that is to say, 100 lbs. weight including weight of bag. Our new contracts will be filled with meal packed in sacks containing 100 lbs. net weight conformably with the recently established rule of the Inter-state Cottonseed Crushers' Association.

Our "Red Tag" will read as follows:
COME TO
KINDERHOOK...

during vacation; inspect the community; see what is being accomplished by progressive farmers in fruit and general farming.

WRITE FOR BOOKLET
RURAL LIFE CO.
KINDERHOOK, N. Y.

William P. Stark Nurseries

We can save you 30% to 50% on highest-grade fruit and ornamental trees. Buy direct from nursery and cut out agents' commission. All varieties of apple, peach, pear, plum, cherry, apricot, grape, blackberries, raspberries, currants, gooseberries, roses—doubly guaranteed true to name. Hardy Ozark Mountain-grown, exclusive distribution. J. H. Hale Peach—most profitable in America. NO AGENTS—SAVE HALF. All orders given prompt individual attention. Quick delivery. Write for illustrated catalog. Describes complete assortment of tested varieties. All prices in plain figures. No one can buy lower than you. Write for catalog today. Address WILLIAM P. STARK NURSERIES Sta. E 12, Stark City, Mo.

Stark City, Mo.

ARE YOU ONE
who does not know what this college and experiment station are doing for you through its 2,000 students and faculty of 350? Have you a problem on your own farm that is giving you trouble?

Then YOU NEED THE CORNELL COUNTRYMAN. It is the FOREMOST AGRICULTURAL PAPER THAT IS PUBLISHED. It contains articles by authorities on livestock, fruit, grain, potatoes and other crops that will help you to solve your problem.

SUBSCRIBE NOW. $1.00 per year (see page 11 of this issue).

The Cornell Countryman
Ithaca, N. Y.

Alfalfa and How to Grow It

THIS little booklet gives in complete form, and yet briefly so that a busy man has time to read it, the very best known methods for securing stand and maximum crop with the great ALFALFA plant. It also has chapters devoted to soil fertility, to the use of the greatest legumes for building soils, including Soy Beans, the Clovers, Melilotus and Vetches.

THESE WHO ARE INTERESTED IN THESE SUBJECTS SHOULD WRITE TO

The Wing Seed Company
OF MECHANICSBURG, OHIO
FOR THIS FREE BOOKLET

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Cyphers Cos' Free Service

IS your name on the Cyphers Company's mailing list? Have you found the way to secure the latest, most reliable poultry information? We want the name and address of every man and woman in America who is seriously interested in the poultry industry.
The below listed Cyphers Company Bulletins are issued for the benefit of Cyphers Company customers. Any three of these bulletins will be sent you absolutely free.

- No. 1—Winter Eggs and How to Get Them.
- No. 2—Dry Feeding by the Hopper Method.
- No. 3—Sanitary Conditions for Poultry.
- No. 4—Back-Yard Poultry Keeping.
- No. 5—Green Food for Poultry.
- No. 6—Dryness Essential for Poultry Houses.
- No. 7—Common Sense: Feeding of Poultry.
- No. 8—Important Don'ts for Beginners to Memorize.
- No. 9—Proper Brooding of Chicks.
- No. 10—Proper Feeding of Chicks.
- No. 11—Handling of Incubators to Get Best Results.
- No. 12—Marketing Eggs at a Profit.

Cyphers Company Free Personal-Letter Service

Whatever poultry problem is on your mind, whatever advice you desire, let us be your counselors. We will gladly write to you, let you have any subject pertaining to the poultry industry, giving you the benefit of the combined experience of the several poultry experts in our "Helps Over Hard Boiled Eggs" department. Every man and woman poultry farmer is a valuable Cyphers Company customer! We want everyone to know that the Cyphers Company is in business for the greater success of poultry keepers. We want to see every chicken raise making money. That is also why we have collected and published our truly great book of $1,000.00 Prize Reports of Successful Poultry Growers.

There's no word of theory in it. Just plain, "brass tack," day-by-day experiences of successful people in your business from near and far. In this book you will find reports from people whose problems were identical with your own, and who were successful, will be of direct help to you. A free copy of this book will be mailed to any address, domestic or foreign, on receipt of 10 cents in U.S. stamps to cover cost of mailing. The contents alone cost us $1,000.00 in prize money. Number of pages, 156; size of pages, 7 by 10 inches; fully illustrated from photographs and original drawings.

Get Your Free Copy of "Poultry Foods and Feeding"

35 pages packed tight with the sort of everyday, usable information that every poultry keeper greatly needs. Begin with the first day the chick is out of the shell and continues through, step by step, to complete preparation for market.

As in all Cyphers Company literature, the statements and advice in this book are founded upon results actually proved out on the-Cyphers Company $5,000.00 Experiment and Demonstration All-Purpose Poultry Feed. Records of thousands of standard feeds are marketed every year. "Poultry Foods and Feeding" is published for free distribution to all persons seriously interested in the poultry business. Your copy awaits your request. Also please write today for

"Best Methods of Brooding"—FREE

Successful incubation is just half the battle. To produce healthy, vigorous chicks, to rear them in safe surroundings, to market as nearly 100 per cent of your hatch as possible, you need today to know the direct preceding facts. Ask for a copy of this booklet of 63 pages. Just the practical knowledge and experience of poultry experts, boiled down—the very essence of the things you need to know in profitable chick raising. Write for your copy today.

Get the Cyphers Company 244-Page Catalogue Also

This compendium of POULTRY FACTS pictures and describes Cyphers Incubators and Brooders—the World's Standard Poultry Equipment. Used on more Government Experiment Stations, at more State Agricultural Colleges, by more successful poultry growers than all other makes combined.
The Cyphers Company 244 page catalogue (size of pages, 8 by 10 inches) also illustrates and tells about over 100 Standard Poultry Specialties—everything you really need in poultry raising. Contains illustrations from phototographs taken of actual hatching tests made in every inch of testing that Cyphers Incubators can do under all conditions, for brooder hatches—for continuous profitable service. Let us mail you a copy of the big Cyphers Catalogue. Please use coupon herewith, and address right now.

Cyphers Incubator Company
Dept. 176
Buffalo, N. Y.

New York, 57th St.: Bea-

Chicago, 121-130 East 57th; III., 332-334, Plymouth Ct.; Kansas City, Mo., 31-32, 110 Broadway; Long-

n, Eng., 121 155 Flushing P. M.
DIARIES AND
DESK CALENDARS

The Co-op. has a good stock of these for student use. The best calendar seems to be "Daily Memorandum" calendar. Many are now buying the perpetual diary instead of the old kind. Let us explain the difference to you.

TEXTBOOKS

If you want a textbook which is not required in classwork, let the Co-op. get the book for you. Our special order service is good.

THE CO-OP.
MORRILL HALL

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
# Table of Contents

**JANUARY, 1914**

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontispiece—Some of the persons in attendance at the School for Leadership.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The New Honor System.</td>
<td>B. W. Shaper</td>
<td>115</td>
</tr>
<tr>
<td>School for Leadership in Country Life.</td>
<td>A. R. Mann</td>
<td>117</td>
</tr>
<tr>
<td>Farm Efficiency.</td>
<td>K. C. Livermore</td>
<td>121</td>
</tr>
<tr>
<td>The Farm Bureau Movement.</td>
<td>L. S. Tenny</td>
<td>128</td>
</tr>
<tr>
<td>Reading for Rural Communities.</td>
<td>Sarah B. Askew</td>
<td>131</td>
</tr>
<tr>
<td>The Fourteenth Annual Agricultural Banquet.</td>
<td>W. D. Hill</td>
<td>135</td>
</tr>
<tr>
<td>Editorials</td>
<td></td>
<td>138</td>
</tr>
<tr>
<td>Campus Notes</td>
<td></td>
<td>140</td>
</tr>
<tr>
<td>Former Students</td>
<td></td>
<td>142</td>
</tr>
</tbody>
</table>

SUBSCRIPTION PRICE $1.00 PER YEAR
Canada, $1.15 Foreign, $1.30
Entered as second-class matter at the Post Office, Ithaca, N. Y.
Copyright by The Cornell Countryman
SOME OF THE PERSONS IN ATTENDANCE AT THE SCHOOL FOR LEADERSHIP, JUNE-JULY, 1913.
THE NEW HONOR SYSTEM

By B. W. Shaper, '14

THE question of an honor system has long been one of very much interest in Cornell University. The students of the College of Agriculture took up the idea some seven years ago and adopted the Honor System. It has been tried in the other colleges of the University, but with the exception of Law, the movement has not been entirely successful.

In our college, the reasons why the first attempt failed, are just two. The Honor System was not proclaimed enough, and it was not made a real live issue in the college. The first two or three years, the enthusiasm which created it carried the system along with fair success, but no foundations were laid for the successive generations to work upon. The Honor System in itself was not continuous; it needed a majority vote of the students to keep it alive. The time was bound to come when an attitude of indifference as to its meaning would grow up because of the uncertainty of its existence. Last year there seemed to be a general lack of enthusiasm over the Honor System, and this year, since no action was taken upon it, the system practically passed out of existence.

The other main reason why the Honor System has failed in its purpose was the indifferent attitude of the students toward the cheating or cribbing of fellow-students. Since the Honor System is essentially a movement by the students to have their examinations conducted in such a way, that they themselves would be put on their honor not to give or to receive outside aid during examination, and in this way to be relieved of the close watching of their so-called "eagle-eyed" professors, the personal honesty and integrity of the students has been at stake. In spite of all it has meant to be upon their honor, some students have cheated in examinations, but what is worse they have been in a large measure allowed to go unmolested by their fellow-students who really knew that cheating was going on.

Such was the condition this fall, when a number of students who were interested in the affairs of the college began studying methods which might make for a better and more efficient Honor System, and one which, in itself, would be lasting from year to year. It was thought that if the student body of the College of Agriculture could adopt a system that would gain momentum as it went along from year to year, one that would provide for its own existence, and one that would always appear to the students for their support, a great step in advance would be made. With this in view, work was started upon the revision of our Honor System.

Practically all of the professors of the Agricultural College were inter-
viewed, and were asked for suggestions. Every professor expressed himself in favor of an honor system and all very willingly offered their support. Conditions and workings of the honor system in the other colleges of the University were studied and as a result of these many conferences, new rules were drawn up which were to be submitted to the student body of the College of Agriculture, as well as to the Faculty, for approval. One thing was brought out very clearly, that no matter what rules or laws could be put in force, an honor system would never work unless the spirit and sentiment of the student body could be so aroused against cheating, that not only would individuals themselves refrain from cheating, but they would report those that persisted in seeking this outside aid in examinations.

An ideal situation would be one where no rules prevail, and personal honor would be so strong among the students, that no one would care or dare to hand in any work except his own. But in Cornell University, this condition does not exist. It will be necessary to have rules, and some body to carry out these rules for a sufficient length of time to allow a custom and sentiment to grow up, which will be so strong that the idea of students being on their honor will become a tradition.

The rules of the New Honor System of the College of Agriculture have been approved by the Faculty, and have been passed and accepted by the students of the college. The sentiment of the students has been expressed against cheating and the real strength of that feeling is what will spell our failure or success. The eyes of the University are upon us, the success of the Honor System in our college, will pave the way for other colleges to follow. As true Cornellians we owe it not only to ourselves, our fellow-students and our college, to get behind this new improvement, but we owe it to the University, for failing in a project that has the honor of any body of students at stake, cannot but reflect upon our Alma Mater.

---

**Student Honor Committee**

**Seniors**

Max Flabell Abell  
Lawrence Julius Benson  
Errol Stanley Bird  
Natalie Brookes Thompson  
John Judson Swift

**Juniors**

Archie Byron Dann  
Thyra Magdalene Jeremiassen  
Harold Malcolm Stanley  
Arthur Watson Wilson  
Paul Watson Wing
FOR a number of years the College of Agriculture was urged to establish a school for the training of social workers in rural communities. In response to this demand there was held July 21 to 28, 1911, a Training Conference for Rural Leaders. This conference lasted for eight days and consisted of three regular class periods in the forenoon, two in the afternoon, and one in the evening of each day. The total attendance was twenty-three persons, coming from five states. The second conference, held June 25 to July 5, 1912, was lengthened to ten days and the attendance was increased to fifty-nine persons, coming from ten states.

The success of these two conferences indicated the desirability of establishing such a training conference as a part of the regular work of the college. On June 24 to July 4, 1913, the third of these conferences was held under the name of the School for Leadership in Country Life. There was an attendance of ninety persons from twenty-two states, and from Washington, D. C., and Toronto, Canada. The persons in attendance were farmers, farm women, rural teachers and principals, district superintendents of schools, college professors, college students, grange officers and workers, farmers' institute lecturers, farm bureau agents, rural librarian, rural social investigator, rural pastors, secretaries of rural Young Men's and Young Women's Christian Associations, rural Sunday School superintendent, repre-
sentatives of rural philanthropic enterprises, boy scout officers, country merchant, civil engineer, and kindergartner. These persons came from the following states: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, South Carolina, Georgia, Alabama, Mississippi, Kentucky, Illinois, Iowa, Minnesota, Missouri, Nebraska, Louisiana, Texas, Arizona, Montana, California, Washington, D. C., and Toronto, Canada.

From the beginning the purpose of the school has been to provide a course of training for all classes of rural leaders and to offer fundamental courses that would be of value to all rural social workers rather than to offer specialized courses for particular classes of rural workers. From the first the desirability of providing a three years' graded course leading to a certificate was foreseen, and in the school this year both first and second year courses were offered. Third year courses will be added to the school next year [to be held June 23 to July 3, 1914, inclusive.]

The courses of instruction offered this year were as follows:

**Courses in Rural Leadership.**—First-year students: (1) The Psychology of Leadership; (2) The Study of Human Nature. Second-year students: (1) The Pedagogy of Leadership; (2) Group Organization.

**Courses in Rural Ethics.**—First-year students: (1) The Development of Rural Character. Second-year students: (1) Rural Personal Ideals; (2) The Family and the Rural Problem.

**Courses in Rural Sociology.**—First-year students: (1) Social Aspects of Rural Life; (2) Principles of Rural Sociology. Second-year students: (1) The Social Function of Rural Institutions; (2) Cooperation and Federation of Rural Social Agencies.

**Courses in Rural Economics.**—First-year students: (1) The Field of Rural Economics; (2) Some Applications of Economic Principles to the Problems of Rural Social Life. Second-year stu-
dents: (1) Business Organization and Cooperation.

**Courses on the Farm Home and the Family.**—Second-year students: (1) The Farm Boy; (2) The Farm Girl; (3) The Farm Woman; (4) Leadership for Farm Women and Girls.

**Course on the Rural Social Survey**, for second-year students.

**Course in Extension Teaching in Agriculture**, for first-year students.

**Course in Rural Play**, for all students.

**Course in Rural Athletics**, for all students.

The afternoon and evening periods were devoted to demonstrations, conferences, field trips, recreation, entertainments, and the like.

The class instruction was supplemented by a large and carefully selected exhibit of the work of a number of country life institutions.

Because of the very full schedule of required work and the distances between the College of Agriculture and rooming houses, it was found desirable to house persons in attendance on the school in tents near the college.

From the beginning the School for Leadership has been considered a college enterprise and has been directed from the general administration office. In working out the plans for the school invaluable assistance has been given by Fred M. Hill, State Secretary of County Work of the Young Men's Christian Association, and by John R. Boardman, of the Good Will Home Association, of Hinckley, Maine. Some of the courses have been given by members of the regular staff of the college and it has been necessary also to call in a number of specialists. The persons who served on the faculty of the School for Leadership last year who are not members of the regular staff of the college, are as follows:

John R. Boardman, B.S., Good Will Home Association, Lecturer on Rural Leadership.

Wilbert L. Anderson, D.D., Amherst, Mass., Lecturer on Rural Psychology.

Edwin L. Earp, Ph.D., Professor of Sociology, Drew Theological Seminary,
NEW SYSTEM OF PUBLICATIONS OF THE
U. S. DEPARTMENT OF AGRICULTURE

Beverly T. Galloway
Assistant Secretary of Agriculture

THE United States Department of Agriculture within the last two months has changed in many ways the character of its publications with a view to increasing their effectiveness and getting to the farmers the information which it has in its possession. Up to that time there had been an independent series of bulletins and circulars in each of the thirteen bureaus, divisions and offices of the Department. Constant difficulty presented itself in the past because of the inability of the Department through existing methods to get out to the people the large amount of valuable information which had been accumulated. Under the old system much highly technical matter was published in the bulletins, and attempt was made in some of the bulletins to give a popular statement of the scientific research. The result was that the lay reader was confused by the intermixing of highly technical material with the popular sections designed for his information, and scientists found the bulletins less adapted to their scientific needs, because of the internixture of popular statements.

Under the new plan of publication the independent series of bulletins and circulars of the various bureaus have been discontinued, and have been superseded by a departmental system of bulletins written in popular language for selected and general distribution and lay readers, and by the Journal of Agricultural Research in which hereafter purely scientific statement of highly technical matter will be communicated to the scientific world. All of the bulky annual reports heretofore issued and which are usually from a year to two years behind the period to which they relate, are to be abandoned or modified. This will include the annual report issued by the Bureau of Animal Industry, the annual report of the Office of Experiment Stations, the annual report of the Weather Bureau, and the annual report of the Bureau of Soils.

THE JOURNAL OF AGRICULTURAL RESEARCH

The Journal of Agricultural Research will be issued about once a month, royal octavo in size, of the scientific magazine type, from 75 to 100 pages, 12 numbers to constitute a volume. Such of the matter in the Journal as seems to merit additional circulation will be issued in the form of reprints or circulars. For the present at least, the Journal will be confined to the publication of the results of research made by the various specialists of the Department, but it will be extended later to include the scientific research work of the State...
Agricultural Experiment Stations, in which event two editors representing these stations will be added to the Editorial Committee. Extensive scientific articles, embodying a complete report of research investigations, will be considered as monographs, and may be published as supplements to the Journal. The first issue of the Journal appeared October 10th.

In addition, permission will be given to specialists to publish technical reports in journals of scientific societies or technical magazines specializing in highly restricted fields of scientific endeavor.

The Journal will be distributed only to Agricultural Colleges, technical schools, experiment stations, libraries of large universities, and certain Government depositories and institutions which make suitable exchanges. Miscellaneous applicants will be able to secure the Journal for fifteen cents a copy from the Superintendent of Documents, Government Printing Office, Washington, D. C.

DEPARTMENTAL BULLETINS

The Department series of Bulletins will hereafter include information designed for popular and semi-technical reading. They will capitalize for popular use the discoveries of laboratories and scientific specialists. All encyclopedic matter will be omitted. Much of the material which has heretofore been published by the Department under the term "Circular" will be issued in this series.

FARMERS' BULLETINS

The series of Farmers' Bulletins which has been running for several years will be improved to the end of making the bulletins strictly informational and specific in their nature, they include information and instruction relating to farming, stock raising, fruit growing, etc., and are to be prepared in the future with particular reference to certain regions or districts. This will make unnecessary the use of general terms or general expressions which are of comparatively little use in so far as directly helping the farmers to solve specific problems. The number of these bulletins as well as the editions will be considerably increased. They will be reduced in size to from 16 to 20 pages.

CROP REPORTER SUCCEEDS THE AGRICULTURAL OUTLOOK AND THE WEEKLY NEWS LETTER

The Monthly Crop Reporter has been discontinued. The crop forecasts which are made and which have heretofore appeared in the Crop Reporter, will be telegraphed to the various States and summaries issued to the press. In place of the Crop Reporter a Farmers' Bulletin known as the Agricultural Outlook will be issued from time to time during the crop seasons which will also contain the forecasts. This Agricultural Outlook in addition to supplying these forecasts, will include special discussions of timely subjects in a form that will convey to the farmers practical advice in dealing with their current problems.

The Weekly News Letter to Crop Correspondents which has been established contains a great deal of information on agricultural subjects which has been secured and which should be given out promptly if it is to be of the greatest use. This News Letter is circulated chiefly to crop correspondents, of which the Department has about 40,000. The correspondents are in a measure the leaders of their respective communities along agricultural lines. They are requested to see that the News Letter, or parts of it of local interest, get into the county papers. The News Letter, of which about a dozen issues have been published, has become extremely popular and there are more demands for it now than can be supplied. In order to prepare and distribute these special news letters an agricultural inventory of the various agricultural districts where agriculture predominates, is being prepared.

The Experiment Station Record, Weather Review, and North American
Fauna are to be continued but with certain modifications.

The Yearbook will be restricted to articles of a magazine type and this, it is believed, will add greatly to the popularity and value of this volume, of which 500,000 copies are printed and distributed annually.

The new plan of publication work has been designed primarily to improve the character of the Department's publications, and secondly to prevent waste in distribution. Through the economies effected, a greater output of information will become possible with the available appropriations. Certain changes will be made in the existing form of the publications designed with the view of improving their material, reducing their size, and adapting them to wider distribution.

---

FARM EFFICIENCY

By K. C. Livermore
Professor of Farm Management, Cornell University

EFFICIENCY studies are becoming popular in the business world. They deserve to be popular because they have so very frequently resulted in greater profits. With the information that is now available on the subject of farm management it is possible to study the efficiency of a farm business. And such studies promise to be equally as effective as in other enterprises. The purpose of this article is to show one method of analyzing a farm business and studying its efficiency.

Such a study should begin with those features of the business that have most to do with its success or failure. Farm surveys conducted in three counties of this State and similar surveys conducted in six or seven other states have shown with striking consistency that success in farming depends primarily upon just three factors. They are: size of business,
production, and diversity of business. The factor of man and horse efficiency also is important. Many other factors, such as, distance to market, feeding efficiency, breed of cows, type of soil, price index, and distribution of capital also have considerable effect upon profits. But with extremely few exceptions, if only the size, production and diversity of a farm business are correct, the farm will be profitable.

The size of a farm business is best represented by the number of acres actually in crops (grain, hay, fruit, vegetables, etc., but not woods, pasture or waste land) and the number of each kind of productive live stock important on that farm. On a dairy farm size would be represented by the crop acres and number of cows; on a poultry farm by crop acres and number of hens.

Or size may be expressed in one figure, called productive man work units. A work unit is a day of man labor. It is known that on the average, an acre of hay requires the equivalent of one day of man labor or one work unit; an acre of small grain two work units; an acre of corn grown in the eastern states six work units; an acre of potatoes 12 work units; one dairy cow 15 work units; cattle or colts running loose two work units per head; and the same information for other crops and animals is available. Then, knowing the acreage of each crop and the average number of each kind of animals for the year, one may calculate the total units of productive work included in the business. Fence repairing, work about the house, caring for the work horses and similar work should not be included because it is not directly productive.

The term production covers both the yields of crops and the production of animals. Production of a farm business may be represented by the yields per acre of the important crops and the receipts per cattle unit, per ewe or per hen according to importance.

It is easier to study production, however, if the crop yields are expressed in one number, called crop index. The crop index is a comparison with the average yields of the region as 100. If the crop index of a farm is 80, it means that the yields, when weighed by acreage, average only 80 per cent of the yields of the region, or, if the index is 125, the farm is 25 per cent better than the average in crop production.

The production of cattle or other stock is measured as follows: the sales of products and stock, and any increase of the inventory are added and from this are substracted the purchases of stock and any decrease of the inventory. The resulting figure is then divided by the number of producing stock. In the case of cattle the number of cattle units should be used in dividing, rather than the number of cows, because the increase from calf to mature cow is not a product of the cow. One cow, steer or bull, or two heifers or calves make a cattle unit.

The diversity of a farm business is not so easily measured as size and production. It involves the balance between crops and stock upon which depends the efficient use of pastures and non-salable feed-stuffs and also the supplying of enough but not too much manure for profitable crop production. Diversity also involves the distribution of work throughout the day and throughout the year which has much to do with the efficient use of labor, horses and equipment. Insurance against complete failure also is concerned.

The percentage of receipts that comes from crop sales together with a list of the most important products sold gives a fair indication of diversity.

The work rate is easily measured. On most farms the acres of crops per man and the animal units (except horses) per man show how much productive work the men are doing. The average number of men is found by adding together the number of months each man worked and dividing by twelve. One cow, steer, or bull is
counted an animal unit, two heifers, calves or colts, seven sheep, five hogs, or 100 hens make a unit. Acres of crops per horse show how well the horses are used.

But when there are many intensive crops like potatoes, cabbage and fruits, or when very much stock is kept, it is better to measure the rate of both man and horse work in terms of productive work units. Horse work units are calculated by the same method used for man work units.

To illustrate these efficiency factors and to show how directly they affect profits, a few Jefferson County farms will be studied here. In that county the principal products are wholesale market or factory milk, hay, cattle, oats and barley. The factors for the average of 670 farms of that region are given in the middle column of Table I.

There were 73 crop acres and 15 cows on the average farm. Altogether the business provided 416 units of productive man work.

The crop index of 100 represents the following yields per acre: corn 36.4 bushels, corn silage 9.9 tons, potatoes 124 bushels, oats 30.8 bushels, barley 24.4 bushels, oats and barley 33.5 bushels, oats, peas and barley 33.6 bushels, hay 1.44 tons. Receipts per cattle unit amounted to $61.

Of the total receipts from crops and stock, 22 per cent came from crops. Milk was the only product that amounted to $500.

The labor on the average farm was equivalent to 1.7 men for a year. Each man farmed 43 acres of crops and cared for 12 units of productive animals. Each horse farmed 21 acres of crops. There were 244 work units per man and 62 per horse.

The average labor income was $609. This is what the average farmer in that region made above all farm expenses and interest on the capital invested in the business. Besides this the farm furnished him a house and farm products to use.

Now let the size, production, diversity and work rate on the average farm be 100 in each case and use it as the yardstick with which to measure the same factors on the other farms shown in Table I.

Farm 129 had a few more crop acres but only half as many cows. There were 294 work units. Its size was only 71 per cent as large as the average. Its crop yields were 15 per cent better, but the cattle were very poor. So its production was only 88 per cent of the average. The tendency in that region is toward too great specialization on the dairy, but this farm had 49 per cent of its receipts from crops. Hay was the only $500 product. The diversity of this farm may be called a little better than the average. The work rate, however, was low, only 67 per cent of the average. There was not enough work on the farm to keep the men busy. This business was weak in size, weak in production, fair in diversity and weak in work rate. As a result the labor income was only $146 or less than hired man's wages for the operator.

Farm 110 had a still smaller business. There were only 24 acres of crops and eight cows or 175 work units altogether. The business was not half as large as the average. But the production was good, 52 per cent better than the average. Both crop yields and receipts per cattle unit were good. This was the “little farm well tilled.” No crops at all were sold and milk was the only large product. So there was practically no diversity. With such a small business and no diversity the work rate was naturally low. Only 13 acres of crops per man were farmed and 10 per horse. In spite of very good production the labor income was only $106. The other factors overshadowed the one good one.

Farm 29 had a business 56 per cent larger than the average. There were 99 crop acres and 27 cows; 648 work units altogether. But production and diversity were very low. The work rate was about average. With such poor production, the more cows and
### TABLE I. Efficiency Factors on Some Jefferson County Farms. Compared with the Average of That Region.

<table>
<thead>
<tr>
<th>Farm No.</th>
<th>29</th>
<th>110</th>
<th>129</th>
<th>Average of the Region</th>
<th>528</th>
<th>536</th>
<th>626</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of Business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop acres</td>
<td>27</td>
<td>24</td>
<td>85</td>
<td>73</td>
<td>15</td>
<td>108</td>
<td>28</td>
</tr>
<tr>
<td>Number of cows</td>
<td>156</td>
<td>142</td>
<td>71</td>
<td>64</td>
<td>28</td>
<td>166</td>
<td>35</td>
</tr>
<tr>
<td>Man work units</td>
<td>175</td>
<td>156</td>
<td>294</td>
<td>416</td>
<td>267</td>
<td>691</td>
<td>917</td>
</tr>
<tr>
<td>Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop index</td>
<td>53</td>
<td>143</td>
<td>115</td>
<td>100</td>
<td>128</td>
<td>$100</td>
<td>144</td>
</tr>
<tr>
<td>Receipts per cattle unit</td>
<td>$295</td>
<td>$95</td>
<td>$315</td>
<td>$61</td>
<td>$58</td>
<td>$82</td>
<td>$139</td>
</tr>
<tr>
<td>Diversity of Business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per cent of receipts from crops</td>
<td>0%</td>
<td>6%</td>
<td>49%</td>
<td>22%</td>
<td>40%</td>
<td>21%</td>
<td>0%</td>
</tr>
<tr>
<td>$500 products</td>
<td>M $764</td>
<td>M $910</td>
<td>M $660</td>
<td>M $916</td>
<td>M $1205</td>
<td>B $58</td>
<td>C $3535</td>
</tr>
<tr>
<td>Work Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop acres per man</td>
<td>37</td>
<td>13</td>
<td>34</td>
<td>43</td>
<td>33</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>Animal units (except horses) per man</td>
<td>107</td>
<td>107</td>
<td>47</td>
<td>67</td>
<td>21</td>
<td>59</td>
<td>115</td>
</tr>
<tr>
<td>Crop acres per horse</td>
<td>22</td>
<td>10</td>
<td>118</td>
<td>244</td>
<td>121</td>
<td>48</td>
<td>248</td>
</tr>
<tr>
<td>Work units per man</td>
<td>240</td>
<td>97</td>
<td>66</td>
<td>62</td>
<td>64</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td>Work units per horse</td>
<td>78</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor income</td>
<td>$177</td>
<td>$106</td>
<td>$146</td>
<td>$609</td>
<td>$1006</td>
<td>$1022</td>
<td>$1532</td>
</tr>
</tbody>
</table>

Note—M = milk, H = hay, C = cattle, B = butter.

### TABLE II. Efficiency Factors on Some Successful New York Farms.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of Business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop acres</td>
<td>112</td>
<td>259</td>
<td>246</td>
<td>188</td>
<td>166</td>
</tr>
<tr>
<td>Number of cows</td>
<td>24</td>
<td>32</td>
<td>12</td>
<td>33</td>
<td>See note</td>
</tr>
<tr>
<td>Man work units</td>
<td>624</td>
<td>1120</td>
<td>1268</td>
<td>1116</td>
<td>903</td>
</tr>
<tr>
<td>Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop index</td>
<td>126</td>
<td>134</td>
<td>127</td>
<td>153</td>
<td>141</td>
</tr>
<tr>
<td>Receipts per cattle unit</td>
<td>$128</td>
<td>$67</td>
<td>$92</td>
<td>$128</td>
<td>$50</td>
</tr>
<tr>
<td>Diversity of Business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per cent of receipts from crops</td>
<td>11%</td>
<td>53%</td>
<td>73%</td>
<td>44%</td>
<td>81%</td>
</tr>
<tr>
<td>$500 products</td>
<td>M $2400</td>
<td>M $2400</td>
<td>P $2250</td>
<td>M $4200</td>
<td>M $2975</td>
</tr>
<tr>
<td></td>
<td>C 1825</td>
<td>H 1100</td>
<td>Be 2000</td>
<td>W 1200</td>
<td>Be 1740</td>
</tr>
<tr>
<td></td>
<td>H 525</td>
<td>O 500</td>
<td>M 1300</td>
<td>P 1450</td>
<td>B f. 700</td>
</tr>
<tr>
<td></td>
<td>Be 1013</td>
<td>H 1110</td>
<td>C 670</td>
<td>H 750</td>
<td>Be 600</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crop acres per man</td>
<td>37</td>
<td>70</td>
<td>65</td>
<td>47</td>
<td>37</td>
</tr>
<tr>
<td>Animal units (except horses) per man</td>
<td>12</td>
<td>11</td>
<td>9</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Crop acres per horse</td>
<td>22</td>
<td>35</td>
<td>33</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>Work units per man</td>
<td>208</td>
<td>302</td>
<td>334</td>
<td>279</td>
<td>201</td>
</tr>
<tr>
<td>Work units per horse</td>
<td>71</td>
<td>112</td>
<td>115</td>
<td>91</td>
<td>35</td>
</tr>
<tr>
<td>Labor income</td>
<td>$2821</td>
<td>$3270</td>
<td>$3321</td>
<td>$2432</td>
<td>$3696</td>
</tr>
</tbody>
</table>

Note—M = milk, C = cattle, H = hay, B = butter, P = eggs, O = oats, Be = beans, P = potatoes, W = wheat, B f. = breeding fees.
land this man had the worse off he was. His labor income was—$177, that is he failed to make interest on his investment, or paid $177 for the privilege of operating that farm.

On farm 528 the business was about two-thirds as large as the average. It included 72 crop acres and 10 cows, or 267 work units. The crop yields were 28 per cent better than the average and the receipts per cattle unit were $100 or $39 more than the average. Production on that farm was 44 per cent better than the average. It also had very good diversity. Forty per cent of the receipts came from crops and there were two important products, butter amounting to $1205 and hay $750. The diversity was probably three times as good as the average. The work rate, however, was low. Only 33 acres were farmed per man and six animal units cared for per man. There were only 121 units of productive work per man. This was due mostly to the small size of business. Two factors, size and work rate were low but, production and diversity were very good, at least good enough to more than offset the others and give a labor income of $1006.

The only strong factor in the business of Farm 536 was its size. There were 128 acres of crops and 28 cows. It was a business two-thirds larger than the average. Production was a little under average with both crops and cattle. Diversity was just average and the work rate was not quite average. With all the factors except size, only average or a little below, but with size two-thirds greater than the average, the farmer made two-thirds more than the average labor income of $1006.

The only strong factor in the business of Farm 536 was its size. There were 128 acres of crops and 28 cows. It was a business two-thirds larger than the average. Production was a little under average with both crops and cattle. Diversity was just average and the work rate was not quite average. With all the factors except size, only average or a little below, but with size two-thirds greater than the average, the farmer made two-thirds more than the average labor income of $1006.

Every factor in the business of Farm 626 exceeded the average. The business was more than twice as large. There were 91 crop acres and 35 cows. Some of the cows were registered. The business provided 917 work units. Crop yields were 28 per cent above the average and the receipts per cattle unit were good. Each man handled 25 acres of crops and 14 units of productive stock. Each man could have handled easily 10–15 more acres of crops. The work rate was 15 per cent above the average. If there had been 30–50 more acres of crops in the business, probably there would have been some crop sales. As it was, there were no crop sales. Milk was the largest sale, amounting to $3,535, but it was not the only one. There was an income of $500 from cattle so the diversity was a little better than average. With size well above the average and all the other factors above, the resulting labor income was $1532.

After realizing the significance of these factors and seeing how they may be studied on any farm business, two questions arise. What are the ideal size, production and diversity? And what are the best ways of attaining each?

Table II gives these factors for some of the most successful farms of which the Department of Farm Management has records. Some of these farms probably have reached the optimum for certain factors, but there is practically never a farm that cannot be improved in at least one.

It is not possible to say definitely what size, production and diversity would result in greatest profits. We know very well that there is a lower limit to each, and though there are few examples we know that there is also an upper limit. After studying successful farms in this State it can be said in a general way that to be in the successful class, general and dairy farms in New York State should approach the following descriptions:

1. There should be from 100 to 250 acres of crops and enough stock, usually dairy cows, to utilize the pasture land, or at least one animal unit for every three to five acres of crops. The business should provide about 1000 units of productive work, or, in other words, be a two to four man business.

2. The crop yields should be from 15 per cent to 30 per cent better than
the average of the region, or about 25 per cent better than the State average. One should not strive for the highest yields unless prices warrant intensive methods. Receipts per cattle unit should be about $100 when wholesale prices are obtained. If the cows are pure bred this figure should be higher. Receipts per ewe should be $7 or better, and receipts per hen at least $2.

3. Neither crop receipts nor stock receipts should be less than 25 per cent of the total. Some farms with less than 25 per cent of the receipts from either crops or stock do very well but usually they would do better if the other receipts could be added. There should be usually from two to five important sources of income and a few minor ones.

4. Unless 40 to 50 acres of crops are handled by each man (12 months of labor) and 6 to 10 units of productive animals in addition, the labor is not being used to its greatest efficiency. A horse should farm from 20 to 30 acres of crops.

The size of a farm business may be increased in three ways; either by buying or renting more land; by intensifying the business, that is, by growing crops like fruit, cabbage, potatoes and truck, or by keeping more stock or pure bred stock instead of grades; or both methods may be used. Where land is not too high in price or rent, it is usually better to increase the area. Where land is high priced or cannot be obtained, it is necessary to intensify or sell out and buy a larger farm in another locality.

The best way to get good crop production is to have good land. The difference in natural productivity of soils in this State is much greater than many people realize. Crop yields may be increased also by the better farming methods that everybody knows. After stock production has been improved by selection, good feeding and good care, one of the best ways to still further increase it, is to work into pure breds. This is especially true with cattle and poultry.

The best way to improve diversity depends upon various conditions. Often it is simply a question of substituting a cash crop for part of the feed crops and buying feed. The most successful dairy farms in this State raise potatoes and cabbage to sell and buy a large part of the feed. The cash crops pay for the feed and more too and the cows get a better
CABBAGE IS A PROFITABLE CASH CROP WHEN GROWN ON A GOOD SOIL AND NOT TOO FAR FROM MARKET. WHEN PRICES ARE LOW IT CAN BE FED TO LIVE STOCK.

Working into pure-breds makes cattle an additional product on many dairy farms. Very often diversity is best improved by adding more land to the farm and having another crop to sell. Of course, diversity can be carried to an extreme. The addition of an unprofitable enterprise would not increase the labor income. Where day labor is abundant as it is in some fruit sections at harvest time, it is often more profitable to concentrate on fruit—not one, but several varieties of several fruits. The idea is to always use the available labor on the thing that pays best at the time; to make the best use of all pasture land and by-product feeds like straw, stalks, bean pods and skim milk, and to maintain fertility in the way that is most economical under the conditions.

More farms miss real success because the business is too small than for any other single reason. Lack of diversity is the weak factor on a great many farms. Poor production limits the success of about as many farms as does diversity.

Many farmers know how to mix fertilizer, how to figure a balanced ration, how to prepare spray materials and some keep accounts. But how many ever figured their own labor income? Or studied their business as to its efficiency? Every farmer who is striving to get ahead; who is not content to merely live and keep what his father left him, will profit by such a study.*

*The Department of Farm Management will supply blanks for figuring labor income to any farmer who wishes them, and if it is desired, will figure efficiency factors for the business, and make such suggestions as seem practical. Requests for blanks should be addressed to Department of Farm Management, College of Agriculture, Ithaca, N. Y.
THE FARM BUREAU MOVEMENT

By Lloyd S. Tenny

State Leader for Farm Bureaus in New York State

It is well that the farm people get a clear conception of the scope of work of the Farm Bureaus. We are hearing much these days about this new development in the field of agricultural education. It is well that we do not become over enthusiastic and expect too much from it. Even if successful, to an extreme, it would not revolutionize the farming in any locality. It is doubtful, however, whether we want a revolution even in agriculture. Properly directed, however, the Farm Bureaus should accomplish much toward bringing better farming closer to the ordinary farmer of the State.

THE FARM BUREAU A LOCAL MOVEMENT

The Farm Bureau differs from most other so-called extension agencies in agriculture in that it does not represent nor is it projected from the State College of Agriculture, the State Department of Agriculture, the State Experiment Station, nor the United States Department of Agriculture. The State Leader of the work has his office with the College of Agriculture at Ithaca, but the county agents have no connection whatever officially with any of the State institutions. They are, however, appointed collaborators of the United States Department of Agriculture. The State Leader of the work has his office with the College of Agriculture at Ithaca, but the county agents have no connection whatever officially with any of the State institutions. They are, however, appointed collaborators of the United States Department of Agriculture and thus become employees of the National Government and receive free use of the mail for their public correspondence. The county agent becomes a resident of the county. His work is largely under the control of a committee of local people and it depends almost entirely upon the people of the county whether there shall be a county agent within that county. The State Leader is willing to cooperate to the fullest extent with any county that wishes to organize the work. After the work has started, he assists the county agent in whatever way he can by advice and personal visits. The State Leader, however, makes no effort to establish new bureaus in counties which are not ready for the work or where the farm people do not feel the need of a county agent.

HOW FARM BUREAUS ARE FINANCED

At the present time, the State Department of Agriculture through an appropriation made by the Legislature during its session of 1912-13, has the sum of $600 which it can use for farm bureau work in any county. The eighteen counties now maintaining the work in New York State all receive this sum from the State Department of Agriculture. The Commissioner of Agriculture has arranged to have the State money paid in monthly installments of $50, the sum being sent each month to the treasurer of the Farm Bureau Association.

In the counties where the work was first started, the United States Department of Agriculture contributed toward the support of the county agent. Support from this source is now received by ten counties, generally to the amount of $1200 per year in each county. No additional funds, however, will be available from this source until Congress appropriates a larger sum of money for the work.

The additional money needed to carry on the work in a county must come from local sources. In most counties, a large share of this additional fund has been received from the Board of Supervisors of the county. Annual sums varying from $600 to $1500 or even more, have been voted by the Supervisors. The money which is so voted should be made payable to the proper official of the Farm Bureau Association, which officer should be under bond, and who should make payments from the sum through the
voucher system. In the past, especially in the beginning of the work, certain railroads contributed generously to the work. At the present time, nearly all the roads contribute a nominal sum toward the salary of the county agent and also furnish free transportation over the lines of their road running through the country. Certain railroads have also been giving splendid support to the work and have been aiding in securing cheaper sources of lime, fertilizers, and other farm supplies. In several counties a large share of the money to support the work has come from voluntary contributions. Farmers, merchants and bankers have all contributed in order to get the work started. The granges, Chambers of Commerce, and other similar organizations have also been active in assisting to finance the work in some sections.

The total sum needed to carry on the work of a county agent successfully is comparatively large and no county should undertake the work without sufficient funds in sight. Twenty-five hundred dollars seems the very least that would be required and at least that amount should be in sight annually for a period of not less than two years, since positive results should not be looked for under that time. The sum of $4000 annually would be far more satisfactory, and could be used to secure a better trained county agriculturist and will provide more money for necessary expenses. An automobile is almost a necessity for it has been found to double the efficiency of the work.

The Organization of the Farm Bureaus

To accomplish much in this work requires an active organization back of the county agent. No individual working alone can much influence farming in a community. The strongest feature in a Chamber of Commerce should not be the secretary of the Chamber, but ought to be the organization of the Chamber itself. An organization back of Farm Bureaus should be strong enough to accomplish things for the farmers which the individual farmers cannot accomplish for themselves. Unless the people of a county interested in better farming are willing to cooperate and unite in an active association to back the county agent, then it is doubtful whether it is worth while to organize a Farm Bureau in that country.

It is not so important just what kind of an organization is effected; the important thing is to get the active organization with committees to direct the work and to assist the county agent in his work. In most counties there has been formed a membership organization with a nominal membership fee of one dollar. Anyone interested in better farming is eligible to membership. There are the regular officers elected annually. The Executive Committee is the most important feature of the organization, for upon this committee falls the responsibility of directing the work. This committee should be comparatively small in number and should plan on monthly meetings at least. In counties where Boards of Supervisors or similar organizations contribute largely to the support of the work, it is frequently arranged to have on the Executive Committee representatives from these organizations. It is probably best to have these representatives nominated only by the co-operating bodies and to leave their final election to the members of the county Farm Bureau Associations at their annual meeting.

The County Agriculturist

The selection of the county agent in New York State for any particular county rests primarily with the Executive committee of the county organization, although the State Leader reserves the right of approving of their choice. As the work has developed in this state, it has seemed far better to make the responsibility for the success or failure of the work rest within the county. This would not be possible if the local people were not free to select their own county agent. The
State Leader is very willing to confer with the committee in regard to this important matter and will even suggest names of men who will be approved by him, but the final selection rests with the executive committee. In general there are four requirements more or less insisted upon by the State Leader for the applicants for county agent. First, he should be a farm-trained boy. Second, he should have a good broad training along agricultural lines, preferably being a graduate of an agricultural college. Third, after graduation he should have been engaged successfully in some line of agricultural work, preferably in managing actual farm operations. In the fourth place, the county agent should have a pleasing personality and should be able to secure the confidence of the farmers with whom he is working. Without this last, all the other qualifications would be of little use in his work.

1. The county agent is not an office man. His work is with the farmers on their own farms.

2. The county agent is primarily not an institute man or a lecturer. A certain amount of this work is permissible, especially as it often gives a new man a good opportunity to become acquainted with many farmers. Frequently, too, it is possible to get in touch with good coöperators at meetings.

3. The work of the county agent is primarily not experimental; he is to take the principles which have been worked out at the experiment stations and in other ways and have them adopted by the farmers themselves.

4. In order to reach a majority of the farmers within his territory, it is necessary for him to work with groups. A demonstration plot may be worked out on an individual farm and this must be used as an example for the farmers in that community. Field meetings can be held from time to time to follow the work of this demonstration.

5. Farm surveys must be made and labor incomes determined in order to assist the county agent in determining what type of farming is most profitable in his locality. Many county agents can use this type of work best in carrying on their work, and every county agent should make use of these surveys to some extent. Without the farm surveys or some other very definite line of work, the county agent is rather liable to do aimless work and sooner or later, he will find that his entire time is being used up with small, insignificant duties and the greater agricultural problems of the county are never reached.

**THE WORK OF THE COUNTY AGRICULTURIST**

There are many different ideas of what the county agricultural agent must do. As a matter of fact, county agents now employed in New York differ widely in their methods of work. We do not know yet just the character of work that will be most effective. It is doubtful whether there will ever be a set plan for every county agent. The individuality of the man will probably determine to some extent the character of his work. Certainly it will be true that the character of the agriculture of the county will influence the work greatly. The following are some of the principles which appear to be developing from the work so far:

If you are thinking of organizing a farm bureau (and I hope you are thinking of it), then I want to ask three questions: Just what do you desire to accomplish? From what point or direction should the movement arise,—from the farming country or from the town? Should the nature of the enterprise be voluntary and educational, or should it be political and paternalistic?

L. H. Bailey in "York State Rural Problems."
READING FOR RURAL COMMUNITIES

By Sarah B. Askew
New Jersey Public Library Commission

MR. Dooley, in a dissertation to Mr. Hennessey on rural conditions at the time of the appointment of the Country Life Commission, pictures the farmer's wife washing dishes by machinery and at the same time reading "Lottie, the Beautiful Cloak Model." It might take some research to find the mechanical device on which he based his dish-washing machine, but he might have derived his idea of the reading matter from a survey made by one of the Library Commissions.

Taking about fifty villages and the same number of rural communities scattered throughout the State as a basis for the survey, it was found that among the 25,000-odd inhabitants of the 100 villages and communities, only 3,500 books were owned. It is pleasant to relate that more than half of these were Bibles, but sad to say, the greater part of those that were not Bibles were melodramatic, badly written, poorly printed histories of great catastrophes, ranging in age from that of the Charleston earthquake to the latest at the time the survey was made. It is just as well to state that the person making the survey did not consider the preponderance of this kind of literature to indicate a delight in human misfortune, or a pessimistic turn of mind on the part of the rural inhabitants, but considered it a tribute to the diligence of the book agent. The rest of the 3,500 was made up of "Doctor's books," so-called religious novels, a few "handbooks of information" giving every kind of information (?) except the kind you want, and a sprinkling of novels which had in their time been "novels of the day." Some of the churches had Sunday School libraries, consisting mostly of Elsie books and Pansy books. There were few books in the schools. Seven schools were in one township but not a single book of any kind excepting text books. Neither did they have wall maps, nor charts. This 3,500, however, only included known and acknowledged ownership; there was a

AN ENDOWED COUNTRY NEIGHBORHOOD HOUSE IN A TOWN OF ONLY 300 INHABITANTS AND DRAWING FROM A LARGE FARMING DISTRICT
much larger surreptitious ownership and circulation of books among the boys and girls.

The woman in charge of the survey had been told so often that the day of the dime novel was over, that she had begun to believe it; but this belief was shattered in very short order. These boys and girls were buying and circulating dime novels among themselves to a surprising extent. The girls' favorite authors were Laura Jean Libbey, Mrs. E. D. N. Southworth, Mary Cecil Hay, The Duchess, Mary Jane Holmes, Charlotte Braeme. Books of the type of "Nellie, the Beautiful Sewing Machine Girl" were in high favor. Their number and similarity suggested that there was somewhere a factory for turning them out by the thousands. The boys' favorite authors were of the Jesse James, Wild West, Old Sleuth, Young Sleuth and Nick Carter class, with a sprinkling of Alger and Optic. Some of the favorite titles were "A Poisoned Rosebud, or, a Tragedy of the Elevated," "Highwayman at Sixteen," "Blood-Red Hand."

Most of the boys, when asked what they were going to be in life, said, "We've got to be farmers; there ain't nothing else for us to do because we can't learn nothing else"; some of them said that the telegraph operator in the small railroad station would teach them telegraphy if they had time to study and practice it. Most of them expressed a great desire to get to town and "leave this God-forsaken place"; few of them could comprehend the fact that a book could mean anything but just something tiresome to study in school, or a forbidden paper-back volume to read for excitement, or a last resort to pass away the time on Sunday. That a book could teach a trade, or impart really useful information to help one in living, was something almost too ridiculous to even consider.

Dr. Draper has said that it is upon the country that the nation has depended in the past for sane thinking, sound men and women with conserva-

tive judgment, but if the country communities are to continue to so serve the nation, the boys and girls of the rural districts must have the same advantages as the boys and girls of the urban districts. With a dearth of books which are the source of sane thinking, and the material for acquiring knowledge, the rural districts are certainly in a fair way to lose their prestige, for country air and country scenery unaided can not produce men and women fitted to take their places as leaders of the nation; nor can the country child, educated in the bookless, mapless, one-room school-house, compete with the city child, trained to the use of books and surrounded by those best fitted to meet his needs.

It began to be apparent that something must be done to supply reading to the rural communities. A system of traveling libraries seemed to be the best solution of the problem. The name indicates just what these libraries were intended to be—small collections of books to be sent to different towns or districts, where they would be kept until read; then exchanged for others, and so the books would travel from one place to another until worn out. These libraries, as first sent out, consisted of small, fixed groups of about fifty books. A community applying for library privileges received one of these groups, and if some of the books did not suit them it was expected that others would. A charge was made to each group of people so served, the amount varying in different States from two dollars to five dollars a year for the use of the books. The libraries could be exchanged as often as desired during the year, the State, or organization in charge of the system paying the express charges. Sometimes no charge was made and the community paid the cost of transportation.

The first system was a State system, inaugurated by the State of New York. Most of the systems in operation today are State systems, supported by appropriations, but others were started and are now supported by
women's clubs, school boards, and even railroad companies. When these libraries were first put into circulation, twenty years ago, it was thought that the "problem of rural reading was solved" and many articles were written on "books for all the people." It did seem, at first, that this was true, as in the beginning the farmers took interest; but it soon began to die out, and to all inquiries as to the for this came such answers as "Books don't get us nowhere," or, "The books don't suit us." After contending with this "Books don't get us nowhere" for several years, those in charge of the various systems began to take thought. Evidently the reading habit was not developed in the country communities. This condition no doubt has arisen from the lack of books, but it had to be faced. The thing most needed was not so much a supply of books, as a way of arousing the people to the necessity and value of reading; to teach them that books were not just "woman's foolishness," or a "tarnation nuisance that keeps the children up so late you can't get them up in time to do anything before they go to school in the morning." The traveling library commissions decided to employ people for this purpose.

These people spoke at harvest homes, visited granges, talked to merchants, tried to interest the school children, worked to get the teachers to train the children to use books and teach them to turn to books in after life, as well as to teach them the mechanics of reading. They drove through the country, stopping here and there to visit farmhouses and hold wayside conversations, trying to show the people how books could come in touch with their lives. They pointed out that the end and aim of these libraries were not merely to place a copy of the latest best-seller in every person's home, but to give the country boy and girl the same chance in life as the city boy and girl, to enable them to know and appreciate good literature, to give them books to enable them to find out what work they would like to take up and to help them study that work. They showed that these books were meant to help the farmers grow better potatoes and market them to better advantage, to help the farmer's wife do her cooking with less work and better results, to help the small town merchant and artisan in their work, to show the people how the country is governed and keep them in touch with the political and economical questions of the day, and last, but by no means
least, to bring them in contact with the outside world and to give them pleasure.

After trying many kinds of people it was impressed upon those in charge of the work that the traveling library visitor must be someone with a liking for people, and someone thoroughly conversant with and in sympathy with rural conditions. They also learned to eliminate the missionary spirit, as it was found that the feeling "We come to bring culture to this district" on the part of the traveling library worker would go far toward defeating the purposes of the system. One countrywoman expressed the feeling of the majority when she told a traveling library visitor, "We like you, because you are just common, like us."

The workers who went out to do this campaigning began to take note of the fact that all rural communities are not alike, that all country people by no means have the same interests, and that "farmers isn't just farmers, and nothing more." A better understanding of the nature of the problem made them realize that libraries all cut out on the same pattern and made to assorted sizes were always going to bring forth the complaint, "the books don't seem to suit our people." So another advance was made. A new plan was adopted. When a new station was to be established a library visitor should go to the town or community, make a survey of conditions, enter into the lives of the people, find out their likes and dislikes, and then a library should be made up to suit that individual community. Whereas the complaint had been made under the old system that only the fiction part of the libraries was read, as soon as they were adapted to the community to which they were sent, the non-fiction began to be in demand. One State, serving a rural population of a little more than half a million, found it necessary, in order to meet the demand for books on agricultural topics, to add to its collection, in about fifteen months, three thousand books on different phases of this subject. The same was true to a greater or less extent of all books in the useful arts class. Science and biography also became popular.

So many demands came in for books on special topics to be included in these small collections that the readers began to grumble that there were not enough books of general interest, and so there came another development in the work—"special loans." A rule was made that a system of special loans should be put in operation, whereby any individual in a community, having a traveling library might borrow, through that library, a book or books on any subject in which he or she might be interested; these books being sent in addition to the regular collection, without extra cost; this rule, however, not to apply to school text-books. In this way any man or woman, boy or girl, can obtain through the traveling library, books on any subject whatsoever, and can keep these books for individual use until they have served the purpose for which they were borrowed.

The special loan privilege resulted in an enormous increase in requests for
books on more specialized topics, and books of more serious purpose and requiring study rather than casual reading. The traveling library really began to help the boy and girl complete their education after they left school, to enable people to do better work and make better citizens of them. This system is not expensive, as through inter-library loans many of the requests coming from rural communities are filled with books borrowed from the larger libraries of the State, and occasionally from the Library of Congress. This special loan privilege has been extended to communities not having libraries. In replying to requests coming from such communities an effort is made, generally with success, to get the inquirer interested in establishing a library for the town or district. Special loans are also made to libraries, so that the smallest library can promise to supply the people with books they need for study or research.

A short list of the subjects on which material has been requested will show the wide range: Moving pictures, ice-cream and soda-water fountains, Guinea pigs, geology, higher criticisms of the Bible, swans, Mormons, swine, apples, child labor, soils, woman suffrage, gardening, dress-making, Celtic literature, manual training, dramatic art, fisheries, co-operation among farmers, chemistry, rubber tires, machinery, pre-Shakesperian drama, telegraphy, domestic hygiene, nursing, sewage disposal, single tax, horses, American poets, laundry work, Baron Liebeg's extract, Monroe doctrine, etc. Many of the demands are for books for learning trades and making commercial ventures.

The traveling library workers began to see results. In a magazine there would appear a picture by an artist to whom they had sent material for studying the subject of that drawing. A newspaper would publish an account of the winning of the first prize in corn-growing by a boy who had applied to them for books. Again, a man would secure his degree by a thesis which books so supplied to him had enabled him to write. There would come to their notice boys who had been helped to enter technical schools, girls who had passed their examinations for teachers, men who were making a better living, ministers who were preaching better sermons, and even poultry raisers who were raising finer ducks and chickens because of the help so given.

(To be continued in February issue)

THE FOURTEENTH ANNUAL AGRICULTURAL BANQUET

By W. D. Hill, '16

The most important event in the social world of the New York State College of Agriculture has come, been thoroughly enjoyed, and is a thing of the past. Everyone who was sufficiently lucky to crowd into the Cafeteria of the Home Economics Building, Friday, December 5th, went home smiling. This happiness resulted from the really high character of wit which the speakers of the evening possessed to a remarkable degree.

This truly sparkling wit was aptly interspersed throughout the talks with sound "food for thought" and each person will remember that two hours as very inspiring.

There are several things necessary to make a banquet a success; attractive surroundings, good food, congenial people, a competent toastmaster, and short, snappy speeches. Every one of these was present to a marked degree. First, thanks to
Dr. White of the Department of Floriculture, the room was artistically decorated with climbing Euonymus, Evergreens, palms, and ferns. On the tables, which were so arranged that everyone could see and hear the speakers, were a carnation and an attractive menu at each plate to welcome the guests. Among other things, the menu informed one that the guests of the evening were: Dean E. F. Nichols of the College of Arts, Dr. W. H. Jordan of the Geneva Experiment Station, and Lieutenant T. H. Twesten. Mr. Coleman's orchestra livened the dinner period with the latest music, and the continuous hum of conversation proved that the 450 members of the "Agricultural Family" present were congenial. For any banquet which the Cafeteria is responsible it is unnecessary to give the menu. The food was plentiful and good.

The evening was very appropriately opened with the singing of the Alma Mater. After the tables were cleared, Professor Everett told us that it was not necessary for him, as toastmaster, to "break the ice." The College of Agriculture was likened to a big family and he was glad that he now belonged to it even though he considered himself a "frosh," this being his first year with us. When he entered Cornell about twenty years ago his mother wanted him to study agriculture. "What a fool I was!" It is impossible to give in full Professor Everett's many keen remarks. It is necessary for me to say, however, that, of all toastmasters I have ever heard, none has ever approached him in wit and aptness of introduction.

It would be desirable to report in full each of the talks. This shows how good they were. For obvious reasons a brief summary will have to suffice. J. J. Swift, '14, president of the Agricultural Association, was the first speaker introduced. His subject, "The Future," was ably handled. He emphasized the desirability of the college man making practical agriculture his vocation. It is granted that there are many rural problems of vital importance. The "college-farmer" is the logical leader of the community and his job is harder than the teacher's or the business man's. College men must be prepared for life's work and it is important that practical experience be gained before leaving college to fit a man for his work. Graduates are needed in the country more than in any other line of work and if necessary the graduates should borrow money to buy a farm of their own. Education is the solution of rural problems.

Professor Everett explained that it is a mistake that the Agricultural students are not loyal to the University. The Agricultural students do not think less of the University but more of their College than any other students on the Hill do of theirs. This loyalty is attributed to the wonderfully inspiring spirit of Dean Bailey which permeates the great College for which he is so largely responsible. Besides being a great poet, Dean Bailey is the greatest leader of agricultural thought in the world. He is a creator and a maker. No other man could fill Dean Bailey's place more acceptably, Professor Everett said, than Director Stocking.

This compliment caused Director Stocking to remark that he now understood how a "pancake feels when molasses is spread on it." Many exceedingly complimentary expressions in regard to Dean Bailey were given by Director Stocking as well as by every other speaker of the evening. Dean Bailey had sent word that he was sorry he could not be present in person but would be at the banquet in spirit. A few excerpts from Dean Bailey's book, "York State Problems," were read. Parts of a letter from a practical farmer of this state to Dean Bailey were also read: "The Farmers' business is administrative—he is handling God's products." "Farmers use soil, rain, and sun—the implements of the Almighty." This expresses Dean Bailey's idea of farming.

The quartet rendered such appreciated numbers that the toastmaster said if he were running things, there would be no more speeches; he would
let them sing." Dean Nichols spoke on the "Virtue of Intemperance." He illustrated his meaning by telling how when he worked for Edison the latter would work regular hours till the final phase of the experiment, when he would work from 30 to 40 hours without rest till the crucial period was past and the experiment was proved a success or a failure. Crises come not in the common things of life but at periods when a person is working at something worth doing. Achievement is obtained only by throwing discretion and thought of the future to the winds till the vital period is past. This applies to farmers since some of our most important and difficult problems are in agriculture and they must be solved by college men and women. Dean Nichols expressed the hope that some day such an important social problem would come to each the solution of which would make us stay awake nights and be intemperate till the correct decision had been made.

A bout of friendly personalities between Professor Everett and Mr. Rogers, '14, chairman of the banquet committee, preceded a talk by the latter on the "Duties of the Present." He strongly emphasized the employment of our spare time in improvement of ourselves for life's business. Dean Bailey was used for an example of a man who is getting much out of life because he is "sensitive to his surroundings." This is very important for the enjoyment of life as well as for preparation to carry our responsibilities. We should seek association with the Professors and the students. Attend those splendid lectures on many subjects which are so common in the University, and by all means do not neglect the books in the library. Now is OUR OPPORTUNITY!

Dr. Jordan expressed his sorrow that he was not an alumnus but said he was the next best thing, a graduate student. He very sincerely honored the professors of that day, especially Professors Caldwell, Anthony, and Roberts. Then he expressed the great enjoyment and inspiration that his friendship for seventeen years with

Dean Bailey has been. Dean Bailey exemplifies the spiritual and human side of life which is the most important. Mr. Jordan expanded the idea that this school is not supported by the State for our benefit primarily, but that it is a "policy of the state" to give men and women this sort of a training for future life and the State expects returns in service, politically and otherwise. The weakness of the present generation is lack of feeling of obligation to the state and society. That but 15 per cent of the men in this state voted at the recent primaries shows lack of realization of civic responsibility. We have very strong obligations and if we do not appreciate them our education is a failure. Dr. Jordan paid a high tribute to the Domestic Science Department and reminded everyone that there was not always the proper responsibility shown toward the home.

Professor Everett expressed his regrets that the other 2000 members of the "Agricultural Family" could not have heard the addresses. They surely missed the treat of the year. Everyone connected with the management of the banquet deserves great credit for such a successful affair. The only thing we can do is to think about this banquet till we can be favored with another one in 1914. Let every person remember the high ideals so appropriately expressed at the Fourteenth Annual Agricultural Banquet and may they influence the solution of our rural problems.

On Monday evening, December eighth, thirty undergraduates representing the student body of the College of Agriculture presented to former Director Liberty Hyde Bailey a scroll signed by four hundred of the undergraduates and faculty members attending the banquet. The wording of the scroll follows:

"The under signed, assembled at the Fourteenth Annual Agricultural Banquet, December fifth, send to you, Liberty Hyde Bailey, our best greetings. We regret that you are not with us. We wish you to know by this token that we have not forgotten you."
The Cornell Countryman

EDITORIAL STAFF
FRANK W. LATHROP, Editor
DUDLEY ALLEMAN - Alumni Notes Editor
EDWIN C. HEINSOHN
HAROLD M. STANLEY
EDWARD D. VOSBURY
ALEXANDER MONTAGUE
STUART WILSON

ASSOCIATE EDITORS
JUDSON SWIFT
ROBERT W. WHITE
BIRGE W. KINNE
PAUL C. CUTLER

BUSINESS STAFF
J. JUDSON SWIFT - Business Manager
ROBERT W. WHITE
BIRGE W. KINNE
PAUL C. CUTLER

- January, 1914

The Countryman announces the election of C. W. Moore, '16, to its Business Staff as Assistant Business Manager. We thank E. S. Stroyan, '16, for the conscientious work which he has done in this competition.

We would like to say a few words to those men who think that in passing the New Honor System and electing a committee nominated by the faculty, they have performed their duty and can now lie back and let the Honor System work itself out with aid of the Committee. We do not agree with these people.

There is dishonesty among the students or no new Honor System would have been necessary. If every man who believes in the Honor System will get back of the Committee, and see that dishonesty is no longer tolerated in the College, the System will succeed. Otherwise it will fail. The man who does not report a cribber has failed in his duty to his College.

The students are taking Farmers' Week plans than in former years.

There are two new student projects which should add materially to Farmers' Week.

One new feature this year will be a joint entertainment to be given in the new Auditorium by all the organizations in the College on Wednesday evening, February 11th. Each organization is contributing either a number on the program or some decorative feature. The way in which these organizations work together toward a common end shows another side of the Ag. spirit.

The proceeds of the entertainment are to be divided into four parts, a part going to the Agricultural Association, another part to the fund which is being raised to distribute "York State Rural Problems" throughout the state, another part to the Girl's Club for their new club house, and another part to the Student Loan Fund. Other divisions may be made.

The entertainment will have an educational value. It will be a credit to the college and we hope it will be an annual affair.

A number of students in the College in cooperation with the Extension Department have arranged a program for farm boys from 15 to 20 years of age. It will consist of lectures and judging contests in Animal Husbandry, Dairy Industry, Farm Crops, Poultry Husbandry, Pomology and possibly in other departments. The program will be given on Friday and Saturday, February 13th and 14th. The expenses of the boys are to be borne by the organizations or individuals.
sending the boys. The Committee will meet the boys at the trains, make arrangements for their room and board and keep them informed as to the program. It is probable that a program for farm girls will be arranged by the young ladies in the College.

It is urged that granges and other rural organizations will consider sending boys and girls. The program will be of good educational value to them and will encourage them to get an agricultural education. All organizations interested should communicate with J. Robert Teall, 214 Thurston Ave., Ithaca, N. Y.

The annual meeting of the Student's Association will be held on Wednesday of Farmer's Week at 10 A.M. Important reports on the year's activities will be presented. A permanent secretary will also be elected in place of Professor A. R. Mann who has resigned. Wednesday evening there will be a reception of all former students, regular, winter course and special. Members of the Faculty and undergraduates will also be present.

Farmers' Week is becoming more and more a time of re-union for former students, and each year an increasing number return. The Association is making a special effort this year to increase the re-union spirit and the number returning. The interest and support of the former students help the resident teaching in the College and the work throughout the state. Our college must have this interest and support if it is to remain a strong and growing institution.

There seems to be a demand for copies of the Bailey Number and we have procured an extra supply. These copies are on sale for twenty-five cents. We offer a Bailey Number with a year's subscription for one dollar and with a subscription and a copy of York State Rural Problems for $1.75.

NEW COUNTRY OPPORTUNITIES

It is not only in actual farming that persons are to be needed in the open country: the practice of customary professions and occupations is to take on added importance in country districts. The country physician, veterinarian, librarian, pastor and teacher are to extend greatly in influence and opportunity.

But aside from all this, new occupations and professions are to arise. There will be established, out in the open country, plant doctors, plant breeders, soil experts, health experts, pruning and spraying experts, farm machinery experts, drainage and irrigation experts, recreation experts, market experts and many others. These will all be needed for the purpose of giving special and expert advice and developing leadership in particular lines. We shall be making new applications of rural law, of engineering, of social service, of business methods for agricultural regions, and new types of organization.

L. H. Bailey, in “York State Rural Problems.”
CAMPUS NOTES

A DIRECTORY OF STUDENT ACTIVITIES

Crew—Captain, M. F. Abell, '14.
Baseball—Captain, F. E. Rogers, '14; Manager, R. C. Shoemaker, '14.
Soccer football—Captain, R. H. Cross, '14; Manager, A. G. Landres, '16.
Basketball—Captain, R. F. Steve, '14; Manager, T. M. Gray, '14.
Agricultural Association—President, J. J. Swift, '14; secretary, Miss Elizabeth Pritchard, '15.
Junior class—President, E. C. Heinsohn, '15; secretary, A. W. Wilson, '15.
Sophomore class—President, Stuart Wilson, '16; Secretary, Miss Ruth Smith, '16.
Freshman class—President, A. W. Richards, Special; secretary, D. C. Thompson, '17.
Student Loan Fund—Chairman, R. C. Shoemaker, '14.

* * *

The December Assembly of the College of Agriculture was held in the Main Auditorium on December 4. The platform was tastefully decorated with flowers by the Floriculture Department. The program included a solo number by the Men's Glee Club. It was very well rendered and enjoyed by all. Mr. J. J. Swift before introducing Director Stocking, the speaker of the evening, urged the winter course students, who were present, to take an interest in the Assembly and in other activities of the College. Director Stocking in his speech traced the growth of agricultural education in New York State from its first agitation to the present time. The first attempt at the establishment of a school for agriculture was made by Hon. Stephen Van Rensselaer at the Rensselaer Polytechnical Institute, at Albany, in 1824. Its purpose was strictly commercial; the question of science for its own sake did not enter into it. In 1836, as the result of the findings of a committee appointed by the Board of Agriculture, formed as early as 1819 for the furtherance of agricultural conditions, a school with capacity for 200 students was founded, to be supported entirely by private subscription. But funds were not advanced, and the project failed. The advisability of a college of agriculture was first pointed out by Simeon DeWitt, the founder of Ithaca, in 1819. This subject was not revived, however, until 1849, when it failed to pass Legislature by a single vote. Two years later a college was actually authorized, located at Fayette in Seneca county, and a faculty appointed. Upon the death of the president, soon after his appointment, however, the whole matter was given up. Still later, on December 5, 1860, a college of agriculture was opened in Ovid with $80,000 available capital. The outbreak of the Civil War caused its immediate collapse, and further occasioned the abandonment for the time being of any other similar projects. After the war, renewed attention was given to
the subject of Agriculture, and at this time, which was so favorable to such an institution, Ezra Cornell presented to the Legislature the proposition that he would found a College of Agriculture and Mechanic Arts, provided he received their sanction and assistance. And so Cornell was founded, an institution where "any person can find instruction in any subject." Director Stocking then proceeded to show the remarkable growth of the College of Agriculture after its founding; how the legislature was from time to time persuaded to make further appropriations to enable the equipment to keep up with the demands of the ever-increasing student body, until now we may truly say that Cornell is the largest and best equipped, agricultural college in the world.

* * *

A summer term, similar in every way to the two winter terms has been created in the College of Agriculture. The advisability of this change has long been under consideration, and was last spring placed in the hands of the Committee on Educational Policy for investigation. This committee consists of Professors Walter Mulford, '99, J. G. Needham, '98, J. E. Rice, '90, G. N. Lauman, '97, E. G. Montgomery, and Lewis Knudson, '11. Acting on their report, the Faculty passed a resolution authorizing the third term.

This will probably extend from June 8 to September 23, with a half holiday on Commencement Day, and a full day on July 4. The course is intended primarily for advanced undergraduates, graduate students and instructors from this and other universities. No undergraduate will be permitted to register unless he has completed his Freshman and Sophomore years.

As the matter now stands, it will be possible for the regular four year course in Agriculture to be completed in three years by the student working through the two summers following his Sophomore and Junior years.

The Dairy Department of the College of Agriculture sent an extensive exhibit to the convention of the New York State Dairymen's Association, which was held in Syracuse, December 9 to 12. Many of the faculty members and undergraduates in the Dairy Department attended the convention. The purpose of the convention was to improve the dairying conditions of the state. The exhibit sent, included the direct results of experiments carried on by the College and covered the methods of making and marketing the products of milk.

* * *

Agriculture has maintained a clean slate so far in the inter-college athletic games. From 131 men who started in the cross-country run, 118 finished and there were enough of these Ag. men to make us win by the low score of 40 while Sibley was second with 141, C.E. third with 167, and Arts fourth with 332. Vere Windnagle, Ag. '17, won the race in fine shape. In the soccer series, C.E. tied their game with Ag. but in the playoff, Ag. won by the close score of 1 to 0. These two victories give Ag. a perfect score of 20 toward the banner and prospects are that the good work will be kept up.

H. B. Wheeler, Sp. Ag., won the cup in the freshman series and was also the first 1917 man to finish in the freshman race against Penn.

* * *

For the Rochester Fruit Growers' Stage, which will be held at Convention Hall in Rochester, January 8th, the following men were chosen: R. F. Steve, A. B. Dann, A. W. Wilson, R. C. Parker, B. W. Shaper, and D. S. Hatch, alternate. The prizes to be won are the $35 first, the $15 second, and numerous special prizes. The fruit judging at the New York State Fruit Growers' Association, under whose auspices the Stage will be held, is to be done by a team chosen from the advanced students of this College. The team will be in charge of Mr. Rogers.
Professor A. W. Gilbert, '05, gave the second of the Sigma Xi public lectures on December 8th. The subject of the lecture was, "Methods and Scope of Genetics". It was illustrated by lantern slides.

The registration in the winter courses has reached the 550 mark and there are 22 states and England represented. New York has a large preponderance in the numbers here but the number of states represented shows that Cornell is known far and wide for its agricultural courses. There are seven courses of study offered. General Agriculture is the most popular with 275 students enrolled; Dairy Husbandry ranks next, followed by Home Economics, Fruit Growing, Poultry, etc.

Progress in Dr. Needham's experiment in the selective breeding of fish will be greatly facilitated by the addition of a new pipe carrying cool spring water to the hatcheries. This will make it possible to raise brook trout. It is his intention in the experiments to strive toward a fish that will combine the best food value and hardiness. Dr. Needham believes that the day is rapidly approaching when the farmer who wants fresh fish from the water will be compelled to utilize his ponds or brook in breeding them himself.

While on a business trip to Europe this fall, Professor G. W. Cavanaugh, '96, spent several weeks in the rural parts of England, Ireland, and France where he made a cursory examination of agricultural conditions.

Professor Moody gave an address on November 13 at the meeting of the Empire State Forest Production Association in New York City. The subject of the address was "Forest Fire" Protection.

Professor Spring acted as chairman of the sub-committee of the National Conservation Congress on Forest Planting, preparing in this capacity a detailed report. Professor Mulford was a member of the two committees on Forestry Education and Forest Investigation, each of which prepared a report.

FORMER STUDENTS

'08, B.S.A.—Professor W. H. Alderman, located at Morgantown, W. Va., has had charge of the Horticultural work in that State for the past two and a half years. During this time the Department of Horticulture has undergone a complete reorganization and the combined station, college and extension staff increased from three to seven men. The number of horticultural courses taught in the college has been increased from three to fifteen, twenty-two experiments are under way and one man is kept in the field upon extension work throughout the year.

Immediately after leaving college Mr. Alderman spent a few months with the Department of Pomology at Cornell engaged in orchard survey
work. He then became connected with the experiment station at Geneva, N. Y., where he remained for three years, first as assistant and then as Associate Horticulturist. While at Geneva he assisted in preparing the monograph upon plums, known as "The Plums of New York." Since going to West Virginia he has published several bulletins, one of which contains cost and production records of several rejuvenated orchards.

'06, B.S.A.—Mr. A. D. Taylor is Associate Landscape Architect with the Warren H. Manning Co., of Boston, Mass.

'06, B.S.A.—C. W. Mann, who has been in California for the past three years at work for the Division of Pomology of the United States Department of Agriculture, is east for the winter and may be addressed, Dept. of Agriculture, Washington, D. C.

'06, B.S.A.—Ora Lee, Jr., has been working on his father's farm at Albion, N. Y., since resigning his position with the Bureau of Soils at Washington, D. C. The farm is devoted chiefly to potatoes, apples and beans.

'07, W.P.C.—R. P. Trask is managing the Benjamin Poultry Farm at Almond, N. Y.

'07, Sp.—Announcement has been received of the marriage of Gordon Hutchins to Miss Alice Bowker, daughter of Mr. and Mrs. William Henry Bowker, of Concord Mass., on October 18, 1913. Mr. Hutchins is now manager of his own farm at Concord.

'08, B.S.A., '11, Ph.D.—Everett Wallace since 1911 has been employed as Plant Pathologist for the Insecticide and Fungicide Board of the United States Department of Agriculture at Washington.

'08, B.S.A.—Jos. Davis, after a year's practical experience as Superintendent on a stock farm, became affiliated with the State Department of Agriculture, and rapidly rose to the position of Technical Assistant to Mr. R. A. Pearson, Commissioner of Agriculture. He resigned in Feb., 1912, to accept the position of Farm Manager and Steward of the Mohansic State Hospital at Yorktown, N. Y. This estate comprises over 600 acres.

'08, B.S.A.—Clarence Lounsbury has been working on a soil survey of Pope County, Arkansas, which has just been completed. His address is Bureau of Soils, Washington.

'08, W.C.—Clarence E. Brett, who was at one time at the head of the Winter Dairy Course at Cornell, has been appointed to the leadership of the Department of Poultry Husbandry in the New Hampshire State College. Mr. Brett has passed his time since leaving Cornell on the N. B. Raine Farm in Connecticut.

'09, B.S.A.—Mr. W. M. Anderson is managing the Turtle Point Farm of Saratoga Springs. His R. C. White Leghorns carried off several blue ribbons. Mr. Davis has also invented a drinking fountain which will be invaluable to large poultry farms.

'08, B.S.A.—Mr. Harry Davis is managing the Bonney Brook Farm of Saratoga Springs. At the recent N. Y. State Fair his single Comb White Leghorns carried off several blue ribbons. Mr. Davis has also invented a drinking fountain which will be invaluable to large poultry farms.

'08, B.S.A.—Mr. S. G. Rubinow has completed work in the Agricultural Normal School at Kalespell, Montana, and is at present taking a course in Farm Management in the University of Wisconsin. He will return to the Normal School at Kalespell to do
extension work for the Chamber of Commerce.

'09, W.P.C.—A. T. Moir is employed by the Hall Mammoth Incubator Co., Little Falls, N. Y., as poultry expert.

'09, W.P.C.—L. M. Hurd is operating his own poultry farm and is developing a very superior strain of White Leghorn fowls.

'10, B.S.A.—F. W. Messing has been appointed to the position of Chemist and Bacteriologist for the Reid Ice Cream Company, Brooklyn.

'10, W.P.C.—George Martin is manager of one of the large poultry farms in Pennsylvania at Shawnee-on-Delaware.

'11, B.S.A.—Mr. and Mrs. B. F. Simmons of Lebanon, Indiana, announce the engagement of their daughter, Miss Leona, to Mr. H. N. Humphrey of Washington, D. C., the wedding to take place early in December. Mr. Humphrey has been employed in the Bureau of Plant Industry, U. S. Department of Agriculture, since his graduation in 1911.

'11, B.S.A.—Warren C. Funk is now employed in the office of Farm Management, U. S. Department of Agriculture, and is located at Washington, D. C.

'11, W.P.C.—Mrs. Beulah Hickman Tompers, who represented the various winter courses on the Farmers' Week stage is managing a successful truck, fruit and poultry farm on Rahway Road, R. F. D. 2, Plainfield, N. J.

'11, W.P.C.—Mrs. J. Warner Bott, "Shore Acres," Shelburne Falls, Vt., has to her credit the enviable record of having hatched 720 chickens from 1200 eggs. She reared 702 of these or 97%.

'12, B.S.A.—Mr. A. M. Goodman is with the Dairy Division of the U. S. Department of Agriculture. He is connected with the Cow Testing Association, having charge of the Mid-Atlantic States under the supervision of Mr. Helmar Rabild.

'12, B.S.A., '12, A.B.—James L. Strahan and Miss Bessie L. Edwards were married on September 17, at the home of Mrs. Esther J. Haswell, in Ithaca.

'12, B.S.A.—James L. Kraker is on the staff of the H. K. Mulford Company as soil bacteriologist. His present address is 321 South 13th Street, Philadelphia, Pa.

'12, W.P.C.—W. W. Wichorst was engaged last winter giving demonstrations in extension work in Indiana and he has had charge of educational exhibits for the Poultry Department of the State College of Agriculture at Purdue University, Lafayette, Ind.

'13, B.S.—W. H. Bronson has recently accepted a position as teacher of agriculture in the high school at Marlborough, Mass. He is planning to supplement his work by some special studies in the Massachusetts Agricultural College during the months of January and February.

'13, B.S.A.—H. M. Harrington is superintendent of a certified milk farm at Sibley, Mich.

'13, B.S.A.—J. H. Cogswell has been engaged in general farming at Etna, N. Y.

'13, B.S.A.—Budd H. White is helping his father on their home farm at Worcester, N. Y.

'13, B.S.A.—Elwyn H. Dole is working for the Winnecook Land & Livestock Company on their ranch at Winnecook, Montana. The chief products are sheep, hay, and grain.

'13 B.S.A.—Fred C. Shaw is farm manager and teacher of Agriculture at the Farm and Trades School at Boston, Mass. His address is Thompson's Island.

'13, B.S.A.—R. H. Hewitt is engaged in dairy farming at Gouverneur, N. Y.
You Will Like This Silo

Every reader of this agricultural college paper is looking for a better way of doing things. You are interested in better ensilage—better results from feeding. You know that a silo must have an airtight, moistureproof wall to keep its contents fresh, sweet and succulent. It is the wisest kind of economy then, to build a silo that keeps ensilage in perfect condition until it is all fed to your stock—a silo that is not in continual need of repairs and soon has to be replaced. Erect a

NATCO
Imperishable Silo

on your place—it will stand for generations—a most sensible kind of monument to your good judgment. The Natco Imperishable Silo is easily erected by any mason. Made of vitrified clay blocks which are reinforced between each layer by continuous steel bands buried in mortar. These blocks make a silo wall that never swells, shrinks, freezes nor cracks—no hoops to tighten—no painting—no continual outlay for repairs.

Weatherproof
Verminproof

Decayproof
Fireproof

Build a Natco Imperishable Silo and end your ensilage troubles forever. It's the most attractive as well as the most durable silo you can erect—a valuable addition to your permanent farm buildings.

Write For Free Silo Book  Our new silo catalog will interest you—describes fully the many features which make the Natco Imperishable Silo superior to others. ASK FOR SILO BOOK.
Rattlesnake Poison Wouldn’t Answer for Whites of Eggs

We are told by chemists that the white of an egg and the rattlesnake poison are composed identically of the same quantities of the same elements. The same is true of oil of roses and common coal gas.

The way chemical elements are combined determine largely the chemical nature of the resulting material.

True it is that

\[ Wyandotte \]

looks very much like other white powders, and even though chemists’ analysis, as is sometimes claimed, should determine “Wyandotte” to be like some other similar looking powder, there would still be the possibility of a difference in the chemical action of cleaning.

The fact is, however, that “Wyandotte” is positively different from any other material used for dairy cleaning. Its ever increasing demand and superior quality of cleaning results bear witness to this fact.

Ask your dealer for a sack of “Wyandotte”, or write your supply house for a keg or barrel.

THE J. B. FORD CO., Sole Manufacturers
Wyandotte, Mich., U. S. A.

This Cleaner has been awarded the highest prize wherever exhibited.
DID YOU SEE IT?
The BAILEY NUMBER of December
PRICE 25 cents

Given FREE with one new subscription to THE CORNELL COUNTRYMAN.

DO IT NOW
(Cut out and mail this advertisement to THE CORNELL COUNTRYMAN, Ithaca, N. Y.

Enclosed please find one dollar ($1) for the Bailey Number and one year's subscription to the Cornell Countryman to begin February 1, 1914.

Name..............................................................................................................

Address.......................................................................................................... 

(Note: This will include the special horticultural number to appear February 1st.)

Educational Trains
now bring the facts from the Experiment Station direct to the Farmer.

The Experiment Station men are anxious to discuss the questions of most value to the people along the routes. Ask them to bring along an exhibit of fertilizer materials and to tell you how to get the most plant-food for your money.

Recently one train gave demonstrations of actual fertilizer mixing. Soon many will do so. Take your fertilizer dealer to these trains. Ask him to sell Potash Salts and brands containing six to ten per cent. Potash.

We shall be glad to send you, free, pamphlets prepared by the best practical authorities on fertilizers for various crops and soils. Write today, mentioning crops and soils that you wish to improve.

German Kali Works, Inc., 42 Broadway, New York

In writing to advertisers please mention THE CORNELL COUNTRYMAN
FRUIT TREES

Grown by Maloney Brothers & Wells Company are the results of many years' experience; no disappointment when they come into fruiting for our varieties have been tested 29 years.

We offer for spring planting 975,000 apple, 850,000 peach, 600,000 cherry, and thousands of plum, pear and quince trees as well as thousands of currants, grape vines and a big assortment of ornamentals, roses and shrubs. You will save considerable when dealing with an old established firm. Write today for our FREE, wholesale, illustrated catalogue of guaranteed true to name trees.

MALONEY BROS & WELLS CO., Dansville, N. Y.
Dansville's Pioneer Wholesale Nurseries

MAK-GRO Odorless PLANT FOOD for FLORISTS and GENERAL GREENHOUSE WORK

A Scientific, Improved, Concentrated, Quick-Acting, Complete Fertilizer, made in Non-Acid Granular Form from the Highest Grade Materials obtainable.

Especially adapted to Greenhouse Work for Flowers, Fruits and Vegetables.

Special Formulas for General and Special Greenhouse Crops, prepared by men who have made a life study of Greenhouse Work—not only in this country but abroad.

The services and advice of our experts is at your disposal on all matters pertaining to your Greenhouse problems.

MAK-GRO ODORLESS PLANT FOOD is put up in various sized packages, and is sold in lots of from one pound to a carload.

The one-pound cans and small packages make a splendid side line for Florists having their own stores.

Write us for further particulars.

CONSUMERS FERTILIZER CO., Longacre Building
Suite E, New York

APPLE TREES

The very best that can be grown. Ours are all budded on whole-root French seedlings. All the leading varieties, absolutely true to name. Send list of wants and let us quote you special prices. Will be glad to send samples to interested parties.

REFERENCES: Any bank or business house in Geneva.

The R. G. Chase Company
Geneva, N. Y.
THE GROOMING TEST

Holstein-Friesian Bull, which won the Grand Champion Prize at the New York and Illinois State Fairs, 1913, being groomed by The Kent Stationary Vacuum Groomer. This Groomer is adapted to perfectly clean horses, cattle, etc. Animals groomed by the Vacuum Process are made more vigorous and can be kept in the best condition for less, as the process stimulates them, promotes the growth of hair and makes them generally cleaner and healthier. The building in which it is installed and nearby buildings can also be cleaned in THE SANITARY WAY by its use.

ADAPTED TO ALL KINDS OF POWER.

The Kent Vacuum Cleaner Company, Inc.

111 S. Washington St.
ROME, N.Y.

Also Manufacturers of Stationary Vacuum Cleaners.

Spray Your Trees Early

Any time this winter and early spring when the temperature is not below 40° F. you can spray with "SCALECIDE" and kill the scale, eggs and larvae of insects wintering on trees, as well as spores of fungi that can be reached by a winter spray. Prepare now for a good fruit crop next season.

"SCALECIDE"

TRADE MARK REG. U. S. PAT. OFFICE

will absolutely destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. It costs less to spray an orchard with "SCALECIDE" than with Lime-Sulfur—and you secure better results. We back up this claim. Write today for free booklets—"Proof of the Pudding" and "Spraying Simplified".

Write to our Service Department for orchard supplies at money-saving prices.

We are World Distributors for Vreeland's "ELECTRO" Spray Chemicals

and "Electro" Arsenate of Lead Powder (53%) which, used wet or dry, has no equal in strength or texture. Avoid imitations. B. G. PRATT CO., 50 Church Street, New York City.

The Improved Simplex Link Blade Cream Separator

LIGHTEST RUNNING LARGEST CAPACITIES CLOSEST SKIMMING

The Only Practical Large Capacity Separators

Has more exclusive patented features of merit than all others—Has all the desirable points that can be put into a cream separator.

500 lbs., $75.00 900 lbs., $90.00
700 lbs., $80.00 1100 lbs., 100.00

D. H. BURRELL & CO.
LITTLE FALLS, NEW YORK

Manufacturers of Creamery, Dairy and Cheese Factory Apparatus

Also "B-L-K" COW MILKERS

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
Once Upon a Time

Once there was really no way out of it for the farmer. Plodding home from the field with his team at close of day, he saw before him the waiting small jobs about the house, barn, and yard, jobs that took time and labor, and never seemed to end. There was water to be pumped, wood to be sawed, various machines to be run by hand. But that was once upon a time. Today he lets the engine do it.

Every I H C engine is economical, simple, steady and reliable. Whether you want it for sawing, pumping, spraying, electric light plant, for running separator, or repair shop, or for all sorts of tiresome energy-wasting small farm jobs, you have need of an

I H C Oil and Gas Engine

I H C engines are built vertical, horizontal, stationary, portable, skidded, air-cooled and water-cooled; sawing, pumping and spraying outfits. Sizes from 1 to 50-horse power. They operate on gas, gasoline, kerosene, naphtha, distillate and alcohol. I H C oil tractors range in size from 12 to 60-horse power.

Have the I H C local dealer demonstrate the engine to you and explain its various points. Get catalogues from him, or write the

International Harvester Company of America

Chicago

U S A
HAVE YOU YET RECEIVED

BURPEE'S

ANNUAL FOR 1914

which is now being mailed at the rate of more than ten thousand copies every day?

A BRIGHT NEW BOOK OF 182 PAGES—it is known as “THE SILENT SALESMAN” of the World's Largest Mail Order Seed Trade. It tells only the plain truth about the

Burpee-Quality Seeds that Grow

Bound with covers lithographed in nine colors, it shows, with the colored plates (also in nine colors), Six Novelties and Specialties in unequaled Vegetables, and sixteen Beautiful New Flowers, including the most superb “SPENCERS,”—as grown at BURPEE'S FLORADALE RANCH, the California “Home of Sweet Peas.”

With hundreds of illustrations from photographs and carefully written descriptions it is a SAFE GUIDE to success in the garden, and should be consulted by every one who plants seeds, either for pleasure or profit. While it is never sent unsolicited (except to customers of record), we are pleased to mail it FREE to every one who has a garden and asks for it. Shall we mail YOU a copy? If so, kindly mention The Countryman and write TO-DAY!

In the past thirty-seven years (since 1876)

THE HOUSE OF BURPEE

Has introduced more distinct New Varieties of Vegetables and Flowers that are now in general cultivation than have any three other American firms. Selected Stocks are produced upon our own seed farms in Pennsylvania, New Jersey, and California, while FORDHOOK FARMS are famous as the largest and most complete trial grounds in America. No Government Experimental Station in the world attempts such complete trials each season, and the information here obtained is of incalculable benefit to planters everywhere. We travel more than thirty thousand miles each season to inspect growing crops, and yet never a single mile to solicit an order! We trust, however, that you will read our “SILENT SALESMAN.” A postal card will bring it. But please write TO-DAY,—“Lest You Forget.”

W. ATLEE BURPEE & CO.

Burpee Buildings

PHILADELPHIA
Mr. Fruit Grower, you are looking for the best Apple, Pear, Peach, Plum, Cherry and Quince trees you can buy.

Kelly Trees are sold at Growers' Prices—shipped direct from our nurseries in Dansville and guaranteed sturdy, free from disease and True to Name. For 27 years we have had the name of knowing how to grow trees right. From seedling to freight car we watch our own trees personally and know that we are shipping just what you order. We have an up-to-date nursery plant and can ship all orders promptly, as well as grow and ship at a low cost. We give you every advantage on price.

Write for catalog today, and get our prices.

KELLY EROS., WHOLESALE NURSERIES,
160 Main Street, Dansville, N. Y.

You'll never regret planting Kelly Trees.

Get Help from Pump Experts

Finding out before you buy will save you money and trouble after you buy a pump or water system. Our Consultation Department is helping hundreds of farmers daily to choose the right pump for the right need. There are over 300 types. One is best for your purpose. Find out which it is. Write our Mr. Gould, the man who knows all about pumps and their uses. No charge for this service.

GOULD'S RELIABLE PUMPS

outsell all others. Goulds Pumps are made by experts who make nothing but pumps. They focus all their skill on one product. And, through specialization, manufacturing costs are lowered. You get best quality at lowest price.

THIS BOOK FREE

Full of facts about pumps. Describes Running Water Systems for Country Homes, how to figure tank capacity, piping, different kinds of wells, etc. Write today and get it by return mail.

The Goulds Manufacturing Co.
16 W. Fall St., Seneca Falls, N. Y.
Largest Manufacturers of Pumps for Every Purpose

THE GREATEST OF NEW INVENTIONS FOR CERTIFIED MILK DAIRYMEN IS THE

Simplicity Milking Machine

WITH THE METAL TUBE CONNECTING THE TEAT CUPS WITH THE PAIL WHICH ELIMINATES ALL RUBBERS WITH WHICH THE MILKER COMES INTO CONTACT.

Write today for full particulars to

F. GROFF & SON
St. Johnsville New York

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
I want the privilege of sending a 60-day supply of Sal-Vet (my famous worm-destroyer and conditioner) to every man who owns sheep, hogs, cattle, horses or mules. I want you to see for yourself how it rids all farm stock of the deadly stomach and free intestinal worms—how it will stop your losses from worms and solve your stock-raising problems—how it will make your stock thrive better—keep healthy and free from disease. In making this offer I don't ask one penny from you, now or at any other time, unless Sal-Vet does all I claim.

Worms rob you of your stock-profits—keep your animals thin and out of condition—steal their food—sap their strength and vitality and make them easy victims of disease. I'll rid your stock of these pests. I'll prove it before you pay.

READ THESE LETTERS

A short time after beginning to use Sal-Vet on a lot of thin sows in bad condition it completely cleaned the worms from these animals and at once they commenced to eat better, and to thrive accordingly. There were cases of cholera close by and we consider that Sal-Vet was our salvation.

Auburn, Nebraska.

I have just shipped a carload of hogs that went within a nickel of topping the market. These hogs were on Sal-Vet.

Most of my neighbors lost their entire herds from disease.

W. J. BUTLER.

Send No Money—Just the Coupon

Tell me how many head of stock you have. I'll ship enough Sal-Vet to last 60 days. You simply pay the freight charge when it arrives, and when the 60 days are up report results. If it does not prove satisfactory I'll cancel the charge—you won't owe me a cent. Fill out and mail coupon today.

Prices: 40 lbs. $2.25; 100 lbs. $5.00; 200 lbs. $9.00; 500 lbs. $12.00; 1,000 lbs. $21.12. No shipment made for less than 40 lbs. on 60-day trial offer. Please send in bulk, only in Trade-Marked "Sal Vet" packages. 60-day trial shipments are based on 1 lb of Sal-Vet for each sheep; 1/2 lb for each horse or head of cattle as near as we can come without breaking regular size packages.

SIDNEY R. FEIL, Pres.

THE S. R. FEIL CO. Dept. CC
Cleveland, O.
Christy Engraving Co.
WHERE QUALITY COUNTS

Halftones  Illustrations
Line Etchings  Designing
and
Embossing Plates

We are Specialists in

Color Plate Engraving and
Color Printing

If you want to increase the selling power of your next catalogue, if you want to make your advertising as effective as possible, you should look into the question of using color reproductions. Our success lies, not alone in the making of proper plates, but in printing them as they should be. Our product is used by companies of international reputation. We shall be pleased to submit estimates or samples of work.

611-18 Central Building
Rochester, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
MORE THAN HALF A MILLION  
First-Class Fruit Trees

from which to select the varieties best suited to your location. My Apple, Peach, Pear and Cherry trees are healthy, vigorous, free from scale, true to name. I have 300 acres of orchards under my control, from which my trees are propagated. Write today for my catalogue.

