

Reviews

A MERITORIOUS WORK

F. V. Theobald has just published a very extensive work of 550 pages, profusely illustrated, on "The Insect and Other Allied Pests of Orchard, Bush and Hothouse Fruits." This work is so important that it should be in the hands of every economic entomologist in the United States, and more especially so as American economic entomologists should keep thoroughly informed regarding the injurious insects of neighboring countries, which are liable at any time to be accidentally imported into the States. The price is thirty shillings and orders should be sent to the author at Wycourt, Wye (Kent), England.

L. O. HOWARD.

Insects Affecting Vegetables, by C. J. S. BETHUNE, Ont. Dep't. of Agric. Bull. 171, p. 1-64, 1909.

This very practical bulletin by a veteran in economic entomology gives brief accounts of the more common insects affecting garden vegetables, preventive and remedial measures being emphasized. The value of this publication is greatly increased by a similar discussion of fungous diseases and by directions for preparing the standard insecticides and fungicides. It can not but be most helpful to the readers for whom it is designed.

Spring Manual of Practice in Economic Zoology, by H. A. GOSARD, O. Agric. Exp't. Sta. Bull. 198, p. 15-88, 1909.

This is the second in a series of important bulletins designed to assist the farmer in controlling not only insects but other animal pests and fungous diseases. The value of correct management, such as rotation of crops, clean farming, etc., is rightly emphasized at the outset. This is followed by brief discussions of various wild animals and methods of controlling the same. Special attention is given to birds. There are brief notes on the habits of the more important species and several paragraphs are devoted to a discussion of methods of attracting birds. Under farm treatment, the methods of controlling the various enemies of different crops are given in a summarized form. The discussion of methods to be employed with each important farm crop or group of crops is nicely summarized in tabular form. The author uses the season and crop as a starting point from which the farmer is expected to recognize the insect and select the proper treatment. The identification of some of the more important species is rendered more easy by a series of original illustrations. An appendix gives the records of bird migrations for the past fifteen years, with brief notes upon their habits. This latter should arouse more interest in bird life. It is a most serviceable publication.

Fourth Annual Report of the Superintendent for Suppressing the Gipsy and Brown-Tail Moth, by L. H. WORTHLEY, p. 1-75, 1909.

The magnitude of this work is well shown by the expenditure on the part of the state and some ninety-four infested cities and towns, comprising an

area of more than 5,000 square miles, of over \$500,000. In addition to this the federal government kept the trees and shrubs along some 230 miles of road free from these pests. Though this work is all conducted under the supervision of state authorities, the parties responsible are able to report that the insects have been kept under control, except in woodland districts, where lack of funds made extensive operations impossible. The clearing of trees along the streets and highways has been continued and a special effort made to cooperate with residents along the north shore, additional funds for this latter work being contributed largely by interested citizens and municipalities. The map of the infested area shows that in spite of this enormous expenditure the gipsy moth has been able to extend its range somewhat, while the brown-tail moth has established itself throughout the eastern half of the state. The extensive spraying operations have resulted in the development of an improved and more powerful outfit, especially adapted to woodland work. Experiments continued from the previous year have shown that solid plantings of white pine are not injured by gipsy moth provided they are protected from invasion by caterpillars from adjacent trees. The work on fungous diseases and parasitic insects has been continued. Dr. J. P. Clinton of Connecticut made special studies of the fungous disease affecting brown-tail moth caterpillars, and though his work did not result in establishing a wide-spread infection, this disease was found to be an important factor in controlling this pest. The work with parasites has been greatly increased, some especially valuable forms having been imported from Japan through the agency of Professor Kincaid. Importations of parasites have been larger than before, and some 200,000 of the most active enemies of the gipsy and brown-tail moths were liberated. The extended work with parasites resulted in a number of important discoveries. Doctor Howard and his associates are to be congratulated upon the progress already made in this most promising line of work. We would call attention, in conclusion, to Professor Silvestri's report upon his findings in the infested territory. This Italian specialist highly commends the careful biological work on parasites now being done in Massachusetts and rightfully calls attention to the importance of similar studies under European conditions, because such investigations would prove of great value in determining the relative importance of the various species.

