

*Dedication...*



# HUDSON VALLEY LABORATORY

HIGHLAND, NEW YORK

29 JULY, 1964

*of the*

*New York State Agricultural Experiment Station, Geneva, a part  
of the College of Agriculture, a Contract College of the  
State University of New York at Cornell University.*

## *About the Station . . .*

When established 82 years ago, State legislators undoubtedly did not dream that the New York State Agricultural Experiment Station at Geneva would ever have the reknown distinction that it enjoys today. In fact, it was only through the diligent efforts of a few that the Experiment Station was ever started.

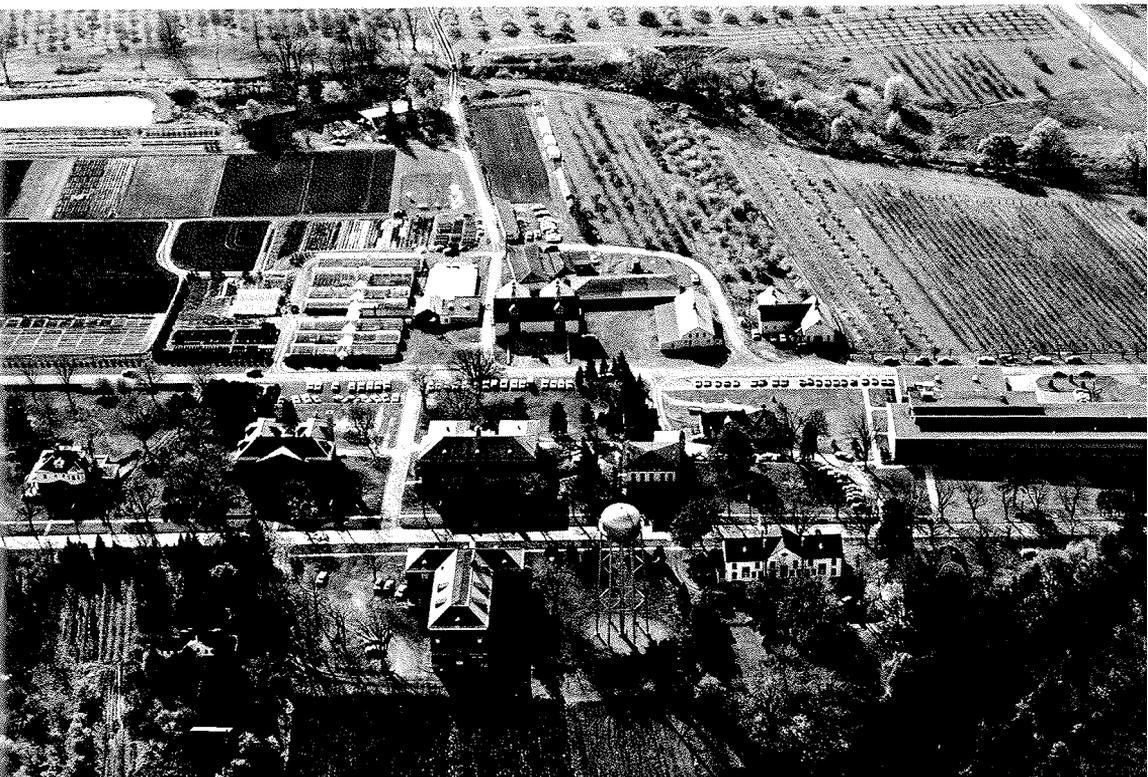
Today, the institution is known throughout the world as one of the great horticultural research experiment stations. Its staff of 60 professional scientists and 200 other technicians and assistants are working on more than 250 projects. The results of these efforts determine to a large extent the direction of today's agriculture in New York State, and will form the design for tomorrow's.

The Experiment Station is an integral part of the New York State College of Agriculture, a contract college of the State University of New York at Cornell University. Research work at the Geneva Station concentrates largely on the production, protection, and utilization of food crops grown for processing. Scientists undertake to develop high yielding, disease resistant varieties of fruits and vegetables that will make high quality products for the consumer. A seed testing service is available for farmers, nurserymen, and dealers. There is a comparable service with feeds and fertilizers. To accomplish all this work, more than 600 acres of land are maintained by the Station for field trials.

