

ENTOMOLOGY

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ABSTRACTS

Wheat Growth as Affected by Barley Yellow Dwarf Virus. JAIME E. ARAYA, ALBERTO FERERES AND JOHN E. FOSTER, Department of Entomology, Purdue University, West Lafayette, Indiana 47907.—An experiment with hydroponic cultures was designed to study the effects of infection with barley yellow dwarf virus (PAV isolate) on growth of roots and foliage of wheat plants. The seedlings were infested at the 1-2 leaf stage with viruliferous bird cherry-oat aphids, *Rhopalosiphum padi* (L.). The aphids were eliminated 48h after infestation with pyrethrum aerosol. Virus infection delayed the growth of roots and leaves, as compared with non-infected control plants, with small differences among wheat cultivars.

Allozyme Characterization in the *Aedes (Stegomyia) albopictus* Sub-Group. DAVID COLÓN-ARROYO AND KARAMJIT S. RAI, University of Notre Dame, Notre Dame, Indiana 46556.—Since its official discovery in the fall of 1985 in Houston, *Aedes albopictus* has received a fair amount of attention due to its potential as a vector for Dengue Fever and Dengue Hemorrhagic Fever, two debilitating and sometimes fatal diseases common in Southeast Asia and the Caribbean belt. Here we analyze allozyme mobility in four species in the *albopictus* sub-group and two hybrid combinations. As expected in lab colonies there is a low degree of heterozygosity as compared to field populations. Further morphometric measurements suggest hybrid vigor in the fertile offsprings. If size is directly related to vector competence, these hybrids could present an additional hazard regarding the transmission of these diseases.

Probing and Feeding Behavior of the English Grain Aphid, *Sitobion avenae* (F.), on BYDV-infected Wheat. A. FERERES, R. H. SHUKLE, J. E. ARAYA AND J. E. FOSTER. Department of Entomology, Purdue University, West Lafayette, Indiana 47907 and USDA-ARS.—An electronic device was used to study feeding of *S. avenae* on wheat infected with the PAV and RPV isolates of barley yellow dwarf virus (BYDV). The system applies an electric current through an aphid attached to a thin gold wire. The aphid serves as a variable impedance and the resulting signal modulations are amplified and recorded on strip charts as waveforms from each particular aphid feeding event.

Aphids feeding on BYDV-infected wheat plants had no significant differences in feeding behavior when compared with non-infected plants, except for some differences ($P < 0.10$) in the number of phloem contacts. When the cultivars were infected with PAV, aphids fed better on 'Abe' (susceptible) than on 'Caldwell' (tolerant), as indicated by less probes, a shorter salivation time, less time for a committed (longer

than 30 min) phloem ingestion, and less phloem contacts on the BYDV-susceptible cultivar than on the tolerant one. No cultivar differences were found when aphids fed on healthy plants.

Geographical Distribution and Vertebrate Host Records for Ticks Submitted to Rocky Mountain Spotted Fever Tick Testing Program, 1982-1986. TODD GLANCY AND ROBERT R. PINGER, Department of Physiology and Health Science, Ball State University, Muncie Indiana 47306.—Geographical distribution and vertebrate host records are an important by-product of the Rocky Mountain Spotted Fever Tick Testing Program. The Program, which began in 1982, has been funded in part by the Indiana State Board of Health from 1983-present. The Public Health Entomology Laboratory maintains records on each tick submitted. For the period 1982-1986, there are records on 11,657 ticks. Ten species of ticks have been identified, including three species which were probably imported from out of state, *Amblyomma maculatum*, *Ixodes dammini*, and *I. scapularis*. *Dermacentor variabilis* ticks were received from every county but Benton County. Specimens of *A. americanum* which normally is limited to the southern part of the state were received from as far north as Allen, Howard, and St. Joseph Counties.

Container Breeding Mosquitoes of East Central Indiana. WENDI L. GRAY, Box 182, Parker, Indiana 46368, and ROBERT R. PINGER, Department of Physiology and Health Science, Ball State University, Muncie, Indiana 47306.—Since the last comprehensive study of mosquitoes in east central Indiana was completed, two potential vectors have appeared in Indiana. Both of these species, *Aedes albopictus* and *Aedes atropalpus*, are known as container breeders. LaCrosse virus (California encephalitis virus group) has been isolated from a third species of container breeding mosquitoes, *Aedes triseriatus*, collected in Delaware County. Each of these species colonizes used automobile and truck tires and it is probable that the two former species entered Indiana by way of transported tires. To determine the presence or absence of *Aedes albopictus* and *Aedes atropalpus*, adult and larval mosquitoes were collected from six east central Indiana tire and retreading services from June 6 to September 30, 1987. Each collection site was characterized by pH, temperature, and the amount of sun or shade present. Samples of *Aedes triseriatus* were sent to the University of Notre Dame for virus isolation attempts and a checklist of container breeding mosquitoes from the area was compiled.

A Key to the Alate Forms of Genera of Indiana Ants (Formicidae: Hymenoptera) JACK R. MUNSEE, Department of Life Sciences, Indiana State University, Terre Haute, Indiana 47809.—Because most keys for ant identification are based on worker castes, identification of alate forms, males and queens, is not easy unless such forms are collected simultaneously with workers of the same species. Also, male and female or queen ants of the same species usually are greatly differentiated, especially as to size, ocelli, and antennal characteristics. Wings of alate forms, of the same genera, however, are more similar as to shape and pattern of wing venation.

The attempt is made to use the patterns of wing venation and the cells formed by the veins to construct a dichotomous key to separate the genera of the ants of Indiana. