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PLANT QUARANTINE AND CONTROL ADMINISTRATION

UNITED STATES DEPARTMENT OF AGRICULTURE

Number 13 (NOT FOR PUBLICATION) January 1, 1932.

TECHNOLOGICAL

A test was recently conducted at Babylon, N. Y., for the purpose of determining the practicability of treating imported chestnuts by some means other than hot water. The hot-water sterilization, while entirely satisfactory in destroying the insects, generally leaves the nuts in a condition ideal for decay and mold growth. The treatment tested at Babylon, in which air heated to the correct degree and with a relative humidity of 100 per cent is used as the heating medium, eliminates the likelihood of this condition. By placing the chestnuts in shallow, wire-bottom trays, in a suitably designed room through which the conditioned air is circulated, this treatment can be accomplished rapidly and does not involve a drying process following the treating.

Reports on the tests being conducted at Acala, Tex., in which a machine for treating commercial quantities of seed cotton by heat is being used, continue to strengthen the evidence that treatments in this type of sterilizer are practicable. Approximately 80 tons of seed have been used for the tests in which various exposures and temperatures were tried. Germination determinations have been completed on samples taken from seed used in 34 of the tests. About the same number of viability results are yet to be reported on.

The laboratory at El Paso, in which work relative to certain phases of the pink bollworm quarantine has been conducted for several years under the direction of A. C. Johnson, is being moved to Alpine, Tex. The transfer involves the moving of all laboratory equipment from El Paso to Alpine and the establishment of permanent headquarters at the latter place of Mr. Johnson and his assistants.

FOREIGN PLANT QUARANTINES

RECENT ENTOMOLOGICAL INTERCEPTIONS OF INTEREST

Mediterranean fruit fly from the Azores.--At Providence, R. I., living larvae and pupae of the Mediterranean fruit fly (*Ceratitis capitata* Wied.) were intercepted in sweet limes in baggage from the Azores. Three living larvae of this fruit fly were also intercepted at Providence, R. I., in *Sorbus* fruit in baggage from the same islands.

Mediterranean fruit fly in Japanese persimmon.--Four living larvae of the Mediterranean fruit fly were intercepted at New York in a Japanese persimmon in the mail from France. This represents the first interception by inspectors of the Plant Quarantine and Control Administration of this fruit fly in Japanese persimmon.

Coffee berries infested with Mediterranean fruit fly.--The Mediterranean fruit fly was intercepted at San Francisco in coffee berries in quarters from Hawaii. Larvae of this fruit fly have been intercepted more than a score of times at California ports in coffee berries from Hawaii.

Mediterranean fruit fly in peach.--Fourteen living larvae of the Mediterranean fruit fly were found at New York in a peach in baggage from Italy. This fruit fly has also been intercepted in peach from the Azores, France, and Spain.

Coreid feeding on guavas.--Adults of *Leptoglossus stigma* Herbst (Coreidae) were found feeding on ripening guavas near Vieux Habitant, Guadeloupe, French West Indies, by Max Kisliuk, jr. and C. E. Cooley, September 1, 1931.

Soursop seed infested with an eurytomid.--An adult of *Bephrata maculicollis* Cam. (Eurytomidae) was collected by Max Kisliuk, jr., and C. E. Cooley in a soursop seed at Pointe Michel, Dominica, British West Indies, September 20, 1931.

Scale insect from the Straits Settlements.--*Parlatoria pseudaspidiotus* Lindinger (Coccidae) was intercepted at Honolulu, Hawaii, on orchids (*Vanda* spp.) in baggage from the Straits Settlements.

Pentatomid from Central America.--*Discocephala humilis* Herrich-Schaeffer (Pentatomidae) was intercepted at San Francisco on bananas in cargo from Panama. This insect, which is not recorded from continental United States, has also been taken on bananas from Costa Rica, Guatemala, and Honduras.

Scale insect on orchids.--The coccid *Chrysomphalus rossi* (Mask.) was intercepted at Honolulu, Hawaii, on orchid plants (*Phalaenopsis sanderiana*

and P. schilleriana) in cargo from the Philippines. This scale insect has also arrived on various hosts from Australia, Belgium, Japan, The Netherlands, New Zealand, and Samoa.

Rice moth in cacao beans.--The rice moth (Corcyra cephalonica Staint.) was intercepted at San Francisco in cacao beans in cargo from Africa and Brazil. According to E. A. Back and R. T. Cotton in Farmers' Bulletin No. 1260, this pyralid is seldom found in this country and has not become very widely disseminated.

Mealybug intercepted at Honolulu.--Pseudococcus lilacinus Ckll. (Coccidae) was intercepted at Honolulu, Hawaii, on orchids (Phalaenopsis grandiflora, P. sanderiana, and P. schilleriana) in cargo from the Philippines. This coccid has also been intercepted from India and New Zealand.

Destructive termite from China.--Soldiers and workers of the termite Coptotermes formosanus Shiraki were intercepted at San Francisco in a wooden crate containing taros in cargo from China. T. E. Snyder, of the Bureau of Entomology, states that this termite does not occur in the continental United States and that it is one of the most destructive termites in the world.

Weevil in orchid plants.--Acythopeus aterrimus Waterhouse (Curculionidae) was intercepted at Honolulu, Hawaii, in orchid plants (Dendrobium phalaenopsis and Phalaenopsis amabilis) in cargo from the Philippines. This weevil has also been intercepted in orchid plants from the Straits Settlements.

European corn borer from Italy.--A living larva of the European corn borer (Pyrausta nubilalis Hubner) was intercepted at New York in a lot of five ears of corn in baggage from Italy.

RECENT PATHOLOGICAL INTERCEPTIONS OF INTEREST

Lima bean scab interceptions.-A number of interceptions of Elsinoe canavaliae on Lima beans from Cuba have been received from the port of New York. One interception of this disease has been received from San Juan, Porto Rico, taken from a shipment of Lima beans destined for the mainland. Some of the Cuban beans were infected with Bacterium phaseoli, some with Colletotrichum lindemuthianum, and some with Diaporthe phaseolorum. One of the Bureau of Plant Industry specialists has asked for material of the Colletotrichum as he wishes to get a pure culture of the organism for study. It is difficult to isolate as it is much slower to start than organisms likely to be associated with it. Spores of the Diaporthe from Cuba are variable and it is sometimes necessary to make several mounts before typical spores are found.

Euonymus spot.--Several interceptions of an unrecognized trouble on

Euonymus have been received from Seattle in the last few months, on plants from Japan. The affected spots are quite small and fall out before any visible evidence of a fungous develops, if such is present.

Septobasidium spongia was intercepted at New York on orange twigs from Brazil. This fungus forms a thick brown growth around twigs and branches. The importance of the group is a matter of some dispute. It had been generally supposed that the fungus killed the masses of scale insects it overgrows, but one investigator has recently come out with the results of his studies and claims that the fungus and scales live symbiotically, the fungus deriving food from the scales and in return protecting the scales from parasites and spray.