Research at the institution is divided among six departments — namely, Entomology, Plant Pathology, Pomology, Seed Investigations, Vegetable Crops, and Food Science and Technology. Also located at Geneva is a Regional Plant Introduction Station, operated under the auspices of the U. S. Department of Agriculture, Washington, D. C.

Many years ago, the administration at Geneva saw the need for establishing units of the Station at strategic points in New York. The first such unit was located at Fredonia, in the heart of a large grape producing area. About 10 years later, in 1923, the Hudson Valley Laboratory was established at Highland. Its primary objective was to help solve the problems facing the growers in eastern New York's fruit and vegetable industry.

The history of not only the laboratory being dedicated today, but of the commodities grown in the Hudson Valley is unique, and it is with a great deal of pride that we hold this collective relationship between our laboratory here and the many growers in the area.



*The New York State Agricultural Experiment Station, Geneva.*

# PROGRAM

## Morning

9:30 Registration

10:30 PARTNERS IN PROGRESS

*Master of Ceremonies*—Daniel L. Dalrymple, Assistant  
Commissioner, N. Y. State Department of Agriculture

SCIENTIST-INDUSTRY, Donald W. Barton, *Director, New York  
State Agricultural Experiment Station, Geneva*

SCIENTIST-GROWER, Charles E. Palm, *Dean, College  
of Agriculture, Cornell University, Ithaca*

GROWER-SCIENTIST-INDUSTRY, James Clark, *President,  
Hudson Valley Agricultural Research Corporation, Inc.*

GREETINGS FROM THE NEW YORK STATE  
HORTICULTURAL SOCIETY, Al Zimmerman, *President*

INTRODUCTION OF SPECIAL GUESTS, Daniel L. Dalrymple

Noon Buffet Luncheon Served on the Grounds

## Afternoon

1:00 TOURS OF LABORATORY FACILITIES AND  
EXPERIMENTAL ORCHARD

*The*

HUDSON

VALLEY

LABORATORY

IT WAS A LITTLE MORE than 40 years ago, in 1923, that the New York State Agricultural Experiment Station at Geneva and the State Legislature saw the need for establishing a laboratory in the Hudson Valley. The act, which became a law with the approval of the Governor on 22 May 1923 stated, "there was to be provided a place for the experimental study of the problems of increasing the production and controlling the diseases and injurious insects of the horticultural crops of the Hudson River Valley, and making appropriation therefor."

This law opened the door for the Station's Board of Control to "rent suitable lands and buildings within the fruit growing district of the Hudson River Valley, to employ the necessary scientists and laborers, and to purchase necessary equipment and provide proper facilities for the study of the problems of maintaining and improving the productivity of the soil, of securing improved varieties of fruits adapted to the soil and climate of the region, and of controlling the diseases and insect pests of the horticultural crops of the district."

It is of interest to note that the Station was to rent lands and buildings, not purchase them. This clearly indicated that the Laboratory was



*Aerial view of new Hudson Valley Laboratory. Photograph taken from the East. Experimental orchard is located behind buildings.*

to remain only so long as it took to solve any important local agricultural problems. To date, there have always been more problems than time, consequently, the Laboratory has become almost a permanent niche in the life of the Hudson Valley region.

Although the Laboratory has always been located in the Hudson Valley Region, it has had many homes during its 40 year history. The first was in Highland, then a few years later it moved to Vassar College, and then to 33 Marple Road, Poughkeepsie. In 1942, the Laboratory was forced into another move, and it was at this time that the Hudson Valley Horticultural Research Cooperative (recently renamed the Hudson Valley Agricultural Research Corporation) stepped into the picture.

During the first 20 years, growers throughout eastern New York had benefitted greatly from the outstanding research programs at the Laboratory. They felt it essential that the Laboratory continue its operations since many new problems were constantly creeping into the fruit and vegetable industry in that part of the State. Through their local organization, the growers purchased an abandoned schoolhouse on Cottage Road in Poughkeepsie. This building was leased to Cornell University for use by the Laboratory, and served as permanent headquarters until February 1962. As Dr. R. W. Dean, one of the Laboratory's entomologists said

in 1942, "The latest move finds the Laboratory in the most satisfactory quarters of its peripatetic career."

