

LIBRARY
STATE PLANT BOARD



NEWS LETTER

PLANT QUARANTINE AND CONTROL ADMINISTRATION

UNITED STATES DEPARTMENT OF AGRICULTURE

Number 14

(NOT FOR PUBLICATION)

February 1, 1932.

TECHNOLOGICAL

The laboratory at White Horse, N. J., erected by the State of New Jersey for cooperative work with this Administration on problems on the control of Japanese beetle, is completed. It is a one-story building, 52 by 24 feet, with a well lighted main laboratory, 38 by 24 feet, and three smaller rooms for preparation rooms and offices. The chemical work on determining the arsenic content of nursery plots treated with arsenate of lead for the destruction of larvae of Japanese beetle in the soil about nursery stock that is to be shipped from the regulated area will be carried on here. This work was done by the Japanese beetle laboratory at Moorestown while the treatment was still in the experimental stage and has just been taken over by the Administration this season. The analytical work will be handled by G. A. Russell, formerly of the Bureau of Plant Industry, and more recently research chemist with the Vick Chemical Company at Greensboro, N. C. The laboratory is well equipped for determining arsenic in soils, and the work of analysis of several hundred soil samples from various plots will begin in March.

FOREIGN PLANT QUARANTINES

RECENT ENTOMOLOGICAL INTERCEPTIONS OF INTEREST

Mediterranean fruit fly from Italy.--Thirteen living larvae of the Mediterranean fruit fly (*Ceratitis capitata* Wied.) were intercepted at New York in oranges in baggage from Italy. Eighty-five living larvae of the same fruit fly were also intercepted at New York in tangerines in baggage from Italy.

Apple maggot in tejocotes.--Living larvae of the apple maggot, *Rhagoletis pomonella* Walsh, were intercepted at Nogales, Ariz., in tejocotes (*Crataegus* sp.) in baggage from Guadalajara, Mexico.

Thrips from South Africa.--A thrips intercepted at Philadelphia on cut flowers of Ornithogalum sp. from South Africa is commented on by J. R. Watson, of Gainesville, Fla., as follows: "This insect is Haplothrips bagnali (Trybom), apparently a common thrips in blossoms in South Africa, but not known to be present in this country. From the habits of the thrips, it might be a rather serious pest if introduced."

Iris infested with thrips.--Bregmatothrips iridis Watson was intercepted at Washington, D. C., on bearded iris leaves in the mail from Paris, France. J. R. Watson reports that this thrips is confined to the Netherlands, Belgium, France, and England.

Dipterous larva in endive.--A living larva of Agromyza pinguis Falen (Agromyzidae) was intercepted at New York in an outer leaf of endive (Cichorium intybus) in cargo from Belgium. This agromyzid is not recorded from the continental United States.

Philippine termite.--The termite Kalotermes (Neotermes) malatensis Oshima was intercepted at Honolulu, Hawaii, in a wooden support of an orchid in cargo from the Philippines. T. E. Snyder, of the Bureau of Entomology, states that this is a Philippine species.

Pentatomid with bananas.--Mormidea ypsilon (Linn.) (Pentatomidae) was intercepted at San Francisco with bananas in cargo from Panama. This pentatomid was taken previously with bananas from Costa Rica.

Weevil in sapodillas.--Larvae of Conotrachelus sp. (Curculionidae) were found by Max Kisliuk, jr., and C. E. Cooley, in sapodillas (Achras sapota) in a market at Port of Spain, Trinidad, October 11, 1931.

Inga setifera pods infested.--Larvae of Stenomoma sp. (Stenomidae) were found by Max Kisliuk, jr., and C. E. Cooley, in Inga setifera pods in a market at Port of Spain, Trinidad, October 18, 1931.

Scale insect on cactus.--The coccid Lepidosaphes (Opuntiaspis) philococcus (Ckll.) was intercepted at San Ysidro, Calif., on a cactus plant in baggage from Puebla, Mexico.

Globe artichokes infested with a weevil.--Larvae of Apion carduorum Kirby (Curculionidae) were intercepted at New York in globe artichokes in cargo from Belgium. This weevil, which is not recorded from the continental United States, has also been taken in globe artichokes from France and Italy.

Tortricid intercepted.--Amorbia emigratella Busck (Tortricidae) was intercepted at San Francisco on rose in quarters from Hawaii. This leaf roller has also been intercepted at San Francisco on chrysanthemum from Hawaii and on gladiolus and rose from Japan.

Coreid from Central America.--An adult of Capaneus odiosus Stal. (Coreidae) was intercepted at Charleston, S. C., on bananas in cargo from Guatemala. This coreid has also been taken on bananas from Costa Rica, Honduras, and

Panama.

Citrus blackfly from the Philippines.--The citrus blackfly (Aleurocanthus woglumi Ashby) was intercepted at San Francisco on mango plants in cargo from the Philippines. This represents the first definite record in our files of the interception of the citrus blackfly from the Philippines.

RECENT PATHOLOGICAL INTERCEPTIONS OF INTEREST

Sclerotinia minor, which was intercepted in December, 1930, on "witloof" (Cichorium intybus) from Belgium (see p. 5 of the News Letter for March, 1931), was intercepted at New York six times on witloof from Belgium during December, 1931.

Nemas infesting taro root from China were determined by the Division of Nematology as a new species of Cephalobus. It is believed that some nematodes in this group are parasitic at times. The specialist indicated that the nemas in this case were "saprophytic?". The interception was made at Detroit.

Oospora citri-aurantii was intercepted at Boston on an orange from Algeria. This disease is not listed in Fawcett and Lee as occurring in any part of Africa.

Recent interceptions at the Inspection House in Washington include the following: Phyllosticta argyrea on Eleagnus macrophylla from England, P. epimedii on Epimedium peralidianum from Holland, P. tineae on Viburnum davidii from England, Colletotrichum hedericola on Hedera sp. (caenwoodiana?) from England, Ciliophora sp. on peduncles of flowers of Verticordia nitens from Australia, Ascomycetella sp. on Euphorbia sp. from South Africa, and Cytospora sp. (possibly C. pinicola) on spruce cones from Germany.

The Phyllosticta spp. and Colletotrichum were causing leaf spots not known or not widely distributed in the United States. The Ciliophora is probably not of much economic importance but being rare is of interest to the mycologists. The Ascomycetella does not fit any of the known species as described. No record of a Cytospora on spruce in Europe could be found.

KISLIUK AND COOLEY FIND FRUIT FLIES IN BRAZIL

(Excerpt from letter of C. E. Cooley and
Max Kisliuk, from Rio de Janeiro, Nov. 28, 1931.)

"In another commercial grove in this section, containing some 20,000 trees of 'Natal' oranges, we found Ceratitis capitata adults quite abundant, and the fruit more heavily infested than in any other grove yet visited. In about two and one-half hours' time, we collected 42 adult C. capitata, 2 adult Anastrepha fraterculus, and 2 adult A. serpentina, on about six or seven trees in this grove. It was interesting to note the attitude of the owner, who followed us through the grove. He stated that there was no fruit fly in

his grove, and when shown the infested fruit hanging on the trees, with the juice actually dripping from the exit holes made by the larvae, he replied with the remark that that was only the 'juice of the moon.' He explained that when his trees bloomed at the wrong time of the moon, the fruit always dripped with juice like that, when it got ripe. It was particularly interesting to note all three species, C. capitata, A. fraterculus, and A. serpentina, all working on these oranges at the same time, and sometimes all three species in the same tree."

