N E W S L E T T E R

PLANT QUARANTINE AND CONTROL ADMINISTRATION

UNITED STATES DEPARTMENT OF AGRICULTURE

Number 7 (NOT FOR PUBLICATION) July, 1931.

ADMINISTRATIVE

Mr. Avery S. Hoyt has been appointed Assistant Chief of the Plant Quarantine and Control Administration, effective June 29, 1931.

Several months ago Mr. Hoyt accepted a position with the Administration in the European corn borer and Japanese beetle work, but it was not until the latter part of May that he was able to have his resignation as Director of Agriculture of California accepted so that he could report for duty. Meanwhile the examination for Assistant Chief of Administration was held by the Civil Service Commission, and following Mr. Hoyt's qualification he was offered the appointment.

Mr. Hoyt has had long experience in plant quarantine work, having entered the port inspection service of the State of California in January, 1912. He held responsible positions in the field of plant quarantine for a number of years, was for a period in business for himself, and returned to the California Department of Agriculture in February, 1928. In December, 1929, he was made Assistant Director of the California Department of Agriculture, and in February, 1931, was appointed Director.

Mr. Hoyt graduated from Pomona College, where he specialized in Entomology. He is well known throughout the western part of the United States, and comes to the Administration with training and experience which well fit him for his work as Assistant Chief.

TECHNOLOGICAL

The test work on the fumigation of freight cars on the Mexican border, which has been under way at the El Paso laboratory since early in January, in cooperation with the Division of Foreign Plant Quarantines, has been completed. In this work 50 separate tests were made--41 in the car fumigation house and 9 outside the house. Various methods of applying the hydrocyanic acid gas were tested including spraying the gas into the chambers, spraying it into the cars, and vaporizing the gas before it was introduced into the car fumigation chamber. The time factor was given consideration in these tests and tests carried on for different time periods from 1½ to 16 hours. Methods of heating the cars were also developed. As a result of these tests, it was shown that it was possible to destroy the pink bollworm larvae under the most unfavorable temperature conditions which occurred during these tests with a dosage of hydrocyanic acid gas which was entirely practicable under commercial conditions.

J. M. Luckie was in Nogales recently installing an incinerator in connection with the port inspection service. The equipment for the incinerators has all been received and incinerators will be built at most of the border ports before the first of July.

Work on the car fumigation house at Presidio, Tex., is proceeding fairly rapidly. The walls were up and the doors were in place in the early part of June. The house should be complete and ready for operation in July.

FOREIGN PLANT QUARANTINES

RECENT ENTOMOLOGICAL INTERCEPTIONS OF INTEREST

Ceratitis capitata from the Madeira Islands.--The Mediterranean fruit fly (Ceratitis capitata) was intercepted at Providence, R. I., in loquat

fruit in baggage from the Madeira Islands. This fruit fly has also been taken by inspectors of the Plant Quarantine and Control Administration in apple, mango, and prickly pear in baggage from the Madeira Islands. (See also News Letter No. 1, January, 1931; No. 2, February, 1931; No. 3, March, 1931; No. 4, April, 1931.)

The melon fly in cucumbers.--The melon fly (Bactrocera cucurbitae) was intercepted at San Pedro, Calif., in cucumbers in stores from Hawaii. This fruit fly has also been taken at California ports in string beans, papaya, and tomato from Hawaii. According to Back and Pemberton (U. S. Dept. Agr. Bul. 491, 1917, p. 1) this pest was introduced into the Hawaiian Islands from the Orient, about 1895. (See also News Letter No. 5, May, 1931.)

Fruit fly larvae from Mexico.--A sweet orange and a Satsuma orange arriving in baggage at Houston, Tex., from Tampico, Mexico, were found to be infested with larvae of the Mexican fruit fly (Anastrepha ludens). (See also News Letter No. 1, January, 1931, and No. 3, March, 1931.)

Eggs of lackey moth taken on oak.--Eggs of the lackey moth (Malacosoma neustria) were intercepted at Washington, D. C., on Quercus rubra schrefeldii in cargo from Germany. This represents the first interception by inspectors of the Plant Quarantine and Control Administration of this insect from Germany. This lasiocampid is recorded as a defoliator in Europe, western Asia, Siberia, Manchuria, China, and Japan.

Sugarcane bud moth from Hawaii.--The sugarcane bud moth (Ereunetis flavistriata) was intercepted at San Francisco and San Pedro, Calif., with coconuts from Hawaii. W. Dwight Pierce in "A Manual of Dangerous Insects," 1917, p. 204, gives the hosts of this tineid as sugarcane, palms, banana, pineapple, and Pandanus. Dr. Pierce also remarks: "While this species mainly lives in the dead tissues of the above food plants, it breeds in cane stalks among dry leaves, but often eats out the eyes or buds, thus destroying the propagating value of the cane. It may easily be transported in seed cane."

Weevil attacking coconut palm.--Diocalandra taitensis (Curculionidae) was intercepted at San Francisco with coconuts in cargo from Hawaii. This insect is sometimes known as the Tahiti coconut weevil or lesser coconut borer. The larva of this weevil attacks the fronds, trunks, spikes, spikelets, and young nuts of the coconut palm in the Fanning and Washington Islands.

Scale insect on azalea in cargo.--Pseudaonidia paeoniae (Coccidae) was collected at Washington, D. C., on Azalea pontica satsuki in cargo from Japan. Besides having been taken on a dozen or more different hosts from Japan, this coccid has also been intercepted on Acer trifidum from China and on azalea from the Netherlands.

Scale insect from the Orient.--The scale insect Odonaspis secreta

was taken at San Francisco on bamboo arriving as ship's plants from the Orient. This coccid has previously been intercepted on bamboo from China and Japan.

Thrips from Hawaii.--Taeniothrips hawaiiensis was intercepted at San Francisco on rose from Hawaii. This thrips has also been taken on Gardenia sp. from Hawaii. The original description of this insect was made by Morgan under the name Euthrips hawaiiensis. See Proc. U. S. Nat. Museum, Vol. 46, 1913, p. 3, reprint.

Whitefly on rhododendrons.--The whitefly Dialeurodes chittendeni Laing was intercepted at Washington, D. C., on rhododendron leaves in cargo from England. This aleyrodid was described in 1928 from Berkshire, England, on rhododendrons. It is not known to be established in continental United States.

Thrips on Lilium.--The thrips Liothrips vaneeckei was collected at Washington, D. C., from Lilium bulb in the mail from Canada. J. R. Watson, of Gainesville, Fla., identified this thrips and remarked as follows: "This is our old friend Liothrips vaneeckei, the European lily bulb thrips. It seems to be getting pretty well distributed over North America. We now have it from Oregon, California, North Carolina, Canada, and Washington."

Scale insect on cactus from Mexico.--The scale insect Lepidosaphes phillococcus was intercepted at El Paso, Tex., on a cactus plant in baggage from Mexico. This represents the third interception by inspectors of the Plant Quarantine and Control Administration of this coccid on cactus from Mexico. It has also been taken once on cactus from Canada.