This was not, however, to be the last move in the illustrious history of the Laboratory, for in February 1962 a fire started in the two story building, gutting much of the inside and destroying many years of valuable research data and documents. Once more the Hudson Valley Agricultural Research Corporation came to the rescue and found temporary headquarters for the staff in the basement of a firehouse. The members of the Corporation further agreed to purchase the land for a new laboratory and to construct an \$80,000 physical plant. Cornell agreed to lease the new buildings and also agreed to purchase enough additional acreage adjacent to the building site for use as experimental orchards. The lack of experimental orchards was a serious drawback at the old building, and prevented testing of certain potentially important agricultural chemicals.

The new site for the Laboratory has once more returned to Highland, and is located just a short distance from the junction of Routes 9-W and 299. Construction began in 1963. There are two units on the main site—the Laboratory and the eight vehicle service garage, storage area, and machine shop. The main building is a one-story affair, 38 feet wide by 111 feet long. It is made of concrete block. Offices are located on one side of a central corridor, while laboratories are on the other. This plan was adopted as a result of experiences during the fire in the old building, where offices and laboratories were combined and flammable materials added greatly to the damage of office equipment and records located in the same rooms.

The new building has six offices, a photographic darkroom, and service rooms on the back side, and four laboratories with adjoining storage closets across the front. Each of the four professional staff mem-

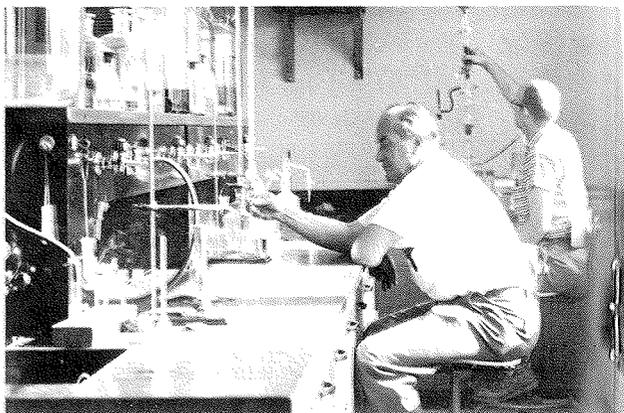
*Area behind main laboratory that is being used for parking. Adjacent to the laboratory is a service building capable of storing eight vehicles, spray materials, and a machine shop.*





*Each staff member at the Laboratory has his own facility for conducting experiments. New equipment is enabling the scientists to embark on greater detailed studies of certain key problems. Here, Dr. D. H. Palmiter, Plant Pathologist, is placing cultures into an incubator.*

*A typical laboratory. This particular one is used by the Station's pomologist, Dr. C. G. Forshey. Laboratories are on opposite sides of corridors from offices to provide added fire protection.*



bers, representing the Departments of Entomology, Plant Pathology, and Pomology, has his own office and laboratory. The remaining offices are used by assistants.

Each laboratory is equipped with hot and cold running water, LP gas, compressed air, and vacuum lines. All elaborate piping and wiring systems are hidden from view. A separate waste water system is provided for laboratory sinks to handle chemical wastes. All offices and laboratories were furnished by the Geneva Experiment Station.