SAMUEL FRASER  
Consulting Agriculturist, Nurseryman and Fruit Grower  
Box 1401 Geneseo, N. Y.

"HAMMOND'S GRAPE DUST"  
Used effectively to kill Mildews on Roses and other Plants...

Sold by the Seed Dealers. 
For pamphlet on Bugs and Blights address 
HAMMOND'S PAINT & SLUG SHOT WORKS  
BEACON, N. Y. (Fishkill-on-Hudson, N. Y.)

CHR. HANSEN’S  
DANISH DAIRY PREPARATIONS

DANISH RENNET EXTRACT  
The Standard of the World

DANISH VEGETABLE BUTTER COLOR  
The best Vegetable Color on the market

DANISH CHEESE COLOR  
Absolutely pure, always reliable—makes prize cheese.

CHR. HANSEN’S LACTIC FERMENT CULTURE  
is unsurpassed for producing a Starter, for ripening cream in butter making, milk in cheese making, and skimmed milk in the preparation of cottage cheese or commercial buttermilk.

Manufactured and put up only by 
Chr. Hansen’s Laboratory  
BOX 1005 LITTLE FALLS, N. Y.

PURE BEEF CRACKLINGS

TRADE MARK REGISTERED

THIS BRAND HAS ESTABLISHED A NEW STANDARD FOR

BEEF SCRAP

THE FLAVELL CO.  
Asbury Park, N. J.
Another Proof That Our Iron Frame House is Snow Proof

Three or so weeks ago Ohio and parts of Pennsylvania were swept by a genuine mid-winter-like snow storm that put down the wires, tied up railroads and made many a grower anxious about his house. After the storm we received the following letter from C. W. Zuck & Sons of Erie, Pa.:

"The most severe snow storm that we have had for some time has just past over today. Toward evening we had to start propping our gutter houses, but the new Lord & Burnham house cleaned the snow all day."

The house Mr. Zuck referred to, is one of our sectional iron-frame vegetable houses, 7 2 feet wide and 4 8 feet long, which they erected. Send for our Iron Frame Catalog.

Lord & Burnham Co.

A COMPLETE LINE OF
MACHINERY
AND SUPPLIES

For Dairies, Creameries and Milk Dealers

Write for catalog and prices

Prompt and Courteous Service

D. H. Gowing & Co.
SYRACUSE, N. Y.
There are Three Important Reasons Why Cows Should be Clipped:

(1st) Their Health Will be Improved
(2nd) Yield of Milk Will be Increased
(3rd) Sanitary Conditions Will be Bettered

Clip off the long coat twice a season—in the spring and summer—and the cows keep healthier and yield more milk. Thousands of dairy farmers have proved this.

Clip the udders and flanks every month; it takes only a few minutes. This makes it easy to keep the parts clean, thereby insuring clean, uncontaminated milk.

Results like these make clipping profitable as well as sanitary.

Minimize the expense, time and labor by clipping with a Stewart Machine. Anybody can operate it because it turns easy and fast, without hard work, trouble or danger to the animals.

Use the STEWART Ball-Bearing Cow Clipping Machine

The sturdy construction of the Stewart insures a lifetime of good service. Gears are file hard, cut from the solid steel bar and are encased in an oil bath away from dust and dirt. Friction and wear are practically done away with. The clipper plates are specially hardened, tempered and ground to a fine cutting edge that stay sharp long and always cut keen.

Six feet of flexible shaft, and everything necessary to begin clipping with, is included with the machine. No extras at all and the machine as it comes is right for clipping cows, horses, mules.

The Stewart Clipping Machine is sold for $7.50 by dealers everywhere, or direct. Ask for our catalog describing our complete line of machines for clipping cows, horses, mules, and for shearing sheep.

Chicago Flexible Shaft Co.
127 La Salle Avenue  Chicago
HAVE YOUR COUNTRYMAN BOUND
WE BIND ANYTHING

J. WILL TREE'S
113 N. Tioga Street

LEHIGH VALLEY RAILROAD

The only line to and from Ithaca Cornell University with through service between New York, Newark, Philadelphia, Buffalo, Niagara Falls and Chicago. Steel Trains; Observation Parlor Cars; Electric Lighted Sleeping Cars; Buffet-Library-Smoking Cars; Dining Cars, Service a la Carte; Stone Ballast.

Automatic Electric Block Signals

COMFORT          SAFETY

Hammond's Greenhouse White, a superb paint, with years' record to back it up for wood or iron Greenhouses. It stays where you put it. In 5, 10, 15, 20, 25, or 50 gallons.

Hammond's Paint and Slug Shot Works, Fishkill-on-Hudson, New York.

KOHM & BRUNNE
THE LATEST STYLES
AT MODERATE PRICES

TAILORS 222 East State Street

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Flashlight Photography...
H. C. CABLE
Ithaca Phone 180-X
405 COLLEGE AVE.

Photo Facts
26 years in the business,
15 years in present stand
(longer than any other
photographer in the city). Be sure and see us be-
fore having that photo taken.

Photographer
AND
Kodak Dealer

WE DO YOUR MENDING FREE
FOREST CITY LAUNDRY
E. M. MERRILL

PHONE 209 NORTH AURORA STREET

CUT FLOWERS, DECORATIVE
PLANTS, ETC.
THE BOOL
FLORAL CO.
215 East State St., Ithaca, N. Y.

PETER SCUSA
MODERN SHOE REPAIRING
Neatly and Promptly Done
Shoes called for and delivered in any part
of the City
Ithaca Phone 428-C 405 Eddy St., ITHACA, N. Y

TYPEWRITERS
New and Rebuilt
Any Make
Sold, Rented and Repaired
Special Rates for the College Year
H. L. O’DANIEL,
Both Phones. 204 N Tioga St.

PIANOS, MANDOLINS, GUITARS, BANJOS and VIOLINS
Rented or sold on Easy Payments. "Songs of Cornell." All the latest
music; Strings and supplies for all instruments at lowest prices.

LENT’S MUSIC STORE
122 N. Aurora Street
Victor Talking Machines, Records, Etc.

The University Photo Shop, G. F. Morgan
314 College Ave.

SPECIAL ATTENTION GIVEN TO FRAMING
10 per cent. off on Frames when furnished with the pictures we make

In writing to advertisers please mention THE CORNELL COUNTRYMAN
BAXTER'S
Clothing and Furnishings

have pleased hundreds of CORNELL students during the last Five Years. Why? Because we sell only first class merchandise and guarantee every dollar's worth of it; we fit our clothing to please; our service is unexcelled, and last but not least, we sell at One Price to All.

Please conside this "Shop," "Your Shop." You get your money's worth here.

E. B. BAXTER,
ONE PRICE TO ALL
"The Quality Shop"
Satisfaction guaranteed
150 E. State St., Ithaca, N.Y.

Cafeteria
HOME ECONOMICS BUILDING
THREE MEALS DAILY

D. S. O'BRIEN
MARKETS
222 North Aurora Street 430 North Cayuga Street

DEALER IN
FRESH, SALT AND SMOKED MEATS
Poultry and Game in Season

D. S. O'BRIEN

writing to advertisers please mention THE CORNELL COUNTRYMAN
The Shops of Shops

Come right in to headquarters where you can find everything for man's wear at lowest prices.

Leave your measure for ONE HALF DOZEN SHIRTS for ONE DOZEN DOLLARS.

We have a whale of a stock of Furnishing Goods, Hats and Caps.

TOWN SHOP,  L. C. BEMENT  HILL SHOP,
142 E. State St.  The Toggery Shops  413 College Ave.

F. J. HAUSNER, Jeweler

Watches, Diamonds and Jewelry  205 E. State Street

THE FIRST NATIONAL BANK
Cornell Library Building
Capital, Surplus and Profits, $350,000.00
Oldest National Bank  Safe Deposit Boxes for Rent

ITHACA SAVINGS BANK
INCORPORATED 1868
Tioga Street, cor. Seneca  ITHACA, N. Y.

When wanting
QUALITY, SERVICE AND CLEANLINESS

go to
WANZER & HOWELL, The Grocers

PICTURES

STUDENTS' FURNITURE

Manufacturers of Special Furniture for
FRATERNITIES AND CLUB ROOMS

H. J. BOOL CO.

(Opposite Tompkins County Bank)
It's very human for one to buy his shoes from the store that can offer the most inducements in the way of style, assortment, quality and big value. For that reason we expect to see you in this store very soon now.

**THE NEW**

**Fall Styles**

are priced at $4.00 to $5.00

Banister make $6.00 to $10.00

**ITHACA BOOT SHOP, Inc.**

204 E. State Street

---

**New York Life Insurance Company**

C. H. WEBSTER, Agent

OFFICE: Student Supply Store
RESIDENCE: 121 Catherine St.
How The Dirt Fletcherized
The New Process Dry-Cleaning will do it.
Cleaned Clean in a Clean Cleaning Works under Sanitary Methods by Cleaners who know how.
Modern Dry-Cleaning and Pressing Works
W. F. FLETCHER CO., Inc. 103 Dryden Road

Norton Printing Co. 317 E. State St.
COLLEGE, FRATERNITY and COMMERCIAL PRINTING
Engraved Cards and Invitations Rubber and Metal Hand Printing Stamps

Robinson's Photograph Shop 214 East State Street
Photographer for the Senior Class

White & Burdick Co.
The oldest and largest
Drug Store in the City
Supplies for Agricultural Students — a Specialty

New York State College of Agriculture at Cornell University
THE DEPARTMENT OF ANIMAL HUSBANDRY
Breeds Percheron Horses, Holstein, Jersey, Guernsey, Ayrshire, Short Horn Cattle, Dorset, Shropshire, Rambouillet Sheep, Cheshire Swine.
Regular Public Sale of all Surplus Young Stock, except Swine, on FRIDAY OF FARMERS' WEEK EACH YEAR

In writing to advertisers please mention THE CORNELL COUNTRYMAN
A postal card request will bring you a copy of our list of some hundreds of Practical Agricultural Books compiled from our lists of regular and recommended books as used at the N. Y. State Agricultural College here at Cornell:

The Corner Bookstores
ITHACA, N. Y.

Mackinaws
Sweaters
Overcoats
Suitings
Shoes

Victor Victrola
Parlors

Complete stock of Records

Our salesmen will be glad to show you

THE UNIVERSITY HABERDASHERY
320-322 College Ave.
A. F. Sturm, Mgr.
Columbia Leader

$75

—pay for it next year if more convenient.

SIXTEEN STYLES FROM $25 to $500

One small payment puts one in your home.

ALL COLUMBIA RECORDS WILL PLAY ON VICTOR TALKING MACHINES. LIKewise ALL GRAFONOLAS WILL PLAY VICTOR RECORDS

DAVIS-BROWN ELECTRIC CO.
MUSIC DEPT.
213 E. State Street, ITHACA, N. Y.

"BACK TO THE FARM"

That is just what must take place in this country, and the sooner the better, or other countries will be obliged to feed us. This publication is doing all it can to make this movement pleasurable and profitable, and after you are persuaded—well, that is where we come in.

We can find that farm for you

We have probably the largest list to select from in Central New York State.

Ithaca Realty Company
202 N. Tioga St., Ithaca, N. Y. "You’re Safe in Our Hands"

Gentlemen—You are cordially invited to inspect our excellent variety of WOOLENS in both Foreign and Domestic and they are exclusive in Styles for Suits and Overcoats, also are approved for all occasions for Fall and Winter.

URBAND & SON

TAILORS

In writing to advertisers please mention THE CORNELL COUNTRYMAN
**WISE**

*THE PRINTER*

Is at your service for all classes of Fine Printing, Engraving, etc.

Buffalo St., next to Post Office, Ithaca, N.Y.

Ithaca Phone 76x

**THE ITHACA HOTEL**

*SERVICE*

**A LA CARTE SERVICE**
6:15 A.M. to 12 P.M.

**CLUB BREAKFAST**
6:15 A.M. to 10 A.M.

**MODIFIED EUROPEAN PLAN**, ready to serve
12 M. to 2 P.M.  6 to 7:45 P.M.

**SUNDAYS**

**TABLE D'HOTE**
1 to 3 P.M.  6 to 7:30 P.M.

We will submit with pleasure menus for private parties and banquets.

Private dining room and tables will be reserved upon request.

**STUDENT SUPPLY STORE**

The Modern Method Laundry

JOHN REAMER, Prop.

**A. B. KENNEDY**

Dealer in Watches and Jewelry,
Cut Glass and Fine Silver for Weddings. Cornell Pins, Fobs, Souvenir Goods, etc.

EAST STATE ST., ITHACA, N.Y.  Opp. New Ithaca Hotel

We keep a fine line of diamonds and jewelry and do all kinds of repairing neatly at:

Heggies' Jewelry Store ===

136 E. State St.
"If you get it from us it's right"

**BUTTRICK & FRAWLEY**

One Price Clothiers and Furnishers

This fall season finds us more fully equipped to satisfy your wants than ever before. Special attention has been paid to get best material at minimum price. **Suits and Overcoats**, $10.00 to $30.00; **Raincoats**, $5.00 to $30.00; **Mackinaws**, $6.00 to $12.00. We make Suits to measure and save you from $5.00 to $10.00.

VISIT OUR SHOE DEPARTMENT

Hats, Gloves, Shirts, Sweaters, Underwear, and all other articles you'd find in a first class shop. **Full Dress and Tuxedo Suits for sale and to rent.**

"If not we make it right" 134 East State Street

**PROFESSORS, STUDENTS, INSTRUCTORS,** you will get **MORE INSURANCE FOR LESS MONEY**

If you have a policy with:

**The Travelers Life Insurance Company**

OF HARTFORD, CONN.

J. J. SINSABAUGH, Agent,

149 East State Street  ITHACA, N. Y.

INSURANCE OF ALL KINDS

**Williams Brothers**

ITHACA, NEW YORK

**WELL DRILLING MACHINERY AND TOOLS**

**The Clinton House**

Corner Cayuga and Seneca Sts.

**TABLE D'HOTE SERVICE**

Cuisine and Service Unexcelled

Luncheon, 12 to 2 - - - $0.75
Dinner, 6 to 8 - - - -  - .75
Sunday Dinner, 1 to 2:30 - - - .75

SPECIAL HOLIDAY DINNERS

"Ithaca's Popular Hotel"
NOW READY FOR DELIVERY

YORK STATE RURAL PROBLEMS

I

By L. H. BAILEY

Although the name of the book is “York State Rural Problems” the discussions apply to the entire country. They are of general interest as a part of the country inquiry and discussion of the present day. The chapters have grown out of the author’s personal experience, and have been to a large extent the working out of problems that have come to him for solution. They are therefore not written in the abstract and as a matter of entertainment, but have been the result of definite work and study when the problems were up for consideration.

Three Hundred Pages Bound in Cloth, with Attractive Stamp

By Mail, Postage Paid, ONE DOLLAR

J. B. LYON COMPANY

PUBLISHERS

ALBANY, NEW YORK
Our fruit and ornamental catalogue really is a reference book on the subjects covered. We give as much attention to the editorial work on it as any other fruit book published receives. Our aim is to publish a yearly descriptive list of fruits and ornamentals which are so carefully chosen, so wisely and accurately described, and so up-to-date, that it will be invaluable to anyone interested in home or orchard planting.

There is a live story of the battle we had to save a big crop of peaches from total loss. It tells how we worked, sprayed and pruned to save the trees, but it paid, and they are now in normal, healthy condition. Read the story for the information may be of value to you some day.

This year the book is better than ever before in text, and it contains fifty or more highly interesting and instructive pictures especially made for it. Send today for your copy and give it a place among your reference books.

Other Harrison Books You Should Have

"HOW TO GROW AND MARKET FRUIT" is our complete guide book. Price, 50 cents, which amount is returned to you on your first order amounting to $5.

"THE WHY AND HOW OF SHADE TREES AND EVERGREENS" tells how to plant home grounds properly. Sent free.

Come to Berlin for a visit. See our orchards. Pick out your own trees in the nurseries. Remember that we bud all our young trees from bearing orchards, and that we sell only trees we ourselves grow.

Harrisons' Nurseries, Cornell St., Berlin, Md.
That's the way a user who has had a lot of personal separator experience and the opportunity to observe a great deal of other people's experience aptly describes the meaning of the name "De Laval" on a separator—"a separator with the trouble left out."

To many buyers of a cream separator and other farm machinery there's more meaning in that simple statement of fact than in a hundred other claims and arguments that might easily be made for the De Laval.

And if anyone would know how and why the "trouble has been left out" of a De Laval machine a new De Laval catalog—the most complete and interesting story of the cream separator ever published—to be had for the asking, will help to make it plain. See the local agent or address the nearest office as below.

THE DE LAVAL SEPARATOR CO.
NEW YORK   CHICAGO   SAN FRANCISCO   SEATTLE

PRESS OF W. F. HUMPHREY, GENEVA, N. Y.
The Scientific Farmer will paint his buildings and preserve from decay.

You will not paint during Winter's chilly blasts, but Now is a good time to look up the question; get prices and make comparisons.

Use WADSWORTH DOUBLE THICK PAINT and save money; the paint formulated upon scientific principle; remarkable for covering capacity; of great durability and economical in cost. Tried and proved for more than half a century.

Buy your Paint of the Manufacturer and save the Middleman's Profits. Address

EDWARD JOSLIN
SPECIAL AGENT
No. 11 South First St. FULTON, N. Y.
SPECIAL OFFER DURING WINTER MONTHS ON BARN AND SILO PAINT.

There was an orchard grower who wasn’t wondrous wise,
Who always jumped at the lowest price hoping to economize.
He would fuss and cuss and pull his hair and swear good stuff’s high;
He would have spray stuff at his own price or By Gosh he wouldn’t buy;
He would get it too, and then he’d spray, and spray, and spray until his eyes were out:—
His crop was purchased by the Dry House at twenty-five cents per hundred on or about.

We write "No Worry" insurance, sell you REX Lime and Sulphur Solution and REX Arsenate of Lead high in quality and give you the insurance free.

The Rex Company
ROCHESTER, N. Y.

P. O. BOX 712

In writing to advertisers please mention THE CORNELL COUNTRYMAN
OFFICIAL PUBLICATIONS of CORNELL UNIVERSITY

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second-class matter at the post office at Ithaca, N. Y. pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and postfree on request:

- General Circular of Information for prospective students.
- Announcement of the College of Arts and Sciences.
- Courses of Instruction in the College of Arts and Sciences.
- Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts.
- Announcement of the College of Civil Engineering.
- Announcement of the College of Law.
- Announcement of the College of Agriculture.
- Announcement of the Medical College.
- Announcement of the New York State College of Agriculture.
- Announcement of the Winter-Courses in the College of Agriculture.
- Announcement of the New York State Veterinary College.
- Announcement of the Graduate School.
- Announcement of the Summer Session.
- The President's Annual Report.
- Pamphlet on prizes, samples of entrance and scholarship examination papers, special departmental announcements, etc.

Correspondence concerning the publications of the University should be addressed to

The Registrar of Cornell University

ITHACA, N. Y.

New York State College of Agriculture at Cornell University

W. A. Stocking, Jr., Acting Director.

The College of Agriculture is one of several co-ordinate colleges comprising Cornell University. The work of the College is of three general kinds: The regular teaching work of undergraduate and graduate grade; the experiment work; the extension work. The resident instruction falls in the following groups:

1. Four-year course, leading to the degree Bachelor of Science in Agriculture (B. S. in Agr.). When desired, the last two years may be chosen in subjects pertaining to landscape architecture and out-door art, or to home economics. In the Graduate School of the University students may secure the Master's and Doctor's degrees (M.S. in Agr. and Ph.D.).

2. Special work, comprising one or two years: (a) Agriculture special; (b) Nature-study special or normal course.

3. Winter-Courses of 12 weeks: (a) General Agriculture; (b) Dairy Industry; (c) Poultry Husbandry; (d) Horticulture; (e) Home Economics.

THE INSTRUCTION IS DIVIDED AMONG TWENTY-TWO DEPARTMENTS AS FOLLOWS

| FARM PRACTICE and FARM CROPS | ANIMAL HUSBANDRY |
| FARM MANAGEMENT | POUlTRY HUSBANDRY |
| AGRICULTURAL CHEMISTRY | DAIRY INDUSTRY |
| PLANT PHYSIOLOGY | FARM MECHANICS |
| PLANT PATHOLOGY | FORESTRY |
| SOIL TECHNOLOGY | RURAL ART |
| PLANT-BREEDING | DRAWING |
| ENTOMOLOGY, BIOLOGY and NATURE-STUDY | HOME ECONOMICS |
| HORTICULTURE | METEOROLOGY |
| POMOLOGY | RURAL ECONOMY |
| | RURAL EDUCATION |
| | EXTENSION TEACHING |
The improved processes used in delinting and crushing cottonseed have rendered it impossible (or at least commercially impracticable) to make a meal which can be guaranteed to contain 8% ammonia, which guarantee has been given with all of this Company’s meal bearing The A. C. O. Co’s well known “Red Tag.”

For this reason we have decided to change the “Red Tag” to a basis of 7.5% ammonia rather than to issue a tag showing a sliding scale or minimum and maximum percentages which leaves the buyer in doubt as to what is sold. We feel that this definite statement of content will appeal to users of cottonseed meal generally and that our “Red Tag” as revised will be recognized in the future as the previous form of “Red Tag” has been in the past as representing an absolutely trustworthy grade.

**NET WEIGHTS:**

Cottonseed meal has been, heretofore, sold upon gross weight, that is to say, 100 lbs. weight including weight of bag. Our new contracts will be filled with meal packed in sacks containing 100 lbs. net weight conformably with the recently established rule of the Inter-state Cottonseed Crushers’ Association.

Our “Red Tag” will read as follows:

---

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
SCALINE

Your fruit and ornamental trees, shrubs and vines must be sprayed to keep them free of the various insect pests which infest them.

SCALINE will effectively rid your trees and shrubs of San Jose, Oyster Shell, Cottony Maple scale and all insect infestation which secretes itself in the bark during the dormant season. It is most effective against red spider, which is so destructive to the evergreens.

SCALINE, a soluble oil and sulphur, mixes readily with water, requires no agitation and is applied in mist like form. More effective than and equally as economical as lime and sulphur. It spreads into every crevice of the bark.

For summer spraying SCALINE is a marked improvement over the old-fashioned kerosene emulsion and fish oil (so called whale oil) soap.


For Greenhouse and Garden Spraying

Use APHINE, the recognized standard insecticide, to destroy green, black, white fly, red spider, thrips, mealy bug and all soft scale.

It is an excellent cleanser for all house and decorative plants.

Quarts, $1.00—Gallons, $2.50.

Use FUNGINE for mildew, rust and other blights on flowers, fruits and vegetables.

Quarts, 75c—Gallon, $2.00—10 Gallon Keg, $15.

Use VERMINE to destroy eel, wire and cut worms, root maggots and all soil vermin. Used one part to four hundred parts water, it protects your crops and lawns against the ravages under the soil without injury to vegetation.

Quart, $1.00—Gallon, $3.00—5 Gallon Keg, $12.50.

The above products are universally used by private and commercial growers of reputation.

For sale by all up-to-date seedsmen

Write us for particulars on any of our products that you may be interested in.

APHINE MANUFACTURING COMPANY
Manufacturers of Agricultural Chemicals
MADISON, N. J.
Best-Hated of Farm Tasks

ON the spreaderless farm the thought of the great heaps of manure piling up constantly in barn yards, stables, and stalls, is a gloomy one. Those piles mean much disagreeable and hard work. Three times every bit must be handled. It must all be loaded onto high wagons. It must be raked off in piles in the fields. Then every forkful must be shaken apart and spread.

Compare that old-fashioned method with the spreader way. You pitch the manure into the spreader box, only waist high, drive out and —the machine does all the rest.

And, far more important, if you buy an I H C spreader one ton of manure will go as far as two tons spread by hand, with the same good effect on the soil, and it will all be spread evenly.

I H C Manure Spreaders

are farm necessities. The man who uses one will get the price of it back in increased crops before its newness has worn off.

I H C spreaders are constructed according to plans in which every detail, every feature, is made to count. They are built to do best work under all circumstances, and to stand every strain for years. They are made in all styles and sizes, for small farms and large, low and high machines, frames of braced and trussed steel. Uphill or down, or on the level, the apron drive assures even spreading, and the covering of corners is assured by rear axle differentials. In all styles the rear axle is placed so that it carries near three-fourths of the load. This, with the wide-rimmed wheels with Z-shaped lugs, makes for plenty of tractive power. Winding of the beater is prevented by large diameter and the beater teeth are long, strong and chisel pointed.

A thorough examination of the I H C spreader line, at the store of the local dealer who sells them, will interest you. Have him show you all these points and many more. Study the catalogues you can get from him, or, write the

International Harvester Company of America
(Incoporated)

Chicago USA

In writing to advertisers please mention THE CORNELL COUNTRYMAN
THE GASPORT TRACTOR
The Leader in the Light Tractor Class

THE REASONS ARE CLEAR:

It is the first successful light tractor, demonstrated by four years of steady development. Strength has not been sacrificed to give lightness as in many machines but is as light as consistent with its contained power, durability is the prime factor. Great rigidity of frame construction, embodying three point suspension, no twisting of frame possible. A machine which is simplicity itself, not a single freakish idea embodied anywhere. Handled as easily as an automobile. No combination of clutches and levers to manipulate in order to go ahead or back up. One lever does it all, three speeds ahead and the same three reverse. This machine will handle 50% quicker and 100% easier than any other machine made. All wearing parts thoroughly protected from dust and dirt. Cut steel gears running in oil tight case. Built low to go under trees. Short wheel base enabling it to turn easily on ordinary headlands. Handles easily three to four plows, depending on ground conditions. A machine for service and high efficiency. The Gasport Tractor is well worth knowing about.

Write for Catalogue No. 108.

LIGHTNESS, SIMPLICITY, DURABILITY

The three prime requisites of the modern power sprayer are exemplified throughout the designs of our little "Gamo", neat strong and powerful, not a pound of metal where it is not needed, every part thoroughly tried out in years of field service. Equipped with either 5 H.P. or 2½ H.P. engine.

Ask for Catalogue No. 100

ORCHARD MACHINERY MFG. CO., - Gasport, N. Y.
Agricultural Books

The Co-op., you know, feels in duty bound to have on sale what the students need. The first and most important thing is textbooks. The largest part of our stock is composed of the books you must have. We also sell many of those recommended. This gives a very complete stock. Always trade at the Co-op.

Good Service and Our Reason for It

Students have very little time between classes and at first thought it would seem as if it did not matter if a man was late to a class, but if he bothers others by coming to the class late it is serious. When you come in we try to wait on you promptly. We have good salesmen to wait on you.

THE CO-OP.

MORRILL HALL

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
# Table of Contents

## FEBRUARY, 1914

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontispiece—Chrysanthemums grown in the Cornell Greenhouses.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Outlook for the Fruit Grower.</td>
<td>C. S. Wilson</td>
<td>147</td>
</tr>
<tr>
<td>Some Practical Points on Apple Orcharding.</td>
<td>E. H. Anderson</td>
<td>148</td>
</tr>
<tr>
<td>Research in Pomology.</td>
<td>W. H. Chandler</td>
<td>153</td>
</tr>
<tr>
<td>Plans of the Department of Pomology.</td>
<td>H. B. Knapp</td>
<td>157</td>
</tr>
<tr>
<td>Poem.</td>
<td>L. H. Bailey</td>
<td>158</td>
</tr>
<tr>
<td>The Development of the Department of Floriculture at Cornell University</td>
<td>E. A. White</td>
<td>159</td>
</tr>
<tr>
<td>Poem.</td>
<td>L. H. Bailey</td>
<td>161</td>
</tr>
<tr>
<td>The Field of Commercial Floriculture from a Graduate's Viewpoint.</td>
<td>R. H. Patch</td>
<td>162</td>
</tr>
<tr>
<td>Investigations in Floriculture.</td>
<td>A. C. Beal</td>
<td>165</td>
</tr>
<tr>
<td>The Vegetable Outlook.</td>
<td>R. L. Watts</td>
<td>168</td>
</tr>
<tr>
<td>Vegetable Forcing as a Business.</td>
<td>C. W. Waid</td>
<td>169</td>
</tr>
<tr>
<td>College Work in Vegetable Gardening.</td>
<td>Paul Work</td>
<td>171</td>
</tr>
<tr>
<td>Reading for Rural Communities.</td>
<td>Sarah B. Ashew</td>
<td>173</td>
</tr>
<tr>
<td>The First Annual Entertainment of the Agricultural Association</td>
<td></td>
<td>176</td>
</tr>
<tr>
<td>Faculty</td>
<td></td>
<td>177</td>
</tr>
<tr>
<td>Editorials</td>
<td></td>
<td>178</td>
</tr>
<tr>
<td>Campus Notes</td>
<td></td>
<td>180</td>
</tr>
<tr>
<td>Former Student Notes</td>
<td></td>
<td>182</td>
</tr>
</tbody>
</table>

**SUBSCRIPTION PRICE $1.00 PER YEAR**

Canada, $1.15

Foreign, $1.30

Entered as second-class matter at the Post Office, Ithaca, N. Y.

Copyright by The Cornell Countryman
CHRYSANTHEMUMS GROWN IN THE CORNELL GREENHOUSES.
THE OUTLOOK FOR THE FRUIT GROWER

By C. S. Wilson

Professor of Pomology, Cornell University

THE outlook for the fruit-grower is brighter today than ever before. Much has been said about the extensive plantings of fruit trees, and some fear has been expressed as to their influence on the price of fruit; however, a careful examination of the facts shows that this fear has been overemphasized and that the new plantings have but little more than replaced the trees that have died.

The United States census for 1910 records the number of fruit trees at that time. A comparison of these figures with similar records from the census of 1900 shows an increase in the number of trees for the last decade. These figures follow:

<table>
<thead>
<tr>
<th></th>
<th>Number of trees 1900</th>
<th>Number of trees 1910</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>369,379,961</td>
<td>432,090,629</td>
</tr>
<tr>
<td>New York</td>
<td>21,470,832</td>
<td>24,988,707</td>
</tr>
</tbody>
</table>

In connection with this increase in the number of apple trees planted in the United States during the last ten years, it is interesting to observe the change in the wholesale price for this fruit. A detailed study of the price of apples on the New York market for the past twenty years has been made by Professor H. B. Knapp, who found that the average price per barrel for all varieties for the ten-year period from 1890 to 1900 was $2.67, and for the ten-year period from 1900 to 1910 was $2.87. The increase in price during the last ten years over the previous ten-years period is seven and one-half per cent.

Similar comparisons for the different varieties give variable figures—in most cases a marked increase, but in a few cases a small decrease. The percentage increase for a few common varieties is:

- Alexander: 32.3%
- Fall Pippin: 26.8%
- Fameuse: 8.0%
- Gravenstein: 24.3%
- Maiden Blush: 29.1%
- Oldenburg: 24.7%
- Twenty Ounce: 28.3%
- Baldwin: 10.7%
- Ben Davis: 6.7%
- Northern Spy: 22.6%
- Rhode Island: 9.1%
- Russet: 3.3%
- Esopus Spitzenburg: 2.7%
- Tompkins King: 12.0%

Fruit farms that are well cared for are producing excellent returns. There is no reason to believe that this will not be true for years to come. It is conservative to say that the better orchards are netting a yearly average from one hundred to two hundred
dollars in New York State, and some of the best orchards are netting even more than this sum. A study of thirty-one such farms by the Department of Farm Management showed an average net profit of about twenty per cent on the money invested.

The practice of diversified farming should receive the serious consideration of the fruit-growers at the present time. This age is called an age of specialization, and it is probable that the idea of "being a specialist" appeals to the farmer as well as to the business man. That there is danger of too great specialization in a single crop has been fairly definitely determined. Failures are common in the case of every crop, and it is reasonable to assume, therefore, that the risk of such failures is lessened more and more as the number of crops planted by the grower increases. Again, on the diversified farm the labor is distributed more evenly throughout the entire year, whereas a single crop requires much labor for a short time. On the other hand, it is true that the farm with the diversified crops does not yield those spectacular returns that are sometimes secured from a single crop for a certain year. Of course the fruit-grower who is raising different fruit crops is practicing diversified farming just as much as though he were growing cereal crops or raising cattle or sheep along with the fruit. The farmer who is planning to specialize in fruit should give careful thought to this question of diversified farming before he plants one kind of fruit too extensively.

SOME PRACTICAL POINTS ON APPLE ORCHARDING

By E. H. Anderson, '08

Farm Agent, Niagara County, N. Y.

TODAY when so much is taught in our colleges and written in our agricultural papers which is in part practical, somewhat scientific and theoretical and mostly "filler," it requires some judgment for the grower to sift the wheat from the chaff and retain only the practical thoughts that are of use.

Since the writer is a grower of fruit and has often resorted to the sifting method and since, as practical orchardists, we are all interested in the net returns from our orchards, this article has been prepared with a view to touching only some simple and practical points.

Most of the readers of this article are interested more vitally in the handling of bearing orchards than in the growing of young orchards, for it is making the best use of old orchards that often makes it possible for the man of limited means to grow young orchards, ideal in his own mind. I say "ideal in his own mind" because the more I see of orchards and orcharding, the more I am convinced that there is no single Right Way in which a tree should be trained. Whether it shall be high or low headed, conical or vase-shaped is largely a matter of choice of the grower. However, at present many standard apple trees are being started lower than good judgment seems to justify. What is of prime importance is the type of soil and drainage, the varieties and the care the orchard receives.

Since soil is a fixed factor in all of our bearing orchards and depends upon the wisdom of our fathers or grandfathers in selecting an orchard site, we can pass over this subject for a type of soil cannot be changed save by adding or subtracting fertilizing elements.
The important point for the young fruit grower is to accept conditions as he finds them in the orchard and know how to improve these conditions so that he may make the best out of the bearing orchard on the farm.

Orchard drainage is the first point to consider for no one has yet succeeded in growing orchards successfully on land that is poorly drained. Tile drains are no doubt the ideal solution of this problem, but for most young men starting farming the cost makes it prohibitive on the start and very good results can be secured where surface ditches are properly used. By surface ditches I mean ditches that will remove the water. They may be eight inches deep or they may be three feet deep. But they must be deep enough to give the orchard good drainage, for no fruit trees do well with wet feet.

Some of the best peach orchards in western New York are grown on level clay loam with naturally poor drainage. These orchards depend upon artificial ditches three to four feet deep and six to eight feet wide for drainage. Such ditches are no doubt inconvenient but so is a small bank account. The practical farmer must put up with many inconveniences. It is his ability to do this that has made him the backbone of our nation. The open ditch makes it possible to grow orchards on land that would otherwise be used only for crop rotation.

Aside from the beneficial effects on the tree growth, good drainage makes it possible to spray the trees in season. This may be, therefore, one of the strongest factors in controlling insect pests and fungous diseases. It is considered extremely poor management to have a spray rig in the repair shop when it should be used in the orchard, but this is not as unfortunate a condition as to have it standing in the barn waiting for the water to soak out of the wet places in the orchard.

Pruning and thinning should next be considered. By pruning, I mean the removal of all dead and diseased limbs and branches, all cross limbs and all superfluous branches. All cuts should be made close to the main branch or limb in order that the wound may heal readily. Pruning does not generally mean the removing of large limbs except as stated above, but should
consist more of the thinning of the branches on the outer edge of the limbs. This is a slow process and can be done satisfactorily only by going around the outside of the tree with a ladder, much the same as in picking the fruit.

By thinning, I mean the removal of trees that are crowding—the old system of setting trees crowded too many on an acre. Standard trees, like Baldwins, at 30 feet apart will begin to crowd at 25 years. They should then be thinned by removing every other tree if the orchard is to be thoroughly productive. It requires a strong purpose to cut down trees that are just coming into their prime but for the future good of the orchard this is the only safe way. If the orchard has already suffered by crowding, the remedy is the same—thinning them out on the ground.

In this connection, I wish to call attention to Fig. 1 which shows a 35-year-old Baldwin apple orchard on the writer's farm. These trees set 33 x 33 feet began to interlock at 25 years of age and every other row was removed on the diagonal until today nearly one-half of the trees have been removed. This meant the removal of trees fully as good as any that remain and was a strenuous method but final results have proven its value, for under this treatment and the present system of management the yield has gradually increased from an average of 70 barrels per acre in 1908-9 to over a hundred barrels per acre for 1912-13.

Fig. 2 shows one of the Baldwin trees in the writer's orchard. This is, in his opinion, nearly an ideal tree for the variety, and while smaller than many of its neighbors, has produced as high as 20 barrels of marketable fruit per season. Some may claim that this tree needs pruning but with plenty of space about the tree for the circulation of air and sunshine and for spraying, considerably less pruning is necessary. Results are what the commercial orchardist is after and wherever we can save in pruning or any other orchard operation without sacrificing the quality or quantity of our fruit, it is to our advantage to do so.

Spraying of the orchard is next of importance. This is a subject about which so much is said and written that there is little need of dwelling long on the matter here. Spraying must be looked upon as a matter of insurance. No doubt much spray is applied that is unnecessary but since we are unable to foretell conditions, we must continue to spray and spray thoroughly. Here, I believe, is where many otherwise good apple growers fail; they do not spray because they do not see anything to spray for and when it can be seen, it is too late to prevent the damage. Others do not seem to realize that scale insects must be hit with the spray to kill them and that the foliage and the fruit must be covered with the spray to be protected from the attacks of worms and fungus.

What brand of spray material or poison is used is of little importance so long as it has been tried out; but the way it is applied is of vast importance. The writer has grown just as good apples in an orchard of twelve acres in area with the old hand power pump and bordeaux mixture as he has with the use of a modern spray rig and lime-sulphur. The efficiency of the men, of course, was not as great with the old equipment, but the quality of the fruit was apparently as good.

When lime-sulphur and arsenate of lead are used for the summer sprays, it is often economical to apply more poison than is ordinarily advised; more fruit free from worms will ordinarily result from such an addition. The admonition to “Watch and Spray” has been very aptly given. While the calyx spraying and one applied a month later will ordinarily be sufficient spray on the fruit, the writer believes he saved more than enough to pay his entire season's spray bill this season by spraying the fruit about the last of July. Other seasons he has seen better fruit grown with two sprayings on the fruit applied at the proper time than was grown in
neighboring orchards sprayed five times at random.

The point that I wish to impress is that economical spraying requires judgment, thoroughness and some knowledge of insect pests and fungous diseases, and to be assured of all these points, the grower must generally take charge of the spraying himself, whether it is agreeable to him or not.

be plowed early and cultivated every ten days, or after every rain, until the first of August when a cover crop should be sown, preferably a legume unless the orchard is making extremely rapid growth, a condition which is seldom found in mature orchards.

No other fertilizer seems to produce as good results in the apple orchard as barn-yard manure. If the orchard needs stimulating, the use of 20 wagon loads of manure per acre repeated yearly for two or three years and supplemented with leguminous crops, as clover or hairy vetch, will ordinarily put the trees in such condition that unless the orchard is on extremely light soil or the trees too thick on the ground, the fertility can afterwards be maintained by the leguminous cover crops. When manure is used in an orchard, the trees seem to use it to best advantage when applied in August than when applied earlier or later.

No discussion on orcharding would be complete without touching on
picking and marketing the fruit. One point that has been often noted is the haste that some growers seem to be in to begin harvesting their fruit. It would seem that many growers begin picking their fruit by consulting the calendar instead of examining the maturity of the fruit.

The last week or ten days that an apple can hang on the tree without dropping will often increase its size one-third; while the color that it takes on the last few days is absolutely necessary to produce fancy fruit. This is an important point in the production of fancy red apples, for an apple may be of perfect shape and free from blemish, but if it lacks color, it cannot be classed as fancy.

The writer has sometimes begun picking Baldwins the day that neighbors have finished their apple harvest. This delay was intentional to allow the fruit to mature and take on color, and the resulting sale of the fruit has seemed to justify this method for in six seasons the drop of the apples has not been large enough to counterbalance the gain in growth during this time and the fruit put on the market is well colored instead of having little or no color. It will, of course, require a larger force of help to harvest a crop of fruit in ten days to two weeks time, than it does in three or four weeks time but the resulting quality of the fruit will justify this inconvenience.

The statement is often made that as highly colored fruit cannot be grown on cultivated orchards as on sod orchards. This, I believe, is not true. It is, however, true that as highly colored fruit cannot be grown in a cultivated orchard in the same number of days as can be grown in a sod orchard. We cultivate to increase the size of the fruit and the vigor of the tree. The cultivated orchard, therefore, naturally requires more time to mature its fruit and foliage; and when this time is given satisfactory color is developed.

Every grower should establish a grade of packing that he holds to year after year. This grade should not be anything below the "Standard Grade" established by the U. S. Congress. With such a standard a reputation will soon be established and buyers will be willing to pay a premium for apples so graded.

It is just as true that there is a trade that can handle our second grade apples as it is that there is a demand for first grade fruit; but it is obvious that the trade that has a call only for selected fruit cannot handle the two grades in one barrel to advantage and will naturally turn toward packs that can be depended on.

Even when apples are properly graded, the packing often has much to do with the price. Apples must be handled so they show no bruises in the operation of packing. This means picking them from the sorting table instead of rolling them as is sometimes done.

Apples sold on the docks in New York City are usually sold by the face and although apples of the size of Baldwins and R. I. Greenings look better when the face contains two circles of uniform size with the center filled with three or four apples, the trade demands that fancy apples must be faced with two rows and one or two apples in the center. The rest of the barrels being equal, a barrel faced in this manner will often sell for from twenty-five to fifty cents a barrel more than will a barrel with three or four apples to fill up the center.

The practical thing for the grower to do, therefore, is to grade and pack the fruit honestly, and if the trade prefers the face to be of large apples, pack them accordingly. If the fancy barrel trade wishes to be notional as to how apples are served to it, there is little use in arguing. We are all more or less notional.

There is a tendency among young growers to speculate on the market and place their apples in cold storage, expecting the price will advance materially. They should remember that the storing of apples is accompanied with much risk, and while it may be a
good investment for the speculator or the man who has money to invest, it is doubtful whether it is advisable for the man who is dependent upon his apples to pay farm expenses.

When a grower who is unacquainted with the market must depend upon others to sell his fruit, it will at least be a more conservative venture to accept a reasonable price for his fruit in the fall and allow the dealer to run the risk of markets.

---

RESEARCH IN POMOLOGY

By W. H. Chandler

Professor of Research in Pomology, Cornell University

At a recent meeting of horticultural workers from various colleges and experiment stations throughout the country, the director of an experiment station stated his opinion that in research work men interested in pomology have not kept pace with those in other lines of agriculture. If I understood him correctly, he explained this by saying that in the rapid dividing-up of the agricultural colleges and experiment stations into new departments the older men with less initiative had been left in the departments of horticulture. As to this last, it is possibly true that there are more of the older men in departments of horticulture than in most of the other departments. But I do not believe it is true that because of this the departments have lagged in research; in fact, I think the best work that has been done in pomology has been done by these older men. The fact that research in pomology has not kept pace with research in some other departments at experiment stations can be explained by the nature of the work.

One of the most important causes of slow progress along this line is the long life of the individual plants with which the pomologist works. The man working with field crops may carry through an experiment with oats or corn in one season. The life of an apple tree may be forty years or more, and some experiments would require this length of time in order that positive conclusions might be reached. Experiments with the culture of a tree certainly require as long a time as is needed for the tree to come into steady bearing after it is planted; and generally a much longer time is required.

When it is considered that an experiment must be verified by being duplicated once, or more than once, before positive conclusions are justifiable, it will be seen that conclusive cultural experiments could hardly be expected during the period since agricultural experiment stations were established in most states. It is further true that in almost any field of research the earlier experiments are of necessity often considered only as opening a way for more thorough experiments. Then, if we allow the length of time required for one experiment—let us say fifteen years—for a sort of survey of the field—expecting that many of the experiments will be rendered inconclusive by mistakes—and as much time in addition for more carefully planned experiments based on the earlier experience, and as much more time for carefully duplicating experiments, some of them perhaps under different conditions, it is more evident that the time element very greatly affects results obtained in pomological research. It is probably true also that there is a much larger quantity of carefully taken experimental data on orchard practice than some of the critics realize, for the reason that this experimental knowledge has not yet been summarized in book form. There
is also a large quantity of experimental data that seem conclusive, but yet requires to be verified by other experiments and other experimenters under different soil and climatic conditions.

Another factor that has played a large part in reducing that amount of research in pomology is the small number of plants on an acre. I think I am safe in saying that in cultural experiments, such as the use of fertilizers or different methods of cultivation, the man working in field crops can draw more positive conclusions from results in experiments with oats, corn, or wheat grown on a half acre of ground than the pomologist can with apple trees grown on ten acres of ground. The field-crop man would certainly have a much larger number of individuals to work with on his half acre. The man working in pomology must have very large plantings in order to be able to secure results that are conclusive; and a very few of the departments in agricultural colleges or experiment stations have had these large plantings available for experimental purposes.

The action of frosts and the limitation of the fruit industry for other reasons have greatly reduced the number of men that could possibly do effective pomological research. It is well known that with but few exceptions the agricultural colleges and experiment stations of the Mississippi Valley began to be liberally supported by their states and to become strong sooner than did those of other sections of the country. Because of the large percentage of crops lost by frost in the section where fruit is grown in the Mississippi Valley, and because of the number of states in which the fruit industry is of little importance, very little far-reaching work has been done in these states except in the line of spraying. In nearly all cases the valuable cultural experiments have been finished by a few states in the East.

The critic mentioned above stated as his opinion that too much of the work has been of a superficial nature, and too little effort had been made to get fundamental results as to the physiology of the tree. This criticism is probably just; and it would probably be a just criticism of almost any other department of agricultural research. The critic was of the opinion that before an experiment, say in orchard heating should be undertaken, long preliminary experiments in order to determine the factors that would influence the problem to be attacked, should be conducted. In case of orchard heating a test should be made of the ability of the trees with different forms of planting to hold the heat during cold nights, the rate of radiation from different types of soils in an orchard, and the like. In my opinion, such preliminary studies would have added very little to the results so far obtained as to the possibilities in orchard heating, and a much easier plan would be to begin some preliminary experiments in actual orchard heating in order to determine the nature of the problem to be attacked. Thus, so far as my knowledge of experimental data obtained in orchard heating goes, the labor and interest cost is greater than the material cost, and with heaters of, say, three gallons capacity, the temperature may be kept above the freezing point in any frost that is likely to come after blooming time. If this be true, the influence of the trees in holding small amounts of heat or of the soil in reduced radiation would have little effect on the results of the experiments conducted. The most important factor to be studied would be methods of reducing labor cost and of determining whether or not during a period of ten or fifteen years in any section, the number of crops saved would offset the cost of actually heating the orchard when a crop is saved, plus the cost of heating when the temperature did not fall low enough to kill, plus the cost of saving crops that would later be lost for some other reasons, plus the interest on the very large investment. Likewise it is very doubtful whether any preliminary physiological studies
preceding experiments with fertilizers would have added as much to the value of the results obtained as the preliminary fertilizer experiments have. Thus, the physiological and chemical knowledge available would have led us to the conclusion that potassium is a peculiarly important element of fertility for an apple orchard, and that nitrogen is applied with considerable danger that it may increase the vegetative growth of the tree sufficiently to reduce its fruitfulness. Actual experimental data has shown rather conclusively that potassium is one of the least important elements of fertility that it may be necessary to apply in an apple orchard, and that nitrogen, where it has shown any effect at all, has nearly always increased the fruitfulness of the trees.

I do not wish to leave the impression that I consider knowledge as complete as possible of the physiology of the tree of little importance in conducting cultural experiments. Not only should any man conducting experiments with trees be acquainted with the best methods of research in order to intelligently plan an experiment, but also he should be acquainted with all the experiments that have been done concerning the physiology of the tree in order that he may know the influences that may affect his results. However, it will be a long time before we have sufficient knowledge of the physiology of the tree so that we may predict the results that would be obtained from experiments with any kind of orchard practice. Thus, we have been giving advice as to pruning and other treatment for the roots of trees in transplanting; yet the Woburn Experiment Station seems to find that the only important
The precautions in transplanting a tree are to set it at about the proper depth and to make the soil very firm about the roots. It is therefore necessary that all phases of orchard culture should be carefully tested by experiments conducted over a large number of years. In addition to this, the experimenter in pomology should be able to conduct fundamental experiments in order to determine more fully the nature of the plant with which he works.

Not only must the experimenter in pomology be acquainted with the experiments in plant physiology, and in other subjects in which results are likely to give information as to influences that may have a bearing on the response of the trees to various cultural methods, but also he must have a rather thorough knowledge of the nature of the fruit business so that he may know what results have practical bearing and what have not, and so that he may be able to apply the experimental results to actual practice. Thus, it is not sufficient that he determine that, in certain sections of the country, by whitewashing peach trees in winter the heat is reflected instead of being absorbed, and the buds may be kept dormant later in the spring. He should go further, and make careful tests in order to determine whether or not such a method would give profitable results, when the expense of doing the whitewashing is compared with the amount of fruit saved during a long period of years. It is not sufficient to determine that, in some sections, by increasing the vigor of a peach tree its rest period is prolonged, and therefore the buds are not so likely to be pushed into growth during warm periods in winter. It is necessary to determine also whether or not the disadvantage of such increased vigor, or the cost of producing the increased vigor, are more than equalled by the benefits derived.

However, the fact that immediate results of financial value to present growers may not be derived from an experiment that is likely to add to our fundamental knowledge of the nature of a fruit tree should not prevent the experimenter from conducting such an experiment. Anything learned of the nature of the tree may be of value in connection with other experiments, or in ways not thought of at the time by the experimenters. It is also true that financial conditions may so change that a method of culture which would not be profitable at the present time because of labor cost may come to be profitable through increases in the price of the product.

Thus it will be seen that the field of knowledge required for valuable experiments in pomology is rather wide. The idea of the experimenter should be to gain such complete knowledge of the nature of the tree that it may become possible to give definite information as to results of any cultural method from fundamental knowledge of the tree, associated with knowledge of the financial nature of the fruit business. The field for research in pomology then, it seems to me, should be to conduct any experiments that the experimenter is equipped to conduct pertaining to the subject of fruit trees or fruit-growing except where they can be better conducted by such specialized departments as entomology or pathology. It is evident that there will be much overlapping with other departments. This is highly to be desired, since the stimulus of association and competition with other departments should tend to add to the efficiency of the experimenters in pomology.
THE Department of Pomology is still young, having been organized in 1910. Like most new institutions, it can point to few pieces of accomplished work. But as youth means enthusiasm and enthusiasm begets hope, there is no lack of plans for the future. Some of these plans have progressed far enough to permit of their appearance in print, many of them are too hedged about with uncertainty to be more than hopes. Ordinarily and at all other times it is well to neither write nor speak about what we intend to do until we have done it, after which it is unnecessary. Let us proceed to violate this rule.

The organization of the Department of Pomology is similar to that of other departments of the college. It is composed of three divisions, teaching, investigation, and extension. Of these, the first is best developed and systematized, and while constant efforts are being made for its improvement, it is felt that the department is stronger here than elsewhere.

No real experimental and investigational work has been undertaken until the present year, owing to lack of funds and facilities. The department (at that time a part of the Department of Horticulture) was a heavy loser when the University in its development eastward destroyed the entire field laboratory, including one of the finest collections of fruit species in America. It has taken and must still take time to recover from this setback. At present department plantings embrace about fifty acres, part of which is laid out as a commercial orchard, while the remainder is given over to variety and species plantings. These include 104 varieties of apples, 126 varieties of peaches, apricots, and nectarines, 75 varieties of pears, 57 varieties of cherries, 71 varieties of grapes, 72 varieties of plums, and approximately 35 species. These plantings will be extended and enlarged as rapidly as seems advisable. At present especial attention is being paid to the setting of bush fruits. It is hoped that adequate facilities for investigational work will be afforded by this field laboratory and that orchard practices may soon be demonstrated to the students in a way that has not been possible in the past.

A test of the value of dynamite in the setting of trees has already been instituted, experiments in the fertilization of bush fruits and strawberries will be undertaken in the spring, and plans are now being laid for some long time experiments in the pruning of apple trees in different sections of the state.

The extension division of the department aims to carry the proved results of investigation and practice to the farmers of the state. If one-half of the pomological information that has accumulated in the last decade could be put before farmers in a practical and intelligible manner, a great forward step in fruit-growing would be taken. There is little use of collecting such information if it is to remain forever locked up in college libraries and department offices, though some escapes that ought to remain there. At present this division performs most of its work through the following agencies: extension schools, community demonstrations of pruning and spraying, inspections of orchards, and meetings of granges and other organizations. In addition, a very healthy correspondence is maintained concerning those problems that can be solved without a personal inspection. Whenever possible arrangements are made and carried out through the Farm Bureau agents, who
are more familiar with local conditions and needs than are members of the department staff. Preliminary steps have been taken for the supervision of an attempt to renew a neglected orchard for one of these agents, a test of cover crops is to be made in the Champlain Valley, and a number of similar projects are under way.

It is a part of the plan of organization of the department that members giving their attention to any one of its divisions shall also do some work in the other branches. That is, the members of the teaching staff must do a certain amount of investigational and extension work, the investigators must keep in touch with the students and with the growers, and the extension workers must know how to teach within the college and to do original work. It is felt that this will insure a better all-around development and a fuller measure of efficiency than would be possible if each man were to confine himself within the narrow limits of his special field of work.

It is the hope of the Department of Pomology that through the cooperation of its various branches it may become so familiar with every nook and cranny of the Empire State that real help may be given to those who seek it and that real service in fullest measure may be rendered to all.

"For I planted these orchard trees myself
On hillside slopes that belong to me;
Where visions are wide and winds are free
That all the round year might come to my shelf.

And there on my shelves the white winter through
Pippin and Pearmain, Rambo, and Spy,
Greening and Swaar and Spitzenburgs lie
With memories tense of sun and dew.

They bring the great fields and the fence-rows here,
The ground-bird’s nest and the cow-bell’s stroke,
The tent-worm’s web and the night-fire’s smoke,
And smell of the smartweed through all the year.

They bring me the days when the ground was turned,
When the trees were pruned and tilled and sprayed,
When the sprouts were cut and grafts were made,
When fields were cleaned and the brush-wood piles burned."

(From the "Rural School Leaflets")—L. H. Bailey
THE DEVELOPMENT OF THE DEPARTMENT OF FLORICULTURE AT CORNELL UNIVERSITY

By E. A. White

Professor of Floriculture, Cornell University

The past decade has witnessed a decided change in all lines of agricultural teaching. What was formerly designated as agriculture in the curricula of land grant colleges has been subdivided into dairy industry, poultry raising, animal industry, and subjects of a like nature, until there is now no course in general agriculture given in many agricultural colleges.

The same trend towards specialization has been noticeable in horticultural subjects, and the old idea of horticulture has been merged in the development of special departments such as landscape gardening, fruit growing, flower growing, forestry, vegetable gardening, and the like.

This is an age of specialization, and the administrators of agricultural colleges have come to appreciate the fact that no one individual can teach.
satisfactorily a wide range of subjects requiring such intensive application as do those dealing with special phases of plant life.

In the earlier periods of horticultural teaching, major attention was given to fruit culture, some emphasis was laid on landscape gardening and vegetable culture, and but little attention was given to instruction in flower growing. A few agricultural colleges had ranges of glass where some flowering plants were grown, but these were largely plants of botanical interest rather than of commercial importance. About six years ago courses in commercial flower growing were first offered by the Massachusetts Agricultural College and the Illinois Agricultural College. So far as can be learned, these were the first attempts to train men in distinctly commercial aspects of the subject. Since that time, courses in commercial floriculture have been introduced into the curricula of many agricultural colleges. In the majority of instances these are still intimately connected with other branches of horticulture and are being taught by men interested also in other subjects.

At Cornell for many years the full schedule, of what were then known as horticultural subjects, was carried by Dr. Bailey. A separate department of landscape gardening, known as outdoor art, was first announced in 1904. A department in plant breeding was established in 1908. Pomology was given departmental rank in 1911. Last June vegetable gardening and floriculture were established as distinct and separate departments. The Department of Horticulture was then no more.

New York State should have the strongest and best Department of Floriculture of any state in the union. It is the purpose of the present administration to make it such. The state has wide and extensive commercial floricultural interests. It has much wealth, therefore private and park conservatories are abundant. The wholesale and retail disposal of flowers is also of great importance in the state.

Statistics taken from the last census give the valuation of flowers and plants produced annually in New York State as $5,148,949. No other state nearly approaches this figure. The next state in valuation of products is Pennsylvania where the annual output in 1909 was $3,803,418. That the importance of the industry is increasing rapidly is demonstrated by the annual production of flowers and plants given in the census for 1900. This was but $2,807,673.

The commercial importance of this industry demonstrates the fact that a strong course of instruction in growing the principal florists' crops should be given at the State College. That this instruction should cover all phases of the subject is important. While this is an age of specialization, the man with the ability to master one special branch of the subject should have as well a general knowledge covering all branches.

The character of the instruction given must of necessity be carefully worked out. There are few precedents to guide one in mapping out floricultural courses. It is important that sufficient glass-house space be available in order to demonstrate the theories of the class room. Up to the present time, work in the department has been seriously handicapped because of this lack. A strictly up-to-date modern house for growing roses should be available. Funds have already been set aside for this house, and as soon as connections can be made with the central heating plant it will be built. Houses for violets, sweet peas, conservatory plants, and aquatics are badly needed. Plans for these houses are now in progress, and it is hoped that they may soon be available.

The investigational work under glass is of the greatest importance. Through the results of research we get valuable material for the class room. It is expected that the project inaugurated by the florists of the state
to get an appropriation of $75,000 for a range to be devoted to investigational purposes will pass the present legislature.

Lack of laboratory facilities has also badly handicapped the department. The building of a new range and headhouse for the Department of Vegetable Gardening will make available more laboratory space for floricultural teaching.

With sufficient laboratory and glass-house space, the courses given should be of such a nature that a student may get a thorough knowledge of plant culture in all its aspects. Courses in commercial floriculture should teach not only cultural methods for growing all crops, but the best means for the disposal of the products as well. This is of special importance. A man may be a successful grower of flowers, but if he lacks a knowledge of business principles so that he cannot dispose of his products to advantage, he will not meet with financial success.

The retail flower trade is coming to be of more and more importance yearly. It is hoped soon to give a definite course dealing with factors concerning all phases of retail store management. A knowledge of the principles of design work and floral arrangement is of the greatest importance in this connection.

Many graduates of agricultural colleges assume the management of private estates. Many take up park work. Each of these duties calls for a knowledge of conservatory plants.

A course in these plants is, therefore, of special importance to men intending to take up landscape work where a knowledge of all forms of plant life is valuable.

Courses in outdoor ornamental plants are also essential not only to men who intend to engage in flower growing as a profession, but to everyone interested in outdoor life. The courses in garden flowers and amateur flower growing are especially valuable for landscape students and also for those specializing in home economics.

As has been shown, floricultural education is still in its infancy. Each year sees an increasing demand for men trained to teach this subject. The call comes mainly for the broadly-trained man—the man with a thorough knowledge of all phases of plant life—and for the man who has considerable practical experience in actual commercial or private glass-house work. Men with this sort of training are difficult to find.

It is believed that there is a promising future for this department in the College of Agriculture. The cordial cooperation already extended to the work by older departments is very gratifying. It is not expected that a strong department can be built up in a short space of time, but it is hoped that the foundation may be sufficiently grounded to insure a grade of work which will result in service not only to students of the University but to the florists of the state as well.

---

**HIVE**

The building bees are humming
About the angled comb
And yellow bees are coming
With treasure laden home,
And other bees are going
To orchard and to bloom
To fetch new sweetness flowing
For ev'ry honied room;
Ten thousand blooms are vicing
Wherever they may roam—
In hurst or fallow flying
The journey leadeth home.

—L. H. Bailey
THE FIELD OF COMMERCIAL FLORICULTURE
FROM A GRADUATE'S VIEWPOINT

By R. H. Patch
Instructor in Floriculture, Cornell University

The growth of commercial floriculture during the last thirty years has been rapid. This fact is well illustrated by the houses in which flowers and plants are now grown. They are larger, better heated, much lighter than those of earlier days, and the tendency is to build larger and even better houses than before. It is not uncommon to see houses of sixty feet in width, four or more hundred feet in length with a proportionate height to the ridge. Again, the growth of the various trade papers will illustrate the point. Twenty-five years ago the Florists' Exchange, published in New York City, contained only four pages per issue. Today this same paper has from fifty to sixty pages. It is the same with the other trade papers, of which there are several. No doubt the trade papers and greenhouse builders have helped in the growth of the industry, but the fundamental causes have been the enormous strides which our country has made since the Civil War.

Commercial floriculture is one of those industries which follows in the wake of marked prosperity. It has always been located in the older parts of the country around the centers of large population and wealth. Here are found those people who, by their education and wealth, have the necessary time and money as well as an appreciation of these products which are forced from nature by the ingenuity of man.

In European countries, where civilization is much older than in the United States, there has for many years been a great interest in general horticulture and especially in floriculture. This interest has centered more largely about private gardens. The more intelligent and wealthier classes have been interested in the improvement of the native flora as well as in the introduction of plants that are likely to prove of value. This has resulted in the training of many men as private gardeners. When the growth in commercial floriculture began in this country, these men trained in the old school began to come here and were engaged on private estates. Little by little they began taking up commercial propositions. These gardeners of the old school are largely responsible for the development of our commercial floriculture as it is at the present time.

We have now reached a point where gardeners of the older types are becoming fewer and fewer, and men born in the United States acquainted with flower conditions here are filling the positions vacated by them. The present period is surely a critical point in floriculture, but herein we find our opportunities.

The subject of education along floricultural lines is new and an open one. There is now great difference of opinion between the older types of floriculturists and the newer as to just how the present-day florists should receive their training. Those of the old school believe in the methods used in the old countries, for the most part apprenticeship. They gave their time for several years to the most common greenhouse operations. Those of the modern school advocate that instruction should be from books, and at the same time practical work is given closely following the theory.

It would be well if the student, before starting his theoretical training could secure a year of experience with some leading grower, or perhaps leave college for a year during his course and spend it in actual practice. He would then know what it was to work a whole year in a greenhouse and follow the different steps in the production of a crop. If it is not possible
or feasible to gather one’s experience in this way, he should be careful to secure employment with men of recognized ability during the long summer vacation and so perhaps make up some deficiencies. In but few other occupations does so much depend upon the judgment and intuitive knowledge of the individual as in commercial floriculture. Experience is a valuable asset, and too much cannot be secured before a fellow begins his college studies. Upon this will depend, to a large extent, his remuneration after he finishes college.

Very few colleges give courses in commercial floriculture. Among those which do are Cornell University, the Massachusetts Agricultural College and the University of Illinois. Several horticultural societies and floricultural clubs located in the larger cities give courses of lectures throughout the winter season for the advancement of their members, but it is to the agricultural colleges that the trade is now looking for young men qualified in every way to carry on the business already established by the pioneers of the industry. What are the possibilities before a college graduate who has specialized in commercial floriculture?

The first opportunity, and probably the best, presents itself to one who has sufficient capital, and who during his college course or before he entered college has secured the practical experience so necessary to success in conducting a business. The field is open for such a person to engage in commercial floriculture himself, either from the wholesale or retail end, or both—that is, the raising and selling of his own produce. It is possible to construct a greenhouse for seventy-five cents per square foot of ground covered, or even less. There are few other businesses in which a man may engage with so little capital and yet develop to such extent as in commercial floriculture. For three or four thousand dollars a man may start in and within a short time develop a thriving little business if the right location has been secured. If one does not care to build at once, he may perhaps discover a business located in some progressive city which it is possible for him to buy or rent.

Employment may perhaps be obtained in one of the commercial establishments of which there are many here in the East. This would probably best suit those who have no experience or capital. At first the work will be of a simple nature and hard. Little by little advancement will come until the workman becomes
the manager and perhaps the owner of the plant.

The creation of so many private estates has produced a demand for men trained as gardeners and florists. These men need a general knowledge which should include not only that of commercial floriculture, but other subjects closely related and equally important in the management of a private estate, because invariably these men become superintendents either as a whole or in some special line of work.

In the parks, garden cemeteries, and experiment stations there are always desirable places for commercial florists as gardeners. A park of any reputation has a greenhouse in which are housed plants valued for botanical and ornamental uses. A garden cemetery must have a range sufficient for the growing of the many bedding plants that are used each year, and also the ornamental plants that are made use of in the tropical effects so often produced in summer. The majority of our experiment stations have greenhouses usually under the charge of a commercial florist.

A phase of commercial floriculture which in the past has been more neglected than others is the selling of the flowers. We find in all of the large cities men engaged in the commission business. They have stores in the market districts where they dispose of produce shipped to them on commission. On the streets outside the wholesale districts we find retail merchants. These dealers secure supplies of flowers from the commission men. There are opportunities for college-trained men in both wholesale and retail houses. This field should perhaps be given more weight than heretofore because of the fact that the main problems before the commercial men today are of distribution rather than of production. Ten years ago this was not the case; the question of supply troubled the florists. Now it is organization, system, salesmanship, and distribution. Of course there are even now communities that have not yet caught up with the supply, but in numbers they are far in the minority.

Grouped with the disposal of floral products comes the opportunity for the artist who deals with the arrangement of flowers. He may enter the field as a professional decorator, not only making set designs but supervising the make-up of decorations for weddings, banquets and functions of like nature. This field is especially attractive for one who has natural taste along these lines.

Greenhouse construction is another field which has been neglected in the past, partly because of the fact that this sort of work has been in the hands of a few large concerns. Now these companies are beginning to look for college-trained men to manage their various departments.

In college work there is a growing demand for commercial floriculture. The fact that the subject is rather new and has not long been taught makes it evident that there are few men capable of teaching and also of handling the research problems. Perhaps the field is not large because of the few institutions dealing with this subject, but in the course of time other institutions will surely broaden their curricula, dividing horticulture into its branches and introducing commercial floriculture. Investigation has shown that there are only a few men of mature age and experience qualified to take rank as professors in this subject in educational institutions in this country.

Commercial floriculture will not attract large numbers of students as the industry at the present time is based on a luxury. Each year, however, the use of flowers is becoming more and more a necessity. As conditions of living are improved in our industrial centers, people of average means are becoming great users of flowers more from the outdoor viewpoint than from the indoor. However, this tends to put commercial floriculture upon a stronger basis, and is gradually making it a necessity. As an illustration, it might be well to mention the city of Rochester,
N. Y., known as "The Flower City." The city was formerly called "The Flour City," but the name was changed because of the removal of one of the principal industries. Since the change in the popular name of the city, there has been a marked improvement of the individual home grounds, and Rochester is now a model city in this respect.

With the tendency to make flowers a necessity, comes the increasing demand for graduates. This demand is sure to continue because as the country becomes older and richer, a greater interest in floriculture will become apparent. It is to the older countries or sections of a country that we look for information and ideas in regard to floriculture. This is true in regard to the United States, although the West is fast catching up with the East. In the middle-west there are today excellent opportunities in floriculture. The signs of the times point to a promising future for commercial floriculture.

INVESTIGATIONS IN FLORICULTURE
By Dr. A. C. Beal
Professor of Floriculture, Cornell University

Some of the first investigations in floriculture and greenhouse work in any experiment station were done by the Cornell Department of Horticulture under the administration of Professor Bailey. Among the subjects investigated were electro-horticulture, greenhouse heating, chrysanthemums, asters, dahlias, sweet peas, and annual flowers. In addition to these much excellent work was done by graduate students, and the results are to be found in their theses in the Cornell library. These include studies of the garden evrebenia, the genus tulipa, bottom heat, the carnation, the effect of fertilizers on the color of flowers, greenhouse class, etc.

During the administration of Professor Craig the cooperative work between the Department of Horti-
culture and the American Peony Society, the American Sweet Pea Society and the American Gladiolus Society, was started. The first-named investigation—a monographic study of the species and varieties of the peonies of the world—was virtually completed prior to Professor Craig’s death in 1912. A collection of over 1600 supposed varieties was brought together and studied for several seasons. The result was that it was found that there were numerous synonyms of some varieties, and in other cases different varieties were appearing under the same name. When the varieties had been compared and sifted less than 500 distinct varieties were found. Then began the laborious search of the literature and trade catalogues extending over many years as well as voluminous correspondence to determine which name should stand, by the rules of priority, for a given variety. The reports upon this work consist of the Peony Check List and Bulletins 259, 278 and 306.

The investigation with sweet peas was similar in character to the work with peonies. Unlike the work with peonies, however, the sweet pea demands high culture and is influenced more by the season. The work was begun in 1909 and has been carried on in the field and under glass until the end of the past summer. Several hundred varieties have been grown. Some of the results appear in Bulletins 301, 319 and 320, with a final report now in the press.

The gladiolus investigation has been receiving attention for three years, and a large amount of data is available for publication. Over 500 varieties have been tested.

These studies are of the horticultural evolution and improvement, and especially the systematic describing and classification of existing forms and varieties.

Some of the theses written by graduate students in recent years are Effect of Acetylene Light on Greenhouse Crops, The Effect of Ether in Forcing Plants, The Effect of Ether on Forcing Shrubs, Effect of Temperature on the Growth of Stocks and Antirrhinums, etc.

The above is a brief sketch of the floricultural work of the old Department of Horticulture. Now that a new Department of Floriculture has been organized with a definite research division, it may be asked what it proposes to do.

The investigation division hopes to complete the investigation work already begun with the gladiolus and sweet pea. Last season similar work was begun with asters and climbing.
roses. Recently the American Rose Society has entered into an arrangement with the new department for the establishment of one of its rose-test gardens at Cornell. Inasmuch as most of the trade in hardy roses centers in New York State, it is believed that the rose growers will recognize the importance of the tests conducted here and that a large collection will soon be found on our grounds.

Gradually the old department had been gathering a collection of irises, perennial phloxes and some of the other hardy perennials for studies similar to those made with the peonies. These offer material for thorough work and doubtless will receive attention even though there are no national organizations pushing these flowers at this time. Every large genus of garden plants needs systematic study for the purpose of re-classification and definite description. There is, therefore, a large field in this particular line of work which is of broad general interest to all the people of the state.

The new department has sufficient land to enable it to grow all the plants necessary for these studies, to which at the present time it is confined owing to the lack of greenhouses for investigations upon greenhouse crops, although these are of greater interest to the majority of commercial florists.

The florists of the state are behind a movement to secure an appropriation to erect a range of greenhouses for experimental work with greenhouse crops. The lines of work to be carried on then will be determined by existing conditions. In order to ascertain these a greenhouse survey is now being made of the florist establishments on Long Island. As rapidly as possible the survey will be extended to other sections of the State. The problems, however, are many. The fertilizer requirements of all kinds of greenhouse crops should be investigated. Studies should be made on the keeping of cut-flowers grown under known conditions. The effect of anesthetics on shrubs should be more thoroughly studied. Information is being sought by many persons as to the effect of artificial light, electric currents, cold storage requirements, the effect of various chemical reagents on the keeping of flowers, and the effect of various fumigating agents upon plants. The treatment and handling of soil is an important problem.

In conclusion it may be said that floriculture offers one of the broadest fields for investigation to be found within the domain of agriculture. It is practically unexplored, and it is the aim of the investigation division to attack the problems as rapidly and as thoroughly as time and facilities permit. The old Department of Horticulture set a high standard, but the new department must serve even more efficiently the amateur and professional florists of the state. Through the cooperation of all interested in flowers throughout the state, there can be no question as to the service which all the workers in the department can render the cause of floriculture in New York.
A LARGE number of college men are interested in vegetable gardening. The possibilities of the business appeal to them. They hear enough about the results of this, the most intensive of all types of farming, to cause them to wonder about its future. Will prices continue as satisfactory as in recent years? What is the outlook?

The Agricultural College is the most important factor in American agriculture. It has finally awakened to the fact that vegetable gardening is a great and growing industry, although only a few have grasped the idea that it is far greater in commercial importance than the fruit industry. The last census report fully supports this statement. The colleges will ultimately be of tremendous value to the vegetable growers. Hundreds of their students will become scientific producers. The results of their experiments will be conveyed to the remotest gardener in the most remote district. The colleges will make production more certain and yields more uniform.

Permanent decline in prices cannot occur, for land areas must remain constant; increasing city population will cause increased consumption. Meat prices are abnormally high, and as the shortage in meat is world wide this will necessarily cause an increased consumption of vegetables.

Improved transportation facilities will benefit vegetable growers as much, if not more, than any other class of soil tillers. Good roads will enable them to make deliveries more promptly and at less expense and the products will reach the market in more salable condition. The auto truck will play an important part in the vegetable industry of the future. Improved refrigeration, a practical parcel post, and lower express and freight rates will also benefit the vegetable growers.

Co-operative rural business organizations and city marketing bureaus will stimulate the vegetable industry. Producers will be brought nearer to consumers. There will be fewer middle men and the cost of distribution will be reduced.

Greenhouses will play a more important part in the vegetable industry of the future. They will help to give employment the year round and provide the best facilities for starting early plants.

While the producers of many farm products may fear foreign competition, the vegetable grower need have no fear about this matter. Most of his crops are extremely perishable and must be grown within the borders of our own country.

The greatest opportunity is for college trained men who will acquire practical experience before engaging in the industry on a large commercial scale. Profits depend upon the persistent application of the principles underlying the economic production and disposition of crops under conditions which must be at least favorable to production as well as marketing.

It should be the aim in any farm family, on a good farm, to have a fresh vegetable every day in the year,—from the time radishes and lettuce come in the spring till the last potatoes, beets, cabbages and parsnips are used from the cellar. It is odd that the city family is likely to have a better range of vegetables than the farm family; and it is curious to see farmers buying the common vegetables when they come to town and carrying them out into the open country. I think that every farm family this year should have not less than ten kinds of vegetables growing in its garden, aside from potatoes.

It is apparent that the garden has been disregarded in the farm scheme.

—L. H. Bailey in "York State Rural Problems."
VEGETABLE FORCING AS A BUSINESS

By C. W. Waid
Past-President of the Vegetable Growers' Association of America

VEGETABLE forcing is one of the most decidedly specialized lines of vegetable growing. The man who takes up this line of work as a business should be well equipped for it. One of the first things for him to do is to make a study of himself. If he has a liking for greenhouse work, can apply himself diligently, is not afraid of work or dirt and has an eye for small things he can feel that he has a good foundation upon which to build. If in addition to this he has ability to sell produce to advantage so much the better.

It is not wise to engage in the forcing business on a large scale without having had considerable experience in this line of work. This is one thing which cannot be learned from books nor in the class room although they are a help. To gain this experience a person may secure employment with someone else or start in the business on a small scale. If a person has the capital available to build on a fairly large scale it will be better for him to get his experience by working for another grower who has a large forcing-house rather than build a small one of his own. This is assuming that he can get away from home for a year or so. One year's experience if accompanied with an earnestness of purpose will do very well as a starter, but two years would be better.

FINANCIAL RETURN

The money there is in a business is always of vital concern to those who contemplate engaging in it. The financial return from the forcing house business depends very largely upon the location as to market and the ability of the man in charge. Assuming that the location is good and the man at least of average ability as a grower and seller the following figures will give some idea of the financial possibilities in this line of work. It is customary with growers in this section of country in which the writer is located to grow three crops of lettuce followed by one of tomatoes or cucumbers each season. With average success the three crops of lettuce should yield at least two pounds per square foot of bed space for the season. At ten cents per pound the lettuce would give a gross return of 20 cents per square foot. A good crop of tomatoes should give a yield of two pounds per square foot and at 10 cents per pound on an average they too would give a return of 20 cents per square foot. The return from cucumbers is more variable as a rule than that from tomatoes or lettuce but with a good crop and fair prices it should be equal to the return from tomatoes. It will be seen from these figures that 40 cents per square foot of bed space may be secured from one season's crops. The net return will depend largely on the size of the houses, location as to market and cost of labor. If the houses are very small the net return will be proportionately small. There are certain labor items which are practically the same for small and moderately large houses. The net return will be much greater when the grower can sell at a city market or even to grocersmen than when he must sell through commission men. If the grower can do much of his own work and is not otherwise occupied during the winter he can make his net return seem large or small according to the labor item he charges against the account. Some of the large growers in Ohio who keep careful records of all financial operations including the labor items claim that their net return is about 50 per cent of the gross return. A prospective grower should take into account, before he figures out his profits the fact that crop failures sometimes occur and prices are uncertain quantities.
COST OF CONSTRUCTION

The cost of constructing a forcing-house is very heavy. It does not pay to build cheap houses. All-wood houses are not built nearly as much at present as formerly. Semi-iron and all iron houses are the most popular forms of construction. It will cost from $5,000 to $8,000 to cover one-fourth of an acre of ground with glass, depending on the form of construction and the cost of material at the time the building is done. The grower can reduce the cost of construction very materially if he is able and willing to do a good deal of the labor in connection with the building of the houses. This is often done when the houses are small.

LOCATION AS TO MARKET

A person contemplating the building of houses should give careful consideration to the market possibilities. In some places the local markets are well supplied from houses already in operation. There are, however, a number of cities in such states as New York where all of the forcing-house produce sold is shipped in and frequently it is shipped a long distance.

The grower who is located near a good city of 25,000 to 50,000 people which is not already supplied locally has a good chance to sell all the produce he can grow in a good sized forcing-house if he grows good stuff and packs it in good shape. He not only cuts out the express charge, commission and much of the package cost which the man who is obliged to ship must pay but he can get a higher price for his produce as a rule, as it will reach the market in a fresher condition.

OTHER THINGS TO CONSIDER WHEN LOCATING A FORCING-HOUSE

Cost of fuel: It is not only important to know the price at which
coal can be purchased, if it is the fuel
that will be used, but the distance
which the coal must be hauled should
be taken into account. It is expensive
to move large quantities of coal a long
distance, especially over hilly or poor
roads.

Water supply: A large quantity of
good water is very important in con-
nection with the operation of a forcing-
house. Such a supply should be
known to exist before the site for the
houses is selected.

Available soil: Any productive soil
can be made suitable for forcing-house
purposes but it is more difficult and
expensive to prepare a clay soil than
a sandy soil. A location with a sandy
soil on sandy loam is preferable to a
clay soil.

Protection: It is an advantage to
have the houses protected on the
sides from which the prevailing winds
come. Trees, hills or building are
suitable for this purpose providing they
are not too close to the houses.

Forcing houses should not be far
from the dwelling as they need con-
stant watching Sundays as well as
week days. The closer the location
to the shipping point the better not
only on account of the coal haul but
frequent trips must be made to deliver
the produce.

The growing of vegetables under
glass is a fascinating occupation for
those who like that sort of work.
When the location is carefully selected
there is no other line of vegetable
growing or even fruit growing which
offers a greater opportunity to the
right sort of men.

COLLEGE WORK IN VEGETABLE GARDENING

By Paul Work
Instructor in Vegetable Gardening, Cornell University

FIFTEEN years ago modern college
work in agriculture was in its
earliest infancy. Its growth has been
marvelous in its rapidity. The
foundations were well laid, and the
structure which is rising is such that
the builders need not be ashamed.
It could hardly be expected that all
phases of agricultural industry should
be developed in due proportion at
once. Several important fields have
received but scant attention and are
only today coming into full recogni-
tion.

Among these heretofore neglected
fields, vegetable gardening is con-
spicuous on account of its present
commercial importance and because
of the opportunities which it offers
both in the field and in college and
station work. Our urban population
increases without abatement. The
place of vegetables looms higher each
day in the dietary of our people.
The products of the home garden, of
the market garden, and of the truck
farm, whether grown outdoors or
under glass, whether sold at once or
preserved, are being consumed in
rapidly increasing quantities. Hence,
we find prosperity and a sane, con-
servative expansion the order of the
day. A realization of these facts,
together with the fact that college
training is a priceless asset in the field,
has resulted in the appearance of
many in our institutions who seek
instruction and guidance toward a
sound knowledge of the business of
vegetable production.

The vegetable gardener has been slow
to avail himself of the facilities of the
colleges and experiment stations. He
has enjoyed little special attention
from periodicals, from farmers' insti-
tutes, and in meetings. He is now
beginning to discern the usefulness of
these agencies, which have been so
helpful in other lines of agriculture,
and he requires the services of well
trained workers. Under pressure of
demands from the growers and from
the students, the colleges are striving to meet the need. They are finding their most serious handicap in the lack of specially trained men. They stand in need of teachers who are able to make intelligent and sympathetic study of the practices of the grower, to focus thereon the light of present day science, and by means of sound class room and laboratory methods to guide the student toward an adequate grasp of the subject. The colleges and state department of agriculture are seeking extension workers who are equipped to discern the problems of the field and to aid in their solution. Most important of all, the colleges and experiment stations require investigators who are able to broaden and deepen and strengthen the foundation of proven truth upon which the work of the grower and teacher must rest. The writer has within the past few months heard of half a dozen such opportunities, some of which are as yet unfilled.

Let it be understood, however, that seekers of men are unwilling to accept any but the ablest and best qualified. On the other hand, the specifications are becoming more and more exacting. The college man must offer the best of training in fundamental science, a high grade of work in his technical courses, and a comprehensive field experience, coupled with energy, ability, and a forceful personality. The field manager must show clear cut evidence that he is likely to "produce the goods."

The Department of Vegetable Gardening has been organized in the hope that it may in some measure help to meet the demands that have been outlined. It hopes to assist the grower and the student toward a better knowledge of vegetable crops, from both scientific and business viewpoints. A strengthened staff, enlarged equipment, increasing and improving areas in gardens and under glass, and a broadened contact with the men in the field, will all contribute toward the betterment of the courses. Thus may the student enjoy better and better opportunity to gain an intimate acquaintance with the crops and with the business, rather than to gather a mere store of information about them.
THE fact that many of the subjects sent in were not really subjects but questions which could be answered from an encyclopaedia, led to another line of work. The users of the traveling libraries were invited to send in questions to be looked up and answered. The people avail themselves greatly of this privilege, sometimes calling up over the long-distance telephone to settle a disputed question or get desired information. These questions cover as wide a range as that between “How many eggs will a hen lay in the wild state,” to “What is the meaning of the word ‘sabotage’.”

When a library visitor goes to a town it is part of her duty to choose the right location for a traveling library, as that is a great factor in the success of the work. The post office in the small town, or the general merchandise store, have been found to be the best places, as the libraries there stationed are easy of access to all. The merchants at first had to be persuaded to take them, but when it was found that the library actually brought them business, they were not only willing but anxious to take charge of one. As an illustration, a merchant in a cross-roads store in one state could not be persuaded to take one of these libraries, so the visitor had to be content with placing it with another merchant, about five miles away. After about two months the merchant who had refused wrote saying “Please come out and put me on to a traveling library; that man you gave one is getting all my business.”

A quotation from a note will give some idea of the work the libraries in the cross-roads stores are doing: “Please send me some more cook-books and a good, real astronomy. We are having a run on cook-books, and that man you sent the ‘Friendly Stars’ for says he don’t want a baby star book; he wants something like those written by some man he calls Newcum.” In a number of instances the traveling library in the store has been supplemented by a permanent local collection bought by the patrons. The merchant has put up a “lean-to” and his wife or daughter take charge of the library for a small sum of money and the companionship the work brings them. This nominal sum is generally paid to the merchant in barter. In one state there are seventeen of these cross-roads libraries.

In some states the traveling libraries are placed in grange halls. Many people are there reached who would otherwise not come in contact with the books. Their actual presence in the grange hall acts as an educational stimulus and has been the means of starting many debates and profitable lines of work. In some of the granges additional reference books have been bought to supplement the small traveling library collection. Sometimes these permanent collections are bought with money raised from produce brought in and exhibited for prizes and then sold at auction. Each farmer brings in his best, and the prices often go extravagantly high. As the local wit is always chosen to auction off the goods, the auction serves two purposes —everyone has a mighty good time and a good deal of money is made. One grange raised as much as $91 in a single evening.

The efficiency of the traveling library service when administered by the grange showed that the greatest good could be accomplished by working in cooperation with other agencies for rural betterment, and so the workers began to study these agencies and to work through and with them. Finding that many of the demands for material were on subjects that could be covered by bulletins from the
United States and State Departments of Agriculture, and that a goodly portion of the questions which came in could be answered best by the agricultural colleges and experiment stations, it became apparent that part of the rural reading and educational problem was to bring the people of the country in closer touch with these institutions. In this way it came about that the traveling libraries are now seeking to cooperate with and make use of these institutions.

The question, "Is the grade of reading better than when you began?" made the worker of whom it was asked stop and think. She saw that while the reading of non-fiction had greatly increased and there were many agencies unconsciously making for a higher literary taste and more reading for power and self-improvement, there was still much room for conscious work in this direction. Many towns that had demanded E. P. Roe ten years ago were still demanding more like E. P. Roe. While many wanted books on soils and house-painting, few in comparison wanted books that taught citizenship, and while many applied books to their business, few applied books to their life. Others awoke to the truth that people must be helped to better reading if the traveling libraries were going to accomplish all that was prophesied for them. As the library visitors came to work for this, the traveling library work took a long leap forward. Whereas, before they had urged that books were needed, now they urge reading with a discriminating and understanding mind, and the desire and ability to translate what is read into life. In working for this they have started reading-courses; inaugurated study-clubs; told stories to the children, and to the grown-peoples as well; given book-talks; reviewed the books in the different libraries with those in charge of them, to try to help them get the right book to the right person, and are sending out criticisms of books and annotated lists to accompany their libraries.

With these developments the traveling libraries begin really to reach and serve the people, and are no longer a literary patent nostrum sent to a community to kill or cure, but are a living agency for rural betterment. The system might be likened to a telephone system with an interested and sympathetic "central" ready at a moment's notice to put the people in touch with the book needed or the information wanted. These libraries in the States having systems can be found everywhere. You find them in the small log school-house in the pines of New Jersey, in the tumble-down shanty of the North Jersey mountains, in the lumber camps of Wisconsin, in the coal fields of Pennsylvania, in the farm homes of New York State. They are used in the fishing villages, the lighthouse stations, the commuting towns, the Quaker communities, the back-woods, and the thrifty factory settlements.

One of the ultimate purposes of the traveling libraries is to pave the way for the establishment of a local library where such aid in studying and direction in reading can be given to the people as is not possible even with the best administered and most highly developed traveling library system. As a result of the work of the traveling library many of the towns of from five hundred to one thousand inhabitants have good local libraries, and since the township plan for libraries has grown in favor, a large portion of the rural population is being served in this way. To obtain the best results the same requirements should be made of the librarian as of the traveling library visitor—she should be thoroughly in sympathy with rural conditions, should study rural and small-town problems and become acquainted with every agency for rural improvement. If the central library is not within easy reach of portions of the community, branch libraries should be established. This has been done in many instances.

When a town is a trading center for a prosperous rural district, a local
The public library can be supported adequately and do good work in places of less than one hundred inhabitants. In many districts several small villages have united and established a library at a point accessible to all. In some instances, these libraries have expanded into country neighborhood houses, with rest rooms, game rooms, club rooms and gymnasiums, besides libraries both for adults and children. These cooperative libraries have story hours, exhibitions of books for mothers to inspect for Christmas presents, do high school work, map out programs for study clubs, and carry on as effective work for the allied villages as do the city libraries for their patrons. Some country neighborhood houses have been donated and are supported by endowment; others have been built by the people of the communities uniting.

In one State nine small villages within a radius of ten miles have so united. None of these towns are on the railroad, but they have once a month an eminent minister to preach for them; they have a dancing class taught by a city dancing master; they have basketball clubs and baseball clubs; the woman's club has a fine course of lectures, and they have a good library of twelve hundred volumes, showing a circulation of over eight thousand, and doing good reference work. Not one of these villages has over one hundred inhabitants. In the same State, in a small factory town, the library is over the general merchandise store which is connected with a glass factory, and shows a membership of eight hundred, proving that not only is everyone in town using it but that many of the farmers outside of the borough limits are making use of the books, although the selection is primarily for an entirely different class of people.

In a small fishing village of four hundred inhabitants, the library building is only ten by twelve feet, because of this the librarian says he cannot circulate books to everyone in town, but that he holds out a membership in
the library to the children as a prize for good behavior. He says first hopefully, that his list is constantly growing, and then despondently, that he does not know what he will do for room if the children improve in behavior during the coming year as they have in the past.

The county library plan has been tried with success in many places, the main library being at some central point and the people being reached by means of branches, or, in some instances, by a book wagon, notably in the case of the Washington County Library at Hagerstown, Maryland.

It would seem that with the traveling libraries in their present state of development, the cooperative libraries, and the township and county libraries, the time had come when books are reaching all the people, and the rural reading problem is solved. It may be true that the solution is known, but the problem is not as yet solved. At least a third of the people are still without library facilities because the commissions in charge of the traveling library work are always limited by the amount of money to be had and the time it takes to do the work. Again, many of the people within reach of libraries have not as yet awakened to the need of books. While all of the agencies for rural betterment want to work together, they often, because they do not understand each other, pull apart. The only thing that it seems possible to do is what the old horse who got the heavy load to the top of the steep hill kept saying to himself—"Keep a-going; keep a-pulling; don't stop, for you'll slip back"—and when we see a new line of work that is going to help, take it up; and when we see that someone else can do some of the work we are doing better than we can, give it to them to do.

---

THE FIRST ANNUAL ENTERTAINMENT OF THE AGRICULTURAL ASSOCIATION

ON WEDNESDAY of Farmer's Week, the students of the College of Agriculture will provide an entertainment, unique in many respects and more pretentious by far than anything hitherto attempted. Judging by present indications, when the curtain rises, not one of the 2500 seats of the new auditorium will be unoccupied and possibly "Standing Room Only" signs will be swinging in the foyer.

In providing this entertainment, the Agricultural Association has been actuated by two motives: first, by this common endeavor the various organizations of the College with their diversified interests will be brought closer together in a spirit of education and service; and secondly, the Association desires funds with which to support and expand student activities. A small admission will be charged and the proceeds divided approximately as follows: 20 per cent to Frigga Fylge, the girls' club, toward their new clubhouse; 20 per cent to the Student Loan Fund; 20 per cent to the Student Bailey Memorial and the remainder to the Association to be distributed among the various organizations taking part in the entertainment.

As for the entertainment itself, the feature of the evening will be a clever playlet produced by Frigga Fylge, and accompanied by such other attractions as a novel tumbling act, some catchy numbers by the musical clubs and a thrilling drama of western life by the Forestry Club. The senior class promises an amusing bit of rural school life and the junior class a monologue appropriate to the occasion. Every number on the program promises a hit. In fact, the interest in the entertainment shown by every department and club insures an unprecedented success.
FACULTY

Professor E. A. White was born in West Townsend, Massachusetts on May 23, 1872. When he was four years of age the family moved to Rindge, New Hampshire, where he was educated in the public schools. He attended high school in Littleton and also in Ashby, Massachusetts. In 1895, he graduated from the Massachusetts Agricultural College with a B.S. degree and was for two years Assistant Horticulturist in charge of the greenhouses of this college. He left there in 1897 to take charge of the greenhouses on the estate of the late Clement A. Griscom, at Haverford, Pa. For two years following he was engaged in commercial work in Arlington, Mass. In 1899 he was appointed instructor in Horticulture at the Baron de Hirsch School, Woodbine, N. J. where he remained for one year. For two years following this he was Assistant Professor of Horticulture at the Texas Agricultural and Mechanical College. In 1900, he was appointed Professor of Botany, Forestry and Landscape Architecture at the Connecticut Agricultural College at Storrs, Conn. He remained here for several years during which time he did some fine work. While at Storrs he published an extensive Report on the Hymeniales of Connecticut. In June, 1907, he was appointed Professor of Floriculture at the Massachusetts Agricultural College.

Professor White began his work at Cornell in September, 1913. He is Professor of Floriculture and head of that department. In the short time that he has been with us he has gained many friends known and unknown to him. His department has been growing and has accomplished some fine things among which are the very beautiful floral decorations which have been provided for our Assemblies and for the Agricultural Banquet. We all are very glad to welcome Professor White to Cornell and wish him the best of success.
The Cornell Countryman

EDITORIAL STAFF
FRANK W. LATHROP, Editor
DUDLEY ALLEMAN - Alumni Notes Editor
EDWIN C. HEINSOHN
HAROLD M. STANLEY
EDWARD D. VOSBURY
ALEXANDER MONTAGUE
STUART WILSON - Associate Editors

BUSINESS STAFF
J. JUDSON SWIFT - Business Manager
ROBERT W. WHITE
BIRGE W. KINNE - Assistant Managers
PAUL C. CUTLER

February, 1914

The Countryman announces the election of W. D. Hill and L. C. Schuknecht, both from the class of 1916 to the Editorial Staff. We also thank H. B. MaCartney, 1916, for work done in this competition.

To the Farmers' Week visitors, the Countryman extends a hearty welcome. You will find that the faculty and student body are ready to do anything in their power to make this week pleasant and profitable for you. We want you during the week to realize the work which the college is doing to promote better agriculture and a better rural civilization. The faculty is not working alone in this cause but faculty and students are working together, each with a fine spirit of cooperation. If this spirit existed in every rural community, a large number of our problems could be wiped off the slate.

We would like to urge again that as many former students as possible return during Farmers' Week and that they take part in the program which is to be given on Wednesday of Farmers' Week by the Students' Association. This program is so important that we venture to duplicate it below from the Farmers' Week Program.

10:00 A.M. Address by Acting Director Stocking in Main 392. Following this address a business meeting.

5:30-8. Informal reception and buffet luncheon for former students and faculty members. Head house in the greenhouse range.

In keeping with our custom of past years, the Countryman devotes this issue to the field of horticulture.

As Cornellians we may feel proud of the splendid work of Cornell men in the advancement of horticulture as a profession. Names like Bailey, Webber, Corbett and Waugh are known the world over, not alone in the assemblies of scientists but in the homes of the practical grower as well. A majority of the prominent horticulturists of this country are graduates or have been connected with this college. Today, our departments of Pomology, Floriculture and Vegetable Gardening are ranked among the best.

It is due in some part to the problems worked out at Cornell, that New York State now leads in the production of fruits, vegetables and flowers adapted to its climate. The industry was never more prosperous. In no locality are finer farm homes or more progressive men and women found.
than among the fruit and vegetable growing sections of this State.

Bright as the past has been, the future is still brighter. True, the trials and problems are many but these only serve as advantages to the man who has the training to cope with them.

The opportunities before the college trained horticulturist in scientific work and in commercial production were never greater. The man who makes horticulture his life work will find his reward not on the ledger alone for he who works in orchard or garden assists in the creation of some of the choicest products of nature.