Nematode interceptions.--Tylenchus pratensis was intercepted from Porto Rico for the first time, the host being Dioscorea and the port of interception, Philadelphia. Aphelenchus parietinus was intercepted on ginger root and lily bulbs from China at Detroit. The former is a new host and China is a new locality among our interceptions of this nema. It has been reported from China in the literature according to the Division of Nematology.

A species of Phoma was intercepted on Verticordia monadelpha from Australia at the Washington Inspection House. No record of diseases on this host was found. Unfortunately, the amount of material was too limited to permit of a detailed study.

Lavatera rust.--A rust, apparently Puccinia sherardiana, was intercepted at El Paso on Lavatera sp. from Mexico. This rust apparently is not reported on this genus in North America although it is known to infect other members of the same family (Malvaceae).

Chinkerichee rust.--Interceptions of diseased cut flowers of chinkerichee have been received from Boston, Chicago, New York, and Philadelphia. In addition to the rust, Puccinia ornithogali-thyrsoides, several lots were found to be infected with Heterosporium ornithogali, material of which was desired by one of the specialists of the Bureau of Plant Industry.

IMPORTS OF FUNGUS CULTURES

A shipment of fungus cultures for industrial uses was held up in the mails in Philadelphia recently, though not under plant quarantine restrictions. This incident stimulated an inquiry from our Philadelphia station as to what attitude should be taken by us toward such imported cultures if presented for entry, which brought the following information from the Washington office. It is quoted here as a matter which may be of interest in various ports.

"Although this Administration has at present no restrictions on the

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importation of fungus cultures as such, yet it is fully realized that among such imports may be important plant pathogenic organisms. Even when these cultures come under the names of species already present and well known here there is always the possibility that strains of exceptionally virulent nature may be thus introduced.

"On the other hand the Administration would wish to make no objection to the entry of cultures of organisms incapable of causing diseases and intended for commercial or industrial purposes. These materials are considered to be outside the scope of our activities.

"If the fungus cultures entering this country are adjudged to come within the last-mentioned category the inspector may allow them to pass unquestioned. But if they consist of or include disease-producing types, or there is suspicion that such may be present, the Washington office desires to have the opportunity before they are delivered to the consignee of verifying their nature, keeping record of the entry, and arranging with the consignee for such safeguards as may be necessary. In case such cultures are encountered the essential facts covering them should be promptly submitted to Washington for the action indicated."

LEAF SCORCH OF AZALEA

A shipment of azaleas from Holland destined to New Jersey was found on inspection at Washington, D. C., on December 7 to be rather generally infected with a leaf-scorch disease due to Septoria azaleae. Available information indicates that this disease is not recorded for this country, but that it occurs in Europe where it appears to be somewhat widely distributed and is reported as damaging. The disease also occurs in Japan. The azaleas in question were therefore held for return to the sender or for destruction. A similar shipment of azaleas presented for entry from Europe December 8, 1930, was likewise refused on account of this disease.

The fungus produces dull, dark-brown, irregular spots or patches on the leaves; under certain conditions there may be an evident chlorotic margin or halo around the spots, but this halo effect is not always present. The spore-bearing pycnidia are imbedded in the tissues of the upper surface of the spots and are difficult to observe even under a hand lens. However, after a period of dry weather stringy coils of adherent spore masses may sometimes be observed exuding from the pycnidia. These are white in color and are easily seen under the lens.

The disease is said to become evident in early autumn and after that time produces so much defoliation that the plants are greatly weakened. Infection is carried over apparently in fallen leaves and research in Japan indicates that infection may be followed by an incubation period of about two months. We have no record of its occurrence on plants other than azalea.

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Inspectors are urged to watch carefully for this disease, both on incoming azalea plants and on plants growing under special permit. In import material leaves which have fallen off in transit should be especially scrutinized.

RHODODENDRON MOSAIC

Rhododendron Mosaic is reported for the first time by Dr. H. Pape in Die Gartenwelt 35:621, 1 fig, for November 6, 1931. The leaves of affected plants bear some resemblance to those of beets infected with curly top of to the distortions of potato leaves suffering from certain types of mosaic. Special permit inspectors will watch for possible cases of this disease in this country.

BEETLE IN CINNAMON SEED

An interesting species of coleopterous insect was intercepted recently at the Washington, D. C., Inspection House in Cinnamomum zeylanicum seed from the Department of Agriculture, Trinidad, B. W. I. Approximately 30 per cent of the 60 seed in this shipment were badly injured by this beetle. In identifying this insect as Heilipus rectirostris Champ. L. L. Buchanan, of the Bureau of Entomology, notes: "H. rectirostris was described from two specimens, one from Mexico and one from Guatemala and it is very remarkable that the species should be found in Trinidad breeding in a Ceylonese Cinnamomum. However, the specimens fit Champion's description so perfectly that I can scarcely doubt that they belong to his species. (It is possible that H. rectirostris Champ. is a synonym of H. draco Fab., from South America.)"

DOMESTIC PLANT QUARANTINES

TRANSIT INSPECTION

The first and only violation of the Mexican fruit worm quarantine reported during the fall season was found by K. S. Rohwer at Pittsburgh, on December 1. It consisted of a crate of grapefruit from Brownsville, Tex., consigned to Pittsburgh, Pa., without the required certificate attached.

The checking of freight in the vicinity of Pittsburgh, particularly at the Pitcairn yard, is being worked out by Mr. Corliss, of the transit inspection force, and Mr. Rohwer, of the European corn borer project. A combination of telephone messages and copying of waybills is expected to provide an efficient system of checking freight shipments of articles restricted under the European corn borer quarantine and other domestic plant quarantines.

More nursery stock is distributed by express through Washington, D. C., than by parcel post or freight, if November is a criterion for the remainder of the year. H. J. Conkle, on checking the November shipping, found a total of 764 shipments en route. Of these, 365 were found to be moving by express, 289 through the railway mail service, 64 through the post office, 34 in train-to-train transfers of express and mail at the Union Station, and 12 in freight at the Potomac Yards. The reason for the apparent greater movement of express is that Washington is a parcel post distributing point for only a limited territory, involving parts of Virginia, West Virginia, North Carolina, South Carolina, and Tennessee, while express shipments of nursery stock available for examination here are distributed to 22 States.

Trucks and railway shipments of livestock arriving at the Chicago Union Stockyards, many of them for exhibition at the Annual Stock Show, are being checked by transit inspectors in cooperation with the European corn borer project, to determine whether cornstalks and cobs used as bedding, and corn on the cob used for feed, are being shipped from the European-corn-borer regulated area. These articles may be infested with the borer. Inspections for a 6-day period resulted in checking 1,045 trucks, of which 153 were from the regulated area. This work is done from 10 p. m. to 7 a. m. Night inspection is also carried on at the Chicago railway terminals in checking on parcel post and express shipments. A high degree of compliance with the requirements is reported.

The New York field office states that the importance of freight inspection at that city was greatly increased during the first 10 days in December, due to the shipping of Christmas trees. Over 100 carloads of evergreen trees from the gipsy moth and brown-tail moth area were moved to or through the transportation terminals during this period.

