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N E W S L E T T E R

PLANT QUARANTINE AND CONTROL ADMINISTRATION

UNITED STATES DEPARTMENT OF AGRICULTURE

Number 9 (NOT FOR PUBLICATION) September, 1931.

ADMINISTRATIVE

The Administration regrets to report the death of Dr. Russell A. Oakley in Monrovia, Calif., on August 6, at the age of 50 years. Doctor Oakley had been in poor health for a number of years and in 1929 went to Monrovia in the hope of finding a cure, but without success. He was appointed a member of the Federal Horticultural Board by the Secretary of Agriculture on January 3, 1925, succeeding Doctor Kellerman, and at the time of his death was a member of the advisory Federal Plant Quarantine Board. Doctor Oakley always evinced a keen interest in the work of the Administration, and his death represents a great loss.

TECHNOLOGICAL

The car fumigation house at Presidio was completed the early part of August. This house is of six-car capacity and is constructed of brick with a built up tar and slag roof. The house has two galleries, one of which is arranged so as to accommodate both long and short cars with a minimum of waste space. A new type of sliding door weighing about 2,000 pounds apiece is used for the outside doors of the fumigation chamber. The doors are in one piece and so arranged that they seal tightly on all four sides. They are sealed by a cam and lever device with which it is possible for one man to apply about 4,000 pounds pressure to the doors in seating them. The house contains a room equipped for the fumigation of trucks and automobiles as well as freight cars.

It has been noticed that in some cases operators are careless in the handling of hydrocyanic acid or calcium cyanide for fumigation. This is particularly true of commercial operators. Hydrocyanic acid is one of the most deadly poisons known. It is dangerous in concentrations of 120 parts per million and it is liable to be quickly fatal in concentrations of 300

parts per million. In concentrations below 100 parts per million, it is liable to cause considerable discomfort. Hydrocyanic acid or calcium cyanide should never be handled unless the operator is equipped with a good gas mask. The mask should fit tightly around the face, and the canister should be renewed with sufficient frequency to be sure that it is absolutely safe and will remove all hydrocyanic acid from the air passing through it. Hydrocyanic acid boils at approximately 80° F., and gives off gas very quickly by evaporation at temperatures below that point because of its high vapor tension, and particular care should be exercised in handling liquid or hydrocyanic acid discoids, calcium cyanide, or other hydrocyanic acid-bearing compounds in hot weather. While the gas is exceedingly poisonous, if handled with the proper care and the right kind of equipment, there is little danger of injury. To avoid accidents, however, it should be treated with respect and precautions taken at all times.

FOREIGN PLANT QUARANTINES

RECENT ENTOMOLOGICAL INTERCEPTIONS OF INTEREST

Fruit fly larvae in avocados.--Larvae of *Anastrepha* sp. (Trypetidae) were found at Brownsville, Tex., in avocados in baggage from Mexico. Four interceptions of the Mexican fruit fly (*A. ludens*) in avocados from Mexico have been made previously on the Mexican border this year. (See also News Letter No. 1, January, 1931; No. 3, March, 1931; No. 6, June, 1931; No. 7, July, 1931.)

Pink bollworm from Syria.--The pink bollworm (*Pectinophora gossypiella*) was taken at Atlanta, Ga., in seed cotton in the mail from Syria. Larvae of the pink bollworm were likewise recently found in seed in raw cotton used as packing for antiques from Syria. (See also News Letter No. 1, January, 1931; No. 3, March, 1931; No. 6, June, 1931; No. 8, August, 1931.)

Pink bollworm found in Jamaica.--The pink bollworm was collected by Max Kisliuk, jr., at Liguanea, near Kingston, Jamaica, June 7, 1931. This is the first record that the United States National Museum has received of the occurrence of the pink bollworm in Jamaica.

Scale insect from South Africa.--*Chionaspis exalbida* (Ckll.) (Coccidae) was collected at Washington, D. C., on *Aloe tingitana* in the mail from South Africa. This scale insect was intercepted previously on Aloe and Pandanus from Port Elizabeth, South Africa, in 1919.

Bean pod borer intercepted in California.--The bean pod borer (*Maruca testulalis*) was intercepted at San Pedro, Calif., in string beans in stores from Hawaii and at San Francisco in green beans in stores from Tahiti. (See also News Letter No. 2, February, 1931; No. 5, May, 1931; No. 6, June, 1931.)

Nitidulid from Guatemala.--*Urophorus humeralis* (Nitidulidae) was found at New Orleans on a banana leaf in cargo from Guatemala. This beetle, which

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is reported from Florida, has also been intercepted from Argentina, British Samoa, Canal Zone, China, Cuba, France, Hawaii, Honduras, Mexico, Morocco, and Spain.

Aphid on gladiolus corms.--The aphid Rhopalosiphoninus tulipaella Theob., was intercepted at Washington, D. C., on gladiolus corms in the mail from the Netherlands. This aphid has been taken on the same host from England. It is not known to occur in continental United States.

Scale insect on coconut.--Ripersia palmarum (Coccidae) was intercepted at San Francisco on coconuts in baggage, cargo, mail, and ship's quarters from Hawaii. Besides being taken numerous times on coconuts from Hawaii, this scale insect has been found to infest coconuts arriving from Pago Pago, Polynesia, Rarotonga, and Tahiti. This coccid is not recorded from continental United States.

Bruchid from France.--Bruchidius villosus (Bruchidae) was found at Washington, D. C., in seeds of Cytisus alpinus in the mail from France. This represents our first interception of this bruchid.

Scale insect on soursop.--The coccid Hemichionaspis minor strachani was found at Philadelphia on soursop in quarters from Jamaica. This scale insect is reported as doing considerable damage to Melicocca bijuga (genip) in the Virgin Islands. (See also News Letter No. 5, May, 1931.)

Citrus psylla from China.--The citrus psylla (Diaphorina citri Kuwayama) was intercepted at Washington, D. C., in a case of citrus plants from China. This insect is a serious pest of citrus in the Orient.

Scale insect on pine from Japan.--The coccid Drosicha sp. was found at Seattle on pine in ship's furnishings from Japan. This represents the first interception of this coccid genus by inspectors of the Plant Quarantine and Control Administration.

Moth on pine from Japan.--The moth Ptochoryctis tsugensis (Xyloryctidae) was taken at San Francisco on pine in baggage from Japan. This insect was found at Honolulu, Hawaii, on pine from Japan in 1921.

Weevil in soil around turnips.--An adult of Ceutorhynchus picitarsis (Curculionidae) was found at Philadelphia in soil around turnips in stores from France. This weevil was recently intercepted in turnips in stores from France. (See also News Letter No. 6, June, 1931.)

RECENT PATHOLOGICAL INTERCEPTIONS OF INTEREST

White pine blister rust (Cronartium ribicola) was found on currant leaves from Canada intercepted in mail at Detroit, Mich.

Two parasitic nematodes, one a species of Caconema (possibly C. radicicola) and the other an undetermined species of Tylenchus, were intercepted at Norfolk in roots of a rubber plant from Sumatra in ship's furnishings.

Phomopsis vexans, which causes a fruit rot and leaf spot of eggplant in parts of the United States, was determined as the cause of rot in eggplant in stores from Argentina and from Brazil intercepted at New Orleans.

Sphaceloma fawcettii, citrus scab, which occurs to some extent on citrus fruits in this country, was intercepted at Philadelphia on lemons from Argentina in stores, at Norfolk, Va., on grapefruit from Panama in stores, and a belated return on a diseased orange from China intercepted in baggage at Seattle gives the same determination.

Puccinia allii, a rust of onions and related plants, was intercepted in cargo at New York on leaves of garlic from Italy. Apparently this disease is not reported from the United States and little is known regarding it.

Diseases of reeds intercepted in cargo at New York were determined as caused by Cladochytrium heliocharidis in the case of Scirpus palustris from Holland and by Puccinia pragmitis in the case of Arundo donax.

An orange bearing spots of fungus growth was intercepted at Boston in baggage from Azores. The fungus was identified as Ophionectria coccicola, an entomogenous form said by Fawcett in "Citrus Diseases and Their Control," p. 269, to attack scale insects and help keep them under control in Florida and the West Indies.

LIMA BEAN SCAB SURVEYS

The situation with respect to Lima bean scab (Elsinoe canavaliae) was discussed on pp. 4-6 of the June News Letter. The cooperative survey by Neil Stevens and colleagues of the Plant Disease Survey has thus far failed to disclose evidence of Lima bean scab in the Southern States. W. A. McCubbin went to California early in August to carry out a similar survey in cooperation with the officials of that State.

CACTUS SMUGGLER FINED

An attempt to smuggle more than one thousand cacti across the Mexican border this spring was frustrated by mounted customs inspectors. A representative of the Administration cooperated in the resulting court action, the smuggler being fined $200.

PROGRESS OF FOREIGN INSECT PEST SURVEYS

C. E. Cooley of the Washington office and Max Kisliuk of Philadelphia are making frequent reports of progress in their survey of plant pest conditions in the West Indies and are sending in large numbers of specimens for determination or verification. While they are specializing on fruit fly collections much other interesting material has been received from them. Reports on these collections will be issued later.

Both Mr. Cooley and Mr. Kisliuk have written in, praising the splendid cooperative spirit of the diplomatic, agricultural, and other officials in the countries visited. Their progress and efficiency have been greatly facilitated in many ways by the helpfulness of those with whom they have come in contact.

The countries visited thus far are the Bahamas, Jamaica, Haiti, Dominican Republic, and Virgin Islands. By the time the News Letter goes to press they will have been to St. Kitts also.

One of the problems met on several occasions was that of transportation particularly where torrential rains had made usual roads impassable. In Haiti the Marine Corps helped out by furnishing an airplane for transportation. Much of the local travel is on foot, however.

The fruit fly survey in western Mexico, which is being made by K. H. Townsend and O. C. Trotman, is well under way. Surveys have been completed in the States of Nayarit and Sinaloa, and at the present time those inspectors are in the vicinity of Los Mochis. Officials of the Mexican Government have rendered splendid cooperation in connection with this survey, the inspectors having been accompanied during a portion of the time by Coppel Rivas, Chief of the Officina para la Defensa Agricola, and his assistant, I. H. Olmedo. The survey thus far has developed some interesting information in regard to the fruit flies on the west coast of Mexico.

BAMBOO BORER IN GRASS FROM CUBA

A shipment of approximately 28 tons of Gynerium sagittatum, G. sacharoides, and Arundo donax, imported at Philadelphia on July 28 for the purpose of testing machinery, was found to be very heavily infested, especially the Gynerium, with the bamboo borer (Dinoderus minutus). In view of the condition of the material, approximately half of the shipment was destroyed by burning, the remainder being submerged for 30 minutes in hot water at a temperature of 170° to 180° F. The destruction and treatment was performed by the importer under the supervision of representatives of the Administration.

While the bamboo borer has been generally considered a pest of the bamboo and related grasses, it develops that this insect in certain countries has been injurious to stored products. In Mauritius it is considered a pest of maize, and in the Dutch East Indies it is reported to attack dry maize and rice. It is said that this insect in Zanzibar reduces all structures built of bamboo within a few years. In Porto Rico it has been found in flour. Apparently there is no record of this insect infesting stored products in the United States. It has been intercepted on a number of occasions in the past, primarily from the Orient, in bamboo fishing poles, Mah Jong sets, furniture, etc. It has also been collected in chestnuts from China, Dioscorea from China and Jamaica, sweetpotatoes from China and the Straits Settlements, dried persimmons from China, lily and narcissus bulbs from China, and the yam bean (Pachyrhizus) from China.

INSPECTION NECESSARY OF COASTWISE SHIPPING VIA PANAMA CANAL

Ships plying between the east and west coasts of the United States by way of the Panama Canal sometimes carry contraband material. Recently an inspector at Philadelphia, Pa., boarded an oil tanker which had arrived from San Pedro , Calif., via Panama Canal. In the ice box he found nine mangoes taken on

board in the Canal Zone by members of the crew. This is only one of the instances where inspectors have intercepted prohibited fruit and plants on ships plying between our east and west coasts.

FOREIGN PLANT QUARANTINE SUMMARIES

Circular PQCA-314, Plant Quarantine Restrictions of the Countries of Central America, has now been published and is available for distribution. The same is true of Circular PQCA-321, Plant Quarantine Restrictions of Sweden.

ARGENTINA.--Under date of June 26, 1931, the full text of the Decree of March 9, 1931, regulating the importation of fresh fruit into that country, was transmitted in a memorandum to chief inspectors and collaborators of the Administration. A complete summary of the plant quarantine restrictions of Argentina has been prepared for publication.

LATVIA.--A translation of the text of the list of serious plant pests and diseases whose importation into Latvia is prohibited was reproduced in a memorandum dated July 31, 1931, to chief inspectors and collaborators of the Administration. This was published in the International Bulletin of Plant Protection, V: 5, pp. 79 and 80, May, 1931.

MEXICO.--Under date of August 3, 1931, a translation of the text of the Decree of July 27, 1931, was transmitted to chief inspectors and collaborators. This decree revokes Absolute Exterior Quarantine No. 11 (see supplement No. 2 to PQCA-284, Plant Quarantine Decrees and Regulations of Mexico), which prohibited the importation into Mexico of corn, broomcorn, sorghum, Sudan grass, straw, etc. A "Resolution" of the same date declares the countries infested with the European corn borer, Pyrausta nubilalis. These include the Provinces of Ontario and Quebec, Canada, and the following named States: Michigan, Ohio, Pennsylvania, New York, New Hampshire, Massachusetts, Maine, Rhode Island, Connecticut, Vermont, New Jersey, West Virginia, and Indiana.

The Decree provides that interested persons in Mexico shall apply in advance to the Mexican Department of Agriculture and Public Works for a permit to import the above-named products from infested regions, and the said Department will formulate regulations on the requirements to be met.

The text of the Decree and of the Resolution will be published as Supplement No. 3 to Circular PQCA-284.

BRITISH HONDURAS.--A memorandum to chief inspectors, dated August 10, 1931, reports the receipt of the text of Proclamation No. 3 of 1931, repealing Proclamation No. 3, of 1930 (see pp. 1 and 2 of Circular PQCA-314), and abolishing the requirement of a certificate of origin with shipments of fruits or vegetables from the United States to British Honduras.

The text of this Proclamation is being published as Supplement No. 1 to Circular PQCA-314.

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UNION OF SOUTH AFRICA.--The text of Proclamation No. 173, of April 21, 1931, has been prepared for publication as Supplement No. 1 to Circular PQCA-297. This Proclamation places the seeds of elm (Ulmus spp.), lucerne (Medicago sativa), tea (Camellia thea), and tomato (Lycopersicum esculentum) within the definition of "plant" in Section three of Act No. 6 of 1924.

According to the Union of South Africa Government Gazette of May 8, 1931, a permit will not be issued to any person to introduce from oversea into the Union: Citrus (all species), plants or seeds of lucerne (Medicago sativa), pome fruit trees, plants and seeds of tea (Camellia thea), plants and seeds of elm (Ulmus spp.) from Europe, and plants and seeds of chestnut (Castanea spp.) from North America. After January 1, 1932, no permits will be issued for tomato seeds from the continent of North America unless accompanied by a certificate issued by competent authority that the seed was produced by plants free from bacterial canker (Aplanobacter michiganense).