Orchard Spraying—Orchard Protection Work, by FRANKLIN SHERMAN, JR., N. C. Dep't. of Agric. Bull. 6, Vol. 30, p. 1-48, 1909.

This is a very plain, practical bulletin designed especially for farmers not well versed in horticulture. The author does not hesitate to go into such details as the type of spray apparatus, the purchasing of chemicals and the relative benefits to be secured from spraying. The orchard inspection work in the state is briefly summarized and pertinent suggestions made to purchasers of nursery stock. The bulletin is illustrated by a series of original figures and will appeal most strongly to the practical man.

Insect Stories, by VERNON L. KELLOGG, Henry Holt & Co., p. 1-298, illustrated, 1909.

This interesting little book portrays in a simple though effective manner some of the instructive lessons that may be learned by a study and collection

of some of our common insects in the field. It bears directly on nature study of insects, which has been considerably neglected in the past, and should appeal to many youthful readers in such a manner as to direct their attention and arouse their interest in the fascinating study of entomology in the field.

Twenty-Fourth Report of the State Entomologist, 1908, by E. P. FELT, New York State Museum Bulletin 134, p. 1-206, 22 fig., 17 pl.

This report discusses the most prominent features concerning economic species in New York State during the year 1908. Among the insects treated at length are the poplar sawfly, the grape blossom midge, concerning which biological notes as well as technical descriptions of the adults and larvæ are given, the gladioli aphid (*Aphis gladioli*) a new species found attacking this host, the green cockroach, a central American form which was found in the state during the year, and the common house fly which is considered at some length, including a bibliography of the publications on the species. A list of the publications of the entomologists office and a statement of the donations received is also included. The appendix contains an article by James G. Needham, relative to a peculiar new May fly, in which a new genera and two new species are described, and a Catalogue of the described species of Scolytidæ of America, North of Mexico, by J. M. Swaine. The text is well illustrated by figures and plates and provided with a complete index. This valuable publication should be in the library of every working entomologist.

Contributions Towards a Monograph of the Scolytid Beetles.
I. **The Genus *Dendroctonus***, by A. D. HOPKINS, U. S. Dept. Agric., Bur. Ent. Tech. Series, Bull. 17, Part 1, p. 164, pl. 8, fig. 95 (June 30, 1909).

Practical Information on the Scolytid Beetles of North American Forests. I. **Bark Beetles of the Genus *Dendroctonus***, by A. D. HOPKINS, U. S. Dept. Agric., Bur. Ent. Bull. 83, Part 1, p. 169, pl. 2, fig. 102 (Oct. 11, 1909).

These two bulletins, which supplement each other in an admirable manner—the former containing the more technical, or purely scientific matter relating to the species of the genus *Dendroctonus*, the latter the facts and suggestions of economic interest—together constitute the most important contribution hitherto made to the study of the Scolytidæ in this country. They are, moreover, one of the best examples of the high standards that are being maintained by the Bureau of Entomology in the scientific investigation of our insect pests. In this respect Dr. Hopkins' work may, indeed, be regarded as a model not only for all future investigations of the Scolytidæ, but also of many other groups of insects. Confronted with a genus of beetles of very difficult taxonomic affinities and immense practical importance, he has undertaken his task with a truly German "Gründlichkeit" and breadth of view. Before describing the twenty-four known species of the genus he gives a fine account of the external anatomy of *Dendroctonus valens*, the red turpentine beetle, one of the largest