The Chicago field office sends in the following totals as the number of Federal violations intercepted at Midwest stations during the period from July 1 to December 4, 1931:

Chicago	158
Omaha and Council Bluffs	51
Kansas City	27
St. Paul and Minneapolis	17
St. Louis	15
Total	268

Information concerning the destinations of these violations is of interest. The shipments intercepted at Chicago would have proceeded to Arkansas, California, Colorado, District of Columbia, Illinois, Indiana, Iowa, Kansas, Michigan, Missouri, New Jersey, New York, Nebraska, Ohio, Pennsylvania, and South Dakota. The Omaha and Council Bluffs shipments were destined to Colorado, Idaho, Massachusetts, Nebraska, New Jersey, Oregon, Wisconsin, and Wyoming. The violations intercepted at Kansas City

were in transit to Colorado, Iowa, Kansas, Missouri, Oklahoma, Texas, Virginia, and Wisconsin. Those seen at St. Louis were consigned to Arkansas, Illinois, Missouri, and Texas, while the St. Paul and Minneapolis violations were en route to Iowa, Michigan, Minnesota, South Dakota, Washington, and Wisconsin.

Christmas shipping.--The checking of shipments of Christmas greenery and similar decorative material forms the principal work of transit inspectors at this time of year. The quarantines relating to the gipsy moth and brown-tail moth, the white-pine blister rust, the Woodgate rust, the European corn borer, and the black stem rust, are all taken into consideration. The certification of Christmas trees and greens from most of the New England States is required and there is an embargo on the shipment of Christmas trees as such from the area generally infested with the gipsy moth. Often white pine trees are used as Christmas trees and, as the blisters may develop and scatter spores weeks or months after trees and branches are cut, the shipment of white pine trees from infected to noninfected States is not allowed. Similar restrictions are also in effect as to hard pines from 10 counties in New York State known to be infected with the Woodgate rust. One of the most popular cut flowers at this time of year is the Chrysanthemum, but it is also unfortunately one of the favored hosts of the two-generation strain of the European corn borer. Mahonias, also known as holly grapes, are much used as holiday decorations on the Pacific Coast where they are native, and are occasionally shipped from that section, but under the black stem rust quarantine regulations, the species susceptible to the rust are not allowed shipment into the 13 protected middle-western States, and permits are required for such shipment of resistant species. The quarantine regulations provide exemptions of Christmas greenery wherever possible, in order to avoid interfering with the pleasures of the Christmas season, but it is nevertheless necessary from time to time to turn back shipments which involve a real hazard of carrying infestation to new localities.

WHITE-PINE BLISTER RUST

Two interceptions of Ribes infected with the blister rust have recently come to our attention. One consisted of R. nigrum shipped from Georges River, Nova Scotia, to Boston, Mass., which was discovered by Chief Maritime Inspector W. G. Bemis. The other was cultivated red currants shipped intrastate in Massachusetts, and discovered by E. J. McNerney.

PHONY PEACH DISEASE

As reported in the last News Letter, the phony peach disease quarantine was amended effective November 30 to involve 11 States instead of only 2 as heretofore. This announcement was followed immediately by

the forwarding of letters and application blanks to the peach-growing nurserymen of these States. Where the nursery premises and the area within one mile of the nursery had been found free from the disease during the past summer's inspection, permits were issued authorizing interstate shipment. Nurserymen whose peach stock was grown within a mile of known infections were notified that interstate shipping of peach and nectarine trees and roots from their premises would not be permitted.

The organization of quarantine activities in the newly regulated areas, including personal visits to important peach-growing nursery centers, and checking on nursery stock shipments, occupied the attention of the Atlanta office during the month. G. W. R. Davidson is personally supervising the inauguration of such work in Georgia and Tennessee in cooperation with the Bureau of Plant Industry of this Department, and Mr. Dopson has been assigned to Texas and Arkansas.

A quarantine restricting the intrastate movement of peach and nectarine trees and roots in North Carolina has been issued by the Commissioner of Agriculture of North Carolina. Preliminary steps in the direction of State quarantines have also already been taken by several other States involved in phony peach disease infection.

A survey of the routings of nursery stock shipments moving northeast from the areas infected with the phony peach disease has been carried on during the month under the direction of R. A. Sheals, assisted by C. A. Lowe of the Bureau of Plant Industry. Evidence indicated that Spencer, Hamlet, and Rocky Mount, N. C., were the three principal transfer points through which such stock was distributed, mainly by freight, when destined for points in the east central States. Cooperative arrangements were made with Dr. R. W. Leiby, State Entomologist of North Carolina, under which the State and Federal Departments will join in checking nursery stock shipments through those points to insure compliance with phony peach disease quarantine regulations. Similar work is being carried on at Atlanta, Ga., and Washington, D. C., with the result that it is believed a complete check on the movement of restricted plant material can be maintained.

DATE SCALE

In November, six fan palms and one date palm were found infested on an old infested property in the Imperial Valley. The palms were under 2 feet high, growing along a ditch bank in a heavy growth of arrowhead. In the fall of 1928 several large, heavily infested date palms were found on this property. It is probable that the small infested palms mentioned above were very small seedlings at the time and were overlooked because of their location.

This incident, with others previously recorded, emphasizes the need of careful inspection of infested premises for a considerable time after the original infestation seems to have been cleaned up.

The arrowhead is a very common plant in desert areas growing along ditch banks and in uncultivated fields. It is cut and used as shelters for winter vegetables. The plant is a host of a scale identified by Dr. F. S. Stickney as Aspidiotus lantaniae Sign., the male of which resembles the male Parlatoria scale. The dense growths of arrowhead and mesquite in abandoned plantings of date palms often make adequate inspection impossible.

During November, five properties in the Coachella Valley were inspected on which no scale has been found since November, 1930. Scale has been found on only four properties in the Coachella Valley in the past year--two commercial plantings and two of no commercial value. Only four infested palms were found in the commercial gardens, two of which were defoliated and torched. The remaining two were not treated as only single dead scales were found. Thirteen infested palms were found in the two non-commercial plantings and were dug out and destroyed. A total of 17 infested palms have been found in the Coachella Valley during the year ending November 30, 1931, as compared with 201 found in the 12 months ending November 30, 1930. In the Imperial Valley 18 date palms have been found infested during the year ending November 30, 1931, as compared with 98 found during the 12 months ending November 30, 1930. In Arizona 2 infested palms were found during the year ending November 30, 1931, as compared with 22 during the 12 months preceding.

EUROPEAN CORN BORER AND JAPANESE BEETLE

General Project News

Field activities in corn borer control were almost wholly brought to a termination within the current period and in the Japanese beetle division also were subjected to additional reductions, except with reference to inspectors dealing with nurseries and in respect to treatment of isolated infestations. Last of the scouting for the borer which will be done this year took place during the first half of the month, and market inspection of products also was discontinued. Road patrols and vehicle inspection stations remaining in operation at the beginning of the month were withdrawn a short time later. Office duties, on the other hand, were increased in a number of directions, the compilation of final records for the season requiring much attention. Information needed in consideration of proposed changes in the quarantine regulations also took up considerable time of certain members of the force.