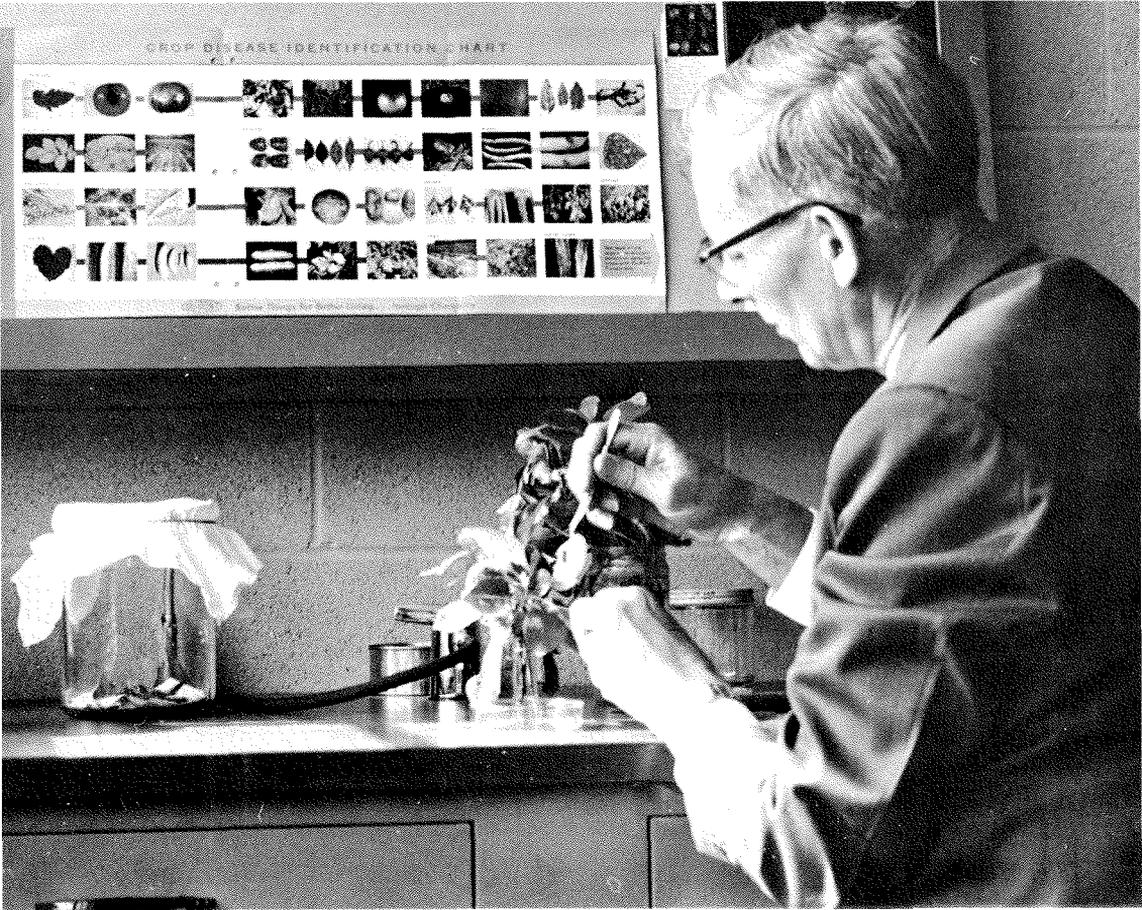
A special feature of the structure includes two insect-rearing rooms. These facilities are equipped with heating and cooling apparatus used for maintaining temperatures within a specified range. Attached to one side of the laboratory is a 12 by 30 foot fiberglass greenhouse that is being used for studying certain disease and varietal problems.

A second building has just recently been completed that houses a workshop, spray materials, and eight vehicles. Also made of concrete blocks, this building is located adjacent to the laboratory and is 126 feet long by 24 feet wide.

Although the facilities at Highland are fully occupied now, much still needs to be done before research can be brought to its peak. A major item that is currently being diligently pursued, is the planting of the fruit research orchard located immediately west of the physical facilities. About 17 of the 20 acres on the farm are arable land. There is good air drainage in all directions. The soil type is Cossayuna gravelly loam, a common orchard soil found in the Hudson Valley. Although much of the soil on the farm is acid and low in fertility, a concentrated liming and fertilization program will correct this deficiency.

Eventually, most of the useable land will be planted to orchards. Presently, some apples have been set out as well as peaches and raspberries. Small plantings of pears, plums, and sweet cherries are planned for the future. All apples are on semi-dwarfing rootstocks planted 15 by 30 feet. When developed to its fullest extent, the orchard will contain five or six of the most important varieties in the region.

It has long been the policy of this Laboratory to use commercial orchards for much of its experimental programs. Unfortunately, testing of new spray materials on these orchards has, for obvious reasons, been limited. Consequently, most of the present plantings in the new orchard are intended for the evaluation of insecticides and fungicides. Future plantings will be devoted to variety trials and studies of cultural practices.



*Nearly 10,000 acres of sweet corn are grown in the Hudson Valley Region. Dr. J. A. Adams, Entomologist, is responsible for studying insect problems.*

To facilitate storage of spray rigs and tractors, a pole-barn has been built on the orchard site. A pond and storage tank are also slated for construction to serve as a source of water for spraying.