DOMESTIC PLANT QUARANTINES

TRANSIT INSPECTION

The transit inspection notes in the July issue included a statement to the effect that "two cars of uncertified bananas from Philadelphia" had been discovered in transit at Pittsburgh. This gave a misimpression which is now corrected. It has developed that the Japanese beetle inspectors at Philadelphia had, in fact, examined these two cars of bananas and certified them for interstate shipment, but through some slip the certificates became detached from the waybills, and when the shipments reached Pittsburgh the inspector at that point rightly intercepted them as apparent violations of the quarantine. On learning that the fruit had actually been certified and therefore offered no danger of spreading infestation, the inspector allowed the shipments to be delivered to the consignee.

More than 200 violations of the Japanese beetle quarantine were intercepted by transit inspectors during the month of July, the shipments consisting principally of uncertified cut flowers and vegetables and fruits. Shipments of gladiolus without certification as to freedom from the European corn borer are also frequently found at this season of the year. A certificate is required in shipping cut flowers or entire plants of gladiolus, dahlia, aster, and chrysanthemum from the 2-generation area of the European corn borer to points outside.

European corn borers were recently found in a shipment consigned to Chicago, Ill., from Syracuse, N. Y., and intercepted at the former city by Inspector N. H. Dunlap, who promptly turned the shipment back to the sender. A few ears of green corn were being shipped by an individual probably unaware of the quarantine regulations.

A list of post offices in areas regulated under Federal plant

quarantines has recently been compiled, showing what Federal quarantines apply to each post office in the United States. Opposite the name of each office the numbers of quarantine notices affecting shipments from that office are given as a reference. Consideration is being given to having the lists printed in notebook form for the convenience and information of the employees and collaborators of the Administration.

WHITE-PINE BLISTER RUST

The discovery of the white-pine blister rust in July at three places in Washington County, Md., bordering on the Pennsylvania State line, is reported by the Division of Blister Rust Control, Bureau of Plant Industry. Maryland has not heretofore been designated in the white-pine blister rust quarantine as an infected State. The disease was found at two points on yellow flowering currants (Ribes aureum) and in one location on a European black currant bush (Ribes nigrum). Inspections were made of flowering currants at 40 places in Washington County, Md., and Franklin County, Pa., but no rust was found on them except as noted. The white-pine areas of the Appalachians south of this infestation are still free from the blister rust, so far as has been discovered, as are also the valuable sugar pine forests of California, and other five-leafed pine areas of the States of Colorado, Utah, Nevada, Arizona, and New Mexico. The European black currant is said by the Bureau of Plant Industry to have been responsible for firmly establishing the rust in hundreds of square miles of white-pine forests which otherwise would have remained free from the disease for many years. This species of currant has been nearly or quite eradicated from important pine-producing States of the Northwest and of the Pacific Coast, and several of the Northeastern and Lake States are freeing themselves from these plants. The Department of Agriculture recognizes the black currant as a distinct menace to the white-pine timber supply of the country and advises against the growing of this species of currant anywhere in the United States.

A scouting trip to determine whether the white-pine blister rust has reached the States of Iowa, Illinois, Indiana, and Ohio, is being made by R. A. Sheals, of this Administration, in company with R. G. Pierce, of the Bureau of Plant Industry, and with State inspectors of the States concerned.

NARCISSUS BULBS

The number of narcissus bulbs injured by the inspectors making warehouse inspections to determine whether the bulbs are infested with eelworms, is practically negligible, according to a recent letter from C. R. Stillinger, who has observed conditions in the bulb-growing areas of the Northwest. The inspection is usually done by cutting the top of the bulb off at the neck, and above the area where the growing bud tissue occurs. Occasionally it is necessary, of course, to cut open an entire bulb if there are indications of infestation. Cutting the necks of a considerable number is absolutely necessary, Mr. Stillinger believes, to avoid losses in the long run.

An "active general field infestation" of the lesser bulb flies in Tennessee, where the capture of one specimen earlier in the season was

reported in the July issue, is disclosed through field observations by G. W. R. Davidson. Several adult flies were observed in most of the plantings, and in the Victoria variety they were quite numerous. At one Georgia planting a number of larvae of the lesser bulb fly, some apparently full grown and others about half grown, were found in one variety of bulbs immediately after digging.

R. A. Sheals, working with the New Jersey inspectors, reports an eelworm infestation in the southern part of that State.

J. M. Corliss and H. J. Conkle left for Michigan about the middle of August to assist the State inspectors there in the regular fall inspection of narcissus bulbs, including warehouse inspection, and especially to aid the State inspectors in eelworm diagnosis.

PHONY PEACH DISEASE

A public hearing has been announced by the Department to be held in Washington on September 15 "to consider the advisability of extending the quarantine on account of the phony peach disease to the States of Arkansas, Florida, Illinois, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and Texas. As an alternative to such extension," the announcement states, "the question of possible discontinuance of the Federal restrictions on account of this disease will also be discussed. * * * The possible extension of the quarantine to include most of the States named was given consideration at a hearing on November 14, 1930, but action was deferred at that time. It was felt that the scouting had not yet been extensive enough to make the situation fully known and that the principal danger of spread of the disease on peach and nectarine nursery stock would be the shipments from the areas of Georgia and Alabama already under quarantine.

"Surveys during the summer of 1931 have shown that scattering instances of the disease occur in Florida and Illinois in addition to the States known to be infected last November and that the infections in the other States, especially North Carolina, South Carolina, Tennessee, and Arkansas, are considerably more numerous and widely scattered than had previously been known."

In Florida, the scattering instances of the disease referred to were found in seven counties in the northern part of the State, by an inspector of the Bureau of Plant Industry during the second week in June. The Illinois infection was found in Jackson County.

G. W. R. Davidson and M. E. Connolly are now engaged in checking the nurseries of Louisiana, Mississippi, Texas, and Arkansas to determine whether phony peach disease infections occur in or near them.

BLACK STEM RUST

As a result of the recently revised black stem rust quarantine, about twenty-five nurserymen growing rust-resistant species of Mahonias and barberries have applied for permits to ship these plants into or between the 13 States from

which the common barberry plants have been eradicated. Permits are not issued for shipping into these States the common barberry (Berberis vulgaris) or any other species, hybrids, or varieties of Berberis or Mahonia sufficiently susceptible to infection by the black stem rust to involve danger of spread of the rust.

DATE SCALE

Inspection during the month of July was hampered to some extent by extreme heat accompanied by an unusual humid condition and very little wind. July 2 was the hottest day, the thermometer in the Government weather shelter registering 120° maximum and 87° minimum. The thermometer in the P. Q. C. A. office registered 98° at 7.30 a. m., and reached a maximum of 115° at 4 p. m. The official average maximum for the month was 110° and the average minimum was 80°.

During the summer months date gardens are irrigated at approximately 10-day intervals. This creates a very humid condition, especially where cover crops are planted, when inspection is being carried on. Records indicate that the effectiveness of inspection is not lowered during the summer months but is slowed up to some extent.

The date scale eradication program is based on the fact that an infested palm can be located by inspection before the infestation has become severe enough to spread to adjoining palms. The individual palm is taken as the unit. This calls for very careful inspection.

The inspector is equipped with a hook with a 4-foot handle. With this hook he pulls the frond of the palm to him and carefully scrutinizes each side. The smaller palms can be inspected from the ground but they grow rapidly and soon stepladders are needed. The heights of the stepladders vary from 12 to 20 feet. Stepladders over 20 feet high built strong enough for field work are too heavy to be used advantageously. Straight ladders were used on palms too high for 20-foot stepladders but the inspection consumed considerable time and was not entirely effective. Other methods of inspecting the increasing number of palms too tall for 20-foot stepladders were tried but none were entirely satisfactory. Finally a tower with an adjustable inspection platform was built which could be set upon a truck and driven through the gardens. This solved the problem satisfactorily.

Recently a man purchased an infested planting of tall date palms and established a tourist camp. Several small cabins were built under the palms and several lines of wire for electrical equipment run through the planting. This made it impossible to set stepladders for inspection under some of the palms and the tower could not be used. A straight ladder was built which, with one end anchored, extends over a movable support into the foliage of the palm. The ladder is strengthened by three-eighths inch steel cables which also serve as

hand rails. The steps at the top of the ladder are 6 inches wide and set at an angle giving sufficient foothold for the inspector. With this apparatus all the palms in the planting can be inspected effectively and in little less time than with the ordinary equipment.

EUROPEAN CORN BORER AND JAPANESE BEETLE

General Project News

Survey of the principal activities in New Jersey of the European corn borer and Japanese beetle project was made by the Chief and the Assistant Chief of the Administration during the week beginning July 12. On Wednesday, the 15th, Mr. Strong joined Mr. Worthley in New York City and together they drove through a number of the more important quarantine line stations where vehicles are inspected both for the borer and the beetle. At Philadelphia the next morning the party was joined by Mr. Hoyt, for a tour of the heavily infested beetle area in southern New Jersey, in connection with which the flight of the pest was observed in some detail. One week later Mr. Hoyt again visited this territory, accompanied by Mr. Allen, executive officer of the Bureau of the Budget, for a further study of the situation, having been joined on this occasion by Mr. O'Kane, New Hampshire state entomologist, and several members of the South Norwalk headquarters force.

"Human-interest" stories of the European corn borer and Japanese beetle quarantine enforcement activities, based on information gathered by feature writers and usually containing numerous inaccuracies, recently have appeared in several newspapers of the areas under regulation. Inspiration also has been found in the beetle work by some cartoonists, most of whom in their drawings on the subject have dealt with road station phases. "Judge," a humorous weekly of national circulation, had a cartoon in one of its July issues, which attracted considerable attention. It depicted a woman motorist, stopped at a vehicle inspection station, answering the question asked by the uniformed inspector, with these words: "No, I haven't any Japanese beetles and I wouldn't give you one if I had."

Interest of the public in the spread of the European corn borer and Japanese beetle is reflected in the requests for information about specimens believed to indicate infestation by one or the other of these pests. During July an unusually large number of such inquiries were received at several of the offices of the corn borer and beetle project. In most cases the specimens submitted were identified as of other insects, but the contacts and correspondence in connection therewith afforded opportunity for data concerning the borer or the beetle to be furnished to people apparently concerned regarding the menace of these pests. One report from outside the territory previously known to be infested led to the trapping of some 2,000 Japanese beetles in a 3-day period.

Vehicle inspection at highway stations along the boundaries of the

quarantined areas was started for both European corn borer and Japanese beetle, in the central section, during the week beginning July 12. In many instances the stations make inspections in accordance with the quarantines for both the pests, having been located where the borders of the 2-generation borer area and the generally infested beetle area coincide. At a few points vehicles going one way are inspected for borers and those moving in the other direction are examined on account of beetles. All inspectors utilized in this activity were schooled in methods, etc., before going on duty, and their work will be checked at frequent intervals by different supervisors.

"Honor system," affording special consideration at vehicle inspection stations to cars bearing windshield stickers showing that the owners have signed cards pledging themselves not to carry products quarantined on account of the 2-generation strain of corn borer, has been sufficient of a success in the New Jersey sections from which there is most commuting into New York City as to justify its adoption in other areas. During July the workings of the plan were extended to include the stations in New York State and Connecticut, located on the borders of the 2-generation area, at which inspection of vehicles also is made for the Japanese beetle.

On July 1 the South Norwalk headquarters of European corn borer and Japanese beetle quarantine activities was visited by P. A. Hoidale, who has charge of the Mexican fruit worm project of the Administration, and who had just concluded a several-months' period of similar service on the Mediterranean fruit fly work in Florida.

Visit to Washington was made by Mr. Worthley on July 24, for conference with Administration officials in relation to several problems which had arisen in European corn borer and Japanese beetle quarantine enforcement. Among these matters was that involving the change in the boundaries of the 2-generation corn borer area, adjusted by modification of the quarantine decided upon while Mr. Worthley was at the Capital. For a large portion of July, Mr. Worthley was engaged in field work which kept him away from headquarters.

Connecticut newspapers recently gave considerable space to an opinion rendered by the United States district attorney whose offices are in Hartford, to the effect that plant pest control quarantine enforcement agents have the authority to seize and confiscate intoxicating liquors found in vehicles that they may examine. No official orders have been issued, however, in respect to the addition of prohibition law duties to the responsibilities of either State or Federal men.

Specialized Corn Borer Activities

Training school for scouts in the western area of corn borer control was opened July 13, at the farm of the Bureaus of Entomology and Agricultural Engineering, near Toledo, Ohio. One group of men reported on that date and another on July 16, all having been given instruction for a period of one week. Through the splendid cooperation extended by farmers of the vicinity, field work also was done in sweet corn on about 50 privately-owned premises. Indications

of infestation in the ears, the tassels, and the lower parts of the stalks were pronounced in the sweet corn, and leaf damage in the field corn on the government farm was plentiful. Lectures were given on the control of the borer, life cycle of the pest, scouting for specimens and the packing of these, reports on field work, care of cars, etc., in a tent set up in a wood on the Department farm. Both the excellence of the field conditions under which they worked and the satisfactory personnel of the students were reflected in the high grades made--averaging 91.5 per cent for the first group and 91.2 per cent for the second.

Inspectors whose duties pertain to quarantine line vehicle inspection in the western corn borer area reported on July 19 for two days of special instructions, at the following points: Michigan City, New Castle, and Richmond, in Indiana; Iron Mountain, in Michigan (July 25); Hamilton and Lucasville, in Ohio, and Fairmount and Point Pleasant, in West Virginia. All of the stations on the main traveled roads were in operation by the morning of July 22. On secondary roads they were established as soon as possible thereafter. Inspection at ports along the western shore line of Michigan and at most stations on the Michigan-Wisconsin State line was under way by midnight of July 27. At the end of the month highway stations were active as follows: Indiana, 40; Ohio, 36; West Virginia, 21; Michigan-Wisconsin State line, 13; total, 110. Port stations included 19 on the Michigan west shore line and 1 in Indiana.

Farm products requiring inspection have shown a steady decline this season as compared with last, in the eastern section of the European corn borer project. In large measure the changed condition is attributed to the modifications in the last major revision of the corn borer quarantine. Movement of produce from within the regulated area during the present summer principally has consisted of beets with tops, celery, and string beans, going to Canada. Shipments from points outside of the area, permitted through the Boston terminal market, mostly have been composed of celery, green corn on the cob, and shell beans, for Canadian ports. Beets and rhubarb have been the only products certified at Portland, Me., and Providence, R. I. Wholesale and retail flower markets have been fairly active, with large quantities of gladioli inspected for Maine, Massachusetts, and Vermont destinations, and exceptionally large shipments of asters into Maryland, Ohio, and Vermont.

Mechanical devices for control of the European corn borer, recommended to farmers by the cooperating State and Federal agencies, were exhibited and demonstrated as a part of the program for farm and home week, at the Massachusetts Agricultural College, Amherst, July 28 to 31. They were shown also at three Farm Bureau meetings in Rhode Island on July 28, 29, and 30, under the direction of county agents. Arrangements also were completed during the month for a similar participation in the Connecticut farm and home week early in August. A number of demonstrations at other farmers' meetings are planned for the remainder of the summer or early in the fall.

Modification of the European corn borer quarantine, approved by the Secretary and effective July 24, removed from the 2-generation regulated area that portion of Hudson County, N. J., heretofore included therein. This change was

made after consultation with officials of the New Jersey Department of Agriculture. It did not involve, in the judgment of the Federal and State authorities, any marked increase in risk of spreading the corn borer. Highway stations for vehicle inspection, previously maintained on the western boundaries of Hudson County, immediately were transferred to the New York side of the Hudson River. Here they will be operated at the ferries and at the Holland Tunnel.

