The Cornell Countryman

VOLUME VI
# INDEX TO SUBJECTS
## VOLUME VI.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABRAHAM—</td>
<td></td>
</tr>
<tr>
<td>Lincoln (Editorial)</td>
<td>160</td>
</tr>
<tr>
<td>ADVANTAGES—</td>
<td></td>
</tr>
<tr>
<td>The, Afforded by Country Life for the Development of Useful Men</td>
<td>80</td>
</tr>
<tr>
<td>AGAIN—</td>
<td></td>
</tr>
<tr>
<td>The Fruit Show (Editorial)</td>
<td>125</td>
</tr>
<tr>
<td>AGENCIES—</td>
<td></td>
</tr>
<tr>
<td>Of Civilization (Editorial)</td>
<td>195</td>
</tr>
<tr>
<td>AGRICULTURAL—</td>
<td></td>
</tr>
<tr>
<td>General, News</td>
<td>24, 53, 85, 126, 162, 106, 231, 274, 305</td>
</tr>
<tr>
<td>Legislation</td>
<td>295</td>
</tr>
<tr>
<td>The Second, Stage</td>
<td>225</td>
</tr>
<tr>
<td>AGRICULTURE—</td>
<td></td>
</tr>
<tr>
<td>EnRoute</td>
<td>125</td>
</tr>
<tr>
<td>Italian Colleges of</td>
<td>John Craig 37</td>
</tr>
<tr>
<td>Some Notes on Egyptian</td>
<td>A. B. Comstock 3</td>
</tr>
<tr>
<td>ALASKA—</td>
<td></td>
</tr>
<tr>
<td>Southern</td>
<td>287</td>
</tr>
<tr>
<td>ALUMNI—</td>
<td></td>
</tr>
<tr>
<td>A Valuable Example for (Editorial)</td>
<td>84</td>
</tr>
<tr>
<td>ANNUAL—</td>
<td></td>
</tr>
<tr>
<td>The, Chrysanthemum Exhibit</td>
<td>87</td>
</tr>
<tr>
<td>The Third, School Picnic</td>
<td>9</td>
</tr>
<tr>
<td>ANSWERS—</td>
<td></td>
</tr>
<tr>
<td>Questions and (Editorial)</td>
<td>230</td>
</tr>
<tr>
<td>APPLE—</td>
<td></td>
</tr>
<tr>
<td>The National, Show</td>
<td>John Craig 154</td>
</tr>
<tr>
<td>APPROPRIATIONS—</td>
<td></td>
</tr>
<tr>
<td>The, and the Seniors (Editorial)</td>
<td>302</td>
</tr>
<tr>
<td>ASSEMBLIES—</td>
<td></td>
</tr>
<tr>
<td>Refreshments at the, (Editorial)</td>
<td>196</td>
</tr>
<tr>
<td>ATHLETICS—</td>
<td></td>
</tr>
<tr>
<td>Inter-College</td>
<td>C. V. P. Young 268</td>
</tr>
<tr>
<td>In the College of Agriculture</td>
<td>John F. Moakley 48</td>
</tr>
<tr>
<td>ATTRIBUTES—</td>
<td></td>
</tr>
<tr>
<td>Of Spring (Editorial)</td>
<td>229</td>
</tr>
<tr>
<td>BAILEY—</td>
<td></td>
</tr>
<tr>
<td>Dean, and Mrs., Honored.</td>
<td>41</td>
</tr>
<tr>
<td>BANQUET—</td>
<td></td>
</tr>
<tr>
<td>The Ninth Annual Agricultural</td>
<td>177</td>
</tr>
<tr>
<td>BARNES—</td>
<td></td>
</tr>
<tr>
<td>The New College</td>
<td>W. G. Stephenson 296</td>
</tr>
<tr>
<td>BILL—</td>
<td></td>
</tr>
<tr>
<td>The Davis</td>
<td>R. J. Shepard 248</td>
</tr>
<tr>
<td>BIRDS—</td>
<td></td>
</tr>
<tr>
<td>Behold the</td>
<td>Rufus Stanley 212</td>
</tr>
<tr>
<td>Our Winter, and the Codling Moth</td>
<td>R. D. Anthony 293</td>
</tr>
<tr>
<td>BOOK—</td>
<td></td>
</tr>
<tr>
<td>Reviews</td>
<td>31, 60, 237</td>
</tr>
<tr>
<td>BORDEN—</td>
<td></td>
</tr>
<tr>
<td>A Visit to a, Condensery</td>
<td>J. H. Stewart 266</td>
</tr>
<tr>
<td>BRACE—</td>
<td></td>
</tr>
<tr>
<td>Up (Editorial)</td>
<td>194</td>
</tr>
</tbody>
</table>
CROSS-COUNTRY—
Inter-College ...................................... N. R. Peet 49
Running as a Sport .................................. H. C. Young 49

DETERMINATION—
The Issue (Editorial) ............................. 270

DRAIN—
The Tile, (Poem) .................................... L. H. Bailey 147

DUTCH—
Cattle in Their Native Land .................... F. R. Sanders 40

EASTERN—
The End ........................................... B. H. Crocheron 189

EGYPTIAN—
A Night Visit to an, Stable ....................... A. B. Comstock 174
Some Notes on, Agriculture .................... A. B. Comstock 3

ELEMENTS—
Some, in Good Housebuilding .................... C. A. Martin 100

ELM—
The Wethersfield ................................ S. F. Willard 14

EMPLOYMENT—
An, Information Bureau ........................... 275

END—
The Eastern ....................................... B. H. Crocheron 189

EN ROUTE—
Agriculture, (Editorial) ......................... 125

ESTATE—
Management ....................................... L. H. Moulton 76

EXAMPLE—
A Valuable, for Alumni (Editorial) .............. 84

EXHIBIT—
The Annual Chrysanthemum ...................... 87
The 1908 Fruit, (Editorial) ....................... 82

EXPECTATIONS (Editorial) ......................... 82

FAIR—
Will I Go to the .................................. Lalia Mitchell 19

FAIREST—
Little City ....................................... C. G. Brown 219

FAMILY—
Food for the, (Editorial) ......................... Flora Rose—Part 1 161
Food for the Farm ................................ Flora Rose—Part 2 169
<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAR — Maintaining, Fertility</td>
<td>Asa H. Smith</td>
<td>12</td>
</tr>
<tr>
<td>The Furniture of the</td>
<td>J. Demary</td>
<td>50</td>
</tr>
<tr>
<td>The, Special</td>
<td></td>
<td>116</td>
</tr>
<tr>
<td>FARMER— A Successful</td>
<td>F. N. Darling</td>
<td>158</td>
</tr>
<tr>
<td>FARMERS' WEEK</td>
<td>R. J. Shepard</td>
<td>155</td>
</tr>
<tr>
<td></td>
<td>N. R. Peet</td>
<td>220</td>
</tr>
<tr>
<td>FERTILITY— Maintaining Farm</td>
<td>Asa H. Smith</td>
<td>12</td>
</tr>
<tr>
<td>FERTILIZER— A Novel, Industry</td>
<td>L. B. Judson</td>
<td>73</td>
</tr>
<tr>
<td>FOOD— For the Family (Editorial)</td>
<td></td>
<td>161</td>
</tr>
<tr>
<td></td>
<td>For the Farm Family</td>
<td>137</td>
</tr>
<tr>
<td></td>
<td></td>
<td>169</td>
</tr>
<tr>
<td>FORECASTING— The Weather</td>
<td>G. W. Mindling — Part 1</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>FORMER— Students</td>
<td></td>
<td>30, 59, 92, 132, 165, 200, 235, 278</td>
</tr>
<tr>
<td>FRUIT— Again the, Show (Editorial)</td>
<td></td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>The Second Annual, Show</td>
<td>107</td>
</tr>
<tr>
<td>FURNITURE— The, of the Farm</td>
<td>J. Demary</td>
<td>50</td>
</tr>
<tr>
<td>GENERALIZATION— And Specialization (Editorial)</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>GRADUATE— The, School of Agriculture</td>
<td>L. H. Bailey</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>The, School of Home Economics</td>
<td>Caroline L. Hunt</td>
</tr>
<tr>
<td></td>
<td>To, Students (Editorial)</td>
<td>24</td>
</tr>
<tr>
<td>GREAT— Some Are Born, (Editorial)</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>GREETING— (Editorial)</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>GROWER— A Type of Mexican Fruit</td>
<td>J. E. Coit</td>
<td>268</td>
</tr>
<tr>
<td>HAPPINESS— Health, Wealth and, (Editorial)</td>
<td></td>
<td>83</td>
</tr>
<tr>
<td>HEALTH— Wealth and Happiness (Editorial)</td>
<td></td>
<td>83</td>
</tr>
<tr>
<td>HEAVIER— A Plea for, Horses</td>
<td>M. W. Harper</td>
<td>181</td>
</tr>
<tr>
<td>HOME— Building (Editorial),</td>
<td></td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>Economics at the N. Y. State</td>
<td>Martha Van Rensselaer</td>
</tr>
<tr>
<td></td>
<td>College of Agriculture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The Graduate School of,</td>
<td>Caroline L. Hunt</td>
</tr>
<tr>
<td></td>
<td>Economics</td>
<td></td>
</tr>
<tr>
<td>HORSE— A Remedy for Inefficient, Breeding</td>
<td>M. W. Harper</td>
<td>251</td>
</tr>
<tr>
<td>HORSES— A Plea for Heavier</td>
<td>M. W. Harper</td>
<td>181</td>
</tr>
<tr>
<td>HOUSEBUILDING— Some Elements in Good</td>
<td>C. A. Martin</td>
<td>100</td>
</tr>
<tr>
<td>HOW— I Got My A.B.</td>
<td>T. R. Temple</td>
<td>122</td>
</tr>
<tr>
<td>I— Only Knew It Came and Went (Editorial)</td>
<td></td>
<td>124</td>
</tr>
<tr>
<td>IDENTITY— Mistaken, (Editorial)</td>
<td></td>
<td>196</td>
</tr>
<tr>
<td>IDLENESS— Unproductive, (Editorial)</td>
<td></td>
<td>160</td>
</tr>
</tbody>
</table>
NATIVE—
Dutch Cattle in Their Land .................................. F. R. Sanders 40

NATURE—
Study in Cities .................................................. J. W. Spencer 152

NEW—
A. Departure (Editorial) ...................................... 125
The College Barns ............................................... W. G. Stephenson 296
The Old and the (Editorial) .................................. 303

NEWS—
Campus .......................................................... 25, 55, 88, 128, 164, 198, 233, 275, 307
Former Students .................................................. 32, 59, 92, 132, 165, 200, 253, 278
General Agricultural ........................................... 24, 53, 85, 126, 162, 196, 231, 274, 305

NOTES—
Campus .......................................................... 25, 55, 88, 128, 164, 198, 233, 275, 307
Some, on Egyptian Agriculture .......................... A. B. Comstock 3
On the International Live Stock Exposition and the National Dairy Show ............................ F. E. Robertson 119

NEWCOMERS—
To the, (Editorial) ............................................. 82

NEW YEAR—
A Joyous Christmas and a Thoughtful ..................... I. P. Roberts 97

NOVEL—
A. Fertilizer Industry .......................................... J. B. Judson 73

OLD—
The, and the New (Editorial) .............................. 393

ORCHARDS—
Irrigation in Peach ............................................ W. F. Crowley 150

ORGANIZATION—
(Editorial) ........................................................ 228

OUR—
Professor Roberts (Editorial) ............................. 124

PEACH—
Irrigation in, Orchards ...................................... W. F. Crowley 150

PICNIC—
The Third Annual School ..................................... 9
The Tompkins County School of 1908 .................... 253
The School, (Editorial) ........................................ 270

PLANS—
Department, for the Summer and the Fall ................ R. D. Anthony 300
For the Department of Plant Pathology .................. 226
For the Division of Pomology ............................... 193

PLANT PATHOLOGY—
Plans for the Department of .................................. 226
PLEA—
A, for Heavier Horses ......................................... M. W. Harper 181
A, for Seed Legislation ......................................... K. C. Livermore 191

POINTS—
Some, of View (Editorial) .................................... 271

POMOLOGY—
Plans for the Division of ....................................... 193

POULTRY—
At Cornell ....................................................... R. E. Briggs 256
Providing Attractions for the Show ....................... 256

POWDER—
Milk ..................................................................... G. W. Cavanaugh 241

PRACTICAL—
Plant Breeding ..................................................... 241

PRESIDENTIAL—
An Important, Message (Editorial) ......................... 243

PROGRESS—
(Editorial) .......................................................... 94

PROVIDING—
Attractions for the Poultry Show .......................... R. E. Briggs 256

QUESTIONS—
And Answers (Editorial) ...................................... 230
INDEX TO AUTHORS
VOLUME VI.

ANTHONY, R. D.—  
A Canadian Lake .................................................. 139  
Department Plans for the Summer and the Fall .................. 300  
Our Winter Birds and the Codling Moth .......................... 293

BAER, U. S.—  
Cheddar Cheese Making ........................................... 16

BAILEY, L. H.—  
Memorial Address—M. V. Slingerland ............................ 215  
Some Remarks to the Seniors and Others ......................... 292  
The Graduate School of Agriculture ............................. 7  
The Tile Drain ..................................................... 147

BRIGGS, R. E.—  
Providing Attractions for the Poultry Show ..................... 256

BROWN, C. G.—  
Fairest Little City ............................................... 219

CAVANAUGH, J. W.—  
Memorial Address—M. V. Slingerland ............................ 216  
Milk Powder ......................................................... 241

COIT, J. E.—  
A Type of Mexican Fruit Grower .................................. 208

COMSTOCK, A. B.—  
A Night Visit to an Egyptian Stable ............................ 174  
Some Notes on Egyptian Agriculture ............................ 3

COMSTOCK, J. H.—  
Memorial Address—M. V. Slingerland ............................ 213

CRAIG, JOHN—  
Italian Colleges of Agriculture ................................... 37  
The National Apple Show .......................................... 154

CROCHERON, B. H.—  
On Snowshoes in the North Woods ............................... 263  
The Eastern End .................................................... 189

CROWLEY, W. F.—  
Irrigation in Peach Orchards ..................................... 150

DARLING, F. N.—  
A Successful Farmer ............................................... 158  
The Advantages Afforded by Country Life for the Development of Useful Men ......... 80

DEMARY, J.—  
The Furniture of the Farm ......................................... 50

GALLAGHER, J. S.—  
The Woodlands ...................................................... 184

HARPER, M. W.—  
A Plea for Heavier Horses ........................................ 181  
A Remedy for Inefficient Horse Breeding ........................ 251

HARRIMAN, H. H.—  
Reminiscences of a "Shorthorn" ................................... 78

HUNT, CAROLINE L.—  
The Graduate School of Economics .............................. 46

JUDSON, L. B.—  
A Novel Fertilizer Industry ...................................... 73

KATKAMIER, A. B.—  
Delicious Strawberries ............................................ 211

KEMP, N. D.—  
The Commission on Country Life ................................ 142
KRUSE, A. M.—
Southern Alaska ........................................... 287
The Second Agricultural Stage ............................ 225

LIVERMORE, K. C.—
A Plea for Seed Legislation ............................... 101

MARTIN, C. A.—
Some Elements in Good Housebuilding .................. 100

MITCHELL, LALIA—
Will I Go to the Fair? .................................... 19

MOAKLEY, JOHN F.—
Athletics in the College of Agriculture ................ 48

MINDLING, G. W.—
Forecasting the Weather .................................. 68, 111

MOORE, H. J.—
Practical Plant Breeding ................................ 243

MOORE, V. A.—
Foot and Mouth Disease .................................. 102

MOULTEN, L. H.
Estate Management ......................................... 75

OGDEN, H. N.—
Sewage Disposal for Country Residences ............... 65

PEET, N. R.—
Farmers' Week .............................................. 220
Inter-College Cross Country ............................... 49

PUBLOW, C. A.—
Dairying in Canada .......................................... 218

RILEY, H. W.—
Lightning and Lightning Conductors .................... 283

ROBERTS, I. P.—
A Joyous Christmas and A Thoughtful New Year ...... 97

ROBERTSON, F. E.—
Notes on the International Live Stock Exposition and the National Dairy Show .............................. 119

ROSE, FLORA—
Food for the Farm Family .................................. 137, 169

ROYCE, C. H.—
The Cornell Way ............................................ 186

SANDERS, F. R.—
Dutch Cattle in Their Native Land ...................... 40

SHEPARD, R. J.—
Farmers' Week .............................................. 155
The Davis Bill .................................................. 248

SMITH, ASA H.—
Maintaining Farm Fertility ................................ 12

SPENCER, J. W.—
Nature-Study in Cities ..................................... 152

STANLEY, RUFUS—
Behold the Birds! ........................................... 272

STEPHENSON, W. G.—
The New College Barns ..................................... 296

STEWART, J. H.—
A Visit to a Borden Condensery ......................... 266

STONE, J. L.—
Ryeland Sheep ............................................... 71
Student Leaders ............................................... 290

TEMPLE, T. R.—
How I Got My A.B. .......................................... 132
Why I Came to Cornell .................................. 79

VAN RENSSELAER, MARTHA—
Home Economics at the N. Y. State College of Agriculture ............................................ 44

VAN WAGENEN, G. B.—
Why I Came to Cornell ................................... 123

WARD, E. A.—
La Vina Grande ............................................ 145
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## Table of Contents

Cover Design—October
Frontispiece—Dairy Association, Photo by Sheldon
Some Notes on Egyptian Agriculture, A. B. Comstock 3
The Graduate School of Agriculture, L. H. Bailey 7
The Third Annual School Picnic, 9
Maintaining Farm Fertility, Asa H. Smith 12
The Wethersfield Elm, S. F. Willard, Jr. 14
Cheddar Cheese Making, U. S. Baer 16
Will I Go to the Fair? Lalia Mitchell 19
Poultry at Cornell, 20
The Survey Work of the College of Agriculture, 21
Editorials,
  Greeting, 22
  "Some are Born Great," 23
  Modesty, 23
  Progress, 24
  To Graduate Students, 24
General Agricultural News, 24
Campus Notes, 25
Former Students, 30
Book Reviews, 31

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**THE CORNELL COUNTRYMAN**

is a monthly magazine published by the students of The New York State College of Agriculture at Cornell University

Address, COLLEGE OF AGRICULTURE, ITHACA, N. Y.

**Subscription Price, $1.00 per Year**

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

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SOME NOTES ON EGYPTIAN AGRICULTURE

By Anna Botsford Comstock

THE most potent factor in the spell of enchantment which Egypt exerts over the traveler from the Occident is its preservation of ancient customs; and the ancient methods of its agriculture first make the American farmer smile, then study and then admire the wonderful results secured by such primitive methods. Cheap labor and backache power seem to wrest from the soil crops which our high-priced labor and modern machinery can scarcely attain. Our stay in Egypt was during the months of January and February, and although we were greatly interested in Egyptian agriculture, we unfortunately lacked the time and the knowledge of the native language necessary for a thorough understanding of all that we saw; therefore, our notes are necessarily brief and superficial.

When we crossed the Nile Delta in January the new grain was just turning green the dark soil, and here and there fields of clover gave a touch of vivid green to the otherwise colorless landscape. There were acres and acres of cotton already picked and the old stalks were being carefully gathered and made into bundles for fuel. There was also a fairly large acreage of maize, but much had been harvested, and the milk-white ears were drying in the sun, guarded by protecting hedges of the stalks made into sheaves, and the land on which it grew was being plowed for another crop. The plows used were certainly but a slight improvement on the one that Abel found himself obliged to invent as the first tiller of the soil; the team was sometimes an ox or a cow or a camel and a small horse hitched together—teams so queerly matched that the gait of one-half must have kept the other half "guessing," and clearly proved that the white turbaned, long gowned man holding the plow had no nerves to speak of else he must have gone mad long ago.

Although the Delta is the richest land of Egypt, except perhaps Fayoum which we did not see, yet the banks of the Nile for several hundred miles above the Delta were very fertile, since they too are submerged during the inundation. The crops we saw growing there were clover, wheat, millet and much sugar cane, while the date palms clustered about the villages and gave large yields. The strip of vivid green on each bank of the river made by the growing crops is sometimes a mile or more and sometimes only a few rods in width; and always on its farther edge lies the desert. The change from beautiful fertility to the yellow sands is so abrupt it seems as if one might reach from one to the other by a single step; and the deserts on either side the Nile have in them no signs of vegetation whatever; they make our American deserts seem like veritable gardens.

Of course, we looked at the Fellahin or farmers themselves with great interest; they seemed to us a sombre race; whether this sombreness is the result of despair or stoicism we could
not determine. The men are stalwart, dark, with strong features and look toil worn. They dress in long, loose-sleeved gowns of dark brown or blue, and, for the most part, wear light colored turbans. When walking they usually carry a staff. The women are enveloped, head and all, in dark brown, cloak-like garments and usually go unveiled (that which no respectable city woman would do); often they have their chins and forehead tattooed in greenish-blue ink. The children wear loose, shirt-like garments of ordinary calico with little knit skull caps or the fez as head covering. The people of all ages and sexes work hard, and one sees very little sign of recreation among them.

The Fellahin live in villages the houses of which are usually made of bricks of the almost black Nile mud. The streets are narrow and very dirty. All of the water used in the villages is carried from the river in jars on the heads of the women, or in goat skins on the backs of the old men. On the top of the houses may be seen large, earthen jars and neatly piled cakes of cow and camel dung drying for fuel. We asked what the jars were used for and were told as follows by various people: “They are bread jars;” “the bees live in them;” “they are water jars;” “the little children are put in them to keep them safe during their parents’ absence.” However, we dare not put much faith in any of this interesting information; the Arab dragoman cannot understand the inquiring American mind and his answers are given with the intent to soothe rather than to inform.

The villages in the inundated districts are usually reached and connected by roads made on the top of high embankments so as to be above the floods. We saw from our boat processions going out from these villages every morning toward the fields. Men, women and children, with camels, donkeys, buffalo and herds of sheep and goats, all marching fieldward outlined against the sun-rise.
sky on this truly high road, and we saw again these processions silhouetted against the horizon at sunset returning from long days of labor. They told us that the Fellahin eat only a light lunch in the middle of the day, which they carry with them, but in the evening they have a hot meal, the main part of which is a savory stew or gravy in which they dip their hard bread; the chief ingredient of this gravy is onions, as any one can attest who has been in the vicinity of one of the villages during the evening.

We were much interested in the methods of raising water from the river to the land for irrigating purposes. After the period of inundation all of this land needs irrigating in order to produce the maximum number of crops. Where the river is almost on a level with the land, as in the Delta, the ancient screw of Archimedes is still in use; it is a funny sight to behold this long pump log with one end in the water and one upon the land and two turbaned men squatting on the ground working the screw which lifts a full and steady stream of water into the ditches.

Where the banks of the Nile are high above the stream there are two chief methods of lifting the water. One the sakieh consists of a sweep worked by cattle which turns a horizontal wheel which is geared to a vertical wheel attached to a drum which carries an endless belt bearing the earthen water jars, or if it is not too great a distance the jars themselves are fastened to the rim of the vertical wheel. Each jar as it goes under the water automatically fills itself and as automatically empties itself into a reservoir as the wheel lifts and turns it over. A bullock, buffalo, cow or camel is used as power in the sakieh. When only one animal is used it is blindfolded, but when two are yoked together they seem to hold each other up in the dizzy round. There is always one or more boys or men on hand to keep the animals moving; but occasionally we saw an instance where both men and animals were fast asleep and we rejoiced in the sight. I am sure if Dante had visited...
Egypt he would have put this particular kind of work in his "Inferno," for I think that it is the nearest to infernal monotony of anything I have ever witnessed. However, there is a screen of cane or tamarisk trees to keep off the hottest sunshine and often a thatched roof above the animals: but even so it must be a dreary and wearisome performance.

The other method of lifting water up the higher banks is by means of the shadouf which works on the principle of the old fashioned well sweep. Two standards, usually made of cane, plastered into cement pillars with the Nile mud, support a cross piece on which works the long sweep, which is weighted at one end with a great ball of Nile mud and bears at the other a large rather shallow bucket of goat skin or of tin. A man pulls down the bucket to the water and the weight lifts it, and the man tips the bucket emptying it into a reservoir. Where the banks are quite high there is a succession of these sweeps one behind the other lifting the water from river to reservoir, then from reservoir to reservoir until the level of the land is reached. Early in the morning the men who work these shadoufs wear the ordinary clothing, but with the heat of the advancing day they shed this, retaining only the turban which seems to protect them from sunstroke. Of course, the American wonders why machinery for lifting water is not introduced on the Nile; but there are plenty of reasons why modern methods do not apply in Egypt. Some syndicate owning sugar plantations put in machinery for irrigating and took such quantities of water that there seemed a danger that the farmers below would be robbed. Therefore, a high water-tax is put upon all machine lifted water, but if it is lifted by men or animals it is free.

The stock of the Egyptian farmer consists of goats, usually black or brown, and sheep of different breeds, one kind being reddish-brown or black with wide, fat tails which taper to a curl at the end. The sheep and goats are herded by children or men. The donkey is the chief beast of burden and certainly its life is a burden; and we
cease to wonder at the agonizing bray which characterizes this animal after we have seen what it has had to endure in Egypt for the past thousands of years. Next to the donkey the camel is the chief carrier of produce. Sometimes its load is cabbage, sometimes a stack of clover or rope panier filled with smaller vegetables and often we saw him looking like a caddis worm in a lengthwise load of sugar cane that covered him like a tube. The cattle are large, yellowish in color, and look like the Jerseys except that they are larger. The cows are as likely to be draught beasts as are the bullocks. The buffalo are also used commonly for draught beasts and for milk; these animals like the water and we often saw them wading up to their backs in the river. But whether the beast of burden be the donkey, camel or cattle they are almost always poor, thin, overworked and underfed creatures.

We saw very little agricultural machinery of any kind; everything is done by hand. However, we were much interested one day in Assiut to see a man with oxen threshing millet or durah; his threshing machine was made like a disc harrow and was hauled around and around upon the grain by the oxen.

And yet, with all of the drawbacks of an arid country, a retarded civilization and lack of tools, the Egyptian farmers raise the most luxurious crops, and as we see their beautiful fertile fields, we do not wonder that in the ages past they worshipped the river Nile as a God from whence they drew fertility and life-giving beneficent waters.

THE GRADUATE SCHOOL OF AGRICULTURE

By Dean L. H. Bailey

The third session of the Graduate School of Agriculture exceeded its predecessors in the attendance and in the enthusiasm aroused, and probably also in the efficiency of the work. This School is conducted by the Association of American Agricultural Colleges and Experiment Stations through its Committee on Graduate Study. The Faculty is chosen from different institutions. It is to be expected that as this work develops from year to year greater effectiveness will be possible; it is, therefore, in the nature of the case that the school this year excelled those of preceding years.

The registration this year was practically double the registration of the school held by the Association two years ago at the University of Illinois. The number of registered students who paid their full fees this year was 122. In addition to this were 15 students registered in the Graduate School of Home Economics who were allowed to register in the Graduate School of Agriculture on the payment of half the fee. Inasmuch as the staff connected with the holding institution receives no pay for its services, the Committee on Graduate Study allows members of such staff to register without payment of fee. The holding institutions this year were the New York State College of Agriculture and the State Agricultural Experiment Station. Adding to the above numbers the persons who registered from the staff of these institutions, the total registration of students is 164. If to these are added the members of the Faculty of the Graduate School, coming from many parts of the country, the number becomes 242. Still in addition to this might well be counted the persons who attended the various group societies that were held during the month of the Graduate School, as the Society for Teachers in Dairy Industry, Society for Teachers of Agronomy, Poultry Society, and the like. Adding these, the total number of different persons who were associated in various capacities with
the Graduate School were about 350. This includes a very large number of those who are engaged in advanced agricultural teaching and experimenting in North America.

A departure in the staff of the Graduate School was made this year in securing some teachers outside the regular Land Grant Colleges; for example, Dr. L. B. Mendel of Yale gave a course of lectures on physiological chemistry; Dr. N. Zuntz of Berlin, also gave a course of lectures on biochemistry; Professor A. D. Hall of the Rothamsted Station, England, gave a course on soil investigations. The work of these persons attracted great attention and proved to be of great value in furthering the interest in the School.

From first to last the School had great momentum, showing that the subjects were vital and that the persons who are pursuing them in our agricultural institutions are energetic and alive. The month of July was crowded with events,—educational, social, and otherwise, and proved to be an exceedingly stimulating period. Every Wednesday evening and Friday evening were devoted to open meetings and discussions, with the subjects presented by some well known authority as a leader. The affiliated meetings were well attended and were characterized by great vitality.

The School left its impression on the New York State College of Agriculture, since the College was the meeting place of many of the very latest and most advanced ideas in regard to the scientific, economic, and social questions related to agriculture.

The New York Agricultural Experiment Station at Geneva was, with Cornell University, one of the holding institutions, it having joined in the invitation to the American Association of Agricultural Colleges and Experiment Stations to hold its Graduate School in New York in 1908. Some classes and excursions were taken to Geneva, and the staff of the State Experiment Station co-operated fully to make the Graduate School a marked success. Commissioner Pearson, representing the State Department of Agriculture, also co-operated and himself aided in giving some of the instruction.

The Graduate School of Agriculture is held every two years. It lies with the Committee on Graduate Study of the Association to determine where the School shall be held. The present Committee on Graduate Study will not determine the location of the next School inasmuch as the terms of two or three members of the Committee will expire at the meeting of the Association in Washington in November. It is understood that two or three institutions at least will extend invitations to the Association for the School of 1910.

*Note*: The term of Dean Bailey, now chairman of the Committee, will expire at that time.
THE THIRD ANNUAL SCHOOL PICNIC

The faculty teams

First to be recalled about Friday, May 29, 1908, is that the day dawnd bright and gloriously clear, as beautiful as could have been wished. All work in the College was suspended for the day—in fact that was the only possible arrangement, for the faculty to a man, had promised to “get into” the games and the Field Day that was to precede the picnic. And furthermore, they did. Eight o’clocks were, however, in order (on the playground) for there were many preparations to be made before the beginning of the events. It is a question which had been anticipated the most, the Field Day for the College, or the picnic for the school children. At any rate both had been the subject of much discussion, and the cause of many a committee meeting for weeks.

The morning was allotted to the College but the welcome visitors began to arrive early, and while here one party was registering, there another receiving coat checks, and others making tours of inspection, already rival ball teams began to warm up on the play ground; teams ranging from the diminutive warriors in grey and red, to the older fellows, nearing graduation days, who played clean, snappy baseball.

At nine o’clock teams from the faculty, captained by A. D. Taylor, and from the undergraduates, led by G. H. Miller, began the day with an exciting contest that lasted for an hour, and ended with the undergraduates in the lead. By this time the greater part of the college body had arrived and the athletic events were quickly run off according to schedule. Competition was keen, but the interest and enjoyment was even keener, so that already success began to settle down upon the day’s festivities. The most spectacular events were the relay race, twice around the play ground track, which was won by the class of 1909, and the various tugs-of-war. These were begun by an inter club struggle, in which the Round-up Club, and the Poultry Association having each won a heat, met in a strongly fought final, in which the Poultry Husbandmen, led by L. F. Boyle, were victorious. The inter-class tug-of-war brought out some more good exhibitions, and the freshmen proved their huskiness by defeating ’09 after ’07 and ’08 had been conquered in the preliminaries. The winners, however, had to meet the faculty team, and that weighty combination, captained by Professor Rice.
and Dean Bailey, won the final prize out of the hands of the freshmen.

By the time the supremacies had been decided it was one o'clock and students, faculty and visitors, who had arrived to the number of a thousand or so, repaired to the orchard for lunch. Here typical picnic groups assembled and gallons of lemonade prepared by the College stimulated the consumption of many sandwiches and other refreshments. The Cadet band had been secured for this time, and amusements in the form of exhibition wrestling bouts kept away any thoughts of flagging interest. Before the resumption of athletics, after lunch, prize ribbons were awarded to the winners in the morning's games, by Mrs. Bailey.

It must not be imagined that during the morning the visiting scholars of the County merely watched, for they were enjoying activities all their own. After inspecting the campus and buildings, they assembled in the auditorium to listen to "alfalfa talks" by Commissioner Updike and Professor Warren. Samples of seed and inoculated soil had been prepared, together with instructions as to their use in home experiments, and these were distributed to the children.

In the afternoon, however, the playground as well as the buildings as a whole, was theirs. They had baseball and medicine ball games, relay races, dashes, jumps, neck and wheel-barrow races, and every other form of athletic sport that could be thought of, and that will form we hope, a part of the rural school life of the future. The baseball attracted crowds at one end of the field while the field events gathered many spectators at the other. One special event that must not be forgotten, that had been delayed from its scheduled time in the morning, and that was perhaps, the most remarkable and spectacular of the day, was the Inter-faculty ball game. Teams had been chosen for the east and west portions of the buildings and the rivalry was intense. It is doubtful whether anyone remembers the score, after the
excitement dependent upon Dean Bailey’s home run, (on a passed ball) and the vigorous batting, with the best intentions, of Professor Wing. But the game and its remembrance will live in college history and, let it be hoped, not as the only, but the first of its kind.

By half past three, clouds had begun to appear in the north and in the expectation of a storm, the children were marshalled by W. E. Harries, ’08 and the parade around the field commenced. It brought a new and striking sensation to the writer, and he doubts if he were the only one, to see the long line of fully twelve hundred children, mothers and fathers, headed by the Cadet band, march down the field towards the imposing building at the end. The line of march was past the steps of the buildings where the ranks were halted and brief addresses were made by Dean Bailey, the two Commissioners and “Uncle John.” Then the band led the way around to the model schoolhouse, where, with the customary salute, a flag was raised on the newly erected flag pole.

Then the rain came: with a great scurrying the crowds sought shelter in the buildings, and entertained themselves in various ways. The size of the structure was strongly emphasized as the corridors, lecture rooms and auditorium took care of the huge congregation which shortly before seemed to fill the play ground. In the auditorium more extemporaneous talks were given and songs were sung while the storm continued. But it was over by five-thirty and as the trains had been held by the railroad companies, the visitors were enabled to leave comfortably and conveniently, and even refreshed and rested by the enforced sojourn in the buildings.

And when the children and their families and teachers had gone, and the College was again quiet, and seemingly deserted, everyone stopped for a moment, took a long deep breath, and began to realize things; first, probably, that he was finely sunburnt, and then that he was weary—more tired than he had thought—and, best of all, he began to realize more and more clearly and emphatically, what a great day it really had been.
HOW to maintain the fertility of our farms and grow profitable crops is a subject which should receive most earnest study. Any system of agriculture which maintains the fertility of our best soils and increases that of our poorer soils is the one to be adopted by the practical farmer. The soil contains all the plant food necessary to grow profitable crops for centuries to come, but it is locked up in nature's store-house in such a way as to be slowly available for use. This is a wise provision of nature; without it the soil would soon be rendered sterile through man's wasteful methods in his efforts to supply himself with food. Anything which will add to this store or render it more available will aid crop production. To build up a soil that has been depleted in its fertility is a slow and tedious process. We are told to give extra tillage, use barn manures, commercial fertilizers, grow cover crops and so on through the list. The advice is good; and the results generally justify the advice, but when the labor and expense involved are deducted from the proceeds our faith is put to a severe test.

The average American farmer is wasteful of his inheritance. Except in few instances no great effort is made to increase the fertility of the land. His sole aim is to extract as much from it as possible with the least amount of labor and expense. The welfare of future generations does not concern him. One cause of this exhaustion of soil fertility is the system of farm renting. The tenant has no interest in the farm save in what he can get from it. Immediate returns are what he is looking for and when these fail to come he moves on again.

In our own farming operations we grow a variety of crops because we believe it to be a safe course to follow. The soil is a gravelly loam with a tendency towards dryness. A rotation of clover followed by corn or potatoes, then oats or barley and wheat have been the main crops for the past fifty years. During this time no special effort has been made to increase the fertility except through what might be called good farming, i.e. work well done. We have done nothing new or unusual; have no great array of figures to give; have simply followed the good old way of thorough cultivation, addition of barn manures, commercial fertilizers, rotation of crops, etc.

We may discuss the subject under the heads of tillage, manures, fertilizers, and rotation of crops. The first essential to tillage is good plowing. Without this all after work is done at a disadvantage. The furrows should be even and of uniform depth, covering all trash that may be on the surface. In the case of sod plowing we follow with the roller which presses the sods down firmly and enables the harrows to do better work by reason of a smoother top surface; but few air-spaces are left and a closer connection with subsoil water is made possible. The land is then harrowed until a fine seed bed is made. The ground for cultivated crops is plowed early if possible to admit working the soil to kill weeds. It is easier to kill weeds with the harrow beforehand than after the plants are out of the ground. The extra tillage gives a finer seed bed, the plants start quicker and stronger and all after cultivation is more easily done.

While we do not claim that the keeping of live-stock is necessary to the maintenance of fertility, we do believe that it is an adjunct to good farming and is a sure and safe course to follow. All straw, damaged hay, coarse fodders, etc., are fed to cattle of which from twenty to twenty-five head are fattened each winter, and the manures returned to the fields of which we cover from twenty-five to thirty acres each year. The profits
of the cattle feeding operations form a very small item in the cash account. Perhaps their owners are to blame for this state of affairs. They are kept for their company and their ability to eat. The advantage of adding manures to our dry soils is especially noticeable, probably because the water holding power is increased, chemical action by their decomposition set up, and fertility added. They also have a loosening effect on the soil and prevent its packing into a hard and dry condition. Some clay and gravel knolls which were formerly hard and difficult to plow have, by the addition of manures, been made quite easy to till. Commercial fertilizers containing only potash and phosphoric acid are used on the grain crops; sufficient nitrogen being added by the manures and growing clover.

A special effort is made each year to secure a good catch of clover. The seed is sown the latter part of March or first of April before the ground gets hard and dry. From eight to ten pounds of clover seed per acre is used. A light seeding of timothy is also applied at the same time, care being taken to secure good seed. The price should not be considered as much as the quality. It would be hardly reasonable to expect every seed to sprout or every plant to grow, so the necessity of good seed and heavy seeding is evident. Grass is nature’s covering for the earth and should be encouraged wherever possible. The soil recuperates quickly under grass and manures seem to give better results when applied to grass lands than when applied to any other crop. When possible we put manure on meadows or pastures that are to be plowed the following year. It rots; and the growing grass takes up the fertility and quickly gives it up when plowed under. Eight acres of ground in 1900 gave only 900 crates of potatoes. In the fall of 1905 a good dressing of barnyard manure was given, and the following spring a light application of fertilizer, and 1580 crates were produced. The same variety was planted and no better cultivation given. The only difference was that the previous crop was planted in hills and the latter in drills. The field was mowed two years and pastured two years. It probably would not be fair to assume that all the increased yield was due to manures and fertilizers as climatic conditions were better in 1906. Sometimes when grass is not wanted for hay it is cut and allowed to rot on the ground. This practice is even better than allowing it to fall down uncut as the weeds are destroyed and the new grass starts more quickly.

The question may be asked if the fertility of the soil can be kept up by the growing of clover and the addition of fertilizers along with good tillage. Our experience would justify an answer in the affirmative. We have a field of fifty acres some distance from the home farm that has been in our possession for twenty-five years and no manure has been applied either by use or the previous owner. The fertility has been kept up and even increased by rotations, clovers, good tillage and commercial fertilizers. Not only are larger crops grown, but the land is more easily worked, not being so hard and compact. Another farm has had no barn manures added for thirty years and the same story can be told. While this is by no means ideal treatment of farm lands it shows that fertility can be maintained and even increased in this way and at the same time profitable crops grown. It also has the advantage of requiring less labor; therefore being cheaper. A diversity of crops aids in this system, not because any less plant food is taken from the soil, but because each crop requires a different course of cultivation. The ground is stirred up admitting light and air, chemical action in the soil is hastened, and the growing grasses store up fertility to be given up later. Many of the fields and hillsides of New York state might better be growing pasture grasses than yielding the scanty returns in cultivated crops. The labor bill (which is no small item at the present time)
would be less and there is an increasing demand for meat and dairy products.

The farmer must give more attention to his soil. It is his bank and he can not make continual demands up-on it and expect to have them honored. The old methods will not do. The Agricultural Colleges and Experiment Stations are pointing out the way and he who fails to take advantage of their teachings must be the loser.

THE WETHERSFIELD ELM

By S. F. Willard, Jr., '08

IN beginning a series of articles which it is the purpose of the writer to prepare for the Countryman, we take for this issue a tree which stands in the historic town of Wethersfield, Conn. As the town was settled in 1634 and this elm is supposed to be nearly as old as the town, it is at once an object of local interest and of intrinsic value to its inhabitants. The writer fully appreciates this as the tree stands not far from his home, so that, figuratively speaking, he has grown up under it.

This tree is supposed to be the largest elm in New England, and some authorities say in the United States. Be that as it may, the following measurements, which are accurate, speak for themselves: The tree at the base is 55 feet 6 inches in circumference and 39 inches up measures 26 feet and 4 inches. It is 125 feet high and has a diameter of spread of 137 feet making the circumference of spread 450 ft. It has 6 main branches the largest being 17 feet in circumference. At a distance of 25 feet from the ground there are 12 large limbs.

As to the age of the tree we must depend largely upon tradition, handed down by former generations. It is supposed to have been brought home by a young lad who carelessly pulled it up root and branch as he was driving cows from the meadows. So pleased was he with the grace of the sapling that he planted it where it now stands, little dreaming of its importance. Now two hundred and fifty years afterward it is highly prized as an old landmark as well as for its strength and beauty.

This large specimen of nature's work has sheltered many a weary traveller, being on the main road through the Connecticut Valley. No less a personage than Charles Wesley, the great reformer, delivered a sermon beneath it on his tour through the colonies about 1750. Undoubtedly Washington and Lafayette stopped to admire its beauty, while passing through the town on their way to Hartford to meet Rochambeau and plan the Yorktown campaign, for even then it must have been above the average in height and spread.

So interested are the townspeople in this landmark that recently at a town-meeting it was voted to appropriate a certain sum of money to preserve it for future generations, decay having set in and its life being endangered. Mr. L. H. Mead of Hartford, a practical forester was obtained to superintend the rejuvenation. What lies within the foresters' art can readily be shown by what has been accomplished in this instance. All broken or decayed limbs have been cut away to the extent of nearly six cords of wood. After cleaning out and cutting away all decayed substances from knots and holes a coating of thick paint was applied and the apertures were filled with stone and covered with cement shaded with lampblack, to resemble as closely as possible the bark. The application of paint was to prevent any moisture reaching the live wood from a vacuum under the cement caused by the expansion and contraction due to heat and cold. One large limb had been weakened and split so this has been
chained to another large limb, the chain being fastened by bolts passing through the limbs, the holes being bored by a specially made augur. Mr. Mead expects that decay will be arrested for years and the life of the tree prolonged as a result of his work.

We have become used to almost anything in the line of scientific development, but there is something almost divine in the fact that the dull ear of man has become keen to the mute appeal of sick trees and that they respond to his treatment. The lives of trees may thus be prolonged and their cool, protecting branches may continue to stretch forth in grace and beauty.

Other parts of the country may boast of their big trees. Possibly this article may serve to awaken interest in them and their preservation.

Editor’s Note: Notes on larger elms and other large or famous trees will be gratefully received by the Editor of the Countryman and if of sufficient interest may be given space in the publication.
CHEDDAR CHEESE MAKING

By U. S. Baer

Sometime Secretary Wisconsin Cheese Makers' Association

THERE are many arts and branches of science which are intricate and very difficult to master. If there is one more difficult than another, the manufacture of cheese seems to excel them all. When we consider the effect of fermentation and bacterial influences, the unknown conditions of milk as received at the factories, the hidden power of rennet action and the intricate combinations which any or all these form to effect the final result, any attempt to fully describe and attach the proper importance to all the facts and principles which underlie cheese making is an undertaking beyond the knowledge and experience of the author of this article. I shall, therefore, merely describe an ideal American cheddar cheese for the home or domestic market and then proceed to describe briefly how it can be best produced.

The recognized, peculiar and varied tastes of cheese consumers call for many different characters of cheese; but the cheese that commands the highest price in the markets of today is one of a clean, nutty flavor, flinty and close in texture, with a firm, meaty, solid, rich and buttery body. Cheese of such a character will keep a long time in prime condition, and if cured under the most favorable temperatures will improve in quality up to twelve or more months.

Fancy cheese cannot be made from filthy sour milk. In the handling of pure, sweet milk, the whole mass collected in the vat is gradually warmed up to 86° F., when the milk is tested (by means of either the rennet test or the acidimeter) for ripeness, and if sufficiently matured, the color and rennet is added at once. If the milk is insufficiently matured from one to two percent starter (commercial pasteurized) is then added, and the milk allowed to stand at this temperature until a sufficient amount of acid has developed so that the curds will show one-eighth of an inch of acid when applied to the hot iron or .20 percent acid by the acidimeter, within two hours from the time of adding the rennet at which time the whey should be removed.

None other than harmless or vegetable color should be used and in any case should be thoroughly incorporated with the milk before the addition of the rennet. The latter should be added in sufficient quantities to cause the milk to coagulate ready for the knife in from twenty to twenty-five minutes; it should be diluted with about fifty times its own bulk of cold water and added to the milk in such a way that the coagulation will be uniform throughout the whole mass.

When the curd breaks clean across the finger and is sufficiently firm to stand up before the knife, it is ready for cutting. Great care should be taken to secure an “even cut” so that the curd particles will be uniform in size. Every piece of curd in the vat should be warmed alike. The center of each piece should be just as warm as the outside. As curd is a poor conductor of heat, this condition can be secured only by raising the heat slowly and steadily. The effect of heating rapidly is to cook the outside of the larger pieces of curd faster than the inside. This contracts the surfaces and confines the whey in the center. It would be preferable, if possible, to heat the inside of the cubes the faster, driving the whey to the surfaces; we do not want to do either. We want an even uniform cook.

One of the most important steps in the process of cheesemaking is to know when a curd is properly cooked or firmed. The real condition can hardly be described in words, but the cheesemaker must learn to recognize it by experience. This is a part of the cheesemaker’s art. The curd should not be salvy and soft, but springy and...
CROSS-SECTION OF CHEESE MADE FROM UNCLEAN MILK SHOWING GAS-HOLES

elastic. The most convenient and sure test is to take up a large double handful of the curd and compress it dry of whey. After a minute remove the pressure. If it falls apart readily and the particles resume their former shape and size, it is very good evidence that the curd has been properly firmed.

We should then have one-eighth of an inch acidon the curd (or .20 percent acidity as shown by the acidimeter) and draw the whey. When the whey is allowed to remain too long with the curd, excess acid is developed, and a dry, mealy cheese is the result. There will also be a great loss of fat. If the whey is drawn too early, a soft mushy article will be produced. The necessity of diligence and care in this branch of cheese making is of vital importance in order that the separation of the whey may be the most perfect possible.

From thirty-five to forty-five minutes should be consumed in raising the temperature to 98 or 100 degrees F., as the case may be. To assist the curd in heating evenly and keep it from matting together, it should be stirred from the time it is cut until the heat is shut off. The automatic curd agitators now on the market are preferable to the hand rake commonly in use.

When the required amount of acid has developed in the curd, the whey is drawn, and the curd dipped upon racks where it is left to drain and mat, having uniform depth of about five inches. If the curd has been properly firmed in the whey, it will not require any stirring at the time of racking, for this means an additional loss of fat and solids. As soon as the mass is matted sufficiently so as to admit of its being turned over without crumbling, it should be cut into blocks of sufficient size for handling and turned over, repeating the process every few minutes, always with a view to perfect drainage. The best textured, close, firm bodied cheese is that made from curd that has been piled but very little, or not at all. If curd is piled, it is important that the outside pieces be folded into the center of the pile each time to insure an even color and uniform temperature of from 96 to 98 degrees F., throughout the mass. When the curd is sufficiently ripened or matured for milling, it becomes stringy or meaty, and when pulled apart splits instead of breaking. In cutting through the mass, the color should be even, with no white spots showing. At this stage of the process, when the curd is in normal condition, it will probably have at least one inch of fine sily threads when applied to the hot iron and will show from .70 to .85 percent of acid by the acidimeter. The acid should be well developed at this stage of the process, but the amount of acid is not so important as that the curd should be meaty in texture. Knife mills ought always to be used as peg mills tend to bruise and

CROSS-SECTION OF CHEESE MADE FROM CLEAN, SWEET MILK
tear the curd, injuring the texture and causing unnecessary loss of butter fat.

After the curd is ground, it is kept sufficiently stirred to keep the particle from matting together again. A further maturing of the curd takes place, during which it takes on a peculiar flavor resembling the odor of clean, rich, ripe cream when ready for the churn. It is extremely difficult to convey in words to the minds of others a definite idea of that peculiar condition characteristic of curd when ready for the salt. That is to be gained through experience. However, resort is had to the hot iron test which furnishes us with two species of evidence. If when a portion of curd is applied to the hot iron, it will string nice and silky, and if when so applied it emits an odor like nice toasted cheese and does not smell like burnt hair it is usually ready for salt. The drippings from normal curds at time of salting will usually show from 1 to 1.2 per cent acidity when tested by the acidimeter. Still these tests are not absolutely reliable in all localities and under all circumstances. Another method of gaining the desired information is by the sense of feeling and the condition of the moisture which oozes out between the fingers when the curd is squeezed in the hand. The curd when ready to salt should not feel harsh, but soft and velvety and will exude a moisture of half fat and half whey. When salted, a clear brine should run from the curd. The temperature at time of salting should not exceed 90 degrees F. After the salt is added the curd should be spread out thin, so that it will cool off, and when it is put to press should be at a temperature of from 75 to 85 degrees F. If the curd is put to press too warm, the fat is more easily pressed out and lost.

With the majority of the rank and file of cheese makers, it is not necessary that much should be said about the hooping and bandaging of cheese. The careful, painstaking maker is an artist in a way, and takes great pride in turning out a neat appearing cheese, symmetrical in form, neatly bandaged and perfectly closed on its surfaces. Still we often, too often, find makers who are slack in this very important part of the work. They have more or less difficulty in getting their cheese properly closed. This is true of some makers even when the curd is in the most perfect condition for pressing. Through negligence, they permit the press cloths to become stiff and full of whey while the hoops are not always kept scrupulously clean. No amount of pressure will secure a good rind if the press cloths and hoops are not in first class condition. If factory operators were to exercise more care and devote more time and attention to the work of hooping and dressing the cheese, there would not be so many goods upon the curing tables with checked rinds and showing free fat under the bandages.

At the time of turning the bandages all the whey should be rinsed out of the press cloths by dipping them in scalding water and placing them again upon the cheese as hot as possible. In the morning, the cheese ought always to be turned end for end in the hoop. When taken out they should be examined carefully to see that they are perfect in shape, and all defects remedied. Then pour water sufficiently hot to melt all free fat that may have accumulated under the circle cloth and bandage, over the cheese again before applying the pressure. This warming of the surfaces aids in the formation of a firm, transparent rind and prevents the cheese from checking. It also improves the appearance of the cheese.

With cheese as with anything else we must try to please the eye. Marketing cheeses that are of unequal height or lopsided from some defect or carelessness in the making is always poor economy. Let us remember that cheese is an article of food, and that it should not only be put up in a neat, attractive form, but also that it should not come in contact with anything having a bad odor.

Recent experiments by Drs. Babcock and Russell and the United
States Government have demonstrated that the quality of cheese was best when cured at temperatures ranging from 35 to 40 degrees F., or thereabouts. Cheese cured at 50° F. were better than those cured at 60° F. Cheese cured at 60° F. were better than those cured at 70° F. This leads us to believe that much lower temperatures than have heretofore been thought advisable in ripening cheddar cheese may be used with very considerable success. The dipping of cheese in hot paraffine will add to the attractiveness of the goods, and tend to prevent mold growth and excessive shrinkage in storage.

WILL I GO TO THE FAIR?

By Lalia Mitchell

"Will I go to the fair?  Do I go to the fair?  Why, surely you'll see me if you should be there.  For this is as certain as darkness and light;  A farmer's hard-working, but this is his right:  To take a day off when the harvest is won,  To take a day off when the farm work is done,  To go with a heart that is free as the wind,  To go with a conscience as clear as you'll find;  And know that he's monarch of woodland and soil,  With all the world richer because of his toil.

I've three shorthorns entered and I shall be there.  No operas tempt me the whole winter long;  The seashore in summer I'd sell for a song.  But this is my playhouse; the barn and the shed  And houses where poultry are sheltered and fed.  And this is my playtime, the fall of the year  When maples are crimson and meadows are sere,  And never a man in the wide world can say  He's freer or gladder than I am today."

—American Agriculturist.
POULTRY AT CORNELL

Tune—"Landlord Fill the Flowing Bowl."

Come friends and listen to my tale
Of chickens kept "in clover";
And students crammed so full of sense
Their brains are brimming over.

CHORUS—
Come boys and girls and take your turn
'Tis said we ever live and learn,
So hunt the spot where genius burns
And chickens live "in clover."

'Tis said that "Jimmie's" passing kind
To all who shirk not labor;
And Rogers, always at his post,
Brings colored eggs in favor.

When "Short Horn" hordes the camp
invade,
A busy man is Lawry.
The ladies always join his class—
But that's another story.

For systematic sleeping, too
The reading room is handy—
And if the students wish to spoon,
Blind chaperons are dandy.

The ancient art of hatching chicks
Is taught to all new comers.
Who wants a brood from china eggs,
Should just apply to Somers.

For feeding chicks and feeding hens
'Tis Krum and Grubbs, Instructors,
While Boicourt tends experiments
With always best of luck, sirs.

Ducks, rainbow hens, athletic chicks,
And people wise to mind 'em,
And Easter eggs and lots of work—
Here, studes, is where you find 'em.

CHORUS—Come boys and girls, etc.
—Anonymous.

Note: Inspired by the season of 1907–8 in the Department of Poultry Industry.
THE SURVEY WORK OF THE COLLEGE OF AGRICULTURE

THE last legislature appropriated $10,000 to extend the extension work of the College of Agriculture. A certain part of this fund has been set aside to extend the various kinds of agricultural surveys in which the College has been interested for some time. The surveys that are now under way are of four main types:

The Tompkins County survey, which was begun two years ago, is to be completed this summer. An economic and social census had been taken of about 950 farms and it is hoped that the remaining farms in the county will be completed before the season closes. This is the most thorough survey that the College has ever undertaken, inasmuch as it attempts to cover not only all the products of the farm, but to find out something about the general status of the farmer and the character of the community. An article on the work so far prosecuted was published in the Independent of September 3rd by Dean Bailey under the title "The Farmer at Home."

The second type of survey is the extension of the pomological inquiries that have been under way for some years. These were begun years ago by Dean Bailey, who was then Professor of Horticulture. They were continued later by Dr. Warren in Wayne and Orleans counties and have been continued since then under the general direction of Professor Craig. Niagara County has been completed, and the results will soon be published. Orange county also has been completed. This year parties are out under Professor C. S. Wilson in Ontario and Monroe counties and it is expected to complete them this year. These parties consider the fruit-growing interests alone, although they correlate these interests with soil conditions and other circumstances.

The third type of effort is the soil survey, which is under the charge of Professor Fippin, and in co-operation with the Bureau of Soils, U. S. Department of Agriculture. Livingston and Montgomery counties are being surveyed this summer. Mr. Crabb is in the field with the parties.

The fourth survey is a study of the trucking interests in Long Island in charge of Professor Judson. He has been in the field during the month of August. Heretofore the college has not taken up the vegetable-gardening interests separately, but this beginning has now been made and it promises well for an extension of the work.
In welcoming the class of 1912 for the first time, and the classes of 1911, 1910 and 1909 for the second, third and fourth, respectively, the Countryman greets them, as always; as a phase of the life of the College that is here to see them come and go, but which, while they are here, is also, of them, theirs. It greets them as a friend ready to assist in every way within its power, whether to publish the ideas of one individual or to endeavor to express the sentiments of many. And it greets them as a dependent activity, relying upon their support and their co-operation. On this last relationship do we lay especial stress and emphasis for the Countryman needs the backing of every student in one form or another, and of all alike in the form of suggestions, criticisms and advice toward its improvement. We repeat, once again, therefore, to one and all, our invitation to visit the office, to get familiar with its aims and its activity, to suggest and criticize and in general, to "talk things over."

To the Freshmen, in particular, a few words of information may not be out of place. There are in the College a number of activities of which this paper is one and several facts which you must recognize and accept as such as you become factorial units in the college. One of these facts is the Honor System with which you should speedily become acquainted. Opportunity is given to all to become familiar with its articles, and ignorance is not accepted as an excuse thereafter. In 1907, the student body decided to do away with the practice of cribbing and as a result the following conditions exist: Work in the college is conducted under the Honor System, at the desire of the majority of the students, and only to those men who intend to uphold this system and its principles is extended the hand of friendship. The effectiveness of this system has been proven; it is now in your hands—from the graduate student to the freshman.

You are advised and urged to enter at once some University or College activity, be it athletic, literary or along the lines of clubs, associations, etc. For practically each branch of the College there is such a club—the Lazy Club in Horticulture, the Round-up Club for Animal Husbandmen, the Poultry Association, and then the Agricultural Association of which every person in the College is theoretically a member. Let it be seen, in your case, that the membership is more than merely theoretical. Finally, there is the Assembly, a general informal gathering on the first Thursday of each month, when the characteristic spirit of the College is diffused more widely and its sinews drawn more closely together, till a unity and an organization has been reached, which can be surpassed, we are confident, by no similar institution. These, in brief,
are your opportunities. They are yours during your college course, and we can only urge you to take advantage of them, knowing that their influence will aid and inspire you for many more than the number of years during which they are offered you.

"Some are born great, others achieve greatness, while others have greatness thrust upon them."

The life of Dean L. H. Bailey has been one of the achievement kind, until now it has come to pass that greatness is being "thrust upon him." At least, this latter fact is what we glean from the daily news journals in their accounts of the progress of President Roosevelt's Commission on Country Life. At any rate the Dean has accepted the leadership of the commission, and if we may criticize, we congratulate Mr. Roosevelt upon his choice, and his successful acquisition of the services of one whom we know as the representative of modern agricultural knowledge and its dissemination. For the Dean, we are, of course glad, as his every success and recognition brings to the college no small degree of gratitude and satisfaction. This commission has no small nor simple task before it, but it is in good hands and its accomplishments may have directly or indirectly, vast influence upon the development of the rural districts in the coming years.

Modesty is one of the virtues, and the hiding of one's "light under a bushel" may often be an expression of this virtue. Yet we question whether it is as much modesty as lack of interest that keeps the alumni so quiet, so reticent concerning their whereabouts and their activities. We have been told that the column of former student notes is of considerable interest to many subscribers, and we trust that this is so. But we wonder whether those same subscribers realize that it is only with their co-operation that we can maintain that department at all. Of the half-a-hundred graduates of 1908, we have heard of perhaps half a dozen and no more. What little news we have gathered this fall has come mainly from the Professors of different departments. This is not as it should be, nor, we hope, as it will be. Once more we urgently request, that former students will let us hear from them and of their alumni friends often. A few words on a postcard may not mean much at your end, but they can prove of considerable help to the Countryman and to those who are working for it.

It is a source of pride, and rightly, to every poultry student, that his department was so distinctly recognized in the work of the Graduate School of Agriculture, this past summer. The attendance at lectures upon various phases of the subject was gratifying and the nature of the discussions clearly proved the worthiness of Poultry Husbandry for the place it occupied. That a department so young, a subject that has been taught and recognized as an important individual for so few years, should at this early stage in its development,
offer material and problems of graduate school calibre is both remarkable and significant. Its rapid progress seems closely comparable to the gigantic strides that this University has made into the light of public and national recognition and on closer observation it seems clear that this comparison should logically exist. If Professor J. E. Rice, of the Department of Poultry Husbandry, in any degree typifies Cornell spirit and energy—and on that point we have some definite and distinct opinions—no less does the growth of Poultry Husbandry investigation and knowledge reflect his personality, his influence, his unceasing activity in the advancement of his subject.

To Graduate Students

In the spring of 1908, shortly before commencement, the graduate students of the College conceived the idea of associating, for the purpose of unification and increased efficiency, as a body. As the time was short, but little was done, but the idea has survived, and within a short time matters will begin to take definite shape. To all students taking graduate work in this college an invitation is extended by the leaders of the movement to co-operate and make the Society a reality. Notice will shortly be given of a meeting at which plans will be fully discussed, a constitution drawn up, and permanent officers elected.

GENERAL AGRICULTURAL NEWS

The College of Agriculture was represented at the State Fair at Syracuse, September 14-18, by means of the exhibits of several of the departments. The Department of Poultry Husbandry which had previously exhibited at the Ithaca and Trumansburg Fairs, presented an interesting collection of models of houses, drawings of the construction of various buildings, incubators, brooders, etc., and many other features of the department's work, which were both interesting and educational.

The Soils Department exhibit dealt almost wholly with the drainage problem, various materials being shown and methods illustrated in miniature. This made a rather unique showing as it is the first of the kind ever put out by the department and emphasizes the increased attention that is being given to this important subject.

The Animal Husbandry exhibit was small but was "out for blood," as Professor Wing had entered several of the best pigs from the University farms and at the time of this writing was optimistic in regard to prizes.

The Department of Agronomy's exhibit was rather extensive, covering several phases of work. There was an interesting display of the varieties of corn grown on the University farms, some thirty-eight in number and samples of ensilage corn in different stages of development in order to emphasize the correct time for cutting and filling the silo. Tests of seed corn, both loose and ear samples, and germination tests of clovers made interesting material, and related to the latter were various studies of the root nodules on different legumes.

Mounted specimens of a large number of pasture and hay grasses as well as those used in the Experiment Station's co-operative experiments gave an opportunity for becoming familiar with a greater variety than could ordinarily be observed in the field, and a similar exhibit of common weeds emphasized the size of the army that the farmer continually has to fight.
Alfalfa was not neglected and specimens of good and poor soils for this crop attracted attention. Finally, this department added to its exhibits short talks illustrated by lantern slides given every half-hour. Two important subjects alternated in these talks, "Silage Corn" and "Abandoned Farms," being enlarged upon by members of the departmental staff.

The Plant Pathology department also presented an educational exhibit dealing with the more common and more serious plant diseases, and the best methods for their control.

There was sent by the Dairy Department a Babcock Testing outfit upon which demonstrations were given. A large collection of different style, small top milk pails; bacterial cultures to show the relative numbers of bacteria in clean and unclean milk, and various other preparations illustrating the effects of the different types of change producing organisms on milk.

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An interesting and important series of meetings was held at the College of Agriculture on July 23, 24 and 25, when after an International Conference of Instructors and Investigators in Poultry Husbandry, an International Association was formed. There were about thirty charter members and the officers were elected as follows: President, W. R. Graham, Canada; first vice-President, James Dryden, Oregon; second vice-president, Raymond Pearl, Maine; secretary-treasurer, J. E. Rice, New York; directors for two years, Horace Atwood, West Virginia; J. P. Kerr, Mississippi; S. T. Campbell, Ohio; directors for one year, R. C. Pierce, Iowa; R. R. Slocum, District of Columbia.

The five sessions of the conference were exhaustive in their treatment of the various phases of Poultry Husbandry, and interesting discussions were maintained after the presentation of papers by a number of the chief instructors and investigators of this country and Canada.

CAMPUS NOTES

Students of the College will hear with interest that the University farms have been increased by the purchase of some four hundred acres of land adjoining the present farm. The greater part of this newly acquired property is composed of the Gleason farm (sometimes called the Cyclone Smith property), which lies directly east of and adjoins the Mitchell farm; the Blair property, lying to the south of the athletic field and the Roberts pasture, and the Frank C. Cornell property surrounding the East Ithaca Station. While no crops have yet been started on this land, hay has been cut from it during the summer, and it will probably soon be given over to experimental work.

Also of interest is the fact that one hundred acres of land on Bald Hill have been purchased by the Veterinary College, to be used in its work.

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Professor and Mrs. Comstock who left early last spring for Europe, returned August 1st after a very enjoyable trip. They spent the remainder of the summer up the lake.

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Professor John Craig having recovered from his severe illness in the spring, continued his European trip and returned September 7th, to resume his position as head of the Horticultural Department.

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Mr. A. D. Taylor, '06, formerly instructor in the Department of Rural Art, has left the college to take a position with Warren Manning, the landscape architect.
The Extension Department has been particularly active this summer, for besides having carried on its correspondence and co-operative work, it maintained for four weeks in cooperation with the Chautauqua Institute, a school for teachers. Instruction was given in Nature-Study and Practical Agriculture, and supplementing the latter work experimental gardens were put in the hands of children of the locality. Professor Tuck, Miss McCloskey and M. P. Jones, '08, who has joined this department, composed the regular instructing staff, while Professor Rice journeyed to Chautauqua to give a special lecture.

* * *

The Rural School Leaflet, edited by Miss McCloskey has been increased in size to thirty-two pages. Of these twenty-four will be for the teachers and the remainder in the interests of the children. The magazine will aim, to help both classes of readers to a better knowledge of practical agriculture, each according to its needs.

A new and interesting series of experiments has been begun by Professor T. L. Lyon, on a somewhat large scale. A part of the farm land has been reserved for this department, and a series of concrete tanks have been constructed that are to remain for some years. The following description which accompanied plans of the tanks and was published early in the summer explains in detail their construction and purpose: "These tanks are now in process of construction. They are intended to furnish receptacles for bodies of soil of sufficient size to produce plants in a normal manner under approximately field conditions, and yet afford opportunity for measuring a large number of the factors affecting plant growth. The construction is of concrete, but the tanks will be lined.

Each tank is 4 feet 2 inches square with a maximum vertical depth of 4 feet 6 inches and a minimum depth of 4 feet. There are 24 tanks placed in two rows of 12 tanks each. Between the rows of tanks is a tunnel the bot-
tom of which is 10 feet below the top of the tanks. The tunnel is six feet wide. From the lowest point in each tank is an outlet tube 2 inches in diameter and tin lined. It is made large enough to permit of easy cleaning and has no bends in it. A piston runs through the tube to within 4 inches of the upper end. Between the perforated head of the piston and the soil glass wool is to be inserted. The piston can be withdrawn if it is desired to clean the tube.

Drainage water from each tank will be caught in a receptacle in the tunnel. The lining in the tanks will prevent any soluble material in the concrete from appearing in the drainage water. A constant water table at the depth of 4 inches may be maintained by raising the rubber tube leading from the outlet tube to a point 4 inches below the surface of the soil in the tank.

The soil will be placed in the tanks with the same relation of surface to subsoil that occurs in the field. Analyses will be made when the soil is installed and afterwards left undisturbed for a period of several years. The purpose in constructing this apparatus is to obtain a record of the performance, properties and composition of the soil during a long period of time."

With the continued growth of the Departments of Soils and of Plant Industries, there have been necessitated extensive changes in the Agronomy Building. New laboratories are being constructed in the basement formerly occupied by Farm Machinery, and in other parts of the building for Dr. Duggar and Professor Lyon. And at the same time congestion and lack of adequate laboratory room is still felt as the classes increase in numbers.

The new Plant Breeding Garden shown in the illustration on page 26, which now occupies the ground formerly sown to alfalfa has been one of the most interesting parts of the farm during the summer. While the experiments with corn, potatoes, summer and winter wheat, etc., have but just begun, care of the crops and crossing experiments have kept several men busy throughout the season. It is expected that the gardens will be maintained on this spot for some years.

Professor J. L. Stone of the Department of Farm Practice left for England on August 8th, intending to combine a vacation with the interests of the College. He is expected to return some time during October.

Mr. Huber Shull, a graduate of the Michigan Agricultural College, has joined the staff of the Poultry Department and will conduct various investigations throughout the winter.

Professor M. B. Thomas, '09, and his wife visited Professor Whetzel for a week during August. He is still at the head of the Botany Department of Wabash College, Crawfordsville, Ind., where Professor Whetzel, Mr. Reddick and Mr. Barrus of this college formerly studied under him.

The Soils Department has been carrying on two important investigations during the summer under the direction of Professor E. O. Fippin of the Department. The first is a series of co-operative soil surveys, which will probably continue throughout the fall.

In Livingston County, M. E. Carr, of the Department of Agriculture, at Washington, and G. A. Crabb, P. O. Wood, '08, and H. O. Tiffany, '09, of the College, had completed three hundred square miles of territory on September 1. In Montgomery County, Ora Lee, '66, and C. Lounsbury, '08, are doing similar work and on September 1 had covered one hundred and twenty-five square miles.
The second phase of the investigations of this department is in the form of experiments with fertilizers on muck soil, where onions are being grown. This work is being done on the Breeze Hill farm in Orange County, owned by Mr. W. B. Howland of the Outlook Company and managed by J. B. Shepard, '06. Mr. Shepard reports that interesting variations in growth are noticeable and further results are expected when the crops are harvested.

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Mr. E. S. Guthrie, a graduate of the Iowa State University, who has been in the Dairy Department of the Ohio State University for the past two years, is to be Instructor in butter-making during the coming year.

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Professor E. G. Montgomery, of the Nebraska Station, spent two months of the summer at Cornell working in the Departments of Soils and Plant Breeding.

Professor R. A. Emerson, Horticulturist in the Nebraska Station, also spent two months here in Dr. Webber's department. His investigations were chiefly with Petunia crosses, having in view discoveries regarding the inheritance of color.

* * *

Professor J. B. Norton, formerly of the Plant Breeding Department, has again joined the U. S. Department of Agriculture.

Dr. Webber has added to his staff as Assistants, F. J. Pritchard, A. W. Gilbert, H. H. Love and E. P. Humbert. Together with E. C. Ewing, '08, these men have been conducting investigations during the summer. Mr. Gilbert, who has already held the position of Professor at the Maine Agricultural College, will conduct the introductory courses in Plant Breeding, while the other assistants will be more closely connected with the Experiment Station and its work.
The timothy experiments which have been running for two years on the grounds east of the Roberts pasture are showing marked and interesting results. There has been considerable trouble caused by rust, but this has unexpectedly brought to light some interesting and valuable differences in the degree of rust resistance in the varieties being tested. Certain rows are found to be almost exterminated while others close by are practically free from the disease.

* * *

The Department of Plant Pathology under Professor H. H. Whetzel has been active throughout the state in sending educational exhibits to several county fairs. Besides the State Fair at Syracuse, it has been represented at the Union Fair at Trumansburg, the Chautauqua County Fair at Fredonia, the Genesee County Fair at Batavia and the Steuben County Fair at Bath.

* * *

This department has maintained its field station for the investigation of Black Rot of Grapes at Romulus, during the summer, where the work has been in charge of Mr. Donald Reddick.

* * *

There has also been a new field laboratory established at Oneida for the purpose of studying Bean Anthracnose. This has been under the direction of Mr. M. F. Barrus, who this winter joins Professor Whetzel's staff as assistant. Mr. Reddick, who last year held this position, has been advanced to Instructor.

* * *

The Department of Agronomy has taken as assistants for the following year: E. H. Thomson, '09, K. C. Livermore, '09, and C. M. Bennett, Sp., who together with F. E. Robertson, have been completing the Tompkins County Survey work which the department has been carrying on for some years. The remaining townships of Ithaca, Dryden, Lansing and Danby will be covered, it is expected, by the end of October.

We are glad to announce the marriage of Mr. Savage, of the Animal Husbandry Department, on September 7.

* * *

Besides the exhibit made at the State Fair, the Department of Animal Husbandry showed eighteen cattle, ten horses and ten sheep at the Tompkins County Fair.

This department now has about eight new teams one of which is a pair of pure-bred Percheron fillies, bought by Professor Wing, especially for the department.

* * *

Plans for the new greenhouses, for which $30,000 was appropriated last winter, have been drawn up and are now in the hands of the State Architect. It is expected that these buildings will be located directly east of the dairy building extension, and it is hoped that their construction will be begun in the near future.

These greenhouses are designed to furnish practical laboratory space for all the Plant Industry departments. The Horticultural Department will probably occupy the largest single amount of space, while the Plant Breeding, Agronomy, Soils, Plant Physiology, Plant Pathology and Nature-Study Departments will share the remainder.

* * *

Extensive improvements and changes have been made in the Dairy Building during the summer. A steam laundry equipment complete in every detail has been installed for the use of the College. The upper floor of the Dairy Extension has been remodelled to provide a laboratory and a reading room for the Poultry Department. This will give both increased room and increased lighting facilities, besides permitting the former laboratory in the Poultry Building to be used for other purposes.

The top floor of the Dairy Building itself has also been considerably altered to provide draughting rooms for the courses in drawing now offered by the
College. The space has been partitioned off into three rooms, an office with dark room adjoining in the south east corner, a large draughting room west of this and a still larger draughting room occupying the remainder of the floor. In addition a cloakroom has been partitioned off to the right of the stairway. The high ceilings and roominess of this part of the building particularly adapts it to its new uses, and with the new sky-lights which have been installed, the lighting facilities have been greatly augmented.

* * *

In order to permit Mr. G. M. Lauman, to give all of his time to his classwork in Rural Economics, Dr. W. A. Riley has been appointed Registrar of the College, and will assume the duties formerly imposed upon the Secretary.

* * *

Two recent advancements in the faculty have resulted in Assistant Professorships for C. A. Rogers, formerly Instructor in Poultry Husbandry and P. W. White, formerly Instructor in Agronomy.

**FORMER STUDENTS**

H. G. Doughty

'08, Special—Herbert Gardner Doughty died suddenly at his home near Speedsville, N. Y., on August 21, after a three days illness. He was born in May, 1885, on a farm and attended the Newark Valley High School for two years coming thence to Cornell for the Winter Course of '06-'07. The next fall he registered in the two year special course, taking most of his work in the Poultry Department.

'04, B.S.A.—A. R. Mann, who last spring joined the Dairy Department of the College is now Private Secretary to Commissioner of Agriculture, R. A. Pearson, '94, at Albany.

'08, B.S.A.—A. W. McKay worked in the Orchard Survey of the State during the summer, and early in September left for Washington to take up his position in the Fruit Storage Division, under G. H. Powell. He expects that his work will take him first to Florida, and later in the winter to California.

'08, W.P.—W. A. Lippincott who was President of the Short Course Poultry Class is now Assistant at the Iowa Agricultural College at Ames. We are glad to announce that on August 25, he was married to Miss F. O. Humphreys of Elmwood, Illinois.

'05, B.S.A.—James G. Halpin, who has been on the instructing staff both here at Cornell and at Rhode Island, is now Assistant Professor of Poultry Husbandry at the Michigan Agricultural College. On July first he was married to Miss Ione Blake of East Lansing, Michigan.

'05, W.—M. F. Barrus is to be Assistant in Plant Pathology this year while working for his Ph.D., under Professor Whetzel. After his short course here, Mr. Barrus entered Wabash College and completed the four-year course in three years. While there he won the Eastman Biology Prize with a paper upon Bean Anthracnose and later was elected to Phi Beta Kappa.
'08, B.S.A.—Errett Wallace has been working under Professor Whetzel during the summer, upon Apple Scab and the Bulb Rot of Gladioli. The latter investigation he has taken as a major subject for his M.S.A.

'08, B.S.A.—J. Taubenhaus has continued his work upon Hollyhock diseases in the Plant Pathology Department, having chosen this subject for his M.S.A. investigations. The department has maintained a large plantation of several thousand hollyhocks south of the athletic field for use in this work.

'06, M.S.A.—J. E. Howitt of the Botanical Department of the Ontario Agricultural College at Guelph, spent July here carrying on work in Plant Pathology.

'06, W.P.—We learn with pleasure that M. P. Burdick has also taken the preliminary step in "settling down." On August the twentieth, he was married to Miss Ethel M. Wight of Auburn, N. Y., where he will be "at home, Franklin Street Road, after September first."

'05, W.P.—"And still they come!" E. E. Britten announces that in April, 1907, he was married to Miss May M. Brownell of Syracuse. Another case where the good news is "better late than never."

'84, B. S. A.—Since his graduation from Cornell in 1884, J. B. Burrows has been engaged in horse farming at Decatur, Ill. He also holds the responsible office of Director of Illinois Farmers' Institutes and is one of a committee of five appointed to investigate ways and means of improving county farmers' institutes. These duties require a considerable amount of his time especially during the winter months.

'08, W.—Roy H. Chamberlin is located on a farm consisting of about 80 acres which he has purchased near Caneadea, N. Y. At present he is practicing mixed farming but expects later to make potato growing a specialty.

'08, W. P.—Walter H. C. Ensign orders his COUNTRYMAN sent to Brook Hill Farm, Genesee Depot, Wis., where he informs us that he is employed.

'00, W.—R. E. Church, since leaving Cornell, has had charge of the butter and buttermilk department of Borden's plant at Oxford. His continuous employment by this company for six years is evidence of his success in his chosen line of work.

This spring, however, because of ill health resulting from pneumonia, he was advised to give up his trade for a time at least. Last April, therefore, he purchased and took charge of a squab industry in Sidney where he is at present located and is making very good success at the work although he states that butter making seems to be more to his liking and that he expects to return to his chosen vocation this fall.

BOOK REVIEWS


Mr. Casson has given us in this little book, a fascinating and readable account of the growth of a great industry. The story of rugged warfare between early manufacturers and of the formation of a great combine, the biographies of the pioneers in the making of harvesting machinery, all these are presented in such a way that one wonders that more romances, more novels and more dramas have not been woven about the days and the activities that have meant so much to the farmer and the country. If the story is made occasionally almost too novel-like in style, and if here and there spectacular descriptions and expressions are used to emphasize the size and importance of our grain producing industry, there is nevertheless an air of straightforwardness, of fairness to both sides and to all parties, as well as the impression of accuracy which personal acquaintance with one's subject promotes.
In the "Story of Deering" and the "Story of McCormick," the author traces the birth and early growth of the invention and production of harvesting machinery. Later in the "Story of the International" and chapters on the "American Harvester Abroad" and the "American Farmer and the Harvester," Mr. Casson has connected those beginnings with the progress of today, and has clearly outlined the marvelously important part played by the American farm mechanics, in the work of supplying the world its grain.

If you are looking for inspiration from the life and struggles of sturdy American workers, and if you wish to be interested in, and appreciative of, one phase of American industry and energy, you will find this book worthy no little commendation.


With characteristic absence of fatigue, Dean Bailey has found time during the past winter to broaden and enlarge his speech delivered in Lansing, Mich., in 1907, into this intensely interesting book, published in July. Fundamentally, as he says, the ideas are the same, the main discussion being one of rural conditions and the relation that the state should bear toward them. And the word "State," Dean Bailey uses in its broader sense, that of government, whether national or more limited.

For one thing this book ought to prove a valuable antidote to the hysteria that has of late afflicted many individuals and no few communities as concerns "abandoned farms." These the author has discussed in their true light, with the additional and highly beneficial point of view of the observer of rural conditions, changes and tendencies. He knows not only what farming is, but how it is done or, perhaps, not done, in many cases and in what respects the "new agriculture" and the old, or at any rate conservative farmer have not become reconciled. So that if we feel at any time that we would like and could profitably receive a little more knowledge concerning these things (and how many of us would and could not!) we can gain information that is broad minded, comprehensive and comprehensible by spending an hour or so with this book.

It is typical of Dean Bailey's style however, in that it suggests many more points than those it discusses in detail. For the person also who likes to think, and to have problems suggested to him, this book will prove an inspiration and a source of enjoyment. As an interesting, clear and up-todate discussion of an important vital set of questions of rural economics, it is a worthy addition to the literature of the year.


The student who makes a careful and comprehensive study of this book will, without doubt, find himself in possession of a very broad foundation for any future biological work. And the method of teaching which it illustrates is in keeping with the modern ideas of practical work, "the learning by example as well as by precept." That is, while it is an interesting and instructive text and while the abundant illustrations greatly elucidate or rather supplement it, yet the exercises suggested and the review question throughout have been chosen with the admirable purpose of making the student think, observe and use his store of common "horse" sense.

While the volume is designed for secondary instruction, it appears in places to almost encroach upon the domains of more advanced work, at least, as such advanced work is, at present, included in the curricula of many universities. This point, however, is one that is often discussed and if as is often suggested, there should come a relegation of the work of the Freshman year standard to the secondary schools, just such books as this will make such a change practicable.
The illustrations, already mentioned deserve special recognition. Aside from several colored plates, there are some 640 figures which are highly realistic and accurate, many being reproduced from standard works on scientific subjects.

The authors have prepared apparently a very exhaustive text and have done their work conscientiously and thoroughly as far as it could be done. But biology, even a first course is a vast subject and it is a heroic undertaking to cover it in one small volume. One other point occurs to us. These are the days, it is said, of awakening knowledge, when Nature should be entirely a friend, an open book so far as she is understood.

We understand that there is a movement to replace prudishness and old-fashioned taciturnity with sensible, healthy, sane instruction in the vital and hitherto ignored questions of life and its reproduction. Can there still be no instigation, no institution of this reform in a text book such as this, which offers no logical and accessible an opportunity to meet facts from the point of view whence they should first be met—as wonders and truths of Nature?

We are pleased to acknowledge with thanks the receipt of Mr. Crewe’s Career (The MacMillan Co., N. Y.), which we shall be glad to review in a forthcoming issue.

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AT THE CO-OP
# TABLE OF CONTENTS

Cover Design—Fall Plowing
Frontispiece—Scroll presented to Director and Mrs. Liberty Hyde Bailey
Italian Colleges of Agriculture, John Craig 37
Dutch Cattle in Their Native Land, F. R. Sanders 40
Director and Mrs. Bailey Honored, 41
Home Economics at the New York State College of Agriculture, Martha Van Rensselaer 44
The Graduate School of Home Economics, Caroline L. Hunt 46
Athletics in the College of Agriculture, John F. Moakley 48
Cross-Country Running as a Sport, H. C. Young, '10, 49
Intercollege Cross-Country, N. R. Peet, '10, 49
The Furniture of the Farm, J. Demary, Sp. 50
Editorials,
  Generalization and Specialization, 52
  The 1908 Fruit Exhibit, 53
General Agricultural News, 53
Campus Notes, 55
Former Students, 59
Book Review, 60

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**THE CORNELL COUNTRYMAN**

is a monthly magazine published by the students of
The New York State College of Agriculture at Cornell University
Address, COLLEGE OF AGRICULTURE, ITHACA, N. Y.

SUBSCRIPTION PRICE, $1.00 PER YEAR
Entered as second-class matter at the Post Office at Ithaca, N. Y.
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This sixth day of June, 1908, marks
the twenty-fifth anniversary of the marriage
of Liberty Hyde Bailey and Annette Smith.

Conscious of the high ideals and unselfish devotion to others
of both husband and wife during these twenty-five years, we, the staff of the New York State College of Agriculture, welcome this opportunity to express our appreciation of such useful living.

Mrs. Bailey, deep in the social life of the College, you have left an enduring impress.

Heaven Bailey, fixed in the minds of your co-workers is a clear conception of your personality. Sympathetic, open-minded, always fair, you have ever been keen as an investigator, inspiring as a teacher, lecturer and author, resourceful as an editor, masterful as an administrator.

May this simple remembrance of your friends working in a common cause, typify that light of exemplary leadership thrown from your two lives of service.

THE SCROLL PRESENTED TO DIRECTOR AND MRS. LIBERTY HYDE BAILEY, JUNE 6, 1908.—SEE PAGE 41
ITALIAN COLLEGES OF AGRICULTURE

Professor Craig Interviewed

COUNTRYMAN readers will remember that we noted the departure of Professor and Mrs. Craig for Europe at the beginning of last semester. We are now pleased to record the return of the professor and family early in September. Although the first part of the holiday was marred by illness, the latter portion was enjoyed to the fullest extent.

A representative of the COUNTRYMAN secured the following interview with Professor Craig which we hope will interest our readers.

Where did you spend most of your time?

"Our time was divided something like this: Two months in Switzerland where I investigated hospital life as pleasantly as possible; two months in Italy, sight-seeing and visiting colleges of agriculture; two months in Germany, summering in the Black Forest region and visiting the horticultural schools of the Empire; and about a month divided between England, France and the low countries. The last month, I must confess, was occupied in sight-seeing after the most approved American plan—a plan I can heartily condemn."

Will you give me any impressions you formed regarding the scope and character of the Italian Colleges of Agriculture for we have heard very little about these institutions?

"I was fortunate in being able to secure satisfactory letters of introduction to the Directors of the five agricultural institutions of learning, ranking as colleges in Italy. I may say in passing that the same freedom of admission to public institutions in Europe does not exist as in America, and in Italy they are especially punctilious. I should also add that the properly introduced visitor is warmly welcomed and treated with the most courtesy.