At the January assembly, the following amendment was made to the constitution of the Agricultural Association:

Article III. Any student found guilty of violating the Honor System shall not be eligible (1) to hold any office in the Agricultural Association, (2) to be a member of the Executive committee of the Agricultural Association, or to represent the general student body in any college activity within the period of one year.

The Editorial office of the College of Agriculture has published a 160 page book entitled "The Buildings, Land and Activities of the New York State College of Agriculture." It is intended to be a comprehensive guide for the use of students as they go out over the farm and for the use of visitors who are inspecting the College in increasing numbers. The farmers of this state will find it a useful reference book describing the facilities of the college which are at their service. The history, organization, buildings, live stock, topography, soils, cropping systems, investigations in progress by different departments, extension work, publications of the college, the courses of instruction offered and the statistics of the students and their organizations are fully given. The book can be conveniently carried in the pocket. It is available through the mailing room.

The re-direction of any civilization must rest primarily on the people who comprise it, rather than be imposed from persons in other conditions of life. The rural public is now beginning to understand the necessity for a rather radical re-direction of the public school system. This re-direction is to express itself in three practical directions: in better pay for the teacher, in better physical facilities in the way of grounds and buildings and apparatus, and in a course of study that has relation to the lives of the people.—L. H. BAILEY in "York State Rural Problems."
Bringing to the January Assembly the message that the future of the meat industry lies with the small farmer and not with the large western rancher, the Honorable James W. Wadsworth, jr., presented the subject in an interesting and forceful manner. During the five years he was speaker of the New York State Assembly, the Agricultural College was at a critical period in its development and it received generous appropriations that have resulted in its successful and rapid ascent to the position it now holds as one of the best agricultural colleges in the country.

Mr. Wadsworth gave statistics showing the amount of meat eaten per capita in the United States and dwelt on the beef-producing industry in Texas and the life of the cow-puncher of today. He said in part: "Statistics show 152 pounds of beef are consumed yearly per capita in the United States which means a consumption of 200 pounds for each adult and places meat next to bread as the staff of life. The "Panhandle" of Texas, Arizona and New Mexico represent the present source of the greater part of the beef supply. In these states the cattle ranches are making their last stand.

"These ranches are from 30 to 60 miles square, entirely fenced in and maintaining a large outfit of men and horses. The life of the cow-puncher is anything but one of ease, as he is in the saddle from dawn until dark, from April till September. The men live practically alone except during the round-up which occupies six weeks. During that time all of the calves are branded and vaccinated for the blackleg and the salable cows and steers shipped away.

"The cattle now bred in the West are pure Hereford with a dash of Durham blood and it is the survival of the fittest since they can live well where an eastern cow would perish. The day of the Texas Longhorn passed years ago and today only a few specimens are found and then only in Mexico.

"With meat consumption at its present high rate, the problem is an enormous one. The dairy farmer of the east can well raise beef as a by-product. It has been seen that the release of the tariff on meat has made no appreciable difference in the price and cannot since the supply is not great enough.

"If steers can be shipped 2000 miles to New York pastures and while there make the land pay, then why cannot the small farmer raise beef? The future of the meat industry, if there is any, rests with him because the large western ranches are decreasing rapidly and forcing it upon the small farmer of the East."

The College will send to the Sixth National Corn Exposition which is to be held at Dallas, Texas, February 10 to 24th inclusive, exhibits from the Plant Breeding and the Farm Crops Departments and the model for a rural community center. The College will be represented by Professors Montgomery, Mann, and Love and Messrs. Gilkey and Ethridge. Professor Montgomery is a vice-president of the National Corn Association, the organization which manages this Exposition. Professor Love is vice-president for New York State. There has been arranged a very attractive program and some of the most prominent men in the United States in their lines of agriculture will speak. All the large facilities of the Texas State Fair grounds will be at the disposal of the Exposition and the indications are that this will be one of the most interesting and educational gatherings of this kind ever held.

A. B. Dann, '15, won the first prize of $35 in the speaking contest held before the New York State Fruit-Growers' Association in Convention Hall, Rochester, N. Y. R. C. Parker,
Sp., took the second prize of $15. The subject of the winner was "How Far May Fruit-Growers Specialize and be Safe?" The other men who spoke in the contest were: D. S. Hatch, '15, A. W. Wilson, '15, B. W. Shaper, '14, and R. F. Steve, Sp. A full account of this contest will appear in the March issue of the COUNTRYMAN.

The tenor of Governor Glynn's message to the Legislature on January 7 was to the effect that this year expenses and appropriations will be cut to the limit. In one of the paragraphs he points out that the increase in expenditures in the agricultural division was $328,092 from 1900 to 1906 and increased $1,063,848 from 1906 to 1912. This is an increase of three times as much in the second six years as in the first six years. However, it is not probable that the appropriations to Cornell will be cut down since the Governor is making his crusade only against unnecessary expenditures. He does not state that the agricultural expenses should be cut down but simply shows that they have increased greatly as well as others.

The New York State Vegetable Growers Association will meet as guests of the department of Vegetable Gardening during the coming Farmers Week. This organization has made a most wholesome growth during the three years of its existence. Its membership is steadily growing and a larger portion of its activities are being guided by men who are engaged in commercial production. The seed and information service have proved especially useful to the growers.

A course of fourteen weekly lectures on eugenics will be given during the second term, of which three will be given by Professor A. W. Gilbert and one by Professor H. H. Love, both of the College of Agriculture.

A new system of marking is being tried out in several of the courses in the college. The method which is the invention of a graduate of the Agricultural college, requires that each instructor give his class marks to conform approximately to the following table of percentages: Five per cent of all marks shall be given below 60; five per cent above 90; 20 per cent between 60 and 70; 20 per cent between 80 and 90; and the remaining 50 per cent between 70 and 80. The system comes as a result of studies of the marks given to the students in the colleges of the University, but especially those in the Arts College.

The new Landscape Art building is now completely finished and is occupied by all the classes of this department. Extensive repairs have been made in the building, which was the old Poultry building.

A new greenhouse 34' x 40' of Moninger construction has just been completed on the north side of the greenhouse compound. This will be used for class work in vegetable gardening, while the vegetable house in the old range will be devoted chiefly to solid blocks of the important forcing crops. A headhouse 26' x 50' has been constructed at the same time. These buildings mark the beginning of a range which will eventually include between twelve and fifteen thousand square feet of space, and which, it is expected, will meet the most urgent requirements of the teaching work.

The Dairy department sent an extensive exhibit to the convention of the New York State Dairymen's Association which was held in Syracuse from December 9-12. There was an attendance of about 5,000 dairymen from the various parts of the State.

The general contract for the Agronomy structure has been awarded to the Durolithic Company of Buffalo at $76,987.
FORMER STUDENT NOTES

M. C. BURRITT

'08, B.S.A., '10, M.S.A.—M. C. Burritt, who until recently was editor of the Tribune Farmer, has now come to Ithaca as leader of the Farm Bureau work in New York State to succeed Loyd S. Tenny. The latter has gone to Florida to conduct farmers' co-operative work there.

In New York, the farm bureau work is conducted cooperatively by the College of Agriculture, the State Department of Agriculture, and the U. S. Bureau of Plant Industry. The headquarters are at Cornell and the State Leader is a Professor of the College. Mr. Burritt, who has assumed charge, was a very prominent student at Cornell. He was president of the Agricultural Association, on the Agricultural Banquet Committee, the Honor System Committee, a member of the Senior honorary society, Hobs-sa, alumni editor of the Countryman, and a participant in many other activities. He is prominent also as a graduate being president of the Students’ association.

'06, B.S.A.—Charles F. Shaw went to the University of California on the first of January, 1913, from the Pennsylvania State College where he had been Assistant Professor of Agronomy. Here he is Professor of Soil Technology, having charge of the instruction in soil physics and allied courses and also charge of the soil survey work for the state of California. In this latter work, his department is cooperating with the Bureau of Soils of the Department of Agriculture, each organization maintaining an equal number of men in the field. They are carrying on a reconnaissance soil survey of California, which will be published with maps on the scale of four miles to the inch. During the past summer they had five men in the field continuously, with two others in the field for about one-half of the time. During the winter the field party will consist of seven men. During the summer season they mapped the Sacramento Valley, an area covering something over four and one-half million acres lying in the north third of the great interior valley of this state. Some work is now being done in the San Joaquin Valley and the reconnaissance work will be carried on in the southwest section of the state, between San Diego and Los Angeles. Professor Shaw has spent the greater part of his time, since the first of July in traveling about over the state, investigating in a general way the soil conditions and agricultural possibilities, and planning for future soil survey work.

In addition to his work, he has charge of the drainage investigations that are being carried on in cooperation with the Office of Experiment Stations. At the present time they are installing a complete drainage system on an area of 160 acres near Fresno, California. This area is badly affected with alkali and has a very high water table. The land ten years ago was worth over $300 per acre, and gave excellent returns of raisin grapes and alfalfa. At the present time it will raise none of the cultivated crops.
Phone—Ithaca 14

The Only Supply Store Owned by Students

A and B Novelty Store
316 College Avenue

Investigate our stock before buying your supplies. It will save you money. You will always get the best.

Souvenirs for Farmers’ Week Visitors

Special prices on these goods during February

PILLOWS PENNANTS SKINS
SHIELDS STUNT BOOKS FRAMED PICTURES
POSTERS PIPE RACKS

Orders by mail solicited

Fraternity Skins, Pennants and Shields furnished on short notice

Peck and Snyder SKATES
Spalding, Wright and Ditson

Athletic Goods

Shamrock Toboggans
Supplies for every Athletic Team

Short Course Students

STONE CLUB PINs SEE ABOUT YOURS IMMEDIATELY
DAIRY CLUB
CRAIG CLUB

OFFICIAL PENNANTS. Have you one?

Orders after you return home will be carefully filled.

BUY A BANNER FOR THE GRANGE HALL

In writing to Advertisers please mention THE CORNELL COUNTRYMAN
A Silo That Will Last For Generations

You prize the instruction in modern agriculture received at Old Cornell, and try to put into practice back on the farm, the many better ways you've learned to do things. As a progressive farmer or dairymen you are interested in better ensilage. You will surely appreciate, if you investigate, the many advantages offered by the NATCO IMPERISHABLE SILO

Here's the new type of silo—the silo that has raised the standard of quality of ensilage for feeding. The silo whose walls are moistureproof and air-tight and consequently keep ensilage from becoming sour, moldy or rotten.

THE NATCO IMPERISHABLE SILO is built of hollow vitrified-clay blocks, reinforced by two continuous steel bands between each layer of blocks. There are no staves to warp, shrink or split. No hoops to tighten. No continual repair bills. Never needs painting. The Natco Imperishable Silo is

Weatherproof Verminproof Decayproof Fireproof

It will last a lifetime and the first cost is practically the last cost. It can be erected by any mason as easily as a carpenter builds the old type of silo. When completed you have a very attractive as well as an efficient and durable silo added to your permanent farm building assets.

SEND TODAY FOR NATCO SILO BOOK. We have an attractively illustrated book which we will be glad to send free to Cornell men or to any farmer interested in keeping ensilage fresh, sweet and succulent. Write for a copy now and names of owners of Natco Imperishable Silos in your locality.

NATIONAL FIRE PROOFING COMPANY
SYRACUSE NEW YORK

In writing to advertisers please mention THE CORNELL COUNTRYMAN
He believes that it will be possible to reclaim this land at a cost of less than $50 per acre and put into condition where it will again be worth $250 to $300 per acre for the standard crops of the region. In the vicinity of Fresno alone there are over 60,000 acres of land similar to this 160, and the condition of high water table and alkaline accumulation is increasing yearly. Professor Shaw believes that they can demonstrate conclusively how the soils may be reclaimed and put into a permanently safe condition.

'08, B.S.A.—B. H. Crocheron who was editor of the COUNTRYMAN during his Senior year at Cornell, went to the University of California on the first of September, where he is associated with Professor Charles F. Shaw, as Assistant Professor of Agricultural Extension and State Leader of county agents. Professor Shaw writes: "Professor Crocheron has accompanied me on several trips and I have gone out with him several times when he was looking after his work. We are planning some extensive trips into the southern part of the state in the near future and are enjoying our opportunities to renew our acquaintance and discuss present and past Cornell matters. At the present time Professor Crocheron is very busy organizing a Ministers' Week to be held at the University Farm School at Davis. This will be most unique, as it will undoubtedly draw most of the ministers from the state. The railroads are giving free transportation and the University is supplying tents and meals. There will be four or more lectures going on continuously, something after the plan of a farmers' week. The aim of the meeting is to acquaint the ministers with the modern ideas regarding agricultural conditions, particularly with reference to rural social and economic problems. We do not propose to even try to make agriculturists out of these ministers, but we want them to know what is being done so that they can form a center for the distribution of knowledge, and particularly advise their parishioners regarding the sources from which knowledge can be obtained. I may say that Crocheron has made a decided success of all of the work that he has taken up up to the present time and is very well liked in the state."

'93, W.P.—Floyd Q. White is specializing in S. C. White Leghorns and fancy fruit on his farm at Yorktown, Westchester County, N. Y. He expects to keep about 2000 hens this winter and he is laying great stress on vigor and egg production rather than fancy points.

'99, B.S.A., '03, M.S.A.—John W. Lloyd is in charge of the Vegetable Gardening work at the University of Illinois. He has carried through a great deal of investigational work, his research bulletins on melons being especially valuable. In his work as a teacher he has attained a most enviable position at Illinois.

'05, M.S.A., '07, Ph.D.—J. Eliot Coit, who was editor of the COUNTRYMAN, '05-'06, is professor of Citriculture at the University of California. He is making a decided success of his course. Professor Coit is one of the authorities on citrus fruits on the coast and is with Dr. H. J. Webber and Dean Hunt on a committee to select the site for the new Citrus Experiment Station.

'06, M.S.A.—J. E. Howitt, who since 1906 has been connected with the Botanical Department of the Ontario Agricultural College at Guelph, Canada, is now in charge of the Department. Dr. R. E. Stone, '12, is Professor Howitt's chief assistant.

'06, B.S.A.—H. L. Westover has been connected with the Bureau of Soils, United States Department of Agriculture since his graduation. At present he is engaged in the classification of the soils of the National Forests. This work is being done by the Bureau of Soils in cooperation with the Forest Service.

'07, B.S.A.—Lynn F. Ayer, who was in charge of the Dairy Department of Hampton Institute in Virginia
for three years and later managed his home farm, is now manager of Chestnut Ridge Farm at Glens Falls, N. Y.

'07, B.S.A.—Edward W. Cleeves, who was formerly in charge of the farming operations of the John F. White Canning Co., of Mount Morris, N. Y. and who had under his supervision 1200 acres, is now managing his own farm at Rocklet, Orange County, N. Y.

'07, B.S.A.—Winfield Hale is in business in Los Angeles and sends word that he is sorry he quit the farm. He said "Get the other fellows to stick to agriculture."

'07, Sp., '03, A.B.—Mr. and Mrs. W. O. Strong spent the holidays in Ithaca. Mr. Strong is now superintendent of Kings Mill Farm, of Grove, Va. Mrs. Strong was Miss Dunn of the class of '03.

'08, B.S.A.—Royal Gilkey, who is now instructor in Extension Teaching at the College, was married on January 20th to Miss Eunice Jackson, '08, who was a teacher in the Ithaca High School.

'08, B.S.A.—Clarence Lounsbury has recently finished a soil survey of Pope County, Arkansas and expects to be doing similar work in Columbia County this winter.

'08, B.S.A.—Vaughan MacCaughey, Professor in charge of the Extension Department of the College of Hawaii, is organizing several new courses in extension work. Special attention is being given to the popularizing of the College's work in tropical agriculture, sugar technology, and field biology. Professor MacCaughey has also recently organized courses in agriculture and industrial subjects in a large secondary school in Honolulu.

'08, B.S.A.—P. O. Wood, who since his graduation has been in the service of the Bureau of Soils, U. S. Department of Agriculture, is now at work in the National Forests in Colorado classifying the soils.

'10, B.S.A.—James H. Rutherford is connected with the Payne Land Co. of Geneva, N. Y.

'11, Grad.—George M. Darrow has covered the Appalachian Fruit Belt this season in connection with the Fruit Production Investigations of the U. S. Department of Agriculture.

'11, B.S.A.—J. E. Dougherty, who graduated in poultry about two years ago, is Assistant Professor of Poultry Husbandry in the University of California and has charge of all of the poultry work. He is developing a rather extensive poultry plant on the University Farm at Davis.

'12, Ph.D.—Professor C. N. Jensen of Plant Pathology at the Utah Agricultural College has been appointed President of Brigham Young College at Salt Lake City.

'12, M.S.—G. M. Ignatiev during the past season, has been manager of a large estate on Long Island.

'12, B.S.A.—The engagement of Miss Genevieve Williams of Brooklyn, N. Y. and E. L. Markell has been announced. Miss Williams took graduate work here in 1913. Mr. Markell is now in the United States Department of Agriculture as Scientific Assistant in Pomological Investigations.

'12, B.S.A.—E. W. Peterson is at Morrisville, Pa., where he is employed by the Wm. H. Moon Co., one of the largest growers of ornamental nursery stock in the country.

'13, Ph.D.—Professor H. M. Fitzpatrick of the Department of Plant Pathology was united in marriage this September to Miss Florence Fenner of Ithaca.

'13, M.S.—T. B. Hutcheson has been made Associate Professor of the Division of Agronomy and Farm Management in the University of Minnesota. He has been placed in charge of the Plant Breeding work.

'13, B.S.—Bert C. Georgia is in charge of the Department of Vegetable Gardening under the Division of Horticulture at the Massachusetts Agricultural College.

'13, B.S.A.—Miss Dora L. Earl is teaching Biology and Physiology in the Pennsylvania State Normal School at Indiana, Pa.
You Can Depend Upon

**Allen's Strawberry Plants**

Strawberry growers must set out plants that will thrive and bear fruit true-to-name. You cannot afford to take chances with carelessly grown plants.

**Buy Allen's True-to-Name Plants**

and you are more certain of large crops of big, delicious strawberries. Allen's plants are hardy, vigorous and heavy yielders of luscious fruit because they are carefully grown from healthy stock.

**All Standard Varieties—Any Quantity**

Prompt Shipment

All the early and late strains of standard varieties of strawberries for every soil and climate requirement. Over 120 acres are devoted to strawberry culture alone at the Allen's Nurseries. Over 29 years' successful experience growing berry plants of the best quality. Allen's plants are carefully selected and packed fresh for shipment and guaranteed true-to-name.

**Here's What Customers Say:**

*From California*—Plants arrived today in fine shape. The growers in this locality as well as myself are delighted with them. D. R. DUNCAN, Los Angeles County.

*From Missouri*—Received plants O.K. They surprised me. So fine, packed nice in bunches, with roots all straight down, one plant like the other and no scrubs in them. JOSEPH VOGEL, Jefferson County.

*From Montana*—The plants came through quickly and in fine condition. MATT W. ANDERSON, Lewis and Clark County.

*From New York*—Wish to acknowledge for the Station receipt of strawberry plants. Arrived in good condition. A. M. TAYLOR, Geneva, N. Y.

*From Florida*—Plants received in fine condition and everything satisfactory. I. W. PECK, Manatee County

**Write for 1914 Berry Book**—Tells how to plant and cultivate strawberries and other small fruits. It lists and describes Allen’s True-to-Name Blackberries, Raspberries, Strawberries, Currants, Grapes, Asparagus, etc. Well illustrated and full of valuable information to growers and gardeners. You should have this book for reference. Write today for a free copy.

**W. F. ALLEN, 147 Market Street, Salisbury, Maryland**
THE GROOMING TEST

Holstein-Friesian Bull, which won the Grand Champion Prize at the New York and Illinois State Fairs, 1913 being groomed by The Kent Stationary Vacuum Groomer. This Groomer is adapted to perfectly clean horses, cattle, etc. Animals groomed by the Vacuum Process are made more vigorous and can be kept in the best condition for less, as the process stimulates them, promotes the growth of hair and makes them generally cleaner and healthier. The building in which it is installed and nearby buildings can also be cleaned in THE SANITARY WAY by its use.

ADAPT TO ALL KINDS OF POWER.

The Kent Vacuum Cleaner Company, Inc.
111 S. Washington St.
ROME, N. Y.
Also Manufacturers of Stationary Vacuum Cleaners.

Spray Your Trees Early
Any time this winter and early spring when the temperature is not below 40°F, you can spray with "SCALECIDE" and kill the scale, eggs and larvae of insects wintering on trees, as well as spores of fungi that can be reached by a winter spray. Prepare now for a good fruit crop next season.

"SCALECIDE"
TRADE MARK REG. U. S. PAT. OFFICE
will absolutely destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. It costs less to spray an orchard with 'Scalecide' than with Lime-Sulfur and you secure better results. We back up this claim. Write today for free booklets—"Proof of the Pudding" and "Spraying Simplified".
Write to our Service Department for orchard supplies at money-saving prices.

We are World Distributors for Vreeland's "ELECTRO" Spray Chemicals and "Electro" Arsenate of Lead Powder (5%) which, used wet or dry, has no equal in strength or texture. Avoid imitations. B. G. FRATT CO., 50 Church Street, New York City.

The Improved Simplex Link Blade Cream Separator
LIGHTEST RUNNING
LARGEST CAPACITIES
CLOSEST SKIMMING

The Only Practical Large Capacity Separators
Has more exclusive patented features of merit than all others—Has all the desirable points that can be put into a cream separator.

500 lbs., $75.00 900 lbs., $90.00
700 lbs., 80.00 1100 lbs., 100.00

D. H. BURRELL & CO.
LITTLE FALLS, NEW YORK
Manufacturers of Creamery, Dairy and Cheese Factory Apparatus
Also "B-L-K" COW MILKERS

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The Work It Does Is Known To the Inspector

Dairy Inspectors are quick at determining the exact condition of cream utensils, churns and other factory apparatus. So quick are they that almost in a glance they can tell whether you are using the cleaning material which they know always cleans clean.

Made for a purpose, and made scientifically, accounts for Wyandotte Dairyman’s Cleaner and Cleanser’s remarkable success.

Ask your dealer for a five pound sack, or write your supply man to ship you a keg or barrel.

THE J. B. FORD CO., Sole Manufacturers
Wyandotte, Mich., U. S. A.

This Cleaner has been awarded the highest prize wherever exhibited.
Why Not Buy the Best?

We grow all commercial varieties of Fruit Trees and our complete stock of Ornamental Trees and Shrubs offers a wide variety to choose from.

When you buy "WOOD QUALITY" Trees you are getting the best. They have been cultivated and cared for until they have an abundance of Fine Fibrous roots, clean limbs, well shaped heads and are First Class in every respect.

Some of Our Leaders

"WOODLAWN GOLDEN PEACH"
"BENDER" GREATEST SOUR CHERRY
"WOOD'S IMPROVED GIANT GERMAN PRUNE"
"MONROE STRAWBERRY"
"WOOD'S IMPROVED CUTHBERT RED RASPBERRY"

We give away 10,000 trees for our customers to test

For 38 years we have been growing and selling direct to the grower and through "Square Dealing" have many well pleased customers. Before placing your order for this season send for our complete 1914 Catalog.

ALLEN L. WOOD 903 Garson Ave.
Rochester, N. Y.
FRUIT TREES

Grown by Maloney Brothers & Wells Company are the results of many years' experience; no disappointment when they come into fruiting for our varieties have been tested 29 years.

We offer for spring planting 975,000 apple, 850,000 peach, 600,000 cherry, and thousands of plum, pear and quince trees as well as thousands of currants, grape vines and a big assortment of ornamentals, roses and shrubs. You will save considerable when dealing with an old established firm. Write today for our FREE, wholesale, illustrated catalogue of guaranteed true to name trees.

MALONEY BROS & WELLS CO., Dansville, N. Y.
Dansville’s Pioneer Wholesale Nurseries

APPLE TREES

The very best that can be grown. Ours are all budded on whole-root French seedlings. All the leading varieties, absolutely true to name. Send list of wants and let us quote you special prices. Will be glad to send samples to interested parties.

REFERENCES: Any bank or business house in Geneva.

The R. G. Chase Company Geneva, N. Y.
HAVE YOU YET RECEIVED

**Burpee's**

ANNUAL FOR 1914

which is now being mailed at the rate of more than ten thousand copies every day?

A BRIGHT NEW BOOK OF 182 PAGES—it is known as "THE SILENT SALESMAN" of the World's Largest Mail Order Seed Trade. It tells only the plain truth about the

**Burpee-Quality Seeds that Grow**

Bound with covers lithographed in nine colors, it shows, with the colored plates (also in nine colors), Six Novelties and Specialties in unequaled Vegetables, and sixteen Beautiful New Flowers, including the most superb "SPENCERS,"—as grown at BURPEE'S FLORADALE RANCH, the California "Home of Sweet Peas."

With hundreds of illustrations from photographs and carefully written descriptions it is a SAFE GUIDE to success in the garden, and should be consulted by every one who plants seeds, either for pleasure or profit. While it is never sent unsolicited (except to customers of record), we are pleased to mail it FREE to every one who has a garden and asks for it. Shall we mail YOU a copy? If so, kindly mention The Countryman and write TO-DAY!

In the past thirty-seven years (since 1876)

**THE HOUSE OF BURPEE**

Has introduced more distinct New Varieties of Vegetables and Flowers that are now in general cultivation than have any three other American firms. Selected Stocks are produced upon our own seed farms in Pennsylvania, New Jersey, and California, while FORDHOOK FARMS are famous as the largest and most complete trial grounds in America. No Government Experimental Station in the world attempts such complete trials each season, and the information here obtained is of incalculable benefit to planters everywhere. We travel more than thirty thousand miles each season to inspect growing crops, and yet never a single mile to solicit an order! We trust, however, that you will read our "SILENT SALESMAN." A postal card will bring it. But please write TO-DAY,—"Lest You Forget."

**W. ATLEE BURPEE & CO.**

Burpee Buildings

PHILADELPHIA

In writing to advertisers please mention THE CORNELL COUNTRYMAN
"QUALITY FIRST"

ARSENATE OF LEAD

UNSURPASSED IN QUALITY
HIGHEST POISONING POWER
NO SOLUBLE ARSENIC

Easily Mixed with Water, Yet Fine Grained
Packed in Oak or Steel Kegs

The ideal Arsenate of Lead for the
fruit grower. The best poison for
potatoes and general farm crops, shade
trees, etc.

RICHES, PIVER & CO.
30 Church St., New York
Works and Laboratory - - Hoboken, N. J.
Mr. Fruit Grower, you are looking for the best Apple, Pear, Peach, Plum, Cherry and Quince trees you can buy. Kelly Trees are sold at Growers' Prices—shipped direct from our nurseries in Dansville and guaranteed sturdy, free from disease and True to Name. For 27 years we have had the name of knowing how to grow trees right. From seedling to freight car we watch our own trees personally and know that we are shipping just what you order. We have an up-to-date nursery plant and can ship all orders promptly, as well as grow and ship at a low cost. We give you every advantage on price. Write for catalog today, and get our prices.

KELLY BROS., WHOLESALE NURSERIES,
160 Main Street, Dansville, N.Y.
You'll never regret planting Kelly Trees.

Three D Grains is our brand for the highest and best grades of Distillers' Dried Grains sold in this country. Three D Grains are classified according to analysis and sold at prices commensurate with their feed value.

<table>
<thead>
<tr>
<th>OUR GUARANTEES:</th>
<th>PROTEIN</th>
<th>FAT</th>
<th>FIBRE</th>
<th>CARBOHYDRATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagle Three D Grains</td>
<td>30-38%</td>
<td>10-15%</td>
<td>8-13%</td>
<td>30-40%</td>
</tr>
<tr>
<td>Corn</td>
<td>26-33</td>
<td>8-13</td>
<td>9-14</td>
<td>30-45</td>
</tr>
<tr>
<td>Bourbon</td>
<td>24-28</td>
<td>8-12</td>
<td>9-14</td>
<td>40-50</td>
</tr>
<tr>
<td>Queen</td>
<td>18-26</td>
<td>4-9</td>
<td>8-15</td>
<td>35-45</td>
</tr>
</tbody>
</table>

The leading dairymen feed Three D Grains to their cows. Read what some of them say:

Pontiac Pet broke the world’s record in the spring of 1911 by producing 37.67 lbs. butter in 7 days. Her owner, E. H. Dollar, of Heuvelton, N. Y., had bought a car of Three D Grains. We asked him if it had been used in this test. He answered saying: “Twenty-five per cent. of grain ration was Corn Three D Grains.”

Write us for circular giving directions for feeding Three D Grains, also for prices if your dealer does not keep it.

The Dewey Bros. Co., Box 577, Blanchester, O.
Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manuf’r, 232 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing how you can save a good many dollars. Write to-day.

A CORRECTION

The advertisement of the H-O Company in our last issue, stated that H-O Scratching Feed contains “oat hulls.” This, of course, was a mistake and our readers will recall the previous claims of this advertiser—that this is the only Scratching Feed that contains “hulled oats” or “oat groats.” The ingredients are all stated on the tag attached to every bag.

Wing’s Quality Seeds

Are known everywhere. Our ALFALFA is famous for its purity and quality. We sell nothing but the best AMERICAN-GROWN seeds; this season we offer stocks from Kansas, Nebraska and Dakota, also Grimm Alfalfa.

CORN, SOY BEANS
Our own improved strains

VETCH and MELILOTUS
The Great Soil Restorer

Full line of FIELD, GARDEN and FLOWER SEEDS.

Send for our free catalogue

THE WING SEED CO.
Box C MECHANICSBURG, OHIO

In writing to advertisers please mention THE CORNELL COUNTRYMAN
How to Supply Your Soil
Just the Plant-Food Needed for Certain Crops

SOIL FERTILITY is a subject that must be handled to meet individual soil conditions and particular crop requirements if you would avoid wasting money when buying fertilizers.

After you have decided what mineral elements your soil needs, your next question is how to purchase these elements in the most efficient and economical form to apply. We offer high-grade fertilizers to meet every soil condition and special crop requirement. Our products are scientifically correct fertilizers, made from the highest-grade chemicals and materials, and are practically odorless. No cheap, worthless "filler" is used which only adds weight and makes more labor to apply.

CONSUMERS BRAND FERTILIZERS
are prepared from your own specifications made out to meet the actual plant food requirements of your soil for any particular crop. You eliminate all waste of expensive elements when you order your commercial fertilizer direct from us. The same soil of any field needs different fertilizers for different crops. The different soils of different fields need different fertilizers for the same crop. We make high-grade fertilizer to meet the exact needs of any field for any particular crop.

Don't waste money buying more nitrogen or more potash or more phosphoric acid—or any other element of plant food—than your soil needs for any particular crop. Commercial fertilizers are too expensive to apply from "stock" formulas. Write today for free circulars. We sell only direct to the farmer.

Consumers Fertilizer Co.
306 Longacre Bldg. New York City
Improve Your Stock

It Pays to Clip Horses and Cows

Clipped horses are healthier and render better service. When the heavy coat that holds the wet sweat and dirt is removed they are more easily kept clean, look better, get more good from their feed and are better in every way.

The Stewart Ball Bearing Clipping Machine is for sale by leading dealers everywhere. Sold under a positive guarantee to please.

Price
$7.50

Why Cows should be Clipped

The campaign to prevent disease and infant mortality from impure milk is rapidly spreading to every city in the land and regulations are being enforced that require the observance of every sanitary precaution in the care of cows.

Cleansing the udders and flanks before milking to prevent filth from dropping into the milk is a pertinent necessity that cannot be properly done unless the hair on these parts is kept short by clipping every three or four weeks.

The Stewart No. 1 Ball Bearing Clipping Machine makes this a simple task that requires less than five minutes time per cow.

No owner of cows can afford to be without one of these machines. (Clips horses and mules equally well with same equipment.)

Write for complete new catalogue showing our line of clipping and shearing machines.

Chicago Flexible Shaft Co. 127 LA SALLE AVENUE CHICAGO, U. S. A.
no rain in October and the wheat is small and does not look like it would stand the winter well.

We finished husking yesterday. From the acre where we tried your theory about bone-meal and clover making the Potash available, we harvested 50 bushels of rather chaffy corn, and from the rest of the field, where we used bone, clover and 50 lbs. Muriate of Potash per acre, we husked out 70 bushels per acre of tip-top corn that is nearly all fit to sell on the ear for seed corn.

I figure that a ton of Muriate of Potash on 40 acres of corn will pay for a year's post graduate study for you and leave you a little spare change to chip in for athletics.

Mother and the girls are going to make a few days' visit to Aunt Sarah's

"Plant Food" is the title of a carefully compiled, comprehensive and scientifically accurate compendium of crop feeding, fertilizer mixing and conservation of soil fertility. Sent without charge upon application.

GERMAN KALI WORKS, Inc.
Continental Bldg., Baltimore
McCormick Block, Chicago
Whitney Central Bank Bldg., New Orleans

WELL-ROTTED

Horse Manure
Dried and Ground

HIGH GRADE, IMMEDIATE, NUTRITIOUS and LASTING, CONVENIENT and COMPACT.

An Odorless Natural Manure for use of Florists, Landscape Gardeners, Truck Growers and Farmers, and for general farming purposes.

For mixing with soil for potted plants; for field crops; for grass and lawns, and for vegetable gardens, promoting rapid, steady growth.

PUT UP IN BAGS, 100 LBS. EACH
Descriptive Folder and Prices upon application.

Sold by
New York Stable Manure Company
272 Washington Street
JERSEY CITY

FARM DRAIN TILE

Rochester Brick and Tile Mfg. Co.
Rochester, N. Y.
THE GREATEST OF NEW INVENTIONS FOR CERTIFIED MILK DAIRYMEN IS THE

Simplicity Milking Machine

WITH THE METAL TUBE CONNECTING THE TEAT CUPS WITH THE PAIL WHICH ELIMINATES ALL RUBBERS WITH WHICH THE MILKER COMES IN CONTACT.

Write today for full particulars to

F. GROFF & SON
St. Johnsville New York

The greatest of new inventions for certified milk dairymen is the Simplicity Milking Machine with the metal tube connecting the teat cups with the pail which eliminates all rubbers with which the milker comes in contact. Write today for full particulars to F. GROFF & SON, St. Johnsville, New York.

A COMPLETE FOOD PREVENTS SCOURING INSURES EARLY MATURITY

RAISE THE CALVES ON BLATCHFORD’S CALF MEAL AND SELL THE MILK

Endorsed by Agricultural Experiment Stations and thousands of farmers. Manufactured to resemble new milk as nearly as possible in chemical composition.

SEND FOR TESTIMONIALS
J. W. BARWELL
WAUKEGAN, ILL.

YOUR FOWLS WILL SETTLE THE FEED BILL! "AND THEN SOME," IF YOU EAT E. E. D.

Life Saver Little Chick Food
Growing Ration
Climax Grain Mixture
Perfection Mash Mixture
High Grade Pigeon Food

Uniform in Quality
Booklet Free
Your Dealer or Rations

R. D. EATON GRAIN & FEED CO. DEPT. NORWICH, NEW YORK

Get a stable, well-balanced feed and half your troubles are over. In H-O Scratching Feed we have aimed first for stability—and that’s what you’ll find in it. Besides, it is the only scratching feed containing hulled oats or oat groats.

H-O POULTRY FEEDS

INCLUDE

Steam-Cooked Chick Feed
Poultry Feed
Dry Poultry Mash

Chick Feed
Scratching Feed

J. J. CAMPBELL
Gen. Sales Agt.
Hartford, Conn.

THE H-O COMPANY
MILLS
BUFFALO, N.Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Don’t Waste Money!
Don’t Waste Time!

Y

mote than made up
improved "Cyphers" will have
dependable hatching machine
that will last ten to twenty years without
ENCE IN COST and then you will own a strictly high-class,
or the
osition.
right kind
hundreds upon hundreds
of chicks. We have received
right number
a cent of repairs. A merely "built to sell" incubator is a
of reports like the samples here published.

Recent Sample Reports—

One Machine Over 12 Years Old
Battle Creek, Mich., July 17, 1913.
Cyphers Incubator Co., Buffalo, N. Y.—

With the exception of a few hen settings, all my breedi-
ing stock has been hatched in Cyphers Incubators since
1902. Considering the thickness of the shells of Wyan-
dotte eggs, it is plain the Cyphers is capable of handling
any egg entrusted to it. I have run fourteen incubators
of different makes, but the only ones I now have are
Cyphers. Have one Cyphers that I have used over 12
years and it hatches as well as ever. M. BOLLSTROM.

What Our Customers Say:

“Wont “Trust Them Under Hens”
R. F. D. 1, Comstock, N. Y., July 28, 1913.
Cyphers Incubator Co., Buffalo, N. Y.—

I use and strongly advocate the Standard Cyphers
Incubators and Brooders. Have used them three years
now and they never yet have been beaten. Have tested
them with other machines, but the Cyphers is the win-
er every time. In setting high-priced eggs I will not
trust them under hens, or in other incubators, but put
them in the Cyphers and raise the chicks in your brood-
ers. Following are hatches made early the past spring
in my Cyphers machines: from 199 untested eggs, 129
chicks; from 148 tested eggs, 146 chicks; from 133 tested
eggs, 128 chicks. Of these 399 chicks, I raised 98 per
cent, so you see they must have been extra strong.

SPRINGSIDE POULTRY FARM
Harold C. Thomas, Proprietor.

$1,000 Prize
Contest Book

This book contains reports
"fact-stories" from chicken-
raisers all over the country—
who won success in spite of
hard conditions — who suc-
cceeded. A free copy will be
sent to any address on re-
cipt of 10c in U. S. stamps to
cover cost of mailing.

"2,530 Fertile Eggs, 2,456 Chicks"
Cyphers Incubator Co., Buffalo, N. Y.—

Early in March I started my Standard
Cyphers Incubators and finished late in
June. From 2,530 fertile eggs I got
2,456 good, strong chicks. Several
hatches were 100 per cent. I
have no trouble whatever with
your incubators and like them
better every time I start them up.
Am sending you, under separate
cover, a photograph of my last
hatch for this season, 175 chicks
from 175 fertile eggs.

ALFRED SHAW.

Free Bulletins and Booklets

If you have not already sent for three
sample free Bulletins, do so today—
and also fill out the coupon for free
booklet, “Best Methods of Brood-
ing” and "Poultry Foods and Feeding." See list of 24 Bulletins.

We manufacture over one hundred standard
poultry articles. Send today for our latest
catalog. Address our place of business
nearest you.

Cyphers Incubator Co.,
Dept. 7, Buffalo, N. Y.

New York, N. Y., 41 standby St.; Boston, Mass., 1-14
Canal St.; Chicago, Ill., 529-331 Plymouth Ct.
Kansas City, Mo., 311-313 Southwest Blvd.; Oak-
land, Cal., 3131 Broadway; London, Eng., 121-122
Finsbury Pavement.
BE ON THE SAFE SIDE!

You needn't fear a visit from the Sealer of Weights and Measures if you use ... 

THATCHER MILK BOTTLES

You won't give over-capacity either, because they are accurate!
Send for our free book. It tells exactly why Thatcher bottles add to your profits.

THATCHER MFG. CO.
103 Market St. ELMIRA, N. Y.

THE UNADILLA
A Silo of Practical Construction for the Progressive Agriculturist

Photo is one of two 20x30 Unadillas which have modernized fodder storage and feeding methods on Ex-Gov. Woodruff's country estate at Guilford, Ct. Send today for new catalogue descriptive of the Unadilla Silo's remarkable time- and labor-saving features and apply for early order discount prices.

Unadilla Silo Co., Box 22 UNADILLA, N. Y.

Dixie Brand
COTTON SEED MEAL

THE CHEAPEST SOURCE OF PROTEIN FOR DAIRY COWS

HUMPHREYS-GODWIN CO., Memphis, Tenn.

CORNELL POULTRY

Breeding Stock: A good supply of Single Comb White Leghorn breeders is available and poultrymen should let us know their needs. A few good breeders of the following varieties may also be furnished: Barred, White and Buff Plymouth Rocks, Rhode Island Reds, Mottled Anconas, Pekin, Rouen and Indian Runner Ducks and Toulouse Geese.

Four Good Records by S. C. White Leghorns

| Egg Laid | Total Eggs
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year</td>
<td>2nd year</td>
</tr>
<tr>
<td>Lady Cornell</td>
<td>257</td>
</tr>
<tr>
<td>Madam Cornell</td>
<td>245</td>
</tr>
<tr>
<td>Cornell Surprise</td>
<td>190</td>
</tr>
<tr>
<td>Cornell Supreme</td>
<td>212</td>
</tr>
</tbody>
</table>

Laying Stock: A limited supply of layers of the above mentioned varieties may be supplied. Persons interested should send in their requests early. Market Eggs, Poultry, Feathers, etc., are always available at the Sales Room.

DEPARTMENT OF POULTRY HUSBANDRY
New York State College of Agriculture

ITHACA, N. Y.
FARM WATER SUPPLY

An abundant supply of running water for house and general farm use means convenience, labor saving, comfort and protection against fire. A private water system is a practical small investment.

Own Your Own Water Works

The system which you install should meet your requirements. The hydraulic ram, the windmill pump, the gasoline or electric-driven power pump—each has its peculiar advantages under certain conditions. A properly selected outfit results in satisfaction and economy; yet only a comparatively small number of farmers have had sufficient experience with pumps to know what is best suited to their needs.

Use our experience and service to get practical suggestions for supplying your place with water. Let us recommend equipment and furnish you with estimates. The right pump for you is included in our complete line of:

Hand and Power Pumps for all Purposes

Address: DEPARTMENT C

RUMSEY & COMPANY, Limited

SENeca FALLS, N.Y.

ESTABLISHED 1840

75 Warren Street
NEW YORK CITY, N.Y.

234 Congress Street
BOSTON, MASS.
New York State Ideal Farms

In a healthful locality; offering the advantages of a practical farm land within two hours of our greatest city, assured value enhancement; acknowledged fruit and entrancing natural country.

Prices range from ten to one hundred dollars per acre, with very liberal terms. Among my patrons are several former Cornell students.

Edgar L. Hoag
233 Broadway
NEW YORK CITY

THE HOTEL OF AMERICAN IDEALS
HOTEL POWHATAN
WASHINGTON, D. C.

Best Located Hotel in Washington
New and Absolutely Fireproof.
Refined. Elegant.
EUROPEAN PLAN
Rooms, detached bath, $1.50, $2.00 up
Rooms, private bath, $2.50, $3.00 up
Write for Souvenir Booklet “B” with Map.
Clifford M. Lewis,
MANAGER

EAVE PLATES

EAVE PLATES  Our galvanized angle iron eave plate is the only plate that is light enough and still strong enough. It is the one that makes the neatest job and that effectually clears itself of ice.

If all this were not true, so many other concerns would not, in spite of our patent, be continually trying to use it. We keenly appreciate such hearty endorsement of our plate by them. It’s just the best kind of advertising for it.

The courts have sustained our patents on an angle iron eave plate. No one else has a right to sell it. It has cost a lot of money to perfect and defend this article. If we hadn’t had the endorsement of thousands who have used it, we should never have considered it worth while to defend. We have told you of its many good points. Try it along with some of our other materials. They are all shown and described in our Handy Book.

Lord & Burnham Co.

SALES OFFICES
New York  Boston  Philadelphia  Chicago
42nd Street Bldg.  Tremont Bldg.  Franklin Bank Bldg.  Rookery Bldg.
Rochester, Granite Bldg.

FACTORIES
Irvington, N. Y.
Des Plaines, Ill.

42nd Street Bldg.  Tremont Bldg.  Franklin Bank Bldg.  Rookery Bldg.
Rochester, Granite Bldg.
I want the privilege of sending a 60-day supply of Sal-Vet (my famous worm-destroyer and conditioner) to every man who owns sheep, hogs, cattle, horses or mules. I want you to see for yourself how it rids all farm stock of the deadly stomach and free intestinal worms—how it will stop your losses from worms and solve your stock-raising problems—how it will make your stock thrive better—keep healthy and free from disease. In making this offer I don't ask one penny from you, now or at any other time, unless Sal-Vet does all I claim.

Worms rob you of your stock-profits—keep your animals thin and out of condition—sap their strength and vitality and make them easy victims of disease. I'll rid your stock of these pests. I'll prove it before you pay.

Send No Money—Just the Coupon
Tell me how many head of stock you have. I'll ship enough Sal-Vet to last 60 days. You simply pay the freight charge when it arrives, and when the 60 days are up report results. If it does not prove satisfactory I'll cancel the charge—you won't owe me a cent. Fill out and mail coupon today.

Prices: 40 lbs. $2.25; 100 lbs. $5.00; 200 lbs. $9.00; 300 lbs. $13.00; 500 lbs. $21.12. No shipment made for less than 40 lbs. or 60-day trial offer. Never sold in bulk; only in Trade-Marked “Sal-Vet” packages. All-day trial shipments are based on 1 lb. of Sal-Vet for each sheep or hog, or 2 lbs. for each ox or cow as near as we can come without breaking regular size packages.

SINIDRY S. R. FEIL, Pres.
THE S. R. FEIL CO. Dept. CC
Cleveland, O.
RIPE TOMATOES—earlier than you ever had before

THE BALL SEED AND PLANT FORCER

Will give you a crop weeks ahead of any other method outside of the greenhouse. You can plant everything in the open garden or field a month ahead. These little greenhouses will give your seeds and plants the same protection as if they were under sash. When taken off you will have a transformation you never dreamed of. Your vegetables will be ready for the first cultivation while your neighbors are still dormant or rotting in the cold ground. All gardeners realize the value of individual glass covered plant frames for early results. The cost and weight were heretofore their only objections. My Forcing Frames overcome this, costing but a few cents, weigh but a few ounces, are collapsible, durable and produce the same results.

Send for my Free Booklet, How to grow Bigger, Better, and Earlier Crops than you ever had before and let me tell you more about this and many other wonderful new money making inventions for the market gardener. Only to be had from

THE BALL MFG. CO., Dept. G.
GLENSIDE, Montgomery Co., PENNSYLVANIA

Spray your FRUIT TREES with

HEMINGWAY’S LEAD ARSENATE

HIGH ANALYSIS EASY TO MIX STAYS IN SUSPENSION

Spray or Dust your POTATO-PLANTS and GRAPE VINES with

HEMINGWAY’S “CASCUT” Pronounced “K. S. Q.”

KILLS THE BUG PREVENTS BLIGHT CAN’T BURN FOLIAGE

For Booklets and Prices, write to

HEMINGWAY & CO., Inc., Dept. C.
17 Battery Place, NEW YORK

A COMPLETE LINE OF
MACHINERY AND SUPPLIES

For Dairies, Creameries and Milk Dealers

Write for catalog and prices

Prompt and Courteous Service

D. H. Gowing & Co.
SYRACUSE, N. Y.
IN YOUR ORCHARD

the first cost of the trees is the smallest part of the expense and yet it is the most important. In buying Green's Trees you know you are starting right. You can overcome the main reason for failures by planting Green's vigorous, healthy Trees.

Thirty-five years of successful tree growing, testing and selling has given us an experience that should and does make Green's Trees superior to any trees grown.

Have you received our new catalog? We will send it by return mail if you send your address. Remember, now is the time to order.

CHARLES A. GREEN, Pres.

Green's Nursery Co.

68 Wall Street

Rochester, N. Y.
Christy Engraving Co.

WHERE QUALITY COUNTS

Halftones Illustrations
Line Etchings Designing
and
Embossing Plates

We are Specialists in

Color Plate Engraving and
Color Printing

If you want to increase the selling power of your next catalogue, if you want to make your advertising as effective as possible, you should look into the question of using color reproductions. Our success lies, not alone in the making of proper plates, but in printing them as they should be. Our product is used by companies of international reputation. We shall be pleased to submit estimates or samples of work.

611-18 Central Building
Rochester, N. Y.
Plant ROBUST Trees In Your New Orchard.

Compare a tree that has just "grown" without care, with a tree from Fraser's Nurseries, where the trees are budded from selected parents, where the rows are thoroughly cultivated, where the strongest specimens only are sold—then you will know what a robust tree is, and how much better it is than the other kind. My Book About Trees gives planting data, varieties for special locations, and tells how and why certain varieties are valuable. Send for a copy—free.

SAMUEL FRASER
90 Main St. GENESEO, N. Y.

“HAMMOND’S GRAPE DUST”
Used effectively to kill Mildews on Roses and other Plants...

Sold by the Seed Dealers. For pamphlet on Bugs and Blights address
HAMMOND’S PAINT &Slug Shot Works
BEACON, N. Y. (Fishkill-on-Hudson, N. Y.)

CHR. HANSEN’S
DANISH DAIRY PREPARATIONS

DANISH RENNEN EXTRACT
The Standard of the World

DANISH VEGETABLE BUTTER COLOR
The best Vegetable Color on the market

DANISH CHEESE COLOR
Absolutely pure, always reliable—makes prize cheese.

CHR. HANSEN’S LACTIC FERMENT CULTURE
is unsurpassed for producing a Starter, for ripening cream in butter making, milk in cheese making, and skimmed milk in the preparation of cottage cheese or commercial buttermilk.

Manufactured and put up only by
Chr. Hansen’s Laboratory
BOX 1095 LITTLE FALLS, N. Y.

PURE BEEF CRACKLINGS

THE FLAVELL CO.
Asbury Park, N. J.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
THE TOMPKINS COUNTY NATIONAL BANK
135-137 E. State St.
Capital $100,000
ESTABLISHED 1836
Surplus and Undivided Profits $165,000
Safe Deposit Boxes for Rent

BOOK BINDERY
START RIGHT—Have your Countryman bound
We bind anything

J. WILL TREE’S
113 N. Tioga St.

LEHIGH VALLEY RAILROAD
The only line to and from Ithaca, Cornell University with through service between New York, Newark, Philadelphia, Buffalo, Niagara Falls and Chicago. Steel Trains; Observation Parlor Cars; Electric Lighted Sleeping Cars; Buffet-Library-Smoking Cars; Dining Cars, Service a la Carte; Stone Ballast.

Automatic Electric Block Signals
COMFORT SAFETY

Hammond’s Greenhouse White, A SUPERB PAINT, with years’ record to back it up, for wood or iron Greenhouses. It stays where you put it. In 5, 10, 15, 20, 25, or 30 Gallons.

KOHM & BRUNNE
THE LATEST STYLES AT MODERATE PRICES
TAILORS
222 East State Street

In writing to advertisers please mention The Cornell Countryman
"If you get it from us it’s right"

BUTTRICK & FRAWLEY
One Price Clothiers and Furnishers

This fall season finds us more fully equipped to satisfy your wants than ever before. Special attention has been paid to get best material at minimum price. Suits and Overcoats, $10.00 to $30.00; Raincoats, $5.00 to $30.00; Mackinaws, $6.00 to $12.00. We make Suits to measure and save you from $5.00 to $10.00.

VISIT OUR SHOE DEPARTMENT

Hats, Gloves, Shirts, Sweaters, Underwear, and all other articles you’d find in a first class shop. Full Dress and Tuxedo Suits for sale and to rent.

"If not we make it right"

134 East State Street

PROFESSORS, STUDENTS, INSTRUCTORS, you will get MORE INSURANCE FOR LESS MONEY IF YOU HAVE A POLICY WITH

The Travelers Life Insurance Company
OF HARTFORD, CONN.

J. J. SINSABAUGH, Agent,
149 East State Street

ITHACA, N. Y.

INSURANCE OF ALL KINDS

Ithaca 'Phone

The Clinton House
Corner Cayuga and Seneca Sts.

TABLE D'HOTE SERVICE
Cuisine and Service Unexcelled

Luncheon, 12 to 2 - - - $0.75
Dinner, 6 to 8 - - - - .75
Sunday Dinner, 1 to 2:30 - .75

SPECIAL HOLIDAY DINNERS

"Ithaca’s Popular Hotel"

Williams Brothers
ITHACA, NEW YORK

WELL DRILLING
MACHINERY AND TOOLS

In writing to advertisers please mention The Cornell Countryman
Delivered Without The Odor

A Special Machine for the removing of that disagreeable Gasolene Odor is one of the many features of the NEW PROCESS DRY-CLEANING

Modern Dry-Cleaning and Pressing Works
W. F. FLETCHER CO., Inc. 103 Dryden Road
THE FIRM WHO LIGHT THE WAY TO GOOD CLEANING

Norton Printing Co. 317 E. State St.
COLLEGE, FRATERNITY and COMMERCIAL PRINTING
Engraved Cards and Invitations Rubber and Metal Hand Printing Stamps

Robinson's Photograph Shop 214 East State Street
Photographer for the Senior Class

White & Burdick Co.
The oldest and largest Drug Store in the City
Supplies for Agricultural Students a Specialty

New York State College of Agriculture at Cornell University

THE DEPARTMENT OF ANIMAL HUSBANDRY


Regular Public Sale of all Surplus Young Stock, except Swine, on FRIDAY OF FARMERS' WEEK EACH YEAR

In writing to advertisers please mention THE CORNELL COUNTRYMAN
While in Ithaca for---

**FARMERS' WEEK**

_Do not fail to enquire at our store about---_

Fairbanks-Morse

**Water Systems**

Water _WHEN YOU WANT IT_

WHERE YOU WANT IT

**EQUAL TO CITY SERVICE**

_We have an experienced man to tell you how it is done, or write us,_

DAVIS-BROWN ELECTRIC CO., Inc.

115-117 So. Cayuga Street

"BACK TO THE FARM"

_That is just what must take place in this country, and the sooner the better, or other countries will be obliged to feed us. This publication is doing all it can to make this movement pleasurable and profitable, and after you are persuaded—well, that is where we come in._

_We can find that farm for you_

_We have probably the largest list to select from in Central New York State._

**Ithaca Realty Company**

202 N. Tioga St., Ithaca, N. Y. _"You're Safe in Our Hands"_

_Gentlemen—you are cordially invited to inspect our excellent variety of WOOLENS in both Foreign and Domestic and they are exclusive in Styles for Suits and Overcoats, also are approved for all occasions for Fall and Winter._

**URBAND & SON**

_TAILORS_

Opposite City Hall

_In writing to advertisers please mention THE CORNELL COUNTRYMAN_
A postal card request will bring you a copy of our list of some hundreds of

**Practical Agricultural Books**

compiled from our lists of regular and recommended books as used at the N. Y. State Agricultural College here at Cornell :::::::::

[Insert image]

**The Corner Bookstores**

ITHACA, N. Y.

---

**Semi-Annual Clearance Sale....**

MACKINAWS
OVERCOATS
RAIN COATS
SHIRTS    SHOES
NECKWEAR

Everything Reduced From 15 to 50 Per Cent.

**Victor Victrola Parlors**

with the most complete stock in the various woods and finishes. : : :

**Complete stock of Records**

WE HAVE THEM WHEN YOU WANT THEM YOU DON'T HAVE TO WAIT AT

**Hickey's Lyceum Music Stores**

---

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The Cornell Countryman

Conlon
PHOTOGRAPHER
OPOSITE TOMPKINS COUNTY BANK
High-Grade Work Only

CARR & STODDARD
MERCHANT TAILORS
UP-TO-DATE STYLES AND WORK
SENeca AND AURORA, NEXT LENT’S MUSIC STORE

BAXTER’S
Clothing and Furnishings

have pleased hundreds of CORNELL students during the last Five Years. Why? Because we sell only first class merchandise and guarantee every dollar’s worth of it; we fit our clothing to please; our service is unexcelled, and last but not least, we sell at One Price to All.

Please consides this “Shop,” “Your Shop.” You get your money’s worth here.

E. B. BAXTER,
ONE PRICE TO ALL
“The Quality Shop”
Satisfaction guaranteed
150 E. State St., Ithaca, N.Y.

Cafeteria
HOME ECONOMICS BUILDING
THREE MEALS DAILY

D. S. O’BRIEN
MARKETS
222 North Aurora Street
430 North Cayuga Street
DEALER IN
FRESH, SALT AND SMOKED MEATS
Poultry and Game in Season
D. S. O’BRIEN

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Flashlight Photography...

H. C. CABLE

Ithaca Phone 180-X
405 COLLEGE AVE.

Photo Facts

26 years in the business,
15 years in present stand
(longer than any other
photographer in the city). Be sure and see us be-
fore having that photo taken.

Photographer
AND
Kodak Dealer

115 & 117 E. State St.

WE DO YOUR MENDING FREE

FOREST CITY LAUNDRY

E. M. MERRILL

209 NORTH AURORA STREET

CUT FLOWERS, DECORATIVE
PLANTS, ETC.

THE BOOL
FLORAL CO.

215 East State St., Ithaca, N. Y.

PETER SCUSA
MODERN SHOE REPAIRING
Neatly and Promptly Done
Shoes called for and delivered in any part
of the City

Ithaca Phone 428-C 405 Eddy St., ITHACA, N. Y

TYPEWRITERS

New and Rebuilt
Any Make
Sold, Rented and Repaired

Special Rates for the College Year

H. L. O’DANIEL, Both Phones. 204 N. Tioga St.

PIANOS, MANDOLINS, GUITARS, BANJOS and VIOLINS
Rented or sold on Easy Payments. "Songs of Cornell." All the latest
music; Strings and supplies for all instruments at lowest prices.

LENT’S MUSIC STORE
Victor Talking Machines, Records, Etc.

122 N. Aurora Street

The University Photo Shop, G. F. Morgan
314 College Ave.

SPECIAL ATTENTION GIVEN TO FRAMING

10 per cent. off on Frames when furnished with the pictures we make

In writing to advertisers please mention THE CORNELL COUNTRYMAN
WISE
THE PRINTER
Is at your service for all classes of Fine PRINTING ENGRAVING ETC.
Buffalo Street, Next to Post Office, ITHACA, N.Y.

Ithaca Phone 76x

The Palace Laundry...
323 and 325 Eddy Street

F. C. BARNARD, Prop.

THE
ITHACA HOTEL

SERVICE
A LA CARTE SERVICE
6:15 A.M. to 12 P.M.

CLUB BREAKFAST
6:15 A.M. to 10 A.M.

MODIFIED EUROPEAN PLAN, ready to serve
12 M. to 2 P.M. 6 to 7:45 P.M.

SUNDAYS
TABLE D'HOTE
1 to 3 P.M. 6 to 7:30 P.M.

We will submit with pleasure menus for private parties and banquets.
Private dining room and tables will be reserved upon request.

STUDENT SUPPLY STORE

The Modern Method Laundry

JOHN REAMER, Prop.

A. B. KENNEDY Dealer in Watches and Jewelry, Cut Glass and Fine Silver for Weddings. Cornell Pins, Fobs, Souvenir Goods, etc.

EAST STATE ST., ITHACA, N. Y. Opp. New Ithaca Hotel

We keep a fine line of diamonds and jewelry and do all kinds of repairing neatly at : :

Heggies' Jewelry Store ===
136 E. State St.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The Shops of Shops

Come right in to headquarters where you can find everything for man's wear at lowest prices.

Leave your measure for ONE HALF DOZEN SHIRTS for ONE DOZEN DOLLARS.

We have a whale of a stock of Furnishing Goods, Hats and Caps.

TOWN SHOP, L. C. BEMENT HILL SHOP,
142 E. State St. The Toggery Shops 413 College Ave.

F. J. HAUSNER, Jeweler

Watches, Diamonds and Jewelry 205 E. State Street

THE FIRST NATIONAL BANK
Cornell Library Building
Capital, Surplus and Profits, $350,000.00
Oldest National Bank Safe Deposit Boxes for Rent

ITHACA SAVINGS BANK
INCORPORATED 1868
Tioga Street, cor. Seneca ITHACA, N. Y.

When wanting
QUALITY, SERVICE AND CLEANLINESS
go to
WANZER & HOWELL, The Grocers

PICTURES STUDENTS' FURNITURE

Manufacturers of Special Furniture for
FRATERNITIES AND CLUB ROOMS

H. J. BOOL CO.
(Opposite Tompkins County Bank)

In writing to advertisers please mention THE CORNELL COUNTRYMAN
This is the Month We Give You the Profits
Buy Your Shoes Now

SEMI-ANNUAL SALE
NOW ON

<table>
<thead>
<tr>
<th>Price</th>
<th>Shoes</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10.00</td>
<td>$7.35</td>
<td></td>
</tr>
<tr>
<td>8.00</td>
<td>$6.35</td>
<td></td>
</tr>
<tr>
<td>7.00</td>
<td>$5.95</td>
<td></td>
</tr>
<tr>
<td>6.00</td>
<td>$4.95</td>
<td></td>
</tr>
<tr>
<td>5.00</td>
<td>$3.95</td>
<td></td>
</tr>
<tr>
<td>4.50</td>
<td>$3.35</td>
<td></td>
</tr>
</tbody>
</table>

ITHACA BOOT SHOP, Inc.
204 E. State Street

New York Life
Insurance Company

C. H. WEBSTER, Agent

OFFICE: Student Supply Store
RESIDENCE: 121 Catherine St.

BOTH PHONES
Butter Triumphs as Usual At National Dairy Show

Butter made from cream separated by De Laval Separators made the usual clean sweep of all highest awards at the great 1913 Chicago National Dairy Show and Annual Convention of the National Butter-makers' Association, just as it has always done every year since the organization of the National Association in 1892.

Whole Milk Creamery Butter. The highest score in this class was awarded to O. N. Peterson, of Rapidan, Minn., a De Laval user, as were 187 out of the 200 whole milk creamery entries.

Gathered Cream Creamery Butter. The highest score in the gathered cream factory-made butter class was given R. O. Byre, of the Readstown Creamery Co., Readstown, Wis., this prize-winning butter being made from the cream of farm patrons all using De Laval Separators.

Farm Dairy Butter. The highest score in this class was awarded to Mrs. D. H. Turnbull, of Mammoth, Ill., whose family has been using De Laval Cream Separators for over twenty years.

De Laval Superiority Indisputable. The evidence of the superiority of De Laval cream and butter as demonstrated by the winning of all highest awards the world over for thirty years, is so overwhelming as to be indisputable and unanswerable. A De Laval catalog, to be had for the asking, will make plain the reasons for it.

The De Laval Separator Co.

New York Chicago San Francisco Seattle
Harrisons' Fruit Trees are Budded From Bearing Orchards

Do you believe that budded trees inherit the bearing habits of their parents?

Here's what we know:

Some trees in every orchard yield better than others—and some yield mighty poor—all other conditions equal.

Young trees that we propagate from the heavy, regular yielders begin to bear earlier, and produce more regularly, than “average” trees. This is a matter of record in our offices.

Our conclusion must be in favor of the selected parent. So every Harrison fruit tree that we sell grows from a parent tree in bearing and of superior bearing habit.

Harrisons Sell only Harrison-Grown Trees

Only by strictly following this policy can we be certain that all the trees we sell measure up to our high standard. Have you our big general catalog, that gives the details about this policy? If not, send for a copy today. It is free. You ought to have this book, for it tells what was done last summer by a Maryland Agricultural College expert to save a crop of peaches. It is a story of a battle against big odds—but spraying won. Get the catalog and read it.

Our Shade Tree and Evergreen planting book and our fruit growers guide book should be in every reference file. The former is free and the latter costs only 50 cents. Come to Berlin for a visit this spring or summer. We would like to show you some fine farms for sale at low figures. Write for what you want—today.

Harrisons’ Nurseries, Cornell St., Berlin, Md.
This College of Agriculture cannot serve the state as it is capable of doing without engaging in many kinds of extension work. It ought to serve farmers who cannot go to college, or do not know what college is. The College must be taken to the people. All State Colleges should become a real part of the machinery of society (or the State), participating directly in all work for the good of the people, so far as such work comes within the range of their subject matter. They become, thereby, a real expression of the needs and the ideals of the people.

L. H. Bailey
What Say You About Paint?

Not now of course, BUT, some time
If this Spring or this Summer, let us send
you NOW, our booklet, “Common-Sense
Rules for the Application of Paint,” by one
who knows.

WADSWORTH DOUBLE THICK PAINT
has stood the test for more than half a
century.

Buy of Manufacturer and save the
Middleman’s Profits.

EDWARD JOSLIN
SALES AGENT
No. 11 South First St. FULTON, N. Y.

There was an orchard grower who wasn’t wondrous wise,
Who always jumped at the lowest price hoping to economize.
He would fuss and cuss and pull his hair and swear good
stuff’s high;
He would have spray stuff at his own price or By Gosh he
wouldn’t buy;
He would get it too, and then he’d spray, and spray, and
spray until his eyes were out:—
His crop was purchased by the Dry House at twenty-five cents
per hundred on or about.

We write “No Worry” insurance, sell you REX Lime
and Sulphur Solution and REX Arsenate of
Lead high in quality and give you the
insurance free.

The Rex Company
ROCHESTER, N. Y.
P. O. BOX 712

In writing to advertisers please mention THE CORNELL COUNTRYMAN
OFFICIAL PUBLICATIONS of CORNELL UNIVERSITY

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second-class matter at the post office at Ithaca N. Y. pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and postfree on request:

- General Circular of Information for prospective students,
- Announcement of the College of Arts and Sciences,
- Courses of Instruction in the College of Arts and Sciences,
- Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts,
- Announcement of the College of Law,
- Announcement of the College of Agriculture,
- Announcement of the Medical College,
- Announcement of the New York State College of Agriculture,
- Announcement of the Winter-Courses in the College of Agriculture,
- Announcement of the New York State Veterinary College,
- Announcement of the Graduate School,
- Announcement of the Summer Session,
- The President's Annual Report,
- Pamphlet on prizes, samples of entrance and scholarship examination papers, special departmental announcements, etc.

Correspondence concerning the publications of the University should be addressed to

The Registrar of Cornell University

ITHACA, N. Y.

New York State College of Agriculture at Cornell University

W. A. Stocking, Jr., Acting Director

The College of Agriculture is one of several co-ordinate colleges comprising Cornell University. The work of the College is of three general kinds: The regular teaching work of undergraduate and graduate grade; the experiment work; the extension work. The resident instruction falls in the following groups:

1. Four-year course, leading to the degree Bachelor of Science in Agriculture (B. S. in Agr.). When desired, the last two years may be chosen in subjects pertaining to landscape architecture and out-door art, or to home economics. In the Graduate School of the University students may secure the Master's and Doctor's degrees (M.S. in Agr. and Ph.D.).

2. Special work, comprising one or two years: (a) Agriculture special; (b) Nature-study special or normal course.

3. Winter-Courses of 12 weeks: (a) General Agriculture; (b) Dairy Industry; (c) Poultry Husbandry; (d) Horticulture; (e) Home Economics.

THE INSTRUCTION IS DIVIDED AMONG TWENTY-TWO DEPARTMENTS AS FOLLOWS

| Farm Practice and Farm Crops | Animal Husbandry |
| Farm Management | Poultry Husbandry |
| Agricultural Chemistry | Dairy Industry |
| Plant Physiology | Farm Mechanics |
| Plant Pathology | Forestry |
| Soil Technology | Rural Art |
| Plant-Breeding | Drawing |
| Entomology, Biology and Nature-Study | Home Economics |
| Horticulture | Meteorology |
| Pomology | Rural Economy |
| | Rural Education |
| | Extension Teaching |
New York State
Ideal Farms

In a healthful locality; offering the advantages of a practical farm land within two hours of our greatest city, assured value enhancement; acknowledged fruit and entrancing natural country.

Prices range from ten to one hundred dollars per acre, with very liberal terms. Among my patrons are several former Cornell students.

Edgar L. Hoag
233 Broadway
NEW YORK CITY

THE HOTEL OF AMERICAN IDEALS

HOTEL POWHATAN
WASHINGTON, D. C.

Best Located Hotel in Washington
New and Absolutely Fireproof.
Refined. Elegant.
EUROPEAN PLAN

Rooms, detached bath, $1.50, $2.00 up
Rooms, private bath, $2.50, $3.00 up
Write for Souvenir Booklet “B” with Map.

Clifford M. Lewis,
MANAGER

THIS SHOWS WHY WIDE GREENHOUSES CAST LESS SHADE

With a ridge and furrow house you have two ridges and a wide center gutter to cast the shade, as against only one ridge in the wide house. It takes exactly the same roof to cover one as the other. The same sides, glass, benches, heating go in both. Once heated it takes less to keep up the temperature in a single wide house. You have better ventilation conditions. The wide house is the logical house. Wide houses when built with the “L. & B.” Improved Sectional Iron Frame construction are economical in every way. You get the lightest house possible, and one that has the endorsement of hundreds of growers. It has stood the test of years—not months. Investing your good money in a house is a serious matter, so give it the careful consideration it deserves. It will be greatly to your advantage to talk it over with us.

Lord & Burnham Co.

SALES OFFICES
NEW YORK
42nd Street Bldg.
BOSTON
Tremont Bldg.
PHILADELPHIA
Franklin Bank Bldg.
ROCHESTER
Granite Bldg.
CHICAGO
Rookery Bldg.
Cleveland, Swetland Bldg.
TORONTO, CANADA
12 Queen St. E.

FACTORIES
Irvington N. Y.
Des Plaines, Ill.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
I want the privilege of sending a 60-day supply of Sal-Vet (my famous worm-destroyer and conditioner) to every man who owns sheep, hogs, cattle, horses or mules. I want you to see for yourself how it rids all farm stock of the deadly stomach and free intestinal worms—how it will stop your losses from worms and solve your stock-raising problems—how it will make your stock thrive better—keep healthy and free from disease. In making this offer I don't ask one penny from you, now or at any other time, unless Sal-Vet does all I claim.

Worms rob you of your stock-profits—keep your animals thin and out of condition—steal their food—sap their strength and vitality and make them easy victims of disease. I'll rid your stock of these pests. I'll move it before you pay.

**Send No Money—Just the Coupon**

Tell me how many head of stock you have. I'll ship enough Sal-Vet to last 60 days. You simply pay the freight charge when it arrives, and when the 60 days are up report results. If it does not prove satisfactory I'll cancel the charge—you won't owe me a cent. Fill out and mail coupon today.

**Prices**: 40 lbs. $3.25; 100 lbs. $6.50; 200 lbs. $9.00; 500 lbs. $13.00; 500 lb. prices. Never sold in bulk. Only in trade-marked "Sal-Vet" packages.

60-day trial shipments are being sent now. For each horse or head of cattle as near as we can come without breaking regular size packages.

---

**READ THESE LETTERS**

A brief time after beginning to use Sal-Vet on a lot of thin sows in bad condition it completely cleaned the worms from these animals and at once they commenced to eat better, and to thrive accordingly. There were cases of cholera close by and we consider that Sal-Vet was our salvation. (Signed) D. E. C. LONG & SONS.

Anbnam, Nebraska. I have just shipped a carload of hogs that went within a nickel of topping the market. These hogs were on Sal-Vet. Most of my neighbors lost their entire herds from disease. Ottowa, Ill. W. J. BUTLER.

Auburn, Nebraska.

I have just shipped a carload of hogs that went within a nickel of topping the market. These hogs were on Sal-Vet. Most of my neighbors lost their entire herds from disease. Otowa, Ill. W. J. BUTLER.

---

**Pres. SIDNEY R. FEIL, Dept. Co.**

**Cleveland, O.**
Just what you need to help you keep cost accounts of your farm or business.

This new Mechanical Adding Machine costs but $2.00. It multiplies and subtracts. Guaranteed against defects for one year.

Relieves brain effort, eye strain, nervousness, etc., and saves both time and money.

The "Golden Gem" Adder for $10 - A PERMANENT MACHINE

SOLD BY

LYLE T. SCHARTEL

Agents Wanted 134 College Ave.

ITHACA, N.Y.

The Cornell Countryman, $1.00

Review of Reviews, $3.00

The Cornell Countryman, $1.00

Breeders Gazette, $1.75

Both $3. $2.15

Dixie Brand

COTTON SEED MEAL

THE CHEAPEST SOURCE OF PROTEIN FOR DAIRY COWS

HUMPHREYS-GODWIN CO., Memphis, Tenn.

CORNELL POULTRY

Breeding Stock: A good supply of Single Comb White Leghorn breeders is available and poultrymen should let us know their needs. A few good breeders of the following varieties may also be furnished: Barred, White and Buff Plymouth Rocks, Rhode Island Reds, Mottled Anconas, Pekin, Rouen and Indian Runner Ducks and Toulouse Geese.

Four Good Records by S. C. White Leghorns

<table>
<thead>
<tr>
<th>Breed</th>
<th>Eggs laid 1st year</th>
<th>Eggs laid 2nd year</th>
<th>Eggs laid 3rd year</th>
<th>Total Eggs laid 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lady Cornell</td>
<td>257</td>
<td>200</td>
<td>191</td>
<td>648</td>
</tr>
<tr>
<td>Madam Cornell</td>
<td>245</td>
<td>131</td>
<td>136</td>
<td>539</td>
</tr>
<tr>
<td>Cornell Supreme</td>
<td>188</td>
<td>188</td>
<td>220</td>
<td>562</td>
</tr>
</tbody>
</table>

Laying Stock: A limited supply of layers of the above mentioned varieties may be supplied. Persons interested should send in their requests early.

Market Eggs, Poultry, Feathers, etc., are always available at the Sales Room.

DEPARTMENT OF POULTRY HUSBANDRY

New York State College of Agriculture

ITHACA, N.Y.
The Sprayer which you buy should suit your requirements. A properly selected outfit saves labor, annoyance and expense. The right pump for you is included in the variety of styles shown in the 1914 catalog (sent on request) of

RUMSEY PRACTICAL SPRAY PUMPS
AND SPRAYING EQUIPMENT

When a compact barrel sprayer is wanted for orchard or garden work, we recommend our

“HARVARD” OR “ESSEX”

The “Harvard” meets the demand for an inexpensive, serviceable pump for supplying one or two nozzles. Valves and seats, plunger and strainer are brass. Outside packed plunger, accessible valves, mechanical agitator, air chamber and long lever make this a practical pump.

The “Essex” is a particularly convenient, well made sprayer of capacity suitable for supplying up to four nozzles. It is moderate priced and represents an excellent value. Plunger, crosshead, gland, valves, seats and strainer are of heavy cast brass. Large steel air chamber for maintaining pressure, mechanical agitator, adjustable stroke and brass plug at bottom of cylinder for removing plunger—are special features of merit.

ADDRESS REQUEST FOR CATALOG AND RECOMMENDATIONS TO

RUMSEY & COMPANY, LTD.
SPRAY PUMP DEPARTMENT
SENECA FALLS, NEW YORK

HAND AND POWER SPRAYERS AND EQUIPMENT
HAND AND POWER PUMPS FOR ALL PURPOSES

In writing to advertisers please mention The Cornell Countryman
DO YOU HAVE USE FOR
CROSS SECTION PAPER

We are surprised sometimes to find that certain people are using cross section paper. A few years ago only engineers used cross section paper but now business men, farmers, manufacturers and others are using it. On cross section paper a curve will show the results and tendencies plainly. The Co-op. cross section paper is good.

Notebook and Special Report Papers

The Co-op. seems to be headquarters for such things. It may be because of the quality of our notebook papers. Our policy is to give you the best we can for the money. We put as many sheets of special paper in a package as we can afford to.

SOLD AT THE

THE CO-OP.
MORRILL HALL

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
# Table of Contents

## MARCH, 1914

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontispiece—The Agricultural Association Entertainment Cast</td>
<td>194</td>
</tr>
<tr>
<td>Foreword. C. H. Tuck</td>
<td>195</td>
</tr>
<tr>
<td>Review of Farmers' Week. The Editor</td>
<td>196</td>
</tr>
<tr>
<td>Abstracts of Some of the Important Addresses. W. D. Hill</td>
<td>198</td>
</tr>
<tr>
<td>Conferences and Conventions</td>
<td>202</td>
</tr>
<tr>
<td>Farmers' Week Exhibitions</td>
<td>205</td>
</tr>
<tr>
<td>The First Intercolligiate Fruit Judging Contest. Dudley Alleman</td>
<td>211</td>
</tr>
<tr>
<td>The Fifth Annual Eastman Stage. H. M. Stanley</td>
<td>212</td>
</tr>
<tr>
<td>The Rural Church. B. W. Shaper</td>
<td>213</td>
</tr>
<tr>
<td>Florida Needs College Graduates. P. H. Rolfs</td>
<td>216</td>
</tr>
<tr>
<td>Editorials</td>
<td>218</td>
</tr>
<tr>
<td>Faculty</td>
<td>220</td>
</tr>
<tr>
<td>Campus Notes</td>
<td>221</td>
</tr>
<tr>
<td>Former Students</td>
<td>223</td>
</tr>
</tbody>
</table>

**Subscription Price:** $1.00 per year

- Canada, $1.15
- Foreign, $1.30

Entered as second-class matter at the Post Office, Ithaca, N. Y.
Copyright by The Cornell Countryman
AGRICULTURAL ASSOCIATION ENTERTAINMENT CAST.
In February of 1907 the New York State Experimenters' League had one of its largest meetings at the State College of Agriculture. Prior to this time the meetings had been small, the attendance coming almost entirely from former students of the College who desired to talk over results of the year. But, at this larger meeting in 1907 some fifty or sixty practical farmers of much experience came on invitation to discuss their methods and results. So pronounced was the interest of these mature farmers in the meeting and so evident was their desire for more information that Director Bailey proposed for the next year, an even larger meeting with a more varied program and with wider publicity; in short, a small Farmers' Week.

Washington's Birthday, February, 1908, found the first annual Farmers' Week in progress with a program filled not alone with lectures by professors but also practical talks by men from the field. The attendance was a marked increase over the year before. Some people came a long distance to attend; and so, ample proof was afforded of the opportunity and service of Farmers' Week as one of the features of extension instruction at the State College of Agriculture.

Year after year since then, there has been a Farmers' Week each one larger than its predecessor both with respect to program and attendance. From the most distant parts of the State people of modest means, as well as those with considerable, came to the College of Agriculture for instruction during this week and to mingle with each other in that democratic way which has marked this school of the people since its beginning.

We have just passed the Seventh Annual Farmers' Week which, with respect to number of features on the program, arrangement of material and people in attendance has eclipsed all previous Weeks. Many people are returning year after year and are coming to know the ways of the place much as do our students. Sometimes an entire family arranges to come for nearly the full week. In many instances, organizations such as granges and reading clubs send delegates to Farmers' Week to make report for the club or society.

While at first sight the program with over three hundred lectures and demonstrations seems a little confusing, yet on closer study it will be seen that much of it is grouped into definite divisions so that the fruit grower, the poultry man and vegetable grower may secure just the information for which he is looking.

This year a new feature was introduced which seemed to be most enjoyable. There were many dinners and social gatherings which meant much in bringing the people together in the evening after a busy day.
There are still many improvements to be made in Farmers' Week. The Faculty of the College cooperate splendidly in working out new features from time to time. Indeed some departments have taken the lead with programs, which of themselves far exceeded the entire program of Farmers' Week a few years ago.

Not alone is there this hearty cooperation on the part of the Faculty, but the farmers of the State are feeling more free, as they come here from year to year, to make suggestions as to how all this work may be kept close to the land.

Therefore, with farmers and faculty cooperating, the New York State College of Agriculture will be able from year to year to more fully meet its mission in rendering real service, not alone to the farming of the State but also in the improvement of the farm life itself.

A REVIEW OF FARMERS' WEEK

By the Editor

THE Farmers' Week registration this year exceeds that of any previous year. The number registering was 2569. As a general rule from 60–75 per cent of the visitors register. The proportion tends to grow less each year, since people who have been here in other years do not think it necessary to register. Probably the Farmers' Week visitors numbered thirty-five hundred, in spite of unfavorable weather conditions.

An important part of the work of caring for the visitors was done by undergraduate committees. These included a registration committee, an information committee, a guide committee, an announcement committee whose duty it was to announce the events of each hour, a ventilation committee, a checking committee, a committee to provide rooms for visitors, a committee to count the attendance at each lecture and demonstration, an arrangements committee which had charge of decorations, badges and other details. R. C. Shoemaker, '14 was the General Chairman of Farmers' Week Committees.

Under the heading of lectures and demonstrations there were 390 events. Sixteen conventions and conferences were held. The departments of the college gave fourteen exhibitions and there were several not included in the program. The program was planned so that not more than one lecture should be given on the same phase of agriculture, during a given hour. The rooms had to be assigned according to the probable crowd which the event would attract, the facilities for illustration and other factors. In arranging such a program the members of the Extension Department had a large and difficult problem to solve and they solved it well.

It was the first Farmers' Week for the New Auditorium. Many of the visitors and the students found it worth while just to go in and look around. It is without doubt the most attractive and largest building of its kind in Ithaca.

The greatest innovation of the 1914 Farmers' Week was the Agricultural Association Entertainment. It was given in a spirit of service in a united effort of the student organizations of the college to develop student initiative and to secure funds for promoting student activities. It is estimated that the attendance was 1800 and the net receipts from the show were $222. The proceeds were apportioned in the following manner: Fifty per cent, divided equally between the Student Loan Fund; the Frigga Fylge Club-house Fund to erect a building which shall serve as a social
center for the women students of the College of Agriculture; and the Student Bailey Memorial Fund, to assist in promoting a higher type of agriculture through a wider circulation of Dr. Bailey’s views as expressed in his latest book “York State Rural Problems.” The remaining fifty per cent. was given to the Agricultural Association for the support of its activities including athletics, the musical clubs and the departmental clubs. One was immediately impressed on entering the New Auditorium by the artistically edited program which has a permanent value as a souvenir. It contains photographs of I. P. Roberts, L. H. Bailey, and W. A. Stocking, jr., a poem by L. H. Bailey and photographs of the college buildings.

The first number was by the Agricultural Glee Club. The club had received coaching by Mr. Quarles, the University Organist. Mr. Clark of the University Glee Club sang the solo parts in two of the encores. The Forestry Club gave a sketch entitled, “The Forest Assistant—A Western Drama” in which E. G. Irish, as stage manager, showed the audience how a motion picture film is made, the rest of the cast acting as the heroes and villains. Mr. Whitney sang “Off to Philadelphia” and several encores. The class of 1915 gave a sketch entitled, “His Old Sweethearts.” T. B. Charles, as a bachelor on the night before his wedding, reviews his love affairs. As he recalls each sweetheart, she appears in the spotlight in the person of a 1915 girl. The Girls Glee Club sang “Over The Waters Gliding” and in the encore, solo parts were taken by Miss Browning and Miss Yerke. H. H. Knight and E. A. Sperry, as amateur acrobats, showed marked ability. The famous quartet composed of Messrs, Myers, Peck, Whitney, and Hesler, sang “Santa Lucia” and encores. The senior class presented, “Troubles In The Little Red School-house on The Hill,” a burlesque on some of the faculty members as they might have been in boyhood days. The Mandolin Club played two selections. “Rice Pudding” was the last number, a playlet in two scenes given by Frigga Fylge, the girls’ club. Every act in the entertainment showed a finish which can only be the result of frequent rehearsals and hard work. Every person connected with this show deserves commendation. It will go down in the history of the college as an example of student achievement.

Another innovation was the Farm Boys’ Conference which was arranged by the students of the college. Lectures and demonstrations were given Friday and Saturday. On Friday afternoon the Junior Class gave a reception to the boys and about thirty boys were present.

A special effort was made this year to induce a large number of former students to return. Although the attendance at the Students’ Association events was fairly good as compared with former years, this part of Farmers’ Week is still undeveloped. If one realizes that the former students of the college number nearly 5,000, the percentage returning is quite small. It is difficult to see why more former students do not come back. It is the dream of the officers of the Students’ Association that the morning meetings of former students will some day fill the New Auditorium and that the cafeteria will be required for the reception and luncheon for former students and faculty members in the afternoon.

Farmers’ Week has become the biggest event of the year at the College of Agriculture. In the healthy growth of its old traditions and the continual development of the new, lies the promise for a still greater future.
ON TUESDAY afternoon, Jacob Gould Schurman, President of Cornell University made a short welcoming address in which he emphasized that the College of Agriculture and all its resources were at the disposal of the visiting farmers, and that the coming together of the practical farmers and the scientific men who are doing research work in agriculture would be of untold benefit to each. The College of Agriculture is the head of the agricultural system in this state and has a three fold purpose; first, to maintain a faculty to do research work; second, to offer free instruction to graduates of the high schools of this state; and third, to carry extension work, which is the quintessence of agricultural knowledge, throughout the state. Though the head of the system is well organized, President Schurman emphasized the fact that the lower nerve centers also needed to be developed, and expressed the hope that in the near future all of the 800 or more high schools in this state will have a well developed agricultural department. The agricultural educational system will not be complete till this is done. Nearly all the activities of man are now based on science and agriculture is rapidly becoming an exact science, so it is even of greater importance that now there be a man in each community who is interested in and conversant with local conditions, and who can actively cooperate with the state and federal agricultural departments. Then President Schurman introduced Jacob H. Schiff as one of our wealthiest men but one who feels that wealth is a public trust.

Mr. Schiff said he is a farmer, though a poor one, and he is very much interested in the development of agriculture and is strongly opposed to the movement of the young people to the city. If President Wilson can work out a successful system of rural credit it will greatly overshadow his successes with the tariff and the currency problems. Agricultural credit suffers from the many failures made 20 and 40 years ago by companies that loaned money to farmers on bonded mortgages and who had nothing in common with the borrowers. A regional rural credit system must be organized similar to the regional money system just introduced and there must be mutual liability or there must be some such system as is in force in Germany. The important thing is that there must be responsibility and there must be a common interest between the lender and the borrower. The prosperity of the country rests on the prosperity of the farming people and though farming is not an easy life, it is a dignified one and the farmer is the backbone of the nation. The curse given to man when he was cast out of Paradise, "In the sweat of thy brow thou shall earn thy bread" has become the blessing of the world.

H. E. Cook, Director of the St. Lawrence School of Agriculture at Canton, N. Y., talked on the educational situation and problems in this state. He deplored the present state of affairs where the whole state is "pickled" with politics, and hoped that people would eliminate the personal element in deciding on the agricultural education problems and determine the policy for the best welfare of all concerned. The present situation is but ten years old and the appropriations to construct the first buildings of this college was the beginning of an epoch. Now agricultural education is very popular and the pendulum may swing too far before it attains its proper place. As long as agricultural schools are mixed with politics we are apt to have an epidemic of new schools. The present policy of the Education Department is sound but it is a problem to work out
the details. The day of the self-made man is past and men are now made in schools. As all cannot go to agricultural colleges it is essential that they obtain the fundamentals of agriculture in the high school. The problem of how to make college students more practical is a difficult one and now there are too many graduates turned out who are "good fellows but do not know much about agriculture". In regard to the extension work, Dean Cook said its primary purpose was to energize the community and that we must not let this take the place of good sound education. Until recently there was not much opportunity on the farm in New York but now the farm offers an attractive field for young men. There are three parts to the agricultural work of the state; the colleges and secondary schools, the extension work, and the enforcement of the regu-lative laws. These units are becoming so large that they should come under one head so as to be unified. There are two ways; (1) that the Board of Regents with the addition of an agriculturally trained man like L. H. Bailey or Dean Stocking be given control, or (2) that an Agricultural Board of Regents be organized. There must be a stronger central control and better people to be controlled in both the government and in education.

Dr. W. H. Jordan of the Geneva Experiment Station spoke on "up-to-date" questions. He confined himself mostly to the relation of the farmer to the high cost of living. In the agitation to provide a system of agricultural credit by which the farmer could borrow money on easy terms and long time, the great danger is that the government might be too easy and free in paying out the money and thereby defeat the end desired. Increase of yields either by increasing production or by multiplying the number of farmers will not solve the problem because the farmer can be exploited by the consumer and larger yields will mean a loss to the producer. At present, increased production would be at a distinct loss to the farmer. No remedy will be successful that does not help the farmer. The chief means of reducing the price of food is in cheaper distribution and this is not altogether a farmer’s problem but must be mainly solved by the city man. The keynote is more efficient handling of what we are now producing. At present about 40% is added to the cost of food after leaving the farm. On the other hand the farmer must not neglect his opportunity to reduce the cost of production which will give him a greater marginal profit. The principal means of doing this is more efficient management. Probably the lack of intelligence, laziness, indifference, etc., are more detrimental than a small capital. There is too much machinery left out doors, too many weeds and dead limbs, inefficient buying and selling, production not standardized, etc. There must be a closer link between the farmer and the consumer and more middlemen cut out. The consumer should handle the raw products in larger quantities. Also the proper education in home economics, which teaches of the more efficient use of food, is to be an important factor in the future and this will also make better women who see something in life besides bridge whist, parties, etc. The high cost of living is essentially a question of efficiency. The future of agriculture does not depend upon more land but upon more BRAINS, and more efficient physical work. We are then dealing with the very foundation of national efficiency and national strength.

Edward Van Alstyne, Director of Farmers’ Institutes, talked on “Rural Citizenship.” He took as the basis of his talk the motto that has been adopted by the Institute workers, “The art of agriculture will never rise higher than the man who tills the land.” Rural citizenship means the upbuilding of men so they may really live and not merely exist. Farm work is a very dignified calling and the life of the city as well as the country depends on the citizenship of the country because the city draws its blood from the virile
blood of the country. Cities tend to decay and the citizenship to wither except for the infusion of new blood from the country. Every year there are over twenty thousand young men go to New York City and as many more to other cities in the state. The building of a strong rural citizenship is also especially essential now because there are so many of the lower class of immigrants coming to our country. Something more than education is necessary to develop a strong citizenship and that is a civic conscience. The abandoned farm is not a sign of decay but a distinct indication of advance. When land becomes so poor that it can not profitably be farmed at the prevailing market prices it should be abandoned and when the prices warrant the cost of making this land produce it will again be farmed. Life is not merely to eke out a living as would be afforded by that land and it is the progressive boys that realize this and go away to better and larger opportunities. It were much better that this land be allowed to grow grass or timber. Do not let sentiment run away with us, but live so as to meet the present day conditions. “Isolation means decay” and farming the farms that are now abandoned, at present means the greatest kind of isolation. Rural citizenship must develop from the progressive farms and the generation that will make or mar the future is the generation on the progressive farms. Many city people are victimized by promoters that harp on the popular saying “back to the land.” Few city people are qualified to farm successfully without experience. Now men must realize that the land does not belong to them in the same sense that they own cattle but that they hold the land in trust and therefore they have no moral right to skim land of its fertility. The real value of land is its earning power and it is better to buy good land than to try to build up run down or poor farms. Also the rural church and the rural school and the farm home must be developed. These are prime requisites of a good rural citizenship. The home and school are the places where an appreciation of Almighty God must be taught and when the idea that the best thing in life is service there will be a strong, virile rural citizenship.

W. H. Vary, Master of the State Grange, answered the unasked question, “Is It Worth While?” He recounted a few of the things that the Grange has accomplished for the farmers of this country in the way of caring for their interests before the law-making bodies. Wasn't the fight for the appropriations for the Agricultural College worth while? This College is of benefit to all the people throughout the state in cities as well as country. Some of the more important things that the Grange has been instrumental or has helped in securing are: the U. S. Department of Agriculture with a representative in the President's Cabinet, Interstate Commerce Committee and the regulating laws for the railroad, the oleomargarine laws, establishment of the experiment stations in many states, Sherman anti-trust law, good roads legislation and special relation to the making of market roads, parcel post, election of senators by popular vote. Some of the more important things in this state are: New York State College of Agriculture and secondary schools which are teaching that the farm is to support the farmer and not the farmer to support the farm, and cooperative fire insurance laws. The Grange is bending every effort to help the farmers work out some marketing schemes that will reduce the enormous cost of delivering the products to the consumer. This problem is so large that it can be solved only by all the farmers working together. The Grange wants the farm to give a fair return to the farmer for the capital invested and the labor and there is no use in raising large crops for the benefit of the city people unless the crops pay. The Grange is directed by men who are very much interested in the welfare of the farmers and it is for the benefit of the farmer. It has largely removed the isolation of country life and has raised
the standard of intelligence and developed education.

Honorable Calvin J. Huson, State Commissioner of Agriculture, said that the Farmers' Week Program indicated very well how many different phases there are to agriculture and that it is the big business of the State and the nation. In New York alone there are over a million and a half people living on over 215,000 farms, and that the increase of the money invested in farms in this state in the last ten years was over $450,000,000. Still there is only an indebtedness of 7% of the capital invested, which makes farming the least in debt of the big businesses. Now the farmers are not asking for any special privilege but want a square deal. The State is at present carrying out a splendid program of agricultural education and the Department of Agriculture is trying to safeguard the farmer's interest by enforcing laws to protect his products but not to restrict or hamper production. The regulation of milk and such products is strictly an agricultural problem and the delivery is a city problem. It is not the city's place to inspect milk. In past almost exclusive attention has been given to increasing production but now it is becoming more and more necessary to increase the efficiency of marketing. For this, some sort of cooperation is necessary though this need not require farmers to sell in common or to have common ownership. Community interest is the present tendency and as all large affairs, farming must follow business principles.

M. C. Burritt, Professor of Rural Development, told how the farm bureaus were organized and the work that they were doing in this state. Extension work in agriculture is carried on by three means; the lectures and demonstrations by professors of this college and others qualified, extension schools which are held for a week or two in the farming community, and the farm bureaus. This last agency is perhaps the most important because it takes all the time of a man for the year around in one community and this man is backed by the farmers of that place in helping to work out all local problems. Farm bureaus are local and are organized by the farmers themselves, and though they receive aid from the state and the federal department, they are never worked up by anyone but the farmers in that community and they must back it with money. Self-help is the only real help. The U. S. Department of Agriculture helped to start this movement and gives the franking privilege to agents, besides a small amount of money. New York appropriated $25,000 which is divided into $600 for a county provided the county raises an equal sum. Also the College of Agriculture is interested and the head of the bureau work in the state is a professor with offices at the college. All affairs of the individual bureaus are local and the director merely is the administrative agent and passes along information that may prove of value. So far there has been expended over $55,000 obtained from various agencies including the railroads, chambers of commerce, boards of supervisors, etc. Farm bureau associations are formed with a membership fee of $1.00 and from all these sources there is usually about $2500 available before the work is begun in any county. In this state there are twenty-two county agents that have been working for from a few months to three years. The functions of the agents are; giving advice (which is the least important because the average farmer knows his business pretty well. However, the agent can pass on what he observes at one farm to another); the most important is that he is the means for the organizing of the forces of that county so they will work together for the common end, such as cooperative societies, buying and selling societies, boys' and girls' clubs, cow-testing associations, etc.; and the study of the local economic conditions by making surveys. Mr. Burritt gave a long list of the actual work accomplished by those bureaus that have been in operation for a year or more.
THE NEW YORK STATE BEE KEEPERS’ ASSOCIATION

The secretary of the Bee Keepers’ Association, Mr. Irving Kinyon arranged an interesting series of talks on the different phases of the honey industry, for the first four days of Farmers’ Week. The conference was purely educational, considering in the lectures the habits, care and management of the honey bee, especially in its relation to farmer and orchardist.