ALL STAGES OF FRUIT FLY FOUND IN ONE SHIPMENT

W. H. Freeman, of the port inspection service in New York, calls attention to an unusually interesting interception of Mediterranean fruit fly made December 16, 1931, in a box of tangerines, oranges, and sweet limes from Italy. In this shipment an egg mass (cluster of eggs in egg cavity) was found in one of the oranges, 6 larvae in a tangerine, 15 pupae in the paper packing, and 1 adult at large in the box, thus presenting all stages of the life cycle in this one package.

CUBAN LIMA BEANS MOVE INTO SOUTHERN STATES

For some years there has existed an understanding with the trade that Cuban Lima beans, permitted entry at the port of New York only, and during the period November to March inclusive, should not be shipped to points south of Baltimore and St. Louis. This agreement was reached because of the occurrence of the bean pod borer (Maruca testulalis) in Cuba, and since 1930 the finding of the scab disease (Elsinoe canavaliae) on Cuban Lima beans has made this restriction on the distribution of these beans doubly desirable as a safeguard for the southern bean industry. In the past two years there have been strong indications that this understanding was not being fully observed, since Cuban Lima beans have been repeatedly found as far south as Washington, D. C. Recently Mr. C. B. Beamer, of the transit inspection force in New York City, has undertaken to gather information on the southward movement of these Cuban beans, and reports on December 15, 1931, that two shipments have been observed destined to Camden, S. C., and to Charleston, S. C. A later report covers some 40 other lots of Lima beans of Cuban origin shipped from New York markets, all of which, however, were billed to near-by towns in New York and New Jersey.

PORT CHANGES

On December 29 the New York office was moved from 45 Broadway to the remodeled Appraisers' Stores Building at 641 Washington Street. This move will result in a considerable saving to the Administration, as no rent will be charged for the new quarters.

A new port inspection station was opened on January 11 at Blaine, Wash. J. W. Stanton will handle the work at this port under the general supervision of A. G. Webb at Seattle.

Changes in personnel made by the California State Department of Agriculture have led to the transfer of Fred C. Brosius, Collaborator in

Charge of Port Inspection, San Francisco, Calif., to Oakland, Calif.

Mr. Brosius has been in charge of the Federal plant quarantine inspection activities at San Francisco since January 21, 1924. His keen interest and untiring efforts have largely contributed to the successful enforcement of the Federal plant quarantines at that important port. The Administration has always recognized the high caliber of his services as a collaborator and appreciates the interest he has always shown in the conduct of Federal enforcement measures.

Mr. Brosius is succeeded by H. M. Armitage, until recently Deputy Agricultural Commissioner of Los Angeles County, Calif.; whose appointment as collaborator of the Administration became effective November 1, 1931. The San Francisco offices have been moved from the Ferry Building, the new address being Agricultural Building, Room 24.

HIDING THEM FROM THE INSPECTOR

The port inspectors at New Orleans maintain a file listing all the strange and unusual places in which articles are concealed aboard ship in order to escape inspection. Each inspector is given the complete file in the form of indexed cards giving vessel, date, material, quantity, owner (if known), and the place of concealment. The New Orleans office claims the following advantages for this practice: It develops a more thorough system of inspection of ships for contraband; reduces to a minimum attempts on the part of ships' officers and crew to "put something over on us"; keeps each inspector informed as to what the other is finding; furnishes advance information as to what is to be expected on a given vessel; serves as a manual of instruction in training new inspectors; creates an interest to be a "finder" and, last but not least, helps us to not appear so dumb to those whom we try to keep straight--the ships' officers and crew.

It is interesting to note some of the recent entries in this file:

Ten orange trees, hidden under rope in poop deck, from Honduras; 3 mangoes found under pots in galley, and one found under pillow in crew's quarters; 10 mangoes submerged under rice in rice bin in dry store-room, from Cuba; 9 mangoes wedged between bananas next to stalk (in bunch) in first assistant engineer's room, from Honduras; 2 mangoes under bedding in bunk, right-hand side, forward, crew's quarters, from Guatemala; 1 mango under tomatoes in icebox, from Mexico; 10 avocados and 11 peaches under bread in icebox, from Honduras; 12 oranges in fireman's quarters forward in locker behind two suitcases, from Nicaragua; 2 sweetpotatoes (Ipomoea batatas) in mattress in compartment No. 1, crew's quarters, from Nicaragua; 5 oranges under bread in breadbox in pantry, from Mexico; and 1 papaya, hidden under sack of garlic in icebox, from Canal Zone.

MEDITERRANEAN FRUIT FLY STILL TRIES TO ENTER

One of the chief functions of Quarantine No. 56, the Fruit and Vegetable Quarantine, is to prevent the introduction into this country of fruit flies, and particularly the Mediterranean fruit fly (Ceratitidis capitata), which object

is accomplished by shutting out host fruits and vegetables from countries known to be infested. With such a prohibitory measure in effect all danger of the entrance of this fruit fly would seem to be removed, theoretically at least. But in many cases the theoretical danger and the actual danger do not coincide; the latter may be greater or less than theoretical considerations would indicate, according to circumstances.

Is there any way of arriving at the actual danger in this case? Yes; if we look into the matter through the eyes of the port inspector who examines the actual materials themselves and thus meets the problem face to face as a stern reality, it ought to be possible to determine fairly accurately the safety or danger of actual conditions.

If we thus look through his borrowed eyes we see at once that forbidden fruits and vegetables are still knocking at the door for entry, not only in spite of the quarantine as cargo, but in baggage, ships' stores, passengers' belongings, crews' effects, and parcel post. Are these materials likely to carry fruit fly? Let the records of the port inspectors tell the tale.

From April 1, 1930, to December 26, 1931, 59 lots of prohibited fruits and vegetables coming from 9 countries were intercepted at 15 different ports. These included 20 kinds of fruit and vegetable hosts of the Mediterranean fruit fly. In 43 of the 59 lots this insect was found to be present as follows: Orange, lots intercepted, 14, lots infested, 11; loquat, 3 - 3; mango, 6 - 1; fig, 1 - 0; avocado, 4 - 0; lemon (over-ripe) 1 - 1; prickly pear, 1 - 1; pepper, 3 - 1; tangerine, 8 - 7; citron, 2 - 2; mandarin orange, 1 - 1; sweet lime, 2 - 2; cotoneaster seed, 2 - 2; pear, 2 - 2; peach, 4 - 4; grape (leaf), 1 - 1; almond, 1 - 1; sorbus, 1 - 1; apple, 1 - 1; persimmon, 1 - 1. In all cases the identification was made by Bureau of Entomology experts.

The records further show a high degree of infestation in some of these cases. The following are quoted: Seven of the pears contained 67 larvae; 7 tangerines, 70 larvae, one of these fruits having 30; 4 peaches, 35; 1 peach, 14; 1 lemon, 16; and 1 orange, 11. There were taken from the 43 lots of infested host fruits and vegetables 568 larvae and 45 pupae, or 613 in all. The average insect infestation of these lots is thus 14.2. Further, if it were assumed that any lot containing 10 or more larvae would be capable of introducing fruit fly successfully if it was dropped into proper surroundings, then 17 of these infested lots could be considered distinctly dangerous.

Are we not justified in concluding that considerable danger of fruit fly introduction still exists and that the vigilance of the port inspectors continues to be our only real defense against this pest?

In the December, 1931, News Letter, the statement was made that Aleyrodes azaleae B. & M. was not known to occur in continental United States. Since then a letter has been received from G. B. Merrill, Gainesville, Fla., pointing out that his records showed the occurrence of this whitefly at four localities in Florida and one in South Carolina.

