

ENTOMOLOGY

Chairman: ROBERT E. DOLPHIN, U. S. Department of Agriculture
Entomology Research Division, Vincennes, Indiana 47591

CLAUDE F. WADE, Department of Natural Resources,
113 State Office Building, Indianapolis, Indiana 46203
was elected Chairman for 1972

ABSTRACTS

Insects and Other Arthropods of Economic Importance in Indiana During 1971. R. W. MEYER and J. V. OSMUN, Department of Entomology, Purdue University, Lafayette, Indiana 47907.—The abundance and activity of insects and other arthropods that were important to growers of foods, fibers, or animal products, or were destructive of stored products, or were annoying to man in the state of Indiana during 1971 were reviewed, together with notes on non-economic arthropods that were of interest.

Survival of Odonata Naiads Through Drought and Freezing. B. ELWOOD MONTGOMERY, Department of Biology, Frostburg State College, Frostburg, Maryland.—Living Odonata naiads were found in a "dry" pond in late October (October 28, 1968). They were in damp situations—masses of fine roots or accumulations of debris on the exposed bottom surface. The natural environment was restored within a few days of the initial observations by fall rains.

During the following winter an examination of the pond revealed that all water was frozen, but the bottom surface immediately beneath the ice was not.

No naiads could be recovered from the pond following the fall rains which resulted in extensive marshy margins so that the central area of the pond could not be approached. Sampling was difficult in the spring for the same reason. However, naiads of Zygoptera (none of which had been found the previous fall), Aeshnidae and Libellulidae were collected. These were of such age that development from the egg during the spring appeared extremely improbable. Thus, the naiads must have survived the elimination of all water from their habitat twice—once through drought and, then, by freezing.

Myiasis in Delaware County, Indiana, 1971, with a Confirmed Case of Infestation by *Wohlfahrtia vigil* (Walker) (Diptera: Sarcophagidae). R. E. SIVERLY, Department of Physiology and Health Science, Ball State University, Muncie, Indiana 47306.—Two fly larvae were removed from the leg of a rabbit on July 25. One of these larvae was reared to the adult stage. The pupal period required 12 days. The adult was identified by the U. S. National Museum as *Wohlfahrtia vigil* (Walker).

Wohlfahrtia is known as a specific myiasis producer, and the larvae are reported to invade unbroken skin in children, as well as in young animals. Death has occurred in animals as a result of secondary

bacterial infection. This species evidently has extended its range into Indiana from the north.

Another case of dermal myiasis occurred in a very old and feeble dog. Larvae of *Phaenicia sericata* (Mg.) and *Phormia regina* (Mg.) were recovered from the frontal head region on August 26. Identification of these flies was confirmed in the adult stage.

It is doubtful if primary screwworm occurs in this area; however, a survey is planned in 1972 which will solicit the cooperation of veterinarians in Indiana for early reporting of all myiasis cases, so that accurate species determinations can be made, and follow-up studies conducted at sites where actual infestations occur.

Preliminary Investigation of the Effects of Three Hormonomimetic Compounds on Larvae of *Culex pipiens pipiens* (L.) (Northern House Mosquito). STEVE BETRAS and R. E. SIVERLY, Department of Physiology and Health Science, Ball State University, Muncie, Indiana 47306.—The effects and lethal dosages of three hormonomimetic agents were investigated during the summer of 1971. Tests with Stauffer (R-20458), Monsanto (Mon-0585), and Zoecon (ZR-0515) were conducted, using late instar larvae of *Culex pipiens pipiens* obtained from waste lagoons in Delaware and Henry Counties. All three compounds were juvenile type hormones.

Larvae were exposed to the chemicals by dissolving the compounds in acetone and mixing these solutions with lagoon water in which larvae were collected. Each sample consisted of 20 larvae in 100 milliliters of filtered lagoon water. Control samples were set up with filtered lagoon water alone. From three to five levels of concentrations were used on each trial, with from three to five replicates for each level of concentration.

Effective dosages were much higher than the manufacturer's recommendations for each compound. This was believed due to rapid biodegradation of the chemicals in lagoon water.