RECENT PATHOLOGICAL INTERCEPTIONS OF INTEREST

Tylenchus pratensis and an undetermined species of the same genus of nematodes were found in Colocasia tubers from Jamaica intercepted in baggage at Philadelphia. The specialist states that this is the first time T. pratensis has been noted on this host and the first time from Jamaica.

A Phoma was isolated from a dahlia tuber intercepted at Chicago in mail from Belgium. The specialist notes that "This has been reported as on the stems, but not, so far as I can find, in the tubers of dahlias." Stevenson's Foreign Plant Diseases lists Phoma fuscata on stems of Dahlia sp. in Germany. Phoma dahliae has been reported as causing a blight of dahlias in Ohio (U. S. D. A. Bul. 1366).

Penicillium dierckxii, a rather rare species, was found on a coconut from Jamaica intercepted in ship's quarters at Philadelphia.

Bacterial canker (Aplanobacter michiganense), in whose occurrence the Bureau of Plant Industry specialists are interested, has been intercepted twice more at Nogales in Sinaloa tomatoes and has also been intercepted in Mexican tomatoes at Detroit, all three interceptions being from cargo.

Puccinia triticina, an injurious rust of wheat previously reported (May News Letter, p. 9) as being intercepted in straw from Japan, has been intercepted at the Washington Inspection House on Triticum dicoccum (emmer) collected in Russia and sent in by express.

Diplodia natalensis was cultured from a diseased sour lime intercepted at New York in cargo from the British West Indies. This stem end rot of citrus is listed in U. S. D. A. Bul. 1366 as attacking grapefruit and orange in Florida and satsuma orange in Alabama and Mississippi.

Cytospora leucostoma Sacc. was found on nectarine scions from Auckland, New Zealand. This fungus had seriously damaged the scions (about 70 per cent dead) in transit.

A shipment from Norway of young plants of Vaccinium vitis-idaea showed many leaves bearing spots caused by the fungus Mycosphaerella stemmatea (Fr.) Rom. This parasite is common in Northern Europe but apparently has not been reported for North America.

Correction: In the News Letter of May, 1931 (p. 5), Colletotrichum blighiae was reported on Blighia sapida, from Cuba. An examination of the matured culture shows the fungus present to be Diplodia cacaoicola, a widespread disease of tropical plants.

INSPECTION UNCOVERS NEW THRIPS HOST

An interception of a sotol bloom stalk (Dasylirion sp.) at Presidio, Tex., on March 22, 1931, bearing thrips, was submitted to J. R. Watson, of Gainesville, Fla., for determination of the species. He reports this thrips as Frankliniella helianthi Moulton, and further remarks: "This is an interesting lot, as it is the first time it has been recorded outside of California, from where it was described. This is also a new host plant and a decidedly different host plant than that from which it was described, namely, sunflowers. I suppose you have no data as to what part of Mexico this came from." Inquiry from R. B. Lattimore, at Presidio, as to the Mexican origin of the host material, brought the reply that since it came in a truck and the flowers are rather delicate the probability is that it was collected within a short radius from the port, and that search would be made for the parasite in the neighborhood.

The interesting feature in this case is the addition of a new and unsuspected species to the known hosts of this thrips, and it exemplifies once again the part so frequently played by our inspection force in contributing in an incidental but effective manner to the sum of knowledge on insects and diseases.

PORT INTERCEPTIONS RECEIVED IN WASHINGTON, D. C., DURING MAY, 1931

The following list includes all foreign interceptions of insects and plant diseases as well as those collected in conjunction with special permit field inspection, and also includes a few local insects and diseases sent in

by port inspectors:

Interceptions collected at the maritime ports are: Baltimore, 14; Boston, 36; Buffalo, 5; Charleston, 61; Chicago, 17; Cincinnati, 1; Detroit, 31; Gulfport, 1; Houston, 7; Mobile, 16; New Orleans, 70; New York, 117; Norfolk, 43; Philadelphia, 300; Port Arthur, 5; Portland, 3; San Juan, 16; San Pedro, 2; Savannah, 12; Seattle, 68; and Wilmington, 4.

Interceptions collected at the Mexican Border ports are: Brownsville, 10; Eagle Pass, 2; El Paso, 14; Fabens, 2; Hidalgo, 1; Laredo, 5; Mercedes (Thayer), 2; Naco, 1; Nogales, 6; Presidio, 4; San Ysidro, 2; and Sasabe, 2.

PORT INSPECTORS' CONFERENCE

During the week of June 8, 1931, a series of meetings was held in Washington, attended by inspectors in charge of the stations at Boston, New York, Philadelphia, Baltimore, Norfolk, Charleston, Mobile, New Orleans, Detroit, Seattle, and Honolulu. These meetings were also attended by A. C. Fleury, Supervising Quarantine Officer of the California Department of Agriculture; J. H. Montgomery, Quarantine Inspector of the Florida State Plant Board; L. A. Whitney, of the Hawaiian Board of Commissioners of Agriculture and Forestry, all of whom serve as Collaborators of this Administration; and by various employees of the Washington office. During these meetings the various problems which arise at the different ports were thoroughly discussed and much valuable information was received both by the field and Washington employees.

ADDITIONS TO PORTO RICO INSPECTION STAFF

The inspection force in Porto Rico has recently been increased by the addition of R. G. Oakley and N. O. Berry.

FRUIT FLY SURVEY IN MEXICO

Karl H. Townsend and O. C. Trotman left on June 15 for Mexico where they will make, on behalf of this Administration and in cooperation with officials of the Mexican government, a survey for the Mexican fruit worm in the States of Sinaloa, Sonora, and Nayarit. The survey will occupy approximately two months.

MEXICAN WHEAT AND CORN QUARANTINES

In the News Letter of May, 1931 (No. 5), announcement was made of a Mexican decree of March 5, 1931 (correctly March 4), amending Exterior Quarantine No. 8 to prohibit the importation of wheat into Mexico.

A similar decree of March 28, 1931, promulgates Exterior Quarantine No. 11, prohibiting absolutely the importation into Mexico of corn (Zea mays) and all other plants and plant parts which might carry the European corn borer.

The official texts of both these decrees have since been received and a special statement is now being prepared embodying information and instructions relating to these quarantines.

ARGENTINE FRUIT RESTRICTIONS

A decree issued March 9, and effective July 1, 1931, regulates the importation of fresh fruit into the Argentine Republic; a detailed explanation of the requirements is in course of preparation. Fruit may enter the country only under certificate issued by authorized technical officials of the country of origin, this certificate to cover apparent freedom from parasites, kind and variety of fruit, locality where grown, point of shipment, vessel, and name of consignee; the certificate must give date of issuance and be visaed by an Argentine consular official at the point of shipment.