Patrol of roads leading across the New Hampshire-Vermont line, which constitutes part of the boundary between the 2-generation and the 1-generation corn borer areas, was started on July 6, with two experienced inspectors assigned thereto, their headquarters having been located at White River Junction, Vt. The same men also attended to field inspection of asters and gladioli in New Hampshire. Highway activities in this section largely are maintained for the educational effect, as few travelers carry articles affected by the quarantine. Of more than 15,000 vehicles stopped in July, only 40 were found to have prohibited products.

When the training school work in the western area had been finished, 365 corn borer scouts were placed in the field, 345 of them Federal employees and 20 State men. Distribution of this scouting force was as follows: Indiana, 111, all Federal; Ohio, 103, all Federal; Kentucky, 58, all Federal; West Virginia, 35, all Federal; Illinois, 25, 17 Federal and 8 State; Wisconsin, 18, 13 Federal and 5 State; Missouri, 13, 6 Federal and 7 State; boat on Ohio River, 2 Federal. Scouting crews will be shifted as the progress of the work warrants.

Scouting to ascertain spread of the corn borer was begun July 20, outside of the regulated areas in the central section. Crews reporting for work on that date were assigned at first as follows: Maryland and Pennsylvania, 19; New Jersey, 9, and New York 5. Transfers of a part of the scouts from time to time probably will be necessary. By July 20, also, practically all the highway station inspection had been started in this territory.

While the removal of Hudson County, N. J., from the area under quarantine on account of the European corn borer tended to simplify the work of the highway station vehicle inspection, it has greatly increased the market inspection of produce, large quantities of which are moved into New Jersey from New York City. Additional men were assigned to the latter activity during the last part of July.

Increase in infestation of the corn borer over most of the territory is indicated by a summary of the field reports on the egg survey in the western area, which was completed on July 22. This undertaking, commenced on June 25, was conducted by the Administration in cooperation with the Bureau of Entomology. Sections of New York, Ohio, and Michigan were covered by the 22 men employed, 20 of whom made the counts with 2 acting as supervisors.

Field inspection of greenhouses and of aster and gladioli gardens was made during June in the eastern area under regulation for the corn borer. This activity covered Maine, New Hampshire, and Rhode Island. Where conditions were found to be satisfactory, the issue of certificates followed, in accordance with the informal agreement used for several years past.

In the western section of the corn borer project an investigation was instituted during July into the sources of supply for green corn used in the dining car service of railways and steamship lines operating interstate from regulated areas into free territory. Permits are issued to carriers purchasing their supplies in unregulated regions.

School for the training of European corn borer scouts who were to work in the central section was held in Schenectady, N. Y., from July 13 to 18. A total of 68 men reported for this training period, after which they were assigned to different territories where scouting was to be carried on.

Address before the Lion's Club of Waterbury, Conn., outlining some of the main phases of European corn borer quarantine and control work, was made at a weekly luncheon, July 30, by T. M. Cannon, in charge of the Hartford office of the Administration.

Exclusive or Combination Japanese Beetle Work

Flight of the Japanese beetles in the heavily infested areas of New Jersey and Pennsylvania was studied during June by plant pest control officials from several other States. In a number of the localities visited, damage to crops was found to be greater than in preceding seasons. On the first of two trips through the regions reporting the heaviest infestations, which took place on Thursday, July 23, the party included Mr. Allen, Executive Assistant to the Director of the Bureau of the Budget, and Mr. Hoyt, Assistant Chief of the Administration, both from Washington, Mr. O'Kane, State Entomologist of New Hampshire and Chairman of the National Plant Board, Mr. Hadley, of the Moorestown laboratory of the Bureau of Entomology, and Mr. Worthley, Mr. Stockwell, and Mr. Thomas, of the South Norwalk headquarters staff. Responding to a telegram from Mr. O'Kane, urging them to make a personal investigation of the situation, a larger group of representatives from States menaced by the spread of the beetle, on Wednesday, July 29, toured the sections where the flight of the pest could be best observed. Among those present were Commissioner of Agriculture Guthery, and State Fair Exhibits Manager Sandles, of Ohio, Director of Plant Industry Bureau Van Buren, of New York, and State Entomologists Yeomans, of Georgia, Anderson, of Louisiana, Sherman, of South Carolina, and Rumsey, of West Virginia. For the Administration Mr. Hoyt, and Mr. Sasscer, in charge of port inspection, attended. The South Norwalk offices were represented by Mr. Worthley, Mr. Bartley, and Mr. Stockwell. Arriving on the previous day, State Entomologist Flint, of Illinois, had been conducted over the territory by Mr. Hadley.

In a report of the Quarantine Committee of the American Association of Nurserymen, presented to the annual convention in Detroit during July by Chairman Albert F. Meehan, reference was made to the Japanese beetle quarantine and to the general policies of the Administration in the following statements: "The first matter to come before the Committee was the hearing (held Oct. 3, 1930), to consider extending the Japanese Beetle Quarantine to include the State of Rhode Island, at which time consideration was also given to the extension of the present area. As a result of the hearing that State now is included in the

quarantine area. During the past year there have been several conferences with the Administration on Japanese beetle quarantine regulations as the result of which many differences have been ironed out; and, in many cases, modified regulations have permitted better working conditions for nurserymen inside the area without increasing the danger of spread."

This year's Japanese beetle scouting program was fully organized and all scouts were placed in the field during the first few days in July. Two types of scouting are performed. The first involves nurseries, greenhouses, farms, and similar premises from which quarantined articles are shipped to points outside the regulated areas, and is confined, of course, to the territory included under quarantine supervision. During July there were 59 crews of scouts and two men scouting independently, engaged in this type of survey. These operated in Connecticut, Delaware, District of Columbia, Massachusetts, Maryland, New Jersey, New York, Pennsylvania, Rhode Island, and Virginia. The second type of scouting, intended to determine the spread of the insect, is performed wholly outside the infested areas, and in the month, 29 crews were assigned to it. They were stationed in Massachusetts, Maryland, Michigan, New York, Pennsylvania, Virginia, and West Virginia. Practically all of the outside scouting activities are performed in towns and cities, frequent transfers being made from place to place as the season progresses. Past experience has indicated that the insect is more likely to spread through populated regions than in open country. Accordingly, most of the surveys are made in urban communities.

Early in July the results of the cooperative analyses performed at the Japanese beetle research laboratory of the Bureau of Entomology, Moorestown, N. J., became available. Collection of soil samples in nursery plots, heeling-in areas, cold frames, and plunging plots had been completed early in June and all analyses were finished by June 30. The services of seven temporary chemists were required for three months on this phase of nursery and greenhouse supervision. As soon as the data were available concerning the lead arsenate content of previously-treated nursery areas, this information was conveyed to the owners of the establishments in order that additional quantities of the treating material might be incorporated in the treated plots to bring their lead arsenate content up to the required 1,500 pounds per acre. Re-treatments were completed in all nursery and greenhouse establishments concerned by August 1. In a number of instances the analyses determined lead arsenate to be present in the treated sections in excess of the required dosage.

Ships' stores taken aboard vessels at ports in the generally infested Japanese beetle area are regarded as dangerous carriers of infestation. Within the regulated territory, the principal ports of departure for coastwise or intercoastal ships are New York, Philadelphia, and Baltimore. The situation at Philadelphia presents the greatest hazard of beetle spread. At the latter port, an inspector daily patrols the 14 miles of docks and piers on the river front. All boats are boarded shortly after docking and the stewards interviewed to assure that all requirements of the Japanese beetle quarantine are met before the ship departs for ports in unregulated territory. Many unintentional violations are prevented by this ship inspection. A rather anomalous situation was encountered by an inspector recently in a difficult attempt to explain the

restrictions to the steward of a Japanese ship who had purchased uncertified produce from a ship chandler in New York and intended to proceed to a port in the United States outside the restricted zone before leaving for Japan.