"These five colleges are located respectively at Portici, near Naples, in fact at the foot of Mt. Vesuvius; at Perugia between Rome and Florence at Pisa; at Bologna; and at Milan. Two of them are directed by the State Department of Public Instruction which also directs the universities, and three by the Department of Agriculture. Just why this arrangement, is wrapped up in the early history of the founding of the colleges."

Did you visit all of these institutions?

"No I was obliged to forego a visit to the Milan college which I understand is modelled largely on the lines of that at Perugia. You ask for impressions: the first that came to me was the obvious one that the government had found an excellent use for some of the old chateaux which changed political conditions and the passing of princely families had thrown upon their hands. Three out of the four college buildings were formerly princely castles and one had been a monastery. Of course their age was indefinite, a century one way or the other did not cut much figure. This does not mean, however, that they are
not well preserved. They are. These walls three and four feet thick stand better than our wood or brick veneer. The evidence of medieval origin is there also in the great surrounding walls and sometimes partially masked battlements. These buildings have come into the government's hands in one way and another and some of them are now serving the admirable purpose of furthering the cause of agricultural education."

How do these colleges stand in relation to the Universities?

"I was informed that the standard for matriculation was the same as for the University. In two instances, at least as at Pisa and Bologna, they are directly affiliated with the University. At Portici, near Naples, the professors of the University in Naples lecture in the college of Agriculture. In Perugia the instruction is given without regular assistance from any allied institution."

Have these colleges lands and experimental areas as we have?

"Oh yes indeed! Bologna has twenty or thirty acres on the outskirts of the ancient city of that name. Pisa has fifty or sixty acres a mile or so from the famous leaning tower which is the center of everything popularly attractive there, while Perugia and Portici each has from two to four hundred acres under its control. Portici, by the way, has the nominal control of a former Royal park, finely wooded, once a hunting ground, now supposed to be used for forestry purposes. Unfortunately the restrictions regarding its management place it in practically the same category as the Adirondack tract in relation to Cornell."

Is the experimental station separated from the college?

"No it is an essential part of the college. The laboratory instruction in agriculture in these institutions is largely of the demonstration type. There is little real laboratory work except in Histology, Pathology, Chemistry and Physics. Nearly all the plant studies are given by the instructor in the form of demonstrations or illustrated lectures, or excursions to gardens and farms. Aside from the demonstration experiments, research work is being instituted to a considerable extent in the field but to a much larger degree in the laboratory. The field work in horticulture and agronomy carried on by the college at Perugia was admirable as I saw it and would compare favorably with experiment station work in this country.

What of the students?

"Well on this score one is apt to be prejudiced. You realize of course that I believe that one of the strongest assets of the agricultural community of this country is the group, or I should say army, of young men enter-
ing, in course of passage and leaving the colleges of Agriculture each year. In the first place the attendance is small as compared with ours. In no case were there, I think, more than one hundred and fifty students enrolled, usually a much smaller number. I believe that they were made up of two classes, viz., those who were sons of land holders and who wished to acquire knowledge to enable them to manage their estates, and second those who came for the purpose of qualifying as teachers of agriculture. They appeared rather less mature than the average student in Cornell.
"I will anticipate your question regarding the teachers and say that the one thing which impressed me most was their cheerful optimism. They seemed most enthusiastic teachers, sometimes under adverse conditions, with marked aptitude for imparting information and sincerely devoted to their work.

"I may also add that all of these colleges have extension departments which carry the results of research and the latest agricultural information to the people by means of district demonstration experiments and traveling lecturers.

"The best agricultural sections are responding. In the poorer parts of Italy, as elsewhere, the awakening is very slow. Nevertheless progress is making and the colleges and secondary schools of agriculture are the main springs in the movement."

DUTCH CATTLE IN THEIR NATIVE LAND

By F. R. Sanders

Bristol, N. H.

DUTCH Belted cattle are known in Holland as Lakenvelders, or Veldlarkers, which means literally a field of white, but conveys the idea of a white body with black ends. The writer spent a number of weeks studying these cattle in this unique country, where huge windmills are dotted over a land that is maintained from the inroads of the North Sea only by substantial sea-walls called dykes. The early history of this breed is not fully understood, but from the records obtainable, and from conversation with several of the older breeders in Holland, it seems that these cattle began to flourish about 1750, and no doubt the system of selection by which this marvelous color breeding was attained dates back into the seventeenth century. One breeder says his father informed him that there were gentlemen of wealth and leisure near what is now called Haarlem, who conceived the idea of breeding animals of all kinds to a certain color, chiefly with a broad band of white in the center of the body, with black ends. These noblemen had large estates, and it is claimed that for more than 100 years they and their descendants worked upon the perfection of these peculiar color markings until they produced belted cows, pigs and poultry. That these breeders were wonderfully successful no one questions, as we have the results of their labors in the Dutch belted cattle, Lakenvelder poultry of England and America, and the Lanchswine of Holland and Germany, and the Hampshire swine of America which were supposed to originate in Hampshire, Eng., but undoubtedly are descendants of the Haarlem herds of long ago. All of these breeds possess a belt, and carry out the idea of their originators to a marvelous degree.

The process by which these unparalleled results were attained seems to be hidden in the obscurity of the past; however it is not difficult to understand that many years of careful selection might culminate in the desired end.

There is a custom born of necessity in Holland to place blankets upon cows recently calved, on account of the dangers of the damp and humid climate as the cattle are never kept in stable during eight months of the year. It is maintained by some that white blankets were kept on these Haarlem herds on account of their neat appearance and that from an accident calves came with white middles, and then the owners conceived the idea of placing artificial belts upon their cows of the required width, and after a long time the calves came bearing the artificial color of their dams with more and more certainty. There seems to be some doubt, even in Holland, as to the method employed to produce such distinct color mark-
ings, but nothing in the animal world shows more skill in breeding than the results of these Hollanders in the production of these different breeds, so strongly bred to color lines.

The Lakenvelder cattle of the present day in Holland, as in times past, are held by the wealthy class and by a few breeders who supply the wants of those who desire these cattle but do not care to breed them, and also to supply the demand for shipment to foreign countries. These cattle have already been exported to France, Austria, Germany, Spain, Portugal, South Africa, Mexico, and the United States.

Most of the Lakenvelder cattle are found at present in the Province of Utrecht, and in North Holland. These cattle as found in Holland are larger than in America, the belt is wider often taking in part of the hips, and nearly all of the animals have more or less white on the hind feet.

As dairy animals, they possess a high order of merit having small heads, slim necks, deep bodies, straight backs, broad level hips, and large udders, and prominent milk veins. The writer saw a cow producing 80 lbs. of milk on grass feed alone, and a number of others with capacity much in advance of the best records made in America by this breed.

There are approximately about one thousand head of Lakenvelders in Holland, many of which are not bred pure, but there are still a goodly number of herds bred with care and animals can be found as near perfect in belt as can be bred.

Reference has been made to Lakenvelder cattle with white heads and black rings around the eyes. These are simply a cross with a breed of cattle common in Holland that possess this unique color, and the cross combines the two colors presenting a very striking combination of color.

From a personal inspection of many herds of Lakenvelders, the writer was much impressed with them in their native land on account of their splendid dairy quality, and it is to be hoped that our American herds will soon have an infusion of the blood of these animals as it cannot fail to be of advantage both from a dairy standpoint and from the increased vigor resulting in an out-cross.

DIRECTOR AND MRS. BAILEY HONORED

O n the occasion of the twenty-fifth marriage anniversary of Director and Mrs. Bailey, was tendered a well deserved tribute of affection and appreciation by the Faculty of the New York State College of Agriculture. Informal, enthusiastic, whole hearted, it struck the key note of the true Cornell spirit.

The scroll and silver token they brought expressed their appreciation for the two whose twenty years at Cornell have meant so much to her intellectual and social life.

On the hour agreed upon, every member of the instructing and investigating staff of the College of Agriculture (who was in town)—some sixty or more, and their wives, assembled at the corner of Stewart Avenue and State Street, from which point they went to the Bailey home. They took possession in true "surprise party" fashion. This was the first surprise of the evening.

A few minutes later, while Director and Mrs. Bailey were being "interviewed" on the front porch by a special committee, the committee on "presentation" was inside planning the second surprise of the occasion.

The lights were turned off and a beautiful silver candelabrum was lighted. A scroll, on which had been engrossed the greetings of the guests and on which had been placed the signature of every member of the Faculty of the College of Agriculture, seventy in number, was spread upon the table. Everything inside the
house being in readiness, the committee on the porch ushered Director and Mrs. Bailey into the room, now illuminated only by the mellow lights from the candelabrum. With this impressive setting, Professor John L. Stone, in well chosen words, expressed the sentiments of his co-workers when he enumerated the qualities in the lives of Director and Mrs. Bailey which have endeared them to the Faculty, to the students, and to all who know them.

It was pointed out that the five lights of the candelabrum symbolized most appropriately five distinct fields of usefulness to the world of the lives of the two in whose honor the Faculty had assembled.

One light stood for literary achievement—the trenchant pen that had written or edited more than fifty books. His other publications alone would have constituted a great life work. Vividly in the minds of all were, also, the "Bailey poems," which, aside from the Director's personality, have proven such a delightful feature of the Agricultural Assemblies.

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 reflected 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, 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, with-
HOME ECONOMICS AT THE NEW YORK STATE COLLEGE OF AGRICULTURE

By Martha Van Rensselaer
Department of Home Economics

THE New York State College of Agriculture provides for women an opportunity to place the farm home on the basis of intelligent interest. The regular courses in the College of Agriculture are also open to women and a good number are enrolled for a four years' course in agriculture as well as in the special courses of the College. Apart from this, the College is fast developing opportunities for women to become proficient in home making by its courses in Home economics. Some of the work is here outlined.

FARMERS’ WIVES READING COURSE

For those who desire practical reading on household subjects without leaving home to attend a school, a reading course for farmers’ wives is provided. It consists of bulletins issued by the College on subjects relating to home life,—Foods, Sanitation, House planning, House furnishing, House decoration, Labor Saving Devices, Reading in the Home, The Rural School, Farm House Industries. These bulletins are sent out in the winter months, November to March inclusive, to members in New York State who have asked to be enrolled on the mailing list. The bulletins are written to meet the problems in the farm home although they may be sent to anyone in the state interested.

Accompanying each bulletin is a four page discussion paper, containing questions upon the text of the bulletin and intended to secure the point of view of the readers. These questions are to be answered by the members and returned to the department. Through them valuable suggestions are received from experienced housewives. Ideas are passed on to others and the course is thus made an interchange of opinions and experiences. In no case is the name of the contributor given in print unless with her permission.

The discussion papers are all read by the Supervisor of the reading course and wherever comments are in place or questions are asked, personal letters are written to members. Questions are received on many subjects and these are referred to members of the faculty in the College of Agriculture who have made a special study of these topics. One woman wants to know how to preserve eggs, another how to rid her pantry of ants, another whether a bread making machine or perhaps a water power washing machine is practical in the farm home; another woman asks for advice concerning the feeding of her baby, or diet for the farm hands, another wants to know how to can vegetables, or to make Sauer Kraut, while another asks for lists of books to be read by the children, lists for the rural school or books to interest the boy or girl in poultry raising. Another woman asks how to build a septic tank or how to fumigate a room after sickness has occurred in the home. The subjects upon which questions are asked are numerous. A good reference library is fast being added to the College and beside the knowledge of the members of the staff of the College of Agriculture always available, there is a full set of bulletins of the U. S. Government and of other states to which readers may be referred for information desired. The course is purely educational and is intended to give farm women an opportunity similar to that afforded the farmers of the state. With a growing tendency to make farming a leading profession the farm home, which is simply a part of the large farm interest, must be based as is no other home on scientific methods.

The Farmers’ Wives Club is the second step in the Farm Home Extension work. The reading course may be for the individual reader at home or a group of women may be associated
in the study of these bulletins. Farmers' Wives' Clubs have been formed in different sections of the state, the members meeting every two or four weeks. Officers are elected, a constitution adopted, a program prepared for the year's study. The bulletins furnish a part of the material for this program while it is advised that a literary program be added which will fit the needs of the members. This may be upon history, topics of the day, a study of literature or any other subject desired.

The traveling library is an aid in the study club. The Department of Education at Albany, N. Y., will send to clubs making application to them, a set of books which have reference to the studies pursued by the club. These are secured for three months for a nominal price merely to cover transportation. A traveling library left in a community for three or six months has a telling influence upon the community. This club study is often held in connection with the Grange as the reading course bulletins have served as special work for women on the Grange program. The cooperation of the Grange has been a very valuable aid in the farm home extension.

**WINTER COURSE IN HOME ECONOMICS**

A more extended course than can be gained by reading at home is offered in the Winter Course in Home Economics at the New York State College of Agriculture. The tuition is free to residents of New York State. The only expense is that of travel and living in Ithaca with incidental laboratory fee and purchase of books desired.

The instruction is divided into lecture and laboratory work. This covers at least three hours daily for five days of the week. Saturdays are used by students in Home Economics in observing other departments and points of interest in the University and for preparation of the work of the following week.
In Course I upon Foods, instruction and practice is given in the proper preparation of dishes common in any home. Lectures in the course on Foods treat of the composition of food, food values and principles of nutrition. Young women taking this course are instructed in the feeding of human beings for higher efficiency as the men in other departments are learning how to feed animals for large values.

Subjects for Course II are the building of the house, its management, equipment and decoration. Special attention is given to simplification in living and conveniences to reduce the labor in the household. The laboratory periods are used for making house plans, marketing, observing laundry equipment, practice in laundry methods, and an observation of the source of supplies for the household. The third course which provides for five lectures a week may be selected by the student from other winter courses of the College, according to the choice of the student whether in poultry, dairy, horticulture or general agriculture.

Between three and four hundred men come to the New York State College of Agriculture for winter course work. Oftentimes these men are accompanied by wives or sisters some of whom take the work for women. It is hoped that more young women from the villages and farms will avail themselves of this opportunity. First it furnishes training in the essentials of home making. Second it gives to woman a broader outlook upon life and a knowledge which gives an interest to her life work; third, it may be the beginning of a professional course which will, with further training, be means of livelihood.

THE FARM HOME WEEK

In February of 1908 there was a Farmers' Week at the College. Farmers from all parts of the state were in attendance and many were accompanied by their wives and daughters. Lectures and demonstrations of farming methods were held in all departments. In February 1909, the meeting is to be repeated and a program will be provided each day for women's work on the farm indoors and out. This will be the farm home or housekeepers' week.

THE GRADUATE SCHOOL OF HOME ECONOMICS

By Caroline L. Hunt

University of Wisconsin

A GRADUATE School of Home Economics was held at the New York State College of Agriculture, July 13-25, 1908.

Home Economics is attracting general attention partly because it concerns that most important of human institutions, the home, and partly because, as a subject, it is in an interesting stage of development and formulation. Cooking and sewing courses have recognized places in the curriculum of lower schools and advanced courses in subjects relating to the welfare of the home are rapidly finding their places in Colleges of Agriculture and Liberal Arts, in technical and normal schools. In each of these schools a particular phase of the subject seems to develop most rapidly and successfully. Dietetics has perhaps reached the highest plane in agricultural colleges which emphasize the general subject of nutrition. House architecture, decoration and sanitation find a favorable field in technical schools, while the sociological and economic relations of the home are best studied in College of Liberal Arts.

Of the various subjects included under home economics none has received more attention than that of dietetics. It seems natural, therefore, that the demand for graduate instruction should come first in con-
connection with this subject and that agricultural colleges should be first to meet the demand.

The Graduate School of Home Economics accepted the invitation to meet at Cornell partly because of the opportunity to hear the lectures on bio-chemistry given by Drs. Zuntz, Mendel and Armsby before the Graduate school in agriculture. It was attracted also by the recently established department of home economics, by the generous offer of lectures by members of the faculty and by the great natural beauty of Ithaca.

Careful preparations were made for the meeting by Dean Bailey and by Miss Van Rensselaer and by Miss Rose. A house on the campus was used as social headquarters for the school and the members had abundant opportunity to meet other workers in the field of home economics. Besides making adequate preparations for the comfort and convenience of those in attendance, Miss Van Rensselaer and Miss Rose gave a very interesting demonstration of labor saving household devices.

The program included lectures by Drs. Fetter, Kemmerer, Needham, Webber, Stocking and Cavanaugh of Cornell. Dr. Zuntz lectured on “Food Values” and Dr. Mendel on “Food and Dietary Standards.” A course of five lectures was given by Mrs. Richards of the Massachusetts Institute of Technology in the “Relation of Costs to Efficiency.” Prof. Day of the University of Missouri gave the results of her recent work on the “Digestibility of Starch.” Professor Bevier of the University of Illinois lectured on “Problems in Teaching Dietetics,” and Dr. Langworthy of the U. S. Department of Agriculture on “Illustrative Material for Use in Teaching Dietetics.”

There were twenty-four in attendance from ten states and Canada, and the enthusiastic preparation made for future sessions showed that those who were present had received great benefit and that Cornell had assisted in the development of a valuable form of educational work.
ATHLETICS IN THE COLLEGE OF AGRICULTURE

By John F. Moakley

'Varsity Track and Cross Country Coach

The College of Agriculture is in the front rank among the colleges of Cornell in its athletic spirit. This is as it should be for the class of material is of the best, comprising as it does a student body whose physiques have been accustomed to a healthy outdoor life before coming here, and whose natural tendency is to continue the active life which they have previously led.

Cornell's prominence in all branches of college sport is of recent growth and the College of Agriculture has been a leading factor in its development. It was not many years ago when a victory in any sport besides rowing was of rare occurrence and the lack of material was given as the reason for our failure to hold our own with other universities. Those most interested in our athletic successes predicted the good results that the College of Agriculture was to bring, and always used the argument, "Wait until we get our Agricultural buildings and then we will have the material with which to win." The results attained in athletics since the completion of this college have certainly verified their prophecy.

The plan of giving gymnasium credit for participation in any branch of sport is a great incentive to students to do something in Inter-college, class, or varsity athletics. It gives an opportunity to those who have never taken part in competition to try themselves out against others as inexperienced as themselves, in the Inter-college and class contests, while the experienced men may always strive for the varsity teams. Our athletic competitions are graded in such a way that a man need give very little of his time and yet may make some team. Many fine athletes have been developed for the Varsity teams by a little participation in Inter-College and class athletics when the student was fearful of having to give too much time to trying for the varsity team, it being a serious question with him of doing sufficient work to stay in the University. When sure of their standing in their classes, the men tried for the Varsity and made it, the training both in knowledge of the sport and the betterment in physical condition from the casual work in these minor contests making of them athletes of Varsity calibre.

The good-fellowship and self-reliance gained in athletics by the average student who, through home situation or other reasons has never had much opportunity to mingle with the world, are among the notable benefits which the College of Agriculture ascribes to athletics. In the athletic Hall of Fame at Cornell University the College of Agriculture has many members. No college in your midst can show more able leaders
or more versatile athletes in sports where brain and brawn have counted for most. Let everyone do something to increase the interest in your College for general participation in athletics and you will be doing your share in the development of the true Cornell spirit in the College of Agriculture.

Of last year's "C" men ten were in the College of Agriculture, representing each of the major sports. The holder of the inter-collegiate heavy weight wrestling championship is a member of the class of 1911, Agriculture, and F. J. Porter, inter-collegiate shot-putting champion in his senior year was one of the college's early stars. The College holds the Inter-college Cross Country cup at present and has made strong fights in the inter-college crew, track and baseball contests. Such is the record of the College of "Farmers," and it is a good one. It devolves upon its present and future members to maintain and augment this standing in athletics as well as in other activities.

CROSS-COUNTRY RUNNING AS A SPORT

By H. C. Young, ’10

Captain of the 'Varsity Cross Country Team

DOUBT very much if there is any sport in this University, that is carried on to any great extent, that offers such good inducements to a person who has had little if any experience in athletics, as cross-country running. A fellow with no experience at all, by sticking to it and using a little perseverance can in a short time become quite efficient in the sport.

Beside the intercollege cross-country race that takes place in the fall, there are frequent novice races that are run at frequent intervals extending from the opening of the University in the fall until Christmas.

I could cite several instances where men came out with the mere intention of running these novice races, but who found themselves so enthusiastic in a short time that they tried for, and made the varsity team.

There is a little book called "Hints on Training," written by Mr. Moakley which is a most useful thing for a man who is doing any running at all. It gives a schedule to be followed by the beginner during his first few weeks of training also a map of the cross-country courses and many other useful hints on such subjects as what to eat, etc., that greatly help the beginner.

It is the freshmen who have the best chance of making good for they have the longest time in which to do it, and I wish the freshmen in particular would "get out" and get into the game. Run in the freshman cup races; there is still a chance to win that cup, for it is the best average in seven or eight races that count.

Now if there is any fellow who has not gone out for any athletic team and who has an idea that he would like this form of exercise let him come out and try it. If in doubt consult Mr. Moakley who is always ready to give advice to beginners.

INTERCOLLEGE CROSS-COUNTRY

By N. R. Peet, ’10

Captain of the College Cross-Country Team, 1908

MOST of the readers of this article, especially those now in the University, have noticed the trophy which has stood since early last winter in the glass case to the right of the left-hand entrance to the auditorium. This is the cup which is held for one year by the college making the best score in the annual intercollege cross-country race which is run off about the first of December.

Last year we took the cup from the Mechanical Engineers by beating out the Civil Engineers by a score of fifty to fifty-one. It might be well to state how this score is made: Each runner scores a number of points equal to his position at the finish; thus the third man to finish scores three; fifth, five, etc. The first five men in each college score for their team; hence it is the team with the lowest score that wins the race.
So much for last year’s run. Now this year we want to keep that cup and we hope to win other trophies in other branches of intercollegiate sports to keep it company; it looks rather lonesome at present.

It is up to every student in the college who can run, thinks he can run, or likes to run, to get out and hustle for his college. It is up to the freshmen especially to do this for only novices can run in this race (numeral and insignia men of all kinds are not allowed) and hence many of the old students will be debarred.

The freshmen should turn out in force: I emphasize the freshmen because I believe that most of the old students will be there anyway to get another whack at it and also to see if “he can beat out the man who tied him for 56th place.”

A meeting will be called shortly of all those interested in this branch of sport to elect a captain and manager. These officers will serve on both the college cross-country and track teams besides being members of the Athletic Board of Control of the College. It is hoped that considerable rivalry will be shown for the positions, for that will start things off with a rush which quite often is the basis of success.

Let’s have a bunch out, and then let this squad run as a bunch for it helps a lot to run together, and it also gives the other colleges the idea that we mean business which also means more than it seems at first. Let’s keep the cup!

THE FURNITURE OF THE FARM
By J. Demary, Sp.

It is hard to say whether we have in this country any distinctive farm furniture such as is often observed in European countries where chests, settles, four post bedsteads, etc., are handed down from one generation to another with scarcely any perceptible wear. Coming as did the early settlers from the different countries they brought with them according to their condition various pieces and styles of furniture and these were copied by the local Colonial cabinet makers without any particular regard for any distinctive pattern that might serve as representing farm requirements and conditions. The old-fashioned secretary with a writing leaf and cupboards above and drawers below was one of the conventional forms of which examples are to be found in many of the farm houses in the older sections of the country.

Most of the older hand-made furniture lasted a long time, since the use of glue had not reached its present stage of perfection, and the arm chairs and rockers survived for many years their makers and users. As time went on furniture from the cities and villages found its way into the farm houses thru gift or public sale and thus added to the mixture of styles often discovered in the best room whenever a wedding or a funeral necessitated the opening of its doors to the public. There has been in the past no specific attention given to the training of the rural mind in the direction of choosing such furniture and decorations that are fitting for the needs of farm dwellers and not only serve their purpose definitely but harmoniously. This was partly due to the influence of the city upon the restless members of the rural community influencing them to leave the country for good and the conservative opinion of the stay-at-homes that “education” had nothing to do with the everyday life of the farmer. Indoor decoration was by similar handicaps confined to virtually useless wax flowers, the construction of ‘throws’ used to embellish the horse hair covered furniture and the various mottoes in perforated cardboard without which no well regulated farmhouse felt complete. That the furniture in daily use by the farmer and his family bore no direct and distinct character fitting to its place and surroundings was a natural result of these influences. As the older pieces of furniture gradually became worn out they were replaced by the city styles.
previously mentioned and whose influence as molders of taste was most unfortunate. The “Red Plush period followed that of the Hair Cloth Sofa,” as one man has phrased it, and the influence of the various cousins of the jig saw could be traced by the fearfully carved and twisted chair legs that served to collect dust and had no relation to the simple purposes for which farm furniture should be designed. While this was going on the hard wood forests were in many cases being destroyed for firewood and what might have been a most fitting article of adornment and utility in a farm kitchen as a table or chair passed up the chimney in smoke. What should have been done and may be done even at the eleventh hour is to show the possibilities that lie within the farmers woodlot and their relation to the rooms that compose the farm home. Once upon a time—and it still persists—the “what not” was the repository for the books of the farmer, a three cornered affair whose shelves decreased in width till at the apex there was barely enough space for the customary sea shell which diametrically opposed the dictionary at the bottom. The name was description enough: but it took the place of the modern bookcase and as a dust collector had no equal.

The need of the present day is for some means of suggesting to the farmer the possibilities within his woodlot for rendering service and ornament to his dwelling house apart from heating purposes; the value and beauty of our common hard woods when quartered and sawed, the planning and building of a simple article like a table or bookcase, whose construction may be facilitated by the nearest planing mill, the final assembling being left to the nearest cabinet maker. Tho the cost may be in excess of the prices of the supply houses the durability will be far greater, besides the satisfaction that comes from using ones own materials.

Whether or not this subject would fall within the province of a reading course bulletin can only be told by experiment: to give elaborate direc-

tions for household decoration is like attempting to expound evolution to a man whose cow has milk fever—before the one has been fully explained the animal may be dead—simple sketches and designs like those in the arts and crafts publications, cover the ground more fully. The so-called “uplifting of the farmer” should not consist of advice given after the manner of the city slumber but a pointing out of the materials and resources which his own surroundings afford, and the means by which these may become useful and ornamental. Perhaps the Mission style of furniture lends itself better to the needs of the farm than any other; its straight and simple lines may be drawn with greater ease in design and readily comprehended by a mechanic, and the work can be left “in the white” for home staining or other finishing. Whatever form the suggestion or bulletin may take it should be in simple language covering the main points with a brief description of our native woods, their value for different situations—the sawing and manipulation—finishing, stains and varnishes, etc., together with coverings that may be produced upon the farm from the hides of the animals which otherwise would go to the dealer. Country people suffer from two great disadvantages—one is that they often are pressed for money and cannot buy beyond the necessities—the other that having gained a surplus—the gaining has been so hard that they still feel it and shrink from buying anew. The first presents a hard problem for a would be “uplifter”; the last may be diverted from the current of their thought leaving them to adorn their homes which have been in many cases hardly won. American farming has been and is a transitory existence—farms do not remain in one family for more than one generation; when this condition has been remedied and some of the features of English farming prevail, perhaps our farm furniture will not serve as subjects for the oratory of the auctioneer and be dispersed to the four winds “to settle the estate.”
The Cornell Countryman

E. L. D. SEYMOUR, Editor

E. L. BAKER - - - Alumni News Editor
W. Y. RUMSEY
F. E. BENEDICT - - - Associate Editors
N. R. PEET
S. G. JUDD
F. S. WILLARD, Jr. - - Business Manager
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T. BRADLEE
C. F. RIBSAM

NOVEMBER, 1908

The COUNTRYMAN takes pleasure in announcing the election of S. G. Judd, '11, and C. F. Ribsam, '11, to the Board, Mr. Judd joining the Editorial and Mr. Ribsam the Business staff. This election marks the culmination of the competition started last April for 1911 men. A general competition now open to members of all classes, will continue until the spring elections, unless unforeseen vacancies occur previous to that time. It is essential that competitors should register and begin their work at once, if a capable board is to be elected in April. Aside from this phase of the question is the benefit, in the form of activity and experience, that is offered to the man who enters such a competition. This benefit is of no small proportions and on this basis alone we would urge students and particularly under-class men to become actively interested now. With the additional force supplied by the necessity of competitors, we simply reiterate the request—which is, in other words, the statement of a duty to the college.

Generalization and Specialization. With the characteristic swing of the pendulum, there seems to be arising a sense of the importance of generalization as contrasted with the severe specialization which was so strongly championed a year or so ago. Yet there is a difference between the two and their applications that should be taken into consideration before one or the other is unqualifiedly condemned or applauded. Specialization it seems, may well be connected with a profession or vocation, a life work wherein one competes with others in production, manufacture and the like. In this case we must realize that to be most useful to mankind we must perform our particular duty in the most perfect way within our power, and this necessitates a thorough knowledge of the details of such a duty; a familiarity greater than that with any other activity. It is in regard to our education, however, that the idea of generalization can best be applied. The agriculturist of today—and of tomorrow—be he dairyman, seedsman, truck gardener, manager, whatever his phase of activity, cannot confine his education to one narrow line of study even though his fund of knowledge in this one direction be vast and deep. The raiser of dairy cattle who is without information as to the raising also of crops, might as well throw up the sponge at the outset. The fruit grower who is ignorant of the principals taught in farm crops, or the bare facts of the chemical effects of manuring, will be sorely handicapped in the struggle for prosperity. In this way can we see the necessity for a generalization of courses during undergraduate years. Whereas it
was once said that applicants for certain positions were accepted chiefly in respect to their specialized knowledge and experience, we now hear of the difficulty encountered by men seeking employment, because of a lack of broad, general information. It all reverts finally to the advice which is applicable in every case—namely to avoid exaggeration and extremes in either one direction or the other—and in the many subjects now offered in the agricultural colleges of the country, is found a solution of the problem of following this advice.

The 1909 Fruit Exhibit

Upon observing the preparations for the fruit exhibit which is to open on the eighteenth of November, our minds naturally revert to the first activity of the kind which a little less than a year ago was made a distinct success through the efforts of Professor Wilson and his classes. With the same enthusiastic advisor and an equally energetic class we can anticipate fully as good an exhibit, and considering also the experience already gained and the greater amount of preparation this year, it is not unduly optimistic to expect an even greater success. This is an activity that can well be talked of among the farmers of the State, for not only is it of interest to fruit growers, but furthermore of distinct educational benefit.

Through an unfortunate oversight, acknowledgment was not made, in the the October number to Mr. C. F. Clark of the Department of Plant Breeding, by whom the photograph of the experimental plant breeding gardens on page twenty-six was taken.

As we go to press we hear that the first inter-college Soccer football game ever played at Cornell was won by Agriculture from the College of Civil Engineering by a score of 2–1.

GENERAL AGRICULTURAL NEWS

One of the most promising features in present progress is the greater attention given to practical education. Interest in the sciences has advanced since they have been shown to apply in a vital way to matters of common experience. Agricultural Colleges have increased in members and importance until they take a foremost place among educational institutions, because they meet the need of the man who desires scientific training in practical everyday things. An urgent need has long been making itself felt for more scientific training for women in household affairs. In some places practical education for women has kept pace with other educational advances, but, on the whole, it has lagged until today. It is often easier for the woman to become proficient in languages, mathematics or abstruse sciences than to put herself in possession of those scientific facts which underlie the proper care of a home and children. It is in recognition of this need that many Agricultural Colleges offer courses in Home Economics; and those not already in line are preparing to follow as soon as larger appropriations are made for such work. In the fall of 1907, the College of Agriculture at Cornell University offered for the first time regular instruction in Home Economics. A
laboratory was equipped for experimental purposes and courses were outlined which should run through the four college years and lead to the degree of the college. The object of these courses is to prepare the woman to meet her home difficulties in the same scientific spirit as the trained engineer, to enable her to plan as thoughtfully for human nutrition as the educated farmer plans the balanced ration for his stock.

* * *

Dean Bailey's address at the first Agricultural Assembly on October 1, assumed practically national importance for he made his first public announcement concerning the aims and work of the Commission on Country Life. Dean Bailey denied that the commission had been appointed for political purposes and read President Roosevelt's letter asking him to accept the chairmanship of the committee. In this letter, the President clearly states that the purpose of the commission is to secure information which shall enable him to make recommendations to Congress for the remedy of certain conditions. He also suggests that methods be proposed whereby rural schools will better fit children for life upon the farm and some manner of cooperation of the national and state agricultural departments with different agricultural organizations to make country life more attractive. The plans of the Commission are to send out about 500,000 circular letters asking nearly 40 questions on rural conditions and during the Fall the Commission will probably travel through the country studying the country life in each part visited. In December, a report will be made to President Roosevelt.

* * *

Mr. H. E. Cook, a veteran Farmers' Institute worker who has recently been appointed Dean of the Agricultural School at Canton, N. Y., reports that about fifty students have already registered and as many more are expected. Mr. Cook is a practical and successful dairymen owning with his brother a large tract of land and several successful cheese factories. Some ten or twelve years ago, he built one of the best dairy stables in the country. A feature of Dean Cook's new work is the holding of Farmers' Conferences which method insures great benefit to the school and to the farmer.

* * *

Fifteen representatives of Agricultural organizations in Tompkins County met at 11 A.M. Saturday, October 10th in the Agricultural College at the call of Commissioner Pearson. The purpose of this meeting was to answer a number of questions concerning the management of Farmers Institutes in this county. Commissioner Pearson has assigned 8 days of institute work three of which will be devoted to special poultry institute during Farmer's week. On the other five days, it has been arranged to hold sessions in different parts of the county. There was a full discussion of the methods of conducting the meetings and of the subjects to be taken up. Good results are expected from cooperation of this sort. This meeting is one of a large number of similar ones held in different counties in the state and exemplifies the "Home Rule" spirit which dominates the policy of the new Commissioner.

* * *

One of the notable exhibits at the New York State Fair was the dairy display. Due to the untiring efforts of Commissioner of Agriculture Pearson, who was the State Fair Commissioner in charge of this department, greatly increased interest was shown in this branch and the exhibit was larger than ever before. All sections of the state were represented. Nearly all of the cheese was fancy and scored unusually high. Is not this increased interest in the excellence of dairy products an indication that dairy conditions in New York are improving? The ready markets at hand coupled with the natural dairy resources of this region ought in a few years to
make New York the Empire State in dairy products as in other things.

KEY TO THE FRONTISPIECE OF THE OCTOBER NUMBER


CAMPUS NOTES

The first meeting of the Agricultural Association was held on the evening of October 13, with a good sized audience, containing, we are glad to note, a goodly number of first year men. After an introductory address by the president E. I. Bayer, '09, business in regard to the financing of the Association and the College athletics was taken up. Following this, Professor Rice stirred up the enthusiasm of the meeting with a characteristically live and inspiring talk, after which the audience was given an unexpected treat. State Master of the Grange Godfrey who had stopped in Ithaca for a few hours was prevailed upon to speak, and emphasized the interest which the Grange is taking in questions of agricultural education. Professor Tuck next made clear the relations that should exist between the student and college and university activities, urging men to take advantage of the opportunities offered while they were freshmen and sophomores.

* * *

The meeting adjourned after E. L. D. Seymour, '09, had talked about the COUNTRYMAN, and the classes met separately to elect members of the Committee on Student Honor. This resulted in the election of the following: Seniors, E. I. Bayer, E. H. Thomson, E. L. Baker; juniors, V. J. Frost, W. W. Fisk; sophomore, I. C. Jagger. The freshman member will be chosen in December.

The formation of the Inter-college Athletic Association resulted in the arrangement of a schedule for Soccer football games early in October. Upon the first call for candidates, seventeen men showed up and this interest was continued in the competition for places on the team. The first game was played on October 15, against the Civil Engineers, after this issue had gone to press.
Preparations for the Second Annual Fruit Show were begun on October 13, when at a meeting of the class in Systematic Pomology the date for the show was chosen as November 18, and the following committees were chosen: Fruits, W. H. Stark; Exhibit, S. P. Hollister, Miss E. F. Genung, B.B. Robb; Award, P. Judson; Package, G. H. Miller; Arrangement, R. J. Shepard.

It is Professor Wilson's intention to have the show under the entire control of this class, although all horticultural students were invited to take part and assist in the work. The results that accrue from such experience are illustrated by the fact that at the State Fair this fall, the exhibit of the Webster Grange put up by Mr. Robb, a prominent member of last year's committee, won third prize of twenty-five dollars.

The exhibit this year is to be even larger than the first, and there will be added exhibitions of insects and diseases injurious to fruit, as well as of the various pomological products, such as fruit juices, jellies, preserves, etc.

* * *

A preliminary report from the Registrar, early in October gave the following figures:

Regular students ............... 244
Special students ............... 136

380

This number is exclusive of graduates and of a number of students who have registered since that time. A final statement of registration numbers as compared with those of last year will be published at a later date.

* * *

The first Agricultural Assembly of the college year was held Thursday evening, October 2. There was a larger gathering of members of the faculty and students than at any previous first assembly. The entertainment consisted of musical selections and the regular address by Dean Bailey.

During the summer, there came to the University, the sad news of the death of H. D. Everett, a former student in the College of Forestry. In a letter just received from Dr. F. W. Foxworthy, who was his room-mate in Manila, there are given further details. Mr. Everett was Acting Director of the Forestry Bureau at Manila during a part of the past year. While doing exploring work in Negroes, he and his entire party were assassinated by savages, after first being stupefied by the fumes of a plant which was placed upon their camp-fire. Mr. Everett was one of the most promising of the students of the former College of Forestry at Cornell, and a man who was, personally, very popular. His death will be mourned by a large circle of friends, both here and in the University of Michigan, where he completed his course.

* * *

Professor Chas. H. Tuck has passed the civil service examination for Conductor of Farmer's Institutes.

* * *

Hobart C. Young, '10, was recently elected captain of the cross-country team. At the Intercollege cross-country meet held at Princeton last fall, he finished sixth and was the fourth Cornell man to cross the line. At the spring Intercollegiate track meet held at Philadelphia, Mr. Young finished second in the two-mile run.

* * *

Professor and Mrs. J. E. Rice entertained the Poultry Association at their residence, on October sixth. Short talks were given by Professors Rice, Tuck and Rogers, also by the members of the Board of Directors and by ex-members of the Board. Games were played on the lawn and Mrs. Rice served some wonderfully fine pumpkin pie and home made grape juice; later a large bonfire was built on the site of the old stand pipe, marshmallows were toasted and songs were sung. About seventy-five were present.

* * *

The Lazy Club held its first meeting of the season at its room in the forcing
The Cornell house, with Professor Craig presiding. Plans were started for the creating of a score card for fruit, with Professor Wilson as chairman of the committee. Niagara grapes from the experimental plots at Romulus were furnished in abundance during the evening.

* * *

Professor Stocking left Ithaca, Oct. 6th, to attend the International Congress on Tuberculosis, at Washington, D.C., where he had sent a pure milk exhibit and some cultures.

* * *

Mr. Wilhelm Miller, a former Cornellian, and at present associate Editor of Country Life in America and the Garden Magazine, visited the College Oct. 5th. Mr. Miller and wife, formerly Miss Mary Rodgers, '96, spent six weeks in England, studying the gardens of several great estates.

* * *

E. H. Meyer, '11, was married July 29th to Miss Lela Zimmer, Ovid, N.Y., they are at home at their apartment at 502 N. Aurora.

* * *

Harold E. Ross of the Dairy Department is the proud father of a daughter, Miss Jane Elizabeth Ross who first called on her parents September 29th.

* * *

The Cornell University Poultry Association has moved into its new office in the Dairy building and one or more of the Board of Directors will be at the office from 9-10 a.m. and 1-2 p.m. At a special meeting of the Board of Directors, it was decided to enlarge on last year's premium list. A better quality of paper will be used and more copies printed. There will be an election of two directors and an appointment of one director to fill vacancies in the near future.

It will be of interest to the readers of the Countryman and other Cornellians to know that Mr. E. S. Guthrie, formerly of the Dairy Department of the Ohio State University, has been appointed as Instructor in the Department of Dairy Industry. Mr. Guthrie grew up on a general stock and dairy farm in southwestern Iowa. After receiving his preparatory training he entered the Iowa State College of Agriculture, where he graduated in 1905 with the degree of B.S.A. After graduation, Mr. Guthrie was appointed instructor in Butter-making in the Dairy Department at the Ohio State University, which position he has occupied for the past three years. During this time in addition to his duties as butter instructor, Mr. Guthrie spent considerable time in extension work throughout the state. During the past year he has also been Secretary of the Ohio State Dairyman's Association, which position he resigns in order to come to Cornell. As Secretary of the State Dairyman's Association Mr. Guthrie's work was of great value to the dairy interests of the state.

For some months Mr. Guthrie had entire charge of the work of the Dairy
Department at the Ohio State University during the absence of the head of that department. In addition to his scientific training, he has spent the last few summers in large commercial dairy plants in different parts of the country. Mr. Guthrie, therefore, comes to us with a broad experience both in practical and in scientific dairying. The Dairy Department is fortunate in securing the services of such a man.

FORMER STUDENTS

'07, M. S. A.—O. S. Morgan, who was recently called to Alfred University as a director of the new agricultural college, was born at Hampshire, Illinois, in 1877, and lived on a farm till eighteen years old. In 1895 he was graduated from the High School and then attended the Illinois State Normal University from which he was graduated in 1899. Still thirsting for knowledge he attended the University of Illinois from which he was graduated in 1905 in the general science course.

O. S. MORGAN.

He taught at the Burlington High School, Iowa, for six months and for the year 1906 as principal of the normal training school at De Kalb, Illinois. Later Mr. Morgan entered Cornell University for the purpose of working for a Master's degree. His major subject, agricultural education, was pursued under Prof. Bailey and his minor, Pomology, under Prof. Craig. In 1907, this degree having been granted, he continued his work at this University with the intention of earning a Doctor's degree, his subject being secondary Agricultural education. Although his new office will prevent his attending Cornell he will continue to work for his Doctor's degree in absentia. While here he was a member of the Gamma Alpha scientific fraternity, and the past year was a fellow in agriculture.

While at this University Mr. Morgan was characterized by the thoroughness with which he pursued his work, and in securing such a man as its first director we feel confident that the Alfred Agricultural College has strengthened its foundation and will rapidly rise to a high state of efficiency.

'06, B. S. A.—Ora Lee, Jr., of Albion, N. Y., and Miss Lela Huslander, daughter of Mr. and Mrs. Lee Huslander, of Binghamton, N. Y., were married on Sept. 23. The ceremony took place at the High Street Methodist Episcopal Church of Binghamton. The bridesmaid's attendant was C. F. Shaw of State College, Pa., and C. Taber Perkins, of Syracuse; W. G. Brierley, of Dover, N. H., Ernest Kelley, of Newark, N. J., and John H. Barron, of Nunda. N. Y., all classmates of Mr. Lee, were among the ushers.

—Cornell Alumni News.

'06, W.—W. J. Tenney of Hillcrest Fruit Farm, Hamlin, N. Y., writes as follows concerning himself and brother, C. M. Tenney:

"Since taking the winter course at Cornell we have purchased a fine farm, have put out eight hundred fruit trees and will plant eighteen hundred more this spring."

"We like the COrnell Countryman very much."

'03, W.—Mr. E. J. Tomlinson is at present employed at the Chase Bros. Nursery in Rochester.
'08, W. P. C.—Fred Deyke is in charge of poultry at the Gabriel Sanitarium, Gabriels, N. Y.

'08, W. P. C.—Earl Crane is assisting Prof. Rogers with poultry at Bergen, N. Y.

'08, W. P. C.—H. L. Grubbs, Hans Kollanderud, and Ray H. Tregallar have returned to pursue studies at Cornell.

'08, W. P. C.—Gilbert S. Faries of "Lindenhurst Farm," Concordville, Penn., was married recently to Miss Bertha Price of Smyrna, Del.

'08, W. P. C.—Herbert F. Bachelor is employed as assistant on the Cornell poultry ranch.

'08, W. P. C.—Walter H. C. Ensign has been engaged by Purdue University as an instructor in poultry.

'08, W. P. C.—Allen G. Phillips has been called to the Kansas Agricultural Experiment Station to take charge of its poultry.

'08, W. P. C.—Miss Ella Hays is managing a poultry farm of her own at Gasport, N. Y.

'08, W. P. C.—J. B. Wilson is at the Vanderbilt estate, Hyde Park on the Hudson, in charge of the poultry.

'08, W.—Herbert F. Bachelor of Orange Co., N. Y., was married Sept. 9th, to Miss Mae Worden at the home of the bride's parents, Andes, Delaware Co. Mr. Bachelor is an employee of the Poultry Department and is residing at 220 Cobb St.

'08, Sp.—Chas. Joseph Telfer of Ft. Atkinson, Wis., was united in marriage to Miss Sara Coe at the home of the bride's parents at Ft. Atkinson, June 30th. Mr. and Mrs. Telfer are at home at 240 Linden Ave., Ithaca.

BOOK REVIEW


It might occur to some of our readers to call us to account for a re-

view of a book outside the pale of technical agriculture. We have a defence, however, and a capable one, in the fact that this is a book for everyone to read—and one which we are willing and glad to recommend. Mr. Churchill is known throughout the country for his romances and, lately, for his characterizations of modern American life. Nearer home—his home in the New Hampshire hills—he is known also for his efforts in behalf of "purer politics," the politics that are the hidden keynote of his latest book. Had we no further information on the subject, we would be easily convinced after reading Mr. Crewe's Career, of the author's knowledge of the inner mechanism of some government, and also of his unequivocal, determined sentiments in regard to such practices.

To analyze somewhat, this story attracts first by its unceasing and un-failing interest; the interest that holds the eye and thought of the reader beyond the reach of outside interruption; that makes the book a dangerous one to pick up, of an evening, if there happens to be work to do for the morrow. The interest is varied also, from the mingled sympathy and admiration for Hilary Vane, and the ever-present attraction of a realistic, uplifting love-story, to the intense excitement that accompanies the description of the election of the Governor at Albany.

As we are advised not to become narrow by a continuous application to one subject or interest, unrelieved by exercise or recreation, so do we pass on this advice and with it the specific recommendation to make use of Mr. Crewe's Career as a broadening, instructive and wholly fascinating recreation.


There is a certain personality, a certain emanating spirit that we almost invariably notice in scientists, in men dealing with deep, important facts.
whose entire work is saturated with accuracy and whose aberrations, mathematical or otherwise, are usually to be measured in millionths or less. We feel convinced that not a few of our readers who were in the college in 1906–7, will remember Dr. J. G. Lipman and his lectures upon Soil Bacteriology, and connect, with him, this same abstract, undefinable scientific atmosphere. For Dr. Lipman is, as his work with the New Jersey Experiment Station has shown, a typical, thorough, and modern scientist in every sense, and his latest publication bears out this characterization with distinct force.

After perusing this book one feels that he has at least a "speaking acquaintance" with every kind of bacterium that exists, and that every day changes and phenomena have taken on a vastly different and more complicated aspect. After an introduction of Bacteria in general, their forms habits, life histories, characters, etc., we are led up to every one of the important phases of country life and shown clearly and understandingly its connection with the various microorganisms that we have formerly heard of as "germs," "microbes" or "bugs." Air and Water, Sewage, Soil Fertility, Barnyard Manure, Milk and its Products, Food Preservation and Various Fermentation Processes, are each discussed in several chapters, and not only is their relationship to Bacteria made clear, but in each case principles are either implied or stated, that permit one to act in the wisest and most effective manner in cooperation with, or against these organisms.

So much for its completeness. But the work has another attraction in its simplicity and ease of understanding to the lay mind. Technicalities are, wherever possible, omitted, or otherwise made perfectly clear, so that these scientific truths, which are so marvellous in themselves, and so recent in their discovery, are grasped and appreciated almost without a realization of it. We have suggested before this the addition of a considerable number of different books to the library of the farmer and the student. We now advise that this one be added, for it contains information, facts and advice, that should be familiar to every worthy farmer and citizen. The duty of mankind to care for and protect his fellowmen is a paramount one: Parts of this book tell us how to do this work. And withal, the book is very readable.
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</thead>
<tbody>
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<td>$1.00</td>
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<td></td>
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<td></td>
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<td>COSMOPOLITAN,</td>
<td></td>
<td><strong>$3.00</strong></td>
</tr>
<tr>
<td>CORNELL COUNTRYMAN,</td>
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<td><strong>$3.00</strong></td>
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<td></td>
<td></td>
<td>$3.30</td>
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<tr>
<td>HOARD'S DAIRYMAN,</td>
<td></td>
<td>$1.00</td>
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THE CO-OP
Morrill Hall, on the Campus
Cover Design—Christmas and the Little Countryman and Woman
Frontispiece—Ryeland Sheep
Sewage Disposal for Country Residences, ... H. N. Odgen 65
Forecasting the Weather, ... George W. Mindling 68
Ryeland Sheep, ... J. L. Stone 71
A Novel Fertilizer Industry, ... L. B. Judson 73
Estate Management, ... L. H. Moulten 76
Reminiscences of a “Shorthorn”, ... H. H. Harriman 78
Why I Came to Cornell, ... T. R. Temple 79

The Advantages Afforded by Country Life for the Development of Useful Men, ... F. N. Darling 80

Editorials,
To the Newcomers ... 82
Expectations, ... 82
Health, Wealth and Happiness, ... 83
Christmas, ... 83
Country Life ... 83
A Valuable Example for Alumni, ... 84

General Agricultural News, ... 85
The Annual Chrysanthemum Exhibit, ... 87
Campus Notes, ... 88
Former Students, ... 92

THE CORNELL COUNTRYMAN
is a monthly magazine published by the students of
The New York State College of Agriculture at Cornell University
Address, COLLEGE OF AGRICULTURE, ITHACA, N. Y.

SUBSCRIPTION PRICE, $1.00 PER YEAR
Entered as second-class matter at the Post Office at Ithaca, N. Y.
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SEWAGE DISPOSAL FOR COUNTRY RESIDENCES

By H. N. Ogden

Professor of Sanitary Engineering, Cornell University, and Sanitary Engineer, New York State Department of Health.

THE following discussion of methods of sewage disposal suitable for country residences is based on the assumption that the residence is provided with so-called modern conveniences, that is, with a supply of hot and cold water, accessible from faucets in the kitchen and in the bathroom, with modern stationary washstands, sinks, bathtubs and water-closets, and with suitable pipes, properly protected against frost, for leading the waste water from these fixtures away from the house. The discussion, therefore, deals only with the disposal of such water-carried waste as may be delivered by the house drain above referred to.

This waste water carries with it both organic and mineral matter, though in the proportion of only about one part per 1,000 parts of water. And yet this one part of organic matter may, under certain conditions, become offensive if not dangerous, unless properly cared for. Except for the one part of organic matter, the waste water might be carried to some stream to form a part of its volume, but there are these objections:

(1) Unless the stream has a minimum flow of about fifty times that of the sewage, and has a velocity and section such that deposits will not occur, gradual accumulation of solids will take place and by decay, become objectionable.

(2) If the stream, even miles below the point where the sewage is discharged, is to be used for drinking water, then the sewage becomes as so much poison, and common decency and fairness should forbid such a discharge.

(3) In New York State, the Health Law forbids, under penalty of a large fine, the discharge of sewage, even from a single house, into any stream, without the permission of the Commissioner of Health. There are many cases where the permission of the Health Commissioner can undoubtedly be obtained, but the method of disposal by dilution calls for no further comment or explanation.

But where the method by dilution is not applicable, disposal on land must be substituted. Fortunately this general method is well understood and should consist of two parts, viz.: subsidence and filtration. The reason for the twofold treatment is that the natural process of destroying the organic matter is two-fold, and consists first of a “rotting” or fermenting stage, and second, of an oxidizing stage—just as manure has to “heat” or rot before it disintegrates. It has been found by experience that if sewage is allowed to pass slowly through a closed tank of proper capacity, the first, or fermenting stage, will be properly provided for, and that then the oxidizing stage will be provided for by any ordinary soil.
The capacity of the tank is of some importance. It should hold about one day’s flow of sewage, and should be long and narrow, so that the fresh sewage, entering at one end, shall move so slowly through the tank that at its exit the desired changes in composition will have taken place. If each person of a household uses 20 gallons of water a day, and there are ten persons in the household, the tank should hold 200 gallons, or should be three feet deep, two feet wide and six feet long. The use of water is at the rate of forty gallons then the tank might be three feet deep, three feet wide and eight feet long. In order to maintain the efficiency of such a tank, it must be left undisturbed, i.e., the water level must be kept constant, no currents should disturb the water surface, and the light and air must be excluded. It follows then, that a weir or dam must be provided at the outlet, and that the inlet must be carefully arranged for, and the whole tank is best placed underground. Figure 1 shows an ideal tank for the purpose.

A hole has been dug back of the house, of the proper size, and the bottom and walls, eight inches thick, have been made of concrete. The cover is of plank, though a more permanent roof would be better. The inlet pipe comes in on the left, and a sheet of galvanized iron is bent around in front of it to prevent a current and to force the flow out equally in all directions below the lower edge. At the right end is the dam for holding the level of the sewage and about a foot back is a board on edge, to keep floating matter from going over the dam. A vent pipe is shown because gases are given off in the tank and should be allowed to escape.

The sewage from the tank is shown discharging into a second smaller tank holding one or two hours flow. One twelfth of the volume of the other tank would be suitable, and it is conveniently built against the other. In this should be arranged either an automatic flush tank whereby the contents are discharged regularly as often as the tank fills, or else a hand
valve, which may be operated from the surface, when necessary. The latter practice requires a much larger tank, (to obviate frequent visits to the valve), and the automatic arrangement is altogether the more desirable. These siphons cost about $10.00 for a three-inch size, and are practically indestructible.

The second part of the process, that is, the application to land, may be accomplished in one of three ways. If a vegetable garden is suitably located, with reference to the tank, the sewage can advantageously be run into furrows between rows of root crops, thus disposing of the sewage and increasing the productiveness of the garden. In deep narrow furrows the disposal will go on in winter as well as in summer, the heat of the sewage delivered from the flush tank keeping the ground open. About forty lineal feet of furrow ought to be provided for each person in the family. A second method is to carry the sewage to some part of the farm where the ground is sandy and turn the sewage onto level areas, from which the top soil has been removed. There should be two of these areas, and the flow shifted from one to the other every day. Underdrains in some cases may be necessary, though generally for a single house they can be dispensed with. About 30 square feet should be provided for each of the beds, if the sewage flow is 200 gallons per day as assumed above. Otherwise take ten square feet for each person, divided into two parts. No special distribution is required, a flat stone under the end of the pipe being all that is necessary.

Finally, the effluent from the tank may be turned into a line of three-inch agricultural tiles laid in shallow trenches, ten inches deep, the separate tiles being merely butted together, so that the sewage can escape through the joints. This method of disposal can be used under the grass of a lawn without nuisance and even without exciting comment. Two precautions, however, must be observed. The tiles must be laid on grades of not more than six inches in one hundred feet, in parallel lines ten feet apart, and at least twenty lineal feet of tile should be provided for each person. The writer can personally vouch for the success of this last method, as he has watched a similar plant operate through severe winters without any interference with its continuous operation.

Fig. 2 shows one possible arrangement of the tiles for this method. Two sections are provided, controlled by valves shown on the extreme left, so that the two sections can be used alternately. Underdrains also are shown, although these may generally be omitted.
FORECASTING THE WEATHER

By George W. Mindling

Assistant Observer, United States Weather Bureau, Cornell Section

IN MOST of the habitable globe, particularly in highly civilized countries, the weather is subject to frequent, and in many instances to sudden and violent changes. This is especially true of the United States, and accordingly popular interest in forecasting runs remarkably high. No other part of the world experiences weather changes equaling in frequency and violence those of the northeastern part of our country. All the vast interior of the United States is visited by cold waves such as are unknown in any other continent. It is only on the Pacific slope and in limited portions of some of the most western states that the weather of this country manifests a regularity sufficient to remove anxiety in regard to its changes for any considerable period.

There is no class of persons that is not desirous of knowing what the weather will be at least a day or two in advance. The farmer plans his work in accordance with his expectations of the weather. If storms are coming he will prepare for them by bringing in his harvest or picking his fruit. The merchant, the shipper, the railroad official and all business men must regulate their affairs to some extent according to the requirements of the weather. A discussion of the relations of modern business to weather forecasts will be given later.

From time immemorial people have sought to know in advance the character of the weather and so widespread has been this desire that innumerable methods of forecasting have arisen. Foreknowledge of the weather has indeed appeared so important that every possible, if not plausible theory has had its trial. The importance of the problem has had an enormous influence in creating hope for its solution, a hope so great that people were not discouraged by the numerous failures of the signs of the weather. On the contrary, they studied the signs carefully and awaited the results patiently on the ground that nothing could be lost by the failure of a prediction but that each success was a clear gain. Of course, there was never any apparent reason that the winter should be like the first three days of December, that it should be unusually cold if the corn husks were uncommonly thick, that winter frosts should be followed by late spring frosts, and so on. Nor was any one ever able to prove by records of the weather that the proverbial old sayings were of any practical value in forecasting. But the difficulty of the problem was recognized by all and a perfect solution was, and in all probability, never will be expected.

In comparatively recent times, the almanac and other long-range forecasts have been regularly published. These all make wonderful pretensions of fulfillment and it is not so surprising that many persons place some confidence in them, as they are prepared by shrewd men that know quite well how to hoodwink the people. The predictor may say, "Between the 16th and 20th of November, storms will move eastward and rain or snow will occur in the northern section of the United States." This is representative of the style of all the professional long-range forecasters. Such a prediction
as this will gain many a fulfilment as every intelligent person knows. That is, there will be storms with rain or snow in some part of the northern section of the United States between the 16th and the 20th of November, and any other four days of the month might be selected with equal reason and with equal success. But a prediction of practical value is not one that foretells storms in the northern section of the United States. There might be severe snowy weather in Montana, fair in the Dakotas and clear skies in Minnesota. The prediction of practical value must tell what to expect in northern Minnesota, in upper Michigan, in southern Ohio, in western New York, in central Illinois, and so on. And it must not say between the 16th and 20th, thus allowing a margin of four days for verification, but it must make a definite statement of the conditions to be expected day by day and night by night. To some persons the almanac forecasters may have seemed to be remarkably successful, but their forecasts contain nothing more than a thinking man should know, unaided even by the study of records or of the sciences.

Valuable predictions can not be made from weather proverbs nor from the positions and movements of the planets as some of the almanac forecasters would have us believe. Indications of the coming weather have been sought in the appearance and behavior of certain plants and animals, but doubtless these indications are as much the results of past conditions as they are signs of future ones. In the present state of knowledge there is only one basis on which to issue a forecast, and that is the weather map, which shows the weather conditions all over the country. The general eastward progression of storms and other types of weather is so certain and so well understood that it is hard to see how any one can expect a weather forecast to be based on anything else than a knowledge of the weather prevailing over the country, especially to westward.

Illustrating Tendency of Storms from the Southwest to Follow a Curve Near the Coast. January 5 to 8.

There are certain modifications of this eastward movement that must, however, receive consideration, if we would understand the real value of the weather map in forecasting. The map is based on telegrams received from stations in all parts of the country, and is completed and ready for distribution within two hours after 8 A.M. and 8 P.M., when the observations of the weather are telegraphed. By noting the position of the storm center on each issue of the map it is easy to plot the course taken by the storm so as to represent its path across the country and show the distance past over in each twelve hours. The Weather Bureau thus traces the course of every storm that passes across the country, and publishes charts at the close of each month showing the tracks of all the storms that occurred during the period. The course of the areas of fair weather is also indicated. These charts show that storms do not always move in the same direction. Sometimes they travel toward the northeast, sometimes toward the southeast, occasionally they move directly north or south, and quite frequently in a fairly straight line eastward. Storms coming from any certain section generally follow a fairly well defined path and usually the entire course of a storm can be approximately foretold from a knowledge of its movement during a brief period beginning at or soon after its origin. For instance, if a storm first appears moving westward over the Gulf of Mexico, it will, in all
probability curve northward, pass thru the central valleys turning gradually toward the east, and finally move over the lake region or Ohio Valley to the New England coast and proceed for some great distance over the ocean.

It was a storm of this type that wrecked the city of Galveston on September 8th, 1900, causing the loss of 6,000 lives and the destruction of $30,000,000 worth of property. Fig. 1 represents the movement of this famous storm from the morning of the 4th of September until the evening of the 12th, and indicates its position at various intervals. Fig. 2 shows the course of a storm that appeared central over El Paso, Texas, on the morning of the 5th of January, 1908. This storm kept very near the coast thruout its course. A third type of storm is shown in Fig. 3.

![Fig. III](image)

**Fig. III**

**TYPE OF CURVE FOLLOWED BY STORMS FROM THE NORTHWEST. INTERVALS OF 12 HOURS FROM JANUARY 25TH, 1908.**

It is apparent from these examples that the rate of movement is much greater in winter than in summer and greater in the eastern than in the western half of the country. These examples also illustrate the tendency of storms to move in rather well-defined curves. But the direction of the storm tracks is considerably modified by the varying distribution of atmospheric pressure, and the movement is sometimes accelerated, sometimes retarded.

Now the weather map shows all conditions likely to influence the movement of storms and thereby affect the changes of the weather. It indicates the regions of clear, partly cloudy and cloudy skies, of rain or snow; it shows the direction and force of the winds, the temperature and the reading of the barometer, while by comparison with the previous map any changes that have occurred during the last twelve hours may be easily observed. It is by means of such knowledge that an experienced forecaster of the Weather Bureau after having completed his morning map can look it over and dictate predictions for State after State almost as fast as he can talk, seldom making more than one error in six predictions.

Owing to the lack of adequate means of communication the general eastward movement of storms was unknown until comparatively recent times. It was first observed by Franklin, it is believed, but before the invention of the telegraph there was no possibility of taking advantage of the knowledge of eastward movement by furnishing advance information to threatened districts, nor had it appeared to be certain that weather predictions based on this knowledge would be worth while.

It has been said that the first scientific attempt at weather forecasting grew out of an incident in the Crimean War, and took into account the eastward progression of storms as observed by Franklin and others. On November 14th, 1854, a severe storm past over the Black Sea and destroyed many ships of the French fleet. It was remembered that a storm of considerable energy had swept over western Europe a few days before.

Accordingly the French Minister of War directed that an investigation be made to determine whether it was the same storm that ruined the fleet, and if so, whether it might not have been predicted. Weather records from all sections of the continent were consulted and it was found that the storm noted in western Europe had moved gradually eastward and proved to be the storm that wrought the destruction in the Black Sea. It was evident that by the use of the tele-
The Cornell Countryman

graph, the extent and the character of the storm could have been ascertained and timely warning could have been sent to the threatened regions. It was also evident, that to accomplish such a result on similar occasions, would require the maintenance of a system of observing stations well distributed throughout the country. At these stations simultaneous observations should be made frequently and the weather conditions immediately telegraphed to a central office, so that the state of the weather for the entire country might be known at all times. Then within two or three hours after each observation, predictions for every section of the country could be received by telegraph from the central office.

This incident, occurring as it did soon after the invention of the telegraph, gave a great impetus to the establishment and extension of national weather services. In this country weather reports had been collected by mail for some years and considerable work had been done in the making of a series of weather maps at intervals of one or two days. The weather observations were made chiefly by the army surgeons, the registrars of the United States Land Office and various scientific societies, while the Government Meteorologist, Professor James P. Espy and the Smithsonian Institution published the weather maps and with the aid of such men as Redfield, Coffin, Loomis and Joseph Henry deduced from them some of the leading facts relating to the movement of storms and other types of weather across the country.

Enough had been accomplished by the year 1861, to justify the establishment of an elaborate organization for the study of the weather but the occurrence of the Civil War so rearranged the telegraph service that nothing of the kind could then be attempted. But in 1870, Congress passed an important act making it the chief duty of the Signal Service of the War Department to keep records of the weather and issue warnings of storms for the benefit of the shipping interests, particularly on the Great Lakes and along the Atlantic coast. The same year the first storm warning was issued. Soon after a system of flags and colored lights was adopted to be used as weather signals and displayed from towers and light-houses along the shores of the Lakes and oceans. Within thirty-five years the number of display stations has increased from about 25 to nearly 300, and there has been a similar increase in the number of weather observing stations.

(To be continued)

RYELAND SHEEP

By J. L. Stone
Professor of Farm Practice

While in England last summer, upon suggestion of Professor Wing, I took occasion to get information regarding Ryeland sheep, a breed of which little is known in America but has attained a good reputation in some parts of Great Britain and is beginning to be exported for breeding purposes. With this object in view, I visited the farms of Mr. W. H. Davies and Mr. H. T. Smith, near Stoke Edith a few miles east of the old city of Hereford. It is claimed that the flocks upon these farms are among the oldest and best established of any to be found—that for at least eighty years they have been bred here in their purity. The name Ryeland seems to have come from a section of country south of the district named above which, on account of its sandy soil, is much devoted to growing rye and is spoken of as the Ryelands. Here a class of sheep was developed that seemed to have the quality of being readily fitted for the butcher on a sparcer vegetation and especially with less “roots and cake” than was re-
quired for other breeds. These sheep are recognized as of excellent quality in the Hereford market—the leading live stock market in the west of England.

Flock records have been kept for a long time, but I believe there has been no association formed to take charge of their registration. There seems to be little printed history of the breed in existence. I urged upon Messrs. Davis and Taylor the desirability of putting the known facts regarding the breed into permanent form before the passing of the present generation and obtained from the latter gentleman a promise to write out a detailed account so far as his knowledge of the breed extends and send it to me by mail. As yet it has not been received.

I found these sheep in many respects like the Shropshires, the most noticeable differences being that they have white faces and legs and are not so heavily woolled over the head as the Shropshires. It is claimed for them that they equal the Shropshires in size and this seemed to me to be correct, though I did not see any specimens as heavy as some Shropshires I have known. It is also claimed that in quality of mutton they equal the best, though it is admitted that on account of their white points they are sometimes at a disadvantage in markets where there is a prejudice in favor of mutton showing dark points. It is claimed that in the matters of fecundity, hardiness and freedom from disease, they excel other breeds that have been developed on richer land. Should further experience fully establish these claims it will be fortunate, as many of the breeds are more or less wanting in these important particulars. I observed, however, in both flocks that I visited, several animals down on their knees while feeding, indicating the presence of foot rot. The wool sells in the same class as Shropshire wool and the yield is about the same.

Everything considered, I was favorably impressed with the sheep I saw and I should expect that a breed developed on the soil and under the conditions that these have been, would take more kindly to our hot, dry summers and often dried up pastures, than do those breeds that have been developed on richer land and with heavier artificial feeding.

The illustrations show their characteristics quite satisfactorily.
A NOVEL FERTILIZER INDUSTRY
By Lowell B. Judson
Assistant Professor of Horticulture

AMONG the hills near Hacketts-town, New Jersey, lies a circular valley about two miles across, which is as level as a floor and of surprising fertility. The soil is as black as coal, and for a depth of several feet appears to be made up entirely of decayed vegetable matter, all fine and mellow. Eighty-four per cent of it, in fact, consists of organic matter, so that it may not improperly be considered a vast bed of humus. Many peat bogs, of course, run quite as high in organic matter, but such soils are nearly always sour or coarsely fibrous, and totally unfit, even when drained, to produce any of the more exacting crops. This particular deposit of humus is unusual from the fact that it is perfectly free from acidity, and of a very fine, uniform texture. With no further treatment than draining, it is capable of producing enormous crops of vegetables and other plants which delight in a rich, mellow soil. Onions yield astoundingly, and celery grows most luxuriantly, as may be seen from the accompanying illustrations; and lettuce, cabbage, corn and tobacco are no less thrifty. It is evidently a most grateful pasturage for plant roots.

The idea of digging up this soil and placing it on the market as a fertilizer came several years ago to a man who had been in the fertilizer business for some time, and felt the desirability of a filler that, though cheap, would yet be of some actual fertilizing value, instead of merely inert, like the sand, ashes or plaster commonly used as diluents. This soil seemed to offer just the requirements, for besides being cheap and abundant, it carried a considerable amount of nitrogen, and provided the thing in which all chemical fertilizers were nearly or quite
deficient, namely, humus. The soil required only to be dried and granulated to be ready for market. Excellent as the filler was, however, the fertilizer concerns preferred to keep largely to their old and cheaper methods, and this led to the new material being placed on the market as a fertilizer complete in itself, instead of a mere filler. It was christened Alphano, the Greek for increase. It is especially recommended for lawn dressing, since it provides humus without the least danger of weed seeds.

The machinery used in the preparation of this material is rather unusual and interesting. The field machines are especially designed for the work, and operated by electric motors mounted on the framework. Power is supplied from the factory near by.
A neat cut about ten inches deep and wide is made by the swiftly revolving wheel at the lower left hand corner, as shown in Figure 2. The spokes are armed with slightly projecting knives which cut away the soil with the greatest ease, for it is fine and uniform, and entirely free from sticks and stones. As the soil is cut it is whirled upward by the knives and directed by a guard onto the chain conveyor. The fan-shaped stream of particles can be seen in the picture. At the top of the conveyor a four-bladed paddle-wheel bats the soil sharply, completing the breaking up and casting it out in a very even spread over a strip some two rods wide. The picture shows the soil flying out from the paddle-wheel. The ground at the side of the machine having been previously leveled, this thinly spread layer when dry is scraped into heaps by a motor-scaper. The rear view of the digger in Fig. 3 shows the steering gear, for the machine is mounted on low, wide-tread wheels, and advances slowly and automatically as the cut is made. The windlass at the top enables the operator to regulate the height of the cutting wheel. The cable which supplies the current is seen trailing behind.

After the dry soil has been scraped into heaps, it is loaded onto dump cars by the electric loader shown in Fig. 4. It is locomotive, and mounted on absurdly wide wheels to keep it from sinking into the soft soil. As the cars are filled, they are run to the factory not many rods distant and dumped on the pile shown in Fig. 5. This sun-dried material may now be bagged and
shipped without further treatment, and part of it is so disposed of. It is useful where rich soil is required for mixing with poor, to form lawns or flower beds. City lawns can be greatly improved in this manner, though the expense is considerable.

Factory treatment of the soil consists in passing it slowly through heated iron cylinders of some six feet in diameter and great length. The cylinders are slightly inclined, and revolve slowly, carrying the soil along and keeping it thoroughly stirred. When it emerges from the lower end it is bone-dry, and in lumps from the size of a walnut downwards. Some is put on the market in this form, but most of it is passed through a crusher, which reduces the particles to uniform size. The finished article, from its color and size of grains, reminds one somewhat of onion seed. This form is the only one adapted to use as a filler. It is light and bulky, and takes up water like a sponge. It is rich in nitrogen, containing 3.62 per cent, and carries considerable phosphoric acid and some potash, though needing fortification in the latter if used as a complete fertilizer. It will commend itself to the buyer chiefly because of its high humus content.

Estate Management

By L. H. Moulten

Cuba, N. Y.

The management of a rich man's farm or country place differs in many respects from the management of an ordinary farm, and a man educated and trained for a farmer may find himself sadly unprepared for some of the experiences of the estate manager. This does not mean that the scientific training of the agricultural college, the methods of the business course, and perhaps years of practice count for naught in this line of work; but that usually, although there are exceptions, the owner is a man who knows little of farm operations and cares less except as they
please him for the moment; and, while he may be familiar with some of the laws governing plant and animal life, he generally fails to apply them to such life on his farm. Consequently he may, or may not, appreciate the importance of having his farming directed by an intelligent and competent man, and hence he may, or may not, deal logically and consistently with him. This may account for plumbers, carpenters, engineers, doctors, veterinarians and various other artisans and professional men being engaged in managing farms for wealthy farmers.

Frequently the country places of our wealthy citizens are located in lands already too high priced for economical farming and the improvements usually put on them bring the total valuation up to a figure that precludes a profitable operation. This hard and fast idea of a money profit is not always indulged by owners; the pleasure derived from his farming may be as profitable to him as many of the little luxuries of other people are to them. One of the pioneer gentleman farmers of New York said, in his declining years that his farming was never so satisfactory as when his books showed the largest cash deficit. Doubtless he had in mind the costly work in drainage and the reduction of water levels for which his place was noted and in which he took great pleasure.

It is evident then that the manager must be prepared for some eccentricities, on the part of the owner, which will be expensive but which, if he is wise, he will accept as inevitable and make the most of them. Whatever may be the owner’s peculiar ideas of the work in hand, he expects his manager to be competent and to give him an intelligent, economic and honest administration of the affairs entrusted to him.

The owner may spend money on hobbies that bring down the criticism of the community, but the manager must commit no such offense against popular judgment. It sometimes happens that the manager must be the owner’s representative in the community during his absence, and, if his landed interests are large, the manager should occupy a position in the community which will command respect. This can only be attained by being an integral part of the community and its activities.

In order to give the owner greater satisfaction, his farm should be noted for the excellence of some of its features, its cattle, horses, poultry or crops. Usually the owner has a favorite breed of horses or cattle and wishes to breed them more or less extensively. To do this successfully the manager must know the breed, its characteristics, its strong and weak points, and be able to select breeding stock with a degree of certainty that they will bring ultimate success.

In his efforts at tilling the soil will come the test of the manager’s farming capacity, and the community will measure him by the size of his potatoes and the height of his corn. If in these respects he leads the neighborhood, they are with him to a man; if he fails once, it will take a good many high records and blue ribbons to square him with them. In the owner’s mind this same standard of qualification is likely to come, for the size of the growing crops is very patent to the eye of the uninitiated while the quality of an animal may not be so apparent. The greatest test of the manager’s skill, however, lies in the quality of the milk, butter and poultry he sends to the “madam’s” table. If they are good, he has passed the period of probation, if not, he had better get his packing boxes ready.

As will be already inferred, the manager’s great trouble will be in the too great versatility expected of him. A corresponding responsibility in other lines of business would be divided among several men, so likewise it would be best for him, while sticking close to a few things he can do well, to parcel out some portions of the work to men that are especially fitted for it and require it at their hands.

For the young man who has had the advantages of an agricultural course
have capacity for work during long and irregular hours even though his men may have short and regular hours; he must be capable of handling men in a masterful way and be something of a diplomat in order that he may maintain peace and good order among them.

REMINISCENCES OF A "SHORTHORN"

By H. H. Harriman

Winter Course, '05

I

WELL remember the first time I attended a short Winter Course in our University. I understood to a certain extent the feelings of misgiving and doubt and fear that the young farm lad entertains when he finds everything about him new and wonderful and confusing; but I wonder if he had the slightest idea what such a course of study was to me, a city-bred fellow. I can assure you that I was as much at sea in the various branches of the agricultural course, about the terms and the methods of farming, of machinery, of seasons and the weather in regard to crops, as the farmer boy is with the strange scenes of college life.

In three or four weeks, however, the newness wore off, and we began to enjoy the life of the University, and to understand the broad scope of the subjects we had taken up; and our faith in our professors ripened into friendship and affection. Many a one of us had never been away from home over night, but all of us except one, overcame the homesickness and he gave up and went home. Still, he had pluck enough to try again the next winter and that time stayed, passed among the highest in his classes and the next fall returned and entered the regular course.

How patient the professors were with us stupid fellows; we really did know so little. But we had come to learn all we could, so we went at it with a will and it was study every minute. The first word that was new to me was humus; "What was that?—Oh!" And so it was, from the way a plant chemically absorbs its food from the soil to the proper selection of seed; or if in Horticulture, the selection of trees, their pruning and spraying and the picking and packing of fruit; and if in dairying or poultry keeping, the same process was gone through, the selection of the best stock, keeping them healthy, and making them produce the best results by the knowledge gained in these branches.

We learned that the success of the farmer depends, not upon mere hard work, but upon his knowing how and why and when to do it. And the winter course gave one this broad knowledge. And it did more, it gave him a keen desire for a wider range of subjects. He rubbed up against other opinions, and being bound to find out which was right, he decided to experiment as soon as he got home. Now was the time for him to interest himself in the Experimenter's League, a league which at least one farmer in every locality should join. It is like Cornell, good not only for the one directly interested, but also for the whole neighborhood from which that one comes.

The first social evening was one of the regular Assemblies where the professors and their wives and the regular agricultural students gave an entertainment of readings and music, ending with delightful refreshments and a general endeavor to get ac-
quainted with one another, and not to allow the newcomers to feel that they were strangers. These Assemblies occurred once a month, and they were looked forward to with high expectations, for the music was always good, and our good Dean Bailey often read a poem which he had himself written. And then toward the close of the evening, the college songs were sung by all. We were not all familiar with them at first, but when such as "Jingle Bells" and "The Quilting Party," were sung, we made the roof ring. Many life friendships were formed at these Assemblies.

A few of our instructors like Professors Fletcher, Rice and Pearson were always with us, entering into all of our club meetings, our debates, and our entertainments. And what good times we had! Not every second week but every week. We would invite one class for one evening, and on another the Home Economics class perhaps, (the members of this class were supposed to be farmer's wives, but most of them were daughters yet.) We had a lively debate with a team from one of the other Short Course clubs, and at the end of the term, we showed our appreciation of the many entertainments given us, by playing host for once at an Assembly, and by presenting some unique features, with all the regular college boy's vim. During our enthusiastic reception, one could not think that we had ever tried to keep in the background, for we were the lions of the evening and everything from the first song of the quartette to the last bit of refreshment was a pronounced success.

It is needless to speak of the campus, finer than any in America; the handsome buildings, the beautiful hills, the picturesque waterfalls, the fine, large lake in the valley, and the wonderful, the grand gorges. And then the skating and the tobogganning on our own Beebe Lake. Such great fun, so exhilarating! And perhaps a dance or two in the country. Many of the fellows said it was the best time of their lives!

WHY I CAME TO CORNELL
By T. R. Temple
General Agriculture, '08-'09

The editor has asked me to state briefly my reasons for coming here this winter, else there would have been less work for the proof reader of this issue. I presume that most of the men, who take the winter course in agriculture, come with far more practical experience than has fallen to me. After three years of University work with a view of entering a profession, I was ordered onto a farm with instructions to work as hard as I pleased but not to open a book. Next I tried business until I found that the hurry and stress of metropolitan life was drawing my energy to an uncomfortably high pitch. Then I decided to follow agriculture permanently and hired a large dairy farm for two years. In that time I have toiled early and late to the limit of my strength, but my love of rural life is as strong as ever. The appreciation of the poetic charms of tilling the soil has not yet been knocked out of me. It has been worth while to me to be able to look across onto forty miles of picturesque Vermont sky line from my dining-room window. Nor do I fail to take constant delight in the ever new glories of our sunrises and sunsets.

But man cannot sustain life by these things alone and I have to remember that I have undertaken certain obligations to my family. The economics of the situation must be considered. I am convinced that I have not obtained as good returns as the farm ought to yield, and by the application of better methods can be made to yield. And while my two
years of experience has taught me many useful things, they have taught me my ignorance of vastly more. So I have come to Cornell with a lot of practical questions to ask of this winter course.

Inexperienced though I was, I made my dairy produce more milk per head than my neighbors who had been dairying all their lives. What I hope to learn now is how to get the same results more economically. Again I am looking for instruction in the fitting of soil for crops of different kinds for I have purchased a farm entirely different in character from the one I have rented. In combining truck farming with dairying, new problems of drainage and fertilizing will demand attention. Indeed, I have never felt more keenly that I was working in the dark and throwing away money than when I have been paying my bills for commercial fertilizers.

These questions have constantly recurred to me, and yet it is doubtful whether I should have come to Cornell, had I not met one of your former winter course men and asked his advice as to the practicability of the scheme. He was emphatic as to the value of the work and assured me that I could not afford to miss the course if it were possible for me to get away from my work. He is now in a responsible position at the head of a condensery and milk shipping plant. He had had a dozen years of experience handling milk before coming to Cornell and I felt that, if the winter course could help a man of his intelligence and experience, it could certainly help me.

Finally, while I did not come here expressly for that purpose, I am anxious while here to become acquainted with the men and measures that make for better moral, social, and economic conditions in our rural life. In my own experience I have seen the decadence of what formerly was, and to a degree still is, a prosperous farming community. I am interested to know whether that decline is necessary and permanent, and also whether it is characteristic of conditions elsewhere. A stream cannot rise above its source. In a large measure, since the day the embattled farmers withstood the shock of arms with the mother country, the source of our greatness as a nation has been in the stamina of our country-bred men. To one who believes that in a very unique way this nation of ours is working out political problems of importance to the whole world, the question of the future of the American farmer assumes large proportions.

THE ADVANTAGES AFFORDED BY COUNTRY LIFE FOR THE DEVELOPMENT OF USEFUL MEN

By F. N. Darling, '10

AGRICULTURE, unquestionably, is the noblest and most enjoyable occupation of man. It was formerly believed that farming was the most inferior of all callings, but such a belief is very unsound and far from the truth. When agriculture is thoughtfully considered, it will be found that for the development of useful men it affords the best advantages.

It is a fact worthy of note that the majority of the world's greatest soldiers and statesmen, men of letters, business, science, orators and reformers have been reared in the country. A brief consideration of a few of the world's greatest men will prove this fact. Washington who had very little schooling lived in the country most of his life. The foundations for his future greatness were laid when he
was a surveyor, gaining an accurate knowledge of the country and learning the habits and customs of the early settlers. "Agriculture," said he, "is the most healthful and the most noble occupation of man."

It would be useless to attempt to name all the great men who were reared in the country, for they are too numerous. Russel Conwell, an eminent divine of Philadelphia, in one of his recent lectures said, "Eighty per cent of the brain and brawn of our large cities is supplied by the country."

Soundness of health is indispensable for the successful man. The lawyer who sits all day in a crowded courtroom and the student who works hard at his books, like all other great workers must have health to be successful. A man hampered by physical difficulties cannot accomplish much. Abundance of fresh air, freedom of exercise, sufficient sleep and freedom from bad habits and vice, all characteristics of country life, are conducive to a vigorous constitution. City air, filled with its germs, gas fumes, and all other kinds of impurities was never meant for us to breathe. It is a fact well worth knowing that country air excites deep breathing which strengthens the lungs, giving vitality and success. Dr. Barrow of England who has made this subject his life study says, "I venture to advance the proposition that the 'vital force' of the city dweller is far inferior to the 'vital force' of the countryman. The general unfitness and incapability of the dwellers of our large hives of industry to undergo continued violent exertion or to sustain long endurance of fatigue, is a fact requiring very little evidence to establish. It may be conceded as an established fact that the city man is, on the whole, constitutionally dwarfed in tone and his life, man for man, is shorter, weaker and more uncertain than that of his country brother. The true causes of this deterioration are neither very obscure nor far to seek. They are bad air and bad habits."

Another important advantage of country life is that it affords the farmer's son an opportunity of acquiring the habit of industry. Idleness kills most town and city boys as men, while the country lad learns to overcome obstacles, forms the habit of economy, the first principle of business of any kind, and acquires that real stamina and perseverance which are the most valuable incitements to performing one's duty. This makes him better fitted for the struggles that come in later life. He learns to be independent and very seldom falls into the habit of trying to get something for nothing, but cultivates that honesty which is so necessary for the growth of useful men.

The man who is thoroughly trained in agricultural subjects and returns to the farm has a marked advantage over the so-called professional man as far as making a living is concerned. The late President Harper of Chicago University once said in an address to the graduating class, "You who are now entering the world will find that poverty will be the strongest opponent to overcome. You who are entering life as lawyers need only look at the papers today to find that the average lawyer does not earn his salt. Those who become physicians will find that their only companion for a few years to come will be the wolf at the door; while those who go forth to teach need only to witness the struggles of the school teachers in this city. The school board is beset with howls and wails for an increase of salaries." While President Harper did not refer to the farmer directly, we are led to believe from the trend of his remarks that the farmer has a better chance to make a living than the lawyer, doctor or teacher.

The country lad has an advantage over the city boy in that good morals are more easily formed in the country. The great evils of the city such as those of the tenement houses where millions of poor children seldom see a blade of grass or play in the sunshine and fresh air, the bad habits the city boy is addicted to and his associations with the lowest class of criminals, are very poor factors in the making of useful men.
In the beginning of a college year come new students with two or four years of work before them, and gradually, by means of experience, as the days proceed and common interests spring up, they find their places in the routine and become active, co-operative units. You, members of the short course classes, arrive with not two or four years before you perhaps, but only part of one, and you find the College well under way with its activities well systematized. Now this is just as it should be and within yourselves lie the power to take advantage of this opportunity.

We welcome you as another part, an important, familiar part of the student body, and we want you to join us in the same spirit, with an idea of becoming even more actively a part of us, of the college life and work, than former winter course classes have become. You will, of course, have your clubs, your teams and your debates, but besides this you have offered to you, invitations to join the clubs of the College, to attend meetings and further, you are not only invited but urged and exhorted to become active members of the Agricultural Association, and to attend each and every Assembly. In this December Assembly you will receive a further understanding of what this college life offers you. The Countryman desires here to extend to you its hand on the part of the students, and to express, as best it can, the welcome, the interest and the regard that those students feel toward you, who are now among us.

