

## ENTOMOLOGY

Chairman: J. A. CLARK, Indianapolis

F. N. Young, Indiana University, was elected chairman for 1952.

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### ABSTRACTS

**Relative attractiveness of different wavelengths of radiant energy to flying insects.** H. O. DEAY, J. G. TAYLOR, and M. T. OREM, Purdue University.—During the 1951 season eleven different wavelengths of radiant energy, ranging from those in the far ultraviolet to the infrared region of the electromagnetic spectrum, were compared as to their attractiveness to flying insects. In general the results show that the number and variety of insects attracted increased as the wavelengths decreased to about 3200 Angstrom units in length and then decreased at wavelengths shorter than 3200 A.

**Tests of new insecticides for control of the meadow spittlebug.** RAY T. EVERLY, Purdue University.—The emulsifiable form of fourteen insecticides were applied as low gallonage sprays on May 13 to Kenland red clover to study their toxicity to nymphs of the meadow spittlebug. BHC (benzene hexachloride) lindane, and toxaphene continued to give good control. Dieldrin, methoxychlor, and compound 269 (Julius Hyman Company) also gave good control. The systemic and other phosphorus compounds including EPN-300, Miticide, Systox, Potassan, Pestox-3, and Compound 4049 (American Cyanamid Co.), were ineffective in controlling the spittlebug. Control evaluations were made on visual observations, counts of nymphs per square foot, and adults per 10 sweeps of a 12 inch net. All methods of evaluation gave the same relative results for the insecticide tested.

**The wireworm problem in Indiana.** GEORGE E. GOULD, Purdue University.—Wireworms have been one of the few major agricultural pests in Indiana for which no satisfactory control has been known. Studies initiated in 1951 indicated that corn was the most seriously affected crop, although damage was observed on wheat, tobacco and some vegetable crops, especially potatoes, onions and melons. A survey of the state indicated higher losses in the northern counties and especially on muck soils. To date the larvae of three genera of Elaterid beetles have been identified, namely *Melanotus*, *Limonius* and *Agriotes*. Some fields in the Kankakee river region were so heavily infested and corn stands so reduced that they were planted to soybeans. Corn was found to be destroyed in three ways: destruction of the germinating seed; cutting the tap root of newly-emerged plants; and the cutting of the unelongated stem in the crown of plants up to 15 inches

in height. Larger plants with a well-established root system were seldom killed. Of the seven materials tested as seed protectants for corn, lindane was the most promising. Seed treated with 2 ounces of actual lindane to 100 pounds of seed gave a nearly perfect stand, while adjacent untreated rows had a 10 to 20 per cent stand.

**Mating behavior of *Perithemis tenera* Say and *Plathemis lydia* Drury (Odonata, Libellulidae) and its bearing on the theories of sexual selection.** M. E. JACOBS, Indiana University.—*Plathemis* males occupy mating territories. Rival males displace occupant males at intervals throughout the day. The white upper surface of the abdomen appears to be used to intimidate rivals. Artificially darkening of this surface depresses the territorial success and mating scores of the experimentals. Young males usually gain dominance which is progressively lost with age. Dominance is established by "marathon" racing. Males showing high mating scores during one period may show low mating scores during another, thereby demonstrating the importance of the entire case history in studies of sexual selection.

*Perithemis* males situate themselves near oviposition sites and appear to tire rivals by "dancing" and racing. An incoming female is pursued by a male after which she follows him to the oviposition site where male "courtship" occurs. A female seldom accepts a male until after she has been "courted" by several males at various territories. It is suggested that this behavior may allow the female an opportunity to select her oviposition site. A male with little or no mating success at one territory may be much more successful at another.

**A preliminary report on insect tolerant alfalfa studies at Purdue University.** M. CURTIS WILSON and RALPH L. DAVIS, Purdue University.—Studies underway at Purdue University show that there are significant differences in the susceptibility of different varieties of alfalfa to leafhoppers and spittlebugs. Some varieties appeared to be less attractive to these insects and consequently received lighter infestations and less injury in 1950 and 1951.

In 1950 spittlebug data were taken by visual observation using a rating system from 1-10 to determine spittlebug populations and also internode shortening caused by the insect. In 1951 square foot counts of spittlebugs showed a range from 57 spittlebugs per square foot for variety 87-C40 to 324 for variety 87-C42 with Ranger, 121; Grim, 152; and Buffalo, 159 intermediate. Data obtained by using the rating system in 1950 showed the same trend with 87-C40 rated a high 1.5 and Ranger 7.6 with 87-C42, 7.5. Buffalo appeared better in 1950 with a rating of 2.2.

Leafhopper data taken on the second crop of alfalfa showed a range of 116 leafhoppers per five sweeps for 87-C53 to 374 for Ranger with Grimm, 126; and Buffalo, 147. An average of three smaller samples taken in 1951 showed that 87-C53 continued to have a significantly lower number of leafhoppers than most other varieties.