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MONTHLY LETTER OF THE BUREAU OF ENTOMOLOGY.

U. S. DEPARTMENT OF AGRICULTURE.

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MANUAL OF DANGEROUS INSECTS LIABLE TO BE IMPORTED INTO THE UNITED STATES.

At the request of the Federal Horticultural Board the bureau has had in preparation for a number of months a manual of dangerous insects liable to be imported into the United States. This manual is now rapidly approaching completion. It is intended to serve as a guide for inspectors and field entomologists to the insects likely to be received on foreign stock.

AN INSECT ENEMY OF THE FOUR-LINED LEAF-BUG.

Members of the field force of the bureau will have noticed an interesting article in the June number of the Canadian Entomologist, by Messrs. Crosby and Matheson, of Cornell University, who have found that a Chalcidid parasite, which they describe as *Cirrospilus ovisugosus*, in its larval state feeds on the eggs of *Pocilocapsus lineatus* in the pith of plants in which these eggs are inserted. This is a new record of a most interesting habit, and it is suggested to field workers of the bureau that when quite convenient they collect the eggs of this leaf-bug or of allied species and dissect the stems in searching for the parasite larva. They should be found in the autumn or through the winter. [L. O. H.]

SPECIMENS OF CUTWORMS WANTED FOR THE TENNESSEE LABORATORY.

S. E. Crumb, of Clarksville, Tenn., laboratory has been studying the tobacco cutworms for several years with special reference to the differentiation of the species in all stages. He has drawn up descriptions of sixteen of the eighteen larvæ which attack tobacco, and has constructed a key for the differentiation of the species which has been found to be of great practical use. It is desired that Mr. Crumb extend his studies to include cutworms attacking other crops. Agents of the bureau who have such material are therefore requested to send specimens for study and identification. The specimens should be sent alive when possible. The stage and habits should be indicated. He can also use to advantage eggs and pupæ of cutworm moths. They should also be sent to him alive. [L. O. H.]

NEWSPAPER CLIPPINGS WANTED.

Dr. E. F. Phillips, in charge of bee-culture investigations, asks that bureau employees in the field send to him all newspaper articles appearing in papers not published in Washington, relating in any manner to bees or bee culture, popular, technical, or otherwise.

It is well to add that field men should send any and all clippings relating to any forms of insects or insect damage, domestic or foreign, to the chief of the bureau.

There is a small form, on which such clippings should be pasted, which will be furnished the field force upon application. [L. O. H.]

LIBRARY.

The librarian reminds all members of the bureau of the desirability of the prompt use and return of books borrowed from the bureau library or from other governmental libraries in Washington. This is necessary both for the convenience of our own staff and of others wishing to consult our library. If all books not personal property are kept together in one place in each office where they are readily accessible in case of urgent need by others, the annoyance of "lost books" will be greatly reduced.

A goodly number of author's separates have been added to the library during the past few months to the donors of which the library extends its thanks. Separates from nonentomological journals and from publications not emanating from the Department of Agriculture are especially desired. [M. C.]



NEW BOOKS.

- BAILEY, L. H. The standard cyclopedia of horticulture. v. 3 F-K. New York, 1915.
- BRUES, C. T., and MELANDER, A. L. Key to the families of North American insects. An introduction to the classification of insects. Boston and Pullman, 1915. 140 p.
- ESSIG, E. O. Injurious and beneficial insects of California. (Second edition.) Sacramento, May, 1915. 541 p. illus. (Supplement to the Monthly bulletin of the California State Commission of Horticulture.)
- KELLOGG, V. L., and DOANE, R. W. Elementary textbook of economic zoology and entomology. New York, 1915. 532 p.
- KIRBY, W. F. Orthoptera (Acridiidae). London, 1914. 276 p. (The fauna of British India, including Ceylon and Burma.)
- ONTARIO ENTOMOLOGICAL SOCIETY. Forty-fifth annual report, for 1914. Toronto, 1915. 152 p.
- SINCLAIR, JAMES. The entomological and ornithological collector's handbook. Los Angeles. [1915] 80 p.
- SINCLAIR, JAMES. Illustrated descriptive entomological collector's handbook and price list. Los Angeles. [1915] 46 p.

LAWN OR GARDEN ANTS.