Further features of this decree relate to wrapping and packing of fruit, holding in quarantine pending examination, destruction if infested with any of a given list of 14 insects and diseases, privilege of reshipment if infested with other less injurious parasites, restriction of entry to the ports of Buenos Aires and Rosario, restriction of certain fruit imports to specified periods of the year, and transportation of apples and pears under refrigeration. The importation of guavas is prohibited.

Article 2 of the above Decree stipulates that the containers of fruits shall be of the standard types adopted by the fruit exporting countries. The term "standard type" was originally interpreted by the Argentine authorities to exclude barrels, thus prohibiting the shipment of barreled apples and pears from the United States to Argentina, but recently the Argentine Embassy informed this office that barrels are now deemed "standard types" of containers which may be employed for apples and pears exported from the United States to Argentina.

FOREIGN PLANT QUARANTINE SUMMARIES

Circular PQCA-310, of May 18, 1931, Plant Quarantine Restrictions of Peru, has now been issued, and a circular including summaries of the plant quarantine restrictions of all the countries of Central America has been put forward for publication.

DOMESTIC PLANT QUARANTINES

TRANSIT INSPECTION

The inspection of express, parcel post, and freight at Springfield, Mass., primarily for the enforcement of the European corn borer and gipsy moth quarantines, was started on May 26, Mr. McNerney being temporarily detailed from Boston to assist in getting it under way. One inspector is being

employed full-time on the work there, and another part-time. Springfield differs from other distribution points of the same kind in the large proportion of train-to-train transfers across the platforms of the passenger stations. This necessitates unusually long hours for the inspectors, as the material to be examined is not concentrated at special postal and express terminals where it could be checked with greater rapidity. It is necessary for the inspector to be present in the station at the time of arrival of all of the numerous important trains. From the date of establishment of this inspection point, quarantine violations have been picked up which would not have been seen elsewhere. Especially good cooperation from the Railway Mail Service and the express company is being reported.

In an attempt to determine the importance of Albany as a transfer point for quarantined material from the New England States, Mr. H. J. Conkle has been assigned to carry out inspection there for six or eight weeks during the summer. He will keep accurate data on the material moving through that point which would not be seen elsewhere and a determination will later be reached as to whether it is desirable to place a permanent inspector there.

An extensive list of shipments of uncertified nursery stock seen moving through the transit inspection points of the Middle West from the first of January to the end of May has been received from the Chicago office. The 483 shipments shown on the list were those which did not involve violations of Federal plant quarantines, but being uncertified, constituted violations of the postal regulations and of the State laws of the States of origin and destination. Sixty of the shipments came from one commercial concern in Kentucky. Copies of the list have been sent to the Post Office Department and information as to the details have been furnished the State nursery inspectors of the States concerned.

Transit inspection methods and problems, as well as certain of the treatments required as a condition of movement under domestic plant quarantines, were discussed in the conference of port inspectors held in Mr. Sasscer's office on June 8 to 11. Experiences with inspection of this kind in California and Hawaii were described by Mr. Fleury and Mr. Willard after the general discussion of the transit inspection work in the United States as a whole had been presented by Doctor Fracker. A transit inspection force of considerable size is on duty at Honolulu during the rush season, which occurs there the late fall months.

Special instructions have been issued to the transit inspectors regarding details in the enforcement of the new gipsy moth quarantine regulations, in addition to circular PQCA-313, in which information is given as to the handling of plants that might be of doubtful status.

A transit inspectors' manual, in which specific information is given on the methods of handling violations or suspected violations of the various domestic plant quarantines, together with information on fiscal methods, injuries, and similar material, has been completed and is now being mimeographed.

It will be distributed to the various transit inspection offices shortly. Supplementing the manual, special instructions to supervising inspectors in charge of stations having several inspectors or assigned to open new stations, have been issued as circular 21-T.

With the farm products restrictions under the Japanese beetle quarantine regulations becoming effective on June 15, transit inspection schedules and activities in New York and Pittsburgh were considerably modified. Refrigerator car movement from New York and Philadelphia is being checked at Pittsburgh, and two cars of uncertified bananas from Philadelphia were discovered on the third day the new restrictions went into effect. The New York force has been augmented by the transfer of Mr. Yoder from St. Louis, the St. Louis station being closed for the next few weeks.

Although there was a slight decrease in the number of shipments of nursery stock through New York City from May 1 to June 10, there was a large increase in the number of violations. This increase was probably due to the fact that there were more shipments made by private individuals who are not familiar with the plant quarantine regulations.

Information concerning the destinations of these violations may be of interest. The shipments intercepted at New York City would have proceeded as far south as Florida, as far west as Ohio, and as far north as Maine.

PHONY PEACH DISEASE QUARANTINE

The annual field inspection work for the phony peach disease within one mile of peach-growing nurseries located within the regulated areas was inaugurated during the past month. Active cases of the disease were found within the prescribed limits of several nurseries which had applied for permits.

Preliminary scouting work within nursery areas located in adjacent States was also started. Trips were made to Tennessee, Indiana, and North Carolina, but no infections of the phony peach disease were observed in new territory.

Messrs. Davidson, Connolly, and Dopson spent June 3 and 4 at Fort Valley, Ga., conferring with Doctor Hutchins and Mr. Turner regarding the latest developments in phony peach disease research and eradication activities of the Bureau of Plant Industry.

NARCISSUS BULB QUARANTINE

Narcissus inspection problems on the Pacific Coast were discussed with Messrs. Fleury, of Sacramento, and Webb, of Seattle, on June 11, in connection with their attendance at the port inspectors' conference.

According to PQCA-312, issued during May, 317,815,409 narcissus bulbs were reported by State quarantine officers as inspected during the calendar

year 1930. Of these, 200,803,124 were certified as uninfested and 91,421,388 were treated and certified. The circular tabulates the figures by States, giving the data for the polyanthus and daffodil types separately.

While scouting for the phony peach disease around nurseries in various southern States, advantage was taken by the inspectors under that project to confer with State quarantine officers regarding narcissus pests and to assist the State inspectors in making several field inspections. These activities resulted in the finding of bulb nematode at Wilmington, N. C., Dyersburg, Tenn., Evansville and Booneville, Ind., and Lovejoy, Ga. One specimen of a fly, since determined by C. T. Greene as Eumerus sp., was captured near Dyersburg, Tenn., and an active field infestation of the lesser bulb fly was found near Lovejoy, Ga. The finding of bulb fly in Tennessee and the discovery of bulb nematode in Indiana and Tennessee are new State records for these pests.

WHITE PINE BLISTER RUST QUARANTINE

The inspection of nurseries in New England and New York which desire to ship white and other five-leafed pines into States that are only lightly infected with white pine blister rust, was carried out during May and June by Messrs. Sheals and Conkle. Under the quarantine regulations permits are issued to such nurseries only when the pines are grown on premises within 1500 feet of which no currant or gooseberry plants, and within one mile of which no European black currant plants, have existed since the pine seed was planted. In case a few small Ribes seedlings are found and destroyed within that distance in the early spring, determination is reached as to whether their location or size would involve danger of five-leafed pines in the nursery having become infected. A considerable number of applications for such permits have been received, but thus far only three nurseries have been granted authority to make shipments. Two other nurseries have had certain plots tentatively approved for growing white pines but do not yet have such pines large enough for distribution.