DOMESTIC PLANT QUARANTINES

TRANSIT INSPECTION

The inspection schedules at Chicago have been rearranged for the light shipping season from January to March in order to eliminate need for overtime and reduce the number of tours in which the daily duty is divided into separate morning and evening periods of employment.

Thirty-five potted Christmas trees, with roots and soil, from one shipper in New York City were intercepted by transit inspectors at railway terminals in that city on December 18 and 19. The shipments were consigned without Japanese beetle certificates to points in the nonregulated territory.

The first violation of the phony peach disease quarantine found for the season was intercepted by H. J. Conkle at Washington, D. C., on January 7.

It is not unusual for inspectors examining interstate shipments to find violations of foreign plant quarantines. A. W. Clark, checking shipments at Boston for compliance with regulations relating to the gipsy moth and brown-tail moth, as well as other domestic plant quarantines, recently intercepted a shipment containing five-leaf pine boughs from Nova Scotia en route to California. The port inspector at Boston, W. G. Bemis, on being notified of the discovery of these boughs entering the United States in violation of the Federal quarantine, which prohibits their importation from Canada, Europe, and Asia, promptly removed and destroyed the boughs. The white-pine blister rust is not known to have reached the valuable forests of sugar pine and other five-leaf pines of California.

Twenty-five ears of corn being shipped as feed with a hog from Burford, Ontario, to Salem, Oreg., were recently seen in transit at Chicago by Inspector J. M. Moran. Burford is in that part of Canada generally infested with the European corn borer. Action was taken to arrange for the destruction at destination of any corn in the shipment which may have come from Canada or from areas in the United States that are regulated under the European corn borer quarantine.

At St. Paul and Minneapolis, all foreign plant material passing through the Customs Bureau is examined by the transit inspector, George W. Nelson. During the fall of 1931, 43 packages of foreign plant material were inspected, of which 8 were diverted to Washington, 20 refused entry, 3 destroyed, and 12 released. All mail matter from foreign countries liable to customs duties entering the United States through New York, Chicago, San Francisco, and Seattle, and destined for Minnesota through New York and Chicago for North and South Dakota, and through San Francisco and Seattle for points in Wisconsin, is examined by customs at St. Paul before redispach to destination. In addition, considerable Canadian mail from the provinces of Saskatchewan, Ontario, Manitoba, and British Columbia to points as far east as Vermont, south to Georgia, and west to California, is examined at the St. Paul Customs Bureau. Packages containing plant material are referred to the transit inspector of the Administration there.

A list of nursery stock shipments moving without State nursery inspection certificates attached is received from the Chicago office. The list shows that 256 such shipments were seen by inspectors of the Central States during a period of slightly less than four months, ending December 15. These were reported to the nursery inspection officials of the States concerned, as probable infringements of the State regulations. The parcel-post shipments, which included 75 per cent of the total, were reported to the Post Office Department as infringements of the postal regulation requiring a State nursery inspection certificate in shipping woody plants. The number given does not include those which also constituted violations of Federal plant quarantines.

The Administration is at present assisting the Solicitor in assembling records of decisions in State courts on cases relating to plant quarantines and pest suppression. In this work the active cooperation of the State nursery inspection and plant quarantine officers is being received. It is anticipated that the decisions will be arranged for publication, at least in abstract form, when assembled.

NARCISSUS INSPECTION

Reports from State officers on the bulb inspection work of 1931 have now been received from nearly all States and the results are being tabulated.

PHONY PEACH DISEASE

Quarantines restricting the intrastate movement within Texas and Illinois of peach and nectarine trees and roots, on account of the phony peach disease, have been issued by these States. These are in addition to the North Carolina quarantine reported last month. The Administration is now in correspondence with the plant quarantine officials of Arkansas, Florida, and Tennessee regarding the provisions of similar State quarantines pending in those States.

The States included in the area quarantined by the Federal Department on account of the phony peach disease conferred at New Orleans on December 28 regarding appropriate restrictions to prevent the further spread of infection within the States through the intrastate movement of nursery stock.

DATE SCALE

In December intensive scouting of the Salt River and Yuma Valleys was begun to locate unlisted palms. Most of this territory can be easily scouted, but properties not cultivated for a few years and waste land along irrigation canals are generally covered with dense growths of desert brush and weeds which sometimes hide small abandoned date palms.

In the Yuma Valley along the Colorado River there is quite an area thickly overgrown with timber, brush, and weeds in which are a number of small clearings where farming is or has been carried on. Quite often date palms are

found in these clearings, either grown from seed or from offshoots. As the area around the city of Yuma was once generally infested, there is a possibility that some of these palms are infested.

Intensive scouting is now being carried on over the entire date-growing area and it is hoped that all date palms in the area will be located.

EUROPEAN CORN BORER AND JAPANESE BEETLE

General Project News

Project functionings during December mainly consisted of work preparatory to seasonal enforcement of the European corn borer and the Japanese beetle quarantines in the periods of maximum field activities. Headquarters officials were engaged much of the time on the pending revisions of the regulations. Numerous conferences and considerable correspondence with State plant pest officials were conducted. Clerical help mostly was employed in compilation of records and in arranging to inform other personnel in reference to the new requirements. Mechanical employees had a busy month in repairing and reconditioning equipment.

On December 1, Administration officials conferred in Harrisburg with Pennsylvania department of agriculture officers concerning changes in the regulated areas under both the European corn borer and Japanese beetle quarantines. Details were discussed between Mr. Strong, Chief of the Administration, Mr. Worthley, the project leader, and Mr. Bell, Director of the State Bureau of Plant Industry. Understandings reached were approved by the Pennsylvania Secretary of Agriculture, Mr. McSparran. Changes decided upon in the territory covered by the beetle quarantine were included in the revision announced on December 12. In reference to the corn borer, it is planned to modify existing boundaries in a minor degree only.

A general conference on the extension within New Jersey of the areas under regulation in consequence of the corn borer quarantine was held at Trenton, on December 21. Agricultural leaders, county agents, farmers, growers, and shipping organizations were represented. State Secretary of Agriculture Duryee, Bureau Chief Weiss, and Entomologist Headlee were present as the New Jersey official delegation, and Messrs. Worthley, Crossman, and Bartley, from the South Norwalk headquarters, appeared for the Administration. Agreement was reached to recommend the placing of approximately four-fifths of the State under the provisions of the two-generation quarantine, including all portions except the southwestern section.

New York plant pest control agencies were consulted at Albany, on December 4, by Mr. Worthley, in charge of the European corn borer and Japanese beetle project of the Administration, as he was returning from a trip to Chicago in connection with the corn borer exhibit at the International Live Stock Exposition. In the enforced absence of Commissioner of Agriculture Pyrke, Assistant

Commissioner Nergord and Director Van Buren, of the Bureau of Plant Industry, represented the State. New boundaries of the part of New York regulated on account of the beetle are indicated in the revised quarantine. Recommendations in respect to the borer contemplate addition to the two-generation area of considerable territory in the eastern portion of the State.