There seems to be a rather exceptional abundance of the common little lawn ant, probably what is often called the garden ant (*Lasius niger*), this year. These little ants, yellowish brown in color, construct their small crater nests on lawns and pastures in enormous numbers, often a dozen or more to the square yard of surface. It is quite probable that these ants do not harm the grass of lawns and meadows, but on the contrary may be distinctly beneficial in their action, bringing up from the lower surfaces sand and earth to form a constant top dressing or soil mulch and at the same time permitting of better aeration of the earth, and in both these ways increasing fertility. It is the rare exception, if ever, that any of these ants enter houses in quest of food, and at least their stay is temporary. Their chief injurious rôle is in harboring plant lice over winter in their nests. Naturally they give a rather unsightly appearance to house lawns, and the little craters of sand are objectionable on putting greens, golf links, and tennis courts, and also on pavements where they work between the crevices of the paving stones or bricks. On these accounts it may occasionally be necessary to recommend methods of control and destruction.

The object of this note, however, is to ask the members of this bureau to make such studies and observations as they can during this summer to determine the abundance and possible damage or benefit from these ants, and to examine the nests to determine the nature of the underground channels and the food habits of the different species concerned. At the same time it would be very desirable to have collections made of the ants from nests, getting the queens if possible, as well as the workers, and sending such collections to this office for identification. Such records will give us a means of determining the distribution of the different species of common lawn and meadow ants, and a better knowledge of their economic importance. [C. L. M.]

SANE REMEDIES.

Next to preventing the loss from insects themselves, probably one of the greatest fields of usefulness for the economic entomologist now, and in the near future, is the preventing of waste and loss from the extravagant and unwise use of sprays and fumigants and other applications to control insect pests. The writer has, within the last two or three years, witnessed indiscriminate spraying of all the trees in Central Park, New York, by men who did not know what they were working against, spraying all trees alike, whether infested or not. The same exhibition has been made in the parks of Washington. Vast quantities of sprays have been put on trees in parks and along sidewalks in this city during the past spring, regardless of whether the trees needed any treatment or not. Similarly, every tree in many of the parks of this city has been banded for the last several years with a proprietary insect lime, which has been of little or no value to the trees as a means of protection and, it now develops, is doing them harm. This application forms an impervious coating which retains the moisture underneath and slowly rots the bark and creates a belt beneath which insects congregate both for hibernation and as a means of entrance into the rotting bark. The actual result, therefore, is diametrically opposed to the object aimed at and, from present appearances, if kept up would probably cause very great damage to, if not the loss of, the trees. Spraying with arsenicals should be done only when fully warranted and particularly for the reason that it puts an additional burden on the vitality of the plant and, even when no immediate injury is seen, some damage probably results, as illustrated by the fact that as a rule sprayed trees will ripen and drop their foliage considerably earlier in the autumn than unsprayed trees.

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A note of caution is perhaps also warranted to the agents of the Bureau of Entomology and others concerning the advice offered inquirers as to remedies for various insects. The natural impulse on the part of the expert is to recommend some standard remedial action in relation to any insect difficulty reported. Very often, however, the remedial action recommended, while perfectly sound, is not necessarily applicable to the particular condition reported, and may result in a vastly greater cost and harm than the insect complained of. A housewife, discovering a silver fish or a small quantity of ants, or a single bedbug recently arrived, naturally becomes very much alarmed as to the future security of her house and its contents, but it is always a wise precaution, before recommending fumigation with hydrocyanic-acid gas or elaborate treatment with powders or other expensive applications which may be more or less detrimental to walls, floors, or furniture, to advise simpler remedies and to make sure that the insect complained of is more than a chance discovery which may not be repeated perhaps for years. The same advice applies to indoor and outdoor plants, whether garden or field culture. Many of the insects which are ordinarily complained of and sent for determination are undoubtedly chance occurrences which have naturally aroused curiosity and perhaps excited fears, but which will doubtless disappear through natural agencies without any treatment.

The wise use of insecticides will repay many times their cost, and any damage to the plants will be largely offset by this gain, but the unintelligent or unnecessary use of insecticides may often do much harm and at least will be money and time wasted. [C. L. M.]

ERRATA.

On page 4 of the April letter, line 3, the words *Chalcodermus æneus* should have read *Lasioderma serricornis*.

On the same page, line 5, the words "special conditions" should have read "special information."

BEE CULTURE.

Dr. E. F. PHILLIPS, *In Charge*.

Mr. N. E. McIndoo did not go to Colorado as announced in the last monthly letter but on account of the destruction of the apple blossoms in New Mexico, went to Benton Harbor, Mich.