Scouts working in communities whose residents largely are unfamiliar with the Japanese beetle in past years frequently encountered difficulties with the local police and with owners of the properties that were examined. All scout foremen when entering a community for the first time now are required to visit police headquarters, explain their activities, and request the cooperation of the local authorities in facilitating their work. A prepared article is also submitted to the local newspaper or newspapers, describing in detail the work to be performed by the scouts, the methods used, and a brief description of the life history and control of the Japanese beetle. This news item requires approximately 18 inches of newspaper space. In the larger metropolitan papers the article is frequently cut, while the smaller dailies and weeklies usually print in its entirety. This publicity has materially facilitated the work of the scouts. It also furnishes an excellent avenue for enlisting public cooperation in quarantine activities.

Flight of the adult Japanese beetle in the market and waterfront districts of Philadelphia reached such proportions that beginning July 10, it was necessary to curtail the period during which farm products could be inspected and certified for movement from the generally infested area. From June 15 until that date inspection service had been provided at the farm products inspection platform, located beneath the Delaware River Bridge, continuously from midnight Sunday to 1 p. m. Saturday. Afterwards this service was curtailed so that quarantined articles were eligible for inspection only between the hours of 8 p. m. and 10 a. m. During the latter quiescent period of the adult beetle, inspections could be satisfactorily made. While the beetles were in full flight, however, inspected produce was subject to reinfestation before it could be trucked to express or freight terminals and loaded for shipment, or reloaded on covered trucks and sealed for transportation from the regulated area. The beetle flight was still in progress at the end of the month.

Fumigation with hydrocyanic gas of carloads of bananas at the Philadelphia loading piers was required beginning July 15. Philadelphia is one of the principal banana receiving ports on the Atlantic coast. The majority of the bananas unloaded from the boats to wagons on the piers are for local consumption. Local haulage of bananas is still done largely by horse-drawn vehicles, in this case the ability of wagons to maneuver in confined spaces on the piers apparently making their use more advantageous than trucks. These bananas are sold at auction to waiting buyers on the piers, who immediately haul their purchases away. Bananas intended for distant shipment are unloaded from the boats directly into freight cars on barges tied to the side of the ship. The loading operations cover such an area that screening to prevent beetle infestation is impracticable, and can not be compared in effectiveness to carload fumigation.

Cooperation on the part of postal employees in assisting in the enforcement of the Japanese beetle quarantine was manifested recently when an individual deliberately sought to violate the regulations by making a false declaratio

of the contents of a parcel-post package presented for mailing at the Lancaster Avenue sub-post office in Philadelphia. In response to the clerk's inquiry, the consignor stated the package contained only clothes and that absolutely there was no fruit in it. She further said that she knew all about the "beetle law" and wouldn't mail any prohibited produce. The clerk, however, detected the odor of fruit about the package and opened it in the shipper's presence, disclosing a quantity of several kinds. An investigation of this attempted violation is under way.

Inspection of farm produce under the Japanese beetle quarantine was carried on in July at one or more places in each of the following cities of the regulated area in the States named: Connecticut, Bridgeport, New Haven, South Norwalk, and Stamford; New Jersey, Bridgeton, Cedarville, Del-Bay, Fairton, Hammonton, Glassboro, Landisville, Malaga, Mount Royal, Newfield, Pedricktown, Rosenhayn, Rutherford, Swedesboro, Trenton, Vineland, Wheat Road, and Woodruff. Most of the offices were open from 8 a. m. to 5 p. m., but at some inspection was by appointment only and longer hours were observed at several market platforms, a few of these working on a 24 hour a day schedule.

Trapping for the Japanese beetle was at the peak during July. Traps were in operation in 39 cities at the beginning of the month. Placement was accomplished in 16 additional cities by the end of July. The trapping program was completed by the distribution of traps in 6 other cities during the month. There were in operation on July 31 approximately 24,000 traps in 61 cities and towns in Georgia, North and South Carolina, Virginia, West Virginia, Ohio, Michigan, Illinois, Maryland, Delaware, Pennsylvania, New York, Connecticut, Rhode Island, and Massachusetts. The personnel assigned to this work comprised 3 permanent employees and 47 temporary trap tenders.

Most of the space in the August issue of the "Telephone News," published at New Haven, Conn., was devoted to the Japanese beetle, material for the several articles having been furnished by the South Norwalk office of the Administration or by the State experiment station. This periodical is the "house organ" of Southern New England Telephone Company, and a copy is mailed to every subscriber with the monthly bill for services. In July requests for information from a number of other publications for data on which to base news stories were complied with by the division of information within the project.

Inspections under the Japanese beetle quarantine in the eastern section of the corn borer and beetle project in large degree are confined to interceptions of cut flowers at the terminals and of funeral decorations held at boat and railway baggage rooms. Nearly all of the larger dealers in the lightly infested areas of Rhode Island and eastern Massachusetts have been classified and the issue to them of Federal permits has decreased the office work connected with certification. Smaller classified dealers and private individuals making occasional shipments are still operating on a certificate basis.

Trapping for the Japanese beetle in the regulated areas under supervision of the central section of the joint corn borer and beetle work was inaugurated during the first week of July. Intensity of infestation and rapidity of spread

are developed by the findings in the traps but their use is not included among the recommended control measures. Soil treatment in the New England territory under the jurisdiction of the central division was completed early in July.

Representatives of the soil insecticide division of the Japanese beetle research laboratory at Moorestown, N. J., have collected soil samples at the various sites treated with lead arsenate this spring in Boston and Springfield, Mass., Newport, Providence, and Westerly, R. I., Hartford, Willimantic, and New London, Conn., Binghamton, Kingston, and Waverly, N. Y., and Sayre, Pa. Samples will also be collected in Cape Charles, Newport News, Norfolk, and Portsmouth, Va. All will be analyzed for lead arsenate content.

Trap work for the Japanese beetle was delayed by heavy rains, both in Massachusetts and Rhode Island. At certain points numerous of the jars were destroyed and the traps injured by boys. Assistance in handling these depredations was received from the Boston city police and from the New York, New Haven and Hartford Railroad police. Trapping is under way in Attleboro, Boston, New Bedford, and Plymouth, Mass., and in Newport, Providence, and Westerly, R. I.

Special inspection of tourist camps located on main traveled roads from the area under regulation on account of the Japanese beetle so far has failed to find infestations at any of them. Similar work during the 1930 season also produced negative results. This year some of the camps inspected were a considerable distance from the boundaries of the quarantined area. A scout supplied with a motor car has been exclusively engaged in this inspection.

Scouting for the Japanese beetle was done in Massachusetts during the month by five crews working throughout the month and by a sixth crew added on July 23. Athol, Attleboro, Boston, Cambridge, Dorchester, Fall River, Fore River, Lynn, Newton, Quincy, Salem, Somerville, Taunton, and Worcester were the cities and towns covered. In Rhode Island one crew was engaged in both field scouting and work at classified establishments.

Authorities of the city of Baltimore have purchased several thousand Japanese beetle traps. While these are largely for use in the parks, arrangements have been made whereby the traps are rented to residents of the city at the rate of $2 per trap for the season. Persons renting traps are required to attend to the placement and maintenance.

Instruction in their duties was given to Japanese beetle scouts engaged in Connecticut, at South Norwalk, Hartford, and Bridgeport, for several days starting July 6 and 7. Men working in this territory are scouting both to determine spread of field infestations and with greenhouse and nursery inspectors.