FIFTH ANNUAL COUNTRY CHURCH CONFERENCE

On Tuesday was held the Fifth Annual Country Church Conference. This phase of rural life was considered from two standpoints, that of the country pastor and that of the layman. Both morning and afternoon sessions were given up to discussions by prominent men in both these groups. The seeming decline of the rural church resulted from the economic readjustment of our social life following the Civil War, influenced by the advent of inventions, new lands and easy transportation. To meet these conditions the church must broaden and recognize the tenant farmer as an important element. The minister should be a pastor as well as a preacher and the expense of such a man will come to be the great missionary problem of the city churches. For success there should be helpfulness and community interest, fewer churches and less sectarian feeling, a new standard of ethical teaching plus the theology and above all a spirit of brotherhood. The conference was in charge of the College, Rev. S. E. Persons, Cazenovia presiding, and it was said to be the largest and most enthusiastic ever held.

MEETING OF THE CORNELL DAIRY STUDENTS’ ASSOCIATION

The annual meeting of the Cornell Dairy Students’ Association was held at the College of Agriculture, Ithaca, N. Y., Wednesday, February 11th, 1914. The meeting was one of the most successful ever held in the history of the Association, and a larger number of the former students were present than ever before. Over 50 new names were added to the membership of the Association. An interesting program was given and all of the talks were followed by discussions which made the meeting particularly instructive.

The following officers were elected for the ensuing year: President, Loran Isbell, Oswego, N. Y.; secretary, Roy C. Clark, Norwood, N. Y.; treasurer, C. R. Owens, Freedom, N. Y.; college secretary, H. L. Ayers, New York.

The next annual meeting will be held at the College of Agriculture, Ithaca, N. Y., as a part of the Farmer’s Week program next year.

NEW YORK STATE DRAINAGE ASSOCIATION

The New York State Drainage Association held their fifth annual convention Monday and Tuesday of Farmers’ Week. President James Findley opened the convention with a short discussion on the importance of drainage in the state. Among the topics discussed were drainage problems of New York State, soil improvement by means of drainage, legal aspects, the proposed act for reclamation of land by drainage, drainage tile, traction ditching machines, drainage in relation to highways. The outside speakers were Arthur E. Bell, L. S. Phelps, W. L. Bonney, Hon. R. W. Sherman, Sanford T. Church and H. E. Cox.

The prize winners in the drainage competition were Mr. J. F. Van Schoonhoven, first; H. E. Cox, second; and H. B. Kean, third. The officers for 1914 were elected as follows: President, J. F. Van Schoonhoven; secretary, E. O. Fippin; treasurer, J. F. Barker.

FARM BOYS’ CONFERENCE

Special lectures were scheduled, Friday and Saturday, by many departments in the College as a part of the
Farm Boys’ Conference. This conference is a new thing in Farmers’ Week. The initiative was taken by the students of the college and a committee was put in charge with Mr. J. R. Teall, 1914, as chairman. Notices were sent to the granges of the counties near Tompkins County and the attendance was largely made up of delegations of farm boys from these counties. The aim of the work was to interest the boys in higher agricultural education, right methods of farming, and to give some practical suggestions which could be taken back to the farm. It is intended to make the conference a permanent feature of Farmers’ Week.

THE NEW YORK STATE FEDERATION OF FLORAL CLUBS

The New York State Federation of Floral Clubs held their third annual meeting on Wednesday and Thursday of Farmers’ Week. The sudden cold wave made it impossible for the commercial florists to attend in great numbers, but there were good delegations from Buffalo and Rochester.

The visiting florists had a very enjoyable time at the luncheon at Alberger’s on Wednesday. Among the speakers at the luncheon were President W. F. Kasting of Buffalo; Professor M. A. Blake, New Brunswick, N. J.; and Mr. Irwin Bertermann, Indianapolis, Ind. The program was carried out as published, and all of the subjects received favorable attention from the visitors. Those in attendance expressed themselves as pleased with the work of the Department and were enthusiastic in their support of the movement for increased appropriations. In the greenhouses there was an excellent trade exhibition of carnations, roses, flowering plants and florists’ supplies. Some class work in floral design and table decoration were on exhibition also.

HOME GARDEN DAY

On Friday special discussions were held in the Home Garden Day conferences. The number of gardens in the state outside of the farms is estimated at two million, so that with 200,000 more farm gardens the problem of instruction is a big one. The idea of a garden day was started last year by the Department of Horticulture, which then included vegetables and floriculture. This year fruits and landscape art were added. Mr. A. E. Wilkinson of the Vegetable Department was in charge of the work which consisted in short lectures on the general subjects of the garden followed by discussions on anything the audience wished to consider. An attempt was made to bring out the exact points the people wanted to know.

HOMEMAKERS’ CONFERENCE

The meetings of the Homemakers’ Conference were held throughout the week. Fifty lectures were given on such various subjects as the principles of cookery and dietetics, home nursing, sewing, art as applied to home life, sanitation, the home flower garden, the keeping of household accounts, and the study of house keeping from the historical side. The Home Economics Department was supplemented by lecturers from the College of Agriculture, Professor Moler of the Physics Department and Mrs. Gertrude S. Martin, Official Adviser of the Women of the University. Other speakers were Mrs. Carrie Chapman Catt, president of the International Suffrage Alliance, Dr. Anna Howard Shaw, president of the National Woman’s Suffrage Association and Mrs. Rose LeV. Morgan, lecturer and musician.

POTATO DAY

For the past two years the potato show has taken the place of the corn exhibit on the Farmers’ Week program. This year, as in the past, exhibits of potatoes were sent in by growers and seedsmen from all parts of the state. The exhibit was so arranged that competition was open to all farmers and seedsmen to exhibit. This afforded opportunity for visitors to see the types and varieties at present being grown in the state.
There were numerous charts giving potato statistics and an exhibit of potato carriers. This year there was an exhibit by the National Potato Association of America of 200 standard and seedling varieties, which was in charge of Professor William Stuart of the U. S. Department of Agriculture.

Potato Day occurred on Tuesday, February 10. Among the principal speakers were Prof. Sirrine, of Riverhead, Long Island; H. R. Talmage, president of the Long Island Potato Exchange, who enlightened growers on the need for better seed; Professor L. C. Corbett of the U. S. Department of Agriculture, who gave interesting data on the potato industry at the present time, and Professor Orton, of the U. S. Department of Agriculture who gave an interesting discussion of the serious potato diseases.

The potato growers of the state were organized at this conference into the New York State Potato Association. The officers elected were Daniel Dean, Nichols, president; T. A. Martin, Syracuse, vice-president; W. M. Peacock, Ithaca, secretary; Gilbert A. Prole, Batavia, treasurer. The object of the association is to promote the potato industry through the state. The main work outlined by the executive committee is to establish a better seed supply, to institute a system of inspection for market potatoes, to inaugurate seed potato associations and to standardize varieties. It is urged that potato growers in the state enroll as members. The membership fee is one dollar.

POULTRY ASSOCIATION CONFERENCE

At the conference of members of poultry associations and clubs of New York State, Mr. D. Lincoln Orr of Orr’s Mills, N. Y., presided in the absence of Mr. R. H. Essex, president of the American Poultry Association. The program consisted of an address by Mr. D. Lincoln Orr on “The Local Poultry Association as a Factor in the Community.”

Prof. J. C. Graham, head of the Poultry Department of the Massachusetts Agricultural College at Amherst, Mass., pointed out the types of extension activities of the Poultry Department of the College and the ways in which the poultry associations were cooperating in the work of Mr. Henry Trafford, a well known poultry editor and judge, discussed the “Methods of Cooperation with the Department of Poultry Husbandry.”

Prof. James E. Rice discussed each of the extension activities of the Departments of Poultry Husbandry as follows:
1. By conducting experiments with poultry.
2. By correspondence.
3. By special instruction in regular and winter courses.
4. By showing visitors the Poultry Department.
5. By personal assistance in selecting breeding pens.
6. By poultry reading course lessons.
7. By educational exhibits at the fairs and poultry shows.
8. By lectures and demonstrations at poultry association meetings and poultry shows.
10. By cooperative experiments with poultry.
11. By testing your fowls for vigor and egg production at the Cornell Breed Testing Station.

POULTRY PRODUCERS’ ASSOCIATION

The Poultry Department program for Thursday of Farmers’ Week was made up of talks on the better preparation and marketing of poultry products. The question of cooperative marketing was discussed. The results of the local poultry survey were presented by O. B. Kent, who showed the possibilities accruing from better care of birds kept within the city limits. Valuable talks were given by Walter S. Tuttle, a Buffalo wholesale distributor of poultry products; Mrs. A. W. Smith, president of the Housewives’ League of Ithaca; and Mr. Julius M. Clapp of the Ithaca Business Men’s Association.

(Continued on adv. page 24)
ANIMAL HUSBANDRY DEPARTMENT

Last year the students of the Round-Up Club carried on a very successful live stock show and horse parade. So much interest was shown in these events, both by the students who took part and by the spectators, that it was thought well to repeat the exhibition this year on a larger scale and with various improvements.

All the events this year took place on Thursday, February 12th, the parade being at 11 A. M., and the competitive show at 2 P. M. It was planned to have all the horses and cattle from the main barns in the parade, but due to the severity of the weather only the horses were entered. The animals in the competition were assigned to the students by lot and were trained and fitted by them. The judging of the animals was entirely with regard to condition of groom and attitude in the ring. The first prize in each class was a gold medal and the winners of second and third places were awarded ribbons. Three grand championship classes were formed of the winning animals in the horse, cattle and sheep classes. The prizes were rosettes of purple ribbon with suitable inscription.

The popularity which the show has attained should make it an established college activity.

Last fall eighteen grade colts were purchased about the vicinity of Ithaca and each colt was assigned to a student to train. The result of this training was exhibited during Farmers' Week in a competition in which Mr. M. S. Morton won the first prize of a medal for the best trained colt. All of the colts had been trained to ride, and drive both single and double and had been matched up as nearly as possible into nine teams. On Friday of the week there was an auction of the surplus animals, the proceeds of which reached above $5,000.

DAIRY INDUSTRY

The general exhibit of the Department of Dairy Industry was held in the Bacteriology Laboratory. On the first table was the bacteriology exhibit. This consisted of various kinds of culture media and materials for studying micro-organisms as well as pure cultures of several species. Several plates illustrating the various methods by which milk may be contaminated, were both interesting and instructive.

The most interesting part of the market milk exhibit was the graphic representation of the composition of a quart of milk. Sanitary milking stools small top pails and different kinds of bottle caps were also shown.
The most attractive table was the cheese and butter exhibit. The different kinds of cheeses were tastefully arranged and the different methods of packing and wrapping butter were shown. Around the walls were various charts pointing out data and interesting facts concerning the production of clean milk and the rank of various states in dairy products. The entire exhibit was tastefully arranged and attracted a large number of the Farmers’ Week guests.

The U. S. Bureaus of Public Health and Marine Service had a number of charts about the hookworm. Under microscopes were arranged mites which are parasitic on man and domestic animals.

THE EVERGREEN EXHIBITION

The Landscape Art Department staged an exhibit of evergreen shrubs in the headhouse of the Floriculture Greenhouses. Professor Curtis was in charge to explain to the visitors the decorative features and hardiness of the different specimens. The material for the exhibit was contributed by the Arnold Arboretum of Boston, Henry Hicks, ’92, of Westbury, Long Island, The New York Botanical Gardens, and The Rochester Parks. Local material also figured largely. The broad-leafed evergreens formed the largest part of the exhibit. There were over two hundred specimens in all.
FARM CROPS
The Department of Farm Crops also displayed some interesting mounts relative to the value of commercial fertilizer used as top-dressing on timothy meadow, the effect of different rates of nurse crop seeding on alfalfa and the distribution of root systems of combination grass and clover seeding. Demonstrations were conducted to show: the effects of different strengths of formalin on germination in the treatment of cereals as size, diversity and production on the labor income. Members of the department were on hand at all times to give help. A visit to the exhibition was a paying proposition.

FLORICULTURE
The flower show at Cornell University which was held in connection with Farmers' Week was one of the most successful ever held. The hall was attractively decorated with southern smilax and artificial pink roses by one for smuts, the detection of sulphur bleached oats and simple methods of testing seed corn and various forage crop seeds.

FARM MANAGEMENT
The farm management exhibit consisted of charts. These included summaries of successful farm accounts, inventories, cost of labor, machinery, cost of keeping a horse for one year, etc. Also the effect of different factors, such of the short course classes. A large number of varieties of potted plants and cut flowers were contributed by various commercial growers and this made a very valuable feature of the week. The hearty cooperation of the commercial people is very gratifying to the department of floriculture, for Ithaca is considerably outside the area of flower production in the state and it is difficult to acquaint the students with the newer varieties of cut flowers.
and with the materials used by retailers. The exhibit made by the Pen-nock-Meehan Co., of Philadelphia, was of special educational value.

THE FORESTRY EXHIBIT

The Forestry exhibit emphasized the practical phases of forestry as applicable to the farm woodlot in New York State. In the center of the room was a study of forest management illustrated by miniature forests. The study had especial reference to wind seeding, strip and group cutting, forest planting, care of the woodlot and county, town and village forests. A display of young trees of different ages suitable for forest planting proved a great attraction. The seeds of trees commonly planted in the United States were shown. Other features were charts and photographs illustrating different phases of forest management, wood specimens and foresters' tools. Demonstrations of the open tank method of treating fence posts were given. The Farmers' Week visitors made several trips to forest nurseries and plantations under the supervision of the faculty members.

HOME ECONOMICS

The exhibits in the laboratories attracted much attention. One of them showed the relative proportions of mineral matter, phosphorus, iron, and lime in some common foods, also the relative proportion of protein. In the sewing room was an exhibition of garments made by the short course students and in an adjoining room the complete outfit for a whole year of the clothing needed for a family of five where the entire income is $1,000.00. In the draughting room on the fourth floor were shown house plans and studies of interior decoration. In addition there were daily exhibits showing the approved methods of child feeding, different methods of cooking and serving meats, fancy breads and food cooked in a fireless cooker. In the recreation room was a collection of implements used in the days of our grandmothers for the preparation, spinning, and weaving of flax and wool. This is to become a part of a permanent historical collection which will be supplemented as opportunity offers by other articles of like nature, which show the development of the industries as related to woman's life and work in the past.

PLANT PHYSIOLOGY

The Farmers' Week exhibition of the Plant Physiology Department was both interesting and instructive. In addition to experiments illustrating such biological processes as transpiration and photosynthesis, considerable space was given to demonstrating the efficiency of legume inoculation. Cultures of bacilli, commercial preparations and literature dealing with the method of treatment were placed on the tables. One afternoon was set aside for explaining to visitors the meaning of the charts, diagrams and cultures illustrating this phase of agriculture which has of late received so much attention. One table was devoted to mushroom growing, which seemed to attract as much interest and as many queries from the farmers as any other part of the exhibition. The exhibition supplemented several lectures on the same subjects.

POULTRY HUSBANDRY

Exhibitions and displays given by the Department of Poultry Husbandry during Farmers' Week consisted of the following: an educational display of charts, diagrams, some models of ideal poultry farms, a display of lantern slides well shown in a transparency case, a display of poultry appliances such as feed hoppers, trap nests, gasoline heaters for colony houses, etc., an exhibition in the library of poultry books and magazines, an egg and dressed poultry exhibit, and a poultry show, accompanying which was a display of birds to illustrate selection for constitutional vigor and a choice pen for utility.

Aside from these exhibitions, displays, and demonstrations, there was offered during the week laboratory in-
struction in the following lines: killing, dry and scald picking of poultry, candling, grading and packing eggs, anatomy of the fowl and a study of the egg, and the selection and mating of breeding stock. There were given during the week thirty lectures, sixteen laboratories, four demonstrations, and three contests. In addition there were held three round-table discussions, one

attendance of 5,452 people which was distributed as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>4078</td>
</tr>
<tr>
<td>Poultry Show</td>
<td>708</td>
</tr>
<tr>
<td>Demonstrations</td>
<td>425</td>
</tr>
<tr>
<td>Laboratories</td>
<td>226</td>
</tr>
<tr>
<td>Contests</td>
<td>15</td>
</tr>
</tbody>
</table>

VEGETABLE GARDENING
One of the most interesting and in-

A PART OF THE POULTRY EXHIBIT.

Above: Curves showing the variations in the New York City market quotations of eggs for 1912, 1913 and 1914.

Below: A Transparency case with display of lantern slides illustrating various phases of the poultry industry.

afternoon was given to a meeting of poultry associations and clubs of New York State, and another afternoon to a business meeting of the Poultry Producers' Association of Ithaca. There was also held on Tuesday afternoon at five o'clock the annual reception and banquet of Poultry Students.

An information and registration bureau was maintained in the building and attendance was taken at all the lectures and laboratories. There were registered during the week a total

structural exhibits for Farmers' Week was that of the Vegetable Gardening Department. The work of the Winter Course Students was exhibited and showed what healthy and stocky plants can be grown in mid-winter, when given the proper conditions of soil, moisture, and temperature. There were exhibits of four different methods of soil sterilization to destroy pests and to make plant food more available; a large exhibit of different packages used for harvesting and marketing
vegetables, including the home hampers; and a model hotbed and cold-frame to demonstrate the way plants are grown and hardened in early spring before setting out in the open. A model Skinner irrigation outfit was on exhibition, showing how plants can be grown to perfection during such droughts as we experienced last summer. An experiment which is being conducted by the department illustrating the effect of bottom heat on the growth of lettuce aroused considerable interest. Different methods of fumigation for insect pests in the greenhouse were shown and explained. The entire exhibit was very educational to all of the many visitors who saw it, and brought out the most progressive and up-to-date methods of growing, harvesting and marketing vegetables at the present time.

THE WEED EXHIBITION
An exhibit of all the common weeds of the farm was given in the Agronomy Building. It was in charge of the Botanical Department, and some one was always in attendance to explain the occurrence of the plants and to urge the farmers to submit specimens for identification and investigation. A demonstration of the methods employed in the mounting of microscopic specimens formed a part of the exhibition.
THE FIRST INTERCOLLEGIATE FRUIT JUDGING CONTEST

Dudley Alleman '14

IN THE latter part of November the American Pomological Association held its thirty-third session in Washington, D. C. One of the most important parts of the meeting was a contest in the judging of apples by teams of three men each, representing eight universities from different parts of the country.

The team from Missouri State University was awarded the team honors, winning a handsome silver cup. The composite score of the victors was .9245, but even with this high standing they barely nosed out our Cornell team which was composed of H. C. Knandel, '14, V. B. Perry, Sp., and Dudley Alleman, '14, and which made a score of .9203. A silver medal, known as the Wilder Medal, the award for second place, is now in the possession of the Pomology Department.

It is interesting to note that the Iowa University team, which occupied third place, had a score of .8748, or nearly five per cent less than Cornell. The other teams followed in this order: Kentucky, West Virginia, Pennsylvania, Massachusetts and New Jersey.

Apples for the contest were collected from different parts of the country and consisted of seventeen of the best known commercial varieties.

Although it did not win first team honors, New York has much to be proud of in this contest; the West Virginia team, which finished fifth was coached by two Cornell men; Professor Beach formerly of the Geneva Station directed the Iowa team, and the highest individual score together with the President's Purse was awarded to Dudley Alleman, Cornell, '14.

The following abstract from a letter received by a member of the team indicates the sentiment of the society toward the contest and the contestants.

"Permit me personally to thank you, and through you, your coach and teammates, for the cordial good-will and support that was rendered the movement for a system of uniform national score cards; and, incidentally a keener appreciation of our pomological interests, with its attendant stimulus to collegiate training in this subject.

The event has been one, the vast influence of which, you and I cannot hope to fully realize at this time; nor, can the older members of the society hope to see the full fruitage of the efforts expended in this first contest. Quite enough is it, however, for us to witness the flood of good promises for future effort, while most of all we value the fact that this society has become directly interested in and associated with the work of a host of bright young men who are to be the large factors in the nation's pomology of the future."

Sincerely yours,
E. R. Lake.
Sec. of American Pomological Ass'n.

The determination of the standing of the contestants was made on a basis of a third for the correct identification of the varieties, a third for the correct placing of the plates of the different varieties, and a third for the scoring of the individual specimens, with the jury score as the basic standard.

The jury consisted of Professor C. P. Close of Maryland, Professor W. T. Macoun of Ontario, Canada, and Professor L. R. Taft of Michigan.

All the teams were warm in their appreciation of the efforts on the part of the association and the jury to make the contest a success, and a success it certainly was from every viewpoint.

The standing of the Cornell team is due to the splendid and vigorous coaching of Assistant Professor Halsey B. Knapp, and whatever success was attained in the contest is the result of his work before the contest and the

Continued on adv. page 21
THE FIFTH ANNUAL EASTMAN STAGE

By H. M. Stanley, '15

The Fifth Annual Eastman Stage in Public Speaking was held in the New Auditorium of the Agricultural College on Friday evening, February 13, 1914. The Auditorium made an excellent place for this event since every one of the Farmers' Week guests, faculty and students present was assured of a place from which he could hear and see the speakers.

So impressed by the result that he then and there decided to establish this prize. Consequently an annual prize of $100 has been offered by him for public speaking on country life subjects. The speech of an agricultural student usually comes out of his own heart and from his own thinking, often while at the plow. The great orators are few, but it is possible for any young

Dr. Andrew D. White was the presiding officer of the affair and it was really a great pleasure to the many who know him to see Dr. White on the stage of the Auditorium in the construction of which he has been so closely interested.

A program was offered besides the six speeches of the evening. After the singing of the Alma Mater by the Glee Club, Dr. White made a brief explanation and remarks concerning the Eastman Stage for Public Speaking.

"Mr. Eastman was present at the first competition, the prize for which was raised by a subscription. He was man who will, to become an effective and influential public speaker in his neighborhood and perhaps in the state at large."

The first speaker of the evening was R. F. Steve, Special, who had for his topic, "The Function of the Agricultural College." He showed that it was the object of the college to develop the conditions in the rural districts directly through extension work and indirectly by training the student in a newer and better agriculture.

D. S. Hatch, 1915, spoke of "The Mission Call of the Open Country," in which he explained the need of
young men and young women accepting the call of the open country and the necessity of their aid toward the betterment of the conditions there, in the schools, in politics and in the homes.

B. W. Shaper, 1914, the third speaker, had for his topic “The Country Church.” His speech is printed below.

The next speech, “A Sense of Civic Duty,” was given by E. G. Perl, 1914. Some very plain facts were brought out by Mr. Perl, by which he showed the present lack of interest in our civic duties. He said that the only time the abandoned farm was justifiable was on election day, when every individual should be stirred to his own civic duty in order to make our conditions what they should be.

J. J. Swift, 1914, spoke next on the subject, “More College Farmers.” Mr. Swift enumerated some of the important rural problems of the day and showed how it is the lack of individualism to-day that is causing many of the rural problems. These problems should be solved by turning more college farmers into the rural communities so that their influence may be felt.

The last speaker T. B. Charles, 1915, in speaking on “The Parents’ Responsibility” brought out the fact that the rural school is one of the most fundamental of the present day rural problems.

Several selections were given by the Agricultural Glee and Mandolin Clubs and by the “Agricultural Faculty Male Quartet” each of which was encored several times. After a brief intermission, Mr. W. H. Vary, who with Professor J. A. Winans and Mr. J. Van Wagenen acted as judges, announced that B. W. Shaper and J. J. Swift had won the first and second prizes. The decision was very difficult to make because of the high quality of all the speeches.

THE RURAL CHURCH

B. W. Shaper, ’14
First Prize Eastman Speech

The picture of the life of a rural community might be painted in many different colors. It might portray conditions of prosperity, good crop productions, it might indicate the advancement in modern times, due to the introduction of better systems of culture and management. We might see well kept orchards along both sides of the highway, trees in good condition, but few scraggly or dead limbs, fences in good repair, and we might note the results of generally well directed efforts. This picture might, on the other hand, show a less fortunate district. We might see farm buildings in a condition of decay, the scattering of implements and the general appearance might not indicate great painstaking or prosperity, the roads, leading to and from this district might be in a run down condition, perhaps hopelessly so. But whatever picture you may make of the life of a rural community, you must always have for the background, for the ground-color, an institution that is entirely bound up in the existence and happiness of the people, the institution that stands for Him, Our Maker, who gave us the opportunity to enjoy these earthly things; this institution is the Country Church.

The rural church went along with the earliest settlers, the pioneers. It came with the first people to settle our great country, it stayed with them, grew with them, and helped them. As our land was developed, and as civilization pushed northward, southward, and westward, the increasing calls for church workers and leaders were answered by many noble men who came and laid down their lives in order to carry out God’s work in this new country.
The foundation of the rural Church was built upon solid ground. The hearts of the people were with it, they worked for it, stood back of it, believed in it. The quality of the characters of those men, whose struggles and trials marked the early history of our nation, was such that it insured the life and advancement of the church, which seemed to play such an important part in their lives.

What have we now? Have we lived up to the inheritance which we have received, generation after generation, from our forefathers? Does the country church mean to us today what it meant to those staunch and noble hearts, whose very blood and lives built and established it for us? How often do we find the same time-worn church building, with its single room, still in use! In many places, there seems to be no demand for a new and larger meeting-place, if we happen in at a Sunday morning service, we are impressed by the fact that the congregation is even growing smaller. There are many country churches which no longer hold regular weekly meetings; services are held monthly. Some churches have even fewer meetings, and we find many churches whose doors are not even swung on their hinges from one Christmas to another.

A great number of our country churches have had the same experience as the Presbyterian Church at Clare, St. Lawrence County. They were built by the early settlers and prospered, but many of the families who were interested in the churches at that time, have moved away and the churches have fallen into disuse. It is said that the church at Clare has outlived its usefulness, and since it is only a bill of expense, the church property is to be sold and the funds are to be diverted to other fields.

In some communities the struggle seems to be more fruitful, services are held, the church is a live issue but do you think that it all that it should be? In only too many cases we have a lack of community interest, congregations are too small, the church is not supported, and because of this seeming condition of decay, newcomers into the region get a wrong impression, and, as a result, probably stay away.

If the population is somewhat centered, and there seem to be resources available, what do we generally do? We have three or four churches, these generally in bitter warfare, where only one, or possibly two, could be well supported by the community.

The whole situation is a complex and delicate one. Perhaps, as a nation, we are not ready for the complete solution. Many districts, however, have made great progress in coping with this rural church problem. To illustrate best what I think is the means of filling the breach, let me mention the life of a man, who, after graduating from Strassburg as a Lutheran minister, began his great life of service in the Vosges Hills of France, nine years before our revolutionary war. This man, John Frederick Oberlin, lived such a fruitful and beautiful life that his influence was felt, not only throughout those hills on the border line, but over the whole continent. One of the largest colleges of our own middle west proudly bears Oberlin's name—it is dedicated to his ideal of service, yet this man spent his whole life in those far-off hills of France. Before he died, at the age of eighty-six, he had seen this segregated mountain district, Ban-de-la-Roche, a region with no developed roads to open up traffic, no schools, nor churches, and the lowest type of civilization, rise, slowly to be sure, but steadily, and through his efforts as minister and teacher, assume the shape of a highly developed farming district. Through Oberlin's efforts, this little hamlet built up moral and intellectual standards so sound and strong that it stands today as a most prosperous and flourishing country community.

In bringing the members of his flock together, did this man teach sect or creed? Did he ask if a man be Episcopalian, Baptist, Methodist, or what not? Did Oberlin waste his precious time in the teachings of the theories of different beliefs. No! He taught to all, the same, that for which all in
their own beliefs stood and worked—the love and the teachings and the service of our Master. The love of God was the inspiration of Oberlin's life, and this was the central thought in his preaching.

In this illustration is intimated the explanation of why our country churches are weak. We lay too much emphasis on petty questions of sect and differences in beliefs, and we overlook the fact that the great truths, underlying our different beliefs, are identical. Oberlin's congregation was made up of men and women of different creeds, who saw the necessity of cooperation in their efforts to make their church a success. They realized that their small numbers and resources would not permit of each sect having its own church.

Insomuch as it is vital to the life of our country church, would it not be better for us all, where possible, to cooperate in some way, bring the different denominations of our community together so that their united efforts could go toward the better support of a preacher and a successful church? This is already being done in some districts. In Proctor, Vermont, a Union Church has been conducted since 1890, the Protestant sects of the township have united upon a common platform of belief and these union services have been very successful. In Castleton, Vermont, there is a Federated Church in which the different sects retain their denominational identity, but unite for services and worship. The DuPage Church, six miles from Naperville, Illinois, is a fine example of a country church where the united efforts of the whole community have made it a success.

The DuPage Church has become the social center of the whole countryside. It has risen in ten years from a sadly neglected church which actually had to go into debt a decade ago to pay the last minister's salary. No one had united with the church for five years. Finally the people came to realize that their indifferent attitude meant failure to their church. They called a minister and they determined to cooperate with him in an effort to build up their church. If you were to visit this congregation today, you would be impressed by the results which they have accomplished. The membership of the church has been increased from 80 to 163 and the Sunday school numbers over 300. Through social gatherings, the church had brought the country people together and a new community spirit and harmony have sprung up. The main reasons why there has not been a tendency of late for these farmers to sell or rent and move to town are the orderly, peace loving and enterprising community which surrounds the church and the lot of clean, sturdy and capable young people that are growing up in the church.

Let us remember that our rural church is vital to the standards and well-being of our country community. At present, except in a few instances, our rural church is in direct need of help; it is in a state of decay. Further, we, as citizens of our community, are called upon to assume the responsibility of continuing the life of our country church. We can not depend upon any outside influence. We, who live in the community, must decide whether our rural church is going to live; the church, which meant so much to those who have gone before; the church, which they have entrusted to our keeping.

Are we ready to do our part; can we overlook a few petty differences of belief, and still not weaken our faith as Christians? Will we remember that our united efforts mean success to our rural church, and that by helping in this movement of reconstruction, we are doing our best to serve our Master?

Let us resolve to be faithful, stand by and do our duty. Let us not wait to be called upon, but let us take an active part in making our community ready to solve this rural church problem. Let us put ourselves to the task of providing the foundation that is to be relaid, the structure upon which we can erect that church, that will call all people together to worship, and seek communion with Our Father.
OF TEN in talking to friends in the North I find they speak of Florida much as one would speak of a city or small county. It is likewise evident from a large number of the letters we receive that few people realize how large Florida really is. To go from Pensacola, the westernmost city to Key West, the southernmost city in the State, one has to traverse nine hundred miles of railroad. It is also a surprise to people to find that we have between 1000 and 1200 miles of seacoast, giving us a huge stretch of country adjacent to salt water.

Another fact that seems to be overlooked is that Florida has a very substantial agriculture. During the year 1913, for instance, the corn crop of Florida was second only to the citrus crop, and yet I dare say that not one person out of a thousand north of the Ohio River could answer definitely whether corn was ever grown as a real farm crop in Florida. The fact that Florida is noted for producing citrus fruits and tropical fruits accounts for this.

Much trucking is done at a time of the year when the weather is too cold in more northern States to permit this, and consequently a great deal of publicity results from these winter truck crops being shipped north from Florida. These winter crops bring a large amount of money to the State annually, affording employment to a large number of laborers, and very frequently taxing the carrying power of the railroads to the limit.

Citrus growing is however, the one industry that has been carried to the fullest degree of perfection in the State. To a large extent it has been reduced to a rule-of-thumb method so that all one has to do is to use good business judgment in making an investment. There is no more difficulty or uncertainty about making a success of citrus growing in Florida than there is of making a success of a cotton factory, a machine shop, or an electric works. There is, of course, abundant room for good judgment and personal ingenuity.

NORTH FLORIDA THE TRANSITION REGION

The region lying between St. Augustine on the east and Pensacola on the west may be spoken of as North Florida. This is a transitional region between sub-tropical Florida and the more temperate regions to the northward. Here we find the cotton field, the corn field and general farming predominating, with a few citrus groves scattered among them in favored regions where less freezing occurs. The elevation of this region does not exceed 310 feet. There is a decided variation in the amount of cold due to unknown factors. Throughout this region large acreages of pecan orchards are planted. The Satsuma orange, the most hardy of our citrus fruits, grows here to its greatest perfection. Were there no warmer portions of Florida a much larger proportion of this area would be used for the hardier citrus fruits.

CENTRAL FLORIDA THE BEGINNING OF THE CITRUS AREAS

Beginning with the isthmus part of the State and extending down well into the peninsula we find an area that was formerly devoted in great part to citrus growing. This was where citrus groves were most abundant before the disastrous freezes of '94 and '95. In this region the first extensive orchards were planted, and there can still be found some of the groves that survived those freezes, and are now considered valuable property. Some fine groves are to be found on the east side of the St. Johns River, stretching northward almost to Jacksonville. Central
Florida, however, has been given over largely to trucking and general farming. As winter truck crops we find mainly hardy vegetables, such as cabbage, lettuce, celery, and cauliflower. For late spring markets tender vegetables are grown. In this region too, we find frequently that though the general farmer does some trucking as a side issue, yet he carries on general farming to maintain himself and his family. In some localities citrus growing predominates to such an extent as to exclude almost all trucking or general farming, while in others trucking predominates so much as to cause people to almost lose sight of citrus growing and general farming. It is however, unusual for the general farmer to discard all idea of raising fruit or truck.

**SOUTH FLORIDA THE TROPICAL FRUIT REGION**

Beginning at about the latitude of Tampa (28 degrees) we find a region given over almost entirely to fruit growing and the raising of truck crops for the early spring market and in the southward, to the growing of tender vegetables for the midwinter market. While general farmers are found in this region they are exceptions. In South Florida there still occur large areas used as stock ranges. These, however, are being crowded further back as the land becomes more valuable and is taken up for intensive forms of agriculture.

**OPPORTUNITIES FOR COLLEGE GRADUATES**

Among the many persons who have emigrated to the State are college graduates who have taken up their work here as professional men or as agriculturists. In nearly every case where a thorough course has been taken in the agricultural college, the graduate will be found making good, one way or another. Of course no amount of college exercises will endow anyone with that quality known as common-sense. It seems however, that a larger percentage of these men take a common-sense view of life and the necessity for showing that they are really capable of accomplishing something, than one will find almost anywhere else. Scores of college graduates not only with the bachelor's degree but also with higher degrees, have come to the State and started in with the severest kind of labor, such as grubbing stumps. The college graduate who has the grit to dig stumps if nothing more attractive offers itself, will very promptly find that he will not be permitted to waste his time and energy in that direction, but will soon be "fired" from his position into something a great deal better. The point I want to make, is that a large number of our agricultural college graduates do not expect their employer to take their word for it that they will make good, but are ready to take hold of anything and show that they can make good in whatever positions they may be placed.

**GREAT DEMAND FOR COLLEGE MEN**

The population of Florida during the last census decade increased 42 per cent. This is a larger increase than occurred anywhere east of the Mississippi in the same decade. Naturally the largest influx to the State consisted of men who were making investments, as the possibilities are superior to those occurring in other States. These people call for a large amount of help, either in the form of labor or as managers, superintendents and partners. Since there could be no possibility of developing a sufficient amount of this class of help locally, it must be brought in from outside. A certain amount of local experience is necessary. The college graduate who has served his apprenticeship at digging stumps and has graduated into handling a squad of a half dozen men, or having charge of a few acres of land is quickly entrusted with the handling of a larger undertaking.

Several of our more progressive counties are also hiring men of this type to serve in the capacity of County

*Continued on adv. page 14*
A. W. Wilson, ’15, W. E. Monson, ’15, and L. E. Gubb, ’16, have been elected to our business staff. The COUNTRYMAN takes pleasure in announcing the election of Miss K. H. Mills to the Editorial Staff. Hereafter an Associate Editor is to be chosen each year to represent Frigga Fylge, the club composed of the young ladies of the college. The Associate Editor shall be chosen by a committee consisting of the retiring Associate Editor, Miss Rose, Miss Van Rensselaer, the president of Frigga Fylge and the Editor of the COUNTRYMAN, this election to be ratified by the COUNTRYMAN board.

We have long felt that the women of the college should be represented on the COUNTRYMAN, since a student publication should represent all the students. We also wish to keep in touch with the science of home economics which is making such an important contribution to rural civilization.

A competition for positions as Associate Editors has been started. All members of the Freshman and Sophomore classes are eligible and it is not too late to start now. The competition ends so that it will not interfere with the final examinations in June.

A new plan is to be tried. The competitors will be asked to report on certain days of the week, these days to be arranged for the convenience of the competitors. All competitors will be asked to report at certain busy periods during the month.

We urge anyone who is interested in this competition to talk it over with the board members. The Editor’s hours are from nine to ten daily.

Perhaps our readers will be interested to know the point of view of some of the farmers who visited us this year. Mr. C. Owen Carman of Trumansburg, N.Y., writes from the standpoint of an animal breeder:

“There is a tendency among the Eastern breeders of farm animals to try to maintain the quality of their flocks and herds by the purchase of well bred females. While this may sometimes be necessary, the real improvement of all breeds of farm animals must come through the use of prepotent sires and the careful selection of the breeding herd. No better illustration of the possibilities of grading up in this manner is given the New York farmer than that of the College Holstein herd. The present herd with an average production of about twice
that of the foundation cow 'Glista' and containing two 30 lb. cows gives a demonstration of practical breeding that is of much value to the animal industry of the state.

To the Farmers' Week visitor who is interested in the improvement of farm animals the careful inspection of this herd together with the records of past and present production of the animals cannot help being a stimulus to more careful selection of breeding stock and more care in the keeping of individual records.

And what breeder of domestic animals could attend Farmers' Week without catching a little of the Cornell spirit and the Cornell enthusiasm for better work and better farm animals?"

Mr. W. L. Bonney of Batavia, N. Y. writes from the standpoint of a vegetable grower and an official in the State Vegetable Growers' Association.

"In answering this question let me first take this opportunity to publicly thank the College of Agriculture on behalf of the vegetable growers of the state for the splendid and diversified program and for the courtesy extended by all connected with the college.

What the farmer gets from Farmers' Week just depends on his capacity for 'absorption' and his ability and willingness to put in practice the many helpful ideas that will apply in his particular case. From my viewpoint Farmers' Week affords an opportunity to get a liberal education in about four days and it is growing more practical and comprehensive every year."

Mr. F. J. Swift of Middleport, N. Y. is a successful fruit grower.

"All visitors were very much impressed by the great courtesy extended to them by the students. Not only would they answer all questions very cheerfully but they would travel a goodly distance out of their way in order to put us on the right track. The whole thought with them seemed to be, what can we do to make the week pleasant and profitable for our visiting friends.

The benefits to be derived from the lectures, etc., given in the different departments not only to the farmer but to the farmer's wife can hardly be expressed in words. The expression which I heard on every hand was 'This is the greatest school that I ever attended and I shall try to arrange my business so as to attend annually the meetings during the years to come.' I wish to speak in particular of the wonderful lectures which I listened to in the Home Economics Building and also of the very successful and satisfactory manner in which the meals were served. In conclusion I wish to say I never spent a more pleasant and profitable week and I expect and hope to attend the yearly meetings as they occur in the future."

We are glad to note that M. C. Burritt is giving a course in Rural Organization. Such a course is needed in our curriculum. One hour each week is devoted to discussion of the history, development, methods, financing, accomplishments and other details of the farm bureaus as they exemplify rural organization. This course will be of practical value to the student in that every one is to work out some special problem of one county. Moreover, the student will have the benefit of the association with a man who is particularly fitted to give such a course.
FACULTY

PROFESSOR GEORGE A. EVERETT

The Extension Department has been requested from time to time to assist in organizing subject matter so that it might be logically arranged and finally effectively expressed. To properly do this requires a study of the principles of argumentation, the use of demonstration material, the manipulation of lantern slides and the effective use of spoken words. Not alone was this demand from undergraduates, but from practical farmers in the state. Some of these men found themselves ineffective in presiding at meetings and unable to express themselves to the best advantage. They also did not have facilities to secure adequate material for their speeches and debates on important questions of the day and turned to the Extension Department for assistance. To completely cooperate with these persons and to effectively assist in wisely guiding thought on the important country life questions, the Extension Department secured the services of Professor G. A. Everett, '99, A. B., and '01, LL.B., to take charge of this work.

Professor Everett was born on a farm near the town of Lawrence, Saint Lawrence County, N. Y., on April 18, 1875. His boyhood days were spent in a district school at Morris Forks, N. Y., and during vacations he worked on his father's farm. After preparing at the Potsdam Normal School, he entered Cornell in September, 1895, with a state scholarship. He took a classical course in the College of Arts and Sciences and specialized in Greek. His work as a student was very excellent indeed. Giving some attention to oratory, he spoke on the '86 Memorial Stage in his Junior year and on the Woodford Stage in his Senior year. In 1899, he was given his A.B. degree and in 1901 his LL.B. degree.

For two years after graduation he assisted in the Department of Oratory. Leaving here, he practiced law in Potsdam, N. Y., for a short time and then accepted a position as instructor of public speaking at the Lawrenceville, N. J., Preparatory School. After a very successful year he returned to Cornell as an Instructor in the Department of Oratory. In 1906 he was elected Assistant Professor. A year later he left Cornell to take up work in the Flushing, Long Island, High School as a teacher of English. He remained at this institution for three years. But as he preferred other work to teaching in a high school, during the latter part of 1909 he returned to North Lawrence, N. Y., where he engaged temporarily in business.

Again in April, 1910, he came back to Cornell as an Assistant Professor in the Oratory Department and finally in September, 1913, he entered the Extension Department of the College of Agriculture, as Assistant Professor in charge of the instruction work. Here we hope he is enjoying his work, for the students are doing their best to make his work so pleasant for him that he will stay here permanently.

Professor Everett is a born teacher and although he has been in the College of Agriculture a very short time, he has already accomplished excellent results and has won a secure place in the hearts of his students. His success in advising the students in their dramatic productions and in their speaking contests has been very marked. His hobby, it might be said, is to bring out the individuality of each student and his success lies in the hold he gets on them, developing in each one a manner of speaking that is very natural and full of sincerity and earnestness. As toastmaster of the Agricultural banquet, Professor Everett demonstrated why the Extension Department selected him. If we had the power we would make him the perennial toastmaster of this affair.
A Directory of Student Activities

Crew—Captain, M. F. Abell, '14.
Baseball—Captain, F. E. Rogers, '14; Manager, R. C. Shoemaker, '14.
Soccer football—Captain, R. H. Cross, '14; Manager, A. G. Landres, '16.
Basketball—Captain, R. F. Steve, '14; Manager, T. M. Gray, '14.
Agricultural Association—President, F. E. Rogers, '14; Secretary, Miss Mary Doty, '14.
Senior Class—President, L. E. Card, '14; Secretary, J. G. Wilkin, '14.
Junior Class—President, E. C. Heinsohn, '15; Secretary, A. W. Wilson, '16.
Sophomore Class—President, Stuart Wilson, '16; Secretary, Miss Ruth Smith, '16.
Freshman Class—President, A. W. Richards, Special; Secretary, D. C. Thompson, '17.
Student Loan Fund—Chairman, R. C. Shoemaker, '14.
Student Honor Committee—Chairman, E. S. Bird, '14.

* * *

The Department of Pomology has leased eight acres of land about a mile and a half from Port Byron, for five years during which time it will try an experiment in renewal. The problem is to find out which is the better method —to cut out half the trees, thus giving to those remaining more room, or to cut them all back to such a degree that they will require less growing room. The dehorning method is considered the better in this case. The orchard is 47 years old and the trees have been allowed to grow tall. Thus, the apples exert a great leverage on the overhanging limbs and if the trees were cut out and the rest allowed to bear to their full capacity, the weight of the apples would probably tear the trees to pieces.

At the same time the department is going to try a similar experiment in the orchard of Mr. C. W. Barker, a former Cornell student. Mr. Barker recently bought a young and thrifty orchard in which the trees are planted too close together.

W. H. Chandler is also carrying on an experiment in pruning, in an orchard along the lake shore, in which he is endeavoring to determine the relation between leaf surface and the size of the fruit. The theory is that when water supply to the tree is low, the leaves by their denser sap solution will draw the water from the fruit by osmotic power thus retarding the growth and size of the fruit. It will also be determined whether this correlation is the same along the lake shore where the humidity is high and the evaporation low, as it is farther inland where evaporation is higher. In this way it will be attempted to fix another fundamental fact in the care and handling of fruit trees.

* * *

Just after the completion of the Agricultural auditorium, there arose a lot of criticism concerning its acoustics. It was claimed that it would be almost impossible to hear speakers or enjoy music in it because the period of vibration was too long. In order to prove...
that these criticisms were far-fetched a practical test was made on January 16. It consisted of songs by the Glee Club and speeches by Acting Director Stocking and B. W. Shaper, '14. The audience seemed unanimous in the decision that the acoustics were all that could be asked for. The speeches could be heard distinctly in all parts of the auditorium although the speakers made no particular effort to talk loudly. Professor H. E. Dann of the department of Music stated that the singing came out clearer and more distinctly than in any other hall in Ithaca. It was his opinion that when the organ and the rest of the furnishings were all in, that the acoustics would be nearly perfect. Professor G. A. Everett of the Extension department also praised it highly for speaking purposes.

* * *

The Dansant benefit dance of the Frigga Fylge Club which was held in the auditorium of the Home Economics Building from 3:30 P. M. to 6:30 P. M. on January 17 was a great success. The proceeds amounted to more than a hundred dollars which will go towards the Girls' clubhouse. This with the money which has already been made is expected to complete the amount which is necessary to furnish their part of the contribution. During the course of the dance five to six hundred persons were on the floor. The patronesses of the dance were: Mrs. Jacob Gould Schurman, Mrs. Andrew D. White, Mrs. E. M. Treman, Mrs. L. A. Fuertes, Mrs. J. R. S. Sterett, Miss G. H. Nye, Miss Martha Van Rensselaer and Miss Flora Rose.

The candy sale conducted by the Dom Econ girls during Farmers' Week was a tremendous success, and raised a goodly amount to add to the money already obtained towards the clubhouse fund.

* * *

Cornell professors took quite an important part in the proceedings of the annual meeting of the New York State Agricultural Society held in Albany at the Capitol on Tuesday and Wednes-

day, January 20 and 21, 1914. The meeting was held in cooperation with the State Department of Agriculture, with headquarters at the Ten Eyck Hotel.

On Tuesday evening, Professor C. H. Tuck of the Extension department lectured on "Lessons in Agriculture from the Far East." The lecture was illustrated with lantern slides. Professor E. O. Fippin of Soil Technology, and Professor B. B. Robb of the Rural Engineering Department and also drainage engineer of the State Department of Agriculture discussed drainage problems on Wednesday morning.

Former Director Liberty Hyde Bailey gave the report of the committee on Agricultural Education Wednesday afternoon. Dr. Bailey was also elected the President of the Association but declined the honor.

Dr. Bailey was again appointed chairman of the committee on agricultural education for the coming year, and Professor E. O. Fippin was appointed on the Drainage committee.

* * *

The departments of Farm Crops, Agricultural Chemistry, and Plant Breeding are sending out a demonstration train on the Lehigh Valley route this month. It will be similar to the one sent out by Plant Breeding last November. No lectures will be given, the object being to demonstrate methods and results. Each department has appointed one man to be in charge of the exhibit and to conduct visitors through the train.

* * *

Much interest was evinced at the first lecture in the course in Eugenics given the second term under the auspices of the Cornell Eugenics Club. Professor A. W. Gilbert of the plant breeding department gave the first lecture of the series which was an introductory survey of the course. The room in which the lectures are being held is Goldwin Smith A. For Professor Gilbert's lecture, the room

Continued on adv. page 14
FORMER STUDENTS

E. L. D. SEYMOUR.

'09, B.S.A.—The Students' Association of the New York State College of Agriculture was unfortunate in losing A. R. Mann, '04, their former secretary. But it is very fortunate in having elected to succeed Professor Mann in this important office so efficient a man as E. L. D. Seymour. In the course of his student days, Seymour was very prominent in many lines and was one of the real "live wires" of the University. He started to hold important offices in his sophomore year when he was elected Associate Editor of the CORNELL COUNTRYMAN, and was a member of his class crew and the varsity four oared crew. Some of the more important things in his college record are: Editor of the COUNTRYMAN in his junior and senior years, member of the Committee on Student Honor, Agricultural Stage, agricultural soccer team, and junior varsity crew in his Junior year, and in his last year—General Committee, varsity soccer team, agricultural crew man-
ger, 1909 Class Book Board, Sphinx Head, and the Senior agricultural honor society—Hebs-sa. In addition to the above Seymour was elected secretary and treasurer for life of the 1909 agricultural class. He is a member of the Alpha Zeta fraternity.

Though Seymour has not been out of college for any great length of time he has continued to keep busy. Graduating in 1909, he entered upon an "elective" course to obtain practical farm experience and worked on farms in Massachusetts and Maine. Then by traveling and study, he became conversant with agricultural conditions in New England. In February, 1910, he became one of the assistant superintendents on the Turner Hill Farm at Ipswich, Mass., where he remained till November. Then he undertook some special editorial work for the Garden Magazine and also contributed to the Country Life magazine. In September, 1911, he took charge of the new agricultural department in the World's Work. Since 1911 he has continued to be associated with these magazines and in the spring of last year took charge of the livestock and agricultural department of Country Life.

It is requested that in the future all communications in regard to the Association be addressed to Mr. E. L. D. Seymour at Garden City, Long Island, care of the Country Life Press.

'02, B.S.A., '05, M.S.A.—George Hosford is manager of the San Dimas Lemon Growers' Association at San Dimas, California. Hosford has charge of the picking and marketing of the fruit and he has shown great ability in his work. He is very popular with the members of the Association because he has markedly decreased the loss in handling and storing the lemons and thereby the returns to the growers have been much increased. Hosford is living on his own lemon grove near San Dimas.

'02, Sp.—Floyd S. Barlow, who for the past few years was the efficient
The Cornell Countryman

manager of a large farm in Delaware, is now County Agent for Otsego County. For the last few months that the Tribune Farmer was published Barlow was associate editor, but, when M. C. Burritt, '08, B.S.A., resigned the editorship of this paper, the Tribune Farmer was absorbed by the Rural New Yorker and Barlow severed his connection with the publication so he could take up the county agent work.

'03, Sp.—D. E. Carley is breeding pure bred Holstein cattle on a farm near Manlius, N. Y. Carley reports that he is having success in raising alfalfa.

'04, B.S.A., '04, Sp.—M. C. van Loben Sels is managing a big ranch at Vorden on the Sacramento delta lands, growing asparagus, alfalfa and similar crops. Mrs. van Loben Sels was Helen Elsworth, one of the first girls to take the agricultural course at Cornell.

'04, B.S.A. Archie Stone, who for several years was manager of Willowmoor Farm at Redmond, Wash., is now in charge of the St. Croix Farm at Johnsville, N. Y.

'07, B.S.A.—John Goldhaar received his M.S. degree from New York University last June and is now teaching manual training in the New York City public schools.

'08, B.S.A.—Eroy H. Anderson was married to Miss Mary Waterbury on January 17th at Sodus, N. Y. Mr. Anderson is now in charge of farm management field studies and demonstrations which are being carried on from his headquarters at Lockport, N. Y. This work is being carried on under the auspices of the College of Agriculture, the state and federal departments of agriculture, Niagara County Bureau, and the N. Y. C. & H. R. R. R. cooperating.

'08, W. P.—James G. K. Duer is now located on his farm of 35 acres at Port Jefferson, Long Island. Before entering Cornell, Duer spent six years as a bank clerk but the call of the land was too strong, so after getting some practical farm experience, he acquired a farm of his own. He is specializing in fresh eggs, which are delivered direct to the consumer. Duer is prominently connected with the Grange and is president of the Long Island Branch of the Students' Association.

'10, Sp.—Floyd C. Tunison was married to Miss Mable L. Gillette on September 10th, at the bride's home in Elmira, N. Y. They were attended by Miss Jane W. Gillette, sister of the bride, and L. G. Howell, '14. In the spring Mr. and Mrs. Tunison will be at home at their farm near Interlaken, N. Y.

'13, Ph.D.—R. E. Stone is lecturer in the Department of Botany of the Ontario Agricultural College at Guelph, Ontario and has charge of the work in Cryptogamic Botany and Histology.

'12, B.S.A., '13, M.A.—J. C. Faure is in the Department of Agriculture, Union of South Africa. Since January 1914, he has been stationed at Bloemfontein, Orange Free State, as Entomologist for that Province. It is interesting to note that Faure is but one of many Cornell men that hold important positions in South Africa and the Department of Entomology has furnished such men as C. B. Simpson, '99, B.S., C. W. Howard, William Moore, David Gunn, and many more for this work. At present there are three English students sent here by the English Government who are engaged in graduate work. In his senior year Faure was president of the Cosmopolitan Club.

'12, B.S.A.—Eugene C. Auchter is assistant horticulturist of the College of Agriculture and the Experiment Station at West Virginia University which is situated at Morgantown, W. Va.

'12, B.S.A.—Announcements have been received of the marriage of Marion Dart Plumb to Claude Edward Emmons, on Thursday, October 9th, 1913. Mr. and Mrs. Emmons are at home at the Hotel La Tourette, Bayonne, N. J.

'13, B.S.A.—Leroy H. Facer is located on his own farm of 26 acres near Geneva where he is planning to engage in the poultry business on a large scale.

Continued on adv. page 16
Natco Imperishable Silo standing after tornado had destroyed barn. See letter below.

NATIONAL FIRE PROOFING Co.,
GALVA, ILL., April 10, 1913.

Gentlemen:

Having decided about a year ago to build a silo, I chose your Natco Imperishable because I believed it would be permanent. The silo was located just outside of a new circular barn. On March 23, 1913, a tornado took the roof off of the barn, took the windmill down and wrecked other smaller buildings and played havoc with nearby trees and a straw stack. One section of the barn roof about twelve feet square, was carried almost half a mile over the fields. During all of this destruction the silo stood absolutely uninjured and bears mute testimony of its imperishable construction. The silo has preserved the ensilage well. During the coldest weather only a very small amount froze on top around the edges.

Yours very truly,

J. W. MORGAN.

NATCO IMPERISHABLE SILO

Here's the new type of silo—the silo that has raised the standard of quality of ensilage for feeding. The silo whose walls are moistureproof and air-tight and consequently keep ensilage from becoming sour, moldy or rotten.

THE NATCO IMPERISHABLE SILO is built of hollow vitrified-clay blocks, reinforced by two continuous steel bands between each layer of blocks. There are no staves to warp, shrink or split. No hoops to tighten. No continual repair bills. Never needs painting. The Natco Imperishable Silo is

Weatherproof  Verminproof  Decayproof  Fireproof

It will last a lifetime and the first cost is practically the last cost. It can be erected by any mason as easily as a carpenter builds the old type of silo. When completed you have a very attractive as well as an efficient and durable silo added to your permanent farm building assets.

SEND TODAY FOR NATCO SILO BOOK. We have an attractively illustrated book which we will be glad to send free to Cornell men or to any farmer interested in keeping ensilage fresh, sweet and succulent. Write for a copy now and names of owners of Natco Imperishable Silos in your locality.

NATIONAL FIRE PROOFING COMPANY
SYRACUSE, NEW YORK

In writing to advertisers please mention The Cornell Countryman
RIPE TOMATOES—earlier than you ever had before

THE BALL SEED AND PLANT FORCER

Will give you a crop weeks ahead of any other method outside of the greenhouse. You can plant everything in the open garden or field a month ahead. These little greenhouses will give your seeds and plants the same protection as if they were under glass. When taken off you will have a transformation you never dreamed of. Your vegetables will be ready for the first cultivation while your neighbors are still dormant or rotting in the cold ground. All gardeners realize the value of individual glass covered plant frames for early results. The cost and weight were heretofore their only objections.

My Forcing Frames overcome this, costing but a few cents, weigh but a few ounces, are collapsible, durable and produce the same results.

Send for my Free Booklet, How to grow Bigger, Better, and Earlier Crops than you ever had before and let me tell you more about this and many other wonderful new money making inventions for the market gardener.

Only to be had from

THE BALL MFG. CO., Dept. G.
GLENSIDE, Montgomery Co., PENNSYLVANIA

Spray your FRUIT TREES with

HEMINGWAY'S LEAD ARSENATE

HIGH ANALYSIS EASY TO MIX STAYS IN SUSPENSION

Spray or Dust your POTATO-PLANTS and GRAPE VINES with

HEMINGWAY’S “CAASCU”

Pronounced “K. S. Q.”

KILLS THE BUG PREVENTS BLIGHT CAN'T BURN FOLIAGE

For Booklets and Prices, write to

HEMINGWAY & CO., Inc., Dept. C.
17 Battery Place, NEW YORK

A COMPLETE LINE OF
MACHINERY
AND SUPPLIES

For Dairies, Creameries and Milk Dealers

Write for catalog and prices
Prompt and Courteous Service

D. H. Gowing & Co.
SYRACUSE, N. Y.

In writing to advertisers please mention The Cornell Countryman
You Can Depend Upon

Allen’s Strawberry Plants

Strawberry growers must set out plants that will thrive and bear fruit true-to-name. You cannot afford to take chances with carelessly grown plants.

Buy Allen’s True-to-Name Plants

and you are more certain of large crops of big, delicious strawberries. Allen’s plants are hardy, vigorous and heavy yielders of luscious fruit because they are carefully grown from healthy stock.

All Standard Varieties--Any Quantity
Prompt Shipment

All the early and late strains of standard varieties of strawberries for every soil and climate requirement. Over 120 acres are devoted to strawberry culture alone at the Allen’s Nurseries. Over 29 years’ successful experience growing berry plants of the best quality. Allen’s plants are carefully selected and packed fresh for shipment and guaranteed true-to-name.

Here’s What Customers Say:

From California—Plants arrived today in fine shape. The growers in this locality as well as myself are delighted with them. D. R. DUNCAN, Los Angeles County.

From Missouri—Received plants O. K. They surprised me. So fine, packed nice in bunches, with roots all straight down, one plant like the other and no scrubs in them. JOSEPH VOGEL, Jefferson County.

From Montana—The plants came through quickly and in fine condition. MATT W. ANDERSON, Lewis and Clark County.

From New York—Wish to acknowledge for the Station receipt of strawberry plants. Arrived in good condition. A. M. TAYLOR, Geneva, N. Y.

From Florida—Plants received in fine condition and everything satisfactory. I. W. PECK, Manatee County.

Write for 1914 Berry Book—Tells how to plant and cultivate strawberries and other small fruits. It lists and describes Allen’s True-to Name Blackberries, Raspberries, Strawberries, Currants, Grapes, Asparagus, etc. Well illustrated and full of valuable information to growers and gardeners. You should have this book for reference. Write today for a free copy.

W. F. ALLEN, 147 Market Street, Salisbury, Maryland

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
The improved processes used in delinting and crushing cottonseed have rendered it impossible (or at least commercially impracticable) to make a meal which can be guaranteed to contain 8% ammonia, which guarantee has been given with all of this Company's meal bearing The A. C. O. Co's well known "Red Tag."

For this reason we have decided to change the "Red Tag" to a basis of 7% ammonia rather than to issue a tag showing a sliding scale or minimum and maximum percentages which leaves the buyer in doubt as to what is sold. We feel that this definite statement of content will appeal to users of cottonseed meal generally and that our "Red Tag" as revised will be recognized in the future as the previous form of "Red Tag" has been in the past as representing an absolutely trustworthy grade.

**NET WEIGHTS:**

Cottonseed meal has been, heretofore, sold upon gross weight, that is to say, 100 lbs. weight including weight of bag. Our new contracts will be filled with meal packed in sacks containing 100 lbs. net weight conformably with the recently established rule of the Inter-state Cottonseed Crushers' Association.

Our "Red Tag" will read as follows:

---

The American Cotton Oil Company

27 BEAVER ST.

---

In writing to advertisers please mention The Cornell Countryman.
THE GROOMING TFST

Holstein-Friesian Bull, which won the Grand Champion Prize at the New York and Illinois State Fairs, 193 being groomed by The Kent Stationary Vacuum Groomer. This Groomer is adapted to perfectly clean horses, cattle, etc. Animals groomed by the Vacuum Process are made more vigorous and can be kept in the best condition for less, as the process stimulates them, promotes the growth of hair and makes them generally cleaner and healthier. The building in which it is installed and nearby buildings can also be cleaned in THE SANITARY WAY by its use.

ADAPTED TO ALL KINDS OF POWER.

The Kent Vacuum Cleaner Company, Inc.
111 S. Washington St.
ROME, N. Y.
Also Manufacturers of Stationary Vacuum Cleaners.

Spray Your Trees Early

Any time this winter and early spring when the temperature is not below 40° F., you can spray with "SCALECIDE" and kill the scale, eggs and larvae of insects wintering on trees, as well as spores of fungi that can be reached by a winter spray. Prepare now for a good fruit crop next season.

"SCALECIDE"

TRADE MARK REG. U. S. PAT. OFFICE
will absolutely destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. It costs less to spray an orchard with "Scalecide" than with Lime-Sulfur—and you secure better results. We back up this claim. Write today for free booklets—"Proof of the Pudding" and "Spraying Simplified". Write to our Service Department for orchard supplies at money-saving prices.

We are World Distributors for
Vreeland's "ELECTRO" Spray Chemicals
and "Electro" Arsenate of Lead Powder (3%) which, used wet or dry, has no equal in strength or texture. Avoid imitations. B. G. PRATT CO., 50 Church Street, New York City.

The Improved Simplex
Link Blade
Cream Separator

LIGHTEST RUNNING
LARGEST CAPACITIES
CLOSEST SKIMMING

The Only Practical Large Capacity Separators

Has more exclusive patented features of merit than all others—Has all the desirable points that can be put into a cream separator.

500 lbs., $75.00  900 lbs., $90.00
700 lbs., $80.00  1100 lbs., $100.00

D. H. BURRELL & CO.
LITTLE FALLS, NEW YORK
Manufacturers of Creamery, Dairy and Cheese Factory Apparatus
Also "B-L-K" COW MILKERS

In writing to advertisers please mention THE CORNELL COUNTRYMAN
CAMPUS NOTES
(Continued from page 222)
was crowded, a large part of the audience being faculty members.
Eugenics is a subject that is comparatively new in the United States and
Cornell is one of the first to give a course in the subject.

T. E. Schreiner an assistant in the Poultry department worked with Professor Freeman Jacoby during the Farmers' Week held at the Ohio State University in Columbus, O., recently.

C. A. Rogers assisted in the Farmers' Week program at the Maryland Agricultural College a short time ago.

W. T. Krum took part in the Farmers' Week program for three days at Alfred University at Alfred, N. Y., February 23-27, 1914.

Professor G. F. Warren, E. W. Benjamin of the poultry department and C. L. Opperman, W. C., 1905 in Poultry, were speakers at the Corn Exchange National Bank Show and Agricultural conference held in Philadelphia a short time ago.

Professor E. A. White of the Department of Floriculture attended the meeting of the American Carnation Society held at Cleveland, Ohio, January 28 and 29.

The Junior class of the college held their annual dance at the Masonic Hall on February 25, 1914.

On January 28th, Mr. G. C. Supplee of the Department of Dairy Industry addressed the Glen Valley Club on the subject of the "Relation of the Milk Inspector to the Farmer." Mr. Supplee addressed the Bemettsburg Grange on Saturday, Feb. 21st, on the subject of "Clean Milk and the Comparative Methods of Selling Milk.

Dr. E. S. Guthrie gave a talk on the subject of "Milk" at Meriden on Tuesday, Feb. 17th. The meeting addressed by Dr. Guthrie was held under the auspices of the Presbyterian Brotherhood.

FLORIDA NEEDS COLLEGE GRADUATES
(Continued from page 217)
Advisers. These are men who have made a good showing in the State, have had experience, and are capable of advising not only the new-comer as to what are his best lines of development, but also of instructing older residents in the newer agriculture. The salary paid to the County adviser is equal to that paid to a college professor. Such positions enable a young man to have a large field of usefulness and at the same time to develop a certain amount of property of his own in the county, thus making the position an attractive one. In short, the college graduate will find less competition in Florida than anywhere else in the east or middle west.

UNADILLA SILOS
Of which the photo shows one of several in use on the experiment farms of the Borden Condensed Milk Co., combine durability and preservability in their construction, and never fail to satisfy the man who demands efficiency with economy in what he buys.

Unadilla Silos of cypress or Oregon fir will endure more years of use than any of the cement, tile or vitrified clay structures, cost far less, and are proof against being riven by frost or bursting under pressure of the settling ensilage. Moreover, the ensilage keeps succulent and prime in any clime.

WRITE TODAY FOR CATALOGUE!
Get Unadilla-wise about the continuous door opening, adjustable door frame, non-warped doors whose fasteners make a safe ladder from which every hoop can be tightened in no time, new base anchors, and a score of other distinctive features. Agents wanted. Extra discount on spring delivery orders.

Unadilla Silo Co., Box 22 UNADILLA, N. Y.
SECURE A COPY OF

Burpee's

ANNUAL FOR 1914

It will not only help you to solve

THE HIGH COST OF LIVING

but it will advise you

How You May Have Better Living

At Lower Cost

The health, comfort and happiness of your family depend largely on what you give them to eat.

Let Burpee’s Wabaco Seeds play their part in this present Question of Questions.

Burpee’s Seeds Grow, and have given satisfaction for thirty-eight years.

To the suburbanite or you who dwell in other places of “Great Opportunity”, we give this safe advice: Select from Burpee’s Annual, which is The Plain Truth About Seeds That Grow, the seeds that will produce your Garden of Beauty or your Garden of Plenty and we will deliver them to your door.

The House of Burpee supplies only The Best Seeds That Can Be Grown, and our confidence in Wabaco Seeds is such that it goes without saying that you can have your money back within a year if failure results from any fault of the seeds.

No House Can Do More - Few Do As Much

W. ATLEE BURPEE & CO.

Burpee Buildings   PHILADELPHIA

In writing to advertisers please mention THE CORNELL COUNTRYMAN
FORMER STUDENTS
(Continued from page 224)

'13, B. S.—Mr. A. M. Besemer, an instructor in the Department of Dairy Industry was married on December 27th, 1913, to Miss Lucy A. Miller of Webster, New York. Mr. and Mrs. Besemer reside at 324 College Ave., Ithaca, N. Y.

'13, B. S. A.—L. W. Kephart is Assistant Agriculturist in the Office of Farm Management at Washington, D. C. He is working on investigations in the eradication of weeds.

'13, B. S. A.—Y. D. Putnam is employed by the Vaughn Seed Co. on one of their farms at Ovid, Michigan. He expects to follow the seed business.

'13, B. S. A.—Clinton B. Raymond is working with his father on their home farm at Penfield, N. Y. Fruit is their main crop.

'13, B. S. A.—Miss Margaret L. Robinson is teaching Home Economics in Proctor Academy, Andover, N. H.

'13, B. S. A.—D. H. Rosenberg is assisting his father on their 300 acre fruit ranch in Washington. His address is 2114 E. Galer St., Seattle, Wash.

'13, B. S. A.—G. L. Wallace has rented on shares part of his home farm at Fulton, N. Y.

'13, Grad.—David Gunn is in Pretoria, South Africa, and has charge of the research work being carried on by the Government along entomological lines in that colony. He also has charge of the collections of the division of Entomology of the Union of South Africa.

'13, B. S.—F. C. Smith is County Agent of Allegany County with headquarters at Wellsville, N. Y.

'13, B. S.—Dorothea Keilland is teaching in the Grandview Normal Institute, Rhea County, Tenn. This school is under the auspices of the Home Mission Board of the Congregational Church and is in a district which is composed all too largely of "poor whites."

'13, B. S.—Miss Irene May Quirin is teaching at Oxford College which is situated at Oxford, North Carolina.

---

To bring the tiny peepers safely through the early days get H-O Steam-Cooked Chick Feed. Its assimilation is remarkably easy because the steam-cooking opens up the grain cells. Every bag is tagged with a guaranteed analysis.

**H-O POULTRY FEEDS**

**INCLUDE**

- Steam-Cooked Chick Feed
- Poultry Feed
- Chick Feed
- Dry Poultry Mash
- Scratching Feed

<table>
<thead>
<tr>
<th>J. J. CAMPBELL</th>
<th>THE H-O COMPANY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen. Sales Agt.</td>
<td>Mills</td>
</tr>
<tr>
<td>Hartford, Conn.</td>
<td>BUFFALO, N. Y.</td>
</tr>
</tbody>
</table>

---

**WELL-ROTTED**

**Horse Manure**

Dried and Ground

**HIGH GRADE, IMMEDIATE, NUTRITIOUS and LASTING, CONVENIENT and COMPACT.**

An Odorless Natural Manure for use of Florists, Landscape Gardeners, Truck Growers and Farmers, and for general farming purposes.

For mixing with soil for potted plants; for field crops; for grass and lawns, and for vegetable gardens, promoting rapid, steady growth.

**PUT UP IN BAGS, 100 LBS. EACH**

Descriptive Folder and Prices upon application.

Sold by

**New York Stable Manure Company**

272 Washington Street

**JERSEY CITY**

N. J.
Make Every Inch of Soil Produce the Maximum at Lowest Cost

In order to make your soil produce its maximum yield, you should supply a fertilizer “made to order” to meet your individual soil and crop conditions.

**Consumers’ Brands** for General Farm Use

comprise special distinct compositions of plant food elements for forage crops, root crops and cereals to meet just your individual soil and crop requirements. They supply just the constituents your particular soil may need for some special crop. You pay for no unnecessary plant food elements.

**Early Crop Odorless Fertilizer**
is prepared especially for the market garden trade for vegetables, small fruits, greenhouse and garden crops. It supplies the four plant food elements needed for these crops in soluble form, mixed in such proportions as to meet your particular soil and crop requirements. Although soluble, it is so prepared in granular form as to prevent leaching and wasting. It produces quick growth and early maturity, which means bigger profits.

**Holden’s Special Fertilizers**
*For Florists and Gardeners for Greenhouse Work*

These fertilizers are prepared by men who have made a life study of greenhouse fertilization in such a manner as to furnish just the plant food elements which your compost lacks. For this reason you save the cost of such plant food elements as your particular soil or crop may not require.

**Mak-Gro-Odorless Plant Food**
A clean, high grade, granular fertilizer for potted house plants, window boxes, flower beds, small fruits, lawns and general home garden use—made for the amateur. A splendid side line for florists operating their own stores.

**Agricultural Chemical and Fertilizer Materials**

We are prepared to furnish all high grade agricultural chemicals and fertilizer materials in any quantity. *We make a specialty of Genuine Thomas Phosphate Powder (Basic Slag.)*

**WE SELL ONLY DIRECT TO THE CONSUMER**

Write today for our Fertilizer Booklet

**Consumers Fertilizer Co.**
306 Longacre Bldg. New York City

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Improve Your Stock

It Pays to Clip Horses and Cows

Clipped horses are healthier and render better service. When the heavy coat that holds the wet sweat and dirt is removed they are more easily kept clean, look better, get more good from their feed and are better in every way.

The Stewart Ball Bearing Clipping Machine is for sale by leading dealers everywhere. Sold under a positive guarantee to please.

Price

$7.50

Why Cows should be Clipped

The campaign to prevent disease and infant mortality from impure milk is rapidly spreading to every city in the land and regulations are being enforced that require the observance of every sanitary precaution in the care of cows.

Cleansing the udders and flanks before milking to prevent filth from dropping into the milk is a pertinent necessity that cannot be properly done unless the hair on these parts is kept short by clipping every three or four weeks.

The Stewart No. 1 Ball Bearing Clipping Machine makes this a simple task that requires less than five minutes time per cow.

No owner of cows can afford to be without one of these machines. (Clips horses and mules equally well with same equipment.)

Write for complete new catalogue showing our line of clipping and shearing machines.

Chicago Flexible Shaft Co. 127 La Salle Avenue

In writing to advertisers please mention THE CORNELL COUNTRYMAN
THE GREATEST OF NEW INVENTIONS FOR CERTIFIED MILK DAIRYMEN IS THE

Simplicity Milking Machine

WITH THE METAL TUBE CONNECTING THE TEAT CUPS WITH THE PAIL SO THAT THE MILK DOES NOT COME IN CONTACT WITH ANY RUBBER

Write today for full particulars to

F. GROFF & SON
St. Johnsville New York

A COMPLETE FOOD PREVENTS SCOURING INSURES EARLY MATURET
RAISE THE CALVES ON BLATCHFORD'S CALF MEAL
AND SELL THE MILK
Endorsed by Agricultural Experiment Stations and thousands of Farmers. Manufactured to resemble new milk as nearly as possible in chemical composition.

SEND FOR TESTIMONIALS
J. W. BARWELL
WAUKEGAN, ILL.

YOUR FOWLS WILL SETTLE THE FEED BILL! "AND THEN SOME," IF YOU

F-E-E-D

EATONS

Life Saver Little Chick Food
Growing Ration
Climax Grain Mixture
Perfection Mash Mixture
High Grade Pigeon Food

Send for Booklet Free

R. D. EATON GRAIN & FEED CO.
DEPT. NORWICH, NEW YORK

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The Unseen Nine Tenths

Bright, shiny utensils with a sweet, wholesome smell is but a small part of the real proof of the cleaning properties of Wyandotte Dairyman’s Cleaner and Cleanser.

So thorough are the cleaning properties of this unusual washing agent that it cleans far beyond what the eye can see, removing thousands, yes millions of bacteria, the deadly destroyers of milk and butter quality.

It is because of this extra cleaning, doing what other washing agents cannot do, that has given Wyandotte Dairyman’s Cleaner and Cleanser the unanimous support of Dairy Colleges and scientific Dairy experts.

In estimating the value of a dairy cleaner they do not forget the “unseen nine tenths”.

Ask your dealer for “Wyandotte” or write your dairy supply house.

THE J. B. FORD CO., Sole Manufacturers
Wyandotte, Mich., U. S. A.

This Cleaner has been awarded the highest prize wherever exhibited.
FRUIT JUDGING CONTEST
Continued from page 211

training afforded by the Department of Pomology.

Everyone who was in any way connected with the contest agrees with Professor Lake when he says that we cannot realize the vast influence of the event at this time, nor can we predict the still greater influence of similar contests in the future. We sincerely hope that this may be but the first of a long series of contests in which all the Cornell teams will surpass the work of the Fruit Judging team of 1913.

Apple Trees
Not by the million, but the finest stock in the State of New York. : : : : : :

My prices will surprise you and my quality will please you. Get my catalogue. Order early and avoid disappointment. All other fruit trees in stock. Grown on new land which makes better roots and are free from disease. True to name.

D. G. BANKER
DANSVILLE, N. Y.

Feed Your Crops Available Potash

Insoluble plant foods are cheap in the beginning but may be dear in the end. We feel good when we hear that the soil contains enough Potash to raise 5000 crops, but we feel tired when we discover that it will take 1000 years or so to make it available. We will be converted into plant food ourselves long before that.

The acids derived from green manure may make insoluble phosphate of lime more available. But the feldspathic Potash in the soil is less soluble in these acids than in the slightly alkaline waters of the best soils. A little soil Potash becomes available yearly, but not enough to provide for profitable crops. Crops have two periods of Potash hunger. One just after germination and the other when starch formation is most rapid—when the grain is filling. Rational fertilization requires ample available Potash at these periods and if you provide it you will find that Potash Pays. Send for our pamphlet on making fertilizers.

German Kali Works, Inc., 42 Broadway, New York


Empire Bldg., Atlanta, Ga.
ENDORSEMENT OF NATURE REPRODUCTIONS
FROM FOUNTAIN HEAD

BURBANK'S EXPERIMENT FARMS
SANTA ROSA, CAL.

The Christy Engraving Co.,
Rochester, New York.

Dear Sirs:—

I was pleased to receive the fine samples of color engravings. In my opinion, they are unusually fine. Am especially pleased with the accurate coloring of the hyacinth, cherry and the apple; the other work I do not consider myself as much of a judge in, although it seems neat and artistic in all respects.

I am publishing a cactus catalogue and had intended to send you some work, but did not hear from you for several months after writing to one of your customers to have you send on some samples, so had to forego it, supposing that you had plenty to do and did not care to take any more work.

Respectfully yours,

[Signature]

Christy Engraving Company
610-618 Central Building
ROCHESTER, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
FRUIT TREES

Grown by Maloney Brothers & Wells Company are the results of many years' experience; no disappointment when they come into fruiting for our varieties have been tested 29 years.

We offer for spring planting 975,000 apple, 850,000 peach, 600,000 cherry, and thousands of plum, pear and quince trees as well as thousands of currants, grape vines and a big assortment of ornamentals, roses and shrubs. You will save considerable when dealing with an old established firm. Write today for our FREE, wholesale, illustrated catalogue of guaranteed true to name trees.

MALONEY BROS & WELLS CO., Dansville, N. Y.
Dansville's Pioneer Wholesale Nurseries

"QUALITY FIRST"

ARSENATE OF LEAD


RICHES, PIVER & CO.
30 Church St., New York
Works and Laboratory - - Hoboken, N. J.

APPLE TREES

The very best that can be grown. Ours are all budded on whole-root French seedlings. All the leading varieties, absolutely true to name. Send list of wants and let us quote you special prices. Will be glad to send samples to interested parties.

REFERENCES: Any bank or business house in Geneva.

The R. G. Chase Company
Geneva, N. Y.
In the afternoon E. W. Benjamin spoke on the work of the association during the previous year. During the first year they handled about 37,761 dozen eggs and 9,683 lbs. of poultry, on which they saved the farmers about $1,362.50.

THE RURAL ENGINEERING SOCIETY

The third annual meeting of the Rural Engineering Society was held during Farmers' Week. In addition to the members of the faculty, the program included several very prominent men. Mr. F. H. Richards, the manager of the Maplewood Stock Farms, Attica, N. Y.; Mr. S. L. Stewart, the president of a large lumber company, and owning and managing one of the largest certified dairy farms in the state, and a prominent barn construction expert, and Mr. E. W. Catchpole, a large fruit grower of central New York were among those that addressed the crowded audiences. All the important phases of Farm Mechanics, Farm Engineering, and Farm Structures were discussed at the spirited round table talks that followed each speech. At the business meeting of the year, the same officers were unanimously re-elected. A larger and even better program is looked forward to for next year.

RURAL SCHOOL EDUCATION

Every afternoon during the week discussions were held in the Rural Schoolhouse on problems of rural education. The program was in charge of Miss A. G. McCloskey and Mr. E. M. Tuttle of the College, and considered subjects of interest to the rural teacher and the district superintendent. Among the topics were very interesting discussions on the relation of the rural school to the home, its use as a social center, and cooperation between the teacher and the district and state officials. The attendance

The 1914 Improved Cornell Gasoline Brooder Heater

means Dollars to the Poultryman

<table>
<thead>
<tr>
<th>Price complete</th>
<th>1 to 4 in one shipment</th>
<th>$10.90 each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 to 9</td>
<td>10.50</td>
</tr>
<tr>
<td></td>
<td>10 or more</td>
<td>10.00</td>
</tr>
</tbody>
</table>

Does the work of 5 kerosene heaters, cares for 250 chicks.

Needs little attention—it runs itself.

No lamps to trim, no ashes, no dirt, no soot.

Perfectly ventilated and safe. Saves money by saving time and worry, and the “Cornell” is the greatest heater made. New burner and several other improvements.

Manufactured in Ithaca, N. Y.

TREMAN, KING & CO.

Hundreds of satisfied users to prove that it has “made good”

Recommended and used by the N. Y. S. College of Agriculture
IN YOUR ORCHARD

the first cost of the trees is the smallest part of the expense and yet it is the most important. In buying Green's Trees you know you are starting right. You can overcome the main reason for failures by planting Green's vigorous, healthy Trees.

Thirty-five years of successful tree growing, testing and selling has given us an experience that should and does make Green's Trees superior to any trees grown.

Have you received our new catalog? We will send it by return mail if you send your address. Remember, now is the time to order.

CHARLES A. GREEN, Pres.

Green's Nursery Co.

68 Wall Street  Rochester, N. Y.
Three D Grains is our brand for the highest and best grades of Distillers' Dried Grains sold in this country. Three D Grains are classified according to analysis and sold at prices commensurate with their feed value.

**OUR GUARANTEES:**

<table>
<thead>
<tr>
<th>PROTEIN</th>
<th>FAT</th>
<th>FIBRE</th>
<th>CARBOHYDRATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagle Three D Grains</td>
<td>-</td>
<td>10-15%</td>
<td>8-13%</td>
</tr>
<tr>
<td>Corn</td>
<td>-</td>
<td>9-14</td>
<td>8-13</td>
</tr>
<tr>
<td>Bourbon</td>
<td>-</td>
<td>24-28</td>
<td>8-11</td>
</tr>
<tr>
<td>Queen</td>
<td>-</td>
<td>15-20</td>
<td>6-9</td>
</tr>
</tbody>
</table>

The leading dairymen feed Three D Grains to their cows. Read what some of them say:

Pontiac Pet broke the world's record in the spring of 1911 by producing 37.67 lbs. butter in 7 days. Her owner, E. H. Dollar, of Heuvelton, N. Y., had bought a car of Three D Grains. We asked him if it had been used in this test. He answered saying: “Twenty-five per cent of grain ration was corn Three D Grains.”

Write us for circular giving directions for feeding Three D Grains, also for prices if your dealer does not keep it.

The Dewey Bros. Co., Box 577, Blanchester, O.
CONFERENCES  
(Continued from page 24)

was very large and was made up of district superintendents, principals and teachers. Several officials from the State Department of Education were present. The Corn Exhibit of the various corn clubs over the state was held in the Auditorium in connection with the conference.

YORK STATE VEGETABLE GROWERS' ASSOCIATION

The New York State Vegetable Growers' Association held its fourth annual institute and meeting on Tuesday, Wednesday, and Thursday of Farmers' Week. Excellent lectures were given by prominent agriculturalists from all parts of the state, both teachers and practical growers. The vegetable interests are very diversified and the list of subjects covered in the discussions was large and comprehensive, ably covering all phases of the industry as it is carried on in all parts of the state. The business meeting was very well attended and considered several new and striking principles. The Association operates a seed service by which members are supplied with well tested strains of seed at a much reduced price. A federation committee is trying to get the local organizations of growers all over the state to affiliate with the State Association, and the entire work is aimed at cooperation which it is thought will solve several problems as to state aid, investigation, and legislation. The Association has invited the Potato Association to affiliate, and plans to hold two regular meetings in different parts of the state, with an exhibit at the State Fair during the coming year. The midwinter meeting will again be held during farmers' institute at the College.

ROCK BOTTOM PRICES

The Cornell Countryman, $1  
Bailey's York State Rural Problems, $1 | $1.60

THE CORNELL COUNTRYMAN  
ITHACA, N. Y.
Wing's Quality Seeds

Are known everywhere. Our ALFALFA is famous for its purity and quality. We sell nothing but the best AMERICAN-GROWN seeds; this season we offer stocks from Kansas, Nebraska and Dakota, also Grimm Alfalfa.

CORN, SOY BEANS
Our own improved strains

VETCH and MELILOTUS
The Great Soil Restorer

Full line of FIELD, GARDEN and FLOWER SEEDS.

Send for our free catalogue

THE WING SEED CO.
Box C
MECHANICSBURG, OHIO

Fraser's Fruit Trees
for the "Man Who Knows"

Grown in Western New York's Great Fruit Belt on virgin soil for trees. Direct descendants from vigorous trees in bearing orchards. Guaranteed healthy, up to grade, true to variety name.

My new catalogue tells what sorts are adapted to planting east of the Mississippi River, with helpful hints on planting, pruning, etc. Write today for this helpful book.

SAMUEL FRASER, Nurseryman,
Box 91 GENESSEE, N. Y

AIR-TIGHT FROST-PROOF PERMANENT

No hoops to tighten or loosen.
Don't order your Silo before you get our free catalog.

CRAINE Patent
Triple Wall SILO
3 Walls
therefore 3 times as warm and 3 times as strong.
Let us tell you more.
THE W. L. SCOTT LUMBER CO.
Norwich, N. Y. Milwaukee, Wisc.

"HAMMOND'S GRAPE DUST"

Used effectively to kill Mildews on Roses and other Plants...

Sold by the Seed Dealers.
For pamphlet on Bugs and Blights address

HAMMOND'S PAINT & SLUG SHOT WORKS
BEACON, N. Y. (Fishkill-on-Hudson, N. Y.)
Big Hatches in Coldest Weather
Come Easy with OLD TRUSTY

Winter hatching has always been an easy thing for Old Trusty. I don't mean for a year or two under favorable circumstances, but continually and everlastingly. As an average hatcher it has a big record winter or summer, north or south, in the hands of expert and beginner alike. You don't have to slack up during January and February. Get your Old Trusty a going and keep it on the job right through the winter.

Now is the Time to Start---Get the Early Profits Next Spring

Old Trusty average is something over 80%. We guarantee it to be that much or better. We have made the guarantee for years, and years, and know that Old Trusty can make good on it. I could show you sensational hatches, too, but I don't believe that's the thing that would interest you. What you want is the average and that's where the Old Trusty has no equal. I might guarantee you 95% hatches, but I think too much of what you are going to think of me later.

Old Trusty Book Tells All About it---
Let Me Mail a Copy FREE!

Get the plain facts on winter hatches. Why let the chickens be idle when they can be making good profits? The Johnson plan is worth getting. Mail a postal or letter for it today. If you order I'll prepay freight and ship the machine the day the order arrives. Write for the book anyway. Address

Johnson, Incubator Man, Clay Center, Nebr.
BE ON THE SAFE SIDE

YOU needn't fear a visit from the Sealer of Weights and Measures if you use Thatcher Milk Bottles. You won't give over-capacity either, because they are accurate! Send for our free book. It tells exactly why Thatcher bottles add to your profits.

THATCHER MFG. CO.

103 Market Street
ELMIRA, N. Y.

LEHIGH VALLEY RAILROAD

The only line to and from Ithaca, Cornell University with through service between New York, Newark, Philadelphia, Buffalo, Niagara Falls and Chicago. Steel Trains; Observation Parlor Cars; Electric Lighted Sleeping Cars; Buffet-Library-Smoking Cars; Dining Cars, Service a la Carte; Stone Ballast.

Automatic Electric Block Signals

COMFORT SAFETY

--Had you any trouble with the MARCH WIND coming through crack or crevice in the Greenhouse?

TWEMLOW'S

Old English Glazing Putty

SEMI-LIQUID and ELASTIC

Will stop the trouble. Put up in 16 pound cans; 50 and 80 pound buckets.

Hammond's Greenhouse White, A SUPERB PAINT, with years' record to back it up, for wood or iron Greenhouses. It stays where you put it. In 5, 10, 15, 20, 25, or 30 Gallons.

HAMMOND'S PAINT AND SLUG SHOT WORKS, Fishkill-on-Hudson, New York.

KOHM & BRUNNE

THE LATEST STYLES AT MODERATE PRICES

TAILORS 222 East State Street

In writing to advertisers please mention THE CORNELL COUNTRYMAN
"If you get it from us it's right"

BUTTRICK & FRAWLEY
One Price Clothiers and Furnishers

This fall season finds us more fully equipped to satisfy your wants than ever before. Special attention has been paid to get best material at minimum price. Suits and Overcoats, $10.00 to $30.00; Raincoats, $5.00 to $30.00; Mackinaws, $6.00 to $12.00. We make Suits to measure and save you from $5.00 to $10.00.

VISIT OUR SHOE DEPARTMENT

Hats, Gloves, Shirts, Sweaters, Underwear, and all other articles you'd find in a first class shop. Full Dress and Tuxedo Suits for sale and to rent.

"If not we make it right"

134 East State Street

PROFESSORS, STUDENTS, INSTRUCTORS, you will get MORE INSURANCE FOR LESS MONEY IF YOU HAVE A POLICY WITH

The Travelers Life Insurance Company

OF HARTFORD, CONN.

J. J. SINSABAUGH, Agent,

149 East State Street

ITHACA, N. Y.

INSURANCE OF ALL KINDS

Ithaca 'Phone

Williams Brothers

ITHACA, NEW YORK

WELL DRILLING MACHINERY AND TOOLS

The Clinton House

Corner Cayuga and Seneca Sts.

TABLE D'HOTE SERVICE

Cuisine and Service Unexcelled

Luncheon, 12 to 2 - - - $0.75
Dinner, 6 to 8 - - - - .75
Sunday Dinner, 1 to 2:30 - .75

SPECIAL HOLIDAY DINNERS

"Ithaca's Popular Hotel"

In writing to advertisers please mention THE CORNELL COUNTRYMAN
A postal card request will bring you a copy of our list of some hundreds of

**Practical Agricultural Books**

compiled from our lists of regular and recommended books as used at the N. Y. State Agricultural College here at Cornell

**The Corner Bookstores**

ITHACA, N. Y.

---

**New Arrivals for Spring**

are ready for your inspection.

That spring suit is ready for you.

Over 100 imported and domestic samples to select from.

Prices range from $18 to $50

Agent for New York’s foremost tailors.

The University Haberdashery

320-322 College Ave.

Once a customer always a customer

**Victor Victrola Parlors**

with the most complete stock in the various woods and finishes.

Complete stock of Records

WE HAVE THEM WHEN YOU WANT THEM YOU DON'T HAVE TO WAIT AT

HICKEY'S LYCEUM MUSIC STORES

---

In writing to advertisers please mention THE CORNELL COUNTRYMAN
ELECTRIC WASHERS

THE KING

has solved the wash day problem. It will wash clean all kinds of fabrics from blankets to lace curtains and fine waists at an absurdly low cost; a whole wash for ten cents.

You cannot afford to be without one.

DAVIS = BROWN ELECTRIC CO.

115-17 So. Cayuga St., Ithaca, N. Y.

"BACK TO THE FARM"

That is just what must take place in this country, and the sooner the better, or other countries will be obliged to feed us. This publication is doing all it can to make this movement pleasurable and profitable, and after you are persuaded—well, that is where we come in.

We can find that farm for you

We have probably the largest list to select from in Central New York State.

Ithaca Realty Company

202 N. Tioga St., Ithaca, N. Y. “You’re Safe in Our Hands”

THE TOMPKINS COUNTY NATIONAL BANK

135-137 E. State St.  ESTABLISHED 1835
Capital $100,000
Surplus and Undivided Profits $165,000

Safe Deposit Boxes for Rent

BOOK BINDERY

START RIGHT—Have your Countryman bound
We bind anything

J. WILL TREE’S

113 N. Tioga St.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Flashlight Photography...
H. C. CABLE
Ithaca Phone 180-X
405 COLLEGE AVE.

**TYPEWRITERS**

New and Rebuilt
Any Make
Sold, Rented and Repaired

Special Rates for the College Year

H. L. O’DANIEL,
Both Phones. 204 N. Tioga St.

**WE DO YOUR MENDING FREE**

**FOREST CITY LAUNDRY**

E. M. MERRILL

PHONE

<table>
<thead>
<tr>
<th>CUT FLOWERS, DECORATIVE PLANTS, ETC.</th>
<th>PETER SCUSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE BOOL FLORAL CO.</td>
<td>MODERN SHOE REPAIRING</td>
</tr>
<tr>
<td>215 East State St., Ithaca, N. Y.</td>
<td>Neatly and Promptly Done</td>
</tr>
</tbody>
</table>

Shoes called for and delivered in any part of the City

Ithaca Phone 428-C  405 Eddy St., ITHACA, N. Y.

**Photographer and Kodak Dealer**

Specialists in Both Departments

For fifteen years we have photographed Cornell Students at the same stand

KODAKS for Sale Rent or Exchange
Both Phones

Over 115 & 117 E. State St.

**PIANOS, MANDOLINS, GUITARS, BANJOS and VIOLINS**

Rented or sold on Easy Payments. "Songs of Cornell." All the latest music; Strings and supplies for all instruments at lowest prices.

LENT’S MUSIC STORE

122 N. Aurora Street

Victor Talking Machines, Records, Etc.

**The University Photo Shop, G. F. Morgan**

314 College Ave.

**SPECIAL ATTENTION GIVEN TO FRAMING**

10 per cent. off on Frames when furnished with the pictures we make
The Shops of Shops

Come right in to headquarters where you can find everything for man's wear at lowest prices.

Leave your measure for ONE HALF DOZEN SHIRTS for ONE DOZEN DOLLARS.

We have a whale of a stock of Furnishing Goods, Hats and Caps.

TOWN SHOP, L. C. BEMENT HILL SHOP, 142 E. State St. The Toggery Shops 413 College Ave.

F. J. HAUSNER, Jeweler

Watches, Diamonds and Jewelry 205 E. State Street

THE FIRST NATIONAL BANK
Cornell Library Building
Capital, Surplus and Profits, $350,000.00
Oldest National Bank Safe Deposit Boxes for Rent

ITHACA SAVINGS BANK
INCORPORATED 1868
Tioga Street, cor. Seneca ITHACA, N. Y.

When wanting QUALITY, SERVICE AND CLEANLINESS go to WANZER & HOWELL, The Grocers

PICTURES PICTURE FRAMES
STUDENTS' FURNITURE

Manufacturers of Special Furniture for FRATERNITIES AND CLUB ROOMS

H. J. BOOL CO.
(Opposite Tompkins County Bank)

In writing to advertisers please mention THE CORNELL COUNTRYMAN
SYSTEM

It's the System that makes the New Process Dry-Cleaning Clean Clean.
It's your business we want that makes the System better.

WE ARE MAKING A STUDY OF OUR BUSINESS

Modern Dry-Cleaning and Pressing Works
W. F. FLETCHER CO., Inc.
103 Dryden Road

Norton Printing Co.
317 E. State St.
COLLEGE, FRATERNITY and COMMERCIAL PRINTING
Engraved Cards and Invitations
Rubber and Metal Hand Printing Stamps

Robinson's Photograph Shop
214 East State Street
Photographer for the Senior Class

White & Burdick Co.
The oldest and largest
Drug Store in the City
Supplies for Agricultural Students
— a Specialty —

New York State College of Agriculture at Cornell University

THE DEPARTMENT OF ANIMAL HUSBANDRY

Breeds Percheron Horses, Holstein, Jersey, Guernsey, Ayrshire,
Short Horn Cattle, Dorset, Shropshire, Rambouillet Sheep, Cheshire Swine.
Regular Public Sale of all Surplus Young Stock, except Swine, on
FRIDAY OF FARMERS' WEEK EACH YEAR

In writing to advertisers please mention THE CORNELL COUNTRYMAN
This is the Month We Give You the Profits
Buy Your Shoes Now

SEMI-ANNUAL SALE
NOW ON

$10.00 and $9.00 Shoes $7.35
8.00 and 7.50 Shoes 6.35
7.00 Shoes 5.95
6.00 Shoes 4.95
5.00 Shoes 3.95
4.50 and 4.00 Shoes 3.35

ITHACA BOOT SHOP, Inc.
204 E. State Street

New York Life
Insurance Company

C. H. WEBSTER, Agent

OFFICE: Student Supply Store
RESIDENCE: 121 Catherine St.

