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ILLiad TN: 428353

Journal Title: Bulletin of the Entomological Society of America

Volume: 25

Issue: 1

Month/Year: 1979

Pages: 25-29

Article Author: Beavers, J. B., Woodruff, R. E., Lovstrand, S. A., Schroeder, W. J.

Article Title: Bibliography of the sugarcane rootstalk borer weevil, *Diaprepes abbreviatus*.

Imprint:

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Bibliography of the Sugarcane Rootstalk Borer Weevil,¹ *Diaprepes abbreviatus*²

By J. B. BEAVERS³, R. E. WOODRUFF⁴, S. A. LOVSTRAND³, AND W. J. SCHROEDER³

In the United States, the so-called sugarcane rootstalk borer weevil, *Diaprepes abbreviatus* (L.), is at present found only in the state of Florida, infesting citrus and other host plants in Orange, Seminole, and Broward Co. It was first discovered near Apopka (Orange Co.) in a citrus nursery in 1964 (Woodruff 1964). Since then it has been intercepted numerous times on plant material moving from Puerto Rico to Florida. By 1968, a quarantine area of 2600 ha had been established in Orange Co. This area has been extended 3X, and by 1975 encompassed 13,000 ha in Orange and Seminole Co. In addition, foliage and ornamental nurseries in Broward Co. have been found to be infested with weevils.

Diaprepes abbreviatus is a major pest of citrus and sugarcane in Puerto Rico and the West Indies. The adults feed on the foliage of at least 41 plant species in Puerto Rico (Martorell 1945), whereas the larvae are serious root feeders. Although *D. abbreviatus* has not yet been found infesting Florida sugarcane, it is an ever-present threat to that industry. In some areas of Puerto Rico, 23,000 larvae/ha of sugarcane have been found, and since the loss of dieldrin and aldrin, the traditional control measures, the decrease in sugarcane production from 1 million metric tons/year to an estimated 150,000 metric tons for 1978 has resulted in a \$73 million loss.

Although economic injury caused specifically by *D. abbreviatus* is difficult to evaluate on mature citrus, ca. 200 ha of citrus trees have been uprooted in the quarantine area of Orange Co. primarily because of *D. abbreviatus* injury to the root systems.

Diaprepes abbreviatus is also a serious threat to the foliage and ornamental plant industry of Florida, since 4-7 million plant cuttings/year are imported from Puerto Rico. Nurseries have strict quarantine regulations placed upon them when weevil infestations are found, and certification requirements entail expensive chemical treatments. The estimated value of foliage plants produced annually in Florida amounts to \$140-\$150 million on the wholesale market, with 95% of these plants being shipped out of state. Quarantine restrictions on Florida exports could cause serious economic losses.

The genus *Diaprepes* is apparently indigenous to the Caribbean area, with species occurring in Central America and most of the West Indies. However, *Diaprepes* spp. do not appear to extend into South America or the United States (Fennah 1942). *Diaprepes abbreviatus* appears to be the principal species occurring in Puerto Rico, Haiti, and the Lesser Antilles, with a series of species occurring on other islands.

Because *D. abbreviatus* is becoming an increasingly important economic pest in Florida and has the potential of becoming a pest in other areas of the United States, a bibliography of this pest has been compiled. With the exception of recent work done in Florida, most literature on *D. abbreviatus* is dated before 1950. All citations except those preceded by an asterisk (*) are on file, and copies

of interest will be made available upon request. References have been searched through Dec. 1977.

Bibliographic sources were the Bibliography of Agriculture, Review of Applied Entomology, Journal of Agriculture, University of Puerto Rico, literature citations of accumulated papers, technical reports, and popular articles.

Acknowledgment

We thank Helen Dudak of this laboratory for assistance in obtaining reprints of many of the publications cited.

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²Received for publication Sept. 14, 1978.

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SCOPE OF SOCIETY SECTIONS

Article VI, Section 2 of the Constitution states that the subject matter scope of the six Sections must be published annually in the March issue of the *Bulletin*, and follows as directed:

SECTION A. SYSTEMATICS, MORPHOLOGY AND EVOLUTION

Biosystematics, including those elements of ecology, bionomics, behavior and genetics useful in taxonomic studies
Morphology
Comparative anatomy
Phylogeny and evolution
Paleoentomology
Zoogeography
Nomenclature

SECTION B. PHYSIOLOGY, BIOCHEMISTRY AND TOXICOLOGY

Life process controls (e.g., metabolism, orientation, functioning of organ systems, endocrines, etc.)
Genetics
Cytology
Ultrastructure
Functional anatomy
Physiological aspects of life phenomena (e.g., pathology, symbiosis with microorganisms, nutrition, rhythms, photoperiod effects, chemical defenses, etc.)
Mode action and metabolism of insecticides
Resistance to insecticides
Chemistry of insecticides

SECTION C. ECOLOGY, BEHAVIOR AND BIONOMICS

Ecology per se
Population ecology, including the effect of man on arthropod populations, effect of arthropods on plant distribution, etc.
Studies of overt behavior per se, including rhythms, responses to natural or artificial environments, dispersal and migration, host relationships, social organization, mating habits, etc.

Biological studies per se, including microbiology, pathology, symbiosis, arthropods in relation to plant diseases, etc.
Husbandry (e.g., apiculture, sericulture, rearing methods)

SECTION D. MEDICAL AND VETERINARY ENTOMOLOGY

Control of arthropods affecting man and animals, by chemical, biological, genetic, physical and other techniques
Disease relationships of arthropods affecting man and animals
Economic significance of arthropods of medical and veterinary importance
Biological of arthropods affecting man and animals

SECTION E. EXTENSION AND REGULATORY ENTOMOLOGY

Area eradication and control programs
Quarantines and similar regulatory procedures
Population surveys and detection of introduced pests
Extension methods and publicity
Legal aspects of entomology, including regulatory programs, licensing, registration, and insects in relation to quality standards of agricultural products

SECTION F. CROP PROTECTION ENTOMOLOGY

Control of arthropod pests of crops, including forests, wood products, and products in storage or commercial channels
Chemical, cultural, and physical control techniques including the use of radiant energy, and methods of application
Biological and ecological control techniques, including methods for introducing and dispersing arthropods and pathogens used in biological control
Relationships between arthropod infestations and crop production and quality, including methods of detecting crop pests and measuring population densities
Problems in the use of pesticides with regard to residues, public health, wildlife, soil and water