So much for the feeling with which we have seen you come, and may it prove but the forerunner of mutual interests and acquaintance. But having been here a little longer than you have, we also expect certain things of you, just as upper-classmen expect things of freshmen. We expect to see you not only join us in recreations, and social intercourse but also in the pursuit of that for which we are all here, broader knowledge, increased capability. College spirit is made up largely, though the fact may not be often dwelt upon at length, of ties of work and industry. These we expect you to strengthen and tighten, as have the short course men and women of the past, and in this way to become worthy of the honor you receive in becoming a Cornellian. Keep that thought in mind, that you are members of Cornell University, whose name bears a reputation for scholarship, prowess, and clean sportsmanship. That name and the upholding of its integrity, its dignity, its honor, rests with every one of us as a responsibility and a privilege. You, too, have your share; and see to it here and now, as well as henceforth in all your work, through all your lives, that you do not fail in fulfilling your part.

Expectations
Health, Wealth and Happiness

It is very probable that the investigator, be he theorist or practicalist, to measure the blessings of the farmer with those of his city brother, he would group the blessings of both under those three heads. There is indeed quite a lot of meaning in those words, quite a number of probabilities and possibilities. In the interests of the farmer, it is the aim of The Countryman to help him increase the sum total of his health, and his wealth, and his happiness. It has designed a new means of attempting to thus assist. On another page an article by Professor Ogden, opens a series of practical articles upon the general subject, "The Farmer and his Health, Wealth and Happiness." The increased attention now being shown questions of public health is significant of the supreme importance of the first subject. We have, therefore, begun with a discussion of one factor of great potential influence in the maintaining of the health of the farmstead. In forthcoming issues we shall present such questions as "Food Problems on the Farm," "Farm Hygiene," "Ventilation," etc., by authorities on the subjects and each one we shall endeavor to have carry some advice, simple and practical, that will be of some direct value and use. Later, under the head of "The farmer and His Wealth," we hope to offer similarly practical articles on economic phases of country life—the farmer's investments, his methods of accounting, perhaps the influence of politics on his success. Finally in closing, we shall endeavor to touch the chords of aestheticism, the questions that add to the contentment and happiness on the farm. Criticisms and suggestions in regard to this plan will be gladly received; if we can even awaken thought, that will give birth to improvement and greater results, we shall be content. The motive and the themes are worthy.

This is a December Countryman and December means, among other things, Christmas. Christmas also means several things: among them, vacations, turkey and plum puddings (sometimes subsequent regrets), and presents. In that last regard, this season is somewhat unique, for in the thought of presents, receiving is in no wise more emphasized than giving—oftentimes even less. The Countryman can only express best wishes for success in the former, but it stands ready to aid for nine months of the year in regard to giving. For a relative, friend or acquaintance who is of the country, either in location or spirit, we suggest a subscription to the magazine, leaving us to do the rest to make it every bit as good as we can. Then, too, there are copies of Dean Bailey's Poems, which, now at the time of his preeminence in affairs agricultural, are especially appropriate and lasting mementoes. There is yet time to prepare for the holidays; you can save time now and arrange for a revival of Christmas greetings for each of the nine months hence by leaving with us the name and address of a new, involuntary subscriber.

Country Life

By this time, the Commission on Country Life has completed a good three-quarters of its labors, as far as travelling and hearing the sentiments of various sections are concerned. In another sense, the results of this work are only just beginning, for the report has yet to be
presented, and the replies to the hundreds of thousands of circular letters sent out, represent material for further investigation for many months. Certain of the readers of the COUNTRYMAN have heard of the actual aims of the Commission from Chairman L. H. Bailey at the last Assembly. For the benefit of others, we hope to publish shortly an article on its work and the conditions and problems with which it has to deal. But such talks and articles can but begin to present the many sides of the vast subject of Country Life Conditions. These are to be seen, everywhere throughout rural districts and no more can we attempt to present them, than the Commission can, by itself, affect them. Its work is not of that kind, but rather is to furnish the dynamic spark, the primary impulse, that is to stimulate the efforts of the future towards the betterment of some of the phases that cry for remedy. And its duty is to pave the way, and, with suggestion to illuminate the road to the broadening and the swelling of the happiness and usefulness of country life.

Hardly under the head of "Book Review," but rather as mention of a handy little note-book, do we desire to call the attention of our readers to the "Diary for 1909," put out by the B. G. Pratt Co., manufacturers of Scalecide. While on the same general lines as other similar pocket journals, it is more complete and contains, in conjunction with the appropriate dates, directions for spraying, with this insecticide. Farmers who grow fruit and use this preparation for the protection of their trees, will find the diary neat, handy, and useful. Application for copies may be made to 50 Church St., New York City.

A VALUABLE EXAMPLE FOR ALUMNI
Highland Farm, Noroton Heights, Conn.
October 18, 1908.

Gentlemen:
I enclose a few notes about members of the 1908 Winter Agriculture class which may be of interest to you. I am keeping a card index of the class and hope to be able to keep in touch with its members and what each is doing. If they will do their share of this work and let me know of any moves that they make, this ought not to be very hard to do. * * * * *

Trusting that you may be able to use some of the enclosed items, which are the most detailed that I have at present, I remain,

Yours very truly,
James G. K. Duer,
Sec'y. of the Stone Club.

The foregoing letter is of considerable importance to the COUNTRYMAN and was received with a great degree of satisfaction and gratification. At last we note a definite and practical scheme of co-operation that will be of immeasurable assistance to us in keeping up the Former Student column of the magazine—an assistance that, we hope, will result in greater interest and more complete information for our readers, of those who have "gone before."

Naturally in the case of classes which elected no permanent secretary, and had no definite organization, this plan can hardly be carried out and we must depend upon the individual members for notification of their whereabouts and activities. But there is no time like the present for the institution of such a scheme and we heartily urge its consideration upon members of the present classes, regular and special as well as Winter Course.
A good deal could be written upon the advantages of such a development of connecting ties, not only to the Countryman but to the members of the great mass of alumni, who could thus keep in touch with each other and gain the benefits arising from the influence exerted by the success, progress and advance of their classmates. The organization of the College would, in a way, be maintained, even as its students scattered over the world, and an undergraduate of the College of Agriculture could look forward, not to a separation from all the influences and sentiments that surrounded him for two or four years, but to an entrance into a great, unified, complex body of Cornelianns, of agriculturists, working in different lands and at different pursuits, but with the same spirit, and the same ambitions and enthusiasm for the advancement of their common vocation. Again we urge that the present classes before graduation, organize, elect a secretary and determine to make use of him, and their connecting bonds of fellowship in after life.

GENERAL AGRICULTURAL NEWS

THE following note, though somewhat delayed in reaching us, speaks for itself in behalf of the live interest that is characteristic of the Short Course organizations, both in the College and in the midst of work outside, afterwards.

"The Fletcher Club, the Short Course club of 1905, the one that never dies, held its annual meeting at the State Fair in October. Among those present were M. F. Barrus, (now one of our college instructors), H. B. Patten, M. J. Shaw and Mrs. Shaw and H. H. Harriman. Letters of regret were read from Professor L. W. Fletcher, Mr. and Mrs. B. W. Law, R. C. H. Fowler, W. J. Faulkner, L. A. Ripley, A. F. Snow and others. Old times at college were brought up, new methods of farming discussed and a pleasant hour spent."

* * *

The American Society of Agronomy met November 17 and 18 at Washington, D. C. O. S. Morgan, '07, M. S. A., who was recently called to Alfred University as director of the new agricultural college spoke of "Some Experiments to Determine the Uniformity of certain plats for field tests."

* * *

Professor Bernhard Bang, the noted Danish Veterinarian, delivered an address of unusual importance recently, before the Veterinary College. His theme was Bovine Tuberculosis and its control according to methods used in Denmark. He emphatically denied that tuberculosis is hereditary and showed that it was not transmitted from parent to offspring when the latter were fed pure food and not allowed to come in contact with diseased animals. On the other hand, healthy calves from healthy parents have contracted the disease when fed on milk from affected cows or when allowed to come in contact with them.

Professor Bang then proceeded to show how easily and economically a herd could be rid of the disease by means of simple remedies, which the farmer himself could apply. The means of prevention and chief remedy for tuberculosis is sanitation; abundant sunlight and cleanliness are also preventives. When the disease does get a start, it means that proper sanitary precautions have not been taken. The diseased animals should be isolated and care should be taken, when skim-milk from a creamery is fed to young stock, that none of the milk is from cows affected with the disease. As a safeguard, all such milk should be heated above 80° C. (110° F.)

In Denmark, where the Bang system is in vogue, the tuberculin test is
applied twice each year, and as soon as early stages of the disease are detected the unhealthy animals are isolated. In this way an infected herd may be used to build up a healthy one if the calves are removed when born and fed uncontaminated food. A case was cited where a peasant had only twenty-two cows remaining from a herd, seventeen of these having the disease. They were isolated and their calves kept from them, and in three years, twelve healthy heifers had been raised from the seventeen unhealthy cows. Because it involves so little hardship and because it may be applied by the farmer himself, the Bang system was heartily endorsed by Dr. Law, as being very practicable and desirable.

* * *

The final reports on the hay and oat crops for 1908 show that the former is a bumper crop, while the yield of oats is wholly unsatisfactory. The average yield of hay per acre is nearly 1.5 tons, which is heavier than for many years; the acreage is also larger than usual, which makes the crop the largest on record. The total yield for the country is 61,383,000 tons.

The oat crop is almost universally a failure. The crop started under favorable conditions, but before maturity, the drought which set in had such a detrimental effect that there was little or no recovery. Besides this, much damage was done by insect pests. The yield was only 756,806,000 bushels against 1,002,376,000 bushels in 1905.

* * *

The National Dairy Show Association has placed at the disposal of the Dairy Division of the Department of Agriculture, the sum of $2,000 to be divided as prizes among the managers and secretaries of creameries and cheese factories.

The contest is limited to every manager or secretary of a factory making not more than 500,000 nor less than 50,000 pounds of butter and not more than 200,000 nor less than 20,000 pounds of cheese, per year. A butter or cheese maker who is manager or owner of a factory is also eligible. Those who enter the contest will write articles of not less than 200 nor more than 1,000 words. The statement may contain a full account of how the plant is conducted, describing methods of manufacture and the handling and sale of product. Every contestant receiving a rating of 70 out of a possible 100, will receive a share pro rata of the $2,000 and for every point above 70, he will receive an extra share pro rata. This is the first opportunity managers and secretaries have had of comparing methods and should prove of great benefit to creamerymen.

* * *

During the past summer, the Pennsylvania State College of Agriculture Experiment Station has issued a valuable and comprehensive bulletin on Poultry. The work was planned and conducted under the direction of Professor George C. Watson.

The points studied were:

1. Rate of growth.
2. Food consumed.
3. Weight at different ages.
4. Relative weight of pullets and cockerels.
5. Loss in dressing and drawing.

Besides a series of careful observations on these points, different types of poultry houses and colony houses together with brooders and incubators are taken up and discussed. Considerable space is given to the selection of stock, the rearing of chicks and to feeding problems and various diseases of poultry are also treated. This bulletin is full of information that is extremely practical and useful to any raiser of poultry.

* * *

Unusual generosity to the students of the agricultural colleges is being shown by the National Corn Exposition. Trophies to the amount of $2,500 have already been provided. Announcements were passed on to the agricultural college professors early this fall and word has been received from the most of them that student teams representing their college will compete at Omaha from December 9 to 19.
A special trophy founded by the Hon. Zeferino Dominguez, of Puebla, Mexico will be awarded to the team receiving the highest total number of points in the corn judging class. This trophy is a handsome, solid silver bust of President Diaz. The silver portion is ten inches tall and rests on an onyx pedestal. Its value is $1,500.

The oat trophy is an artistic creation four feet high. It represents a sheaf of oats capped by a spray of that grain. It is valued at $1,000 and was founded by the Western Grain Dealers' Association.

An award will be made in the wheat judging classes for proficiency. To the student receiving the highest total number of points in corn, oats, and wheat judging, a solid gold watch valued at $50 will be given.

The students' judging contest is open to teams of five members selected by agricultural colleges. Oral examinations will prevail. The students must be ready to answer all questions asked by the judge. Sixty points shall be allowed for placing and forty points for reasons.

The corn samples shall be judged from the standard of seed corn. Ten ear samples of five of the leading varieties must be passed upon. The varieties are Leaming, Reid's Yellow Dent, Boone County White, Silver Mine and Golden Eagle.

A beautiful gold emblem will be awarded to the best written essay on the following subjects: Producing a Maximum Corn Crop; the Principles and Practices of Corn Breeding; Commercial Uses of the Corn Plant; Corn Machinery; Boys' and Girls' Growing Contests; Corn as a Food; Insects Pests of Corn; Silos and Silage; Increasing the Oat Crop; Improvement of Small Grain by Breeding; Rural School Agriculture.

Essays of not less than 1,000 nor more than 1,500 words are admitted. In awarding the prizes, originality, workable value of the ideas presented and clearness and conciseness of presentation will be considered. All articles must be in the hands of General Manager of the National Corn Exposition, Omaha, not later than December 9th.
During the week the exhibition was open to visitors, some 500 persons visiting the Forcing Houses. The exhibit of 40 varieties apart from its attractiveness possessed features of considerable educational value, the blooms being properly arranged, labelled and so staged that each was seen to advantage, while the general effect left little to be desired.

CAMPUS NOTES

The November Assembly was held on Thursday, the sixth, with an unusually large attendance and an atmosphere of complete enjoyment in spite of the continuance of the plan of no refreshments. The Agricultural Glee Club made its first appearance of the year, in leading Alma Mater, then J. F. Grace, Sp., rendered a bass solo which was heartily encored. Dean Bailey, who was to leave the next day to begin work with the Commission on Country Life, made his usual good talk even better and more effective than ever. He read "Mr. Dooley's" observations on the Commission and gave a full idea of its scope and the progress that it had made. To the poems that have gone before, he added another new one, "The World's Highway," which was as easily his best as the others have been in their turn. After his address the Mandolin Club which is considerably larger than that of last year, made a very favorable impression and was followed by the Evening Song and the social hour.

* * *

Professor Cavanaugh of the Department of Agricultural Chemistry was appointed delegate from the College to the convention of Official Agricultural Chemists at Washington on November 16. While at the capital he attended the convention of the association of Agricultural Schools and Experiment Stations.

* * *

The Poultry Association held its third regular meeting in the Auditorium, Thursday, November 12. In the absence of the President and Vice-president, Secretary F. E. Benedict presided, opening the meeting with a question-box in charge of Mr. Jacoby. A short business session followed and it was voted to accept persons not taking poultry work as associate members upon payment of twenty-five cents. These members will not be allowed to vote or hold office. The main feature of the evening was an illustrated lecture by Mrs. A. B. Comstock, who related in a charming way her experiences in Egypt during the past year. Piano duets were played by Misses Seamon and Dobb of the Conservatory of Music, after which refreshments were served.

* * *

The round of winter meetings in which the members of the Horticultural Department assist has been under way for some time. There are always two important state meetings which are attended by representatives of the Department. These are the conventions of the State Fruit Growers' Association, which occurs this year at Medina, and the Western New York Horticultural Society always held at Rochester. In addition to farmers' institutes and grange meetings in New York State, the members of the Department have accepted certain engagements outside of the state.

Professor Craig attended the meeting of the Maine Pomological Society at Waterville on November 11, and addressed an important conference of the Governors of the New England states in Boston on the 23d. This conference considered the shellfish industry and forestry in addition to fruit-growing matters in New England. The last topic was assigned to Professor Craig. He also attended a county horticultural society meeting in Pennsylvania in December and the meeting of the American Wine Growers' Association in New York.

Professor Judson attended the New York Chrysanthemum Society exhibit in New York, and has been engaged in making an examination of the cauliflower and 'sprout industries of Long Island.
The Department of Horticulture cooperated in a chrysanthemum, civic improvement, and horticultural exhibition in Elmira early in November, being represented by Mr. L. D. Batchelor.

A meeting of the Round Up Club was held on November 9th, with a good attendance. Mr. Palmer explained the "International Consolidated Record Association" and a general discussion followed. Mr. Elder then gave the history of the tariff on the importation of pure bred animals and told of its influence on importations.

Other meetings had been held on previous Monday evenings, with a good attendance each week. On October 12, G. W. Tailby, Jr., Elmer Savage, F. D. Palmer and C. H. Van Auken had a discussion on Stock Judging at County Fairs. The following week the subject of Exhibiting Stock at County Fairs was taken up and on the 26th, fourteen members discussed different state affairs, the exhibitors and their stock, and the prizes won.

The College Department of Soils is sending out to the different dealers in lime throughout New York and Pennsylvania for full information as to where all forms of agricultural lime may be obtained and the prices of the same. Similar information is also being sought in connection with drain tile.

The department has completed the soil survey of Livingston County, a total area of 1043 square miles having been covered.

The College of Agriculture and the State Department of Agriculture are to combine in making an exhibit at the National Corn Exposition at Omaha, December 9-19. The exhibit is to take the form of bales of hay and milk cans which will be placed in such form as to show the superiority of New York in these products.

On November 6th, the Cornell section of the American Society of Agronomy met at the residence of Dr. Lyon. Professor Stone spoke of the work at the Worburn and Rothamstead Experiment Stations which he visited while in England this past summer.

G. E. Bentley, '12, was the winner this year of the Greeley scholarship. Mr. Bentley comes from Fluvanna, Chautauqua County. He was graduated from his preparatory school with the class of '06, and took a two years' post graduate course. This past summer he took a six weeks' course at the Sturgis School of Ithaca. He is a candidate for the freshman crew.

The 49th Annual Meeting of the Fruit Growers' Association of Toronto, was held Nov. 10-11. Wednesday morning Professor C. S. Wilson read a paper on "Results of Orchard Surveys in New York State."

Professor Publow of the Dairy Department has recently been offered the position of Director of the Kingston Agricultural School. Although a substantial increase in salary has been offered he has not yet decided to accept the offer.

Mr. James Dunlop of Kilmarnock, who is the largest breeder and exporter of Ayrshire cattle in Scotland and a member of the Scottish Agricultural Commission, while touring Canada and some of the States, recently visited the College. He secured many valuable points of interest and value to take back to Scotland. Mr. Dunlop, was very complimentary in his criticisms although it is well known that a Scot is not given to flattery: he stated frankly that the Dairy Department is the finest and best equipped of all he had visited in this country.

Professor Smith, an Englishman, who is Professor of Agriculture at the new College at Pretoria, South Africa, made a three days' visit at the College at the same time Mr. Dunlop was here, and was equally well pleased.
Dr. Clark, a former Professor in the Cornell School of Forestry, spent a few days in Ithaca last month. He is now located at Vancouver, British Columbia, where he has large interests in forest lands.

President Schurman's Annual Report states that "The number of students enrolled in the University for the year ending September, 1908, was 4,465, of whom 3,734 were regularly enrolled for the academic year from September to June and the rest attendants at the Summer Session and the Winter School in Agriculture. This is an increase of more than 1,000 over the enrollment of four years ago, when the total figure was 3,423."

The enrollment in the Agricultural College also shows a marked increase over previous years the registration, not including Graduate students being 257 regular and 134 special students, a total of 391, while Winter Course registration on November 11th, was already in excess of last year's.

At a recent meeting of the Agricultural Association, it was voted to levy an assessment of $1.00 on every student of the College, for the entire support of the Association, the musical clubs, and the College athletics. The following committee was appointed by E. I. Bayer, Sp. President of the Association, to collect the tax: G. H. Miller, '09, S. F. Willard, Jr., '09, N. R. Peet, '10, E. M. Tuttle, '11, and W. E. Malcolm, '12.

H. C. Young, '10, Captain of the Cross Country team, easily finished first in the cross country dual meet with Yale on November 3. He broke the record of the course, the regulation intercollegiate six miles and a half, crossing the line 35 minutes and 57 seconds after the start. The other Cornell men, Taylor, Bean, White, Jones, Bogart and Grant finished in the following order; second, fourth, seventh, eighth, ninth and tenth. Cornell easily won the meet, the score being Cornell, 22: Yale, 37.

The Agricultural Train left Ithaca, November 23, via the D. L. & W. Railroad, the work commencing at Union from which point a run was made to Corning with stops at all the intermediate stations from thirty to sixty minutes. At Corning an evening meeting was held and the stop made for the night. Leaving Corning, Tuesday morning for Batavia where the next evening meeting was held, stops were made at all the stations en route as before. Wednesday morning the train made a run to Avon up to which time it was known as a Milk Special. From Avon the train went to Corning via Hornell as a Potato and Bean Special arriving at Ithaca, Wednesday evening. The addresses on milk were in direct charge of Professor Wing; those covering the subjects of potatoes and beans were Professors Stone and Warren on the crops, with Professor Whetzel and Mr. Crosby on the protection from diseases and insects. Dr. Webber spoke on the question of crop improvement and Professor Cavanaugh dealt with the matter of soil fertility. Besides these speakers other members of the teaching staff accompanied the train and gave talks on these and kindred subjects.

Director Morgan of the Agricultural School at Alfred University was a member of the party together with an Associated Press reporter and Luis Jackson, Industrial Commissioner of the Erie Railroad. The train was made up of three or four coaches and dining and baggage cars.

Professor C. A. Rogers and M. P. Jones, '08, spoke at Geneseo, November 15th, and the 14th at Byron at a Grange meeting.

Professor Rice accompanied by W. O. Strong, '11, Assistant Secretary of the Poultry Association and M. P. Jones, '08, of the Extension Department attended a meeting of the Owego Poultry Association on October 22d. Prof. Rice delivered an address illustrated with lantern slides on the "Results of Recent Poultry
The Cornell Countryman 9T
Investigation at Cornell. Mr. Jones spoke on "The Poultryman and his Relation to Agricultural Education.

* * *

The Poultry Association held its second regular meeting at the new Poultry Laboratory in the Dairy Building, October 21st. R. A. Williams, Sp., of the Board of Directors was elected vice-president. L. F. Boyle, President of the Association called a special meeting Thursday evening, November 5th, immediately following the Assembly. It was voted to change the dates of the future regular meetings to the second and fourth Tuesdays in each month in order not to conflict with the Agricultural Association.

* * *

Lazy Club meetings during the past month have been held at the Forcing House each Monday evening. On October 12, Professor Craig presided and Mr. Leon Bachelor spoke of his experiences in Plant Breeding during the past summer. Grapes were served as refreshments.

On October 19, S. F. Willard, Jr., '09, discussed the news and Mr. Harry Chase of Riverside, California spoke of Orange Growing in that state. He exhibited some fine samples of fruit that had hung on a tree for eighteen months, two crops being often found on a tree at the same time.

On October 26, the news was reported by Mr. Moore. Fruit Growing in Maine was discussed by Mr. H. Breckenstrater who predicted a great future for the apple districts of the state if a more uniform method of packing and marketing is used.

November 2, was chrysanthemum night, an account of which is found on another page. On November 9th, Professor Judson presided and the first part of the session was occupied in discussing the various local names for the blue berry and allied species of wild bush fruits. Mr. Cummings gave an interesting account of the experiments in crossing the Vacciniaceae family, performed by Professor Munson of Maine. Mr. F. E. Benedict, '11, gave an account of his experiences during the past season with "Uncle John" Spencer at Westfield, Chautauqua County, consisting of the supervision of the picking and marketing of a fine cherry crop. They were shipped to Cleveland, Ohio, and brought the highest price through extra care in picking and packing.

* * *

The first November meeting of the Agricultural Association was held November 10th, with a surprisingly small attendance. Mr. H. B. Winters of Smithboro, who was to have addressed the Association was detained at his home by illness and Professor Stone kindly consented to fill the program of the evening. Those who attended were fortunate in hearing a most interesting general account of the Professor's recent vacation trip through Great Britain. In a most informal and enjoyable way, Professor Stone led the audience over his route and spoke in some detail on some of the features of the trip which particularly impressed him.

* * *

The second game played by the College Soccer Football team against the College of Law resulted in a no-score tie. The game was therefore scheduled for a later date, to be played off before the close of the season. On November 10th, the team appeared on the field in readiness to play a scheduled game against the Veterinary College team. The latter did not turn out, however, and the game was thereby forfeited to Agriculture.

* * *

At the time of this writing the plans and preparations for the Fruit Show were developing rapidly and satisfactorily. Every indication was for a more complete and successful exhibition than that of last year and the specimens that arrived almost daily were of a high quality. A complete and probably illustrated account will appear in the January Countryman.
FORMER STUDENTS

'98, B. S. A., '05, M. S. A.—It is a little less than a year since Professor, now President, J. W. Gilmore paid us a visit and since that time he has been “doing things” in a truly Cornellian way, and with his characteristic thoroughness and determination. These traits have been noticeable characteristics in him since the time of his first connection with Cornell.

Professor Gilmore was born in 1872, in White County, Arkansas. He attended the Fort Worth High School in Texas, and being graduated he entered Cornell in 1893, registering in the College of Mechanical Engineering. The following year, however, he changed to Agriculture and was graduated with the degree of B. S. A. in 1898. Shortly after his commencement he went with Mr. C. D. Brill, to China, to teach Agriculture at the Agricultural School of Wuchang. Here he remained until the outbreak of the Boxer uprising in '99, when he left China and after an extended trip through various parts of the world, took the position of teacher of agriculture in Honolulu. The following year he taught the same subject in the Philippine Islands and was made Fibre Expert in the Philippine Bureau of Agriculture. After leaving this position and after more travelling, Professor Gilmore returned to Cornell, in 1902, becoming Assistant Agronomist in the Department of Agronomy. In 1904, he was made Instructor, and in 1905, received his M. S. A. In 1906, two more honors were conferred upon him, election to Sigma Xi and his advance to Assistant Professor. In the summer of 1907, he was called to the Pennsylvania State College to join Director T. F. Hunt in organizing the Department of Agronomy there, on the foundations of the old Department of Agriculture. The number of courses given was increased from two to eleven, and other improvements were effected in like degree. While there, Professor Gilmore organized the Soil and Crop Investigation Laboratory, completely systematized the field experiments, and devised a machine for automatically registering the temperature in soil or other media.

In the summer of 1908, Professor Gilmore was once more called away this time to assume the presidency of the new Agricultural College of Hawaii. Here he found everything in the preparatory stage, with grounds to lay out, buildings to erect, “sentiment to develop, courses to arrange, faculty to organize—everything to do.” With his customary directness, he lost no time and already he is able to report two buildings completed and a registration of over thirty students. “Things are progressing satisfactorily,” he says, which we who know him can interpret to mean that he is instilling Cornell spirit and energy into the development of an institution that will be of vast benefit to the Islands, and their people.

President Gilmore was married in August, 1900, to Miss E. M. Hitchcock and has two children, his whole family being with him in Honolulu. With this brief mention and recognition of his work, and his useful life, we express to President Gilmore, as a friend and a Cornellian,
our congratulations upon the growth of his institution, and our sincere regards and wishes for further success and prosperity to accompany him throughout his life.

We have further news from Hawaii, in the report of the recent formation of a Cornell Club. At the first banquet of the club held a short time ago in Honolulu, the following alumni of the College of Agriculture were present and renewed the old ties with their Alma Mater: President Gilmore, '98, D. L. Van Dine, '01, P. D. Schuyler, '04, C. J. Hunn, '08, J. E. Higgins, '08, and Vaughn McCaughy, '08. To this new association also do we extend our hand and solicitations.

'05, Sp.—H. C. King, since leaving Cornell has been running his farm at Willow Creek, New York, until recently. At present he is doing clerical work in the office of the True American, a Prohibition Monthly, published at Battle Creek, Michigan. This is also the headquarters of the Michigan Prohibition State Committee.

'05, G.—J. S. Cates of the U. S. Department of Agriculture was married October 17th, to Miss Theodoria Dutrow of Washington, D. C.

'05, B. S. A., '07, M. S. A.—L. G. Dodge of Washington, D. C., and Miss Alice Ware Cole of Beverly, Mass., were married September 14th, at the home of the bride's parents.

'05, W. G. A.—Howard Olin, who is located at Perry, New York, on his father's farm, was recently married to Miss Harriet Gregg of Perry.

'06, Sp.—We are glad to announce the marriage of Mr. B. H. Hawkins, '06, to Miss E. J. Stanley of Syracuse, on November the fourth. Mr. and Mrs. Hawkins will return to Syracuse by December to live at 302 Summit Avenue.

'06, LL.B., '08, B. S. A.—H. F. Major has been appointed Assistant in Landscape Gardening at the University of Illinois.

'06, Sp.—On June 20th, Miss Emma M. Lewis of Ithaca, was married to Mr. J. A. Switzer also of Ithaca. Mr. and Mrs. Switzer will make their home in Memphis, Tennessee, where Mr. Switzer has accepted a position in the Department of Experimental Engineering at the University of Tennessee.

'07, W. P., '08, W. A.—Nestell K. Anderson, was married Oct. 14, 1908, to Miss Lena Clarke of Vermont. Mr. Anderson is running his own farm at Gaylordsville, Conn.

'07, B. S. A., '08, M. S. A.—Norman H. Grubb, who will be remembered by many of the older men who are taking Landscape Architecture, is at present in Washington, D. C., with the United States Forest Service. His present work, he writes us, is the testing of forest tree seeds. His address for the year is 1939 Biltmore Street, N. W.

'08, W. G. A.—R. C. Baynard is working for his father on his farm at Wye Mills, Maryland.

'08, W. G. A.—Henry A. Bullard has a position as manager of a farm at Sterlingville, New York.

'08, W. G. A.—Leland B. Gardner is working as herdsman and assistant foreman on a farm at Tully, N. Y.

'08, W. G. A.—Halvor A. Caun is herdsman on a dairy farm at Haverford, Pennsylvania.

'08, B. S. A. The wedding of Leonard Rider Gracy and Miss Esther Edwards Newell, daughter of Mr. and Mrs. Theodore Leonard Newell, took place on September 23 at Brynfan, Shawanese Lake, Pennsylvania.

—Cornell Alumni News.

'08, B. S. A.—Lewis A. Toan has been spending a few days with his Cornell friends. He is employed on his father's farm at Perry, New York, where he states, they are intending to devote much time to horticulture. They are contemplating the planting of thirty acres of orchard next year.

'08, W. G. A.—Jay Fred Hager is working his father's farm at Bainbridge, New York.
'08, W. G. A.—E. M. Hubbard is in Williamson this fall to conduct his nursery business at Seneca, New York.

'08, W. G. A.—Burton A. Outhouse is working on his father's farm at Canandaigua, New York.

'08, W. G. A.—Linden Rigby is working his own farm at Somerville, New York.

'08, W. G. A.—Harold C. Robinson is farming for himself at Riverhead, Long Island.

'08, W. G. A.—Chas. P. Russell has been spending the summer as working foreman on a farm at Riverhead, Long Island and will return to his home at Williamson this fall to conduct his father's farm.

'08, W. G. A.—W. J. Toussaint has been working this summer as a farm hand at Glasgow, Missouri, on a dairy farm.

'08, W. G. A.—Solon G. Vail is running his own farm at South Royalton, Vermont.

'08, W. G. A.—Ernest S. Yawger is manager of the Puritan Hill Gardens at Ithaca, New York.

'08, W. G. A.—W. P. K. White is manager of a farm at Batavia, New York.

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<th>Regular Price</th>
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</tr>
</thead>
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<td>$1.50</td>
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<td>$1.00</td>
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<td>$1.00</td>
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<td>$3.00</td>
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<td>$1.00</td>
<td>OUR</td>
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The Cornell Countryman

JANUARY, 1909
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# Table of Contents

Cover Design — To Forest Home
Frontispiece — Isaac Philip Roberts

A Joyous Christmas and a Thoughtful New Year, I. P. Roberts 97
Some Elements in Good Housebuilding, C. A. Martin 100
Foot and Mouth Disease, V. A. Moore 102
The Commission on Country Life and the College, 105
The Second Annual Fruit Show, 107
Forecasting the Weather (Continued), G. W. Mindling 111
The Farm Special, 116
Some Notes on the International, F. E. Robertson 119
How I Got My A. B., T. R. Temple 122
Why I Came to Cornell, G. B. Van Wagenen 123

Editorials,

Our Professor Roberts, 124
"I Only Knew It Came and Went," 124
Again, the Fruit Show, 125
Agriculture En Route, 125
A New Departure, 125
Home Building, 126

General Agricultural News, 126
Campus Notes, 128
Former Students, 132

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**THE CORNELL COUNTRYMAN**

is a monthly magazine published by the students of The New York State College of Agriculture at Cornell University
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From a Painting

J.H. Roberts
A JOYOUS CHRISTMAS AND A THOUGHTFUL NEW YEAR

From J. R. Roberts

To my Old Students and Friends:

It gives me pleasure to send you greeting at the close of this eventful year which has brought so much of good and so much of joy to those who are fortunate enough to live in this land of our adoption. As I contemplate its prosperity and growth I am wondering how active a part the students of the College of Agriculture—so long misunderstood by reason of prejudice and ignorance—are taking in the solution of those five great problems in which the whole civilized world is engaged.

The key to religious liberty has been discovered and the problem of civil liberty is rapidly approaching solution; for although it seems probable that there will always be Kings and Emperors on the earth, their autocratic powers are at last being taken from them.

The third great problem of the world is the emancipation of Woman who until recently, has been the slave and mistress of men even among civilized peoples. Although the most progressive nations have attacked the question with vigor, the majority of the women of the world are still in bondage. No nation can be civilized if any large portion of her people—whether male or female—have rights which the strong and governing portion neither acknowledge nor respect. Yet we may rejoice that this fundamental problem is making progress although not as rapidly as we could wish.

The fourth question—Shall the people of this country live soberly?—is now to the front. There is no place in America where a drunken man is welcome; no one desires to employ him; no parent is happy with a tippling son at his fireside. I am wondering whether you students are going, by precept and example, to teach the world to live soberly.

The fifth problem is how shall we learn to live in peace, and it has scarcely been thought of, certainly not seriously, by most people. "Young men for war, old men for peace!" No! Rather, young men for peace! Are all of you who must be as educated men, leaders of thought and effective action, taking an active part in this question of peace; peace personal, peace local, peace national? Are you urging the settlement of all major differences through the courts of law or the courts of arbitration? I am wondering if you are so engrossed in study and sport that you have no time to help solve the hellish question of war; and
if you realize its results in the misery of women and children and its waste and perversion of economic force? Compare it with the expenditures for education during these last hundred years! Think on these things; open your Book on these days of merry-making and read: Peace on Earth, Good-Will to Men!

I send greeting also to the College of Agriculture as a whole. It has grown in numbers, dignity, influence and usefulness beyond my most sanguine expectations. From eighteen students in 1874–5 the number has risen to 618 in 1908 and the prospects are for 800 the coming year; while the number of students in the whole University has risen from 542 to 4465 in the same time. Meanwhile the staff of instruction in Agriculture has grown from five to sixty.

Naturally one looks for the causes which have produced this phenomenal increase in thirty years, and asks himself whether they were local, affecting only Cornell University, or general, affecting many institutions and many men. The fact that other institutions had a similar augmentation of students in the last third of the Nineteenth century leads to the conclusion that these causes were not operating merely through a single man or in a single institution. Upon a wider view it is found that the higher institutions of learning in Germany have also had an equal increase of students in the last forty years.

It appears that the attendance at nearly all of our own large institutions of learning and at many of the smaller ones as well, had, previous to 1880–85 been nearly uniform and could be diagrammatically expressed by a slightly irregular, but almost horizontal line. In Germany, from 1870–1875 mechanics, chemistry and allied technical subjects began to attract wide attention in schools above the High School grade. From this time on a line representing attendance in schools of University grade, makes an abrupt angle of about thirty-five
degrees from the horizontal, in the diagram consulted. In America this sharp angle of the line does not appear until 1880–1885 but when the upward trend does appear it is more marked even than in Germany. If the curricula of the schools above the normal grade be examined, it is seen how rapidly the broadening process has been going on.

I think it cannot be gainsaid that this very marked increase in attendance at the colleges and universities is due to the change from a narrow and ancient curriculum to a broad and democratic one—from abstract to concrete teaching; from teaching the few in the terms of the ancients to teaching the many in those terms of Nature's modes of action in which ninety per cent of mankind are profoundly interested. All this change has not weakened but rather strengthened the Colleges and the Departments of Arts; and this is most gratifying, for it would be a misfortune to close or obstruct one great and vital opportunity for elevating mankind while opening others. We are all justly proud of the fact that a greater per cent of our population receive instruction in institutions above the normal grade, than in any other country. Without doubt the Colleges of Mechanic Arts and those of Agriculture—the Land Grant Colleges—have been the chief factor in securing this happy showing.

### Number of Inhabitants to each Student.

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<td>530</td>
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<tr>
<td>Germany</td>
<td>1000</td>
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<tr>
<td>France</td>
<td>1200</td>
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<tr>
<td>Great Britain</td>
<td>1750</td>
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<td>Russia</td>
<td>6,400</td>
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This most gratifying showing is chiefly due to the effect which the Land Grant colleges have had in democratizing the institutions of higher learning. Soon after the Morrill Land Grant was made in 1862, a little handful of thoughtful and far-seeing men saw the need of broadening the curricula of the great universities, but it was the task of one man to translate the abstract into the concrete and to carry on the experiment until its value and success was so assured that it could no longer be controverted. For twenty years that man—whom Corneliots delight to honor—bore the obloquy heaped upon early Cornell which was dubbed "Fresh Water," "a college making fresh recruits for Satan," "a college for Hay-seeds," for "Short-horns," "for greasy mechanics."

That Cornell University has ten times as many students in 1908 as it had twenty years ago is chiefly due to the early adoption of the broadest ideals of education and to the wisdom and enduring patience of those who first put them to the proof.

**NOTE:** The facts from which I have generalized in the second part of this greeting were furnished me by the kindness of Guido H. Marx, Cornell, '93, Associate Professor of Mechanical Engineering in the Leland Stanford Junior University. His exhaustive and painstaking researches have revealed the causes of the recent rapid advancement in higher education. I hope that the time is not far distant when the facts which he has collated and his conclusions therefrom will be given to the public.—I. P. R.

*300 if Normal students are included as above High School rank.*
Simplicity and directness in plan, in design, in detail, are qualities of primary importance in all building. In the building of the home, particularly of the farm home, they are absolutely indispensable, not to the beauty of the house merely, but to the health, comfort, and consequent happiness of those who dwell in it.

These two words, therefore, the prospective home builder should keep constantly before him, writing them large on his plans and on every page of his specifications. He should know first as fully as possible what are the needs that must be met by the house about to be built, and then in the simplest and directest fashion he should make his plans meet those needs, letting his exterior design express his plan without superfluous or equivocation. So only can his house become “a thing of beauty” and “a joy forever.”

In the matter of general design, fortunately, good taste is already asserting itself and heaping merited condemnation upon the indescribably tawdry show of a few years ago wrought by the scroll saw and the turning lathe. People are beginning to realize that a plain exterior is not necessarily ugly; that its simplicity, its freedom from elaborate detail, miscalled ornament, may give a quiet dignity; that the ordinary home is no place for attempting the monumental. We begin to understand at last that a home is a home and that it should be homelike and inviting, with quiet restful lines, and plain broad surfaces. There are few things in the design of a building that an architect need fear less than plain wall surfaces. They nearly always enhance the beauty of the building and are certainly under any circumstances preferable to unintelligent elaboration.

All this sounds easy. One is reminded of the axioms our English teachers used to din into our ears: “Easy writing makes hard reading,” etc. Well, it is true. Easy writing is usually bad writing, and easy planning is usually bad planning. Keep the plan of the house very simple; what could seem easier than that? But the inexperienced home builder will find that he must work over his plans long and patiently to eliminate all unnecessary crooks, turns, dark corners and general complications; and he must remember that it is much easier to change partitions, stairways etc., that exist only on paper than it is for the carpenter or mason to make changes after the work has once been built.

To eliminate dark corners—that suggests one of the demands most insistently made nowadays and quite rightly; the demand that whatever a house is, it shall be hygienic. One should be sure that his plan gives everywhere an abundance of light—so far as possible direct sunlight. Let him have fine broad porches or verandas if he likes, but let him take care that they do not cover up and darken his rooms. In other words, neither the house nor any one room should be entirely surrounded with wide roofed verandas; one side at least of each room should have windows open to direct unobstructed light. It may not be necessary always to have all windows so constructed that they can be opened; but every room, especially work rooms and sleeping rooms, should have windows that may be opened wide to give an abundance of fresh air and wherever possible cross ventilation.

Windows are not, however, the only means of ventilation. Open fireplaces are not only cheerful adjuncts wherever they occur, but are also the best of ventilators when
properly constructed. True, they are rather among the luxuries than among the things purely utilitarian, but they are an excellent investment for health, comfort, and happiness; and even though one may feel like classing them as luxuries they need not be extravagant ones. Fireplaces built and faced with common red bricks that cost about $8.00 a thousand are just as good as if faced with finer bricks or tiles at a dollar a square foot, and often they are more attractive because more in harmony with their surroundings.

In the matter of interior finish, fortunately, we may be "in style" and still be esthetically and hygienically right, for there is a general reaction against the elaborately molded and fretted woodwork of a generation ago in favor of a cleaner and plainer finish with moldings and ornamentation so very simple that they may be cleaned almost if not quite as easily as the plain unmolded portions of the work.

In kitchens, pantries, and bathrooms especially is it desirable to avoid complicated or finely molded finish, and to avoid all cracks, crevices, or angles likely to catch and to hold dirt and to harbor vermin. The problem of a proper finish in the kitchen is not easily solved within the means of the ordinary home-builder. If one did not need to count the cost he could readily make his kitchen as clean as an operating room in a modern surgical hospital; the market affords the materials. But cost imposes many and sharp limitations; and comparatively few of us can go far beyond the ordinary cheap method of finishing. Wooden wainscoting are much used; but they present many joints that are objectionable in such a place, and it is a question if it would not be better to omit them and, if we cannot use tiles, cover the walls with sanitary oilcloth made especially for this purpose. This cloth is clean, durable, washable, and is made in many attractive patterns. It might run from baseboard to ceiling, or it might be only three, four, or five feet high and finish at the top with a plain band of wood.

Wood floors in a kitchen are very difficult to care for properly and should not be imposed upon the good housekeeper. If something more expensive is out of the question, then perhaps it is best to put in a cheap wood floor and to cover it with linoleum of as good a grade as can be afforded. This is clean, sanitary and, pleasant under foot. It will, however, need renewing every five or ten years, according to quality used and the wear and care given it. The sink should, as a simple matter of course in these days, be of white porcelain enameled iron, if a solid porcelain sink is too expensive. The drainboards may be of wood, but wooden boards covered with zinc or copper and hinged to lift up for cleaning thoroughly are much better.

Whether floors through the rest of the house should be of hard wood and polished, or of cheaper wood and carpeted, is largely a question of individual preference, though there can be little doubt as to the superiority of a good hardwood floor from the standpoint of cleanliness unless indeed we can advance to the universal use of vacuum cleaners. A good hardwood floor laid with tight joints and properly polished with wax is somewhat more expensive in first cost than cheaper floors and carpets, and requires more constant attention to keep it in good condition; but with such floors there is no "housecleaning" time. They are always clean and in condition, and in the end are cheaper both in actual cost and in labor for their care than the carpeted floor.

These are just a few of the primary do's and don'ts for the prospective homebuilder, particularly the farm homebuilder. If a general adoption of these suggestions were possible it would go a long way toward improving housing conditions on the farm. It is, however, unfortunately true that everything that tends to better housing seems to cost almost prohibitively more than the things that
FOOT AND MOUTH DISEASE

By Veranus A. Moore

Director, N. Y. State Veterinary College, Cornell University

FOOT and mouth disease is a highly infectious and communicable disease of animals. It affects cattle, sheep, goats and swine. It is occasionally transmitted to the horse, dog, cat and poultry. It is also said to affect the large herbivora, as found in zoological gardens, such as camels, giraffe and deer, of all species. The human family is also, susceptible, people being infected usually by drinking the raw milk of animals suffering from this disease. The mortality is not high, but a large percentage of the animals that appear to recover from it do not thrive and often suffer from abscesses in the udder and about the feet, sloughing of the hoofs, gastro-intestinal catarrh and blood poisoning. This is especially true of dairy cows. Young cattle, dry cows and steers seem to suffer less from the after effects of the disease.

Foot and mouth disease was quite accurately described in the 18th century. It is known, however, to have existed long before that. The most extensive and destructive outbreaks have occurred during the last two centuries. This disease has invaded European cattle, extending over large regions involving several countries, and sometimes has persisted for years. It invaded England about 1860, where it remained as a destructive feature of cattle breeding for nearly 40 years. It is reported that from 1897 to 1899, this disease attacked more than a million cattle and hogs. In 1870 it occurred in northern and eastern New York, western New England and the southern part of Canada. In 1902-3 an outbreak occurred in eastern Massachusetts and extended into four states. It involved 244 herds and necessitated the destruction of 4,712 animals.

Although foot and mouth disease has been known for a long time, the exact nature of its virus or cause has not been determined. It is known that it retains its vitality and virulence in stables and in piles of barnyard manure for at least six months, that it will stand freezing and that it may be destroyed by disinfectants. Loeffler and Frosch have shown that the cause—presumably a germ of some kind—will pass through a coarser Berkefeld filter. Animals that have passed through the disease are immune to it for some months, but the immunity is not lasting. This disease spreads more easily than any of the other known infectious diseases of cattle. It is carried most readily by affected animals, or by those that have come from herds on infected premises. There are cases reported where it has been carried in hay, straw, grain, manure, stable utensils, etc., from farms where there were diseased animals, to animals on other premises. It is stated that small animals, such as dogs, cats, poultry, pigeons and birds, may transport the virus.

The symptoms of foot and mouth disease vary in different outbreaks.
sometimes they are quite mild and at others very severe. The first evidence of the disease is a rise of temperature. The mucous membrane of the mouth and the muzzle become dry, the appetite is diminished and rumination ceases. The discomfort that comes from this condition in the mouth causes the animals to chew their food very cautiously. There is considerable accumulation of saliva in the mouth with some collection of froth about the lips and strings of rather viscid saliva may hang from the mouth. This condition becomes more conspicuous as the disease advances. There soon appears evidence of pain, and the animal may refuse food altogether. Soon after these symptoms appear in the mouth, there is evidence of soreness of the feet as shown by the tendency to shift the weight from one foot to the other. This stage is followed by the appearance of vesicles, or water blisters in and about the mouth. This eruption usually appears at the ends or margin of the pad, the tip, border and top of the tongue, the inside of the upper and lower lips, and sometimes on the muzzle and about the nostrils. These vesicles appear later on the udder and in the region of the feet. It is reported that in cattle these changes are more common and conspicuous in the mouth, while among sheep and hogs they appear more frequently in the region of the feet. The vesicles may be few and small, or they may be large and coalesce. After the vesicles are well formed the temperature tends to diminish. In milch cows the flow of milk is checked. Following the vesicles there are erosions which give rise to raw denuded surfaces, from the sloughing of the outer layers of the mucous membrane or of skin that covered the vesicles. The soreness of the mouth in some cases is very pronounced. The period of sloughing and healing requires from 5 to 10 days. Cattle affected with this disease make, after the increase of the secretion begins, a peculiar sucking, clinking and smacking sound that becomes quite prominent as the disease advances. The period of incubation varies from 24 hours to several days. The duration of the disease in uncomplicated cases varies from 10 to 20 days.

The outbreak of this disease which is now appearing in western New York and Pennsylvania seems to have been introduced with cattle that were shipped through the Buffalo stock yards, although no cases of the disease have occurred in the stock yards themselves. These yards have been most thoroughly cleansed and disinfected, and every possible precaution to eradicate the disease has been taken. It seems at this time as though the disease had been introduced by animals that had been shipped from some infected premises or that had recently suffered from the disease. It is known that animals that recover may spread the virus for a considerable length of time after they appear to be perfectly well. At this writing, the real source of the infection does not seem to have been determined.

As this disease has cost the European countries millions of dollars, it is very important that radical methods for its extermination should be adopted, at this time. In the control of foot and mouth disease, the U. S. Department of Agriculture, through its Bureau of Animal Industry, is rendering all possible assistance to the authorities of the states in which the disease is appearing. In New York Commissioner Pearson is doing everything that an official can do to stamp out this scourge of cattle.
THE COMMISSION ON COUNTRY LIFE AND THE COLLEGE

President Roosevelt's Commission on Country Life came "out of the West," and on the 16th of December subjected the College of Agriculture to an inspection, more thorough, probably than any before. Not the whole Commission, however, for Messrs. Gifford Pinchot, Kenyon L. Butterfield and Walter H. Page, were unable to get to Ithaca at the time. Nevertheless, a "hearing" was held, and by all indications was as complete a success as could have been hoped for.

Dean Bailey arrived on Monday, but his work for two days was purely personal as the cars bearing the Commission did not arrive until Wednesday morning. Once here, however, there was little delay, and after an informal reception in the Dean's office, the tour of inspection began. Out through the Dairy Building it progressed. Then to the Poultry Plant, Judging Pavilion and Experimental greenhouses; then back to the main building, stopping only for a group picture to be taken, and so up to the Department of Home Economics. In every department, the work was explained, its application both to theory and practice, and the different features distinguishing it from others. In some cases exhibitions were prepared, illustrating the nature of the instruction given, and the methods used.

Arriving at the top floor of the main building, the party found prepared a delicious lunch, the product of the Home Economics laboratory—judging from the culinary results—a remarkably good kitchen. The students of the department, under the direction of Miss Rose and Miss Van Rensselaer had made all preparation, and were on hand to act as waitresses. The following, most of whom were included in the party of inspection, enjoyed the hospitality of the department at this luncheon: Director and Mrs. L. H. Bailey, Mrs. J. G. Schurman, Henry Wallace, William A. Beard, Charles S. Barrett, E. W. Allen, Dr. C. W. Stiles, C. J. Blanchard, John R. Boardman, Dean and Mrs. T. F. Crane, Judge and Mrs. C. H. Blood, Dr. and Mrs. V. A. Moore, Mynderse Van Cleef, N. D. Kemp, Boothe C. Davis, Mr. Glenn, Wallace Buttrick, Dean H. E. Cook, Professor C. W. Burkett, F. N. Godfrey, Montgomery Darling, L. H. Tucker, Dr. W. H. Jordan, Almon Gunnison.

By two o'clock the party was again on the march, beginning at the roof where the work of the Weather Bureau was observed, through every laboratory and department down to the basement. Thence the route led into the Soils and Farm Machinery laboratories, and from there up through the Agronomy wing, into the various departments of the Plant Industry activities. From the completion of this careful inspection of the educational and investigational facilities, the party proceeded to dinner, only to turn up at the buildings again, promptly at seven fifteen, when a private hearing of the student point of view was heard, the speakers being those students who, although not chosen to appear at the public hearing, had prepared their reasons for coming to this college.

By eight o'clock the Auditorium was completely filled with faculty, regular, special and short course students, and the members of the Commission and their guests. Shortly afterwards the Chairman of the evening, President E. I. Bayer, '09, of the Agricultural Association, opened the meeting by announcing Alma Mater. This was led by the Agricultural Glee Club, and preceeded a series of brief talks upon "The Influence of the College." Harry B. Winters, '01, of Smithboro, and Gilbert A. Prole, '05, of Batavia, spoke first, giving their impressions as to the work the College is doing, and the influence it is
exerting upon their communities. Charles T. Osborne, '06, of East Hampton, though unable to appear, sent a message of greeting, also emphasizing the value of the College in his neighborhood. Commissioner R. A. Pearson, who had expected to attend, and to address the hearing, also sent a message of regret from the midst of his work in Albany, and mentioned with particular force the close connection that exists between
THE SECOND ANNUAL FRUIT EXHIBIT

"This fruit is worth a' Afric's wealth,
To comfort us 'twas sent, man;
To give the sweetest blush o' health,
And mak' us a' content, man.'"

The second annual fruit show given by the Department of Horticulture, November 18 to 21, started off with an informal reception given by the committee to the members of the Faculty and students of the Agricultural College on the evening of the eighteenth. The halls and laboratories, in which the exhibit was held, were beautifully decorated with red and white bunting and ferns from the greenhouse; and they were crowded from eight to ten, during which time the College glee and mandolin clubs rendered several selections, and light refreshments were served.

Many were the persons of Ithaca and vicinity who visited the exhibit during the three days it was open to inspection, and certainly the solid banks of apples, pears, and the juicy fruits of California as well as the culinary exhibit, given by the young ladies of the Home Economics de-
partment, disappointed no one. The exhibit was in charge of the students of the department, and much of the fruit was from the farms of the students and alumni. The exhibit was in no sense a local one, however, for there were specimens from most of the fruit regions from the Atlantic to the Pacific there. The main exhibit, which was composed mostly of apples, pears, and grapes, was composed of contributions from Colorado, Oregon, Utah, Arizona, New York, Vermont, Massachusetts, and Canada. The largest single exhibits were from Ellwanger, Barry & Co. of Rochester, N. Y., by M. F. Pierson, of Stanley, N. Y., and by the New York Experiment Station.

The fruit was arranged by states, each state being given a table, except New York which was so large that it was divided into counties, each county having a table. The firm of Ellwanger, Barry & Co. had a special table because it contributed, not alone to the main fruit department, but also to the package, and the nursery exhibits. The State Experiment Station also had a separate place. This latter exhibit was of particular interest because of the results of the "Sod-Tillage Experiment" that have been carried on at Geneva. A typical New York state apple orchard was selected several years ago and half of it has been given cultivation, and the other half has been left in sod ever since. Apples from both halves were on exhibition, and it must be acknowledged that the apples grown on the tilled portion are larger and of a finer flavor, though of a less intense color, than those grown on the sod.

Another feature that attracted considerable attention, was the complete collection of the edible nuts of the world. This collection comprises 160 varieties, and has been recently donated to the College by Dr. Philip T. Morris of New York City.

Several nursery companies sent in exhibits which, in themselves, were probably as educational as anything there; for they comprised series of trees in their different stages of growth in the nursery row, and the different stages of cuttings, etc., as well as specimens of tree packages ready for shipment.

The Arizona exhibit unfortunately did not arrive in time to enter the competition, but it was particularly interesting, both in the quality and the variety of the different kinds of fruit. Some of the most interesting,
besides the exceptionally large apples, were the huge Keiffer pears, ripe citrons, yams, some immense potatoes, dates (both seedling and preserving) on the stem as they came from the tree, olives, (ripe and green), olive oil, tangerines, lemons, oranges, grape fruits, and pomegranates. One of the most interesting features was the results of the dry farming as shown by the apples. Several varieties were shown, some of each having been grown under both irrigated and dry conditions, the later comparing most favorably with the others in every respect; in fact they were better than a great many grown under ordinary conditions.

Besides the green-fruit exhibits, there were exhibits of grape and apple juice, cider, canned fruits, and dried and evaporated apples. These were
highly interesting for they brought home to many of us the real importance of the fruits, and how much they enter into our every day life.

The exhibits of the Departments of Plant Pathology and Entomology were decidedly an improvement over those of last year, in both the number of plant diseases and insect enemies shown and the completeness
of their discussion and the way they were shown up. We all had a better idea of the nature of Bean or Grape Anthracnose, of the Gypsy Moth and the several others which were shown there.

The exhibit of fruit packages was about the most complete that has ever been gotten together, and had the added advantage that the salesmen were not there to bother you in your comparison of the relative merits of the different makes. This exhibit, as well as the canned fruit, the dried fruit, the bottled juices and beverages, and the nut exhibits are to be set up in the glass cases of the department as a beginning of a horticultural museum.

First, second and third premiums were awarded to the best plates of apples and other fruits exhibited; the different states and the different counties of New York state ranking as follows:

<table>
<thead>
<tr>
<th>County</th>
<th>Plates</th>
<th>First</th>
<th>Second</th>
<th>Third</th>
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</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>10</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>12</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Iowa</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Oregon</td>
<td>17</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Vermont</td>
<td>12</td>
<td>12</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Canada</td>
<td>13</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Monroe County</td>
<td>88</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Wyoming</td>
<td>17</td>
<td>19</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Schoharie</td>
<td>8</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Ontario</td>
<td>230</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tompkins</td>
<td>21</td>
<td></td>
<td></td>
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<tr>
<td>Wayne</td>
<td>37</td>
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These figures are somewhat misleading because, in the two counties, viz., Monroe and Ontario, the exhibits of Ellwanger, Barry & Co., and M. F. Pierson respectively are included; and these exhibits, since they were so much larger than any others, naturally had a chance to carry off more premiums.

The fruit show was intended to be primarily instructive. It accomplished that end very satisfactorily; for the students, in setting up and judging the different varieties came to be more familiar with them; but the show accomplished more, it gave the students an added interest in things horticultural, it got them acquainted with show methods, and lastly it gave them an idea of the relative merits of the important fruit growers throughout this and other states.

**FORECASTING THE WEATHER**

*By George W. Mindling*

Assistant Observer United States Weather Bureau, Cornell Section

(Continued from the December issue)

When the Government first undertook the forecasting of the weather, there were found hindrances such as we might not think of to-day. The nation's credit was very poor, but the telegraph service of the country was worse and the appropriations for the weather service seemed hopelessly inadequate, the pay of the members of the Signal Corps being sometimes deferred for a whole year. The weather messages were frequently refused by the telegraph companies for months at a time, and the mails were so slow that the predictions for Monday often could not be made until about the following Tuesday or Wednesday and reached the place for which they were intended still later. But there was no opportunity for deceit: when forecasting for Monday, the predicting officer had no information later than Sunday's observations. Hence he still had a chance to prove the efficacy of his methods and in this he succeeded so well that as the nation's credit improved, the appropriations for the
service were increased so that by about 1875 the Government weather telegrams were receiving proper attention and the forecasts could always be expected in time to be decidedly useful to commercial and other interests.

At first the only attempt in forecasting was to predict the coming of such storms as would likely prove to be dangerous or destructive to shipping. The wisdom of thus limiting the work of the forecast service in a time of extreme scarcity of funds is especially apparent from the great success of the storm warnings. In those days the forecasts must have been of much less value in total, had there been an effort to serve other than the shipping interests. For it is a fact that today only one-fourth of the loss to shipping on the Great Lakes is attributable to storms, while fully three-fourths of such loss was due to storms prior to the establishment of the forecast service. As time went on there was an increasing demand for weather predictions and the work of the Signal Service was extended. In addition to the storm warnings regular weather predictions were made daily, and later, after appropriate investigation of the various questions had been made, special warnings of frosts, cold waves and river floods began to be issued to the interested districts. Thus the character of the national weather service was considerably modified and it is now of much greater importance to agricultural interests. In 1891 the service was given a new organization and the Weather Bureau of the Department of Agriculture relieved the Signal Service of all duties pertaining to the weather.

When regular weather forecasts were first issued in this country a single prediction was made to apply to an entire group of States. Thus, there was one prediction for the New England States, one for the Middle Atlantic States, and so on. As the number of stations increased it was found that this plan could be improved upon and from time to time the country was re-districted for purposes of forecasting. At present there is, in general, a separate prediction for each of the smaller States, while the larger ones are subdivided and a special forecast is made for each section. The extent to which this subdivision has been carried is illustrated by such a prediction as this, which was issued for New York State on January 3, 1905. “For western New York: Snow tonight and Wednesday, except fair in southeast portion Wednesday; diminishing northerly winds. For eastern New York: Fair, colder tonight, much colder in extreme southern portion. Wednesday fair; brisk to high northerly winds.”

Such an elaboration of the forecasts has necessitated a considerable increase in the number of predicting officers. At one time the forecasts for the entire country were made by one man at Washington. Now there are eight districts whose central offices are located respectively in the following cities: Boston, Washington, Chicago, Louisville, New Orleans, Denver, San Francisco and Portland, Oregon. The Weather Bureau official at each of these cities makes the published forecasts for all the States in his district. In addition to these State forecasts there are local forecasts issued from most Weather Bureau stations, the observer being authorized to publish predictions for his city and vicinity.

Forecasts for all sections of the country are completed each day by 10 A.M. or earlier, central standard time. The distribution of the forecasts has been a subject of much concern to the Bureau and at present considerably more than 2,000 places receive the forecasts by telegraph at Government expense, while more than 150,000 addresses are supplied thru the mails. Further distribution is secured without expense to the United States thru the press, by the display of flags, the sounding of whistles and by means of some other signals. But most effective of all the means of distribution is the telephone and it is probably safe to say that
three-fourths of the total population of this country, if interested, may secure the daily forecasts at a comparatively early hour.

There has been a remarkable growth of public interest in the Government weather predictions. Thirty years ago they were often the object of ridicule, while today they are eagerly sought after by men of large business affairs and are given much consideration even by persons that have only a casual interest in the weather. Public interest has increased to such an extent that the demand for the forecasts is greater than the ability to supply and the Bureau has often found it necessary to refuse to furnish them to a great many applicants. The policy of the Bureau is to furnish the predictions to such persons and places as will give them the widest distribution or serve the most important interests. The extent of public interest is further illustrated by the numerous inquiries received by telephone and in person at Weather Bureau offices. The number of telephone calls at the Pittsburg office, for instance, has exceeded 1,500 in a single day. As showing the extent of public confidence in the Bureau and the value of the service, it should be stated that most of these inquiries come from business men seeking information in addition to that furnished by the published forecasts.

A word in regard to the limitations of forecasting would not be out of place at this point. It is generally held by the public that a prediction approximately true to the facts is a success. It is not expected that the hour be foretold when rain will begin nor that the region over which it will occur be accurately defined. The art of forecasting is beset with so many difficulties that complete success is now impossible and must long remain so, judging from the present state of knowledge and the results of the latest experiments. The whole atmosphere is in a very unstable equilibrium. The effective amount of heat received from the sun is not definitely known, and as yet it is not susceptible of accurate measurement. The same thing is true of the upward extension of the atmosphere. Comparatively little is known or can be known of the actual conditions in the upper air at any given time, and yet, many important weather changes are dependent upon such matters as the temperature, humidity and movement of the air 1,000 feet or more above the earth's surface.

There is now in progress at Mt. Weather, Va., and other research observatories, a system of exploration of the upper air by means of kites and balloons, that promises an improved knowledge of the upper air, quite imperfect of course, but still such as may contribute appreciably to the bettering of weather forecasts. In addition to the study of the upper air, some of the more remote sources of influence on weather changes are being investigated, such as the variations in terrestrial magnetism and solar radiation. And everywhere the climate and the changes of the weather are being studied as never before, with a view to eliminating unsuccessful predictions as much as possible. But notwithstanding the occasional failures of the Weather Bureau forecasts, they have for many years proved to be of immense practical value and illustrations of this will now be given.

On the occasion of the tremendous hurricane that ruined Galveston, September 8, 1900, warnings of an exceptionally severe storm were received from Washington along the Texas coast as much as four days in advance. These were repeated from day to day with increased emphasis. It is true the gravity of the situation was not fully realized even by the forecasters, but the warnings were the means of inducing hundreds of the citizens of Galveston to prepare for the worst by leaving the threatened portion of the city. Thus a great many lives and some property were saved that would have been lost but for the warnings. The press throughout the country published articles commenting on these and other warnings issued in connection with the same
storm as it passed toward the lakes, the St. Lawrence Valley and the Atlantic ocean.

On February 12–13, 1894, there occurred in the West Indies a great cyclone. Warnings were received 24 hours or more in advance and were well distributed. At the points where warnings had been received not a vessel left port, Maritime journals all referred to these effective and timely predictions and declared them to be worth millions of dollars.

At New York during September 27–30, 1894, not less than 250 vessels were held in port by the storm warnings. Only two ventured out. One reached Sandy Hook and was there compelled by the gale to seek shelter. The other being in charge of a fool-hardy captain, went on but suffered great damage. The decks were swept, the mainmast was carried away, and two men were washed overboard and lost. The vessel in a badly crippled condition arrived at its destination five days late, while those that heeded the advice of the Weather Bureau lost less time and then had the comfort of fair weather for their voyages, and freedom from damage.

These instances show the value of storm warnings only in cases of extreme severity, such as have quite generally been made the subject of comment by the press. But only in a less degree have the forecasts proved valuable in the case of minor storms occurring at least once a month. Besides the advantages resulting from the regular storm warnings, the advice of the Weather Bureau have proved of untold value to shipping in ways not often mentioned.

In January, 1894, the steamer Rappahannock was floated and brought to safety. The property thus saved was valued at $600,000.

The value of the Weather Bureau predictions to the railroad and mining interests is well illustrated by the following facts related by H. W. Richardson, local forecaster at Duluth, Minn. During October, November and December, over two and a half million tons of iron ore are generally shipped from Duluth and vicinity and as will be seen the forecaster renders an important service in this connection. Later in the winter the shipment of ore has to be given up on account of the prevalence of freezing weather. But in the three months mentioned the trade is pursued to the utmost possible extent, tho it is subject to frequent interruptions by cold spells. The cost of operating boats in the ore trade averages about $200 a day. Ore that has been frozen in the car necessitates a considerable expense for thawing or a greater expense thru delaying the boats, or both. Hence it is easy to see the importance of forecasts of freezing temperatures to the managers of the ore industry and the railroads engaged in ore transportation. Mr. Richardson was told by the Superintendent of the Duluth and Iron Range, R. R. an important ore road, that the value of his forecasts to the ore interests near Duluth amounted to several thousand dollars a season. The economy included the saving in vessel delays, quick despatch from mines to docks, the controlling of mine output to tonnage desired for vessel orders, and the reduction of loss from freezing.

Now if the forecasts are of so great importance to the iron ore industry, what must be their value in connection with the shipment of vegetables, fruits and all kinds of perishable products in times of critical temperatures? The iron ore industry is limited to a few sections of the country and affects a comparatively small portion of our population, but the perishable goods enter into the very diet of every person on the continent. Millions are engaged in
their production and transportation. It is to the interest of all that the requirements of these products receive the attention they do from forecasters in order that the losses may be reduced to a minimum. The losses from freezing or from heat, sustained in the first instance by the merchants and railroad companies, are finally to be borne by the masses—by the producers, that is the farmers, and by the consumers. On the other hand, the saving of these products from freezing and from excessive heat, increases our food supply and gives direct benefit to the consumer.

In the present state of civilization so great is the tendency for the profits or losses of one class to affect the interests of every other class, that one should be well versed in economics in order to fully appreciate the extent of the benefits resulting to the whole country from the Government weather forecasts. If a storm causes a wreck on Lake Superior and a million bushels of wheat are lost, let no farmer think that the decrease of supply will operate to cause a higher price of the product to his gain. For it is certain that the unfortunate dealer in the grain will do his utmost to force down the price paid to the farmer in order that he may so far as possible recover his loss. Therefore, the storm warnings are a benefit to the farmer as well as to the shipper and transportation company. The principle of the recovery of loss is an effective and important one in countless other ways and it would be interesting to notice its application further, but space will not permit.

But having indicated somewhat in detail the value of certain forecasts, we hasten to mention others and merely to suggest their importance to the interests directly affected. Forecasts of snow are beneficial to railroads. The snow plows are brought out and made ready to clear the tracks and thus much delay is obviated when the snow appears. Switches are looked after that they may be in the best possible condition and perishable freight is taken to shelter and safety.

Forecasts of the stage of rivers in time of flood are made by the Weather Bureau with remarkable accuracy and often many days in advance. On the occasion of the flood of 1903 in the Mississippi river a prediction was received at New Orleans four weeks in advance announcing the coming of a stage of 21 feet of water. The crest of the flood came at the time predicted and differed but five inches from the stage forecasted.

In the following quotations we find impartial evidence of the value of the forecasts to various agricultural interests.

Pacific Rural Press, San Francisco December 17, 1901: "There has been some injury in the citrus and winter vegetable districts, but thanks to the early warnings of the Weather Bureau those who know how to burn and smoke as a preventive from frost effects saved much property."

Sugar Planters' Journal, New Orleans, Dec. 20, 1902: "An evidence of the esteem in which the forecasts issued by the United States Weather Bureau at New Orleans are held was shown by the sugar planters all over the State by their windrowing thousands of acres of cane on receiving warning of the late cold snap, when the temperature fell as low as the freezing point, and in some places even lower."

It may seem strange but even the insurance business is coming to be affected by the forecasts to a considerable extent. Cases have arisen and have been taken into court in which it was a matter of dispute whether the insurance company should be liable for damage from storms incurred thru disregarding the Government forecasts. In one case a skeptical insurance company, before deciding to demand policy holders to give heed to the storm warnings and other predictions of the Weather Bureau, determined to investigate the amount of property saved in a year by means of the Weather Bureau's forecasts, and found that it averaged about $30,000,000 annually.
During the last week of November, the first "Farm Special," ever sent out in New York state, made a tour of thirty towns located along the Erie Railroad in Western New York. Its success surpassed the expectations of even its most enthusiastic advocates.

The idea of the trip originated with Mr. Luis Jackson, industrial commissioner of the Erie, at a meeting held in Syracuse last year, to consider the question of abandoned farms in the State. The outlook for the improvement of agricultural conditions seemed gloomy, but Mr. Jackson's optimism found expression in this scheme. It was further discussed during Farmers' Week, and gained the attention of Professor Tuck of the Extension Department. He saw immediately an excellent opportunity for reaching the rural districts on practical questions, in an attempt to help the farmer solve his problems.

The following extracts from a letter written by Professor Tuck, indicate very clearly the nature of the work, and suggest the success, that the Farm Special achieved:

"In commenting upon the work of our Farm Special, recently run over the Erie, I may call your attention to the fact that this was the first venture of its kind ever undertaken in this State. That it was successful is indicated by the fact that during the first day's run from Union to Corning, talks were given to 1,500 people. The work began as early as ten in the morning with nearly 300 present at Union. The work continued during the day by our making stops of practically 45 minutes, allowing no regular time for the noon meal, since we carried a diner with us giving the privilege to the speakers of having their dinners served at will. The first day's work closed with an unusually strong meeting at Corning where some 300 persons, most of whom were men, listened to able addresses from Professors Wing, Webber and Rice. The work of secondary schools in Agriculture was tersely presented by Deans O. S. Morgan of Alfred and H. E. Cook of Canton, N. Y.

"The next day's work began at eight o'clock in the morning, stopping..."
at almost every place along the line each hour. At nine o'clock we had the largest crowd of any time on the trip. Bath turned out between ten and twelve hundred people, some seven hundred or eight hundred students coming down from the schools. Addresses were delivered one in each of the three coaches and one on the rear platform.

"You perhaps are familiar with the make-up of the train: a locomotive, baggage car, cafe car and three coaches. It was one of the best railroad equipments ever given for this kind of work. Such, in fact, was the opinion of our Dr. Webber who has been on similar trains in the West. At four o'clock in the afternoon, we had already more than doubled the first day's attendance. At the close of the evening meeting in Batavia, where were gathered some of the most influential farmers of that section, the total number of the day had swelled to 4000. This indeed was most encouraging and proved most conclusively that the people of the State are ready for this kind of work.
At each of the evening meetings stereopticon talks were given which lent interest to the work. At Corning we were delighted for a few minutes with the presence of State Master Godfrey who gave a brief talk on the Grange. At Batavia we were equally pleased with the unexpected presence of Commissioner R. A. Pearson, who, in a few well chosen words, expressed his pleasure at being with his old colleagues again, and indicated the ways and means of combating the dreaded foot and mouth disease.

"The third day began at Attica, shortly after eight, and while not as strong as the second, brought to the cars before our last stop at Addison some 3,000 people, many of whom came from towns that had never been touched by institute work. The mere physical fact of a train of this kind arrested the attention and brought the people within the reach of the lecturer's voice, therefore bringing their minds in touch with his on points of economic value in their business. At Addison, our last stop, the business houses closed so that the whole town might profit by the opportunity. In a great many places the teachers showed particular interest, dismissing their schools that the children might attend. Ministers very courteously made announcements from their pulpits, calling the attention of their parishioners to the significance of the movement.

"The three days, therefore, brought us in touch with some 8,000 people. To nearly everyone we gave a package of selected reading matter all nicely done up in a bulletin envelope, none of which was thrown away.

"The speaking, therefore, has been backed by literature. The literature has gone into the homes. Already results are coming through scores of requests in our mail. The idea of the Farm Special was correct theoretically. The practical results are proving positively its value. Other railroads are now following in line. The movement is well on its way."

The following persons composed the party on board the "Special":

MOST INTERESTED!!!
H. H. Wing, Professor of Animal Husbandry, J. L. Stone, Professor of Farm Practice, G. F. Warren, Professor of Farm Crops, C. S. Wilson, Professor of Horticulture, Dean H. E. Cook, of the State Agricultural School in Canton; Dean O. S. Morgan of the State Agricultural School at Alfred; J. E. Rice, Professor of Poultry Husbandry, H. H. Wetzel, Professor of Plant Pathology, C. R. Crosby, Professor of Entomology, M. P. Jones, Assistant in the Extension Department, Dr. H. J. Webber, Professor of Plant Breeding; G. W. Cavanaugh, Professor of Agricultural Chemistry, C. H. Tuck, Professor of Agricultural Extension and manager of the trip; Luis Jackson, industrial commissioner of the Erie, J. P. Shultz, Secretary to the party; Stanley F. Morse of Albany, and reporters.

NOTES ON THE INTERNATIONAL LIVE STOCK EXPOSITION AND THE NATIONAL DAIRY SHOW

By F. E. Robertson, '09

ONE of the most interesting and instructive excursions that anyone interested in animal husbandry can take, is to spend a few days at the International Stock Exposition at Chicago. A student who is interested in animal husbandry, or in general agriculture, or any breeder of cattle, horses, sheep or swine, who looks forward to improving his animals, can find at the International, living examples of the very highest types of the individual breeds that able and experienced breeders have produced. There one can see and compare the most perfect animals of all the important breeds—the results of long years of most careful feeding, breeding and selection. It is a common saying among the stock exhibitors at Chicago that "The International sets the type of breed for the United States," and they might well add, for the world as well. It is doubtful if there can be a more beautiful sight for the lover of fine animals than to sit in the great amphitheatre and watch the enviable blue ribbon aspirants being put through their paces. They seem to catch the spirit of the occasion, and vie with each other as strenuously as their owners.

It was with considerable anticipation that the party of Cornell boys looked forward to the International, and to the National Dairy Show to which a judging team was entered in competition with several of the western colleges.


The afternoon and evening of Monday were well taken up in visiting the Stock Show and in watching the judging and placing of several classes of horses and cattle which took place daily in the great Amphitheatre capable of seating thousands of people. The evenings were devoted to the Horse Show which consisted in parading the prize winners, judging fancy drivers, saddlers, three and six horse teams and cavalry maneuvers.

The Exposition was largely attended. Farmers from all parts of the United States and Canada were in evidence for it was essentially a farmers' exposition and only in the evenings during the Horse Show was the city element noticeable. It was estimated that the attendance during the
Exposition was 500,000 as against 300,000 last year.

Tuesday, Professor Wing piloted the whole party through the extensive stock yards, and the hog and sheep pens adjoining the great packing houses of Armour, Swift, Morris and other packing companies. It was really a great sight to see so many animals in the pens awaiting their turn to be driven along the lanes and chutes, always toward the packing houses. Apparently there was but one outlet for all those animals and that was, as we found later, through the packing houses, where but little got away from the greedy killer save the squeal. In the morning the pens would be comparatively filled with the carloads of stock that came in during the night. That same night they would be comparatively empty, for the packing houses are busy all day, in Chicago.

The trip through the packing houses was most interesting and instructive. Numerous uniformed guides were everywhere posted to give information and to point out the way. Pages might be written and then not do justice to the enormity of these great packing industries upon which so many people depend for their meat supply. The admirable system noticeable in every department is indicative of years of thought and application on the part of the great packing house promoters. One cannot help but be impressed with the thought,—what would the consumers do if these great packing industries should cease their activity for a month or even for a week?

The evening of Tuesday was made notable by the business meeting and the banquet given by the American Federation of Agricultural Students, at the Exchange Building. The program was in charge of the Wisconsin delegation and the business meeting was called to order by President T. R. Davison of Wisconsin. It was voted that any college that did not pay its dues regularly would be dropped from the Federation; that each college society should elect a corresponding secretary to keep in touch with the secretary of the college in charge of the Federation for the ensuing year; and
that henceforth all college students visiting the International should wear their representative college colors. Washington State College was chosen by lot to take charge of the Federation for the coming year. The question of establishing permanent headquarters for the Federation was discussed and the meeting adjourned.

The banquet following the business meeting was presided over by the Chairman of the earlier meeting. While the attendance at the banquet was quite large, all of the agricultural students in attendance at the Exposition were not present. However, most of the agricultural colleges were represented by part or all of the visiting members.

The Toastmaster introduced as the first speaker, Professor Curtis of Iowa, who spoke at some length on student judging teams, and the agricultural college graduates' duties as a citizen.

Professor George C. Humphrey of Wisconsin, followed with an appeal for American bred International winners. He said: "American breeders should no longer depend on imported stock with the idea of competing in the International show ring." He also dwelt upon the value of the International to the agricultural student, and of the opportunities that the Federation of American Agricultural students offers for closer relations between the different agricultural colleges.

Professor Skinner of Purdue University spoke of the great opportunities and benefits open to the agricultural student who visited the International, both in respect to getting in touch with the feeder and breeder as well as in promoting closer fellowship through the Federation. He felt that there was great need of a better understanding in the various colleges as to the advantages of the Federation; that the various colleges should send larger delegations to the International, a matter which could be brought about by creating a greater interest in each college.

Mr. E. B. Trowbridge of Missouri, followed with a short history of the Federation. He mentioned the fact that the International fixes the type of animal for the United States and for the world. To illustrate this fact he mentioned that years ago the black Percheron and the white Short Horn were considered undesirable in the Show ring, while today the International does not discriminate against these points.

Toastmaster Davison ably brought the banquet to a close, but before doing so he spoke with special emphasis on the fact that next year all students visiting the International should wear their college colors. He also called attention to the fact that there was need of greater interest in the Federation by the faculty members of the different colleges, for by such a greater interest the growth of the Federation would be promoted.

The banquet as a whole was very lively and enjoyable. Some attempt was made to determine the number of undergraduate students in attendance at the International, from the various states. This could not be done accurately but the following approximate figures were obtained:

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The National Dairy Show opened December third at the Coliseum. There was an extensive display of dairy products, dairy utensils and stable equipments.

The showing of the dairy breeds was small. This was largely due to the fact that the quarantine against the foot and mouth disease, shut out all of the fine herds that were to have come from the Eastern States. Notwithstanding this fact the show was quite successful and attracted considerable interest.

One of the interesting features of these shows was the student judging contest. In the fat-stock, horse, sheep
and swine classes the standing of the colleges were as follows:

Cattle: Iowa 1st, Kansas 2d
Horses: " " Ohio "
Sheep: Texas " Ontario (Guelph), "
Swine: Nebraska " Minnesota "

In judging the dairy breeds Iowa again took first place with a score of 1681, points out of a possible 2,100. Nebraska came second with 1,645 points and Minnesota third with 1,616 points.

Four breed trophies were won by various colleges as follows:
Holstein-Frisian Trophy won by New York
Jersey " " " Nebraska
Gurnsey " " " Iowa
Dutch Belted " " " Iowa

The judging team from New York consisted of R. L. Lewis, Sp.; W. D. Brown, Sp.; E. H. Foster, Sp.; and R. L. Williams, Sp., as alternate. The winning of the Holstein-Frisian Trophy was due largely to the excellent judging of R. L. Lewis who made a perfect score in this class. Had conditions been such that the New York State dairymen could have entered their cattle in the show rings, the standing of the various judging teams might have been considerably different. At any rate the work of the team as a whole deserves especial commendation at this was the first student judging team ever sent from New York to compete at the International. We can safely look for equal if not better results in the future.

The International Live Stock Show commends itself. Farmers and students who are interested in promoting stock breeding should keep in closer touch with the International, for by this means a mutual benefit may be realized.

HOW I GOT MY A. B.

By T. R. Temple

Winter Horticulture

UNCLE Matt McGown was one of my near neighbors when I first essayed agriculture. He shared the mild contempt of the community for my ability to run a large dairy farm without previous experience, and like the rest of the community, he said nothing to me but awaited the result with suppressed amusement.

Uncle Matt was a character. Deep chested, hearty of manner, and blunt of speech, he was quite the typical farmer. His mother was Dutch and his father was Irish, but he was as loyal an American as ever marched out of the Empire State to help put down the Rebellion. And in the memory of that conflict he lived and moved. All conversational roads led thither. Any subject that was introduced would lead into the thickest of the fight. Speak of a card and he would tell you how the road was strewn for miles with cards which the soldiers threw away when marching into battle. Speak of a stream of water and you would be told how, "We was all in swimmin' at Sibley's Ford an' the Rebs could a' bagged the hull outfit if they had come in onto us." But all this was overlooked when one learned from his comrades that Uncle Matt was always at the front of an advance, shooting right and left, and howling like a Dervish, "Give it to 'em boys." On such occasions, and indeed it must be confessed on most others, he was like Shakespeare's soldier, "full of strange oaths."

He waited and watched my farming methods in silence. But no move of mine escaped him. While offering no advice, he gave it freely when asked. We swapped yarns at the cheese factory; we exchanged courtesies in the shape of cuts of pork and beef at killing time; and in the long winter evenings we gossiped over Pedro and sweet cider. We were good neigh-
bors. The second summer rolled around and one day, just as I was cleaning up the last load of hay, my old friend drove along. Stopping his horses, he surveyed the scene a full minute and then shouted, "By heck! Young fellow, you are a good farmer," and then drove on. That was all, but from gruff, honest, old Matt McGown it was solid encouragement. Slowly it filtered through my brain "a good farmer," *agricola bonus.* Why, I have my A.B. at last! And I am not sure that I did not feel as much satisfaction as would have come with the academic degree to which I have looked forward so long only to be disappointed. And why not? May not a good farmer be vastly superior to a poor bachelor of arts? Of late we have heard a lot of foolish talk about how noble a thing it is to be a farmer until we are forced to suspect that we keep repeating it to convince ourselves of what we do not fully believe. Farming, like any other calling, is noble or not as we make it. But the fact remains that the finest crops our fields have produced are the men who have tilled them. The myth of old Antaeus rising with renewed vigor from every contact with mother earth has still truth for us moderns and in it may be found the answer to some of the problems that vex us.

WHY I CAME TO CORNELL

By G. B. Van Wagener, Alstead, N.H.

General Agriculture, '08-9

THAT it is somewhat unusual for a resident of a state other than New York to enroll in one of the Winter Courses at Cornell, must be inferred from the request received by the writer from the Editor of this paper, that he make public in its columns his reasons for choosing the Winter Course offered by the college that it represents. Therefore, it is hoped that those reasons may be of sufficient interest to excuse the personal tone which is inevitable in such an article.

The fact that the writer had any choice to make in the direction of agricultural education, implies that he believes thoroughly in a technical and theoretical training in this, the most comprehensive of all professions. This view will, of course, be in accord with the views of all who are likely to read this article, but on it hinges, in a measure, the writers choosing Cornell rather than his own state college to assist him in carrying out his purpose. The farmers in this region, and generally over the whole of this rough and hilly state, have a very poor opinion of "book-farming," as they term it. They are not entirely unprogressive, but they place more importance on industry than on thought, and any time spent on the former is, in their opinion so much time lost. Hence the institutions which represent the opposite point of view are not so well supported by public opinion as they might be, and without that support a public institution cannot reach the highest degree of service, however efficient and capable its workers may be.

The writer believes New York state to be in advance of his own in this respect and that its college of agriculture, under these conditions, has reached a higher degree of efficiency in its line. Aside from the opportunities for technical education offered he believes that the association with a large number of men who are all striving after the best, both social and economic to be had in rural life, is of the utmost importance, and this he is sure he will find at Cornell.
The Cornell Countryman

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R. P. McPHERSON - General Agriculture Club

J. M. TORBETT - - - Horticulture Club

JANUARY, 1909

The Class of 1909, has at least one reason for pride in being the only class now in the University, which came in direct contact with Professor I. P. Roberts before his retirement to his Palo Alto farm in 1906. It is a source of satisfaction to have even known him by sight, and we doubt whether those, who heard but his last lectures in "General Agriculture 101," do not feel that they too knew him, do not remember and revere him almost as well and as highly as those who were most closely associated with him. The Countryman appreciates the privilege of publishing the greeting from Professor Roberts, that appears on another page, and experiences a cordial gladness in hearing from him. We only wish that he could be with us again in person as he is still with us in spirit; that he could see with his own eyes the institution that has reared itself upon the foundation that he so firmly laid in his many years of incessant, broad-minded, unselfish work; that he could observe the increasing, tightening bonds that are ever drawing the College and the farmer closer together.