Mr. George S. Demuth went to Winchester, Va., recently to assist the county agent there in establishing apiaries in two county schools. Interest in beekeeping among farm demonstrators is increasing.

CEREAL AND FORAGE INSECT INVESTIGATIONS.

F. M. WEBSTER, *In Charge*.

Mr. Harrison E. Smith, of the Springfield, Mass., station, has already begun grasshopper investigations in Vermont and New Hampshire.

Mr. J. A. Hyslop of the Hagerstown, Md., laboratory, has just returned from a trip of investigation through New York and New Jersey, and reports the clover-root curculio making havoc in the alfalfa fields in eastern Pennsylvania.

Mr. J. J. Davis has returned from a trip of investigation of *Lachnosterna*, which included the States of Alabama, Mississippi, Louisiana, Texas, and Kansas.

Mr. C. W. Creel has returned to his field station at Forest Grove, Oreg.; and Mr. Rockwood has been temporarily detailed from Salt Lake City, Utah, to aid him.

Mr. J. D. Caffrey is now in charge of a field station at Maxwell, N. Mex.; engaged chiefly in range caterpillar investigations.

Mr. Irving R. Crawford, of South Dakota, appointed temporarily to assist Mr. Caffrey, proceeded first to San Diego to secure parasites of the allied species of *Hemileuca* and experiment in introducing them among the range caterpillars.

Mr. W. H. Larrimer was detailed to investigate a reported chinch bug outbreak in northern Texas.

Among the temporary appointees, who will commence their work in June, are the following: J. H. Newton, of Arizona, who will be attached to the laboratory at Tempe, Ariz.; George R. Bailey will be attached to the laboratory at Gainesville, Fla.; J. H. Hart to the laboratory

at Lafayette, Ind.; Eugene Craighead to the laboratory at Hagerstown, Md.; W. B. Cartwright to the laboratory at Nashville, Tenn.; Miss Helen Alwood to the laboratory at Charlottesville, Va.; Lloyd Cortelyou to the laboratory at Wellington, Kans.; Miss Sally Hughes to the laboratory at Forest Grove, Oreg.; and Manning Moody to the laboratory at Charleston, Mo.

DECIDUOUS FRUIT INSECT INVESTIGATIONS.

A. L. QUAINANCE, *In Charge.*

Mr. Dwight Isely, who has been spending the winter months in Washington for the purpose of making bibliographical records on grape insects, has returned to his field station at North East, Pa., where he will resume his duties in connection with grape-insect investigations.

Mr. R. A. Cushman, who has been spending the winter months in the National Museum, being engaged in systematic work on parasites of deciduous fruit insects, has returned to his headquarters at North East, Pa., where he will resume his investigations in connection with parasites of the grape berry moth and other parasites of deciduous fruit insects.

FOREST INSECT INVESTIGATIONS.

A. D. HOPKINS, *In Charge.*

Mr. Joseph J. De Gryse was appointed field assistant, March 1, and assigned to work at the Falls Church, Va., station. He is assisting Mr. Heinrich in forest Lepidoptera.

On May 12, Dr. Hopkins returned from a two weeks' stay at Kanawha Station, W. Va., where he was making observations on experiments with cedar for rustic work to avoid attack by insects, seasonal history, studies of insects in prepared trap trees and conducting phenological investigations.

On May 8, Mr. Carl Heinrich left for a 10-day trip to Long Island, N. Y., and Guys Mills, Pa., to secure rearing material of *Evetria buoliana* and to study cankerworm conditions.

Mr. Craighead and Dr. Böving returned at the end of April after a week's trip to Tyrone, Pa., spent in the investigation of depredations by, and control of the poplar borer (*Saperda calcarata*).

Recently Dr. W. E. Britton, State entomologist, Connecticut, has forwarded to the Bureau of Entomology specimens of larvæ and adults, determined by Mr. S. A. Rohwer of the branch of forest insects, as the European *Diprion similis*, which has been found established in a nursery at Elm City, Conn. How long this insect has been in this country or how well established is at present unknown, but from the evidence submitted by Dr. Britton it seems to be thoroughly established in the nursery mentioned. This insect, which, in Europe, is a serious enemy to coniferous trees, lays its eggs within the needles of the pine. The larvæ have black heads, black legs, and a greenish body which is marked with a number of black spots.