Today, most of the research done by the New York State Agricultural Experiment Station is directed at producing fruits and vegetables that are suitable for processing. In the case of fruits, particularly, the Station attempts to develop duo-purpose varieties, that is, varieties acceptable for either fresh or processed markets.

However, in eastern New York the greatest demand is for fresh commodities, and, unfortunately, the problems facing these growers are not always the same as those prevalent in other parts of the State. Even if there should be a problem basic to all areas in New York, climatological and geographical differences may make considerable difference in the way this problem is approached. For example, applying a spray



*To provide further diversification with research activities, a fiberglass greenhouse was constructed for use by the Laboratory's pomologist and plant pathologists.*

just a day or two late can mean disaster to the fresh fruit and vegetable grower where he must have his crop at its peak when the market is highest.

It is therefore particularly appropriate that the New York State Agricultural Experiment Station maintains the Hudson Valley Laboratory. The staff members have all had long experience in studying problems peculiar to the fresh fruit and vegetable industry. It is this part of the Experiment Station staff that provides the basic link between New York's research activities in agriculture and those growers who produce their crops primarily for the fresh fruit and vegetable market.

Fruit and vegetables are a big industry in eastern New York. Apples, peaches, pears, sweet and sour cherries, plums and prunes, and sweet corn are the basic commodities. Apples lead the group with an annual production of more than 6 million bushels. The annual value of the apple and sweet corn crop alone exceeds 14 million dollars.

As can be imagined, the problems facing growers are many. For example, three things determine a grower's profit with sweet corn—high quality, good yield, and nearness to market. If any one of these is thrown out of balance it can mean operating in the red for that year. Consequently, an entomologist and plant pathologist at the Laboratory are constantly working on better ways of controlling diseases and insects. Much has already been accomplished, but there is also still much more to be done.

Research, primarily done at the Hudson Valley Laboratory, has also

brought about needed grower-directions for accurate timing and formulation of apple thinning sprays. When applied properly, the result is a product of outstanding quality that has a high consumer acceptance. It is largely the result of spray thinning that has made Golden Delicious such a popular variety in this part of New York State.

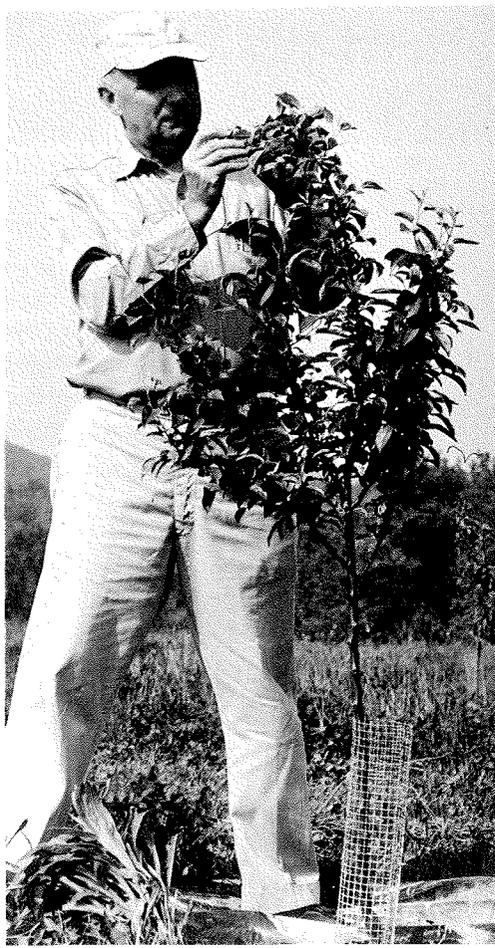
A long-term study on the possible use of irrigation in apple orchards has been another key project at the Laboratory. Results of this research show irrigation can prove quite profitable in years when rainfall is deficient and if the grower irrigates more than 35 acres of orchard.