Like Mr. A. R. Eastman, from whom we have recently heard of the earlier days of the College, Professor Roberts knew the old type of farming, knew it well through personal contact and thorough, unrelenting experience. But his mind, his ideas and ideals, looked even farther ahead, saw in the distance an even greater aim, and with a marvelous realization of the needs of the future and the possibilities of the Science of Agriculture, he created plans and made possible preparation for an educational movement, an era, of which this College of Agriculture and its efficiency is but a beginning. It is our pleasure, it is an honor which we hold not in light esteem, that we have known one of the greatest organizers, one of the foremost agriculturists in the highest sense of the word, that the nineteenth century has produced.

From the student body of the College of Agriculture, the Countryman returns greeting to Professor Roberts, with an expression of its affection and the wish that the years may bring to him the prosperity and the happiness that his life of service deserves.

"I Only Know it came and went" Not so with the Commission on Country Life, however, for there was a significance in its visit to the College, that was overlooked by but a very few if any, of the students or faculty. It is a worthy recognition that this institution was chosen as the only one to be inspected by the Commission. And it is gratifying to be exposed to the inspection of
The Cornell Countryman

125

a critic and investigator, so competent to judge and compare, so balanced, broad-minded and so experienced as that body of men. It is a source of regret that the three missing members of the Commission could not have attended the hearing, but such a disappointment is engulphed by the gratification that Ithaca was placed at all in the itinerary of the transcontinental tour. From the few words Dean Bailey spoke at the meeting on December 16th, we received a deeper insight to, and a clearer appreciation of the experiences the Commission has undergone, the impressions it has received, the problem with which it finds itself confronted, and the magnitude of the project now before it in the preparation of a report and the advancement of recommendations. May its conscientiousness, its energy and its importance be symbolized in the success of its work and the improvement that its existence may call into being.

We are glad to recollect that our anticipations in regard to the 1908 Fruit Show, were even exceeded by the success of that event. Congratulations to all of those who had it in charge, cannot nearly equal the significance of the crowds of visitors, the interest, the commendation, the whole tone of the Exhibition. It is sufficient to repeat that the success was unqualified, deserved, and of no little importance both to the College and to the farming interests of the State.

Agriculture En Route

The Mahomets found it impossible to come to the mountain—hence the mountain, finding another means of doing its duty, went to the Mahomets, and as a result the farmers along the Corning and Batavia branch of the Erie Railroad, have a knowledge of the College of Agriculture, that they never had before. Moreover, they have heard of many other things that are to make them better farmers, more profitable business men, broader, more efficient citizens.

The Farm Special is not a new scheme. It has been tried successfully in the West, in Maine, and in other localities, but the trip that was begun on November 23, was the first in New York history, though it seems safe to assert that it is but the first of many yet to come. The account presented on another page of this issue, naturally cannot radiate the spirit of progress that spread from that train, the signs of advance that appeared in the crowds that received the instruction that was prepared for them, and the enthusiasm that reinforced the physical strength of the party of Professors and assistants, as the strenuousness of the program made itself felt. This Farm Special was the first. Let others follow, and may each one be the best—until the next occurs.

A New Departure

Department of Animal Husbandry, may be observed in the fact that this year the college entered a Judging Team in the International Dairy Show at Chicago, early in December. Though defeated as a team, the Cornell representatives made a game fight against their more experienced rivals, and through the skill of their captain, secured an individual cup—the Holstein Friesian Trophy. To the team, which was composed of R. L. Lewis, Sp., Captain, W. D. Brown, Sp., E. H. Foster
Sp., and R. L. Williams, Sp., and no less to Professor Wing who coached it, are due the thanks of the College for the work that was done, both here in practice, and in the judging ring, to bring Cornell among the leaders in this activity. The advance is a long desired and significant one, and we foresee greater interest, keen competition, and heightened success, awaiting in future years the students of this branch of Agriculture.

For our "Farm Health" series, we have secured this month a discussion of some of the fundamental features, which have also to do with the happiness of the country dweller. Though the craze for cheaply ornate houses—particularly in the country—has largely died out, there is yet vast chance for improvement, for the exercise of simplifying ideas. Director Martin's article suggests a number of such ideas, which the prospective farm house builder can do well to ponder on. The greatest architectural simplicity, the greatest comfort, and the greatest probabilities for health, are preeminent factors in designing the ideal farm house. The last item may justly lay claim to a great share of this preeminence.

Passing to more specific means for the preservation of health on the farm, it is the intention of the Countryman to present in the next issue, a discussion of Practical Food Problems on the Farm, by Miss Flora Rose, of the Department of Home Economics. The many phases of this subject offer great possibilities, and we anticipate that they shall receive treatment worthy their importance at the hands of Miss Rose.

We take this first opportunity to correct two errors which made their appearance in the December issue. On page 85, the name of O. S. Morgan was wrongfully substituted for that of J. O. Morgan, who delivered the address on Experimental Plats. Mr. Morgan is at present doing graduate work in the Department of Soils Investigation, under Professor Lyon.

On page 93, the home of Mr. and Mrs. J. A. Switzer should be given as Knoxville and not Memphis, Tennessee.

**GENERAL AGRICULTURAL NEWS**

Before this issue of the Countryman appears the Commission on Country Life will have completed its tour of the country. Beginning with a hearing at College Park, Maryland, on Monday, November ninth, it held a series of meetings through southeastern United States, returning to Washington for the 16th and 17th to hold hearings in connection with the meetings of the National Grange, Farmers' Institutes, and American Association of Agricultural Colleges and Experiment Stations, which were in session at Washington at that time. From here the Commission went to Dallas, Texas, thence across southwestern United States to California. At Sacramento the Commission divided, part coming east through Nevada, Utah and Colorado, the other part returning by way of Washington, Oregon and Montana. The two divisions united at Omaha, where a session was held in connection with the National Corn Exposition. Subsequent hearings were held in Minnesota, Wisconsin, Illinois and New York. At this writing the plans are being laid for the hearing at Ithaca,
which is to be a hearing of the College of Agriculture. From Ithaca the Commission will go to New England for a hearing.

These hearings of the Commission have been attended chiefly by farmers and other persons who make their living in country districts, including school teachers, physicians and ministers. The attention which the Commission has received has been most gratifying, and at each place it has met great numbers of persons who were interested in its work. At the hearing at Dallas, Texas, there were estimated to be five hundred persons. Inasmuch as everywhere there was special emphasis on the importance of more agricultural education, the Commission considered it important to see what are the activities of a modern College of Agriculture. There was time to investigate only one College, and our own was chosen.

The members of the Commission on Country Life are as follows: L. H. Bailey, Chairman, New York; Henry Wallace, Iowa; Kenyon L. Butterfield, Massachusetts; Gifford Pinchot, Washington, D. C.; Walter H. Page, North Carolina; William A. Beard, California; Charles S. Barrett, Georgia, E. W. Allen, Washington, D. C., Executive Secretary.

* * *

Agriculture is to play a big part in the general scheme of the Alaska-Yukon-Pacific Exposition next summer. More attention will be paid to the farmer and his interests than any other feature, inasmuch as he is the leading individual factor in the upbuilding of the West, and on the Pacific coast leads all other vocations. Every state building and every county of Washington that exhibits in a separate building will give agriculture the leading place and the U. S. Government plans separate and distinct exhibits which will be of particular interest to the farmer and stockman. These are the irrigation and forestry exhibits which will be made in the main Government building. Animal husbandry and plant industry and in fact all branches of Agriculture will be well represented and the latest investigations and most modern methods in these lines will be placed before the public.

In addition to the exhibits in the various buildings there is to an extensive outdoor display with a model farm and a model irrigated tract. Plants under actual growing conditions will occupy several acres of ground and farm machinery will have a separate display with a field for practical demonstration.

Public roads will receive much attention, as no question is of more vital interest to the farmer. Two or three of the latest machines for testing the physical properties of road materials and a working model showing the various stages of construction of every class of improved road machinery will be displayed. The Bureau of Entomology will display a series of enlarged models of beneficial insects together with those which are injurious to forage and cereal crops, fruit and forest trees. The weather bureau and experimental stations will show the work which they are accomplishing and its practical application to agriculture.

The exposition grounds are part of the broad campus, of the University of Washington and at least a million and a half dollars that is being expended on the buildings and grounds goes into permanent work that will be utilized by the University when the fair closes.

The Alaska-Yukon-Pacific Exposition is held to commemorate the achievements of man in the development of the West and the discovery of the great gold fields of Alaska. It is also designed to show the world the resources of the Pacific Northwest which present opportunities for capital and labor in the opening up of new lines of endeavor in the West.

* * *

The 42d annual meeting of the National Grange held in Washington the second week in November was marked throughout with interest and enthusiasm. Matters of great importance were discussed. Plans of
expansion were talked over and agreed to and arrangements made for enlarging the activity of the Grange.

Perhaps the most important single matter disposed of at this meeting was the matter of National Grange representation. After a most lengthy and energetic discussion, a vote decided in favor of leaving the representation as it is at present. While this meeting was primarily a business meeting, reports being read from national officials, state masters, and committees appointed for specific purposes, the educational features were varied and interesting. Several noted men addressed the grange and gave their advice on matters of vital interest to both the order and the welfare of Agriculture in general. Among these were Hon. James Wilson, Secretary of Agriculture, and Gifford Pinchot, chief of the Forestry service.

A very notable conference was held when the Country Life Commission appointed by President Roosevelt met in open session and discussed with the Grange body the work the Commission is seeking to accomplish. An address by Chairman L. H. Bailey was well received. Many questions were asked and the prevailing opinion was to co-operate in every way possible.

The National Grange also went on record as favoring the Davis Bill in Congress. This bill provides for the teaching of agriculture and domestic science in the public schools of the country. The importance of this bill was fully realized by all and every effort will be made by the Grange to aid in the establishment of such educational features as the Davis bill contemplates.

* * *

The American Breeders' Association has elected to hold its fifth annual convention in the middle west in January. In connection with Missouri's Agricultural Organizations, the American Breeders' Association will meet at Columbia, Missouri, January 6, 7 and 8, Wednesday, Thursday and Friday.

Honoroble Willet M. Hays, Assistant Secretary of Agriculture, is the secretary of this society. In a recent interview, he said:

"This American Breeders' Association really represents a part of America's great policy of conservation of natural resources. Heredity in plants and animals is a great resource. It is a source of marvelous utility. An idea of how important is the undeveloped heredity in the occasional plant or animal which can project its higher efficiency into a new strain may be had by considering the following facts:

"The United States produces $7,000,000,000 of plant and animal products annually. Of this amount $5,000,000,000 comes from crops and animals, the heredity of which we may undertake to improve. Now it is conservatively estimated that over ten percent can be added to the value of these crops and animals by breeding at a cost of one percent of the increase or at a rate of ten thousand percent profit."

* * *

At the convention of State Dairymen in Syracuse, December 8 to 11, Dr. Veranus A. Moore of the Veterinary College addressed the Assembly on the "Spread and Prevention of Bovine Tuberculosis in New York." The main purpose of the convention was the discussion of the White Plague. Commissioner of Agriculture Raymond A. Pearson, '04, also spoke on the "Policies and Work of the Department of Agriculture in the Suppression of Bovine Tuberculosis."

CAMPUS NOTES

On December eighth, Mr. A. R. Eastman of Waterville, N. Y., gave a very interesting and inspiring talk before the Agricultural Association, upon "The Farmer of Yesterday and the Farmer of Tomorrow." The speaker contrasted the early pioneer farming as it existed in his boyhood days on a backwoods farm in north-eastern Ohio, with the conditions of the present, and the possibilities of
the future. He emphasized several facts, first, that there are greater opportunities offered on the farm today than ever before; that the point of view of the farmer is changing from a conservative narrow prejudice against progress to a broader feeling of cooperation and a realization of the value of scientific knowledge; and that success on the farm depends as in other industries, not entirely upon the opportunities but principally on the man. In speaking of the improvement of home communities he advised the student not to return and immediately to try and tell the farmers how they should do things, but to "do things" himself, then quietly let the results be known, and have the information to give when asked for it.

Incidentally Mr. Eastman gave pleasant reminiscences of his close associations with Professor I. P. Roberts, and the audience of some three hundred persons, of whom many were short course men, were treated, on the whole, to a most enjoyable address.

* * *

Dean Bailey, chairman of the Commission on Country Life, who has been touring the country attending the hearings of the Commission, returned to Ithaca on Monday, December 14th, in advance of his associates. He remained until Wednesday night, the 16th, when the Commission left for the hearings in New England.

* * *

The registration in the winter-courses this year has broken all records. There are 356 registered, distributed as follows: Dairy Industry, 113; Horticulture, 25; General Agriculture, 148; Poultry, 53; Home Economics, 17. The total registration last year in the winter-courses was 262. The College is now taxed to its capacity to take care of the regular and winter-course students.

* * *

On Friday evening, December fourth, the members of the Winter-courses assembled in the auditorium to learn the yells and songs, and to get acquainted with certain features of our College life. A very helpful address was given by President J. G. Schurman. Student speakers brought out the value of club-organizations for the winter-course students, college debates, athletics and sports for the winter, the Countryman and the Cornell University Christian Association. The Countryman arranged to have each club appoint a representative who should not serve on the Countryman Board, but whose duty it should be to see that the interests of his club and course are given a place in the Countryman.

* * *

Professor John Craig addressed the Cosmopolitan Club recently on Agricultural education in Europe which he spent some time last year investigating in European institutions. He brought with him from Europe a number of lantern slides illustrating the subject.

* * *

The Harriman Cup shown in the illustration on page 131 is the present of Mr. H. H. Harriman of Syracuse, N. Y. Mr. Harriman was a member of the 1905 Winter Poultry Course at Cornell and is now Vice-President of the New York State Branch of the American Poultry Association.

The purpose of this cup is to encourage increased membership in the New York State Branch of the American Poultry Association during the years 1908-1918. It is to be held for each year, by the club or society securing the largest number of life members to the New York State Branch of the American Poultry Association and will become the permanent property of that club or society which enrolls the largest number of such life members during the years 1908-1918. This cup can be competed for by any Poultry Association, club or society in good standing with the New York State Branch of the American Poultry Association.

For the present year the cup has been placed in the office of the Department of Poultry Husbandry at
the New York State College of Agriculture. The Cornell University Poultry Association is striving to make this its permanent resting place.

The following meetings have been held by the Lazy Club since the last issue:

November 16th, Professor C. S. Wilson gave a report of the Toronto Horticultural Exhibit. Mr. Jarvis discussed miscible oils as insecticides and gave demonstrations of home made mixtures. On November 23d, Mr. Beckenstrater handled the news of the week. Mr. Moore showed a variety of hybrid carnations and their parents. Following this Professor Judson discussed the raisin industry in California. On November 30, the news was discussed by various members who also gave informal talks on various general subjects. December 7th, Professor Judson spoke of seed farms and seed growing. Messrs. Batchelor and Moore gave an interesting account of the United States Cut Flower Company of Elmira as seen by them that day.

Mr. Elmer E. Savage, Assistant in Animal Husbandry was married on Wednesday, September ninth to Clara daughter of Mr. and Mrs. Joseph Henry Clark of Durham, N. H.

G. A. Crabb, Instructor in Soils was married on September 28th to Miss Mary C. Shepperson who has been a special student in Nature-Study for several years and who was one of the original members of the COUNTRYMAN staff.

At a recent election of officers of the Forrest City Grange, H. C. Troy of the Dairy Department was re-elected Lecturer.

Dr. H. J. Webber addressed the Business Men's League of Moravia, December fourth, on "Plant Improvement." About two hundred and fifty farmers and townspeople were present. The purpose of the meeting was to encourage and educate the farmers concerning their opportunities in plant improvement.

Mr. Humbert, M.S.A., '08, recently visited Dr. Webber's plants of corn at Ballston Lake and at Aurora, to select samples of breeding stock corn for the Omaha Exposition. The corn proved to be of very fine quality.

At a meeting of the Cornell Cross Country Team on December sixth, Hobart C. Young, '10, was re-elected captain.

A committee has been appointed by President Bayer of the Agricultural Association to carry on extension work in Tompkins County, as follows: V. J. Frost, chairman, J. B. Phillips, E. H. Thompson, N. R. Peet, K. C. Livermore (resigned) and G. P. Scoville. This committee conducted its first meeting in Hayts Chapel, Thursday, December third, which was presided over by K. C. Livermore, '09. The program consisted of talks by Mr. M. B. Cummings on "Orchard Problems," J. H. Hill on "Sheep," and J. B. Phillips, '10, on "The Selection of Poultry." Discussion followed the talks and the remainder of the evening was devoted to a social hour, enjoyable refreshments being served by the women of the neighborhood.

The next meeting was held December 11, at Kennedy's Corners, where an audience of about thirty listened to a discussion on "Fire Blight" by S. P. Hollister and a pertinent talk on the "Foot and Mouth Disease" by Mr. H. Welsh of the Veterinary College.
quartette from the Agricultural Glee Club and Mr. and Mrs. R. V. Egbert entertained the audience with vocal selections. After the program a social hour was enjoyed.

* * *

Quite extensive changes have recently been made in the Farm Crops laboratory. About one third of the space has been partitioned off for the advanced laboratory, Tompkins County Survey work office and a reading room. This rearrangement also gives more actual room for the general laboratory. The Department has ordered five small silos to be set up as models. It was fortunate this year in being able to raise to maturity twenty-nine varieties of corn, samples of which have been classified and placed in the laboratory.

* * *

At the regular meeting of the Poultry Association held December tenth, F. E. Benedict, '11, tendered his resignation as secretary and treasurer of the Association, which was accepted. He resigned in order to become advertising manager of the Association to which position he was appointed. M. A. Travis, '09, was appointed secretary and treasurer; F. S. Jacoby, '10, and Miss Edna Jenkins, '09, were elected members of the Board of Directors. Mr. Jacoby being appointed Assistant Superintendent of the Poultry Show, and Miss Jenkins chairman of the Publicity Committee.


* * *

Captain Hobart C. Young, '10, led the Cross Country team to an overwhelming victory at the Inter-Collegiate Cross Country Meet held at Princeton, November 21st. The com-

THE HARRIMAN CUP

See p. 129.

parative scores are as follows: Cornell 29, Syracuse 87, Harvard 89, Yale 90, Michigan 105, Pennsylvania 134, Columbia, and Princeton. Out of the ten meets the Cornell teams have won the Intercollegiate championship nine times. Captain Young's time, as individual winner, of thirty-four minutes and fourteen seconds is the record for the course.

* * *

At the annual meeting of the State Dairyman's Association, held December 11th at Utica, Professor H. H. Wing of the Animal Husbandry Department was elected President.

* * *

Two hundred new lockers have been ordered for the gymnasium and were recently installed proving more than enough for all applicants. The jumping pit has been floored over and the lockers set up there.

* * *

The third annual Intercollege Cross-Country Race for the Ehrich Cup was held December 12th, over the four
mile course. Sibley College won the cup with a score of 31 but were closely pressed by C. E. with a score of 34 points. The other colleges scored as follows: Arts 104, Agriculture 116, Architecture 180, Law 244, Veterinary 371. The cup was won last year by the College of Agriculture and has been in its possession during the year. The five men who scored for the Agricultural College were as follows, in order of their position: R. D. Anthony, '10, F. H. Hahnel, '11, W. R. Wilson, '12, M. H. Swick, '11, and K. C. Livermore, '09. The following list completes the team: B. Tyson, '12, R. E. Deuel, '10, A. R. Barron, Sp., A. L. Thompson, '11, D. H. Fullerton, '09, A. T. Van Buren, '12, P. C. Stark, '12, O. N. Fuller, '09, T. M. Morrison, '11, H. B. Lewis, '10, F. L. Vaughn, '12, M. C. Butts, '11, C. F. Ribsam, '11, S. G. Judd, '11, and T. M. Scoon, '11.

At a meeting of this cross country squad F. H. Hahnel was elected captain and R. D. Deuel manager.

* * *

G. W. Myer, '09, is in New York City this month in charge of an exhibit given in connection with the International Tuberculosis Exhibition. The exhibit which consists of a model sanitary stable, two Guernsey cows and all appliances for the production of sanitary milk is shown for the purpose of educating the people in the production of clean milk. This exhibit is one of the features of a large exhibition given in the Museum of Natural History in New York City, dealing with the various phases of the prevalence and control of the disease.

* * *

The final rating of the Inter-college Soccer teams left Agriculture in fourth place, having won one game, lost one and tied two. The intention was to have played off the ties but the early darkness of the November days, prevented sufficient games being played to determine an actual, definite standing. The Sam-miento Cup goes this year to Sibley College, with law second, C. E. third, Agriculture fourth, Architecture fifth. Arts sixth and Veterinary seventh. The institution of the game among the Intercollege sports, however, was a complete success, and considerable interest has been aroused. The men who composed the Agricultural squad were, C. F. Boehler, P. R. Cabrera, J. A. Cohill, F. N. Darling, E. Friedman, W. C. Funk, S. P. Holister, R. C. Lawry, F. E. Robertson, V. E. Siramarkian, W. G. Stephenson, G. M. Stevens, and E. L. D. Seymour, Captain.

SHORT COURSE DOINGS

Within ten days of their registration, the Short Course students began to organize definitely and the splendid attendance at the meetings of the different classes, spoke well for their energy and enthusiasm.

On Thursday, December 10th, the Horticultural men met and organized a club of about twenty-four members. The following permanent officers were elected:

W. L. Worcester, President; D. L. Shepherd, Vice-President; J. M. Torbett, Secretary and Countryman representative; A. A. Lewis, treasurer.

Later a committee was appointed to devise a yell and other details, and the question of a definite name was considered.

Shortly afterwards fifty-four Poultrymen met, and in preparation for future meetings elected as temporary officers, Mr. Rudy, chairman, and Miss Fedder, secretary. Mr. N. E. Gatzert was elected representative to the COUNTRYMAN.

FORMER STUDENTS

'74, B. S. A.—William R. Lazenby was born in Bellona, Yates Co., N.Y., in 1852. His preparatory education was secured in a district school and at the Penn Yan Academy. In 1874 he graduated from Cornell but remained at this institution as an Instructor and Assistant Professor of Horticulture until 1881. Since 1881 he has been professor of "Horticulture
and Botany” and “Horticulture and Forestry” in Ohio State University, his major subject, however, being Horticulture.

Professor Lazenby, since his graduation from Cornell, has made admirable success not only as a teacher of Horticulture but in various other lines of work. He has done much institute work and written many articles along the line of subjects which he has taught.

During the latter thirty-five years of his life Professor Lazenby has held the following positions which serve to indicate his ability as a scholar and leader in various lines: Lecturer of New York State Grange 1879–81; Director of Ohio Experiment Station 1882–88; President of the Columbus Horticultural Society since 1894; President of the State Forestry Society since 1903; Secretary, College of Agriculture, Ohio State University 1894–1906; Secretary of Ohio Medical University since 1895; One of the charter members, and has served as president of the Ohio Academy of Science; Fellow, and has served as sectional vice-president of the American Association for Advancement of Science; five years secretary and two years president of the American Society for the Promotion of Agricultural Science; Vice-president of the American Pomological Society; and chairman of Executive Committee of Society of Horticultural Science.

While at Cornell Professor Lazenby was a member of Sigma Xi, and while at Ohio State has been made a member of Delta Theta Sigma, Alpha Zeta and Acacia. He is a Knight Templar and a thirty-third degree mason, is an active member of the Columbus Board of Trade and University Club and one of three honorary members of the Columbus Country Club.

'04, W. A.—C. E. Holloway is Superintendent of Pencoyd Farm at Bala, Pa. This farm is devoted to the breeding of Guernsey cattle, the herd now consisting of fifty-five head. That Mr. Holloway is giving satisfaction as a superintendent is evident since this is his second year on the Pencoyd Farm.
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<th>Club Offer Price</th>
</tr>
</thead>
<tbody>
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<td>COUNTRY GENTLEMAN</td>
<td>$2.50</td>
<td>$1.50</td>
</tr>
<tr>
<td>CORNELL COUNTRYMAN</td>
<td>$2.00</td>
<td>$1.00</td>
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<tr>
<td>RURAL NEW YORKER</td>
<td>$1.00</td>
<td>$1.00</td>
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<tr>
<td>CORNELL COUNTRYMAN</td>
<td>$2.00</td>
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<tr>
<td>HOARD’S DAIRYMAN</td>
<td>$1.65</td>
<td>$1.00</td>
</tr>
<tr>
<td>CORNELL COUNTRYMAN</td>
<td>$3.00</td>
<td>$1.00</td>
</tr>
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<td>$1.00</td>
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</tr>
<tr>
<td>COSMOPOLITAN</td>
<td>$1.65</td>
<td>$1.00</td>
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<td>$3.30</td>
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### Table of Contents

**Cover Design**—Photo by Head

**Frontispiece**—View at the National Apple Show

Food for the Farm Family .......................... Flora Rose 137
A Canadian Lake ................................... R. D. Anthony, '10 139
The Commission on Country Life ................. N. D. Kemp 142
La Vina Grande .................................... E. A. Ward 145
The Tile Drain ...................................... L. H. Bailey 147

*Design by W. C. Baker*

Irrigation in Peach Orchards ...................... W. F. Crowley 150
Nature-Study in Cities ............................ J. W. Spenser 152
The National Apple Show .......................... John Craig 154
Farmer's Week ..................................... R. J. Shepard, '10 155
A Successful Farmer ............................... F. N. Darling, '10 158

**Editorials,**

- Abraham Lincoln .................................. 160
- Unproductive Idleness ............................ 160
- "The" Week ...................................... 161
- Food for the Family ............................. 161
- Talking Shop .................................... 161

**General Agricultural News** .................... 162

**Campus Notes** .................................. 164

**Former Students** ............................... 165

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**THE CORNELL COUNTRYMAN**

is a monthly magazine published by the students of

The New York State College of Agriculture at Cornell University

Address, COLLEGE OF AGRICULTURE, ITHACA, N. Y.

SUBSCRIPTION PRICE, $1.00 PER YEAR

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

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FOOD FOR THE FARM FAMILY

By Flora Rose

Department of Home Economics, Cornell University.

THE problem of providing proper food for farm crop and farm animal has come to be recognized as having great economic importance. The prosperity of the farmer depends upon the returns he gets from field and animal and experience has shown that the yield may be greatly increased by a knowledge of how to enrich the soil and of right feeding methods. Our agricultural colleges are meeting this need so that every year there is a marked improvement in modes of farming. One crop upon the farm has everywhere been partially neglected,—the human crop. In concentrating our attention upon the obvious need for better agricultural methods, we have lost sight of the equally important but more obscure needs of man, and to-day the least intelligently housed, fed and cared-for individual on the farm is the human being. The economic value of efficiency in the human members of the farm family has not been sufficiently emphasized. We have not yet learned the lesson that good health both mental and physical, enlarges the power of man to plan and execute, and that this increased ability has an actual money value. It is important for the prosperity of the farm that the people who dwell upon it shall be cared for with knowledge and intelligence. The right food is a factor as fundamental in importance to the health of man as to the health of the farm animal. Human nutrition presents more difficult problems than the feeding of the animal, for civilized man has not the power of the lower animals to utilize much of the crude material furnished by nature. He has not even the primitive instincts of lower man to aid him in the selection of his food. If he is to be rightly fed, knowledge and intelligence must be the guides which shall govern his choice.

The food needs of man are similar to those of other living things. He must have in his food material which will supply him with the energy to support his various activities, which will repair worn out parts, permit new growth, and prevent the wasting of any of the body's tissues, which will maintain the wonderful power of self-regulation which the body possesses. The human organism has been aptly compared to an engine, needing fuel to run it and material to repair it. The comparison soon ends for the body is a far more wonderful piece of mechanism than any man-made machine. It is not only self-regulating, but self-repairing, self-governing.

To understand how to plan the human dietary we must first know what elements compose the body, because a long continued deficiency of any one element in the food will lead to some defect in nutrition and will ultimately affect both activity and growth. Chemical analysis shows us that the elements which are a part of the
body and which are necessary for its proper development and maintenance are carbon, hydrogen, oxygen, nitrogen, sulphur, iron, calcium, magnesium, potassium, sodium, chlorine. When the body is deprived of any one of these elements it is really in a condition of hunger. Ordinarily, the word hunger is used to express a desire for food, but the word in its broader sense signifies an actual need on the part of the tissues for nutrition. If the food eaten does not contain all the needed elements and the body is thus deprived of something essential to it, the condition which results is one of actual hunger, though it may not be expressed in terms of a desire for more food. There is no doubt that a frequent cause of failure on the part of the body to function properly is an imperfectly adjusted dietary.

After determining the elements essential to life, the next step is to find out in what form it is necessary to supply these to the human being. We know from experience that we cannot make use of the elements as they occur simple and uncombined in nature. Carbon with which we are familiar in charcoal, the gases, hydrogen, oxygen and nitrogen are none of them in a form which the body can use. All the elements must be built up into complex compounds which we call foods before they are available for man.

Carbon and hydrogen are the elements which give our chief fuels their power of yielding heat. They serve a similar purpose in the body, and the foods which are to supply our bodies with energy and heat must be rich in these two elements. If much muscular work is to be done and we wish to increase the supply of energy to the body, we add to the dietary foods rich in sugar, starch or fat. Sugar and starch, called collectively carbohydrates, and fats are known as fuel foods because their function in the dietary is to serve as a source of energy.

Nitrogen is an essential element in all the living tissues of the body and if all nitrogen containing food were withdrawn from the dietary the tissues would inevitably perish. Nitrogen is supplied by the class of foods which we know as the proteids. We are familiar with proteids in the albumen of the egg, the casein of milk and cheese, the lean of meat, the gluten of wheat, etc. If we wish to increase the nitrogen in the dietary we add milk, or eggs, cheese, meat, nuts, and the legumes (peas and beans), all of which are relatively rich in what we call proteids. The proteids serve a double function in the dietary, for while they supply the nitrogen necessary to build up the living tissues of the body, they are also a source of energy to the body since they also contain both carbon and hydrogen.

The use of sulphur to the body is obscure, but as it is associated with all proteid it is obtained in sufficient amounts in proteid foods.

Phosphorus serves several purposes in the body, but chief among these may be mentioned its effect upon growth. If the food of a growing organism is deficient in phosphorus compounds of the right sort the growth becomes stunted. Some foods rich in such phosphorus compounds are, milk, egg yolk, meat, oatmeal, whole wheat, dried peas and beans.

Iron is a very important element to the body for it is by means of the iron compounds in the red corpuscles of the blood that oxygen is taken from the air breathed into the lungs and carried to the various tissues, and the carbon dioxide is carried from the tissues back to the lungs again and gotten rid of. It is by means of the iron compounds in the tissues that the oxygen brought to them is used. Hence a deficiency of iron very seriously interferes with the entire nutrition of the body. This deficiency may be a result of conditions other than improper feeding. Some foods relatively rich in iron are egg yolk, meat, entire wheat, dried peas and beans, green peas and beans, spinach, prunes.

Calcium is an important constituent of the bones and if insufficient calcium
is supplied in the food the bones do not develop properly and general nutrition is also seriously interfered with. The food richest in available calcium is milk. Dried beans, celery, oranges, cabbage, turnips and spinach are also relatively rich in this element.

Calcium, magnesium, potassium and sodium are all of great importance in the body to serve some of the less understood purposes. The elasticity and irritability of muscles and nerves are influenced by salts containing these elements. For example, the heart beat, the ability of the muscle to contract and relax, etc., seem to depend in some way upon the presence of these substances. Certain waste products formed by the activities of the tissues and themselves hurtful to the body are first made harmless by being combined with some salt of these elements and are then eliminated from the body. The vegetable foods, as a whole, are relatively rich in potassium and magnesium.

All the sodium and chlorine needed by the average individual, and frequently more than needed, are supplied by the use of common table salt, which is a compound of these two substances.

The above brief outline serves to show the necessity of providing the human being not merely with food but with the right kind of food. The problem is a much larger one than has been indicated here. After the knowledge of what foods to choose has been gained, other questions must be considered. What is to be the measure of the amount of food to be consumed; in what proportions should the various food compounds occur; what effect upon the kind and amount of food used have such circumstances as variations in age and activity, sex and build, climate and season, etc., what are the proper methods of food preparation? The subject is indeed one of wide range, but its importance demands more knowledge and intelligence on the part of the individual as well as on the part of those planning family dietaries.

A CANADIAN LAKE

By R. D. Anthony, '10

Photos by the author

We had paddled across one corner of Senora the year before but we had that product of Satan, the three-mile Senora portage, ahead of us and a rain storm blowing up behind us so we were not disposed to spend time admiring nature's beauties. But now we were drifting through the narrows from Kushog, the lake of long and weary paddles, with that pleasant feeling of laziness which comes over one when a good day's journey is behind you, with the sun still a couple of hours high and camp, and supper, and the sleepy, waning fire before you.

We lay back against the packs and let the spirits of the lake guide the canoes. The dark woods that fringed the lake so closely and the clear green waters were without sound or motion. The spirit of silence settled upon us and our talk ceased.

What a contrast in colors! The greens and blues of the water, the blues and blacks of the pines and hemlocks, and all the indescribable hues of the autumn; flaming reds, rich russets and browns; and above it all a blood-red sun in an atmosphere of golden haze for the forest fires were burning.

It wasn't a wonderful lake, just one of the many that make that region a canoeman's paradise; a couple of miles long, a mile or so across, rocky islands here and there, and in unexpected corners long island-dotted bays. The shores were cliffs and ridges and tables of archaean granite,
broken occasionally by some little creek and here we could see the gleam of sandy beaches.

We came out of our reverie with a start. Our intrusion had disturbed a loon from his fishing and his wild, mournful laugh woke us and all the echoes of the lake.

In a few minutes the packs were spread out on the flat top of a rocky point and each man was at his task: one for the fire, one for the cooking, and one for each of the tents. Urged on by that gnawing feeling under the belt, it took but a short while to transform the chaos of the pack into a snug camp filled with the odor of sizzling bacon.

As the darkness deepened, the chill of the northern night reached us and we threw logs on the fire, wrapped our blankets around us, and settled down to enjoy the pleasantest thing of the day, the waning camp fire. The brands snapped and crackled at first and then sank down to a steady, quiet glow. A fish jumped just at the edge of the rock. Some woods animal stirred the leaves behind us. Across the bay a whip-poor-will began his plaintive call. As we talked with low voices of the day’s work and of the country before us, all the sounds of the night sprang out of the silence. The fragrance of “My Lady Nicotine” mingled with that of burning pine and fresh cut balsam till the glow in the pipe bowl went out and the glow of the fire faded into the gray of the ashes. Then for the dreamless sleep that rounds out the camper’s day.

From Senora we were to swing off to the east into unknown country so the next day was set aside for the first loaf of the trip. There wasn’t another soul for five miles in any direction so we knew we would be undisturbed. One party, with compass and belt-ax, went to work out the portage for the morrow and the rest paddled off for a swim and a royal feast in a three acre patch of wild blackberries so dead ripe that they tumbled into the hand at the first touch.

That afternoon a change came over the lake. A shift in the wind or a new and nearer fire brought the smoke till we could smell it in the air. The distant shores began to fade till only the headlands showed, and then these and the islands went and we found
ourselves shut in by a strange, gray wall that blended with the water till the camp seemed to float in air. Canoes vanished with it as a fragment of smoke is lost in the sky. Some lost their definitions of location and the compass became a necessity. And in the night the stars were shut out as when a rain cloud settles low overhead.

The rising sun found the camp astir. The tents were struck, break-
The Commission on Country Life

By Norval D. Kemp

Secretary to Chairman, Commission on Country Life

The Commission on Country Life as appointed by President Roosevelt in the latter part of the summer of 1908 organized and formulated its plan of inquiry and started its work the first of October. At once three main lines of activity were put out: A list of questions covering the chief aspects of country life was mailed to about six hundred thousand persons throughout the United States whose lives and interests relate them to country life; the Commission took itself to various places in the great geographical regions of the Nation and held hearings whereat the country people of these regions attended and expressed their opinion on rural conditions; and special inquiries by correspondence were made by the several members of the Commission dealing with specific phases of this subject matter. Early in November President Roosevelt suggested that the country people of the United States come together in their district school houses and discuss these matters as they find application in the several school districts.

The progress of the Commission's inquiry has recorded more and more definitely and unmistakably the dependence which all persons, regardless of their condition or vocation, put upon the power of a system of education for the open country which will express the life of the country, since it is a distinctive life from that of the city and town, and lead to intellectual, social, spiritual and material development.

We are indebted to the Cornell Countryman for the opportunity to present what seems to be the present attitude of the public mind in relation to country life. This attitude can be recognized in the following letter which is a copy of a letter written to the Commission on Country Life by Fassett A. Cotton, Superintendent of Education for Indiana, in reply to the suggestion that in that State a day be set when the country people of every school district in the State of Indiana would come together in their respective school houses and, guided by a carefully formulated program, discuss the educational needs of each community and the full function of the district school in relation thereto. The discussion would further examine into the actual present performance of the district school, and conclude with a definite immediate plan for promoting the growth and usefulness of the country school to serve all members of the community.

It is suggested to associate the four States of Ohio, Indiana, Illinois and Kentucky for concerted action in this precise matter, and for interchange of ideas and matters of interest among the States.
January 8, 1909.

Dear Sir:

Your favor of the 7th is at hand. I am so very greatly interested in the subject of Country Life and Country Schools that I have decided to write you at considerable length.

The relation of rural schools to rural life is the greatest educational problem of the present day, and as yet few have realized its stupendous importance. Upon its solution depends in large measure the future welfare and stability of our people. This is no idle statement. A study of the factors involved will show that it is true. To arrive at conclusions of any value at least three phases of rural life must be studied—(a) material and commercial progress, (b) social life, and (c) the schools.

The change in farming methods is one of the marvels of the century. With forests cleared and swamp lands redeemed, the steam plow does the work of many men. The soil is prepared, planted, cultivated and the harvest is gathered by machinery. The sickle, the scythe, the cradle and the flail have given way to the mower, the self-binder and header, and the steam thresher. The dairy, from milking to butter-making, has become scientific. Chicken raising and stock growing have become matters of intelligence instead of chance. Good roads, steam rail-ways interurbans, rural routes and telephones have all but eliminated time and distance, and have brought the farm in close touch with everyday life in the commercial world. Easy transportation and the knowledge of market prices have brought the farmer a fair return for his products. While this progressive spirit has in a way touched all farm life, this does not by any means tell the whole story.

It is still a far cry from the small hill-country farm to the wide western plains where farming is done on so large a scale. The difference between what may be called domestic farming and commercial farming is tremendous. It is the difference between the small farm owned and occupied and cultivated by the owner for a living, and the landed estate owned by a syndicate or a wealthy individual and farmed for commerce. More and more as the years come and go must millions of our people get their living from the land; and more and more must domestic farming become a dominant factor in the life of our people. It is with this phase of farming rather than with commercial farming on a large scale that I am interested, and it involves at once the questions of social life and education of the family. After all it is the family that lives on the farm that makes the problem an interesting one.

Before any reliable conclusions are reached certain mistaken notions must be corrected. Doubtless the stories of farming by machinery and the great results of commercial farming are responsible for these. To the unthinking, farming has come to be one long holiday picnic, when everybody rides. Nothing can be further from the truth. Even with the most approved machinery there is plenty of work for head and hand on the farm; and when it is realized that the use of all this up-to-date machinery is by no means general, and more than that, that its use would be impossible on small farms, it will be apparent that there is still work to do.

It looks as though the same forces that brought farm life in touch with the commercial world might easily bring it in touch with the social world; and they might make possible the pleasures, comforts, luxuries and culture of city life with none of its unpleasant features. But it must be admitted that this possibility has not been very generally realized. In many instances the social life of the people has not kept pace with material prosperity. Big barns filled with grain, wide fields over which blooded stock roam, and the latest farm machinery have often kept the dwelling house small and barren enough of comfort and beauty. And
so it may be fairly stated that the home interests have not always kept pace with the material interests of the farm. The mothers and daughters who have borne their share of the burden of toil have been the larger sufferers. Under existing conditions it is not strange that farmer's children are attracted to city life, and that they leave the farm. Life is too hard and the social advantages are too few and far between. It has been suggested that the custom of European farmers who live in villages would solve the problem. It is thought that such local centers would relieve the isolation and furnish the much needed social life.

The real solution of the problem in this country lies in the cooperation of economic, social and educational forces with the school as the center. There is a vital relation between country life and the country school which has not been seen. The country school has not even begun to fulfill its mission. Hitherto all schools have been alike—city, country and town. Their province has not been to educate, to develop boys and girls into men and women, but simply to impart facts of arithmetic, geography and history. The country has had such schools but they have never recognized their distinctive environment or let it make any difference in their mode of procedure. They have never realized that their problem is a distinct one, nor that the means are peculiar. The farmers could not solve the problem: they have their own work to do, and it isn't their business. And educators have worshipped tradition so long that it has been almost impossible for them to look fairly and squarely at the nature, conditions, environment and needs of a child and let these determine the process and means of education.

Now with the school as the center of township life, economic, social and educational interests can work out the solution together. The school center is better than the village center. It is doubtful if the latter is possible.

In the nature of the case most farmers must live on their farms. Those whose circumstances would permit could build their homes in the school center vicinity, but the school, either the consolidated or the large district school, must be the center. The township school should be conducted under the ideal conditions mentioned above. The teachers should be well prepared men and women thoroughly in touch with the problems and interests of the township, and permanent residents of the community. They should understand the relation of education and agriculture, and should be able to create in the boys and girls a love for the land. The school should be the center of social life where the farmers' families could assemble frequently to hear lectures, to enjoy concerts and high-class entertainments, and to discuss problems of vital community interest. The teachers should be capable of directing all of this life and of taking part in it. The school center should be the meeting place for farmers' institutes and clubs, and should be the political center of the township where all civic questions could be discussed. What phases of life the principles of centralization shall include the community will easily decide. Good roads from every direction will center here, and convenience will shortly locate all residences upon these direct lines. Of course, the natural conditions of the township must determine the center or centers, for hills, streams, and size of the township may make more than one center necessary.

Three things, then, are fundamental in this problem: First: the co-operation of economic, social and educational forces with the school as the center is absolutely essential. The one-room isolated school, unless a very large one, can no longer meet the needs of the people. Second: community life with its dominant interest, agriculture, must determine the nature of the work in the school and the mode of procedure. Third: the teachers must be well prepared.
men and women, capable of dealing with the problems of life, willing to make the community their permanent home, and to take the solution of its economic, social and educational problems as their life work.

I shall be glad to cooperate with the States mentioned, and shall get the press of this State back of the movement as outlined above as soon as the date is agreed upon.

Yours very truly,

Fassett A. Cotton

Norval D. Kemp, Secretary to the Chairman
Commission on Country Life,
Washington, D. C.

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LA VINA GRANDE
By E. A. Ward
Carpinteria Valley, Cal.

In the Carpinteria Valley in Santa Barbara County, California, is a huge grape vine that has the claim made for it of being the largest in the world, a claim that has remained unchallenged for a score of years.

Two branches twisted around each other form the main trunk which measures nine feet, nine inches in circumference at the base, and eight feet, two inches where the lateral branching begins at a height of five and a half feet from the ground. The largest lateral branch has a circumference of three feet, eleven and a half inches, six feet from the main trunk. The present trellis measures one hundred and twenty feet by one hundred and ten feet and has been enlarged but very little in the last twenty years. If the vine were not severely pruned every year it is hard to tell how far its branches might extend. The crop for 1908 was six tons of grapes, and it is estimated that from ten to twelve tons were harvested from the vine in a single season a decade or more ago.
Figures are hard facts, but a better appreciation of the magnitude of the vine may be gained if it is said that one person can span only about two thirds of the circumference of the trunk, and that, allowing three square feet to a person over four thousand people could easily stand under the noonday shade of the vine. It was under this vine that the Carpinteria precinct held its first election after the American government assumed control of California.

There is no particular romance connected with the planting of the vine. In 1842, a young Spanish woman, Doña Ayala, put the cutting into the ground and soil and climate have done the rest. The grape is a wine grape of the Mission variety, somewhat resembling the Concord in appearance, though not as large, and yet more juicy. The clusters are very large, some of them weighing from two to ten pounds. There seems to be no definite history of the introduction of this grape into California, but legend has it that the Mission Fathers brought it with them, hence the name.

No effort is made to show off the grape vine. It stands humbly in the back yard of its owner and the one indication of its whereabouts is the simple inscription, “Big Grape-vine” at the lane leading from the highway to the place. Pictures of this vine have been used frequently by boosters of other towns and they have credited the vine to other localities, but no steps have been taken to punish the offenders. The game can hardly be played much longer for in spite of the modest seclusion of the vine its fame has spread and it is safe to say that now there are but few tourists who visit that section without going to see it. Photographs of the vine may be a familiar sight, and figures about it may be learned by rote, nevertheless the actual sight of the prodigy gives the visitor a shock of surprise at its remarkable immensity.

Editors Note: This article is the second in the series dealing with Big Trees, and though the subject is a vine, in this case, rather than a tree, we find it sufficiently unique and imposing to be thus included. We feel that there must be many other such remarkable features about the country and shall be glad to receive contributions concerning them from our readers.
THE TILE DRAIN

By L. H. Pailey

FAR under the ground
As men pass by
Unseen and alone
I silently lie.

Under bottoms of springs
And under the pools,
‘Neath slopes of long fields
And under old stools
Of bush and of briar,
‘Neath roots of the grass
On hardlands and swale,
I straightforwardly pass.
I feel the cool earth
And the slow trickling streams,
And roots of big trees
That pry in my seams;
And crawling things find
When pursued by alarms
A welcome retreat
As they hide in my arms.
The soft summer showers
And the long winter rains,
The springtime that floods
And the autumn that wanes,
The tempests that rend
With their sudden affright,
They disquiet me not
In the day or the night.
Far down to the bank
Of the creek I run
And unburden my freight
To the stream and the sun;
And oft to my mouth
The yellow-birds come
And drink to their fill
When the stream is dumb.
The cattle I hear
As they move on the land,
And the burrowing folk
That build in the sand.
When the plow-team tramps
On the full crunching earth
I feel the hard thrusts
Of the first harvest birth;
But the plowman thinks not
That I lie down below
And tireless prepare
For the harvests to grow.
The rootlets reach down
As the waters I drain,
For the soils break fine
Where they sodden had lain;
And the air breathes in
Through my welcoming pores
And persuades from the depths
Their hard-hoarded stores.
And as seasons return
All the pastures above
Respond to a touch
That he knows not of.

Years in and years on
I rest in my bed
And draw down the rains
When the farmer is dead;
And nothing I care
That the people know not
Whether I am
Or where is my lot.
All secrets I hold
Of the dead and the live,
For they all come at last
To the soil where I strive
Calm and content
I silently lie
And carry my work
As men pass by.
IRRIGATION IN PEACH ORCHARDS

By W. F. Crowley

BECAUSE the peach tree requires less moisture than the apple, peach orchards may be made profitable under an irrigation system that would be inadequate to supply the needs of a commercial apple orchard. Peach plantings have been made and kept in a thrifty growing condition by hauling water the first two seasons. However, when the trees reach the bearing age water should be at hand ready for application at all times during the growing season and up to the maturing of the fruit. The peach, like almost all fruits requires most moisture just before ripening as this is the stage of most rapid growth. The chief advantage of irrigation over the natural rainfall in growing the peach is that when rains occur at the time of maturing, the peach is made soft and watery and will not “hold up” in handling or shipment. The fruit ripens too rapidly during or just following a rainy season. This is not the case where the atmosphere is dry and water is applied to the soil by means of irrigation.

While such varieties as the Alexander, Sneed, Waterloo and Mountain Rose are not adapted for long distance shipment and even though grown by irrigation are too juicy to bear handling, such kinds as Early and Late Crawford, Carman and Elberta grown by irrigation and picked at the proper time will bear transportation to a great distance and will “hold up” on the market long enough to give the buyers a chance to make some profit off the fruit. In a dry climate, with much sunshine it is possible by proper irrigation to get a splendid color and size to the fruit which enables the grower to pick it while yet hard and sound and still have it open up as fine on the market as if fully ripened on the tree.

Irrigation alone will not do all these things. Proper culture, pruning and thinning of the fruit are necessary to produce the finest quality and get the size which is necessary to bring top prices on the market. The trouble of many orchardists in the irrigation districts is that they depend too much on irrigation for results. An orchard can be grown with half the water that is sometimes applied by giving proper cultivation and an annual deep plowing in order to let the water penetrate the subsoil at each irrigation. More attention to the subsoil would mean many dollars annually to orchard growers all over the country. The subsoil is of greater importance to the root system of a tree than the top soil.

IRRIGATION OF THE YOUNG ORCHARD

In planting an orchard in the irrigated portions of the country, early spring is the best time. After thorough and deep preparation of the soil for the orchard, lay off the rows in the direction the water is to run. This will depend on the contour of the land. Where it is comparatively level allow the rows to run in the direction of greatest fall, but if the land is quite steep it is preferable to run the rows diagonally with the slope or to go around the hill sides something on the plan of a terraced garden tract. Where the rows must necessarily have considerable fall it is important to use only a very small stream of water in each furrow to avoid washing.

With a strong, swift team and an ordinary mold-board plow, going up and down where the row is to stand a deep ditch is opened. When this is well done but little if any digging is necessary to accommodate the roots of a good thrifty young peach tree. When the trees are planted in a row the water is immediately turned down the ditch in which they are set. A small stream runs slowly, saturating the soil to a great depth and thoroughly settling the earth among the roots of the newly planted trees.
Water is usually allowed to run from six to twelve hours at this first irrigation. When the soil has dried on top sufficiently to admit of the use of a horse and plow, a furrow is thrown from each side toward the row, filling the ditch, banking up the trees to a proper height and leaving a furrow about one foot from the trees on each side, for use in giving the second irrigation.

On most soils the young orchard will require irrigation about once in two weeks though by good cultivation it can be made to go from three weeks to a month between "drinks" with no ill effects. Irrigation of the young orchard should cease about the middle of August in order to allow the wood to fully ripen before cold weather. Older orchards and especially those bearing heavy crops will not require this precaution as they naturally mature the current season's wood when ripening the crop. Early peaches may start a second growth that will be too tender to withstand the first cold snap if irrigation is continued too late. It is more important to ripen the wood of the peach than that of the apple, because the crop is always produced on the young wood, and fruit buds are liable to be quite tender if the wood is kept growing too late.

METHODS OF IRRIGATION

In irrigating the young peach orchard furrows close up to the trees may do for the first year. After that the middle ground between the rows should be furrowed at least every three or four feet and watered as regularly as the furrows close up to the trunks. Some of our readers may be at a loss to know why we should not flood the entire surface, as is done in irrigating wheat, alfalfa, etc., in many places. For one reason flooding causes most soils to bake and become very hard after being exposed to the direct rays of the sun as they are between tree rows. Another important reason is that irrigation in furrows is more easily and rapidly accomplished and requires less water to cover the same area. In furrow irrigation we have a sort of semi-sub-irrigation system. The furrows are made with the ordinary single shovel plow or with a two-horse marker. They are from four to six inches deep and the same width at the surface. A small stream trickling down each furrow will in the course of from 6 to 24 hours, according to the character of the soil, soak across from one furrow to another two or three feet apart.

In cultivation no attention is given to these little furrows. Sometimes the cultivators go cross-wise of the rows and again they go up and down following the furrows. But when the time arrives for another irrigation fresh furrows are made. It is usually best to cultivate the ground as soon as dry enough to work after each irrigation. The furrows if used continuously without replowing would become coated with a sediment from the irrigation waters so that the moisture would not readily get through the crust into the soil.

WINTER IRRIGATION

In some sections where water is scarce during the summer months and where the winters are dry and changeable, freezing and thawing alternately, it is desirable to thoroughly soak the orchard lands at least once in mid-winter. For this winter irrigation the furrows are not of much value as the ice freezing causes the water to rise and overflow the entire surface between the tree rows, around the bodies of the trees and even in some instances getting out into the public roads. Where winter irrigation is thus practiced the trees require much less water during summer and the soil is more easily cultivated after having been covered with ice much of the winter.

MIXED PLANTING NOT GOOD IN IRRIGATED COUNTRIES

In planting peach trees always put the early and late varieties in separate rows. As explained in the first part of this article the peach needs most
moisture when maturing the fruit. For convenience in irrigation, as well as economy in picking the crop, varieties should be planted in separate rows. For the same reason, though more emphatically, apples and peaches should never be planted together in an irrigated orchard. When the apple is maturing its crop late in the fall and needs extra moisture for the process the peach is preparing for winter and needs dry feet.

If the soil of a certain farm varies, the peaches, plums and cherries should be planted on the driest, best drained portion giving the apple, pear and small fruits the heavier soil.

COST AND PROFITS IN IRRIGATED PEACH ORCHARDS

The price of irrigated lands is rising every year. The arid lands are worth but little till water is applied. So the cost of raw lands suitable for peach orchards varies from $50 to $400 per acre according to location and water right. Very little desirable land with never failing water supply can be bought for less than $100 per acre including perpetual water right, which means a certain amount of stock in a
ditch or reservoir system. The cost of maintaining canals, ditches and reservoirs varies in different sections. In most parts of Colorado it runs from $1.00 to $3.00 per acre annually. Then the cost of applying water to the orchard is from $3.00 an acre to $8.00 including furrowing for irrigation. It will thus be seen that while the expense is great on a large tract it does not count up very fast on the five or ten acre fruit farm and these are the kind that yield best results. The peach crop from well handled irrigated orchards brings from $150 to $500 per acre. Of course there are many expenses aside from that of irrigation; it is, in fact, a small item in the total expense, though a big item in increasing the yield and improving the quality of the peach crop. Profits from peach orchards in the Palisade and North Fork districts of Colorado are so good and so general that bearing orchards, four to six years old, sell at prices ranging from $600 to $1500 per acre. And there seems no danger of the business being overdone as the shipping associations of those districts the past season could not fill over half their order for fancy Elbertas.

NATURE-STUDY IN CITIES

A Communication Sent by "Uncle John" Spencer

MISS Kate Denan of the Camden, N. J., schools sends the following letter concerning her success in children's gardens:

"I will endeavor to answer your questions concerning my garden work with my pupils. I have taught the work in grades 3 to 6 inclusive giving lessons twice each week—that is if you wish to call heart to heart talks that of teaching. The children were that interested that they complained, if for some reason it became necessary to omit a lesson, which is not their attitude toward normal instruction. This interest went on past the children to the parents. The children did their gardening at home where they were occasionally inspected by the teacher and who sent me a report of conditions that she found and I in turn reported to the City Superintendent of Schools. Of these reports he says 'I desire to express my satisfaction with the reports of the garden work. It is certainly very interesting and I am sure that the interest that has been taken in the work by the teacher is responsible for the progress that has been shown by the children.

'We have made use of newspaper comment to inspire the children in their garden work. They enjoy publicity no less than grown people. Newspaper method has a beneficial
influence in spreading the work to other schools.

"It has a collateral benefit by breaking the monotony of the school room. Gardening is a live subject and learning the multiplication table is not.

"I much prefer home gardens rather than a plat in a vacant lot. The inspiration that comes from ownership is greater if it is there every day, and becomes a family affair and has greater protection from vandals.

"I hope to induce a nearby church to convert a wilderness and 'catch all' place about the church into something attractive.

"Our boys usually select vegetables and the girls flowers. One need not be surprised because of this diverse tendency. It is but natural the material and the esthetic. Men think of comfort and women appearance.

"The garden work is not required. The list of volunteers is twice the number this year as compared with last.

"The County Fair consisting of an exhibit of the children's products is a great incentive and adds much to the enthusiasm."
THE NATIONAL APPLE SHOW

By John Craig
Professor of Horticulture

MANY people have been anxious to know the outcome of the extensively advertised apple show held at Spokane, Washington, the early part of December. In a word it was a magnificent success. "More apples than were ever brought together in a single exhibit" said one of the judges. This was literally true for there were prizes for car load lots—and prizes worth while. It is worth while taking a fling at a $1500 prize even if it takes a carload to make the entry.

Never before was there a fruit show with such a blaze of color due to a display of highly tinted apples; and this is where the western apple shines. The color is truly wonderful. Winesap, Arkansas Black, Spitzenburg, Jonathan, take on deep rich tints only suggested in other regions and their size is fully in keeping with the color. Under irrigated conditions a product of wonderful beauty is developed. Our western friends do not claim everything, however, and are willing to concede that the largest size is not correlated with the highest quality. On the other hand appearance sells the fruit and the best varieties are very good.

There was keen competition in most of the sections as for instance in the "District Display" there were twenty-three entries. It might be said that the contest as a whole was a four cornered one between the Hood River, Wenatchee and Yakima Valleys of Oregon and Washington, and British Columbia, the last making the fourth important factor. Wenatchee Valley secured the largest share of first premiums. The fruit was beautifully colored, uniformly graded and remarkably free from blemish. In addition to this, the installation in every case was exceedingly artistic. Wenatchee captured both car lot and district display prizes; British Columbia with exhibits from Kelowana and Grand Forks made an excellent showing securing second on district display with a beautiful collection correctly named and absolutely sound.

The car lot and district classes aroused keen rivalry and the judges were obliged to justify their awards by giving each entry a copy of his score card. A Wenatchee Valley grower, Mike Horan, won first prize, the second and third going to Yakima Valley, Washington and Bitter Root Valley, Montana, respectively.

Outside of Oregon, Washington and British Columbia there was comparatively little competition. Idaho sent in some good fruit while Montana secured third prize on a car lot with an entry of McIntosh Red from the Bitter Root region. Very fine they were too. North Carolina sent an interesting collection for exhibition only. New York was represented for a day or two by three barrels of poor commercial stock sent forward in a heated car. This exhibit created such an uproar on the part of former New Yorkers who "knew better" that it was withdrawn. It appears that the Apple Show management desiring a good representative sample of the commercial apples of the east telegraphed to Messrs Simon, Shuttleworth & Co., of New York to forward them as soon as possible by express. What steps this firm took to secure them are not known but the results through carelessness or bad judgment were certainly very poor. A poorer lot of Russets and Baldwins it would be hard to find. By their connection in this transaction it is safe to say that the firm in question did not bring glory upon itself either in the east or in the west. It looked like gross carelessness or cold blooded indifference, neither quite defensible on the part of large New York apple buyers.

The one judge system with the score card was employed throughout. The list included the professors of
Horticulture of Oregon, Washington (Lewis and Thornton, both Cornellians), Idaho, Montana, Iowa, and New York (the writer) and Senator Dunlap of Illinois. The judging covered the greater part of three days, and the principal actors heaved a sigh of relief when the job was done.

The attendance at the show was large and the financial returns such that the management is already making plans for another larger and bigger, in 1909. A part of the crowd was undoubtedly attracted by the really first class vaudeville each afternoon and evening. There was no lion tamer but there was an equally interesting individual in the person of a "bee tamer" who took remarkable liberties with a lively hive of bees, in a wire screen enclosure. Little stunts like dropping a handful of bees into his shirt bosom or into his hat and then putting it on his head were "easy" for him. This prince of "Bee Tamers" comes from W. J. Bryan's town, in Nebraska and hands out a line of eloquence almost equal to the "peerless" one while taking unusual liberties with her of the stinger.

The show has advertised the apple growing possibilities of the country in a striking manner; has directed the attention of young men to the irrigated regions of the Pacific Slope; has again emphasized the fact that in the matter of grading the Pacific Coast packers are far ahead of the East; and finally it will impress upon the Eastern fruit grower that right here is a lesson worth learning. The eastern producers cannot afford to lose the cream of the home market returns by failure to attend to such fundamentals as grading and packing. Perhaps this show has done more than any other one thing to draw attention to the superior advantages of the box package as a receptacle for high class fruit. Eastern fruit growers must recognize this. A few years ago commission men and fruit dealers in the east discouraged the box as an apple package, now they accept it without demur. It has come to stay.

FARMERS' WEEK

By R. J. Shepard, '10

The week of the 22d of February will mark the largest event of the Agricultural College year. This is known to all throughout the State, and indeed, to many outside of the State, as FARMERS' WEEK. It is just what the name signifies: a gathering of all people interested in Agriculture; a reunion of all old students of the college, making no difference whether they are graduates, specials, or short-course men; and last but not least, the farmers of the State. Last year the people turned out better than we had even expected, but this year the indications point to a record breaker. The citizens of Ithaca have kindly opened their houses for the accommodation of our guests, and rooms can be had at very moderate rates. This is an advantage over a hotel, as a good share of these rooms will be near the Agricultural buildings and thus people will be within easy reach of the lectures and exhibits at all times.

Every minute of the week will be taken up with something and people coming here will have no time hanging idly on their hands. There will be something for everyone, from the oldest father or grandfather to the child in the district school. In naming over some of these things we will start with the boy or girl in the district school. On January 29th, which will be known as Corn Day, the boys all over the State brought to their school the ten best ears of corn that they could find. These were judged by three of the best farmers in that vicinity and prizes awarded. The girls at the same time served some simple thing made from corn and its
products. Then every school after its Corn Show could send the five best ten-year exhibits to the Cornell Corn Show at the College of Agriculture during Farmers' Week. To each of the five Farm Boys' and Girls' Clubs sending in the best five ten-year exhibits, a banner for the school room will be given.

At the same time a corn show will be held for every man in the State. This will be held under the supervision of the Agronomy Department, the students in the Farm Crops course doing all the work. The purpose of this Show is to try if possible to induce farmers throughout the State to become interested in the bettering of their corn crop and to do it themselves by the different methods of selection. There is no reason why it cannot be done in this State as it has in the west, and the one aim of the Show will be to forward this movement.

In the department of Animal Husbandry there will be plenty doing. On special days there will be slaughtering in the new building showing the model way to kill and dress the different farm animals. This is something that should be of interest to everyone. Then at intervals in the same building there will be exhibitions of judging animals, especially horses, cows and sheep. In the Poultry department there will be educational demonstrations every day and along many different lines. But the thing that will arouse the greatest interest among poultrymen, will be the Poultry Institute which will last three days and will be held in the Dairy building.

The Horticulture department will have an exhibit which will be something like the Annual Fruit Exhibit held in the college every fall. All the fruit that can be obtained will be put on exhibition altho it is hard to get it at this time of the year. The greatest stress will be laid along other lines. The best packages, boxes, etc., will be shown. A large collection of fruit products have been collected and also will be shown. Another feature will be an exhibition of the outputs of the different nurseries of Western New York, that part of the State being famous along these lines.
Then comes the part in which the women are interested. Miss Van Rensselaer and Miss Rose have worked up a set of demonstrations along the lines of Farm Home Features, Home Economics and Special problems under Foods. These will be held on the fourth floor of the main building in the rooms which that department uses.

All this time there will be given lectures in the different departments about every conceivable thing that a farmer will want to know. Probably two or more lectures will be going on at the same time so a person will have to choose that one which he thinks will do him the most good and then go to it. At these lectures an opportunity will be given everyone to ask questions, and indeed that is just what the professors want. During the week several organizations will meet, making this their place of meeting every year. The largest one under this head will be the Agricultural Experimenters' League. This is an organization of farmers of the State who do experimenting during the year on their farms and then come here and tell of their results. At this time several lectures will be given by prominent farmers. This is primarily a meeting of the farmers, for the farmers and carried on by the farmers themselves and the floor is open to anyone who wishes to find out anything or who wishes to tell anything he has found out. Then there will be a meeting of the Railroad Men's Educational Society. Also a gathering of all those interested in the Rural School subjects.

On one night of the week will be held a general gathering of all the people here at that time. At this meeting Dean Bailey will speak, probably some speaker from out of town, and the winner of the Agricultural Debate Stage. Everyone is invited and a general good time is assured, every one trying to become acquainted with everyone else. And last but not least, the reunion of the different classes. This is the best place, where old classmates can get together and talk over old times and also reorganize. Last year I happened to come upon two fellows in a room talking very earnestly. They began to laugh when they saw me and I asked them what they were doing. They said they were having a reunion of their class and that they were trying their best to make it hang together. That showed the right spirit and if others would only try to do as well there would be a more united spirit among the farmers of the State than there is now.

With the meetings, lectures, demonstrations, etc., that I have named above, the week will be well filled. An earnest invitation is sent to everyone and it is hoped that many who were not here last year will come this year. The college is endeavoring to serve the people of the State and it is their right to derive some of the benefit from it. It is with this purpose in view that the college is offering this Farmers' Week. Last year there was at least one man and his wife who took that view of the situation. I happened to meet them the first day they arrived. It seems that they had recently moved out of New York City on to a small farm on the Hudson. They told me something of their new farm life and then the wife told me something about her husband and the real reason why they had come to Farmers' Week. Early in the spring he had taken some onions and planted them in the garden, (upside down). As time went on they did not come up, and when early summer came they were not above ground. It puzzled and worried him all summer and fall to think that they should not come up after planting such a good variety. During December he heard of Farmer's Week and he determined to go to that College of Agriculture and find out why those onions did not come up. And that, she said, was the reason they were here. Let us hope he found out the reason for his failure.
If you were to ask George W. Jackman of Atlanta, N. Y., to what he most attributed his success as a farmer, he would probably reply, "I plan my work carefully and thoughtfully and then proceed to work out the plan." That his farm is today the result of a well worked out plan is a fact that is clearly seen by those who know him. When Mr. Jackman purchased his farm some six years ago, he had to face a situation that looked rather dubious and not all encouraging. The former owner was one of those men who removed everything from the land and placed nothing in return. The low productivity of the soil and the dilapidated condition of the buildings largely evidenced this fact. But what was then one of the poorest producing farms in the community is now one of the best, if not the best.

The farm itself is located about one mile northwest of Atlanta, in the beautiful Cohocton River valley. It contains eighty-five acres, sixty of which are tilled the remainder being devoted to pasture land. The soil is a gravelly loam, having a gravelly sub-soil. It is a general farm in character with potatoes and sheep as specialties. It might be well to mention that Atlanta is one of the largest rural potato markets in the country, there being shipped annually from this point over five hundred carloads.

Mr. Jackman plants about fifteen acres to potatoes each year, for he thinks that this is an ideal acreage for a farm of this size. When he first took possession of the farm the land was yielding a little less than ninety bushels per acre, but now it is producing an average of two hundred and fifty bushels per acre, an average which he expects to increase year by year. The principal reasons for his success as a potato grower are: First, a well prepared seed-bed; second, a wise and judicious selection of seed; and third, a thorough cultivation.

The seed-bed is prepared to bring about a moist, mellow, and well drained soil. Contrary to the general rule, the ground is never plowed in the fall, but in the spring after a good application of stable manure has been made with a manure spreader. Mr. Jackman claims that for a three year rotation this is the best plan, or at least experience has proved it to be the best for him. He further believes that ploughing a uniform depth of six or seven inches with a sulky plow is another important advantage in the preparation of the seed-bed.

In his opinion a wise and judicious selection of seed is a very valuable requisite. The varieties from which he selects his seed are the German Queen and the Sir Walter Raleigh. To kill the scab spores, he soaks the tubers from one to two hours in a solution consisting of one pint of formalin and twenty-five gallons of water. Probably the result of this treatment of the seed more than any other, has given Mr. Jackman the name of marketing the best wagon loads of potatoes of any other farmer in the community. At any rate the buyers are of this opinion for they are always glad to pay him a fancy price in order that they may have good stock to "top out" their carloads. The tubers are cut into pieces of nearly uniform size having at least one eye to the piece, and are planted with a potato planter, sixteen inches apart in rows thirty-three inches wide.

Regarding the question of cultivation his ideas are as follows: "I believe in a thorough cultivation of the crop. Last year I went thru my potatoes with the cultivator as many as thirteen times. About ten days after planting my field is harrowed either with a spike tooth harrow or a weeder. Often this is repeated before the plants appear above the ground. Just as soon as the plants begin to prick thru the surface of the
soil, I use the cultivator, being careful not to disturb the growing plant by cultivating too deeply. This shallow cultivation within a few days is followed by a deep one, the main thing being to keep the soil porous. We should use our cultivators and harrows just as early in the season as possible, for in this way we will break up the crust that the late fall rains and winter snows have formed, thus admitting the air that is needed to unlock the dormant plant food. It is important also from the stand point of economy, since superior tillage more cheaply increases the production of good lands than the purchase of large quantities of fertilizers."

During the past three years, his potato crop has yielded him an average of one hundred dollars per acre. This source of income alone is commendable, considering that there are fifteen good producing acres.

Another important feature of this farmer's progress is his sheep industry. Altho his flock consists of only one hundred and twenty-five head, he makes them pay him a fair dividend, by employing the most successful methods of flockmasters in the breeding, housing, care and feeding of sheep. One reason for his having a small flock is that he sells the lambs when they are about ten weeks old, thus eliminating a large item of expense in the feeding of growing lambs. This industry is an important consideration with him for he figures each sheep as being worth ten dollars a year to him.

Besides these two specialties Mr. Jackman is engaged in diversified farming. Usually he has five acres of wheat, fifteen acres of oats and a few acres of barley and of buckwheat. One year he planted five acres to cabbage and the crop yielded him one hundred and twenty dollars per acre. For oats he always plows at least eight inches deep, the plowing being done in the fall. This is done to get the value of the manure that was turned under the year before.

Mr. Jackman is a successful farmer, because he makes his business pay him good money. Last year his farm yielded him, besides living expenses, an income of one thousand dollars. This is rather noteworthy when one considers that he has two children attending school away from home.

This farmer is the type of man that every rural community needs, for he is a careful observer and painstaking student who reads much and keeps in close touch with the Experiment Station. Thru his exhibition of good farming he has already had a marked influence over his neighbors. For instance, one man recently remarked, "I thought that I knew how to farm it before Jackman came here, but I have found out that I didn't."
The Cornell Countryman

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C. F. RIBSAM - Horticulture Club

SHORT COURSE REPRESENTATIVES
N. E. GATZERT - Poultry Club
R. P. MCPEHERSON - General Agriculture Club
J. M. TORBETT - Horticulture Club

FEBRUARY, 1909

The Countryman announces with regret the resignation of E. L. Baker, '09, from the Editorial Staff. Mr. Baker who has registered for work in absentia, leaves the office of Alumni News Editor vacant, and until the spring elections no selection of a successor for 1909-10 will be made. The department will, however, be continued as usual, and again we urge the contribution of news from our alumni.

The February issue of any monthly magazine that contains neither a eulogy, an appreciation, an anecdote or some more or less lengthy consideration of Abraham Lincoln, is indeed conspicuous by its absence. So, too, the Countryman, which deals primarily with phases of agriculture, considers fitting, in every way, comment upon this centennial anniversary of a man who though touching but lightly this vocation of the country, was still of vast influence in augmenting the welfare of the nation. Yet Abraham Lincoln was of the country. Born in the backwoods, of parents who knew the hardships and struggles of the pioneer farmer, he absorbed, from his boyhood environment, the strength, the resistance, the energy of the power of nature. And these attributes he transformed into success and triumph in educating himself, in gaining legal prominence and in maintaining his magnificent diplomatic administration. His biography chronicles the life of a supreme example of the true American, the son of the very life and truth and integrity of a great nation. And where, more than in the open unsullied country, in the virgin forests, inflexible mountains and fertile fields, do we find a clearer, more impressive typification of these forces and powers of good?

The attention of the Editor was recently called to the glass-fronted, efficient looking bulletin board covering most of the east wall of the main entrance. This we are led to believe was designed for use as a directory, but whether in recognition of the familiarity of the student body with the rooms and departments of the College, or to increase self-reliance and independence, at any rate the board has ever remained empty, idle and wasted. There may be definite plans as to its future, but we would suggest that interesting and helpful information for the Farmers' Week visitor might advantageously be posted thereon. And further, that in the future—if nothing else is thought of—its vacant surface might serve to catch the overflow of the more important notices from the other overworked bulletin board directly opposite.

Unproductive Idleness
Mention of Farmers' Week calls up many ideas in the minds of those who have attended one in the past. An article on another page gives in some detail—yet merely as suggestion—a forecast of the events to occur between February 22d and 27th, and there is little if any need to dilate upon the subject here. It should be, by now, understood throughout the State that this one week course in scientific and practical instruction, in parliamentary practice, in reunion and in good fellowship is open to every farmer of New York; that efforts are made to get him here with the least inconvenience; that preparations are gladly made for his information and for mutual benefit and that a welcome is here awaiting him in the name of Agriculture and Better Farming. Let him who has eyes and ears, see, then, and hear, and make best use of his new found knowledge.

Any branch of agriculture, and in fact of any science or classified information must be based on certain fundamental facts and relationships. In her contribution to the "Farmer and His Health" series given on another page, Miss Flora Rose carefully marshals these facts and principles in regard to the sane and beneficial feeding of the body. Upon this basis can be built plans and methods which may be studied and followed in every household—in the city as on the farm. This Miss Rose will proceed to do in another article in the March issue. As she truthfully remarks, while the sciences of feeding animals, plants and even the soil are occupying the attention of hundreds of scientists and being carefully followed by all good farmers, yet the feeding of the farmer himself, his wife and children is all too poorly understood, and all too carelessly carried out. We are coming to recognize the false economy in this uneven distribution of knowledge, and we trust that these articles may not only present some facts of value, but still better may create a desire and a determination to go deeper into the subject and to live more wisely.

**TALKING SHOP**

One or two matters editorial deserve mention. The January issue was considerably late in appearing owing to unexpected and somewhat demoralizing contingencies. This we sincerely intend shall form no precedent, nor we hope, cause in the minds of our readers, anxiety for future issues.

In that same issue on page 130, Mr. E. S. Savage was incorrectly referred to as assistant. He is instructor in the Department of Animal Husbandry.

When a special column is inaugurated—even though but temporarily—for the use of any distinct classes, it is considerably more gratifying to see that column made use of than almost ignored. The "Short Course Doings" are extremely brief this month, while we still feel that there must continually be meetings and happenings of interest in every department. These, we assert, are interesting to both active students and older men, and as we must rely upon our club representatives for reports of such activities, we urge that they both stir up their organizations, and bestir themselves to send in accounts to us.

Once again we urge Short Course Clubs to make preparations for a permanent alumni association, the secretary of which will keep the COUNTRYMAN posted concerning every man of his class.
The New York State Fruit Growers Association met at Medina, January 6-7. Cornell was represented by Professors Craig and Wilson of the Department of Horticulture who presented addresses. Mr. S. P. Hollister, '09, attended and spoke on the score card method of judging fruit. Professor Whetzel and Mr. Barrus represented Plant Pathology with an exhibit of specimens and photographs.

Two large events in the nature of apple exhibitions occurred during December. The first one held at Spokane is described elsewhere. The second was the National Apple Congress in Council Bluffs December 14-19. Cornell was represented at both exhibitions by Professor Craig. In Spokane he officiated as judge and addressed the Washington State Horticultural Society then in session. In Council Bluffs he addressed the Congress on the "Outlook for Fruit Growing." He reports that much of the success of this show from the decoration standpoint was due to R. F. Wilcox, Ex-'06 who was chairman of the committee on hall and decorations.

A fair attendance and a successful carrying out of the official program characterized the annual meeting of the New York State Dairymen's Association at Utica, N.Y., December 8-11th.

Bovine tuberculosis was probably the most important matter discussed while addresses were heard from prominent men on other matters pertaining directly to the dairy industry. Hon. R. A. Pearson was scheduled to speak on "Human Food Inspection in New York" but was absent on official business. An efficient substitute was found in first assistant commissioner, George L. Flanders.

Dr. W. H. Jordan spoke twice the first day on "Human Food in its Relation to the Home." The second day, in his annual address he talked for some time on the dairy industry. He referred to the enormous dairy production saying that the "milk solids produced in New York in one year are not far short of a billion pounds and contain enough food energy to sustain the activities of over 1,700,000 men at moderate labor during one year." This looks like quite an undertaking for the gentle-eyed cow.

Dr. V. A. Moore spoke on Bovine Tuberculosis, treating its extent, spread and prevention. In the course of his remarks, Dr. Moore said: "As the great increase in Bovine tuberculosis has been brought about by man's action in defiance to nature's teaching and methods, it is certainly possible to return to the former healthy condition if men will direct their actions to prevent the further spread of tubercle bacilli. If every cattle owner who has a sound herd will keep it well protected, and owners of diseased herds will proceed to eliminate the infected individuals, the disease would disappear with the present affected animals. This is all there is to prevention. In conclusion he said: "Bovine tuberculosis is a great destroyer of cattle, and like other things, it will disappear when dairymen learn to avoid it."

Dean H. E. Cook of the St. Lawrence School of Agriculture at Canton, talked on the "Producers Attitude toward the City Milk Supply," and his statements were full of common sense and right to the point. He argued that poverty rather than innate "cussedness" was the cause of poor milk. If there is a necessity for cleanliness the consumer must pay the bill. In no other food purchased does he fail to pay according to quality, yet milk, the most delicate and highly sensitive food known, is not graded. Professor Cook advocated fewer and better cows, better feeding, and more select breeding, claiming that these factors would do more to eliminate tuberculosis than legislation, tuberculin and zealous boards of health combined.
On the last day, Commissioner R. A. Pearson outlined, in an address, the policy and work of the state department of agriculture. He stated the position of the department regarding the foot and mouth disease and took up the tuberculosis problem.

The National Corn Exposition at Omaha was the most elaborate demonstration of farm products ever held in this country. The entries totaled eight thousand, representing twenty different states. The exposition was not one entirely of corn, the word "corn" taking on the older meaning of all the grains and including grasses. But judging from the exhibits and the interest taken, corn was king with alfalfa as queen, and wheat, oats, rye, barley and the grasses all members of the imperial family.

The exhibits required a floor space of 250,000 square feet and as the main auditorium contained but one-fourth this amount it was found necessary to roof in one of the main streets and several alleys in the heart of the city of Omaha. The alfalfa palace constructed of numerous arches of alfalfa bales and elaborately decorated with grasses and strings of golden corn was probably the most pleasing sight of the show.

The milling exhibit was particularly interesting, the various varieties and strains of wheat, oats, and barley were shown on one side, the milling tests were operated on the other side. Wheat was ground, bolted into flour, made into dough, and baked in an electric oven, thus giving a complete reproduction of all the steps from the field to the table. Samples were in this way judged and milled, demonstrating what types of wheat possessed the highest milling value so that the growers were shown the just reason for the wide range of market prices. This demonstration did much to acquaint the grower, miller and consumer with the needs of each, and to harmonize commercial and farm interests.

Daily demonstrations of a complete denatured alcohol plant showed the comparatively simple process by which corn and other products of the farm are utilized for commercial, domestic, or manufacturing purposes. One of the best agricultural implement displays ever assembled was located in a special building. The most improved binder, reaper, mower, cultivator, planter; also automobiles, incubators, separators, lighting systems, and in fact anything that the farmer might make use of in improving his methods and saving his labor.

What was really a complete school of domestic science but called a model kitchen fitted with laboratories, electric ovens, chafing dishes, and lecture rooms was one of the most interesting and instructive features of the show. A course in the science of cooking and domestic art was given and the lectures were well attended.

The Country Life Commission spent two days at the exposition, holding sessions in the afternoon and evening at which farmers, country merchants, and professional men exchanged views with the commission relating to the methods to be employed in making the rural life more enjoyable.

The exposition in all its departments was a great success. While its primary object was to stimulate the growth of better grains and grasses, its usefulness will not stop there.

The increasing demand for direct instructors in floriculture for winter course students and specials will probably result in the organization of courses to meet this need in the near future, Professor Craig and Judson of the Department of Horticulture have the matter under consideration at the present time.
CAMPUS NOTES

The December Assembly was held in the Auditorium, January 7th. Owing to absence of a large part of their members we were obliged to go without selections from the Glee and Mandolin Clubs. Dean Bailey gave an exceedingly interesting talk on different phases and conditions of country life which had come to light through the investigations of the Commission on Country Life. Dean Bailey produced a pleasant surprise in the form of a new poem, "The Tile Drain." Most of those present remained for a short social hour.

* * *

At the meeting of the Agricultural Association, Tuesday evening, January 11th, Professor Martin, Dean of the College of Architecture gave a very interesting talk on, "The building of a country home." The lecture was held in the Horticultural lecture room which was filled. After the lecture the election of officers for the ensuing term took place. The following officers were elected: President, R. C. Lawry, '09; Vice-president, V. J. Frost, '10; Secretary, Miss Elizabeth Genung, '10; Treasurer, H. N. Kutschbach, '10.

* * *

Thursday evening, January 14th, the committee on Extension work conducted a meeting at Brookton. E. H. Thompson, '09, gave a talk on Dairy Cattle and J. S. Jacoby, '10, a talk on Poultry. The other talk of the evening was given by Dr. P. J. White of the Farm Crops department. Music was furnished by a quartette from the Agricultural Glee Club. After the program a social hour was enjoyed.

* * *

Professor Rice, C. A. Rogers and N. R. Peet, '10, left Thursday to speak at Poultry meetings at Rochester and Pulaski. Mr. Peet will speak on Extension work.

* * *

G. W. Myer, '09, has returned from New York city where for the past month he has been in charge of an exhibit, in connection with National Tuberculosis Commission, to demonstrate the production of Sanitary milk.

* * *

At the meeting of the Lazy Club, Monday evening, January 11th, Mr. Rupert of Geneva gave a very interesting talk on, "The Difficulties of a Nurseryman."

* * *

Mr. F. E. Benedict, '11, spent Christmas vacation touring the poultry shows. Mr. Benedict attended shows at New York, Baltimore, Binghamton and Elmira. He reports an exceedingly interesting trip. While on this trip he also made arrangements for several details of the Poultry Show to be held at the College during Farmers' Week.

* * *

Dr. H. P. Armbsby in charge of the school of animal nutrition at Pennsylvania State College gave a course of lectures on the "Principles of animal nutrition," on the afternoons of January 12th to 15th. This course of lectures was given under the auspices of the Animal Husbandry Department.

* * *

Fred B. Skinner of Greene, N. Y. who is giving special lectures to the Short Course in Poultry, gave a talk to the Poultry Association, Thursday evening, January 14th, on the topic, "How to handle eggs commercially."

* * *


SHORT COURSE DOINGS

The Short Course men in Horticulture were entertained by Professor and Mrs. Craig, Saturday evening, January second at their home on East Avenue. Some of the other members of the faculty assisted in the entertainment and a very pleasant social hour was enjoyed, refreshments being
provided by Mrs. Craig. All those present reported a delightful evening.

* * *

The Craig Club has organized an orchestra which will furnish music at meetings of the Club. It started with five pieces.

On Thursday evening, January 14th, Professor Whetzel spoke to the Craig Club on, "Some Principles of Plant Disease Control."

* * *

At a meeting of the Stone Club, January 14th, a debate was held. Resolved: That farming in the east is more satisfactory than farming in the west.

FORMER STUDENTS

'74 Ex.—Benj. F. Hallock entered Cornell with the class of '74 and pursued a three years course in agriculture, completing his course with the class of '73, meanwhile associating himself with both classes. During the three years he had nearly all the studies required in the four years course with the exception of French and German.

Since leaving Cornell Mr. Hallock has made good as a farmer and as a citizen. That his Cornell training has been of value to him is evident from the following letter to the Countryman.

"My three years residence in Ithaca made a great impression on me. Pleasant memories of those delightful scenes and associations are still doing much to lighten my life.

"On leaving Cornell I immediately went to work with my father on his farm at Lake Grove, Long Island, and here I have remained all these thirty-five busy and eventful years. I am of choice a farmer; the farm appeals to me in many ways. I am not a specialist, though I have at different times concentrated my attention on some one special problem in agriculture, but as soon as I had that well marked out I have grappled with another. My time has been devoted to general farming. I have found pleasure and satisfaction in caring for farm animals and in farm gardening but I have not accomplished as much as have many others though I have contented in escaping the average. I have striven for quality at least above the average. My best crop is my three sons. In my wife and sons I feel I am blessed far above and beyond the average."

'04, Sp.—James Pringle was an assistant to Professor Roberts during the latter's last year in college. He refused an offer to remain here and returned to farming at his home near Mayville, Chautauqua Co. He has since built up one of the best dairy farms in the county. Neighbors who once looked askance at the "college farmer" are now going to him for advice and help with their problems.

'06, B. S. A.—M. M. Barron, who has been operating his farm at Nunda, N. Y. during the past year, expects to return to Cornell to work for an advanced degree this winter.

'06, G.—The Countryman is sorry to announce the death of Professor Peter M. Novick, near Hyattsville, Maryland on December ninth where his body was found presumably after having been struck by a train.

Professor Novick was born in Norway about fifty years ago and had
spent many years studying along horticultural lines. He spent the year 1905–06 studying Horticulture at Cornell. Since leaving Cornell he has been an instructor in Horticulture at the Maryland Agriculture College.

Professor Novick, so far as is known, has no relations in this country.

'06, B. S. A.—C. B. Tillson, manager of the Sangerfield farm at Sangerfield, N.Y., has been very successful in his new work. He is rapidly getting the farm under a profitable system of management. Mr. Tillson was unfortunate last spring in being confined in the Utica Hospital for three months with a disease of the hands and feet, with which he suffered severely. He is now entirely recovered.