Findings of scarabeid grubs, identified as Ochrosidea villosa Burm., on an estate at Greens Farms, near South Norwalk, have been reported to project headquarters. Turf on another and adjoining residence property also has been injured by insects similarly determined. Feeding of the grubs has ruined some three acres of lawn on the latter place, and a large number of specimens collected for experimental purposes have been delivered to the Connecticut State Entomologist, Dr. W. E. Britton.

Specialized Corn Borer Activities

Reports from the International Live Stock Exposition and Hay and Grain Show, which opened in Chicago on November 27, for a nine days' run, indicate that the European corn borer exhibit attracted much attention and was a source of interest to thousands of people. The display, prepared at the western section headquarters in Springfield, Ohio, was transported to Chicago by truck and set up in ample time for the first day of the event. Some of the outstanding items in the exhibit were as follows: Life cycle of the borer, the injury done by it, and the parasites which prey upon the pest; larvae of the borer and of 18 other insects sometimes mistaken for it; borer moths collected from various parts of the world and moths of the family Pyralidae; damage to corn plants by the corn borer in comparison with that by the ear worm, smartweed borer, and lotus borer; seasonal activities and development of the corn borer, including flight of the moths, laying of egg masses on the leaves, depredations in growing plants during the larval stage, winter hibernation, spring resumption of larval functioning, the pupation period, and emergence of the new generation of moths. In another section, loss in yields was shown in a comparison between ears from infested and noninfested plants, in two small cribs with the same number of ears in each. Illustration of loss in yield further was given in 5 lots of ears each from 25 plants, with the following number of borers per plant: 5, 10, 15, 25, 30. A section was devoted to plowing, one of the several methods of control recommended. A full size table model of two turned furrows of a corn stubble field was shown. One-half of the model represented clean and satisfactory plowing, while the other half depicted a slovenly piece of work. The background of the exhibit was a panorama of a field of corn stubble ready to plow. A striking feature was a longitudinal section of a plowed furrow; one-half showing the debris lying in the bottom, and the other half showing the debris near the top and along the surface, emphasizing the relative merits of good and poor plowing for control. Different phases of the quarantine enforcement were graphically presented. Present quarantine lines and the quarantined areas by States were shown on an outline map of the United States. The point of origin and the destination of 46 interceptions of ear corn at quarantine stations also were indicated on the map. Two miniature grain cars were featured, one loaded with clean shelled corn, permitted movement from the infested to noninfested areas without interference, and the other with corn containing parts of cobs, debris, etc., the movement of which is prohibited from quarantined territory. Two corn cleaning screens, such as are used by elevators,

also were exhibited; one showing the proper type, and the other allowing cobs or debris to drop through with the corn in the process of cleaning. Two live stock cars were displayed, one loaded with animals bedded down with stalks and debris, in violation of the regulations, and the other empty and in the process of cleaning before use in reshipment of cargoes from within the quarantined section. The centerpiece in the background was an illuminated cut-out sign depicting a quarantine station. A question box with answers was arranged in a form which permitted accurate mechanical operation. Questions were painted along the rim of a dial at the top, and just above and behind the dial there was a panel on which a pointer was set in the shape of an arrow which moved and pointed to the answers. When the interrogation mark on the dial was placed at a question, a button, conveniently at hand, was pressed and the arrow turned clockwise with the head stopping at the answer on the panel. Twelve of the questions most frequently asked by the general public were placed on the box and appropriate answers on the panel.

The oven for heat treating material to be moved outside the quarantined area was completed in time to treat all the ear corn exhibits for the International Live Stock Exposition and Hay and Grain Show at Chicago which growers had submitted from the quarantined area. Corn was received as follows: From Canada, 1 lot, 10 ears; from Pennsylvania, 5 lots, 70 ears; from Indiana, 15 lots, 153 ears; from New York, 4 lots, 71 ears; from Michigan, 16 lots, 192 ears; from Ohio, 9 lots, 100 ears; total, 50 lots, 596 ears. The oven was constructed as follows: 1-5/16" x 1/8" angle iron used for the frame, on which was riveted 1/16" galvanized sheet iron for both the outer and inner walls and 2 1/2" x 2 1/2" x 1/8" angle iron for the door frame. Inside dimensions were 40" x 52" x 64" and the outside 48" x 60" x 72", leaving a space of 4" between the walls; 1/2" of this space was taken up on each wall by insulation of sheet asbestos packed with mineral wool, giving an air space on all sides of 3". Six electric heaters were placed on the floor of the inner wall, each heater equipped with an independent switch on the outside which permitted the use of any number desired. Four inches above the heaters is a false bottom, of 4" x 1/8" iron rods placed at a graduated distance from each other, from 0 at the back to 3/8" at the front, to equalize the amount of heat which the motor draws through the air duct at the back for circulation. The door was constructed the same as the walls of the oven in a manner that closed both the outer and inner walls of the door flush against the outer and inner openings of the oven. Metal weather strips were placed on both the outer and inner walls of the door to prevent any loss of heat. The door is supported by a large caster while open. The total weight of the oven is approximately 2,100 pounds, and it was erected on wooden skids for moving. The inside space above the false floor is divided equally for six trays, 40" x 63", which are about 6 1/2" apart. Each tray will hold approximately 100 ears of corn, average size. The trays when removed from the oven are placed on a rack for cooling. Even temperatures are maintained at all points of the oven by a blower carrying air from the false bottom up through a duct at the

back, and is distributed by blower down through the center of the top. The temperature is regulated by a thermostat mounted on the top, with a capillary tube running through the side to the center. Corn which had been treated won high honors at the Hay and Grain Show, including first prize in the white dent classification, giving evidence that it had not been injured by the process. After the entries had been judged, typewritten slips were attached to each collection of treated ears, explaining how the corn had been subjected to the heat treatment, so that visitors to the exhibit could see for themselves that it had sustained no injury.

Over 100,000 copies of the Massachusetts State law relative to the disposition of cornstalks and stubble in connection with the suppression of the European corn borer have been distributed over rural routes and to post office box holders. This distribution will be followed by a canvass of the agricultural and suburban sections of Barnstable, Bristol, Essex, Middlesex, Norfolk, Plymouth, and Worcester Counties, by State inspectors. Fifteen men have been assigned to this work, and all persons who have not complied with the law will be required to appear in person at the State House, in Boston, or at some other conveniently located State or county building, for a hearing. Eight hundred "first offenders" were compelled to attend these hearings last year and all were placed on probation. That there were no "second offenders" and that it was unnecessary in any case to impose severe penalties speaks well for the operation of the law. The work of the State inspectors will be supplemented by a more intensive "farm to farm" campaign by experienced Federal inspectors, working in cooperation with the State, through the Greater Boston market garden section, which includes about 35 towns containing small farms, gardens, and greenhouses supplying the wholesale markets with fresh vegetables, plants, and flowers. This district covers the territory included in the first Federal and State quarantine against the European corn borer and contains heavily infested neighborhoods.