Repair shops at the South Norwalk headquarters in December serviced and prepared for road use 39 half-ton trucks, changing gas and oil, fixing ignition and lighting systems, straightening fenders, and attending to minor deficiencies. Ten light cars and 14 large trucks were completely overhauled--drive and rear shafts, motors, steering gear, and transmission. In addition, bodies, curtains, and tops of trucks were repaired, cars washed and polished, both cars and trucks were repainted, and repairs were given to lighting and power plants and to tents. In the stock room, all car and truck tools and supplies and quarantine line equipment were sorted and placed in bins, with name stencilled thereon, many fittings and parts were moved to quarters where they will be more accessible, and keyboard for 350 cars was rearranged, and numerous other similar tasks were performed. Miscellaneous transactions on the part of mechanical employees included removal from South Norwalk to the army depot at New Cumberland, Pa., of six trucks and one trailer, checking and soldering of 11,000 beetle traps, and like activities. Springfield, Ohio, subheadquarters forces were active during the period on related work pertaining to machinery and supplies. All project field equipment is made a bronze green as repainted and the Department and Administration shield placed on trucks in decalcomania, greatly improving the appearance.

Training schools for employees of the European corn borer and Japanese beetle project, current items concerning which appeared in summer issues of the Administration News Letter, are of major importance in providing competent and informed personnel. Additional facts in relation to this phase of project activities, collected in December for transmission to the Bureau of Personnel and Business Administration of the Department, furnished a more complete picture of the schools than heretofore has been assembled. In the western section of corn borer control, the special training courses were inaugurated in 1926, in the central section they were started during 1928, and for exclusive Japanese beetle purposes the first was conducted in 1929. In 1926 and 1927, however, the western section schools also supplied scouts for the central section. Only one school on corn borer control was held in 1926, but in 1927 three were conducted. From 1928 to 1931, inclusive, annually there was a single general training unit in the western section and another in the central. Expenses of the undertaking principally have been provided through special assignments of regular personnel. Western section corn borer schools have been attended by an average of approximately 375 men, and the central section courses by about 100. In the western section schools 7 instructors usually are engaged, in the central section 2, and in the Japanese beetle division there have been as many as 11. Many of the instructors have college degrees; others possess long experience in field practice. Students failing to perform satisfactorily, or failing to pass examinations held at the close of the school either are dismissed or transferred to duties requiring lesser qualifications. All courses closely parallel actual field work and are designed with special reference to the practical side of things. Corn borer school students in fact devote nearly 90 per cent of the period to field demonstrations and practice,

while in the beetle school a somewhat greater proportion of attention has been paid entomological aspects. All available data appear to definitely indicate direct and worth-while results from the training schools, observable in the increasing efficiency and improved diplomacy of the employees who come into contact with the public.

Specialized Corn Borer Activities

At the conclusion, on December 5, of the International Live Stock Exposition in Chicago, which had opened on November 28, as reported in the last issue of the News Letter, it was estimated that 75,000 persons had viewed the European corn borer exhibit prepared at western section headquarters. Deep interest in the material shown was manifested up to the end of the event. Both city and country people in large numbers operated the mechanical questions and answers device. Corn belt farmers manifested particular concern in respect to the control section of the display. The quarantine enforcement part also attracted a great many people, as did the portion devoted to seasonal activities and development of the borer. Three men from the Administration were assigned to the exhibit, with alternating shifts so that two Department representatives were on duty at all times. Sixty-one samples of corn containing 616 ears, submitted by 50 growers, had been heat-treated at the Springfield offices. Twenty-one of the lots were from Michigan, 15 from Indiana, 10 from Ohio, 7 from New York, 7 from Pennsylvania, and 1 from Ontario, Canada. Of this treated corn, that from Michigan was awarded 10 prizes; Indiana had 13 prizes out of 15 lots; Ohio's received 6; the New York samples, 1; all of Pennsylvania's 7 were prize winners.

Report of the second annual field day and European corn borer conference at Berkley Farm on September 17, 1931, was distributed during the early part of December to Department officials and others interested in control of the borer. In connection with the mailing out of copies, a new and up-to-date mailing list was compiled, assembling the addresses of State department of agriculture officials, agricultural experiment station and extension officers, college of agriculture staff members, county agents, and related personnel associated with plant pest work in Connecticut, Maine, Massachusetts, New Jersey, New Hampshire, Rhode Island, and Vermont. Delay in issue of the report, which was produced entirely in the South Norwalk headquarters of the project, was due to the fact that it was handled by employees having other major duties, in odd moments of spare time. The book contains 48 pages and covers, and includes considerable material explanatory of the Berkley demonstration farm, in addition to reproductions in full of the addresses delivered on the occasion of the field day and conference. A few extra copies are available, and persons associated with other projects who may wish to read the report should make application for it promptly, through their official superiors.

Clean-up work as a control measure was completed about the middle of December in the vicinity of the isolated infestation found some weeks earlier, at Temperanceville, Va. Approximately 35 acres of land were covered in the operations, which consisted of plowing 22 acres and handpicking some 13 acres seeded to rye, as well as four small gardens, for disposal of crop remnants. Corn stubble on the land plowed was from 3 to 7 inches high, and in most cases the soil had been ridged, rendering it more than ordinarily difficult to obtain

complete coverage. Results regarded as practically 100 per cent efficient were secured, however, by frequent adjustments of the equipment used. Stalk shavers widened to 46 inches for the 60-inch rows were found to work splendidly. Much interest in the undertaking was manifested by farmers, who came from all parts of the county to observe the operations and to get information concerning the corn borer. The county agent was present much of the time. Equipment was supplied from the South Norwalk headquarters and in the undertaking the Administration had the cooperation of the Bureau of Agricultural Engineering and the Virginia Department of Agriculture.

Inspectors of the Rhode Island State department of agriculture now are engaged in a survey of corn-growing sections in that State and checking up farmers who failed to comply with the law in relation to plowing under all corn stubble by December 1. In this connection, over 4,000 notices were posted, several radio talks were delivered, and a number of press releases were issued, citing the law and the necessity for clean-up work at the proper time. Persons who have failed to comply with the law are notified to appear before the Commissioner of Agriculture for hearings. Over seven hundred offenders appeared last year and were warned to clean up their premises. The Department intends to impose penalties on all second offenders found this year.

Movement of cut flowers from the wholesale markets in New York City, requiring certification or permitting under the corn borer quarantine, decreased considerably in December, except in respect to gladioli, on which there was an increase. Gladioli from the Southern States began to arrive early in the month and they were present in fairly large quantities by the middle of the period. Green corn on the cob, from Florida, was received in about the same amounts as during November, at the wholesale produce markets. More permits for shipments to points outside the regulated area were issued this month than last, but the total number of packages moved was somewhat less.

Through the offices of the western section of corn borer control, the recommendations approved by the Administration regarding the location of the quarantine lines for 1932 were presented to the officials of the Departments of Agriculture in the various States concerned. In no case were the proposed revisions of the regulated area for the one-generation strain of the borer notably extensive, though some expansion was made necessary by the findings of new infestations and the showings as to greater density of infestation recorded last season. On December 31, all of the interested States except Ohio had signified their concurrence in the proposed changes.

Exhibit of material illustrating the habits and life history of the corn borer and of machinery for control of the pest, to be made at Trenton, N. J., January 26 to 29, was planned and in part prepared for during December. The New Jersey department of agriculture is sponsoring the event, and the Administration field headquarters at South Norwalk will be cooperated with by the Bureau of Agricultural Engineering in features relating to mechanical control practices.

Trucks temporarily placed at the disposal of Post Office Department officials by the South Norwalk corn borer headquarters, for use during the Christmas season in promptly handling the abnormal quantities of mail requiring

attention, were as follows: For Bridgeport post office, 14; for Stamford, 4; for Danbury, 3; for Norwalk, 3; and for South Norwalk, 2. All these cities are in Connecticut. Trucks were utilized for varying periods, ranging from 4 to 15 days.