'06, Sp.—Rolla Van Dorn is at his home at Three Mile Bay, Jefferson Co. With his father he is conducting a large hay farm. "Van" has not forgotten his training here, and is trying to exemplify Cornell's teachings both in practice on the farm and in the community in general.

'07, B. S. A.—H. C. Pierce, Assistant Professor in charge of Poultry at the Iowa State College in a recent letter to the COUNTRYMAN makes the following statement: "It gives me increasing pleasure to read the COUNTRYMAN each month and from an examination of the last issue it strikes me as one of the best issues I have seen judging from the subjects and high class illustrations." The Iowa State College is offering six courses in Poultry Husbandry and has over seventy students enrolled.

'08, B. S. A.—M. C. Burritt is now assistant in farm management at the Department of Agriculture, Washington, D. C. Mr. Burritt is another alumnus of the Agricultural College who is assisting THE COUNTRYMAN very much by sending in "write ups" of alumni of various classes with whom he comes in contact or whom he hears about. Mr. Burritt formerly had charge of the Alumni News col-

umn and knows how to sympathize with THE COUNTRYMAN.

'08, B. S. A.—F. S. Hayden is in charge of a large estate at Crosley, Texas. He is attempting a new system of management on the estate, which if successful will cause the breaking up of a large range into smaller unit farms.

'08, M. S. A.—S. J. Craig who took his major work in the Soils research laboratory, is now expert for the Swan Creek Phosphate Company at Kempston, Illinois.

'08, M. S. A.—J. O. Morgan of the Soils research laboratory has recently been chosen Professor of Agronomy in the Mississippi Agricultural College. He will have charge of the work in both the College and the Experiment Station, but has secured a leave of absence for the remainder of this college year to enable him to complete the residence here necessary for his Ph.D. from Cornell.

'08, B. S. A.—Kolrang Yih, who is studying for an M. S. A. returned recently from the South where he has been studying tobacco curing methods.

'08, W. P. C.—W. A. Lippincott, president of the Cornell W. P. C., '08, is poultryman at the Iowa State College and is also studying for his B. S. A. degree. Mr. Lippincott was married on August 25th to Miss Florence Humphreys of Elmwood, Illinois.

'08, W. G. A.—James G. K. Duer is working on "Highland Farm," Noroton Heights, Conn.

'08, W. D.—L. M. Hurd, who last year won the Short Course Agricultural Stage, has returned to take the course in Poultry Husbandry.

'08, W. P.—Miss Ella Hays reports good success on her poultry farm for the past season, having at present several hundred good layers on the plant.

'08, W. P.—Fred Dyke has charge of a large poultry plant at South Bend, Indiana.
"If you get it from us it's right"

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# TABLE OF CONTENTS

Cover Design  
Frontispiece - General View of Eastern Long Island  
Food for the Farm Family 11  
A Night Visit to An Egyptian Stable  
The Ninth Annual Agricultural Banquet  
The Cornell Way  
A Plea for Heavier Horses  
The Woodlands  
Some Rambling Remarks on Soil Surveys  
The Eastern End  
A Plea for Seed Legislation  
Plans for the Division of Pomology  
Editorials,  
Brace Up!  
An Important Presidential Message  
Rural Social Life  
Agencies of Civilization  
Refreshments at Assemblies  
Mistaken Identity  
General Agricultural News  
Campus Notes  
Former Students

<table>
<thead>
<tr>
<th>Article Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food for the Farm Family</td>
<td>Flora Rose</td>
<td>169</td>
</tr>
<tr>
<td>A Night Visit to An Egyptian Stable</td>
<td>A. B. Comstock</td>
<td>174</td>
</tr>
<tr>
<td>The Ninth Annual Agricultural Banquet</td>
<td></td>
<td>177</td>
</tr>
<tr>
<td>The Cornell Way</td>
<td></td>
<td>180</td>
</tr>
<tr>
<td>A Plea for Heavier Horses</td>
<td>M. W. Harper</td>
<td>181</td>
</tr>
<tr>
<td>The Woodlands</td>
<td>J. S. Gallagher, Sp.</td>
<td>184</td>
</tr>
<tr>
<td>Some Rambling Remarks on Soil Surveys</td>
<td>P. O. Wood, '08</td>
<td>185</td>
</tr>
<tr>
<td>The Eastern End</td>
<td>B. H. Crocheron, '08</td>
<td>189</td>
</tr>
<tr>
<td>A Plea for Seed Legislation</td>
<td>K. C. Livermore, 09</td>
<td>191</td>
</tr>
<tr>
<td>Plans for the Division of Pomology</td>
<td></td>
<td>193</td>
</tr>
<tr>
<td>Brace Up!</td>
<td></td>
<td>194</td>
</tr>
<tr>
<td>An Important Presidential Message</td>
<td></td>
<td>194</td>
</tr>
<tr>
<td>Rural Social Life</td>
<td></td>
<td>195</td>
</tr>
<tr>
<td>Agencies of Civilization</td>
<td></td>
<td>195</td>
</tr>
<tr>
<td>Refreshments at Assemblies</td>
<td></td>
<td>196</td>
</tr>
<tr>
<td>Mistaken Identity</td>
<td></td>
<td>196</td>
</tr>
<tr>
<td>General Agricultural News</td>
<td></td>
<td>196</td>
</tr>
<tr>
<td>Campus Notes</td>
<td></td>
<td>198</td>
</tr>
<tr>
<td>Former Students</td>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>

THE CORNELL COUNTRYMAN  
is a monthly magazine published by the students of  
The New York State College of Agriculture at Cornell University  
Address, COLLEGE OF AGRICULTURE, ITHACA, N. Y.  

SUBSCRIPTION PRICE, $1.00 PER YEAR  
Entered as second-class matter at the Post Office at Ithaca, N. Y.  
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A LONG ISLAND VILLAGE.

Note the level farms beyond and the modern character of the houses. Woodlands are few because of the high prices of farm lands. (See page 189)
FOOD FOR THE FARM FAMILY—II

By Flora Rose

Department of Home Economics, Cornell University

The problem of right food has been shown in a previous article to be that of supplying the various elements which compose the body, in such amounts as are needed to prevent the wasting of any of the tissues. It is necessary to furnish these elements not only in proper amounts but in the form which is available to the human organism, that is as the food stuffs, proteids, fats, carbohydrates, salts and water.

In order to throw light upon the method of choosing the day’s ration, it is necessary to explain more in detail the part that is played by the various food stuffs in the functions of the body.

If the food contained no proteid or too little proteid the living tissues would waste away for lack of the material needed to build and repair them, hence, whatever else the daily food may contain, a certain amount of proteid must be present to care for the wear and tear of living parts. If more proteid is eaten than suffices for the body’s immediate needs it is gotten rid of as fast as possible, for the body does not store away proteid consumed in excess of its needs unless for some reason, as in the case of the growing child, the athlete, or the person convalescing from some wasting disease, new living tissue is being added. There is a growing belief that excessive amounts of proteid are very harmful to the body, overtaxing those organs concerned in getting rid of it and producing products which may prove injurious. The problem is therefore to supply proteid sufficient for all demands but not greatly in excess of this. Proteids are useful sources of energy in the body, but as large amounts may be harmful, and since proteid is expensive, it is not practical nor wise to depend upon it as a main source of fuel.

The carbohydrates, the sugars and starches, and the fats are cheaper and better to use as fuels than the proteids and the main part of the energy back of the body’s activities should be derived from these two food classes. They have, by themselves, no power of building up living tissue, and if the diet contains only foods rich in sugar or starch and fat, there is a plentiful supply of fuel for energy but a deficiency of building material and starvation finally results. If more carbohydrates or fats are eaten than the body requires at the time, they may be deposited in the form of fat and thus serve as a reserve food supply. If there is too little fuel in the day’s food, that is, if the energy spent by the body has been greater than the heat value of the food the body burns first the reserve fat of the body and may later use the living tissue.

Salts are important not only because they are necessary constituents of the tissues, but also because they take an active part in the changes which convert the dead protein of the food into the living matter of the body.
and give rise to the power to conceive and execute. If food were given from which all mineral matter had been extracted death would follow more quickly than by withholding all food.

Without water the body perishes sooner than without food, for although the human being is not an animal living in water, the outside skin is the only part in the body which does not suffer, when in a state of dryness. All the other membranes and tissues are kept constantly moist and are rapidly destroyed by drying. Food is carried by means of the blood to remote parts of the body and the waste products are removed from the tissues in the same way. Too little water in the dietary leads to a sluggish circulation; the tissues are not flushed, and the waste products are not completely removed and so accumulate; the proper action of the intestine may also be interfered with, and the condition of the body becomes generally unsanitary. It is not merely the water which we drink which is useful, but also the water which forms a larger part of many fruits and vegetables.

Foods in their natural state are mixtures of food stuffs. Milk, for example, contains representatives of all five food classes, proteids, fats, carbohydrates, salts and water, while eggs and meat lack only carbohydrates, and fruits and vegetables lack only fat.

**Composition of Some Common Food Materials Adapted from Office of Experiment Station, Bulletin No. 28.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>87.6</td>
<td>3.3</td>
<td>4.0</td>
<td>5.0</td>
<td>0.7</td>
<td>325</td>
</tr>
<tr>
<td>Eggs, edible portion</td>
<td>73.7</td>
<td>13.4</td>
<td>10.5</td>
<td></td>
<td>1.0</td>
<td>720</td>
</tr>
<tr>
<td>Beef, hind quarter, medium fat</td>
<td>59.8</td>
<td>18.3</td>
<td></td>
<td></td>
<td>0.9</td>
<td>1250</td>
</tr>
<tr>
<td>Walnuts, edible portion</td>
<td>2.4</td>
<td>18.4</td>
<td></td>
<td>13.0</td>
<td>1.7</td>
<td>3300</td>
</tr>
<tr>
<td>Rolled oats</td>
<td>7.7</td>
<td>16.7</td>
<td></td>
<td>66.2</td>
<td>2.1</td>
<td>1850</td>
</tr>
<tr>
<td>Beans, dried</td>
<td>10.4</td>
<td>18.1</td>
<td></td>
<td>65.0</td>
<td>4.4</td>
<td>1625</td>
</tr>
<tr>
<td>Cabbage</td>
<td>77.7</td>
<td>1.4</td>
<td></td>
<td>4.5</td>
<td>0.9</td>
<td>125</td>
</tr>
<tr>
<td>Potatoes</td>
<td>62.6</td>
<td>1.8</td>
<td></td>
<td>14.1</td>
<td>0.8</td>
<td>310</td>
</tr>
<tr>
<td>Apples</td>
<td>65.3</td>
<td>0.3</td>
<td></td>
<td>10.8</td>
<td>0.3</td>
<td>220</td>
</tr>
<tr>
<td>Prunes</td>
<td>75.6</td>
<td>0.7</td>
<td></td>
<td>17.4</td>
<td>0.5</td>
<td>335</td>
</tr>
</tbody>
</table>

The well planned meal will not only contain a right mixture of the various food stuffs but will also be somewhat bulky in character, for the intestine was made to take care of a certain amount of coarse material and it does not function well if this is denied. In other words, the human being also needs "roughness" in food. While the fruits and succulent vegetables have very little fuel value, few meals should be planned without the appearance of one or both, for they are of decided importance, both as a means of furnishing bulk, and because of certain of the salts which they contain in larger amounts than any of the other foods.

<table>
<thead>
<tr>
<th>Foods rich in proteid</th>
<th>Foods rich in carbohydrates</th>
<th>Foods rich in fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole milk.</td>
<td>All cereals and cereal foods.</td>
<td></td>
</tr>
<tr>
<td>Skim milk.</td>
<td>Starchy vegetables.</td>
<td></td>
</tr>
<tr>
<td>Buttermilk.</td>
<td>Sweet fruits.</td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td>Legumes.</td>
<td></td>
</tr>
<tr>
<td>Meat.</td>
<td>Some nuts.</td>
<td></td>
</tr>
<tr>
<td>Cheese.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legumes, peas, beans, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oatmeal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cream.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fat meats.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meat fats.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butter.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Egg yolk.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetable oils.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Foods Rich in Salts.

<table>
<thead>
<tr>
<th>Iron</th>
<th>Phosphorus</th>
<th>Potassium</th>
<th>Calcium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green beans.</td>
<td></td>
<td>Prunes.</td>
<td></td>
</tr>
<tr>
<td>Meat.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eggs.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Some very simple combinations will serve to show how few foods may be put together and yet answer all requirements.

I. Bread, (better whole wheat bread). Whole Milk.
   Prunes.
   Proteid 1. milk. 2. bread.
   Fat 1. milk. 2. bread.
   Carbohydrates 1. bread. 2. milk. 3. prunes.
   Iron 1. prunes. 2. whole wheat.
   Calcium 1. milk. 2. whole wheat.
   Phosphorus 1. milk. 2. whole wheat.
   Magnesium and Potassium 1. prunes. 2. milk. bread.
   Bulk 1. prunes. 2. whole wheat.

The food furnishing the main part of any of the food stuffs is mentioned first. The above menu as those which follow is in itself capable of meeting all the food needs of the body if a sufficient amount is consumed. It serves to show that while much variety may be “spicy” it is not essential.

II. Cream of onion soup or any other cream soup made with milk. Bread and butter. Fruit.

III. Eggs. Bread and butter. Fruit or some juicy vegetable.

IV. Bread and cheese. Fruit or some juicy vegetable.


VI. Oatmeal and thin cream, or Whole milk. Fruit.

VII. Nuts and fruit.


While the food combinations given above theoretically answer all dietary requirements, they would not be practical in the majority of cases where the food habits of the individual would lead him to demand a greater variety, as appetite accustomed to stronger fare would pall if stimulated only with such simple mixtures. However, the simple menus show the way for planning more complex dietaries, for whether the meal is to consist of bread, milk and prunes or be extended to include a dozen other things, the principle is the same, to combine foods rich in proteid, rich in carbohydrate and fat, rich in salts, and bulky, watery foods. Thus, instead of making a cream soup the main part of the meal, a small portion can be served at the beginning of the meal.

Cream soup—Bread and butter.
   Meat—Potatoes—cabbage.
   Baked apples and cream.

It must be remembered, that with each increase in the number of foods served, the difficulty of making right combinations becomes greater. If a meal similar to the above is planned, where the soup served is rich in nutriment and the main part of the meal is also rich in nutriment, it will be very unwise to serve a heavy dessert. Apples in this case, increase the bulk of the meal, give desired variety and
taste but do not materially increase the amount of proteid which is already sufficient.

Meat, Potatoes, Macaroni, Bread and Butter.

Bread Pudding.

The above meal is a poorly planned one, not because it lacks proteid, fat or carbohydrate, but because there is a complete lack of juicy foods. It is never wise to serve two starchy vegetables at one meal. If macaroni, rice, or sweet potatoes are used they should take the place of white potatoes and not be substituted for the succulent vegetables as cabbage, turnips, green peas, beans, etc. If the main part of the meal is heavy the dessert should be light and if the main part of the meal is light the dessert should be heavy.

Another important factor in planning a meal is to consider the occupation of those who are to eat it. We have heard so much argument concerning pie, that it makes a striking illustration of this point. For the individual leading an inactive, sedentary life, pie may result in a deranged digestion for it is a concentrated food, but it may be an excellent food for the man actively engaged in some out of door occupation. The trouble is that often with a change of conditions we do not change our dietary habits. This is particularly true of the farmer. He has been accustomed to heavy out of door work and has needed large amounts of food to supply the energy expended. When he lessens his work and still consumes the same kinds of food in the same old amounts, disorders are bound to result.

It is not well to pass this subject without some discussion of the relative merits of the various foods as a source of the food stuffs. The question often arises as to the advisability of using meat as the main source of the proteid supplied in the dietary. There is a great deal of misconception regarding this point and the common belief among a large number of people is that "strength" is dependent upon meat consumption. Now, strength is only another word for energy and energy is not supplied by the proteids but by the carbohydrates and fats. If we increase the amount of food in the diet of a man doing much work we choose foods rich in sugar or starch or fat and not those rich in proteid. The proteid from milk and eggs, cereals, legumes and nuts serve the same purpose (that of building tissue and repairing waste) as the proteid in meat. In meat there are certain extractives which give it a high flavor and more stimulating action, but whether or not these are beneficial is debatable. Certainly, the proteid for the growing child should be mainly in the form of milk and eggs for these proteids are more readily built up into the body's tissue. Sugar is best served in the form of sweet fruits or combined in desserts. The main reason for this is, that sugar is a food stuff, extracted from the foods in which it occurs naturally and is therefore not combined with any of the salts which it is so desirable to include in the dietary. Let us then lay down this rule, not to exclude meat, but to use it only once a day; to make more free use of milk and eggs, and less free use of meat, to make more free use of fruits and vegetables and less free use of uncombined sugar. On the farm of all places in the world there is greater possibility of making a good choice of food for a wealth of good foods is always there,—milk, eggs, butter, cream, fruit and fresh vegetables.

Finally, how much food should be eaten and what proportion of the daily food should be proteid? In facing this question we are in a pioneer country where dangers beset us either side, and so a middle course seems best. The amount of food consumed in a given time should be capable of yielding energy equivalent to that spent by the body during the same time.

If the day's work is hard muscular effort requiring a large output of energy, the amount of food should be proportionately greater than when the day's work is light. In other words, the amount of food must vary directly
with bodily activity. Food values are determined in a way similar to that of determining the heat value of fuels. A weighed quantity one gram (.0022 lb.) is burned and the amount of heat it is capable of yielding is determined by the number of degrees rise in temperature it causes in one kilogram (2.2 lbs.) of water. In order to express this in a simple way it has been decided to call each degree of heat a heat unit or calorie. In other words, a calorie is the amount of heat required to raise one kilogram (2.2 lbs.) of water one degree Centigrade. As an example, if one gram of fat is burned, one kilogram of water is raised 0.3 degrees C., and we say that each gram of fat is therefore capable of yielding 0.3 calories of heat. The actual calorie value of the various food stuffs to the body is as follows:

<table>
<thead>
<tr>
<th>Weight of man</th>
<th>Proteid</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 lbs.</td>
<td>.17 lbs.</td>
<td>.171 lbs.</td>
<td>.585 lbs.</td>
<td>2080 to 2200</td>
</tr>
<tr>
<td>150 lbs.</td>
<td>.195 lbs.</td>
<td>.195 lbs.</td>
<td>.675 lbs.</td>
<td>2400 to 2600</td>
</tr>
<tr>
<td>170 lbs.</td>
<td>.22 lbs.</td>
<td>.22 lbs.</td>
<td>.765 lbs.</td>
<td>2720 to 2900</td>
</tr>
</tbody>
</table>

It must not be forgotten in using the above figures that they only approximate real conditions. It may be that for one individual the amounts given would be too little, for another, too much.

As the muscular exercise increases the calories furnished by the food should increase. For example, the man weighing 130 pounds requires 2000 to 2200 for light muscular exercise, but if the amount of work is increased the calories must be proportionately increased and may reach 3000 to 4000 or even 5000 in number, according to the nature and severity of the work.

A great deal remains yet to be done in deciding dietary standards, but in the meanwhile sufficient progress has been made to enable the individual to feed himself with at least partial wisdom. Information on this subject is within the reach of all for the Government Experiment Station at Washington and the agricultural colleges in various parts of the country are constantly sending out new and valuable literature concerning foods. A knowledge of foods and food values is of greatest importance from the standpoint of both economics and hygiene, for right food is one of the main factors which are at work in determining the prosperity and health of the race.
A NIGHT VISIT TO AN EGYPTIAN STABLE

By Anna Botsford Comstock

With Snapshots by J. H. Comstock

IT was the middle of January and all day our pretty steamer, the Queen Hatsoo, had steamed against the swift current of the Nile, which checked her speed sufficiently to give us plenty of time to gaze at the high, flat-topped mountains, with steep sides wind-carved into flying buttresses which flank the great Egyptian river; and here and there were openings in this mountain wall which gave us glimpses of the vast desert beyond, beset with more flat-topped mountains. The Nile landscape has always for a background the desert and these mountains which take on heavenly tints of rose and purple in the morning and evening lights; and for the foreground there is ever the strip of vivid green of the irrigated crops on the river rim dotted with mud villages and their groves of date palms; and in the immediate foreground always the native sail boats with their tall, curved sails and high prows like great, graceful water birds flitting up and down the opalescent waters.

Since these native boats carry no light, it is necessary for the steamers to tie up at night lest there be collision and consequent bad feeling, which would prove a dangerous asset for a steamship company; and this night we tied up at Shiekh Fadl, which is a village of only 1800 inhabitants, but is made important now because in its midst is a great cane-sugar factory. Times have changed, for once the site of this very town was the ancient city of Cynopolis where dogs were regarded as sacred and many dog mummies have been unearthed here.

After supper we were invited to visit the sugar factory by Mr. Ragheb Choukry, the secretary of the concern, who made a ceremonious call on our ship's officers and through them extended the invitation. Mr. Choukry proved to be a handsome, vivacious, courteous Mohammedan with pleasing
manners, European dress, and a fair command of his own English but with small command of ours. He led us up a steep bank and along the village street past the front of a long arcade filled with native bazaars and ending at the gates of the sugar factory, which were locked, and were only swung open after explanation on the part of our host. Most of the work rooms of the factory were on the first floor, and we studied the various processes of sugar making through the open windows and doors. We first saw the cane ground and then pressed; the work was done by hordes of natives, most of them quite dark complexioned, and many of them negroes. Some of them were less than half clad and some not clad at all, for the heat of the factory was intense. As we watched the work with outward interest we inwardly hoped that something was done to the sugar in the refinery to extract the dirt else we must needs forever abjure sweetness in our food. The men were working in six hour shifts and the mills were thus kept running night and day. A man received for his twelve hours work the sum of twenty-five cents or an English shilling, which our host evidently regarded as a truly magnificent sum. We were unable to more than give a casual glance at the refinery as it was not then running, but we examined with interest the little railroad with its truck cars which brought in the cane and carried away the bagasse.

After we had seen all that was open to inspection we were led out through the gates, which again were not unlocked until after explanation. Then Mr. Choukry insisted on taking us to an empty-looking tavern where he seated us at a table and promptly ordering a much needed clean table-cloth treated us to small glasses of Cognac; and those of us who had “principles” found it more expedient to stealthily empty the contents of our tiny glasses on the sanded floor than to explain to our host why we could not drink. Our appreciation of his kindness and the Cognac opened Mr. Choukry’s heart still more to us and he took us to call on Madam Choukry. We entered his home through an alley that led into a courtyard and thence into a room with high walls, which were decorated with modern hunting equipment and some rather primitive Italian pictures. A table covered with a clean cloth occupied the middle of the room, a modern sideboard was at one end and a large sofa covered with dilapidated red plush was at the other. Madam Choukry proved to be a good looking Syrian woman and was Mr. Choukry’s only wife, as he explained that he did not believe in polygamy. As she spoke no English she smiled her welcome, and ordered a big negro servant to bring us Cognac and cigarettes. Then the eldest son was introduced, a bright-eyed, dark-skinned, little fellow with very nice manners, and then as a special favor the Madam brought in her arms a poor sick, little girl who seemed to be naught but a wraith, with great, dark, pleading eyes and Mr. Choukry explained to us with sad face that the illness of this little one was their great sorrow. After an interesting half-hour we bade a lengthy and ceremonious goodbye to Madam Choukry and were taken out through the town to visit the stables belonging to the factory.

We walked for some distance at the side of a high, stone wall and only stopped when we came to where a sentry in flowing, white robe and white turban with a huge gun on his shoulder was pacing up and down before a strong iron gate. Mr. Choukry rapped on this gate enthusiastically and a grated peep-hole was opened, through which a parley was held with some unseen person behind, with the final result of throwing wide the gate and admitting us to a courtyard. A stone house with wide, open doors disclosing large rooms was at our right. From this house came a man of magnificent physique with handsome, melancholy face adorned with long, drooping mustache and surmounted by a silken turban. Like the others, he wore a flowing robe and was introduced to us
as the High Functionary of the Stables, and henceforth was known to us as the H. F. of S. He led us through a succession of walled courts, which seemed grim and prison-like under the brilliant light of the room. At length we reached some stables with stone walls and partitions, which would have done credit to a fortress. There was one, ten-candle electric light for each stable which made the center Rembrandtish and the corners mysterious.

First we visited the white Arabian horses, ten of them, all thoroughbred and very beautiful; they looked at us out of proud, sleepy eyes as if haughtily wondering what nightmares had disturbed their dreams. Next we saw some donkeys of famous breed, and although we were not very conversant with donkey races, yet we were able to see that these were truly aristocrats. From the donkey stable we went to that of the oxen and bulls, splendid creatures which made us long for more light so that we might properly appreciate them. One of the bulls was the largest we had ever seen, and had cost $400 in silver, as our guide assured us with much pride. Once when the cars carrying sugar cane ran off the track and the little engine could not pull them back, this huge creature was hitched to the errant cars and pulled them up and on the track with no special effort and with absolute unconcern. We then visited the cows, which we found to be large and beautiful animals, quite as large as Holsteins but colored like Jerseys; they were not fastened by stanchions but by chains around the neck. We failed to get from Mr. Choukry the names of any of the breeds of cattle; I do not think he knew and the H. F. of S., though evidently very proud of his cattle, spoke no English. He showed us with a smile in one stable a young creamy-yellow calf, which looked at us long and doubtfully and then distrusting our appearance ran bleating to its mother to be comforted by fond licks and soft, motherly mooing. "See, see" cried the sympathetic and impressionable Mr. Choukry, "ever the mother, ever the mother."
Meanwhile certain black heaps on the floor and on a long seat or shelf in an embrasure at the end of the barn, heaps that looked like horse blankets casually dropped, began resolving themselves into gowned and turbaned beings. Evidently the stable force slept around just anywhere and were not nearly so comfortably bedded as were the cattle.

After seeing and admiring all the animals we wandered back through the mysterious highwalled enclosure to the door. The H. F. of S. invited us, and then persuaded us through Mr. Choukry's English, to enter his house and have coffee with him, but we were obliged to refuse as it was growing late and we feared more Cognac. So we bade him an extended and stately farewell and backed out of his presence, as is becoming those taking leave of high functionaries; the iron gates clanged to behind us, and the white robed sentry continued to pace up and down.

Soon we passed the quarters where the laborers of the sugar factory lived and slept; kennels we thought was the proper word to apply to these buildings, which were small, dark, low and dirty, the rooms into which we glanced seeming merely large enough to accommodate the bed. We could not help contrasting the housing of these human beings with the high, airy, fortress-walled stables given to the animals. We emerged from this distressing alley into a magnificent avenue of Lebakh trees; the Lebakh is something like our locust and flourishes in arid places, its pods and fruit being a valuable fodder. We soon reached a point where another equally grand avenue crossed the one we were following at right angles and at the intersection the trees were made to form an ornamental arch, the entrance for the Khidivé when he graces Sheikh Fadl with his presence. This sacred archway, however, was fenced off and none but royalty might pass under it, so we drifted back to the boat where we took a cordial, nay, almost affectionate leave of our hospitable host, the polite, cordial and child-like Mr. Choukry.

THE NINTH ANNUAL AGRICULTURAL BANQUET

The need for some larger University building was again emphasized on the evening of February twentieth, when the even four hundred banqueters of the College of Agriculture taxed the Armory to its capacity. Another success was thereby added to the list of college functions and once more was the true spirit of the College diffused, absorbed and radiated from every heart and mind present. The committee under the chairmanship of E. G. McCloskey, '09, did its work well and every phase of
the gathering worked smoothly and satisfactorily in the extreme. If the Short Course, yells were less numerous and less vociferous than last year, we can readily believe that nevertheless, there was no lack of spirit in those students, as in every other person there.

The toastmaster was R. C. Lawry, '09, who is well known to many of us, and who was well fitted for his office. His wealth of clever and appropriate jokes and quaint introductions, easily outweighed the difficulty he experienced in making his voice reach to the limits of the hall, and all in all his task was accomplished most gracefully.

K. C. Livermore, '09, who represented the regular students, was recommended as having come from Boston with neither "spectacles nor a bulging forehead as might have been expected," and further that his varied experiences had well fitted him to represent the long course students. His toast was unique, original and very cleverly developed, being a confession of "A Senior's Love." It was back in my freshman year when I first saw her," he began. "In a group of five or six others she alone impressed me. Charmed by her lofty ambitions and sturdy courage, I saw in her future, promise of a life rich in good influences. How she has changed in these four years" and so on, apostrophising "his love" for her wisdom, her unselfishness, her love of Nature and scientific investigation, her energy, her democracy, her powers of good and her altruistic friend ship for the farmers. "I am not disheartened because she loves each of her many suitors equally," he concluded.

"Rather am I stimulated to greater love of her and more determinedly do I strive for the heights towards which she leads. All that I am or ever may be I owe to her, to whom I declare my love tonight. Friends, my toast is to her whom we all love "Our College."

Dr. H. J. Webber, the next speaker, is we were told one of those "forms that easily adapt itself to new conditions of soil and climate." In responding on behalf of the Faculty, he supposed that he had been asked to do so because, perhaps, the faculty needed some evolving. But on the whole, he thought them pretty good. His deeper message, however, was for a greater appreciation of further and more careful specialization. One of the few things he felt he might criticize in the College was the lack of sufficient emphasis towards keen scientific specialization. The idea of sending men back to the farm is in itself good, but, he asserted, a man with the divine spirit and power to teach, can do more good for agriculture as a science than any other. To explain why few students take up teaching as a profession, he gave the fact that a teacher does not become rich, though, he added no man can have as good a time or receive such satisfaction as he who has the divine spirit for teaching. The very fact that specialization makes a man unable to delve into many subjects, causes the failure of scientists, as a rule, to be good business men. Thus, he urged, there should be a greater community of interest between the scientist and the business man each recognizing the place and value of the other.

An unexpectedly pleasing feature was then introduced namely, the presentation by Dean Bailey of the Morrison Trophy Cups to the Short Course winners in Debate and Basketball. In a brief speech urging for continued efforts along debating lines, the Dean tendered the handsome Debate trophy to the Dairy class, which had beaten the Poultrymen in the final contest. Then with a reference to the result of team work and the necessity for it throughout life, he presented the Basketball cup to the victorious class in General Agriculture.

Following these awards, R. P. McPherson, General Agriculture, presented the short-course point of view in a clear, well delivered speech. The men had come to Cornell, he explained expecting to take little interest in anything but their special work, to return to their farms with some new technical knowledge and perhaps put some of it into practice. But, he said, they soon found out how they were a
part of the College; how much was expected of them here as well as in after life when they should have to stand representing and worthy of the College. They have felt responsibility and they have come to realize that we of Agriculture are the only class of men to whom are entrusted the life and care of living things, not metals, machines and inorganic substances, but plants and animals that live and breed, and grow. Should not this realization he asked, inspire us to ever better doing and living, to a remembrance of all the greater things that we are striving for, and to an endeavor to be leaders in all that is good and true and useful.

J. D. Van Wagener, '91, as one of “The Old Boys” was characterized as one of the two men who had received an M. S. A. and then gone back on the farm, as an enthusiastic and tireless Institute worker and as an “edition de luxe” of the real farmer. He spoke of the early days of the College “not her infancy, but that time when she was just putting up her back hair and beginning to go out with the boys.” He touched on the nature of the earlier agricultural banquets, with which, in contrast to the banquets of today, he felt small and insignificant. Almost, he said, he hesitated to represent the College, so much smaller was it in his day, and so much fewer the opportunities. But one great source of pride, he maintained, would ever remain with him, and make him glad that he was “one of Roberts boys.” And then in a sincere tribute to Professor Roberts, to his character and his heroic, unselfish work, he sent a greeting across the plains to him, whom, he felt, could justly glory in the fulfilment of his greatest hopes and endeavors—the present College of Agriculture.

And then came Dean Bailey, with a new message to his “fellow students and brother shorthorns.” He had been impressed, he said, by Dr. Webbers, words concerning specialization and investigation, as also he was impressed with the value, to every man and woman of a scientific mind. He spoke of the College and for what it should stand, that it means new thoughts and advanced, broadening ideas. People who think little, take the things that are so, as the best, whereas the existing state of things is often most in need of change. We grow up in the bounds of certain customs, and come to feel that certain things are right, until at last some gradual growth of mind brings new truth into our sluggish beliefs. Some men, he said, have acquired much wealth and power and are looked upon as leaders. But there are, nevertheless, rights belonging to the individual, to all people which must be recognized. On this recognition are based many of President Roosevelt’s policies for the people rather than for the few, and by no institution is it more fully lived up to than by the colleges of agriculture. They work for the people on the land, not for power.

Returning to the value of a scientific mind, the Dean said he realized that many of the students had changed their preconceived notions since coming to Cornell and that he wished they could have changed all the earlier mistaken opinions of their youth, for the later more correct ones. Few ideas, he said, come save from experience and prolonged thought, hence youthful opinions can easily be misleading. He declared the greatest integrity to be honesty with ones own opinions, and that this condition could come only from founding ideas on certain, sound premises, developing them logically and then standing fast. In Abraham Lincoln could such integrity and steadfastness be seen. How many men, he said, disbelieve even what they see, in the face of preconceived ideas. But a scientific mind will save us. It is willing to believe the truth as it appears, and so becomes continually revived and amplified, as in the light of modern discovery, every scientific book should be revised frequently.

Man must be open to new convictions. Many students have received knowledge that perhaps, conflicts, or seems to, with their religion. The
remedy, said the speaker, is to accept the truth, that which is actually seen and demonstrated, and to forever remember that behind all the universe, and ruling it, is God; that naught that man can do will change the destiny of things. Growing to keep pace with our increasing knowledge, let us change if need be our forms of dogma, but through all, the fundamental truth stands. Through truth and

through science will come not doubts and instability, but knowledge, insight, and thus shall we come into close relationship with all creation.”

With a closing word from the toastmaster, a final cheer, and the Evening Song, the banquet was over and another step along the road of progress, development and unification in agriculture and the College had been taken.

THE CORNELL WAY

Smithville Flats, N. Y.,
Feb. 10, 1909.

Cornell University,
Poultry Department,
Ithaca, N. Y.

Dear Sirs:—
In the Cornell Countryman, some time ago,
I saw your Ad. of the “Cocks that Crow,”
And I said to myself, to make some gain,
I'll get a cock of this wonderful strain,
For in Poultry craft, as in other breeding,
The record made is not all in the feeding.

II

For some years past I've kept the count
Of the number of eggs; the cost and amount
Of feed to produce a dozen eggs,
From the little Leghorn with yellow legs,
And I'm forced to conclude, that to make things go,
I must have a “Cockerel with the Cornell Crow.”

III

Now to some it might seem passing strange,
That in poultry breeding, one must arrange
For a change of blood, to give us vigor
And keep constitution to the proper figure,
But this, Rice says, we all must do,
And Rogers and Krum and Miss Nixon, too.

IV

So then, dear Sirs, with your ears to the ground
All open and tuned for the proper sound.
Approach the quarters of chanticleer
And select a bird, in conscience clear,
A bird of parts, and vim and go,
A “Cornell Cockerel with the Cornell Crow.”

V

To me at Greene you may consign
This bird with voice so true and fine,
And on the coop, mark the consideration
That will be charged, laid down at our station,
And I will remit, in New York exchange,
The price in justice you arrange.

Sincerely yours,

Chas. H. Royce,
(Cornell, '91, B.S.A.)
IN America we have learned to substitute brute for human energy to a greater extent than in any other country. The statistics show that the horse population of the United States is one-fourth that of the human population, or one horse for every four habitants. This is two and one-half times as great as the proportion of horses to men in France; three times greater than in Germany and six times greater than in England. We have wasted our natural resources, such as lumber, coal and soil fertility but we have used human energy more economically than has ever been used before us. The older nations are saving everything but human time. As a nation, we are extremely saving of time, but wasteful of everything else.

Those who developed the agriculture of the United States were very early taught that human muscle was the dearest material from which to secure energy, even if the person was a slave. A horse properly directed, is equal in productive energy to ten men, and it will cost about half as much to keep him as that of one man. According to these figures, a horse intelligently handled may be made to cheapen labor twenty fold over the old hand method. Here lies the secret of success in America. Human muscle, however cheap, can never successfully compete with improved implements operated by well bred horses, adapted to their work, and directed by intelligent workmen.

Since the horse seems to be such an economical factor in American production and progress it behooves Americans to acquaint themselves with the conditions whereby the horse may do his work most efficiently. What are the conditions that will enable us to substitute horse power for human effort to the greatest extent? In America the farmer is not as a rule contented to direct the energies of but one horse at a time.

He usually harnesses two, sometimes three or four, and occasionally six and even more, to a single implement or machine. On the open areas in the west where the fields are often a mile long, one frequently sees two sixteen inch plows mounted on wheels and drawn by four large horses plowing as much as six and one-half acres in a single day, more than a hundred laborers could do in a day of the severest toil. Perhaps the most striking illustration of the economy of horse over man power may be seen in the great wheat fields of California where fourteen teams, twenty-eight horses or even more, are attached to a combined machine which cuts, threshes, cleans and sacks one thousand or more bushels of wheat in a single day. One man drives the horses and three others tend the machine and sew up the bags of grain. Four men and fourteen teams reaping and threshing one thousand or more bushels of grain in a single day. It would take at least sixty men one day to accomplish this with the cradle and flail.

So much for the conditions under which we can use horse power most economically. The next most important consideration for the farmer to acquaint himself with is the sort of animal that is the most economical for him to use. It would seem foolish to rear horses which would only increase man's productive powers five times when a more intelligent effort may have produced one which would increase them ten times. Can we produce a horse that will be more efficient, require less human effort than those we have at present? This is the most important question in the rural communities of the eastern part of America today.

When we study the type of horse used in the west where large machinery is employed and the type used in the east where smaller machinery is employed, we note quite a difference.
PERCHERON FILLIES, 2600 POUNDS. A DESIRABLE TYPE OF FARM BREED MARE.
in the type and size of the horse. East of Ohio there are few draft horses in the rural communities. They seem to be mostly of trotting blood and occasionally one of Morgan type. It would be interesting to know if it were possible, the influences which have led the eastern farmer to stick largely to the lighter type of horse. It would be interesting to know whether this was due to the fact that the lighter horses became established in the east before the introduction of the draft horse into the United States, which occurred about fifty years ago, or whether the environment is more suited for the smaller horse. The breeding of draft horses began in central Ohio and has gradually moved westward until the whole of the central west has become permeated with horses of draft breeding. During the half century that has elapsed the draft horse has appeared unable to make his way eastward to any considerable extent except to be consumed in the large cities. Whatever may be the reason, one thing seems certain that the phenomenal development of the central west has been in a large measure related to the application of more efficient horse power in the production and the marketing of farm crops. The draft horse has been a factor in this development. We shall see that the efficiency of the horse as a motive power has been raised to such an extent as to reduce the number of men as well as the number of horses required to do a given amount of work. Thus giving a larger production per unit of human effort and per acre of land, which makes labor more valuable and increases the value of the land.

The relation between land values and the number of heavy horses kept is close and intimate. With few exceptions profits per acre rise and fall with the number and value of heavy horses kept. If we study the conditions in detail we shall find in the areas of high priced land heavier and fewer implements as well as heavier and fewer horses per acre. The fourteen and sixteen inch plow is common, the two-row cultivator, corn binders, the eleven-hoed and larger grain drills, seven and eight foot binders, the hay loader and in fact every contrivance to substitute horse power for human effort on the largest possible scale. When we study the conditions in the regions of cheap farm land, we find the opposite conditions. Small horses and more tools per acre. Ten and twelve inch plows are common, corn tilled with the one row cultivator or the double shovel, seven and nine-hoed grain drills, five and six foot binders and mowers, in fact everything on a smaller scale requiring more human effort per acre.

It is true that the conditions are not comparable in every respect. Oftentimes the texture of the soil is different, which may modify conditions somewhat. Oftentimes the topography of the land is different, which may have some influence. Again the farms are smaller and poorly laid out. This, however, is an objection that is met with in the areas of high priced land. There are, however, vast areas of land in the cheap land region that could be worked in much the same way as the land in the regions of higher land values.

The claim is often made that the reason heavy horses are quite popular in certain sections is because the land is easily tilled, labor scarce, and that it is necessary to employ the large horses. Again the claim is often made that it was the high land value that attracted heavy horses and not the heavy horse that increased the value of the land. The facts in the case are that the areas of high priced land and heavy horses are closely allied and that the heavy horse decreases the cost of production.

Aside from the fact that the heavy horse is the more economical because he saves human effort more efficiently than the lighter one, there are other points in his favor. In the areas of high-priced land, on well regulated farms, more horses are raised than are consumed there, and the heavy horse is perhaps the most profitable for the.
farmer to produce. The heavy horse can be produced with less effort and less risk to mare and foal. The brood mare should be worked up to the time of foaling; it is better for her. The heavy mare is more phlegmatic, not so apt to injure herself or the colt while in foal, as is the lighter and higher strung mare. Again when the colts are young, they are not so active, nor so apt to hurt themselves as are the, lighter and higher strung animals. And even if they should blemish themselves, while very objectionable, yet it is not so much so as it would be with the lighter horses. Draft colts can be made to earn their own keep from the time they are two years old, when they can be put to light work. They are not so hard to train as the lighter ones, as they are more phlegmatic and take to their work better. If one is raising coach or saddle horses it may cost more to properly educate them than the entire cost of the draft colt.

The heavier horses are always in good demand on the market. They are the least affected by business depressions, by fads and fancies. If one is breeding coach or saddle horses, they are usually considered pleasure animals and the first to be effected by business depressions. Again, the draft horse will be the least effected by the motor car. Whatever else may be said, the motor car has come to stay and as there are about seventy thousand automobile licenses in New York state alone, we can hardly gainsay that it has effected the number of pleasure horses to some extent.

If it is true, as seems to be the case, that the larger the horse the larger the farm machinery, then it is true that more work will be accomplished per man and hence less human effort will be expended per acre. This will decrease the cost of production and increase the net returns per acre, therefore the value of the land is increased. Furthermore, if it is true that the draft horse is the more economically raised, the least effected by business depressions and worth the most when ready for market, it would seem well worth while to give him greater recognition in the east than has hitherto been accorded him.

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**THE WOODLANDS**

*By John Sill Gallager, Sp.*

When drowsily the woodlands wake
As the stretches of night softly scatter and break,
Retreating before the shafts of day.
There slowly we roam the fields away.

And ever through mists of the pine's sleepy smell,
And mirages of scarlet from flowered dell,
The flow of light sweeps on through space
To the dusk enfolding its resting place.

We move through dreams of light and time
With hearts that beat life's sounding rhyme:
The fields and hills and clouds fade by:
The shades of the Great Beyond draw nigh.

For life flows out like the streaming wind
And leaves the myth of the world behind,
Passing beyond the bourn of the tomb,
Ever drifting out to the radiant gloom.
SOME RAMBLING REMARKS ON SOIL SURVEYS

By P. O. Wood, '08

As noted in the Countryman last fall, two soil surveys were made in New York during the summer which were of especial interest to Cornellians, inasmuch as the Department of Soils of the College of Agriculture was closely interested, the work being prosecuted in cooperation with the Bureau of Soils of the United States Department of Agriculture. In this work the College furnished an equal number of the men employed and paid their expenses and also shared equally other expenses incidental to the field work of the survey.

The two areas surveyed were Livingston County in the famous "Genesee Valley" country and Montgomery County in the middle Mohawk Valley region. The work in Livingston County was in charge of Mr. M. Earl Carr, Syracuse, '03, assisted by Instructor Geo. A. Crabb, for the Bureau of Soils, and Mr. H. O. Tiffany and the writer, for the college. The Montgomery County area was in charge of Mr. Ora Lee, Jr., Cornell, '06, for the Bureau, assisted by Mr. C. Lounsbury, '08, for the college.

Not having been in close touch with the work in Montgomery County, these remarks apply directly only to the Livingston County work.

The field work was begun July 1st and completed November 16th. Livingston County is well suited to show...
the value and utility of such work, embracing as it does lake, stream, glacial, and residual soil conditions, and offering a wide variety of soil and agricultural conditions. In the progress of the work thirty-six soil types were recognized, a number unprecedented in any one area in the history of the Bureau's soil survey work. Conditions of agriculture are as varied as are the soil types, and depend largely on the soil. The prices of farm land within the county, range from the extreme low—as low as $8 per acre—to the extreme high—$400 per acre. Agricultural conditions have as wide a range as do the prices of land. Where the low priced lands occur there is a low grade of extensive farming, deserted farm homes, and abandoned fields if not farms, but where the high priced land is found there is a high grade of very intensive farm industry and instead of there being abandoned or semi-abandoned fields, the fields are made to produce from one to three high priced crops annually. However, as a whole Livingston county is noted for its agricultural productivity, farming being
The Cornell Countryman 187

The Level Land of Northern Livingston County. Note the "Home-Made" Stone Fences.

Atlas sheets of the United States Geological Survey covering the county are complete except a small portion of Ossian township, which was completed for the purposes of the soil survey work. These topographic sheets, which were used for a base, show accurately all roads, streams, houses, villages, etc. They also show by means of lines and figures the elevations and contour of every portion of the country. The necessary apparatus where such a map is available consists of copies of these maps, a set of colored pencils with which to represent the various soils found, a soil auger, which is an ordinary two inch auger with a three foot stem, and a note book.

The party drives out from temporary headquarters, usually two men working together. The day's work is started by one man taking his soil auger and going across the fields to another road, boring in and examining the soil brought up with the auger to a depth of three feet. He also observes the general surface conditions, contour, vegetation, etc., in addition, and from these observations determines what the character of the soils is of the region over which he has passed. The man left in the buggy makes numerous other borings and observations along the highway and occasionally takes short trips into the fields and finally stops on another road at a certain designated point where the man who has taken the cross country trip is to come out. Each man is supposed to cover as much territory as possible and to indicate on the map by means of the colored pencils the different soil types which he has found.

When the man going across the lots reaches the predetermined point he may find the horse tied, and his partner in absentia, and his arrival simply alternates the previous performance, he driving around a predetermined route and working along the road and meeting his partner, who has taken his time across the country, at some other point.

At noon time a suitable spot is chosen, or rather an attempt is made to choose a suitable spot, which is no simple operation in the middle of November, and the dinner pails are emptied. If the days work is properly planned, the noon-time lunching place is the farthest point of the day's work from "home" or rather hotel, so that the afternoon is spent in working back to town.

As the work progresses, and typical areas of the different soil types are encountered separate samples of both soil and subsoil are taken and sent to headquarters for such analyses as are considered necessary and essential to a full understanding of each soil type. Generally a mechanical analysis is all that is deemed necessary. In the prosecution of the Livingston county
work some 60 to 70 samples were collected and forwarded to Washington where various analyses are being made. In this area the College of Agriculture was supplied with duplicate samples of each soil type mapped, for its use. A number of analyses have been made of these soil samples for lime or calcium carbonate, some soils showing none to be present and others containing a high percentage.

In case something peculiar or special is encountered samples are submitted, and in this work the writer and his partner observed and collected some white surface incrustations. An examination of these crusts made in the chemical laboratories of the Bureau of Soils showed them to be almost pure magnesium sulphate, one of the troublesome "alkalies" of the arid regions of the west. This point is of particular moment as our New York people and many of our agricultural workers have never dreamed that alkali conditions ever existed within the state.

Another phase of the field work of the soil survey is the collection and preparation of data and statistics bearing on the agricultural development, the present condition and future possibilities of the region both in the way of improving the crops already grown and the introduction of new crops or the adjustment of the crops to the soils best suited for their production. All this material is incorporated in the report and constitutes what is really a miniature agricultural encyclopedia of the area, dealing with a general description of the area, climate, soils, description of each soil type, irrigation, drainage, markets, transportation facilities, other important industries, and in fact every thing pertaining to the agriculture of the region under consideration.

On first thought, such duties as briefly outlined may appear to constitute what is sometimes called a "soft snap," but actual experience does not bear out this opinion. The work is extremely interesting to one who cares to study agricultural conditions first hand, and there are many other pleasant features. On the other hand, these unpleasant features are sometimes balanced by some not so enjoyable, such as poor hotels, poor livery accommodations, and the laboriousness of the unending cross country trips with the temperature at 90° in the shade, the equally interminable "office copy" of maps, etc. The algebraic sum of the desirable and undesirable features of the work, so to speak, is, of course, determined by the personality and make up of the individual and the party. Speaking personally and as a graduate with no fear of the Professors, I think the experience gained from field work of this kind is invaluable and should count toward graduation. It cannot be secured from books or lectures.

One of the pleasing features of soil survey work is the feeling that one has been doing something worth while. This side of the subject requires a much larger space than is here available, and those interested are referred to the reports of Prof. Milton Whitney, Chief of the Bureau of Soils and various other publications of the Department of Agriculture.

One may not be able to place a definite pecuniary value on such work as is possible on raising so many bushels of potatoes, but it is the object, and the accomplished object of the soil survey to show just what soil in a given region is best suited to grow potatoes, corn, beans, etc., and thus to increase the number of bushels of these and other crops raised with the same acreage and expenditure for labor.

Judging from what has actually been accomplished by this soil survey work in many ways, and in many places, surely the work done by the Bureau of Soils constitutes a most wise and profitable expenditure of Government funds.
LONG Island is but little understood by most up-state folks. They know more of the Adirondack "wilderness" than of the big island which they think of, first, as a sand bar and, second, as a place where summer boarders, vegetables and Coney Islands flourish.

The Eastern End, as Long Islanders call it, is even less known, and, although it comprises the second largest county in the state, little has been written and said about it, comparatively, although it differs as widely from Central New York in its agricultural practices and problems as do Delaware and Eastern Maryland which it greatly resembles.

People there still tell of the enthusiastic institute speaker who devoted much time and energy to their instruction upon the wholesale raising and marketing of hogs—and this to people who till land as closely and carefully as a garden. There is another and more recent incident told of the speaker, from up the state, who feelingly depicted the misfortune of the children imprisoned in their local schools, the disadvantages of which he described at length, using the old-fashioned, one-room, three R type as his text. At the finish he feelingly called upon his hearers to consolidate and modernize their schools. It happened that in the township in which he spoke, not one school of the type which he described existed, they were all up-to-date consolidated schools—but the speaker didn't know it.

This aloofness from the state is of long ago origin. Long Island was settled by two antagonistic races. The Western End around Breuklyn, Flatsbusch, and Coenties was taken up by the Dutch about the same time that the Eastern End was settled by New Englanders from Massachusetts and Connecticut at Southold and Westhampton. The two races had some fine lively times in the early days as each claimed the land of the other. The popular method of warfare seemed to be to nail on a tree a sign which said that this land belonged to the Colony of New Netherlands. This would be promptly followed up by the other party who pulled down the sign and erected another in its place which said that this land belonged to the Colony of New Haven. These little pleasantries might have merrily gone on for an indefinite time had not the luckless New Havenites been hailed before the Dutch governor who couldn't see the joke. He patched up a truce upon the basis that the land was a part of the Dutch possessions upon which the New Englanders were to be allowed to live unmolested and their titles to land recognized by the Dutch authorities.

It thus came to pass that, though under the rule and part and parcel of New York, the Eastern End of Long Island remained typically New English in its settlers' houses and methods of farming. Today the descendents of the original settlers are, many of them, still on the land and, proud of their long tenure of title, placidly self-satisfied with themselves and their country. They naively asked the "Experiment Station man" if he ever before saw such progressive farmers as themselves; at the same time averring their belief that such do not exist. One farmer even stated that no other place was so beautiful to live upon as Eastern Long Island and added that his farm was the best situated of all those upon it.

Land is usually valued at from two to three hundred dollars per acre and in some sections it is very difficult to buy any except at a price several times in excess of its real value. The people who have held land for two centuries or more in the same family do not intend to part with it now if
they can still make a good living from it. Until recent years land was valued at only a hundred dollars an acre but the demand for summer homes for city men, the high earnings of the land when planted to vegetables, and, perhaps most of all, the influx of Polish settlers anxious to buy farms and willing to pay practically any price, provided it is not demanded in cash; these have forced up the price of land to its present level and will no doubt force it still higher.

The soil, in most places, is sandy. Suffolk County, the Eastern End, is said to use as much commercial fertilizer as all the rest of New York state together. The terminal glacial moraine runs along the northern edge of the island and modifies the soil type widely. Many of the best farms are situated along the line of this great moraine. The centre of the island is, much of it, still covered with scrub oak and of little present value although by sufficient fertilization crops can be grown upon it.

The main business of the Eastern End is to grow vegetables. Potatoes, cauliflowers, Brussel sprouts, cabbage (for seed), asparagus and lima beans are the principal crops; and about in order of importance as they are here given.

The labor problem has been interesting in its development. The first "imported" laborers were Indians and even today an occasional Shinnecock Indian is found working on a farm. But the first real great race movement was when the Irish came in as farm hands. Some of these have stayed as farm owners but most of them are gone and an Irish farm-hand is a rarity now. Next came the Germans. A few of these now own farms but most of them are gone. They got drunk every pay-day.

Today the people from Poland are the great source of labor and the great problem on Long Island. They live cheaply and save most of their wages.

In some sections they already own many of the farms but there is no one section yet totally occupied by Poles, the statements of some writers to the contrary notwithstanding. The Poles are poor farmers but good citizens. Their farms are in bad shape; their crops below the average but they get ahead because the whole family, men and women work in the fields from daylight till dark. A philosophic old gentleman looking over his farm which had been in his family for two centuries and a half said that he doubted not but that the Polish people would in a few years own all the land including his farm; and this because they did the three things necessary to acquire and hold land and the present-day Americans did none of them. In reply to my question he said that these three things were: to work hard; to save money; and to raise many children.

The farmers' clubs act as co-operative buying agencies. The town of Riverhead has an Agricultural Society which has flourished for a quarter of a century. It holds weekly meetings open to the public for the discussion of agricultural questions and buys flour, seed potatoes, block salt, kitchen stoves and almost any other staple for the use of its members. It has a special fertilizer of its own for sale at cost price. Last year it sold a hundred thousand dollars worth of commodities to its members through its salaried purchasing agent.

The Eastern End is prosperous in the old settled portions. The houses, barns and farms show it. The people are contented although many are now looking longingly at the money for which they could sell their land and buy more cheaply elsewhere. Without being over enthusiastic, one may quote the farm owner who, squinting across his level land at the blue Peconic Bay and the green hills of Shelter Island beyond it, spat forcibly on the soil and said, "It sure is God's country."
A QUESTION of great importance to farmers is being agitated. It has been long recognized and practically solved in most of the European countries; but in our own country, although the experiment stations have felt its importance, it has not received enough attention to bring about the effective legislation necessary to meet it squarely. I refer to the question of impure, adulterated and misbranded seeds.

The chief evils found to exist in the condition of our seeds may be divided into five classes. The first class includes such impurities as dirt, chaff, small pebbles and similar inert foreign materials. The second includes weed seeds. The third includes the mixture of foreign seeds with the commercial seeds, like the seed of Canada blue grass in a package of Kentucky blue grass seed. The fourth class includes low-germination seeds; seeds that are of the right kind but which will not grow. Misbranding or substituting seeds of one variety for those of another constitutes the fifth class of evils.

You question, perhaps, whether there are enough of these impure, adulterated and misbranded seeds on the market to warrant a discussion of the question at all. Perhaps you are so in the habit of blaming the soil or weather for a poor crop, and your neighbor for the weeds which appear in your fields, that you never ask if the seed is just right. There is plenty of cause for discussion of this question.

The Vermont Experiment Station collected 735 samples of seeds from all over their state and tested them, finding many that were impure with dirt, chaff and weed seeds, some that were worthless and some which had obviously been adulterated.

The Pennsylvania Station conducted similar investigations, taking samples of seeds from merchants all over their state. The station reported, "* * * we may conclude that there are farm seeds placed on sale that are exceeding poor and even worthless." They also considered that the worst conditions had not been shown.

Kentucky blue grass seed examined at the North Carolina Experiment Stations contained thirty-five per cent of weed seeds, dirt and chaff. In a test at the Connecticut State Experiment Station seventeen samples of orchard grass seed were examined. One of them contained no orchard grass whatever, but consisted mostly of perennial rye grass, a very inferior species. Five other samples contained on an average of twenty-five per cent of this grass seed, while of the entire lot only forty per cent germinated, the amount germinating in one case being only four and one-half per cent.

The seed of clover is usually much more impure than that of any other crop. Sixty-three samples from different parts of the United States were tested at the Iowa Experiment Station. They showed impurities ranging from three-tenths to sixty-seven per cent that is from three ounces to forty pounds per bushel and averaged nearly three and one half pounds of impurities to the bushel.

This is the condition of our seeds, especially the grass and clover seeds, all over the United States. In New York State the condition is just as bad. One of the students of our college collected samples of grass and clover seeds from all parts of the state and tested them carefully. He used the results of his investigation in a graduation thesis, in which he says, "* * * it is obvious that the adulteration of commercial seeds has been and is yet carried on to a greater or less extent and no sample is entirely free from impurities. * * * We have samples that show adulteration and no sample
but that contains some impurities.

Who, is to blame, we ask, for the presence of all this poor seed? That is hard to say. Every dealer apparently buys his seed of some one else and when his seed is found to be adulterated, he claims it is just as he bought it. This is probably true in the majority of cases. The blame rests right on us as a nation. Why don't we protect ourselves against this robbery? Argentina, Canada, and nearly every country in Europe prohibits the importation and forbids the sale within their borders of low-grade seeds. But, at the same time, they carefully provide for its exportation. Who gets their poor seed, then? We, the farmers of the United States, cry out, "We'll take it, we're easy! We want cheap seed." And we get it. We import the dirt and screenings which can not be sold in other countries. We pay to have dodder, ergot, Canada thistle and many other noxious weeds imported and scattered over our farms. We like to pay for Kentucky blue grass seed and get the seed of Canada blue grass!

May I use a few more figures? In 1904 over 324, tons of Canada blue grass seed were imported from Canada practically all of which was sold as Kentucky blue grass seed and at Kentucky blue grass seed prices. We know that Canada blue grass is inferior to the Kentucky variety and that the seed is cheaper. Well, we paid for it all.

Our own dealers can not compete with this cheap seed, unless they sell the same kind. So they grade their seeds down and we pay for the mixing. Thus, we are to blame, not only for importing great quantities of worthless seed, but worse yet, we are to blame for practically forcing our own dealers to handle the same kind of seed.

Well! we say, this is a pretty bad condition of affairs. How shall we protect ourselves? We can not tell by the looks of seed what its quality is. We have no time to test our seeds, and it is not convenient to send them to the experiment stations to be tested.

Besides, we want to know, at the time of purchasing the seed, just what it is. Why shouldn't we know?

Let us see how other people handled the seed question. The only state which has effective seed laws is Maine, and those laws are successful. Both the farmers and the dealers are benefited by them. They apply to all seeds (with a few exceptions) in packages of a pound or more. They require that upon every such package there shall be a written or printed guarantee of the percentage of purity. The guarantee may be based upon tests conducted by the experiment station or by the dealers themselves, provided that such tests shall be made under such conditions as the Director of the experiment station shall prescribe. Moreover, the station is empowered to sample and test any seeds on the market, and to prosecute dealers whose seeds test below the guaranteed purity. The Maine laws do not compel dealers to handle pure seed; that would be attempting the impracticable. They simply require that the dealer shall say just how pure the seed is and what the impurities are which it contains. Then, the true worth of the seeds is apparent.

There is nothing new or strange to us in these laws. The principle involved is familiar. We remember how only a short time ago, public opinion was aroused over a similar matter. People united, and working with one purpose, brought the pure food law into existence. Today a man may know what he is getting when buying prepared foods and drugs. The same is true in regard to fertilizers. With the analysis printed on the bags and with government inspection to check up the honesty of the manufacturers, a man may know what he is buying. The principle is not only familiar to us but it is workable, workable in the case of seeds as well as of foods and fertilizers.

If then there is need of seed laws and if seed laws have been proved practicable, why don't we have them? We must have them, and I urge the farmers of New York state to unite in demanding guaranteed seeds.
PLANS FOR THE DIVISION OF POMOLOGY

The purchase of the Blair and Mitchell farms by the University for the use of the Agricultural College has enabled the Division of Pomology to widen the scope of its activities in very practical directions. Fifty acres of the Blair farm have been placed at its disposal. Of these, thirty acres are to be set out to orchards immediately and the remaining twenty will be planted as soon as the soil can be got in fit condition.

The work here will be carried on along three different lines. One section will be grown entirely on a commercial basis; only commercial varieties will be set, and all work in fertilizers, cover crops, pruning and spraying will be carried on to prove whether or not the methods employed are worth while, when dollars and cents are considered. This class of work will be of the greatest value to the fruit-growers for it will supply them with accurate knowledge, not only of commercial orchard practices, but also on picking, packing, shipping, and marketing the fruit.

The second section will be set out for experimental purposes. A large number of fruits and varieties will be planted; and experiments in cross-breeding, the application of Mendel’s Law, the influence of the scion on the stock and other of the many unanswered questions, will be carried on.

Another section will be used as a nursery for the study of the nursery problems. Whatever affects the nursery, affects the orchard, and when we consider that one of the largest nursery sections of the country, that in the vicinity of Rochester and Geneva, is within a hundred miles of the College, we can see the possibilities that this work opens up. On the Blair place there is now a small orchard of old trees that are in bad shape. This will be used for an object lesson in the problem of renovating old trees.

In addition to this work at home, much more will be done through the state than formerly. On the farms of Judson Knapp near Syracuse, two acres of nineteen-year-old apple trees have been turned over to the Division for work in orchard management. The orchard has been in alfalfa for fifteen years and has never born a crop. The work will be to bring this into bearing.

For the next year the biggest task will be the running of a seventy-five acre vineyard on a commercial basis. The H. B. Cushman vineyard at Romulus, N. Y., has been leased and the College is going into the grape business in earnest. It was on eight acres of this vineyard that the successful experiments on the control of black-rot were carried on last year. At the same time it is planned to make a grape and small-fruit survey of Chautauqua County. These two will, taken together, be a valuable contribution to our knowledge of grape-growing and marketing.

Orchard surveys have already been made in six counties; Wayne, Orleans, Niagara, Monroe, Ontario and Orange. The results of these are being worked out and tabulated; as soon as they are done, the surveys will be published. A much greater effort will be made to help the fruit growers solve their problems. The orchard surveys have brought the College into close touch with these men and their work, and with these surveys as a basis, circulars will be published and forwarded to them on pruning, cleft graftage, top-working, cover crops, spraying, fertilizing and tilling.

This extension of activities will not be confined entirely to outside instructive work. Commencing next fall, four new courses will be added to the College work. A course will be given in “Manufactured Fruit Products,” such as canned and dried fruits, fruit juices, wines, etc. The work that is now given on bush fruits in “Practical Pomology” will be increased and made into a separate course. Another course will deal with the propagation and growing of nuts. One other course will be in Advanced Pomology and will continue the work in Practical Pomology, going more into detail in the various questions brought up in that work.
For once in his four years of student life, and at a time when such was farthest from his mind, the Editor was surprised and pained to witness a distinct and most unworthy failure of Cornell spirit in the student body of the College of Agriculture. That, at the close of the Banquet, the students should have streamed out of the Armory, while still the Evening Song was being sung, leaving a mere handful to carry the beautiful melody, was unprecedented and inexcusable. It has been the pride of each one of us to refer to the loyalty of our College to Cornell traditions, but with that melting away of the occupants of the tables, in the midst of that almost sacred practice, came a disheartening and regrettable lapse in that which we should bend every effort to create—Cornell spirit. Perhaps our recent self-satisfaction in our patriotism and loyalty led at last to that exhibition of—shall we say carelessness?—and to the inevitable fall from pride which should go deep down into the heart of every member of the College. Now, at least, in wiping out this mistake, have we good reason to try to show, in the future, how truly Cornellian the College of Agriculture can be.

An Important Presidential Message

The special message sent by President Roosevelt to Congress on February ninth, embodying the report of the Commission on Country Life, is of vital, if perhaps indirect, importance to the farmers of the country and should be read carefully by everyone of them. Being necessarily brief, it but touches upon the contents of the more voluminous report, yet it offers many ideas that should be carefully considered. Fundamentally we see that the question of improving country conditions hinges, as do so many other civilizing movements, on cooperation—the working together of the government and the individual farmers. Furthermore, we see that the work that has yet to be done, the improvement yet to be effected to make farming what the President believes it will become, “one of the most dignified, desirable and sought after ways of earning a living”—is distinct from the advance that has already been made, the work that has resulted in the astounding figures of the value of the 1908 crops. For several years the national Government has been developing its policy of assisting farmers to produce more, by carrying on experiments that they cannot, by collecting, interpreting and distributing information, and by exerting its powerful and widespread influence in controlling and preventing losses from disease, insect pests, illegal transactions, etc. The farmer has responded; he has
read the bulletins, he has accepted suggestions and acted upon them, and has farmed, not it the narrow, hard way of his ancestors, but with the introduction of the science of today into his business. That is, it has been done to some extent, by the successful farmers, and the result is seen in the increase from year to year in the total crop value of the land. Even so, there is still greater progress possible, in a further awakening and the greater application of science and intellect to the "tilling of the soil."

* * *

The social conditions towards which the appointment and efforts of the Commission were directed, must be attacked?—no—improved, strengthened, beautified in the same general manner. The state and the nation can offer essential assistance and administration, but the responsibility of the farmer himself is no less marked, his duty no less clear, than in the improvement of the fertility of the land. The Government can legislate, can advise, can urge and can prove the necessity for certain policies, until doomsday, yet without the action of the men and women towards whom its attention is turned, its efforts are as naught, and improvement is impossible. Social betterment means, just as it results in, increased self-respect, appreciation of true living, broadmindedness and progress, sane, sanitary and patriotic.

* * *

President Roosevelt mentions several such factors, towards which we must at once turn our minds and direct our efforts. Better education, a new kind of rural school, is one, and here, we can say is work already being done. Witness the extension work of the Universities, the introduction of agriculture into elementary schools, the cry for better teachers and the growth of the natural laboratory method of instruction. Time and perseverance in this direction, must result in schools that are typically, essentially of and for the country. Secondly, must there be cooperation by township, county, state and even interstate organizations. Does not the ignominious failure of this chief apple-raising state of the east, to exhibit at the National Apple Show at Spokane, point out the crying need for cooperation of fruit growers? Does not the example set by city industries, actually prove the need of unifying, cooperative methods in agriculture? Here then, must the individual farmer think forward a little, put aside any personal prejudice or desire for selfish advancement, and in combining with others for the general good, will he find success far above all that he may have coveted. Finally President Roosevelt calls for better means of communication and we echo his call, urging every man to do his part. The parcels post, an extended development of the mail service, better roads, lengthened telephone and telegraph systems, all such provisions are the stepping stones to a better country to live in, to work in and to enjoy. Many such questions are before the legislature, or will come before it, and at this stage can each citizen add his weight by calling for the passage of the desired measures. There are many, and there is no space to present them here, but the conservation of the forest and stream resources are among the dominant, the vital problems. Let it be not only our aim, but our work to accomplish
these things, and for a better understanding of our way, the COUNTRYMAN again urges an earnest study of the President’s recent message.

* * *

Refreshments at the Assemblies

We were glad to note the re-introduction at the February Assembly of the time-honored refreshments. This is not, let us assure our readers, from any gormandizing tendency, but because, as we see it, some such provision is a valuable attraction to our monthly gatherings. As aptly expressed by one of our faculty, and one who in former times has had to do with the providing, it “breaks the ice” and moreover it is easier to talk and sing with one’s throat refreshed even by one small glass of cider or grape juice. We appreciate the obstacles encountered in setting even a moderate repast before our graduatingly increasing numbers, but the game is worth the candle and we wish it well.

* * *

Mistaken Identity

The COUNTRYMAN has been called to account by the Girls Club of the College of Agriculture for an error in reporting the Fruit Show of last November, wherein a certain exhibit of culinary products was credited to the “young ladies of the Home Economics department.” Lest others are uncertain as to the connection between the two organizations and might suffer the penalties enforced by ignorance, we would state with new-found knowledge the correct relationship existing within our collegiate boundaries. The members of the Girls’ Club are bona fide and registered students of the College of Agriculture and to them are we indebted for the feminine influences that form no small part of many of our college activities. They form a distinct minority of the Home Economics classes however, the latter being largely composed of Arts students, students whom, in their search for knowledge of a subject closely allied to our vocation of producing food for the nations, we welcome as colleagues. We trust that we have grasped the correct relationship and that we have expressed our appreciation of both the actual and the reputed providers of the aforementioned culinary exhibit.

GENERAL AGRICULTURAL NEWS

A NEW school of agriculture has been established at Morrisville, Madison County, this state. At the last session of the legislature, provision was made for this school and the county has now given to the state the buildings which were formally used for county purposes. A conservative estimate places the value of these buildings at $150,000. These buildings consist of a large frame building used as a courthouse, a brick structure which served as the Sheriff’s residence and jail together with the County Clerk’s office. The two frame buildings were erected about forty years ago but the Clerk’s office is a modern fire proof structure erected only six years ago and cost $40,000. Morrisville is located in a section of the state where there is every opportunity to study all lines of farm industry. Located about the school are many varieties of soil which make possible the carrying on of many branches of agriculture in that locality. It is also possible to study specialized farming, for Madison County has long been
noted for its crops of celery, onions, alfalfa and hops. There are also several abandoned farms in a short distance of this school. Thus it is seen that this section furnishes almost all types of farming and farm conditions that can be desired.

Governor Hughes has appointed the following trustees for this school: Dean L. H. Bailey and Commissioner Pearson by virtue of their positions and the law establishing the school; John H. Broad, of Morrisville; John T. Roberts of Syracuse; Fitch Gilbert of Otsego County, and John A. Stewart of New York City. The first meeting of the trustees was held at Morrisville recently and the following officers elected: President, Mr. Roberts; secretary, Mr. Broad; treasurer, Mr. Fitch. The members of the board expressed great satisfaction with the property and it is hoped to have the school ready for students next fall. The founding of this school has already stirred up enthusiasm in this locality and the grange which surrendered its charter twenty years ago has reorganized, and throughout a new interest in farming is evident.

* * *

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture gives some interesting statistics on the number and value of farm animals on the farms and ranges in the United States on January 1st, 1909. The total value of all farm animals was $4,525,259,000 as compared with $4,337,230,000 on January 1, 1908. This is an increase of $194,029,000 or 4.5%. In average value per head, horses increased $2.23; mules increased $0.80; milch cows increased $1.60; other cattle increased $0.60; sheep decreased $0.45; swine increased $0.50.

* * *

The attendance at the Farmers' Institutes this winter is larger than ever before, which shows that the farmers are taking greater interest in this work. This improvement is due to three factors: first, the institutes are being conducted along more instructive and practical lines than formally, so that they better meet the requirements of the farmers. In the second place, the farmers are finding far greater benefit in them than in previous years for they are now more alert to take advantage of every opportunity offered them to conduct their work along successful and remunerative lines. And thirdly, the farmers feel that besides the pecuniary returns, any interest in this work will result in better living and more attractive farm life.

* * *

The Holstein-Friesian Association of America announces through its secretary, F. L. Houghton, Brattleboro, Vt., a list of special prizes to be offered at the various state fairs and expositions of 1909. Most of the money prizes are for exhibition of purebred registered Holsteins in the various classes. The money prizes amount to $2050 while the value of the silver cups offered will aggregate $850. In most cases the cups are for the largest and best show of cattle though several cups will go to winners of the first prize in the butter test. This is certainly a liberal list of prizes and should invite the interest and competition of Holstein breeders throughout the country.

* * *

Early in February, an important conference was held in the State Department of Agriculture and the milk situation thoroughly gone over. The meeting was the result of a recommendation which Governor Hughes made in his annual message to the Legislature. This recommendation called for a plan whereby clean and healthy milk should be produced under proper safeguards to producer and consumer alike. Those present at the meeting included Commissioner Pearson, James W. Wadsworth, Speaker of the Assembly; Senator F. C. Platt, Assemblyman C. Frederick Boshart, chairman of the Committee on Agriculture; F. N. Godfrey, master of the state Grange; Dr. W. H. Jordan, director of the state experiment station; Dr. E. J. Lederle, formerly
Commissioner of Health of New York City; Dean H. E. Cook, of the St. Lawrence School of Agriculture; D. C. Markham, of Port Leyden; Lorton Horton, president of the Sheffield Farm Dairy Company, and George W. Sisson, president of the state Breeders' Association.

The different phases of the milk business which have caused dissatisfaction were considered and it was decided to carry on an investigation which would determine the cost of production and handling the milk from the time it leaves the producer until it reaches the consumer. This inspection will be in charge of Commissioner Pearson and will continue throughout the entire year so that the fluctuations of supply and demand can be studied. The matter of milk inspection in cities and towns not already having an inspection system of their own was taken up and it was the opinion of those present that the unsanitary dairies should be excluded in order that those who were honestly striving to put out a good product might be encouraged.

* * *

The committee in charge of collegiate athletics at the Alaska-Yukon-Pacific Exposition to be held in Seattle, June 1st to October 16th, announce a large number of contests covering every branch of athletic sports. There will be a national meet open only to college men, early in the summer at a time most convenient for a majority of the competitors. Individual medals and team cups are offered for standard track and field events, relay races and cross-country runs. Besides these there will be a series of baseball, basketball, tennis matches, besides boxing, wrestling, and other special features. Relay races will be arranged between teams representing the Atlantic states, the Middle states, the Rocky Mountain states, the Pacific Coast, Canada and the western Indians. The committee in charge is anxious to hear from all college athletes who may possibly enter the meets. Correspondence should be addressed to Dean Milnor Roberts, University of Washington, Seattle, Washington.

CAMPUS NOTES

Smith Prize in Farm Management

PROFESSOR Clinton D. Smith, Escola Agricola "Luiz De Queiroz" has offered a prize of $50 for the best plan for the organization and management of the Smith farm at Trumansburg.

Competition is open to any student in the University and will close June 15, 1909. All plans are to be submitted to Professor Warren before that date. The award will be made by a committee of three appointed by Director L. H. Bailey. All plans and specifications will become the property of the committee.

The plan should present a complete reorganization of the farm, including arrangement of the fields, necessary fencing and drainage, location of new buildings, disposition of old buildings, location of orchards, kinds of trees to set and planting plans. Areas of crops to grow, rotation to follow, kind and amount of stock to keep. Estimates of expenses and receipts should be included. The plan should run for three to five years or until the reorganization is fairly complete. The first two years the development is to be in charge of a hired manager.

* * *

Early in February, Professor C. A. Publow stated that positions had been secured for thirty-three of the present Winter Dairy class. These positions are in factories, creameries, and as dairy farm managers with pay ranging from forty-five to one hundred dollars a month.

* * *

L. R. Waldron, Director of the Sub-experiment Station of North Dakota, recently registered for graduate work in the Plant Breeding department.

* * *

M. J. Dorsey, Assistant Horticulturist at the Geneva Experiment Station, is again at the College taking work in the Plant Breeding and the Plant Physiology departments.

* * *

“The Grapes of New York,” which was gotten out by the Geneva Experiment Station has just come from the
press. Professor Hedrick and Wm. Alderman, '08, have started "The Plums of New York" on which they will devote their entire time until it is finished, after which Professor Hedrick will go abroad for some time.

* * *

Professor C. S. Wilson, accompanied by about sixty students, attended the two days session of "The Western New York Horticultural Society." Various plans and phases of orchard management were discussed. Many excellent papers were read on peaches and grapes, also on tillage, fertilizers, and spraying.

* * *

Professor Fippin went to Rochester, February 22d to confer with Chase Brothers in regard to tile draining their farm at Honeoye Falls. They expect to purchase a traction ditcher similar to the one used experimentally on the University Farms.

* * *

Mr. G. A. Crabb of the Soils Department recently spoke before the Grange at Ovid, N. Y., on "The Use of Lime."

* * *

Dr. A. D. MacGillivray reports a registration of nearly one hundred and fifty in General Entomology No. 3. This year's class is much larger than any previous one.

* * *

At a meeting of the Winter Poultry course, the permanent officers for the year were elected. They are: President, R. C. Rudy; vice-president, R. D. Smith; secretary, Miss M. Fetter; treasurer, Miss O. B. Sane. Committees were appointed to take charge of the entertainments, athletics, class-pins, picture, etc. It was arranged that meetings were to be held every Tuesday evening at eight o'clock.

* * *

Professor B. M. Duggar of the Department of Plant Physiology lectured on January 30th, before the Massachusetts Horticultural Society on "The Relation of Conditions of Growth to Susceptibility to Fungal Diseases."

February fifth, the Winter Home Economics class combined with the Winter Horticulture class in holding a banquet. An excellent supper, followed by stories from H. Findlay and a solo by Mr. Moore of the Horticultural Department were greatly enjoyed by the thirty-five present.

* * *

Monday evening, February eighth, the Lazy Club meeting was held in the Auditorium with the Craig Club in charge. The Craig Club orchestra furnished excellent music.

* * *

The first of the Winter Course inter-class debates was held February fourth. The Horticultural team was defeated by the Poultry team composed of J. P. Landry, L. M. Hurd and Lane.

* * *

In the recent competition for the Second Agricultural Stage, the following students were chosen: Miss E. F. Genum, Sp., K. C. Livermore, '09, G. P. Scoville, '10, R. J. Shepard, '10, F. N. Darling, '10, P. H. Elwood, '10.

* * *

The Stone Club, which is composed of all the Winter Course students in General Agriculture, was organized during the first week of the course, but the officers were not elected until later. The name selected by the class of '08 seeming most desirable, was appropriated; for it seemed to be the sense of the Club that it believed no one person had done more for the course, or has its interests more at heart than Professor Stone, and so they wished to prolong, if not make permanent, the name, Stone Club.

The officers elected are: President, R. P. McPherson, LeRoy, N. Y.; vice-president, Perley Rider, Ansonia, Conn.; secretary, F. E. Rogers, S. Kortright, N. Y.; treasurer, H. Sawyer, Centerville, N. Y. The Stone Club is holding most interesting and well attended meetings. Debates among its members, or addresses by some member of the faculty usually following the evening's business, regular meetings being held every Wed-
nesday night. These debates create a
great deal of enthusiasm.

"Agricultural Methods as Pursued
in England" was the subject of a talk
by Professor Stone at a recent meet-
ing. Prof. Stone was well qualified to
make this a most interesting as well as
instructive lecture as he was in England
part of the summer.

* * *

Perhaps the most interesting meet-
ing and, in some ways, the most prac-
tical one held, was the meeting of
February tenth. Miss VanRensselaer
spoke on "The Modern Conven-
iences of a Modern Home." She
demonstrated that much may be done
to lighten the burdens of the house-
keeper and make the home more ideal.
Miss Rose followed with a short talk.
She urged that more music be had in
the home, that one should read more
good literature, not along agricultural
lines alone, but also upon current
topics.

Mr. Curtis, of the Farmers' Insti-
tute staff, then spoke a few words on
"The Soil Problems and How to
Solve Them." The Club then lis-
tened to Mr. Merrial, of the Educa-
tional Department at Albany, tell of
the conditions in the district school.

* * *

As we go to press, the Agricultural
College basketball team leads all the
other colleges in the intercollege
series. The team has played four
games and won them all. The scores
follow: M. E., 25, Ag., 26; Law, 13,
Ag., 26; Arch., (forfeited by Arch.);
Arts, 12, Ag., 37. There are still two
games to be played, viz.: C. E. and
Vet. The game between Ag. and
C. E. should be pretty close if each
team continues to put up the kind of
game it has in the past.

If Agriculture succeeds in winning
both these games, it will hold the
intercollege basketball trophy for the
next year. The cup is at present in
the possession of the Law College.

The line-up of the team follows:
J. Retick .......... Right forward
W. G. Stephenson .. Left forward
J. H. Rutherford, (capt.) ... Center
J. C. Laue, (manager) . Right guard
L. S. Ward .......... Left guard
H. C. Young ......... Sub forward
S. G. Rubinow ....... Sub guard

* * *

The Student's Extension Committee
held its first meeting after the Christ-
Dr. J. P. White gave a talk on
"Alfalfa;" F. S. Jacoby spoke on
"Profitable Poultry Raising," and E.
H. Thompson gave a brief discussion
of the "The Breeding of the Dairy
Cow." The Glee Club quartette ren-
dered several selections; the meeting
was led by V. J. Frost. Attendance,
150.

The next meeting was held at Dry-
den on the evening of Feb. 5. The
program consisted of the following
talks: "Soil Fertility," by Mr. Crabb;
"The Improvement of the Dairy
Herd," by Mr. Van Auken; "Seed
The mandolin quartette gave several
selections. E. H. Thompson, '09,
presided, about 300 were present and
everyone was interested.

On the evening of Feb. 12, the larg-
est gathering of the year was held at
Newfield. The Farmers' Institute
had just been held there, but the
attendance at this meeting exceeded
any attendance of the Institute, a fact
which was very gratifying to those in
charge. At this meeting, J. H. Phil-
lips, Sp. Ag., spoke on "Tile Drain-
age," D. W. Hallock spoke on "The
Value of the Government Soils Sur-
vey," and G. P. Scoville read a selec-
tion. The Glee Club quartette sang
several songs. J. H. Phillips led the
meeting; about 350 were present.
FORMER STUDENTS

Y. H. TONG.

'07, B.S.A., '08, M.S.A.—Yau Hang Tong was born in Canton, China, in 1884. He graduated from the Provincial School (Chinese) and received his English education at Queen's College, Hong Kong. In 1904, he was sent to the United States by the Chinese Government to study Agriculture. He entered Cornell in 1904 and specialized in Agronomy, receiving his B.S.A. degree in June, 1907.

Mr. Tong then registered for a Master's degree, taking rice as the subject for his thesis. He spent much of the time, while working for his M.S.A. in the South investigating methods of growing rice and of rice irrigation. His thesis on rice culture excited much very favorable comment among agricultural circles and he was requested by the U. S. Department of Agriculture to remain here and do special investigation work on rice. This offer he declined. He received his M.S.A. degree in June, 1908. Mr. Tong was also a member of Sigma Xi.

After receiving his degree he went back to China and has been appointed Director and President of the Canton Provincial College of Agriculture and Agricultural Experiment Stations. The central station is at Canton and there are two branch stations. The college will not be opened till this spring.

Director Tong writes that, "Our organization is completely modelled after that of Cornell. I sincerely expect that in a few years, after we are fully developed, people will come to tell me that this establishment is a real daughter of Cornell."

Director Tong has recently sent $3,000 to the University Treasurer, which is to be expended by Professors Warren, Fippin and Cavanaugh in the purchase of books, apparatus and seeds that are not available in China, for his University.


'89, Fellow.—W. A. Withers who held a Fellowship in Agricultural Chemistry, '89-90, was elected vice-president of the Association of Official Agricultural Chemists of North America at the annual meeting of the association at Washington, D. C., in November, 1908.


'00, Sp.—S. W. Clarke is managing his father's farm, Chenunda Creek Farm, at Independence, N. Y. Besides practicing general agriculture, he is raising high grade Holstein cattle, O. I. C. swine and Percheron horses. Mr. Clarke writes, "Farming is a pleasant, paying and healthful occupation and I am well pleased with it."

'01, B.S.A.—D.L. Van Dine visited the college in the early part of February. Mr. Van Dine, who since his graduation has been Entomologist of the State Experiment Station of Hawaii, has recently been transferred to the Bureau of Entomology at Washington.

'01, B.S.A., '05, M.S.A.—R. W. Curtis now engaged with The Park Department of Boston, writes cheerfully. Is engaged, and expects to return to Cornell in a year or two to get his Ph.D. Is enthusiastic about his op-
portunity under Dr. Sargent and in the Arnold Arboretum. Curtis will be remembered as the motive power in student activities while doing graduate work here.

'04, B.S.A.—Archibald Stone, who is well known among the Holstein breeders of this state, has accepted a position as manager of a large estate and stock farm, Willowmoor, at Redmond, Washington. Mr. Stone has already gone west to take up his new work.

'04, B.S.A.—H. E. Kinne is secretary of the Syracuse Breeder’s Association. His address is 414 Dillaye Building, Syracuse, N. Y.—Cornell Alumni News.

'06, Sp.—Ernest Kelley is located with the Newark Milk and Cream Company, Newark, N. J. Mr. Kelley does all the laboratory work for this Company and in addition has the supervision of the milk room where about 10,000 quarts of milk are handled and pasteurized daily. His address is, Y. M. C. A. Building, Newark, New Jersey.

'06, B.S.A.—A. S. Coelho after graduating took a trip to Europe, and, on returning to Brazil, accepted a position to which he was appointed by the Governor of the State of Santo Paulo. He is now superintendent of a large coffee plantation. He was married on January 16, 1908, to Miss Lenor Tibirica, daughter of Dr. Jorge Tibirica.—Cornell Alumni News.