MEXICAN FRUIT FLY

Due to the enforcement of the host-free period no host-fruits in a stage susceptible to infestation are available for inspection during the summer

months. During previous years the inspection work during this time has been confined to wild native fruits. As a supplement to this inspection work this summer, 1,077 fly traps similar to those used in Florida were placed in 118 selected groves during the first part of July. The use of these traps resulted in the taking of one adult Anastrepha (not ludens), July 14, in a grove one mile south of Mission, Tex. Additional traps placed in this and the surrounding groves gave negative results the remainder of the month. Arrangements were made with the owner of this grove to apply a poison-bait spray at weekly intervals to the 2,100 bearing trees in the grove. Under the arrangement the Administration furnishes the material for the bait spray and the grower furnishes the labor and machinery for applying it. The first application was made July 29. The plans call for three more applications of the bait spray provided no further infestations are found.

Adult flies continue to be taken in the traps in Matamoros. During the month 176 traps were maintained in 57 different premises scattered throughout the city. The use of these traps resulted in the taking of 30 adult flies on 13 different premises. Of interest in this connection is the fact that in only 4 of these premises were reinfestations found. All trees within an area of four blocks around each point of infestation were sprayed at weekly intervals with poison-bait spray.

The cooperation of the Mexican officials and citizens in the eradication work continues to be of the highest order. The importation of infested fruit to the market in Matamoros has been practically stopped through the granting of authority to the Mexican inspector to impose fines upon the merchant importing this fruit and to also seize and destroy shipments of infested fruit. One merchant was fined 50 pesos during the month for importing infested oranges from Rio Verde, San Luis Potosi, Mexico. One shipment of pears from the State of Coahuila was found to be infested following which the importation of pears from that region was prohibited.

PINK BOLLWORM

During the month of July, field inspection in the Salt River Valley of Arizona consisted of making infestation counts from 23 selected fields, 20 of which are in Maricopa County and 3 in Pinal County. The results have all been negative. This is somewhat surprising when it is recalled that 2 of the fields selected in Pinal County and 9 in Maricopa County were infested last season. Also 2 of the fields in Maricopa County were found to be infested this season prior to the beginning of the infestation counts. This would seem to indicate that the infestation is still apparently very light. One of the most logical conclusions for not finding specimens, especially in the 2 fields where they were found earlier in the season, is that the bolls are now developing much more rapidly than the infestation.

An infestation count consists of the inspection of 100 bolls. Estimates were made recently to determine the number of bolls per acre, which was found to

be 919,080. In examining 100 bolls from this number, it can be readily seen that the chances of finding specimens are very slight, except where the infestation is heavy.

Field inspections have also been made in the Tucson area. By using 10 squares or green bolls per acre, 1,225 acres have already been inspected with negative results. Practically all of the cotton acreage in the district will be covered by this method of inspection in another month.

One of the new gin trash machines mounted on a truck was sent to the Lower Rio Grande Valley of Texas on July 24. Other machines were sent out as they were completed, so that by the end of July there were five machines operating in the above area. These machines inspected 265½ bushels of trash from 25 gins, with negative results.

At the present time each machine is operated by three regular inspectors. As the ginning season advances, and more machines are needed, two of the inspectors with each machine will be replaced by temporary men, leaving a regular inspector in charge of each machine.

The alfalfa inspection and crop survey was continued during July. At this time it has been found that 20 per cent of the alfalfa acreage and 6 per cent of the acreage devoted to other crops in Maricopa County has cotton present, while 44 per cent of the alfalfa acreage and 34 per cent of the acreage devoted to other crops in Pinal County has cotton present. The total cotton acreage is shown to be 132,114, and the abandoned cotton acreage 36,031. The area remaining to be inspected consists of 11 sections near Mesa, in Maricopa County, and the Indian Reservation in Pinal County. These areas will be completed shortly, and more information on this work will be given in the next News Letter.

In connection with the above work, several young alfalfa fields were reinspected to obtain further information on the effect of mowing cotton plants at the time alfalfa is cut. It can be readily seen that at each mowing of the alfalfa a number of cotton plants are destroyed. It was previously stated that volunteer seedlings do not survive unless one or more branches are left. In a few instances it has been noted that dormant buds near the ground have put out leaves and made some growth after the upper stalk had been cut off. However, it is doubtful if such growth would ever fruit to any extent. In another field it was noted that after two mowings the cotton plants produced a considerable number of squares, but no bolls of any size have developed. Cotton plants are rarely ever found in fields which have been in alfalfa for two years or more.

Heretofore both fumigation and compression have been required as a safeguard to prevent baled cotton lint from carrying pink bollworms to uninfested areas. Recent investigations have confirmed the importance of compression as a measure for greatly reducing or, under most favorable circumstances, entirely eliminating infestation in the bale. Accordingly, the pink bollworm quarantine regulations were amended, effective August 1, whereby the fumigation requirement was removed for the movement of cotton lint produced

in areas so lightly infested with the pink bollworm that in the judgment of the Plant Quarantine and Control Administration any possible danger of the spread of that insect in baled lint would be prevented by high compression without fumigation. The areas designated as lightly infested include the Counties of Chaves, Eddy, Otero, Dona Ana, and Luna, in New Mexico, and all the regulated part of Texas except the Counties of Presidio, Brewster, and the southeast part of Hudspeth County, beginning at a point immediately west of the town of McNary. The release from fumigation applies only to square bales which have been compressed so that when ready for transportation they have a density of at least 22 pounds to the cubic foot.

The inspectors formerly engaged in the San Antonio laboratory devoted most of the month to the study and discussion of various subjects connected with inspection work. Some of the subjects covered were:

1. Picking of cotton with reference to finding pink bollworms in gin trash.
2. Principles involved in ginning cotton; also bollie cotton.
3. Cotton cleaners.
4. Study of Quarantines Nos. 52 and 61.
5. Larvae likely to be confused with the pink bollworm.
6. World distribution and losses caused by the pink bollworm.

Considerable time was also given to the study and actual operation of the gin trash machines and gin plants. A visit was made to two gins, where an expert on gin machinery explained in detail the various processes of ginning. It is thought that a great amount of good was accomplished in these studies. The information obtained with reference to cotton cleaners should result in making the gin trash inspection more efficient. This increased knowledge of the subjects discussed should make the inspectors more valuable to the Department. They will be in a position to discuss intelligently with ginners such matters as cotton cleaning and the operation of gins.

On July 23 a road station was opened about 5 miles west of Las Cruces, N. Mex., on the Bankhead Highway. The purpose of this station is to protect the eastern cotton growing area from the possible spread of pink bollworm infestation from the Salt River Valley of Arizona. The results obtained during the next few months will determine whether or not this station will be maintained permanently. A number of confiscations were made at the four stations during July, none of which were infested with the pink bollworm. During the same period 6,798 cars were inspected.

PREVENTING SPREAD OF MOTHS

The bringing together at Greenfield, Mass., of the various offices of this project is now well under way. Several families have already been moved,

and bids have been sent out for the moving of most of the rest of the families during August. The moving of the Government property is being done by our own force with Government trucks, and many loads have already been delivered at the new quarters in Greenfield.

After August 25, 1931, communications formerly sent to the office at Melrose Highlands, and to the Moth Quarantine Office, 408 Atlantic Ave., Boston, Mass., should be forwarded to the new Central Office at 20 Sanderson Street, Greenfield, Mass. Telephone, Greenfield 2290.

A suboffice of the Quarantine and Inspection project will be continued at Room 303, #408 Atlantic Ave., Boston, Mass., to handle local inspection matters. All special inquiries or matters affecting quarantine and inspection policies should be taken up with the Greenfield office.