Conditions in the eastern shore counties of Virginia, where a first-record corn borer infestation was found late in the fall, as developed in a survey made during November, are much different from any existing elsewhere in the infested areas and present some unusual problems with reference to control practices. About half of the farmers in Accomac County, the scene of the new infestation, still follow the old-time custom of "topping" their corn, just above the ears, and stripping the leaves from the stalks below that point. This handling, which was the general practice wherever corn was grown in the South up to 40 or 50 years ago, supplies fodder claimed to have a maximum of feed value, as the tops are cut and the blades pulled while the corn is yet green. Ears are harvested from the topped stalks at convenient periods during the winter, mostly in December. Sometimes the leaves are left, below the ears, and the stalks cut, at a height of about 6 inches, after the corn has been pulled off. In other cases, the stalks are allowed to stand for a while, and afterwards cut down before spring plowing is done. On the other half of the crop, corn is cut and shocked in the same manner as elsewhere in the grain-

growing regions. Obviously, the extraordinary amount of stalks and stubble to be taken into consideration makes the approved method of control by turning under more or less impracticable, and a further complication is introduced by the light, sandy, and loamy soil, ranging from 4 to 6 inches in depth and customarily subjected to shallow plowing only. In Accomac and Northampton Counties, some 70,000 acres of corn are cultivated in a normal year. Arrangements were carried forward for the cleaning up of from 75 to 100 acres around the location of the infestation previously found.

Men are to be placed in the field by the Rhode Island department of agriculture, beginning on December 1, to make a thorough survey of all premises on which corn was grown last season and ascertain how far there has been compliance with the State law requiring that all stubble and debris shall be plowed under. Enforcement of the law in 1930, it is pointed out by the officials in their announcement of the investigation, resulted in an average reduction in infestation of approximately 50 per cent, in the State as a whole, and made possible the marketing of the best crop of early sweet corn produced in three years. Only one county reported a heavy increase in corn borer population, it is stated, and special attention will be accorded this section in the forthcoming clean-up campaign. Warnings have been widely published in the State press that corn growers who fail to conform to the provision of the law will be held to strict accountability under the penalties prescribed.

Proceedings instituted on October 26 against Clarence Shipp, 231 Paul Street, Belvidere, N. J., for a violation of the European corn borer quarantine on September 4, were concluded on November 17. The violation involved the transportation via rowboat of 36 ears of corn, grown in the one-generation area, across the Delaware River from Riverton, Pa., to Belvidere, N. J. Just prior to the violation the defendant had been refused permission to walk across the bridge with the corn. He appeared before Judge George M. Bourquin, in the District Court at Trenton, and entered a plea of guilty. In view of the small quantity of corn involved and of the poverty of the defendant, a fine of only $3 was imposed.

In collecting additional information concerning infestations of the corn borer and crop damage resulting therefrom, Mr. Bartley, of the South Norwalk headquarters, visited farmers, canners, and county agents in the western, Lake Ontario, and Albany sections of New York, during the latter part of November. Data from these sources indicate that growers of early-planted corn in several of the counties covered sustained considerable losses. The survey conducted by Mr. Bartley in this connection supplemented a similar one made by Mr. Crossman some weeks previous.

Commercial damage to sweet corn, amounting to at least 10 per cent, as a consequence of heavy infestations of the European corn borer, has

been reported during the current season from the southwestern part of Vermont, according to information supplied the press by the State department of agriculture. Spread is said to have been observed from not far distant sections of New York which are heavily infested. Control by plowing under of all corn stubble and waste according to approved methods is urged upon Vermont farmers by the plant pest authorities of the State.

The remaining road patrols and vehicle inspection stations in the eastern section of corn borer control work were discontinued on November 14. These quarantine line activities had been confined to New York City and vicinity for some time before that date.

Shipments of the new crop of winter sweet corn grown in Florida first were reported as arriving at the Washington Market, in New York City, on November 16. This green corn on the cob was packed in crates. Only limited quantities were offered for reshipment under permit.

Late fall crops of Lima beans supplied material for shipments to New York from California, Cuba, and some of the Southern States, which began to come through in the early part of November.

Exclusive or Combination Japanese Beetle Work

Project and field leaders in enforcement of the Japanese beetle quarantine were in conference for two days at the South Norwalk headquarters on November 16 and 17. The discussions covered a wide range of pertinent subjects and many interesting points were developed. Practices and procedure which have given them the best results were explained in detail by practically all of the men who have supervisory duties in the various districts, almost every one of them bringing out numerous points which apparently were of interest and value to others as suggesting different and improved methods. Expressions of opinion were unanimous as to the desirability of uniformity in the enforcement of the regulations and with respect to the need for preventing spread of the beetle. The worth of good judgment and the call for exercise of common horse sense in contacts with the public also were stressed by several. A better understanding between headquarters officials and field office men as to the problems confronting each group appears to have been materially advanced, as one of the results of the meeting. Nearly all of those who participated gave expressions at the end of the sessions indicating hope that other like conferences could be arranged in the future.

Lead arsenate treatments of isolated infestations were begun at Elmira, N. Y., on November 2 and concluded on the 5th. Properties on which 21 beetles were collected by scouts during the past summer are in close proximity, therefore treatment was applied to a continuous section

of some 18 acres. At the conclusion of the work two of the four spraying outfits used were returned to the South Norwalk headquarters. From Elmira, two spray outfits proceeded to Watkins Glen, N. Y., where arsenate of lead was applied to approximately four acres on November 6. The three finds of a single beetle each in traps were all in close proximity to the Belknap Hotel, at the entrance to the Glen, so that a contiguous tract was treated. On November 9 about three acres of ground were treated in Little Falls, N. Y., surrounding the premises on which seven beetles were collected during the summer of 1931. Treating of 32 acres in Richmond, Va., was finished on November 9, in this operation, begun on October 24, four separated areas having been covered. Infestations in Richmond discovered last summer consisted of 5 beetles collected by scouts and 10 additional beetles recovered after the distribution of traps. After finishing in Richmond, two sprayer trucks proceeded to Charleston, S. C., where treating began on November 12 and was finished on the 23rd, 23 acres having been given attention. Unfavorable working conditions in congested residential districts slowed down the work. Three more or less isolated tracts were treated in and around the four locations at which single beetles were trapped last summer. Sprayer trucks were en route to the South Norwalk headquarters at the end of the month.