'06, B.S.A.—C. W. Mann has been with the Bureau of Soils since graduation and has made soil surveys in New York, Virginia, Mississippi, South Dakota, Idaho and California. He has been in California for nearly a year in survey and soil utilization work. In South Dakota and Idaho his work kept him in close touch with irrigation construction work.


'07, M.S.A.—H. L. Dutt, one of the first students sent from India to Cornell, who returned to his native land in the summer of 1907 is now in charge of an experiment station at Shibpur, Bengal.

'07, Sp.—W. W. Basset was married, January 26th, 1909, to Miss Lula Puleston at the home of the bride’s parents, Mr. and Mrs. Thomas Puleston of Monticello, Florida. Mr. and Mrs. Basset will make their home at Monticello.


'08, B.S.A.—W. H. Wicks has become assistant in Horticulture at the New Hampshire Experiment Station of the United States Department of Agriculture.

'08, B.S.A.—M. C. Burrit has been confined in the Infirmary with an attack of pneumonia. At last writing he was much improved but expected to remain in the Infirmary about a week longer. Mr. Burrit’s illness prevented him from going to Washington to take up his new position.

'08, B.S.A.—Friends of H. F. Major will be glad to learn as we were to note that he contributed an interesting and practical article on “Making Money by Landscape Gardening” to the February Illinois Agriculturist. It deals chiefly, however, with the benefits and profits that may be derived from tree planting, both along country roads, on lawns and on waste land of the farm. Mr. Major is now assistant in Landscape Gardening at the University of Illinois, and the following story which appeared in the Agriculturist for February will probably be appreciated by many of our readers.

“Pete,” the University Policeman, to Mr. Major, the new young looking instructor in landscape gardening whom he found on the campus: “Well, young feller, is picking leaves off the trees all you got to do?”

'08, W. A.—J. C. White has a large farm at Sagaponack, N. Y., where he is growing potatoes on an extensive scale. In addition to potato culture he conducts a small dairy.
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<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frontispiece – The Corn Congress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Am I My Brother’s Keeper?</td>
<td>J. E. Wing</td>
<td>205</td>
</tr>
<tr>
<td>A Type of Mexican Fruit Grower</td>
<td>J. E. Coit</td>
<td>208</td>
</tr>
<tr>
<td>Delicious Strawberries</td>
<td>A. B. Katkamier</td>
<td>211</td>
</tr>
<tr>
<td>Behold the Birds</td>
<td>Rufus Stanley</td>
<td>212</td>
</tr>
<tr>
<td>Dairying in Canada</td>
<td>C. A. Publow</td>
<td>218</td>
</tr>
<tr>
<td>Fairest Little City</td>
<td>C. G. Brown, ’02</td>
<td>219</td>
</tr>
<tr>
<td>Farmers’ Week</td>
<td>N. R. Peet, ’10</td>
<td>220</td>
</tr>
<tr>
<td>The Second Agricultural Stage</td>
<td>A. M. Kruse, ’11</td>
<td>225</td>
</tr>
<tr>
<td>Plans of the Department of Plant Pathology</td>
<td></td>
<td>226</td>
</tr>
<tr>
<td>Editorials</td>
<td></td>
<td>228</td>
</tr>
<tr>
<td>Organization</td>
<td></td>
<td>229</td>
</tr>
<tr>
<td>Attributes of Spring</td>
<td></td>
<td>229</td>
</tr>
<tr>
<td>Andrew D. White and the College</td>
<td></td>
<td>230</td>
</tr>
<tr>
<td>A Truly Royal Trophy</td>
<td></td>
<td>230</td>
</tr>
<tr>
<td>Questions and Answers</td>
<td></td>
<td>230</td>
</tr>
<tr>
<td>The Annual Index</td>
<td></td>
<td>230</td>
</tr>
<tr>
<td>General Agricultural News</td>
<td></td>
<td>231</td>
</tr>
<tr>
<td>Campus Notes</td>
<td></td>
<td>233</td>
</tr>
<tr>
<td>Former Students</td>
<td></td>
<td>235</td>
</tr>
<tr>
<td>Book Review</td>
<td></td>
<td>237</td>
</tr>
</tbody>
</table>

**THE CORNELL COUNTRYMAN**

is a monthly magazine published by the students of
The New York State College of Agriculture at Cornell University
Address, COLLEGE OF AGRICULTURE, ITHACA, N. Y.

SUBSCRIPTION PRICE. $1.00 PER YEAR
Entered as second-class matter at the Post Office at Ithaca, N. Y.
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The Corn Congress. Farmers Week, College of Agriculture, 1909. See page 220.
AM I MY BROTHER'S KEEPER?
A Sermon

By Joseph E. Wing

Mechanicsville, O.

Again I heard the same words in France. There I dined once in a great castle, half in ruins, but a part of it kept up and used as a residence, while other parts were used as stables for sheep, horses, and cows. Many men lived about the castle walls and labored on the estate. I was much interested in the lives of these men and their families. So I asked many questions, to the annoyance of my host who finally put me off by saying impatiently "Oh, they are very much like animals, Mr. Wing." Like animals! God pity France. God pity the rich and the softly clad, the good, and the elegant if it is indeed true that the mass of the people are "like animals."

But it is not true. The common people are not like animals, any more than the rich. Every man is an animal into which has been breathed the spirit of God. Maybe he develops only the animal side, maybe he lets the holy fire that God put in him die down and the animal of him comes to be about all there is. There are such men, who are so dead to all that is good and all that is God in man, that they are like walking dead men, but this thing is found among the rich as well as among the poor.

Editors' Note: Many of our readers know Joseph E. Wing as a capable, modern, successful farmer to a high degree. In his own community he is also known and revered as well, as one who can transmit thoughts and inspiration into every-day life. The Countryman has been fortunate enough to receive the above sermon and takes pleasure in printing it. Aside from the fact that it aims, in many places, at contact with our vocation of agriculture, it contains ideas and phases of one great doctrine, the consideration of which cannot help but broaden and raise the reader's point of view.
And among God's poor I have found quite as much of kindness, quite as much of love, quite as much of willingness for service as among the rich. So they are all our brothers and we are our brother's keepers. It is a duty we cannot escape. God will call to us, "Where is thy brother?" And we cannot put Him off, as did Cain of old, by retorting, "I do not know. I do not care. Am I my brother's keeper?" For we are our brother's keeper and it will be required of us to show what has become of the brother.

Who is my brother?

Every man whom I meet is my brother. I mean this exactly, every word of it. The Irishman who works on our farm is my brother. The colored man is my brother. The immigrant is my brother. The rich man is my brother. The rich, the poor, the learned, the wise, the ignorant, the foolish, each one is my brother and each one is in part at least in my care and keeping. And it shall certainly be asked of me, "Where is thy brother?" And I can't reply, "I know not. Am I my brother's keeper?" For we know that we are in duty bound to be our brother's keepers.

I don't just like that word, "keeper." I imagine that it is not translated just aright; that in the original it spelled something like counselor, or helper, or friend. That is, Cain said, "Am I responsible for my brother, do I have anything to do with directing his way?"

A man must let that character of his reach out on every side of him and touch, and get hold of, and help every man with whom he comes in contact. Each man of them all is his brother, and the greater man he is, the greater the contact between him and the men around him. Consider Lincoln for a minute; he was called a common man by those who could not understand him, because he had such hosts of friends among the common people, among the laborers, the common soldiers, and even the beggars of the streets. Every man was his brother. He was, in the right sense, the keeper of every man. Towards every man he felt the sense of duty, of loyalty, and of brotherhood. He believed everlastingly that every man was his brother, and that God had made him his brother's keeper. Or consider Roosevelt; he has the same feeling, every man is his brother, and he feels his duty towards each one. Or take our great William H. Taft; he is the same sort of a man; he went to the Philippines and made himself brother to every half-naked Philippino, he planned for them, worked for them, pled that we do them justice, he loved them, and did more in his short reign there to bring civilization and growth than all the white people who had lived there before him had ever done. And William Jennings Bryan is another example; whether they believe his theories right or wrong, all must admit his great love for the common people, his real devotion to them. So it is true that really great men have that sense of brotherhood, and also that further developed sense of their responsibilities toward other men, all men, the rich and the poor alike and even the bad men among their brethren.

Perhaps the greatest prophet of brotherhood among men in the world is Count Leo Tolstoy of Russia. Born among the rich, he early tasted all the joys of riches, and all of the perils and self destruction that riches bring as well. Then he saw the terrible gulf that existed in Russia between the rich, the educated, the officers in the government, and the common people. There is found no sense of brotherhood, no sense that the poor man, the common man is my brother and I am his keeper. So there exist in Russia two classes, the rich and the poor, with almost no friendly or intimate contact between them. Count Tolstoy went out to his fields and gathered his farm servants around him. He said to them, "I am your brother. I am a man like any of you. I feel hunger as you feel hunger and it is as right that
I should feel hunger as that you should feel hunger. It is as right that I should be cold or as right that I should be weary as that you should be cold or weary. While it is not necessary that I should labor in the fields, it is right that I labor in the fields so that I may be close to you and so that I should not forget what is your work, your pains, your pleasures, your joys. You are my brothers. If I have any God-given inherent nobleness in me I must get close enough to you so that some of it shall be shed off to you. Whether you will or no, whether I will or no, I am your brother and your keeper, and I must not try to shirk from that duty and that responsibility." So Leo Tolstoy plows his fields alongside his half-worshiping tenants, he harrows his grain, helps harvest it, and as he rests from his toil his great heart and soul goes out unceasingly in his writings, seeking to lift up his people, crying as did Christ so many years ago, "Woe unto you, scribes, Pharisees and hypocrites, who lay on burdens grievous to be borne, who oppress and ravish and hate and forget your brothers in poverty, and refuse to be their keepers."

You ought to go out into the fields as did Leo Tolstoy. Every man ought to labor in the fields, or in the blacksmith's shop, or in the factory, at least part of his life, or better a part of every week of his life. He would be a better man for that. He would know then where dwell the masses of mankind, the needs of mankind, the soul hunger and the body hunger of mankind.

Every woman ought to work, too. I am not sure that it would not be a good thing for every girl to earn her own money by taking in washings, at least for a few weeks; taking in washings at 50 cents each, or for washing and ironing, $1.00. I see in city hotels women on their hands and knees, scrubbing stairways and floors and other women passing them haughtily by, holding their dresses daintily away from these kneeling forms, acting as though there was leprosy in the touch, and with never a look or smile or a kindly "good-morning." It is a crime to pass a scrub-woman that way. It is doubly a crime for one who sleeps softly and dresses in fine linen and fares sumptuously every day, to draw away her skirts and look down scornfully on her, who through no fault of her own must toil and wear coarse clothes and make callous her hands, and who through the hardness of mankind and womankind, must make callous her mind and soul as well. It need not be so. The scrub-woman might smile and laugh, and have happy thoughts, and have self-respect, if only her more fortunate sister would admit the sisterhood. How often have I seen such actions and wished that I might have the power to transform for one day that proud, thoughtless, ignorant, well-dressed woman into a scrub-woman, that she might feel the pain and humiliation that she all ignorantly and heedlessly was bestowing.

And then there is this joy that comes from brotherhood. It is all that makes life worth living. Try it yourself. Get next to your neighbor. Get down beside him. Labor with your hands as he labors with his, get his confidence, get next his heart. Learn then how like your heart his is, how like your own are his joys, how like your own are his ideals. Find in him those good sparks of love of home, of love of wife and children, of love of beauty and order and good living. How it will cheer you, how give you new hope for the outcome of America, to know this brother of yours. The strength of the land is in him. From this brother must come the future life of America. From among his ranks must come the real great men of the nation. From among his ranks will come the perils of socialism, if it has perils. Get acquainted with your brother. You will do him good. He may do you more good.
HERMOSILLO, Sonora, is in many ways an exceedingly interesting Mexican City. It is the Capital of the State of Sonora, and being situated in a broad and well watered valley, has become the center of considerable citrus interests.

It was with a feeling of relief that I alighted from the train at Hermosillo on a bright August afternoon, for a brief and perspiry sojourn in the humid climate of Guaymas, on the Gulf of California, made the intense dry heat of Hermosillo seem exhilarating in comparison. Anxious to see as much as possible of this interesting region, I rose early the following morning, and in company with an intelligent Mexican guide and interpreter, who labored along under the weight of my camera and vascularum, set out afoot on a tour of the valley.

Once outside the town, our road skirted the base of low desert hills covered with stones and the xerophytic vegetation so characteristic of the region. Perhaps the most striking plant of the hills was the Pitalla cactus, enormous clumps of which were dotted all over the dry hillsides. In the distance we could see the Rio Sonora winding its way between the hills. It is the artery of the valley, for from it is diverted the water so necessary for all farming operations, the annual rainfall being only five or six inches. On both sides of the river are orange groves aggregating some three or four hundred acres. There are many groves composed of very large old trees, mostly sweet seedlings. The Washington Navel and other standard varieties are found in some of the young groves recently planted. At the time of my visit, the space between the trees was occupied by summer cover-crops consisting mostly of weeds, grass and morning glories. I spent some time inspecting a large grove belonging to Governor Torres, an interesting feature of which was a magnificent row of very tall fruiting date palms, which surrounded the grove.

Among the various small ranches which I visited I have selected one, which is a fair type of the rest, for more detailed description.

Senior Miguel Higuera received us with great hospitality. After passing through the house into the open court, we were given cool water to drink from the ollas. These ollas are large jars made of clay and are slightly permeable by water. When filled and set in a shady place where the dry breeze continually fans their wet surfaces, the rapid evaporation reduces the temperature of the water to a surprisingly low degree. The court was well protected from the sun by an arbor which supported an immense grape vine of the Mission variety, which was loaded with fruit. Extending up through the arbor
could be seen the trunks of a number of date palms and Washington palms. Against the rear wall of the house hung many large strings of red peppers, which play a very important part in Mexican cookery. The Mexican thinks no less of his festoons of peppers than the New England farmer thinks of his winter’s hoard of apples stowed away in the cellar.

Upon a table near the door sat a large wooden bowl containing about a half bushel of smoking tobacco. It seemed to be one of the duties of the girls to make cigarettes for the men, as several hundred, rolled in brown paper, were neatly piled beside the bowl. The house was built of sun-dried brick and plastered within and without. The floors were the natural earth beaten down hard and smooth as a pavement. The roof consisted of about twelve inches of earth on top of a thatch which rested upon very strong supporting beams. This type of house is the one most commonly met with, and is the one most often used by ordinary farmers of moderate means. It is the coolest and most comfortable house that can be built at a moderate cost.

Senior Higuera showed us over his ranch, of which he was the owner. It consisted of about twenty acres of good desert soil, well supplied with water from an irrigation ditch in which he owned an interest. There were twelve acres of oranges, all large sweet seedlings, which were beginning to crowd badly. Senior Higuera’s trees had never had scale, and he knew nothing of spraying or fumigating. The trees had been pruned very high in the beginning and little subsequent pruning, further than to cut the sprouts from the trunks, had been done. The oranges ripened in November and were packed at a shed near the railroad. On account of the heavy duty of one sent a pound, the fruit was not sold in the United States but was sent...
through in bond to Canada, where it enters duty free. There were a few trees each of the other various citrus fruits including the sweet lime, which I have found to be delightful though it is but little known in the United States.

There was an acre of pomegranates grown in orchard form, the quality of which was much poorer than I had been accustomed to in Arizona. A number of very large fig trees were loaded with fine fruit, chiefly of the Mission variety. The dates were all seedlings of a poor quality. A few very large guava trees yielded abundant fruit of a very good quality. The odor of this fruit is especially delightful. The guavas do not ship well, hence they are very cheap about Hermosillo. They retail on the street for one cent each, Mexican money.

Along the boundary of this place was a very interesting fence, for it represented the epochs of fence-building. The earliest fence of the region was made in the form of a low wall of adobe or sun-dried mud. This was supplemented in time by a hedge of giant prickly pear, *Opuntia tuna*, the fruit of which is eaten by the Mexicans. This in turn has been relegated to the background by an American barbed wire fence.

After returning to the house and taking a farewell drink from the olla, we tasted the cactus candy (made from the Bisnaguis cactus) graciously presented by a senorita, and bidding our host adios we continued on our way.

There is a great deal of good water in the Sonora river which might be used for additional orange groves. At present, however, the Sonora fruit-grower's chief handicap is lack of market; he has no direct railroad connection with the more populous parts of Mexico, and heavy duties cut him off from the American markets. About the only fruits exported from Sonora in any quantity are oranges which go to Canada, and a few dates on which the duty is low.

But little cared our friend, Senior Higuera, for his life is far from the strenuous. In fact the environment is not conducive to over exertion. The intense quivering heat, coupled with the continuous and plaintive cooing of the little Sonora dove, seem to call the would-be laborer to a life of ease in the cooling shade, where the breath of "My Lady Nicotine" and the twang of a neighbor's guitar make pleasant a long siesta.
WHO doesn’t like strawberries? I believe that some member of every family should listen to the “call of the soil” sufficiently to cultivate a garden. Most homes, except those in the congested sections of cities, do have the space for gardening even if on a small scale and it should be an unwritten law of the household that as many as possible of the fruits, vegetables and flowers should be produced as circumstances will permit. With a little thought, patience and labor much may be grown on a restricted area. These articles of food and decoration will taste better and look prettier when produced on the home grounds by the home folks.

There is nothing which can be grown in the garden or in the field that will give so much good eating, pleasure and profit for the time and effort expended as the strawberry. Why then should so many gardens and farms be destitute of even a single strawberry vine? When the whole family is so fond of a healthful and delicious fruit, what reasonable excuse can there be for its not being provided?

How about your garden? Does it contain some thrifty plants of the Parson’s Beauty, the Haverland, the Marshall or some of the other popular varieties? Perhaps you have a farm of one hundred or two hundred acres. Certainly you have room for a fine strawberry patch. How about it? Have you the strawberry patch?

Start from any given point and go a distance of ten miles counting farms and gardens and not one in ten will have any cultivated strawberries growing. Then it is safe to say that not one in ten families will have all the strawberries they want to eat or would eat if they could have the berries just when they wanted them.

Many men dismiss the subject by saying that they can buy all the strawberries wanted by their families
cheaper than they could grow the fruit. This statement may be seri-
ously questioned. To have all the strawberies wanted is to have them
just when you desire them and in such quantity and quality as the
continued desire for them may demand. When you are depending
on the market for your berries you are not always sure of a steady
supply. You do without them occasionally or have less than you would
use if the supply for the time being was not limited. Then you are apt—
very apt—to get some fruit that is either not ripe enough or is very
much over ripe; in either case the pleasure of eating the berries is much
reduced or entirely destroyed and tends to lessen the desire for
more.

Now about the price. I know of hundreds of acres of strawberies
grown for the canning factories at five to six cents per quart of twenty
ounces and which yield a profit to the grower even at these low figures.
Can you buy the berries for your table at anything like these prices?
Don't you pay fifteen cents, or possibly eighteen cents for the first of
the home grown fruit? Yes, and don't you pay from eight cents to
twelve cents per scant quart when the price is lowest?

Then why talk about buying strawberies cheaper than you can produce
them on your own soil. You can grow them for less than five cents
per quart heaping and have the privilege of picking them fresh from
the vines when wanted. It is a fact that no berries you can purchase
either on the market or from the man who comes to your door will
equal the specimens grown on your own vines.

No strawberry contains all its rich juices or its delightful fragrance or
its beautiful coloring until it is fully mature. You can let your berries
remain on the vines until they are ripe, then by picking them when
cool, keeping them from the rays of the hot sun, and cool and unbruised
until they are served, you will have a luxury that nothing else on earth can
equal.

The strawberry is a cosmopolitan fruit. It will grow anywhere in the
world where other farm or garden crops will grow. There are varieties
which will grow on any kind of soil and from the many named sorts now
under cultivation you can select just the varieties suited to your needs.
There are firm berries which will endure shipment to distant points;
sweet and melting kinds which are the especial delight of the home folks;
early sorts or late ones; large showy berries or those which are small and
of delicate texture.

You have practically nothing to lose and essentially much to gain by
starting a strawberry patch this spring, and NOW is the time to make
the start.

Behold the Birds

Up from the South, at dawn of Spring,
Coming to us on fleetest wing,
Birds of passage cleave the air,
Bidding us cease our faithless care.

We pause and wonder at their flight
Unswerved, unceasing day and night.
And fain would thus our passage find,
Guided by so Divine a mind.

—Rufus Stanley.
A few days ago there was removed from our midst a friend, a man of science, and a man dear to the hearts of many. We all had come to love and respect him. In his death science loses one of its deepest thinkers, entomology one of its most competent leaders, and our own Jugatae one of its strongest pillars. It is, therefore, with great propriety that we have set aside this day as a memorial to his name, and welcome those who can speak to us on some facts of his life which we have not known. Professor Comstock can perhaps tell us best of his early life and what his life meant to science.

ADDRESS
By J. H. Comstock

We have met to express our appreciation of the life of a colleague and a friend, to say a few words regarding a brief but brilliant career. It was only a few years ago that Mark Vernon Slingerland came to us an untrained country boy; he left us a scientist with a world-wide reputation. Although he had barely reached middle life, he was recognized as being among the foremost in his chosen field of labor.

The position he attained was reached by untiring industry and a devotion to truth; his work was characterized by painstaking thoroughness and an absence of anything sensational. His constant aim was to determine the exact and complete truth and to present what he discovered in a clear manner. In this way he was very successful both in the classroom and as a writer.

Regarding his early life, Mrs. Comstock who knew him as a child says: "Professor Slingerland's father died when he was a child and his mother was left with her home in Otto, N. Y., and with little besides. Mark was very bright in his school work. I remember very well that when he came to school to me, when he was eight years old, his head hardly came to the shoulders of the other boys in his reading class. As a child he was a great reader; but his reading was naturally limited to such books as were at his disposal in this small town. So far as I know no one influenced him to go on with his education after he finished our village school; and it was due entirely to his own efforts that he went to Randolph and finished the college preparatory course at the Chamberlain Institute. To earn money for this he taught school and did other work."

"His mother and friends urged him to go to Syracuse University; but, learning that he could secure a position as student assistant in the Insectary, he came to Cornell."

"As a young man he had such a reputation for honesty and uprightness, as did his father before him, that when it became necessary for him to support his mother in addition to supporting himself here in college, he found no trouble in borrowing what money he needed from one of the leading business men in his home town."

"In fact, the whole history of his younger years, as I knew of them, from the time he was in my classes as a handsome little fellow in a velvet jacket up to the time that he took his position as a man among men was characterized by honesty, integrity, kindness to the people who associated with him, and a deep sense of his obligations. In all the years that I have worked with him I never found him so busy that he could not stop and help me, and his help was not that of the merest word, but was always painstaking and thoughtful."

Professor Slingerland's call to his life work came to him suddenly and with irresistible force. When he came to the University he knew nothing of entomology. In speaking of this fact afterward he said that when he entered the University he did not know that a butterfly was developed from a caterpillar. During his freshman year he
listened to a lecture on the transformations and habits of insects; and the wonders of the insect world took such a deep hold on his imagination that he could not sleep the following night. From that moment there was no doubt in his mind of what his life work should be.

This is not the time to speak in detail of Professor Slingerland’s work; but something can be said of its more general features. The bulletins that he published were in a marked degree monographic. Instead of writing about many insects he selected a few and discussed them thoroughly, working up so far as possible every detail in the life history of the specie studied.

A striking feature of Professor Slingerland’s bulletins is the excellence of the illustrations; no one else has been so successful as he in photographing entomological subjects; and his lantern slides of insects, colored by Mrs. Slingerland are unsurpassed.

Although his work is characterized by the highest degree of scientific accuracy, he never forgot that the object of his work was to aid those that till the soil. He never allowed his interest in the purely scientific aspects of the subjects studied to cause him to neglect the practical
applications of the results obtained. A marked instance of this was his invention of the "Spray Calendar," for he devised the first tabular calendar arrangement of spraying suggestions. This was printed and used at Farmers’ Institutes in 1894. The value of this method of publication was apparent at once and it has been generally adopted by Experiment Stations.

As a teacher he was clear, direct, and painstaking. He had the keenest interest in the needs of each individual student. In the last conversation I had with him, only a few hours before his death, he discussed with me the work of several of his students. Even at that hour, when it was evident to others that the end was near, his thought was not of himself but of his students.

In this manner closed the life of one who, although given but few years to work, accomplished much; and who endeared himself to us by his sterling qualities as a man and a friend.

ADDRESS

By L. H. Bailey

Members of the Jugatae: So far as I now recall, in the twenty-one years in which I have been connected with the College of Agriculture, there has been no other Professor who has been taken away in the prime of life, in the full flood of his activity. Mr. Loderman was not a professor and Dr. Caldwell who died recently had passed well through life, and had been for a period of years practically unknown to the student body. But here was Professor Slingerland who was in the full tide of his usefulness taken out as the snuffing of a candle. It, therefore has been to all of us a very great shock not only because we regret the departure of the man, but because in the suddenness of it we feel that a life has been cut short and we feel regret for it. For myself, I have long since ceased to feel regret for anything that I cannot help. I feel that every life when it is ended is complete, that no man’s work is ever done, but that he has lived his full measure of usefulness when life is done, and I think that Professor Slingerland’s life illustrates exactly this point. He did his work well, kept his work up to time and his day was a day of work that was well done always. The thing that has impressed me most during the past three or four days in regard to Professor Slingerland’s work was touched on somewhat by Professor Comstock, and that is the fact that here is a man of forty-five years of age who had no preliminary bent, so far as he himself knew, for scientific work, who has made for himself a name not only in this country but throughout the world. He graduated in 1892, he died in 1909: in seventeen years a man has made for himself an international reputation. That, of itself, should be a tremendous stimulus to all young men, to show what can be done by integrity, industry, and faithfulness. I know of no greater inspiration that could come to a man than the fact that within seventeen years a man has made it worth while to the world that he should have lived, and has piled up information and the results of investigation which are going to be of use to mankind for all time; not only for the results themselves but as the foundation upon which other work may be done and as a stimulus to coming men.

His life is said to have been very short. There are some persons whose work is measured by a great number of years; they do not come to the full stature of their work until late in life. They are likely to be men who touch a great many things and, therefore, are not able to make a great impression on any particular subject. They come to be known for their opinions and judgments, but this life illustrates that in the line of any particular form of special inquiry a man in ten or fifteen years of assiduous, earnest, honest work can accomplish really remarkable things, for even ten years ago Professor Slingerland was known all through the country as a leading entomologist, and his reputation dur-
ing the past ten years has been increasing. So I feel like impressing this upon the student body everywhere. It is not the great length of life, but what is accomplished in the days as they come and go.

In regard to the special features of Professor Slingerland’s work, the one thing that impressed me most was the honesty of it. Of the accuracy of his work I cannot judge because I am not an entomologist; but he was fundamentally and thoroughly honest in all his convictions. It was no doubt a recognition of this that he has always been asked to go back to the places where he has been before. Time and time again he has gone to societies and sometimes spoke to them in a way which they did not quite want to hear. I know that he has disagreed with leading nurserymen and others in questions of fact and procedure and has always stood his ground without fear or favor and has been asked to come back. That shows the impression that he really has made on the agricultural and country life of this State, and I think we will find as time goes on that impression is deeper than we realize.

The best persons in the world make mistakes. We cannot build our reputation on accuracy alone, but if we are honest we can build our reputation on that. I think Professor Slingerland was just that kind of a man. It is a fine trait in scientific circles for a man, whatever his peculiar work, to maintain what he knows is right. It is so very difficult for us to disassociate our own personalities, our own desires, and our own opinions from the naked truth; but I think Professor Slingerland did illustrate the absolute integrity of his results. He was honest in his entomological work. It made no difference to him whether anybody liked his facts or not. I know I have asked him whether or not certain persons would like a certain statement and he would reply: “I don’t care; the statement is true.” Now it is this honesty and integrity which is the foundation of all scientific work. It lies behind the entomologist, it lies behind all technicalities, it lies behind all writing and everything else.

The life that has been closed has left us with certain pieces of work; these pieces of work will endure. Every life leaves behind it certain impulses and certain impressions; we shall all remember that Professor Slingerland has lived his life well, and shall cherish him for the intrinsic value of the work he has done.

The two things that impress me, then, are the fact that a man entering scientific work could make for himself in ten or fifteen years a name which is world-wide, which is of itself an astonishing thing: In the second place that he has exemplified to us what it means to be really honest with oneself. As much as we deplore the fact that his life has been cut short at forty-four years, we must, nevertheless, be consoled by the fact that it has been very much worth while both for him and for us that he has lived.

ADDRESS

By G. W. Cavanaugh

My association with Professor Slingerland came first through the work that was started at the beginning of the Extension movement of the College of Agriculture. In the early days of the Extension movement there were requests from certain people in the western part of the State that certain schools, called Horticultural Schools in those days, be held separate and distinct from the ordinary Farmers’ Institutes. He graduated in the class of ’92 and I was in the following class, but in the department of Arts. We naturally did not come much together in our college life, and my first real acquaintance with the man began in those meetings that were held in western New York. The acquaintance which started then soon ripened into a sincere friendship. We worked together on many pieces of work up until the time of his death. In fact, he was engaged now, a few days ago, on a piece of investigational work, the importance of which in the technical
and manufacturing world can hardly be overestimated, if it could only have been completed. It was on the point of completion. It was my privilege further to be with him at meetings of Horticultural Societies and Farmers’ Institutes. What impressed me more than any one thing in the addresses and discussions I have heard him give, was that rare faculty of absolute clearness. He did not only tell a thing so that one could understand it, but it always impressed me that you could not misunderstand it. I want to emphasize that characteristic mentioned by Professor Bailey namely: his disregard of how a statement might impress his hearers, when he felt it was correct. If they wanted facts he was ready to give them.

Those of us who have been at some of these meetings know at times that there is in the mind of the questioner something that he wants to know, but he has not the technical knowledge to put that question clearly so that it can be answered definitely. I have noted that Professor Slingerland had that quality of interpreting the question. If a man asked some question which was not clear, before giving the answer he would put that question in good form and then answer it definitely. In all my acquaintance with this man I never could discover anything but the most uniform courtesy and appreciation of the limitations of the man he was dealing with, the problems the solution of which were vital to him, and his full understanding of that man’s position, treating them with all care and courtesy.

I have always associated this man with one other in this delightful quality of accuracy and courtesy in addressing the untrained audience. That was a man in his own field, if I remember, a Mr. Low, who was at the Geneva Experiment Station, and who was taken away some years ago in the West. These two men have invariably been associated in my mind as being the clearest, most direct and most courteous teachers in the popular way that I have ever known, either in entomology or any other line.

RESOLUTIONS

Whereas, our Heavenly Father has removed from among us, our friend and Professor, Mark Vernon Slingerland: therefore be it

Resolved, that as we bow in submission to the Divine Will, we express our sorrow at the loss of our friend and teacher; and that we extend to his family our sincere sympathy in this, their time of sorrow.

For the Cornell University Agricultural Association

E. W. Mitchell
Miss M. W. Aherne
F. E. Robertson
DAIRYING IN CANADA
By Chas. A. Publow
Assistant Professor of Dairy Industry

If one visits Canada at this season of the year when the snow covers the ground and winter sports are being enjoyed, he does not think of the possibilities of the dairy industry, yet this northern part of America is one of the greatest dairy countries in the world.

From a geographical standpoint, Canada is divided into several Provinces, but the ones most active in dairying are Ontario and Quebec. These two provinces although only separated by a river have characteristics as distinct as two foreign countries. The population of Quebec is principally made up of French Canadians who speak a broken French language, while the people of Ontario are almost entirely English speaking and practically similar to the people of New York State.

The principles of dairying in these two Canadian Provinces are just as distinct as the people. In Ontario the farmer depends on the cheese factory almost entirely, while the Quebecker is more deeply interested in the manufacture of butter.

The importance of this great Canadian industry can be appreciated when we know that Canada supplies about eighty-five per cent of all cheese imported into Europe, besides supplying a large part of the butter market. Last year the market value of cheese exported was $29,000,000 after supplying the markets for home consumption. The province of Ontario is made up of some 20,000,000 acres, divided into some 75,000 farms, from which some 60,000 patrons furnish milk to over 1,500 cheese and butter factories.

If one should visit a cheese factory in Ontario and ask the owner why he has such a good market for his cheese, he would learn that it is because Canada has secured a world-wide reputation for honest products. The Canadian government prohibits the manufacture of all inferior products, such as skim milk cheese, oleomargarine, butterine and process butter, and the Sanitary laws require that everything surrounding the manufacture of cheese and butter be absolutely clean.

The Ontario government is certainly to be congratulated on the success of their dairy laws and on the systematic means of inspection and instruction by which they are carried into effect. In order to facilitate the inspection work the factories and creameries are divided into groups of some thirty to forty each, and over these an inspector is placed. His duty is to visit each factory once a month or as often as possible, assist the cheese or butter-maker, inspect the dairies and milk of each patron, and do anything he may think of that will improve the dairy products made in the factories under his care. These men are responsible to and must report weekly to a chief instructor and sanitary inspector, who is again responsible to the Government. Special attention is paid to the sanitary conditions of the buildings, drains and water supply, and the surroundings are so beautified with trees and flowers that the cheese-factory which formerly was a collecting place for flies and bad odors is fast becoming an ornament and a pride to the dairy community.

In Quebec many cheese are made, but most of the milk is made into butter, which is usually of a very fine quality. Here the small French-Canadian cattle find good pasture on the highlands and have plenty of fresh, pure water, both of which are conducive to good butter-making.

Too much cannot be said in praise of the Canadian government for the good accomplished through the Cow Testing Associations which have been
established with the co-operation of the dairymen in all parts of both Provinces. Already the yield of milk of each cow is being increased, feed is being produced at a smaller cost, unprofitable cows are being sold for beef, better and cleaner stables with improved ventilation and light are being provided, and the profits from dairying are being materially increased.

Farmers' clubs are being formed and successfully conducted all over the country. Agriculture is being taught in the schools, and one has only to visit the home of a progressive dairymen to appreciate and realize the great advantages and opportunities of Canadian dairying.

In those localities where dairying is most in practise the farmers are the most prosperous, comfortable and happy. The houses and out buildings are attractive and neat, and are equipped with all modern conveniences. In fact, the up-to-date dairymen has all the necessaries of the city life together with the luxuries of life in the country. Co-operation and rarity of extreme dishonesty is the rule amongst Canadian farmers, and the best cheese and butter plants are owned and managed by them.

Much has been done and is being done by both the government and factorymen in improving the facilities for controlling temperature in the factories and during transportation of the dairy products. Refrigerator cars, furnished free by the Dominion government, carry the cheese and butter to Montreal port, where they are loaded onto the steamships for export to Europe.

Undoubtedly the most neglected part of Canadian dairying is in the milk supply of cities and towns. In this very important branch the Canadians are far behind, but they are beginning to realize the relationship of the milk supply to the life of the infant and adult, and no doubt before many months have passed much will be done to improve this now regrettable condition. Taken all in all it is doubtful if any branch of American Agriculture is meeting with more rapid development and popularity than Canadian dairying.

FAIREST LITTLE CITY

By C. G. Brown,'02

At the head of fair Cayuga,
Nestling in among the hills;
Backed by orchards, fields and meadows,
Washed by splashing streams and rills;—

Picturesque by nature fashioned,
Beautified by human skill;
At her feet Cayuga sparkling,
Crowned by Cornell on the Hill;—

First in beauty, first in culture,
Let the slogan forth be hurled:
Ithaca's the Fairest Little
City of the Western World.

FARMERS' WEEK

By N. R. Peet, '10

The second annual Farmers' Week came, was tremendously successful, and is now a thing of the past. How shall we describe it?

Think of these words: exhibits, lectures, crowd, busy, interested, thoughtful, questioning, and then wrap the word spirit around them all, give them the setting of the magnificent buildings of the College of Agriculture at Cornell, with mild winter weather, and then let your imagination run rampant; even though you were not one of those present, you will have an impression of Farmers' Week which cannot be very far wrong.

For quality and variety it is doubtful if the exhibits of Farmers' Week have ever been surpassed by exhibits at any other agricultural convention of its kind. Those at the state fairs and expositions may be larger but where at such places do we find authorities present for the express purpose of demonstrating them? The Corn Congress, representing, 475 entries of ten ears each has never been equalled in this state. The poultry show differed from most of its kind in that it showed only prize winning birds of all the different breeds, an educational ideal hard to beat. The horse show was restricted by several factors which enter into horse management, such as expense of shipping, animals being out of show condition, etc. But nevertheless the shows of draft horses and breeding stallions were well attended and being conducted by Professor Harper proved well worth while. Then there were the exhibits of the dairy building, farm machinery, home economics, horticulture, plant diseases and insect pests.

And what shall we say about the lectures? For class and range of topics the program of that week was wonderful. The subjects ranged from alfalfa, and the acidimeter, through butter to cereals, chickens, corn, cheese and cyclones, and then on over the five foot program, ending with vacuum cleaning, weeds, and weather forecasting. Some were illustrated with lantern slides, some were emphasized with charts, but behind each one was an authority; this is the reason beyond a doubt, why Farmers' Week has come to stay as a permanent educational feature.

After Farmers' Week was well under way, the feature that would have perhaps attracted the attention of the onlooker first was the crowd. An attempt was made to have each visitor register, and succeeded to the extent of 1275 names. Those, who are in a position to know, however, estimate that nearly half as many more neglected to register.

Everyone was busy. There were so many things going on, and in so many lines that at least one thing appealed to each one individually, and the visitors were busy from 8 a.m. until 5 p.m. and then some in the evening. And they were interested; everything was practical and as there was something going on in every branch of agricultural activity, it would have been strange had they not been. But the intentness with which they listened to lectures on such subjects as agricultural chemistry, plant breeding, and weather forecasting, signified that the practical is at least awakening to the truth of the scientific and is anxious to learn it.

The grasping of the principles underlying all time-honored customs and practices, thereby recommending them or, in some cases, condemning them, was the first step of Mr. Farmer toward Mr. Scientific Agriculturist, and it made him thoughtful. When a lecture was over there would be a slow closing up of note books, a pensive exit into the corridors, each one thinking of how that theory he had
just heard applied to his own case and how it answered some of his own questions; it was for the voice behind the megaphone in the main corridor to recall attention to the fact that, "A lecture on Judging Butter now going on in the Dairy Building second floor" or "Exhibition of Spraying Machinery in the basement of the Agronomy building this hour."

Then too there was the questioning. Each lecturer devoted the last ten minutes of his time to answering any questions that might be asked, but these were usually only a starter and after the time was up he would be surrounded by inquirers who were after some definite help on the application of the speaker's theories.

But as we have said before; to retain an adequate memory of Farmer's Week, one must subordinate all these ideas and impressions to spirit. It was this that was worth while probably above everything else. Some of the visitors had it when they came, but they all got it as soon as they entered the buildings. It could be seen in the hearty greetings, the cordial handshaking, and later in the glint of the eye that had just received an inspiration. The professors and the students had it. The professors were giving one or two extra lectures a day, besides holding consultations and conducting demonstrations, and all this in addition to their regular classroom work. Why were they doing it? Not because it was part of their regular duties, but because they had the spirit; they were alive to the value of the work they were doing and were anxious to give the best of themselves to it.

And how about the students? They were the ones who saw to it that the visitors had a place to stay; they acted as ushers; they maintained a check room, and they had charge of the exhibits. They were not being paid for it either, unless indeed the invaluable experience of doing things, and of associating with these, their predecessors, and learning their viewpoint, be called pay. And the mere interest in their studies would not have caused them to devote themselves to their several duties as they did. No; it can only be attributed to spirit. What caused this spirit? One might as well ask why is water wet? The Agricultural College and college spirit are coming to be synonymous. This fact became so evident as to cause an editorial in our worthy contemporary, The Cornell Daily Sun which we take great pleasure in quoting: "In its example of college spirit and seriousness of purpose on the part of both the students and professors,
the Cornell College of Agriculture is unequalled by any of its sister colleges. In the value of its work it is certainly not excelled."

**FARMERS' WEEK CLASS REUNIONS**

The Fletcher Club ('05) held its reunion on Thursday afternoon. It was decided, that in the future, there would be but one meeting, this to be held during Farmers' Week at Cornell. So there will be no more meetings at the State Fair. The members present were Messrs. Chapman, Phillips, Helfer, Prole, Grinell, Cook, Underdown, Barrus, Mekeel, Snow, and Harriman. Treasurer Chapman's report showed the finances in better shape than ever before.

After the lapse of four years, the members present were enthusiastic over the future of the Club, the loyalty shown by all, and they all expressed the intention of getting more of the fellows out to the next Farmers' Week, and consequently to the reunion. Of course it goes without saying that the meeting did not break up until the club yell was given.

The Brill Club ('06) also held its reunion Thursday afternoon. Those present decided to hold the next meeting during Farmers' Week 1910 and it is hoped that more of the members will be present at that time; those who were here this year expressed the desire that their classmates might come and see the improvement in the College. The following members were present: Brill, Brown, Shank, Rothmeyer, Pierce, Steele, Matthews, Miller, McCarthy, Wall, Munro, Vann, Tomlinson, Thorne, Tenney, Smith. All enjoyed a very pleasant time talking over the past, each one telling of his experiences since leaving here.

The Stone Club ('08 reunion on Thursday afternoon of Farmers' Week. Professor Stone gave an address of welcome, C. P.
Russell gave a short talk on "What a Short Course has done for me," D. S. Wakeman spoke on, "How the Short Course has changed my views of farm life;" and Roy Badger told "Why I came back for more work, and does it pay?"

Arrangements were made for the members of the club who attend the State Fair at Syracuse to meet in the Dairy Building on Grange Day at 12 o'clock, also for the printing of a directory of the members of the club. There were thirty present at the meeting.

MEETINGS AND CONVENTIONS

It seems best to list the various meetings separately in this account of Farmers' Week, in order to give them due importance and distinction. Much more could be written concerning each one, for all typified progress, advance in agricultural development and unity. These conventions formed a large and significant part of the week's activities and their annual meetings will doubtless bring back increasing numbers of farmer students as well as non-alumni members, in future farmers' weeks.

The New York State Experimenters' League held its annual meeting and elected the following officers: Honorary president, R. A. Pearson, Commissioner of Agriculture; president, T. E. Martin of West Rush; vice-president, J. T. Stone, of Marcellus; secretary-treasurer, Professor C. H. Tuck, of Ithaca. This association was formed to promote and conduct active experiments on the farms of the state. It now has from one thousand to fifteen hundred members. An important resolution which this league passed at its meeting requested the director of the College of Agriculture to name some person as a field demonstrator and conductor of experiments. The director has promised to do this if he has the money.

The New York Plant Breeders' Association held its annual meeting and elected the following officers: President, H. B. Winters; vice-presi-

dent, H. N. Wells, of Portageville; secretary, H. J. Webber, of Ithaca; treasurer, Samuel Fraser, of Genesee; executive committee, George R. Schaub, of Ballston Lake, T. B. Wilson of Halls Corners, Professor Hedrick, of Geneva, together with the officers of the society. The organization has a membership limited to those actively engaged in plant breeding. Its objects are to encourage the breeding and improvement of New York State crops, to extend the use of highly bred seeds and fruits, and, in general, to protect the interests of plant breeders throughout the state.

The New York State Branch of the American Poultry Association held its annual meeting and elected the following officers: President, Professor James E. Rice, of Ithaca; vice-president, H. H. Harriman, of Syracuse; secretary-treasurer, E. M. Santee, of Cortland; members of the executive committee, to serve for five years each, George H. Burgott, of Lawton, and J. T. Miller, Jr., of Syracuse. The Poultry Association had a larger attendance than at any meeting it has ever held. It requested the state Legislature to appropriate $50,000 for a new poultry building at the College of Agriculture.

A new organization was formed, to be known as the New York State Drainage Association. The idea is a novel one, the organization being the first of this type in the country. The object of the association is the promotion of better drainage on the farms of New York State, by the spreading of information, by the encouragement of drainage investigations and by facilities to assist persons who wish to install proper drainage. The following were elected to office: President, Professor E. O. Fippin, Ithaca; vice-presidents, one from each local agricultural society and grange; secretary 'G. A. Crabb, of Ithaca; treasurer, F. E. Gott, of Spencerport; legislative committee, T. B. Wilson, of Halls Corners; G. G. Lansing, of Lockport, and C. R. Mellen, of Geneva.
An association was formed to be known as the "Students' Association of the New York State College of Agriculture." It will include in its membership past and present students of the college. Its objects are to promote fellowship among the students of the college, to further the interests of the College of Agriculture and to aid country life. Its officers as elected are: President, Jared Van Wagenen, Jr., of Lawyersville; first-vice-president, E. L. D. Seymour, '09, editor of The Cornell Countryman; second-vice-president, A. C. King, of Trumansburg, from the regular students; third vice-president, B. D. Van Buren, of Lockport, from the special students; fourth vice-president, H. B. Winters, of Waverly, from the winter course students; secretary-treasurer, A. R. Mann, of Ithaca.

"The Cornell Horticultural Union" was formed to connect the horticultural student with his alma mater, to co-ordinate their common interests and to keep members in touch with the latest horticultural development. At its first meeting fifty members were enrolled. The officers elected follow: President, E. W. Catchpole of North Rose; vice-president, B. D. Van Buren, of Lockport; secretary-treasurer, Professor C. S. Wilson, Ithaca; executive committee, Professor John Craig, Ithaca; Professor L. B. Judson, Ithaca; B. H. Crocheron Ithaca, and the president and secretary ex-officio.

On Saturday noon a luncheon was served in the entomological laboratory to seventy institute workers of the State and their guests. Speeches were made by Dr. Jordan, of Geneva; Dean Bailey, of Ithaca; Commissioner Pearson and others.

At a meeting on February 24, a woman's organization was perfected called the Home Makers' Conference. The objects are to study the best ways of doing home work, of broadening farm life and of elevating the general tone of the community of which they are a part. The officers elected are President, Mrs. George Monroe, of Dryden; vice-president, Mrs. James Pringle, of Ashville; corresponding secretary, Miss Van Rensselaer, of Ithaca; recording secretary, Mrs. George N. Welles, of Elmira, and treasurer, Miss Grace Fisher, of North Franklin.

A conference of deans of the State agricultural schools was held with representatives of the educational department in the office of the Director of the college on Friday. At this conference three questions in regard to secondary agricultural schools were discussed:

First—it was decided that the schools should be practical schools to fit persons to go back on the farms. They might also train people to teach agriculture; but their main business should be to train farmers.

Second—That these schools should be co-ordinated together into one general system and not be isolated efforts at education.

Third—That a bill should be introduced in the present Legislature advocating the establishment of agriculture throughout the public schools of the state in a similar way to the trade schools established by the law of 1908. Wherever agriculture is established the state is to contribute $500 a year toward the pay of the first teacher in each school and $200 each year toward the pay of other teachers in the same school if there are such. That these schools teaching agriculture are to be under the supervision of a committee of persons from their locality who are interested in agricultural education. The bill has been placed in the hands of the executive committee of the New York State Grange for introduction in the Legislature. If passed, it will necessitate the establishment of an executive office of agriculture in the educational department of the state.

On Saturday another conference was held to consider the question of branch experiment stations, several of which are being demanded by certain sections of the state. As a result
of this conference it was unanimously decided that no branch experiment stations should be established in the sense of buying land and erecting permanent buildings, but that field laboratories and stations to solve individual problems might be furnished and established till the problem for which they were established was finally settled.

The Cornell University Dairy Students Association held its fourth annual meeting and elected the following officers: President, John H. Kelly, '06, of Lysander; vice-president, Homer C. Teall, '08, of Ithaca; secretary, R. C. H. Fowler, '05; assistant secretary, Winfield Markham, '04; treasurer, Wyndham Andrews, '08.

At this meeting there were very interesting addresses by Dean Bailey, H. A. Harding, Professors Stocking and Publow; also short talks by W. Andrews, '08, and R. C. H. Fowler, '06.

THE SECOND ANNUAL AGRICULTURAL STAGE

By A. M. Kruse, '11

ON the evening of February 26th, the second annual stage was held under the auspices of the Agricultural Association. Hon. Andrew D. White was the presiding officer for the evening and in his opening remarks complimented the College on its great advancement. He spoke of the pleasure it gave him to appear before the College of Agriculture; the memories connected with its establishment and with Ezra Cornell's interest in it were, he said, always pleasant. In speaking of the Agricultural Stage, Dr. White laid great stress on the benefits derived from public speaking.

At the close of the competition which followed, Dean L. H. Bailey delivered an address in his usual inspiring strain. He spoke of new activities in Agriculture and of the need of personal leadership. An announcement, which created considerable enthusiasm, was made by him. A prize to further the interest in public
speaking, has been offered by A. R. Eastman of Waterville, N. Y. It is to be known as the Eastman Prize, and, consisting of one hundred dollars is open only to students of Agriculture. Mr. Eastman, offered also the prizes given at this stage.

The first prize for this year's stage was awarded to R. J. Shepard, 'ro, whose speech will appear in an ensuing issue of the COUNTRYMAN. Mr. Shepard spoke on the Disadvantages of the Davis Bill. He maintained that governmental aid in rural education in agriculture would have a destructive influence upon the farmer's interest in such subjects. The second prize was awarded to K. C. Livermore, '09, whose speech on Seed Regulation is included in the March issue.

G. P. Scoville, '10, made a plea for a new type of country church. He asked that there be fewer denominations, less dogma and more real religion. The advantages of, and the benefits to be derived by the farmer from the Parcels Post were set forth by P. H. Elwood, '10. The ever interesting subject of the Farmer and the Tariff was presented by F. N. Darling, 'ro. Elizabeth Genung, Sp., replied to R. J. Shepard's speech on the Disadvantages of the Davis Bill. In her opinion, agricultural education and betterment of country conditions need assistance from the central government. Her arguments were set forth clearly and forcibly.

The program was concluded by the decision of the Judges and the awarding of the prizes.

PLANS FOR THE DEPARTMENT OF PLANT PATHOLOGY

By H. H. Whetzel, Assistant Professor, in Charge

THE investigation work of the department of Plant Pathology will continue to be carried on largely in field laboratories. This scheme has been followed out for the past two years with excellent success, and for the coming year we have arranged for four such laboratories with a competent man in charge of each. The central idea in this field laboratory work is to put the man who is to investigate the problem right in the field where the problem is, rather than to attempt to bring the problem to the laboratory, often times a considerable distance away. The field laboratory idea was first put into concrete form two years ago when Mr. Reddick of the Department took up the investigation of the Black Rot of grapes. For the past two summers our field laboratory on the Black Rot of grapes investigation has been located at Romulus, N. Y., where Mr. Reddick has spent all of his time from early in June until late in September. We propose to continue this field laboratory again this season with Mr. Reddick in charge. The work is to be located as usual in Romulus, and to be carried on in cooperation with Prof. Wilson of the Department of Horticulture. The work on the Black Rot of grapes has been very successful for the past two years, and we believe our success in the control of the disease was due in a very large degree to the fact that a man fully acquainted with the habits of the parasite was on the ground constantly. It is proposed to continue this field laboratory for the study of grape diseases for a number of years, as there are several other important diseases of the grape which need careful study and observation. One of these, the so-called Necrosis of the Grape, on which we have just issued a preliminary bulletin, is to receive further consideration by Mr. Reddick. Some rather extensive experiments in connection with this disease are planned for the next few years.
Last season we established at Oneida, N. Y. on the farms of the Burt Olney Canning Co., another field laboratory for the study of bean diseases. Mr. M. F. Barrus, assistant in the department was in charge of this. The spraying of about 250 acres of beans was under his immediate direction, the prime object of this investigation being to determine whether spraying for the control of the Bean Anthracnose is profitable or not, and if not, to determine what methods may be used for successfully combating this disease. This field laboratory was maintained through the direct cooperation of the growers. The arrangement was very successful and satisfactory and arrangements have been made to continue the laboratory on the same basis the coming season. The Department of Plant Pathology expects to make it a regular practice to cooperate with the growers for the study and control of the more common diseases of crops in the State. It is believed that methods and principles worked out right in the fields of growers who are financially interested in the cooperation, will be more apt to be practical, and what is more important, successfully followed up after the field laboratory may be removed.

Arrangements have also been made for a field laboratory at Seneca Castle, N. Y. in a large nursery there. The problem to be solved here is the control of Fire Blight in nursery stock and will be in charge of Mr. V. B. Stewart, of Wabash College, Crawfordsville, Ind., who has been devoting the past year to a study of this disease with the object of taking charge of this work here. Mr. Stewart will become a graduate student in the Department of Plant Pathology next year. This field laboratory will also be conducted in cooperation with the nurserymen on whose farm the experiments are to be carried out. The fourth field laboratory, which will be established for the special study of apple and peach diseases, particularly in regard to the use of lime-sulphur as a summer spray on these fruits, will be located on the farm of Mr. L. B. Frear, near Ithaca, N. Y.

Mr. Everett Wallace, who for the past year and a half has been a graduate student in the department of Plant Pathology will have charge of this field laboratory.

A rather extensive cooperative experiment is being planned to test out the merits of various so called Fire Blight remedies which are now on the market. This work was begun last season in a small way on the University grounds and will be repeated and carried out on a more extensive scale on some very badly blighted pear orchards about Oswego, N. Y. Four of five different remedies are already on hand to be tried out in this experiment.

The Department of Plant Pathology proposes to follow the policy of devoting its energies chiefly to a careful re-study of the more common fungous diseases of grapes grown in the State together with a careful investigation of the means and methods for controlling the same, looking particularly to the matter of practical, effective, and profitable methods of control.

In connection with the teaching work some new changes are to be introduced into the courses that are to be offered next year. The Winter Course Farm Botany which up to the present time has been given in the Department of Plant Pathology will be given elsewhere. The course in Plant Diseases for winter course students will be much enlarged and double the time we have heretofore been able to give to this work will be devoted to this course next winter.

Course 4, listed as Practical Plant Pathology will very likely be divided up into two or three units that may be elected separately by students who have already had course one. It is very likely that in this will be included a course on the diseases of fruits and fruit trees; another, perhaps on the diseases of garden, truck and field crops, and possibly also a course on the diseases of shade and forest trees, the object being to provide for students taking work along special lines of Agriculture.
The Countryman wishes to give expression to its deep grief over the death on March 11th, of Professor M. V. Slingerland. In losing him from our midst we are made poorer by one man who has worked unceasingly and ever unselfishly for the College and for the State. He was an instructor, helpful, enthusiastic and sympathetic; an investigator thorough, untiring and capable; and a friend whose friendship carried no little privilege and source of appreciation. We convey our sincere sympathy to those whose bereavement is closer than ours, but with whose sorrow we mingle our own acute sense of deprivation.

Two movements of considerable importance have recently taken place in the College. The first was the organization of the Students' Association, and the second, the organization of the Class of 1909, Agriculture. The former is an Association of present and former students, and is to include every person in good standing who has ever attended the College as a student. The executive committee is drawing up the Constitution and By-laws which will be discussed at the next annual meeting. Meanwhile it is to be desired that ideas in regard to details of the plan be received from as many of the present and former students as possible. The secretary will send letters to all alumni who can be reached, and it is essential that every loyal student enter into this organization. Its opportunities are extensive, not only in the College sphere and the relation of student to student, but in the State and national relations,—wherein this Association will form a unified body of agriculturists which can wield power in the advancement of agriculture, and the welfare of rural communities. Its capillaries reach out all over the country and by enthusiastic cooperation, a pulse of spirit, inspiration and assistance can be sent through every vein and artery that binds together the whole body.

The class organization also aims at closer relationship in after life. It may well exist as a sub-body of the larger association, striving in a more concentrated form for the same cooperation and strength in a mutual purpose, and furthermore it will keep together the interests and activities of its members. Not the least in importance from our point of view is the assistance that such organizations can afford The Countryman by adding to its Former Students' Column. Each secretary of any such organization should be in constant touch with the College magazine and realize in it his official and logical organ for the expression of ideas.
Attributes of Spring

Spring is certainly here! In a very few days an Easter vacation may find us helping along the spring plowing or waiting impatiently for the ground to thaw out permanently. In spite of the blizzards that may arrive, as in former years, in May or even June; however cold one's ears may get making eight o'clocks, Spring is here. We know it for we have observed on several occasions boys of varying sizes and ages, at the cheerful occupation of playing ball. Both their precedent and the calendar justifies a call for candidates for the Agricultural team. It is unnecessary to go into detail concerning past teams—and in fact past athletics, in general, in the College. At times we have won, at others lost, but at no time have we "quit" or lacked interest sufficient to get a crew or a team together, and fight. Once more men are wanted to defend Agriculture on the diamond; let many a candidate turn out.

So, too, it is past time that the crew should have started its work, as indeed it has. The machine work will become monotonous in time, but it is exercise and it is for the College. With the new boat house as a reality, facilities for extended practice on the water should result shortly, and this too adds interest and furnishes additional recompense. But this sort of thought of reward and personal benefit is out of place, incidental, subsidiary. The essence of the work is that it is forwarding, aiding the College of Agriculture—keeping it at the head where it has taken its place—and though inconvenience and discomfort greet the individual, there is a lasting reward, one that is worth while, in the satisfaction of work well done, of sacrifice rightly directed.

The "Shorthorns" have a new champion; one of whom they may well be proud in the highest degree. Not that they need any outside support—for as every one of us knows, the short course classes are as much a part of the College, and as independent and representative of Cornell spirit as any of us—but unsolicited, genuine appreciation from such a source is ever gratifying.

Hence the words of the Honorable Andrew D. White, Ex-president of the University, at the banquet of the Cornell Alumni Club of Buffalo on February 20th mean a great deal, not only to the short course men and women, but to the College as a whole. To quote him, we present the following from the Cornell Alumni News:

"As to the winter agricultural students I assure you that you have a right to be proud of them. I have seen them at work in their laboratories, libraries and lecture-rooms, have attended their discussions and their public exercises, have walked and talked with many of them and I have been surprised and delighted at their vigor, their zeal, their ambition to give new and helpful impulses, not to the agriculture of this great commonwealth, but to its whole policy.

THE SHORTHORNS

"These special students in agriculture are generally known among students in the full regular course as shorthorns, but let me remind you that among all the cattle upon a thousand hills, the Shorthorns are among the most valuable. Indeed I think that some of the energetic characteristics of these shorthorns are having a happy influence in improving the other breeds represented in our great herd. Some of the strongest among recent impulses for good among us have come from this very quarter, which waited so long for proper recognition by the state. There is a sort of agriculture, if you choose so to call it, which is discouraging. As I rise from my daily paper, disheartened, disgusted—after mentally floundering through the filth accumulated every day by the muck
I not infrequently visit our new Agricultural College, with the result that I return home like one having stepped from a mud bath into the clear waters of a cool stream, strengthened and braced in body and soul."

We have often noted Dr. White about the buildings and grounds of the College, and enjoy towards him the beneficial intimacy of a close friend; not alone because of these occasional visits, however, but also because of his interest in the two Annual Stages at which he has presided. With gratitude for his words of encouragement and inspiration, we can take pride in striving to raise the College and the Farmer to the stations of power and importance which, for the future, he has assigned them.

The speakers on the two Agricultural Stages of 1908 and 1909, have something more than the satisfaction of having participated, to take to heart and ponder over. They have jointly formed the occasion for a gift that provides a prize for public speaking in the College of Agriculture, which in amount is excelled by no other trophy in the University. The success of the project for an annual competition was for a time the subject of doubt and experiment. Now it has been proven; the contestants have made good. Mr. A. R. Eastman, through whose generosity the prizes for the past two events were made possible, has now arranged for the investment of a sum of money, the interest from which, amounting to one hundred dollars annually, is to be awarded for the best original speeches delivered by students of the College each year. Interest has never been lacking in this activity; it is safe to say it that will never be more lacking. May it result in training, competition and excellence in direct, effective speaking, that will pave the way for the triumph of the farmer in defending by force of argument, his rights, and in securing, against all unworthy efforts, just, wise and productive legislation. We foresee a vast influence and importance in the future of the Eastman Agricultural Stage.

We are in receipt of a communication suggesting the establishment of an inquiry or Question Column as part of the Countryman. We are grateful for this suggestion, and will be very glad to obtain and publish the opinion of a Professor upon any question of agricultural interest from our readers. Such a plan has been occasionally thought of, but the absence of any questions ever sent to us has invariably removed any logical excuse for its starting into being. But now that the ice is broken "fire away," and we shall endeavor to present the latest authoritative information upon any suggested subject.

It has been the custom for the past few years to publish an index of the preceding volume of the Countryman. The press work on the index for Volume V is now under way and the copies will be ready for distribution with the May and June issues. To subscribers they are free, to non-subscribers the price is ten cents. Persons desiring copies of this complete index are requested to have their applications in our hands not later than April 30th, as orders received after that time cannot be considered.
GENERAL AGRICULTURAL NEWS

The thirty-sixth annual convention of the New York State Grange which assembled at Little Falls, N. Y. in February continued for four days and was the largest of its kind ever held in the state. The delegates and grange members present numbered over five hundred and there were full as many more present as visitors. The reports of the various committees showed the grange to be in a flourishing condition, and if the number of resolutions introduced by the members may be taken as a criterion there is a deeper and more widespread interest than ever before. The membership and the financial standing of the grange was reported by the secretary to be as follows: On January 1, 1909 there were 700 granges with a total membership of 83,267. During the year, dues to the amount of $15,000 have been paid and the total resources are $36,124.89. The surplus fund is on deposit in trust companies and savings banks.

The committee appointed to consider tuberculosis and the slaughtering of infected cattle, after giving considerable thought to the matter decided that legislation had best be of a broad and comprehensive scope so as to safeguard the interest of the owner and the public as well. A bill embodying these provisions was introduced in the last legislature and passed but immediately afterward it was found to be impractical and at the request of the committee it was vetoed by the Governor. A few weeks later the legislature in a special session passed another bill which lacked the objectionable features of the former. This bill is still a law and is giving good results tho it will be possible to perfect certain parts of it in the future. To this end the committee reported in favor of an amendment providing that where a herd is to be condemned the owner may employ a veterinarian at his own expense to act with the state veterinarian and in case of a disagreement a third dis-

interested veterinarian shall be called in and no animal is to be slaughtered unless condemned by a majority. The committee also reported favorably on the plan to investigate the milk business in order to secure information which would make possible the working out of a scheme whereby the producer would be enabled to receive more for his product and the consumer to receive a better quality of milk.

The grange went on record as being heartily in favor of the present good roads law and urged that every member give all possible aid to the new Highway Commission in carrying out the provisions of the new law. The committee on co-operation and trade recommended that a standing committee be appointed to investigate and report on the best methods in practice by successful grange co-operative associations in this and other states. This information is to be kept on file for future use. In educational matters it was the opinion of the grange that a more diversified knowledge on the part of the people is necessary to the betterment of the farmer. Therefore, it is essential that there shall be closer relations established between the secondary schools and the College of Agriculture but that no more schools of agriculture should be started until those already in operation have proved their worth. The grange also believes that the Department of Education be cooperated with in formulating a plan of legislation that will better meet the the requirements in regard to the supervision and oversight of the rural schools.

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The Thirty-fourth annual meeting of the Ayrshire Breeder's Association was the largest and most successful meeting in the history of the society. The demand for Ayrshires has increased in the past year and the tests and yearly records made show them to be coming to the front as a dairy breed and possessing staying qualities,
As an incentive to improve the breed by making better records cash prizes are offered. Prizes to the amount of $150 will be given to herds of five cows giving the best butter records while $75 will be given in individual prizes. In order to encourage the testing of cows from year to year, a championship ribbon will be given to the champion cow at the end of every second, third, fourth, and fifth year. Beside this it was voted to appropriate $300 for the Yukon Pacific Exposition, $300 for the national show, and $500 will be raised by popular subscription for herd prizes at the Yukon Exposition. The following officers were elected: President, Mr. E. S. Fletcher, secretary, Mr. C. M. Winslow, treasurer, Mr. N. S. Winsor. The meeting thru resolution expressed the desire that the next National Dairy Show should be held in New York.

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It seems probable that the legislature, acting upon the suggestions of Governor Hughes, will provide for the inspection of meats, abattoirs, and the places where meats are handled. This should improve the quality of the local meats and make a better market for them. The federal inspection of meats intended for interstate or foreign trade has raised the quality of those meats until in many instances they have driven the local meats out of the market or greatly reduced their sale. With proper and careful state inspection the sale of local meats will increase and this increased demand will result in better prices to the farmer. In many other states where confidence is placed in local meats to a degree that puts them in competition with federal inspected meats it is due to the state inspection and both farmers and butchers realize the benefit.

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The Secretary of Agriculture has appointed Mr. B. H. Rawl as Chief of the Dairy Division of the Bureau of Animal Industry, to succeed Prof. Ed. H. Webster, who resigned some weeks ago to accept the position of dean of the State Agricultural College at Manhattan, Kan. Mr. Rawl has heretofore had charge of the dairy farming investigations of the Dairy Division. He is a graduate of the Agricultural and Mechanical College of North Carolina, and has pursued special courses at the Pennsylvania State College and the University of Wisconsin.

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During the last week in February Commissioner Pearson called a Conference to consider means for preventing damage from the gypsy and brown tail moths in this State. Those present at the meeting included representatives from the New York State fruit growers association, the Western New York Horticultural Society, the Orleans County Fruit Growers Association, the Eastern Nurseryman’s Association, and the New York Florists’ Club. Plans for combating these pests were discussed and it was decided to lay the whole matter before the legislature. To further this part of the undertaking, a delegation headed by Commissioner Pearson called on Governor Hughes and it is probable that a bill including the recommendations of the Conference will be presented to the legislature for action.

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Robert Stanton, '07, who was a special student in chemistry during his university course, and held a French degree in Agriculture when he came to Ithaca, has been making for the Agricultural District Clery Syndicate of Paris, a comparative study of the systems employed in the neighborhood of the French capital for the manufacture of sugar from sugar beets. Copies of these two reports have been sent to the University Library. French scientific circles have complimented Mr. Stanton on his work.
CAMPUS NOTES

The regular March Assembly was held in the auditorium Thursday evening, March fourth. The attendance was rather small but lack of numbers was made up by for the spirit of those present. Besides selections by the Glee and Mandolin clubs, Mr. Moore, in charge of the forcing houses, rendered a solo which was enthusiastically received, and then responded with an encore. Dean Bailey talked on "Tendencies toward Socialism" and again we were pleasantly surprised by a new poem, "The Land of Why-and-Who." The last hour was spent in a general good time, lemonade and cookies having been furnished in abundance.

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At a meeting of the members of last year's Agricultural Crew, W. A. Salisbury, Sp., was elected captain. The election of a manager was postponed for a short time. About thirty men are now registered at the Armory for the Agricultural Crew. Out of this number there are only three or four men from last year's crew. The building of the new Intercollege boat-house will give future crews more time on the water than has been the privilege in former years.

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At the Junior Smoker, held in the Armory, February 19th, 1909, "C's" were awarded to the following men in the Agricultural College: Track—Refine Latting Roseman and Hobart Cone Young; Crew—Edward Irving Bayer and Frank Burnette Kelley; Football—Edward Irving Bayer, Floyd Wayne Bell and Berwick Bruce Wood; Cross Country—Hobart Cone Young.

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During the banquet of the Connecticut Pomological Society at Hartford, February third, Mr. J. H. Hale, the president, said that he had been at Cornell University the previous week and had spoken to the students in Horticulture. After his talk he passed through a hall and saw a young Chinaman, a student, flirting with a pretty girl. "My boy," said Mr. Hale, "this is not studying Horticulture." "Yes it is," said the boy, "I am studying the peach."—The Connecticut Farmer.

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Institute schools were held during the week of March first, at Spencerport, Alfred and Delhi. Subjects of general interest such as "The Farm Home" and "Poultry Raising" were treated at all of these schools but the kind of agriculture most prominent in the communities where the Institutes were held received chief attention on the program as follows: Horticulture at Spencerport, General Farming at Alfred and Dairying at Delhi. The Agricultural College faculty was well represented among the speakers at these meetings. At Spencerport, Professors C. H. Tuck, G. W. Cavanaugh, John Craig, C. A. Rogers, and Miss Martha Van Rensselaer, and Drs. Williams and Moore of the State Veterinary College spoke. At Alfred, Professors J. E. Rice, E. O. Pippin, G. F. Warren, C. S. Wilson H. H. Whetzel, and Miss Flora Rose, and Dr. James Law, also of the State Veterinary College, addressed the meeting.

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Dean L. H. Bailey recently took a trip to Columbus, Mississippi, where he delivered two addresses, March 10th and 11th.

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Commissioner Pearson was in Ithaca on Saturday, March 6th and in the evening addressed a meeting of the local Grange.

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Three of the lectures in the University course on Sanitary Science and Public Health, have been given by members of the faculty of the College of Agriculture. On February 11th, "The Effect of Dairy Processes on Pathogenic Bacteria and their transmission to Human Beings" was discussed by Professor W. A. Stocking, on February 16th, "Dairy Hygiene," by Professor C. A. Rublow, and on March 9th, "Insects and the Transmission of Disease," by Professor A. D. MacGillivray.
At a meeting held at the College of Agriculture February 27, 1909, Mr. J. W. Pincus editor of the Jewish Farmer addressed fourteen Jewish students of the Agricultural and Veterinary Colleges. Mr. Pincus spoke of the conditions of Jewish Agriculture in the United States and explained the necessity of extension work which is essential to its promotion. He urged the young men to take up this kind of work and prepare themselves for it while at the different Agricultural Colleges.

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A good illustration of the interest manifested towards Farmers’ Week by New York State Farmers was the large delegation here from Genesee County, there being between twenty-five and thirty men from the town of Batavia alone.

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An important though very poorly attended meeting of the Agricultural Association was held March 9th. The committee which had been appointed to compile the Constitution and By-laws which were scattered throughout the minutes, reported and submitted together with the complete documents, suggestions for their revision in order to bring them up to date. The questions were thoroughly discussed by the few who had shown sufficient interest to attend, and a series of amendments were prepared which were to be posted and taken up again at the next regular meeting.

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Members of the Stone Club of 1909 spent a very enjoyable social evening as the guests of Professor and Mrs. J. L. Stone at their home on Wait Ave., on the evening of February 22. A book-case was presented to Professor Stone by the Club as a token of their regard for him.

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On March 10th, a meeting of the class of 1909 of the College of Agriculture was called for the consideration of the question of organizing as a class. Under the temporary chairmanship of R. C. Lawry, the plan was discussed, and seemed to be favored by all. A committee was then appointed to draw up a constitution, and soon submitted the following which was unanimously adopted:

Preamble: In order to strengthen the Class of 1909 of the College of Agriculture, while in the University, and to bind it more firmly together after graduation, we hereby organize with the following constitution:

Article 1—Name. The name of this organization shall be the Class of 1909, Agriculture.

Article 2—Officers. The officers shall consist of a president, first vice-president, 2d vice-president, life secretary-treasurer, and assistant secretary-treasurer.

Article 3—Duties. The duties of the officers shall be as prescribed by Robert’s Rules or Order. It shall be the further duty of the secretary-treasurer to keep a record of the whereabouts and activities of each member and to communicate same to the Cornell Countryman, and to handle all funds of the Class.

Article 4—Members. The members of this Class shall consist of all students receiving a B.S.A. in June, 1909, and all Specials (one- two- three- and four-year) who will leave the University in June 1909, permanently.

Article 5—Meetings. The president shall call a meeting whenever desirable or necessary.

The election of officers was then taken up and resulted in the following: President, E. H. Thompson; first vice-president, K. C. Livermore; second vice-president, G. H. Miller; secretary-treasurer, E. L. D. Seymour assistant secretary-treasurer, Miss Edna Jenkins.

It was then moved and carried that a tax of twenty-five cents be levied upon each member to pay for a card index, book for minutes, etc. A second motion then resulted in the appointment of a committee to consider the advisability of a “Senior Stunt.” The committee was appointed as follows: Chairman, H. B.
Fullerton, S. F. Willard, Jr., Miss Aherne, C. F. Boehler, and E. W. Mitchell. It was then moved, seconded and carried that the editor of the Countryman be authorized to call a meeting of the class at any time this spring for the purpose of taking a group picture. After some discussion of the possibilities of a banquet or other event before graduation the meeting was adjourned.

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The championship game between the Civil Engineers and the Ags. in the intercollegiate basketball series was played in the Armory on Saturday afternoon, March 13. The date or something else, which we fear we will have to call superior playing on the part of the C. E.'s, proved the undoing of the Ag. team and the series went with the game to the College of Civil Engineering. The score of the game was 17-8. Perhaps it was the closeness of this final spurt for college honors, perhaps it was the growing intercollege spirit, but at any rate the interest and enthusiasm shown at this game will closely rival that shown at Varsity games. We are wont to believe that it was college spirit which was responsible for this; if it was, it cannot but help increase the Cornell spirit.

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Professor Rice attended and spoke at the Ohio State Poultry Institute held at the Ohio State University, March 9 and 10. Professor Rice tells us that the purpose of this meeting was to start a poultry department at the Ohio State College of Agriculture, and it succeeded to the extent that a determination to have such a department at any rate was established. Professor Rice gave his report on "Poultry Education and Investigation in the United States," which was received with great favor at the meeting of the American Poultry Association last August. J. C. Halpin, Cornell, B.S.A., '05, and at present Instructor in Poultry Husbandry at Michigan Agricultural College, also addressed this meeting.

FORMER STUDENTS
A CORNELL ENTOMOLOGIST IN AFRICA

One of the Cornell entomologists who is rapidly winning a reputation in his chosen field is Charles W. Howard, A.B., 1904. On completing his undergraduate work here, he remained as a laboratory assistant, in the department of Entomology for a part of the following year and, early in 1905, went to Pretoria as Assistant Entomologist to the Transvaal Department of Agriculture. On the death of C. B. Simpson, B.S.A., 1894, he became Government Entomologist to the Transvaal. Recently he has transferred to Portuguese East Africa in a similar position.

C. W. HOWARD

Aside from the educational work which must accompany the introduction of modern American methods of Economic Entomology into a conservative colony, Mr. Howard's main work will be in studying and combating insect transmitters of diseases and, in the fight against the locust plague.

Something of the extent of the latter may be seen from the fact that,
in a single district of the colony, the locusts last year damaged the cocoanut crop alone to the extent of $360,000. On a big sugar plantation along the Zambezi River there have just been dug from among the canes, over an area of 2000 hectares, more than fourteen tons of locust eggs. In addition to this method of destroying the pest, oil was being spread along all the roadways and other areas where the young grasshoppers were hatching out. Mr. Howard has organized in connection with this work, a system for collecting information which, during the year, should give much reliable data as a basis for the fight in the future.

In a recent letter, he writes that he is somewhat handicapped by lack of proper equipment, but that the work is being very liberally supported, and that as fast as he can collect apparatus, he will be able to obtain it. It is hard for us to realize what it means for so conservative a government to take the radical step of establishing and actively supporting such a department, and it may well be seen that the work will call for the exercise of the greatest tact and ability in handling men as well as demanding a knowledge of technical entomology. Mr. Howard's success in the past few years bespeaks an equally successful experience in his new field and his work will be watched with interest by his Cornell friends.

'06, W. D.—James A. Redburn has had considerable experience in the management of large and important dairies, having been for two years with Major John J. Rikers at Port Chester, N. Y.; another two years he had charge of Hon. Whitelaw Ried's dairy at White Plains; for the same length of time and in the same capacity, he was connected with the Gedney farm at White Plains, N. Y.; and for the past two and one half years, he has had charge of the dairy and herd of Mr. Francis Lynde Stetson at Sterlington, Vt. At this last place there are forty head of registered Ayrshires, several of which are now making over 50 pounds per day, and two of them are making over 60 pounds.

Mr. Redburn suggests that the COUNTRYMAN start a question department. We are glad to receive suggestions of this sort, they signify that the former students are interested in us. We shall keep this advice in mind.

'03—'05, W. A.—W. G. Phillips has been home ever since he left here in '03, and is engaged in general farming on his own farm at East Bloomfield, N. Y. He is specializing however, in pure bred sheep, swine and chickens.

'04, Sp.—D. E. Carley is at White Spring Farm, Lisle, N. Y. where he is breeding pure bred Holsteins. He has about thirty head at present.

'05, B. S. A.—Lee A. Chase was married to Miss Anna Sarah Case on Wednesday, February 24th, at the home of the bride's parents in Gloversville, N. Y.

'05, W. D.—John A. Smith has just completed his fifth year as bootmaker at the Clover factory, located at Oak Hill, Greene Co., N. Y.

'05, W. D.—Harold Straw is supplying his home town, Guilford, Me., with certified milk. Mr. Straw has a model dairy and gives his patrons the best possible product.

'05, W. D.—Harry Walker has formed a partnership with his brother and they have purchased the old homestead near Auburn, N. Y.

'06, B. S. A.—F. E. Peck, who has been teaching in the Agricultural Department of the Mt. Hermon Preparatory School at Mt. Hermon, Mass., has now taken charge of the bacteriology work in the Fairfield Dairy Co. at Montclair, N. J.

'07, Ph.D.—J. Eliot Coit, Associate Horticulturist at the University of Arizona Experiment Station, had a very interesting trip into Mexico last fall, and is sending us a short article about it; this will be found elsewhere in this issue. THE COUNTRYMAN desires to say that it appreciates this kind of remembrance; we only wish that more of the former students would do likewise when they do any-
thing in which they think their class-
mates would be interested.
'07, W. D.—Wm. Murray has been
very successful since leaving Cornell.
He is located at Sempronius, N. Y.
'07, B. S. A.—H. B. Grubbs is with
Thomas Mawson, landscape architect,
and his address is Sheldrick Lees,
Faversham, Kent, England.
'07, W. D.—Carl A. Thornton is
manager of the Lake Placid Club
dairy.
'08, B. S. A.—T. H. Desmond is
with Townsend and Fleming, land-
scape architects, 1326 Prudential Bldg.
Buffalo, N. Y.
'08, W. D.—Edward Miller has been
employed at Constableville, N. Y.,
since he finished his course. Mr.
Miller had some fine scoring cheese at
the last State Fair.
'08, W. D.—Alex Salton is located
at Towanda, Pa.
'08, W. D.—Henry Ayres has re-
tently taken charge of a dairy plan
at South Otsego.
'08, W. D.—Earl H. Powler has
taken charge of a large dairy at Lake
Kushaqua, N. Y.
'08, W. A.—J. F. Hager was mar-
rried at Bainbridge, N. Y. last spring.
'08, W. A.—Elbert Slorah was
married to Miss Mary Harriett Norton
at Barneveld, N. Y., on February 3,
1909.
'08, W. A.—F. E. Thayer is work-
ing with his father on their farm at
Frewsburg, N. Y. Mr. Thayer is
breeding sheep, cows, hogs, and horses
besides raising most of his own feed.
'08, W. A.—James G. K. Deuer
has taken a position of manager of
Brookdale Farm, Brewster, N. Y.
'08, W. A.—Roy Badger is with his
father on his farm of 225 acres at
DePeyster, N. Y. where he makes
dairy farming a specialty.
'08, W. A.—R. W. Beecher is in
partnership with his father under the
name of J. S. Beecher & Son. Their
specialty is breeding of merino
sheep.
'08, W. D.—Vincent E. Barnes of
Delhi, N. Y. was married to Miss
Gertrude Robertson of Meriden in
July, 1908. He is now employed as
buttermaker for the Cooperative
Creamery Co at Delhi, N. Y.
'09, Sp.—A. C. Barns is located on
the Brooklands Farm at Pough-
keepsie, N. Y. Mr. Barns has been
visiting dairy farms for a month, and
is convinced of the practicability of
milking machines, and intends to in-
stall them on his farm. He has 350
acres and 300 head of pure bred cows.
Barns will be glad to see any student
that lands in that region.

BOOK REVIEW

_The Good, The Beautiful, The True_, by C. F. Brown, editor the Holstein
Friesian World. 6x4 1/4 inches, 150
pages. Cloth. Published by the
author, Ithaca, N. Y.

Josh Billings has said “I beleive
everything there is in the Bible, the
things i kant understand i beleave
the most.” From several of the poems
contained in this little volume, it is
easy to see that Mr. Brown is not a
disciple of Mr. Billings—in this respect
at least. In fact he acknowledges
and defends a distinct and wholly
personal religion or lack of one, which
he sets down in rhyme as viewed
from different points of view. This
is the tenor of “Anthropomorphic
Gods,” “Metrical Theology,” “Why I
Am an Atheist,” “Gods on Toast,”
and other of the verses, which to
anyone either immune to or searching
for new thought, will probably prove
of considerable interest.

It is, however, with the other poems
forming the slight majority, dealing
with nature and a variety of such sub-
jects that we would have more to do.
A number of these consider and
champion farming and its various
details in a way that is readable.
The subject matter of “Farm Phil-
osophy” has doubtless been read in
text books or heard in lectures many
times—yet the very fact that it is in
rhyme and rhythm, attracts one’s
notice and attention. “The Song of
the Holstein Friesian,” and other
sonnets of like kind are decidedly
unique in their application, and these
and a number of other poems might
furnish recreation for many a farmer. On another page we present one of the features of the book which will appeal to many readers—as would also a birthday poem to Professor Roberts, at the time of his seventy-fifth anniversary, had we space to print it.

On the whole, The Good, The Beautiful and the True, is worth some time and examination, and can furnish some hours of recreation. It is not without its minor errors and crudities, and as mentioned above, some of the conclusions drawn are rather sudden and startling, but these facts perhaps lend rather than detract any interest to the little volume.

It may be procured from the Ithaca bookstores, or directly from the author.

SOME THOUGHTS OF THE FUTURE

At this opportune time we wish to call attention to a few of the features of the May issue of the COUNTRYMAN, which, we think, warrant special mention.

I. In anticipation of the Annual Tompkins County School Picnic, the issue will recognize the anniversary of the 1908 Picnic, by filling several pages with photographic reproductions of views of that activity.

(Note: Perhaps YOU will appear in some of the groups pictured.)

II. Articles of special importance will include discussions on The Practical Value of Lightning Rods, by H. W. Riley, of the Farm Machinery Department; the recently invented Powdered Eggs and Milk, by Prof. G. W. Cavanaugh, of the Department of Agricultural Chemistry; the desirability and ease of breeding heavy draft horses on the farm, by Prof. M. W. Harper; the question of providing attractions for Poultry Shows, by the Secretary of the Tioga Poultry Association, etc., etc.

III. The complete index for Volume V will be ready for distribution; free to subscribers; ten cents to others.

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## Contents

**1909 MAY**

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover Design—Lilacs</td>
<td></td>
</tr>
<tr>
<td>Milk Powder</td>
<td>G. W. Cavanaugh. 241</td>
</tr>
<tr>
<td>Practical Plant Breeding</td>
<td>H. J. Moore. 243</td>
</tr>
<tr>
<td>The Davis Bill</td>
<td>R. J. Shepard, '10. 248</td>
</tr>
<tr>
<td>A Remedy for Inefficient Horse Breeding</td>
<td>M. W. Harper. 251</td>
</tr>
<tr>
<td>The Tompkins County School Picnic of 1908</td>
<td></td>
</tr>
<tr>
<td>Providing Attractions for Poultry Shows</td>
<td>R. E. Briggs. 256</td>
</tr>
<tr>
<td>On Snowshoes in the North Woods</td>
<td>B. H. Crocheron, '08. 263</td>
</tr>
<tr>
<td>A Visit to a Borden Condensery</td>
<td>J. H. Stewart, Sp. 266</td>
</tr>
<tr>
<td>Inter-College Athletics</td>
<td>C. V. P. Young. 268</td>
</tr>
<tr>
<td>The New York Central Farm Special</td>
<td></td>
</tr>
<tr>
<td>Editorials</td>
<td></td>
</tr>
<tr>
<td>L’envoi</td>
<td></td>
</tr>
<tr>
<td>The Current Issue</td>
<td></td>
</tr>
<tr>
<td>The School Picnic</td>
<td></td>
</tr>
<tr>
<td>Some Points of View</td>
<td></td>
</tr>
<tr>
<td>An Employment Information Bureau</td>
<td></td>
</tr>
<tr>
<td>General Agricultural News</td>
<td></td>
</tr>
<tr>
<td>Campus Notes</td>
<td></td>
</tr>
<tr>
<td>Former Students</td>
<td></td>
</tr>
</tbody>
</table>

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MILK POWDER

By George W. Cavanaugh
Professor of Chemistry in its Relations with Agriculture

MILK is a most desirable food. The ratio between its solid nutrients and its water is one that seems peculiarly adapted to the needs of the body. There is only one property of milk that prevents its being an ideal food—and that is its keeping quality. Milk is an excellent medium for the growth of micro-organisms. In their development the micro-organisms cause various changes in the constituents of milk. Most of these changes are undesirable, when the milk is to be used directly as food. In order, either to hold these organisms in check, or to destroy those present, certain practices of great commercial importance have been developed.