BOTH PHONES
BAXTER'S
Clothing and Furnishings

have pleased hundreds of CORNELL students during the last Five Years. Why? Because we sell only first class merchandise and guarantee every dollar's worth of it; we fit our clothing to please; our service is unexcelled, and last but not least, we sell at One Price to All.
Please consider this "Shop," "Your Shop." You get your money's worth here.

E. B. BAXTER,
ONE PRICE TO ALL
"The Quality Shop"
Satisfaction guaranteed
150 E. State St., Ithaca, N.Y.

Cafeteria
HOME ECONOMICS BUILDING
THREE MEALS DAILY

D. S. O'BRIEN
MARKETS
222 North Aurora Street 430 North Cayuga Street
DEALER IN
FRESH, SALT AND SMOKED MEATS
Poultry and Game in Season
D. S. O'BRIEN

In writing to advertisers please mention THE CORNELL COUNTRYMAN
**Ithaca Hotel**

**ITHACA, N. Y.**

*Ithaca's Leading and Only European Hotel*

One hundred rooms; 50 rooms with private bath. All rooms have running water, electric lights, local and long distance telephones.

No expense has been spared in furnishing this hotel to make it modern and up-to-date and comfortable for its patrons.

The Dutch Kitchen has become famous for its excellent cuisine and service at reasonable prices.

The Hotel Orchestra will render a musical programme every evening.

J. A. and J. H. Causer, - Proprietors

---

**The Palace Laundry ...**

323 and 325 Eddy Street

F. C. Barnard, Prop.

---

**The Modern Method Laundry**

**JOHN REAMER, Prop.**


EAST STATE ST., ITHACA, N. Y.

Opp. New Ithaca Hotel

---

We keep a fine line of diamonds and jewelry and do all kinds of repairing neatly at:

Heggies' Jewelry Store ===

136 E. State St.

---

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Once Upon a Time

Once there was really no way out of it for the farmer. Plodding home from the field with his team at close of day, he saw before him the waiting small jobs about the house, barn, and yard, jobs that took time and labor, and never seemed to end. There was water to be pumped, wood to be sawed, various machines to be run by hand. But that was once upon a time. Today he lets the engine do it.

Every I H C engine is economical, simple, steady and reliable. Whether you want it for sawing, pumping, spraying, electric light plant, for running separator, or repair shop, or for all sorts of tiresome energy-wasting small farm jobs, you have need of an

I H C Oil and Gas Engine

I H C engines are built vertical, horizontal, stationary, portable, skidded, air-cooled and water-cooled; sawing, pumping and spraying outfits. Sizes from 1 to 50-horse power. They operate on gas, gasoline, kerosene, naphtha, distillate and alcohol. I H C oil tractors range in size from 12 to 60-horse power.

Have the I H C local dealer demonstrate the engine to you and explain its various points. Get catalogues from him, or write the

International Harvester Company of America
(Incorporated) USA
Apple Trees are Potent Factors in Raising the Value of Farm Lands

In a recent issue of a leading farm paper, Prof. L. W. Lighty discusses how he and others made cheap farm land more valuable. The use of ground phosphate rock, ground limestone, burned lime and acid phosphate are told of.

Prof. Lighty said: "My neighbor beat us to a frazzle by adopting this unique rotation of crops—apple trees and mules—and in less than twelve years increased the value of a 250-acre farm from $10.50 an acre to $170 an acre.

The fact stands out like a fire at night—the increase in value did take place, and the cause of the increase was the apple trees. They lifted the land value and the income more than a thousand per cent.

LEARN THE SMALL COST OF PLANTING APPLE TREES

We will help you figure it, either for your land or in the abstract for your future use. Get our big 1914 catalogue as a starter. It contains the facts about fruit growing profits and about the few varieties that, after twentieth century tests, should be planted now. A handbook for fruit people. Copy sent free on request.

Ask our experts about your problems. They will reply promptly and fully. If your proposition is a large one, we may be able to superintend its planting.

Come to Berlin for a visit. A trip here is an education for you.

Our apple trees, and all other trees, are budded from bearing orchards. All we sell are grown at Berlin. Write today for the books and facts you want.

"THE WHY AND HOW OF SHADE TREES AND EVERGREENS" is free if you are interested in that subject.

Get "HOW TO GROW AND MARKET FRUIT", our guide book. Price 50 cents, and that rebated later if you send us an order amounting to $5.00 or more.

HARRISONS' NURSERIES
Cornell St., Berlin, Md.
DE LAVAL CREAM SEPARATORS
Their Great Simplicity

THE DE LAVAL SEPARATOR EXCELS ALL OTHERS not only in thoroughness of separation, sanitary cleanliness, ease of running and durability, but as well in its great simplicity.

THERE IS NOTHING ABOUT THE operation, cleaning, adjustment or repair of a modern De Laval Cream Separator which requires expert knowledge or special tools.

NOR ARE THERE ANY PARTS which require frequent adjustment in order to maintain good running or to conform to varying conditions in the every-day use of a separator.

THERE IS NOTHING ABOUT THE machine that cannot be taken apart, removed or replaced by any one who can use a wrench or screw driver. In fact, the only tool which is needed in the use or the operation of a De Laval Cream Separator is the combination wrench and screw driver illustrated below, which is furnished free with every machine. Visit the local De Laval agent and see for yourself its simplicity of construction.

Combination wrench furnished with each De Laval Separator, the only tool required in setting up, taking down or using a De Laval machine, the simplest as well as the best cream separator ever built.

THE DE LAVAL SEPARATOR CO.
NEW YORK CHICAGO SAN FRANCISCO SEATTLE
Every gallon of REX LIME AND SULPHUR SOLUTION that we can make by May 1, 1914, has been contracted for, BUT LISTEN:

REX ARSENATE OF LEAD contains about the same amount of moisture as other brands, yet it appears to have less because it carries or holds all its moisture, and no water appears over or around it.

This is because in our perfected process for combining the arsenic and the lead in the making of Arsenate of Lead, it is so done as to make the finest, flakey particles possible to produce.

To test this out for your own satisfaction take a small amount in a tall glass tube or bottle, get it into perfect suspension in the water, then allow it to stand and settle, watch it and note how well it remains in suspension and note how much bulk it makes when settled. That will show you its fine, light, flakey, fluffy condition.

Made this way, and made as it is, of the highest quality raw materials, it makes a product that gives the best possible distribution of the poison, makes the product stick better where sprayed and leaves the poison in best condition for better and quick acting results.

It contains over 15% Arsenic Oxide and less than ½ of 1% Soluble Arsenic. It contains about 33% Lead Oxide and less than 50% Moisture.

We respectfully invite comparisons and comparative tests with any other brand on the market.

THE REX COMPANY
P. O. Box 712 ROCHESTER, N. Y.

Painting Season is Here!

BUY

Wadsworth Double-Thick Paint
of the maker and save the middleman’s profits

Write today to the manufacturer’s agent, the man who has sold Wadsworth Paint up and down the State of New York for sixteen years, for booklet describing the lasting qualities of Wadsworth Double-Thick Paint, the paint having a tested reputation of sixty-four years’ standing. Address

EDWARD JOSLIN
No. 11 South First St. FULTON, N. Y.
**OFFICIAL PUBLICATIONS of CORNELL UNIVERSITY**

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second-class matter at the post office at Ithaca N. Y.: pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and postfree on request:

<table>
<thead>
<tr>
<th>Publication</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Circular of Information for prospective students,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the College of Arts and Sciences,</td>
<td></td>
</tr>
<tr>
<td>Courses of Instruction in the College of Arts and Sciences,</td>
<td></td>
</tr>
<tr>
<td>Announcement of Sibley College of Mechanical Engineering and the Mechanic</td>
<td></td>
</tr>
<tr>
<td>Arts,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the College of Civil Engineering,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the College of Law,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the College of Agriculture,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the Medical College,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the New York State College of Agriculture,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the Winter-Courses in the College of Agriculture,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the New York State Veterinary College,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the Graduate School,</td>
<td></td>
</tr>
<tr>
<td>Announcement of the Summer Session,</td>
<td></td>
</tr>
<tr>
<td>The President's Annual Report,</td>
<td></td>
</tr>
<tr>
<td>Pamphlet on prizes, samples of entrance and scholarship examination papers,</td>
<td></td>
</tr>
<tr>
<td>special departmental announcements, etc.</td>
<td></td>
</tr>
</tbody>
</table>

Correspondence concerning the publications of the University should be addressed to

**The Registrar of Cornell University**

**ITHACA, N. Y.**

---

**New York State College of Agriculture at Cornell University**

W. A. Stocking, Jr., Acting Director.

The College of Agriculture is one of several co-ordinate colleges comprising Cornell University. The work of the College is of three general kinds: The regular teaching work of undergraduate and graduate grade; the experiment work; the extension work. The resident instruction falls in the following groups:

1. Four-year course, leading to the degree Bachelor of Science in Agriculture (B. S. in Agr.). When desired, the last two years may be chosen in subjects pertaining to landscape architecture and out-door art, or to home economics. In the Graduate School of the University students may secure the Master's and Doctor's degrees (M.S. in Agr. and Ph.D.).

2. Special work, comprising one or two years: (a) Agriculture special; (b) Nature-study special or normal course.

3. Winter-Courses of 12 weeks: (a) General Agriculture; (b) Dairy Industry; (c) Poultry Husbandry; (d) Horticulture; (e) Home Economics.

**THE INSTRUCTION IS DIVIDED AMONG TWENTY-TWO DEPARTMENTS AS FOLLOWS**

<table>
<thead>
<tr>
<th>Department</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Practice and Farm Crops</td>
<td>Animal Husbandry</td>
</tr>
<tr>
<td>Farm Management</td>
<td>Poultry Husbandry</td>
</tr>
<tr>
<td>Agricultural Chemistry</td>
<td>Dairy Industry</td>
</tr>
<tr>
<td>Plant Physiology</td>
<td>Farm Mechanics</td>
</tr>
<tr>
<td>Plant Pathology</td>
<td>Forestry</td>
</tr>
<tr>
<td>Soil Technology</td>
<td>Rural Art</td>
</tr>
<tr>
<td>Plant-Breeding</td>
<td>Drawing</td>
</tr>
<tr>
<td>Entomology, Biology and Nature-study</td>
<td>Home Economics</td>
</tr>
<tr>
<td>Horticulture</td>
<td>Meteorology</td>
</tr>
<tr>
<td>Pomology</td>
<td>Rural Economy</td>
</tr>
<tr>
<td></td>
<td>Rural Education</td>
</tr>
<tr>
<td></td>
<td>Extension Teaching</td>
</tr>
</tbody>
</table>

---

*The Cornell Countryman* 3
New York State
Ideal Farms

In a healthful locality; offering the advantages of practical farm land within two hours of our greatest city, with assured value enhancement; acknowledged fruit land and entrancing natural country.

Prices range from ten to one hundred dollars per acre, with liberal terms. Among my patrons are several former Cornell students.

Edgar L. Hoag
233 Broadway
NEW YORK CITY

This Owner Ships to Hotels

GROWS both Flowers and Vegetables, and contracts with some of the New York hotels to furnish them the year round. There's an idea for you. It's a nice, clean, paying proposition. Be careful to build right. Wrong start means success delayed. Let us talk it over with you.

Lord & Burnham Co.

In writing to advertisers please mention The Cornell Countryman
Best-Hated of Farm Tasks

ON the spreaderless farm the thought of the great heaps of manure piling up constantly in barn yards, stables, and stalls, is a gloomy one. Those piles mean much disagreeable and hard work. Three times every bit must be handled. It must all be loaded onto high wagons. It must be raked off in piles in the fields. Then every forkful must be shaken apart and spread.

Compare that old-fashioned method with the spreader way. You pitch the manure into the spreader box, only waist high, drive out and — the machine does all the rest.

And, far more important, if you buy an I H C spreader one ton of manure will go as far as two tons spread by hand, with the same good effect on the soil, and it will all be spread evenly.

I H C Manure Spreaders

are farm necessities. The man who uses one will get the price of it back in increased crops before its newness has worn off.

I H C spreaders are constructed according to plans in which every detail, every feature, is made to count. They are built to do best work under all circumstances, and to stand every strain for years. They are made in all styles and sizes, for small farms and large, low and high machines, frames of braced and trussed steel. Uphill or down, or on the level, the apron drive assures even spreading, and the covering of corners is assured by rear axle differentials. In all styles the rear axle is placed so that it carries near three-fourths of the load. This, with the wide-rimmed wheels with Z-shaped lugs, makes for plenty of tractive power. Winding of the beater is prevented by large diameter and the beater teeth are long, strong and chisel pointed.

A thorough examination of the I H C spreader line, at the store of the local dealer who sells them, will interest you. Have him show you all these points and many more. Study the catalogues you can get from him, or, write the

International Harvester Company of America
Chicago U S A

In writing to advertisers please mention The Cornell Countryman
YOUR FOWLS WILL SETTLE THE FEED BILL! "AND THEN SOME," IF YOU

F-E-E-D

<table>
<thead>
<tr>
<th>LIFE SAVER LITTLE CHICK FOOD</th>
<th>ALL</th>
<th>IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROWING RATION</td>
<td>100 lb.</td>
<td>SACKS</td>
</tr>
<tr>
<td>CLIMAX GRAIN MIXTURE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERFECTION MASH MIXTURE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIGH GRADE PIGEON FOOD</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Uniform in Quality
Dependable in Your Dealer or Rations

R. D. EATON GRAIN & FEED CO.
DEPT. NORWICH, NEW YORK

**Dixie Brand**

**COTTON SEED MEAL**

**THE CHEAPEST SOURCE OF PROTEIN FOR DAIRY COWS**

**HUMPHREYS-GODWIN CO.,** Memphis, Tenn.

**IMPROVE YOUR STRAIN OF POULTRY**

During the latter part of the season we can supply a limited number of eggs for hatching and day-old chicks from our High Vitality S. C. White Leghorn stock. Eggs $2.50 per setting, $10.00 per 100; day-old chicks 22½ cents each, $20.00 per 100. Send in your order and ask for earliest possible date of shipment.

**Four Good Records by Cornell S. C. White Leghorns**

<table>
<thead>
<tr>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Total Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lady Cornell</td>
<td>1st year</td>
<td>191</td>
<td>648</td>
</tr>
<tr>
<td>Madam Cornell</td>
<td>200</td>
<td>136</td>
<td>539</td>
</tr>
<tr>
<td>Cornell Surprise</td>
<td>186</td>
<td>196</td>
<td>562</td>
</tr>
<tr>
<td>Cornell Supreme</td>
<td>186</td>
<td>220</td>
<td>660</td>
</tr>
</tbody>
</table>

A few eggs for hatching and day-old chicks are available from our Barred Plymouth Rocks and Rhode Island Reds.

Market eggs, dressed poultry and feathers are also available at the Salesroom.

**DEPARTMENT OF POULTRY HUSBANDRY**

New York State College of Agriculture

ITHACA, N. Y.
An abundant supply of running water for house and general farm use means convenience, labor saving, comfort and protection against fire. A private water system is a practical small investment. Let us recommend the right outfit for your requirements.

RUMSEY & COMPANY, Ltd
SENeca FALLS, N.Y.
234 Congress St.,
Boston, Mass.
75 Warren St.,
New York City, N.Y

HAND AND POWER PUMPS
FOR ALL PURPOSES
IN THE SPRING

DRY

The dry weather is when we all get outdoors. Some prefer games but many prefer the long walks in the country. Then it is that you want a camera. A small compact camera is the best. A Kodak is compact and easily operated. The Co-op. can show you all of the best models.

WET

You must go to your classes as usual and a rain coat is much more convenient than an umbrella. You take the rain coat with you to your seat. The Co-op. gives good quality for the money.

THE CO-OP.

Morrill Hall

Ithaca, N. Y.
# Table of Contents

**April, 1914**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover Design—“The Last Furrow.” By W. C. Baker</td>
<td>-</td>
</tr>
<tr>
<td>Frontispiece—John Henry Comstock.</td>
<td>-</td>
</tr>
<tr>
<td>Retirement of Professor John Henry Comstock.</td>
<td>227</td>
</tr>
<tr>
<td>The National Quarantine Law Against Insect Pests and Plant Diseases.</td>
<td>229</td>
</tr>
<tr>
<td>G. W. Herrick</td>
<td></td>
</tr>
<tr>
<td>The Students’ Association of the New York State College of Agriculture: Its Objects and Aims and a Report of its Fifth Annual Meeting. E. L. D. Seymour</td>
<td>233</td>
</tr>
<tr>
<td>Investigation in Plant Physiology. L. Knudson</td>
<td>236</td>
</tr>
<tr>
<td>The Sixth National Corn Exposition. H. H. Love</td>
<td>240</td>
</tr>
<tr>
<td>The Honor System. E. S. Bird</td>
<td>242</td>
</tr>
<tr>
<td>Fruit Growing in the Northwest. E. L. Markell</td>
<td>243</td>
</tr>
<tr>
<td>Vegetables for Every Month. Paul Work</td>
<td>247</td>
</tr>
<tr>
<td>Editorials</td>
<td>250</td>
</tr>
<tr>
<td>Campus Notes</td>
<td>252</td>
</tr>
<tr>
<td>Former Students</td>
<td>255</td>
</tr>
</tbody>
</table>

**Subscription Price:** $1.00 per year  
Canada, $1.15  
Foreign, $1.30  
Entered as second-class matter at the Post Office, Ithaca, N. Y.  
Copyright by The Cornell Countryman
RETIREMENT OF PROFESSOR JOHN HENRY COMSTOCK

By S. H. Gage

Professor of Histology and Embryology, Emeritus; Cornell University

At the close of the present college year Professor John Henry Comstock, head of the department of Entomology, will retire at the age of 65. It seems difficult for his colleagues and students to conceive of the department without Professor Comstock at its head, for he is its creator and has been its inspiration for over forty years.

In 1869 he came to the university with keen interest in the study of insects, and with the expectation, from the university announcement, that he would find inspiring teachers, and those specializing in entomology. He found the inspiring teachers, and the sympathy and encouragement he desired, but he himself became the specialist in entomology.

It came about in this way: In 1872, thirteen students in natural history and agriculture petitioned the University Faculty for a course of lectures in entomology to be given by J. H. Comstock. Among the thirteen are found the names of David Starr Jordan, William R. Dudley and several others who have since won renown. Professor Wilder, the head of the department of zoology, in which department the course was to be given, strongly favored the petition, and the Faculty authorized the course. It was given—one lecture a week with field work during the spring term of 1872.

The plan of this course has never been departed from in all the splendid development of his department. There have been lectures for the general survey of the subject and the discussion of principles, but going with the lectures have been field and laboratory work in which the student is brought in direct personal contact with nature herself, and can see the evidence with his own eyes, and learn to be an independent observer and thinker.

Mr. Comstock did not stop with the opportunities and facilities available at Ithaca, but sought those found in the older institutions of our own and other lands. Very early in his career (1872) he spent the summer in study with the distinguished entomologist, Dr. Hermann Hagen, of the Agassiz Museum of Comparative Zoology at Harvard University. Needless to say he won the respect and friendship of Dr. Hagen, and was given the freest use of the priceless collections in the museum. Later (1875) he studied at Yale University, and still later (1888–1889) at the University of Leipzig. He has used every means in his power to prepare himself to make his department what it should be. In the words of one who knows him well, “He has never ceased to grow, and to make his department grow with him”; and this seems to be as true to-day as it did two decades ago.
In 1876 he was made assistant professor and his duties were enlarged to include general invertebrate zoology. In 1882 he was elected to a full professorship, and in 1909 there came under his supervision as an outgrowth of his department the subject of general biology and in 1912 that of nature study.

If we follow his eventful career since those first lectures in 1872 we find that he has given personal instruction to more than five thousand students. More than fifty of his advanced students have become state or national entomologists or professors of entomology or zoology in various colleges and experiment stations. Besides these, a very large number of teachers in natural history and investigators in all departments of science look back to his instruction with gratitude for the true and inspiring view of nature which he gave them.

As stated above, David Starr Jordan was one of the petitioners for that first course which Mr. Comstock gave. Twenty years later when it fell to the lot of Dr. Jordan to establish and preside over a great university on the Pacific slope, he turned again to Professor Comstock to lay the foundation of a department of entomology for the Stanford University of the same character and ideals with which he had so richly endowed the one at Cornell. Professor Comstock entered upon this work with his accustomed enthusiasm and was non-resident professor in Stanford from its beginning in 1891 to 1900, spending his vacation term at Stanford. Judging by the strength and vigor of Stanford's entomological department his work partook of the same productive spirit there as here.

In his work in the larger world outside the University, he never turned a deaf ear to the farmer and the horticulturist when they appealed to him for help in their struggles with insect pests. When the opportunity came to him to serve the whole country as United States Entomologist (1879-1881), the broad views he had gained as a teacher and an investigator, and his extensive knowledge of the conditions and difficulties of the agricultural districts of the country, enabled him to inaugurate a far-sighted and comprehensive policy for the development of the work of the United States through its department of entomology in furnishing information about injurious insects and giving aid in helping to suppress them. This program has been carried out and extended in a most efficient manner by one of his students, L. O. Howard, '78.

Turning from the work he has done for the University and for the country to the still larger field where one's work is for the whole world, Professor Comstock's bulletins and monographs upon various phases of insect structure and life, and his beautifully written and illustrated books upon entomology, make an exhibit which is most honorable. Naturally, he became identified with our own national societies of science, and entered into the work done by them in zoology and especially in entomology and has been honored by the presidency of several of them. That he is also appreciated by his colleagues abroad is evidenced by the fact that he has been made a member of the Entomological Society of France, honorary member of the Entomological Society of Belgium, and honorary fellow of the Entomological Society of London.

In 1912 he was made the representative of Cornell University at the celebration of the 250th anniversary of the Royal Society of London. During this same year he was appointed by the Entomological Society of London to represent that society at the 100th anniversary of the Academy of Natural Sciences of Philadelphia.

As a man and a citizen Professor Comstock has always enjoyed the esteem and confidence of his colleagues and of the community. No one is ever in doubt where he stands on all questions of plain honesty or high principle.

No home has given a warmer hospitality and few if any have been so
generous in that hospitality as his. Students from every corner of our own broad land, and from every continent, when they think of the University always couple with those thoughts this home where the spirit of the home was exemplified and where human sympathy and friendliness were in the very atmosphere.

When in 1872 he gave the first course of lectures, he was a student assistant, but the following year was made instructor by the university trustees. For years afterward as instructor and assistant professor he was alone in the department, giving all the lectures and personally directing all of the laboratory and field work. Room and facilities were meagre; but now after more than forty years when he retires from active work in the instruction, the department which he has created has a magnificent material equipment, and a staff of five professors, five assistant professors, two instructors, sixteen assistants, one fellow, one librarian and one curator, (31 in all).

Fortunately, while he is to lay aside the burdens of teaching and administration in the department, he will remain in our midst, bringing to completion the researches upon which he is engaged and the books which are already planned; and we feel sure that there will ever remain his friendly, helpful and sympathetic attitude toward both colleagues and students.

---

THE NATIONAL QUARANTINE LAW AGAINST INSECT PESTS AND PLANT DISEASES

By Glenn W. Herrick
Professor of Economic Entomology, Cornell University

In 1911, Mr. C. L. Marlatt, in speaking of a national law to prevent the importation of injurious insects and plant diseases, said, "The United States is the only great power without protection from the importation of insect-infested or diseased plant stock." It is true that up to the first day of October, 1912, most of the ports of entry in the United States were open to the incoming of any and all kinds of plants without a question as to what injurious insects or diseases there might be on such stock. As a result, we have been struggling for years with such notorious pests as the San José scale, codling moth, Hessian fly, imported cabbage worm, Angoumois grain moth, Croton bug, horn fly of cattle, asparagus beetles, and other old offenders. The pests just named were introduced into this country from European countries many years ago and all of them came with plants or animals that were transported in ships and landed at our ports of entry. Nor is this all! Within the last two decades, prior to the passage of the national quarantine law, there came into the United States a few of the worst insect pests and plant diseases our country has ever known. We refer to the Mexican cotton boll weevil, the brown-tail moth, the

BROWN TAIL MOTHS
chestnut bark disease, and the white-pine blister rust.

**LOSSES CAUSED BY INSECTS**

It seems safe to say that at least half of the worst insect pests in this country have been imported from foreign countries. The annual losses due to insect pests in the United States alone have been conservatively estimated to be a round billion dollars. Probably half of this loss can be safely attributed to our imported pests.

Undoubtedly much of this might have been prevented had our national law come earlier. To the actual losses caused by these pests must always be added the cost of fighting them. For example, it is estimated that it would cost four million dollars annually to spray the apple trees in the United States for the codling moth. Spraying for the San José scale costs an immense amount of money every year in time, labor, and materials. The national government is appropriating $300,000 a year for fighting the gypsy and brown-tail moths in New England merely by attempting to control them along the highways and thus check their spread. For several years Congress appropriated a quarter of a million dollars to fight the Mexican cotton boll weevil and other cotton insects in the South.

**ATTEMPTS TO SECURE A QUARANTINE LAW**

The need of a national quarantine law has been recognized for many years and active attempts were made to secure such a law for at least a dozen years before it was finally passed. The immediate danger that led to the final effort to secure legislation was the discovery in 1909 of the large importation into the United States on nursery stock and the wide distribution of nests of the brown-tail moth larve. During 1909, 7000 nests of the brown-tail moth containing probably 3,000,000 larvae were found on shipments of nursery stock into New York State alone. During the two years of 1909 and 1910 nursery stock infested with nests of the brown-tail moth and occasional egg masses of the gypsy moth were carried into 22 different states of the Union. The
The exigencies of the situation called for immediate action and activity in securing legislation became greater than ever.

Unfortunately, the efforts to secure a national quarantine law were opposed year after year by a small body of importing nurserymen. They feared a slight interference with their freedom of business and apparently were not alive to the danger that infested stock might hold for an immense number of people in the different states of the Union. It seems that the total value of imported nursery stock in 1910 was only about $350,000, slightly more than the National Government was spending on the control of the gypsy and brown-tail moths along the highways of a restricted part of New England.

The principal objection of the nurserymen had been to the provision for the examination of the stock at the port of entry. Their main argument seemed to be that when the stock was once removed from the original packages for examination it could not be satisfactorily repacked. This objection was met by providing for examination and inspection at the points of destination by state officials. Undoubtedly, the old doctrine of state’s rights played an important role in the objection to federal inspection at ports of entry. Other minor objections were met by modifications, and finally a bill upon which all were agreed was introduced in Congress and was passed and approved August 20, 1912. It took effect on the first day of October, 1912.

PROVISIONS OF THE LAW

In its principal features, the law was modeled on the law governing the importation of domestic animals. A nursery company, in order to import nursery stock, must secure a permit from the Secretary of Agriculture and, in addition, must have such stock accompanied by a certificate of inspection from the proper officials of the country from which the importation is made. These restrictions do not apply to plant products imported for food and for scientific purposes.

Section 2 provides for a careful system of notification to the Government regarding all packages of imported nursery stock. The customs
POTATO WART DISEASE

officers at the different ports of entry must notify the Government of the receipt of stock, the broker or other receiver must send notification, and finally the common carrier must apprise the Secretary of Agriculture before transportation is even begun. Apparently there is little chance to import nursery stock unknown to the Government.

Section 7 makes provision for quarantining against foreign districts which are infested with particularly noxious insects or plant diseases that can not be kept out by inspection. It also provides for an absolute quarantine against particular plant products in foreign districts. For example, the only way to have kept out the chestnut bark disease would have been to have prevented absolutely the importation of any chestnut stock from Japan. Apparently the only way to prevent the introduction of the potato wart disease and white-pine blister rust into this country is to prohibit the importation of seed potatoes and white-pine seedlings from infested districts.

This provision of absolute quarantine provided in Article 7 has been objected to by importing nurserymen. However, it is the only method by which such dangerous diseases and pests can be kept out of the country; and it will not work great hardships to the nurserymen—certainly nothing in comparison with what such diseases and pests, if once allowed to obtain a foothold, might work upon the people of the United States. The Secretary of Agriculture says, “It is not the intention to apply this section except in case of diseases or other dangers which cannot be kept out by the inspection or disinfection. The fears are absolutely groundless that the Department of Agriculture, in enforcing this section would necessarily interfere in any way with legitimate importations of plants, and in those cases where importations carry grave dangers the importers themselves, if honest in their intentions, should be the first to assist in keeping out these dangers.” This same provision is in the law relating to the importation of domestic animals and it has worked most satisfactorily there.

Section 8 gives similar power to quarantine against any district in the United States where a new disease or insect pest has gained a foothold until such district has been freed from such disease or insect. For example, it gives power to prohibit the importation of seed potatoes from the State of Oregon to prevent the spread of the potato tuber moth if such quarantine seems wise and necessary in the eyes of the Federal Horticultural Board.

Finally, Section 12 authorizes the Secretary of Agriculture to create what is known as a Federal Horticultural Board to aid him in carrying out the provisions of the law. This Board consists of five members appointed by the Secretary of Agriculture from the Bureaus of Entomology and Plant Industry and the Forest Service, not more than two of whom, however, shall be appointed from any one Bureau or office.

(Concluded on Adv. page 18)
THE STUDENTS' ASSOCIATION OF THE NEW YORK STATE COLLEGE OF AGRICULTURE:
Its Objects and Aims; and a Report of Its Fifth Annual Meeting, February 11, 1914

By E. L. D. Seymour, '09
Garden City, N.Y.

CONSIDERING the many and varied attractions of Farmers' Week, the hundred or more persons who heard Acting Director Stocking open the Fifth Annual Meeting of the Students' Association constituted a very fair attendance. Perhaps before going farther with the report of the meeting I should briefly review the history and aims of this organization, for I am told that the active student body has recently taken the same name for the organization well known to most alumni as the "Agricultural Association", a condition giving rise, perhaps, to a possible misconception.

On the 25th of February, 1909, a meeting was called to consider the formation of a "permanent organization of all the students of the College of Agriculture," and on the next day the plan was carried out, a constitution adopted and officers elected. The objects of the new Association were:

"(1) To supply a bond that shall unite all resident and former students of the New York State College of Agriculture.
(2) To advance the interests of the College, and (3) to promote country life interests at large."

Of the other specific provisions of the Constitution the following are perhaps worth recalling here:

"This Association shall consist of two parts or divisions—a Resident Division and a Non-Resident Division.

"The Resident Division shall be composed of students registered in the College of Agriculture and members of the staff of the College and Experiment Station. The special purpose of this Division shall be to stimulate student initiative and cooperation and the spirit of unity and loyalty; to create and maintain a high standard of student life and activity; to advance the standing of the College among the other colleges of Cornell University; and such other duties as may come upon it in its relation to the College, and that may be assigned to it by the Association.

"The Non-Resident Division shall be composed of the former students of the College. Its special responsibility shall be to bring the benefits of the College to the people of the state by example and other means; to make suggestions looking to the increased effectiveness of the work of the College; to support such movements; to promote the welfare of the College and of country life interests at large as the Association may initiate or may determine to aid."

Of the four vice-presidents, it is directed by the Constitution that the first shall be President of the Agricultural Association and shall be charged with the work of the Resident Division; the second "shall be chosen from among the non-resident special students;" the third "from among the resident or former winter course students and shall not be one who has subsequently taken a regular or special course;" and the fourth shall be the editor of the Cornell Countryman, which, also, is designated as the official organ of the Association.

So much for what the Association was designed to be and do. The question to-day is whether the students,—resident and non-resident—are going to back up their action at that time and give their support and membership to
the organization. Thus far, to speak frankly, they have not done so; for, of the six thousand names on the College roll, less than six and one-half per cent are paid up members of their Association. Surely, it would seem, there is somewhere a lack of interest or appreciation or realization that is creating this obstacle in the path of the progress and effectiveness of the Association.

Work, to be done for the College and the State, by the Students' Association is not wanting; the crystallization of the spirit of the Association in local and county groups of alumni is rich in potential power. And surely the college gives enough to every student that enters and leaves its sphere of influence to deserve the recognition and gratitude that active participation in the work of the organization represents. The Students' Association is a tangible means of keeping in touch with the College interests as a whole. Whether or not you have special fruit-growing, dairying, poultry, or other affiliations, you owe it alike to yourself and to the College to maintain this, general yet centralized medium of contact.

* * *

Resuming my report; Acting Director Stocking outlined clearly and comprehensively the present development of the College, the scope and nature of its past activities and its plans for the immediate future.

President Burritt then reviewed the work and condition of the Association, and called for the usual reports of officers and committees. A phase of the Association's growth was indicated in the brief reports from local or subordinate sections, of which there are now six, located in Wyoming, Chemung, Monroe, Broome, Chautauqua, and Suffolk Counties.

The discussion of new business brought up the suggested Student Loan Fund (which was referred to the Executive Committee for consideration and action), the matter of amendments to the Constitution, and the financial condition of the Association. A subscription was started and some two hundred dollars collected with which to reduce the existing deficit and establish a sinking fund. Later the following amendments were adopted:

§1. Article 5, paragraph 7, was amended to read simply "The Secretary-Treasurer shall have such duties as ordinarily pertain to such office," making possible the election of other than a resident member connected with the College, as formerly required.

§2. Article 6, Section 1 was amended to require an annual due of one dollar ($1) in addition to the membership fee of two dollars ($2) already required.

Officers for the ensuing year were recommended by the Nominating Committee and unanimously elected as follows: President, C. H. Royce, Elm Grove, W. Va.; vice-presidents, F. E. Rogers, and F. W. Lathrop, Ithaca; F. H. Richards, Attica; and H. B. Winters, Albany; secretary-treasurer, E. L. D. Seymour, Garden City; members at large of the executive committee, Samuel Fraser, Gene- seo; Jared Van Wagenen, Jr., Lawversville and C. F. Boshart, Lowville.

After adopting the three resolutions given below, the meeting adjourned, to meet informally in the evening in the greenhouses, where light refreshments were served, extemporaneous talks called for by Professor H. H. Wing as impromptu toastmaster, and, on the whole, an altogether pleasant informal reunion enjoyed. It is to be hoped that, whatever changes future years may bring, the latter may remain a permanent feature of the annual meeting.

RESOLUTIONS ADOPTED BY THE STUDENTS' ASSOCIATION OF THE NEW YORK STATE COLLEGE OF AGRICULTURE, AT ITS FIFTH ANNUAL MEETING

Introduced by Professor J. E. Rice: Recognizing the loyal and exceptionally efficient services of our retiring President, Professor M. C. Burritt, we desire to express the hearty approval and thanks of this Association. Be it Resolved, therefore, that a copy of this resolution be included in the minutes of the meeting, and a copy handed to Professor Burritt.
Introduced by Mr. C. H. Royce:
To William A. Stocking, Jr., Acting Director of the New York State College of Agriculture:

The Students’ Association of the New York State College of Agriculture, in annual meeting assembled, herewith expresses its gratification at your selection as Acting Director, and desires to express to you its hearty approval of the manner in which you are administering the office of Acting Director, and to assure you of the united and loyal support of its members in your task of solving the grave problems confronting the College, and in continuing the policies laid down by Director Bailey.

Be it resolved, that this resolution be spread on the minutes and a copy be transmitted to Acting Director Stocking.

 Introduced by Mr. Samuel Fraser:
At this, the first meeting of the Students’ Association since the resignation of Dean Bailey as Director of the State College of Agriculture, it is eminently fitting that some words of appreciation be said of his great services to the State, the Nation, and to this Institution.

For twenty-five years the name of Liberty Hyde Bailey has been linked with agricultural progress in New York State. More than that of any other one man his leadership has given confidence to others and has found a way out of difficulties, and has led the farmers of this State in agricultural development and achievement.

It is given to few men to make their influence such a power for progress and for good in the world as it has been given to Liberty Hyde Bailey. For a quarter of a century he has been a vital force in American agriculture, and especially in horticulture. He has been associated with the New York State College of Agriculture for nearly twenty-five years, and for ten years has been the leader, not only in this great Institution, but in the agricultural development of the whole Empire State. His counsel and opinions have been sought throughout the United States. The name of Bailey must always loom large in the agricultural history of this period. Only future generations will be able fully to measure his influence.

But it is in his personal relationship with the students, and, indeed, with all with whom he came in contact, that he will be longest remembered. In spite of the pressure of work—and it has always been very great of late—he always found time to keep in personal touch with students, faculty and his friends, of which he has many. His wise counsel was as gladly given as it was constantly sought. Never to our knowledge has any person who had business with him or greetings for him failed to receive courteous welcome and attention.

In a position of great power and with heavy responsibilities, Dean Bailey has never been an autocratic master. Rather he has been the leader. His power to win the confidence of men and to lead them to do the wisest thing is perhaps his strongest characteristic. His leadership has first of all been wise, then forceful, and it has brought results. The laying down of this active leadership will be keenly felt.

It has been said that one measure of a great man is his ability so to organize his work that when he lays it down another can take it up and carry it on without difficulty. We doubt not that the Dean measures up to this standard. His work is by no means finished. He may be called upon to perform even more arduous and responsible tasks than he has already done. We doubt not that he is ready and that he will do them well. He is now free to do them in his own way.

Dean Bailey, without doubt, is the most useful man that American agriculture has ever produced. We desire to express our appreciation of him while he is yet among us. By his resignation the State loses a great director of one of its most useful institutions and a man of rare foresight; the College loses a great executive and organizer; the Faculty of the College and the students lose a wise counsellor;
but we still retain our friend and leader. We desire him long life and that he may long enjoy the fruits of his great work and see agriculture established upon the plane for which he so long and nobly fought.

The words of Professor Bailey in his memorable speech at the dedication of the buildings of the New York State College of Agriculture we accept as our watchword and guide. And we now pledge him our support in carrying out his dream and life work for the development of the College and the agricultural interests of the State. "This College of Agriculture is not established to serve or to magnify Cornell University. It belongs to the people of the State. The farmers of the State have secured it; no amount of academic sentiment would have secured it. Their influence has placed it here. They will keep it close to the ground."

Be it then resolved. That a copy of this expression of our appreciation be sent to Ex-Director Liberty H. Bailey and others elsewhere at the discretion of the Executive Committee and that it be placed upon the permanent record of this Association and be transmitted to the CORNELL COUNTRYMAN and the press in general.

INVESTIGATION IN PLANT PHYSIOLOGY

By L. Knudson

Assistant Professor in Plant Physiology, Cornell University

PLANT Physiology does not seek primarily to establish practical rules for guidance of the farmer but to seek and establish the fundamental principles upon which practical knowledge should be based. Plant Physiology, is, of course, not alone in this field but more than any other phase of botany and perhaps more than the other sciences it is fundamental to all the applied plant industry sciences. So, it is, that investigations in plant physiology are very diverse in character and have a bearing upon problems in farm crops, floriculture, forestry, plant breeding, plant pathology, pomology, soil technology and vegetable gardening.

It is six years since the work in Plant Physiology was definitely organized in the College of Agriculture. During that period considerable research work has been done by members of the staff and graduate students, and much work is in progress, but because of its nature it is not readily accessible to the general reader of the COUNTRYMAN. In this brief sketch it is manifestly impossible and even perhaps not desirable, to enter in any details concerning the work. Not all of the research work will be mentioned but only that which appears to be of a general interest.

GUMMOSIS OF PRUNUS

The exudation and accumulation of masses of gum on the bark of trees of cherry, plum and peach is frequently observed and is characteristic of a physiological disease known as Gummosis. Results of investigations on the disease were published in 1911. The gum exudation is a resultant of the dissolution of embryonic wood cells forming a pocket just below the bark and cambium. The gum consists of the dissolved cells and their contents. Sometimes the cambium may be destroyed. Gummosis is a traumatic response, that is, it is due to wounding caused by physiological, chemical or biological agents. In the case of cherry, gummosis may start auto-genously. In all cases the disease occurs only when the tree is actively growing and when there is an abundance of moisture. The remedial treatment is, as previously stated by other investigators, related to a diminishing of the water supply by drainage or other means.
DIAMETER INCREASE IN TREES
Relatively little is known concerning the season of cambial activity, that is, the season of diameter increase in trees. Does wood formation begin concurrently with bud development? Microscopic studies made with American larch, apple, and grape indicate that the formation of new wood and phloem does not begin until the leaves have almost fully developed, and this lateral increase is of relatively short duration, being most rapid shortly after the beginning of cambial activity. In the peach beginning of diameter increase is coincident with blooming. In all lateral increase ceased before August 10. Under certain conditions a second growth may occur in the same season. Such studies with fruits are especially important to the pomologist in deducing conclusions from fertilizer, irrigation, pruning and other experiments.

INFLUENCE OF SUGAR ON GROWTH OF VETCH GROWN UNDER STERILE CONDITIONS, (1) CONTROL CULTURE, NO SUGAR; (2) LACTOSE, (3) MALTOSE, (4) CANE SUGAR

ENZYME STUDIES IN MOULDS
Interesting fundamentally, and also economically, are certain investigations which have been made with certain of the mould fungi. These fungi like others produce ferments or enzymes, each of which is capable of effecting the digestion of a particular organic substance. These enzymes
are secreted by the fungus and effect digestion extracellularly. Investigations show that certain of these enzymes can be regulated in production and secretion by varying the nutrition. Such studies may be important in the interpretation of investigation in plant pathology.

Economically interesting results have been secured as follows: Pyrogallol, which is largely used in photography, and otherwise technically, is derived from gallic acid which in turn is derived from tannic acid by fermentation. If tannic acid along with certain nutritive salts is given to the mould it is fermented and some of the gallic may be utilized by the mould. If, however, sugar is supplied with the tannic acid, the organism utilizes the sugar, ferments the tannic acid to gallic acid, which latter remains in the culture solution. Without the presence of sugar the gallic acid is used as food; in the presence of sugar the mould shows a preferential selection of the sugar, though of course not anticipatory of its better food value and flavor. Sugar can be purchased for five cents per pound, whereas gallic acid is expensive. It is readily evident, therefore, that the addition of sugar is an economical procedure.

**BALANCED SOLUTIONS AND ANTAGONISTIC ACTION**

In Memoir Number 2 of this station is embodied the results of comprehensive investigation of the influence of various salts on plant growth. This work has extended the investigations on this subject. The nutritive salts when singly in solution or in mixtures not properly balanced with each other show a toxic influence or do not permit of optimum growth. Two nutrient or non-nutrient salts, each of which may be toxic when singly in solution, may mutually counteract the toxicity when combined at the same concentration. Calcium salts especially strongly antidote the toxicity of other salts and particularly of magnesium salts which are extremely toxic. These studies indicate practically that beneficial effect of liming is due in part at least to the antidoting effect of calcium, and, furthermore, they suggest the danger of application of high magnesia limestone.

**SENILITY IN PLANTS**

One of the very interesting problems now in preparation for publication is that concerned with senility in plants. Botanists and horticulturists in general have assumed that the plants show no true evidences of senility; for instance, it is stated that the death of an old tree is not due to senile degeneration, but due to disease or to various mechanical difficulties involved. According to them there is no senile deterioration in the meristematic cells (those cells which give rise to new growth) of plants. To determine this point in the meristematic cells is extremely difficult but any difference in the cells should be made manifest in the tissue produced. Such differences are shown in the leaves of woody plants. Mature leaves borne on old vines or trees will have per unit area a greater system of veinage than mature leaves borne on young vines or trees. If the area enclosed by the smallest veins, which areas we may term vein-islets, are measured, it will be noted that the areas vary inversely as the age of the plant from which the leaf was taken. For the grape vine data has been secured which make it feasible to determine the approximate age of the vine by an examination of the leaf. This will be possible also for other perennial plants. Even in the case of water sprouts it will be possible to approximate the age from the parent plant. From the standpoint of the pomologist a method is here available for detecting seedling stock.

Evidence indicates also that the leaves of old plants are less efficient in manufacturing carbohydrates. If the leaves of old plants are less efficient manufacturing organs than leaves from young plants it would seem advantageous to develop varieties of fruit propagated from seeds and not by vegetative reproduction.
As a result of these studies furthermore, a new theory of senility is proposed in which senile deterioration is considered as due to change in permeability of the cells for which evidence is given.

**LEGUME INOCULATION**

During the past four years considerable attention has been devoted to investigations on the subject of legume inoculation. Practically these studies have led to the development of the sterilized sand method for the distribution of the legume bacteria. The advantages of this method are ease of handling by the farmer, little danger of contamination and consequent destruction of the legume bacteria, rapid multiplication of the organisms, but more important than all is the retention of viability and certainty of results. Results show that even after three years there are billions of the bacteria present in the soil culture. All gelatine and liquid cultures have a time limit and, furthermore, are subject to injury by exposure.

The studies, furthermore, indicate that contrary to the claims of commercial houses that bacteria cannot be bred or increased to any extent in virulence that is, infecting capacity. The studies show, furthermore, that there is a distinct relation between the chemical nature of the soil solution and nodule production. In the volusia silt loam the addition of sulfates and nitrates are detrimental to inoculation while chlorides are stimulative as are the carbohydrates. There is also a relation of nodule formation to moisture content of the soil. Furthermore, it has been found in the experiments that the organism may live in the soil yet be unable per se, or because of the resistance of the plant, to affect inoculation. It has been found in field studies that the soy bean organism will live in the soil at least three years without the host plant. The experiment is being continued.

**ORGANIC NUTRITION OF PLANTS**

One of the more recent problems under investigation is concerned with the organic nutrition of plants. The earlier views of plant nutrition were to the effect that all the organic matter of

(Concluded on Adv. page 18)
THE Sixth National Corn Exposition was held in Dallas, Texas, February 10-24, 1914. This exposition is held in connection with the National Corn Association, which was organized seven years ago to further the interests of agriculture. The management decided the interests of agriculture could best be served by holding an annual National Corn Exposition at which the best products of the farm would be shown, with the most scientific methods of their production.

The first exposition was held in Chicago and the second and third were held in Omaha, Nebraska. The fourth was held in Columbus, Ohio, and the fifth was held in Columbia, South Carolina.

The sixth exposition was held under the direction of the National Corn Association, State Fair of Texas, Texas Industrial Congress and Dallas Chamber of Commerce.

There are three general lines emphasized at these expositions, the assembling of farm products to compete for prizes, the staging of educational exhibits from the United States Department of Agriculture and the various states, and programs dealing with the various phases of the farm, farm home and conservation.

The competitive exhibits are brought from all over the United States, each state being urged to bring samples for competition. Most of the states have their state shows and the prize winners from these state shows are brought to the National Exposition to compete for prizes. Such a procedure brings only the finest specimens of farm products to the national show.

The premium list is large and the prizes well worth the competition. Prizes are offered for such products as corn; rye, seed and sheaf; flax, seed and sheaf; buckwheat; alfalfa, seed, sheaf, and bale; timothy, seed and sheaf; red clover, seed and sheaf; alsike, seed and sheaf; white clover seed; millet; peanuts; blue grass; popcorn; sweet corn; soy beans; cowpeas; wheat; oats; barley; and potatoes.

The value of the premiums offered this year was $50,000. For the best bushel of corn on the ear the first prize was an automobile. New York State had exhibits of corn, oats, and potatoes. The sample of potatoes competed against all other samples and won the world’s championship.

Such an array of farm products is of value to agriculture since it increases competition between the different states and between the different sections of the country. The greatest value, however, is that it establishes an ideal for the producer to keep in mind toward which to work. The farmer, as he looks over the splendid specimens resolves to better his system of farming so that he may produce such samples. If he is progressive, he begins to look about to see where the information may be had.

From these competitive exhibits his attention is directed to the educational exhibits which are brought to the National Corn Exposition by the United States Department and the various states.

In looking over the various exhibits the farmer finds the answer to questions that have been bothering him for some time. As he passes from exhibit to exhibit he is impressed by the fact that agriculture is one of the broadest of subjects and that a large army of workers are busy attempting to solve some of the very perplexing problems. The entire exhibit has the effect of renewing the enthusiasm of the farmer and he feels more than ever that agriculture is a dignified field and that much work is being done to aid the practical man.

The exhibit that was taken to Dallas by the United States Depart-
The Divisions of Agriculture was one of the largest that the Department had ever sent out. It covered an area of ten thousand square feet. The work of the Division of Forestry was emphasized and well illustrated by pictures, charts, and exhibits of various sorts. The effect of deforesting was illustrated by an exhibit showing the eroding on the deforested soil while no erosion was noted on the soil which was covered with trees. The work of the Divisions of Soils and Plant Industry was well illustrated by the results of soil studies and many specimens of cereals. The Office of Public Roads exhibited many types of roads illustrating the materials used in construction and methods of building.

Other divisions from the Federal Department having exhibits were Chemistry, Animal Industry, Entomology, and the Weather Bureau. All of these exhibits were excellent and gave some very instructive lessons along the various lines.

About twenty-seven states were represented by exhibits. Each exhibit was attended by two or more members of the college staff. All of these exhibits showed the results of the latest experimental work along the lines of soil or seed improvement, rotations, systems of cropping, results of various sorts of feeding and the like. For example, Nebraska showed the amount of water required by a corn plant at different hours during the day and under different soil treatments. Results given in the Nebraska exhibit showed that a one crop system was not a profitable one to follow. The two leading crops of Nebraska are corn and wheat, but it is not profitable to depend upon all wheat or all corn. The fact that it did not pay to fan or reclean seed wheat was also illustrated in this exhibit.

The Iowa exhibit showed a map of the state made up of the principal soil types. The relation between the rate and rapidity of the germination of corn and yield was also well illustrated.

The California exhibit showed the method used in fumigating a tree in the orchard. The tree was covered with a large tent and fumigated. The results showed that this method is very successful.

The Illinois Station showed the composition of a bushel of corn and the results which have been accomplished in increasing and decreasing the oil and protein content of the corn. The important results of their soil investigations were also shown.

The Missouri Station showed, among other things, the importance of seed selection. A selection from Poole wheat had given an increase of 6.3 bushels an acre over the parent variety. A selection from Fulcaster had given an increase of 8.4 bushels an acre over the parent variety.

The Colorado exhibit contained samples showing the results obtained by crossing different varieties of cereals in an attempt to produce new profitable sorts.

Wyoming showed a large display of different types of wool, while South Carolina showed the results obtained from different types of cotton.

Space does not permit giving all the interesting features displayed by the different states. All the state exhibits showed that much thought and money had been used in assembling them.

Daily programs were arranged during which talks along the various lines of agriculture, country life, and farm home were given. Many leading men were brought from all over the country to talk on the various subjects.

Together with the exhibits, demonstrations, and lectures the Sixth National Corn Exposition represented the greatest agricultural affair that has ever been brought together.

There were some entertainment features which served to rest one from the study of exhibits. This seems necessary, since one cannot spend all the time in study and taking notes without some recreation.

The exhibit from Cornell was in charge of Professor A. R. Mann, E. G. Montgomery, J. R. Livermore, W. C. Etheridge, Royal Gilkey, and the
writer. The experimental results from the Department of Farm Crops, and the Department of Plant-Breeding were shown together with the rural community center.

The exhibits from the Departments of Farm Crops and Plant-Breeding were practically the same as were used at the New York State Fair, and space does not permit describing them in detail.

The rural community center also was exhibited in the same manner as at the New York State Fair. The Cornell exhibit received much favorable comment.

The National Corn Exposition, representing as it does the greatest agricultural exhibit ever assembled, is such a valuable institution that it certainly should live and continue its service to the people.

THE HONOR SYSTEM

By E. S. Bird

Chairman of the Honor System Committee

Since the organization of the new Honor System a number of questions have arisen and it is the purpose of this statement to make clear the attitude of the committee regarding several of these.

This committee has jurisdiction over cases of fraud in class rooms and in all examinations. The system is on trial. In order to give it a fair trial instructors are going to find it convenient to be out of examination rooms except while giving out papers and answering necessary questions.

Two suggestions have been made regarding the reporting of cases of cribbing. One, that we have a secret service squad to police examinations. This, of course, is entirely opposed to the spirit of the Honor System and the committee feels that it would not be practicable. This method would force the System upon the students and this is exactly what we do not want to do. If the student body does not want the System, the sooner we have faculty control of examinations the better.

The other suggestion is that when a man sees another cribbing, he go to him and say, "I have seen you cribbing and will give you three days to report to the Committee, if you do not report in that time I will report you myself." This is a new idea and one, we think worthy of trial. As it is now, cases of cribbing are reported directly to members of the Committee.

The man who cribbs lowers the standard of the B.S. degree, the man who lets another cheat admits that he is willing to have the dishonest person get a certificate, having the same value as his own, on another student's work.

The Committee recommends that whenever possible students in examinations sit in alternate seats and directly behind the persons in front of them.

The System is working. The Cornell Sun for February fourth contained the following:

"The Committee on Student Affairs approved the recommendation of the Committee on Student Honor of the College of Agriculture that a winter-course student in Poultry Husbandry be dismissed from the University because of fraud in examination." Subsequent recommendations are:

To place a senior on probation till June.

To deny a sophomore credit for a course and place him on probation until June. One case concerning freshmen from another College was turned over to the Faculty Committee.

The success or failure of the present System depends entirely on the spirit of cooperation of the student body with the Committee, for we already have the cooperation of the Faculty.

The Committee invites criticism and suggestions.
FRUIT GROWING IN THE NORTHWEST
E. L. Markell

The question comes to many of us who are contemplating fruit growing, where can I plant an orchard to the best advantage,—which is better, the East or the West? We hear a great deal about the northwestern part of this country, and we wonder writers for this purpose. The writer may have paid a short visit to the region which he attempts to describe, or he may have composed it from information furnished him by someone else. Many of the pamphlets are truly works of art. They contain

if this section is endowed with all of the natural advantages which are claimed for it, whether it is, in fact, the El Dorado of America. For most of us, the only sources of information on this subject are magazine articles, or the elaborate pamphlets that are published by the commercial clubs in all of the large fruit growing sections of the West. The magazine articles are frequently the work of land promoters, who have even been known to secure the services of skilled photo- engravings of beautiful orchards heavily laden with fruit, and of unsurpassed bits of local scenery. The impressions which one gets from these is often misleading. They convey the idea that a western fruit orchard is a never failing source of comfort and profit. Some of them may be, many are not.

The history of all of these sections is very similar. A quarter of a century ago, a plow had never touched most of the land that is now occupied by
orchards. A few of the settlers grew fruit, but mainly for their own consumption. Very little of it was sold. The land and the climate proved ideal for fruit growing, and the trees produced the most beautiful fruit that the owners had ever seen. Some of this gradually made its appearance on the markets of the East. It was much more attractive than most of the fruit that was produced in the restricted areas, but these areas gradually widened until whole sections were planted with nothing but fruit trees. The tremendous demand for land in these sections very rapidly increased its value. This invited real estate speculation, and three or four years ago, many of the prominent fruit growing sections had forty or fifty real estate dealers, who were eager to sell ignorant settlers anything from an acre of sage brush to a well developed orchard, at a fabulous price. They are largely responsible for the descriptive pamphlets which have deluged the country. Some of the information contained in them is fact, and some is fiction. In most of these sections, certain individuals, through a happy combination of favorable conditions, and the exercise of good common sense, have made large profits. Records of these successes are always given a prominent place in the literature relating to a locality, and to the man

THE DALLES OF OREGON. A REGION OF DIVERSIFIED FRUIT GROWING
whose ideas have already been distorted by extravagant tales of western possibilities, they are but representative. The city man who longs to be a farmer, readily believes them. They are in strict accord with his preconceived notions. As a result, thousands of people have moved from the city, and have settled in these communities with no more knowledge of the section in which they are to live than is given in these booklets, which they carry with them. Most of the disappointment which has followed the settlement of western fruit growing sections is due to the fact that the settlers have not investigated the conditions themselves, before buying the land. Some of the settlers have wealth; others have barely enough to purchase a small piece of ground and build a shanty. The man of wealth has a fair chance for success, if he cares for the new conditions under which he has to live. He can purchase a good sized tract of land, plant his orchard, and still have enough money to live on until his orchard comes into bearing. Better still, he can buy a bearing orchard, which will give him immediate returns, or at least give him something to experiment with. He has a great deal to learn, because orchard conditions in the Northwest are different from those in other sections of the country, but the man of means is better able to withstand the adversities that must almost surely be encountered, than his poorer neighbor. Examples of success and failure may be found side by side in the fruit business as well as in other lines of industry, and, in most cases, the difference is not due to a difference of thrift, or of natural ability, but simply to the lack of sufficient capital on the one hand, and the possession of it on the other.

The Northwest is a great fruit producing country. One would hardly
hesitate to state that orchards of a given age are, on the average, more productive in the West than in the East. This is doubtless in part due to better care. We hear considerable discussion as to the relative qualities of the fruit from the two sections, and while most people agree that the western fruit is more attractive in appearance, many feel that the eastern fruit is higher in quality, or flavor. There is some ground for this belief, but it is the writer's opinion that the leading varieties of apples of the West are as high in quality as the leading varieties of the East. These, in brief, are the main advantages of the West as a fruit producing country. The disadvantages should also be carefully considered. Most prominent among these is the distance from market. Freight rates are so high, that unless the market prices are good, it does not pay to ship east, and that is where the bulk of the crop must be sold, under the present conditions. The season of 1912 may be taken as an example. The tremendous shipments of western box fruit during that season, together with the large crop of apples all over the country, reduced prices to such an extent that very few western growers made any money at all, and many lost money on their crop. Several factors combine at the present time to make it practically impossible for the average grower to make money during a season of widespread large production. One is the rather poor system of marketing which is in vogue, but which the shippers are trying to improve. Another is the waste of second grade fruit. As has been previously stated, it only pays to ship high grade fruit to the East. The fruit which falls below this grade is frequently of considerable quantity. Some of this is consumed in the local markets, and some of it goes to the cider mills, but a great deal of it is wasted every year. Comparatively little fruit is dried in the Northwest. This could be made a very large source of income, especially when prices are low. Over-specialization is probably the greatest handicap to prosperity in most of the western fruit growing sections. Hood River Valley in Oregon, is one of the most prominent examples of extreme specialization. Practically all of the cleared land in this section is planted with orchards. The valley has been well called a mammoth apple orchard. A few years ago, these orchards were all cultivated intensively, and apples and a few pears and strawberries were the only products of the soil. Practically all of the food consumed by the inhabitants was brought in from other parts of the country, at expensive freight rates. It was estimated last year that $50,000 worth of dairy products are imported annually by the inhabitants of this valley, and other food products in proportion. Conditions have changed somewhat during the past three years and they are changing all of the time. The orchards are not now cultivated during all the growing season, and most of the growers are planting cover crops of clover, which are left on for a year or more. These are often cut and harvested. This is not in strict accordance with good orcharding principles, but conditions seem to permit it in the West, and economy demands it. The soil is naturally rich, and all of the orchards in sod are regularly irrigated. Water is abundant, and there is little danger of the cover crop robbing the trees of moisture. Many of the growers are now keeping a cow or two, and some are establishing milk routes. Small stock raising is attracting the attention of many of the growers, and it is evident that most of them are beginning to realize the necessity of establishing some kind of a side line, that will provide them with sufficient income to help tide over unfavorable conditions. It is also to be noted that comparatively few new orchards are now being planted in Hood River Valley. In fact, it is said, that one grower pulled up the trees on twenty acres of his young apple orchard, and replanted this entire area to clover. Very little land is being sold at the
present time, and it is reasonable to expect that land values will become re-adjusted within a few years, and based more upon their actual earning capacity.

Not all of the fruit growing sections have made the mistake of basing all of their hopes on one crop. Some of them which may be classed as diversified fruit sections are producing a great many different kinds of fruit in considerable quantities. The Dalles, a section about twenty miles from Hood River is an example of this type of fruit region. It is noted locally for its peaches, but other fruits are grown there in abundance. Some of the farms are producing apples, peaches, pears, cherries, prunes, and grapes, and appear to be quite successful. This section makes the same mistake as Hood River in that the bulk of its food supply is produced elsewhere.

When we finally consider the Northwest as a place to live in, we are bound to make a favorable report. It is said that anyone who has lived in this section of the country for a year or more, never cares to live elsewhere. This appears to be almost literally true. The scenery, especially in the mountain valleys, is almost unsurpassed. Hood River Valley, with its snow-capped mountains, looming up eternally white at either end is an ever-changing scene of magnificent splendor. The climate, too, is very pleasant. One never feels the extremes of temperature that are so often encountered in the East. The days are mild practically all of the year, and the nights are cool. The rainy season, which occurs on the Pacific Coast during the winter, is somewhat unpleasant, but most of us feel that there is considerable truth in the western “booster’s” remark that there are some unpleasant features to every section of the world, and that the Pacific Northwest is generously supplied with the pleasant ones.

The pictures shown are by courtesy of the U. S. Department of Agriculture, B. P. I. Division of Pomology and Horticulture.

EVeGETABLES FOR EVERY MONTH

By Paul Work

MOST people insist on eating every day of the year. This means that our markets must supply the products of the farm to the consumer constantly and without any interruption. Fortunately, most of the animal products are yielded more or less uniformly throughout the twelve months, and storage comes into play merely as a balance wheel for the evening up of the supply. Plants, however, yield their crops only during their regular seasons and are fruitless through many months. In the case of the staple products, as the cereals, the problem of distribution is comparatively simple, for they are non-perishable.

Modern folk are not satisfied with a diet of cereals and meat and dairy products. The vegetables, together with the fruits, constitute twenty-five per cent of the food consumed. These are perishable things, things that may be easily offered only during the summer and early autumn. The insistent demand continues throughout the four seasons, and it can be met only by special foresight, special care, and special equipment. Few realize as the toothsome delicacies of the garden are set before them the complexity of the devices for hastening maturity and for preventing spoilage and for speeding transportation that are involved.

The first factor that is brought into play in bringing the curve of supply to conform with the curve of demand is the ingenuity of the grower in the management of his operations. He strives to coax his fields into early pro
duction and he strives to continue his harvest well into autumn months. He selects the warmest slopes and lays drains and plows in the fall, that he may plant as soon as possible. He applies quickly available fertilizer, cultivates ceaselessly, and irrigates copiously in order that maturity may be hastened. Knowing when a given block of a crop is likely to cease production, he makes later plantings, and thus is able to sell regularly through several months.

This, however, is not enough. Parts of his fields which are occupied during the midst of the growing season by tender crops may be utilized in the spring and fall for hardy crops which make active growth in the intervals between frosts. Thus may radishes or turnips or peas be planted as soon as the ground can be prepared, to be followed by a midsummer crop of tomatoes. These may be removed in time to sow spinach for very late fall and very early spring cutting. Two cool season crops may also be grown on the same ground in a season, as early cabbage to be followed by late celery.

Such intensive plans could not be carried out to the best advantage if all the seeds were sown in place. During their early growth the plants only partly utilize the soil. The gardener rises up a great while before spring and makes his sowings under glass. By the exercise of a skill which is born of years of experience, he is able, as soon as outdoor conditions are favorable, to set out well grown and well hardened plants which are ready to make uninterrupted progress toward full bearing. Plant growing and transplanting, even without glass, often permit the pro-

5000 SASH FOR CELERY AND LETTUCE. ABOUT ONE MONTH IS GAINED
increasing every year, and the processes have been so highly perfected that the quality in many cases rivals that of the freshly cooked product.

To distribute his crops and, incidentally, his income through the winter months, the grower must rely upon the storehouse and cellar and pit and trench. He doles out from these hiding places his market's daily needs of celery, cabbage, onions, and all the many root crops. Of recent years mechanical cold storage has come into use for celery and even to lengthen the season of muck land lettuce.

Nearly seventy-five years ago the trucking industry had its birth in the Norfolk section and since that time the development of transportation facilities and the improvement of the refrigerator car have made it profitable for many sections, where climatic and soil conditions favor, to contribute to the feeding of distant cities. To borrow the language of the produce trade, long before "up-state storage stocks of cabbage are cleaned out, "carlots are rolling from Gulf Coast points." Solid express train loads of asparagus, celery, and melons make their way across the whole breadth of the continent from southern California. Texas begins to ship its onions in March, and early Spring sees tomatoes from Mississippi and Tennessee on their way northward. Such crops as spinach, kale, and the salads know no winter in Louisiana and Florida. Nor is the shipping business entirely engaged in bringing southern produce North. The cities of the South are enjoying marvelous development and their people are as insistent upon enjoying the delicate products of a milder climate during the summer months as are our northern people on being supplied throughout the winter. August and September find several rapidly growing New York trucking districts forward-

ing cars of peas, lettuce, celery, tomatoes, and cucumbers to the central and southern cities. October and the winter months find enormous quantities of northern grown cabbage and potatoes on their way to the great consuming centers.

With all these skilfully devised schemes of garden management, of preserving, of storage, and of transportation, becoming each year more perfect in their operation, it is hard to believe that every demand is not fully met; but the most highly specialized and most exacting and withal the most highly intensified of methods for insuring continuity of supply is yet unmentioned. Though threatened by competition from all the others and especially from the southern truck gardens, the vegetable forcing industry increases without a pause. Though fifteen months ago a mighty cry of over-production went up from the vegetable greenhouses, losses were more than recouped during the later months of the winter, and new ranges of glass are being built each summer. The economy of large scale production and the improvement of methods with advancing years of experience point to the continued success of the gardens under glass.

And yet with all the marvelous progress of the past twenty-five years, a visit to our markets and green grocers reveals not only vegetables and fruits that are fresh and tempting, but also products that are blemished with insects and diseases, that are wilted and stale, that, even though attractive in appearance, lack in quality when prepared for the table. In many places and much of the time there is an absolute dearth of some of the crops that should be available at every season. Even yet is there room for progress.
Howard E. Stern ’17, of Philadelphia, Pa., has been elected to the Editorial Staff.

A large eastern university has started the custom of setting aside a day each year which is called Alumni Day. The graduates of the college attend recitations, listen to talks by prominent undergraduates and go over the everyday problems with the officers. The alumni are thus encouraged to take an active interest. Needless to say such a university will continue to grow and develop.

In the College of Agriculture where the problems of most of the graduates remain identical with at least some of the problems of the College, is there not all the more reason for a greater active interest in its affairs on the part of the graduate? The first step toward an active interest in the college should be to join the Students’ Association. Any person who has ever attended the College of Agriculture is eligible to membership. It costs $2.00 to join the Association and the annual dues are $1.00. The membership is very small as Mr. Seymour points out elsewhere in this issue. In order to carry on its activities it needs your money but your active interest is more important. The association will keep you in touch with the affairs of the college. The question now arises as to whether your college course has been worth one dollar a year or not.

The Ag. Basketball Athletic Team closed its season by winning over M. E. 20 to 16. Although this season’s games have not been as successful as desirable, the team deserves credit for its hard work.

At present twenty-five Ag. men are registered for intercollege crew. It will soon be time for out-of-door practice and those in charge would like to see an increased number of candidates. To make the Ag. crew means a big step toward the Varsity because the training the men get gives them a decided advantage over the untrained.

F. W. DeGolyer, ’15, has been chosen captain of the Ag. Track Team and R. C. Shoemaker, ’14, manager. Last year we won the Inter-college Track Championship for the first time. A large number of candidates is required this year in order to repeat the trick.

The Ag. Baseball Team has begun regular daily practice under the direction of Captain F. E. Rogers who emphasizes the fact that all the positions on the team are open to competition. It is quite important that every
The Cornell Countryman

man who can play baseball and is unable to try out for the Varsity do his utmost toward making ours a winning team in the Inter-college League.

**During the past Incorporation** month the *Countryman* has been incorporated under the laws of New York State. The work of incorporation has been done in a very efficient manner by Mr. F. Dobmeier, a graduate student in the Law College. The following directors have been named: L. H. Bailey, J. B. Taylor of the Taylor-Carpenter Company, J. J. Swift '14, F. W. Lathrop, graduate student, and H. M. Stanley, '15. It is expected that the incorporation will be of much benefit to the *Countryman* in a business way.

It may interest our former students to know that a movement is on foot to establish a University Hour. On March 13 a dinner was given to representatives from the student organizations in the university by the senior societies in the College of Agriculture. The following is the resolution which was adopted:

"Whereas, It is desired to have a general assembly of the undergraduates and Faculty from time to time in order to bring together the students of the various colleges with a view to promoting acquaintanceship and a more unified spirit throughout the University;

Also, To provide for a time when all students may assemble to hear prominent speakers, musicians, etc.;

And further, To furnish an opportunity for undergraduates to discuss their student problems and affairs—

We, the undersigned, speaking in behalf of our respective colleges and organizations, respectfully petition the President and Faculty of the University to set aside the hour from 12 to 1 every other Friday to be at the disposal of the students; that the use of this hour be in the hands of a committee of students acting with the President of the University; such committee to consist of three seniors, two juniors and one sophomore, appointed by the presidents of their respective classes, the presidents of these classes to be members ex-officio."

It is planned to have these gatherings in the New Auditorium. The idea is meeting with approval throughout the University.
CAMPUS NOTES

A DIRECTORY OF STUDENT ACTIVITIES

Crew—Captain, M. F. Abell, '14.
Baseball—Captain, F. E. Rogers, '14;
    Manager, R. C. Shoemaker, '14.
Track—Captain, F. W. DeGolyer, '15;
    Manager, R. C. Shoemaker, '14.
Soccer football—Captain, R. H. Cross,
    '14; Manager, A. G. Landres, '16.
Basketball—Captain, R. F. Steve, '14;
    Manager, T. M. Gray, '14.
Agricultural Association — President,
    F. E. Rogers, '14; Secretary, Miss
    Mary Doty, '14.
Senior Class—President, L. E. Card,
    '14; Secretary, J. G. Wilkin, '14.
Junior Class—President E. C. Heinsohn,
    '15; Secretary, A. W. Wilson,
    '15.
Sophomore Class—President, Stuart
    Wilson, '16; Secretary, Miss Ruth
    Smith, '16.
Freshman Class—President, A. W.
    Richards, Special; Secretary, C. A.
    Thompson, '17.
Student Loan Fund—Chairman, R. C.
    Shoemaker, '14.
Student Honor Committee—Chairman,
    E. S. Bird, '14.

The program of the March Assembly
    was a treat to all who were present.
Several very pleasing musical numbers
    were given by the Agricultural Glee
Club and a string quartet. F. E.
    Rogers, '14 the president of the Agricul-
tural Association read a letter from the
    Winter Course students in which they
expressed their thanks and apprecia-
tion for all the kindness and interest
shown them by the regular students.
Director Stocking made an announce-
ment of the trophy won by the Pomol-
ology Judging Team and he expressed the
desire that this might be continued as
one of the activities of the college.

Dr. J. G. Needham, the speaker of
the evening, gave a very interesting
talk on "The Common Ground of Poet
and Naturalist." Professor Need-
ham's remarks were composed largely
of readings from several of the world's
most famous poets, as illustrations of
the fact that the poets base much of
their work on the common things in
nature. He stated that the Poet and
Naturalist both use the same raw
materials which are the common,
homely things, generally near at hand
and intrinsically valueless, an ore bed
to them and but a gravel heap to the
ordinary person.

The literal adherence to fact is less
expected of the Poet than of the
Naturalist and their observations of
details are quite likely to vary. To
illustrate this Professor Needham com-
pared the Poets, Lowell and Burns.
The former was a plowman nearly all
his life, while the latter was trained in
the laboratories at Harvard. Their
training accounts for the difference in
the treatment of details, to some extent.
Poets, like Naturalists, usually receive
their inspirations in their childhood,
to which they all testify in their
poems." The Naturalist should only
expect the Poet to learn to see things
as they are and then to tell the truth
about them.

In closing his talk Professor Needham
read, Wordsworth's "Ode to Nature."
Mr. M. Spiegel has been placed in charge of the gardens and experimental work of the Vegetable Gardening Department. He attended the Baron de Hirsh School at Woodbine, N. J., and was a student here for three years. He was later employed at the Empire City Farms near Cuba, N. Y., and still more recently at the Mohegan Lake Farms near Peekskill.

Arrangements have been made between Alfred University and also with the University of Rochester for cooperative work with the State College of Agriculture. These arrangements have been made on the initiative of the two universities mentioned. At Alfred University cooperative extension work of a somewhat general nature is to be done by Professor C. O. DuBois of the State School of Agriculture at Alfred under the supervision and maintenance of our Extension Department.

The cooperative work with the University of Rochester involves investigations of plant diseases among vegetable growers at Irondequoit. The expert, who will do the field work, will be under the immediate direction of the University of Rochester and will have the use of its laboratories. He is also expected to consult freely with the Department of Plant Pathology at Cornell University and the department here will also furnish certain equipment for the field work. The salary of this expert will be paid by the University of Rochester and his field expenses by the College of Agriculture. The plant diseases among the vegetable growers of the state result in large financial losses each year and it is hoped that this work will result in materially decreasing these losses. The results of this cooperative work will be published by the College of Agriculture. It is distinctly understood that this work will be carried on with the very closest cooperation of the University of Rochester and the College of Agriculture.

Professor J. G. Needham's new book, "The Natural History of the Farm," is in the hands of the printers, and will be on sale soon. The first 136 pages of this book were issued last fall. The "Farm" course now consists of one lecture and one laboratory period a week. It is arranged that the book be used in place of lectures. It is illustrated by a large number of drawings and pictures. It also includes a map of the University Farm, showing the location of hills, woodlots, pastures and cultivated lands, etc. This is a valuable addition to the agricultural text books of Cornell, and should be of great benefit to the future freshmen.

"Fruit Insects" by the late Professor M. V. Slingerland and Professor C. R. Crosby has recently been published by the McMillan Publishing Company. The book is beautifully illustrated by photographs taken by Professor Slingerland. Professor Crosby undertook the revision of the documents after Professor Slingerland's death and the publication has consequently been delayed.

Mr. Etheridge, assistant in Farm Crops has been at Washington, D. C., engaged in collecting leguminous plants which will be used for class demonstration and for study. The plants of economic value were first obtained and then the related types. Mr. Etheridge has more than one thousand different specimens at present. These plants were obtained from the Bureau of Seed and Plant Distribution at Washington as well as other government stations over the country. Some types were from the Hawaiian Islands and from Porto Rico. It is a very exhaustive collection.

Mr. S. L. Stewart, proprietor of Brookside Farms, Newburg, N. Y., was a visitor at the College during Farmers' Week. Mr. Stewart donated the sum of $50 to be distributed as prizes in a clean milk contest. This contest was conducted by the Dairy Department. This is the third time Mr. Stewart has donated money for this purpose.
Professor G. F. Warren, of the Farm Management Department, is spending a part of his sabbatical leave at Athens, Ga. He plans to spend several months in the South, studying social and agricultural conditions.

Mr. R. H. Patch, instructor in floriculture, has been granted a three months leave of absence, and will spend this time in practical work with the H. A. Dreer Company of Philadelphia.

The Department of Floriculture at Cornell and the Bureau of Plant Industry at Washington have been designated by the American Rose Society to carry on investigations with hardy roses. It is expected that extensive plantings of many varieties of roses will be made on the experimental plots during the coming season.

Mr. Warsaw, a graduate of Iowa State College, has been appointed assistant to Professor E. O. Fippin. He is a specialist in soil drainage and will do demonstrative and cooperative work with the farmers of the state.

The Forestry Department has partially completed plans for a meeting on May 15 to dedicate the Forestry Building. Many prominent men in the profession, including the Chief Forester, H. S. Graves, and Mr. Gifford Pinchot, will address the sessions.

The Forestry Club is planning a boat ride on May 16, as entertainment to the guests here at the dedication of the Forestry Building.

At the Annual Forestry Banquet at the University of Michigan on March 24, Professor Mulford of the Forestry Department spoke on "Our Profession."

Three departments had exhibits on the Agricultural Car run over the Lehigh Valley Railroad from March 2-13 inclusive. J. R. Livermore had charge of Plant Breeding, Mr. Reisner of Farm Crops and Professor Cross of Agricultural Chemistry.

The Department of Pomology has leased an orchard of Mr. L. Houghtaling of Port Byron, N. Y. The trees in this eight acre orchard were originally planted too close together and have grown so that the branches interlock. It is the purpose of the department to test for various methods of improving this condition which is common to many orchards of the state. In one part of the orchard every alternate tree will be removed and in others the trees will be severely trimmed. The fruit will be used for testing the worth of different fruit graders that are on the market.

The installation of the organ for the Auditorium has been commenced and will be completed by April 1. This organ has over seventy stops, thirty more than the number on the organ in Sage Chapel. As a result, a much greater number of effects will be possible. Although such a huge instrument is in the Auditorium, all parts except the swell box on the platform will be invisible to the audience.

R. J. Gilmore, instructor in the Farm Course, has accepted the position as head of the Biology Department of Huron College, Huron, S. D. He will return here for the summer term to obtain his doctor's degree.

At a meeting of the Floriculture Department of the Lazy Club on March 2, Professor E. G. Davis of the Landscape Department of the College delivered a lecture on the "Relation of Landscape Art to Floriculture."

A. T. Fabis, a graduate student, and B. R. Leach, '14, of the Department of Entomology have received appointments in the United States Bureau of Entomology and have left to take up their work.

Dr. T. L. Lyon, head of the department of Soil Technology, has returned from a trip through France and Germany. He visited Leipsig, Paris and the Rothamsted Experimental Station.
FORMER STUDENTS

Professor C. A. Rogers

'04, B.S.A.—'07, M.S.A.—C. A. Rogers, who was an assistant professor in the Poultry Department of the College, left Cornell last month to go back to his farm at Bergen, N. Y., a town eighteen miles from Rochester.

As a student, Professor Rogers did excellent work, becoming a member of Sigma Xi. Active in student affairs, he played on the first Ag. football and baseball teams and was the first president of the Poultry Association. As such, he was in charge of the first poultry show at Cornell. He is a member of the Alpha Zeta fraternity.

Taking his B.S.A. degree in June, 1904, he returned the following September to work for his Master’s degree. But he left the university that winter to take charge of the trial seed grounds of the James Vick’s Sons Seed Co., Rochester, N. Y. After spending the spring and summer there, he went back to his home farm. In the fall of 1906 he returned to Cornell as an Assistant in the Poultry Department and took his M.S.A. degree in 1907. For his thesis, he worked out a “Comparative Anatomy of Domestic Fowls.” This will be published very soon in book form.

As an assistant, he was in charge of the experimental pens of the department. He, himself, carried on a very interesting experiment in color feeding of poultry for egg production. The fowls were fed various color dyes to see if they would affect the color of feathers, flesh and yolk of eggs. He discovered that rhodamine, a red analine dye, colored the nitrogenous parts.

In 1907, Mr. Rogers was made instructor and two years later Assistant Professor. His teaching had to do primarily with construction and mechanical work, the history of breeds, and judging. He did considerable extension work and wrote several bulletins.

All the time he was a member of the teaching staff of the College, the desire to go back to his farm steadily increased until last fall he decided that he could stay away no longer. He bought his father’s farm at Bergen, N. Y., and in February left to take charge of the place. This is a general crop farm of 70 acres, with 17 acres of orchard and 130 White Leghorn fowls. By next summer Professor Rogers expects to have increased this number to 3000 layers. Thru the columns of the COUNTRYMAN he issues an invitation to the students to come out and see him. He says that a Cornell face will always be welcome.

'84 B. S.—J. B. Burrows is director of Farmers Institute work in the 19th Congressional district of Illinois with headquarters at Decatur. Besides this work, he is running his own farm in a very successful manner.

'91, B. S. A.—Jared Van Wagenen, Jr., of Lawyersville, N. Y., is actively interested in Farmers Institutes in this state, and has been lecturing at various places. On February 27 at Columbia University, New York City, he spoke on “Farms and Farming in New York
State." This was one of a series of lectures that are being given at Columbia, under the auspices of the Farmers Institute, for the benefit of city-dwelling farmers or those men who wish to become farmers. A vague notion is possessed by most city people that they could become very efficient farmers without any experience or knowledge of farming conditions. These lectures and conferences are doing a great work in discouraging those people wholly un fitted for farm life from going on the farm, and are helping others, who are qualified, to get the requisite viewpoint necessary to become successful farmers.

'95, W. C.—Harmon W. Thornell was one of the many former students here Farmers' Week who was a welcome visitor at the COUNTRYMAN office. He is located on a prosperous 170 acre farm at Pittsford, N. Y., where he is helping his father. This is a general farm with a small herd of Holstein cattle, furnishing marketable cream and skimmed milk for the pigs.

'00, Ph.D.—K. C. Davis writes from Nashville, Tennessee, that the first opening of the School of Country Life will be the summer session on June 25. From then it will continue through each college year and summer session. This School of Country Life will be a part of the George Peabody College for Teachers which is the central teachers' college of the south. This new school will give these teachers a knowledge of the work of farm demonstration agents, boys' and girls' club workers, and others who are carrying the "new agriculture" to the South, by bringing them in contact with those people engaged in these lines of work who it is expected, will take the course. Besides the science of farming, there will be special attention given to such subjects as: rural credit, economics, cooperation, conservation, making the homes more comfortable and livable by introducing running water, sewage, etc. and other subjects that have to do with rural life. This school is founded for the purpose of developing leaders for rural communities.

'02, B.S.A.—I. F. Worthley is Forester for the Pennsylvania Railroad with his office located at the Broad Street station, Philadelphia. He visited his Alma Mater the last of February to see the new equipment that has been added to the Forestry Department.

'08, B.S.A.—William E. Harris is practicing in Toronto, Ontario, as senior member of the firm of W. E. Harris & A. V. Hall, landscape architects and engineers. Their offices are at 71 Bay Street.

'08, B.S.A.—Frank S. Hayden was married in January to Miss Mable N. Matthews of Buffalo. They are now at home in the Oatka valley near Wyoming, N. Y., where Hayden is managing a 300 acre farm.

'08, B.S.A.—P. O. Wood, who was reported in our February issue as being in Colorado on a soil survey, has recently resigned from the Bureau of Soils, U. S. Department of Agriculture, and is now with his father in the general insurance business in Ithaca. The name of the firm is P. W. Wood & Son.

'10, B.S.A.—I. J. Shepard of Batavia, N. Y., told the Farm Management Seminar on February 25, how the Genesee County Fruit Growers' Association was organized and what it is accomplishing. There was a great need for some kind of an organization in this community that would help the farmers to improve their quality and quantity of apples and pears and would enable the farmers to obtain a more profitable market. Of course the first year proved a tartar and the Association was bitterly opposed by the local produce commission men. The final success was made possible only by the unswerving loyalty and self-sacrifice of the directors and those members who believed in cooperation. Now, this Association is firmly founded and has proved extremely profitable and helpful to its members. How profitable, may be imagined from the fact that this year some of the apples sold for nearly half again what the local commission men were paying.

(Continued on adv. page 12)
A SILO THAT WILL LAST FOR GENERATIONS

Auburn, N. Y., Nov. 26, 1912

Gentlemen:—The Imperishable Silo I bought of you and erected this fall and filled with ensilage is satisfactory in every respect so far. It has attracted a good deal of attention among farmers and causes much favorable comment. It looks to be true to its name, "IMPERISHABLE". It is, in my judgement, the coming silo.

Yours very truly,

B. P. COGSWELL,
Farm Manager.

THE SILO FOR NEW YORK FARMERS

NATCO IMPERISHABLE SILO

Here's the new type of silo—the silo that has raised the standard of quality of ensilage for feeding. The silo whose walls are moistureproof and air-tight and consequently keep ensilage from becoming sour, moldy or rotten.

THE NATCO IMPERISHABLE SILO is built of hollow vitrified-clay blocks, reinforced by two continuous steel bands between each layer of blocks. There are no staves to warp, shrink or split. No hoops to tighten. No continual repair bills. Never needs painting. The Natco Imperishable Silo is

Weatherproof  Decayproof  Fireproof

It will last a lifetime and the first cost is practically the last cost. It can be erected by any mason as easily as a carpenter builds the old type of silo. When completed you have a very attractive as well as an efficient and durable silo added to your permanent farm building assets.

WRITE FOR FREE SILO BOOK We have an attractively illustrated book which we will be glad to send free to Cornell men or to any farmer interested in keeping ensilage fresh, sweet and succulent. Write for a copy now and names of owners of Natco Imperishable Silos in your locality.

NATIONAL FIRE PROOFING COMPANY

SYRACUSE  NEW YORK
Every Dollar Comes Back

High time for you to plan on getting a larger return from your 1914 corn crop and labor by ordering a UNADILLA SILO forthwith. Discount given on April and May delivery orders. With nutritious, succulent silage in the daily ration, winter or summer, you dispense with the expense of half the hay and mill feed. This saving, plus the value of the increased milk yield, will equal cost of a UNADILLA the first year. Do you know of a surer way to make your money return a

100 PER CENT. DIVIDEND?

A copy of our catalogue mailed gratis to anyone contemplating the purchase of a silo this season. Illustrates those features which have given the UNADILLA a national reputation for being the best built and most convenient silo in use.

Photo shows the twin 14 x 32 white pine UNADIL-LAS which have doubled the feeding value of the corn crop on the Geo. P. Miller farm at Lewisburg, Pa.

UNADILLA SILO CO.
BOX 22 UNADILLA, N. Y.

The Improved Simplex

Link Blade
Cream Separator

LIGHTTEST RUNNING
LARGEST CAPACITIES
CLOSEST SKIMMING

The Only Practical Large Capacity Separators

Has more exclusive patented features of merit than all others—Has all the desirable points that can be put into a cream separator.

500 lbs., $75.00  900 lbs., $90.00
700 lbs., 80.00   1100 lbs., 100.00

D. H. BURRELL & CO.
LITTLE FALLS, NEW YORK
Manufacturers of Creamery, Dairy and Cheese Factory Apparatus
Also "B-L-K" COW MILKERS

In writing to advertisers please mention The Cornell Countryman
President
S. R. FEIL
Registered Phar-
macist
and
Expert
Chemist

I'll Feed Your Stock
60 Days Before
You Pay

I want the privilege of sending a 60-day supply of Sal-Vet (my famous worm-destroyer and conditioner) to every man who owns sheep, hogs, cattle, horses or mules. I want you to see for yourself how it rids all farm stock of the deadly stomach and free intestinal worms—how it will stop your losses from worms and solve your stock-raising problems—how it will make your stock thrive better—keep healthy and free from disease. In making this offer I don't ask one penny from you, now or at any other time, unless Sal-Vet does all I claim.

Worms rob you of your stock-profits—keep your animals thin and out of condition—steal their food—sap their strength and vitality and make them easy victims of disease. I'll rid your stock of these pests. I'll prove it before you pay.

Auburn, Nebraska.
I have just shipped a carload of hogs that went within a nickel of topping the market. These hogs were on Sal-Vet. Most of my neighbors lost their entire herds from disease.

(Signed) D. E. C. LONG & SONS.

I have just shipped a carload of hogs that went within a nickel of topping the market. These hogs were on Sal-Vet. Most of my neighbors lost their entire herds from disease.

W. J. BUTLER.

Send No Money—Just the Coupon

Tell me how many head of stock you have. I'll ship enough Sal-Vet to last 60 days. You simply pay the freight charge when it arrives, and when the 60 days are up report results. If it does not prove satisfactory I'll cancel the charge—you won't owe me a cent. Fill out and mail coupon today.

Prices: 40 lbs $2.25, 100 lbs $5.60, 200 lbs $8.90, 300 lbs $13.00, 500 lbs $33.15. No shipment made for less than 40 lbs in a consignment. Shipment made only in trade-marked "Sal-Vet" packages. 60-day trial shipments are based on 1 lb of Sal-Vet for each sheep or hog. 1 lb for each horse or head of cattle as near as we can come without breaking regular size packages.

S. R. FEIL, Pres.
THE S. R. FEIL CO., Dept. CC
Cleveland, O.
FORMER STUDENTS
(Continued from page 256)

'00, B.S.A.—On February 11th, Louis F. Boyle was married to Miss Anna R. Egbert, '10, Brigham Young University. Boyle sold his interests in the Inter-Mountain Industrial Association, and is now operating the largest specialized potato farm in Utah at Lewiston. Last year his yield was a little over fifteen thousand bushels. His farm adjoins that of Mr. A. L. Hyer, whose son, Merle, is the champion boy potato raiser of the United States. In addition to his farm work, Boyle acts as a consulting agricultural specialist for the American Smelting & Refining Co., of Salt Lake City.

'11, B.S.A.—Floyd W. Bell was married last September to Miss Mildred Dudley of Ithaca. Bell is teaching Animal Husbandry at the A. & M. College at College Station, Texas.

'11, B.S.A.—We wish to correct an error in the February issue which stated that W. O. Strong was of the class of '07. Strong graduated in 1911 and in October, 1912, married Miss Dunn who graduated in 1912, B.S. Part of Mrs. Strong's letter is well worth repetition, "We have a large farm here (Grove, Va.), of 8100 acres and our days are busy. We have the field ready for 90 acres of potatoes. A part of the farm is woods and marsh but the farm land lies flat and is in good large fields. The James River bounds us on the South for two miles or more. Our help is mostly colored but we are getting in some white men. We run a commissary in connection with the farm because we have so many people on the farm. We are near Yorktown, Jamestown, and Richmond, all historic places. The second oldest college in the United States, William & Mary, is in Williamsburg, three miles through the woods.

"Our Virginia needs more money and more energetic, ambitious men. There are a few northerners and westerners here and more coming in to clear the land, and some day, as Dean Bailey says, this may be the "garden spot of America." We have cleaned and cleared and repaired and built so that King's Mill is a different farm than two years ago. We shipped 15 carloads of potatoes last year from 51 acres and want to do better this year. We have put up four silos and are feeding beef cattle this winter. Hogs will play a large part in our future plans."

'12, B.S.A.—W. H. Hook is now situated at Ridgely, Maryland, where he has charge of an agricultural high school and experimental farm. He is conducting experiments with such local crops as strawberries, tomatoes, soy beans, factory peas, sugar corn, field corn, and similar crops.

'13, B.S.—Miss Mary B. Crossman is teaching science at Glen Eden, a private school for girls, in Poughkeepsie, N. Y.

'15, B.S.—W. C. Stokoe is back in New York State after several months of farm and other experiences in Ohio and Wisconsin. He is now employed by the city of Buffalo as farm manager for the farm run in connection with the J. N. Adams Memorial Hospital.

'13, B.S.—Miss Dorothy W. Bustard may be addressed at 662 Washington St., Brookline, Mass.

'13, B.S.—Miss Rebeckah Gibbons is teaching domestic science at Marion College, Marion, Virginia.

'13, B.S.—Miss Cecilia Agnes McKay is teaching domestic science at the Syracuse State Institution which is located at Syracuse, N. Y.

Ex. '14—Daniel E. Smith, who until recently was in Colorado, may now be addressed at 4 Park Place, Saranac Lake, N. Y.

'14, B.S.—Miss G. C. Bristol, who graduated in February is manager of the Dryden Road Cafeteria.

'14, B.S.—Miss Bertha Betts has announced her engagement to Mr. J. H. Reisner of the Department of Farm Crops.

Send 10c for three months' trial subscription to "Gleanings in Bee Culture", the standard bee journal of the United States for forty years. Full of profit-making suggestions. FREE book on "Bee Supplies" with every order. Send coin in envelope at our risk. Offer is for limited time only.

THE A. I. ROOT CO., Box 28, Medina, Ohio
Three D Grains is our brand for the highest and best grades of Distillers' Dried Grains sold in this country. Three D Grains are classified according to analysis and sold at prices commensurate with their feed value.

**OUR GUARANTEES:**

<table>
<thead>
<tr>
<th>Protein</th>
<th>Fat</th>
<th>Fibre</th>
<th>Carbohydrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagle Three D Grains</td>
<td>30-38%</td>
<td>10-15%</td>
<td>8-13%</td>
</tr>
<tr>
<td>Corn</td>
<td>26-33</td>
<td>9-14</td>
<td>8-13</td>
</tr>
<tr>
<td>Bourbon</td>
<td>24-25</td>
<td>8-11</td>
<td>9-14</td>
</tr>
<tr>
<td>Queen</td>
<td>18-20</td>
<td>9-12</td>
<td>8-15</td>
</tr>
</tbody>
</table>

The leading dairymen feed Three D Grains to their cows. Read what some of them say:

Pontiac Pet broke the world's record in the spring of 1911 by producing 37.67 lbs. butter in 7 days. Her owner, B. H. Dollar, of Heuvelton, N. Y., had bought a car of Three D Grains. We asked him if it had been used in this test. He answered saying: "Twenty-five per cent. of grain ration was Corn Three D Grains."

Write us for circular giving directions for feeding Three D Grains, also for prices if your dealer does not keep it.

The Dewey Bros. Co., Box 577, Blanchester, O.

---

Use Chr. Hansen's RENNET TABLETS and CHEESE COLOR TABLETS

For Cheese Making on the Farm

Also try our DANISH BUTTER COLOR. It gives that beautiful golden June shade and does not affect the faintest aroma or flavor in the butter.

CHR. HANSEN'S RENNET EXTRACT, CHEESE COLOR AND LACTIC FERMENT CULTURE

Have Stood the Test of Time.

Chr. Hansen's Laboratory

BOX 1095 LITTLE FALLS, N. Y.

---

PURE BEEF CRACKLINGS

TRADE MARK REGISTERED

THIS BRAND HAS ESTABLISHED A NEW STANDARD FOR BEEF SCRAP

The Flavell Co.

Asbury Park, N. J.

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
Christy Engraving Co.
WHERE QUALITY COUNTS

Halftones  Illustrations
Line Etchings  Designing
and
Embossing Plates

We are Specialists in

Color Plate Engraving and
Color Printing

If you want to increase the selling power of your next catalogue, if you want to make your advertising as effective as possible, you should look into the question of using color reproductions. Our success lies, not alone in the making of proper plates, but in printing them as they should be. Our product is used by companies of international reputation. We shall be pleased to submit estimates or samples of work.

611-18 Central Building
Rochester, N. Y.
FANCY MILK

The prize winners of fancy milk contests invariably attribute their success in no small measure to the aid of

Wyandotte Dairyman's Cleaner and Cleanser

Also in butter exhibitions, the contestants who are able to develop to a high degree that peculiar grain, flavor and odor so easily associated with butter made from clean, pure cream, always speak their appreciation for Wyandotte Dairyman's Cleaner and Cleanser.

Clean milk and clean cream need protection and that is the express purpose of Wyandotte Dairyman's Cleaner and Cleanser. It is made a perfect cleaner, also a sanitary cleaner. Without either fats, grease, caustic or any of the common properties of ordinary agents, it does what none of them can do in cleansing, sweetening and purifying.

For this reason Dairy College Authorities and milk Inspectors recommend only Wyandotte Dairyman's Cleaner and Cleanser. Why not ask your dealer or write your dairy supply house.

THE J. B. FORD CO., Sole Manufacturers
Wyandotte, Mich., U. S. A.

This Cleaner has been awarded the highest prize wherever exhibited.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Wing’s Quality Seeds

Are known everywhere. Our ALFALFA is famous for its purity and quality. We sell nothing but the best AMERICAN-GROWN seeds; this season we offer stocks from Kansas, Nebraska and Dakota, also Grimm Alfalfa.

CORN, SOY BEANS
Our own improved strains

VETCH and MELILLOTUS
The Great Soil Restorer

Full line of FIELD, GARDEN and FLOWER SEEDS.

Send for our free catalogue

THE WING SEED CO.
Box C
MECHANICSBURG, OHIO

A PROBLEM SOLVED WITH EFFICIENCY

Have you money invested in producing prize stock, certified milk, or getting the best results possible from cattle and horses? THE KENT VACUUM GROOMER solves the cleaning problem. Animals do better; employees take greater interest, and cleaning of stock is done more sanitarily, and with less wear and tear by its use.

ADAPTED to all kinds of power

The Kent Vacuum Cleaner Co.
Incorporated
111 South Washington Street
ROME, NEW YORK

Also manufacturers of THE KENT STATIONARY VACUUM CLEANER.

“HAMMOND’S GRAPE DUST”

Used effectively to kill Mildews
on Roses and other Plants . . .

Sold by the Seed Dealers.
For pamphlet on Bugs and Blights address
HAMMOND’S PAINT & SLUG SHOT WORKS
BEACON, N. Y. (Fishkill-on-Hudson, N. Y.)

In writing to advertisers please mention The Cornell Countryman
Improve Your Stock

It Pays to Clip Horses and Cows

Clipped horses are healthier and render better service. When the heavy coat that holds the wet sweat and dirt is removed they are more easily kept clean, look better, get more good from their feed and are better in every way.

The Stewart Ball Bearing Clipping Machine is for sale by leading dealers everywhere. Sold under a positive guarantee to please.

Price

$7.50

Why Cows should be Clipped

The campaign to prevent disease and infant mortality from impure milk is rapidly spreading to every city in the land and regulations are being enforced that require the observance of every sanitary precaution in the care of cows.

Cleansing the udders and flanks before milking to prevent filth from dropping into the milk is a pertinent necessity that cannot be properly done unless the hair on these parts is kept short by clipping every three or four weeks.

The Stewart No. 1 Ball Bearing Clipping Machine makes this a simple task that requires less than five minutes time per cow.

No owner of cows can afford to be without one of these machines. (Clips horses and mules equally well with same equipment.)

Write for complete new catalogue showing our line of clipping and shearing machines.

Chicago Flexible Shaft Co. 127 LA SALLE AVENUE CHICAGO, U. S. A.
INVESTIGATION IN PLANT PHYSIOLOGY
(Continued from page 239)

the plant came from the soil. With the discovery of the phenomenon of photosynthesis in the plant the views went to the other extreme. Many recent investigations, however, point to the use of organic nitrogen, a few to direct assimilation of sugar. Our experiments indicate that sugar may be absorbed and utilized from the medium in which the plant is growing. It is necessary to conduct all such experiments under absolutely sterile conditions, as the presence of microorganisms would result in transformation of the organic substance offered. It is entirely probable that the beneficial influence of manuring is due in part to the increase of directly available organic substances.

SEED STERILIZATION
As indicated, studies of the above type are only possible when conditions of growth can be maintained absolutely free from microorganisms. The method of seed sterilization used gives promise of being applicable practically for the prevention of those plant diseases transmitted by diseased seed. A large number of seeds have been successfully treated. In fact no seeds have yet been employed which do not withstand the treatment.

OTHER PROBLEMS
Other problems have been or are in the course of investigation. Those of an economic interest and to which attention has been devoted are: (1) A study of the red pigment in tomato and factors influencing its formation. Light is not essential and temperature above 30° C is detrimental and may only permit formation of the yellow color. Immature fruit will color and has better keeping qualities than vine ripened fruit though the culinary quality is poorer. (2) A study of respiration in fruits with reference to ventilation and fruit storage. The practical deduction is that good ventilation in conjunction with refrigeration is important. (3) Investigations on prolonging the keeping of cut flowers. (4) Investigation on the rest period in plants. (5) Factors influencing the rooting of cuttings. (6) Growth and metabolism in apple trees.

Much attention has been given also to other problems of fundamental importance but of less practical and general interest.

NATIONAL QUARANTINE LAW
(Continued from page 232)

The fear has been often expressed that the power of regulating the entire business of importing plants will, under this law, be assumed by some one man who may prove arbitrary in the exercise of his powers. In the first place, the personnel of the Horticultural Board would of itself prevent any one man from assuming arbitrary power in carrying out the provisions of the law. In the second place, all inspection of nursery stock in this country is made in the different states by state officials and does not, therefore, come under the Federal authorities at all. The Department of Agriculture simply serves as an information bureau to gather information concerning the packages of nursery stock imported into this country and to report the same to the state inspectors. There is no reason to expect that the Department of Agriculture on the one hand will become an unfair partisan of any one interest, or on the other hand an enemy of any particular agricultural industry.

TIME TO ORDER FRUIT TREES

Spring is here; planting should be started right away.

If you have not sent your order, better do it right now.

READY TO SHIP AT ONCE.

I can get your trees on the road in a day or two after I have your order. Send for my new catalogue; it is a book you need whether you plant a hundred or a thousand trees.

SAMUEL FRASER, Nurseryman,
Box 92 GENESEO, N. Y.
Hardy Pomeroy
English Walnut Trees

Obtainable ONLY through Pomeroy growers, other nurseries can not and do not fill orders with our HARDY POMEROY ENGLISH WALNUT TREES. To insure results obtain trees of us. You can have beautiful productive shade trees and orchards in zero climate. Their dormant condition permits transplanting through May, usually.

BOOKLET of illustrated facts desired sent free.

Mail Postal Now.

DANIEL N. POMEROY & SON
English Walnut Orchards
LOCKPORT, N.Y.

There is a difference between fruit growing and forestry yet most of the directions for fruit growing are directions for producing rapid wood growth only.

This means coming into bearing late and irregular bearing on account of lack of enough available mineral plant food to raise a crop of fruit and to set strong fruit buds in the same season.

POTASH

Two years before the trees are expected to come into bearing the annual application of minerals should begin, using 50 to 100 pounds Muriate of Potash and 100 to 200 pounds of bone, acid phosphate or basic slag per acre.

Potash improves the flavor, shipping quality and keeping power as well as the yield of fruits.

Write us for Potash prices and for free books with formulas and directions.

GERMAN KALI WORKS, Inc.
42 Broadway, New York
Chicago, McCormick Block
Atlanta, Empire Bldg.
New Orleans, Whitney Central
Back Bldg., Savannah, Bank
& Trust Bldg., San Francisco,
25 California St.

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
BE ON THE SAFE SIDE

You needn’t fear a visit from the Sealer of Weights and Measures if you use Thatcher Milk Bottles. You won’t give over-capacity either, because they are accurate! Send for our free book. It tells exactly why Thatcher bottles add to your profits.

THATCHER MFG. CO.
103 Market Street
ELMIRA, N. Y.

Lehigh Valley Railroad

The only line to and from Ithaca, Cornell University with through service between New York, Newark, Philadelphia, Buffalo, Niagara Falls and Chicago. Steel Trains; Observation Parlor Cars; Electric Lighted Sleeping Cars; Buffet-Library-Smoking Cars; Dining Cars; Service a la Carte; Stone Ballast.

Automatic Electric Block Signals
COMFORT SAFETY

Had you any trouble with the March Wind coming through crack or crevice in the Greenhouse?

TWEMLOW'S

Old English Glazing Putty

SEMI-LIQUID and ELASTIC

Will stop the trouble. Put up in 16 pound cans; 50 and 80 pound buckets.

Hammond's Greenhouse White, a superb paint, with years' record to back it up, for wear and tear and looks on either wood or iron Greenhouses. It stays where you put it. In 5, 10, 15, 20, 25, or 30 Gallons.

Hammond's Paint and Slug Shot Works, Fishkill-on-Hudson, New York.

KOHM & BRUNNE

THE LATEST STYLES
AT MODERATE PRICES

TAILORS 222 East State Street

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The Cornell Countryman

One Barrel of "Scalecide"
Will Spray as many Trees as Three Barrels of Lime Sulfur

"Scalecide" has greater invigorating effect on your orchard—kills more scale, eggs and larvae of insects with half the labor to apply. We can back up this statement with facts concerning the Good Results from Using "SCALECIDE"

Send for our illustrated booklet—"Proof of The Pudding". Tells how "Scalecide" will positively destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. Write today for this FREE book and also our booklet—"Spraying Simplified".

Our Service Department can furnish everything you need for the orchard at prices which save you money. Tell us your needs.

We are World Distributors for VREELAND'S "ELECTRO" SPRAY CHEMICALS and Arsenate of Lead Powder (33 per cent), which, used wet or dry, has no equal in strength or texture. Avoid imitations.

15. G. PRATT CO., M'f'e: Chemists 50 Church Street, New York City

Spray your FRUIT TREES with HEMINGWAY'S LEAD ARSENATE
High Analysis Easy to Mix Stays in Suspension
Spray or Dust your POTATO-PLANTS and GRAPE VINES with HEMINGWAY'S "CAASCUC"
Pronounced "K. S. Q."
Kills The Bug Prevents Blight Can't Burn Foliage
For Booklets and Prices, write to HEMINGWAY & CO., Inc., Dept. C. 17 Battery Place, NEW YORK

A COMPLETE LINE OF MACHINERY AND SUPPLIES

For Dairies, Creameries and Milk Dealers

Write for catalog and prices
Prompt and Courteous Service

D. H. Gowing & Co. SYRACUSE, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
ARSENATE OF LEAD

Easily Mixed with Water, Yet Fine Grained. Packed in Oak or Steel Kegs.
The Ideal Arsenate of Lead for the Fruit Grower. The Best Poison for
Potatoes and General Farm Crops, Shade Trees, Etc.

RICHES, PIVER & CO.
30 Church St., New York
Works and Laboratory - - Hoboken, N. J.

THE GREATEST OF NEW INVENTIONS FOR CERTIFIED
MILK DAIRYMEN IS THE

Simplicity Milking Machine

WITH THE METAL TUBE CONNECTING THE TEAT
CUPS WITH THE PAIL SO THAT THE MILK DOES
NOT COME IN CONTACT WITH ANY RUBBER

Write today for full particulars to

F. GROFF & SON
St. Johnsville New York
A postal card request will bring you a copy of our list of some hundreds of

Practical Agricultural Books

compiled from our lists of regular and recommended books as used at the N. Y. State Agricultural College here at Cornell

The Corner Bookstores

ITHACA, N. Y.

Well Rotted Horse Manure

DRIED GROUND ODORLESS

To insure increased Garden Crops—larger and brighter Flowers and a rich green Lawn, give your soil a heavy coating of Dried Ground Horse Manure. No weed seeds, no refuse—it becomes part of the soil.

Plant food is immediately available and lasting. Your planting will be successful when you use Well Rotted Horse Manure. Put up in bags 100 lbs. each.

Write for circular and prices.

New York Stable Manure Co.
273 Washington Street
JERSEY CITY, N. J.

How and When To Spray

This Book Mailed Free

40 pages of practical information, written in a way you can understand and use. Gives spray calendar, spray formulas. Describes which mixtures to use to fight any certain pests on apple and other fruit trees, bush fruits, grapes, vegetable crops, etc. Tells how to prepare stock solutions, how to apply, which type of sprayer to use. Shows most practical sprayers, both hand and power. Get this valuable Free Book today.

Goulds Reliable Sprayers

are made of chemical-proof materials. Designed to furnish best service with great saving of solution. Easy to operate and to clean. More efficient and more economical than cheap outfits which last but a season or two. In use by over 400,000 fruit growers and gardeners. Sold under a binding guarantee of satisfaction. Send for the book and post yourself at once. (22)

Largest Makers of Pumps for Every Purpose
16 W. Fall St., Seneca Falls, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Pyrene Fire Extinguishers

are being used on the farm, in the home, in hotels, factories, motorboats and automobiles.

They are the best because

THEY ARE THE MOST EFFICIENT
THEY ARE SMALL
THEY ARE EASILY OPERATED
THEY ARE REASONABLE IN PRICE

DAVIS-BROWN ELECTRIC CO.
213 E. State St. 115-117 So. Cayuga St.

"BACK TO THE FARM"

That is just what must take place in this country, and the sooner the better, or other countries will be obliged to feed us. This publication is doing all it can to make this movement pleasurable and profitable, and after you are persuaded—well, that is where we come in.

We can find that farm for you

We have probably the largest list to select from in Central New York State.

Ithaca Realty Company
202 N. Tioga St., Ithaca, N.Y. "You're Safe in Our Hands"

THE TOMPKINS COUNTY NATIONAL BANK
135-137 E. State St. ESTABLISHED 1836
Capital $100,000 Surplus and Undivided Profits $165,000
Safe Deposit Boxes for Rent

BOOK BINDERY
START RIGHT—Have your Countryman bound
We bind anything

J. WILL TREE'S 113 N. Tioga St.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Flashlight Photography...

H. C. CABLE
Ithaca Phone 180-X
405 COLLEGE AVE.

TYPEWRITERS
New and Rebuilt
Any Make
Sold, Rented and Repaired
Special Rates for the College Year

H. L. O’DANIEL,
Both Phones. 204 N. Tioga St.

WE DO YOUR MENDING FREE
FOREST CITY LAUNDRY
E. M. MERRILL
PHONE

PHOTOGRAPHER and Kodak Dealer
Specialists in Both Departments
For fifteen years we have photographed Cornell
Students at the same stand

PETER SCUSA
MODERN SHOE REPAIRING
Neatly and Promptly Done
Shoes called for and delivered in any part
of the City
Ithaca Phone 428-C 405 Eddy St., ITHACA, N. Y.

CUT FLOWERS, DECORATIVE
PLANTS, ETC.
THE BOOL
FLORAL CO.
215 East State St., Ithaca, N. Y.

PIANOS, MANDOLINS, GUITARS, BANJOS and VIOLINS
Rented or sold on Easy Payments. "Songs of Cornell." All the latest
music; Strings and supplies for all instruments at lowest prices.

LENT’S MUSIC STORE
122 N. Aurora Street
Victor Talking Machines, Records, Etc.

Victor Victrola

Complete stock of Records
WE HAVE THEM WHEN YOU WANT THEM
YOU DON’T HAVE TO WAIT AT

Parlors

HICKEY’S LYCEUM

MUSIC STORES

In writing to advertisers please mention The Cornell Countryman
"If you get it from us it's right"

**BUTTRICK & FRAWLEY**

One Price Clothiers and Furnishers

This fall season finds us more fully equipped to satisfy your wants than ever before. Special attention has been paid to get best material at minimum price. Suits and Overcoats, $10.00 to $30.00; Raincoats, $5.00 to $30.00; Mackinaws, $6.00 to $12.00. We make Suits to measure and save you from $5.00 to $10.00.

**VISIT OUR SHOE DEPARTMENT**

Hats, Gloves, Shirts, Sweaters, Underwear, and all other articles you'd find in a first class shop. Full Dress and Tuxedo Suits for sale and to rent.

"If not we make it right" 134 East State Street

**PROFESSORS, STUDENTS, INSTRUCTORS**, you will get MORE INSURANCE FOR LESS MONEY IF YOU HAVE A POLICY WITH

The Travelers Life Insurance Company

OF HARTFORD, CONN.

J. J. SINSABAUGH, Agent,

149 East State Street

ITHACA, N. Y.

Insurance of All Kinds

---

**WILLIAMS BROTHERS**

ITHACA, NEW YORK

WILL DRILLING MACHINERY AND TOOLS

---

**THE CLINTON HOUSE**

Corner Cayuga and Seneca Sts.

**TABLE D'HOTE SERVICE**

Cuisine and Service Unexcelled

Luncheon, 12 to 2 - - - $0.75
Dinner, 6 to 8 - - - .75
Sunday Dinner, 1 to 2:30 - .75

SPECIAL HOLIDAY DINNERS

"Ithaca's Popular Hotel"

---

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The Shops of Shops

Come right in to headquarters where you can find everything for man's wear at lowest prices.

Leave your measure for ONE HALF DOZEN SHIRTS for ONE DOZEN DOLLARS.

We have a whale of a stock of Furnishing Goods, Hats and Caps.

TOWN SHOP, 142 E. State St.  L. C. BEMENT  The Toggery Shops
HILL SHOP, 413 College Ave.

F. J. HAUSNER, Jeweler

Watches, Diamonds and Jewelry 205 E. State Street

THE FIRST NATIONAL BANK
Cornell Library Building
Capital, Surplus and Profits, $350,000.00
Oldest National Bank Safe Deposit Boxes for Rent

ITHACA SAVINGS BANK
INCORPORATED 1868
Tioga Street, cor. Seneca ITHACA, N. Y.

When wanting
QUALITY, SERVICE AND CLEANLINESS

go to
WANZER & HOWELL, The Grocers

PICTURES  PICTURE FRAMES
STUDENTS' FURNITURE

Manufacturers of Special Furniture for
FRATERNITIES AND CLUB ROOMS

H. J. BOOL CO.
(Opposite Tompkins County Bank)

In writing to advertisers please mention The Cornell Countryman.
THAT SPRING SUIT
Cleaned by the New Process
made like new
GET IN EARLY WE ARE GOING TO BE RUSHED
MODERN DRY-CLEANING
AND PRESSING WORKS
W. F. FLETCHER & CO., Inc. 103 Dryden Road

Norton Printing Co. 317 E. State St.
COLLEGE, FRATERNITY and COMMERCIAL PRINTING
Engraved Cards and Invitations Rubber and Metal Hand Printing Stamps

Robinson’s Photograph Shop
214 East State Street
Photographer for the Senior Class

White & Burdick Co.
The oldest and largest
Drug Store in the City
Supplies for Agricultural Students a Specialty

New York State College of Agriculture at Cornell University
THE DEPARTMENT OF ANIMAL HUSBANDRY
Breeds Percheron Horses, Holstein, Jersey, Guernsey, Ayrshire,
Regular Public Sale of all Surplus Young Stock, except Swine, on
FRIDAY OF FARMERS’ WEEK EACH YEAR

In writing to advertisers please mention THE CORNELL COUNTRYMAN
This is the Month We Give You the Profits
Buy Your Shoes Now

SEMI-ANNUAL SALE
NOW ON

<table>
<thead>
<tr>
<th>Price Range</th>
<th>Shoes</th>
<th>Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10.00 and</td>
<td>$7.35</td>
<td></td>
</tr>
<tr>
<td>$9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.00 and</td>
<td>6.35</td>
<td></td>
</tr>
<tr>
<td>7.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.00</td>
<td>5.95</td>
<td></td>
</tr>
<tr>
<td>6.00</td>
<td>4.95</td>
<td></td>
</tr>
<tr>
<td>5.00</td>
<td>3.95</td>
<td></td>
</tr>
<tr>
<td>4.50 and</td>
<td>3.35</td>
<td></td>
</tr>
<tr>
<td>4.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ITHACA BOOT SHOP, Inc.
204 E. State Street

New York Life Insurance Company

C. H. WEBSTER, Agent

OFFICE: Student Supply Store
RESIDENCE: 121 Catherine St.
Conlon
PHOTOGRAPHER
OPPOSITE TOMPKINS COUNTY BANK
Bell Phone, 173-W
High-Grade Work Only

CARR & STODDARD
MERCHANT TAILORS
Up-to-date styles and work
Seneca and Aurora, next Lent's music store

BAXTER'S
Clothing and Furnishings

have pleased hundreds of Cornell students during the last five years. Why? Because we sell only first class merchandise and guarantee every dollar's worth of it; we fit our clothing to please; our service is unexcelled, and last but not least, we sell at one price to all.

Please consider this "Shop," "Your Shop." You get your money's worth here.

E. B. BAXTER,
ONE PRICE TO ALL
"The Quality Shop"
Satisfaction guaranteed
150 E. State St., Ithaca, N.Y.

D. S. O'BRIEN
MARKETS
222 North Aurora Street 430 North Cayuga Street
DEALER IN
FRESH, SALT AND SMOKED MEATS
Poultry and Game in Season
D. S. O'BRIEN

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The Cornell Countryman

W I S E
THE PRINTER

Is at your service for all classes of Fine
PRINTING
ENGRAVING
ETC.

Buffalo Street,
Next to Post
Office,
ITHACA, N.Y.

Ithaca Phone 76x

The Palace Laundry ...
323 and 325 Eddy Street

F. C. BARNARD, Prop.

Ithaca Hotel

ITHACA, N. Y.

Ithaca’s Leading and Only European Hotel

One hundred rooms; 50 rooms with private bath. All rooms have running water, electric lights, local and long distance telephones.

No expense has been spared in furnishing this hotel to make it modern and up-to-date and comfortable for its patrons.

The Dutch Kitchen has become famous for its excellent cuisine and service at reasonable prices.

The Hotel Orchestra will render a musical programme every evening.

J. A. and J. H. CAUSER, - Proprietors

STUDENT SUPPLY STORE

The Modern Method Laundry

JOHN REAMER, Prop.

A. B. KENNEDY
Dealer in Watches and Jewelry,
Cut Glass and Fine Silver for
Weddings. Cornell Pins, Fobs, Souvenir Goods, etc.

EAST STATE ST., ITHACA, N. Y.

Opp. New Ithaca Hotel

We keep a fine line of diamonds and jewelry and do all kinds of repairing neatly at :

Heggies’ Jewelry Store ===

136 E. State St.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Make Every Inch of Soil Produce the Maximum at Lowest Cost

In order to make your soil produce its maximum yield, you should supply a fertilizer “made to order” to meet your individual soil and crop conditions.

Consumers for General Farm Use

comprise special distinct compositions of plant food elements for forage crops, root crops and cereals to meet just your individual soil and crop requirements. They supply just the constituents your particular soil may need for some special crop. You pay for no unnecessary plant food elements.

Early Crop Odorless Fertilizer

is prepared especially for the market garden trade for vegetables, small fruits, greenhouse and garden crops. It supplies the four plant food elements needed for these crops in soluble form, mixed in such proportions as to meet your particular soil and crop requirements. Although soluble, it is so prepared in granular form as to prevent leaching and wasting. It produces quick growth and early maturity, which means bigger profits.

Holden’s Special Fertilizers

For Florists and Gardeners for Greenhouse Work

These fertilizers are prepared by men who have made a life study of greenhouse fertilization in such a manner as to furnish just the plant food elements which your compost lacks. For this reason you save the cost of such plant food elements as your particular soil or crop may not require.

Mak-Gro-Odorless Plant Food

A clean, high grade, granular fertilizer for potted house plants, window boxes, flower beds, small fruits, lawns and general home garden use—made for the amateur. A splendid side line for florists operating their own stores.

Agricultural Chemical and Fertilizer Materials

We are prepared to furnish all high grade agricultural chemicals and fertilizer materials in any quantity. We make a specialty of Genuine Thomas Phosphate Powder (Basic Slag.)

WE SELL ONLY DIRECT TO THE CONSUMER

Write today for our Fertilizer Booklet

Consumers Fertilizer Co.

306 Longacre Bldg. New York City

In writing to advertisers please mention THE CORNELL COUNTRYMAN
A HARRISON HANDBOOK
ABOUT HOME PLANTING

Few people know what trees or shrubs to plant about a home, or know how to arrange them. Proper planting is both simple and inexpensive when you analyze the purposes of planting and classify the kinds of planting material.

In this book, "THE WHY AND HOW OF SHADE TREES AND EVERGREENS", we have classified the different kinds of trees, shrubs and vines according to their uses, and we have dissected planting methods to find out exactly what should be accomplished by planting at each home.

One home may need a windbreak more than anything else. Another may need a screen. A third may need none of these, but demand shrubs and hedges. You will be clear as to what features your home needs after you have read this book. Ask for a copy—sent free.

Have You a Copy of our 1914 General Catalogue?

If not, send for a copy today and read how scientific spraying and care saved a big crop of peaches last year. The spraying began early in April—the crop was saved, and sold in September for over $35,000. You will want to know how the crop was saved. Get the catalogue, read the story, look over the list of Fruit and Ornamental Trees, and study it as you would a reference book on orcharding.

"HOW TO GROW AND MARKET FRUIT", our guide book for orchardmen and students, is authoritative and most practical. Price, 50 cents, which will be rebated on your first order for $5 worth of trees or plants.

We bud all our trees from bearing orchards, many from our test orchards, and we want to show you how well our trees are grown. If you are interested in rich, productive land, we can show you fine farms for sale at low figures. Come to Berlin—we will pay your hotel bill during your visit here.

Harrisons’ Nurseries, Cornell Street, Berlin, Md.
WHAT A
DE LAVAL
CREAM SEPARATOR
SAVES

over any other separator or creaming system

Quantity of cream that no other separator will recover completely, particularly under the harder conditions of every day use.

Quality of cream as evidenced by De Laval butter always scoring highest in every important contest.

Labor in every way over any gravity system, and also over any other separator, by turning easier, being simpler, easier to clean and requiring no adjustment.

Time by hours over any gravity system, and as well over any other separator by reason of greater capacity and the same reasons that save labor.

Cost. Since while a De Laval Cream Separator may cost a little more than a poor one to begin with it will last from ten to twenty years, while other separators wear out and require to be replaced in from one to five years.

Profit in more and better cream, with less labor and effort, every time milk is put through the machine, twice a day, or 730 times a year for every year the separator lasts.

Satisfaction, which is no small consideration, and can only come from knowing you have the best separator, with which you are sure you are at all times accomplishing the best possible results.

Easily proven—these are all facts capable of easy demonstration and proof to any user or intending buyer of a cream separator. Every De Laval agent is glad of a chance to prove them by a De Laval machine itself—without the slightest obligation on your part unless entirely satisfied.

The De Laval Separator Company
165 BROADWAY, NEW YORK
29 E. MADISON ST., CHICAGO
50,000 Branches and Local Agencies the World Over
A Most Startling Testimonial for Rex Sprays

The Rex Company, Rochester, N. Y.

Dear Sirs:

I never had anything to work on me like your lime and sulfer and Arsenick Lead did on my orchard trees. I spraded the worst of them in the dormant spra with 1 galun of REX mixed into cold watter and as fur as I kin see it did not hert enything. if the leves come out I may want another galun. Hav not hed as manny wurms as my nabors, but some, wurms will not bother enyone if they use REX Arsenick Lead.

Write to me the lowest cash prise for 1 galun REX and 1 ful pound Arsenick Lead if I pay when I get it. I may spra agin.

Yurs trooly,

P. H. C."

This very frank but satisfactory letter may not have been written as you would have written it, but the idea of asking for prices on REX goods at this time—particularly REX Arsenic of Lead—is very suggestive and wise. Our address is

THE REX COMPANY
P. O. Box 712 ROCHESTER, N. Y.

Painting Season is Here!

BUY

Wadsworth Double-Thick Paint
of the maker and save the middleman's profits

Write today to the manufacturer's agent, the man who has sold Wadsworth Paint up and down the State of New York for sixteen years, for booklet describing the lasting qualities of Wadsworth Double-Thick Paint, the paint having a tested reputation of sixty-four years' standing. Address

EDWARD JOSLIN
No. 11 South First St. FULTON, N. Y.
OFFICIAL PUBLICATIONS of CORNELL UNIVERSITY

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second-class matter at the post office at Ithaca, N. Y., pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and postfree on request:

General Circular of Information for prospective students,
Announcement of the College of Arts and Sciences,
Courses of Instruction in the College of Arts and Sciences,
Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts,
Announcement of the College of Civil Engineering,
Announcement of the College of Law,
Announcement of the College of Agriculture,
Announcement of the Medical College,
Announcement of the New York State College of Agriculture,
Announcement of the Winter-Courses in the College of Agriculture,
Announcement of the New York State Veterinary College,
Announcement of the Graduate School,
Announcement of the Summer Session,
The President’s Annual Report,
Pamphlet on prizes, samples of entrance and scholarship examination papers, special departmental announcements, etc.

Correspondence concerning the publications of the University should be addressed to

The Registrar of Cornell University
ITHACA, N. Y.

New York State College of Agriculture at Cornell University
W. A. Stocking, Jr., Acting Director.

The College of Agriculture is one of several co-ordinate colleges comprising Cornell University. The work of the College is of three general kinds: the regular teaching work of undergraduate and graduate grade; the experiment work; the extension work.

The resident instruction falls in the following groups:

1. Four-year course, leading to the degree Bachelor of Science in Agriculture (B.S. in Agr.). When desired, the last two years may be chosen in subjects pertaining to landscape architecture and out-door art, or to home economics. In the Graduate School of the University students may secure the Master’s and Doctor’s degrees (M.S. in Agr. and Ph.D.).

2. Special work, comprising one or two years: (a) Agriculture special; (b) Nature-study special or normal course.

3. Winter-Courses of 12 weeks: (a) General Agriculture; (b) Dairy Industry; (c) Poultry Husbandry; (d) Horticulture; (e) Home Economics.

THE INSTRUCTION IS DIVIDED AMONG TWENTY-TWO DEPARTMENTS AS FOLLOWS

| FARM PRACTICE and FARM CROPS | ANIMAL HUSBANDRY |
| FARM MANAGEMENT | POULTRY HUSBANDRY |
| AGRICULTURAL CHEMISTRY | DAIRY INDUSTRY |
| PLANT PHYSIOLOGY | FARM MECHANICS |
| PLANT PATHOLOGY | FORESTRY |
| SOIL TECHNOLOGY | RURAL ART |
| PLANT-BREEDING | DRAWING |
| ENTOMOLOGY, BIOLOGY and NATURE-STUDY | HOME ECONOMICS |
| HORTICULTURE | METEOROLOGY |
| POMOLOGY | RURAL ECONOMY |
| | RURAL EDUCATION |
| | EXTENSION TEACHING |
New York State Ideal Farms

In a healthful locality; offering the advantages of practical farm land within two hours of our greatest city, with assured value enhancement; acknowledged fruit land and entrancing natural country.

Prices range from ten to one hundred dollars per acre, with liberal terms. Among my patrons are several former Cornell students.

Edgar L. Hoag
233 Broadway
NEW YORK CITY

Do Some Farming Next Winter Under Glass

Do some intensive farming and get three times the number of crops you do in your extensive farming.

Build one of our greenhouses—one of our thoroughly practical kinds with no fuss and frills—simply a straightaway, thoroughly well built, enduring glass enclosure for your garden. Then raise lettuce, tomatoes, cucumbers or strawberries. You will find no difficulty to market them, and the price average will net you a nice snug profit each year.

Get a good man for your foreman, then in the winter keep on your regular summer force in the greenhouse. By doing this, you can keep your good men all the year around, and go a long way toward solving your labor problem. Incidentally you will make money.

If you have a thousand or so dollars to invest as starter, write us for any particulars you may wish to know about this farm greenhouse plan. We will answer it fully. Let us go into all sides of the question with you.

Lord & Burnham Co.

SALES OFFICES—Cities of

Boston        Philadelphia
42nd Street Bldg.        Tremont Bldg.

Rochester      Chicago
Granite Bldg.        Rookery Bldg.

Cleveland, Swettland Bldg.

Toronto, Canada, 12 Queen St. E.

FACTORIES

Irvington, N. Y.
Des Plaines, Ill.

THE HOTEL OF AMERICAN IDEALS

HOTEL POWHATAN
WASHINGTON, D. C.

Best Located Hotel in Washington

New and Absolutely Fireproof.
Refined.    Elegant.
EUROPEAN PLAN

Rooms, detached bath, $1.50, $2.00 up
Rooms, private bath, $2.50, $3.00 up
Write for Souvenir Booklet “B” with Map.

Clifford M. Lewis,
MANAGER

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Once Upon a Time

ONCE there was really no way out of it for the farmer. Plodding home from the field with his team at close of day, he saw before him the waiting small jobs about the house, barn, and yard, jobs that took time and labor, and never seemed to end. There was water to be pumped, wood to be sawed, various machines to be run by hand. But that was once upon a time. Today he lets the engine do it.

Every I H C engine is economical, simple, steady and reliable. Whether you want it for sawing, pumping, spraying, electric light plant, for running separator, or repair shop, or for all sorts of tiresome energy-wasting small farm jobs, you have need of an

I H C Oil and Gas Engine

I H C engines are built vertical, horizontal, stationary, portable, skidded, air-cooled and water-cooled; sawing, pumping and spraying outfits. Sizes from 1 to 50-horse power. They operate on gas, gasoline, kerosene, naphtha, distillate and alcohol. I H C oil tractors range in size from 12 to 60-horse power.

Have the I H C local dealer demonstrate the engine to you and explain its various points. Get catalogues from him, or write the

International Harvester Company of America
(Incorporated)
Chicago USA

In writing to advertisers please mention The Cornell Countryman
THE CORNELL COUNTRYMAN

CRAINE SILO

The Craine Patent Triple Wall Silo has thick vertical wooden staves, inside; horizontal patent wooden covering thoroughly nailed, outside; and waterproof felt-like rubber roofing between. This makes a perfect non-conductor of heat. SCIENTIFIC in every feature of its construction. IT'S FROST-PROOF AIR-TIGHT PERMANENT

No silage spoiled by contact with concrete, tile or any mineral. Craine Silage is sweet, clean and perfectly preserved—it is "drawn from the wood." No troublesome iron hoops requiring annual overhauling. The first cost is low and the last. The Craine is therefore the cheapest on the market. Ask for illustrated booklet.

W. L. Scott Lumber Co.
Norwich, N.Y. Milwaukee, Wis. Kansas City, Mo.

10c for 3 months' subscription to "Gleanings in Bee Culture" called the "Bible" of bee keeping. Facts, stories, ideas worth dollars to you. Shows how to get more and better honey. Book on "Bee Supplies" sent Free. Offer open for limited time. Send stamps or coin at our risk.

THE A. I. ROOT CO., Box No. 28 Medina, Ohio

Dixie Brand
COTTON SEED MEAL

THE CHEAPEST SOURCE OF PROTEIN FOR DAIRY COWS

HUMPHREYS-GODWIN CO., Memphis, Tenn.

IMPROVE YOUR STRAIN OF POULTRY

During the latter part of the season we can supply a limited number of eggs for hatching and day-old chicks from our High Vitality S. C. White Leghorn stock. Eggs $2.50 per setting, $10.00 per 100; day-old chicks 22½ cents each, $20.00 per 100. Send in your order and ask for earliest possible date of shipment.

Four Good Records by Cornell S. C. White Legehorns

<table>
<thead>
<tr>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Total Eggs laid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st year</td>
<td>2d year</td>
<td>3d year</td>
</tr>
<tr>
<td>Lady Cornell</td>
<td>257</td>
<td>200</td>
<td>191</td>
</tr>
<tr>
<td>Madam Cornell</td>
<td>245</td>
<td>131</td>
<td>156</td>
</tr>
<tr>
<td>Cornell Surprise</td>
<td>180</td>
<td>186</td>
<td>196</td>
</tr>
<tr>
<td>Cornell Supreme</td>
<td>242</td>
<td>198</td>
<td>220</td>
</tr>
</tbody>
</table>

A few eggs for hatching and day-old chicks are available from our Barred Plymouth Rocks and Rhode Island Reds.

Market eggs, dressed poultry and feathers are also available at the Salesroom.

DEPARTMENT OF POULTRY HUSBANDRY
New York State College of Agriculture
ITHACA, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
FARM WATER SUPPLY

An abundant supply of running water for house and general farm use means convenience, labor saving, comfort and protection against fire. A private water system is a practical small investment.

Own Your Own Water Works

The system which you install should meet your requirements. The hydraulic ram, the windmill pump, the gasoline or electric-driven power pump—each has its peculiar advantages under certain conditions. A properly selected outfit results in satisfaction and economy; yet only a comparatively small number of farmers have had sufficient experience with pumps to know what is best suited to their needs.

Use our experience and service to get practical suggestions for supplying your place with water. Let us recommend equipment and furnish you with estimates. The right pump for you is included in our complete line of:

Hand and Power Pumps for all Purposes

Address: DEPARTMENT C

RUMSEY & COMPANY, Limited
SENeca Falls, N.Y.
ESTABLISHED 1840

75 Warren Street
NEW YORK CITY, N.Y.

234 Congress Street
BOSTON, MASS.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
TENNIS RACKETS

The “Lee” rackets have stood the test. You will know them by the slotted throat. There are the usual grades so that we feel sure that we can show you a racket that will suit. The “Goodrich” tennis ball will probably be the big seller again this year. We sell also the “Wright and Ditson.”

Kodaks and Premo Cameras

The two names cover the best in Cameras. The Kodaks use the roll film and this year the F-8 Vest Pocket Kodak with the double lens is already selling the best.

The premo cameras are for either plates or film packs depending on the model. The Premoette, Jr. Special is one you will want to see.

CO=OP.

MORRILL HALL

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
# Table of Contents

**MAY, 1914**

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontispiece—The Home Economics Building, Cornell University</td>
<td></td>
<td>258</td>
</tr>
<tr>
<td>The Privilege of the Farm Family.</td>
<td>L. H. Bailey</td>
<td>259</td>
</tr>
<tr>
<td>Home Economics at the New York State College of Agriculture.</td>
<td></td>
<td>260</td>
</tr>
<tr>
<td>The History of Housekeeping.</td>
<td>Blanche E. Hazard</td>
<td>264</td>
</tr>
<tr>
<td>The Field of Home Economics.</td>
<td>Flora Rose</td>
<td>271</td>
</tr>
<tr>
<td>An Experiment in Home-Making.</td>
<td>Helen B. Young and Ethel L. Phelps</td>
<td>273</td>
</tr>
<tr>
<td>Faculty</td>
<td></td>
<td>277</td>
</tr>
<tr>
<td>The Farm Boy.</td>
<td>Jared Van Wagenen, Jr.</td>
<td>277</td>
</tr>
<tr>
<td>Rhododendrons.</td>
<td>R. W. Curtis</td>
<td>280</td>
</tr>
<tr>
<td>Editorials</td>
<td></td>
<td>282</td>
</tr>
<tr>
<td>Campus Notes</td>
<td></td>
<td>284</td>
</tr>
<tr>
<td>Former Student Notes</td>
<td></td>
<td>286</td>
</tr>
</tbody>
</table>

**SUBSCRIPTION PRICE** $1.00 PER YEAR
Canada, $1.15  Foreign, $1.30

Entered as second-class matter at the Post Office, Ithaca, N. Y.
Copyright by the Cornell Countryman.
THE PRIVILEGE OF THE FARM FAMILY

By L. H. Bailey

It has been my good fortune to have been entertained in many homes. These homes have represented a wide variety of persons and of countries. Every home has been interesting to the inhabitants and, therefore, it has been interesting to the guest.

The type of conversation in the home circle is always significant. It expresses the nearest and most personal interest. It reveals the organizing sentiment of the home. I am impressed that in most homes outside the rural places the conversation does not turn very much on the occupation or the profession in which the head of the house is engaged. There is a curious notion in men's heads, anyway, that one should not talk "shop," whereas this subject is likely to be most interesting both to the guest and to the host, because it is immediate, vital, and personal. I always like to hear a man or woman talk about the thing that is just then being done; the person speaks with authority and knowledge, and, therefore, interestingly. When I go to a farm home, I want to hear conversation about the farming; and seldom am I disappointed.

The important thing about this farm home conversation, beyond its immediate interest to the persons concerned, is the fact that all members of the family speak of common knowledge and they are all partakers in the farming enterprise. They all work at it. They all cooperate in it, to the extent of their strength and their abilities. The guest soon comes to know that the farming is a family undertaking.

I do not find this to be the case to any extent in other families. I seldom hear much conversation of the business or the occupation on the part of the wife and older children, if the father is a merchant or a mechanic or if he is a professional man. They are not necessarily a part of the business; they are only supported by it. I have been a guest when to the end of my visit I have not certainly known the business or profession of the host.

This commonality of discussion in the farm home appeals to me as having much significance. If all the members cooperate on one economic basis, we have not only a school in democracy but a means of the most effective intellectual development. It is also difficult to disrupt a family that is founded not only in affection, but also in a relationship of common economic and intellectual interest. As rapidly as we add new knowledge to the farm enterprise, and stimulate new incentive in it, we shall find the new interest reflected in the home circle. Every new resource added to the farm is a contribution to the home life. This may not be apparent in all homes, nor all at once, but it lies in the necessity of the situation and in the main it is now a reality. With the greater division of knowledge among the different members of the household, consequent on
the increasing complexity of farming, this cooperative conference will increase. If the farming is well conducted, the home will feel the effect of it directly, and even quite independently of the financial influence.

I think that the common economic situation of the members of the farm family has much to do with the relatively little concern that these members—both men and women—take in some of the violent propaganda of the day; but into this subject I am not now to enter. I am for the moment expressing the conviction, that in the nature of its constitution the farm home is a powerful means of education and an indispensable organ of public welfare; and I would impress on young farm folk the vast importance of maintaining the farm as a family enterprise and of using this enterprise more effectively than it has yet been used for the development of the highest responsiveness in every member of the household.

---

**HOME ECONOMICS AT THE NEW YORK STATE COLLEGE OF AGRICULTURE**

*Martha Van Rensselaer*

Professor of Home Economics, Cornell University

HOME Economics at the New York State College of Agriculture is due to the vision of Liberty Hyde Bailey, former director of this college. Beginning in the year 1900 he took the first step toward the establishment of homemaking subjects in the college. Various later events have been history making which only the director knew at the time were prophetic. These events were the Reading Course for farmers' wives with the publication of bulletins; the first winter course in 1905; a survey course on homemaking with two hours university credit in 1907; the four year department course organized in 1909; the first summer school classes in 1910; the homemakers' conference held in connection with Farmers' Week in 1911; a bill introduced into the Legislature in 1911 for a Home Economics Building; the foundation of the building started in February, 1912, and the building occupied Farmers' Week in February, 1913. Since that time the course of study has become fuller, and the general organization rounded. There is interest in looking backward on the development of a department and more in looking into the future of a course of study which is so closely connected with living. An institution may be dignified by a historical setting and it may also find dignity in high ideals of expansion.

Director Bailey stated the province of such a course of study for college women in the following remarks before the women in the college.

"If the customary subjects in the College of Agriculture are organized and designed to train a man for efficiency in country life and to develop his outlook, so also is the Department of Home Economics in this College to train a woman for efficiency and to develop her outlook to life. A department of home economics, therefore, is not a concession to public opinion, or even alone to the special needs of woman's education. It is a necessity as a means of developing society.

Home economics is not one department, in the sense in which dairying or entomology or soils is a department. It is not a single specialty. It stands for the whole development of woman's work and place. Many technical or educational departments will grow out of it as time goes on.

Of course, I would not limit the entrance of women into any courses in the College of Agriculture; on the
contrary, I want all courses open to them freely and on equal terms with men; but the subjects that are arranged under the general head of home economics are their special field and sphere. On the other hand, I do not want to limit the attendance of men in courses of home economics; in fact, I think it will be found that an increasing number of men desire to take these subjects as the work develops, and this will be best for society in general.

Furthermore, I do not conceive it to be essential that all the teachers in home economics subjects shall be women; nor, on the other hand, do I think it is essential that all teachers in the other series of departments shall be men. The person who is best qualified to teach the subject should be the one who teaches it.

My attitude, therefore, is that homemaking subjects are just as essential a part of a college of agriculture as any other subject whatever, and that we cannot expect to make much progress in the redirecting of country life until these subjects are as well developed as the technical agricultural subjects. There is no longer any necessity of explaining why home-making subjects are necessary in this institution. The number of young women is increasing. The work is recognized as of equal value and standing with other work. It will grow and will take care of itself. I hope for the time when there will be as many women in the College of Agriculture as there are men.

Extension in Home Economics.—Extension enterprises embrace a reading course, study clubs, lectures before rural organizations, a homemakers' conference at Cornell, the winter course of three months at the college, an occasional exhibit in a farm car or at a fair, extension schools, canning clubs and correspondence.

The Reading Course comprises a membership of 32,000 mostly farm women, with a lesson on a home economics subject every month.

The course in Home Economics in a state college is developed as much for
extension to rural homes as for the students in college. The same subjects are interpreted for bulletins, lectures before granges, institutes, extension schools, or for class room teaching. In the latter, however, fundamental training in science and art and economics are required, making professional training for the student at college.

Reading Clubs.—In various sections of the state it appeared that farm women who were taking the Reading-Course wanted to talk with their neighbors on the subjects presented in the Reading-Course lessons. In some communities social opportunities were few, in others where groups of people had gathered there was need of a subject of common interest for discussion that would seem worth consideration. Some very wise women, therefore, asked that clubs be organized to hold meetings at regular intervals. There were the usual difficulties in organization, but wherever clubs have started the women have been enthusiastic. Literary and domestic subjects are considered, a social hour is a part of the program, often with refreshments. Sometimes men and women have met together, at other times the women alone have taken up the discussion of the bulletins which form the basis of the programs.

The Winter Course in Home Economics.—After the Reading Courses and reading clubs were successfully underway, it seemed desirable further to develop the work which the college could do for the women of the state. Winter courses had been organized in General Agriculture, Horticulture, Dairying, and Poultry. Farm men came to the College of Agriculture to gain the latest methods in farming. Some farm women came to attend these lectures, but it appeared that women were wanting to learn the latest methods in housekeeping to become acquainted with scientific facts as they related to household tasks. It was arranged that a course in Home Economics should be the next in the series of winter courses. The college was not then ready to employ regular instructors. Director Bailey announced that there was money available for such a course at Cornell in the winter of 1906. Probably the most unusual lecture course ever presented in Home Economics was held that year in Morrill Hall. Invitations were sent to lecturers in other institutions with the result that some of the most able women then in the field were on the lecture program of the first Home Economics course. Since that time a winter course in Home Economics has been a yearly occurrence.

The winter courses given in the College are business and occupational courses rather than academic. There are no entrance examinations, but the student is prepared to receive the instruction and should have a good common-school education as a basis for the work. The courses are open to men and women of eighteen years of age. There is no limit of age above eighteen and the course has been attended both by young women and by some older women. Many of the latter, mature in experience, have brought much inspiration and help to the Department.

The required subjects in the Winter Course in Home Economics are: foods and human nutrition, household sanitation, household management and household art.

Rural Schools.—The Department of Home Economics is able to give assistance to rural schools in the vicinity of the University, through its extension class which is made up of young women, mostly seniors, who are prepared to teach. The school constitutes a laboratory for the class. A lesson in cocoa-making, egg-cooking, the making of white sauce, bread-making, or table setting and serving, is given at each visit to a rural school. Members of the class, cooperating with the rural school teacher, drive to the school, carrying with them an oil or alcohol stove, necessary utensils, and supplies for a simple lesson. One student demonstrates the making and baking of bread, another develops the geography lesson from the growing and
marketing of wheat, another develops the arithmetic lesson from the recipe for making the bread. The nutritive value of the food is explained, to an extent possible for the pupils to understand. This work has led to prize bread-making contests in rural schools, and an interesting feature is that boys have taken prizes for bread-making as frequently as the girls have taken them.

The Building.—A bill authorizing an appropriation of $154,000 for the construction of a Home Economics building passed the Legislature of 1909–10. Later $40,000 was added for equipment. The brick building now occupying the site of the old red barn is a monument to the interests of legislators and friends of education in training the women of the state in right living and care for the human.

The Cafeteria.—As a practice laboratory a cafeteria has been instituted in the Home Economics building equipped to care for feeding large numbers. The name Cafeteria was used by Californians to distinguish this type of self serving which has come to be very common throughout the United States and abroad. The cost of serving is reduced to a minimum in order to allow the cost of food to be the chief factor. The Home Economics Cafeteria was opened in April, 1913, although it had been used while still unequipped during Farmers' Week in February. First only the noon meal and later three meals during the week and two on Sunday were furnished. The cafeteria has afforded opportunity to a limited number of students to help pay college expenses and has given to Home Economics students registered for institutional management a practice field without which a course in Home Economics would be largely theoretical. College social functions have been cared for in the cafeteria, making the building a social factor in the life of the college.

Proceeds from the cafeteria have thus far been used to promote the business. The management aims to charge only enough for food to maintain the enterprise. It is a part of the (Continued on advertising page 12)
PROBABLY no housekeeper since the world began has ever dreamed of the twentieth century interest in her work, her daily rounds and puzzling problems. Far less has she conceived the idea of a history of housekeeping ever being written or read. Yet housekeeping has a history, as old as civilization itself, older in fact, for it goes as far back into the world's beginnings as the woman and her family do. Before there was a single domesticated cat, the housewife had her problem not only of storing grains but of keeping the rats and mice out of it, and therefore she proceeded to tame a wild cat. Her neighbors followed her example; so have housekeepers ever since. Whether the fact that the cat by relieving her as nursery maid, urged her decision, I cannot tell, but I will just refer you on this point to Kipling's tale of "The Cat That Walked by Himself."

This subject of the history of housekeeping would provide material for an intensely interesting Home Economics Seminar and would keep students effectively busy for a whole college year. One could study the housekeeping of primitive women of all centuries and countries, from the Aztec Indians whom Montezuma ruled and Cortez conquered in Mexico, back to the prehistoric woman of the Swiss Lake Dwellings and forward to the Papuan Islanders and Ungava Eskimos of today. The story of the Arctic woman's search for food, and for dishes in which to cook it, and for proper implements for scraping skins and then fashioning them into garments, is just as interesting as that of the woman of the tropics who longs for ornaments of gold for her arms and ankles and searches eagerly for new cooling drinks. Such facts put women of today into sympathy with a housewife of the far off yesterday or the far-away uncivilized lands of the present time.

Another student could well follow the prosperous agricultural life of the people of the Nile Valley till she found the housekeeper in the Egyptian family of the early Pharaohs planning a dinner with fish and fowl, fruit and flowers, and presiding over the table with gracious courtesy. We can follow such a dinner in imagination today or in actual imitation, for a hundred of its details have already been recorded by historians. Not only a writer like George Ebers can use such facts in a novel like the "Egyptian Princess" to produce a realistic tale, but housekeepers of today can reproduce them as an interesting entertainment. Our students tried it once with guests who were surprised and delighted to find heliotrope and violets given to them as a welcome; chrysanthemums and tea-roses on the table; lamb roasted with a stuffing of bread crumbs, raisins, pistachio nuts and parsley, served with rice and onions. Each student, moreover, could have given the guests a definite page reference in Wilkinson's "Ancient Egyptians" for everyone of these details. The same was true for the salad of water cress and orange, of sherbet flavored with violets, and the black coffee which we served with cardamon seeds. Our quondam Egyptian maids had to be trained to salute and graciously receive the guests before they were led to the hostess' presence, and to glide noiselessly in and out of the dining room.

The Greek and Roman housekeepers learned centuries ago from the people of the Nile some of these arts of entertaining. These matrons in Greece and Rome had the care of houses and servants besides their families. In a recent bulletin of the Cornell Reading Course you have been given the history of the knives and spoons used by the Ancient Romans. I wonder if you realize that the Roman housekeeper had a long list of the very same kind of
vegetables that we eat today with our knives and spoons. This matron could choose for any dinner between artichokes and asparagus, garlic, lentils, beans, beets, cabbages, carrots, chicory and cucumbers; between melons, peas, pumpkins, radishes, onions, and turnips. She had Cato’s word for it that cabbage was the finest vegetable known, just as she had the time-honored opinion of the Roman fathers that pork was the most acceptable meat. Instead then of honoring her most distinguished guests with roast turkey and cranberry sauce she served roast pork and cabbage.

Even back in the early Homeric age of Greece we can see housekeepers about their work, for the “Odyssey of Homer” gives us picture after picture. Two of them I quote in full in order to make you see the Greek matron in her home. This one shows Helen in the court of her palace at work on wools:

“While Menelaus thus doubted in his mind and heart, forth from her fragrant high-roofed chamber Helen came, like golden-shafted Artemis. For her, Adraste placed a carven chair; Aleippe brought a covering of soft wool, and Phylo a silver basket which Aleandra gave the wife of Polybus, who lived at Theves in Egypt, where abundant wealth is in the houses. He gave to Menelaus two silver bath-tubs, a pair of kettles, and ten talents of gold. And then, besides, his wife gave Helen beautiful gifts; she gave a golden distaff and a basket upon rollers, fashioned of silver and its rim finished with gold. This her attendant Phylo now brought and set beside her, filled with fine spun yarn; across it lay the distaff, charged with dark wool. Seated upon her chair, upon whose lower part there was a rest for feet, she straightway questioned her husband closely.”

The second quotation gives a picture of a Greek bedroom:

“So then, desiring rest, they each departed homeward. But Telemachus himself, where on the beautiful court his chamber was built high upon commanding ground, went to his bed with many doubts in mind. And walking by his side, with blazing torch, went faithful Eurycleia, daughter of Ops, Peisenor’s son, whom once Laërtes purchased with his substance when she was but a girl, and paid the price of

\[1\] The Odyssey of Homer” (Palmer’s Translation) Bk. IV, lines 119–135.
twenty oxen. Now she it was who bore the blazing torch beside Telemachus; for she of all the hand maids loved him most and was his nurse when little. He opened the doors of the strong chamber, sat down upon the bed, pulled his soft tunic off, and laid it in the wise old woman’s hands. Folding and smoothing out the tunic, she hung it on a peg beside the well-bored bedstead, then left the chamber, and by its silver ring pulled to the door, drawing the bolt home by its strap. 

So there Telemachus, all the night long, wrapped in a fleece of wool, pondered in mind the course Athene counseled."

This glimpse into the daily life of the Greeks makes us realize what the women did for the comfort of their family. A student who might take the history of the family laundry work would find her story fascinating in the highways and byways into which it led her. She would find herself reading the tale of Nausicaă washing at the shore, where Odesseyus was at last released from the hand and harm of the ill-wishing Poseidon. Even Homer stopped to describe how the family washing was done:

"To this man’s dwelling came the goddess, clear-eyed Athene, planning a safe return for brave Odyssceus. She hastened to a chamber, richly wrought, in which a maid was sleeping, of form and beauty like the immortals, Nausicaă, daughter of generous Alcinous. Near by two damsels, dowered with beauty by the Graces, slept by the threshold, one on either hand. The shining doors were shut; but Athene, like a breath of air, moved to the maid’s couch, stood by her head, and thus addressed her, taking the likeness of the daughter of Dymas, the famous seaman, a maiden just Nausicaă’s age, dear to her heart. Taking her guise, thus spoke clear-eyed Athene:

"Nausicaă, how did your mother bear a child so heedless? Your gay clothes lie uncared for, though the wedding time is near, when you must wear fine clothes yourself and furnish them to those that may attend you. From things like these a good repute arises, and father and honored mother are made glad. Then let us go a-washing at the dawn of day, and I will go to help, that you may soon be ready; for really not much longer will you be a maid. Already you have for suitors the chief ones of the land throughout Phæacia, where you, too, were born. Come, then, beg your good father early in the morning to harness the mules and cart, so as to carry the men’s clothes, gowns, and bright-hued rugs. Yes, and for you yourself it is more decent so than setting forth on foot; the pools are far from the town.”

Soon bright-throned morning came, and waked fair-robed Nausicaă. She marveled at the dream, and hastened through the house to tell it to her parents, her dear father and her mother. She found them still indoors; her mother sat by the hearth among the waiting women, spinning sea-purple yarn; she met her father at the door, just going forth to join the famous princess at the council, to which the high Phaeacians summoned him. So standing close beside him, she said, to her father:

"Papa dear, could you not have the wagon harnessed for me, the high one,
with good wheels, to take my nice clothes to the river to be washed, which are now lying dirty? Surely for you yourself it is but proper, when you are with the first men holding councils, that you should wear clean clothing. Five good sons too are here at home, two married, and three merry young men still, and they are always wanting to go to the dance wearing fresh clothes. And this is all a trouble on my mind."

Such were her words, for she was shy of naming the glad marriage to her father; but he understood it all, and answered thus:

"I do not grudge them mules, my child, nor anything beside. Go! Quickly shall the servants harness the wagon for you, the high one, with good wheels, fitted with rack above."

Saying this, he called to the servants, who gave heed. Out in the court they made the easy mule-cart ready; they brought the mules, and yoked them to the wagon. The maid took from her room her pretty clothing, and stowed it in the polished wagon; her mother put in a chest, food the maid liked, of every kind, put dainties in, and poured some wine into a goat-skin bottle—the maid, meanwhile, had got into the wagon, and gave her in a golden flask some liquid oil, that she might bathe and anoint herself, she and the waiting-women. Nausicaà took the whip and the bright reins, and cracked the whip to start. There was a clatter of the mules, and steadily they pulled, drawing the clothing and the maid, yet not alone; beside her went the waiting-women too.

When now they came to the fair river's current, where the pools were always full, for in abundance clear water bubbles from beneath to cleanse the foulest stains, they turned the mules loose from the wagon; and let them stray along the eddying stream, to crop the honeyed pasturage. Then from the wagon they took the clothing in their arms, carried it into the dark water, and stamped it in the pits with rivalry in speed. And after they had washed and cleansed it of all stains, they spread it carefully along the shore, just where the waves washed up the pebbles on the beach. Then bathing and anointing with the oil, they presently took dinner on the river bank and waited for the clothes to dry in the sunshine. And when they were refreshed with food, the maids and she, they then began to play at ball, throw-
ing their wimples off. White-armed Nausicaa led their sport; and as the huntress Artemis goes down a mountain, down long Taygetus or Erymanthus, exulting in the boars and the swift deer, while round her sport the woodland nymphs, daughters of aegis-bearing Zeus, and glad is Leto’s heart, for all the rest her child o’ertops by head and brow, and easily marked is she, though all are fair; so did this virgin pure excel her women.”

This same method of doing washing lived through the middle ages and today you can find Russian peasants in Siberia, modern Greeks in Corinth and Italians in Milan, as well as the Filipinos in the Philippines washing in the streams or by the shore, while the laundry of millions of other people in the world is being done in huge machine equipped laundries.

Intensive study of a special part of housekeeping might easily lead other students to similar research. One could profitably take the history of baking — i.e., among primitive women who baked by means of hot stones put in baskets; then of the ancient, mediaeval, and modern peoples in turn, down to the twentieth century bakers working in large factories. There thousands of cakes and pies, cookies and biscuits are made daily to save the time of the busy housekeeper or to provide for the needs of families whose women have never been trained to be real housekeepers. A study of the history of dairying, another of plumbing and of lighting and heating, still another of such an aid to housekeeping as cooling devices, whether it be the water coolers of the Far East, the stone-floored cellar of the colonial house or the Eddy refrigerators of today, would all bring appreciation not only of the advance civilization has made, but also of the ingenuity of early women in solving the problems of housekeeping that are made relatively simple for us today.

There is no one secondary source of realistic information in this history of housekeeping equal to that provided by historical novels. The “Egyptian Princess” already mentioned, is mated by the “Coward of Thermopylae” for customs in Greek life and “The Friend of Caesar” for facts of the Roman daily life. “The Dove in the Eagle’s Nest” gives a wonderful picture of the contrast between the meagre housekeeping facilities of the castles of the nobles, and the substantial houses of theburghers growing rich through the industry and trade in their mediaeval and early modern towns. There was to be found in the castle only cold stone floors and stately furniture; fur coverings and heavy tapestries to be sure, but nothing dainty or suited to comfort. In the house of the prosperous merchant were carved chests of finely woven damask and the tables were set and adorned by shining pewter and silver and brass. By means of other novels it is possible to study the housekeeping of a mediaeval and then of a modern French nunnery — and to find out the duties of the abbess as housekeeper.

For the Elizabethan Age in England, when houses, even of nobles, were still dirty and uncomfortable; where the gorgeous velvet and satin clothes swept over rush-strewn filthy floors, we have plenty of details in such books as “Kenilworth” and “Master Skylark”, in “Alise of the Blessed Voice” and Richard Hewlett’s fascinating books. For pitiful, crowded housekeeping accommodations and difficulties in keeping the larder filled in the epoch of the mill development in such towns as Manchester and Leeds in England, we have only to turn to books like Mrs. Gaskell’s “North and South,” and her “Mary Barton” to find very real pictures. Here is one from the latter. It is the story of getting tea for three guests whom the Bartons had met on a spring day outing and urged to accompany them home.

“Mrs. Barton produced the key of the door from her pocket; and on entering the house-place it seemed as if they were in total darkness, except one bright spot, which might be a cat’s
eye, or might be, what it was, a red-hot fire, smouldering under a large piece of coal, which John Barton immediately applied himself to break up, and the effect instantly produced was warm and glowing light in every corner of the room. To add to this (although the coarse yellow glare seemed lost in the ruddy glow from the fire) Mrs. Barton lighted a dip by sticking it in the fire, and having placed it satisfactorily in a tin candle-stick, began to look further about her, on hospitable thoughts intent. The room was tolerably large, and possessed many conveniences. On the right of the door, as you entered, was a longish window, with a broad ledge. On each side of this, hung blue-and-white check curtains, which were now drawn, to shut in the friends met to enjoy themselves. Two geraniums, unpruned and leafy, which stood on the sill, formed a further defense from out-door pryers. In the corner between the window and the fire-side was a cupboard, apparently full of plates and dishes, cups and saucers, and some more nondescript articles, for which one would have fancied their possessors could find no use—such as triangular pieces of glass to save carving knives and forks from dirtying tablecloths. However, it was evident that Mrs. Barton was proud of her crockery and glass, for she left her cupboard door open, with a glance round of satisfaction and pleasure. On the opposite side to the door and window was the staircase, and two doors; one of which (the nearest to the fire), led into a sort of little back kitchen, where dirty work, such as washing up dishes, might be done, and whose shelves served as larder, and pantry, and store-room, and all. The other door, which was considerably lower, opened into the coal-hole—the slanting closet under the stairs; from which, to the fire-place, there was a gay-coloured piece of oil-cloth laid. The place seemed almost crammed with furniture (sure sign of good times among the mills). Beneath the window was a dresser with three deep drawers. A round table on one branching leg ready for use, stood in the corresponding corner to the cupboard; and, if you can picture all this with a washy, but clean stenciled pattern on the walls, you can form some idea of John Barton's home.

"The tray was soon hoisted down, and before the merry clatter of cups and saucers began, the women disburdened themselves of their out-of-door things, and sent Mary upstairs with them. Then came a long whispering, and chinking of money; to which Mr. and Mrs. Wilson were too polite to attend; knowing, as they did full well, that it all related to the preparations for hospitality; hospitality that, in their turn, they should have such pleasure in offering. So they tried to be busily occupied with the children and not to hear Mrs. Barton's directions to Mary."
"Run, Mary, dear, just round the corner, and get some fresh eggs at Tipping's (you may get one a-piece, that will be five pence), and see if he has any nice ham cut, that he would let us have a pound of."

"Say two pounds, missis, and don't be stingy," chimed in the husband.

"Well, a pound and a half, Mary. And get it Cumberland ham, for Wilson comes from there-away, and it will have a sort of relish of home with it he'll like, and Mary" (seeing the lassie fain to be off), "you must get a pennyworth of milk and a loaf of bread—mind you get it fresh and new—and, and—that's all, Mary.

"No, it's not all," said her husband. "Thou must get six pennyworth of rum, to warm the tea; thou'll get it at the 'Grapes.' And thou just go to Alice Wilson; he says she lives just right round the corner, under 14 Barber Street" (this was addressed to his wife), "and tell her to come and take her tea with us; she'll like to see her brother, I'll be bound, let alone Jane and the twins!"

"If she comes she must bring a teacup and saucer, if the alternative was to be her sharing anything with "Jem."

Such word pictures as these make us feel we have visited in those homes just as the paintings of Dutch masters, masters like Teniers, Terborch and de Hooch of the 16th century introduce us to the interiors of Dutch and Flemish houses. They give us an inexhaustible source of information about the daily work and surroundings of the housekeepers in the Netherlands who were the ancestors of so many New York families of today. For conditions of the Colonial housekeepers all along the English Atlantic seaboard we have Alice Morse Earle's books to give us both facts and enthusiasm.

For pioneer life in the west, we can find many a story, beginning with housekeeping in the Canestoga wagons on the way out to the fertile Iowa lands or to the far-away gold fields. Stories of explorers like Peary and Wallace give so many glimpses into the homes of Labrador Indian and Eskimo, that we know the duties and devices of the housekeepers there. There the women are still primitive—but their rough tools are made of materials supplied or suggested by the civilized whites with whom the Eskimos come in contact. Their larder is yearly coming to be much more like that to which the white
INQUIRIES such as the following are received at times: "Why should physics and chemistry be a part of a course in home economics? What is the need of drawing, of political science, of biology?"

It is said that the average woman does not like physics or chemistry and is likely not to succeed in those subjects. When a woman finds that the principles of science apply to her everyday tasks, and begins to comprehend their relationship, her interest awakens not only in the science, but in the task itself. She becomes interested in physics because she is interested in the laws of light, heat, and electricity as they apply to the construction and equipment of her house. Mechanical devices for domestic work require a training in mechanical principles underlying the working of pump, vacuum cleaner, fireless cooker, kitchen range and furnace, power washers, and separators. Chemistry soon makes a strong appeal, for it renders cleaning processes, cooking, nutrition, and many other processes readily comprehensible. Biology gives knowledge of and respect for life and the laws of life. Drawing is a part of the course of study, because art is as well expressed in dress, house construction, and house furnishing as in the making of pictures. Application of the principles of art as they apply to the home and to simple and effective clothing is to be found in a department of home economics. Political science meets the needs of the man engaged in business. Finance, corporations, tariff, railroads, municipal control, all look to economics for foundation principles; their need is recognized because of their wide financial interests. A large percentage of the family income is spent for food, shelter, and clothing. It is apparent, therefore, that a knowledge of economic principles is needed for the expenditure of that amount as well as for the earning of it.

Vocations open to students in home economics.—Until very recently it was regarded as heresy to advocate the idea that culture and skill could find an harmonious union in our educational system. The well-educated woman of a hundred years ago was the woman skilled in the performance of household tasks. Skill was the standard by which her education was measured—skill not necessarily related to culture. Industrial conditions were such that her ability to do well the practical task made her work of economic importance and she earned her living in the home in a manner that had the sanction of the times.

In the course of events the keynote in education changed. Skill ceased to be the all-important consideration and so-called culture became the dominant factor. The value of skill was depreciated, and culture, detached and unrelated to anything practical, governed all teaching. Higher education no longer concerned itself with instructing women in practical things when cultural training had become so compelling. Industrial conditions had changed so that skill in household affairs did not equip the well-educated woman to earn a living in a manner that had the sanction of society. The home no longer offered professional opportunities and women had ceased to be considered of great economic importance. Yet to earn a living was still the human problem. As a result, the well-educated woman of yesterday, justifying her economic existence by her skill in performing household tasks, was supplanted by the modern woman versed in cultural subjects only. She earned her living by teaching, the only profession for which the college or school especially fitted her.

But the hour has struck when culture and skill are no longer regarded as incompatible, detached ideals in education, one the antithesis of the other. We have awakened to a realiza-
tion that when science and art are applied they lose nothing in cultural value and gain much in human interest. Important tasks that have been stigmatized as menial have thus been lifted to a high cultural plane. New vocations and professions are being developed through this type of education, and woman is beginning to find her field of professional opportunity greatly enlarged. Fate has here played one of her ironic tricks, and the woman of to-day in search of a profession may find herself engaged in the old household tasks which have merely been given a different name and a new setting. Once these tasks were dull; but now, through the glory that applied science and art sheds about them, they have been reclaimed from a menial position.

The purpose of home economics is to develop and redirect woman's work, to train her for what may now be regarded as the profession of home-making, and at the same time to give full consideration to her probable need of earning a living. That purpose is accomplished through a broad general training in all home economics subjects, with specialization in one. Although many of its possibilities are still in the speculative stage, the present development of home economics is such as to afford a variety of professional opportunities:

1. Teaching.—The teaching of home economics subjects is, and probably will always be, the profession chosen by the larger number of graduates in home economics. A broad field of specialization is open to them, and since more difficult and systematic training is required of specialists their financial rewards are usually greater. At present the demand for teachers of home economics is greater than the supply.

2. Institutional management.—The woman who has executive ability may enter the newly opened field of institutional management. The capable, well-trained woman may find a large opportunity for success as a dietitian in a hospital, sanitarium, or public institution, or as purveyor, steward, manager, or matron of a dormitory, hospital, or hotel.

More and more the public is feeling the need of applying scientific methods in places where numbers are being housed and fed. Perhaps this is, next after teaching, the best opening for graduates in home economics. It is a field that should not be entered without thorough consideration, for already the irush of the over-confident and inefficient has been detrimental. Only a woman of force and executive ability, one who is clear-sighted and self-controlled and who has some understanding of human nature, should attempt specialization in this line of work. For such a woman the promise of a successful future is greater than that afforded by teaching.

3. Business enterprise.—Business enterprise in which home economics is practically applied has already been sufficiently developed to show that it has varied, original, and undoubtedly promising possibilities. Tea-rooms, lunch-rooms, cafeterias, small hotels, and inns have been opened and successfully managed by women. The woman untrained in home economics has sometimes been successful, but training, in this as in every other business, is a more direct road to success.

The baking industry offers two-fold opportunities: first, as a possible commercial enterprise; second, as a laboratory for the scientific worker. Laundry management, already successfully undertaken by women, promises good professional opportunities. Both the centralized bakery and the centralized laundry may be regarded as possible solutions for some of the present-day rural problems. The right woman, well trained in home economics, should find in either an excellent field for work.

Fruit-canning as an industry is promising. Women capable of directing large enterprises have already proved its possibilities. This industry has also been begun in a modest way on certain farms. In many cases it would afford at least as good an income as could be obtained by teaching.

(Continued on advertising page 10)
AN EXPERIMENT IN HOME-MAKING

By Helen B. Young
Assistant Professor of Home Economics

and Ethel L. Phelps, '15

Almost in the side yard of the Home Economics building stands a modest gray cottage known as the Home Economics Lodge. This little experiment has worked out so happily, upon the whole, that its story may prove interesting to others.

The Lodge, as seen from the outside,
was dark and cheerless both within and without. Viewed from the outside, its dark greenish bulk and grudging little windows gave one the sense of a great toad blinking at the sun. Entering the house seemed like going into a case, for everywhere a dread sentiment against light and air prevailed.

Once on the inside, the faint light gradually revealed the condition of the interior. The walls were covered with varieties of scrollly patterns in red, gilt and green, or with a realistic grape design clambering over a life-size trellis, or with raw green paper faded in streaks. The woodwork was finished with yellow varnish throughout. The floors were of unfinished pine boards of different widths in different rooms. The kitchen, however, proved to be the climax of the situation. It was a chilly lean-to affair, loosely built of money with which to do it. It was necessary therefore to select first the large essentials which would affect the comfort and health of all, and then the lesser changes if the money held out.

Out of a long list of suggestions, it was found that two structural changes would be absolutely necessary. First, a few more windows, and second, a rejuvenated kitchen.

After a careful survey of the house upstairs and down, it was found that it could be made comfortably light and airy if four window changes were
made. Two of these were for dormer windows in two upstairs rooms then having but a single window, the other two changes were in the principal downstairs rooms. The single window in the sitting room was enlarged and replaced by a group of three casements; the dining room window was enlarged and replaced by a huge sash taken from the enclosed porch.

The kitchen changes were next considered. Here the floor must be raised to the level of the main house; the walls must be lathed and plastered, and the windows must be raised bodily until the sills were about three feet, six inches from the floor. Next a simple set of cupboard shelves were planned, with a broad zinc covered shelf at table height, which continued around one corner and fitted against the sink. The cupboard-table-sink arrangement was to hold all dry foods and utensils and would furnish a working center for the cooks. The ice-box and cold supplies were to be left in the northeast entry already built.

Since the bathroom was unfortunately located on the first floor, it was felt that running water must also be provided upstairs; so a slop sink with hot and cold water faucets was planned for a corner of the upper hall, behind a low screen.

All of the proposed changes were either drawn out to scale, or were carefully described in writing. The whole scheme was then submitted to a contractor for an estimate, which proving satisfactory, allowed the work to proceed at once.

Problems of decorating and furnishing were next considered. Just at this time there occurred near the campus, two sales of household goods. From these collections were selected the simplest and soundest pieces of useful furniture. More was procured from a second-hand shop. When all the things were delivered at the house, the assortment was found to include pieces of black walnut, of cherry, of mahogany, of oak, in several finishes, and a number of painted chairs of various hues; a typical collection of successive generations of furniture output.

The general color sentiment of the best pieces of furniture seemed to be a
dark reddish brown. This suggested cream wood work and light colored papers throughout. This scheme was welcomed the more gladly, because by its use the whole house would assume a unified effect; would be made light, cheerful and spacious in appearance.

Accordingly, the woodwork was painted upstairs and down and appropriate wall papers selected. For the connecting sitting rooms with exposures, a buff texture paper with wide border in quiet tones of green, grey, and old rose was selected; for the dining room on the north, to be furnished with dark oak pieces, a clear light yellow stripe was chosen. For the downstairs bedroom, a soft grey cartridge paper with tiny rose bands for panel trimming was selected. A large flat type design in two tones of yellow was used for upper and lower halls. On the second floor, the two connecting bedrooms on the south were covered with a buff cartridge paper and finished at ceiling with a neat decorative band of small flowers. The other two bed-

rooms were papered with well-designed patterns of a quiet nature, one room on the southeast corner, hinting of blue, the other hinting of a light warm green.

Since carpets were thought undesirable for both practical and decorative reasons, all floors were painted with a brown deck paint and hard finish, preparatory to the use of rugs. For the sitting rooms were used domestic rugs made from a quantity of old

ingsrain carpet. The floor of the larger room is covered by one large rug, with two smaller ones in the smaller room. An inexpensive modern rug of heavy ingrain weave, in two tones of brown was purchased for the dining room. The idea was to use a single large rug for the rooms used by the family, both because it is simpler in effect and also less exasperating than many little rugs. Smaller rugs were appropriately used in the bedrooms.

The walnut, mahogany, and oak pieces of the old "parlor" type were kept for the living rooms. All up-

(Continued on advertising page 20)
FACULTY

BLANCHE E. HAZARD

INDUSTRIAL economics is to be a part of the course in the Home Economics Department at the New York State College of Agriculture. Miss Blanche Evans Hazard has been appointed assistant professor in that department, to pursue work which is best outlined by Liberty Hyde Bailey, former Director of the College of Agriculture in a recent address. He said that a course in Home Economics should not be entirely practical, but students should have a knowledge of the history and evolution of the home as a cultural background. Such knowledge would create in the students a greater interest in the customs and implements of the home by enabling them to appreciate their historical significance. Each age and nation has had its own manner of living, its own etiquette, and its own style of dress. To study the evolution of the home is to become intimately acquainted with people of all ages; to gain a cultural background; and to find in common household things a new significance and a new interest.

Upon the historical study of the household will be based pageants and other illustrative material which may be used both in the Department of Home Economics and in the extension work of the state. Miss Hazard who has been appointed to this position, is a graduate of Radcliff College, was a teacher of history in the Rhode Island Normal School, had charge of the History Department in the Brockton, Mass. High School and later the Department of History of the Practical Arts High School, Boston. Miss Hazard is on the Editorial Board of the Teachers History Magazine. Her book entitled "Indians and Pioneers" and her work upon "Beaumarchias and the American Revolution" are recognized as authorities by the teaching profession.—NATALIE B. THOMPSON, '14.

THE FARM BOY

By Jared Van Wagenen, Jr., '91

IT IS the fashion in our flood of what may be called bucolic literature to glorify the life of the soil. It is soberly true that in our big cities are thousands of men who have learned to dream of the farm as a place of shady dells and lowing herds where life goes by with a song. It is well to have it clearly understood that farm life has very many disadvantages.

We farmers are compelled to do without very many things which are wonderfully desirable and satisfying. We are living without fire defense or police protection. In many cases our mail facilities are poor, our means of transportation are expensive and insufficient. We have commonly no concerts or lectures or theaters worth the name. Our schools nearly always, and our churches very frequently compare most unfavorably with those available to the city dweller. Our social life at best lacks the opportunity to gather in groups attracted by common tastes and instincts. We may as well admit to ourselves and the world that there are grave disadvantages in dwelling as we do—each man separate from his neighbors. Such disadvantages as there may be in close everyday mingling and contact we miss and these are facts which ought to be well considered by city people contemplating country life. Our way of life makes us individualistic beyond any other class of men—which is both our strength and weakness. Our life also encourages the fine virtues of self-reliance and initiative. Because we
work much alone we have learned to encourage the fine virtues of self-reliance and initiative. Because we work much alone we have learned to draw our own conclusions and to hold to them most tenaciously. In short, above all other classes we do our own thinking.

Now these are precisely the factors which make the farm the finest training school for boys in all the world. Say what you will in this particular regard, the farm has some things all its own. It would be possible to enumerate many advantages in favor of the farm boy, but I believe that the one thing above all others which has enabled him to win his way in the world has been the settled habits of industry developed on the farm.

It is hard for the best intentioned city-dwelling boy to maintain any sort of real industry outside of his school life. He may play ball on the street if the policeman does not object—he may find opportunities for physical exercise in the gymnasium, but unless he sells papers or becomes an errand boy, it is pretty hard for him to do any really useful work. He cannot weed onions—or feed calves—or hunt eggs or carry in the wood or pick berries. The farm boy can and must do all these things. Doubtless he often is compelled to do so many of them that they become drudgery. Even this is better than entire idleness, for the city boy is in school only six hours out of the twenty-four and doubtless, “Satan finds some mischief still for idle hands to do.”

To get up before dawn on a winter morning has in it something for hardship, but because the farm boy learns to do it, it makes him able to unflinchingly do harder things in later life. The farm boy then has this to steady him in life. He has health above the average of his city fellow; initiative because he must learn to do for himself; trained industry as the result both of opportunities and necessity, and ordinarily higher ethical standards. Any competent observer will bear testimony to the fact that students from the farm as well as farm boys in general, bring with them much less of folly and wickedness than the boy of the town. Life on the farm does not sharpen wits like contact with the city street. His failings are possibly something of awkwardness and lack of precocity which—like extreme youth—time will cure.

When it comes to education, the farm boy is usually handicapped as compared with his brother of the town. Judged by every standard of efficiency or pedagogy, there is nothing more pitiful than the typical one-room, cross roads school house with a dozen youngsters from six to fourteen years old, presided over by a Miss of twenty summers, who is using school teaching as a stop-gap between high school and matrimony; yet this is the exact condition in the vast majority of country schools. Even if the teacher be a born genius, she must contend with an impossible number of classes and with a paucity of material resources.

Unpromising as such a school is, it is generally the preparatory, and not infrequently the finishing school of the farm boy. The country-raised boy is filling places of responsibility in the world, out of all proportion to his number, but he succeeds not because of, but in spite of his school advantages. Let it also be said in passing that this educational system is the most expensive of any public school system in our land. The remote rural school district with a total assessed valuation of $50,000, which is maintaining a cheap teacher in a one-room school is doing it at a relative cost very far in excess of the splendid educational system of any great municipality. In a word, these are the facts. Education in the country is pitifully inefficient, but it is tremendously expensive. The high cost at least is nobody’s fault. It is only one of the features which inherethere where a scattered people of moderate wealth must assume the functions of public education.

Of course the natural remedy is the organization of the consolidated school. The bringing together at some central point of all the children from say a half
a dozen neighboring school districts without doubt makes for economy of administration and—for efficiency of instruction. There are objections, the greatest being that the central school in the village cannot but be a destroyer of community sense. It is unfortunate to take a child of six years, just those years when impressions are most easily made and most lasting, and practically say to it, “Your own little hamlet don’t amount to anything. It isn’t worth while. You cannot even learn to read if you stay in it. You better begin to get away from it as soon as you can.”

It is to be feared that this is too often some of the unconscious instruction given by the consolidated school, yet granting this fault, such a school seems the most feasible solution of our rural education problem.

The farm boy has always gone to college in relatively large numbers. No man is more ready than the farmer to sacrifice in order that his children may have educational advantages. Today no section of our country has so many boys in college in proportion to the population as the exclusively rural states like Kansas and Nebraska. The farmer is certainly, beyond most men, a believer in education, but unfortunately, he has thought little about agricultural education. Like the rest of the world, he has been slow to see that farming, also, is one of the learned professions.

The fact that the farm boy is now coming to the College of Agriculture in large numbers is big with promise for the future. It will mean ultimately more prosperous and intensive agriculture, but the greatest benefit will be in the broadening and enrichment of our agricultural civilization. In the past, our agricultural graduates have largely become teachers and investigators. In the future a constantly increasing proportion will go back to find a place for new ideas and enthusiasm on their own acres. Not even a casual survey of the topic of the “Farm Boy” can forget the question of why he leaves the farm. He certainly does so in great numbers. A recent commission has estimated that from New York state alone, 40,000 boys—not all farm boys, but country-bred youths—go to the cities every year. It is a mighty army. We cannot expect to keep them all at home. They go for many different reasons. Some go for better opportunities. Some others go through sad mistake, leaving the best opportunities behind. Some go because they judge life by false standards, and measure it by false ideals. Above all things they go in answer to what seems to be a sort of Zeitgeist—world-wide movement which leads men to gather in vast and crowded communities. Every great city of the world is growing and growing rapidly.

It is a platitude that on the farm today are living the boys who will be making world history in future days. When our marvelous and stirring industrial life shall some day be put into an epic, the central figure will be the farm boy going forth with very little except his mother’s prayers and his father’s blessing, and his clear eye and sturdy health, and love of truth, and right—to strive and conquer in the world.

Pity the man who cannot thrill to the story of Dick Whittington which has come down to us since the days of Henry V of England. Dick, a poor country boy had gone to London to seek his fortune and failed. He was turning his back upon the great city in despair, and at sunset as he looked back upon the town for what he supposed was the last time the bells began to chime, and he listened until their throbbing music beat a refrain into his own heart which bade him “Turn again—Turn again, Sir Richard Whittington—Thrice Lord Mayor of London Thou.” He hearkened to their call and turned again and made the dream come true. And five centuries later Alfred Tennyson voices the visions of the Farm Boy traveling that same road.

“Eager hearted as a boy when first he leaves his father’s field.”

“And at night upon the dusty highway near and nearer drawn
Sees in Heaven the Lights of London flaring like a dreary dawn.”

“And his Spirit leaps within him to begone him then
Underneath the light he looks at; in among the throngs of men.”

That is at heart the reason why the boy leaves the farm.

Be that as it may, his going brings in its train consequences which are serious enough. It involves the crux of the problems of the rural neighborhood. It explains a decline in population universal in all old agricultural communities. It explains vacant farm houses and dying churches, and discouraging social conditions.

We welcome agricultural education because it will open the eyes of the farm boy to the worth and the possibilities of the duty that lies nearest.

We honor the Farm Boy, because in him there is such stuff that out of all proportion to his numbers in every great city of our land he sits in the seats of the mighty.

---

RHODODENDRONS

R. W. Curtis

Assistant Professor, Department of Landscape Art

The rhododendron is the finest and most elegant of garden plants. The form is symmetrical and pleasing, the foliage is evergreen, and the flower magnificent. It is commonly considered a hard plant to grow, but if a few rules are observed, this ought not to be so.

First of all, rhododendrons do not like lime. Therefore, the soil must be made acid by adding plenty of peat or leaf mould and well rotted manure.

Rhododendrons on the lawn, Hunnewell Gardens, Wellesley, Mass. Mr. Hatfield marking plants for seed. Small plant is Mrs. H. S. Hunnewell (white). Larger plant at right is Everestianum (lavender).
Secondly, the soil must be fine and fibrous, but not loose and coarse. Two feet of yellow wood soil mixed with leaf mould, etc., as mentioned above is ideal. Thirdly, there must be good drainage, but also plenty of water during the summer, and some kind of mulch on the surface to keep the soil cool and moist. Lastly, rhododendrons do best in a northern or northwestern exposure against a border of evergreen trees or a woodland or a building where they will be shaded from the morning sun.

When the bed is properly mulched a foot deep with leaves or hay, the roots do not all become frozen, but some still manage to keep the plant supplied with water. The buds and leaves, however, do become frozen and in the early spring with hard frosts at night and warm sunshine during the day, the rapid thawing and drying action of the morning sun is what does the harm. Therefore, shade in the morning is best.

A few of the best varieties are given below. All are old, well tried sorts and perfectly hardy unless otherwise noted.

**White**—Boule de neige, early and small, 3 feet.
Album elegans, medium and large, 9–12 feet.
Delicatissimum, late and medium, 6 feet.

**Pink**—Carolinianum, early and small, 3–4 feet. (Native of Alleghany Mountains.)
Mrs. C. S. Sargent, medium both in bloom and size.
Hannibal or Henrietta Sargent, late and medium, 6 ft.

**Lilac or Lavender**—Everestianum, early and medium, one of the very best.
Lady Grey Edgerton, medium, silvery lilac, lighter and more beautiful than Everestianum, but not as hardy.
Rosy Lilac—Roseum elegans, medium both in bloom and size.

**Red**—Charles Dickens or Atrosanguineum, early and medium.
Caractacus, medium.
H. W. Sargent, late and medium.

**Purple**—Purpureum elegans, medium, a magnificent color; much darker than Everestianum.

---

Rhododendron in a natural setting, Arnold Arboretum, Boston, Mass. Plant at left is Charles Dickens (red), in center across the brook is purpureum elegans (purple), upper right is Album elegans (white).
This number represents our final effort to make this year's Countryman better than that of any preceding year. We now transfer the Countryman with many of its possibilities unrealized to a new board. The new board is composed of men who will be continually working to make this publication of greater service to the College of Agriculture.

The Countryman Board as elected for 1914-1915 is as follows: Editor-in-chief, Edwin C. Heinsohn, '15; Managing Editor, Harold M. Stanley, '15; Home Economics Editor, Miss K. H. Mills, graduate student; Associate Editors, W. D. Hill, '16; L. C. Schuknecht, '16; S. Wilson, '16; H. E. Stern, '17; Business Manager, A. W. Wilson, '15; Circulation Manager, W. E. Monson, '15; Assistant Business Managers, L. E. Gubb, '16; B. W. Kinne, '16; C. W. Moore, '16; P. C. Cutler, '17.

The Executive Committee of the Agricultural Association has passed the following by-law: The Nominating Committee of the Cornell Countryman shall not nominate for Editor any man who is a member of the same fraternity or corresponding organization as the Editor then in office nor shall they nominate as Business Manager any man who is a member of the same fraternity or corresponding organization as the Business Manager then in office. This rule is not to go into effect until after the nominations in 1916.

We feel that this by-law will help in making the Countryman a publication for all the students in the College of Agriculture.

We thank our subscribers, contributors, and advertisers for their courtesy to us during the past year. We also thank many of our friends who have given us freely advice and help.

The Countryman has never before had a Home Number but if we are to keep abreast of the times such a number becomes a necessity. The farm home is now receiving attention from agencies which formerly looked past the home into the barns and fields. Agricultural colleges are now studying the subject. The United States Department of Agriculture is making investigations. Other agencies now recognize that better farm homes should be on a par with better farming, better churches, better schools.

If we accept the statement that the farmer is more important than the farm, the farm home becomes the most important point on the farm. Here is found a moulding influence in
the lives of the farm boy and the farm girl. In the efficient or inefficient farm home the farm woman becomes an unfortunate drudge or a useful administrator and powerful educational force. A farming community can be praised or condemned on a knowledge of its farm homes.

In the College of Agriculture the interests of the farm home are cared for by our Home Economics Department. This department is splendidly equipped and it stands high in its field. The part that it is playing in the agricultural progress of the state should be a source of pride to every Cornellian.

Advance copies of Volume 1 of the Standard Encyclopedia and Cyclopedia of Horticulture by L. H. Bailey are being distributed. It is being published by the Macmillan Company, 66 Fifth avenue, New York City. The first volume contains 602 pages and 700 illustrations. Price $6.00 per volume.

Dr. Bailey has undertaken a tremendous task in editing the six volumes of this Cyclopedia. Such a work requires infinite accuracy and pains. Volume 1 shows these two qualities very clearly. This volume indicates that this Cyclopedia is the greatest of its kind yet attempted and we predict that it will be standard for many years.

The book is a revision of a Cornell Song Book published in 1909. Some Cornell songs not in the old book and several other songs have been added. It consists of 106 pages and costs $1.00 or postpaid for $1.15.

We wish to call the attention of all the seniors to the annual Senior Banquet, which will be given in the Armory on May 8th. This is the last opportunity of their undergraduate days that the Class of 1914 will have to "get together," and therefore every senior should take advantage of this and help make the banquet a success. The tickets have been made reasonable, only $1.50, so that no one will be kept away on account of the cost. The committee in charge hopes that the seniors of the College of Agriculture will be well represented.

As the COUNTRYMAN goes to press, news has been received of the appointment of Dr. Beverly T. Galloway, Assistant Secretary of the United States Department of Agriculture as Director of the College of Agriculture.

Dr. Galloway is a graduate of the University of Missouri. Twenty-six years ago he became assistant botanist in the Department of Agriculture and by hard and effective work he has risen to his present position. As Chief of the Bureau of Plant Industry, the Bureau developed to great size and efficiency. He was appointed Assistant Secretary at the beginning of the Wilson administration. He is known as a very able investigator and organizer.

The COUNTRYMAN extends a greeting to Dr. Galloway and wishes him success in his new work.
CAMPUS NOTES

On the evening of March 17th, the Junior Agricultural class held a banquet in the Home Economics Cafeteria. Due to the kindness of Professor White of the Floriculture Department, the tables were very prettily decorated with carnations and ferns. A. B. Dann was toastmaster. Talks were given by the President of the class, Mr. E. C. Heinsohn, and several members of the class were called on for responses. Solos by A. L. Clark and C. W. Whitney and selections by a mandolin quartette were much appreciated. Mrs. J. H. Comstock told how the spirit that is now so prevalent in the College of Agriculture was born when the news of the first appropriation for the new agricultural buildings was first received in Ithaca, and how the agricultural students, who had previously gone around with a sort of apologetic expression on their faces, had a parade with floats and from that day held up their heads. That was the origin of the present spirit that has caused the agricultural students to be so often likened to "one big family." Professor S. P. Orth of the Arts College gave a very inspiring talk on culture. He said it was a mistake to think that by going to college or by reading books one can "acquire" culture. Culture comes from within, from the heart, and has no relation to the amount of "polish" that may be used for superficial effect. Humanity is the key to culture. Everything is artificial except in the realm of Nature and in the realm of human nature. Nature affords an example of all the requisites of culture; patience, sincerity, humbleness, genuineness, and the source of all beauty. Books that last are written from Nature or human nature and everything that lasts through the ages is derived from Nature. The human element is the most vital thing to remember. Then a person has culture.

* * *

Through the efforts of Mrs. Jean K. Foulks, the farm adviser of house sanitation and household economics of the Pennsylvania Department of Agriculture, the article on Household Sewage Disposal by Professor H. W. Riley is to be published by the State of Pennsylvania as a bulletin to be distributed among the farmers of the state.

* * *

The Poultry Department is planning to cooperate with the Ithaca Business Men's Association and the Tompkins County Fair Association to develop the poultry interests in this part of the state. A course of thirty or more lectures will be given by W. G. Krum, of the Poultry Department, in centrally located places in different parts of the country.

* * *

The installation of the pipe organ in the New Auditorium by the J. W. Steere & Son Company, of Springfield, Mass., is well under way. It will be the largest organ in this vicinity and has several novel features. Among these will be the echo-organ, which is located between the ceiling and the roof. Its tones will enter the Auditorium through a specially prepared...
hood constructed above the skylight in the center of the ceiling. This echo-organ is played from the main console, with which it is connected by a cable several hundred feet long, and one of the most beautiful features will be its set of tubular chimes. Through use of the echo-organ in connection with the organ proper, it will be possible to obtain many charming effects both antiphonal and of distance.

* * *

Once more the College of Agriculture came to the front in athletics. On Saturday, March 28th, Ag. won the indoor carnival by a score of 32, C.E. being second with 24. The potato race won by Arts caused a great deal of excitement, and the sack race won by Ag. provided a lot of fun for the spectators.

* * *


* * *

For the purpose of bringing together the candidates and old members of the Agricultural baseball team and to arouse spirit for the coming inter-college series, a banquet was given in the Home Economics Cafeteria, March 25. J. J. Swift, ’14, was “umpire” and the “players at bat” were, Professors A. R. Mann, G. A. Everett, and Knapp and Messrs. H. H. Knight, ’14, who was captain last year, Captain F. E. Rogers, ’14, Manager R. C. Shoemaker, ’14, and “Mike” O’Neill. About fifty enthusiasts enjoyed a very pleasant evening.

After the Easter vacation, all of the undergraduates who are registered in Poultry 7, a marketing course, were taken to New York City to study conditions there. E. W. Benjamin, Instructor in the Department, had charge of the trip, which lasted three days. The New York markets were visited, the live poultry receiving stations, wholesale egg dealers establishments, dressed poultry markets, the general public market, and the New York Mercantile Exchange. A study of hotel, restaurant, and retail trade was made and several trips to cold-storage warehouses were included.

* * *

With the death of Lady Cornell, the College lost its most famous hen. Great care in choosing her ancestors was the cause of her very successful career. An operation was performed by the Veterinary College in an attempt to save her life but this proved futile. Lady Cornell’s record has never been equaled at Cornell. In the three years of her productive life, she laid 257 eggs the first year, 200 in the second year, and 191 in the third year, which makes a total of 648.

* * *

The third reading of a bill, introduced in behalf of the state florists to appropriate $60,000 for facilities to carry on more research work at Cornell, passed the Senate on March 25. This money will be used for laboratory apparatus and the construction of new greenhouses to be used for the benefit of the florists of the state. This prospective appropriation is entirely outside the regular annual appropriation of the College of Agriculture.

* * *

Each month the Plant Industry Conference holds an informal meeting. This is composed of about fifty professors and instructors from the different departments dealing with plant work. During the rapid growth of the College of Agriculture, a great number of departments have been organized. This conference serves to bring the [Continued on advertising page 20]
FORMER STUDENTS

'06, B.S.A.—During this past year, Professor H. F. Button has been organizing a Department of Agriculture in Vincennes University at Vincennes, Indiana. Since taking his degree at Cornell, his work has been such that he is well qualified to undertake this new work. His first two years after graduation were spent in teaching agriculture in the Waterford, Pennsylvania, High School. In 1908, he became Director of the Manassas Agricultural High School in Virginia. The success that he made in Virginia was due to “following the ideals of Dr. L. H. Bailey in making the school the expression of community life.” Professor Button took advantage of his opportunities and carried farming methods to the people of that region by organizing a Farmers’ Institute that met monthly, a Women’s Auxiliary to the Farmers’ Association, Boys’ Corn Clubs, Girls’ Tomato Clubs, etc. In order to make the school of more service to the community and to bring it into closer relations with the farmers, he spent most of his time when not teaching in doing those forms of extension work that seemed to be most needed. For instance, he tested dairy products, tuberculin tested many herds because the farmers were afraid of the official tester, induced many farmers to use pure bred sires, and such work. During the five years that he was Director of this school, the size increased from thirty students to ninety and the work was of such good quality that several of its graduates entered Cornell without being required to take entrance examinations.

Now, in southwestern Indiana, Professor Button is trying to do a similar work on a larger scale. Vincennes University, though scarcely more than an academy doing some college and normal work, is over a century old and on its first Board of Directors was William Henry Harrison. Professor Button is trying to bring the old institution into harmony with the changing agricultural and social life of the community by giving such courses as will prepare young men and women for a broader country life. There were about five hundred people who attended a Farmers’ Short Course this winter and there is a vigorous Corn Club in operation.

Though Professor Button has been in Indiana less than a year, the success of his work can be judged from the fact that he has the backing and active cooperation of the Farmers’ Union, Township Institutes, and all organizations that seek rural betterment. He “feels assured that the Cornell Ideals of Rural Reorganization will prevail in this part of Indiana.” We are confident that Professor Button will achieve even greater success because he is combining theory with practice and is carrying this direct to the farmer.

'74, B.S.A.—Professor William R. Lazenby, who is in charge of the Department of Horticulture and Forestry at Ohio State University, Columbus, Ohio, was recently re-elected president of the Columbus Horticultural Society. This is an organization in which the state university and the city of Columbus cooperate. It is one of the oldest societies of its kind in the United States, having been founded in
1845. This society publishes a volume of its proceedings each year and has over $6,000 invested in various enterprises.

Professor Lazenby is the author of the January extension bulletin that was published by Ohio State University. This is one of the monthly publications gotten out by this department and is entitled, "Trees for Shade, Shelter, and Ornament." The illustrations are very pleasing, and invite one to make use of the shade, provided the sun will ever shine warm again. All in all the bulletin is carefully written and is of value to anyone interested in trees. A suggestive list of trees for almost any place or soil is given and there are drawings showing how to transplant a large tree, dig holes for setting out small trees, and some of the important things to be avoided.

'94, W.C.—Irving C. H. Cook is farming the Old Homestead where his father was born 85 years ago and where he resides in the original house. Mr. Cook is interested in farm drainage engineering and has a Buckeye traction ditcher. At the meetings of the State Drainage Association held at the College during Farmer's Week, Mr. Cook gave a talk on digging ditches with a traction outfit. He is an expert on that subject and his talk was well received. It was shown what well graded ditches a tractor can dig and how rapidly it eats through the ground. For digging extensive drainage systems they are almost necessary, provided the land is not too stony. Much grief was experienced in rocky land.

'06, W.C., '08—'10, Sp.—Alfred E. Boicourt has recently been appointed assistant in the Poultry Husbandry Department. He will have charge of all the experimental flocks of the College.

'06, B.S.A.—Since March 10th, John H. Barron has been connected with the extension work of the College. Formerly he was with the farm bureau of Broome County with headquarters at Binghamton. Then for two years he was an Institute worker under Director Van Alstyne. He and his brother have a large general farm near Nunda, N.Y., where Mr. Barron will be during the summer and at other times when he is not engaged with extension work. Recently he has been on the farm crops trains that have been sent out over the New York, Ontario and Western and the Erie Lines. Besides this work, he will be active in extension school work. Mr. Barron's specialties are soils and farm crops.

'09, Sp.—H. W. Coryell took possession on March 1st, of a farm which he has purchased near Wilseyville, N.Y. After finishing his work at Cornell, he was tester for the Cow Testing Association which was organized by the Dairy Department among its patrons. The Cornell Dairy Department could use more milk than it is now getting from the farmers in this region, so to increase this quantity and to carry extension work among the farmers, this testing association was formed. The results obtained have more than justified its organization and have exceeded expectations.

'09, B.S.A.—Charles P. Boehler, who for some time has been connected with Warren H. Manning, Landscape Designer, of Boston, is now located at 115 East Franklin Street, Richmond, Virginia, as Mr. Manning's southern representative. He has general charge of the work in Virginia which includes, besides private estates, real estate subdivisions, etc., the landscape work in connection with the new location of Richmond College. The present location in the city has been outgrown and, desiring room for expansion, the trustees chose a site of great natural beauty in the suburbs of Richmond. It is an irregular, heavily-wooded tract overlooking the James River and there is an attractive lake in the center of what will be the new campus. The buildings, while varying in details, are of a uniform style of architecture, and their red brick blends very beautifully with the background formed by the predominant pines of that region. The plans for arrangement take into consideration the probable growth for the next fifty years, but nothing is being
done which will seriously affect the present arrangement in beauty or utility. For beauty of location, the college will, when completed, undoubtedly rank with the best in the country.

'09, B.S.A.—On March 3d, G. C. Manrow was married to Miss Bertha Loman of Nassau. They are now at home at Nassau, Rensselaer County, where Manrow is superintendent of a farm belonging to Troop B, New York National Guards, of Albany. This farm is used to pasture the horses of Troop B during the summer and to breed horses for the cavalry of the state.

For two years after his graduation, Mr. Manrow managed a country estate at Bernardville, N. J. Then for the next two years he managed a large fruit farm at Middleport. At present he is at Nassau on this 250 acre Troop B farm.

'10, B.S.A.—Sydney L. Beebe is managing his own farm at Alpine, N. Y., where he is engaged in slowly building up a herd of grade Holsteins. He has made his farm a general farm and besides the Holsteins and crops, keeps about 1000 S. C. White Leghorn hens "on the side."

'10, B.S.A., '11, M.S.A.—H. N. Kutschbach recently spoke before the Farm Management Seminar at the College. He is now located on the home farm near Sherburne, N. Y. This farm contains 800 acres, but he says that he could handle a little more than this, but not much more.

The chief product of the farm is thoroughbred Holstein cattle, some of which have very high markings, and the herd is one of the best in that section. There are two barns which afford room for 120 head. Two hundred and seventy-five acres are in pasture, 250 acres in woods, and usually 150 acres in hay. Cabbage, beets, corn, oats, and barley are also raised. Mr. Kutschbach follows the practice of selling his oats and barley for seed and buying his grain. He is managing his farm according to the most approved Warren-Livermore methods except that he did not figure out his labor income for last year.

'11, B.S.A.—J. H. Neethling is teaching in the agricultural school at Elsenburg, Cape Province, South Africa.

'11, B.S.A.—S. G. Judd, editor of the COUNTRYMAN in 1910-11, who was a farm manager at Marion, N. Y., for the two years following his graduation, is now Instructor in Animal Husbandry and Dairying at the Lyndon School of Agriculture at Lyndon Center, Vermont.

'11, B.S.A.—Arthur K. Getman will have charge of the course in Agriculture in the Summer Session. This course is intended to give teachers of Agriculture in elementary and high schools a general survey of the whole field of agriculture and its relations to economics, society, etc., and to study the more important principles of agriculture.

'12, B.S.A.—Edwin P. Smith, a former Alumni Notes Editor of the COUNTRYMAN, is now manager of the Peaceful Valley Farm at Oxford Depot, Orange County, N. Y. This is a 400 acre farm owned by a New York City business man and it is devoted principally to dairy, fruit, and poultry. Two years ago, when Mr. Smith assumed charge, there were practically no tools or stock on the place and it was rather a badly run down farm. Fifty acres have since been set out in tree fruit, mostly apples, and about two acres in small fruits. A herd of seventy-five pure bred Holsteins has been developed and about 1200 hens, besides considerable other poultry, hogs, and sheep, have been added. About five acres of garden truck is raised besides the regular field crops. About twenty acres have been drained and quite a lot of building has been done, and plans for this year call for considerable more building and draining.

Besides raising fine cows and crops and apples, Mr. Richards, the owner, is trying to raise some better citizens. About 12 New York City boys, who

(Continued on advertising page 10)
SEEDS WITH A LINEAGE

Unequalled original "stock," improved by seventy-five years of most careful cultivation and selection, make Carters Tested Seeds the "Seeds with a Lineage."

CARTER'S TESTED SEED include grass, flower and vegetable seeds of every desirable variety. Used rightly, they will give your grounds the same rich beauty that distinguishes the notable Gardens and Estates of Old England. Ask any gardener with experience in Great Britain. He will tell you that Carter's Seeds are unequalled.

Write for our 1914 catalogue—"Garden and Lawn."

Carters Tested Seeds, Inc.

130 Chamber of Commerce Bldg.
BOSTON, MASS.

Branch of JAMES CARTER & CO.
Raynes Park, LONDON, ENGLAND
THE FIELD OF HOME ECONOMICS
(Continued from page 272)

4. Inspectors—Inspection of food and of markets is increasing and women have already entered this field.

5. Purchasing agents.—Expert buyers of fabrics, textiles, clothing, and house-furnishings are already in demand. A course in home economics should enable an alert woman to be successful in this field.

6. Designing.—Artistic millinery, expert costuming, and costume-designing should offer great possibilities to the artistic woman of practical inclination. A knowledge of dressmaking and millinery should afford many a girl an opportunity to remain in the country and at the same time to earn money.

7. Research work.—The laboratory affords a growing field for the scientific woman desiring neither to teach nor to be thrown where executive ability has commercial value.

8. Care of children.—Expert care of children is in demand. The realization is growing that an untrained person is not competent to care for a child. The future must see women cultured and refined, versed in the psychology of childhood, and understanding the physical needs of the child, in positions of trust and responsibility.

9. Modern philanthropy.—In no other field than this is there greater need of scientific knowledge and of tact in applying such knowledge. The woman who is able to combine the two qualifications will be invaluable in philanthropic work.

10. Care of the individual home.—Last, but not least, is the profession of home-making. It is no longer sufficient for the woman who is to assume the responsibility of a household to know something of everything save the problems over which she is to spend a good part of her life. A knowledge of nutrition, of sanitation, of the care of the child, may not increase her wage-earning capacity in the home where she is wife and mother; but the welfare of the family, the benefits of their increased efficiency, are worthy of her best effort.

FORMER STUDENTS
(Continued from page 288)

are either orphans or boys whom their parents can not manage, are sent out to live and work on the farm. They are taught different kinds of farm work and are given a chance and all possible encouragement to get a correct viewpoint of life and a proper start in life. It is encouraging to hear that most of these boys show much improvement after being in God’s open country for a few months. Mr. Smith is manager of a farm that is trying to raise men.

'12, B.S.A.—Since March 1st, Harry Embleton, who was an Instructor in the Poultry Department at Purdue University, LaFayette, Indiana, has been in charge of the J. R. Bray fruit farm at Highland, N. Y., across the Hudson from Poughkeepsie. While at Purdue, Embleton coached a class of more than a hundred students in wrestling, and Purdue had an intercollegiate wrestling team for the first time this year.

'12, B.S.A.—Jacobus C. Faure has changed his address from Pretoria to Box 502, Bloemfontain, O. F. S., Union of South Africa.

'12, B.S.—Ivan McCellip has accepted a position as instructor in the Dairy Department at the Amherst Agricultural College in Massachusetts. Since leaving Cornell, McCellip has been an instructor in the Dairy Department at Purdue University, LaFayette, Indiana.

'13, B.S.—Hiram E. Greiner is teaching Agriculture and is Vice-Principal of Union Academy at Belleville, N. Y. This academy is doing the regular four years’ work in agriculture. This summer, Greiner will work among the boys who are doing farm work, because under the Regents’ rules each pupil in agriculture is ex-

(Continued on adv. page 32)
Every Dollar Comes Back

High time for you to plan on getting a larger return from your 1914 corn crop and labor by ordering a UNADILLA SILO forthwith. Discount given on May and June delivery orders. With nutritious, succulent silage in the daily ration, winter or summer, you dispense with the expense of half the hay and mill feed. This saving, plus the value of the increased milk yield, will equal cost of a UNADILLA the first year. Do you know of a surer way to make your money return a 100 PER CENT. DIVIDEND?

A copy of our catalogue mailed gratis to anyone contemplating the purchase of a silo this season. Illustrates those features which have given the UNADILLA a national reputation for being the best built and most convenient silo in use.

Photo shows the twin 14 x 32 white pine UNADILLAS which have doubled the feeding value of the corn crop on the Geo. P. Miller farm at Lewisburg, Pa.

UNADILLA SILO CO.
BOX 22
UNADILLA, N. Y.

There's sound science back of H-O Steam-Cooked Chick Feed. The steam-cooking opens up all the grain cells, preparing them for easy assimilation.

The fine balance you will notice on the guarantee tag which shows an analysis of the contents of each bag.

H-O POULTRY FEEDS
INCLUDE
Steam-Cooked Chick Feed
Poultry Feed
Dry Poultry Mash
Scratching Feed

J. J. CAMPBELL
Gen. Sales Agt.
Hartford, Conn.

THE H-O COMPANY
MILLS
BUFFALO, N. Y.

ONE MAN CAN MILK FOUR COWS AT ONE TIME if you use :

B-L-K Milkers

THE COWS like them, because the action of the Pulsator is soothing and regular and never hurts them.

THE CONSUMER likes them, because they produce a sanitary product desirably low in bacterial count.

Write today telling how many cows you milk and ask for information regarding our B-L-K Milkers.

D. H. BURRELL & CO.
Manufacturers also of "Simplex" Cream Separators and other "Simplex" specialties.
"THE BEST IN THE WORLD"
LITTLE FALLS, NEW YORK
HOME ECONOMICS AT THE NEW YORK STATE COLLEGE OF AGRICULTURE

(Continued from page 263)

Home Economics department and directly managed by Miss Anna Hunn, a graduate of the first class in the college which included Home Economics students.

Women in Agriculture.—Not all women in the College of Agriculture are taking the course in home economics. More and more, agriculture is being considered as desirable employment for women. One of the winter course students who took the course in poultry husbandry writes as follows:

"I believe that farming is fast approaching the intensive stage which will precede the more strictly scientific, and in this I see no reason why a man is more fitted for farming than a woman. Good farming means attention to details, in which women as a rule excel men. It means records which are equally accurate in women's hands; it means more careful sanitary measures and more attractive packing of products, and I believe that these things among others are better in women's hands than in men's. Much farm work, like plowing and cultivating, is done by the hired laborer whether the farm be managed by man or woman. Surely the planning, the knowing the time best suited for all things, and judgment on most farm subjects, are just as well handled by a woman as by a man."

A thrifty farmer brought his two daughters to the Winter Course and said: "I want one to study dairying to look after my dairy farm when I am away from home and the other to study household economics in order that she may relieve her mother and become scientifically trained to preserve the health and comfort of the family."

Education for this man's daughters was his capital and the cost of it was to him a necessary investment in order to gain the desired returns.

The Four-Year Course.—Instruction in home economics in the New York State College of Agriculture is now organized as a four-years college course leading to the degree of bachelor of science. Practically the same requirements for entrance are exacted as for other full college courses given in Cornell University. Instruction for the first two years includes the same underlying science courses as are required in the general course in agriculture—chemistry, physics, biology, botany, physiology, and bacteriology. The course includes also drawing, English, and political science, and affords opportunity for electing certain subjects from either the College of Agriculture or other colleges in accordance with the interests of the student. In the last two years much of the student's time is spent in the study of foods and nutrition, sanitation, household management, house furnishing, and house decorating, design, sewing, and millinery. Both the theoretical and the practical are included in the course.

WHY NOT

Investigate some of the available FARM BARGAINS IN THE HUDSON RIVER VALLEY AND THE KINDERHOOK COUNTRY

RURAL LIFE CO.

KINDERHOOK NEW YORK
The Northern Pacific Country

The Northern Pacific Country offers a healthful, varied and invigorating climate; the best crop records and, in all respects, the best opportunities in the West to those seeking new locations or just starting out in the business world.

THE NORTHERN PACIFIC RAILWAY

with its 6,600 miles of trackage through this Storied Northwest, traverses the cream of the country from an agricultural and industrial standpoint. This is equally true scenically. A thousand miles of its line follow historic trails, along historic rivers, and grand and historic mountain peaks are seen from its trains.

Two modern transcontinental trains run daily between Chicago, three between St. Paul-Minneapolis, one between St. Louis, Kansas City and Omaha, and Spokane, Seattle, Tacoma, Portland and the North Pacific Coast.

YELLOWSTONE PARK

the world’s Wonderland is reached directly by this line via Gardiner Gateway, the northern and original entrance. Daily Pullman service, Chicago to Gardiner, and weekly personally-conducted excursions to and from the Park during the tourist season, June 15 to September 15. Send for free literature.

A. M. CLELAND,
General Passenger Agent, St. Paul, Minn.

A PROBLEM SOLVED WITH EFFICIENCY

Have you money invested in producing prize stock, certified milk, or getting the best results possible from cattle and horses? THE KENT VACUUM GROOMER solves the cleaning problem. Animals do better; employees take greater interest, and cleaning of stock is done more sanitarily, and with less wear and tear by its use.

ADAPTED to all kinds of power

The Kent Vacuum Cleaner Co.
Incorporated
111 South Washington Street
ROME, NEW YORK

Also manufacturers of THE KENT STATIONARY VACUUM CLEANER.

SLUG-SHOT

USED FROM OCEAN TO OCEAN FOR 20 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Burs and Blights, etc., to B. HAMMOND, Fishkill-on-Hudson, New York.
Christy Engraving Co.
WHERE QUALITY COUNTS

Halftones Illustrations
Line Etchings Designing
and Embossing Plates

We are Specialists in

Color Plate Engraving and Color Printing

If you want to increase the selling power of your next catalogue, if you want to make your advertising as effective as possible, you should look into the question of using color reproductions. Our success lies, not alone in the making of proper plates, but in printing them as they should be. Our product is used by companies of international reputation. We shall be pleased to submit estimates or samples of work.

611-18 Central Building
Rochester, N. Y.
ALWAYS RELIABLE

The element of reliability enters into the making of a cleaning material equally as much as into the manufacture of any other article that must be of a dependable quality.

The high standard of purity and cleaning excellence for which

Wyandotte
Dairyman’s Cleaner and Cleanser

is so well known and which is so carefully maintained increases to the maximum the reliability which the butter or cheese maker can give to his dairy cleaning material.

Since there are no greases, caustic properties or other harmful ingredients in Wyandotte Dairyman’s Cleaner and Cleanser to bring about a loss of quality in the finished product, and since it has only the purest of cleaning ingredients that work in perfect harmony with milk, butter or cheese, the reliability of Wyandotte Dairyman’s Cleaner and Cleanser is easily established as every pound is equal in all respects to every other pound.

Its original low cost together with its thoroughly reliable qualities make Wyandotte Dairyman’s Cleaner and Cleanser the most ideal and serviceable cleaner for any dairy or factory.

ASK YOUR DEALER OR ORDER FROM YOUR SUPPLY HOUSE

THE J. B. FORD CO., Sole Manufacturers
Wyandotte, Mich., U. S. A.

This Cleaner has been awarded the highest prize wherever exhibited.
BE ON THE SAFE SIDE

YOU needn't fear a visit from the Sealer of Weights and Measures if you use Thatcher Milk Bottles. You won't give over-capacity either, because they are accurate! Send for our free book. It tells exactly why Thatcher bottles add to your profits.

THATCHER MFG. CO. 103 Market Street ELMIRA, N. Y.

LEHIGH VALLEY RAILROAD

The only line to and from Ithaca, Cornell University with through service between New York, Newark, Philadelphia, Buffalo, Niagara Falls and Chicago. Steel Trains; Observation Parlor Cars; Electric Lighted Sleeping Cars; Buffet-Library-Smoking Cars; Dining Cars, Service a la Carte; Stone Ballast. Automatic Electric Block Signals

COMFORT SAFETY

TWEMLOW'S

Old English Glazing Putty

SEMI-LIQUID and ELASTIC

Will stop the trouble. Put up in 16 pound cans; 50 and 80 pound buckets.

Hammond's Greenhouse White, A SUPERB PAINT, with years' record to back it up, for wood or iron Greenhouses. It stays where you put it. In 5, 10, 15, 20, 25, or 30 Gallons.

HAMMOND'S PAINT AND SLUG SHOT WORKS, Fishkill-on-Hudson, New York.

KOHM & BRUNNE

THE LATEST STYLES AT MODERATE PRICES

TAILORS 222 East State Street

In writing to advertisers please mention THE CORNELL COUNTRYMAN
What Is Your Farm Worth?

Eastern Farms have been so depleted of their natural Fertility, that most of them seem incapable of producing a paying crop without chemical stimulants. For years they have depended principally on stimulants and—LIKE THE DRUG VICTIM—require larger and larger doses of stimulants each year to produce at all. Finally and inevitably they are abandoned—lifeless and worthless.

If You are a Drug Victim—Quit!

Give your soil a square deal before it is too late. Start now to build up instead of tearing down. Adopt the one sane, permanent system of soil enrichment that is always successful. Meanwhile get increased crops at less than half the “fertilizer” expense.

Beatey’s Fine Ground Natural Florida Phosphate Rock supplies the element Phosphorus at a saving of 200 to 600 Per Cent. Thousands of farmers in thirty-seven States have adopted a profitable husbandry recommended and endorsed by the highest authorities everywhere. Write us for particulars.

Beatey’s Unadulterated Agricultural Phosphate Company
21-22-23 South Market St., BOSTON, MASS.

What Can Be Done With Swamplands

Swamplands can be reclaimed and made profitable by intelligent fertilization. They will produce good corn, onions, potatoes and hay. Their productiveness is not only increased, but maintained.

By Using POTASH on Them

Use 100 to 200 pounds of Muriate per acre for corn, and the same amount of Sulphate for onions, potatoes or celery. Drill in 75 pounds of Kainit with seed to drive away root-lace or cut-worms.

Send for FREE literature on this interesting subject. Prices on any amount of Potash from 200 lbs. up.

GERMAN KALI WORKS, Inc., 42 Broadway, New York
Chicago, McCormick Block Atlanta, Empire Bldg.
San Francisco, 25 California St.

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
ARSENATE OF LEAD

Easily Mixed with Water, Yet Fine Grained. Packed in Oak or Steel Kegs.
The Ideal Arsenate of Lead for the Fruit Grower. The Best Poison for
Potatoes and General Farm Crops, Shade Trees, Etc.

RICHES, PIVER & CO.
30 Church St., New York
Works and Laboratory - - Hoboken, N. J.

TO BE ON THE SAFE SIDE WHEN MILKING

TIME COMES YOU NEED THE

SIMPLICITY MILKING MACHINES

They are the simplest in construction, made of the best material, has the fewest
rubber parts, and every part can be thoroughly sterilized.
It has no mechanical construction for working the relief, the cow, by the flow of
milk, controls this herself, causing an uniform relief at each milking.
There is an inspection glass at the bottom of each teatcup so there is no guess
work if each teat is milking.
Do not be worrying about your hired help leaving you to do your milking all
alone, for you can overcome this by installing at once the SIMPLICITY MILKING
MACHINES which will stay with you each and every day of the year.

Write for full particulars today, before you forget the name.

F. GROFF & SON
St. Johnsville New York

In writing to advertisers please mention THE CORNELL COUNTRYMAN
One Barrel of “Scalecide”
Will Spray as many Trees as Three Barrels of Lime Sulfur

“Scalecide” has greater invigorating effect on your orchard—kills more scale, eggs and larvae of insects with half the labor to apply. We can back up this statement with facts concerning the Good Results from Using “SCALECIDE.”

Send for our illustrated booklet—“Proof of The Pudding.” Tells how “Scalecide” will positively destroy San Jose and Cottony Maple Scale, Pear Psylla, Leaf Roller, etc., without injury to the trees. Write today for this FREE book also our booklet—“Spraying Simplified.”

Our Service Department can furnish everything you need for the orchard at prices which save you money. Tell us your needs.

We are World Distributors for VREELAND’S “ELECTRO” SPRAY CHEMICALS and Arsenate of Lead Powder (33 per cent), which, used wet or dry, has no equal in strength or texture. Avoid imitations.

H. G. PRATT CO., M’f’g Chemists
50 Church Street, New York City

Spray your FRUIT TREES with HEMINGWAY’S LEAD ARSENATE
HIGH ANALYSIS    EASY TO MIX    STAYS IN SUSPENSION

Spray or Dust your POTATO-PLANTS and GRAPE VINES with HEMINGWAY’S “CAASCU” Pronounced “K. S. Q.”
KILLS THE BUG    PREVENTS BLIGHT    CAN’T BURN FOLIAGE

For Booklets and Prices, write to HEMINGWAY & CO., Inc., Dept. C.
17 Battery Place, NEW YORK

A COMPLETE LINE OF MACHINERY AND SUPPLIES
For Dairies, Creameries and Milk Dealers
Write for catalog and prices
Prompt and Courteous Service

D. H. Gowing & Co.
SYRACUSE, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
AN EXPERIMENT IN HOME-MAKING

(Continued from page 276)

holstered chairs of whatever wood the frame might be, were recovered with a substantial tapestry showing a small foliated pattern in greens, blues, old rose, greys, and black. The hint of old rose, betrayed in the border of the paper, in the mahogany pieces, and the tapestry of the chairs, suggested old rose window draperies of a quiet tone, as a finishing touch to the room.

A few new things, lamps, books, desks, or mirrors were fitted into place as the need for them arose. The bedrooms are comfortable, but are by no means perfect, as these had to take things that were left after the best pieces were used for the family rooms. An attempt has been made to keep the painted pieces in one room, the mahogany in another, the oak in another and so on. In spite of this the bedrooms are still a bit motley in appearance. The readjustment will continue, however, until gradually each room is considered to be the best that can be made of the materials. Within the last year a sleeping porch has been added over the kitchen.

The house is managed in a cooperative way by four girls and two Department instructors, the house chaperones. The seventh, a graduate student, does not cooperate in the house keeping scheme. The work is divided into three sections:

1. Preparation of food, including care of furnace and stove.
2. Dish washing.
3. Sweeping and dusting of living rooms and dining room.


At the end of every six weeks, there is a complete change of partners so that there are three entirely new combinations, and so on.

Food costs two dollars each per week. Room rent is at the same price. The cost of food is the sum the girls have themselves determined and is based on their experience of an economical and wholesome diet.

All household accounts are kept in one loose-leaf book, according to the system used by Miss Fleming, the Department accountant. At the end of the year, the girls have an exact record of their common expenses, food, fuel, rent, lighting, etc. These accounts are of course at the service of the Department for reference.

Each girl is responsible for the care of her own room. Because of the demands of University work, the girls do not attempt to do their weekly cleaning. For this purpose a woman comes two afternoons a week.

From time to time the Lodge serves certain educational and social purposes. Last year the house was used by the winter course students as a laboratory for meal preparation. This year it has been used as a house practice laboratory for the freshmen. A winter course reception was held at the Lodge last year, and during the National Home Economics Conference last June, the house was open all the time and tea was served daily. The house is always open to visitors after ten o’clock in the morning.

The students who live in the Lodge are very enthusiastic about it. There is indeed a true home spirit. The girls are loyal and helpful among themselves and rejoice in knowing that their temporary home is of real service to the community.

CAMPUS NOTES

(Continued from page 285)

different departments closer together and to keep them in touch with each other’s work. Each meeting is given up to one department, which outlines the work that it is doing.
NATCO IMPERISHABLE SILO

NATIONAL FIRE PROOFING COMPANY
SYRACUSE, N. Y
Dewey’s Ready Ration

Guaranteed Analysis:

25 per cent. Protein
7 "  "  Fat
9 "  "  Fibre
50 "  "  Carbohydrates

COMPOSITION:

Eagle Distillers Dried Grains, Choice Cotton Seed Meal, Old Process Linseed Oil Meal, Winter Wheat Bran and Middlings, Pure Hominy Feed, Malt Sprouts, ½ per cent. Salt.

Dewey’s Ready Ration, when fed in connection with the home-grown hay, straw, fodder, ensilage and roots, forms a perfectly balanced ration. It is a complete grain ration for dairy cows. No other feed or grain need be fed with it.

THE FEED QUESTION

The feed question is not or should not be of price per ton, but of “how much milk will each dollar’s worth of feed produce.” Dewey’s Ready Ration is worth all it costs because it is scientifically blended from the highest grade feeds to produce for you all the milk possible for each dollar that you pay. “The proof of the pudding is in the eating.” Try Dewey’s Ready Ration. Give it a chance to convince you.

THE DEWEY BROS. CO.
BOX 577
BLANCHESTER, OHIO

Write for prices on 3D (Dewey’s Distillers Dried) Grains.

Use Chr. Hansen’s RENNET TABLETS

AND

CHEESE COLOR TABLETS

For Cheese Making on the Farm

Also try our DANISH BUTTER COLOR. It gives that beautiful golden June shade and does not affect the faintest aroma or flavor in the butter.

CHR. HANSEN’S

RENETT EXTRACT, CHEESE COLOR AND LACTIC FERMENT CULTURE

Have Stood the Test of Time.

Chr. Hansen’s Laboratory
BOX 1095
LITTLE FALLS, N. Y.

PURE BEEF CRACKLINGS

TRADE MARK REGISTERED

THIS BRAND HAS ESTABLISHED A NEW STANDARD FOR

BEEF SCRAP

THE FLAVELL CO.
Asbury Park, N. J.

In writing to advertisers please mention The Cornell Countryman.
A postal card request will bring you a copy of our list of some hundreds of

Practical Agricultural Books

compiled from our lists of regular and recommended books as used at the N. Y. State Agricultural College here at Cornell:

+ +

The Corner Bookstores

ITHACA, N. Y.

Well Rotted Horse Manure

DRIED GROUND ODORLESS

To insure increased Garden Crops—larger and brighter Flowers and a rich green Lawn, give your soil a heavy coating of Dried Ground Horse Manure. No weed seeds, no refuse—it becomes part of the soil.

Plant food is immediately available and lasting. Your planting will be successful when you use Well Rotted Horse Manure. Put up in bags 100 lbs. each.

Write for circular and prices.

New York Stable Manure Co.
273 Washington Street
JERSEY CITY, N. J.

Get the Right Pump First

Then you won't spend money pulling out the one that failed.

We make over 300 types of pumps—one for every purpose. Tell us what you need a pump for, and we will suggest the type that will serve you best. Write Mr. Gould, care of our Consultation Department. His advice is free. It may save you many dollars and days of wasted time.

Goulds Reliable Pumps

We specialize on pumps. Our big 70-acre factory turns out more pumps than any other concern in the country. And this multiplied output means greater efficiency and a lower cost to you. Before you buy any pump, look up the Goulds dealer in your town.

WRITE FOR FREE BOOK

A little volume of pointers on "Water Supply for the Country Home," illustrated with pictures and diagrams. Tells how to have running water on the farm. Send for it.

THE GOULDS MFG. CO.
16 W. Fall Street
SENECA FALLS, N. Y.

The Largest Manufacturers of Pumps for Every Purpose

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Make Every Inch of Soil Produce the Maximum at Lowest Cost

In order to make your soil produce its maximum yield, you should supply a fertilizer “made to order” to meet your individual soil and crop conditions.

**Consumers Brands**

for General Farm Use

comprise special distinct compositions of plant food elements for forage crops, root crops and cereals to meet just your individual soil and crop requirements. They supply just the constituents your particular soil may need for some special crop. You pay for no unnecessary plant food elements.

**Early Crop Odorless Fertilizer**

is prepared especially for the market garden trade for vegetables, small fruits, greenhouse and garden crops. It supplies the four plant food elements needed for these crops in soluble form, mixed in such proportions as to meet your particular soil and crop requirements. Although soluble, it is so prepared in granular form as to prevent leaching and wasting. It produces quick growth and early maturity, which means bigger profits.

**Holden’s Special Fertilizers**

*For Florists and Gardeners for Greenhouse Work*

These fertilizers are prepared by men who have made a life study of greenhouse fertilization in such a manner as to furnish just the plant food elements which your compost lacks. For this reason you save the cost of such plant food elements as your particular soil or crop may not require.

**Mak-Gro-Odorless Plant Food**

A clean, high grade, granular fertilizer for potted house plants, window boxes, flower beds, small fruits, lawns and general home garden use—*made for the amateur*. A splendid side line for florists operating their own stores.

**Agricultural Chemical and Fertilizer Materials**

We are prepared to furnish all high grade agricultural chemicals and fertilizer materials in any quantity. *We make a specialty of Genuine Thomas Phosphate Powder (Basic Slag.)*

*WE SELL ONLY DIRECT TO THE CONSUMER*

*Write today for our Fertilizer Booklet*

**Consumers Fertilizer Co.**

306 Longacre Bldg. New York City

In writing to advertisers please mention THE CORNELL COUNTRYMAN
We Knock Out the Home Runs in the Athletic Outfitting Game

Here you will find all the better things for Base Ball, Tennis, Golf, Track, Crew and all athletic games.

Our makers are the best in the land—Reach, Wright & Ditson, Spalding, Norman & Bennett, Harry C. Lee, Slazenger, etc.

Outfitters of every Varsity Major and Minor sports Team, the Ag. Base Ball Team, etc. We want YOUR business.

Treman, King & Co.

The Sanitary Liner

This illustration shows our new removable, non-rusting liner for the bowl chamber of the 1914 model U. S. Cream Separator. Milk can not touch the iron bowl chamber of the separator. This liner can be taken out easily, and washed with other parts. It has a unique but simple locking device which holds it rigidly in place when in the frame of the separator.

THE 1914 MODEL

UNITED STATES

CREAM SEPARATOR

The only separator on the market equipped with such a sanitary feature. It makes the U. S. the easiest to keep in clean and sweet condition. The U. S. Cream Separator holds the World's Record for clean skimming in fifty consecutive runs with ten different breeds of cows during a period of thirty days.

Get Our 1914 Catalogue

Call on the local dealer for our new 1914 catalog. He will be glad to demonstrate this better cream separator to you. Let him put it in your dairy room on trial at his and our risk. If there's no U. S. Cream Separator dealer in your vicinity, write to our nearest office.

The Vermont Farm Machine Co.

Portland, Ore.
Chicago, Ill.
BELLOWS FALLS, VERMONT
Salt Lake City, Utah
Los Angeles, Cal.

In writing to advertisers please mention The Cornell Countryman.
The Shops of Shops

Come right in to headquarters where you can find everything for man’s wear at lowest prices.

Leave your measure for ONE HALF DOZEN SHIRTS for ONE DOZEN DOLLARS.

We have a whale of a stock of Furnishing Goods, Hats and Caps.

TOWN SHOP, L. C. BEMENT HILL SHOP,
142 E. State St. The Toggery Shops 413 College Ave.

F. J. HAUSNER, Jeweler

Watches, Diamonds and Jewelry 205 E. State Street

THE FIRST NATIONAL BANK
Cornell Library Building
Capital, Surplus and Profits, $350,000.00
Oldest National Bank Safe Deposit Boxes for Rent

ITHACA SAVINGS BANK
INCORPORATED 1868
Tioga Street, cor. Seneca ITHACA, N. Y.

When wanting
QUALITY, SERVICE AND CLEANLINESS
go to
WANZER & HOWELL, The Grocers

PICTURES PICTURE FRAMES
STUDENTS’ FURNITURE

Manufacturers of Special Furniture for
FRATERNITIES AND CLUB ROOMS

H. J. BOOL CO.
(Opposite Tompkins County Bank)

In writing to advertisers please mention THE CORNELL COUNTRYMAN
YOUR FLANNEL TROUSERS
Have Them Cleaned by the
NEW PROCESS
It keeps them new. Costs no more than primitive methods and lasts longer
MODERN DRY-CLEANING AND PRESSING WORKS
W. F. FLETCHER & CO., Inc. 103 Dryden Road

Norton Printing Co. 317 E. State St.
COLLEGE, FRATERNITY and COMMERCIAL PRINTING
Engraved Cards and Invitations Rubber and Metal Hand Printing Stamps

Robinson’s Photograph Shop White & Burdick Co.
314 East State Street
Photographer for the Senior Class

New York State College of Agriculture at Cornell University
THE DEPARTMENT OF ANIMAL HUSBANDRY
Breeds Percheron Horses, Holstein, Jersey, Guernsey, Ayrshire, Short Horn Cattle, Dorset, Shropshire, Rambouillet Sheep, Cheshire Swine
Regular Public Sale of all Surplus Young Stock, except Swine, on FRIDAY OF FARMERS’ WEEK EACH YEAR

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Do you get best values for money you spend for shoes
Do you make comparisons
If not, why not — — —
Judicious spenders should

It will prove to their perfect satisfaction
that our values are the best

$3.50 to $5.00

ITHACA BOOT SHOP, Inc.
204 E. State Street

New York Life Insurance Company

C. H. WEBSTER, Agent

OFFICE: Student Supply Store
RESIDENCE: 121 Catherine St.

BOTH PHONES
Conlon
PHOTOGRAPHER
High-Grade Work Only

OPPOSITE TOMPKINS COUNTY BANK
Bell Phone, 173-W

CARR & STODDARD
MERCHANT TAILORS
UP-TO-DATE STYLES AND WORK
SENeca AND AURORA, NEXT LENT'S MUSIC STORE

BAXTER'S
Clothing and Furnishings

have pleased hundreds of CORNELL students during the last Five Years. Why? Because we sell only first class merchandise and guarantee every dollar's worth of it; we fit our clothing to please; our service is unexcelled, and last but not least, we sell at One Price to All.

Please consider this "Shop," "Your Shop." You get your money's worth here.

E. B. BAXTER,
ONE PRICE TO ALL
"The Quality Shop"
Satisfaction guaranteed

150 E. State St., Ithaca, N.Y.

D. S. O'BRIEN
MARKETS
222 North Aurora Street
430 North Cayuga Street
DEALER IN
FRESH, SALT AND SMOKED MEATS
Poultry and Game in Season

Cafeteria
HOME ECONOMICS BUILDING
THREE MEALS DAILY
**Ithaca Hotel**  

**ITHACA, N. Y.**  

*Ithaca's Leading and Only European Hotel*

One hundred rooms; 50 rooms with private bath. All rooms have running water, electric lights, local and long distance telephones.

No expense has been spared in furnishing this hotel to make it modern and up-to-date and comfortable for its patrons.

*The Dutch Kitchen* has become famous for its excellent cuisine and service at reasonable prices.

*The Hotel Orchestra* will render a musical programme every evening.

J. A. and J. H. Causer, - Proprietors

---

**The Palace Laundry ...**  

323 and 325 Eddy Street  

F. C. Barnard, Prop.

---

**STUDENT SUPPLY STORE**

**The Modern Method Laundry**  

JOHN REAMER, Prop.

---

**A. B. Kennedy**  

Dealer in Watches and Jewelry, Cut Glass and Fine Silver for Weddings. Cornell Pins, Fobs, Souvenir Goods, etc.

East State St., ITHACA, N. Y.  

Opp. New Ithaca Hotel

---

We keep a fine line of diamonds and jewelry and do all kinds of repairing neatly at: Heggies’ Jewelry Store --- 136 E. State St.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Flashlight Photography...

H. C. CABLE

Ithaca Phone 180-X
405 COLLEGE AVE.

TYPEWRITERS

New and Rebuilt
Any Make
Sold, Rented and Repaired

Special Rates for the College Year

H. L. O’DANIEL,

Both Phones. 204 N. Tioga St.

WE DO YOUR MENDING FREE

FOREST CITY LAUNDRY

E. M. MERRILL

200 NORTH AURORA STREET

CUT FLOWERS, DECORATIVE PLANTS, ETC.

THE BOOL FLORAL CO.

215 East State St., Ithaca, N. Y.

PETER SCUSA

MODERN SHOE REPAIRING
Neatly and Promptly Done

Shoes called for and delivered in any part of the City

Ithaca Phone 428-C 405 Eddy St., ITHACA, N. Y.

Photographer and Kodak Dealer

Specialists in Both Departments

For fifteen years we have photographed Cornell Students at the same stand

KODAKS for Sale
Rent or Exchange
Both Phones

Over 115 & 117 E. State St.

PIANOS, MANDOLINS, GUITARS, BANJOS and VIOLINS

Rented or sold on Easy Payments.

“Songs of Cornell.” All the latest music; Strings and supplies for all instruments at lowest prices.

LENT’S MUSIC STORE

122 N. Aurora Street

Victor Talking Machines, Records, Etc.

Victor Victrola

Parlors

Complete stock of Records

WE HAVE THEM WHEN YOU WANT THEM
YOU DON’T HAVE TO WAIT AT

HICKEY’S LYCEUM MUSIC STORES

with the most complete stock in the various woods and finishes.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
THE HISTORY OF HOUSEKEEPING
(Continued from page 270)

traveller has been accustomed. When the hospitable Eskimo to the far north of the Labrador hails the passerby, he almost drags him in for entertainment, and his wife serves the traveller-guest with tea!

For the housekeeping of all other primitives living in our own century, we get all sorts of interesting details in such books as the "Woman of All Nations" by Joyce & Thomas, and in the Geographical Magazine. We can get stories, too, at first hand from travellers. One U. S. Army officer tells an after-dinner story which runs like this: He had been served in regular European fashion at a dinner party in Manila given to him and some of his fellow officers and their wives. The table had been set with shining white table damask and the proper amount of silver, glass and china. The menu was chosen and served as if the dinner were in Paris or Milan. Having forgotten his gloves at leave-taking, this officer returned to the house of his host two hours later in time to surprise the same family, seated on top of a low, bare dining table. They were grouped about a huge earthen bowl, filled with a rice concoction from which all were dipping for themselves, with long handled sticks, and using no intermediary individual plates.

There, then, the housekeepers have two standards, two sets of rules for playing the housekeeping game, one for native guests and one for Europeans. Yes, there is certainly a history of housekeeping, of all ages and nations, all centuries and countries.

FORMER STUDENTS
(Continued from adv. page 10)

expected to do some summer work and the teacher must look after this work.

'13, Sp.—D. A. O'Brien is teaching agriculture at Little Valley High School, Little Valley, N.Y. Mr. O'Brien was at the College during Farmers' Week getting some of the good things that were being passed around then.

'13, B.S.—A. M. Besemer has resigned from the Dairy Department of this college and has accepted the position of sanitary bacteriologist with the Bureau of Chemistry, U. S. Department of Agriculture. Mr. Besemer assumed his new duties April 1st and is at present located at Cincinnati, Ohio, where the Department of Chemistry is carrying on some experiments on sanitary contamination.

'13, B.S.—Leon H. Spooner is connected with the Horticultural Bureau of the New York State Department of Agriculture. This Bureau has charge of the inspection of all nursery stock in the state, of the orchards, and of all shipments of shrubs or trees coming into the state from other states or countries. Also this Bureau aids the fruit growers in every possible way to take care of their orchards. At present Spooner is at Lockport where he is working with an inspector who has charge of the western New York counties.

'14, B.S.—The announcement has been made of the engagement of H. D. Bauder, who graduates in June, and Miss Louise Brown, who is attending the Ithaca Conservatory of Music. Miss Brown is from Middletown, N. Y. Mr. Bauder, who lives in Fort Plain, N. Y., is a member of the Bandhu fraternity and also Heb-sa, the honorary agricultural senior society. No date has been announced for the wedding.

Fraser's Fruit Trees

are grown for the man who wants good stock and knows it when he sees it. My Apple, Pear, Peach and Cherry trees are healthy, true to name, vigorous, free from scale. All trees are budded from bearing orchards, of which I have 300 acres under my control. Send today for my helpful booklet on fruit growing and varieties.

SAMUEL FRASER
Nurseryman, Fruit Grower and Consulting Agriculturist

93 Main Street Geneseo, N. Y.
DO away with your annual spring house cleaning by using a Frantz-Premier. Instead of an upheaval of furniture, ripping up of carpets, etc., to get rid of the accumulated dirt of months, we have a regular and simple method which results in perpetual freedom from dust and dirt. Telephone immediately for a free trial.

DAVIS-BROWN ELECTRIC CO.
115-117 So. Cayuga St., Ithaca, N. Y.
I want the privilege of sending a 60-day supply of Sal-Vet (my famous worm-destroyer and conditioner) to every man who owns sheep, hogs, cattle, horses or mules. I want you to see for yourself how it rids all farm stock of the deadly stomach and free intestinal worms—how it will stop your losses from worms and solve your stock-raising problems—how it will make your stock thrive better—keep healthy and free from disease. In making this offer I don't ask one penny from you, now or at any other time, unless Sal-Vet does all I claim.

Worms rob you of your stock-profits—keep your animals thin and out of condition—steal their food—sap their strength and vitality and make them easy victims of disease. I'll rid your stock of these pests. I'll prove it before you pay.

READ THESE LETTERS

A short time after beginning to use Sal-Vet on a lot of thin sows in bad condition it completely cleaned the worms from these animals and at once they commenced to eat better, and to thrive accordingly. There were cases of cholera close by and we consider that Sal-Vet was our salvation. (Signed) D. E. C. LONG & SONS.

I have just shipped a carload of hogs that went within a nickel of topping the market. These hogs were on Sal-Vet. Most of my neighbors lost their entire herds from disease. Ottawa, Ill. W. J. BUTLER.

Tell me how many head of stock you have. I'll ship enough Sal-Vet to last 60 days. You simply pay the freight charge when it arrives, and when the 60 days are up report results. If it does not prove satisfactory I'll cancel the charge—you won't owe me a cent. Fill out and mail coupon today.

Prices: 40 lbs. $2.25, 100 lbs. $6.00; 200 lbs. $9.00; 300 lbs. $12.00; 600 lbs. $21.00. No shipment made for less than 40 lbs. on 60-day trial offer. Never sold in bulk; only in trade-marked Sal-Vet packages. Trade-marked shipments are based on 1 lb of Sal-Vet for each sheep or hog, 4 lbs. for each horse or head of cattle as near as we can come without breaking regular size packages.
"If you get it from us it's right"

Buttrick & Frawley
One Price Clothiers and Furnishers

This fall season finds us more fully equipped to satisfy your wants than ever before. Special attention has been paid to get best material at minimum price. Suits and Overcoats, $10.00 to $30.00; Raincoats, $5.00 to $30.00; Mackinaws, $6.00 to $12.00. We make Suits to measure and save you from $5.00 to $10.00.

Visit our shoe department

Hats, Gloves, Shirts, Sweaters, Underwear, and all other articles you'd find in a first class shop. Full Dress and Tuxedo Suits for sale and to rent.

"If not we make it right"

134 East State Street

Professors, Students, Instructors, you will get More Insurance for Less Money

If you have a policy with

The Travelers Life Insurance Company

Of Hartford, Conn.

J. J. Sinsabaugh, Agent,

149 East State Street

Ithaca, N. Y.

Insurance of all kinds

Williams Brothers

Ithaca, New York

WELL DRILLING
MACHINERY AND TOOLS

The Clinton House

Corner Cayuga and Seneca Sts.

Table d'Hote Service

Cuisine and Service Unexcelled

Luncheon, 12 to 2 - - - $0.75
Dinner, 6 to 8 - - - .75
Sunday Dinner, 1 to 2:30 - .75

Special Holiday Dinners

"Ithaca's Popular Hotel"
The Cornell Countryman

A CLEAN AND ODORLESS

MINERAL

PLANT FOOD

Insures bigger crops and will destroy cut worms and bugs

The New Mineral Plant Food is a finely powdered rock, which contains all the mineral elements necessary to make plants thrive and grow.

FOR GARDENS AND LAWNS—Increases the yield; improves the color and flavor of fruits and vegetables and gives them vitality and long-keeping quality. Imparts to lawn grass a rich, green color and kills the grub worms.

FOR FRUIT TREES AND ORNAMENTALS—Trees respond very quickly to an application of the New Mineral Plant Food, growing better fruit and more luxuriant foliage.

FOR ALL FIELD CROPS—The New Mineral Plant Food is a natural plant food. It is highly efficient for every kind of crop and in all kinds of soil.

These facts are established. There is no doubt or uncertainty about the truth of these statements.

For sale at Florists, Grocers, and Hardware Stores, or direct, where local dealers have not already obtained supplies.

The New Mineral Fertilizer Company

11 So. Market St. and 36 Chatham St.

BOSTON, MASS.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Buy Fruit Trees that are Grown on the Eastern Shore

For more than three hundred years this section between the Chesapeake Bay and the Atlantic has been famous for its soil, its productiveness, its long growing season, and its mild climate.

Harrisons’ Nurseries have all the good things given by Nature. To these advantages we have added the skill of expert horticulturists, and a force of men trained in nursery practice. The result is shown in the trees and shrubs that are shipped from our big packing house.

There are six points that have made Harrisons’ Nurseries famous:

1—We sell only the trees we grow. We believe we are the first nursery firm to adopt such an important policy.

2—Our fruit trees are budded from bearing orchards. No unknown varieties go out of our packing house; we are sure of our stock.

3—Age for age our trees are larger than most others. Our intensive cultivation, the rich soil, and long season, give stocky growth.

4—Harrisons’ Trees have big root systems. The loose, warm soil makes a strong bunch of fibres to sustain the tree when transplanted.

5—We have over 2500 acres of Eastern Shore land planted to Fruit and Ornamental trees, shrubs, roses and plants.

6—We have a larger corps of experts in our employ than any other nursery concern in America.

Come to Berlin during the Summer

Whether you are interested in farms or fruit trees, COME! We want to show you our nurseries and orchards. We will pay your hotel bill during your stay in our town.

“How to Grow and Market Fruit,” our guide book, is 50 cents, and that amount is rebated later on a $5 order. Our big general catalogue is free; write to-day.

Harrisons’ Nurseries, Cornell Street, Berlin, Md.
DE LAVAL
CREAM SEPARATORS
are used exclusively by
98% of the World's Creameries

TEN YEARS AGO THERE WERE a dozen different makes of creamery or factory separators in use. Today over 98 per cent of the world's creameries use De Laval Separators exclusively.

IT MEANS A DIFFERENCE OF several thousand dollars a year whether a De Laval or some other make of separator is used in a creamery.

EXACTLY THE SAME DIFFERENCES exist, on a smaller scale, in the use of farm separators. Owing to the fact, however, that most farm users do not keep as accurate records as the creameryman, or test their skim-milk with the Babcock tester, they do not appreciate just what the difference between a good and a poor separator means to them in dollars and cents.

NOW, IF YOU WERE IN NEED OF legal advice, you would go to a lawyer. If you were sick you would consult a doctor. If you had the toothache, you would call on a dentist. Why? Because these men are all specialists in their line, and you rely upon their judgment and skill.

WHEN IT COMES TO BUYING A separator why not profit by the experience of the creameryman which qualifies him to advise you correctly? He knows which separator will give you the best service and be the most economical for you to buy. That's why 98 per cent of the world's creameries and milk dealers use the De Laval exclusively.

THERE CAN BE NO BETTER RECOMMENDATION for the De Laval than the fact that the men who make the separation of milk a business use the De Laval to the practical exclusion of all other makes of cream separators.

A De Laval Catalog, to be had for the asking, will make plain the many points of superiority of De Laval Cream Separators.

The De Laval Separator Company
165 BROADWAY NEW YORK
29 E. MADISON ST., CHICAGO
50,000 Branches and Local Agencies the World Over
AS A MATTER OF ECONOMY

You should not grow potatoes to feed blight and bugs. If potatoes were harmful and a poison or menace to your system and you were determined to grow them anyhow, then you might be justified. But potatoes are not harmful to your system, they are healthful; they are not a poison to your system, they are a tonic; they are not a menace to your system, they are a friend. We should show them every attention, leaving nothing undone to promote their culture and growth. Potatoes, like people, are subject to ills and ailments, but for their troubles remedies are at hand that are dependable, having been thoroughly tested and tried. You can positively control and prevent blight or fungus and the bugs on potatoes by use of Bordeaux Mixture Paste and Arsenate of Lead Paste. The kind that you can use with the assurance of getting the best results at the least possible cost is made and sold by The Rex Companies. You can know the cost and manner of using it if you will write

THE REX COMPANY

P. O. Box 712 ROCHESTER, N. Y.

If you believed the things we have said in these columns about Wadsworth Double-Thick Paint
You would use none other, because other paints are higher in price, do not cover as much surface and will not last as long, therefore, when you buy other paints which cost more you are wasting money. Thousands of people in different parts of the country do believe what we say about Wadsworth Double-Thick Paint and have tried it to their satisfaction. If you want to buy paint at manufacturer’s wholesale price, write

EDWARD JOSLIN,
Special Agent
No. 11 South First St. FULTON, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
OFFICIAL PUBLICATIONS of CORNELL UNIVERSITY

Issued at Ithaca, N. Y., monthly from July to November inclusive, and semi-monthly from December to June inclusive.

(Application for entry as second-class matter at the post office at Ithaca N. Y. pending.)

These publications include the annual Register, for which a charge of twenty-five cents a copy is made, and the following publications, any one of which will be sent gratis and postfree on request:

General Circular of Information for prospective students,
Announcement of the College of Arts and Sciences,
Courses of Instruction in the College of Arts and Sciences,
Announcement of Sibley College of Mechanical Engineering and the Mechanic Arts,
Announcement of the College of Civil Engineering,
Announcement of the College of Law,
Announcement of the College of Agriculture,
Announcement of the Medical College,
Announcement of the New York State College of Agriculture,
Announcement of the Winter-Courses in the College of Agriculture,
Announcement of the New York State Veterinary College,
Announcement of the Graduate School,
Announcement of the Summer Session,
The President's Annual Report,
Pamphlet on prizes, samples of entrance and scholarship examination papers, special departmental announcements, etc.

Correspondence concerning the publications of the University should be addressed to

The Registrar of Cornell University
ITHACA, N. Y.

New York State College of Agriculture at Cornell University
W. A. Stocking, Jr., Acting Director.

The College of Agriculture is one of several co-ordinate colleges comprising Cornell University. The work of the College is of three general kinds: The regular teaching work of undergraduate and graduate grade; the experiment work; the extension work. The resident instruction falls in the following groups:

1. Four-year course, leading to the degree Bachelor of Science in Agriculture (B. S. in Agr.). When desired, the last two years may be chosen in subjects pertaining to landscape architecture and out-door art, or to home economics. In the Graduate School of the University students may secure the Master’s and Doctor’s degrees (M.S. in Agr. and Ph.D.).

2. Special work, comprising one or two years: (a) Agriculture special; (b) Nature-study special or normal course.

3. Winter-Courses of 12 weeks: (a) General Agriculture; (b) Dairy Industry; (c) Poultry Husbandry; (d) Horticulture; (e) Home Economics.

THE INSTRUCTION IS DIVIDED AMONG TWENTY-TWO DEPARTMENTS AS FOLLOWS

FARM PRACTICE and FARM CROPS
FARM MANAGEMENT
AGRICULTURAL CHEMISTRY
PLANT PHYSIOLOGY
PLANT PATHOLOGY
SOIL TECHNOLOGY
PLANT-BREEDING
ENTOMOLOGY, BIOLOGY and NATURE-STUDY
HORTICULTURE
POMOLOGY
ANIMAL HUSBANDRY
POULTRY HUSBANDRY
DAIRY INDUSTRY
FARM MECHANICS
FORESTRY
RURAL ART
DRAWING
HOME ECONOMICS
METEOROLOGY
RURAL ECONOMY
RURAL EDUCATION
EXTENSION TEACHING
New York State
Ideal Farms

In a healthful locality; offering the advantages of practical farm land within two hours of our greatest city, with assured value enhancement; acknowledged fruit land and entrancing natural country.

Prices range from ten to one hundred dollars per acre, with liberal terms. Among my patrons are several former Cornell students.

Edgar L. Hoag
233 Broadway
New York City

HOTEL POWHATAN
WASHINGTON, D. C.

Best Located Hotel in Washington

New and Absolutely Fireproof.
Refined. Elegant.

EUROPEAN PLAN

Rooms, detached bath, $1.50, $2.00 up
Rooms, private bath, $2.50, $3.00 up
Write for Souvenir Booklet "B" with Map.

Clifford M. Lewis,
Manager

Do Some Farming Next Winter Under Glass

Do some intensive farming and get three times the number of crops you do in your extensive farming.

Build one of our greenhouses—one of our thoroughly practical kinds with no fuss and frills—simply a straightway, thoroughly well built, enduring glass enclosure for your garden. Then raise lettuce, tomatoes, cucumbers or strawberries. You will find no difficulty to market them, and the price average will net you a nice snug profit each year.

Get a good man for your foreman, then in the winter keep on your regular summer force in the greenhouse. By doing this, you can keep your good men all the year around, and go a long way toward solving your labor problem. Incidentally you will make money.

If you have a thousand or so dollars to invest as starter, write us for any particulars you may wish to know about this farm greenhouse plan. We will answer it fully. Let us go into all sides of the question with you.

Lord & Burnham Co.

SALES OFFICES—Cities of
New York Boston Philadelphia Chicago
42nd Street Bldg. Tremont Bldg. Franklin Bank Bldg. Rockery Bldg.
Rochester, Granite Bldg. Cleveland, Swetland Bldg.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Once Upon a Time

Once there was really no way out of it for the farmer. Plodding home from the field with his team at close of day, he saw before him the waiting small jobs about the house, barn, and yard, jobs that took time and labor, and never seemed to end. There was water to be pumped, wood to be sawed, various machines to be run by hand. But that was once upon a time. Today he lets the engine do it.

Every I H C engine is economical, simple, steady and reliable. Whether you want it for sawing, pumping, spraying, electric light plant, for running separator, or repair shop, or for all sorts of tiresome energy-wasting small farm jobs, you have need of an

I H C Oil and Gas Engine

I H C engines are built vertical, horizontal, stationary, portable, skidded, air-cooled and water-cooled; sawing, pumping and spraying outfits. Sizes from 1 to 50-horse power. They operate on gas, gasoline, kerosene, naphtha, distillate and alcohol. I H C oil tractors range in size from 12 to 60-horse power.

Have the I H C local dealer demonstrate the engine to you and explain its various points. Get catalogues from him, or write the

International Harvester Company of America

Chicago

In writing to advertisers please mention The Cornell Countryman
**A COMPLETE FOOD PREVENTS SCOURING INSURES EARLY MATURITY**

**RAISE THE CALVES ON**

**BLATCHFORD'S CALF MEAL**

AND SELL THE MILK

Endorsed by Agricultural Experiment Stations and thousands of Farmers. Manufactured to resemble new milk as nearly as possible in chemical composition.

SEND FOR TESTIMONIALS

J. W. BARWELL

WAUKEGAN, ILL.

---

**YOUR FOWLS WILL SETTLE THE FEED BILL!**

"AND THEN SOME," IF YOU

**F-E-E-D**

Life Saver Little Chick Food
Growing Ration
Climax Grain Mixture
Perfection Mash Mixture
High Grade Pigeon Food
Uniform in Booklet Free Dependable Quality
RATIONS

Your Dealer or

R. D. EATON GRAIN & FEED CO.

DEPT. NORWICH, NEW YORK

---

**Dixie Brand**

**COTTON SEED MEAL**

**THE CHEAPEST SOURCE OF PROTEIN FOR DAIRY COWS**

**HUMPREYS-GODWIN CO.,** Memphis, Tenn.

---

**IMPROVE YOUR STRAIN OF POULTRY**

During the latter part of the season we can supply a limited number of eggs for hatching and day-old chicks from our High Vitality S. C. White Leghorn stock. Eggs $2.50 per setting, $10.00 per 100; day-old chicks 22½ cents each, $20.00 per 100. Send in your order and ask for earliest possible date of shipment.

**Four Good Records by Cornell S. C. White Leghorns**

<table>
<thead>
<tr>
<th></th>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Eggs laid</th>
<th>Total Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st year</td>
<td>2d year</td>
<td>3d year</td>
<td>3 years</td>
</tr>
<tr>
<td>Lady Cornell</td>
<td>257</td>
<td>200</td>
<td>191</td>
<td>648</td>
</tr>
<tr>
<td>Madam Cornell</td>
<td>245</td>
<td>131</td>
<td>136</td>
<td>530</td>
</tr>
<tr>
<td>Cornell Surprise</td>
<td>180</td>
<td>186</td>
<td>196</td>
<td>502</td>
</tr>
<tr>
<td>Cornell Supreme</td>
<td>242</td>
<td>198</td>
<td>220</td>
<td>660</td>
</tr>
</tbody>
</table>

A few eggs for hatching and day-old chicks are available from our Barred Plymouth Rocks and Rhode Island Reds. Market eggs, dressed poultry and feathers are also available at the Salesroom.

**DEPARTMENT OF POULTRY HUSBANDRY**

New York State College of Agriculture

ITHACA, N. Y.

In writing to advertisers please mention **THE CORNELL COUNTRYMAN**
Rumsey "Atlantic" Pumping Outfit

FOR FARM WATER SUPPLY

COMPACT  ECONOMICAL
EFFICIENT
SERVICEABLE

A Complete Waterworks for General Water Supply and Fire Protection.


ENGINE: A 1½ H.P. "SULTAN" Vertical Gasoline Engine of the four-cycle, water-cooled type with cooling hopper above and fuel tank in base. Equipped with battery box, dry cells, spark plug, wrenches and wires for wiring.

Pump and engine are mounted together on a heavy cast iron sub-base and are connected by gearing.

The whole design is simple and compact. Working parts are few in number and readily accessible. The outfit is complete in every detail, ready for connecting pipes. It is regularly furnished for open tank pumping, but may be fitted to order with special air valve for pneumatic tank service.

We can supply Farm Water Works Systems in a variety of styles and sizes, for operation by hand, windmill or water power, by gasoline engine or electric motor, and will gladly suggest to those interested, practical outfits suitable for their requirements. Please address inquiries to our Service Department.

1840 RUMSEY & COMPANY, Ltd. 1914
MANUFACTURERS OF
HAND AND POWER PUMPS FOR ALL PURPOSES
SENeca FALLS, N.Y.

75 Warren St. 234 Congress St. 219 Arch St. Mission and 2d St.
NEW YORK BOSTON PHILADELPHIA SAN FRANCISCO

In writing to advertisers please mention THE CORNELL COUNTRYMAN
YOU HAVE USE FOR A CAMERA

Some make their cameras earn money for them. Perhaps it might be their work, but many of your friends will pay a reasonable amount for a few pictures. More people use their cameras for pleasure. It certainly is a great pleasure to sit down in the evening and look over the events of the past year. Let us show you how to use a camera.

NEXT YEAR

Those who graduate will find that the “Co-op.” can still serve them well. Try, at least, no matter where you live. We are going to improve next year and that alone should bring to the “Co-op.” more students than ever.

THE CO-OP.

Morrill Hall

Ithaca, N. Y.
Table of Contents

JUNE, 1914

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frontispiece—Senior Class—College of Agriculture, Cornell University.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retrospect. E. G. Perl '14</td>
<td></td>
<td>291</td>
</tr>
<tr>
<td>The Opening of the Forestry Building. S. N. Spring</td>
<td></td>
<td>292</td>
</tr>
<tr>
<td>The National Movement for Conservation. Gifford Pinchot</td>
<td></td>
<td>293</td>
</tr>
<tr>
<td>The Poultryman and the Hotel Trade. Augustus Nulle</td>
<td></td>
<td>299</td>
</tr>
<tr>
<td>A Farm Picnic in Ohio. Joseph E. Wing</td>
<td></td>
<td>304</td>
</tr>
<tr>
<td>A Study in Close Breeding. Harry Hayward</td>
<td></td>
<td>305</td>
</tr>
<tr>
<td>A New Spray Rig. J. L. Strahan</td>
<td></td>
<td>312</td>
</tr>
<tr>
<td>Address by Director William A. Stocking, Jr.</td>
<td></td>
<td>313</td>
</tr>
<tr>
<td>Meat Cookery. Clara W. Browning</td>
<td></td>
<td>318</td>
</tr>
<tr>
<td>Editorials</td>
<td></td>
<td>320</td>
</tr>
<tr>
<td>Campus Notes</td>
<td></td>
<td>322</td>
</tr>
<tr>
<td>Former Student Notes</td>
<td></td>
<td>327</td>
</tr>
</tbody>
</table>

Subscription Price $1.00 per year
Canada, $1.15 Foreign $1.30
Entered as second-class matter at the Post Office, Ithaca, N. Y
Copyright by the Cornell Countryman
See Key—page 326.
RETROSPECT

E. G. Perl, '14

FATHER. Time stands at our door ready to turn the hour glass, but let us linger a moment and enjoy the pleasant memories of our short stay at Cornell.

Freshmen, we were, and “as green as grass,” just fairly out of the shell; but behind that greenness was a firm determination to make good. This determination took form in the way of monthly meetings of the class, by which we gained a more intimate acquaintance and friendship with the faculty, and came to know our fellow classmates (we are glad to see the other classes have maintained the same policy). Who can forget the “frosh” dances, “fudge party,” “Spirogyra” and the many stunts we did with impunity, for “we were only frosh.” But when May 27th saw the burning of our caps, at least a few of the rough edges had worn off.

We came back as Sophomores and although some of our number had dropped by the wayside, still the majority of us learned to efficiently break stone with a hammer, measure the length of sound waves, and count the monotonous swings of the pendulum. When not engaged in these pursuits, it can be rightly said, that the class did its full quota in the support of all undergraduate activities.

Specialization began its distribution. We no longer met in large lecture classes, for each had chosen his specific line of study. Things began to happen thick and fast—we were enjoying Dean Bailey’s addresses for the last time; the “Student Loan Fund” was established; the Junior dance was enjoyed, and the Junior banquet served as a fitting close to a “large” year.

We are now finishing our last lap. Director Stocking has proven himself a capable successor to Dean Bailey; the Agricultural Honor System has been placed on a firm and workable basis; the First Annual Agricultural Show has made its debut, and with assured success for the future; a Student Hour for the University is about to be established; and a new Cornell Song Book is in the publishing. In addition to all this, we have seen the College develop from a great institution to one of even greater proportions, a monument to the untiring zeal and efforts of the faculty, the past directors, and also to the legislatures which appropriated the money. The senior class in parting, expresses its keen appreciation to the faculty, and wish Dr. Galloway, the new Dean, the utmost success. It is time for us to make our final bow, and we trust our Alma Mater will take good care of her coming protégés, as she has of us.
THE OPENING OF THE FORESTRY BUILDING

Samuel N. Spring
Professor, Department of Forestry, Cornell University

EARLY in May the Forestry Building was occupied by the Department and on the 15th, open for inspection by the public. There was no formal dedication, but a series of addresses were given at morning, afternoon and evening sessions. These followed one main topic, "Lines of Principal Effort in American Forestry for the Next Decade," and this was also the subject of an open meeting of the Society of American Foresters, which was held on the day following.

AFTERNOON SESSION

Chairman—W. H. VARY.
Lines of Principal Effort in American Forestry for the next Decade.
In Training Foresters
James W. Toumey, Director, Yale Forest School.
In Lumbering
F. L. Moore, President, Empire State Forest Products Association.
In Making Public Opinion Effective
H. S. Drinker, President, American Forestry Association.
In New York State
J. S. Whipple, President New York State Forestry Association.

THE NEW FORESTRY BUILDING.

This meeting of the Society was the first held outside of Washington, D.C. An exceptional list of speakers were heard at both of these meetings, as may be seen by the program.

FRIDAY MORNING SESSION

Chairman—W. A. Stocking, jr., Acting Director, New York State College of Agriculture.
National Forestry
W. B. Greeley, Assistant Forester, U. S. Forest Service.
Forestry on the Farm
W. H. Vary, Master, New York State Grange.
Forestry as an Investment
Charles M. Dow, Director, Letchworth Park and Arboretum.
The Work of the New York State Conservation Commission
C. R. Pettis, Superintendent of Forestry, New York State Conservation Commission.

EVENING SESSION

Chairman—Professor T. F. Crane, Former Dean, College of Arts and Sciences, Cornell University.
The Forest
L. H. Bailey, Former Director, New York College of Agriculture.
The National Movement for Conservation
Gifford Pinchot, President, National Conservation Association.

OPEN MEETING OF THE SOCIETY OF AMERICAN FORESTERS

SATURDAY MORNING

Chairman—B. E. Fernow, President of the Society.
Lines of Principal Effort in American Forestry for the Next Decade
In State Forestry—The East
Alfred Gaskill, State Forester of New Jersey.
In State Forestry—The Middle West

FILIBERT ROTH, Director, Department of Forestry, University of Michigan.

In the Society of American Foresters

B. E. FERNOW, President, Society of American Foresters.

Visitors were here from all parts of the State and a large number of foresters from other forest schools and from other states and from the Federal Forest Service.

A description of the Forestry Building and the floor plans are to be found in a recent publication of the College of Agriculture, "The Buildings, Lands, and Activities of the New York State College of Agriculture." Briefly, this building is located on the east side of the university campus, opposite Beebe Lake and Fall Creek Road. Its cost including equipment, is $120,000, which was appropriated by the State. It is one hundred and forty-two feet long and fifty-four feet wide. The distribution of principal rooms is as follows:

Ground floor: Wood technology laboratories, timber testing laboratory, locker room, freight room.

First floor: Offices, reading room, lecture and class room, mensuration and utilization laboratory.

Second floor: Silvicultural and dendrology laboratory, museum, herbarium, class rooms, draughting room.

Third floor: Laboratories for advanced students, forestry club room, camera and dark rooms.

It is the first building of the proposed Plant Industry group and for the time being, will also house the Department of Plant Breeding.

THE NATIONAL MOVEMENT FOR CONSERVATION

By Gifford Pinchot

President National Conservation Association

Address delivered at Ithaca, May 15, 1914.

Mr. President, Dr. Bailey, and Ladies and Gentlemen:

It causes me very deep pleasure to meet with you tonight to celebrate the opening of the Forestry Building at Cornell. The old school did good work and I haven’t the slightest doubt that you are going to do equally good work in the future here now and I am proud and glad to be with you on this occasion.

Now let me go straight into the subject that has been assigned to me. I am to speak on some of the main articles of the conservation program but before I take up two or three of the biggest things, I want to say a word on what conservation is, what it has done and what it has to do for the future.

As far as the fundamental side is concerned, it deals with the earth itself and the use of the earth for the greatest good to the greatest number for the longest time. It is the bottom policy and we can go no further back. That policy grew out of the forests which impressed upon the people of the United States the fundamental idea of the conservation of their natural resources. The only remarkable thing is that conservation was born as late as it was. The thing is so natural, so obvious, it ought to have been created long before it was. It did grow as I have said, directly out of the forest policy and it was, so to speak, put on the map by what has seemed to me to be the most important thing in its history,
when there were gathered in Washington all the governors of the states. They had two things to consider, the resources of the country and how to preserve them. Conservation has come to mean very much more. It was a question whether there was room enough for it within the ship of state in which we live, within the four walls of our boundaries, the Atlantic, the Pacific, Canada and Mexico, and whether there was enough to continue many of the essential resources necessary to maintain a vigorous, national life. The problem then that confronted the future was that we did not have enough to continue our average for very long; and then came that demand for an inventory. The first inventory ever made of the natural resources of any country in the world, because the whole resources of the federal government were laid open, was completed in six months. Then came a most significant meeting; a group of ten men chosen from the United States, Mexico and Canada in 1909 came together in Washington, making it evident that conservation of resources was not bounded by natural lines within the United States and that it was to the interest of all North Americans to join together and decide how the resources might be used for the best interests of all. This was most significant, for they invited the President of the United States to lay before the nations of the world a plan for the world-wide conference which would bring together and prepare a method for the ascertainment of the natural resources of the whole globe, at least along the physical and economic lines. This would lay the basis for a wise, intelligent and foresighted use of natural resources for the people of the whole earth and thereby would create the strongest and most effective bond for peace and good fellowship among the nations.

Unfortunately, the suggestion was dropped in the change of administration and that meeting has not been held but it will be held and through this service will come a stronger movement for world peace and a world congress, in my judgment, than has come from any other movement. So conservation deals as far as it can with a new point of view in the nation and a new point of view on the continent and will give us a new point of view in the whole world.

First, as this question of conservation arose it dealt mostly, as I have indicated, with the natural resources in the country at present, their quantity, the waste that was going on and the proper methods of avoiding that waste. It was purely a question of how much food and water and merchandise there was on board the ship and we had not come to realize how that has been wasted.

The question of development and preservation and the use, broadly speaking, of natural resources has been considered but as to the numbers of our population which could be interested in that use, nothing had been said; but that point of view wasn't long in arising. Out of conservation, the efficient use of all the natural resources, as that idea was driven home to the minds of the whole people of the United States, naturally must come efficiency. Not that efficiency has not been attained many times, but there was tremendous pressure, a pressure of this great question which has more to do with our daily life; the information would come to us that the end of it all would be a conscious and developed plan along all lines. We had seen that, but had not seen it would be impossible to develop a conservation ideal.

The second question was for whose benefit shall the natural resources be used? And the way that came about was this. First, after the governors' conference had formulated the conservation idea, that there was an active national need, everyone was for conservation and there was practically no dissenting voice. Of course it was a good thing to use our natural resources wisely, but the moment we began to apply the idea, immediately opposition arose. Just exactly as in church,
it is so easy to apply the sermon to someone else. Just so it is easy for the man who is doing things to have his neighbor be good but when it is applied to his case, opposition is instantly met. As we applied the conservation idea to, say, Mr. A and Mr. B and said your forests ought to be conserved, you ought to stop stealing timber, oil and coal, you must grab no water power, then instantly a general protest began to be made with loud and vigorous opposition and that has grown steadily until now it is being overwhelmed by the active support of the general body of the people. So we say that by the very force of circumstances the conservation policy had to be a fighting policy because it was a thing that was standing in the way of individual gain.

Immediately it became apparent that the case where conservation could be applied with the best results was to these natural resources, that still remain in the public hands, the natural resources for the present and the future. The other question was the immediate use and preservation of any resources, first for the people in our times and second for the people coming in the future. In other words, we had come squarely against the great question of private monopoly, not that we foresaw we should not and not that we wanted to come into the fight, but simply because it could not be helped. Conservation led us there and we were obliged to face it. And then it appeared that the conservation of the ownership of natural resources, because that was the big fact along that line, works back on the average man and woman in the cost of living. In other words, it was realized that the real significance of the passage into private hands of great coal lands, timber lands, water power, of agricultural lands, of natural resources of any kind, works out to the man and the woman who never knew that this conservation existed and who never understood, in daily cost of living, that the conservation policy falls onto the fellow of broad statements and broad politics because it interferes with the plans of a few big men in the organization of great business of natural resources. Conservation came, not only for that reason, but for the still more important reason that the application of the policy was one of monopoly and cost of living. It stayed because it laid at the heart the biggest of all questions, the cost of living of the average man and woman.

We had, then, these situations to face; these great concentrations had taken place, they existed; new concentrations were constantly being made and the first task, the important task, the task which should not be put off was to stop further concentration. So the conservation policy became at once anti-monopoly, the fighting policy, as I have said, and the policy laid down from the point of view of the future to exceed the broad question of the present. Consequently it goes without saying that the natural resources are raw material, food, clothing and household goods and that the concentrated ownership of them cause power over all these comforts, conveniences and utilities. It is always difficult in a great question of this kind, it is always difficult in any work that is worth doing, to keep clear before the mind the great object that lies behind it all and makes the whole thing worth while; and yet there is nothing better worth while than to keep the legitimate end before us. That is what has been done to some extent in conservation and that is what is being done in the four big things before us along these lines.

The most important of these to my mind is the question of water power. I know of nothing bigger than the height to which material civilization has gone with the use of mechanical power. We in this country have actively and effectively before us at all times the capacity of 360,000,000, although we have only 100,000,000 men, women and children of all ages. The control of that power puts into the hands of those who own it a more important influence over the daily life
of all the rest than any other form of control can give. As an illustration of it, it may be said that the average family in the United States has an income of about $600.00 and of that $600.00 more than $150.00 goes to pay the cost of transportation in one way or another; of course that is a general average. Transportation means power.

The water power question is the question of the one natural power, the cheapest, most effective of all the power with which we are acquainted. The water power of the United States is divided under four heads; those not navigable; those not on public lands, those navigable and those on public lands.

There are, however, running through a policy which should be applied to all of these kinds of power, certain main lines in which they are all alike. Water power, being a preferred sort of power and being essential to the general welfare, should not be allowed to pass out of the public control whether by the state or by the nation and the essential thing first of all is that every water power now held in the public hands should remain in the public hands. But in our form of organization it is improper to have these powers developed by the nation or by the state. Therefore, they must be turned over temporarily to private individuals and through conferences with water power men, the water power policy has been threshed out. This department was six or seven years ahead of the other departments. It has these main lines under which it ought to work. First, no power should be given away but only for a limited time to allow for the profitable development of power because private enterprises will not take up water power unless it can make a profit. It simply must have development. Second, there must be compensation to the people. Do you realize that Niagara, the most valuable water power in the world, pays not one cent to the United States or New York State? The men who have it now for ninety-nine years, paid not one cent to the United States or New York State for the valuable right. A time limit of fifty years permits development of the power and no man should be allowed to develop just that part of it which might make him the most profit and get him cheaper power from the people. Behind the water power policy lies the idea of ultimate public control.

Take for the next illustration our grazing lands. Through the entire western part of the country not less than 350,000,000 acres are available for nothing except range. It is carrying now less stock than half of what it might easily carry. That is to be put under public control. Always we should continue public ownership until homes can be made on the land. As long as that grazing land is producing but half, it follows at once that the price of meat all over this land is directly affected by this conservation policy, just as any manufacturing line is affected by the water power policy.

There is a proposition in the state of New York of developing water power in the Adirondacks. I am not sufficiently familiar with the details of the plan but I am confident that it will be the result over the nation that states and municipalities will take this and use it not for the making of a profit for a few but spread it as widely as possible.

Take the question of our coal, oil and natural gas in addition to water power. Not one acre of any of these public lands containing coal or oil or natural gas ought to be allowed to pass out of the control of the state or nation where it is owned now. Because here again we meet the same idea of confinement instead of public control, of confinement instead of natural resources, because public control over these things makes possible the control over the life of the people. There are bills in Congress now for handling water power wisely, and for leasing the public lands, keeping the right of control in the government hands but leasing to private individuals and getting them into general use.
There is a bill for handling the grazing lands in the same way and there has just been passed a bill to start what will probably be, before we finish working it out, the most complete and satisfactory conservation to be found outside the national forests; that is to say, a bill has been passed for the construction of a government railroad in Alaska. A government railroad in Alaska means very little unless it is followed out by the use of its resources, especially coal, to prevent their control and concentration in a few hands and giving a few men power to dictate the price of things all of us have to have. That is the essence of the conservation policy—the use of all these resources for all the people. The distinction is as clear to you as it is to me.

It must also take measures to acquaint the people of the United States with conservation. Today the essential of conservation is to prevent further destruction, as this makes the article which is destroyed high in price to the average buyer. It must also take measures to prevent the destruction of monopolies of natural resources. Third, and that is the part which still remains in the future, the handling of the concentrations that have already taken place.

You will note I have said nothing at all about the forests. You have heard that to-day, and I do not intend to repeat any. I do want to use one illustration that has arisen, which is the next but one step of the conservation movement. The matter of handling the concentrations that have already taken place.

There are in the hands of one group of western lumbermen thousands of acres of public timber, passed into private hands partly because of the bad administration and partly because the laws were bad. For less than a tenth of what that timber was worth it has passed into the hands of a small group of men, and the people of the United States, if they go on as they have been going will be compelled to pay the fine of $900,000,000 or nearly as much as the national debt, for allowing that timber to pass out of the public hands into private hands. It is a serious question.

The same way with water power—sixty-five per cent. of the developed water power is in ten companies or ten groups of companies. But there has been a still more rapid increase in the water power held for development in the future. The ground work is laid for a giant monopoly, a greater control than any other country or any other state. Eighty per cent. of the anthracite coal is in the hands of one group, or company, so that about forty men have in their power the domination over the use and price of this public necessity over a large part of the United States. One thousand, six hundred and forty-one men, owners or group owners, own one out of every twenty acres in the United States and there is a concentration of oil, lead and all other natural resources, about which I need not speak at present. What should we do about it? All of us have shied that question, partly for good reasons, to prevent the further concentration of these resources. We have not been willing to face the question of what shall be done with the resources already concentrated, but that must be faced in the very near future. I shall not attempt to make any solution, but merely say there are certain lines along which it has been proposed that this question shall be taken. Perhaps the most difficult of the questions to be faced will be that of the unearned increment which people are required to pay and they will be paying this into the hands of private owners to whom they gave the resources. It has been proposed to meet the question by taxation and the most earnest among these single tax advocates will find it necessary to vary the straight single tax. The theory of expropriation may be advanced so the state will say we will take for the public use what we gave out of the public treasury. And the question of privilege must also be fixed so as to prevent the effect of monopoly on the cost of living. The theory of con-
control which the state and nation should exercise over the owners of these resources would mean the taking for the public a given interest on what was their property and that must be used for the public welfare. There are solutions but it is enough to bring it before you.

The great question in the next generation is what shall be done to remedy the conditions which we have allowed to take place; what we must do to prevent the further aggravation of these conditions. It is perfectly clear to me, at least in the nature of certain natural resources, possibly very limited in number, but very important in character, that the solution will be public ownership or such public control as will amount to giving the people of the country and state the benefit of public ownership.

I have run very rapidly over some of the questions which you might or might not expect to be included within my subject, and I have left entirely to one side many of the questions which are most usually to fall within the name of conservation.

There are certain questions which Mr. Greeley discussed about government ownership. These are questions, at least for the present, involving controversy, which are immediately assailed, fighting questions, and this is the fighting aspect of the conservation policy. Before such an audience as this I need not say anything or make but brief reference to the evident welfare of the whole nation; that you understand as well as I.

I want to say in closing just this one thing. There is no task which might possibly rest on any man or woman that is equal in binding power to the task of leaving the country for our descendants as good as it has been for us.

In South Carolina where I had charge of forest lands I remember going along a country road and seeing a little enclosure with a tombstone and I looked over and read. I will say the name was John Smith. It read, John Smith, born 1821, died 1895 and under it just this one line, "He left this country better than he found it." I do not think, for one, that any finer epitaph can ever be written than that.

Conservation means that, if it means anything, it means it not only for the present, but the future as well. Conservation is tremendously interested in the present. We have first learned of the natural resources of our lands but there is to be built on this continent of North America a better system, a more direct and efficient application of laws governing the natural resources and the welfare of all the people of the land. Conservation is the building policy, it is the civilization building policy, it is the use of the earth for the benefit of all the people and to them it ought to mean and to me it does mean, a better people living in a better land and nation. All that there is and the best that there is should be used to benefit all the people in the land; that is what conservationists are fighting for. I know of no better or finer task—I thank you.
THE POULTRYMAN AND THE HOTEL TRADE

By Augustus Nulle
Steward of the Waldorf-Astoria

THE business of selling food supplies to hotels direct has grown to such an extent that it merits the consideration of every producer of "quality" products. In the large cities the hotels formerly consumed almost all the very choice produce which came into the markets, but the general public has become educated to the quality of foods, and the "private family trade" demand, together with the increase in size and number of the hotels, has made it necessary that they reach out farther and farther in the search for the quantities of high quality foods that they require.

For a great many years eggs have been bought direct from the producers and now at the Waldorf-Astoria we are using an average of about six hundred dozen per day, over ninety-five percent of which are shipped to us direct from poultry plants. One-quarter of our supply consists of white shell eggs for table use only and the balance are of the brown shell varie-

for breaking, as the New York hotels use the browns. The prices paid by hotels range from two to five cents per dozen over the quotations for "State, Pennsylvania and nearby hen-ner whites," or "browns" as the case may be. Storage eggs as a rule are not safe for use in a large hotel as one might be ever so careful in handling them and yet pass as perfect a single egg that stood the light test but was musty. Then the cooks, breaking out a case of thirty dozen at a time and separating whites and yolks might allow that musty egg to get into a batch of cake or a quantity of...
sauce or ice cream, which would be a total loss.

Arrangements for the year’s supply are usually made about the first of September. This is the beginning of the hotel’s busy season and is also the beginning of the period of scarcity in eggs; we know that any shipper who can send a regular supply for that period can be depended upon for the same supply during the balance of the year. No definite contracts are made as to anything but price, as no one can foresee just how many eggs will be produced, but the shipper who takes care of the hotel during the scarce time has the best chance to dispose of a few more when they become plentiful.

They are usually shipped in crates containing thirty dozen and a producer should be able to send at least one crate per week during the season of scarcity before attempting to do business with a hotel. The eggs must be large, clean, and if possible, unfertile. During the period just following the hatching season they should be carefully candled for blood spots and in fact some of the most successful shippers candle them at all times as there is always the possibility that in spite of every egg being candled at the hotel before it is boiled, a bad one may slip through and when opened at the table cause serious complaint. When such things happen of course the steward can do nothing but discontinue buying from that particular source. The hens should not be fed anything which will give the egg an objectionable flavor or color the yolk. We have on occasions detected a strong flavor caused in forcing the hens to lay by feeding large quantities of Cayenne pepper or mustard. Allowing hens to range in a field of rape will sometimes darken the yolk to such an extent as to be objectionable, and there are other foods which will affect the quality of the egg.

If shipments are made to a small hotel it may be advisable to mark the eggs with the name of the producing farm. This often tends to create a demand for them if the patrons of the hotel like the quality. The marking may be done with a rubber stamp and indelible ink. Most of the large poultry plants are shipping in the ordinary crates which are thrown away after use. The private returnable cases are perhaps better to use when eggs are delivered personally by wagon, but for express shipments, if the crates are well packed and clean, dry fillers used, secured by excelsior or waste paper so that they will not work loose, there is no reason why the contents should not arrive in the best of condition. The express rates have been lowered and the companies are very reasonable about making settlements for losses and damage. The cost of expressage is a matter to be arranged between the shipper and his customer. Usually, however, the shipper has to stand this expense and he either sends his eggs prepaid or the charges collected at the other end are deducted from his bill. The former method is better as the shipper is more familiar with the rates from his home town and there are not likely to be as many errors requiring adjustment with the express company.

The best method of billing is to enclose a bill with each shipment. In fact this method is the best for direct shipment of any produce, as if there is a shortage it will be discovered at once, and saves delay on correcting the error. Our shippers enclose two bills made out for the quantity of eggs but with the prices blank. We then fill in the price for the day on which the eggs are received, deduct the expressage if the package has not been prepaid and return one of the bills to the shipper for his record. It is also well, if settlements are made monthly, to send a statement on the first of every month by mail, so that the account may be checked up and passed for payment without delay.

In taking up the poultry end of the business the conditions are somewhat different. The quality of fresh eggs is not subject to very much variation but the producer who wishes to sell
his poultry to hotels has a more difficult problem to solve. Taking our house as an example, we use three sizes of broilers, weighing one pound, one and one-half pounds and two and one-half pounds each respectively. The one pound broiler is sold as "Poussin" or "Hamburg Chicken" and is served whole either broiled or roasted. Along in the early part of May they become plentiful as most of the large poultry plants are killing off their surplus cockerels and disposing of them for any price they will bring.

The next size, the one and one-half pound broiler, is sometimes served whole, but as a rule is used for luncheons and a half served to each diner. We sell more of this size than any other and a large percentage of them are also White Leghorn cockerels. The two and one-half pound broiler is used for dinner, split and served for two persons. These broilers are usually of a heavier breed than the White Leghorn, which does not seem to fatten up to that weight and remain tender. A great many hotels and restaurants use only two sizes of broilers, one pound each and two pounds each, and eliminate the third size.

In roasting chickens two weights are used, three and four pounds each.

But hotels are looking for quality and if a poultryman is able to produce a chicken that is a little more plump, a little more tender than the ordinary market bird, he can obtain a better price. I have in mind a farmer in New Jersey who fattens up his surplus White Leghorn cockerels on a sour milk mash and selects one pound birds which we are glad to buy at sixty-five cents each when chickens of the same size are selling in the market at thirty-five and forty cents.

The three pound roaster is served whole to two persons. The four pound roaster is not used for roasting at all, but the breast is taken off the raw chicken in one piece, cooked in a chafing dish and served on a slice of Virginia ham or in some other attractive way.

Up to the present time hotels have been compelled to procure most of this poultry from the dealer for the reason that it is so difficult to get it of uniform size from individual shippers. When several diners in our restaurant order broiled chicken it would not do at all to serve large ones to some of the party and small to others. The market men have large quantities from dif-
different shippers to select from and are able to supply birds which only vary slightly in weight. Under these circumstances the hotel steward hesitates to buy direct from the producer and it is only by quality and careful selection that the individual shipper can retain the business. He can be sure, however, that if his quality is exceptional the hotel steward will try and stretch a point in his favor.

Another difficulty experienced in buying for hotels is that at certain times of the year, generally during December, January, February and March, it is almost impossible to procure a supply of fresh killed poultry. During these months a producer who can ship any quantity, no matter how small, can obtain good prices. Broilers and roasters should be dry picked and packed in boxes containing one or two dozen. They should not be drawn, as undrawn poultry does not spoil as quickly, and the heads and feet should not be removed. Care should be taken that the crops are empty and that the chickens are cooled slowly after killing until none of the natural heat remains when they are packed. During the warm weather of course they should be iced for shipment.

Another large item in the poultry bill of a hotel is for fowl. These are used for boiling to make soup stock and also cut up for sandwiches and salad. They are not profitable to the hotel under four pounds in weight and in a great many cases the five pound size will be required. A poultryman should have no difficulty in disposing of them at a price slightly higher than market quotations. They may be shipped in boxes or barrels
and very often it is not necessary to
dry pick them as scalded fowl, if
fresh killed, are just as desirable for
broiling.

The demand for capons is fairly
large, especially in the early winter
and in those hotels catering to private
families. There the steward serves
a whole bird to a dinner party and
arrangements can be made to ship
almost any size. In the transient
hotels he will require capons about
eleven pounds in weight, from which
he can profitably cut portions or
slices. The same methods should be
used in shipping as have already been
suggested for broilers and roasters.

Turkeys are now consumed in large
quantities during almost the entire
year, and direct shipments, especially
in the early winter have become quite
a factor in the hotel trade. In the
past season at the Waldorf-Astoria
we have bought from producers as far
west as Wisconsin and we have
received peanut-fed turkeys from
South Carolina. Other districts which
contributed to our supply, shipped
direct were, Virginia, Maryland, Penn-
sylvania, New Jersey, New York,
Vermont and Rhode Island. In all
cases a certain number were taken
every week, dry picked, shipped in
barrels, and weighing from twelve to
fourteen pounds each. Turkeys
weighing about four and one-half
pounds and used for broiling are also
becoming quite popular. Unless a
poultry farm is restricted as to space,
however, it would not be profitable to
sell squab turkeys, as by the time they
have attained that size they have
passed through the many turkey
troubles and are hardly enough to
almost take care of themselves.

Ducks are also taken in two sizes;
for roasting about five pounds and
for broiling about three pounds each.
This is one item on our poultry account
which is taken care of entirely by
direct shipments and we have not
purchased a single duck in the New
York market for the past season.

The most satisfactory breed seems to
be the White Pekin, though we have
experimented with Indian Runner
broilers and found them very fine.

Of all poultry the demand for geese
is the lightest as they are only used in
any quantity during the holiday sea-
son. However, we are obliged to have
a few of them on hand at all times and
a good deal of our supply is taken from
producers who include them with
shipments of other varieties of poultry.
They bring a good price and have a
large sale in the general market and
should be a profitable side line for a
poultyman.

Guinea chickens and squabs are
filling a new demand in the hotel
trade. We require something to take
the place of game, the sale of which
has been prohibited, and for large
public dinners we can no longer use
wild duck, partridge, quail or grouse.
In place of these, quantities of guinea
chickens and squabs are being con-
sumed and in the early part of 1913
there was a serious shortage and
consequent high prices. During one
month we used at the Waldorf-
Astoria over six thousand guinea
chickens for banquets and almost as
many squabs. The guineas are of
two sizes, the broiler weighing about
one and one-quarter pounds and the
roaster about a half pound heavier.
They must be selected of uniform size
and handled in the same manner as
chickens. Some consumers will take
them unplucked but a hotel will
prefer them dry picked, as it is dif-
ficult when they are received to tell
the quality under the plumage. Squabs
should also be selected as to size and
packed in dozens weighing seven,
eight, nine, and ten pounds. For
banquets the eight pound size is
usually required and for the regular
restaurant service the ten pound, but
the various hotels will use different
sizes, depending upon the class of
patronage they cater to, and the prices
they are able to obtain.

Now a word as to how the poulty-
man can get in touch with the hotel
trade and keep the business after he
has succeeded in obtaining it. In the

(Continued on advertising page 10)
A FARM PICNIC IN OHIO

Joseph E. Wing

EDITOR'S NOTE—Mr. Wing owns about 500 acres near Mechanicsburg, Ohio. When he took charge of the farm, some years ago, it had ceased to be profitable, but by carefully building up the soil he now has the land in such a fertile condition that much of it averages five tons of alfalfa to the acre. He is specializing in sheep and alfalfa.

My Dear Cornell Countryman:

This is how we came to have a picnic on Woodland Farm last 28th of May. For now these many years our father and after him we brothers have striven to make this farm fertile, beautiful and profitable. After drains had been laid and manure used and phosphorus applied then alfalfa grew for us notably well, so at last all of the farm was, as we say, "alfalfa efficient." One day last May we looked over the fields and saw the alfalfa and it was beautifully good. It seemed so good that I could not bear that our neighbors should not see it, see it and gain new faith in agriculture. There were 75 acres of it all in one field, gloriously beautiful! There were, too—1000 fat lambs in the yards. We hoped that if men came to see our alfalfa they would cease to plant little test patches here and there and would plant it by fields. So we announced the picnic, and certain good friends aided us in making widespread the tidings.

The Governor of Ohio, Hon. James Cox wished to come, so did the Dean of our Agricultural College, Homer C. Price, and many others of like fame. We asked the ladies of our church to feed 400 people, and then we were aghast lest they have left on their hands too many sandwiches!

The day dawned fine and clear.

The people came. The earliest ones came on foot. Later ones came in automobiles. A special train brought students from the Ohio Agricultural College. They came, and yet they came. At first we were glad, elated; then amazed, then dismayed, then frightened! The two-acre lawn filled full. Automobiles were parked in the woodland and along the fences for a mile or more. The Governor arose to address the people and more than 3,500 of them were there! It was, truly, a great day for an Ohio farm.

Well, we took them in parties tramping down through the alfalfa fields, where roadways had been mown.