Similar nursery inspections are being made in the Pacific Northwest by C. R. Stillinger. Most of the nurseries of that section are operated either by the Federal Forest Service or by the Conservation Departments of the various States.

BLACK STEM RUST QUARANTINE

A hearing at which consideration was given to a revision of the black stem rust quarantine regulations was held at the offices of the Administration on June 9. The proposals discussed included that of extending the quarantine to cover shipments between, as well as into, the thirteen barberry eradication States which consist of the group extending from Ohio to Montana, Wyoming, and Colorado. Those in attendance from outside of Washington included Messrs. P. A. Glenn, of Urbana, Ill.; D. G. Fletcher, Secretary of the Conference for the Prevention of Grain Rust, Minneapolis, Minn.; William

Flemer, Jr., and Albert F. Meehan, representing the American Association of Nurserymen, and several field employees of the Bureau of Plant Industry. Since the conference, a draft of a revision of Quarantine 38, under which permits would be required for shipments of any barberries or Mahonias (except Japanese barberries) into or between the protected States, has been submitted to the Solicitor of the Department for further consideration.

DATE SCALE

During the month of May, 33,847 palms were inspected and a single Parlatoria scale was found. This specimen proved to be dead. During the past six months the routine inspectors have found only 3 infested palms; on 2 of these dead scale only was found. The scout inspectors, inspecting small plantings, ornamentals, etc., have located 21 infested palms during the same period, 12 in the Coachella Valley, 7 in the Imperial Valley, and 2 in the Yuma Valley. Sixteen of these palms were of no value and were dug out and destroyed; the remaining 5 were defoliated and torched. In the corresponding six months a year ago 180 infested palms were found.

A thrifty date palm adds about 2 feet to its trunk height each year. This is increasing the cost of inspection rapidly. One man can inspect several hundred young palms per day when no ladder work is necessary. If the palms are so large that 20-foot ladders are required, one man can give only 10 or 12 palms the inspection necessary in infested gardens per day. The indications are, however, that the eradication area can be safely reduced from time to time so that the inspection cost will not exceed the estimates and the efficiency of the inspection will not be decreased.

In the eradication area there are many properties which were under cultivation but later abandoned and allowed to revert to desert conditions. Over 50,000 seedling date palms were on these properties, some in garden formation, some in jungles, others scattered in the mesquite and desert brush. It was impossible to inspect these plantings properly and the scale could breed up on them until spread was inevitable before the infestations could be located. Most of these palms were eliminated with the consent of the owners and all remaining ones listed for inspection. An intensive survey of this area is in progress to check up on previous scouting and to locate unlisted palms. The section is taken as a unit and the ground is gone over carefully and all hedges and windbreaks examined. The report turned in by the inspector gives a map of the section showing the ownership, portion under cultivation, number of date palms, and portion not under cultivation with description of general condition. Two men average about one section per day. To date 67 sections have been covered and 49 unlisted palms found. All of these new palms were small and found growing in the brush or mesquite or in tamarisk windbreaks. None were found to be infested.

EUROPEAN CORN BORER AND JAPANESE BEETLE

The first European corn borer pupa found in 1931, as reported by the Arlington Laboratory, was collected in the vicinity of Arlington, Mass., on April 16, and the first record of emergence, also in that neighborhood, was made on May 22.

Seven Federal pump trucks were received at the Army Reserve Depot, New Cumberland, Pa., on May 15, having been transferred from the Mediterranean fruit fly project, Orlando, Fla. These trucks are being stored at the Army Depot, and will be used in connection with the control of the European corn borer and the Japanese beetle.

Corn borer equipment moved from Toledo, Ohio, to Springfield, Ohio, during the month comprised 181 carloads and included all of the quarantine equipment and miscellaneous supplies. In addition to this, several of the regular appointed employees were moved. Transfer of the equipment and force will be completed by June 15.

Trap activities for Japanese beetle control began on May 4 and 5 with the placement of 300 traps each in Charleston, S. C., and Savannah, Ga. Within a few days traps were also distributed in Wilmington, N. C., and Norfolk, Portsmouth, and Newport News, Va. The trap work in Maryland and Virginia was to start early in June.

Four high-pressure sprayers were transferred during May from the Mediterranean fruit fly project at Orlando, Fla., to the Japanese beetle project, Camden, N. J. These were immediately overhauled and driven to Norfolk, Va., for use in the application of lead arsenate spray to the soil at, and adjacent to, the known infestations in that city.

The quarantine inspection suboffice previously located at Camden, N.J., in connection with the Japanese beetle quarantine headquarters, was abandoned on May 15 and the personnel divided between the New Jersey district office at Trenton and the inspection office at Glassboro, N. J. Service previously performed by the inspectors from the Camden office will now be available from the Glassboro station.

Offices for joint occupancy by the Japanese beetle quarantine inspector assigned to the Norfolk, Va., lightly infested area and the port inspectors of the Administration stationed in that city were rented during May and are now in use. They are on the fifth floor of the Seaboard Bank Building, 111 West Main Street, in the principal business section, and within easy reach of the waterfront district.

A survey in cooperation with the Bureau of Entomology was started May 4 in several counties in the one-generation area to determine the number of borers remaining in corn debris in the field. The work has gone along smoothly with farmers giving splendid cooperation in the matter of permitting men to go on grain fields. On a few occasions the men were somewhat hampered on account

of heavy rain. This survey will be completed before the middle of June.

Many postmasters have been charged with carelessness in enforcing quarantine regulations in the eastern area of European corn borer control, but most hearty cooperation has been received from numerous others, especially from the postmaster of Plymouth, Mass., and his entire staff. Not only have the latter endeavored to prevent violations through the Plymouth post office but they have also been active in bringing the quarantine regulations to the attention of the public through notices printed in the local newspaper.

H. N. Bartley represented the Plant Quarantine and Control Administration at a meeting in Albany, N. Y., on May 11, with officials of the New York State Department of Agriculture, to go over matters pertaining to the cooperation between the two departments in connection with quarantine work. A meeting was also held on May 25 at Harrisburg, Pa., attended by R. H. Bell, of the Pennsylvania State Department, and L. H. Worthley and H. N. Bartley, of the Federal Administration, relative to European corn borer and Japanese beetle work in Pennsylvania.

Japanese beetle scouting for the 1931 season began on May 4 with the organization of a scout crew of four men in Brunswick, Ga. These men scouted in Brunswick from May 4 to 18. They then moved to Savannah, Ga., where they joined an additional crew of four men which had been operating in that city since its organization on May 14. The two crews scouted in Savannah until the end of May. A third crew of four men began operations in Charleston, S.C. on May 6, and continued in that city until May 25. From May 26 to 29 was spent in Wilmington, N. C.