Steps for additional control operations next summer, in densely beetle infested sections of Philadelphia, were taken during the month. The demonstration contemplates the treatment of a number of vacant lots with dosage of arsenate of lead toxic to larval survival, planting of smartweed on the treated soil, and subsequent trapping operations on the plot during the period of adult beetle flight. Smartweed, preferred as a food plant by the insect, will attract and feed large beetle populations. Traps with geraniol and eugenol bait will draw and catch the pests in great numbers. Oviposition in the poisoned soil will not perpetuate the insects, but will result in high mortality of the grubs. The intention of this control measure is to reduce by the millions, if possible, the beetle population. Preparation of six vacant lots was nearing completion at the end of the month, permission having been secured for free use of seven. One of the lots is reserved for treatment and seeding in the spring. Arsenate of lead is spread and harrowed thoroughly. Smartweed planting is accomplished by broadcasting. In most cases the broadcasted seed is lightly harrowed. The lots are distributed throughout the city, in sections known to have many beetles. On another plot, containing one-half acre, where there was already a rank growth of tall smartweed, lead arsenate was spread on the soil to be washed in by the rains. One-half acre of ground at the White Horse district headquarters has also been treated, and a half acre is reserved for spring treatment.

After obtaining a "buyer's button" at the Hammonton, N. J., berry market on June 29, 1931, Carmon Micale of Syracuse, N. Y., purchased 24 crates of berries. Informed by the market master that carbon

disulphide treatment was necessary before his berries might be certified for movement to Syracuse, the purchaser placed the crates in the fumigation house. Micale refused to pay the treating fee, so his fruits were not fumigated. En route to his destination with the uncertified berries, he was stopped by road inspectors stationed at Factoryville, Pa. Despite warnings as to the consequences, he proceeded to Syracuse with the contraband. A criminal information was filed against the violator in the United States District Court at Syracuse. A plea of guilty was filed by the defendant on November 21 and he was fined $50.

Considerable outside work was done during the month in mapping nursery establishments recently or scantily infested and apparently eligible for Class II and III split-classification. Erection of suitable permanent fences or the establishment of other satisfactory boundaries to clearly mark the units subdivided as Class II on Class III premises was supervised in a number of establishments.

Road patrol activities on the southern and western boundaries of the lightly infested areas were abandoned on November 30. Several inspectors stationed at these posts had been laid off earlier in the month. Discontinuance of quarantine line work at these posts occasioned the dismantling of 19 road posts and the dismissal of 20 additional road inspectors.

MEXICAN FRUIT WORM

Two adult *Anastrepha ludens* were taken November 6 and 9 in traps maintained in a premise in Matamoros. Following the finding of these adults four applications of arsenical poison bait spray were made to the trees in 22 premises surrounding the point of infestation. Edible sweet oranges were growing in four of these premises. Cloths about 4 feet square were suspended in these trees and the poison applied to these cloths. Occupants of two premises objected to the spraying work and rather than build up opposition to the work the spraying on these premises was omitted.

An increase was noted in the amount of infested fruit recovered from the market in Matamoros. Guavas, sweet limes, oranges, and pears were found to be infested. Two hundred and sixty-four larvae were taken from these fruits.

No *Anastrepha* were found on the American side of the river.

The movement of fruit from the Valley was decidedly sluggish during the month due to a weak market and the lack of large sizes of fruit in

Valley groves. Valley fruit is still running largely to 96s and smaller, and the market is demanding larger size fruit. Some growth was noted in the fruit during the month; groves which had been ring picked for 96s and larger at the beginning of the month showed a fair percentage of 80s and larger when picked again at the end of the month. A total of 668 cars were moved by rail during the month, and approximately 272 carloads, or about 40 per cent of the entire movement, was by truck. A casual check of the destination of these trucks showed the farthest points to which fruit is being trucked are New York, several points in Kansas and Missouri, and Denver, Colo. Naturally the great majority of fruit going out by truck is destined to Texas points.

The Rio Grande City road traffic inspection station was opened on the 16th. Very little traffic moves over this road and, accordingly, only one inspector was assigned to duty at this station. Confiscations at both stations have been fairly light considering the volume of fruit passing.

Groves were found to be in good condition during the month. The continued dry weather with several days of high winds caused a heavy drop of fruit which put the growers to considerable extra trouble and expense in picking it up and burying it. A total of 7,043 inspections were made during the month. Of the groves inspected it was necessary to withhold "Certificates of Inspection" on 516 on account of drop fruit and weedy condition of the groves.

PINK BOLLWORM

Picking and ginning of the cotton crop in the regulated areas progressed very rapidly during the first part of November. Weather conditions, however, interfered considerably during the latter part of the month. In a number of the districts there are many fields in which no picking has been done. Practically all of the cotton is now open, consequently it will all be gathered at one picking. It was thought that ginning would be completed earlier than usual this season, but now that winter rains have begun it appears that the season will be prolonged as usual. At the end of November 174,501 bales had been ginned. The cold rains have affected the seed sterilizers somewhat, but as a whole seed sterilization continued to be very satisfactory.

In last month's letter it was stated that very little cotton had been shipped from the regulated areas and as a result practically all gin yards were full. The latter part of the month a reduction of freight rates on cotton went into effect and since that time cotton has been moving very rapidly. This has resulted in a considerable increase in activities at the various compresses and fumigation plants. In fact, the

compresses in the El Paso Valley have been unable to handle the cotton as fast as it comes in.

With the exception of the Tucson district and the Salt River Valley, both in Arizona, specimens have been found in trash from practically all gins in the regulated areas; therefore, most of the gin trash machines were closed during the month. Two machines are still operating in California in addition to those in the Salt River Valley. The machines operating outside of the regulated area in the western extension of Texas were also closed the latter part of the month, and the men are now devoting their time to field inspection.

The results of all gin trash inspection outside of the regulated areas have been negative this season. A number of specimens were taken by the machines operating within the regulated areas during November; however, these did not involve any new territory. All of the specimens taken in the Salt River Valley during November were in trash from the Gilbert Gin Company, at Gilbert, Ariz. Although none of these specimens have been traced directly to the fields as yet, the information secured from the ginning records indicates that the worms originated in fields of stub cotton in the vicinity of Chandler and Goodyear.

A new record finding was made by the gin trash machine in the Big Bend district of Texas on November 3. One bale of cotton produced about three-fourths bushel of trash, which contained 8,767 specimens of the pink bollworm. The first frost occurred in the Big Bend on the 19th of the month, and since that date the number of worms per bushel in trash has been decreasing. There has also been a considerable decrease in the number of pupae taken.

At the beginning of the season regulations were promulgated by the New Mexico authorities calling for the daily disposal of gin trash until November 15, the average date for a killing frost being before that time. This season, since there had not been a killing frost by the 15th, our gin supervisors requested the ginners to continue the daily disposal of trash until there was one. It is very encouraging to note that most of the ginners very readily agreed to this.

Mention was made in the last letter concerning the finding of a specimen of the Thurberia weevil in trash from the gin at Coolidge. Additional specimens have since been taken from gin trash and also found in the field. This cotton is grown at Eloy, which is outside the area regulated on account of the Thurberia weevil. On November 10 the Arizona Commission of Agriculture and Horticulture met and extended the Thurberia Weevil Quarantine so as to include this new area.