The most important of these practices is refrigeration. Milk is cooled to a low temperature, and shipped in ice cooled cars. The low temperature restricts the development of bacteria and prolongs the time in which milk may be used. However, even with the best methods of refrigeration, milk may be kept only a few days. When transportation is an important factor, the shipping of whole milk in the cold condition is expensive. One hundred pounds of milk contain approximately twelve and one-half pounds of milk solids and eighty-seven and one-half pounds of water. This is at the rate of one pound milk solids in eight pounds of milk. If a part of this water could be eliminated, and the remaining milk be preserved against spoiling, two results would be accomplished; the lessening of cost of transportation and the increasing of the keeping quality. These results have been accomplished in the production of condensed milk.

Ordinary sweetened condensed milk has an average composition of about 25% water, 35% milk solids and 40% sugar. The chief function of the sugar is to preserve the milk somewhat like that of sugar in fruit preserves. The sugar is dissolved in the milk, which is then evaporated in a vacuum till the desired density is reached. By the removal of part of the water the milk solids in approximately three volumes of milk are concentrated into one volume. Milk is also condensed without the addition of sugar, sterilized by heat, and preserved in cans.

The latest development in this line aims to remove all the water from milk and leave the milk solids in a form that can be readily restored to their original condition by mixing with water. No sugar or other preservative is then needed; because without moisture, the bacteria do not propagate. The transportation problem is reduced to a minimum, because only the milk solids are then shipped.

The removal of the water from the milk may be accomplished in several ways. One of the first that was successful, consisted of evaporating the milk exposed in a thin film on the surface of heated metal cylinders. The cylinders dip into a shallow dish containing the milk. The film of milk taken up by the cylinder, dries by the heat that is applied to
The dried milk is scraped off by a knife. This is then ground and sifted. Another method is to expose the milk in the form of a spray to heated air. The particles of spray lose their water by evaporation, and leave the solids in a powder form.

One part by weight of this powder, and seven parts of water furnish all that is necessary to produce whole milk. The powder made by the latter process is as fine and white as flour. On mixing with water in the correct proportions whole milk is produced. The milk fat, on microscopical examination is found to be in the same globular form as in ordinary liquid milk. Figure I shows a plate of milk powder. On the left is a glass of restored milk; on the right a glass of ordinary milk.

Cream rises just as in ordinary milk and may be removed as desired. Figure II shows the cream risen on the two glasses of milk. From the cream obtained from the restored milk butter may be churned and Figure III shows the result of such a churning.

The milk made by mixing this powder with water possesses all the qualities of fresh milk and in one respect, may be better. If the original milk from which the powder is made, is clean and is also pasteurized, the restored milk has a very small number of bacteria.

USES

Milk powder may be used in either of two ways. By mixing with water in the proper proportions, liquid milk is formed which may be used for any purpose the same as ordinary liquid milk. Owing to the extreme fineness of the powder, it does not readily mix with water, unless stirred. By placing the powder on the water and using an egg beater for two or three minutes a perfect fluid is obtained.

In baking, the powder may be used without first restoring to a liquid form. The proper amount of powdered milk is mixed with flour by sifting, in the same manner as baking powder. In this way too it is possible to incorporate more milk solids than in the case of liquid milk. Milk powder is made both from whole milk and skim milk. Many baking establishments in large cities are finding this form of milk convenient, as there are no wastes from souring. It is also being used by confectioners. In New York City, it can now be obtained in small packages suitable for domestic use.
IN writing this article I feel that I am treading on dangerous ground, seeing that my profession is not that of plant breeder entirely, but that of horticulturist. However, I may be able to overcome the difficulty by approaching the matter from a practical standpoint and dealing only with that phase connected with practical horticulture.

No matter whether we are interested in the subject for practical or scientific purposes we must approach it systematically. We must discriminate in order to get the best results from our labours, or much valuable time will be lost in beating around the bush. There is no reason whatever why every trained horticulturist should not become a practical plant-breeder, and the pleasure he would derive from associating himself more intimately with and understanding more fully the fundamental laws on which the science is based would amply repay him for the time spent in its pursuit. There is something indescribably fascinating about plant breeding, as one never knows what to expect; although if we understand Mendel’s Law of Inheritance, and its relation to the particular group of plants with which we are working we can predict pretty closely as to results. The life of the man who is engaged in plant breeding is full of hope and this has a tendency to make him look more cheerfully upon the sterner duties which, as a horticulturist, fall to his lot. Even for the amateur, plant breeding has its charm and there is no occupation more edifying, more instructive, or more worthy of man’s best efforts than the production of something better than already exists, or the creation of something new, which will either aid in the beautifying of our home surroundings or be of some utility in the economy of life.

Although it is impossible to make two blades of grass grow where one grew hitherto, it is quite possible to produce a better blade of grass, a better ear of corn, or a sweeter scented flower, which will occupy only the same space as its less worthy progenitor. There is room for improvement not only in our fruits, but also in our flowers and vegetables.

There are essentials which are necessary in order to become a skilled breeder or improver of plants, the chief of which is an intelligent mind to grasp a knowledge of the subject to be dealt with. Before a doctor can diagnose the case of a patient he must have a thorough knowledge of human anatomy and physiology. He must know the various organs which constitute the body, and understand their functions. Thus it is with the hybridizer. He must know at least something about the other branch of biology, viz.: botany, without which it is useless to attempt any discriminate work, because the operator, although having eyes, sees not, that is, he lacks the knowledge to intelligently carry out his desires.
A good course in First Stage Botany is the first requirement. When a person has studied the morphology, and physiology of plants, he or she understands at least what the various organs of the flower, the calyx, corolla, stamens, and pistil were intended for. Secondly, a course in Systematic Botany will be found invaluable because of the knowledge of the families or natural orders of plants that is obtained. Why is Systematic Botany necessary? Because it has long been known that plants of different natural orders will not hybridize, but plants of the same order may. Thus when a person knows the characters of the plants which constitute an order, his chances of success in plant breeding will be greatly enhanced. It would be absolutely useless to attempt to hybridize a plant belonging to the natural order Ranunculaceae with another belonging to the order Compositae. Different species of an order may cross; species of different genera of the same order occasionally cross, but rarely; bi-generic hybrids are uncommon. From the above remarks the value of Systematic Botany will be readily understood.

Where is it possible to obtain these courses of instruction? At the agricultural, and various other colleges of the country, at high schools, and last but not least, Botanic Gardens. In the latter case these courses are available only to gardeners, or practical horticulturists who constitute the staff of the establishment. As some idea of the requirements of plants is of great value to the hybridizer, the practical horticulturist has the advantage over his less fortunate neighbor who has never had facilities for work in this direction. A knowledge of soils, temperature, humidity, and other environmental conditions is essential in order that we may bring any class of plants to full maturity by giving them conditions as nearly natural as possible; otherwise our chances of success will be limited to the extent of our knowledge in this respect.

Now, suppose we are through with all preliminaries, the next step is the selection of suitable subjects for hybridizing. The operator must have some definite purpose; there is very little to be gained by indiscriminately pollinating everything which appears likely to hybridize. The inevitable
used, the dimensions of which will depend upon the size of the flower operated upon.

Not having space in this short article to give the details of pollination, I may say that it simply consists in transferring pollen from the anthers or male organs of one plant to the stigma or female organs of another. As flowers are in most cases perfect, that is possessing male and female organs, it is sometimes necessary to pollinate a flower with its own pollen or with pollen from another flower of the same plant. The Primrose is a good example. In the case of "monoecious" plants, which possess both staminate and pistillate flowers, the only course to pursue is to transfer the pollen from the staminate flower to the pistillate one, or, if the staminate and pistillate flowers are borne on different plants of the same species, the pollen must of necessity be transferred from the staminate flower of one "dioecious" plant to the pistillate flower of the other. After the act of pollination is performed the flowers are covered with the paper sacks, and the operation completed by affixing a small tag bearing all data and information.

Nearly every one knows the beautiful Primrose, Primula obconica, a plant commonly grown in a great many homes. I have chosen this plant as an illustration on account of that fact. The photographs are from plants grown in the Forcing Houses.
It is plainly evident from Figure I that great improvement has taken place. The small flower represents the original species; the medium one, that of an improved variety called gigantea; and the large flower that of a supposed cross between Primula obconica, and Primula megasaefolia produced some years ago. Although the flowers of the hybrid were not larger than those of the variety gigantea originally, this enormous size has been attained by selection through several generations, the plant of each generation possessing the largest flowers having been selected for seed, and up to date each succeeding generation has given us larger flowers than its progenitor. This variety has been greatly improved at Cornell, as already two generations have been grown, flowers of the last generation showing an increase in size over the previous one. What will be the limit we do not know.

Previous to the appearance of this new variety, the flowers of the largest one measured one and a half inches in diameter, whereas, several flowers of the new introduction measure two inches. Two generations back its flowers were not more than one and a half inches, greatest diameter. Not only have the flowers increased in size, but the color has been intensified. The plant is very floriferous, and the umbellate inflorescences, which are remarkably large and borne on long rigid stems, measuring in some cases eighteen inches, are most desirable as cut flowers. In this respect a new
feature is introduced. Figure II speaks plainer than words.

The ordinary Primula obconica has poisonous leaves, this fact proving greatly to its detriment as a commercial plant. In the new variety this poisonous quality has apparently been eliminated to some extent. Whether this is so remains to be proved; suffice it to say that up to date no harmful effect has been produced upon persons who have handled it. Figure III represents the plant itself, and Figure IV the ordinary type from which it came.

The Chinese Primrose, Primula sinensis, affords another striking illustration. The flowers of the species as originally introduced were insignificant and of poor color. Now we have flowers ranging from white to deep crimson, including a beautiful blue, while the foliage is so attractive as to render the plant ornamental even when not in flower. This process of development has been slow, but the results of careful hybridising and selection are sure, and who can say that the result is not worthy of the labor as he looks into the face of one of these beautiful flowers? Surely such results as indicated in Figure V are encouraging.

The last photograph is that of a plant belonging to the genus Calceolaria having seven hundred and fifty blooms. It was produced by selection from a plant found growing in a garden in Sunny Kent in the south of England. How the parent plant originated no one knows; it may have occurred as an accidental hybrid. Nine different types were produced by the parent plant in the first generation under observation, the one represented in the photograph being selected as the best, although scarcely resembling the parent. This year we have in all, over twenty different types produced from these nine plants, several of which resemble the parent while others are entirely dissimilar.

FIG. VI.
In the present generation we have a clue to the parentage of the hybrid which evidently follows Mendel’s Law. Of this Law there is no time to speak here except to say that this great discovery has taught us not to discard hybrid plants as worthless; they may have inherited some desirable quality which in succeeding generations will appear and amply repay months and even years of acciduous toil.

What is true of flowers is true also of vegetables. Strange as it may seem, a good edible variety of carrot has been produced by selection through seven generations from the common wild species Daucus carota. The parsnip has a similar history, and that delicious vegetable asparagus has been produced by judicious selection combined with careful cultivation from the wild, saline loving seaside plant Asparagus officinalis.

Space forbids any further discussion. Suffice it to say there is an unlimited field for the scientific investigator, whether he be studying to throw light upon some cytological problem, or to prove or disprove some existing theory. There are also unlimited possibilities for the practical plant breeder. Science and practice are inseparably wedded, therefore it is the duty of one to aid the other for the sake of the good which can only accrue from mutual cooperation. Scientists have obtained many ideas and much of their knowledge from the trained practitioner, and it is to him they look for material for scientific investigation.

Let us then not scorn the efforts of the men who do the work; rather let us encourage the improvement of our beautiful flowers and useful fruits and vegetables. The difference between the scientist and the practitioner is only that of degree, and in either case let us encourage the one whose efforts testify to an intelligent appreciation of the works of nature.

THE DAVIS BILL

By R. J. Shepard, ’10

Winner of the 1909 Agricultural Stage

In the progress of the world, American agriculture has pushed itself to the front. Natural resources and the perseverance of the American farmer have held it there so far. But our natural resources are fast failing us, and in the near future we will have to depend more and more upon scientific knowledge, if we expect it to hold the place it has already gained. A few years ago the people ignored the idea of educating the farmer, as a farmer. Ideas have now changed. And the question in the minds of a majority of the people is not whether it should be done, but how should it be done. In order to further this movement several plans have been formulated, all of them of different natures, and all without success. At last, in order to bring this matter to a focus, the Davis Bill has been prepared, and was presented to Congress only a few weeks ago. This bill, in the main, is as follows:—(1) Beginning July 1, 1912 it provides for an appropriation of ten cents per capita to each state for vocational education, and the amount, about $9,000,000, to be paid yearly from the national treasury. (2) Instruction to be given in Mechanic Arts in schools of towns of not less than two thousand inhabitants. (3) Instruction to be given in Agriculture and Home Economics in secondary agricultural schools, one school to be established to each group of not less than five, nor more than fifteen counties all over the United States. (4) A branch of the State Experiment Station to be established at every secondary school. (5) The community in which the school is established is required to pay for the erection of the buildings and for the cost of the
general studies taught there. That is the bill in brief. On the face of it, it looks as if it was just what we want. But it is a question which we cannot afford to pass over lightly, and it is for this reason that I am going to give you a few thoughts on the subject.

In the beginning, if you will allow me to say so, I wish it understood that I am not in favor of this bill, the way it now stands. Neither am I in favor of doing away with it entirely. But I favor a modification, namely, to establish Agriculture in the high schools instead of building these secondary schools, and then concentrate our efforts along this one line entirely.

One of the objections to the bill as it now stands is that it would tend to take our children away from the high school and send them to the secondary school. It does not say so in so many words, but that is what the outcome would be, nevertheless. No doubt many of you have seen the time when you were sick of school and wanted to stop, and if it had not been for the advice of some kind friend or for father or mother, you might not be what you now are. And what would have happened if this bill had been in force? You would probably have dropped high school, or possibly never have entered at all, and gone directly to this secondary school. And what will this mean if a great many are allowed to do it? Simply that we are educating our farmers along agricultural lines only. That they will not be getting the education that a high school would furnish, and without which very few men will be strong enough to fight life's battles the way that they ought to be fought. What we want is a person not versed in Agriculture only, but one who has had an all around education—the kind that will make a man of him.

Then we will carry this point a little further. After a student has spent some two or three years in a secondary school, what will be the outcome? First, he is three years older. Second, he has been spending money for three years and is anxious to get out in the world and see the money coming in instead of going out all the time. And lastly, he will think he knows enough about Agriculture and doesn't need to go away to our State Colleges. This means that we are going to take away from these institutions some of the men, who, if they had gone there, might have turned out to be the very backbone of some of our future efforts. And taking these men away who are left? Only those who have gone thru high school and received sufficient education to allow them to enter our State Colleges, and this class will be composed almost entirely of people coming from our towns and cities. Is it safe, friends, to trust the future of Agriculture in their hands entirely?

Another effect that this bill will have will be to divide our children into two distinct classes: agricultural and non-agricultural. It means that our children from the country will be isolated from those of the town, and at an age when it will do them the most good to intermingle. We cannot afford to have our children narrow-minded and ourselves the cause of it. We cannot make bread unless we put the yeast and the flour together. Neither can we have a well-developed set of farmers by shutting them off in one corner of the world together, the way this secondary school would do, and there leaving them to themselves and to their own ideas.

The bill provides for one secondary school to each group of from five to fifteen counties. This will often cover a large territory and in most cases will necessitate the students attending it, leaving home, and often at a very early age. On the face of it this does not seem right. It surely is not right to take a child away from home, to strange surroundings, and perhaps evil influences, at an age when it is acquiring the characters which are later to be built into its life. Along this same line is the taking of our small district school children to the city or town to school. The bill itself
admits that it will hasten the consolidation of our rural and village schools, and this is just what we are working against. Here again, comes in the question of age. It means a great deal to us whether a child of district school age is kept in the country and there studies those things with which nature provides us, or whether he is taken to the town and there imbibes all the time, those very things against which we are trying to work in our Nature-Study courses. Whatever is impressed upon the mind of a child at this age usually stays with him thru life and it is for us to see that his early training is of the right kind. When he becomes of high school age there is no better place for him to go than to the high school and there mingle with high school children. But when he is of district school age the place for him is in the country.

Moreover, this bill will not take effect until 1912, if it is passed. Add to this two or three years to erect the buildings and get things in general working order, and it will be 1914 before work can be commenced. Now, we will suppose the bill has passed. It is 1914, the buildings are erected and fully equipped. Yes, fully equipped with everything except the brains. And where are these coming from? Do your realize what a drain it would be on the Agricultural Colleges of the United States today to supply with teachers the three hundred or more schools that this bill would create? It could not be done. Last summer at the summer school of Agriculture held at this college, there was a call for more than twice the number of teachers than could be procured, to fill vacancies in our State Colleges alone, and if we cannot get teachers to teach in our State Colleges, where then are we to get teachers to fill these secondary schools? They are simply not in existence, and without teachers we cannot have schools.

Knowing all these facts, does it seem right to let such a bill pass? We are now at a stage when there is more interest taken in Agriculture than there ever has been, and if you will allow me to say so, possibly more than there ever will be, taking everyone in the United States into consideration. We are at the beginning of a great evolutionizing movement, and upon whatever we do now may rest the destiny of the future. In laying the foundations for this plan we should lest that nothing enters into it that will cause it to topple over in time to come. Friends, you who are interested in Agriculture, it is for you to say what shall be done in this matter. It is your child who will be affected by the passing of this bill, and you hold his future in your own hands. See to it that you add your influence and your support to that side of the balance which will cause it to swing in the right direction.

**JOHN DEERE’S TRIPLE GANGS WORKING IN HARD, SUMMER PLOWING.**

See next article.
IN the article “A Plea for Heavier Horses” which appeared in the March number of this magazine an attempt was made to set forth some of the advantages that the production of heavy horses has over that of the lighter types. The figures given showed that horse power cheapened human effort from ten to twenty fold; that the heavier the horse, the larger the machinery possible, and the fewer the men needed; that this increased the value of human effort, decreased the cost of production, which increased the net returns per acre and hence increased the value of the land. It was shown that the heavier horse was the more profitable for the general farmer to produce, because he could be raised with less risk, easier training, could be put to work younger, was worth more on the market and the last to be effected by business depressions. It was also pointed out that the rural communities in the eastern part of America were rather deficient in the number of heavy horses, and that this condition cheapened human effort, thus increasing the cost of production and keeping the price of land down.

The former article simply represented the agitation and made no attempt to bring harmony out of chaos. Now it seems advisable to suggest a remedy, which while short, is of far reaching significance, and if put into successful operation will result in much that is good for many a now poor farmer, and for his beast of burden—Man’s most noble friend, the horse—as well.

Before suggesting the remedy and in order to make it stand out more clearly, let us look into conditions as they exist at the present time. We must not lose sight of the fact that the majority of horses that supply the great markets, and do the work of the world, are produced upon the farms of the country and not at the great horse breeding establishments, where every provision favorable to development is made. They are produced by the general farmers who will always remain the greatest producer of work horses. Upon the farms there is general lack of uniformity and persistency in breeding horses. All sorts of crosses are made. Farmers throughout the entire country have practiced haphazard methods of breeding horses for years. They simply breed and rear horses without any regard whatever to the demands of their conditions or of the market. The result is that the horses are of mixed breeding, many of them mongrels and misfits. These mixed-bred horses have proved disappointing. They have been so numerous and so indifferent in quality and character that they have been of little use and have not attracted outside buyers but have sold at small prices in their home districts.

As it is now, the buyers in search of any particular type or breed of horses does not know where to find them in any considerable numbers, but has to search and buy, here and there over a wide territory and at a great outlay of traveling expenses, individual animals of the right type, until the required number has been gathered together. If he is in search of a car load the assembling, at a shipping point, of horses thus purchased is another great expense. When each farmer in a given district, is breeding according to his individual ideas, he has to find a separate and individual market or buyer for his products, and the price received is consequently small. In such a district there may be a number of horses for sale annually, but all of them are of non-descript type and character. Such horses neither make a name for a district as a horse-breeding center nor
attract buyers willing to pay appreciative prices.

This condition of affairs is very discouraging to the buyer. He wants to know where he can procure what he desires with as little delay and expense as possible. A horse buyer of forty years' experience on being asked where he would go to procure a car load of heavy draft horses replied, "Where I can find them." He can not afford to take a chance. If he searches a week and fails to find what he wants, he is sure to lose his trade. This very state of affairs has led certain districts to make a specialty of producing or buying at large, horses of a given type. One district may traffic in heavy draft horses, another in the Coach type and the like. Now if a firm wants a car load of horses of a certain type they send their buyer to the district producing that particular type. Right here is where I prescribe my cure. The remedy is co-operation in horse-breeding.

Get a number of farmers in a given district, township or county, to get together and form a horse breeding association. It should be formed of farm-breeders who possess the same breed or class of horses and who will pledge themselves by every legitimate means to further the interests of the association and of the breed handled. It would be the work of such an association to protect the interests of its members, provide suitable stallions each year for use upon the mares owned by them, advertise stock, attract buyers, hold sales, make exhibits at the district, county and state fairs, hold meetings for discussion of horse-breeding matters, and educate the farmers of the locality to the better methods of breeding, feeding and developing market horses. Were such an association formed in each horse breeding center, and were each of them to practice the same sound methods of breeding, the use of the scrub, cross bred and unsound stallion would soon be a thing of the past.

Such an association should never lose sight of the value of uniformity. The breed selected should be the best suited to the conditions of the district. In some districts this would be the heavy draft, in other districts some other type, but whatever the breed or type selected it should be bred persistently until the locality becomes noted for that particular type or breed. A good example of this is seen in and about Toronto, Canada. The Scotch element in that vicinity has been partial to the Clydesdale. Stallions of this breed have been largely used in their breeding operations for several years with the results that the district has but one type of draft horse. This fact becomes apparent to one who stands on a street corner in Toronto and watches the teams as they pass. They are largely uniform in type, color, conformation, weight and action.

After uniformity comes pers sistency of effort. There are two very essential reasons why the association should be persistent in its attempts.

First to get the breed or type well established in the vicinity; second, to give the district a name for breeding horses of a certain type, though this latter fact, will ordinarily be established by the time the type becomes fixed. The only certain method of raising the general average of horses in regard to type, quality, character, action and specific utility is through persistent breeding to sires of the same breed until the blood of the type or breed desired obliterates the native blood of the mares. Naturally, then, we should find among animals graded up in this way, general excellence in form, quality, action and utility.

Oftentimes a fitting start is made in grading up in a certain district and in a few years no stallion of the same blood is to be found to carry on the good work in the right line. The consequence is that a horse of different breed is used until a sire of the same breed can be obtained. In this way, through lack of persistence, we cross our breeds or types and break the uniformity, though this should never be done. It would be the work of the association to provide the right stallion and prevent this crossing. The efficiency of the association will depend on its persistency and the uniformity of the stock it can produce.
The season of athletic carnivals and picnics is at hand. To fittingly usher it in, for us of the College of Agriculture, there must come once again the gathering of the children of Tompkins County at the College, to indulge their athletic rivalry, to get closer to their friends in Nature-Study and Extension work, to become familiar with more of the ideas about working and living that are characteristic here, and above all to have a good, long day of fun. It seemed probable that the accompanying views of last year's event would bring memories of that jolly day; in the morning, the sports, the inter-school ball games, and over all, the glorious blue sky and the sunshine; then the lunch under the trees—while the cadet band gave forth vociferous airs—and the wrestling exhibitions and awarding of prizes that followed; after that more fun on the field, the faculty baseball with its remarkable scores, the flag-raising over the little 'school-house, and then—that ripping old thunder storm that sent everyone scurrying into the buildings to listen
to Uncle John and to rest for a while and realize what a splendid day it had been! Wasn’t it worth while?

So it is time, now, to get to work. You, boys and girls, of the country schools, borrow some of last year’s potato crop and practice potato racing, or try jumping or baseball, or anything, so long as you are ready by May 30th, to at least try and beat someone else. Get ready the questions you want to ask the
Professors, about your garden or your experimental plot or your pet chickens or guinea pigs. Get ready for a good, long day of fun and come to see us determined to have a fine time.

And there is much for the students of the College to do in preparation, also. Let's begin to think of the good time we had and of the better time that we are going to have, and so—to work.
PROVIDING ATTRACTIONS FOR POULTRY SHOWS*

By Ralph E. Briggs, Sec'y-Treas'r Tioga Poultry and Pet Stock Association

Owego, N. Y.

In conducting a poultry show, we must not lose sight of the fact that we have two distinct publics to cater to: first, and foremost, perhaps, the exhibiting public; and second, the general public. One is as essential to the success of the enterprise, in its various phases, as the other. For, without the exhibiting public, it goes without saying that we cannot have the poultry show, and without the general public, even though the exhibiting public is largely represented, we will not have the wherewithal to run it. Therefore, it is plain that the management of a poultry show must offer every inducement possible to pursue these two publics to join hands enthusiastically and effectively.

The nucleus of a poultry show is nearly always the local poultry association, and to this little bunch of enthusiasts, and to those who may hereafter form such a nucleus, I, as one having had a little experience, will address a few humble suggestions on the subject of the inducements or attractions which may be offered to bring together your two publics in the show room.

Get a good judge; one who not only understands his business, but who has a reputation in the poultry world for fair and competent dealing. A small show cannot afford to hire a cheap or unknown judge. The little show, just making a bid for exhibitors, needs the drawing power of a judge of national fame. I believe that is the first step toward getting the birds into the show room.

Premiums, of course, should be made as attractive as possible, but they should be so arranged that the entrance money will at least pay all the awards. As a matter of fact, the association ought to make a percentage of profit on the entrance money, but it MUST pay the premiums, at any rate. The first year our association paid premiums on the percentage plan; that is, the winner in any given class received 50% of the entrance money in that class, second received 25%, leaving 25% to the association. The entrance fee was 50 cents for singles. That is, if there were eight birds in the Barred Rock Cock class, the entrance money was $4.00. The winner would receive 50% of this, or $2, and second, 25%, or $1, leaving $1 profit for the association. Third, fourth and fifth received ribbons. Of course, this is a very safe plan, but we found it confusing to some and not very attractive to others. This year we adopted the following plan, and we found it worked out very nicely: Entrance fees, 50c, singles; $1.50, breeding pens. Singles: 6 or more entries in a class—First Prize, $2.00; Second Prize, $1.00 Five Entries—First, $1.50; Second, $ .75. Four Entries—First, $1.00; Second, $ .50. Three Entries—First, $ .80 Second, $ .40. Two Entries—First, $ .50; Second, $ .25. One Entry—$ .25. BREEDING PENS: Three or more Entries—First, $3.00; Second $1.50. Two Entries—First, $2.00; Second, $1.00. One Entry—First, $1.00.

Special premiums, in the form of cash, silver cups and acceptable merchandise we have found to be valuable drawing features. Get the public spirited and well-to-do citizens of your community to give $5.00 to your association to be used as specials. Most every county has one or more illustrious sons in other parts of the world who look back upon the home of their boyhood with tender recollections, and who will be pleased to

*From an address delivered before the Cornell University Poultry Association during Farmers' Week, 1909.
send your secretary $5 to $10 if the matter is put before them in the right way. Of course such donations are given proper credit in the premium list and in the press. Divide the money thus received into $2 specials and place them where they will bring the association the most exhibitors.

I don't know where your association can spend money to better advantage than for silver cups. Get all you possibly can afford. They will draw more exhibitors and bigger entries than anything I know of. One who is not posted will be surprised to learn how reasonably splendid, quadruple-plated silver cups can be purchased. A few small cups and two or three larger ones, judiciously placed, will boost your show. Do not forget that.

I have also found that the subscriptions which the poultry press offer to associations for specials in return for advertising in their premium lists are valuable aids. A large number of these yearly subscriptions can be obtained in this way. They can be spread around on a great many classes and they always please the recipient. You will find, after the show, that quite a number have not been won owing to the class not being represented upon which they were placed, and these can be given to exhibitors who have not won at all, or who have won very little, and I assure you that this promotes good feeling.

Provide attractive ribbons for your winning exhibitors—something which they will be proud to own. Don't put up cheap rags in your show room. It cheapens your show and you cannot afford it. You can get a handsome ribbon which will be treasured by your winners for $.04 apiece in 500 lots from the biggest concern in the business.

Have your coops in readiness to receive the birds as they arrive. Have your judge on hand to commence judging as advertised in your premium list. This pleases the exhibitors because they like to look at them, because they like to have the public look at them, and because they want to display their advertising on their coops. And the public wants to know who has won. Associations should make the show room as profitable a market for their exhibitors as they can possibly make it. The secretary and superintendent should aid their exhibitors, so far as in their power lies, to make sales.

You will find that the newspapers of your county, and even of a territory wider than that, will turn in and help you cheerfully if you will furnish them with the material. For three or four weeks before the show have something in each paper each week all through your county and beyond. Strive to have something worth while to write about and tell it so that it will appeal to the general public as well as to breeders.

Get a copy of all the leading poultry journals and select advertisers from their columns who live within a reasonable distance from you, especially those who exhibit, and send them your premium list. Send a notice of your show to every prominent poultry paper in the country. Make it brief and to the point and they will publish it. Get the membership list of other local associations within striking distance of you and send your premium list to the members named therein, offering your membership list to the other association in return for the privilege.

Get your members interested in the specialty clubs, to the point of joining them. These clubs offer badges and other specials at shows where their membership is represented. Then have your members who belong to these clubs write to other members thereof who are not too far away and solicit them to exhibit at your show. Of course, send premiums list to every chicken breeder whose name you can dig up in your entire territory. Have the members of your association who know, or know of, breeders anywhere in your territory write them a personal letter and urge them to show. Have all your members pass the
news along by word of mouth. Talk the show first, last and all the time. Educate your constituency upon the subject of exhibiting. Many of them have scarcely heard of a show, and they do not know how it will benefit them. Publish, in all the papers, articles describing the benefits to be derived from showing, of meeting the fraternity socially, of comparing birds, of discussions with the judge and other breeders; drive home the value of the winnings in the way of advertising and business; show them the opportunities of doing business right in the show room. I have been referring, of course, to those who raise standard bred, or, at least, thoroughbred stock. But, also, start a campaign of education among those who are raising mongrel stock and show them the advantage of breeding something worth while. Such material ought to furnish many a recruit to the ranks of the fancy and the thoroughbred.

How many times have you got your birds back from a show, together with some ribbons which showed you had received first cock and second hen, or something in the winning line, and wondered how much credit belonged to you because of the winning—wondered how many birds in the class you beat, and, perhaps, which hen of two that were sent, won the prize? If you cannot attend the show you are exhibiting at, and there are no catalogues, you cannot learn what competition you had, because the usual way is simply for the secretary to notify you that you have won so and so and that "enclosed is so much money to pay for same." The papers state the winners (sometimes), not the number in the class. I know I always wish to be posted on how much competition I have had, and I believe every one else does. The Missouri State Poultry Show sends out an "Exhibitor's Statement" which is excellent as far as it goes, but I believe the form shown on the opposite page would be even better.

This statement shows the exhibitor which of his birds in any given class won, how many competed against him in each class, how much is coming to him on each winning, what specials he won; provides him with a check for the amount of his winnings; furnishes the secretary with a receipt for payment of the same.

Now, after we have all got our birds into the show room, how can we induce the great and fickle public to come and see them? There's the rub, because, brethren and sisters, we need 'em—yes, we do. I think I am safe in saying that a poultry show cannot be made to pay without large door receipts. How, then, can we get 'em a-comin' our way? That has been the stumbling block of many and many a poor secretary, believe me. It is a big problem, and far be it from me to attempt to solve it. However, I will try to do a little figuring on it in the hope that others will take it up and find the true answer.

We will take it for granted that your show room is light, clean, neat and airy. We will take it for granted that your fanciers are attractive because of fresh paint, uniform construction and clean litter on their floors; that they are arranged in an orderly manner throughout the hall, and that their occupants have been properly fitted for the exhibition. Now, of course, your fanciers come, and they go up and down the aisles comparing this bird with that, and taking them all in with an intelligent eye. But what about the great public which we wish to separate from some of its coin? It comes in, in greater or lesser numbers—principally lesser, probably—and it wanders aimlessly up one aisle and down the next with much the aspect and expression of an old brindle cow chewing its cud out in the pasture. Just as one day is much the same as another to Old Brindle, so is one chicken much the same as another to the public. How can we jar this bovine complacency and induce the public to look with different eyes upon our pets? I am going to mention a few things which I think might serve to amuse, to interest, to
EXHIBITOR’S STATEMENT.

TIOGA POULTRY AND PET STOCK ASSOCIATION EXHIBITION, OWEGO, N. Y.


The total number of birds entered in each class was as follows:

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<th>Class</th>
<th>Cocks</th>
<th>Cockerels</th>
<th>Hens</th>
<th>Pullets</th>
<th>Pen Young</th>
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Specials: No. 3, $2.00; No. 42, $2.00; No. 43, $2.00.

Your winnings were as follows:

Total amount won by you on this variety, $16.50.

You will find check for that amount attached. If you discover any errors in above, kindly return this statement with your complaint and we will cheerfully correct same.

We tried to treat your birds well and to give you a square deal, and hope you will find your way clear to exhibit with us next year.

Rollin M. St. John, Secretary.

RECEIVED $16.50 in full payment for all cash premiums won by me at the 2d annual exhibition of the Tioga Poultry and Pet Stock Association, Owego, N. Y.

Ralph E. Briggs.

NOTE. This check will not be paid unless the above receipt is signed.

Check must not be separated from Receipt.

To The TIOGA NATIONAL BANK
Owego, N. Y.

Pay to the order of Ralph E. Briggs $16.50.

Sixteen and 

Dollars, for premiums show of 1908.

Rollin M. St. John, Secretary.

This check is not valid unless above receipt is signed and is void after 30 days from date.

satisfy, and, therefore, to capture our elusive friend, the dear public.

A dominant trait of human nature is curiosity. Yet how many shows make an effort to satisfy that curiosity in their patrons? Some of the larger shows have a catalogue which skims the surface a little. Some of the smaller shows have placards on the coops naming the variety therein. These are valuable features, and one, or both, should be a part of the system of every show just as much as putting the coops up. But why not go further and educate your public as to the difference in feathers and the difference in practical performance between different breeds and varieties of
poultry? Why not adopt the method used at the great Tuberculosis Congress held in the Metropolitan Museum of Art in New York City some weeks ago? The New York Board of Health is pursuing a campaign of education on the subject of maintaining sanitary conditions and preventing the inception and spread of tuberculosis. Every thirty minutes a competent demonstrator went the round of the exhibit, a crowd following him from place to place, explaining, cautioning; describing and making clear the methods, purposes and workings of the Board of Health. Thousands upon thousands listened to those discourses. Of course, a poultry show is not of as much moment to the public as the scourge, tuberculosis, but there is this bond of union between the two subjects: the bond of education. Then why not select two or three men from your association who understand the breeds and have them pass around the hall, thirty minutes apart, say, during the time the attendance is largest, and explain the different varieties: what the standard weight is; the required color of the different sections; the number of points on the comb; the color of the eye, legs and beak; what the disqualifications are; where such and such a specimen is weak in form, color, etc.; describe each variety from a utility standpoint: whether it is an egg or meat breed, or general purpose, and why; whether setting or non-setting, etc. This can be rapidly done and, I believe, would not fail to attract an attentive audience. Placards should be displayed on the walls of the room stating that these demonstrations will be given every thirty minutes.

After a person has walked around the hall two or three times and stood on his feet, talking to this friend and that friend, he gets pretty tired, and yet, very likely, is not ready to leave the hall yet. But it is seldom there is a place to sit down. I would advocate, wherever it is at all possible, to provide a room easily accessible to the show room, freely furnished with chairs, where people may sit down and rest and talk it over. Have all the latest poultry papers on the table, and a liberal supply of government poultry bulletins from different stations. In the evening provide a good light so they can be read.

And right here I want to say that if an adjoining room of sufficient size can be had for the above purposes, it could also be utilized for a poultry institute to be held in connection with the show. By properly advertising such a feature, I believe it would be invaluable, both to attract visitors and to educate them and to get them interested in poultry and poultry shows. The New York State College of Agriculture here at Cornell University has this work in hand and will be glad, as I understand it, to take the matter up with the local associations throughout the state.

One of the best ways to stimulate enthusiasm in your association and interest in your general public is, for three or four months before your show, to hold a series of lectures, one each month, or even one each fortnight. The expense would be small. The Agricultural College will take up the matter of supplying lecturers on poultry topics with the local associations at very little expense to them. Very likely a hall could be secured free of charge. In our own town we use the court house. In some places the Board of Trade rooms would be available. Advertise these lectures by means of window cards and the newspapers. We had Professor Rice in Owego and had an audience which nearly filled the court room. He aroused a great deal of enthusiasm among our members and interest among the public. Such a series of lectures would lead up very consistently to the show.

Don't begrudge floor space to the incubator and supply people. Get a price for the space, if possible, but have them anyway. The more incubators, brooders, hoppers, fountains, model houses and coops, egg testers, foods, trap nests, and other chicken machinery and paraphernalia, you can get into the show room the better
attendance you will draw. Have some incubators hatching. Have some little chicks hustling in the brooders. The public loves to look at the little downy fellows; it never seems to get tired of it.

In this connection, let me advise you, if it is possible to arrange it with the Agricultural College, to secure their poultry show exhibit, consisting of model houses, coops, brooders, trap nests, hoppers, fountains, foods, photographs, charts, etc., which they send out in charge of an advanced student of the college, free of charge. It is THE feature of any show. We had it at our last show and it excited a great amount of interest. The student in charge Mr. J. H. Phillips was always on deck to answer the usual run of questions.

The Boston Show of 1909 is said to have been the most attractive poultry show ever held in America. Why? Because "it was tastefully decorated," as Judge Corey says in his report of the show, "with evergreens, until portions of this great hall resembled a jungle, in which one could wander among the cages containing beautiful and rare varieties of land and water fowls, until they could almost imagine themselves in some great park in the good old summertime. Nothing more attractive or artistic in the way of a poultry show could well be arranged." Now, of course, every association hasn't the use of a large hall, but, given a hall of any decent dimensions, palms, which could be rented at a reasonable figure from the florist, and evergreens, could be so utilized as to make the hall look very much like the Boston show; might even be used, in one or two parts of the room, at least, so as to produce the jungle effect. The public would appreciate such a novelty as this and would repay you by handing in more cash at the box office.

Another feature which many associations could provide is a duck pond. There is no doubt about the drawing power of this attraction. Those who attended this year's show at the Garden will remember the crowd that was always about the duck pond. It never became weary of watching the beautiful birds swimming and diving and playing and eating. Such a pond could be constructed in most any hall where there is a little extra room, some lumber, wire netting, a water connection, some waterproof canvas, and a carpenter. Of course, the fancy ducks are the most attractive to place on the pond but any kind of an old duck would please the public. I dare say some of the breeders of fancy ducks might be induced to furnish stock for such a feature free of charge if you gave them the privilege of putting up their advertising in the show room and doing business there.

Pheasants, storks, rabbits, hares, caviars, rats, mice, ferrets, squirrels, and all pet stock, we have found to be a drawing card. Cats are a great attraction to the ladies. Do a little hustling and get your friends, neighbors and fellow citizens to put in their pet tabbies, whether mongrels or thoroughbreds; entrance fee to be the same as for poultry. Pay a first prize of $5, a second of $3, and a third of $2. Advertise liberally that these prizes will be awarded by the ballots of those attending the show on the first evening. At that time, place a box, with a slit in it, in a conspicuous place, and have a trustworthy man with a small pad and pencil and book to take care of it. Each person who buys a ticket after seven o'clock, and all holders of season tickets, are eligible to vote as to which are the first, second and third cats. The ballot box keeper requires every one who votes to register in his book so that no one can repeat. Polls to close at ten o'clock and the result to be announced as soon as the ballots are counted. The ticket taker on this night should remind each one who gives him a ticket or presents a season ticket to vote for the cats before ten o'clock. Properly worked this ought to provide quite a crowd for that particular evening, and, then, by making good in other attractions you could keep them coming.
As a final suggestion, I would urge that you secure some novelty, something new to your public, and then use it as a talking point in the newspapers and in all your advertising. For instance: At our first show we incorporated in every article in the papers, and in every piece of advertising, "Be sure to see the Electric Hen. Chickens hatched by electricity, in plain sight, while you wait." We played that up for all there was in it. It was something absolutely new to our public and we had the whole town wondering, and talking the electric hen. And they came to see it by the hundred. The funny part of it was that, owing to a miscalculation, we had no eggs ripe for hatching in the Electric Hen during the show, so we had to place eggs, egg shells and chicks just hatched from an incubator to carry out the illusion. People would stand around that machine in droves, patiently waiting to see a chick kick itself into the world. But in vain they waited. So they would move on and perhaps when they looked again the next day another chick or two would be in evidence, and they would say, "I can’t ever manage to be here when one of those chickens breaks the shell." Well, nobody tumbled except the chicken cranks, so the Electric Hen did its work all right.

I would say, in the light of past experience, if you can put up anything like as good a show as I have been describing, charge twenty-five cents admission; children under twelve, fifteen cents; season tickets, entitling purchaser to admission at any time during the four days, $1.00, not transferable. Place these season tickets on sale in your prominent stores and advertise them persistently. Induce your members to sell two apiece, at least. You will be surprised how this will help out. I would also say, in the light of past experience, avoid Christmas week for the holding of your show as you would the pestilence. I am told that Christmas week shows are successfully held in some places, but it is hard for us over in Owega to believe it. Our public is too busy playing Santa Claus to even stick its nose in the hall.

In conclusion, let me say: Don’t forget that the visitor within your gates is seeking to be amused. In his search for amusement he sees things which arouse his curiosity and you will be dollars in if your satisfy his curiosity. You will make money by observing the wants of your visitors, for the fact that you have done so will spread very quickly by word of mouth throughout your territory.
ON SNOWSHOES IN THE NORTH WOODS

By B. H. Crocheron, '08

The Adirondack region of New York is well known to many summer visitors, but in its winter character it has the acquaintance of but few who live beyond its limits. The summer visitor crowds into a rattletrap hotel or a slab-sided camp, fishes in a fished-out stream, and tramps excitedly along some well-worn, lady-like trail. In this he is attended by a swarm of mosquitoes and black flies which pursue his path with relentless severity. From this, he retires at the end of a brief vacation, feeling that he has camped in the heart of nature and thrust himself close to the edge of the unknown.

In the winter season all this is changed. Most of the hotels and the pseudo-camps are closed for the northern wind to crowd through the gaping chinks in their threadbare construction and ramble through their empty corridors. The summer boarder departs to indulge in the winter charms of the city—its cheap theatres, garish restaurants, and overheated homes. The woods are left alone to the winds, the snows, and the everlasting trees.

To one who will rip himself away from the daily rut of common things and go for a winter season to the unbroken vastness of the Northern Woods, they hold a charm sufficient to compensate for the loss of the crowded streets, the clattering trolley, and the rush of civilized life.

Winter camping in the snow-clad woods is attended with an element of adventure which we seldom feel in our daily lives. When the snow falls thick and fast from October to January till it lays five feet deep in the woods without a drift or a break in its wide expanse; when the cold comes down from the Northland till the mercury drops to forty below and then ceases to register; when the sky is grey and leaden and the whirling flakes still come siftling down between the trees—then the camper must know his business; his togs must be thick and warm; his snowshoes must be strong and firm; and his grub must be light and abundant if his pleasure trip is not to have serious consequences.

Much depends on the snowshoes if one is to travel in the woods. It is dangerous at all times to go alone but especially dangerous unless one’s snowshoes are so old that they are tried and true and yet so carefully kept in order that every lacing is at its best for security. Occasionally a man alone in the woods breaks a snow-shoe. Sometimes he never comes back. Sometimes he is found after a long hunt, that is, if snow hasn’t obliterated his trail and if they know where to look for him. The writer snapped a snowshoe two miles from home on a cold day. He wasn’t alone, so he and the other man combined forces on the same principle as a three-legged race, and the adventure was only a joke. But any-
As a final suggestion, I would urge that you secure some novelty, something new to your public, and then use it as a talking point in the newspapers and in all your advertising. For instance: At our first show we incorporated in every article in the papers, and in every piece of advertising, "Be sure to see the Electric Hen. Chickens hatched by electricity, in plain sight, while you wait." We played that up for all there was in it. It was something absolutely new to our public and we had the whole town wondering, and talking the electric hen. And they came to see it by the hundred. The funny part of it was that, owing to a miscalculation, we had no eggs ripe for hatching in the Electric Hen during the show, so we had to place eggs, egg shells and chicks just hatched from an incubator to carry out the illusion. People would stand around that machine in droves, patiently waiting to see a chick kick itself into the world. But in vain they waited. So they would move on and perhaps when they looked again the next day another chick or two would be in evidence, and they would say, "I can't ever manage to be here when one of those chickens breaks the shell." Well, nobody tumbled except the chicken cranks, so the Electric Hen did its work all right.

I would say, in the light of past experience, if you can put up anything like as good a show as I have been describing, charge twenty-five cents admission; children under twelve, fifteen cents; season tickets, entitling purchaser to admission at any time during the four days, $1.00, not transferable. Place these season tickets on sale in your prominent stores and advertise them persistently. Induce your members to sell two apiece, at least. You will be surprised how this will help out. I would also say, in the light of past experience, avoid Christmas week for the holding of your show as you would the pestilence. I am told that Christmas week shows are successfully held in some places, but it is hard for us over in Owega to believe it. Our public is too busy playing Santa Claus to even stick its nose in the hall.

In conclusion, let me say: Don't forget that the visitor within your gates is seeking to be amused. In his search for amusement he sees things which arouse his curiosity and you will be dollars in if your satisfy his curiosity. You will make money by observing the wants of your visitors, for the fact that you have done so will spread very quickly by word of mouth throughout your territory.

ANOTHER VIEW OF THE PICNIC.
See Page 253.
ON SNOWSHOES IN THE NORTH WOODS

By B. H. Crocheron, '08

THE Adirondack region of New York is well known to many summer visitors, but in its winter character it has the acquaintance of but few who live beyond its limits. The summer visitor crowds into a rattletrap hotel or a slab-sided camp, fishes in a fished-out stream, and tramps excitedly along some well-worn, lady-like trail. In this he is attended by a swarm of mosquitoes and black flies which pursue his path with relentless severity. From this, he retires at the end of a brief vacation, feeling that he has camped in the heart of nature and thrust himself close to the edge of the unknown.

In the winter season all this is changed. Most of the hotels and the pseudo-camps are closed for the northern wind to crowd through the gaping chinks in their threadbare construction and ramble through their empty corridors. The summer boarder departs to indulge in the winter charms of the city—its cheap theatres, garish restaurants, and over-heated homes. The woods are left alone to the winds, the snows, and the everlasting trees.

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A ROAD TO A LUMBER CAMP.

Heavy clothing is needed for the winter woods. Thick underwear, sweaters, and Mackinaw shirts are used by the lumbermen and guides. Many also wear the broad habitant sash of woven worsted about the waist. It certainly is decorative, and warm in fact as well as appearance. The best headgear is probably a Norwegian cap which pulls down over the head when necessary, leaving an opening in the front for the eyes and nose. Footgear is the main difficulty. A man becomes a connoisseur on hosey before he finds the kind suited to his needs, if he makes long tramps on snowshoes. One fellow wore a pair of woolen heather-mixture Scotch socks; over these were blue woolen Shaker hose that reached almost to the knee and on top of these, plaid, lumberman's socks. This glowing combination was surmounted by a pair of Indian moosehide moccasins. The whole outfit was supposed to hold out snow, slush, and almost any degree of cold. The Forest, Fish, and Game Commissioner came in from a twenty-five mile cross-the-woods trip with about this same combination of footgear, except that his moosehide moccasins had an inner moccasin of sheepskin with the wool on it. He stated that they were the best thing he had yet been able to find. We have treated this matter of footgear in detail because it is probably the most serious part of the equipment.

Pack baskets are the usual methods of carrying supplies to camps in the woods. They probably are not as good for large loads as is the made-up pack and tump-line of the Canadian. A recent magazine writer in a prominent journal stated that he hauled his supplies on a toboggan. He admitted that this was difficult work and most persons who have been over the rough country and through the thick woods of much of the Adirondacks will find it hard to realize how it was accomplished at all. Few camps are maintained during the winter which cannot be reached by railroad or by horses and sleds. The difficulty of

one who has snowshoed over deep snow and occasionally fallen off his shoes knows the peculiar drowning, floundering sensation with which you have to struggle toward a tree to pull yourself to the snow level. Six or eight foot snow seems to have no bottom when you fall off your snowshoes. It's a good joke on a sunny day near home but a painful experience alone in the deep woods.

Up there one hears much talk about shapes and kinds of snowshoes. Most of the talk is of moolies versus trailers. The moolies are the round snowshoes much used by hunters because it is easy to turn quickly on them without falling and they have no points in the rear which are apt to trip on the brush when the snow is not deep. The trailers are the pointed kind which come in many varieties of shapes and sizes. Their principal advantage is that they do not dip forward in soft snow as the moolies do, nor do they scoop up the snow in front as is often the case with the others. The adherents of both types of shoes are many, and it is impossible to say which is the best for all cases.

One thing is certain, however, snowshoes to be practical must be heavily and strongly made of the best material. The very light shoes sold by “Indian” stores and many of the city sporting goods stores are no good.
transporting provisions on the backs of men is so great as to make the cost excessive. For those who go without guides on a camping trip during the winter, a camp pitched within short tramping distance of civilization is far the most practicable, even though it does not appeal so strongly to the imagination. Daily tramps may be made into the woods from the camp without difficulty for it is only at night during cold weather that the woods present their worst problem. Almost any camp can be made feasible if it is built tightly and has a stove. Hard work and sharp axes will be required to keep up the fuel supply, but this is part of the camping fun. Open-air camps, such as lean-tos may be possible. The writer has never tried them in winter—and never wants to.

Cooking a meal in the open in winter is a problem more complicated than that of cooking a meal in a summer camp. Sometimes persons build a fire on the top of the snow, for there seems nowhere else to build it. It will usually go on merrily for a short time but comes to grief at about the stage where the coffee-pot ought to boil; having eaten its way downward through the snow it is drowned beyond redemption. The only way possible is to cut some short green logs which do not burn through quickly, lay them together side by side on the snow and build a fire on top of this raft. All other efforts are fruitless. The best dry material to start a fire is birch bark. Great rolls of old bark can be peeled from dead trees. It will light almost as easily as paper.

An outdoor meal in the winter woods has surprises of its own. You get as close as possible to the fire and turn around occasionally to keep from burning on one side and freezing on the other. You turn your attention from your tin coffee cup and when you resume, the coffee is frozen solid in the bottom of the cup. Meats congeal almost instantly to a cold pasty mass, and fried potatoes have to be eaten directly from the pan or they have a cold storage effect on the palate. Things must be eaten in haste when the temperature is down below zero in the woods.

Yet with all their dangers winter experiences in the woods are well worth while. To many, the sighing of the wind through the trees is more potent than the most famous grand operas, and the thud of the snowshoes more harmonious than the clatter of the trolley. Perhaps to anyone the trees draped in snow, the hills veiled in mists, the skies steeped in sunsets are more satisfactory than a row of brick flats. To him who has heard the wind in the pines and the crack of the trees through the otherwise silent woods, who has seen the footprints of the wild things on the snow with never a print of a snowshoe crossing the way, who has sat at night by the glowing camp-fire, and watched the birch logs flare up and die away when the wind was high and the snow swirled and swooped round the camp—on a night when the wildness of things comes up on the doorstep and rattles the latch—to him the woods will come back with their echoing call.

“Next to the conservation and efficiency of the physical, mental, and moral energy of American youth through education which fits them for practical life, stands the problem of utilizing the forces of heredity in the improvement of all forms of life.”
“YOU can’t be sure about anything you eat or drink these days,”
I heard a gentleman say to his friend in the seat ahead of me. “It almost makes a man sorry he was not born sooner, before the water all got full of typhoid germs and the milk—” Just then the trainman announced the station where I was to get off so I was unable to hear what the gentleman had to say about milk, and the thought came to me: I wonder if he ever saw milk handled at Cornell. Then there came also the thought of the ways of putting up condensed milk and of what precautions are taken in the process, and as I had heard that one of the Borden factories was in town I thought that it would be interesting, if possible, to see some of the other ways in which this product, milk, can be used. I found the factory, and the Superintendent, after listening to my plea, kindly consented to allow me to go through the buildings, and called a foreman to show me through. The latter was very kind in explaining the nature and uses of some of the different machines, though the details of the process are not devolved and in fact, are known to but a few.

We find interest in recalling some of the hardships of Gail Borden in starting this great work which today employs a tremendous amount of labor and the output of many herds of cattle. About fifty years ago Gail Borden’s character had already made an impression, but only upon a small circle of acquaintances and friends. He was looked upon as a dreamer, determined to waste other peoples’ money as well as his own, for he was trying to find a way to preserve milk, and the practical men of his day said it was absurd, since the substance was the most susceptible to changes of temperature, surrounding conditions and the like. He tried for a patent, but the officials could not see that the evaporation of milk “in vacuo,” was of any special importance as the Patent Commissioners declared in May, 1856. Mr. Borden didn’t give up, however, but obtained much convincing proof of the value of his plan finally compelling the patent officers to yield; and in August of the same year he obtained his patent.

Having secured his patent, he spent much time in perfecting his plan and always insisted upon the most scrupulous cleanliness in his
factory, thus securing this most desirable quality in the product. Besides cleanliness at every stage of the process, another essential was that the air must be kept from the milk during the process. Milk is about eighty-seven per cent water, which has to be evaporated away from the influence of the atmosphere. The inventor succeeded in arranging this by employing a large egg shaped vessel from which the air had been exhausted and which was heated inside by a steam coil and outside by a steam jacket. Within this vessel by low heat the milk is reduced in volume. No loss of flavor or discoloration occurs and the real milk taste is retained unchanged. It is a remarkable fact that although the process was started fifty years ago, it is today the same, save for a few slight modifications. It is interesting to know and it is also greatly to the credit of the Borden firm, that instead of having to modify their methods to meet the demands of the United States Government and local boards of health, they have always been and are today in advance of these demands.

The form of contract which has governed the business of the Borden Company with dairymen for many years past, is a safeguard for the consumer, which in a large measure accounts for the success of the Company. If this contract were here reproduced, it would furnish a particularly valuable lesson in sanitary science as applied to the handling of milk. The contract requires the dairyman to sell and deliver to any one of these large plants, the whole output of his dairy. The milk is to be sweet, unadulterated and uncontaminated, containing all the cream and must be delivered at a low temperature (about 50 degrees) summer and winter. It also provides for the proper situation, condition and ventilation of the cow stables, also the proper methods of cleansing the utensils used. The milk house must be apart from the barn and clean, light and airy, the inside being painted or whitewashed. The company does not stop here, but follows the milkman into the stable and requires the milking to be done under sanitary rules. It also refuses to allow the dairyman to use any distillers' grains or ensilage. Sickness in the herd or household must be reported at once. The Company's inspector is empowered to enter any patron's farm at any time and look over the herd, barn, and milk house and see that all is in a sanitary condition.

The company does not confine its activities to merely condensing milk, but goes further and puts up evaporated cream, a milk chocolate and cream caramels. This branch of Borden's industry may be judged by its output of over 200,000 separate caramels daily, each one being made, wrapped and packed, by machinery.

It was very interesting to stand and watch the tons of milk being brought in and received at the receiving platforms. The inspectors receive the milk, all delivered as before mentioned and drawn in large wagons especially constructed for this purpose. The inspector examines the contents of each can by sight, smell and thermometer to make sure that the milk has been properly cooled. It is then carefully strained into the weighing vessels and weighed while the dairyman's empty cans are being scrubbed inside and out with scalding hot water and sterilized with steam. Here the processes diverge, according to disposition of the raw milk. In the case of condensed milk, the fresh material is raised to an exact temperature and at this temperature run into a mixing tank, where it is mixed with an accurately apportioned quantity of standard granulated sugar. When mixed well, the fluid is put into the large vacuum pan where it is condensed and thence to forty quart cans to cool. When cooled it is placed in a small tank from which are filled the small cans that every person knows of.

The factory described and shown in the illustration is not one of the largest condenseries but the foreman said that on July 11, 1907, they put up in this place about 115,000 one pound cans of condensed milk, requiring about 267,000 pounds of milk and somewhere near 45,000 pounds of sugar.
INTER-COLLEGE ATHLETICS

By C. V. P. Young, Professor of Physical Culture, Cornell University

No course of education is complete which does not devote special attention to the securing of a normal development and healthy working of the body. It was not so many years ago that the president of Amherst said in an annual report: "No one thing has demanded more of my anxious attention than the health of the students. The waning of the physical energies in the midway of the college course is almost the rule, rather than the exception, among us, and cases of complete breaking down are painfully numerous." A man may as Bacon says fill his vessel with gold, and silver, and precious stones, but if in the process he has destroyed his health, it will avail him very little.

Every student should choose some form of exercise which appeals to him and make a hobby of it. That does not mean that exercise should be pursued to the exclusion of other work that needs to be done, but that other work should not be permitted to exclude exercise. The man who thinks he is too busy to devote any time to play or physical recreation in some form or other, is according to all the laws of physiology, hygiene, and common sense, impairing the efficiency of the organism so that his work will not be as well done, nor will he have as long a time in which to perform it, as would otherwise have been the case. Many men are willing to admit the truth of this statement, but fail to act upon it. They persist in burdening themselves with work to the very limit of endurance, and are only brought to a halt by a threatened breakdown or worse, when it is forced upon them by painful experience that time saved at the expense of the physical reserve is a false economy.

The value of any form of exercise that may be selected is not determined solely by its immediate results however beneficial, but by the interest and enthusiasm it arouses and by its adaptability to conditions such as are likely to exist in later life. Not that the same form of exercise must always be pursued, nor that exercises must always be pursued with the same degree of vigor; but that the form selected should not be so strenuous or call for such a high degree of specialization, as not only to render the exercise unsuited to middle life but as to render the participator, because of exaggerated or one sided development, incapacitated from taking part in other and lighter forms of exercise. A Sandow, for example, is unfitted for anything but giving exhibitions of strength and for posturing; a blacksmith cannot throw a ball or perform movements which require any degree of co-ordination; an athlete who owed his development exclusively to football could make but a very indifferent tennis player, while a trained oarsman on the golf links would be very apt to remind one of the traditional bull in a china shop.

The great objection to intercollegiate athletics as carried on today is not against any evils that may be inherent in such contests or that have grown up about them, but it lies in the fact that they are participated in by a few specialists while the great majority of students are excluded. What is needed is not less athletics but more athletics — less for the specialists, perhaps, but more for the general body of students. No form of exercise occupies as large a place in the training of body and mind as do the games and sports of the athletic field. If properly carried on, not only do they give to the physical organism a needed stimulus, but it is through games of competition that the broader range of social and moral qualities are called into action. The student who fails to avail himself of the opportunities afforded by the athletic field for recreation and exercise, for meeting his fellow students on a footing and under conditions such as prevail...
almost nowhere else, is missing, it seems to me, a whole lot out of his college life.

It is this phase of our inter-college athletics which appeals to me. It is not only that many of the students who enter into them would not exercise regularly otherwise, but in these contests students of one college rub up against those from other colleges, and while they are getting needed exercise and becoming imbued with a love of sport as sport, they are also learning a whole lot about human nature. Knowledge of men is as essential to a well rounded education as knowledge of books, and for that study no better place presents itself than the athletic field. It is for this reason as well as for the fact that physical benefits will be derived and the habit formed of wholesome and pleasurable muscular activity, that I commend to every student participation in inter-college athletics, or other forms of outdoor sport which will entail associations outside of his own small circle.

THE NEW YORK CENTRAL FARM SPECIAL

The second educational farm train sent out by the College of Agriculture, and the most extensive thing of the kind that has occurred in the state, started from Suspension Bridge on the morning of April 5th. Proceeding over the Ontario Division of the New York Central, it reached Oswego, thence went north to Ogdensburg and returned by way of Syracuse. In all there were three and a half days of actual riding and speaking, with on the average, a stop every hour every day. At each stop lectures or demonstrations would be given in the coaches, from the platforms to the hearers below, or on the ground near the train. Each evening a larger and more extended meeting was held in the town hall of whatever place the train had reached. A moderate estimate of the attendance is 9,420 and when it is remembered that this was in spite of some very bad weather after the first day out, the actual success of the train may be realized.

The train included six cars; a Superintendent’s private car for the use of the staff, a compartment car also for baggage, etc., and four coaches in which lectures were given and demonstrations made. The special car was sent to Ithaca by the Central to take the speaking staff and the apparatus to Niagara Falls, where the special train was in readiness. Between these points as well as between Ithaca and Auburn the car was taken care of through the courtesy of the Lehigh Valley Railroad.

The route lay through sections devoted especially to the fruit and dairy industries, which were, therefore specially emphasized in the talks. Other points, however, were thoroughly considered by the various members of the party. The personnel of the occupants of the train was as follows: From the College, Director L. H. Bailey, Professors Stone, Cavanaugh, Craig, Fippin, Webber, Stocking, Lyon, C. S. Wilson, White, Rogers, Tuck, Publow; Instructors, Savage, Batchelor, and Jones; and student assistants, Anthony, Fisk, Frost and Shepard. From outside the College, Commissioner of Agriculture R. A. Pearson, State Master F. N. Godfrey, Dean H. E. Cook and F. W. Storrs of Canton Agricultural High School, Jared Van Wagenen, Lawyersville, J. D. Remington, Special Agent of the Traffic Division of the N. Y. C., F. E. McCormick, Superintendent of the Division, and stenographers, photographers, etc.

That this educational farm special plan is a practicable, valuable one may be inferred from the increased interest that is being shown in its development and the increasing cooperation that is being proffered by the railroads. It is being realized by ever increasing numbers that this is a means of reaching many farmers, of increasing their knowledge and ability, and of ultimately raising the prosperity not only of farming but of every phase of industrial activity throughout the state.
It is time once more for the present Editor, Business Manager and some of their associates to tender into the hands of a new board the reins of the Countryman's administration. The June issue will be brought out by that new body, that it may, "early in the game," become familiar with the exigencies of its task. The board as recently elected, will be as follows: Editor, N. R. Peet, '10; Alumni News Editor, W. Y. Rumsey, '10; Associate Editors, S. G. Judd, '11; R. D. Anthony, '10; W. G. Stephenson, '11; A. M. Kruse, '12; Business Manager, R. J. Shepard, '10; Assistant Managers, T. Bradlee, '11; C. F. Ribsam, '11.

The Editor relinquishes his grasp upon the editorial pen, after three years of intimate relationship, hesitantly, and yet gladly: reluctantly, because in reviewing the past years he sees the undeveloped plans, the lost opportunities, and the errors; and e'en would endeavor, once more, to attain to some of his original ideals; willingly because he is optimistic for the future, sanguine, that the incoming Board will develop desirable plans, institute improvements, and profit through the mistakes that have been made. There will always be the compensating surprises and disappointments, the problems and the revelations, the responsibilities and privileges that are attributes of the work. Our sincerest wish, as we cease our active duties, is that the gratifications that can accrue will be exceeded only by the success that will mark the Countryman's future years.

Let this thought be grasped and fully appreciated not only by the new Board, but by every student in the College:—That the maintenance of the Countryman, its success, its supremacy, the accomplishment of its purpose is his or her responsibility, and is calling for his or her every effort. The greatness of agriculture in this State, the need for the cooperation of its enthusiastic supporters, the vast opportunities open to the College, and the increasingly important part that the Countryman can play in this movement—all these call for conscientious and unselfish work on the part of those whom the magazine represents—the students of the College. Let this work be generously offered, that there may come inevitably and deservedly the reward of true success.

The Current Issue

Owing to serious illness in the family of Professor H. W. Riley, the preparation of the article on Lightning and Lightning Rods, which we fully intended to publish in this issue, has been delayed and we must solicit the indulgence of
our readers for not presenting it. It will be but temporarily delayed, however, and will appear in one of the immediately forthcoming issues.

We present with no little pride and pleasure Professor Cavanaugh’s article upon an industry that is the result of very recent inventions. Professor Cavanaugh’s high standing as an Agricultural Chemist and his intimate connection with this activity since its earliest days, bespeak the authoritative weight of his discussion, and further interest is aroused by the fact that this is the first popular, yet reliable information published upon this subject.

Among other things The School May stands for the Picnic Tompkins County School Picnic and the Agricultural Field Day, and it is high time to begin to think about these events. They deserve—and in fact require—a good deal of preparation, and it is, we trust, needless to remark that this year’s celebration must eclipse that of 1908, however much that implies. The indefatigable Extension Department arranges the details with the out of town participants, but we would suggest that the Agricultural Association take hold of the local responsibilities at an early date. Remember, this is a day when no criticism is too severe for the person, student or faculty member, who, without an exceptionally valid excuse, is not out on the Alumni Field. There are old athletic scores to settle, class supremacies to determine and above all, a huge amount of fun and profit to be derived when the children of the County visit the College, and everyone joins in to make the Field Day a record breaker.

When The Outlook announced a collection of articles upon the “Life of the Farmer” we waited with interest, in expectation of some broad, comprehensive, convincing discussions. As we read the awaited articles, our anticipation was sadly disappointed and our expectations were leveled with a sudden jarring thud. We would not be surprised to learn that the discussions as a whole, had created not a few distinct pessimists, out of persons who, without other knowledge of agricultural affairs, accepted them (as most productions in that excellent contemporary may be accepted) as sound doctrine. Our surprise was excited, however, first by some of the “Points of View,” and second, by the peculiar taste manifested by the editors in choosing such articles as representative material. For in the first of the group particularly, entitled, “Some of the Farmer’s Troubles,” by Fanny Morris Smith, are expressed some seemingly crude and distorted notions, ideas that savor of ultraconservatism, ignorance of the present scientific nature of farming, of some of its most obvious principles. The author would evidently cross swords with the Commission on Country Life, since she asserts that the salvation of the farm lies in its isolation from civilization, in practically a condition of mediaeval, narrow, undeveloped solitude. Speaking of the added necessities and increased desires that accompany the more complete life that is brought to the farmer by civilization, she says: “Nor will rural free delivery, parcels post, or increased trolley lines do else than intensify these very conditions. Every one of these things leads
straight away from the farm to the village, the town and the city. In fact, the railway is the destruction of the prosperous farming town." This it seems to us, is an insecure foundation for argument, today, when greater transportation facilities are almost universally called for, and when the broader, higher life for the country man and woman is the much sought ideal. Unfounded, also, seems the implication not only that there has not come knowledge to increase the profitableness of farming, but that the fertility of the land must finally disappear and that the farmer can never hope for anything better than the bare existence of the farmstead of yesterday. It is not true that, as she asserts, animals are kept on farms merely as a sort of fertilizer factory, that represents only expense, never inherent profit. The author speaks of this condition obtaining particularly in Europe, whereas we have thought of the dairies of Holland as lucrative industries, of the sheep farming of Spain and France as complete and profitable in itself, and that the grape-growing industry of the Latin countries, the grain fields of North and East Europe, and parts of the agriculture of Great Britain were not entirely dependent upon the keeping of animals.

The author bewails the dying out of wheat raising in Western New York. But she does not mention the fruit production there, which certainly deserves consideration. We would ask her whether it is not a sign of advance, when a crop like wheat, that is vastly more adapted to the central plains of the country, is supplanted by some other which is adapted to New York conditions, and which results in profits sufficient to provide comforts—modern, civilized comforts and even luxuries, for the "poor" farmer. The farmer whom the author pityingly quotes as saying, "If wheat brings less than a dollar a bushel it does not pay," and then "turned to other things," showed, to our way of thinking, his good sense and perception, and was but adapting himself to new conditions—in other words providing for his greater welfare.

One other thought that strikes us as unique we will mention. To quote, "The peasant of Europe can dance, sing, play his national instrument with no mean skill, carve, make lace and toys and even paint. * * * In America there are no cottage industries, no arts, no singing, no sound of pipe or viol or zither, no national dances, no bouts of wrestling, or boxing, no skill with the scythe or cradle, nothing by which a man can measure his power against that of another in healthful competition." Is it necessary to more than call attention to this remarkable philosophy? How many of us feel the want of a peasant class in this country? And the thought comes: Can these gifted foreign farmers (?) with all their skill on the zither and with the cradle, manage any of the modern farm machinery; can they read or write, are they level-headed, capable citizens?

We have mentioned, hitherto, some of the more glaring inconsistencies, and distorted deductions in the series but by no means all of them. In some cases merely technical, possibly excusable errors are made, in others, the whole viewpoint and conception of the writer seems to have suffered aberration and hypertrophy. Exception may be made, however, in regard to the two discussions by farmers, who evidently present actual condi-
tions in their communities, as seen by them. This fact reminds us once again of the interesting contrast between the too-often futile mental products of theoretical social reformers, and the pregnant statements from practical first-hand observers, taking these two authors as a type. The latter may often inspire investigation, thought, and sometimes, results. Nevertheless, we fear that the general effect of the articles taken as a whole, would be to leave a wrong impression in the mind of the readers. We felt regret that the stamp of approval that The Outlook's name implies could not have been borne by more worthy, more authoritative matter. We could not read the "Points of View" without wishing that as others read them they might obtain also an insight into the other side of the case, and observe some of the optimistic features and tendencies of this new era of Agriculture.

AN EMPLOYMENT INFORMATION OFFICE

As the result of a conference on April 20th, there has been established in connection with the Director's office an "employment information office." The purpose is to have a central agency where information will be assembled concerning students, present and past, who want positions or advancement, and concerning employers seeking to engage men. The demand at times for our students is greater than can be supplied from the miscellaneous list of available men who make their wants known, and it becomes necessary to establish a system whereby the College can know what each man is doing so that it can place him in a position for which he seems specially fitted when the opportunity arises.

On the other hand, the demand for positions at times is greater than the demand for men, and this office will endeavor to secure a list of farms in New York State, inspected by the College and declared to be well-managed and successful, where students who want experience can be placed for summer work or longer periods. This is a step toward the further unification of the College of Agriculture and the State, in which the farms of the State become our great laboratory.

This information office asks that all resident students who will want positions when they have finished their courses, or who will want summer work, make known their wishes. And that all former students who are available for new positions make the fact known. In addition, the office must maintain a complete record of the positions held by former students, showing length of service, range of experience and the like. This applies to all former students, whether they have in mind promotion or not, and includes those who were here for any length of time whatever, regular course, short course or special. Frequently a man who is well pleased with a position he holds can be advanced to a larger one if the College can just lay its hands on him. The demands for men cover practically every phase of agricultural work —on farm and in factory, teachers and experimenters, agents, inspectors, investigators, editors, and the like. The information assembled by the office will be constantly at the disposal of the several departments when they have calls for men or for positions. The work of the employment information office is placed in the hands of A. R. Mann, to whom all statements should be addressed. It is urged that this information be sent in voluntarily at once.
Mrs. Wilhelm Miller (Mary Rogers Miller) B.S., '96, has been nominated by the Cornell Alumnae Club of New York for the office of Alumni Trustee of Cornell University. The Countryman takes pleasure in presenting to its readers a short sketch of Mrs. Miller's life in view of the fact that she was so intimately connected with the Agricultural College, being for six years lecturer in Nature-Study. Mrs. Miller inaugurated the Nature-Study Correspondence Course, was married to one of the Agricultural College faculty and since leaving the University has always shown a lively interest in the Agricultural College, giving two excellent lectures here in the winter of 1906.

Mrs. Miller was born on a farm in Dallas County, Iowa, April 21, 1868. At the age of seventeen she began teaching in a district school. She taught for some time in the rural, village and city schools of her native state and then prepared for Cornell at the Iowa State College. She entered Cornell in 1893, and graduated in 1896 a member of Sigma Xi and with the degree of B.S.

It was in 1897 that she took up the Nature-Study work in connection with the Extension Department of the Agricultural College. In this work she became very prominent, giving lectures in almost every county of the state of New York, having charge of the same kind of work at the State Summer School at Thousand Island Park, and teaching at the Chautauqua Summer School. Mrs. Miller has appeared on the programs of the National Education Association, of the New York State Science Association, and of the American Association for the Advancement of Science.

In 1899 she was married to Wilhelm Miller, Ph.D., Cornell, '99, who had been assistant in the Horticultural Department, and who is now editor of Country Life in America and The Garden Magazine. Dr. and Mrs. Miller have one daughter and are now living in Elizabeth, New Jersey.

Mrs. Miller is a member of the Meridian Club of New York City, and of various scientific and professional associations. She was for two years treasurer, and at present is president, of the Cornell Alumnae Club of New York, by whom she has been nominated for the responsible position of Alumni Trustee.

In 1906, she was chosen to represent the Cornell Alumnae Club of New York on the General Alumni Committee. Of her work in this organization, the chairman writes, "A very active and creditable representative she has been. She has attended all our meetings; has shown herself helpful and full of suggestions in the solving of our problems, and in every way a level-headed well-balanced member, who has ideas, and is able to present them in such a way as to win the approval of her colleagues."

* * *

The School of Traction Engineering, which is now one of the short courses of the School of Agriculture of the University of Minnesota, will be held this year at University Farm, St.
Paul, for one month commencing May 25th.

Steam engineering, gasoline engineering, and blacksmithing will be taught in a practical way. Students will be given practice in actually running the engines and will be given sufficient work at the forge so that they may be able to do some of their repair work. Students will room and board in the school dormitories.

A prospectus describing the work and giving full information will be sent to all who desire. Apply to James M. Drew, Registrar, University Farm, St. Paul, Minn.

* * *

We note the ascendency of a new world's record maker in the Holstein Friesian cow Grace Payne 2d's Homestead, who, tested during the latter part of March, produced 28.44 pounds of butter fat in seven days or an equivalent of 35.55 pounds of butter. This animal is owned by Mr. H. A. Moyer of Syracuse, N. Y. and thus brings the honor of being home of the Queen of the Holstein's back to the Empire State. Her record has been consistent since she became the champion four year old in 1907 with a record of 29.16 pounds of butter in seven days.

CAMPUS NOTES

Prizes offered to Cornell Poultry Students and to others at the Poultry Institute and Exhibit held during Farmers' Week, Ithaca, N. Y., Feb. 22, 23, 24 and 25, 1909.

1. "The Metropolitan and Rural Home prize" of $5.00 for the best write-up of the Poultry Institute and Exhibit. Won by Freeman Jacoby, Ithaca, N. Y.

2. "The Horace F. Prince prize" of $5.00 to be divided between the members of the winning judging team. Won by F. W. Dromgoole, Middletown, N. Y.; H. L. Davis, Laurens, N. Y.; G. S. Cornelius, Ithaca, N. Y.

3. The James G. Halpin prize of $5.00 to the student in the judging contest whose scoring most nearly corresponds to that of Judge. Awarded to S. H. Hallock, Ithaca, N. Y.

4. The Poultry Monthly prize of a yearly subscription to the student doing the second best work in scoring in the judging team contest. Won by G. S. Cornelius.

5. The T. F. McGrew prize of $3.00 to the special or short course student whose scoring most nearly corresponds to that of the Judge. Awarded to Harry Hayner, Livingston, N. Y.

6. The T. F. McGrew prize of $2.00 to the special or short course student whose scoring next most nearly corresponds to that of the judge. Awarded to W. E. Kidd, Clifton Springs, N. Y.

7. The H. W. Hayner prize of one setting of Barred Plymouth Rock eggs (value $5.00) to the Short Course student doing the best all round judging. Awarded to G. S. Cornelius.

8. The S. W. Draper prize of one setting of White Plymouth Rock eggs to the Short Course student doing the best judging on White Plymouth Rocks. Won by Harry Hayner.

9. The Church Bros. prize of one setting of S. C. Buff Leghorn eggs to the student doing the best work in judging S. C. Buff Leghorns. Won by H. L. Davis.

10. The T. F. McGrew prize of one copy of "Perfected Poultry" to the student who best fits his fowls for the Show. Awarded to H. I. Macomber, Ithaca, N. Y.

11. "The T. A. Goessling prize" of a setting of S. C. White Leghorn eggs (value $1.50) for the second best work in preparing birds for the Show Room. Awarded to Miss Bethea T. Moodie, 466 W. 22d St., New York City.

12. "The Poultry Monthly prize" for a yearly subscription to the student doing the third best work in preparing fowls for the Show Room. Awarded to E. J. Joralemon, Webb Mills, N. Y.

13. The Church Bros. Prize of one S. C. Buff Leghorn cockerel (value $10.00) for the best work in killing.
and picking. Won by S. Sugarman, 726 DeKalb Ave., Brooklyn, N. Y.

14. The T. A. Goessling prize of one setting of S. C. White Leghorn eggs for the second best work in killing and picking. Awarded to Ross R. Finch, Clyde, N. Y.

15. The W. P. K. White prize of $1.00 credit for the purchase from the Poultry Association of a book or books which shall cost at least $3.00, to the student doing the third best work in killing and picking. Won by H. L. Davis.

16. "The Poultry Monthly prize" of a yearly subscription to the student doing the fourth best work in killing and picking. Won by G. S. Cornelius.

17. L. F. Boyle prize for the Judging and Guessing Contest open to all persons except Poultry Judges and Present or Former students in Poultry Husbandry. Won by W. P. Mix, Schoharie, N. Y.

18. Mrs. O. B. Sarre prize of a gold medal (value $5.00) and $20.00 in cash for the best set of Poultry Farm plans. Won by W. K. Bachrach, 2408 Linden Ave., Baltimore, Md.

19. Poultry Department prize of $5.00 given by a member of the Poultry Department for the student having the highest general average standing in all studies. Won by Miss Betha T. Moodie.

20. The Ellis M. Santee prize of $5.00 to the most useful student in the Winter Poultry Course Club decided by vote of the class. Voted to L. M. Hurd, Auburn, N. Y.

* * *

The Students’ Association of the New York State College of Agriculture organized during Farmers’ Week, is receiving a very enthusiastic response to its recent circular letter to the alumni and ex-students explaining the purpose of the Association and calling for membership. The replies are characterized throughout with devotion to the College and an eagerness to work for its interests and for the interests of farming in general. If the Association is to be influential in a reasonable proportion of the lines of effort that are being suggested for it, it will have a big work to do and will touch a good part of the problems of the country people. The spirit and purpose at present is to develop an active, working organization, that shall take hold of definite problems. It is requested that resident students that wish to become members of the Association hand their names and home addresses to the secretary-treasurer, A. R. Mann. All students are eligible, and secure membership by identifying themselves with the Association. The slogan is that every man or woman who has ever studied agriculture at Cornell for a long course or a short course shall be an active member of the organization. The time to join is right now.

The Association is considering the advisability of having a reunion of students on Wednesday of State Fair Week, at the State Fair. After an hour business discussion in the morning the meeting could adjourn until evening, when after a beefsteak dinner together, the evening could be spent in an informal discussion of the work before the Association.

* * *

The regular April Assembly which was postponed until after the Easter holidays was held Thursday evening, April fifteenth in the auditorium. Special pains taken to notify the undergraduates of the assembly resulted in a large attendance. Previous to Dean Bailey’s talk a piano solo was exceptionally well rendered by Miss Gertrude Yne of Sage College. In his talk, Dean Bailey gave his views as to what the keynote of a good speech ought to be. Gestures and the raising and lowering of the voice at certain places, he said, would not make a good speech unless the proper spirit was put into it. The Dean also gave an explanation of poetic expression and the things that gave birth to it. He concluded his speech for the evening by reading a number of poems among them Coleridge’s "Kubla Khan," Barham’s "Jackdaw of Rheims," and Longfellow’s "My Lost Youth." Music was then furnished by the Mandolin Club. The usual
social hour followed the assembly, the refreshments being supplied by Hebsa, the senior honorary society.

The first inter-faculty baseball game of the season was played Saturday April 17th on the Alumni Field by teams picked from the east and west wings of the building. The latter team won by the decisive score of 25 to 12, though the game was intensely interesting from start to finish. The batteries were Knudson, Love and Squires of the victors and Publow, Laury and Rogers of the vanquished. The other members of the teams were East Wings; Anderson, Wilson, Savage, Eldridge, Kimball, Cook and Rice; West Wings, Fippin, Gilbert, Minns, Robb, McCool and Duggar. In spite of this defeat, rivalry exists to a high degree, and frequent games will probably be necessary to decide the final supremacy.

The Agricultural Crew has been working steadily since vacation and is in good shape to represent the College at the spring regatta. At this writing the make-up of the crew was as follows: Bow, W. A. Salisbury, Sp. (Capt.); 2, D. Palmer, Sp., 3, T. O. Gavett, 4 L. C. Jagger, '11, 5 C. H. Arnold, 12, 6 H. B. Munger, '12, 7 O. J. Smith, '11, Stroke, M. A. Centurion, '09.

On Saturday, March 20th, the University was visited by a committee of 19 members of the New York State Legislature, headed by Speaker James Wadsworth, Jr. and including Edwin A. Merrett, chairman of the Ways and Means committee, Commissioner Eugene H. Porter, C. F. Boshart, '84, and others. After a general tour of the other Colleges of the University in the morning the committee turned towards the College of Agriculture. Luncheon was served by the Department of Home Economics to about fifty guests including the legislative committee, five of the University trustees, Deans of seven colleges, members of the faculty of the College of Agriculture and others. After luncheon the committee proceeded on a tour of inspection of the College which included every department from attic to cellar. The Professors in charge of respective Departments gave short talks explaining the work carried on by their Department and briefly outlining certain work planned for the future. As far as possible students were working in the laboratories in order to make more clear the work that is being done by the College of Agriculture. After inspection of the College the Committee was escorted to the Armory where they reviewed the student cadet corps.

The baseball team of the College of Agriculture started the season of 1909 by a game with the College of Mechanical Engineering which resulted in a victory for the Agricultural team. The final score at six o'clock was 10-6 in favor of Agriculture. The team played together well for their first appearance and the outlook for a successful season is good. The battery which did effective work consisted of Wilson, catcher, and Emmons and Oyster, pitchers. The Agricultural team excelled especially in batting. Of course the errors of a first game and a new team were evident but we feel sure that practice will correct these faults. The line up was as follows:

Wilson, c.; Emmons, Oyster, p.; Smith, rb.; Boehler (Mgr.) 2 b.; McCloskey, 3b.; Peckham, s s.; Barron, r. f.; Myer, (Capt.) c. f.; Bayer, l. f.

The meeting of the Agricultural Association on April 20th was productive of not a little amusement, as well as the transaction of quite a little business, by a goodly attendance. After the reading and acceptance of the minutes, the question of the formation of a committee which should serve in the fall to assist new students in becoming familiar with the College, its work and system was brought up and after discussion it was decided that such a committee be appointed.
to confer with Mr. Mann—from whom the scheme originated. The subject of the Children’s Picnic and Agricultural Field Day was then touched upon in anticipation of the active work that is shortly to be begun in preparing for the event.

The meeting then convened as the Cornell Countryman Association, and the board for 1909–10 recently nominated as given on another page was unanimously elected. The retiring editor and manager then made their reports, and auditors for the books were called for. The Agricultural Association then turned to the program for the evening which consisted of an elaborate and unique entertainment conducted entirely by the Girls Agricultural Club—to the members of which are due thanks and credit for their efforts. There were charades, musical and dramatic selections, and finally a bountiful supply of popcorn. Not only did the affair provide for an evening’s recreation but it also set a pace for all other students of the College in the matter of making the Association meetings novel and interesting.

FORMER STUDENTS

'95, B. S. A.; '06, M. S. A.—G. Harold Powell did his preparatory work in the high school at Chatham, N. Y. He entered Cornell in 1891 and graduated in 1895 with Sigma Xi. In 1896 he received his Master’s degree. He was professor of Horticulture and Entomology at the Delaware State College for five years.

In the fall of 1903 Mr. Powell entered the United States Department of Agriculture, working with Mr. Wm. A. Taylor, Pomologist in charge of Field Investigations. Mr. Powell began to develop in most of the important fruit regions of the United States the investigations of the factors which influence the keeping quality of fruits. Wherever possible Mr. Powell has worked through organizations. Not only organizations of fruit growers, but organizations of fruit shippers, cold storage organizations and even the railroads have been brought to see the advantage of the work to them and to lend most hearty cooperation. In this way Mr. Powell has been able to reach a large portion of the business men interested in fruit and to exert a tremendous influence upon the industry.

One of his important lines of work, the precooling or the quick cooling of perishable fruits and vegetables before shipment, was started by Mr. Powell in Georgia in 1905. It has been continued in California for several years and promises to revolutionize the methods of shipping perishable produce in the next few years.