Inspection during December in the eastern section of corn borer control, principally of garden products and cut flowers from outside the regulated area in movement to other uninfested sections, disclosed no specimens of the borer, but a rather heavy infestation of the corn ear worm was found in gladioli of Florida origin. Practically every consignment from that State contained large numbers of well developed larvae.

Cut flowers inspected at Boston for certification, under which shipments could be made to points outside the European corn borer regulated area, showed a further heavy decline in volume during December. The 1931 total was only 20,439, as compared with 317,773 in the corresponding month of 1930. Extension of the quarantined territory to include New York City, made early in the year, accounted for most of the difference.

With the expiration on December 31 of the seasonal requirements of the corn borer quarantine respecting certain products in the two-generation area, all per diem men engaged in inspection and certification of farm produce in the central section were released. Cut flowers and other articles remaining under regulation will be looked after by regularly appointed employees.

Exclusive or Combination Japanese Beetle Work

Abandonment of the two-area system of Japanese beetle quarantine operation took place with the 10th revision, effective January 1, 1932. Since March 1, 1930, quarantine activities have been based on a division of the regulated zones into generally and lightly infested sections, with somewhat differing requirements for the movement of quarantined articles therefrom. The territories now affected are not contiguous but all are subjected to the same measure of restriction. On the basis of previous years' records of farm products inspection, it also has been considered practicable to materially reduce the number of fruits and vegetables under regulation and to eliminate entirely restrictions on the movement of grain and forage crops. Farm products requiring certification under the revised rules are limited to green corn on the cob, beans in the pod, bananas in entire bunches or in clusters of 25 or more, apples, peaches, blackberries, blueberries, huckleberries, and raspberries. These are the articles of produce subject to infestation at the farm or port of entry. They are the only commodities in which inspection over a period of years has evidenced consequential beetle infestation. In exceptionally rare instances, beetles have been removed from a few other articles of produce, but only under conditions which also subject nonagricultural commodities to equal infestation. Evidences of long-distance spread from the latter sources are lacking. Modification of rules for nursery certification has resulted in the elimination of the Class II status for nursery premises. Class II establishments comprised premises in which there was believed to be likelihood of early future infestation. Abandonment of this intermediary status limits nursery classification to Classes I and III. Class I status

requires the evidencing of freedom from Japanese beetle infestation of the nursery premises and all adjacent properties within approximately 500 feet thereof. Nurseries so determined are accorded certification without chemical treatment or inspection of their stock. Nurseries in which grubs or adults have been found, or situated within approximately 500 feet of an infestation, are placed under Class III requirements. Requisites for certification of stock from Class III premises call for chemical treatment of stock or other safeguards adequate to assure freedom from infestation. In the additional territory added to the regulated zones under the revised regulations are the two southeastern tiers of New York counties, as far north as Lake George. Primarily extended to embrace within the zone of quarantine activity the newly-discovered infestations in Albany and Fort Edward, inclusion of this southeastern portion of the State permits unrestricted movement of farm products to summer resorts in the Catskill Mountains. Previously required certification of large quantities of uninfested farm produce transported to mountain resorts will be eliminated. Additional advantages also accrue from the fact that the two-generation European corn borer quarantine line in southeastern New York is conterminous with the Japanese beetle quarantine boundary, thus permitting operation of joint road stations. Small sections of uninfested territory heretofore included in the lightly infested Hampden County, Mass., zone have been restored to nonregulated status. Otherwise Massachusetts' spheres of quarantine activity remain unchanged. Connecticut and Delaware have acquired the status of New Jersey and Rhode Island as entire States under regulation. Pennsylvania's restricted areas coincide largely with previously-regulated territory. Small uninfested sections of Mifflin and Bradford Counties have been released from quarantine requirements. Wayne and Pike Counties, and isolated zones in Blair and Erie Counties, have been included within the limits of the quarantine for the first time. In western Maryland, the regulated zones are confined to the previously-restricted generally infested sections, together with two small isolated units in the northwestern counties of the State. Remaining districts of the State heretofore included in the lightly infested zone, but in which no infestation has been determined by persistent scouting, have reverted to nonregulated conditions. With the exception of a section of the eastern shore of Maryland, the Del-Mar-Va Peninsula has been included in its entirety. Aside from reduced quarantine jurisdiction of uninfested regions in Fairfax County, Va., no material change in actual regulated area is evidenced in the latter State. Zones under regulation will consist of the main regulated territory together with 10 isolated localities. Most of the detached districts are so small that it is impracticable to permanently station an inspector therein. The regulations as originally promulgated conditioned unrestricted movement between isolated zones of quarantined articles by truck or other road vehicle upon affixing of seals by an inspector at the point of origin and the maintenance of the seals intact until examined by an inspector in the separate regulated area to which the stock was transported. The new situation created by the establishment of numerous separate sections has been met by elimination of the sealing requirement, through a modification of the quarantine requirements to become effective simultaneously with the revised regulations.

Measures to assure thorough riddance from traps of accumulated beetles must be taken annually. Activity on the part of trapped beetles often leads them to become hidden in parts of the trap other than the collecting jar.

The insects sometimes gain access to the inside of the traps and lodge themselves in the perforated metal bait container or become crushed between the bait container and the bottom of the cylinder forming the body, especially when large numbers have been caught. Only by thoroughly cleansing the entire trap assembly may freedom from beetles be secured. Unless clean traps only are distributed each year, there is always the possibility of carrying dead adults of the previous year's catch to new localities in unwashed traps. Subsequent discovery of such adults might lead to the erroneous assumption that specimens had been trapped in the new location, whereas they were actually carry-overs. Frequently the beginning of the trapping season is accompanied by high temperatures. Trapped beetles remaining in the glass collecting jars, for several days subjected to the extreme heat in the confined air of the jar and the sun's drying effect, become desiccated and are almost identical with dried specimens held over from the previous year. Washing of the baffle, funnel, cylinder, and bait container assemblies was last summer accomplished by trap tenders immediately after the completion of their summer's activities, and just prior to placement of the traps in temporary storage. When the traps receive their annual reconditioning, the encrusted bait material and other accumulations of the summer are completely removed. This winter all traps have been assembled at the South Norwalk headquarters, where the metal portions will be repaired, and the baffles, funnels, and cylinders painted. Painting of iron supporting rods is accomplished by dipping them in a small elongated wooden tank containing black asphaltum paint. Cleansing of the glass jars is performed in connection with the slotting operation described in a previous issue of the News Letter. The jars are so carefully and thoroughly cleaned, during the process of overhauling them; as to afford complete assurance that no beetles, lodged therein during the past season, will remain when the work is finished.

Consolidation in a new subheadquarters near Oakmont, Pa.; of the project's two Pennsylvania cooperative suboffices previously located at 141 South 52nd Street, Philadelphia, and Germantown Pike, near Norristown, was accomplished on December 29. Moving operations started three weeks prior to the opening date. Transfer of the office furniture, supplies, motor vehicles, garage and other equipment from Norristown to Oakmont constituted the greatest item involved in the changed headquarters. A large automobile storage shed at Norristown was sectioned and re-erected at Oakmont, as was also a smaller temporary building used as a repair shop. The new headquarters is an L-shaped one-story, high-ceilinged brick and sash building, having over 10,000 square feet of floor space. It was previously occupied by a manufacturing concern. Surrounding ground is available for expansion should conditions warrant. An oil-burning boiler supplies steam to two enclosed coils within the building. Blowers integral with the coils force heated air to all parts of the building. Ground adjacent to the building has been plowed. When fill is available the environs of the building will be graded and grass sown. The building is located on West Eagle Road, near Oakmont, Delaware County, Pa. Post Office address of the new headquarters is Box 508, Llanerch Branch, Upper Darby Post Office, Pa. G. B. Stichter, previously in charge of the Philadelphia office, and J. K. Gould, supervisor of the Norristown territory, remain in charge of their respective quarantine activities.