The number of confiscations made at the road stations continues to show a slight increase. Only one of the confiscations was infested with the pink bollworm, this interception being made at the Alpine, Tex.,

station on November 6. This interception consisted of 37 cottonseed taken from cracks in the body of a truck, which contained two dead larvae. The driver readily informed our inspector that he had hauled seed from the Big Bend, but that his truck had been swept thoroughly. This finding indicates that a very close inspection is being made at the stations. A rather unusual confiscation was made at the Van Horn, Tex., station on November 1. Five men passed the station on foot, and as one of the men was carrying his clothes in a pick sack our inspector stopped them for inspection. About one-half pound of seed cotton was found in the sack. One of the other men had a small amount of seed cotton in his suit case, while another was carrying two green bolls.

The latter part of November a delegation of citizens and officials from the State of Arizona visited the Big Bend section of Texas, for the purpose of seeing actual field damage done by the pink bollworm. Among those making the trip was the Chairman of the Commission of Agriculture and Horticulture, State Entomologist, County Agent of Maricopa County, a newspaper editor, and several prominent cotton farmers. These men, especially the farmers of the party, were all very much surprised to see the damage that could be done by the pink bollworm. They all expressed themselves as being very heartily in favor of continuing the eradication program in the Salt River Valley.

An estimate of the damage done by the pink bollworm to cotton in the Big Bend section has recently been made. Counts were made of the pickable and nonpickable bolls. Pickable bolls were counted as those which the ordinary picker would take, that is, bolls showing no injury and those showing injury to only one lock. Bolls showing injury to two or more locks were counted as nonpickable. The following table shows the results of the counts made in 14 fields in the vicinity of Presidio. Actual damage will run higher, as the injury to the lint and seed of the cotton that was picked was not taken into account:

Damage of the pink bollworm to the 1931 cotton crop
Big Bend section of Texas

(Records made on November 12, 13, 14, 1931)

Field No.	Location	Number bolls pickable	Number bolls unpickable	Total bolls	Per cent damage
1	1 Mi. SE Presidio	1146	291	1437	20.25
2	1½ " " "	842	462	1304	35.43
3	2 " " "	1012	596	1604	37.06
4	2½ " " "	870	231	1101	20.98
5	6 " " "	1031	325	1356	23.96
6	½ " S "	1680	597	2277	26.22
7	2½ " NW "	1063	225	1288	17.47
8	3 " " "	772	278	1050	26.65
9	5 " " "	1065	370	1435	25.78
10	5½ " " "	607	106	713	14.87
11	12 " " "	574	64	638	10.03
12	13 " " "	541	68	609	11.16
13	20 " " "	1009	154	1163	13.24
14	21 " " "	927	133	1060	12.55
	Average damage Presidio section				21.12

PREVENTING SPREAD OF MOTHS

Scouting work for the gipsy moth was greatly reduced during November because of the fact that there were approximately 100 men from the scouting and extermination force assigned to temporary duty on quarantine work. These men were engaged in the seasonal inspection of evergreen boughs, Christmas greenery, and Christmas trees to be shipped out of the area quarantined for the gipsy moth.

Of the 191,557 acres of woodland planned to be scouted by the Federal force in the Adirondack region of the New York barrier zone during the current fiscal year, approximately 150,000 acres have been examined with negative results.

Scouting work for the gipsy moth was concluded during November with negative results in Crown Point, N. Y., a town having more than 30,000 acres of woodland, and the men working there were transferred to other

Losses of the ship Hollywood in the 1941 Pacific Ocean
Air Raid against the Japs

Disaster occurs on November 7th, 14, 1941

Plane No.	Location	Number Killed	Injured	Wounded	Total	Year
1	Mt. de Tenerife	1,[illegible]	1[illegible]	1[illegible]	1[illegible]	[illegible]
2	" "	8[illegible]	1[illegible]	1[illegible]	1[illegible]	[illegible]
3	" "	1,[illegible]	1[illegible]	1[illegible]	1[illegible]	[illegible]
4	" "	9[illegible]	2[illegible]	1[illegible]	1[illegible]	[illegible]
5	" "	1[illegible]	3[illegible]	1[illegible]	1[illegible]	[illegible]
6	" "	1[illegible]	1[illegible]	1[illegible]	1[illegible]	[illegible]
7	" "	1[illegible]	8[illegible]	1[illegible]	1[illegible]	[illegible]
8	" "	1[illegible]	1[illegible]	1[illegible]	1[illegible]	[illegible]
9	" "	1[illegible]	1[illegible]	1[illegible]	1[illegible]	[illegible]
10	" "	8[illegible]	1[illegible]	1[illegible]	1[illegible]	[illegible]
11	" "	4[illegible]	6[illegible]	1[illegible]	1[illegible]	[illegible]
12	" "	1[illegible]	7[illegible]	1[illegible]	1[illegible]	[illegible]
13	" "	1[illegible]	1[illegible]	1[illegible]	1[illegible]	[illegible]
14	" "	3[illegible]	1[illegible]	1[illegible]	1[illegible]	[illegible]
	Average Loss per Year					[illegible]

work. At the close of November, scouting crews were working in Putnam and Dresden, Washington County, N. Y., and in Hague, Warren County, N. Y. No gipsy moth infestations were found during November in the area regularly scouted by the Federal crews in New York State.

On November 30 a small crew was assigned to intensive scouting work planned for this season around old colony sites in the town of New Marlboro, Berkshire County, Mass. This is one of the towns in southwestern Massachusetts where numerous gipsy moth infestations have been found in the past which were attributed to wind spread from the infested territory east of the barrier zone.

Preliminary scouting work was continued during November with negative results in Beckett, Monterey, and Tyringham, Mass., and Kent and Litchfield, Conn., in the vicinity of where gipsy moth male adults were caught at the assembling cages.

The New York Conservation Department has been allotted the sum of $50,000 for gipsy moth work from an appropriation for the relief of the unemployed. The appropriation was passed at a special session of the New York legislature this fall. The training of men for gipsy moth work started November 9 and there are several crews now at work. The allotment will be expended for gipsy moth work by the Conservation Department in Washington, Putnam, and Westchester Counties, N. Y.

The New York Conservation Department has reported that there were scouting crews engaged in the examination of wooded areas during November in East Fishkill, Kent, Southeast, and Phillipstown, all in Dutchess County, N. Y., and in Newcastle, Bedford, White Plains, and Harrison, all in Westchester County, N. Y. The map received from the New York Conservation Department which gave the above information also indicated that scouting work was concluded in LaGrange and Fishkill, Dutchess County, N. Y., with negative results. In addition to the above scouting crews, there is one crew engaged in checking work around old colony sites in Milan, Dutchess County, N. Y.

The Conservation Department has reported 12 gipsy moth infested locations on Long Island in Nassau County up to and including November 30, of which 9 are situated in North Hempstead and the other 3 in Oyster Bay. Ten of these infestations are within a 3-mile radius of No. Roslyn, L. I., the centre of the original infestation found on Long Island during the fiscal year 1930.

Clean-up work on Long Island is reported as progressing slowly in that it is limited to days when it is dark, foggy, or otherwise unfavorable for scouting work. There are New York State scouting crews working in North Hempstead, Oyster Bay, and Hempstead, Long Island, N. Y., the work in the latter place starting during November. These three towns are in Nassau County.