In July shipments of two types of quarantined products, namely, evergreen and nursery products, were at a low ebb. Shipments of the former were in excess of those recorded for the month of June due to the fact that the blooming of laurel was over and the branches were in condition to be picked for decorative purposes. During June, because of the growth and blooming, laurel is not in a satisfactory condition for use. As soon as blooming is over, pickers begin to gather it. It is shipped for the most part in bales to New York. In the northern section of the quarantined area a considerable quantity of balsam twigs was gathered and shipped in bags to be used for the manufacture of pillows and other novelties. Very few shipments of nursery products were sent out. During the summer the nurseries do not attempt to sell stock to any appreciable extent. A few nurseries, particularly those located on arteries of travel, sell some stock to persons traveling by automobile. This class of trade has not as yet developed to any considerable extent, but a few sales are made, and as time goes on this type of shipment will increase. The inspections of forest, and stone and quarry products were entirely of a routine nature. The general classes of forest products were shipped about as usual and no infested materials were found. The stone and quarry products, consisting mainly of granite and marble, were numerous. Towards the latter part of the month some new gipsy moth egg clusters were found while inspecting these materials.

During July in New Jersey 101 lots of nursery stock and forest products, and on Long Island 51 lots of nursery stock, were inspected and certified for shipment by Federal men. No gipsy moth infestations were found as a result of these inspections.

Spraying work for the fiscal year 1931 was completed during the second week of July. All infestations, except a few single unbroken egg cluster infestations and a few infestations located on isolated trees which were discovered in the Barrier Zone during the year, were thoroughly sprayed. The exceptions noted above were treated by creosoting the egg clusters or by cutting down and burning isolated infested trees. In such cases the surrounding trees were banded with burlap, and these were patrolled during the caterpillar season to discover any infestation which might have been overlooked.

When the spraying work was completed the bulk of the force was transferred to northern New York, where they began scouting in 6 townships bordering Lake Champlain. Twelve regular scouting crews were engaged in this work. Some woodland scouting has been done in previous years in some of these townships. Such areas will not be scouted this year. The rest of the area in these townships will be scouted by the regular 40-foot strip method. During the month no towns were completed and no infestations were found. As soon as other men can be released from special assignments they will be transferred to northern New York, to assist in the scouting work being carried on there. Scouting work in the northern area of the Barrier Zone is done early in the season so that as much as possible of it can be finished before snow makes conditions unsatisfactory for scouting.

In the part of the Barrier Zone in New York State which is cared for by the New York Conservation Department, scouting was carried on during July in the townships of Ancram, Austerlitz, Canaan, and Hillsdale, and apparently no infestations were discovered during the month. On Long Island the New York Conservation Department had 5 crews doing intensive scouting in North Hempstead Township. No indications of gipsy moth infestation were found as a result of this work.

In New Jersey the force has been engaged during the month in patrolling burlap bands which were previously placed around trees at the sites of old infestations but no gipsy moths were found in this work. In addition to this the men have put out a large number of assembling cages to attract male moths which may be present. After these cages are put out they are visited at least once a week to gather any male moths which may be caught. No moths have been caught in New Jersey as a result of this work. However, this work is not entirely completed at this time and there is a possibility that some gipsy moth infestation may be discovered before its completion.

Spraying work in New Marlboro, Sandisfield, and Sheffield, Mass., and Canaan, Cornwall, Salisbury, and Warren, Conn., was completed early in July. The following figures will give some idea as to the extent of this work: In Massachusetts there were 2,022 acres of woodland sprayed, and in Connecticut, 1,746 acres, making a total of 3,768 acres. In doing this work, 159,922 pounds of arsenate of lead and 3,157 gallons of fish oil were used.

For several years records have been kept of the degree and extent of defoliation of trees in New England caused by the gipsy moth. These records have been gathered from State and Town officials, from members of the Federal Bureau of Entomology, as well as by the force of the Plant Quarantine and Control Administration. Reports are obtained from most of the towns in the generally infested area. Most of the Federal men assigned to this work have had considerable experience in examining towns and drawing the wooded areas in them onto blue print maps. This helps them in determining the extent of defoliated areas, and with a little experience they soon become expert at estimating the degree of defoliation. There was less defoliation caused by the gipsy moth this summer than for several years, and the trees in most of the area were practically free from gipsy moth feeding. Defoliation was severe in the counties of Bristol, Plymouth, and Barnstable, Mass. There was recorded a total

of 204,720 acres in New England which showed some feeding by the gipsy moth caterpillars, but over one-half of this was classified as less than 10 per cent defoliated, leaving 101,583 acres classified as from 10 to 100 per cent defoliated, and over one-half of this amount (54,710 acres) was in the southeastern section of Massachusetts. Practically all of the defoliation records are now available but there may be a few scattered ones received later, so that these figures may have to be changed somewhat, but it is not expected that any material change in them will be necessary.

On pages 24 and 25 of the August News Letter is given a brief description of the assembling cage work. The gathering of the material to be used for attracting male gipsy moths is done during July. This year the material was obtained from the area around Middleboro, Mass. In previous seasons the percentage of female moths issuing from the collected pupae has been low, ranging from 10 to 15 per cent, and this has necessitated gathering large numbers of pupae in order to obtain a sufficient supply of female tips. The low percentage of issuance of moths has been due to several factors, the more important ones being the presence of wilt disease in the pupae, parasitism of them by S. scutellata, injury due to handling, and overcrowding in the tray. The methods of collecting and caring for the material were improved in several ways this season, and the wilt disease and parasitism were not as severe as usual. This summer nearly 50 per cent of the collected pupae gave female moths. Because of this high percentage of issuance of moths an unusually large amount of material was obtained. There were about 371,350 pupae collected, from which approximately 176,490 tips were obtained. About 90,720 of these were put into 3,024 cans for use in New Jersey next year. Each can contains 30 female tips and 1 ounce of benzol. About 85,770 tips were used during this summer in the Barrier Zone or just east of it, and in New Jersey. These cans contained 15 female tips in 1 ounce of xylene or high test gasoline, and there was enough material to fill 5,718 cages. The exact number of cages that were put out can not be given at this time as some of this material was used to refill cages and all of the notes have not as yet been received at the office. The refilling of cages gives two periods when the attractant is very strong and allows for the cages to attract over a longer period. In addition to the above, there were 582 cages of benzol material prepared in July, 1930, placed in New Jersey. Cages were placed in every town of the New England part of the Barrier Zone in which any gipsy moth infestation has ever been discovered. In the Barrier Zone cages were placed in 16 towns in Vermont, 26 towns in Massachusetts, 23 towns in Connecticut, and 12 towns in New York State. The New York State Conservation Department caged 9 of these 12 towns with material supplied from the Federal office. In addition to this, cages were placed east of the Barrier Zone in 5 towns in Massachusetts and in 8 towns in Connecticut. In New Jersey cages were placed in 29 towns.

Several male moths have already been caught at cages in New England, but no catches have been made in New Jersey. It may be necessary to slightly revise these figures in a later issue of the News Letter as the season's work is not quite completed at this time.

During July scouting has been carried on in cooperation with various

State officials to determine the extent of this summer's dispersion of the satin moth. Much of the area just beyond the present quarantine line has been examined, and a few infestations have been found in towns beyond the present controlled area. The satin moth has been found outside of the quarantine line in 8 towns in Connecticut; 2 towns in Massachusetts, one of which (Williamstown) borders the Vermont and New York State lines; 1 town in Vermont, and 9 towns in Maine. No infestation beyond the quarantine line in New Hampshire was found as a result of this work. This work is not entirely completed so that recommendations for changing the present quarantine line can not be made at this time.

About 70 collections, including the gipsy moth, brown-tail moth, satin moth, and miscellaneous insects, were made during the month for the Gipsy Moth Laboratory at Melrose Highlands. This work is done incidental to the regular duties of the men and is helpful in adding valuable records to data assembled at the laboratory.

During July there was a total of 46 violations reported. Investigations were completed in July on 2 violations reported in May, and on 58 violations reported in June. No prosecutions were instituted as all cases appeared to be of minor nature due to ignorance or misunderstanding of the requirements. All of the violations were reported by transit inspectors of the United States Department of Agriculture.

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