species of the genus. This account is a contribution to the morphology both of the Scolytidæ in particular and of the Coleoptera in general. Then follow remarks on the geographical distribution, ethological peculiarities (Dr. Hopkins unfortunately prefers the words "physiological" and "bionomic"), the range and limits of specific variation, progressive modifications within the genus and the coniferous host-trees that are infested by the *Dendroctoni*. More than half of the technical bulletin is devoted to a minute and orderly account of the species, their galleries, or excavations, broods, distribution, and seasonable relations, with a full synonymy and bibliography, making one of the most complete monographs ever published of a single small genus of insects. The bulletin containing the matter of economic importance is equally full and explicit. It embodies a great number of excellent suggestions for the forester and abounds in careful observations, the result of a practical experience extending over many years. The author gives a number of striking instances of the control of *Dendroctonus* deprivations through attending to the proper time for beginning and ending timber-cutting or for barking operations in our coniferous forests. He shows how success in controlling the beetles must depend on a precise knowledge of their developmental and seasonal peculiarities. Considerable space is devoted to an account of the diseases and natural enemies of the *Dendroctoni*. Then the species are taken up *seriatim* and the seasonal history of each is given in detail, with an exhaustive account of its economic features and a minute résumé of its bibliography and the basis of information concerning its habits. The clear and profuse illustrations leave nothing to be desired. The student of forestry entomology will find it advantageous to bind both bulletins together so that they can be used as a hand-book. The only criticism that may be offered is that the author should have pre-faced the technical study, which appears as the first of a series, with a brief account of the Scolytidæ in general. Such an introduction would have been a great aid to the American student and would place the genus so exhaustively treated in its proper perspective with relation to the other genera of the family. This, however, is a rather unimportant omission. All entomologists will congratulate Dr. Hopkins on his fine achievement and desire that he may have the leisure and inclination to give us many similar studies of other Scolytid genera.

W. M. WHEELER.

Third Annual Report of the Committee of Control of the South African Central Locust Bureau, by CHARLES P. LOUNSBURY, Cape Town, South Africa, p. 60 (1909).

The report outlines the work that have been done during the past year in controlling the locust plague by the different governments in South Africa and includes the proceedings of the annual meeting at Cape Town, which was attended by the representatives of most of the districts which are suffering severe loss from these insects. The officials concerned are to be congratulated on the united and systematic efforts that are being made to check the ravages of these pests.

Current Notes

Conducted by the Associate Editor

Dr. A. W. Morrill, who was recently appointed entomologist to the Arizona Horticultural Commission and the Arizona Agricultural Experiment Station, has moved his headquarters from Tucson to Phoenix, Arizona, and all communications should be sent to him at the latter address.

Mr. F. D. Couden has resigned his position with the Bureau of Entomology at Washington, D. C., and entered a partnership with Mr. Herbert W. Meyers under the firm name of Meyers & Couden. All communications should be sent to No. 432 Pioneer Building, Seattle, Washington.

Mr. Harry Severin, who recently received a post-graduate degree at the Ohio State University, has been appointed State Entomologist of South Dakota. Address, Brookings, S. D.

Dr. A. E. Brunn died at South Woodstock, Conn., September 30, 1909. He was a graduate of Cornell University and was greatly interested in entomology, having published in 1882 a valuable paper on the Tineidæ infesting apple trees at Ithaca, N. Y.

Mr. C. H. T. Townsend, who has been engaged in investigation work on the Tachinidæ at the Gipsy Moth Parasite Laboratory at Melrose Highlands, Mass., has been granted leave of absence by the Bureau of Entomology in order to carry on entomological investigations for the Peruvian government. He will establish an entomological service in that country and will give special attention to the treatment of insects affecting cotton and fruit trees. Great damage has recently resulted to these crops on account of the abundance of certain scale insects and these will be given immediate attention. Address, Lima, Peru.

Mr. Arthur I. Bourne, a graduate student at the Massachusetts Agricultural College, was employed as assistant in the entomological department of the Connecticut Agricultural Experiment Station at New Haven during the summer. Mr. Bourne has recently been appointed an expert and agent of the Bureau of Entomology, Washington, D. C.

Mr. George H. Hollister, who for three years has been field superintendent in immediate charge of the gipsy moth work at Stonington, Conn., has accepted an appointment as forester in Keney Park, Hartford, Conn. Mr. Hollister took up the work in his new position October 16th, where he will have charge of all spraying and planting work in a seven hundred acre park, which is well endowed.

Mr. E. J. Kraus, who recently resigned from the Bureau of Entomology, accepted an appointment as Assistant in Horticulture at the Oregon Agricultural College, Corvallis, Oregon. An error was made in announcing his change of address in a recent issue.

Dr. H. J. Franklin will have charge of the Cranberry sub-station of the Massachusetts Agricultural Experiment Station at Wareham, Mass., where he will conduct extensive experiments on insects affecting that crop.