No changes have been made in the European corn borer regulations of the Department of Agriculture of the Dominion of Canada since the effective date of April 12, 1928, and shipments of certain farm products and cut flowers which have been removed from the American quarantine still require inspection and certification before they are allowed entry into Canada. Large consignments of celery and green beans in the pod are made from Boston, Mass., by boat to Yarmouth, N. S., St. John, N. B., Prince Edward Island, and other Canadian ports, which must be certified or permitted in Boston.

The earliest adult Japanese beetle emergence for the season was recorded on May 23 at Andalusia, Pa., when a single specimen was collected in an outdoor nursery frame. Three beetles were collected on May 30 near Chester, Pa., having been discovered on weeds in a hollow along a creek. These recoveries were of beetles which had overwintered under particularly favorable conditions as to protection from severe weather. Consequently their transformation into the adult stage does not represent the normal life cycle of the insect in the region of Philadelphia, where the mass emergence of the beetle will not occur until late in June or early July.

Soil treatment for the control of the Japanese beetle has been completed in the following areas: Boston, Mass.; Newport, R. I.; Hartford, New Lon-

-don, and Willimantic, Conn. (with the exception of about four acres in Hartford). The wet treatment has been used in all areas, with the exception of the Navy Yard at Charlestown, Mass., in the Boston area, where dry mixture was utilized, owing to the fact that a sufficient quantity of material was left over from last year. Having been found quite satisfactory, the wet method is lessening costs to a considerable extent. Applications of arsenate of lead as a spray on infested properties in Portsmouth, Va., commenced on May 25 and was to have been completed early in June, after which the apparatus will be moved to Norfolk.

Removal of office furniture, supplies, and equipment from the former administrative headquarters of the Japanese beetle project, Camden, N. J., to the combined headquarters of the European corn borer and Japanese beetle projects at South Norwalk, Conn., began on May 11. The major portion of the office furniture was moved during the following week. Most of the administrative personnel reported at the South Norwalk headquarters on May 21. Complete removal of the Camden headquarters requires the transfer of considerable mechanical equipment and supplies and the razing of several outside sheds. This will probably be accomplished by the latter part of June and in ample time to vacate the premises before the expiration of the Department's lease on June 30.

Nineteen Japanese beetle larvae were removed from soil about the roots of six lots of plant material surrendered by motorists at quarantine line posts throughout Pennsylvania. The majority of the interceptions were made on the Lincoln Highway west of Gettysburg. The infested material was destined to Jennerstown, Pittsburgh, Johnstown, and Latrobe, points in western Pennsylvania located at considerable distances from the infested areas, to Conklin in south central New York, and to Frederick. Four lots of the infested plants originated in the heavily infested Philadelphia area, one had been obtained in Baltimore, and one was being transported from a point on the New Jersey coast.

No complaints whatever from the public were received by the combined European corn borer and Japanese beetle project in consequence of the enforcement of quarantine regulations over the Memorial Day week-end period. In the territory covered by the beetle work observance of this holiday is more general than in many other sections, and is accompanied both by abnormally heavy vehicular traffic and by an unusually large movement of potted plants and cut flowers. The difficulties of the situation created through these conditions are increased by the fact that a great many people are concerned whose lack of contact with the regulations at other times renders them ignorant as to the restrictions imposed. That this year matters were so handled as to completely avoid criticisms and protests, was due in large measure to the special arrangements in effect for prompt certification of plants, etc., which had been protected from infestation by the florists and nurserymen from whom they were purchased. Of great value in giving the public a better understanding of the requirements of the quarantines was a general news release made by the Department Press Service, on May 23, largely based on material supplied by the South Norwalk headquarters, in the form of a story originally intended for use only

in the areas covered by the corn borer and Japanese beetle activities.

Plans were completed this month, and partially put into execution, for an Honor System which it is believed will greatly lessen the work at European corn borer quarantine line stations located on the boundaries of the infested area in New Jersey just across the river from New York, and at the same time will enable motorists of the "commuter" type to avoid much inconvenience. In cooperation with the New Jersey Department of Agriculture, the Plant Quarantine and Control Administration is distributing pledge cards from its South Norwalk offices, among passenger car owners whose vehicles pass the stations every day but in which prohibited products are not ordinarily carried. These cards explain the regulations and their purpose, describe the quarantined area, and list the articles which may not be carried. A returncard is attached, for the signature of the motorist, on which he agrees not to transport or allow to be transported in his car, any of the latter. When a signed card is received at headquarters, in proper form, a windshield sticker is mailed to the car owner. Automobiles bearing these stickers will be passed by the station inspectors with only cursory examinations, except when there is reason to believe the pledge is being violated. Stickers will not knowingly be furnished for trucks, nor will they be honored when attached thereto. (Samples of the pledge cards will be mailed to leaders of other projects who may be interested, upon receipt of requests therefor at 22 Elizabeth Street, South Norwalk, Conn.).

In the European corn borer and Japanese beetle work effort is made to secure personnel from different sections of the country, especially from areas into which infestation may spread at later dates. Men whose homes are in such regions, becoming familiar with the pest and with methods for its control while engaged on the project in the present infested areas, furnish a reserve force which subsequently it may be found advisable to call upon for work nearer to their places of residence, should the spread extend in that direction. Each year, therefore, leading agricultural colleges and other educational institutions in corn-growing sections are asked to recommend competent students for vacation-time employment. Allotments covering the men recommended, whose services can be utilized this season, were completed during May. For European corn borer work exclusively, personnel will be engaged from the following: Pennsylvania Department of Agriculture; Michigan Department of Agriculture; West Virginia Department of Agriculture; Wisconsin State Capitol; Oklahoma Agricultural and Mechanical College, and Louisiana Agricultural and Mechanical College. For Japanese beetle work exclusively, men are to be taken from the following: Massachusetts Agricultural College; University of Maine; Pennsylvania State College; Cornell University; North Carolina Agricultural Experiment Station; Connecticut Agricultural College; Michigan State College; Kentucky State Entomologist; Alabama Polytechnic Institute; Clemson Agricultural College, and Rhode Island State Entomologist. For corn borer and beetle activities combined, men are to be employed from the following: University of Tennessee; University of Maryland; Purdue University; Kansas State College of Agriculture; Ohio State University; Iowa State College; University of Illinois; Mississippi Agricultural and Mechanical College; University of Missouri; University of Kansas; Minnesota University Farm; Virginia Agricultural Experiment Station, and University of Nebraska.