During November, there were several employees of the scouting and extermination project caught in fox traps that were concealed beneath leaves and other debris. These employees were not injured by the experience because the type of dress adopted by the scouts consists in part of leather puttees or high leather boots and also because they were fortunate enough not to step onto stronger traps such as are used in trapping of bears and other large animals. However negligible it may seem, these hazards, in some instances, have a slight bearing on the quality of the scouting work accomplished.

Although the gipsy moth egg cluster usually hatches from the latter part of April to the first half of May and the larvae issuing from the eggs become full grown the latter part of July and the early part of August, there are rare occasions when gipsy moth egg clusters are found hatching in the fall of the year. An instance of this was discovered just east of the barrier zone in back of Bald Mountain, Shelburne Falls, Mass., on September 11. Approximately 25 gipsy moth larvae were found on an egg cluster which was about 5 feet from the ground on the east side of an apple tree. Closer inspection revealed 12 additional egg clusters in a cavity of a dead limb on the same tree and larvae were hatching from 3 of these egg clusters. The fall hatching of gipsy moth egg clusters is so rare that it is unimportant as a control factor and consequently very little study or investigation has been made to determine the facts in the case. There were no temperature or other weather data available which would have a bearing on this fall hatching except that in a general way the weather was unusually warm for that time of the year.

During November there were 143 lots of material offered for inspection in New Jersey, which represented a decrease in the number of shipments and the quantities of materials comprising these shipments over the previous month. No gipsy moths were found on these shipments.

On Long Island, in Nassau County, there was also a decrease in the volume of stock offered for inspection, there being 126 lots examined and certified for shipment during November. No gipsy moths were found on these shipments.

At one time, cable reels used by the maintenance departments of telephone companies operating in the quarantined areas were difficult to inspect for infestation by the gipsy moth. They were constructed entirely of wood, and the inner drum on which the cable was wound was not made in such a manner as to prevent the entrance of full-grown larvae. In consequence, egg clusters were sometimes deposited inside of this inner drum, and in order to reach them the reel had to be taken apart. The cable reels now used have pressed on steel drums whose only openings are the two, one on either side, through which a steel bar is placed to act as an axle when unwinding the cable. To avoid the possibility of the drum becoming infested on the inside, the telephone companies provide plugs which they require to be placed in the holes at all times except

of course when the reels are mounted for unwinding. During the unwinding the holes are filled by the steel axle and close fitting steel plates so that larvae cannot enter. Particular care is exercised by the telephone employees as they realize that if the inner drums did become infested, their dismantling for inspection would be a difficult and expensive task.

In general, the inspection of quarantined products for shipment to points outside of the quarantined area is made just prior to shipment. After inspection, the articles are packed or loaded and then certified. With certain manufactured products, such as wreaths and other decorative Christmas pieces, the materials may be put together in such a way that thorough inspection can not be made and as a result the usual procedure of inspection is not possible. For all such articles when inspection of the finished products can not be made, the raw materials are examined before used in the process of manufacture and the proper precautions taken so that only inspected materials will be used. In most cases, the shippers will send out some if not many articles to points within the quarantined area where certification is not necessary, but as it is impossible to tell in advance of manufacture just what materials may be used for the inside shipments, all are inspected, and then at the time of shipment, certificates are issued only for those which are consigned to points outside of the quarantined area.

The spruce bough industry in southern Vermont and western Massachusetts, which was explained in the December News Letter, was practically completed in November. Approximately 1,300 tons of spruce boughs were inspected up to November 30, which is about 35 per cent increase in the amount of boughs submitted for inspection this year as over the quantity inspected and shipped last year. The inspected boughs are being rapidly certified and shipped to points outside the quarantined area.

In connection with the spruce bough inspection, 15 tons of balsam fir boughs and 10 tons of hemlock boughs have been inspected and certified for shipment. These were shipped in 100-pound bales and are used for making up wreaths and other decorative pieces for Christmas use. The baling process of shipping this stock enables the florists to make their own creations as ordered. Christmas tree inspection is purely seasonal, and the volume of business is so great over such a short period in November and December that it is necessary every year to arrange with the scouting and extermination project for the temporary transfer of approximately 100 men trained in gipsy moth work to take care of the inspection and certification work incidental to the Christmas tree and greenery industries. The inspection of Christmas trees in the quarantined area of Maine, New Hampshire, Vermont, and western Massachusetts started November 2 and reached its maxium point about November 25. The Christmas tree operators were unusually late in assembling the trees

for inspection this season due to the fact that this November was the warmest on record for this type of inspection. The trees are conveyed to a shipping or assembling point and the bundles opened by the operators to allow for a tree-by-tree inspection for the gipsy moth. The trees when shipped are loaded onto flat cars, at which time a certificate is issued covering the shipment based on the inspection at the time the trees were assembled and bunched at the shipping point. The cutting of car stakes, which are necessary in loading platform cars, is another work associated with this industry. A car will take from 14 to 22 stakes, 10 feet in height and about 5 to 8 inches in diameter, and considering that there were approximately 850 cars loaded and shipped last year, a great deal of additional inspection work is required for this type of product. The Christmas trees cut in the quarantined gipsy moth area are shipped to practically every State in the Union, although for the most part they are destined to Illinois, New Jersey, New York, Ohio, Pennsylvania, and the New England States. This year inquiries have been received by the operators relative to shipments of Christmas trees to Italy, Germany, and England.

A new revision of the satin moth quarantine No. 53 has been issued by the Secretary of Agriculture to become effective December 1, 1931. In this revision, the territory under quarantine has been extended in Maine, Vermont, Massachusetts, and Connecticut to include within the regulated area all towns beyond the old regulated area which have been found to be infested with this insect. In Maine approximately 757 square miles were added to the regulated area and in this section are located 18 towns or other geographical units. This added area is located in Piscataquis, Somerset, and Franklin Counties. In Vermont one town of approximately 47 square miles in Orange County was added to the regulated area. In Massachusetts the extension was in Berkshire and Franklin Counties, and consisted of 8 towns of approximately 177 square miles. In Connecticut the area extensions were mainly in Hartford and Litchfield Counties, although a few towns were added in both New Haven and Fairfield Counties. In all, 24 towns of approximately 569 square miles were added to the regulated area in Connecticut. The regulations in so far as they affect poplars and willows, or parts thereof capable of propagation, remain the same. The shipment of these trees or parts from the regulated area is not permitted. As the regulated area has been extended from year to year, more and more nurseries have been brought into the area from which the shipment of poplars and willows is not permitted. In many cases these nurseries receive orders for poplar and willow trees which they are unable to fill. The regulations of some other quarantines permit the shipment from the quarantined areas of products which originate outside, but this has not been permitted under the regulations of quarantine No. 53. In the revision, a new regulation provides that these trees and parts may be brought into the regulated area after October 1 of any year, but they must be shipped prior to April 30 of the following year. In addition, it is provided that such trees or parts while within the regulated area must be safeguarded by being segregated so that there will be no possibility of their becoming infested. All shipments of these trees and parts to points outside of the regulated area will go under permit.

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