R-20458 and Mon-0585 produced a total kill during a 48-hour exposure at 40 and 30.5 parts per million, respectively. ZR-0515 produced complete kill at 15.5 parts per million with a 24-hour exposure. Most of the tests were difficult to evaluate because of the high mortality in the controls. The Zoecon product appeared more active, but less stable than either the Stauffer or Monsanto compounds. Further laboratory investigations should be conducted before actual field testing of these compounds is attempted.

A Preliminary Study of Autogeny and Host Preference of *Culex pipiens pipiens* L. (Northern House Mosquito) in East-Central Indiana. DONALD A. SHROYER and R. E. SIVERLY, Department of Physiology and Health Science, Ball State University, Muncie, Indiana 47306.—Several colonies of *Culex pipiens pipiens* L. were established from immature stages collected at two food processing waste lagoons to evaluate the effects of photoperiod on the expression of autogeny and on host preference.

Three cages were maintained under a 15L 9D photoperiod, at 80° Fahrenheit \pm 2°. One cage was provided no blood host and produced no egg rafts after several weeks. All dissected females from this cage were nongravid.

A second cage was provided only avian hosts, while a third was offered mammals. Although *Culex pipiens pipiens* is regarded as primarily an avian feeder, samples from both cages contained equivalent proportions of engorged females. However, females fed on birds produced more eggs than those fed on mammals.

Two colonies were maintained under a 13L 11D photoperiod. One cage was provided a bird host and the other a mammal. There was no evidence to support the shorter day length as conducive to mammal feeding, since samples from both cages contained equivalent proportions of engorged females.

Further studies to clarify the effects of photoperiod on host preference and autogeny will be conducted by: 1) observations of laboratory colonies under simulated natural light conditions but constant temperatures, 2) observations of laboratory colonies under simulated hibernating conditions, and 3) studies of natural overwintering populations in the field.

Genetic Studies on Melanic Forms of *Tropisternus collaris* (Fabricius) from North and South America. FRANK N. YOUNG, Department of Zoology, Indiana University, Bloomington 47401.—Laboratory studies of the results of crossing melanic *Tropisternus collaris* from South America with the melanic subspecies from Florida and South Carolina indicate higher levels of interfertility than shown in crosses with the lightly pigmented North American forms. Rearing of larvae from wild caught females from South Carolina show that interbreedings of light and melanic forms occur in nature. Further evidence for the discreteness of the genes producing the melanic condition was presented.

The Planipennia (Neuroptera) in Indiana. H. RANDOLPH LAWSON, Department of Entomology, Purdue University, Lafayette, Indiana 47907.—Representatives of nine families (Coniopterygidae, Mantispidae, Berothidae, Hemerobiidae, Polysteochotidae, Sisyridae, Chrysopidae, Ascalaphidae, and Myrmeleontidae) were recorded in this study. Representatives of the eighteen species previously recorded in literature as occurring in Indiana were collected during the summer of 1969. Twenty species were reported as being new records from Indiana. Due to inadequate taxonomic work on the species of the family Coniopterygidae, specimens of this family were identified only to genus. Five genera of coniopterygids were recorded.

The possible occurrence of 17 more species which have been recorded from adjacent areas is reported. Included in these possible species is *Nallochius americanus* (McLachlan) which represents a 10th family, Dilaridae. Therefore, a total of 55 species is included in the keys constructed for adult identification.

Important range extensions include *Micromus variolosus* Hagen, a western species of Hemerobiidae, and *Brachynemurus longicaudus* (Burmeister), an eastern, south-eastern coastal species of Myrmeleontidae.

The only recorded species of the family Polysteochotidae in the eastern U. S., *Polysteochotes punctatus* (Fabricius), appears to have had a drastic population decline since the early 1900's. Although collected quite often in the Chicago area around the turn of the century, no specimens have been seen that were collected after 1940.

OTHER PAPER READ

Fruit Insect Research Programs of the U. S. Department of Agriculture.
M. L. CLEVELAND, USDA, ARA, Beltsville, Maryland (by invitation).