Announcement by the Secretary, under date of May 26, that effective June 15, the Japanese beetle quarantine regulations would be modified in several rather important respects, was received at headquarters of the project with the feeling that the duties connected with enforcement will be considerably lessened. A fundamental change in the classification requirements to which nurseries and other establishments within the regulated areas had been obliged to conform to secure a classified status under the regulations is involved in this amendment. Nursery establishments and dealers whose premises are in uninfested districts in the lightly infested area will be relieved of considerable certification routine previously required. Establishments of this status will constitute those designated as Class I under the revised regulations. In lieu of an individual certificate to accompany each package or bulk shipment, Class I dealers will hereafter be permitted to affix a statement to their regular address label or tag showing the number of their valid Federal permit. The inconvenience to a Class I dealer in complying with the quarantine restrictions consequently will be almost negligible. Aside from reporting the receipt of certain plant material and monthly rendering a condensed report of shipments made and certificates used, the affixing of the permit number as mentioned is all that is necessary to permit free movement of the products of Class I establishments. Class II establishments are defined in the amended regulations as including all uninfested premises within the generally infested area. Class I and Class II establishments are to enjoy essentially the same privileges, with the exception that the regular inspection certificates must be used by the latter and in addition they must furnish an individual report of each shipment made under certification. The previous Class II requirements for grub digging to determine soil infestation, the partial or entire removal of soil from plants intended for certification, the treatment with arsenate of lead of plots for the plunging of potted plants, and the screening of coldframes in establishments in which no infestation had been determined but located in districts recently or scantily infested, will be abandoned. These requirements are to be waived in view of the fact that repeated soil diggings over a period of years have failed to disclose any soil invasion previous to the collection of adult beetles within the confines of the nursery or on adjacent premises. Discontinuance of these restrictions will relieve Class II establishments of a considerable amount of expensive growing procedure and shipping preparations. The definition of Class III establishments and the restrictions applicable to the same remain unchanged. This modification tends to free the inspection officers of a large amount of routine report work and will permit the administration of the quarantine requirements with less friction and controversy. At the same time it will allow nurserymen and florists a greater economy of operation and freedom of plant movement.

MEDITERRANEAN FRUIT FLY

Notable progress was made during May in transfer of equipment, property, records, and supplies. By the end of the month most of the material which will be taken by other projects of the Administration had been shipped. In addition, a considerable quantity had gone to other bureaus of the Department and a

limited quantity to outside government agencies. Further reductions in personnel were made at frequent intervals and with the end of May only 38 employees remained on the Orlando payroll. Of these, 16 were engaged in the Old Court House offices, and 22 at the garage and warehouses. The mechanical force has been kept up in sufficient proportions to provide men for putting all machinery and equipment in the best possible condition before shipment. Letters of acknowledgment from a number of the consignees indicate receipt of cargoes in satisfactory shape, some of these including expressions of appreciation for the care exercised in painting, repairing, and servicing.

Both houses of the Florida legislature adopted by unanimous vote a memorial asking Congress to act favorably upon proposed legislation for appropriations sufficient to reimburse, in part at least, growers of fruits and vegetables and other produce who directly suffered loss by destruction of property during the fruit fly eradication activities. The preamble to the resolution recited that the "State of Florida suffered irreparable damage.... not only financially, but in many other respects;" that "because of the strict quarantine enforcement and the stringent rules adopted, the growers....were unable to ship or otherwise market their products;" that"in many instances fruit and vegetables were destroyed by order of the Federal agents at the expense of the growers;" that "in many other instances fruit trees were destroyed at the behest of the aforesaid Federal agents and inspectors," and that "it has heretofore been the policy of the Federal Government to reimburse, in part at least, owners of property for losses incurred in campaigns seeking to eradicate certain pests and diseases." There was some discussion among senators as to the wording of the measure, which implied responsibility of the State in the partial provision of the funds for the desired compensation of growers.

In a lengthy letter which the Orlando Sentinel printed at the special request of Representative Owen, she outlines in detail the handling of reimbursement measures in the last session of Congress. While pledging her cooperation in presenting to the appropriations committee at the next session the claims which have been assembled by the Howey Committee, Mrs. Owen places squarely on Mr. Howey the responsibility for failure of the survey bills introduced by herself and Senator Trammell. Enactment of one of these would have better served the interests of the growers, Mrs. Owen believes, but she concedes that the only hope for compensation now lies in securing appropriations based on the claims which the growers themselves have compiled.

Called to Washington for conferences with the Chief of Administration and other officials concerning the remaining work on Mediterranean fruit fly undertaking and about conditions existing in Texas as regards the Mexican fruit worm project, Mr. Hoidale left Orlando on May 5, returning one week later. In his absence, Mr. Gaddis had charge of supplies for shipment. Several stenographers in the Orlando office were transferred to the corn borer and Japanese beetle projects, most of them for temporary work this summer.

The bait spray campaign contemplated by the Clearing House Association has been abandoned. President Tilden advised Mr. Strong that sentiment in favor of the effort had dissipated following the withdrawal of Federal inspec-

tors from the State. When the State Plant Board agreed to donate to the Clearing House a considerable quantity of syrup, sugar, and copper carbonate, which its officials had asked for, they declined to accept the material.

MEXICAN FRUIT FLY

Following the finding of an infestation of the fruit fly in fruit held in storage near Mission, Tex., on April 22, an intensive effort was made to locate and thoroughly examine all fruit held in storage within the quarantined area. This work was completed early in May and, with the exception of the infestation near Mission, all inspections gave negative results. Following the inspection of the stored fruit a recheck was made of all groves in which "October-Bloom" fruit was found at the time of the tree-to-tree inspection in March. At that time this fruit was about one inch in diameter and, due to the heavy foliage of the trees, very difficult to see. At the time the recheck was made the fruit that was overlooked had grown to the size of a base ball or larger and was much easier to find. A small amount of this fruit was found in several groves and cleaned off. Considerable difficulty was experienced with one owner who had about 10 bushels of this fruit. Through the combined efforts of the inspectors and several committees of local citizens, permission was finally obtained to remove this fruit.

The field work of listing the fruit trees growing in the Valley was completed during the month and the compilation of these data started. The compilation of these figures should be completed in June or the early part of July.

While listing the fruit trees growing in the area every effort was made to secure the destruction of alternate host fruit trees found, with the result that 23 premises were cleared of 96 such trees.

Additional infestations in fruit growing locally in Matamoros were found during the month, bringing the total number of infested premises to 12. On April 15, larvae of the fruit fly were found feeding in half-grown fruit of Sargentia Greggii, one of the sapotes. Larvae were also taken from fruit of the white sapote, Casimiroa edulis, of which there are 5 trees growing in Matamoros.

The work of stripping all citrus fruits from the trees, with the exception of 5 premises, was completed the latter part of May. Due to the local situation in Matamoros, it has been impossible to get any definite action on these properties

---

PINK BOLLWORM

The finding of the first pink bollworms in the 1931 cotton crop in the Salt River Valley of Arizona, on May 5 and 6, was mentioned in last month's News Letter. The two fields involved are located about 10 miles southwest of Phoenix and some 15 miles west of the 1930 noncotton zone, in the Laveen section. Since then specimens have been found in two additional fields. On May 11, 1 larva was found in a field about 6 miles east of the 1930 noncotton zone. An exit hole was found in a green boll from this field on May 22, indicating that the first generation of the current season has already begun to emerge. Since the initial infestation was found, additional specimens have been taken from each of the above three fields. One specimen was taken from a field about 4 miles south of the 1930 noncotton zone on May 29, this being in the Goodyear vicinity.