In connection with the Eastern Station at East Falls Church, Va., there has been established a nursery which contains a number of species of conifers and a number of species of oak. The purpose of the establishment of this nursery is to have immediately available small trees on which to conduct experiments dealing with oviposition, incubation periods, feeding of young larvæ, formation of galls, and the possibility of alternation of hosts of various forest tree insects. The Forest Service has supplied coniferous transplants in 100 lots of 21 different species, representing the following five genera: *Picea* (3 species); *Pinus* (12 species); *Abies* (3 species); *Larix* (2 species); *Pseudotsuga* (1 species). The oaks, which were secured by purchase, consist of 2 to 3 feet transplants of 10 individuals of each of the following species: *Quercus alba*, *Q. bicolor*, *Q. coccinea*, *Q. macrocarpa*, *Q. velutina*, *Q. rubra*, and *Q. palustris*.

The investigation of insects affecting shade trees and hardy ornamental shrubs has been assigned by the Chief of the Bureau of Entomology to this branch.

SOUTHERN FIELD CROP INSECT INVESTIGATIONS.

W. D. HUNTER, *In Charge.*

Mr. A. C. Morgan visited Washington for a short conference during the month.

The following temporary field assistants have been appointed and detailed for investigations of tobacco insects: Messrs. J. U. Gilmore, K. B. McKinney, A. D. Bosley, J. E. McMurtrey, and J. D. Smith.

Mr. F. L. McDonough is at Quincy, Fla., where he is conducting experiments in control of the tobacco bud worm. He will return to his regular station at Batesburg sometime during the month of June.

Mr. A. H. Jennings, who has been in New York City for some months with the Thompson Pellagra Commission, has gone to Mound, La., where he will be associated with Dr. D. L. Van Dine in the investigation of malaria mosquitoes. The work of the Bureau of Entomology on pellagra has been discontinued.

During the month a conference was held at Washington with representatives of the Bureau of Animal Industry to discuss the project relating to the control of the house fly and other insects in establishments operating under the meat inspection act, which was recently approved by the Secretary. Messrs. Bishopp and Laake of the Dallas laboratory attended this conference. Immediately thereafter these men, in company with Mr. Shaw, sanitary engineer of the Bureau of Animal Industry, visited the meat-packing establishments at Chicago, Kansas City, St. Louis, Fort Worth, and Dallas. Many interesting observations were made and a report has been submitted which will be placed in the hands of the inspectors of the Bureau of Animal Industry for their guidance in preventing the breeding of flies.

TROPICAL AND SUBTROPICAL INSECT INVESTIGATIONS.

C. L. MARLATT, *In Charge.*

Mr. R. S. Woglum, in charge of the California citrus work, is now in Washington for consultation.

Greenhouse insects, including insects affecting ornamental and flowering plants grown in the home, conservatory, cold-frames, and in hothouses or greenhouses, have been made the subject of a special project, to be directed by Mr. E. R. Sasser. Mr. A. D. Borden, who for the past year has been making life-history studies of the citrus mealy bug at Pasadena, Cal., has been transferred to Washington to assist in this project. The insect enemies of hothouse cultures of truck crops and small fruits, such as tomatoes, lettuce, cucumber, eggplant, strawberries, mushrooms, etc., will remain under the direction of the Office of Truck-Crop and Stored-Product Insect Investigations, as formerly. In connection with this new project Mr. Sasser will cooperate with the Bureau of Plant Industry of this department and with the officials in charge of the Botanic Garden and the propagating gardens and greenhouses of the War Department.

Mr. E. W. Rust recently returned from a visit to California. In addition to assisting in inspection work for the Federal Horticultural Board, Mr. Rust is devoting considerable time to the unarmored scales.

TRUCK CROP AND STORED PRODUCT INSECT INVESTIGATIONS.

F. H. CHITTENDEN, *In Charge.*

Mr. F. B. Milliken and Mr. F. M. Wadley have found it advisable to remove their headquarters, formerly at Garden City, Kans., and will establish new quarters at Wichita, Kans., where more attention can be given to insects injurious to stored grains, cereals, and other stored products.

A new insectary building 19 by 25 feet is just being completed for the branch of truck-crop and stored-product insect investigations of the Bureau of Entomology. In addition to a spacious outside insectary for housing breeding material, the building will furnish laboratory headquarters for stored-product insect tests and a number of effective appliances for testing methods of eliminating stored-product insects from prepared cereals and other materials infested by them are being installed.



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