In southern California alone the value of Mr. Powell’s work in preventing the decay of oranges during shipment is estimated by the more conservative fruit growers to be worth to the industry over one million dollars per year. So highly is he regarded by the men of large influence in the citrus industry that he has found it hard to stay in the scientific work on account of the many business openings which have been offered him.

Mr. Powell spent two and a half months in Europe during the past summer studying the handling, selling and distributing of fruit in the
principal markets there. He visited the lemon producing districts of Italy and Sicily looking up thoroughly the foreign lemon growing industry in connection with the lemon investigations now being carried on in California.

Mr. Powell was commissioned by President Roosevelt to represent the Government at the First International Congress of Refrigerating Industries held in Paris last September. About 4,000 enthusiastic delegates assembled for a ten days' session. Mr. Powell was elected President of the American delegation. His paper and the discussion upon it occupied nearly a full day's session and excited much interest from foreign fruit handlers. He was elected to the permanent International Commission for the organization of the next Congress to be held in Vienna in 1910.

Mr. Powell has associated with him in the work, Professor A. V. Stubenrauch who received a Master's degree in Agriculture from Cornell in 1901; L. S. Tenny the son of a New York State fruit grower and a graduate of Rochester University; H. M. White, a graduate of the Massachusetts State College of Agriculture at Amherst; S. J. Dennis as Refrigerating Engineer a graduate of Sibley in the class of 1904; G. W. Hosford, B.S.Agr. 1902 and M. S. Agr. 1905, from Cornell; C. S. Pomeroy, a graduate of the University of Vermont and A. W. McKay, Cornell, B.S.Agr. 1908; W. J. Eustace now Professor of Horticulture at the Michigan Agricultural College and S. H. Fulton and Guy L. Stewart all graduates of the Michigan Agricultural College have also been associated with Mr. Powell in his great work.

On one of the best packing houses at Riverside, California, is the following tribute:

"In grateful appreciation of the U. S. Department of Agriculture, the Bureau of Plant industry, G. Harold Powell and his staff, this building is dedicated to the careful handling of citrus fruit, January 1, 1908."

'81, B. Agr.—For some time to come the address of A. G. C. Hahn will be Menlo Park, Cal.—Cornell Alumni News.

'84, B. Agr.—N. A. Welles has removed from Wyalusing, Pa., to 861 College Avenue, Elmira, N. Y.—Cornell Alumni News.

'91, B. S. A.; 97, M. S. A.—In an article entitled "Power from the Farm Brook" the January number of the Review of Reviews contains some interesting facts about the utilization of local power on the farm of Jared Van Wagenen, Jr., in Lawviersville, N. Y.—Cornell Alumni News.

'91, Sp.—W. J. Kerr, president of the Oregon Agricultural College, has been in Washington attending the convention of the American Association of Agricultural Colleges and Experiment Stations.

'98, M. S. A.—J. Edgar Higgins is teacher of Agriculture and Nature Study in the Normal School at Honolulu, Hawaii, and supervisor of agricultural teaching in the Honolulu schools. He is also horticulturist at the United States Experiment Station.

'00, Sp.—William Underdown has been spending the last three years as Farm Manager for the New York State Orphanage at Hastings-on-the-Hudson. Prior to that time he was Farm Manager for the Boston Farm and Trades School on Thompson's Island, Boston Harbor. He has just left his home at Trumansburg, where he has been for the last three months, to assume the management of the celebrated Bradley farm of 800 acres at Nyack, Rockland County. This farm has stable room for 160 cows, besides having a modern dairy equipped with all the modern sanitary appliances. The farm also has a large poultry yard. In this new position he is going to take a few boys to train in practical farming. He hopes eventually to have a sort of Farm School for orphan boys.

'01, Sp.—S. C. Roulston is in charge of three of the creameries in New York State for the Newark Milk and Cream Co. His address is Cassville, N. Y.
'02, M. S. A.—A daughter, Elizabeth, was born on February 9, to Mr. and Mrs. James A. Foord, (Grace Mary Law, '93) of Columbus, Ohio.

'02, B. S. A.—Arthur Brinkerhoff has opened an office at 103 Park Ave., New York City, for the general practice of landscape architecture.

'04, B. S. A.—H. E. Kinne, jr., is secretary of the Syracuse Breeders’ Association. His address is 414 Dillaye building, Syracuse, N. Y.—*Cornell Alumni News.*

'05, B. S. A.—Lester C. Griffith, a landscape architect of Lynbrook, Nassau County, N. Y., has been appointed from the civil service list as nursery inspector for the State Department of Agriculture.

'05, B. S. A.—In its correspondence from Brown University the *Boston Transcript* recently printed the following: ‘The interest of students at Brown University in practical social work has been greatly increased by the addition to the faculty this year of Carol Aronovici. He is a college graduate of wide experience and is now in charge of the Union Settlement House in Providence. He is teaching a year course in ‘Social Welfare,’ which aims to give the students an insight into the actual social conditions among the poor, and the work carried on by the social settlements. The work consists of a one-hour lecture, once a week, on social settlement work, and on the characteristics of the different nationalities found in Providence. This is supplemented by genuine laboratory work, that of the first term being house-to-house canvassing in several of the foreign communities of the city, finding out the general housing and sanitary conditions existing. The second term will probably be devoted to the study of special definite problems like child labor or woman labor in factories, while the third term will be occupied in observing the methods of practical social legislation. Mr. Aronovici has not confined himself to this work, but has introduced into the city a new kind of work, modelled on the People’s Institute of New York. One of the features of this organization is a systematic course of lectures; and two of Brown’s professors are assisting in this.”—*Cornell Alumni News.*

'05, W.—Arthur Ambler is foreman for the Newark Milk and Cream Co. at their plant in Stone Road, N. Y. His post office address is Cassville, N. Y.

'06, B. S. A.—A. S. Coelho, after graduating, took a trip to Europe and on returning to Brazil, accepted a position to which he had been appointed by the Governor of the State of Santo Paulo. He is now superintendent of a large coffee plantation. He was married on January 16, to Miss Leonora Tibirica, daughter of Dr. Jorge Tibirica.

'06, B. S. A.—R. R. Slocum is poultry assistant in the bureau of animal industry of the United States Department of Agriculture. His address is 1202 Q street, N. W., Washington, D. C.—*Cornell Alumni News.*

'06, Sp.—George B. Chase, son of Mr. and Mrs. George W. Chase of North Rose, died very suddenly of pneumonia at the hospital in Great Falls, Montana, on Sunday morning, March 28. Chase prepared for college at the Drury high school. While there he was greatly interested in athletics, and for two years was quarterback on the football team. He was also on the Drury track team and won points for his school in the Williams inter-scholastic meets. After graduation he entered Cornell taking a special course in Agriculture, remaining here one year. He then entered the Amherst Agricultural College. At both these colleges he made the college basketball team. After a year at Amherst he again entered Cornell but was advised to complete his agricultural course at the Ontario Agricultural College at Guelph, Ontario. At Cornell he was a member of the Theta Delta Chi fraternity, and played the cello on the University musical clubs. Chase was always characterized by his earnestness and enthusiasm in what ever he undertook. His death has removed from the life of his home town, one of the most popular of its young men.
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<table>
<thead>
<tr>
<th>Cover Design—An Alaskan Camp</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontispiece—The Class of 1909 Agriculture</td>
<td></td>
</tr>
<tr>
<td>Lightning and Lightning Conductors</td>
<td>H. W. Riley</td>
</tr>
<tr>
<td>Southern Alaska</td>
<td>A. M. Kruse, '11</td>
</tr>
<tr>
<td>Student Leaders</td>
<td>J. L. Stone</td>
</tr>
<tr>
<td>Some Remarks to Seniors and Others</td>
<td>L. H. Bailey</td>
</tr>
<tr>
<td>Our Winter Birds and the Codling Moth</td>
<td>R. D. Anthony, '10</td>
</tr>
<tr>
<td>Agricultural Legislation</td>
<td></td>
</tr>
<tr>
<td>The New College Barns</td>
<td>W. G. Stephenson, '11</td>
</tr>
<tr>
<td>Department Plans for the Summer and Fall</td>
<td>R. D. Anthony, '10</td>
</tr>
<tr>
<td>Editorials</td>
<td></td>
</tr>
<tr>
<td>The Appropriations and the Seniors</td>
<td></td>
</tr>
<tr>
<td>The Old and the New</td>
<td></td>
</tr>
<tr>
<td>The Weather Bureau</td>
<td></td>
</tr>
<tr>
<td>General Agricultural News</td>
<td></td>
</tr>
<tr>
<td>Campus Notes</td>
<td></td>
</tr>
<tr>
<td>Candidates for the Degree of Ph. D. 1909</td>
<td></td>
</tr>
<tr>
<td>Candidates for the Degree of M. S. in Agr. 1909</td>
<td></td>
</tr>
<tr>
<td>Candidates for the Degree of B. S. in Agr. 1909</td>
<td></td>
</tr>
</tbody>
</table>

**THE CORNELL COUNTRYMAN**

is a monthly magazine published by the students of
The New York State College of Agriculture at Cornell University
Address, COLLEGE OF AGRICULTURE, ITHACA, N. Y.

SUBSCRIPTION PRICE. $1.00 PER YEAR
Entered as second-class matter at the Post Office at Ithaca, N. Y.
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In the mythology of the Greeks, thunder was the weapon of Jupiter with which he ruled the heavens and the earth from his throne on Mount Olympus. These same Greeks, little realizing the importance of their discovery, found out that amber, or "electron," when rubbed briskly, developed a force that was capable of attracting certain other bodies, and forthwith "electricity" received its name. Man's knowledge of this great science, however, remained a complete blank for many ages until in 1660 an Englishman performed experiments with amber and glass rods, which aroused other scientists to action, the result being that there were soon developed many pieces of electrical apparatus that now constitute part of the standard equipment of every physics laboratory. Machines were built for making electricity, the Leyden Jar was devised for storing it and many experiments were tried but none with any definite end in view. It remained for our great statesman and common sense scientist, Benjamin Franklin, about 1750, to draw a practical lesson from these discoveries. After extensive and wonderfully direct studies of the new experiments he boldly stated and promptly proved, by means of his historic, silken kite flown in a thunder storm, that lightning and the electricity of the amber rod were one and the same in principle tho varying greatly in magnitude. With this theory proven correct Franklin laid down the law that buildings could be protected against destruction from lightning by the installation of lightning rods or conductors. This law stands today practically unquestioned, the only points on which controversies have arisen being questions of details as to the installation of the rods.

Before considering the laws governing the correct installation of lightning conductors we must first discuss the characteristics of the form of electricity which causes lightning. For the purposes of a popular article, electricity defies definition because it has none of the concrete tangible characteristics of the objects with which the average man is familiar. Physicists have studied electricity only through its performances, not directly from the substance itself for the very simple reason that it has no substance and cannot be seen. As a result of these studies we are informed that electricity is a peculiar form of molecular disturbance which under suitable conditions may exist anywhere in nature. The physicists have found that this disturbance appears as two distinct types or classes, Dynamic, or actively moving electricity, and Static or stationary electricity. That of the first class is commercially manufactured in small quantities by chemical batteries, or in practically unlimited quantities by power-driven dynamos, and it may be stored up in cells called storage batteries where it exists not really as electricity but as chemical compounds which under favorable conditions will
change back to other chemical compounds and in so doing give back or recreate the electricity stored in them. This class, as its name indicates, is essentially active in its nature and must flow round and round in a circuit to and from the generator in order to exist.

Static electricity is the kind that can be produced by rubbing amber, glass, rubber, furs, or other substances and it has the peculiar property of being able to exist for a long time as electricity on the surface of the material in which it was produced or on the surface of a body to which it may be transferred. A body on the surface of which static electricity exists is said to be "charged." If this charge is of such a nature as to attract a certain class of substances it is called a positive charge; one that repels these same substances is called a negative charge or a charge of negative sign. Two bodies having the same kind of a charge repel each other, while if one is positive and the other negative they attract each other and if they come close enough, the static electricity becomes, for the instant, excessively dynamic and the more heavily charged body discharges in the form of a spark or flash into the other, thereby somewhat overcharging the other, which promptly discharges back into the first. This interchanging is repeated five or six times until the charges in the two bodies are very nearly the same and most of the available energy is used up in friction in going back and forth through the air. This balancing up process goes in with an intensity depending in the size of the charge and with a rapidity of probably about one million interchanges a second. This rapid back and forth movement of the current that flows at each discharge causes it to be an "alternating" current and adds very much to the difficulty of its control.

One other important property of charged bodies should now be briefly noted and that is their ability to produce by "induction" charges of opposite sign in other bodies through intervening air but without any actual discharge taking place from one to the other. A body carrying such an induced charge behaves in nearly every way as if it were regularly charged.

This brings us to the direct consideration of lightning which may be defined as the path followed by a charge of electricity flowing back and forth between unequally charged clouds, or between a cloud and the earth. The electricity is of course invisible but in passing through the air it heats it up to a white heat thus producing the light which we know as lightning. Just how the clouds become charged is an interesting study but it must necessarily always remain a matter of conjecture and we will not consider it here. The peculiar black color of "thunder clouds" is due to the effect of the electrical charge in the cloud upon the water vapor of which it is composed, an effect which can easily be reproduced in the laboratory.

Lightning discharges to earth have been divided by Lodge,* into two general classes, A—those due to a steadily increasing electric strain between the cloud and the object struck, as when a thunder cloud slowly floats over a barn; and B—those due to an impulsive rush into the striking cloud of a charge received directly or by induction from another cloud nearby.

Flashes of class A prepare their path to the ground by induction in a most leisurely manner and always strike the highest and most sharply pointed portion of the object struck. It undoubtedly often happens that flashes of this class are averted by the use of a number of sharp points extending upward from a lightning conductor on a building because just so fast as the cloud tries to build up, by induction, a great difference in electrical pressure between the building and itself, these points permit the induced charge to relieve itself by a gradual sputtering known as "brush" discharge up to the cloud before the strain gets so great as to cause a

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*"Lightning conductors and Lightning Guards."
lightning flash. Even if the points in this way do not wholly prevent this class of lightning they certainly do decrease its intensity if they have time enough in which to act and in addition they offer very attractive striking points to class A flashes and in this way insure their getting into the rod. If much rain is falling from a cloud it is practically impossible for a steady strain flash to occur because each rain drop carries from the cloud to the earth its share of electricity, thus equalizing the pressure between them sufficiently to prevent the setting up of dangerous conditions.

Class B flashes, however, present a very different problem. In this case we have above the building a cloud which, because it is itself struck from another cloud, becomes in a moment tremendously overcharged and it instantly relieves itself not back to the other cloud but down to earth because the path to earth is easier. Hence there is no time for the charge to prepare at its leisure a path for itself down to the sharp, glittering point of a lightning rod, but it discharges blindly down to earth and it may strike the unprotected peak of some small dormer window in the side of a roof instead of striking the rod on the higher main gable as an A flash would have done. An A flash would pass by a tall lightning rod topped by a ball in order to strike a lower one topped by a sharp point because it prefers to enter rods through points, but an impulsive flash cares not for the shape of the terminal of the rod it strikes, a ball being just as attractive to it as a point. Lodge compares an A flash to a small stream of water trickling down a hillside, readily turning aside to pick an easier path while a B flash is like an avalanche plunging headlong into the valley below.

There is one path, however, which all kinds of flashes prefer to any but that down a good lightning rod and that path is down a column of air, possibly a little moist, that is not quite as dense as the air around it. This condition exists above the ventilator of a barn just filled with new hay, above the chimney from which hot gases are merging, above a flock of wet sheep huddled together and steaming in the field, or above a heated plow team resting on a knoll. On buildings where these conditions may exist, the lightning rod point should be placed in the center of the air column, not to one side, because the lightning does not travel there and it will not jump far aside from so easy a path as the warm air gives. The farmer must not decide from this that barn ventilators should be removed but rather that good lightning conductors should be properly installed.

The behavior of a lightning discharge once it has struck a conductor has direct bearing on the installation and selection of the rod. Because of the fact that lightning "alters" at the rate of about a million alternations a second, it objects strongly to turning corners, the sharper the turn the more it objects to following it and the more likely it is to jump away from the rod at such a point into some other object, possibly shattering the object and certainly making a spark amply capable, under favorable conditions of starting a fire. For this reason the rod should be somewhat flexible and be carried around all turns with as long and easy a curve as possible.

While the electricity is most ready to leave the rod at the corners, it also has a tendency to "side flash" or leave the rod on even a straight run. The presence of an area of metal which the electricity can jump over to and charge is the prime cause of side flashes and while large areas like tin roofs or large metal tanks offer the most attractive marks for such discharges, even small areas like the surface of a hay carrier track in a barn, a screen door or the barrel of a gun on the opposite side of a wall from the rod, have been known to induce side flashes. A person near a rod or near metal suddenly charged by a side flash is thus liable to be struck and the flash may easily be strong enough to kill. Where the flash is near a tin roof or a hay track the greatest danger is of
course from the heat of the spark which may cause fire.

Experiment has shown that the electricity of lightning flashes does not have time to get into the main body of the metal of the rod but travels in a thin outer layer of the rod and in the air around it. For this reason, what is known as the "conductivity" of the metal composing the rod, makes practically no difference; what little choice there is in this respect being, for reasons too technical to discuss here, in favor of the poorer conductor. Thus, looked at from this point of view only, iron is in one way really a little better than copper as material for lightning rods. Other considerations, however, enter into the question of the kind of metal to be selected, the principal among them being the greater durability of copper and its freedom from detrimental rusting at any joints which have to be made. The result of this being that, while copper rods cost more than iron ones, they are now used more generally than any other kind. The form of the rod may be either a flexible many-stranded cable, a broad thin ribbon, or a thin walled tube, the order of excellence being about as given. A rigid conductor with an avoidable joint anywhere in it is distinctly to be condemned. Cable conductors should be about 1/4 inch in diameter; and ribbons of about 3/8 inch by 3/4 inch cross section, smaller conductors would be liable to be burned up by the heat of the large current flowing in with an extra heavy discharge.

One other danger from side flashes should be mentioned here and that is relative to wire fences. Lightning may strike a tree carrying a wire fence, side flash along the fence and flash again from the fence to live stock standing near it with fatal results, instances being known where several animals were killed by one main flash. In one case every joint for a quarter of a mile of a linked wire fence was welded together by a side flash of this nature. For this reason every wire fence should be grounded at about every fifth or sixth post by a copper or iron wire nailed so as to touch the fencing and set well into the ground either when the post is set or afterwards in a hole made with a crowbar.

For specific instructions as to the installation of lightning conductors on buildings I will quote from the 1901 report of the English Lightning Research Committee the rules substantially as given by them.

1. Two main lightning rods, one on each end of the building should be provided, extending from the top of each tower, spire, prominent gable or high chimney-stack by the most direct course to earth. It is not advisable to insulate the rods nor to keep them away from the surface of the building.

2. Horizontal conductors should connect all the vertical rods (a) along the ridge and (b) at or near the ground line, this lower conductor being recommended evidently to guard against side flash at this point.

3. The upper horizontal conductor should be fitted with sharp points two to four feet high at intervals of 20 or 30 feet.

4. Short vertical rods also should be erected along less prominent parts of the building and connected with the upper horizontal conductor, thus affording protection against flashes of the impulsive type that may strike any part of the roof of a building.

5. All roof metals, such as finials, ridging, rain water and ventilating pipes, roof valleys, gutters, hay carrier tracks, etc., should be connected with the horizontal conductors.

6. All large masses of metal in the building should be connected with the earth, either directly or by means of the lower horizontal conductor.

7. Where roofs are partially or wholly metal-lined they should be connected with the earth by means of vertical rods at several points.

8. Gas pipes should be kept as far away as possible from the lightning conductor in order to avoid side flashes which might ignite leaking gas.

9. All connections to the earth should be very thoroughly made. Moisture is absolutely essential to a
good ground and for that reason spots as shady and as near the discharge of a water pipe as possible should be selected. The conductor should be permanently attached to a sheet of metal, copper or iron about a yard square and this buried as deep as possible so as to insure the presence of moisture at all times. A bed of broken coke or charcoal about the ground plate serves to hold the moisture and helps to dissipate a lightning discharge. When the hole is filled it should not be rounded up but left concave to catch the surface water."

Finally, it should be said that while it may be possible to cite cases in which rodded houses have not been protected from damage by lightning it is never-the-less a fact that a good lightning conductor properly installed and well-grounded, affords a very high degree of safety from this danger which is a very considerable one in almost all country districts. The total cost of an efficient system is small, not as much as the value of many a good cow, and no farmer should run the needless risk which he incurs in not having his buildings protected by lightning conductors.

SOUTHERN ALASKA
By Arthur M. Kruse, '11

EDITOR'S NOTE: Mr. Kruse spent his summer vacation in Alaska, working on a survey. It is to him that we are indebted not only for the pictures which accompany this article but for the cover picture as well.

OUR party of about twenty persons sailed from Seattle, June 14, 1908, for Alaska. The voyage was not on an open sea but rather through channels lying between submerged mountain ranges of rugged beauty and subtle charms of color. For three days we gazed upon a broken coast line whose shades changed with the hour of day and upon islands wooded with heavy masses of trees and underbrush. One's remembrance of the voyage is that of a shifting panorama of color, of primitive wildness and grandeur, underlaid with the glamour and power of the ocean.

We landed at Ketchikan before proceeding to the mainland for the summer. Thereafter for three months we moved over many miles of country seeing the variations in topography and vegetation. Ketchikan is situated on an island about seventy miles from the mouth of the Unuk river, up which we wished to journey. On striking the mainland at the mouth of the river we encountered a dense growth of forest; spruce and hemlock were the predominating species of trees, their diameters ranging from one to six feet. They reached toward the sky to a great height and their limbs covered with trailing vines and mosses created an effect like that of a jungle. Around them grew many species of ferns of magnificent size, bushes and such flowers as violets, forget-me-nots and dogwood, and the curious growth known as the Devil's Club, a native Alaskan plant. The hot summer sun, the long days and the high rainfall during the open months caused the rich and rapid development of luxuriant vegetation. It is hard to conceive of a more beautiful type of scenery than that afforded by this region.

Because of its primitive wildness this country is a paradise for the hunter or angler. The small mountain streams abound with trout, the cutthroat and dolly varden. During the summer, the salmon come in from salt water to spawn in every small stream available. To this fact may be accredited the great number of trout, as salmon eggs form their relish of diet. The best catch by hook and line recorded for last summer was twenty-one trout in twenty-five minutes; salmon eggs
A BIT OF ALASKAN SCENERY.

were used as bait. Ducks and geese were seen in great numbers and frequently found their way to the camp table. Brown bears were occasionally met with, while the sight of a black bear was a daily occurrence. Several were shot as fresh meat was demanded. Wolves, wolverines, lynx, marten, otter and mink live in the wooded hill-lands in abundant numbers. Goats were frequently sighted on the mountain peaks. Deer are plentiful on the islands along the coast but there is a scarcity on the mainland due to the ravages of wolves. The great quantity of game can be ascribed to the protection afforded by the government from would-be sportsmen.

As we proceeded up the Unuk river, the type of scene changed. The timber becomes thinner and the underbrush denser as one advances inland. Many of the mountain slopes are covered with an almost impenetrable mass of alder and devil's club. Blue berries and salmon berries are small fruits that flourish abundantly in the woods and on the hillsides. The character of the country grows more rugged. The snow-capped mountains of the interior stand out in bare peaks and long ridges giving the impression of scantier timber and vegetative growth but the lower slopes are covered with the same extent of lofty forests. Here and there the wooded slopes are broken by great glaciers and rock slides.

The Unuk river like most Alaskan streams is very swift. The river branches frequently; its channels are intensely rugged and full of sweepers (log jams, etc.). Luckily we were able to pack our camping outfit and supplies from one camp to another by making use of a good mining road which led up along the river. We traveled this way for thirteen miles. At this distance up the river we encountered the most strenuous work of the summer. The road at this point ended abruptly at some great rock bluffs which extended for about two miles. The trail over the bluffs was one long and tedious climb and somewhat dangerous. To pack our three tons of outfit over this trail would have been a great undertaking. By making use of a boat belonging to the mining company we were able to
get our outfit around the bluffs. We accomplished this by crossing the river and lining, which is towing a boat upstream. On account of the shallowness of the river near the shore, it necessitated our wading in the water to pull the boat. The cold glacier water, together with quicksands, made this operation extremely difficult and unpleasant. After repeated trips every day for over a week, we finally managed to reach a point above the bluffs.

For the next month and a half our journey was over ground, broken and rocky, but passing this we finally struck a better section of country. Many times we made side trips to the tops of ridges and mountains. In starting to climb a mountain one first encountered timber and brush which gradually thinned as the altitude became higher, until finally at the upper timber line wide stretches of heather and scattered balsams came into view. In passing over the snow fields patches of the red snow plant (*Sphaerella nivalis*) were occasionally seen. On reaching the top a magnifi-

![AN ALASKAN SUNRISE.](image)
southern Alaska is estimated at about 3,000,000 acres. Hardy garden vegetables such as potatoes, turnips, and onions are cultivated in many districts. Grasses are one of the most valuable plant products: timothy, blue grass, orchard grass, wild barley and rye flourish there.

   It has been through mining that the country has become and will become more thoroughly settled. The mineral wealth of southern Alaska while not as great as that of the northern part or Yukon district is immense. Gold is the chief source of mineral wealth, but silver and copper are also found in considerable quantities. Great areas of land have been staked off as placer claims; many extensive mines are in operation.

   The impression left by Alaska is that of a wild, majestic country; things there, are as they were in the Great West before the white man came and when the great rivers rolled to the sea and heard no sound "save their own dashings." In the hazy twilights we saw snow-capped peaks, black forests and white waterfalls and heard the roar of falling water and its murmurs as it rushed down the rocky channels. In the nights we sometimes saw the northern lights as they leaped and glowed in the heavens. It is no wonder that the Indians called this country the Great Land.

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   **STUDENT LEADERS**

   **By Prof. J. L. Stone**

   Professor of Agronomy at Cornell University

   I AM asked to write briefly regarding the ways that students may best be leaders in their home communities when returning there after graduation. The first and most important way that a student should lead his community is in the matter of good farming. This does not imply that good farming is more important than good citizenship or some other things, but a young man attends an Agricultural College primarily to learn improved agriculture and there are many farmers, some good and some bad, who still doubt the value of agricultural education as furnished by the colleges. During the first years after a student's entry into practical agriculture his farming will be observed most critically. While he may be active in many community affairs, the weight of his influence will largely be determined by the quality of the farming he does. If his neighbors see that in his farming he is visionary and impractical they will not take much stock in what he says regarding school or road matters, but if after a few seasons he takes his place among the very best farmers of the community his advise and influence will be sought by all interests of the community to which he shows himself friendly.

   The attitude assumed by the college graduate towards the farmers of the community will largely determine their reception of him. If he assumes an attitude of superiority and indifference or of condescension and patronage he will get little attention and much of ridicule. He must make himself one of them and then if he actually has knowledge or skill superior to theirs, he naturally and inevitably becomes their leader.

   As to the instrumentalities to be used by the graduate in effective leadership it seems to me that in most communities there are already enough. New organizations or new movements will usually not be required. The instrumentalities for work that I would name as usually found ready to hand are the public schools, the church, the grange or agricultural club, the farmers' institutes, the agricultural fair, the community administration, the good roads
movement, conservation of natural resources, etc.

The public school system of the States is a matter of national pride and it well may be, but the matter of making it as effective as it ought to be and of adapting it to our changing conditions as we now view them is a problem of far reaching importance and great difficulty. No graduate of the College of Agriculture need feel that this problem is unworthy of his most careful attention and best efforts and no doubt the local school board of his home town will gladly receive him into its councils.

Much is said these days regarding the ineffectiveness of the country church and it is true that many farmers do not seem to be reached by it and are not giving it their support, yet the fact remains that for one who wishes to make himself effective for good in his community the church affords a field of activity and a means of building up his personal influence that he cannot afford to ignore. Those same farmers who have little or nothing to do with the church will respect and trust the consistent church worker more than the man of equal ability who holds himself aloof from the church. It is true, however, that we would all despise the man who would ally himself to the church simply because of the influence he thought he would thus gain or the material benefit he would derive.

The grange has now so thoroughly demonstrated its adaptation to rural social conditions and has already extended its influence to such a large proportion of our rural communities, that it would seem wise for those who aspire to marked usefulness in such communities to become active workers in such granges as already exist or by their help may be established.

The agricultural fair is an institution that is woefully failing to accomplish its proper mission. Started as an educational agency, it has degenerated until it is now an open question whether it does not do more harm than benefit to the community. Thoughtful people are waking up to this fact and the time is ripe for a general movement for improving the moral tone of these gatherings and causing the really educational and uplifting exhibitions to displace much that is now only demoralizing.

The recently organized association of ex-students could scarcely find a more promising field for organized effort than this.

The other instrumentalities for doing good or getting good that I have named and others, that circumstances may make desirable, will appeal to different persons in different ways according to their individual abilities and adaptations, but in all of them educated leadership is needed and usually eagerly sought. The college bred farmer has a fertile field opened before him and he must study how to make himself most effective. If he attempts to enter into every movement he is sure to scatter his energies and over-tax his powers so as to render himself ineffective. On the other hand, to selfishly devote his powers to securing only personal profit or pleasure is unworthy of the man and the institution he represents.

If a person possesses the characteristics that fit him for political leadership, such as a place in the state legislature and has a taste for such activities, there probably is no more direct and satisfactory course to pursue than, after graduation from an Agricultural College, to enter upon practical farming, do such work as will attract attention to its merit, take part in many of the activities of the community and help to fight some of the community's battles. Farmers would rather be represented by one of their own number than by the doctor or lawyer or hotel keeper providing there is one in sight who in education and general efficiency is the equal of the others. Even the county politicians like to have an occasional good clean farmer in nomination just to "strengthen the ticket" and "help to carry the rural districts,"
TO A GRADUATING CLASS, AND OTHERS
By L. H. Bailey

[Abstract of Remarks at the Assembly on May 20.]

THERE are some things that would say to those who are about to leave us, to take their place with the men and women who do the good work of the world.

This College of Agriculture aims to train its students for two kinds of usefulness;—to enable them to secure a better livelihood, and to fill them with the idea of service to the community. Your first concern will be to establish yourselves in a good business or occupation, and this is also your duty; but I shall be disappointed if every one of you do not also develop leadership in his neighborhood or among his fellows.

I ask you to consider well the difference between leadership and commandship. The leader never, or seldom gives stern orders. The commander is necessary in a military organization, but in a self-acting society his influence is evil. The commander says, “Go, boys;” the leader says, “Come, boys.” The followers of the real leader may not know that they are led. The power of the leader is personal and spiritual. He moulds men, never drives them.

Last week I walked up to the College with a workman whom I had missed for months. I asked him where he had been, and why? He had been working in another city on a car line. A new superintendent had come on the line, and the first day he had called the men together and had commanded them what to do. “We all knew that before,” the man told me, “and so we all quit. But,” he continued, “the old superintendent was a fine man. He used to come out to the car barn and explain all about the work and lecture to us on electricity and machinery.” It was apparent that the difference between the two superintendents lay in the method.

So, your method of approach to the men with whom you work is of the first importance. Everywhere you will find men and women who know more than you know. Some of them may be the most ignorant workmen. Recognize their knowledge and their skill, and give them the honor that all knowledge and all skill, no matter how small, is entitled to receive. Some of you have practiced at wrestling; but you will find a man in every farm community who can excel you in throwing a pig. The pig does not follow the orderly rules of the game, but he is likely to win it.

You must be properly conscious of your short comings and make no boastful display of your knowledge. With many men with whom you come in contact, physical skill counts for more than intellectual training. Recognize the fact and give them their due. There will be a man who can out-do you in sticking a pig, or binding a load of hay, or in getting a wagon out of a rut, or in tying up a horse’s tail, or in adjusting a clevis on a plow. Do not disregard the small things. Life is made up of small and homely things and a man masters in big things only because he has first mastered in little things. Some persons never get beyond the small things.

But while you are mastering the little things, be careful that you keep your ideals. You will be discouraged for a time. You will not see how or where your ideals will apply. Be patient. Remember that you are getting hold. You are going through a process of adjustment to the conditions of life. Be sure that you will excel in the thing that you undertake. Gradually you will find that you can apply an ideal, or a new purpose, here and there; then you have begun to win.

You must always keep your thinking ahead of your working. We are often told that we must practice what
we preach. That is very wrong advice. It is poor preaching that does not set its stakes at least a little ahead of the day's work. When we catch up with our preaching, we cease going. I would give you Emerson's advice, to hitch your wagon to a star; but be sure that you stay in the wagon.

OUR WINTER BIRDS AND THE CODLING MOTH

By R. D. Anthony, '10

No one likes to find a worm in a nice looking apple or still less to find only half a worm, nor does the presence of the worm add to the commercial value of the apple. In fact, in 1898, Professor Slingerland estimated that the codling-moth, which is responsible for the wormy apple, caused a loss of $3,000,000 a year, in New York state alone. In addition to this direct loss there is a large indirect loss in the time and money spent in spraying to keep this insect in check. When we consider this loss we can see how important it is for the horticulturist to take advantage of all means of reducing the numbers of this pest. One of the most efficient methods is through the agency of our winter birds.

To see how the winter birds become valuable, let us review the life history of the insect. The small, brownish moth appears about the time the petals of the flower fall and the eggs are laid on the small fruit. The worm hatches from the egg and eats its way into the apple. The apple usually ripens prematurely and falls. Just before or after the apple falls many of the worms crawl out and find some secure place to spin their cocoon and spend the winter. This place is generally the under side of a loose piece of bark. In the spring they emerge from here as the moth.

On a number of apple trees around the campus the loose flakes of bark were examined this spring. On the under side of many of them the winter cocoon of the moth was found and in some of these there was a fat, juicy larva curled up, waiting for warmer weather; but with more than half of them there was a small hole through the bark either just under the cocoon or close to it, and the cocoon was torn open and the larva gone. This is the work of certain of our winter birds.

When we want to find the cocoons it is necessary to pull off the loose pieces of bark and examine the under side but a woodpecker seems to have an instinct which tells him what piece of bark hides a good meal for him. The single blow from his powerful beak does the rest. Usually he will go through the bark and strikes squarely onto the cocoon but even if he is a little to one side he has a means of securing the larva. The tip of a woodpecker's tongue is hardened and furnished with many strong barbs like a fish spear and this can be extended from one inch to an inch and a half beyond the end of the bill so that even a good sized cavity under the bark can be thoroughly explored from a single puncture.

The accompanying photograph is one of the under side of four flakes of bark and shows the remains of the cocoons and the holes made by the bill of the bird that extracted the larvae. In two of them the bill came through directly onto the cocoon and in two others it was at the side.

More than half of the cocoons found on the trees that were examined had been destroyed by the birds and of the fourteen found on one tree, all but two were torn open. The Entomologist at the Michigan Experiment Station reports that in almost every case when the cocoons were concealed under flakes of bark the birds found them; and most of the economic ornithologists give similar reports.
If the worm makes its cocoon near a crevice or where it can be seen from the outside, the chickadees and the brown creepers, the birds that investigate every crack and cranny in the bark, are sure to get at it. These birds are easily identified. The chickadee is a small, gray bird with a black cap with a high call that sounds like his own name and, indeed, from which he gets his name. The brown creeper is just what his name would indicate, a small brown bird that creeps up the tree trunks and hunts and hunts incessantly.

The birds with the heavier beaks that drill through the bark are the hairy and downy woodpeckers and sometimes the nuthatch. The woodpeckers are the common black and white marked ones that we see in the winter, the downy being only a smaller edition of his big brother, the hairy. The nuthatch is the white and gray bird with the black cap who scampers around the tree trunks and says, "hank" when you disturb him.

The destruction of codling-moths is but one of many beneficial acts that we can credit to these birds that add so pleasant a touch of life to the desolate, snow-swept, orchards and woods. Ants, beetles, borers, plant lice eggs, and larvae of many of the injurious insects form the greater amount of their food and it is to their work that our forests and many of our old orchards owe their comparative freedom from pests.

If we admit the value of these birds in the orchard the next question is how can we get them around the orchard and keep them there? The winter birds will stay wherever food is plentiful and they are protected from molestation. If we put up a few strips of suet and meat and an occasional crust of bread and keep the small boy with the air gun in the house we may be pretty certain that our trees will receive a daily inspection by a well trained corps of "insecticiders" and that fewer apples will have to go into the culls because of worms.
Many changes in the Agricultural law will be made if Governor Hughes signs all the amendments now awaiting his action. Seven agricultural bills have already been signed and are as follows:

Mr. Boshart’s, defining adulterated cream as that containing less than 18 per cent of fat or to which a foreign substance has been added, to take effect immediately.

Mr. Boshart’s, establishing a standard for cider vinegar, to take effect immediately.

Senator Alld’s repealing two conflicting sections of the law relating to animal diseases, to take effect immediately.

A bill of Senator Raines providing for a more rigid supervision by the State Department of Agriculture to prevent the bringing of diseased nursery stock into New York State from other states. The new law also seeks the extermination of diseases and the brown tail moth and all other insect pests infesting trees, shrubs, and vines. An appropriation of $25,000 is provided.

Mr. Phillip’s appropriating $40,000 for buildings, etc., for the school of agriculture at Alfred University, to take effect immediately.

Senator Holden’s making an appropriation of $278,000 for buildings on the State Fair Grounds and for the improvement of the grounds, to take effect immediately.

Senator Hamilton’s making an appropriation of $10,000 for an investigation by the State Experiment Station of grape production in Chautauqua County, to take effect immediately.

Agricultural bills still before the Governor are as follows:

Mr. Boshart’s appropriating $10,000 for investigating certain questions relating to the production, transportation and sale of milk and milk products, to take effect when approved by the Governor.

Mr. Boshart’s amending the feeding stuffs’ law, in reference to labels, etc., to take effect January 1, 1910.

Mr. Boshart’s authorizing the Commissioner of Agriculture to accept the work of a veterinarian not in the regular employ of the Department, in exceptional cases, to take effect when approved by the Governor.

Mr. Gray’s providing for accurate tests of milk where the payment for milk is based upon these tests and requiring persons making tests to be licensed, to take effect November 1, 1909.

Mr. Lewis’ making a provision for the giving of bonds by manufacturers and shippers of butter, cheese and milk under certain conditions, to take effect when approved by the Governor.

Senator Platt’s restricting entrance of diseased animals into this state, to take effect when approved by the Governor.

Mr. Shea’s bill relating to appraisal and payment for animals condemned on account of glanders, to take effect October 1, 1909.

Mr. Thorn’s appropriating $10,181 for unpaid bills on account of animals and property destroyed during foot and mouth disease outbreak, to take effect when approved by the Governor.

Mr. Boshart’s bill further restricting the sale of oleomargarine, prohibiting the sale or gift of coloring matter or the use of dairy words or pictures, requiring signs to be prominently displayed in restaurants where this product is used, requiring the article to be sold in packages of five pounds or less, and to be sealed and plainly labeled, showing the name and address of the manufacturer, to take effect when approved by the Governor.
Mr. Boshart’s giving the Chief Veterinarian of the Department of Agriculture the same authority to quarantine on account of contagious diseases as now held by the Assistant Commissioners, to take effect when approved by the Governor.

Mr. Callan’s requiring the labeling of seeds and a statement of percentage of purity within reasonable limits and an exact statement of the character and amount of certain adulterations, to take effect July 1, 1909.

Mr. Boshart’s to prevent frauds in the use of tuberculine and the sale of animals as healthy when they are known to be tuberculine and requiring the permanent marking of animals known to be tuberculine, unless they are to be immediately slaughtered or kept under specified provisions for breeding or dairy purposes, to take effect when approved by the Governor.

Mr. Boshart’s establishing a standard for condensed or evaporated milk and requiring the marking of cheese made from skimmed milk or made by a process in which water foreign to the milk is added to the curd, to take effect when approved by the Governor.

Senator Raines’ bill regarding laying quarantine for rabies, posting notices and providing penalty for destroying such notices while they are in force, to take effect when approved by the Governor.

Mr. Scott’s permitting the DeRuyter Four County Fair to share in the apportionment of funds for county and town fairs, to take effect when approved by the Governor.

Senator Raines’ appropriating $40,000 for new building at the State Experiment Station, to take effect when approved by the Governor.

Senator Raines’ defining the duties of sheriffs and police officers in the enforcement of quarantines on account of diseases of animals and reducing penalties for violation of rabies quarantines, to take effect when approved by the Governor.

Hon. F. C. Platt, of Steuben County is chairman of the Committee on Agriculture in the Senate, and Hon. C. Fred Boshart, of Lewis County is chairman of the Committee on Agriculture in the Assembly.

THE NEW COLLEGE BARNS

W. G. Stephenson, '11

At last, we are to have the much needed and long looked for addition to the college buildings, the new barns. Ground has been broken for the foundation and it is expected that the structure will be entirely completed by about November 1. They are to be built on the old Mitchell farm east of the college and across the road from the east end of the athletic field. The need of such a building has long been felt as the old barns have been inadequate for some time. The general shape of the barn is that of the letter U; the main barn forming the base of the “U” and facing the north. It will be one hundred and twenty-five feet long and forty feet wide, with a basement and loft.

The basement affords feed rooms, root cellar, locker-room, bull-pens, etc. On the first or main floor are situated a granary and five large rooms to be used for teaching and demonstration purposes and for storage. The rooms here will be sealed up and finished in much the same way that the rooms in the present animal husbandry building are. Eventually they are to be as pleasant and attractive as possible. On this floor are the driveways, one near each end, the ground being so graded as to make the first floor in this barn practically a basement while the floors on the same level in the wings are to be entirely above ground. There are two such driveways with doors large enough to admit big loads,
and permitting grain to be unloaded under cover. The second floor or loft will be used principally for the storage of unthreshed grain. The two wings or arms of the "U" extend south from each end of the main barn one hundred and eighty-eight feet and are both thirty-seven feet wide. The basement of each is devoted to stabling purposes with room for the storage of forage crops on the floor above, there being but two floors in the wings.

The west wing constitutes the dairy stable and accommodates fifty-six animals. The stable is planned in an ideal way and all the equipment is to be up to date and of the highest order. There are two rows of stanchions, fac-

ing each other with feeding trolley and alley between. A few yards west of the center of the dairy wing is located the milk house that will be 16 feet long by 12 feet wide; the customary air space in the walls being filled with shavings. It affords ample room and
facilities for the proper care and storage of the milk.

The east wing is similar in outline to the dairy building and will ultimately be used as a sheep barn but it is probable that the farm teams will be accommodated here until a new horse barn is built. An overhead trolley runs the entire length of the main barn and of the wings, as well as connecting with feed rooms and silos. The silos (two in number) are to be 16 feet in diameter by 24 feet high, and located at the west end of the main barn. The silos are to have a concrete foundation and will be of the stave type.

The foundation and basement of the entire building is to be of concrete, and the remainder of stud and frame construction with ship-lap siding and shingle roof. Contrary to the expectations of some, these barns are not to be ideal, i.e., not the kind that a very wealthy city man would erect on his country residence, but are to be such as a good economical farmer would want to build. The silos should have been higher but the architect could not be persuaded to sacrifice architectural symmetry for economy of space. The contract was let to Driscoll Bros. & Co., of Ithaca, N. Y.
DEPARTMENT PLANS FOR THE SUMMER AND FALL

Reported by R. D. Anthony, '10

Editor's Note:—Several of the departments have been unable to report their plans in time for this issue as they did not know what money would be allowed them.

JUNE and Commencement days bring no respite for the Agriculture staff, for as soon as the last examination paper is corrected the summer's investigation will be in full swing. The summer's research forms the basis for much of the teaching and serves to keep the college in touch with the problems of the country but it means that the professors and assistants must work twelve months in the year.

THE DEPARTMENT OF HORTICULTURE

This department expects to conduct a vigorous campaign in the fields of fruit, vegetable and flower culture the coming season. New courses of study are being introduced, and established courses amplified and strengthened. Several important lines of experiment are being planned. The amount of field work possible will of course be largely determined by the money available. It is hoped that orchard survey work in pomology may be extended to add at least one county to the area surveyed, though the failure of the legislature to appropriate money for extension work may prevent this. Grape rot experiments on an extensive commercial scale are being continued in connection with the Experiment Station and in the 75 acre vineyard that has been leased at Romulus. Orchard planting and the establishment of experiments on the home area will occupy considerable attention.

It is also hoped that a survey of the floricultural interests of the state can be inaugurated. The capital involved in these interests is very large and these interests have not received much attention at the hands of the experiment station thus far. An important piece of work which will need close supervision this summer is the erection of the new forcing-houses. It is hoped that the horticultural group of houses will be ready for use by the opening of the university year. These will give enlarged facilities and better opportunities for studies of greenhouse problems than have been thus far available. Various experiments in vegetables, including variety tests and cultural tests, will be conducted during the summer on the University farm.

Next fall several changes will be made in the courses of study. Professor Wilson has enlarged the scope of the division of pomology by the addition of a needed course on bush and small fruits, and one in advanced pomology.

In vegetable and flower culture, two parallel courses running throughout the year are offered by Professor Judson and Mr. Batchelor. The course in greenhouse construction will be given by Mr. Batchelor the coming year.

In the general field of horticulture, Professor Craig gives a new course entitled nuciculture (nut culture), and also adds one hour to the course in plant breeding, making this a three-hour course under the title of Evolution of Cultivated Plants.

SOILS DEPARTMENT

In the Soils Department, Professor Fippin plans to put four of the students into Ontario county during the summer for a soil survey of that region and, if sufficient funds are available, the survey of Washington County will be undertaken in connection with the United States Bureau of Soil. A strip of land east of the athletic field has been given to the Department. Here a series of experiments on different soil problems will be carried on throughout the year.
One new course will be added next year on Irrigation and Drainage. It will be a two hour course and will be given in the second term.

PLANT BREEDING DEPARTMENT

In Plant Breeding, Dr. Webber will continue the work from last year. In the breeding plats there are 4,500 hybrid tomatoes that will be used to study skin color and its transformation, form and quality of fruit and its transformation, as well as to develop improved varieties. For study along similar lines, 1,000 hybrid peppers have been set out. A large collection of phloxes, including practically every known variety will be used to study the inheritance of form and color. The potato experiments will be continued to determine the extent of bud variations and the value of seed selection. Experiments in the production of variations by inoculation with chemicals and also natural variations and their transmission will be carried on with 2,000 wild Silene plants. Several hundred strains of timothy, oats, and wheat are also being tested out on the college farm.

DEPARTMENT OF PLANT PATHOLOGY

The plans for this department were given in the April issue of the COUNTRYMAN but there have been a few additions since then. The work for the summer will consist chiefly in the investigation work of which a number of lines are now under way. The summer work of the department is carried on almost entirely in field laboratories in charge of different members of the staff, or of men who are taking graduate work. Mr. Reddick will as usual have full charge of the grape disease investigation, continuing the field laboratory at Romulus on the study and control of the Black Rot of grapes. This work will be carried on, as it has been in the past, in cooperation with Professor Wilson of the Division of Pomology. In addition to this it is expected that investigations on other diseases of grapes, particularly those peculiar to the Chautauqua Belt will be begun in cooperation with the State Experiment Station at Geneva. Mr. Reddick will have full charge of the disease end of the work, and Mr. C. N. Jensen, a graduate student in the department, will act as his assistant. Mr. Jensen will probably be stationed at Romulus on the Black Rot work.

Mr. E. W. Mitchell, Cornell, '09, will have charge of a field laboratory for the control of Fire Blight in pear orchards. This laboratory will be located on the farm of Mr. Ira Pease, Oswego, N. Y.

Professor H. H. Whetzel will devote a large portion of his time to the investigation of ginseng diseases, for the carrying on of which during the summer the Ginseng Growers' Association of the State have raised a fund of about $100.00. The work on Hollyhock diseases will also be continued and it is hoped brought to a close this summer.

Some slight changes have been made in the courses in the department for next year. Instead of Course 4, as listed in the catalogue for 1908-09, four separate half year courses will now be offered, as courses 5, 6, 7 and 8. These courses are designed primarily for students specializing along certain lines of Agriculture. The more common diseases of certain crops will be taken up and carefully studied. Course 5, Diseases of Field and Truck Crops will be the first term of next year. Course 6, Diseases of Fruit and Fruit Trees will be given the second term. These courses are open to all students who have had Plant Pathology I. Course 7, Diseases of Greenhouse and Florist's Crops, and Course 8, Diseases of Trees and Ornamental Shrubs will be given respectively the first and second terms of 1910-11.

THE DAIRY DEPARTMENT

This department had planned to start a series of cow tests among the farmers of the state this summer, but the shortage in the appropriations will prevent this. It may be possible to begin this the first of October.

(Concluded on page 309)
The Cornell Countryman

N. R. PEET, Editor
W. Y. RUMSEY
P. E. BENEDICT
N. R. PEET
S. G. JUDD
R. J. SHEPARD, Jr.
R. J. SHEPARD
T. BRADLEE
C. F. RIBSAM

Alumni News Editor
Associate Editors
Business Manager
Assistant Managers

JUNE, 1909

The Appropriations and the Seniors

As we go to press, the question uppermost in the minds of most of us is, "What are the state appropriations for the College to be this year?"

The College of Agriculture draws its funds from two bills, the Maintenance Bill and the Supply Bill. Last year it received $150,000 under the former, and $10,000 for additional extension under the latter. This year it was felt that, owing to the increase in the number of students and the growth of each department, the College was justified in asking the legislature for an appropriation of $200,000, this to include the $10,000 of the Supply Bill. But contrary to our best hopes, the legislature saw fit to appropriate but $175,000 in the Maintenance Bill and to continue the $10,000 item in the Supply Bill. This makes a total of $185,000 appropriated in place of the $160,000 of last year; but is also short $15,000 of the amount that seems absolutely necessary to carry along the work on its present basis. Neither bill has been signed by the Governor as yet. He is allowed thirty days after the adjournment of the legislature, which occurred this year on April 30, to approve or disapprove them.

It has not been decided just how the $25,000 increase over last year's appropriation will be used. We are advised by Dean Bailey that it doesn't seem possible to continue all the pieces of extension work and at the same time to keep up with the natural growth of each department. It is still an open question whether it would be more advisable to cut off some of the branches of extension work and allow the remainder of the college work to grow actively, or to keep up all of last year's enterprises and to try to maintain them on their present basis without allowing any to grow. Evidently something must suffer.

It would seem that this is a matter that each of us, and especially the seniors, should make personal. The seniors are going out from here with a training and inspiration which we feel certain they could not have obtained elsewhere. The work is upon them to make good; to impress a notion of the value and importance of this college upon all with whom they may associate. In this way can be created a general demand for increased facilities at this college.

There is another way, perhaps more tangible and effective, that each one can be a factor in securing the funds which an economical and efficient administration deem so necessary, and that is through the Students' Association of which each alumnus and student is a member. We trust that the class of '09, the first to graduate since the formation of this association, will set future classes a good example
by taking a very active interest in this association whose purpose is to obtain strength by union.

It is customary for The Old and The New board, which has been elected in the spring for the following year, to take charge of the June issue in order that it may receive suggestions and advice from the retiring board; consequently with this issue, the board for 1909-10 takes up its work.

We have witnessed from the inside, the growth and the increasing value of the publication during the past year, and so feel qualified to say something about the administration, which has been responsible for it. The policies have been directed in such a way that the paper not only looks prosperous but has been placed on a very sound, business basis. We feel sure that the articles, which the retiring board has obtained or written have been, not only interesting, but of some instructional value as well to our readers. Many of them have been written by authorities and carry the weight which is their attribute. We have witnessed the willingness of these men and women to contribute to our columns and the impression that came with this was that the Editor and Business Manager must be running the Countryman about right, if such people were pleased to appear in its columns.

Anything we may say here in an endeavor to express our admiration for the retiring board will, of necessity, carry but mediocre importance. But we can and do desire to express our thanks to them for the excellent standard of the precedents they have set for the present board. We can appreciate, probably better than any outsider, the honest endeavor that has been required of them and which they have given so freely. May virtue continue to be its own reward.

A new board is about to take up this work. As it has been endeavoring to get out this issue, it has had a glimpse of the work, it has ahead of it; not only the routine that must necessarily accompany such a task, but also the possibilities and the plans underway which, it is hoped may be developed. Surely such a work cannot be expected of any group as small as ours; the board will need the active co-operation, interest and backing of each and every member of the body it is endeavoring to represent—the students of the College of Agriculture. If you have any idea, that you think the Countryman might work out, any suggestion of improvement, or criticism of a fault, we ask you to let us know all about it. It is in this way, and in this way alone, that we can hope to keep up with our reputation.

The Weather Bureau

Ever since Emerson Hough succeeded in getting his article entitled "Does the Weather Bureau make good?" into the columns of a recent issue of Everybody's Magazine, the weather bureau has been the subject for more general free-for-all discussion than any other governmental institution. The Countryman feels that it has an added excuse for edging in a few words, in that the primary importance of the weather bureau in this country is its relation to agriculture.

Mr. Hough's article is primarily a thrust at the head or backbone of the service and not at the body. In so far as that is concerned, we would rather
let Chief Willis L. Moore fight his own battles. He is capable as would be any other man who has impressed his worth upon the nation under administra-tions of differing political faith; having been in the service 32 years, and chief for 14 years.

But so far as Mr. Hough deals with service in general, we really can’t be-lieve him. His statement that the service is unduly expensive is a charge which is calculated to win popular favor in this day of commercialism and worship of the “almighty dollar.” It is true that the government spends more money on its weather bureau service than any other nation, but it is also more extensive and, what is more important, more efficient (at least the foreigners themselves say so, with all due respect for Mr. Emerson Hough.) The fact that the service was obliged to discontinue publication of its maps from May first to July first on account of lack of funds is evidence that the Bureau has no money to waste.

His statement that the Bureau is explanatory and self-defensive is a very clever attempt to hinder the bureau from defending itself against such unjust and scathing abuse.

The charge implied in his insult to Chief Moore in regard to Mt. Weather being a pleasant summer resort is absolutely false as anyone and everyone is privileged to find out for himself by visiting that notable research observa-tory. It also refutes his charge that the service is unprogressive and shows no hope of improvement.

Mr. Hough’s charge that the service is general and not specific, we under-stand to mean that it cannot specify the exact place and time of a storm. He cites the Portland disaster, the destruction of Galveston and the recent inaugural day storm. We wish to state in regard to the former that it is a fact that danger signals were hoisted in the Boston harbor ten hours before the storm and that the head of the Boston station personally tried to prevent the captain of the Portland from sailing. In regard to the disas-ter at Galveston, it was the tidal wave, and not the storm that did the most damage, the storm was predicted, coast danger signals hoisted, and as a result not a ship was lost in the Gulf. The Bureau could not have prevented the wave nor could it tell exactly where it would strike the coast.

The storm on Inaugural day at Washington which was the immediate cause of all this discussion was clearly a mistake. The records are accessible to the public so that anyone can see that this storm was one of the most erratic, and did not follow the course which nine-tenths of these storms do.

We do not wish to leave the impres-sion, that we believe the weather bureau to be perfect, it has a chance for vast improvement. Personally we would like to have the predictions more local and we would like to receive maps for the entire year. In closing, we desire to express our perfect agree-ment with the editor of the Chicago Evening Post whom we quote: “Does the weather bureau make good? Not wholly; but more nearly so, we feel than Messrs. Hough and Dunn.”

BOOK REVIEWS

The Countryman is in receipt of a book entitled, “Business Organiza-tion” by Samuel E. Sparling, Ph.D., assistant professor of political science, University of Wisconsin, and published by The MacMillan Co. The Country-man regrets that the book arrived too late to be reviewed in this issue, but assures the author and publisher that it will appear in one of the next issues.
GENERAL AGRICULTURAL NEWS

The Federal authorities engaged in a large irrigation and land reclamation scheme in western Kansas at an estimated cost to the government of $350,000, are about to file an injunction against the United States Sugar and Land Co., of Garden City, Kansas, to restrain them from sinking wells which it is alleged would seriously affect the intended improvements and damage the interests of the farmers of that section, who have put their money and time in the project.

The rights of man on land and sea have heretofore been rather clearly defined. It has been generally understood that an individual owned from the center of the earth to the limits of the land on the surface and so on indefinitely into space. But, with the development of the mining industry and the possibility of aerial navigation, the ownership of the earth below and the air above is coming under serious discussion with the possibility that in the future we may have better definitions concerning these points. Within the last twenty years Americans along the Rio Grande have taken with exceptional enterprise, practically all the water from the river at some points for irrigation purposes, depriving the Mexicans of their supply. The matter has been up for diplomatic consideration and some monetary allowance has been made Mexico by our government. A somewhat similar case existed at Garden City, Kansas, arising from the fact that the Coloradans were taking all the water from the Arkansas river and leaving none to flow by Garden City, the river’s natural channel. These are comparatively new matters in American legislation and the final decision of the appellate courts will be looked to with much interest.

The World’s Work says there is a county in the state of Mississippi, in fact the only county in the nation “where practically every white boy of school age is working a piece of ground with his own hands as a part of his education—working it, too, under proper direction so that what he does has a definite educational value; working it, too, so as to produce a better yield at a lower cost than the land ever before knew.” This statement may well cause the farmers of more favored states to look about them for such a course of training will have a splendid effect on those Mississippi boys in after years.

An interesting fact along the dairy line is noted in Europe. Government employees at the German State printing department have taken to drinking milk instead of the national beverage, beer. Among this class, the consumption of milk has been doubled in the last year. The same alarming conditions exist in the State printing office at Vienna and as far back as several years ago “milk booths” were established at Cologne and these have been so successful that now the same milk supply company has decided to put at least eight of these public milk drinking booths in operation in various parts of the same city in much the same way that the American public is now supplied with soda water. Large numbers of men of every station take a glass of milk as they pass, instead of entering nearby saloons. A great number of factory workmen are also substituting milk for beer.

The prize list of the Fruit Department for the State Fair this year has been greatly changed and enlarged. About $400.00 additional in prizes are offered. Some of these new prizes are as follows:

Local society Grange collection, collection of box fruit, collection of fruit packages, collection of nursery stock, collection of fruit products, boys' and girls' club collection, boys' and girls' collection.
Not only have these additions been made but many changes in the old list. Some of the prizes for individual varieties have been cut out and the premiums on the more common varieties raised in some cases to $25.00 for the first prize for a single plate of fruit.

The entry fee has been changed to encourage individual exhibitors. Heretofore the fee was 5% of the first prize competed for, and at least two dollars must be paid. The fee now is 5% of the first prizes competed for, no matter how small that fee may be. Any grower can enter a single plate of fruit without paying an excessive fee.

Previously it was necessary for every exhibitor to go to Syracuse to put up his own fruit. This was impracticable for the growers and the Commission, realizing this fact, has provided for the putting up of individual exhibits wherever such is requested.

The prizes for fruit for the first time this year will be sent out in a little folder by themselves. This is a new departure from the prize list of previous years, and the Commission hopes to be able to place this folder in the hands of every grower.

* * *

The Executive Committee of the American Pomological Society has accepted a joint invitation tendered by The Ontario Fruit Growers' Association, the Niagara District Fruit Growers and The St. Catherines Horticultural Society, to meet at the city of St. Catherines this year. Arrangements are rapidly progressing for a reunion of unusual value and interest at this attractive place on September 14-16, 1909.

An exceptional feature lies in the fact that the Ontario Government has recognized the importance of the coming of this society to Canada by placing a substantial sum of money at the disposal of the committee on arrangements. Professor Craig, secretary of the American Society, reports that an unusually large number of state horticultural societies have appointed delegates to attend the St. Catherines meeting and this will insure a wide representation and a diversity of interest which will present exceptional opportunity for considering in a satisfactory way legislative questions of interstate significance. It is also to be noted that a great exhibition of Canadian grown, Lake Ontario fruits will be in progress at the time of the meeting affording a splendid opportunity for a study of these northern varieties. The fruit region between Niagara and Toronto is the most extensively cultivated region in Canada. Excursions through this famous section will be arranged for the pleasure and profit of the visitors.

The program may be expected to include the latest and best in the entire field of pomology. Arrangements are now being made for the presentation of subjects of present day importance by the leading authorities. A good time is assured as early September is the most delightful season in the Lake Ontario region.

* * *

At the annual meeting of the Ginseng Growers' Association at Syracuse yesterday, April 28, the Association raised the sum of about $100.00, which they have placed at the disposal of the department of Plant Pathology, Cornell University to aid in carrying on the investigations on the diseases of ginseng for the coming year. This appears to be the first case in which an association of growers has voluntarily met the State College halfway in a financial cooperation for the investigation of the diseases of their crops. The ginseng growers of the State of New York are composed very largely of business and professional men, though a number of the growers devote their entire time to the growing of this crop. The annual exportation of dried root from this country averages about one million dollars a year, the average price being about $7.00 a pound. The growing of ginseng is now on a firm financial basis, the cultivated root being worth more in
the market than the wild, and the demand for the same being in excess of supply. Professor Whetzel of the department of Plant Pathology addressed the ginseng growers at the annual meeting above referred to on the subject of the Alternaria Blight of Ginseng. The first published account of this disease appeared in The Cornell Countryman for November 1906. The investigation of this disease has been under way for the past four years and a bulletin on the subject is now in preparation.

* * *

An enthusiastic audience was gathered at the meeting of the Chemung County Boys' Agricultural Club held in the City Hall at Elmira on May 8th. Mr. Rufus Stanley as chairman of the meeting first introduced, Supt. of Schools, J. W. Deans. Mr. Dean spoke of the opportunities of farmer boys.

The next speaker was Mr. Gould J. Little, School Commission of Chemung Co. Mr. Gould mentioned in his speech some of the defects of the present Country School. He deplored the fact that at present, country boys and girls, were in the main, being prepared for clerical positions in the city rather than learning to become intimate with Nature.

Dean Bailey, the next speaker, gave the principal address of the day. He spoke directly to the boys and girls present. He asked them what occupation or profession they intended to follow and explained to them that successful men flocked to the city because of the better conveniences there. The open country needs these improvements and the boys and girls of today must help to establish them. The Dean then spoke of the boys that intended to live in the country. He emphasized two things that each of them must do to be a successful man and farmer. "In the first place, you have got to make good; in the second place, you have got to help somebody else make good." Then he went on to show that the city of Elmira was making good in setting out and planting thousands of trees for the benefit of future generations.

After Dean Bailey's speech, Miss A. G. McCloskey addressed the Club: later, Prof. C. H. Tuck made a few remarks and then Mr. Van Dusen of Horseheads spoke.

CAMPUS NOTES

At a recent meeting of the faculty of the College of Agriculture several important changes were made in the curriculum. Concerning the required work, Drawing was made elective, Chemistry 6 was made elective but all are required to take Agricultural Chemistry 85. Those not electing Chemistry 6 are only required to take four lecture hours of Agricultural Chemistry 85. A course in Biology was substituted for the required work in Zoology and Entomology. In the sophomore year Soils was made wholly elective and in Physiology there is a choice between Physiology of Domestic Animals, Human Physiology and Plant Physiology. Physical Geography as an alternative for Geology was dropped. A new arrangement of subjects into groups was made and the following rules adopted:

All students except those registered in Rural Art shall have passed before graduation at least fifteen hours of agricultural electives in one of the following groups and at least three hours in each of the others.

In selecting the subjects in the major group the student must obtain the advice and approval of some one Professor or Assistant Professor having charge of a subject within the group, who shall be chosen by the student at the beginning of the sophomore year.

Group A—Farm Crops, Farm Management, Horticulture, Home Economics, Farm Mechanics.


Group D—Plant Pathology, Entomology, Limnology, Rural Economy.

L. B. Cook, '09, has been appointed as Assistant in the Department of Dairy Industry to fill the vacancy caused by the resignation of Mr. A. W. Ferguson. Mr. Cook also takes the position of City milk inspector which was formerly held by Mr. Ferguson.

On April 27th, the baseball team of the College of Agriculture defeated the team from the Veterinary College by the score of 10–8. The game was marked by rather loose playing on both sides. The game with the Civil Engineering College scheduled for April 30th was indefinitely postponed.

The Agricultural baseball team suffered their first defeat May 7th, losing to the Law College team by the score of 7–5.

At the annual spring elections of Sigma Xi Society the following students from the College of Agriculture were honored: Marshall Baxter Cummings, B.S., M.S., Assistant in horticulture; Early Cunningham Ewing, B.S., B.S. in Agr.; Erret Wallace, B.S. in Agr., and from the class of 1909, Kenneth Carter Livermore and Stephen Franklin Willard, Jr.

The May Assembly was postponed to the evening of May 20th. This is the last Assembly of the year and a full attendance of both students and faculty is desired.

Dean L. H. Bailey will be a delegate to meetings of the Association of Agricultural Colleges and Experiment Stations and the National Irrigation Congress to be held at Seattle, Wash., during August, 1909.

The campus seems to have been visited by an epidemic of mumps and the Agricultural College has furnished its full quota of victims, among them being the Editor and Business Manager of the new COUNTRYMAN board.

On Friday noon, May 7th, a group picture of the senior class of the Agricultural College was taken in front of the main building.

Among the events scheduled for the month of May are the Intercollege Track Meet on May 14th, Spring Day on May 21st, Intercollege Crew Races on May 22nd, and the Annual Picnic for the school children of Tompkins county on May 28th.

The following men of the class of 1910 were recently elected to Hebs-sa: Roy David Anthony, Grover Coors, Walter Warren Fisk, Vincent James Frost, Freeman Steel Jacoby, Frank Burnette Kelley, Harold Newton Kutschback, Thomas Joseph McInerney, Nelson Rusk Peet, Gad Parker Scoville, Roy John Shepard, Hobart Cone Young.

We are glad to note that H. C. Young, '10, captain of the varsity cross country team has returned from his home in Batavia where he has been confined with an attack of the mumps.

The classes in Dairy 43, Animal Husbandry, Farm Management and Poultry Husbandry started on a joint excursion. Monday morning, May 10th. The following places are to be visited the first day: Candee's place at Dewitt and Van Patten's place at Fayetteville are to be visited by poultry students while the rest of the party visits Tallman's place at Fayetteville. Party then visits the farms of W. R. Smith and E. A. Powell at Lakeland, returning to Syracuse for the night. On May 11 the party inspects the farms of H. A. Moyer and Stevens Bros. where they spend the day. All but the dairy students return to Ithaca Tuesday night. On May 12th, dairy students visit Tully.
MEMBERS OF FRIGGA FYLGE.

Farms Certified Milk Plant, proceed about noon to Cortland where they inspect the plants of Ekenberg Milk Products Company and Champion Milk Cooler Company and then return to Ithaca.

* * *

In February 1908, at the suggestion of Misses Van Rensselaer and Rose, the women of the Agricultural College organized into a club which has taken “Frigga Fylge” as its name. “Frigga, wife of Wodam, the supreme Anglo-Saxon god, was the goddess who brought the blessing of rich harvests; “fylge” means following”, hence the name “Frigga Fylge.” The purpose of the club as stated in the preamble of its constitution is to unite the women of the College and to further their interests in College affairs. It is to a certain degree a social club to acquaint the girls with each other. It is not supposed to run in opposition to the Agricultural Association but to further the work of that institution by enabling the women, by united effort, to better accomplish their share of the college work.

[Department Plans for the Summer and Fall]

Concluded from page 301.

A new course in Creamery and Dairy Management will be offered in the fall.

DEPARTMENT OF SOIL INVESTIGATION

This department is experimenting on the fertilization of grain at different stages of growth and on the use of a fertilizer on different crops in a rotation.

This summer the distribution of soluble salts in cropped and uncropped soils will be studied.

A recent issue of Science contained an article by Dr. Lyon describing the new soil tanks that have been built on the farm and their value in conducting soil experiments.
CANDIDATES FOR THE DEGREE OF Ph.D., 1909

Charles Frederick Clark was born at Glover, Vermont. Received early training in district schools and Derby Academy. Graduated from the University of Vermont in 1897. Entered Cornell University in 1904. Appointed Assistant Agronomist in the Experiment Station in 1906. Received the degree of M.S.A. in 1907. At present Instructor in Department of Experimental Plant Breeding. Member of Sigma Nu and Sigma Xi.

Marshall Baxter Cummings, born at North Thetford, Vt. Prepared for college at Thetford Academy, entered the University of Vermont in 1897 and received the degree of B.S. in 1901. Appointed Assistant Horticulturist at University of Vermont in 1901. Instructor in Horticulture and Botany at University of Maine, 1902-'04. Received the degree of M.S. at Maine in 1904. Head of Botany Department at University of Maine, 1904-'07. Assistant in Horticulture at Cornell since 1907.

Arthur W. Gilbert was born in 1882 at West Brookfield, Mass. Graduated from Brookfield High School, 1901. B.S. from Massachusetts Agricultural College and Boston University, June, 1904. M.S.A. from Cornell, June, 1905. Ass't. Prof. of Agronomy and Supervisor of Agr'l. Extension Courses, University of Maine, '05-'07. Elected fellow in Cornell, '08-'09. Member of Alpha Zeta, Sigma Xi, Phi Kappa Phi.

Chester Deacon Jarvis was born near London, Ontario. Preparation for college was received at the local high school. He received the degree of B.S.A. from the Ontario Agricultural College in 1899. He was Assistant Horticulturist at his Alma Mater until 1904, when he entered the Graduate Department of Cornell University, registering for the degree of Ph.D. In June, 1906, he accepted the position as Horticulturist of the Storrs Agricultural Experiment Station, Storrs, Conn., which position he now holds. Last fall he secured a leave of absence and returned to Cornell to complete his residence.

Harry Houser Love was born in 1880 at Taylorville, Ill. Graduated from the Preparatory School of the Illinois Wesleyan University, Bloom-
The Cornell Countryman

CANDIDATES FOR THE DEGREE OF M.S. IN AGRICULTURE, 1909

BENI M. CHATTERJEE was born June 19th, 1882, in the village of Duckineswar, Bengal, India. He prepared at his home high school and took his B.A. at the University of Calcutta. He then entered the higher Agricultural College at Silpur, Bengal, and obtained his diploma in 1907. After taking his degree he hopes to go back to India to do what he can for his people.

B. H. CROCHERON received B. S. in Agriculture in June, 1908, and during the summer, following served as agricultural expert on a large Virginia estate. During the past year he has made a survey of the breeding region of eastern Long Island under the Departments of Horticulture and Rural Economics.

MOHINIMOHON DATTA was born in the city of Calcutta, Bengal, on the 20th of October, 1883. He received his school education in Comillah High School and next attended Chittagong College, where he took his intermediate degree. In 1905, he entered the Higher Agr. College at Silpur, where he obtained the H. A. S. degree. He was then sent by the Government of Bengal to this country to further his studies in Agriculture.

EARLY CUNNINGHAM EWING was born in 1886, at Aberdeen, Miss. He prepared in High School at Aberdeen; graduated from Miss. Agricultural and Mechanical College with degree of B. S. in 1906, and from Cornell in 1908 with degree of B. S. A. He has been working for his Master's degree in the Plant Breeding and Plant Physiology Departments. Sigma Xi.

HOWARD B. FROST was born at Dairyland, Ulster Co., N. Y., in 1881, attended district school and worked on his father's farm. After taking the Training Class course at Ellenville High School, he taught country schools four years, meanwhile preparing for college. He received the degree, B.S. in Agr. from Cornell in 1908, specializing in Plant-breeding. President of the Cornell Prohibition League, 1908.

MINNIE JENKINS was born on a farm near Walton, Delaware County, New York. She graduated from the Walton High School in 1903 and in the fall of that year entered the College of Agriculture at Cornell University, from which she received a B. S. A. degree in 1907. Since that time she has been Assistant Bacteriologist in her Alma Mater. She expects to continue this line of work.


ELMER S. SAVAGE was born June 15, 1884, at Lancaster, N. H. Prepared for college at Lancaster Academy. Graduated from New Hampshire College, Durham, N. H., in June, 1905, with degree of B. S. A. During two years after leaving college he was Instructor in Dairying at Baron De Hirsch School, Woodbine, New Jersey and manager of Dairy Department of
The Cornell Countryman


Erret Wallace was born in Hants County, Nova Scotia, where he received his elementary education. After two years at the Truro Agricultural School he entered Cornell as a special, but later changed to the regular course and took his B. S. A. with the class of 1908. He has since been doing graduate work in the Department of Plant Pathology, and has been doing extra work with a Ph.D. in view. Chairman, Plant Doctors, 1908 to 1909. Sigma Xi.

Koliang Yih, Cornell B. S. Agr., '08, was born in Foochow, China. He entered with the class of 1906 but took his degree one year ahead and expects to get M. S. A. the coming June, having elected tobacco as his major subject and sugar as his minor subject. He will return to China next year.

CANDIDATES FOR THE DEGREE OF B.S. IN AGRICULTURE, 1909

Earl William Avery was born in South Dakota in 1886. Graduated from the Iliam High School, 1904, and entered Cornell in the autumn of 1905 where he specialized in Animal Industry.

Cornelius Morris Bennett was born near Ovid, Seneca County, New York, in January, 1885. His early life was spent on a farm. He entered the college as a special in 1905, but has changed to the regular course.

Charles Ferdinand Boehler was born at Camden, New York, April 20, 1886. In 1905, he graduated from Camden High School and entered Cornell in the Special Agricultural Course. In 1907, he changed to the regular course and since then has specialized in Landscape Architecture. Robert's Scholarship, (2); Supt. Poultry Show, (2); College baseball, (2, 3, 4); College Glee Club, (3, 4); College Soccer team, (4); Agricultural Banquet Committee, (4).

Walter Weidenfeld Bonns. Prepared at Milwaukee East Division High School, '95. B.S. in Architecture, Massachusetts Institute of Technology, '99. Engaged in architectural profession for a number of years. Gave up such work on account of poor health. After spending two seasons in practical horticulture entered winter course in Cornell, 06-07. Entered regular course, 1907. Registered as graduate student, Feb., 1909.

Manuel Anastasio Centurion, of Habana, Cuba, was born Aug. 29, 1887. His preparatory education was secured in the same city, entering Cornell, 1905. Agricultural Engineering is his ideal so he will continue in the University taking Civil Engineering. Member of College Crew, 1908; Vice-President of Club Hispano Americano.

Lee Briggs Cook was born in 1886, on a farm near Panama, N. Y. He prepared at Panama Union School and Lakewood High School, graduating from the latter in 1905. In the fall, he entered Cornell and has specialized in Dairy in which Department he is now an Assistant. Sachord, Agr. crew in 1908.

Tracy Egbert Davis was born in Buffalo, N. Y. He received his elementary education in the public schools of that city and later prepared for college at Masten Park High School. After graduation he will become superintendent of a 500 acre farm near Rochester, N. Y.

Asu Tosh Dutt graduated in Arts from the University of Calcutta, '06. While working for his M.A. as an Instructor in mathematics he was elected by H. H., the Maharaya of Coochbehur to study Agriculture at Cornell from which he obtains his B. S. A. this year.

Elmer Ellsworth Eldredge was born at S. Lavoy Springs, N. Y., Oct. 8, 1884. He prepared at Sharon
Springs High School and entered Cornell with the class '09. Student Assistant in Bacteriology during Junior and Senior years. Expects to enter Experiment Station work or teaching.

**Alice Catherine Evans** was born on a farm at Neath, Pa. After graduating from Susquehanna Collegiate Institute, she taught three years and in 1905 entered the Cornell Nature-Study course. After completing this course, she registered as a regular student specializing in Bacteriology which line of work she intends to pursue. President Frigga Fylge.

**David Humphrey Fullerton** was born in the town of Apollo, Pa., in 1886. He attended high school at Princeton, N. J., and then entered Princeton University. At the end of his Sophomore year he discontinued study there and came to this college. Member of the Ag. College Glee Club. After returning from a year’s study in Germany he expects to take up general farming.

**Daniel Wells Hallock** was born Oct. 28, 1885, at Rocky Point, Long Island, N. Y. He prepared for college at Cazenovia Seminary, Cazenovia, N. Y. While at Cornell he was a member of Long Island, Cosmopolitan and Cayuga Clubs. After a year or so more of study he intends to engage with his brother in the farming and mining business.

**Sherman Preston Hollister** was born at Medina, Ohio, in 1884, but soon moved to Connecticut where he has resided since. He studied three years at the Connecticut Agricultural College and then was Assistant in Horticulture at the same place for two years before coming to Cornell in 1907 for further work in horticultural lines. Acacia, Cornell Masonic Club.

**Edna Mary Jenkins** was born on a farm near Walton, N. Y. After graduating from the Walton High School she taught school one year. Miss Jenkins entered Cornell in 1905 and has taken a general course in Agriculture and Domestic Science. She expects to return to the home farm. President Frigga Fylge.


**Kenneth Carter Livermore** was born at Watertown, Mass., where he prepared at Phillips High School. Alpha Zeta; Agr. Football Team, 1904; University wrestling championship; welter weight class, 1906 and 1908; Captain Agr. Crew, 1908; Agr. Cross Country Team, 1908; speaker at Hearing Country Life Commission; Agr. Banquet speaker; Agr. Stage, 2d prize; Vice-Pres. Class '09, in Agr. Sigma Xi.

**Ervin Getman McCloskey**, age 22, prepared at the High School, Hamburg, N. Y., and entered Cornell in 1905. Student Extension Committee, (1); Cornell Countryman, (2); Business Manager, (3); Agr. Baseball, (1–2–3–4); Captain, (2); Banquet Committee, (3–4); chairman, (4); Springday Committee, (3–4); Spring Picnic, (2–4); chairman, (4); Student Representative Athletic Board of Control, (4); student assistant in Dairy Industry; Hebs-Sa; Alpha Zeta.

**Grosvener Carlton Manrow** was born in Mentz, Cayuga Co., N. Y., April 16, 1889. Graduated from Port Byron High School. While in college, he has specialized in Agronomy and farm management with the intention of taking up practical farming as a life work.
George Harvey Miller comes from Buffalo where he prepared at Masten Park High School. He has specialized in Dairy and Horticulture, and has been prominent in Agricultural baseball activities. Member of Cayuga Club, Hebs-Sa; Junior Moakley House Fund; Banquet Committee; Class Day Committee; Cornell Countryman Board.

Edwin Wells Mitchell comes from Cincinnati, where he prepared at the University School. He has specialized in Horticulture and Plant Industry and expects to do orchard work and later to grow an apple orchard in Northern New York. Hebs-Sa; Cayuga Club; Mandolin Club.

George Warren Myer was born in Ovid, N. Y., March 6th, 1885. He received his elementary education in the district school and in Interlaken High School and The Cook Academy. He took one year in the special course and the next year changed to the regular. Alpha Zeta; College Basketball, 1906-7, 1907-8; College Baseball 1906-7-8, Captain, ’09.


Tanomo Odaira was educated in Toda Agricultural School and later specialized in Horticulture in the Imperial University of Sapporo, Hokkaido. After two years of study he was a teacher at Toda Agricultural School and an expert in the Agricultural Experiment Station at Toda. He entered Cornell in 1907, specializing in Horticulture and will continue in this work for an M. S. A. He is a member of the Cornell Cosmopolitan Club.

Fred Eugene Robertson. Born Feb. 18th, 1878, at Cambridge, Washington County, N. Y. Entered Cornell as a special student of Agriculture in 1901. He left in 1903 to superintend the Empire City Farms, Alleghany Co., N. Y. After an absence of three years he returned and prepared at the Ithaca High School for the regular College course.

Refxine Latting Rossman of Martindale, N. Y., prepared at Hudson, N. Y., High School. He has not specialized, preferring to take a general course. Cayuga Club; Class Track Team, (2); varsity Track Team, (1-2-3-4); Junior Feed Committee; Senior General Committee; Hebs-Sa.

Sydney Godfrey Rubino was born in Moscow, Russia. Prepared at Newark, N. J. High School. Specialized in Dairy Industry. Future occupation not decided upon.

Victor Israel Safro prepared at the DeWitt Clinton High School of New York City. He has specialized in Entomology. Francis Miles Finch Debate Club; Class Debate Teams, (1-2); Agassiz Club. (Secretary); Cornell Prohibition League, Secretary (3); President, (4).

Hart Irving Seely born at Spencer, N. Y., and prepared at Ithaca High School. After completing his course in Agriculture he will take up the management of his farms at Spencer, Tioga Co., N. Y. Sphinx Head; Hebs-Sa; Widow Board, (2), (3), (4); Business Manager Widow, (4); Chairman Senior Cap and Gown Committee; General Spring Day Committee, (3), (4); Chairman Agr. Spring Day Committee, (3); Ice Carnival Committee, (3); Masque, (1), (2); Chairman Agr. Song Book Committee.

Edward Loomis Davenport Seymour was born in Boston and received his elementary education in the schools of that city, Cincinnati and New York. A desire soon grew into a determination to live and work in the country, and he has completed a general course intending to go into practical farming. Editor The Countryman, 1907-8, 1908-9; Alpha Zeta; Sphinx Head; Hebs-sa; Class, Junior Varsity and Varsity 4-oared Crews; Varsity Soccer team; 1909 Class Book; Secretary Class of 1909 Agriculture.

Vahan Eppan Siramarkian, was born at Constantinople, Turkey, in 1884. Followed the study of Greek, 1896-1900 at Adrianople. In 1900, he entered Robert College at Constantinople and leaving there in 1904.
decided to enter Cornell and take up the study of Agriculture, in the fall of 1906. Mr. Siramarkian intends to take up graduate work later.

FREDERICK BURDETT SPRAGUE was born at Smyrna, Chenango County, N. Y., Dec. 7, 1881. Received his early education in the district and village schools. He taught school for one year and after a year in the Ithaca High School entered Cornell Agricultural College in fall of '05. Francis Miles Finch Debate Club; Cornell Congress; Interclass Debate Team; Intercollege Track Team; Varsity Track Team. He will return to do general farming on Smyrna Hill.

CHARLES JACOB STEIN was born in Buffalo, N. Y., and received his preparatory education at Masten Park High School of that city. Sophomore Smoker Committee; Varsity Track Team, (3); Class Day Committee; Sculp and Blade; Hebs-Sa, and Cerberus.

ARTHUR WATSON SWEETON was born May 20th, 1886, in Canton Center, Conn. After graduating from the Collinsville High School, he spent a year working on the home farm. The next two years were spent at the Connecticut Agricultural college and then, after working on the home farm for another year, he came to Cornell in the fall of '07. He expects to go into farm management work.

EDWARD HERRMANN THOMSON, age 22, comes from Delhi, Delaware Co. N. Y. He has specialized in Dairy and Farm Management, with the intention of following this work for a few years, after which he hopes to return to the home farm. Hebs-Sa, Cayuga Club, Agriculture, '09. Class President; Agr. Banquet Committee, (3); Spring Day Committee, (3); Round-Up Club; College Crew, (3); Pres. Delaware Co. Club.

MILLER AMASA TRAVIS, age 23, was born in Woodhull, N. Y., where he later attended the district school. He afterwards went to Greenwood Union School, graduating in 1903 and on the completion of a two years post-graduate course he entered Cornell in 1905. Mr. Travis was Secretary and Treasurer of the Cornell University Poultry Association, '08-'09.

OLIVER DIBBLE TULLER was born in town of Simsbury, Conn. He attended the Shelton High School and Westminster Academy then entered Conn. Ag. Col., spending three years there. After two years of practical experience in farming he entered Cornell in fall of '07, as a Junior. He expects to be a farmer.

STEPHEN FRANKLIN WILLARD, JR., was born in Wethersfield, Conn., on Nov. 1, 1884. He graduated from the Hartford High School in 1904 and from Cushing Academy in 1905, entering Cornell in the fall of '05. While here he has been actively interested in college activities. He was elected to the Countryman Board in his Sophomore year, becoming Business Manager in his Senior year. He has specialized in Plant Breeding. Is a member of Alpha Zeta, Hebs-Sa and Sigma Xi.

GEORGE NORTON WOLCOTT was born July 12th, 1889, at Yorkville, Oneida Co., New York. He prepared at the Utica Free Academy and on entering Cornell pursued the regular course in Agriculture. He has specialized in Entomology and hopes to go into Experiment Station work.

The Countryman regrets to announce that it has been unable to secure write-ups of the following:

CANDIDATES FOR DEGREE OF Ph.D.
ORR SHERMAN MORGAN.

CANDIDATES FOR M.S. IN AGRICULTURE
LEON DEXTER BATCHelor.
GEORGE JOHN BOUYOUcOS.
LLEWELLYN RHYs DAVIES.

CANDIDATES FOR B.S. IN AGRICULTURE
E. L. BAKER.
P. H. CORMAN.
M. JACK.
N. M. McGINNIS.

CANDIDATES FOR M.S. IN AGRICULTURE
CHRISTIAN NEPHI JENSEN.
LOLA ALEXANDER NIVEN.
JACOB TAUBENHAUS.

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