The stub cotton in the Salt River and Gila Valleys is making considerable growth and fruiting rather heavily, even where there has been no irrigation. In some places this cotton is some 2 feet high, and stalks can be found with as many as 40 or 50 squares, most of the bolls being as yet immature. These conditions are most favorable for the early development of the pink bollworm. The heavy fruiting will also make the finding of light infestations more difficult.

Some studies are being made of the development of the cotton plant, both Pima or long staple and Upland or short staple, to determine the length of time elapsing between planting and fruiting. Several fields of each type were selected in various parts of the Salt River Valley. This work has not been completed , but from the records now available it appears that at least 60 days must elapse from the time of planting until the squares are large enough to become infested in the case of Pima cotton, and 50 days for Upland cotton.

There were some ten fields of stub cotton near the two infested fields in the Laveen section. The largest cotton grower in that vicinity volunteered to secure agreements from the owners of these fields to destroy the stub cotton. The Arizona State Department of Agriculture and Horticulture offered to assist in the case of abandoned acreage or where a farmer was absolutely unable to do the work. This clean-up was started on May 27.

On May 19, the work of inspecting all alfalfa fields in Maricopa and Pinal Counties, Ariz., was begun. This is being done to determine the amount of cotton present in any form. At the same time other crops are being inspected as to a possible source of contamination, and a general crop survey made. These inspections are being made as a follow-up to the preliminary alfalfa survey previously conducted, at which time it was found that 11.3 per cent of the alfalfa acreage had some form of cotton present. In the present inspection some 13,000 acres of alfalfa hay has been examined with cotton being found present in 3,230 acres. Approximately 20,000 acres planted to other crops have been inspected, and information obtained on 21,000 acres of cotton.

There was an increase of about 10 per cent in traffic at the road stations

There was an increase of about 10 per cent in traffic at the road stations this month as compared with last month; however, the interceptions remained practically the same. Out of 14 interceptions made, 5 originated in the heavily infested section of the Big Bend in Texas. No specimens of the pink bollworm were found in any of the interceptions.

Modifications regarding the disposal of gin trash have been made by the New Mexico authorities for the coming season. The old regulations required the daily disposal of all gin trash throughout the ginning season. The modifications require this daily disposal until after the killing frost date in the area in which the gin is located, this date to be determined by the inspector in charge in each locality. Thereafter the gin trash may be removed by farmers for feeding, fertilizer, or other purposes. When ginning is completed at the end of any season, a thorough clean-up of the gin premises and equipment shall be made to the satisfaction of the inspector.

During May 2,373 samples of bolls were inspected at the San Antonio laboratory, this being the greatest amount inspected any month since the laboratory has been in operation. These samples represented fields in 216 counties in the States of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, South Carolina, and Texas. Samples have already been inspected from North Carolina and Tennessee. A total of 7,982 samples had been inspected at the close of May, all with negative results.

During the month of May 18 International 1½-ton dump trucks were transferred from the Mediterranean fruit fly project to this project. They were shipped by boat from Miami, Fla., to Corpus Christi, Tex., and driven from there to San Antonio. New models of gin trash inspection machines are being fitted onto these trucks and will be made completely ready for the opening of the ginning season. The new model machine is quite an improvement over the one used last season. By having them mounted on trucks they are mobile, and are so arranged that they can begin operations immediately upon stopping. They can be easily cleaned. The drums are made to revolve on rollers instead of an axle, with several other more or less important mechanical improvements.

The field headquarters for the Eastern Quarantine Area have been moved from Big Spring, Tex., to Alpine, Tex. A cottage was secured for office quarters. The district office at Marfa, Tex., has been moved to Alpine and also occupies the above cottage.

The matter of paying compensation to farmers that were in the noncotton zone in 1930 is practically completed.

PREVENTING SPREAD OF MOTHS

The gipsy moth and brown-tail moth quarantine regulations have been

revised effective June 1, 1931. The regulations have been arranged to conform with other domestic quarantines. More definition of restricted articles is given and the revision "authorizes the recognition of valid State nursery inspection certificates as evidence of freedom from the gipsy moth and browntail moth with respect to certain shipments of deciduous trees and shrubs moving to points within the gipsy moth infested areas."

The embargo against the interstate movement from the generally infested area of holly and laurel is removed so that these articles may be moved after inspection. No change is made with respect to the shipment of Christmas trees nor in the boundaries of the regulated area.

The major portion of the inspection of evergreen products is confined to laurel branches to be used for floral purposes except during the period just preceding Christmas. Quarantine No. 45 until June 1 prohibited the shipment of laurel from the generally infested area, and the so-called Oregon Huckleberry has been substituted for it to quite a large extent. As this originates outside of the quarantined area it is shipped under permit, as is also a considerable amount of laurel which originates beyond the infested area. At present the laurel branches are picked mainly in the lightly infested area in Connecticut and shipments are sent principally to New York by truck. These branches are picked by hand and are usually not over 18 inches in length. After inspection they are tied in bundles which weigh from 40 to 50 pounds each. An experienced picker will average about 300 pounds a day. The bales are transported immediately and placed in cold storage as soon as possible.

In the morthern part of the quarantined area, particularly in New Hampshire, balsam twigs are gathered to be used in the manufacture of pillows and other articles to be sold as novelties. The gathering of these twigs begins in the late spring and may continue for several months. A type of inspection limited to a short season is the examination of cut lilacs. This occurs a few days during the latter part of May just previous to Memorial Day. The market for these lilacs is mostly in New York City. Each year buyers tour New England and purchase the blossoms from property owners. The men who gather the lilacs travel with trucks in which they carry packing cases and supplies of cracked ice. After inspection the sprays are placed in the packing cases with a liberal supply of cracked ice. For some reason the water melting from the ice does not injure the blossoms, but rain water causes them to turn brown. Inspection of lilac sprays is not confined to any particular part of the regulated area. During the past season there were 139 cases and packages of lilacs inspected and certified.

Under the classification of Forest Products many types of materials are inspected and certified. Many of these, such as lumber, are not shipped in the natural state but there are quite a few materials which are shipped in almost the same condition as found in nature. Among such materials might be mentioned fencing made from rustic materials, also cable reels, chairs, birdhouses, etc. As the wood used in such articles is covered with bark, particular care has to be exercised in the inspection. During May an entire rustic house furnished with a rustic table and a number of chairs and benches was certified after inspection.

The two quarantine inspectors who were temporarily detached from the gipsy moth quarantine work for terminal inspection service in New York and Chicago returned to their stations early in May.