Immediately upon determination of the scope of the revised Japanese beetle regulated area with the promulgation on December 12, 1931, of the 10th revision of the regulations, effective January 1, 1932, work began on a shipper's guide. The guide will include a brief digest of the regulations, together with a list of United States post offices, express stations, and freight offices, shown by available guides and maps as situated within the new area. Approximately 40 mimeographed sheets containing 100 cities and towns per page will be necessary. Counties in which the various communities are included will also be shown. Probably the most bothersome routine encountered by shippers in interpreting the quarantine is the necessity for determining cities and towns to which their shipments are destined as inside or outside the regulated area. Reference to the guide will determine whether a community is within the area, when the shipment may go forward without restriction, or is outside the area, in which case the movement of the stock must be made under certification.

United States Attorney Oliver D. Burden, from Syracuse, N. Y., reports that on December 1, 1931, Carmon Dagostino, 409 N. State Street, Syracuse, appeared in the United States District Court at Utica and entered a plea of guilty to an information alleging a violation on July 21, 1931, of the Plant Quarantine Act arising from the transportation contrary to the Japanese beetle regulations of an uncertified truck load of miscellaneous vegetables and fruit from Swedesboro, N. J., to Syracuse. The defendant was fined \$35. Although stopped at the quarantine line station at Factoryville, Pa., and warned of the possible consequences of violating the regulations, the defendant elected to proceed to his destination with the contraband. Form of information was filed with the United States Attorney on November 6.

H. J. Dougherty and C. R. Gaunt, agents of the project, who have heretofore performed transit inspection at the Philadelphia postal terminals and railway express platforms, respectively, under the immediate supervision of Mr. Stichter, in charge of the Philadelphia quarantine suboffice, have been transferred to work under the direct supervision of the transit inspection division in Washington. Desk room has been furnished for use of these men in the office of Mr. Brinton, chief of the Philadelphia field inspection service station of the Food and Drug Administration, located at 134 South Second Street.

Mild weather during much of December has permitted movement of nursery stock for a considerably longer period than is usually available for winter digging and shipment. Although the actual shipment of nursery stock under certification has been comparatively limited, a considerable movement within units of nursery establishments has taken place. This additional demand for certification and supervision of movement on classified premises has resulted in active employment for many of the skeleton force of inspectors who would otherwise have been assigned to maintenance or other out-of-season occupations.

A draftsman from the South Norwalk headquarters in company with an inspector from the Dover, Del., suboffice was occupied during the month in mapping classified establishments on the Del-Mar-Va Peninsula. Accurate maps to scale are required in connection with application of lead arsenate to

sections of nursery plots, treatment of heeling-in and plunging areas, and as basis for determining classification boundaries.

A survey of six plots in Philadelphia, on which smartweed planting and lead arsenate application were completed early in December, indicates that the majority of the broadcasted seeds have been washed in by recent rains and all surface signs of the arsenate have disappeared. Treated sections have been staked out, and warning signs erected to prevent trespassing on the demonstration plots.

Considerable equipment used at quarantine line stations whose locations do not conform to the revised regulated zones was collected during the month and brought to the South Norwalk headquarters. Over winter the equipment will be cleaned, repaired, or painted as required.

Cooperation during the Christmas mail rush was extended to the Post Office Department through the loan of two of the project's delivery trucks to the Postmaster at Norristown, Pa., and the transfer for a short period of a similar truck to the Postmaster at Dover, Del.

Transfer of an inspector from the Dover, Del., office to Salisbury, Md., marked the establishment of readily available inspection service in the lower Del-Mar-Va. Peninsula.

MEXICAN FRUIT WORM

The operation of traps in Matamoros resulted in the taking of five adult Anastrepha ludens in three premises during December. Four of these were females. On dissection no egg development was observed, indicating that they had been caught shortly after emerging from the pupal stage. A close inspection of the citrus fruits growing in these premises gave negative results. Upon the determination of these infestations spraying operations were instituted in the area comprised in the four blocks surrounding the points of infestation. Bait spray was applied in 49 premises and will be continued at weekly intervals until 4 applications have been made.

A number of sour orange trees were cut down by their owners in Matamoros with the idea in view of budding the sprouts to sweet fruit.

Spoiled oranges, guavas, cherimoyas, pomegranates, apples, grapefruit, and sweet limes were secured from Matamoros, inspection of which resulted in taking 92 larvae from oranges imported from Montemorelos, Nuevo Leon, Mexico.

No fruit flies in any stage of development were found on the American side of the river.

The fourth round of grove inspection was completed during the month. Inclement weather and the necessity of attending to regulatory duties interfered to some extent with field work, resulting in a slight decrease in the

number of specimens submitted for identification. Due to the small sizes of the fruit and the practice of the packers in ring picking, very few groves have been completely cleaned of fruit.

Rail shipments were light for the month. The holiday gift box shipment was about as heavy as last year for the two weeks period preceding Christmas. However, the movement of fruit by truck showed an unprecedented increase. An equivalent of 376 carloads were shipped by this means during the month compared to 585 cars by rail. While the majority of fruit shipped by truck is consigned to Texas points a casual inquiry among the drivers as to their destination revealed a number of trucks making regular runs to New Mexico, Kansas, Oklahoma, Arkansas, Louisiana, and Colorado. Outlying points to which fruit was hauled in trucks during the month were in Illinois and Minnesota. During the early part of the season there was one trucker making regular runs between the Valley and New York City, completing the round about every two weeks. However, this trucker did not make the trip during December.

A violation involving the improper use of permit stamps was encountered on the afternoon of December 31. A Mexican from Donna, engaged in a small way in the trucking of fruit to points upstate, bought the fruit from a grove south of La Feria. In the sales contract this Mexican agreed to take care of the orchard and keep it properly cleaned. On the 15th it was found to have too much drop fruit on the ground, and "Certificate of Grove Inspection" was withheld. On rechecking this grove on the 31st, it was found that a truck load of fruit had been cut and was in process of being loaded on a truck. The baskets had permits from a Donna packing company attached. Upon investigation it appeared that the Mexican was considerably ignorant of the regulations; that he had been to the Donna inspector for stamps for this fruit and had been referred by him to the La Feria inspector in whose district the grove was located. However, instead of applying to the La Feria inspector, he had picked up a pad of stamps in the packing house at Donna which he was intending to use. In view of his apparent ignorance of the requirements of the regulations, he was allowed to move the fruit under La Feria permits after putting a crew in the grove and thoroughly cleaning it.

PINK BOLLWORM

Ginning operations were very materially retarded throughout the regulated areas during December, as a result of unfavorable weather conditions. There has also been a shortage of pickers, especially in the lower part of the El Paso Valley of Texas. In the Salt River Valley of Arizona, a number of pickers have left the cotton fields to assist in harvesting the winter lettuce crop. As a result of the above conditions, less cotton was ginned during December than in any previous month since the season actually got under way. Probably the greatest amount of cotton yet to be ginned is in the Salt River Valley of Arizona, the latest estimate showing that some 29 per cent of the crop remains to be picked and ginned.

It is very gratifying to note that the sterilization of cottonseed has been very satisfactory, in view of the cold weather that has been experienced. At the end of December, seed from 211,971 bales had been sterilized, at an average efficiency of 98 per cent per bale. During the past two months a survey of the sterilizer equipment has been under way. The most serious defects revealed by this survey have already been corrected. A fine spirit of cooperation was shown by the ginners in correcting such defects.

