

ENTOMOLOGY

Chairman: HOWARD O. DEAY, Purdue University

John Favinger, State Department of Conservation, was elected chairman for 1958

ABSTRACTS

Electric Light Traps and Their Uses in Entomology. HOWARD O. DEAY, Purdue University.—An electric insect trap consists of a collecting or killing device in which some kind of electromagnetic radiation is used as a lure. Although the response of insects to different wavelengths of radiant energy seems to be specific, most positively phototactic insects appear to be attracted more to lamps which emit their energy in the near ultraviolet region (2900-3900A) of the electromagnetic spectrum than to those which radiate either longer or shorter wavelengths. Light traps have been used by entomologists to make general collections of night flying insects, to determine time of appearance, abundance and distribution of certain injurious insects, to predict insect outbreaks, to time application of control measures, and to control certain insects.

The Role of Entomology in Science Fair Projects. J. J. DAVIS, Purdue University.—The science fairs which are available to high school students offer an increasing opportunity to promote the biological sciences in our high schools. Biology and vocational teachers have an excellent opportunity to promote such activities. A report is presented on Entomology projects for high school students as given in *Turttox News* for August, 1957.¹

Notes on Artificially Induced Nesting of the Alkali Bee, *Nomia melanderi* Ckll. EARLE A. CROSS, Purdue University.—This paper summarizes a portion of the work carried on at the U. S. Legume Seed Research Laboratory, Logan, Utah, during the field seasons 1949-56, under the supervision of Dr. G. E. Bohart. The alkali bee, *Nomia melanderi* Ckll., is the most important pollinator of alfalfa in the Great Basin area. It nests gregariously, often in large numbers, in clayey or sandy alkali soils. Alfalfa seed growers fortunate enough to have nesting sites of these bees near their fields usually obtain excellent seed yields. Various methods of establishing the bees on acreages not previously populated by them were attempted as follows: 1.) Releasing adult bees at favorable locations. 2.) Caging adult bees on favorable sites. 3.) Transplanting soil blocks containing the prepupae of the bee. 4.) Burying prepupae in wooden or plaster-of-paris blocks in favorable locations. 5.) Preparing sites by clearing and irrigation.

¹ Reprints of this article available from author.

Methods 1 and 2 were generally unsuccessful, methods 3 and 4 showed varying but small measures of success, and in areas where the bee is already established, the last method shows great promise as a method of inducing bees to populate new sites.

Prey Records of Ground Beetles (Coleoptera-Carabidae). RAY T. EVERLY, Purdue University.—The large numbers of species and the diversified habitats in which ground beetles occur makes this family one of the most important groups of predators in the control of many economic species of insects. Among the approximately 2500 species found in North America north of Mexico, only two are definitely known to be injurious to field crops. Several European species are reported as damaging strawberries. A few species are known to feed predominantly on pollen and weed seeds. Food records of over 90 species and varieties of ground beetles are given with literature citations supporting these records.

The Japanese Beetle Infestation in Newton County. GEORGE E. GOULD, Purdue University.—The Japanese beetle, *Popillia japonica* Newman, had infested several thousand acres along the Illinois-Indiana state line when its presence near Sheldon, Illinois, was first reported in 1953. This infested area had spread by 1957 to include some 60,000 acres in the two state area. The rapidity of spread and the change in larval food preference from the roots of grasses to those of corn and soybeans has caused concern to agricultural officials. As a consequence, investigations were started in Newton County to determine the biology of the insect and the amount of damage from both the adult and larval stages to agricultural crops. Observations during the past two years indicated that the first emergence of the beetle was in late June and the peak of adult abundance in late July. Beetles showed a decided preference for the foliage of smartweed throughout the summer and only small numbers were found on soybean foliage, corn silks and blossoms of clover. Some feeding was also observed on evening primrose, buttonweed, wild grape, willow, wild cherry and Virginia creeper. The only heavily infested soybean field had populations of 20 to 40 beetles per 100 feet of row, but damage to foliage was not of economic importance. Eggs of the new generation were found in early August and by the 15th grubs and eggs were common in the soil under corn and soybeans. In the field with heavy beetle population, counts of grubs and eggs were as high as 40 per corn hill or per foot of soybean row in late August, but by mid-September had dropped to 5 to 10. Both corn and soybeans in this field produced excellent yields.

Notes on the Distribution of the Japanese Beetle in Indiana. FRANCIS L. MADINGER, Indiana Department of Conservation.—Since discovery of Japanese beetle, *Popillia japonica*, in Indiana in 1934, annual, state-wide surveys have been conducted by the State Entomologist's office in cooperation with the United States Department of Agriculture to determine the distribution of this beetle within the state. These surveys have been, and are now, a most necessary adjunct to the control of this economically important plant pest.

Present known distribution of *P. japonica* in Indiana is limited to the northern half of the state. viz: Terre Haute, Indianapolis, Richmond, Kentland, Remington, Logansport, Fort Wayne, Kendallville, Garret, Elkhart, South Bend, Mishawaka, Plymouth, Argos, Wanatah, Gary, East Chicago, and Hammond.

The current, survey of southern Indiana, ie.: south of U. S. Highway No. 40, failed to discover Japanese beetle, however.

Detection of the beetle in the above listed areas was effected by using traps charged with a volatile bait, (direct) field scouting, and through the submission of specimens by interested persons or agencies.

Smartweed—*Polygonum* sp.—was the host found most preferred by feeding, adult beetles. The characteristic feeding injury, on this and other host plants, was invariably employed as a clue in detecting the presence of *P. japonica* in a given location when visual scouting was used.

While this pest was found on soybeans and corn, the survey did not reveal a significant loss in yield to a commercially important crop.

Occurrence of *Culiseta melanura* (Coquillett) in Indiana. R. E. SIVERLY, Ball State Teachers College.—Larvae of the mosquito, *Culiseta melanura*, were recovered from a bog area near Gaston, Indiana, on October 5, 1957. So far as it is known, this is the first record for *C. melanura* in Indiana. The virus of eastern equine encephalitis has been isolated from this species in other areas. Its occurrence in Indiana is noteworthy. This mosquito is probably more widespread in Indiana than is presently realized.