Through arrangement with the proper authorities in Florida, the sending of the usual notices of shipment of plants to that State from the gipsy moth area has been discontinued.

The inspection work which is carried on by Federal officers in New Jersey and on Long Island was continued during the month. There were inspected and certified in New Jersey 163 lots of nursery and forest products, and 569 on Long Island. No gipsy moth infestations were found as result of these inspections.

The greater part of the scouting work planned for in the Barrier Zone for the fiscal year 1931 was completed by the close of the month of May, and although several additional infestations were found in Massachusetts and Connecticut, these were in all cases small ones. Much cleaning work and the erection of temporary fences around infested areas to be sprayed during June has been accomplished. During May there were 5 crews used in this work in Massachusetts and Connecticut. This work for the most part was completed early enough in the month so that much of the hose which is to be used in the spraying operations was laid before spraying actually began. In some cases rough repairs have been made to abandoned roads in order that heavy spraying equipment might be moved over them. The water supply is more abundant than usual this spring, but in some cases it has been necessary to construct dams across small streams to furnish sufficient water for the spraying work. Supplies of arsenate of lead, fish oil, lubricating oil, etc., have been distributed to central points in the field and a number of the spraying machines were set up during the last of May ready to begin spraying about the first of June. The spraying work started the last of May and the first of June. There are 12 sprayer trucks operating in Massachusetts, 12 in Connecticut, 4 on Long Island, and 2 in New York State. In Massachusetts and Connecticut 2 trucks are being used to furnish the sprayers with supplies. There are being used about 12,000 feet of hose on Long Island, 6,500 feet in New York State, 31,000 feet in Massachusetts, and 30,000 feet in Connecticut, making a total of 79,500 feet, or 15 miles of hose being used in the Barrier Zone and on Long Island this season. Much of this hose was laid during May just previous to actual spraying operations. It will be necessary to move a large amount of it during the season for use in other locations.

In the Barrier Zone 17 regular scouting crews were engaged in the inspection of wooded areas in 7 towns in Connecticut, 6 in Massachusetts, and 4 in Vermont. In 9 of these 17 towns the scouting was intensive work around the sites of infestations which were discovered and treated during the fiscal year 1930. In the remainder of them the scouting was the 40-foot strip method used in woodland scouting. Scouting work was completed in 11 of these towns and no infestations were found in 5 of them.

In that part of the Zone lying in New York State 6 crews employed by

the New York Conservation Department did scouting work in 3 towns. From the reports available at this office no infestations were found in them.

On Long Island the scouting work which is carried on by the New York Conservation Department was completed during the month in the township of Huntington and a small portion of Babylon township was scouted with negative results. Spraying operations were commenced on Long Island on May 20, the work being carried on by the New York State force. The equipment, including 4 high-power truck sprayers, spray hose, and much of the arsenate of lead and fish oil, is furnished by the Plant Quarantine and Control Administration.

In New Jersey the work which is being done cooperatively by the Federal and State forces consisted mostly of checking up work around previously infested areas. This was practically completed during the month and no infestations were found. Many of the Federal men in New Jersey were transferred during the last of May to Massachusetts and Connecticut to assist in the spraying work which is being done there during June.

The 10 heavy-duty spraying machines which were transferred to this project from the Mediterranean fruit fly project have been altered so as to be able to develop 1,000 pounds pressure which is necessary for gipsy moth spraying work, and are now being operated in the field. In addition to the above equipment this project has received from Florida 10 Ford Model A station wagons, 5 Ford Model A 2-door sedans, 3 Ford Model A roadsters, 4 Chevrolet roadsters, and some miscellaneous equipment such as tires, fire extinguishers, suction hose, Federal parts, etc. Before the motor equipment was sent from Florida it was thoroughly overhauled and reconditioned, and the men operating this equipment have been notified of this with instructions to use it as they would in breaking in new machines.

The 4 weather stations mentioned on p. 25 of the June News Letter were operated until June 4. By that time the dangerous period for wind dispersion of the small gipsy moth caterpillars had passed. The records which were obtained will be summarized as soon as possible to ascertain the amount of dangerous wind dispersion hours which occurred during this spring at and following the gipsy moth hatching period.

During May the wire tops covering certain cages containing parasites of the gipsy moth were removed. This is done to allow the escape of the mature parasites. These cages contain puparia of Sturmia scutellata, which is one of the introduced dipterous pupal parasites of the gipsy moth. These parasites, which the Plant Quarantine and Control Administration handle, are obtained incidental to the assembling cage work which is carried on during July and which will be explained in a future News Letter. Large numbers of gipsy moth female pupae are collected for use in the assembling cage work. These are placed on trays arranged so that all of the parasite maggots which issue from them will drop into boxes containing earth and leaf mold. In these boxes they transform into pupae, in which stage they hibernate, the adult flies issuing the following spring. During August when the assembling cage work is completed, the boxes containing the parasites are transferred to different towns in or near the Barrier Zone where they are placed in the ground. After the flies have

issued in the spring, the boxes are assembled to be used during the coming summer. Last August approximately 35,000 Sturmia were colonized. Boxes containing these were put out in 32 different towns, as follows: 5 in Vermont, 22 in Massachusetts, and 5 in Connecticut. Each box contained about 1000 puparia. The adults of this parasite issue during May and June. They lay their eggs on the foliage and these are taken into the stomach of the gipsy moth caterpillar as it feeds. The parasite maggot develops slowly at first but as the caterpillars approach the prepupal stage the parasite maggots develop rapidly, and after consuming the contents of the gipsy moth pupae the maggots issue and enter the ground for hibernation. This is one of the important introduced enemies of the gipsy moth and it is well established over the infested area, but as this material is obtained incidental to other work, it is deemed worth while to liberate it in the western part of the infested area.

A scouting crew working in woodland at Cornwall, Conn., on May 15, found the remains of a human skeleton about one mile from the nearest road. The State Police were notified and an investigation is being made by them.

About sixty of the field men of this project were notified during May to send to the Gipsy Moth Laboratory of the Bureau of Entomology at Melrose Highlands, Mass., any collections of miscellaneous insects that they are able to obtain without interference with their regular duties. The Gipsy Moth Laboratory is anxious to obtain as many larval insect collections as possible to determine which are acting as alternate hosts of the imported parasites as well as to secure dispersion and parasite records.

There were a total of 78 violations reported during May. These were as follows: 1 violation of Quarantine No. 53 as well as Quarantine No. 45; 3 violations of Quarantine No. 63 as well as Quarantine No. 45; 1 violation of Quarantine No. 48 as well as Quarantine No. 45; 1 violation of Quarantine No. 43 as well as Quarantine No. 45, and 72 violations of Quarantine No. 45 only. Most of the violations have already been investigated, and in all cases they were of a minor nature due either to ignorance or misunderstanding of the requirements, and no prosecutions were instituted. Information concerning quarantine requirements was given by the investigating inspectors of this project in all cases where the parties could be located.