Two gin-trash machines were in operation most of the month outside the regulated areas, both of these being in the San Joaquin Valley of California. Trash was examined in Kern, Tulare, Madera and Kings Counties, the results all being negative.

Within the regulated areas machines were operated in the Salt River Valley and at Tucson, Ariz. At Tucson, 57 different lots of trash were examined, 53 lots being infested with the *Thurberia* weevil. No specimens of the pink bollworm have been found in the Tucson area this season. In the Salt River Valley three specimens of the pink bollworm were found in trash, which apparently came from cultivated stub cotton in the vicinity of Goodyear. A specimen of the *Thurberia* weevil was found in trash at Coolidge, this specimen having apparently come from a field southwest of Casa Grande. Due to the fact that there is considerable ginning yet to be done in the Salt River Valley, it has been thought advisable to continue the operation of three machines during the coming month.

The regular weekly infestation counts, which have been made from fields in the Salt River Valley since July, were discontinued the early part of December, due to the scarcity and character of material available for inspection. All counts were negative.

For the past several years 54 man-days' annual field inspection has been performed on the Ivy Dale ranch. The Ivy Dale ranch is located in the El Paso Valley of Texas, and was selected because cotton is planted each year. The purpose of the inspection is to obtain some idea of the increase or decrease of the pink bollworm. The inspection this season was about half completed during December. The results already obtained indicate that the infestation is much heavier this year than ever before; also a greater number of living specimens are being found. In connection with the field inspection, all trash from this ranch is being run through one of the gin-trash machines so as to give a comparison of the two methods of inspection. This work will be completed during the coming month, and the results will be given in the next News Letter.

Counts are now being made in the Big Bend of Texas to get some idea of the number of live worms left in the various fields. The count has been completed in one field in which the stalks had previously been raked and burned, so that the material left consisted of bolls, squares, and other parts of the plant too small to be raked. From an area of 100 square feet, all material was collected and examined. It was found that approximately 97,000 living and 40,000 dead worms per acre were left in this particular field. The damage counts mentioned in the last News Letter showed 26.22 per cent for this field.

Seed samples from the Big Bend are now being inspected to check the efficiency of sterilization. The seeds are first run through a gin-trash machine equipped with a modified drum for collecting double seeds. These seeds are then inspected, and also a considerable number of single seeds. Approximately 1,000 specimens of the pink bollworm have been found in the seeds examined thus far. All of the worms were dead, thus indicating that sterilization has been efficient.

There was a considerable decrease in both the number of cars inspected and interceptions made at the road stations during the month, due largely to the cold weather prevailing. Many of the confiscations were taken from Mexican cotton pickers returning to the Rio Grande Valley of Texas. One interception made at the Fort Davis, Tex., station on November 14, was found to be infested with the pink bollworm. This interception consisted of about one-fourth pound of cottonseed taken from the bed of a truck which had been used to haul seed from the Big Bend to the Marfa oil mill. An examination of the seed resulted in the finding of 21 dead larvae. One other interception of material made at the Fort Davis station showed evidence of pink bollworm work; however, no specimens were found. The road station at Van Horn, Tex., has been relocated, due to changing of the highway. This station is now permanently located and is equipped with electric lights, which is a great advantage to the inspectors.

PREVENTING SPREAD OF MOTHS

Practically all of the men who were temporarily transferred to the quarantine force for Christmas tree and spruce bough inspection work had returned to the scouting and extermination project before the end of December and were assigned to scouting work. This work, however, no sooner got under way again in December, when it was temporarily slowed up by poor scouting conditions, and also because of the fact that a large part of the force was away from field duty on annual leave during the Christmas holidays. There was some snow during December which, in some instances, turned to rain and then froze, causing uncertain footing conditions particularly in the mountainous areas in the Adirondack regions.

During December, scouting work for the gipsy moth was concluded as planned in Hague, Warren County, N. Y., with negative results, and the men were transferred to duty at Dresden, N. Y. At the close of the month, scouting crews were working in Putnam and Dresden, Washington County, N. Y. No gipsy moth infestations were found during the month in the area scouted by the Federal crews in New York State.

During December there was some intensive scouting work carried on around old colony sites in New Marlboro, and also in Sheffield, Berkshire County, Mass. There have been found to date 9 infestations aggregating 61 new egg clusters and 28 old egg clusters in New Marlboro, and 1 new and 1 old egg cluster in Sheffield. Clean-up work around these infestations has not as yet been completed.

Preliminary scouting work was continued during December in Litchfield, Conn., by three supervisors and one agent, and also at Tyringham, Mass., by two

supervisors. No indications of the gipsy moth were found during this period.

During December there were 92 lots of material offered for inspection in New Jersey, which represented a sharp decrease in the number of shipments and the quantities comprising these shipments over the previous month. This condition is usual in New Jersey at the time following the Christmas holidays. No gipsy moths were found on these shipments.

On Long Island, in Nassau County, there was also a decrease in the volume of stock offered for inspection, there being 69 lots examined and certified for shipment during December. No gipsy moths were found on these shipments. In addition to the inspection and certification of nursery stock originating in Nassau County, L. I., the Federal gipsy moth inspector stationed at Roslyn, L. I., learned that wood was being cut at Roslyn in order to furnish temporary employment to men in that locality. The wood cut was piled in cords and some of it was shipped outside of the regulated area in Nassau County. In the vicinity of where this wood was cut, the New York Conservation Department's scouting crews recently discovered a gipsy moth colony. During November and December approximately 140 cords of wood were cut and shipped. A stick by stick examination was made of this wood by the gipsy moth inspector without finding any gipsy moths. The cutting of this cord wood has been discontinued for the present.

The New York Conservation Department have reported that they had scouting crews engaged in the examination of wooded areas during December in East Fishkill, Wappinger, Northeast, and Amenia, Dutchess County; Harrison, Mamaroneck, White Plains, Bedford, North Castle, and Yorktown, Westchester County; Chatham and Ghent, Columbia County; Whitehall and Granville, Washington County; Phillipstown, Ghent, and Carmel, Putnam County.

On Long Island the same number of men have been reported as employed during December as during the previous month, these crews still being located in North Hempstead, Oyster Bay, and Hempstead, Nassau County. Scouting conditions on Long Island continued to be fairly good so that the New York Conservation Department are gradually completing the scouting work. There is not a great deal more work to be done in the 3-mile area surrounding No. Roslyn., L. I., the center of the original infestation found on Long Island during the fiscal year 1930.

The State of Connecticut has reported that since July 1, 1931, their scouting crews have found 78 infested locations in towns east of the barrier zone, which aggregate 8,674 egg clusters. There are two of these infested sites, however, which total 27 egg clusters in the town of Colebrook, Conn., which borders on the barrier zone at the Massachusetts State line.