MEETING ON WOODLAND FARM—MR. WING SPEAKING.
for their passage; we had a lot of high school boys to guide them and distribute little cards that set forth the simple art that had made a success in each field; they seemed happy in it all, the picnic was a success.

But, oh the tragedy of it! Lunch time came. Frantically the automobiles sped to the village and back, carrying to Woodland Farm every loaf of bread, every ounce of butter, every bit of ham, in fact, every scrap of edible picnic stuff that could be found, and yet the people hungered!

About 1,500 were fed of the 3,500. The others departed in the gloaming and as they approached little villages and towns in the surrounding country they stopped in swarms and devoured like the locusts of Egypt until all of these towns likewise were eaten bare.

Truly, it was the happiest day of my life. Will we have it again? Well, not this year, thank you! We are brave, but there is a courage that amounts to rashness.

(Signed) JOSEPH E. WING.

A STUDY IN CLOSE BREEDING

By Professor Harry Hay ward, '94
Director of the Delaware College Agricultural Experiment Station

PERHAPS no phase of agriculture is carried on with so much uncertainty as to results as the breeding of live stock. We lack not only exact information as to the influence exerted by environment and nutrition, before an animal is born, but we also lack general information concerning the laws of reproduction themselves. The rediscovery of Mendel's law has aroused such interest in breeding that considerable data has been accumulated by a number of investigators who are now studying this field using both plants and small animals in their researches. Also studies in breeding the larger animals are now being carried on in a number of different Experiment Stations but as yet little data has been reported by our investigators. And less, still, has been put in such shape that it is of any real value to the man whose money income is derived almost exclusively from his skill not only as a breeder, but as a developer and as a salesman of his cattle, pigs, sheep, or horses. The total result is that America has few
One Hundred Percent 16590
Sire of 14 tested daughters.

Two Hundred Percent 33592
Sire of 7 tested daughters
50 percent inbred in the third parental generation.

Leclair's Marjoram 36355
Butter 15 lbs., 3 oz. in 7 days.
Dam of 4 tested daughters.
Stoke Pogis 5th
5987
Sire of 21 tested daughters.
Also sire of Stoke Pogis of Prospect 29121 who is sire of over 75 tested daughters.

Leclair's Marjoram
36355

Stoke Pogis
1259
Sire of 4 tested daughters.
Also sire of Stoke Pogis 3d who is sire of 26 tested daughters.

Marjoram
3239
Butter 16 lbs. in 7 days. Dam of 2 tested daughters.

Stoke Pogis
1259
Marjoram 3239

Stoke Pogis
1259
Marjoram 3239
great breeders. When some one does reach the top, many others rush to pay extremely high prices for the result of his efforts rather than attempting to emulate the methods or system that produced them.

The Delaware Station has been at work for the past six years attempting to determine the influence of a single question in reproduction, namely, the effect of close breeding in pigs. The study of results obtained by some plant breeders and from the work of some of our greatest Shorthorn cattle breeders, particularly Bates, Booth, and Cruickshank.

Those who have followed the work of Burbank and other plant breeders have noticed that they are constantly on the watch for variations that are pure; that is, variations that will reproduce themselves with certainty.

From these an uncertain number may be produced that are pure in the same sense, and in time, by constant selection, a new type may be fixed, that will reproduce itself with a great degree of certainty.

In the animal world, conditions are found which are approximately analogous to those of the plant world. One animal in a large number will breed true in one or more of its characteristic attributes. De Kol z"—Golden Lad, May Rose II—and Hambletonian 10 are illustrations of this statement.

![The Inbred Jersey Bull—"Two Hundred Per Cent."
A Prominent Prize Winner and Good Sire.](image-url)
This principle explains why some sires are so much better and so much more potent than others in improving their family or strain. This is, in turn, explained by another interesting fact in the physiology of reproduction. We are told that the chromosomes are the hereditary factors of the reproductive cells, that their numbers differ in the reproductive cells of the various classes of animals and plants, and that there are sixteen in farm animals. When the male and female cells meet to form a new cell, one-half the chromosomes in each degenerate and disappear in order that the new cell may have the required number of sixteen. Assuming that some of these sixteen chromosomes are good, some bad, and some indifferent, the quality of the new animal depends upon whether the good or bad chromosomes go to form the new cell-contents which originate the new cell from which the animal grows. This seems to explain why the offspring from the same parents may differ so widely, and why it is that some individuals of the same litter may be good while the rest are bad or indifferent.

The influence of nutrition and environment upon the chromosomes and their selection has not been determined. Of course some sires and dams produce chromosomes of better quality than do others. As this is an individual attribute, however, it is unlikely that it can be influenced beyond narrow limits. Occasionally we see a sire that has been almost a total failure under certain conditions, become a noted producer under a different environment.

There are various ways in which breeders may take advantage of this information in their work with farm stock.

First, whenever they are so fortunate as to find a "pure" animal, let them use it to the fullest possible extent in fixing a desirable type. This is the method pursued both by plant breeders, and by our great breeders of dairy and beef cattle. It has also been employed by our most noted swine and sheep breeders. If Amos Cruickshank had not made use of the "pure" Short-horn bull champion of England, the world would not have had the Scotch Short-horns in such perfection as we now find them. Nor would the Jersey cattle be what they are today without the fullest use of the "pure" sire, Golden Lad. Where this principle has been applied in practice as a means to an end and not as an end in itself, most satisfactory results have been obtained. Theoretically, it is the most direct road to improvement.

Second. It is perhaps, highly probable that the best and most uniform results will be obtained when chromosomes are from cells that are uniform. Or, in other words, more satisfactory results may be expected when the animals mated are of the same type and breeding, and the better the type and breeding, the better and more certain the results. A well known breeder once said, "I have so managed my purchases and my breeding methods that when anyone wants the best, he has to come to me for it." Subsequent events have, in the main, borne out his statement.

Third. When an "impure" animal appears, the breeder should recognize it at an early date, lest sooner or later it pollute the entire herd or flock. Such an animal may even be a superior individual, but an inferior breeder. While the inferior offspring of such an individual may be and frequently are good breeders, for the sake of getting the best results in the end, they should not be used. In other words, to reach the ideal, only "pure" animals of the highest type should be used for breeding.

The problem is to obtain the "pure" sire and dam that are of satisfactory type and then by a rational system of care and management to reproduce them with a sufficient degree of certainty. In the solution of this problem there is, as we have noted, but little experimental data. There are, however, a large number of breeders whose success is recognized
<table>
<thead>
<tr>
<th>Name</th>
<th>Registration Number</th>
<th>Litter Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outten Farm Charmer</td>
<td>106592</td>
<td>9</td>
</tr>
<tr>
<td>Duke of Sussex 6th</td>
<td>159088</td>
<td>9</td>
</tr>
<tr>
<td>Duchess of Silversspring</td>
<td>138261</td>
<td>8</td>
</tr>
<tr>
<td>Duchess Stub Tail</td>
<td>11 in litter</td>
<td>9</td>
</tr>
<tr>
<td>Duchess of Sussen 6th</td>
<td>159088</td>
<td>9 in litter</td>
</tr>
<tr>
<td>Duke of Kent</td>
<td>115273</td>
<td>8 in litter</td>
</tr>
<tr>
<td>Blue Hen 7th</td>
<td>122151</td>
<td>13 in litter</td>
</tr>
<tr>
<td>Beulah</td>
<td>81143</td>
<td></td>
</tr>
<tr>
<td>Baron Duke 50th Masterpiece</td>
<td>75000</td>
<td></td>
</tr>
<tr>
<td>Masterpiece Baroness 3d</td>
<td>88148</td>
<td></td>
</tr>
<tr>
<td>Lord Charmer 3d</td>
<td>54996</td>
<td></td>
</tr>
<tr>
<td>Lord Premier</td>
<td>5001</td>
<td></td>
</tr>
<tr>
<td>Duchess 168</td>
<td>44532</td>
<td></td>
</tr>
<tr>
<td>Masterpiece</td>
<td>77000</td>
<td></td>
</tr>
<tr>
<td>Baroness Lady 3d</td>
<td>64620</td>
<td></td>
</tr>
<tr>
<td>Masterpiece</td>
<td>77000</td>
<td></td>
</tr>
<tr>
<td>Duchess 8th</td>
<td>76597</td>
<td></td>
</tr>
<tr>
<td>B D 50th M</td>
<td>107000</td>
<td></td>
</tr>
<tr>
<td>Duke of Kent II</td>
<td>115273</td>
<td></td>
</tr>
<tr>
<td>Beulah</td>
<td>81143</td>
<td></td>
</tr>
<tr>
<td>Baron Duke 50th Masterpiece</td>
<td>75000</td>
<td></td>
</tr>
<tr>
<td>Masterpiece Baroness 3d</td>
<td>88148</td>
<td></td>
</tr>
<tr>
<td>Lord Charmer 3d</td>
<td>54996</td>
<td></td>
</tr>
<tr>
<td>Masterpiece</td>
<td>77000</td>
<td></td>
</tr>
<tr>
<td>Duchess 8th</td>
<td>76597</td>
<td></td>
</tr>
<tr>
<td>Baron Duke 50th Masterpiece</td>
<td>75000</td>
<td></td>
</tr>
<tr>
<td>Masterpiece</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duchess 168</td>
<td>44532</td>
<td></td>
</tr>
<tr>
<td>Masterpiece</td>
<td>77000</td>
<td></td>
</tr>
<tr>
<td>Duchess 8th</td>
<td>76597</td>
<td></td>
</tr>
</tbody>
</table>

The Cornell Countryman Pig Breeding Services

LITTER OF BERKSHIRE PIGS.
by everyone interested in the subject under discussion. Not only individuals, but also, groups of men have worked toward a definite end but with no concerted action.

The most striking result of such work, and the one with which we are all more or less familiar, is the development of the American trotting horse. This example is of special importance to us because the measure of the results obtained is expressed in the absolute terms of minutes and seconds. It is a notable fact that the American trotting horse came largely through one horse, Hambletonian 10. If his breeding is carefully studied, it will be found that he was strongly inbred to Imp. Messenger, who, in turn, was rich in the blood of Darley Arabian, Godolphin, and Byerly Turk; three horses that formed the arch stones in the improvement of the English race horse. If this investigation is carried a little further, it will be found that Hambletonian mated best with the daughters of Seeley's American Star, who, in turn, was as strongly inbred to the great thoroughbred Diomed as Hambletonian was to Messenger.

The blood of Hambletonian was bred so well and has been blended so successfully that today the successful race horse or sire, with scarcely an exception, shows in his pedigree numerous crosses to this great progenitor of speed.

That these results have been ob-

THE BERKSHIRE BOAR THAT IS BEING EXTENSIVELY USED IN THE BREEDING EXPERIMENTS AT THE DELAWARE STATION.
of this great sire, and of his influence upon the Island type of Jersey cattle. This blood is still breeding on and is producing the best there is of Jerseys.

Another most excellent illustration of this system is seen in what N. H. Gentry has done with Berkshire pigs. For the past 25 or 30 years, Mr. Gentry states, he has not purchased a breeding boar, and perhaps Gentry's Berkshires are more eagerly sought than any others. Further, in recent National exhibitions, Gentry bred pigs have won most of the highest prizes. Mr. Gentry attributes no small degree of his success to his system of breeding within his own families.

The great cornerstone of the breeder's work has been, and in all probability always will be, the fact that "like produces like." When we shall have bred our farm stock as pure as the birds of the air or the wild animals, or in other words, when we shall have eliminated the inferior animals so completely that they have no influence in determining the quality of the new individual, we shall have reached our objective point as breeders.

It will be readily seen from what has been said that the single phase of breeding that is emphasized in this paper is close breeding, or line breeding as it is termed by some. In view of the facts as they are recorded in the history of the methods devised and followed by our greatest improvers of live stock, it is not too much to say that this is the most feasible system of improving our farm stock and maintaining whatever improvements have been made.

It has yet to be proven that bad results will follow the mating of animals of good individuality even though they are closely related. The close breeding that has been practiced at Delaware College with Berkshire pigs for the past five years, has succeeded in fixing a pretty definite type. While this type may not be the ideal of some breeders, nevertheless it is a type and is quite uniformly represented by practically all the animals in the herd.

In this work in close breeding there have always been some sows in the herd that were in no way related to the inbred stock. These have been mated with the inbred sires and the progeny used as checks upon the closely bred pigs. The results obtained thus far indicate that inbreeding, as carried on under the conditions that obtain at the Delaware Station has had no adverse influence upon the size, constitution or fecundity of the pigs. The herd has had its share of misfortune with cholera and results of inefficient work of poor caretakers and feeders, but all of these calamities have affected the check and experimental animals alike.

It is intended to carry on the work indefinitely or until the experiment checks itself. The same line of work is also being carried on in the Station's Guernsey herd and perhaps in the course of years some interesting data on the effect of close breeding in dairy cattle will be obtained.

What is being attempted at the Delaware Station is graphically shown in the typical pedigrees which accompany this article. The percentage of inbreeding in each case is based on the coefficient of inbreeding suggested by Pearl in the American Naturalist for October, 1913, and are comparable. The aim has been to select the best individuals from various litters as material for the experiment, and no inferior animal has been used. With a single exception of a double harelip, no deformities or other abnormalities have appeared. There have been no very small litters. A gilt, not inbred, farrowed a litter of four to the service of her own sire; this being the smallest litter that has appeared in the experiment.

By comparing the pedigrees of the Jersey bull 200 per cent, 50 per cent inbred, but which appears to be about as close as possible, with the litter of Berkshire pigs out of Duchess Stub Tail 62.5 per cent inbred, a good idea of the intensity of the inbreeding in the Delaware Experiments may be obtained.

(Continued on advertising page 10)
A NEW SPRAY RIG

J. L. Strahan
Instructor Farm Mechanics Department, Cornell University

PROFESSOR B. B. Robb of the Department of Rural Engineering has recently perfected the design of a new type of spray rig which is, in principle, quite different from any now on the market and which bids fair to become an innovation in the field of spraying machinery.

The essentials of design are shown by the accompanying cuts. They are briefly, sheet metal round tanks 4½ feet in diameter and 18 inches wide hung on a five-inch hollow iron axle in place of wheels. The axle is tapped within the wheels or tanks to receive a one-inch iron pipe which reaches to within a short distance of the bottom. As the axle does not revolve, these pipes remain in a perpendicular position, and liquid can be pumped through them and out of a larger hole in the center of the axle.

A platform of angle iron and small boards is hung from the axle on U bolts and upon this is placed the power plant, consisting of a small 1½ H. P. gasoline engine and power pump. Any form of tower desired can be placed on the frame.

A description of so unique a design would be incomplete without some mention of the advantages it possesses over the designs at present in general use:

First, then, a center of gravity from 18 inches to two feet from the ground makes it almost impossible to tip over; Second, a tire width of 18 inches will allow it to float over soft ground where a narrower tire would sink in; Third, it is 20 per cent lighter than the lightest rig of its capacity at present on the market (approximately 200 gallons); Fourth, power for agitation is supplied by the horses, thereby making it possible to cut the engine power nearly in two; Fifth, its short construction makes it easy to turn in the orchard.
ADDRESS BY DIRECTOR WILLIAM A. STOCKING, JR.

(Delivered before the Students' Association, February 11, 1914)

No one deplores more than I the fact that it is necessary for me to speak to you in the place of Director Bailey. Every alumnus of the college regrets the fact that Director Bailey felt obliged to resign from the directorship and we all feel the loss that faculty, students, and alumni have sustained. In the field of agricultural education Director Bailey has no equal. In him the college had a marvelous combination of administrative ability, sympathetic leadership for students and faculty, and prophetic foresight which have been a constant inspiration to all who have come under his wise guidance. Perhaps more than anything else we miss the inspiration of his great personality which has been with us for so many years.

Unfortunately, the position of Acting Director does not carry with it the ability to discuss broad questions of rural philosophy and country life as you have been accustomed to hear them discussed by Director Bailey, but as alumni you are interested in the work that the college is doing and the plans that are in mind for the continuance and development of its work. I think I can do no better, therefore, than to spend the few minutes assigned me in giving you a brief survey of the college in its present condition and what we hope to do in the immediate future.

MATERIAL DEVELOPMENT

The construction of our new buildings is proceeding slowly. The new auditorium is now in condition for use, although it has not yet been officially turned over to the college by the state authorities, because of a few details which are still not satisfactory to the State Architect. The new forestry building will be ready for occupancy some time during the present term. The new animal husbandry building and the new judging pavilion are being pushed rapidly and will be ready for use before the beginning of the next college year. The contract has been let and construction commenced for the new agronomy building at the east of the home economics building. This will cost $100,000. In addition to these buildings which are now more or less visible on the campus, the last legislature granted appropriations for pig and sheep barns, a tool barn, additions to the greenhouse range, minor poultry buildings to complete the teaching facilities, a model rural schoolhouse, and for the completion of the new heating-plant, including the construction of the main steam line in a tunnel running from the heating-plant to the center of the agricultural quadrangle from which side lines will connect with the different buildings. The plans for all of these buildings are now under way and the work will be pushed as rapidly as possible. It is hoped that all of them may be completed during the coming summer.

The old central poultry building has been moved over against the woods to the east and remodeled for the use of the Landscape Art Department. This has been done at a very moderate cost and when completed will make a very attractive, serviceable home for the Department. A head-house and one section of glass has been erected as a beginning of a new range for the Department of Vegetable-Gardening. This will be extended as funds are available.

GROUNDS

Because of the continuous building operations, including the laying of underground conduits for telephone and electric light wires, it has been impossible to complete the development of the grounds around the college.
buildings. Definite plans have now been agreed upon by the Grounds' Committee for the development of the quadrangle and the rough grading was done last fall. This will be completed as soon as the weather permits in the spring. The row of large elm trees at the north of the quadrangle will need to be removed in order to make room for the new building, which will be located there. It is planned to move these trees into the quadrangle, thus giving it a finished appearance immediately.

The location of drives and service roads about the college buildings has been decided and a part of the work has already been done. It is hoped that this work can be completed, at least in connection with the main quadrangle, early next spring.

A considerable amount of planting will also be done this season. This will include a row of trees each side of the tower road from Garden Avenue to the Judd Falls road and small plantings in and around the quadrangle.

INSTRUCTION

With the material development of the college the quality of the instruction given has not been overlooked. Last year the faculty voted not to admit students without full 15 units of entrance. This requirement has been rigidly adhered to this year. This resulted in about 60 to 70 students being refused admission for the first semester because of entrance deficiencies, but the faculty believe it will result in materially raising the standard of the work in the College of Agriculture.

For some time it has been Director Bailey's desire to have the College of Agriculture open to students the entire year. Last year the faculty voted that the college should establish a third or summer term as nearly as possible equal to each of the two present terms. This proposition was approved by the trustees and arrangements have now been made for the inauguration of this enlarged college year beginning with the summer of 1914. By beginning the third term immediately on the close of instruction in June and continuing until the opening of instruction in the fall, it is possible to get a third term equal to each of the present terms. The announcement for this term is now ready for distribution. It is believed that the development of this third term will result to great benefit in both students and faculty. It will make it possible to give instruction during those months of the year when nature provides the material for the work. This is especially true in plant industry subjects, including botany, plant-breeding, plant diseases, entomology and biology, and certain others. One of the important results of the new plan is the placing of the members of the agricultural faculty upon the same basis as in the rest of the university, namely, nine months' service each year. This will make it possible for members of the staff to have three months each year for study and research in such manner as they may desire. The time at which courses and vacations shall be scheduled is left with each department and the work will be so arranged that particular courses will be given at such time of year as will result in the most effective teaching. Vacations will be arranged to meet the requirements of the department's activities. With the rapid development of agricultural knowledge, it is highly important that the members of the teaching staff have opportunity for personal research and study in order that they may develop to the greatest degree the subject-matter with which they are especially concerned. We believe that this new plan is an important step in advance and will result in materially improving the quality of instruction in the College of Agriculture.

PUBLICATIONS

The publishing work of the college is increasing each year. We are now editing six series of publications and during the past year the work included the publication of 63 issues
with a total of over two million copies. One new series of publications was commenced last year. This includes the result of the more technical scientific research and the series is known as the Memoirs. These publications will be printed in relatively small editions and distributed to colleges, libraries, and persons especially interested in research work.

I desire also to call attention to the recent edition of the Guide to the New York State College of Agriculture, which describes concisely the buildings, lands, and activities of the College. This Guide contains much information of interest to those who desire to know something of the history and activities of the College.

To sum up the work of the past year, three important events stand out as significant for the College of Agriculture. 1. The loss of Dean Bailey as Director of the College is without doubt the most important and one from which the college will not soon recover. 2. The large increase in state maintenance which Director Bailey was able to secure from the legislature last winter. This is making it possible to develop many lines of work which could not be developed until these funds were secured. The rapid increase in buildings and students has called each year for more maintenance funds and one of the greatest handicaps for the last few years has been the lack of such funds. 3. The enlarged college year or the establishment of a third term with its attendant readjustment of the service of the staff is of great importance to the college and will result in great benefit and development of the work.

LOOKING AHEAD

The college is being criticized in some quarters as being over-ambitious for rapid growth and the desire to secure more state funds than we can properly use. It is to be expected that any individual or institution which is alive and active will be criticised but the college must meet all just criticisms and just as far as possible avoid opportunity for them. In view of the feeling that the college has been asking for too large appropriations, it was felt this year by Director Bailey and the Agricultural Council that it would be wise to ask for no increase this year. We are, therefore, asking for the same maintenance funds as last year and for only one new building, the main part of the plant industry building, for which an appropriation of $200,000 will be needed. In addition to this, we are renewing our request for money for the purchase of land to be used by the Department of Forestry. Our present maintenance fund will probably carry us through next year fairly well but if the present rate of increase in students continues it will soon be necessary to ask the state for a further increase. While it is not expected that there will be much difficulty in securing our appropriations this year, it may be necessary later to have a hearing, at which time the alumni can be of great service to the college.

There is some feeling in certain parts of the University that there is a disposition on the part of the College of Agriculture to separate itself from the rest of the University rather than to form an integral part of it. This matter has been brought to my attention a number of times during the last few months. I have met this criticism with the statement that any feeling of estrangement which may exist between the College of Agriculture and the rest of the University is due not to any action or feeling on the part of the College of Agriculture. Both students and faculty in this college desire a close relationship with the University.

There is a general impression abroad that the salaries in the College of Agriculture are higher than in the rest of the University and this is given as one reason for the feeling of jealousy which appears to exist. In order that this matter may be clear in your minds I desire to give you the figures as prepared by the University Treasurer's
office for the last year published in the Cornell Sun of April 16, 1913.

University College of Agriculture

| Full professors | $3315 | $2805—$510 |
| Assistant professors | 1733 | 1718—15 |
| Instructors        | 988  | 1108+120 |

It will be noted by these figures that the average salary for a full professor in the main University is over $500 higher than in the College of Agriculture and for assistant professors $15 higher; while the instructors in the College of Agriculture receive more than in the rest of the University. When it is remembered that the men in the College of Agriculture work not less than eleven months per year as compared with nine months in the rest of the University, the relative salaries are even more significant.

It is true that in the College of Agriculture men have been promoted more rapidly than in other parts of the University but this is absolutely necessary in order that we may hold our men because of the high commercial value which graduates of agricultural colleges now have. We are having increasing difficulty each year to hold our good men because of better offers received from other institutions, and it is only because of the loyalty of our staff that we have held a number of our important men. The time is rapidly approaching when the salaries of the professors in the College of Agriculture must be materially increased.

The feeling is now widespread that there should be a broad yet centralized policy of agricultural education in New York State which shall make for the greatest efficiency and the most economical use of state monies. The college should be an important factor in the working out of this state-wide policy.

Probably the first obligation of the College of Agriculture is to the students who come here for instruction. The rapid increase in the student registration is taxing the capacity of both building and teaching staff. For a few years at least it will be necessary for us to ask for funds for new buildings and for additional men to the staff.

The obligations of the college to the agricultural interests of the state as a whole are increasing year by year. The policy of carrying knowledge to the men on the farm is now well established and the state is looking to us each year for increasing amounts of this home teaching or extension work. If the college is to meet its full obligations to the state, this work must be developed. It will be of interest to you to know that because of the increased maintenance given by the legislature last winter a number of departments now have strong men who are devoting their entire time to this type of work.

The question of sufficient financial state support while of great importance is a secondary one. As Director Bailey has so often said, the problem of getting appropriations is not a matter of politics but of demonstrating to the state that the money which is appropriated is honestly and efficiently administered in such manner as to meet the requirements of the state. I believe it will be difficult to find an institution where greater efficiency is secured from the money expended than right here in the College of Agriculture, and if we can continue to administer the state appropriations efficiently and wisely the state will not hesitate to continue its generous support.

The alumni of any institution are one of its great assets and this is particularly true of the College of Agriculture. I know of no institution where the alumni have been more loyal or active for the welfare of their Alma Mater. The College is now facing important problems involving state policies, its relation to the university and its administration and development. We need the active support and advice of the alumni in the working out of these problems, and we look forward with confidence to the future knowing the past record and the spirit which pervades the alumni and alumnae of the College of Agriculture.
A Resolution Adopted by the Senior Class of the College of Agriculture on April 23rd, 1914

To
William Alonzo Stocking, Jr.
Acting Director of the College of Agriculture

This year has been a very difficult and trying one for you. It seems to us that it has been a successful one. You have rendered a great service to the College of Agriculture and to the farmers of the Empire State. We have admired your wise decisions and your patience under trying circumstances. Your personal contact with us has been most pleasant. You have encouraged every good form of student activity.

We, the members of the Senior Class, in leaving the College of Agriculture, fully expect that your future successes will be even greater than those of the past.

Presented to Acting Director W. A. Stocking by the Members of the Senior Class.
A KNOWLEDGE of meat cookery is essential to an economical use of meat. To understand meat cookery we must know something of meat structure and composition.

Structure. Lean flesh is made up of tiny tubes bound together with connective tissue to form muscle fibres; these in turn are bound with connective tissue into larger bundles which we see as muscles. The fibres of some flesh are very long as in the leg of crab; other flesh, like the breast of chicken, has very short fibres. As a rule, short fibres are more easily chewed, since they are more tender than are the long fibres. To break up the length of fibre and thus increase the apparent tenderness of the meat, carving should always be across the grain.

Composition. Meat contains protein, fat, mineral matter, water, and extractives or flavoring substances. Protein, fat and minerals are nutritious but extractives have no food value, though their flavor makes meat more appetizing. Muscle protein consists of different proteins, some of which are soluble in water and some insoluble. All of this protein of the muscle tubes and contents, like the white of egg, is coagulable and as egg white becomes tough and leathery by over cooking, so this meat protein may be made tough by over cooking. Protein coagulates at about 160°-180° F. Therefore, it is evident that the boiling point (212° F.) maintained for considerable time is a temperature that will harden and toughen the muscle protein. This fact has an important bearing on meat cookery.

Another composition factor with which we must reckon in meat cookery is this: The connective tissue which binds the muscle tubes and fibres together, though protein, is very different from the protein of the muscles themselves. This connective tissue protein does not coagulate when heated in hot or boiling water; instead it is converted into gelatin which dissolves in hot water.

To these few points relative to the structure and composition of meat let us add something concerning the factors which influence the texture and flavor of meat. We shall then be ready to discuss the reasons for the various methods of preparing meats.

Flavor and texture are dependent upon many factors. Each species of animal has its own peculiar flavor and texture which make it easy for us to distinguish lamb, pork, and beef. In any one species some of the factors which influence flavor and texture are, feeding and sanitary conditions, age, and activity. Thus very old animals are tougher and more highly flavored than younger ones. Compare lamb with mutton, or veal with beef. Animals which are worked beyond the ordinary need for exercise develop tough tissue. Also the active portions of any one animal are tougher and more highly flavored than the inactive portions. Compare the active round or neck with the inactive loin.

The tender cuts are most in demand and are therefore the highest in price. They are, however, no more nutritious than the less popular cuts, and are actually less highly flavored. If, therefore, the cheaper cuts could be so cooked as to be tender we should gain a greater variety of meat at lower cost.

A tough piece of meat is often boiled. So prepared the meat at least looks tender, for it falls to pieces. This is because the protein of the connective tissue has been changed to gelatin and is dissolved in the water. But in reality the meat is very tough because although free from binding tissue, the fibres consisting of coagulable muscle protein are hardened from the long exposure to great heat.

As has been said all meat contains these two types of protein, which are so
different in some characteristics. But, as has also been shown, different cuts differ in their proportions of these proteins. It is this variation in composition which makes necessary different methods for cooking various cuts of meat.

To illustrate and make more clear these general fundamental principles suggested above, let us describe and explain more in detail some of the simple, well known, typical processes of meat cookery. The following may serve our purpose. Broiled porterhouse steak, Beef to boil, Beef for soup, Hamburg steak, Roast, Stew.

**BROILED PORTERHOUSE STEAK**

*Description of cut.* This is a tender, juicy piece of meat which is not highly flavored.

*Aim in cooking.* To preserve tenderness and juiciness and develop flavor by browning.

*Method and Explanation.* Clean with cloth wrung out of cold water and remove superfluous fat. Sear in a very hot pan or on a broiler. This will coagulate the surface and thus retard loss of juices. Turn every ten seconds during first minute, and frequently thereafter. This will insure thorough searing and will keep a continual flow of juice through the meat. If preferred rare, steak an inch thick will be done in five minutes. In six minutes it will be well done.

**BEEF TO BOIL**

*Description.* A thick piece of meat from shoulder or round, sometimes tender, sometimes quite tough.

*Aim.* To secure tender, well flavored, piece of meat for slicing.

*Method and Explanation.* Clean with cloth wrung out of cold water. Plunge beef into boiling water. This will sear the outside and thus much juice and flavor and other soluble material will be retained.

Lower the temperature and allow to simmer until tender.

This lower temperature insures gelatinization of connective tissue and yet prevents over coagulation of muscle protein.

**BEEF FOR SOUP**

*Description.* A thick tough piece of meat, full of connective tissue. Also a soup bone.

*Aim.* To convert connective tissue to gelatine and to get as much as possible of the flavor from the meat into the stock.

*Method and Explanation.* Soak meat and bone in cold water and bring gradually to boil. Reduce temperature at once. Thus much soluble material will dissolve into the stock.

Allow meat to simmer until tender and until the stock is rich. During this process the gelatine is formed.

The soluble protein coagulates in the soup stock and appears as little brown flakes. These and some fat and mineral matter constitutes the only nourishment on the broth. Since straining removes the protein a clear broth has very little food value, but serves to make a savory introduction to dinner. Since the meat from which the stock is obtained has lost little material except flavoring, the meat is nutritious and may be ground and served with herbs and vegetables in many appetizing ways.

**HAMBURG STEAK**

*Description.* Somewhat tough cuts may be used.

*Aim.* To pan broil or roast rather tough meat and get a tender result.

*Method and Explanation.* Grind meat. Season. (Egg and bread crumbs may be added). Shape into loaf and roast or shape into flat cakes and pan broil.

The apparent tenderness is due to the fine division of the connective tissue by grinding.

**ROAST**

*Description.* The best roasts are obtained from the loin and ribs. These cuts are always tender.

*Aim.* To preserve tenderness, retain juices and develop flavor.

(Continued on advertising page 12)
With this number the new board assumes charge of the COUNTRYMAN. We wish to thank the election committee for their confidence in us, and we assure them that we will strive with all our power to make next year the best in the history of the magazine. This past year has, it seems to us, been a very successful one and the credit for this is due to the retiring editor, Mr. F. W. Lathrop, and the business manager, Mr. J. J. Swift.

During the coming year we intend, for the most part, to continue the policies followed by our predecessors. But by a few changes we hope to make the COUNTRYMAN of still greater value to its readers. Realizing the importance of the Former Student Notes, we will endeavor to make these more complete. This will be possible only thru the cooperation of all the former students. Please do not wait until you are written to, but write to us now and inform us as to what you are doing, for every former student is anxious to know what his classmates are accomplishing. In order to keep our readers more in touch with the happenings of the University, hereafter, instead of limiting the Campus Notes to the College of Agriculture, we will include the more important happenings in the University. For our women readers we will have a special article every month of particular interest to them.

The COUNTRYMAN is published with the purpose of being of the greatest service possible to its readers. Therefore, we will sincerely appreciate any suggestions offered. We want your cooperation and support. May we have it?

With the close of this term the College will lose by graduation about two hundred of its best students. These graduates will enter a great variety of occupations; some will teach, some will go into the government service, some will engage in commercial enterprises, and many will go back to their own farms. Their work will take them all over the world.

The College will miss these men and women, but in one sense is glad to see them go to take up their life's work. For four years they have enjoyed the
privilege of attending this great university, Cornell, and now they have the opportunity of proving that the years spent here have not been spent in vain. We look for these graduates to accomplish great things, for we know they are competent and we are proud of them. We wish them Godspeed and great success in all their undertakings.

No longer will the buildings of the College be called merely Buildings Named “Main Ag” or “Agronomy” or “Dairy”. The Trustees of the University at their last meeting voted that the main building should be called “Roberts Hall” in honor of the first dean of the college. Hereafter the auditorium will be called “Bailey Hall.” It was felt that in naming it after former Dean Bailey the University had a permanent memorial to one who has done so much for agriculture in general and Cornell in particular. The main veterinary building has been named “John Law Hall.”

On the evening of May 7th, the seniors of the college presented to Director Stocking a scroll, expressing their appreciation of his excellent work this past year. In behalf of the entire student body, the Cornell Countryman wishes to heartily endorse this action. Director Stocking will soon give the reins of administration to our new Dean, Dr. Galloway and return to his work as head of the Dairy Department. When we consider that he gave up for a year the work that he loves so well, to assume administrative duties, we doubly appreciate his services. We extend to him our best wishes for equal success in all his future undertakings.

It is with great pleasure and satisfaction that we announce Our New Dean Dr. Galloway has accepted the appointment as Dean of the College of Agriculture. The future of the college with Dr. Galloway at its head looks very bright for he has the qualities that are essential for such a position. His long experience in the Department of Agriculture has made him a leader among men associated with agricultural enterprises. Of a modest disposition, he is a student and a lover of men; he is a man, for whom the affection of his associates increases as they come to know him better. Since he has been the right-hand man of Secretary of Agriculture, Houston, he has made his personality distinctly felt by increasing the efficiency of the whole Department of Agriculture. But as an organizer he is best known, for, from a Department of Plant Pathology employing four men and with an annual appropriation of $4,000, he has built up the Bureau of Plant Industry with an annual appropriation of $2,700,000.

The Countryman extends congratulations both to Dr. Galloway on his appointment to this responsible position and to the College for securing such a man as its Director. Dr. Galloway possesses the three essential qualities for such a position, namely, a wide reputation, great organizing ability and experience in dealing with legislative bodies. In behalf of the present and former students of the College, the Countryman wishes to assure Dr. Galloway that he will have their heartiest cooperation and support in all that he does for the College.
CAMPUS NOTES

Address by Professor Finley

The Honorable John Huston Finley, former President of the College of the City of New York and Commissioner of Education of New York State, was the speaker at April Assembly of the students of the College of Agriculture held on the 16th of the month. Acting Dean Stocking, in introducing Mr. Finley, told of his repeated efforts to get him to come to Ithaca, and especially to have him here for the last Farmers' Week.

Commissioner Finley said in part: “The great work of the educator of the past has been to teach young men to think. In this way they are directly responsible for all the great scientific and mechanical discoveries of history. Until agricultural conditions are sound the economic condition of a country can never be on a firm basis. One of the principal causes of unsound agricultural conditions is the prevalent attitude held by many that agricultural pursuits are ignoble. I only wish that a new Virgil would spring up in New York state to describe and glorify the local agricultural conditions, and then perhaps youth could be taught to appreciate the science of agriculture to a greater extent than it does now.”

“If we wish to make the country people enjoy the conflict with nature more and make life happier, more and more of the farm income must be devoted toward making farm life more attractive, more comfortable and morally uplifting. A farmer should devote his income to higher pursuits than to merely adding more land to his farm.”

Mr. Finley discussed briefly the trouble with our present rural educational problems. He compared these troubles to the pests and diseases that beset growing trees. The uppermost part of the tree represents youth and nourishment and if infection gets to these parts, it must usually enter in the roots and pass up through the trunk. So it is with education: Its troubles begin in the roots or parents and pass to the twigs or youth. Thus it is not the youth who is responsible but those who are in charge of the youth. The people of the rural districts should deem it their duty to make the life of the youth as attractive as possible. He suggested that the residents of this state follow the ideal not only to make New York a great state in products but also in happiness.

In conclusion, Commissioner Finley stated that he was more interested in that part of Cornell which embodied the College of Agriculture than in any other and expressed his approval of the monthly assemblies of the college and their effect on the student body.

Selections by the Mandolin Club, the men’s Glee club and the women’s Glee club were on the program of the evening.

Not the least important were the decorations of the stage by the students in the floricultural department. At each assembly they seem to out-do themselves.
The Musical Festival

The Musical Festival of 1914 has passed. It marked the first big event since the opening of the auditorium and although the $25,000 organ was not finished in time, it could hardly have been more successful. Many singers of note took part in the Festival, among them Madame Ernestine Schumann-Heink, Grace Bonner Williams, Florence Mulford, Lambert Murphy, Willard Flint, Gwylm Miles, and C. W. Whitney, '13.

The Chicago Symphony Orchestra scored a decided hit with their wonderful playing. The director of the orchestra was Frederick Stock; the violin soloist, Harry Weisbach, was conceded to be one of the best violinists ever heard in Ithaca. The Festival Chorus under the leadership of Professor H. E. Dann gave a performance which surpassed those of former years.

The Third Term

The announcement of the newly instituted "summer" or third term of the College of Agriculture is ready for distribution. Previously the only instruction given by the college was the regular summer session of six weeks, as maintained by the other colleges of the University.

The announcement of
The Third Term

being given only a limited number of courses will be offered, but when the arrangement of the entire college is made to meet the new requirements it is planned to give courses in every department. Eleven departments will offer instruction this summer. The departments and number of courses offered follow: Botany, 7; Dairy Industry, 2; Entomology, Biology and Nature Study, 14; Floriculture, 6; Plant Breeding, 3; Plant Pathology, 4; Pomology, 3; Poultry Husbandry, 6; Rural Engineering, 3; Soil Technology, 1; Vegetable Gardening, 3; making a total of 52 courses.

To enter the third term, one must have besides the regular requirements for the four year course, the first two years of that course.
A bill appropriating $350,000 for a new drill hall at Cornell has been signed by Governor Glynn. The bill appropriates $50,000 for present uses and authorizes the Trustees to contract for a building to cost $350,000. This means that after the completion of the drill hall, two years of military training will be required.

In regard to location, the Board of Trustees made the following resolution:

"Resolved, that the location of the New York State Drill Hall be within the limits of the tract of land bounded on the east by Garden Avenue, on the south by the east and west driveway from East Avenue, south of the house of W. D. Bancroft eastward to Garden avenue, on the north by the south line of the lands reserved for the use of the New York State Veterinary College, and on the west by the east line of the lots facing on East Avenue."

Statistics concerning marks, gathered by the Registrar's office show that the average of fraternity men for the first term of 1913-14 was 70.7 and of non-fraternity men was 74.2. According to classes the average marks are as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>Fraternity men</th>
<th>Non-fraternity men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior</td>
<td>72.4</td>
<td>75.2</td>
</tr>
<tr>
<td>Junior</td>
<td>71.4</td>
<td>75.1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>69.1</td>
<td>72.4</td>
</tr>
<tr>
<td>Freshmen</td>
<td>70</td>
<td>74.1</td>
</tr>
</tbody>
</table>

The average for the Agricultural College is: Fraternity men 71.8; Non-Fraternity, 75.4.

Twelve large American elm trees have been moved to the new Agricultural Quadrangle under the supervision of the Department of Landscape Art, from the tract of land immediately to the north. The work, which is one of the last steps to be taken in the beautification of the Quadrangle, was done by Isaac Hicks & Sons, of Long Island.

The grading work of the new Quadrangle has been practically finished, but the laying of walks is yet to be done. This cannot be accomplished until September on account of the change in the heating plant in the College of Agriculture. The new plant
is already in operation, but pipes to all of the buildings of the college must be laid before the roads to the main buildings can be abandoned. This will be done during the summer and the finishing touches will be put on the New Quadrangle after the fall term opens.

"I had intended to go to Cornell and enter the Agricultural College but I finally decided to come to Colgate and be a Christian." From a speech at The Life Work Conference for Students held recently at Colgate.

The Pomology department lost one of its most popular instructors through the resignation of Mr. G. E. Peck, '12, who has left the College to take charge of the extensive Blossom Fruit Farms in Ohio. Mr. Blossom was here for the winter course of 1911-12. Mr. E. J. Heinicke, who replaces Mr. Peck, comes from St. Louis. He is a graduate of the University of Missouri and will get his M.A. degree from there in June, his thesis being on the study of the physiological effect of certain treatments to break the rest period of plants. While at Missouri, his time was taken up almost entirely by experimental work in pomology.

Through the cooperation of the Poultry Department of the College of Agriculture, the Ithaca Business Men's Association, the district superintendents of schools and the management of the Tompkins County Fair, 125 settings of thoroughbred White Leghorn eggs have recently been distributed to the farm boys of Tompkins County. The expenses were borne in part by the business men's association, by a donation of one hundred dollars, and by the poultry department. For several months previous to the distribution of the eggs Mr. Krum of the poultry department visited nearly every rural school in Tompkins County giving lectures on the proper handling of poultry. The teachers held competitive examinations on the lectures and the three highest, each received a setting of the White Leghorn eggs. The boys have been instructed to make out four reports to the poultry department and will be given chances to compete for prizes aggregating $500 at the annual county fair to be held at Ithaca in the fall. In addition to this there will also be a prize of $100 to the rural school bringing in the best display of farm stock bred and owned by the children.

For the occasion of Professor Comstock's retirement from active work, his former students have contributed a fund for the endowment of a Comstock Memorial Library. This fund will be formally presented at a meeting to be held Saturday, June 13, during Alumni Week. Former Dean Bailey and President Schurman will make addresses, to be followed by brief speeches by several former pupils of Professor Comstock.

The Home Economics department has conducted 33 extension schools throughout the state from Dec. 1, 1913 to May 4, 1914. These schools average six meetings per week. Through them a large amount of interest was aroused and generally an application was filed for one of them for the next year.

Thirteen canning clubs have been organized in Cortland county by the Home Economics department in connection with the Farm Bureau work.

A new feature in the University Summer School this year will be instruction in dancing which is to be taught under the supervision of the Misses Southerland.
and Murray of England. Dances that tend to develop grace of form and to aid physical development in general will be taught. The folk dancing will be given in a form suitable for use in the schools and colleges including old country dances, old English dances, jigs and reels, court dances and the minuet. Many are the lecturers who voice in poetical language the sentiments of "back to the farm, and back to nature." This public advertising of the back to the farm movement has done much to further it, but to Dr. W. J. Hallock belongs the honor of offering the first practical method of so doing. He will give plots of land of one acre or more to city people who wish to live in the country. The land is given free, with the exception of a $15 charge for surveying, recording the deed and for advertising purposes. His restrictions are that the owner shall build a bungalow to cost at least $500, and that he occupy it three months in the year. Dr. Hallock furnishes free pasture for a cow and firewood for a term of three years. He has also built a water-supply system which is available. The land comprising some 400 acres, is in the town of Danby seven miles from Ithaca and one-half mile from the state road. So far about 50 applications have been received.

(Continued on advertising page 32)
FORMER STUDENT NOTES

M. G. KAINS.

'96, B.S.A., '97, M.S.A.—M. G. Kains, for nearly ten years associate editor of The American Agriculturist at New York City, will become Professor of Horticulture at Pennsylvania State College on August 1.

Ever since early boyhood he has been deeply interested in domesticated and wild plants, especially since the age of fifteen, when he decided upon horticulture as a profession. At that time he knew of no agricultural college except the one at Guelph, Ont., but, because that college was then specializing in live-stock, dairying and field crops, he was not attracted thither, so continued his studies and practice mainly in his father's, his grandfather's and his own gardens and orchards. These studies were not conducive to a phenomenal development as a railway or express clerk, or cashier—lines of work he followed between the ages of seventeen and twenty-two.

In 1891, while employed in the General Superintendent's office of the Erie Railway at Cleveland, O., he first learned of the Michigan Agricultural College from a graduate with whom he talked one evening. The very next morning he flung his chances of promotion and his "pull" to the winds, resigned his railway position and entered the college, where he worked his way and graduated in 1895. He has never regretted his "precipitate" decision. That same autumn he entered Cornell University as a horticultural senior. The following spring he was one of the six Woodford Orators. In June he was graduated. That summer he experimented with sweet peas and reported his results in one of the experiment station bulletins. The following year he was awarded his master's degree and was elected to the Sigma Xi Society for his work in horticulture and entomology.

From 1897 to 1900 he was connected with the United States Department of Agriculture at Washington where, as special crop culturist, he established and had charge of the 25-acre trial grounds (not the present ones at Arlington). In 1900 he accepted the chair of Horticulture at the School of Practical Agriculture and Horticulture at Briarcliff Manor. Upon arrival he found the "chair" to be a settee, broad enough to permit him also to include botany, entomology, meteorology and physics with little tinctures of chemistry. After two years teaching he became horticultural, agricultural and botanical editor of the New International Encyclopedia and later chief horticultural contributor to the Cyclopædia Americana. Then followed his American Agriculturist work.

During the past decade as representative of the American Agriculturist, he has been a familiar figure at horticultural gatherings and fairs in New York, Pennsylvania, New Jersey, Maryland, Delaware, Virginia and West Virginia, and has frequently taken part in the proceedings of the former usually extemporaneously but often upon the announced program.
This work and his extensive travels, especially in the region mentioned, have given him a broad and familiar grasp of horticultural problems which characterize the states bordering Pennsylvania which has been practically the center of his activities since he left the government.

While with the government he published several bulletins and his first book—"Ginseng." Since then he has written other books, among them "Culinary Herbs" and "Making Horticulture Pay," and has edited more than two score books for the Orange, Judd Company, besides editing or writing practically all the horticultural and poultry articles and editorials published in American Agriculturist.

'07, W.C.—W. S. Lyon has resigned from the Poultry Department, where he has been an Assistant for the past few years, and has bought a 50-acre farm near Ovid, N. Y. This is a very fertile section of the state, and Mr. Lyons expects to make a big success raising grain, poultry and fruit.

'09, B.S.A.—E. W. Mitchell reports that he has gotten very good results on his fruit farm near Stuyvesant Falls, N. Y. Much of his success is attributed by Mr. Mitchell to the training that he received at Cornell from Professor H. H. Whetzel of the Department of Plant Pathology.

'10, B.S.A.—Announcement was received from Webster, N. Y., that Mr. and Mrs. Nelson R. Peet were the proud and happy parents of Samuel Clinton Peet who made his entry into this world on April 4th. In his senior year, Nelson R. Peet was editor of the COUNTRYMAN. We now extend an invitation to this eight and a quarter pound youngster to come to Cornell and follow in his father's footsteps.

'10, Sp.—Mr. Ray L. Williams is now working for the Brazilian Government and is located at Rio Grande do Sul, Brazil. The Government is dividing land in this region into 125-acre tracts and is offering this land to colonists on such easy terms that men without means can get and make for themselves a home. Any men are eligible to settle here and the colony is now composed mostly of Brazilians and Germans. The hired laborers are half-breeds and Spaniards. The Government sells the land to these men and gives them the use of the necessary machinery to clear the land and get a start. The two main crops are alfalfa and sugar-cane. The latter is manufactured in the colony but the alfalfa is shipped out of the region. Mr. Williams has charge of the surveying and the dividing of the land, the locating of the tenants, clearing the land of the timber and the selling of this, and also of the storehouse, through which all the produce of the colony is handled. The timber in this region is largely iron-wood, though there is some pine. This is made into fence posts and railroad ties.

'10, W.C.—H. E. Mullen is now operating a creamery for the Camden Creamery Company at Camden, N. Y.

'11, Ph.D.—Mr. George J. Bouyoucos, who is now connected with the staff of the Michigan Agricultural College at East Lansing, Mich., is spending a year's leave of absence in Germany.

'11, B.S.A.—D. E. Fink is with the United States Department of Agriculture as an entomologist and is now working at the Virginia Truck Experiment Station at Norfolk, Virginia.

'11, B.S.A.—Waldemar H. Fries has resigned from the International Agricultural Corporation, Buffalo, N. Y., and has gone into business with his father at 303 Fifth Avenue, New York City. His home address is 181 Woodruff Avenue, Brooklyn. Fries was one of the three Cornell men who were members of the Crescent A. C. lacrosse team that played the varsity a 3–3 score in a practice game on May 2d. It may be recalled that Fries was captain of the varsity lacrosse team during his senior year here.

'11, W.C.—William G. Brooks, who was at Cornell for the winter course in horticulture in '09 and liked it so well that he came back the next winter.
Cornell Songs
DO YOU STILL SING THEM?

The Agricultural Association has just published a new book of
Cornell and Other College Songs
Price $1.25. Postpaid

NEW YORK STATE RURAL PROBLEMS
By L. H. BAILEY, $1.25

Send orders to
THE CORNELL COUNTRYMAN
Ithaca, N. Y.

A BIG ARMY OF
UNITED STATES CREAM SEPARATOR USERS
is always ready to march to the front and back our claims with the
Proof of Personal Experience.
U. S. “Boosters” are a volunteer and not a drafted army.

I have been using one of your No. 17 U. S. Separators for 10 months.
I have had some experience with other machines but for easy running,
easy washing, close skimming, the U. S. beats them all.
FRANCIS McINTOSH.

The U. S. has BIG FEATURES
that no other cream separator has. They bring to dairymen the
greatest advantages in recent years, and crown the United States
the King of all. Send for Catalogue.

VERMONT FARM MACHINE CO.
BELLOWS FALLS, VT.

Chicago
Salt Lake City
Portland, Ore.
Los Angeles

In writing to advertisers please mention THE CORNELL COUNTRYMAN
THE POULTRYMAN AND THE HOTEL TRADE
(Continued from page 303)

absence of any acquaintance who might assist in introducing the producer, letters may be written to hotels in the nearest large city. Should favorable answers be received the poultryman ought to go into town and have a personal interview with the one who has charge of the purchasing. Such letters will probably not bring any results if they are written at a time when the goods offered are plentiful. For instance, it would be almost useless to offer direct shipments of eggs in April but during the month of September the offer would be much more tempting and connections for the entire year might be established.

No promises should be made as to quantities unless the producer is absolutely sure of being able to carry them out and if through some accident a shipment cannot be made on the arranged date a letter should be written notifying the purchaser. The steward of a large hotel handles thousands of different articles of food and must rely absolutely upon getting them when they are expected. If he receives notice in time he can always obtain a temporary supply but soon becomes discouraged in dealing with a shipper upon whom he cannot depend.

Shipments should be made as attractive as possible. Eggs should be clean, poultry packed neatly, showing up the breast to the best advantage, with the heads wrapped so that the blood does not drip, and the contents of all packages secured so that they will not move about during transit. It is a well known fact that the same quality of goods in two different packages will bring better prices in the more attractive package. The poultryman should go into town occasionally and see the quality of what is being offered in the markets. We have found that the tendency of every producer is to consider his own goods superior to all others and have often been obliged to show a poultryman chickens from another shipper in order to get the quality we desired.

The trend of the times is toward the elimination of profits paid for handling goods between the producer and consumer. The middleman has played an important part because of his selling ability and because of his acquaintance with the requirements of different classes of trade. The producer, in order to compete must develop the same selling ability and must produce those varieties of goods required by the class of trade with which he is trying to do business.

A STUDY IN CLOSE BREEDING
(Continued from page 311)

In discussing this particular phase of the subject of breeding, the evidence of the biologist and the successful breeder should appeal to the student with special force. Dr. Raymond Pearl, a biologist who is eminently qualified by experience and study to discuss the question, places himself on record in the Christmas number of the Breeders' Gazette, as follows: "A number of experimental investigations are being carried out in which the closest inbreeding is continued for many generations and the effect on the progeny noted. So far as the results have been published, they appear to indicate clearly that inbreeding in itself is not necessarily harmful. Strains which are as completely inbred as is possible may show the highest qualities of constitutional vigor and stamina."

William Duthie, the best known, possibly, of our present day breeders of short-horn cattle, states his belief in close breeding as follows: "Every time so-called fresh blood is introduced, the uncertainties seem to increase; while the first few crosses are generally good, it is quite difficult after that to hold a type."

"Where the use of a few strains of related blood has been long continued, the tendency toward variation is generally reduced. When outcrossing

(Continued on advertising page 12)
WHY NOT

Investigate some of the available

FARM BARGAINS IN THE
HUDSON RIVER VALLEY AND THE
KINDERHOOK COUNTRY

RURAL LIFE CO.

KINDERHOOK
NEW YORK

Beatey’s Fertilizer will Make Your Crops and Bank Account Grow

Beatey’s Fertilizer is the natural bone phosphate of lime, free from adulteration of any sort, admittedly the best, and 68% pure.

By a simple mechanical process the Raw Phosphate from the deposits in Florida is disintegrated so that the soil gets the benefit of the total quantity of available Phosphorus, free from chemical treatment or adulteration, assuring a higher crop yield at less than one-fourth the cost, and leaving a surplus of phosphate food in the ground for the next five years’ crops.

For sale by all dealers in large or small quantities, or send for circular “S,” and order direct from

Beatey’s Unadulterated Agricultural Phosphate Co.,
21 South Market Street,

Boston, Mass.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
is practiced, the direction of the heredity forces seems to be given constant variability. In the one case, it is like shooting with a rifle; in the other it is like shooting with a shotgun. Scatteration follows the mingling of mixed bloods; whereas, the concentration of related strains, supplemented with careful selection with a view to the establishing of a type, gives increasing accuracy to the resolute aim of the breeder.

“Straight breeding within a limited range of pedigrees, striving steadily to improve the stock descended from the foundation herd, making deeper rather than wider the life stream, checking instead of increasing the tendency toward variation, gaining hereditary power by intensifying a few rather than by combining many lines—these, I think, are the chief items to be considered by the breeder who wishes to achieve success in breeding and improving Short-horns or any other breed of stock.”

“Assuming this position, which I have adhered to in practice almost without an interruption, I do not believe that, so far as Scotch Short-horns are concerned, any advantage could result from the introduction of Bates or any other geographically new blood. The lesson of experience as I read it, emphasizes the fact that outcrossings or other radical changes in blood combinations, upset type by weakening the line of hereditary force and in a short time undo what it has required many years to achieve.”

In conclusion let it be understood that the writer does not wish to recommend close breeding as a general practice or as an end in itself. The results thus far obtained at the Delaware Station, however, lead him to feel that if desired physical attributes would make it wise to mate a given pair of animals, their relationship should not cause the breeder any hesitation in breeding them.

MEAT COOKERY

Method and Explanation. Clean roast. Season with salt and pepper. Place, fat side up, on rack in pan. Put a little hot water underneath the rack. Cover and place in hot oven. When seared reduce the temperature and complete cooking at low temperature.

Thus the juices are retained by the seared surface and the meat is not made tough by over heating.

Frequent basting, water in the pan and the cover all help to prevent drying out of the roast.

The oven may be hotter for a small roast than for a large roast because heat penetrates the meat so slowly that if a large roast were put into a very hot oven the outside might be roasted, even burned, before the inside were properly done.

STEW

Description. Various tough cuts are used.

Aim. To make the meat as tender as possible and to preserve some of the flavor in the meat; also to draw out some flavoring into the gravy.

Method and Explanation. Cut stew into small pieces. Rub bottom of pan or kettle (preferably an iron pot) with a little of the meat fat. In this hot pan sear about half of the pieces. (These may be first rolled in flour.) This browning gives flavor to the stew, the searing retains meat juices and the flour thickens the gravy. To these brown pieces add the raw pieces and cover with water. Let simmer several hours. A crock, caserole, or iron pot are excellent utensils in which to prepare stew.

Before the stew is done, add diced vegetables, as carrots and potatoes. Later add peas, tomatoes and the like. Thus meat and vegetables will be tender at the same time. The gravy is flavored by the juices from the unseared meat, by the brown surface of the seared meat and by the vegetables. No food or flavor is lost, and
A Hotel for the Man of Moderate Means

The MEN'S HOTEL
BUFFALO
75c PER NIGHT
MODERN SANITARY
LUNCH ROOM
ALWAYS OPEN

Operated by the Buffalo Y. M. C. A.

TO BE ON THE SAFE SIDE WHEN MILKING
TIME COMES YOU NEED THE

SIMPLICITY MILKING MACHINES

They are the simplest in construction, made of the best material, has the fewest rubber parts, and every part can be thoroughly sterilized.

It has no mechanical construction for working the relief, the cow, by the flow of milk, controls this herself, causing an uniform relief at each milking.

There is an inspection glass at the bottom of each teatcup so there is no guess work if each teat is milking.

Do not be worrying about your hired help leaving you to do your milking all alone, for you can overcome this by installing at once the SIMPLICITY MILKING MACHINES which will stay with you each and every day of the year.

Write for full particulars today, before you forget the name.

F. GROFF & SON
St. Johnsville New York
A CERTAIN TOUCH OF PERFECTION

"Why is it," one buttermaker recently asked another buttermaker, that no matter how hard I try or no matter what methods or cleaning agents I use, somehow I cannot duplicate the results I get when using

**Wyandotte Dairyman's Cleaner and Cleanser**

This very experience, mayhap, has been your experience, and you, too, may have questioned why it is that with Wyandotte Dairyman’s Cleaner and Cleanser a certain quality of cleanliness is produced that is peculiar only to Wyandotte Dairyman’s Cleaner and Cleanser.

To thoroughly appreciate why this is true one should realize that Wyandotte Dairyman's Cleaner and Cleanser represents years of study and experience in the manufacturing of a material made especially for dairy cleaning purposes. By gradual improvement in quality and by bettering the methods of manufacturing there has been given to Wyandotte Dairyman’s Cleaner and Cleanser that certain touch of perfection which only years of experience makes it possible to obtain.

And as you probably know, no claim for Wyandotte Dairyman’s Cleaner and Cleanser is ever made that is not upheld by a guarantee of the highest quality. Your dealer can supply you in sacks. For kegs and barrels write your regular dairy supply house.

**THE J. B. FORD CO., Sole Manufacturers**

**Wyandotte, Mich., U. S. A.**

This Cleaner has been awarded the highest prize wherever exhibited.

In writing to advertisers please mention *The Cornell Countryman*
A Suggestion--
Color Printing Increases Business

We are Specialists in

COLOR PLATE ENGRAVING and COLOR PRINTING

CHRISTY ENGRAVING CO., 610-618 CENTRAL BLDG.
ROCHESTER, N. Y.
BE ON THE SAFE SIDE

YOU needn’t fear a visit from the Sealer of Weights and Measures if you use Thatcher Milk Bottles. You won’t give over-capacity either, because they are accurate! Send for our free book. It tells exactly why Thatcher bottles add to your profits.

THATCHER MFG. CO. 103 Market Street
ELMIRA, N. Y.

LEHIGH VALLEY RAILROAD

The only line to and from Ithaca, Cornell University with through service between New York, Newark, Philadelphia, Buffalo, Niagara Falls and Chicago. Steel Trains; Observation Parlor Cars; Electric Lighted Sleeping Cars; Buffet-Library-Smoking Cars; Dining Cars, Service a la Carte; Stone Ballast.

Automatic Electric Block Signals
COMFORT SAFETY

TWEMLOW’S

Old English Glazing Putty
SEMI-LIQUID and ELASTIC

Hammond’s Greenhouse White, a superb paint, with years’ record to back it up, for wood or iron Greenhouses. It stays where you put it. In 5, 10, 15, 20, 25, or 30 Gallons.

KOHM & BRUNNE
THE LATEST STYLES AT MODERATE PRICES
TAILORS 222 East State Street
The Northern Pacific Country

offers a healthful, varied and invigorating climate; the best crop records and, in all respects, the best opportunities in the West to those seeking new locations or just starting out in the business world.

THE NORTHERN PACIFIC RAILWAY

with its 6,600 miles of trackage through this Storied Northwest, traverses the cream of the country from an agricultural and industrial standpoint. This is equally true scenically. A thousand miles of its line follow historic trails, along historic rivers, and grand and historic mountain peaks are seen from its trains.

Two modern transcontinental trains run daily between Chicago, three between St. Paul-Minneapolis, one between St. Louis, Kansas City and Omaha, and Spokane, Seattle, Tacoma, Portland and the North Pacific Coast.

YELLOWSTONE PARK

the world’s Wonderland is reached directly by this line via Gardiner Gateway, the northern and original entrance. Daily Pullman service, Chicago to Gardiner, and weekly personally-conducted excursions to and from the Park during the tourist season, June 15 to September 15. Send for free literature.

A. M. CLELAND,
General Passenger Agent, St. Paul, Minn.

"THE BETTER WAY"

All progressive owners of stock, dairymen, horsemen, and others, know that three necessary conditions must prevail to have healthy and profitable stock. These are: GOOD RATIONS, PROPER SHELTER AND CLEANLINESS. Everywhere great effort has been made to provide the first two of these necessities but very little has been done until recently in the development of a scientific method for grooming animals. The increasing sentiment in favor of cleanliness of animals, the rigid enforcement of laws for the production of pure milk, and the high standards set in awarding premiums on stock have created a demand for a better way for grooming, as grooming with the ordinary curry-comb, brush or cloth does not accomplish the desired result. THE KENT VACUUM GROOMER provides The Better Way.

ADAPTED to all kinds of power
Manufactured by
The Kent Vacuum Cleaner Co.
Incorporated
ROME, NEW YORK

Also manufacturers of THE KENT STATIONARY VACUUM CLEANER.

SLUG-SHOT

USED FROM OCEAN TO OCEAN FOR 29 YEARS.

Sold by Seed Dealers of America.

Saves Currants, Potatoes, Cabbage, Melons, Flowers, Trees and Shrubs from Insects. Put up in popular packages at popular prices. Write for free pamphlet on Burs and Blights, etc., to

B. HAMMOND, - Fishkill-on-Hudson, New York.

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
I'll Show
You How

To make them grow faster—thrive better—look better—
Put on flesh on no more feed—stop losses from worms—
I have done it for thousands of farmers and stockmen—I'll do it for you. All I ask is the
privilege of sending you enough Sal-Vet to last your stock 60 days. I simply want to show
you what a remarkable change Sal-Vet will work on your sheep, your hogs, your horses
and cattle. I want to show you how it will improve their condition—rid them of all
stomach and free intestinal worms which are the biggest drain on your stock profits.
I don't ask a penny of pay in advance. I prove all my claims first—and if you are
not satisfied at the end of 60 days, you do not pay me a cent.

The Great
Worm Destroyer

Sal-Vet is first a worm destroyer; second, a conditioner; a medicated salt. It contains several medicinal
elements which promptly kill and expel stomach and free intestinal worms and in the meantime puts the digestive
organisms in a healthy, vigorous condition. It sharpens the appetite—tones the blood—puts life and vitality
into the whole system. It aids digestion—helps the animal to derive more good from its feed.

No Drenching—No Handling—They Doctor Themselves

It is easy to feed Sal-Vet—you feed it just as you do salt. Put it where all your stock—sheep, lambs, hogs, horses
and cattle, can get at it daily and they will doctor themselves. It will keep your hogs, sheep and lambs from
dying—make your horses and cattle look better, thrive better—save you money in saving feed—make you more
profit by making your stock more valuable. I want to prove all this on your own farm and before you
pay me one cent. You cannot afford not to accept this open, liberal offer. You pay the small freight
charge when it arrives and I will send you enough Sal-Vet to feed your stock 60 days, after that you
pay if pleased. Read this letter:

From Sec'y Amer. Hampshire Swine Record Ass'n.

"I write to say that I have been a free user of Sal-Vet ever since its introduction and find that
it is a perfect worm exterminator. I feed Sal-Vet as I would salt and it positively does all that
you claim for it. There is nothing within my knowledge as good and reliable as Sal-Vet. It expels worms and puts stock in fine condition." E. C. Stone, Peoria, Ill.

Send No Money—Simply Send Coupon

If you could open and read the
letters I get, seeing the ap-
preation of hundreds of stockmen and farmers—who have taken advantage of my
liberal offer, you would not delay a minute in sending me the coupon requesting
enough Sal-Vet to feed your stock 60 days, especially when you pay if pleased. Now fill in the coupon, telling how many head of stock you
are feeding—mail at once. Sal-Vet costs just one-twelfth of a cent per
day for each hog or sheep.
**Study Your Wheat Before You Harvest It**

If the yield and quality are bad you must do better. If they are good it will pay you to make them better. A better fertilizer will do it. The usual wheat fertilizers do not contain enough **POTASH**

Use 6 to 8 per cent. Potash, instead of 1 to 2, and balance the phosphoric acid of the bone or phosphate.

Tell Your Dealer about this Now before the fertilizer salesman arrives. Write us today for our free book, "Fall Fertilizers."

We sell Potash Salts in any amount from 1 bag (200 lbs.) up.

Write for prices, stating quantity needed.

**GERMAN KALI WORKS, Inc., 42 Broadway, New York**
Chicago, McCormick Block
Atlanta, Empire Bldg.
New Orleans, Whitney Central Bank Bldg.
Savannah, Bank & Trust Bldg.
San Francisco, 25 California St.

---

**Is Milking Much of a Job on Your Farm?**

If you have twenty cows or more you can make money by buying a B-L-K Milking Outfit. If you have power now—there's more reason and less expense to machine milking.

**B-L-K MILKERS**

Cut cost and time of milking in two

One man with two machines, like the one shown here, can milk from 24 to 30 cows per hour. The milk from the two cows can be kept separate. You can pick out the "loafers" in the herd.

B-L-K Milkers, properly handled, will not affect the flow of milk. They do not influence the purity of milk. They keep the dust and dirt out. They are easily cleaned and kept sterile.

Let Us Show You the B-L-K Milker

and figure with you on what an outfit will cost you and on what it will save you in time, labor, cost and discontented help. We shall be happy to answer without putting you under any obligation.

**D. H. BURRELL & CO.**

LITTLE FALLS, NEW YORK

Manufacturers also of "Simplex" Cream Separators and other "Simplex" specialties. "THE BEST IN THE WORLD"

---

In writing to advertisers please mention THE CORNELL COUNTRYMAN.
MEAT COOKERY

(Continued from advertising page 12)

the meat should be very tender after the long cooking.

The above methods of preparing meat may be grouped under two general methods, one requiring high temperature for a short while, followed by lower temperature, the other requiring long continued low temperature.

One of the easiest ways of obtaining the later condition with no inconvenience and little fuel is by means of the fireless cooker. The fireless cooker, casserole and covered iron pot are almost indispensable for preparation of cheap cuts of meat. The broiler, frying pan and roaster are used for the more tender cuts.

With these tools at hand and the above principles in mind, our choice of meat cuts need not be limited, for by suitable methods we can so prepare any meat that it may be both nourishing and delicious.

FORMER STUDENT NOTES

(Continued from page 328)

has been for the past two years in partnership with his father in the retail nursery business at Monroe, N. Y. Most of the work of the Quaker Hill Nurseries is landscape planning and planting on both town lots and country estates. These nurseries employ about ten men during the planting season and Mr. Brooks reports that just now they have more work than they can conveniently handle.

After leaving Cornell, Mr. Brooks was for a short time employed by the state as a nursery inspector, and during the summer of 1912 was with a landscape firm in Worcester, Mass. Since being with his father, he has worked up quite a business in the winter doing pruning, spraying, and grafting on the private estates near Monroe. A brother of Mr. Brooks is now taking the regular course in landscape gardening at the College here.

'12, B.S.—G. W. Peck, who has been instructor in the Department of Pomology for the past year, has left the College to become manager of a large orchard at Birmingham, Ohio.

'13, B.S.—Wilfred de Sidnia Wilson visited the College about the middle of April. He is now an analytical chemist in the employ of the Canada Cement Company at Montreal, Can.

'13, B.S.—Paul R. Guldin is teaching school near his home at Yellow House, Berks County, Pa. and is also running his poultry farm, tending to it before and after school hours.

'13, B.S.—James S. Champion is teaching a four year course in agriculture in the Honesdale High School, Honesdale, Pa. His work is under the supervision of the Vocational Division of the State Department of Public Instruction. He has also organized a School Boys' Poultry Club in Wayne county and it has about 75 enthusiastic members.

'13, B.S.—F. G. Wischhusen has been appointed assistant in charge of the poultry plant at the Carnegie Institute of Research at Cold Springs Harbor, N. Y. This is the Institute that is carrying on research work in eugenics under the direction of Professor Davenport.

'13, Sp.—L. D. Greene is now manager of a 120 acre farm at East Highgate, Vermont. Forty acres are in Snow apple trees but the rest is too rough except for pasture. About the first of May, he expects to start raising a bunch of turkeys. For a year after leaving College, Greene was an Agricultural Assistant connected with the Lehigh Railroad.

'13, W.C.—R. H. Wilkin is now employed by the Poultry Department and is connected with the experimental work.

'14, B.S.—L. B. Smith left on April 19th for Norfolk, Virginia, where he will be an Assistant State Entomologist of that state and will be stationed at the Virginia Experiment Station. Mr. Smith did most of his work at the Nova Scotia Agri-
“ONLY ONE WORMY APPLE IN 458 BBLs.”

"Electro" Arsenate of Lead Powder (not powdered) Did It. You can Duplicate It But Not With Something "Just As Good"

for there is none other just like "Electro"—
SO STRONG (½ all poison) that it takes less to kill—
SO WELL MADE (less than ½% soluble arsenic) it cannot burn foliage—
SO FINE (yet not ground) it will stick to dry leaves when dusted on.
One lb. does the work of 3 lbs. ordinary paste, and mixes easier. Cannot ball, cannot lump or clog nozzle. No waste.

"SPRAYING SIMPLIFIED, 3d EDITION" sent free on request. Write for it today.

B. G. Pratt Co., Mfg. Chemists 50 Church St., N. Y.
Manufacturers of SCALECIDE and Sole Distributors for the World for Vreeland's "Electro" Spray Chemicals

Spray your FRUIT TREES with HEMINGWAY'S LEAD ARSENATE
HIGH ANALYSIS EASY TO MIX STAYS IN SUSPENSION
Spray or Dust your POTATO-PLANTS and GRAPE VINES with HEMINGWAY'S "CAASCU"
Pronounced "K. S. Q."
KILLS THE BUG PREVENTS BLIGHT CAN'T BURN FOLIAGE
For Booklets and Prices, write to HEMINGWAY & Co., Inc., Dept. C.
17 Battery Place, NEW YORK

A COMPLETE LINE OF MACHINERY AND SUPPLIES

For Dairies, Creameries and Milk Dealers

Write for catalog and prices

Prompt and Courteous Service

D. H. Gowing & Co.
SYRACUSE, N. Y.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Dewey's Ready Ration

Guaranteed Analysis:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>Protein</td>
</tr>
<tr>
<td>7%</td>
<td>Fat</td>
</tr>
<tr>
<td>9%</td>
<td>Fibre</td>
</tr>
<tr>
<td>50%</td>
<td>Carbohydrates</td>
</tr>
</tbody>
</table>

COMPOSITION:

- Eagle Distillers Dried Grains
- Choice Cotton Seed Meal
- Old Process Linseed Oil Meal
- Winter Wheat Bran and Middlings
- Pure Hominy Feed
- Malt Sprouts
- ½ per cent Salt

Dewey’s Ready Ration, when fed in connection with the home-grown hay, straw, fodder, ensilage, and roots, forms a perfectly balanced ration. It is a complete grain ration for dairy cows. No other feed or grain need be fed with it.

THE FEED QUESTION

The feed question is not or should not be of price per ton, but of “how much milk will each dollar’s worth of feed produce.” Dewey’s Ready Ration is worth all it costs because it is scientifically blended from the highest grade feeds to produce for you all the milk possible for each dollar that you pay. “The proof of the pudding is in the eating.” Try Dewey’s Ready Ration. Give it a chance to convince you.

THE DEWEY BROS. CO.
BOX 577
BLANCHESTER, OHIO

Write for prices on 3D (Dewey’s Distillers Dried) Grains.

Use Chr. Hansen’s
RENNET TABLETS
AND
CHEESE COLOR TABLETS

For Cheese Making on the Farm

Also try our DANISH BUTTER COLOR. It gives that beautiful golden June shade and does not affect the faintest aroma or flavor in the butter.

CHR. HANSEN’S
RENNET EXTRACT, CHEESE COLOR
AND LACTIC FERMENT CULTURE

Have Stood the Test of Time.

Chr. Hansen’s Laboratory
BOX 1095
LITTLE FALLS, N.Y.

PURE BEEF CRACKLINGS

Trade Mark Registered

This brand has established a new standard for

BEEF SCRAP

THE FLAVELL CO.
Asbury Park, N.J.
A postal card request will bring you a copy of our list of some hundreds of 

Practical Agricultural Books

compiled from our lists of regular and recommended books as used at the N. Y. State Agricultural College here at Cornell:

The Corner Bookstores

ITHACA, N. Y.

Well Rotted Horse Manure

DRIED GROUND ODORLESS

To insure increased Garden Crops—larger and brighter Flowers and a rich green Lawn, give your soil a heavy coating of Dried Ground Horse Manure. No weed seeds, no refuse—it becomes part of the soil.

Plant food is immediately available and lasting. Your planting will be successful when you use Well Rotted Horse Manure. Put up in bags 100 lbs. each.

Write for circular and prices.

New York Stable Manure Co.
273 Washington Street
JERSEY CITY, N. J.

How and When To Spray

This Book Mailed Free

40 pages of practical information, written in a way you can understand and use. Gives spray calendar, spray formulas. Describes which mixtures to use to fight any certain pests on apple and other fruit trees, bush fruits, grapes, vegetable crops, etc. Tells how to prepare stock solutions, how to apply, which type of sprayer to use. Shows most practical sprayers, both hand and power. Get this valuable Free Book today.

are made of chemical-proof materials. Designed to furnish best service with great saving of solution. Easy to operate and to clean. More efficient and more economical than cheap outfits which last but a season or two. In use by over 400,000 fruit growers and gardeners. Sold under a binding guarantee of satisfaction. Send for the book and post yourself at once.

The GOLDS MFG. CO.
Largest Makers of Pumps for Every Purpose
16 W. Fall St., Seneca Falls, N.Y.
SEEDS WITH A LINEAGE

Unequaled original "stock," improved by seventy-five years of most careful cultivation and selection, make Carters Tested Seeds the "Seeds with a Lineage."

CARTERS TESTED SEED include grass, flower and vegetable seeds of every desirable variety. Used rightly, they will give your grounds the same rich beauty that distinguishes the notable Gardens and Estates of Old England. Ask any gardener with experience in Great Britain. He will tell you that Carters Seeds are unequalled.

Write for our 1914 catalogue—"Garden and Lawn."

Carters Tested Seeds, Inc.

130 Chamber of Commerce Bldg.
BOSTON, MASS.

Branch of JAMES CARTER & CO.
Raynes Park, LONDON, ENGLAND
We Manufacture the Cornell Brooder Heater
designed and recommended by
the N. Y. State College of Agriculture.

The new burner we are using now does away with all trouble caused by inferior gasoline and insures an absolutely efficient heater.

Write for Catalog of the celebrated Cornell Poultry Appliances.

Treman, King & Co.
ITHACA

Unadilla Silos are Prosperity Builders!

Fasten your eyes on the illustration opposite showing a lively September day scene on the Moore Villa Guernsey Farm in Otsego County, N. Y., where, during the winter of 1913, with a corn crop that was frozen three times before it was cut into the UNADILLA shown, the owner profited by a 50 per cent. saving in feed bills due entirely to the substitution of succulent, nutritious, health invigorating silage for an all dry roughage ration. Due to the air-tight construction of the UNADILLA no rot or mould appeared in the thrice-frozen-before-cut silage, nor did 36 degs. below zero weather cause the least trouble or loss. Your experience with a UNADILLA will be the same. By investing in one of these Silos you can't lose out on your corn crop, no matter how early fall frosts hit it. June delivery orders subject to a cash discount. Apply at once for catalogue and terms of sale.

UNADILLA SILO CO., Inc., Box 22, UNADILLA, N. Y.
CUT THIS OUT FOR SUMMER USE

Modern Dry-Cleaning and Pressing Works

W. F. FLETCHER & CO., Inc. 103 Dryden Rd.

You can send us your Dry-Cleaning during the Summer by Parcel Post. We will deliver it to you as soon as the City Cleaner. Our prices are less and we know Just How to Clean Clean.

ITHACA'S MODERN CLEANERS

Norton Printing Co. 317 E. State St.
COLLEGE, FRATERNITY and COMMERCIAL PRINTING
Engraved Cards and Invitations Rubber and Metal Hand Printing Stamps

Robinson's Photograph Shop 214 East State Street
Photographer for the Senior Class

White & Burdick Co.
The oldest and largest Drug Store in the City
Supplies for Agricultural Students a Specialty

New York State College of Agriculture at Cornell University

THE DEPARTMENT OF ANIMAL HUSBANDRY

Breeds Percheron Horses, Holstein, Jersey, Guernsey, Ayrshire, Short Horn Cattle, Dorset, Shropshire, Rambouillet Sheep, Cheshire Swine
Regular Public Sale of all Surplus Young Stock, except Swine, on FRIDAY OF FARMERS' WEEK EACH YEAR

In writing to advertisers please mention THE CORNELL COUNTRYMAN
The Shops of Shops

Come right in to headquarters where you can find everything for man's wear at lowest prices.

Leave your measure for ONE HALF DOZEN SHIRTS for ONE DOZEN DOLLARS.

We have a whale of a stock of Furnishing Goods, Hats and Caps.

TOWN SHOP, L. C. BEMENT
142 E. State St.

HILL SHOP, The Toggery Shops
413 College Ave.

THE FIRST NATIONAL BANK
Cornell Library Building
Capital, Surplus and Profits, $350,000.00
Oldest National Bank Safe Deposit Boxes for Rent

ITHACA SAVINGS BANK
INCORPORATED 1868
Tioga Street, cor. Seneca ITHACA, N. Y.

When wanting
QUALITY, SERVICE AND CLEANLINESS

go to

WANZER & HOWELL, The Grocers

PICTURES PICTURE FRAMES

STUDENTS’ FURNITURE

Manufacturers of Special Furniture for
FRATERNITIES AND CLUB ROOMS

H. J. BOOL CO.
(Opposite Tompkins County Bank)

The Jersey

The sire is of vital importance. Buy a thoroughbred Jersey bull and grade up. Work towards the 400-pounds-of-butter cow. It costs no more to produce 400 lbs. of butter with a good cow than 200 lbs. with a poor one. Let us send you some Jersey facts.

American Jersey Cattle Club
324 W. 23rd St. NEW YORK

Subscribe now for
The Cornell Countryman

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Do you get best values for money you spend for shoes?
Do you make comparisons?
If not, why not?

Judicious spenders should:

It will prove to their perfect satisfaction that our values are the best.

$3.50 to $5.00

ITHACA BOOT SHOP, Inc.
204 E. State Street

New York Life
Insurance Company

C. H. WEBSTER, Agent

OFFICE: Student Supply Store
RESIDENCE: 121 Catherine St.

BOTH PHONES
Conlon
PHOTOGRAPHER
High-Grade Work Only

CARR & STODDARD
MERCHANT TAILORS
UP-TO-DATE STYLES AND WORK
SENeca AND AURORA, NEXT LENT'S MUSIC STORE

BAXTER'S
Clothing and Furnishings

have pleased hundreds of CORNELL students during the last Five Years. Why? Because we sell only first class merchandise and guarantee every dollar's worth of it; we fit our clothing to please; our service is unexcelled, and last but not least, we sell at One Price to All.

Please considers this "Shop," "Your Shop." You get your money's worth here.

E. B. BAXTER,
ONE PRICE TO ALL
"The Quality Shop"
Satisfaction guaranteed

150 E. State St., Ithaca, N.Y.

Business Men Can Make Money with an Orchard

Business and professional men make successful fruit growers. They select a good location, prepare the soil properly, then they

Plant Fraser's Fruit Trees

Fraser's trees are clean, strong, healthy, scientifically grown. Get ready now for fall planting. Send for Fraser's Tree Book, which describes the right trees for a profitable orchard:

SAMUEL FRASER, Nurseryman
94 Main Street GENESEO, N.Y.

D. S. O'BRIEN
MARKETS
222 North Aurora Street 430 North Cayuga Street
DEALER IN
FRESH, SALT AND SMOKED MEATS
Poultry and Game in Season
D. S. O'BRIEN

In writing to advertisers please mention THE CORNELL COUNTRYMAN
WISE
THE PRINTER

Is at your service for all classes of Fine
PRINTING
ENGRAVING
ETC.

Buffalo Street,
Next to Post
Office,
ITHACA, N.Y.

Ithaca Phone 76x

The Palace
Laundry ...
323 and 325 Eddy Street

F. C. BARNARD, Prop.

Ithaca Hotel
ITHACA, N.Y.

Ithaca’s Leading and Only European Hotel

One hundred rooms; 50 rooms with
private bath. All rooms have running
water, electric lights, local and long
distance telephones.

No expense has been spared in fur-
nishing this hotel to make it modern
and up-to-date and comfortable for its
patrons.

The Dutch Kitchen has become
famous for its excellent cuisine and
service at reasonable prices.

The Hotel Orchestra will render
a musical programme every evening.

J. A. and J. H. CAUSER, - Proprietors

STUDENT SUPPLY STORE

The Modern Method Laundry
JOHN REAMER, Prop.

A. B. KENNEDY    Dealer in Watches and Jewelry,
Weddings. Cornell Pins, Fobs, Souvenir Goods, etc.

EAST STATE St., ITHACA, N.Y.    Opp. New Ithaca Hotel

We keep a fine line of dia-
monds and jewelry and do all
kinds of repairing neatly at ::

Heggies’ Jewelry
Store ===

136 E. State St.
Flashlight Photography...
H. C. CABLE
Ithaca Phone 180-X
405 COLLEGE AVE.

TYPEWRITERS
New and Rebuilt
Any Make
Sold, Rented and Repaired

H. L. O’DANIEL,
Both Phones. 204 N. Tioga St.

WE DO YOUR MENDING FREE
FOREST CITY LAUNDRY
E. M. MERRILL

PHONE
209 NORTH AURORA STREET

CUT FLOWERS, DECORATIVE
PLANTS, ETC.
THE BOOL
FLORAL CO.
215 East State St., Ithaca, N. Y.

PETER SCUSA
MODERN SHOE REPAIRING
Neatly and Promptly Done
Shoes called for and delivered in any part
of the City
Ithaca Phone 428-C 405 Eddy St., ITHACA, N. Y

PHOTOGRAPHER and Kodak Dealer
Specialists in Both Departments
For fifteen years we have photographed Cornell
Students at the same stand
KODAKS for Sale
Rent or Exchange
Both Phones
Over 115 & 117 E. State St.

PIANOS, MANDOLINS, GUITARS, BANJOS and VIOLINS
Rented or sold on Easy Payments. "Songs of Cornell." All the latest
music; Strings and supplies for all instruments at lowest prices.
LENT’S MUSIC STORE
122 N. Aurora Street
Victor Talking Machines, Records, Etc.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
FORMER STUDENT NOTES
(Continued from advertising page 20)
cultural College and has been working here on the study of the germs of farm Chalcidae.

'14, B.S.—L. G. Howell, who will return to get his degree in June, left Ithaca the first week in May to begin his work with the Springfield Vocational School, Springfield, Mass. This is a new school that is being formed in Springfield and the work of organizing and getting the work started will fall on Howell. The purpose of this school is not to make farmers out of the children of Springfield but to teach them to so farm their back yards that they can make a large part of their living in summer from that source. So this summer, Howell will get the “kids” started and see that they learn how to plant and care for their individual garden spots. In the fall and spring there will be class room work based on the practical work done in the summer and also any other work for which there is time. In December, Howell will have his vacation and he will also be given January and February in which to study. This work which he is undertaking is not planned to take all the children’s time but is designed to bring them into closer contact and harmony with Nature and to give them the practical benefit of showing them how to decrease their cost of living. There are very few back yards where some sort of a garden could not be profitably put and the work to care for it would be recreation and pleasure while the results in dollars and cents would be far from negligible.

'14, B.S.—M. C. Wilson has been appointed Assistant to County Farm Bureau Agent Babcock of Tompkins County. Mr. Wilson has his office here in the College.

'14, B.S.—J. R. Teal has been appointed County Farm Bureau Agent of Cayuga County, having been chosen from five or six candidates by the board of Directors. He began his work on April first and has held a series of fifteen meetings in the county during April, acquainting the people of the work of the Bureau. On April 24 a Farm Bureau Association was organized, and the officers elected. This association is composed of 150 members. Mr. Teal has done very satisfactory work and is making good. His headquarters are at Auburn.

CAMPUS NOTES
(Continued from page 326)

The honorary society Helios of the College of Agriculture has elected the following men from the junior class: Lowell LaGrange Andrus, Homer John Brooks, Thomas Burr Charles, Robert Davis Edwards, Edwin Sleight Ham, John DuBois Holmes, Dean Ward Kelsey, Albert Bloxon Mehafley, Everett Andrew Piester, Donald Ballard Rice, Victor Heinrich Ries, Alan Newton Rogers, Ray Grant Sierk, Elton Ray Wagner, Edmund Curry Weatherby, John George Wilson.

Wrestling Team
E. J. Gallogly, ’15, of Albany was elected during last month captain of the University wrestling team for the coming year. Gallogly is a junior in the College of Agriculture. He is holder of the Intercollegiate championship in the 158-pound class and during the past season he has lost only one bout out of a total of nine bouts.

Hebs-Sa
Columbia
Grafonolas

HEARING IS BELIEVING

That is the final supreme test of the Columbia Grafonola—as of any other musical instrument. We do not want you to be content with reading this advertisement—or even with looking at the instrument. Hear it.

The Columbia Jewel Grafonola, $35.00. Easy terms

DAVIS-BROWN ELECTRIC CO.
115-117 So. Cayuga St., Ithaca, N. Y.

WOODLAWN NURSERIES

ALLEN L. WOOD, Prop.
903 Garson Ave.
ROCHESTER, N. Y.

THE TOMPKINS COUNTY NATIONAL BANK

135-137 E. State St.
Capital $100,000

Safe Deposit Boxes for Rent

BOOK BINDERY
START RIGHT—Have your Countryman bound
We bind anything

J. WILL TREE'S
113 N. Tioga St.

In writing to advertisers please mention THE CORNELL COUNTRYMAN
If you get it from us it's right

BUTTRICK & FRAWLEY
One Price Clothiers and Furnishers

This fall season finds us more fully equipped to satisfy your wants than ever before. Special attention has been paid to get best material at minimum price. Suits and Overcoats, $10.00 to $30.00; Raincoats, $5.00 to $30.00; Mackinaws, $6.00 to $12.00. We make Suits to measure and save you from $5.00 to $10.00.

VISIT OUR SHOE DEPARTMENT

Hats, Gloves, Shirts, Sweaters, Underwear, and all other articles you'd find in a first class shop. Full Dress and Tuxedo Suits for sale and to rent.

"If not we make it right" 134 East State Street

PROFESSORS, STUDENTS, INSTRUCTORS, you will get MORE INSURANCE FOR LESS MONEY

IF YOU HAVE A POLICY WITH

The Travelers Life Insurance Company

OF HARTFORD, CONN.

J. J. SINSABAUGH, Agent,

149 East State Street ITHACA, N. Y.

INSURANCE OF ALL KINDS

Williams Brothers

ITHACA, NEW YORK

WELL DRILLING
MACHINERY AND TOOLS

The Clinton House

Corner Cayuga and Seneca Sts.

TABLE D'HOTE SERVICE

Cuisine and Service Unexcelled

Luncheon, 12 to 2 - - - $0.75
Dinner, 6 to 8 - - - .75
Sunday Dinner, 1 to 2:30 - .75

SPECIAL HOLIDAY DINNERS

"Ithaca's Popular Hotel"

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Make Every Inch of Soil Produce the Maximum at Lowest Cost

In order to make your soil produce its maximum yield, you should supply a fertilizer "made to order" to meet your individual soil and crop conditions.

**Consumers for General Farm Use**

comprise special distinct compositions of plant food elements for forage crops, root crops and cereals to meet just your individual soil and crop requirements. They supply just the constituents your particular soil may need for some special crop. You pay for no unnecessary plant food elements.

**Early Crop Odorless Fertilizer**

is prepared especially for the market garden trade for vegetables, small fruits, greenhouse and garden crops. It supplies the four plant food elements needed for these crops in soluble form, mixed in such proportions as to meet your particular soil and crop requirements. Although soluble, it is so prepared in granular form as to prevent leaching and wasting. It produces quick growth and early maturity, which means bigger profits.

**Holden's Special Fertilizers**

*For Florists and Gardeners for Greenhouse Work*

These fertilizers are prepared by men who have made a life study of greenhouse fertilization in such a manner as to furnish just the plant food elements which your compost lacks. For this reason you save the cost of such plant food elements as your particular soil or crop may not require.

**Mak-Gro-Odorless Plant Food**

A clean, high grade, granular fertilizer for potted house plants, window boxes, flower beds, small fruits, lawns and general home garden use—*made for the amateur*. A splendid side line for florists operating their own stores.

**Agricultural Chemical and Fertilizer Materials**

We are prepared to furnish all high grade agricultural chemicals and fertilizer materials in any quantity. *We make a specialty of Genuine Thomas Phosphate Powder (Basic Slag.)*

**WE SELL ONLY DIRECT TO THE CONSUMER**

Write today for our Fertilizer Booklet

**Consumers Fertilizer Co.**

306 Longacre Bldg. New York City

In writing to advertisers please mention THE CORNELL COUNTRYMAN
Gentlemen:—I am sending you under separate cover, two views of my silo, which was purchased of you this year. It is attracting a good deal of attention, and I am quite proud of it.

Very respectfully,

B. U. OSBORNE.

THE SILO FOR "CORNELL" MEN

Natco Imperishable Silo
(Patented)

Here's the new type of silo—the silo that has raised the standard of quality of ensilage for feeding. The silo whose walls are moistureproof and air-tight and consequently keep ensilage from becoming sour, moldy or rotten.

THE NATCO IMPERISHABLE SILO is built of hollow vitrified-clay tile, reinforced by two continuous steel bands between each layer of blocks. There are no staves to warp, shrink or split. No hoops to tighten. No continual repair bills. Never needs painting. The Natco Imperishable Silo is

Weatherproof
Decayproof
Fireproof

It will last a lifetime and the first cost is practically the last cost. It can be erected by any mason as easily as a carpenter builds the old type of silo. When completed you have a very attractive as well as an efficient and durable silo added to your permanent farm building assets.

WRITE FOR FREE SILO BOOK We have an attractively illustrated book which we will be glad to send free to Cornell men or to any farmer interested in keeping ensilage fresh, sweet and succulent. Write for a copy now and names of owners of Natco Imperishable Silos in your locality.

NATIONAL FIRE PROOFING COMPANY
SYRACUSE NEW YORK
Come to Berlin

During the past few months we have been telling you of some interesting facts about Harrisons’ Nurseries and “The Eastern Shore”. We have told how we bud our young trees from bearing orchards; how we have test orchards and commercial orchards containing thousands of trees; and how we sell only trees that we ourselves grow, in order that you will get trees that meet our high standards.

But you can’t get from a printed page the vivid knowledge that personal sight will give you. And because we know that our nurseries and our section contain features that you ought to know about, we want you to come to Berlin for a visit. Your vacation time is just ahead—use some of it here. If you want to play, the ocean is only seven miles from here, and there are many trains a day to Ocean City, on the beach. We will pay your hotel bill while in town.

RIPE FRUIT IN OUR ORCHARDS IN JUNE

Our peach trees will begin to ripen soon. In our test orchard we get ripe fruit all the time from the middle of June until frost comes in the fall. Strawberries, of course, are ripe, and some apples come in soon.

If you don’t have our big general Catalog send a postal for it now. If you do not have our guide book “How to Grow and Market Fruit” in your library, you are missing something valuable; send 50 cents today for it, the amount will be returned on first $5 order. Our Shade Tree and Evergreen Planting Book is free.

Write today, tell us when to expect you.
We will meet you at our station.

Harrisons’ Nurseries CORNELL STREET Berlin, Md.
SEEING
the Difference
BETWEEN THE
DE LAVAL
AND OTHER
Cream Separators

IT DOESN'T TAKE AN EXPERT knowledge of mechanics or a long working test to tell the difference between the De Laval and other cream separators.

ON THE CONTRARY, WITH A 1914 De Laval machine placed beside any other separator the difference is apparent at first sight to the man who never saw a separator before.

IF HE WILL THEN TAKE FIVE minutes to compare the separating bowl construction; the size, material and finish of the working parts, particularly those subject to wear and requiring to be occasionally taken apart and put together; the manner of oiling, and everything which enters into the design and construction of a separator as a simple durable machine, he will still further see the difference.

IF HE WILL GO A STEP FARTHER and turn the cranks of the two machines side by side for half an hour, particularly running milk or water through the bowl, he will see still more difference.

AND IF HE WILL TAKE THE TWO machines home, as every De Laval agent will be glad to have him do, and run them side by side in practical use, the De Laval one day and the other machine the next, for a couple of weeks, he will see still greater difference in everything that enters into cream separator practicability and usefulness.

THE MAN WHO TAKES EVEN the first step indicated in seeing for himself the difference between the De Laval and other cream separators doesn't put his money into any other machine one time in a thousand.

THE COMPARATIVELY FEW buyers of other separators are those who merely read printed matter claims or listen to the argument of some dealer working for a commission, and who do not think it worth while to see the difference for themselves.

THE WISE BUYER OF A CREAM separator today does see this difference when buying his first separator, while the unwise or careless one usually finds it worth while to do so when he comes to buy a second cream separator a year or two later.

EVERY DE LAVAL AGENT CONSIDERS it a privilege to show the difference between the De Laval and other separators, and to afford every prospective buyer the opportunity to try out and prove the difference to his own satisfaction, if on first examination he feels the slightest doubt about it.

THAT'S THE REASON WHY FOUR buyers out of five are buying De Laval Cream Separators in 1914, and why the use of De Laval machines will, before long, be nearly as universal on the farm as already is the creamery and milk plant use of power or factory separators.

The De Laval Separator Company
165 BROADWAY, NEW YORK  29 E. MADISON ST., CHICAGO
50,000 Branches and Local Agencies the World Over

PRESS OF W. F. HUMPHREY, GENEVA, N. Y.