But, there are many problems yet unsolved. For example, virus diseases still cause 20% of the losses in peaches, 50% of the losses in sour cherries, and 15% of the losses in sweet cherries. Virus diseases, with one or two exceptions, are also just now beginning to appear in apples and pears in the Hudson Valley. However, experts are predicting that there will be increased infection in the future. This means that the

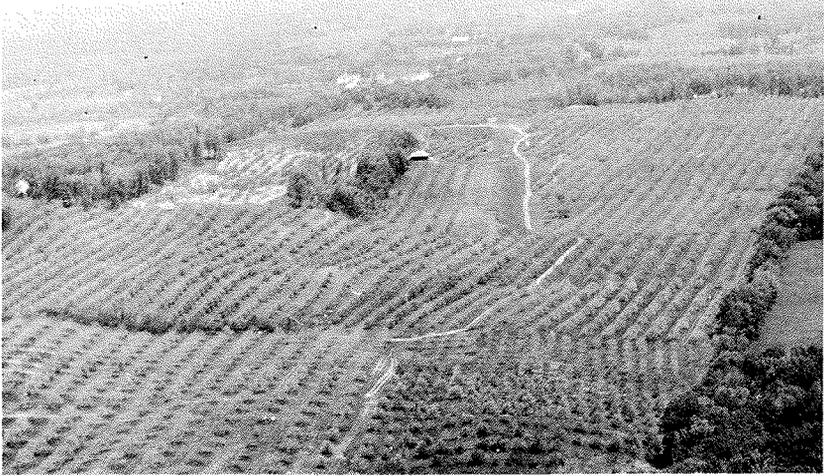
*The experimental orchard allows the Laboratory to explore in greater depth certain fungicides and insecticides that could not be tested on commercial orchards. Here, Dr. R. W. Dean, Entomologist, is checking one of the young apple seedlings.*

*On next page:*

*Golden Delicious is one of the best quality apples grown in the Hudson Valley.*





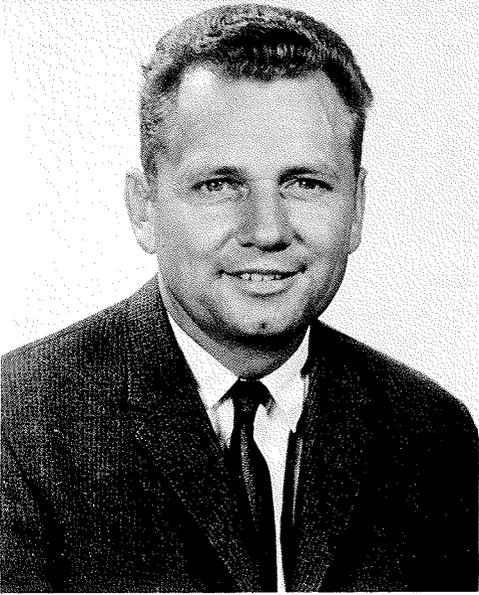


*Typical panoramic view of agricultural industry in the Hudson Valley Region. All fruits and vegetables are produced for the fresh market.*

Hudson Valley Laboratory will have to be prepared to meet this challenge when it comes.

Insects, of course, are among the major problems facing growers in the Hudson Valley. Three of these pests do most of the damage. They are: the plum curculio, a pest of all tree fruits, the codling moth, which primarily damages apples, and finally, the apple maggot and the effect that it has on the most important fruit crop in eastern New York.

Donald W. Barton, Director of the New York State Agricultural Experiment Station, summarized the future applications of the Laboratory when he said, "It is essential that the Experiment Station maintain a laboratory dedicated to solving the problems peculiar to the needs of growers in the Hudson Valley Region. We have had a wonderful relationship with the growers in the area for the past 41 years. With these new facilities, it should enable us to provide an even greater service."



## *A Statement*

*by*

DONALD W. BARTON, DIRECTOR

NEW YORK STATE AGRICULTURAL  
EXPERIMENT STATION, GENEVA

IT IS WITH A GREAT DEAL OF PRIDE that the New York State Agricultural Experiment Station and Cornell University dedicates its new Hudson Valley Laboratory. For more than half the time that the Experiment Station has been in existence, this Laboratory has proved its value not only to the fruit and vegetable growers in eastern New York, but to the continued improvement of New York's entire agricultural economy.

Of even greater significance, however, is the outstanding relationship we have enjoyed for so many years with the growers in the region, through their Hudson Valley Agricultural Research Corporation. This relationship has been one of the truly great milestones in the history of our Institution, and, with these beautiful new facilities should prove of even greater value to scientists and growers alike.

A handwritten signature in black ink that reads "Donald W. Barton". The signature is written in a cursive style with a large, sweeping initial "D" and a long, horizontal flourish extending to the right.