Since the beginning of gipsy moth scouting and extermination work, the use of town maps was found to be indispensable to the foreman of crews and to other supervisory officials. The first maps were rather crude as no attempt was made to standardize them. Some of them were prepared from U. S. Geological Survey topographical sheets, and from whatever road maps were then available. As the gipsy moth work developed, and the demands for specific

information became more and more necessary, it was imperative that a type of map which supplied uniform information be adopted. Improvements have been made in these maps from time to time and also in the methods employed to secure data for the preparation of them. When they can best be spared from their regular duties, men who are well acquainted with the scouting and extermination work are assigned in pairs to make town woodland and road surveys. They usually start in one corner of the town to be surveyed. All roads are measured by an automobile odometer and are then drawn in on the map. The main roads are lettered alphabetically and the smaller roads leading into these main roads are sublettered such as A1, B1, C1. It has seldom been necessary to use more than the letters A-B-C-D for the main roads. The scale of the map is usually 1 inch to a mile. As the woodlands are encountered, the boundaries of each are paced or otherwise measured by odometer, when possible, and the acreage is determined by calculation, the basis being 4,840 square yards to an acre. The shape of the woodland block is drawn in on the work map and the distance from the roadside is also shown. The woodland blocks are numbered and the acreage of each shown inside of it. Villages within the town are designated as are rivers, important trails leading through woodland blocks averaging 20,000 acres or more, and large brooks and streams. The predominating tree growth and other necessary information relative to the tree growth are indicated. All important elevations are shown. Advantageous locations for scouting and spraying crews within a town as well as locations for high-power spraying machines with respect to accessibility of water, etc., are noted. Road and trail conditions as regards their use for motor vehicle travel are given. When the survey is completed and it usually takes two men approximately two weeks in an average town—a master map is made embracing these details, from which blueprint copies are made. The roads in the town are marked at suitable places with white lead to correspond with the map. The road designations appear at the start and finish, at all road junctions, and in cases where the road is unusually long and is not traversed by other roads, the designation is painted again on trees, poles, etc., at intervals of 1 mile.

There were 1,407 tons of spruce boughs (28,140 bales of 100 pounds each) inspected and certified for shipment from the quarantined area of western Massachusetts and southern Vermont this year. This is an increase of 21 per cent in the volume of spruce boughs shipped this season over that shipped the previous season.

During the season just past, approximately 1,420,000 Christmas trees were actually inspected. This represented an increase by several thousand trees over those inspected last year. In connection with this work, there was a 26 per cent increase in the volume of shipments carried by motor truck. The trees were consigned to 32 States, not including New England. One shipment, in addition, was shipped to Hawaii. Approximately 1,050,000 trees were sent to Illinois, New Jersey, New York, Ohio, and Pennsylvania. Related to the inspection of carload lot shipments of Christmas trees, was the necessary inspection of 13,000 car stakes or approximately 300 cords of lumber. The trees cut for stakes are mostly spruce, maple, and white birch. Considerably more white birch is now being used as it sets off the car and makes the carload more saleable.

There was a heavy increase in the shipment of mixed Christmas greenery from the quarantined area this year. Of this type of product there were 1,301 bundles and bales, 462 bags, 8,212 boxes, and 63 packages inspected and shipped in less-than-carload lots. This year one carload of mixed greenery consisting of 20,000 spruce and balsam wreaths was shipped from Skowhegan, Me., to Brooklyn, N. Y. It took approximately 12 tons of material to make up these wreaths. The greenery used in making these wreaths was assembled and inspected before the finished product was constructed. This is the first carload lot shipment of this type of product shipped from the regulated area, but with the apparent increase of this kind of inspection from year to year, it is to be expected that more carload lots may be shipped in the future. Christmas greenery includes wreaths, sprays, decorative baskets, evergreen roping, centre-pieces, etc., and when practical, the regulated materials which are used in these articles are inspected before being used in making up the finished product. While inspecting mixed greenery assembled at Putney, Vt., for shipment outside of the quarantined area, one gipsy moth egg cluster was found on a branch of holly. The holly originated in the generally infested area and did not require inspection for transportation to Putney as this place is also in the generally infested territory.

An enterprising manufacturer of Vermont maple sugar products shipped to various parts of the United States 837 boxes of maple sugar candy and in each box he placed a single sprig of fir balsam which required inspection.

During the past Christmas greenery shipping season, the U. S. Customs Inspectors were active at loading points for Christmas trees along the northern border of the gipsy moth quarantined area of New Hampshire and Vermont. There is an import duty of 5 cents per bundle on trees originating in Canada, and a considerable number of trees were transported in hayracks and trucks across the Canadian border to the nearest railroad shipping points in the United States. Gipsy moth quarantine inspectors stationed at the border shipping points see to it that the Canadian trees are segregated from those originating in the United States. Trees originating in Canada do not require inspection as they are shipped under permit showing that they originated outside of the gipsy moth quarantined area, whereas trees originating in the United States must be inspected and certified.

There was a marked increase in the amount of different types of Christmas greenery inspected and certified for shipment from the gipsy moth quarantine area of New England during the past season. This can, no doubt, be attributed to the fact that persons who in previous years were otherwise employed but due to the present business depression were now without employment, found temporary relief in the Christmas greenery business, which is a seasonal activity.

Persons interested in preserving relics of early American industries have from time to time acquired certain structures or buildings of this nature. In October, Henry Ford, one of the principal collectors of such relics, purchased for erection in his model early American village or his museum at Dearborn, Mich., the first silk mill built and operated in this country. This mill, in which the first silk manufactured in the United States was spun, was built and operated in 1810 by Rodney Hanks at Mansfield, Conn. Accounts of his early



efforts in developing a process of spinning silk state that the raw silk used at the mill was produced by silkworms raised on the premises, and that during the first year 300 pounds of this material were produced and used. All of the machines used were operated by hand power and it was not until 70 years later that the first mechanical power was introduced by the erection of a large water wheel. It was at first intended to move the mill intact from Mansfield, Conn., to Dearborn, Mich., but this was found to be impracticable. Accordingly, it was dismantled with care and each section packed for transportation by rail and truck to its final destination. Each piece or unit of the dismantled mill was inspected and certified by a Federal quarantine inspector before shipment.

Recently, school children in a section of Maine, acting upon suggestions and arrangements made by their teachers, have been sending collections of minerals, bark from different species of trees, and various evergreen twigs, all of which are characteristic of the section in which they are gathered, to children of corresponding grades in other schools throughout the country. The materials in all of these cases have to be inspected and certified even though the individual specimens are usually quite small. Packages have gone to schools in Georgia, Kentucky, Nebraska, Missouri, California, and Alaska.

In the border towns of the quarantined area, the inspection and certification of quarantined products may present some difficulties, particularly when these towns are located in sparsely populated sections, where roads are few and railroad stations are rather far apart. Quite often, railroad stations in border towns may serve large areas lying both inside and outside of the quarantined areas and materials from both areas may be shipped in considerable amounts. Inspection at such points is conducted with care to insure the proper examination of all products originating inside of the quarantined area. The situation may be further complicated by the loading of cars with products from both inside and outside the regulated areas. As a general rule, this mixing of materials is not practiced with respect to lumber and most other forest products, but it is quite a common thing with Christmas tree shipments. Each year numerous such mixed carloads are handled. The men who inspect at such points must be alert to see that all materials requiring inspection receive it, and that there shall be no mixing prior to examination. Occasionally, no advantageous shipping points are present inside of the quarantined area and products have to be transported to points outside before being placed on cars. Whenever possible, particularly when they have to be moved some distance to stations located any distance from the quarantined area, the products are inspected before being taken to the stations, but sometimes this is not possible or practicable and then the inspection takes place at the shipping point outside of the quarantined area.

In connection with nearly all types of quarantined products, there are occasional shipments which attract attention because of their nature or size. Two such shipments of quarry products were certified lately. Two large granite columns were shipped from Milford, Mass., to New York City for use in the Roosevelt Memorial Building now under construction. Each of these columns was slightly over 6 feet in diameter and reputed to be the largest in diameter of any granite used in a building in this country.

Correction.--In the second paragraph, line 4, p. 24, of the January News Letter, No. 13, 35 per cent should be changed to read 20 per cent.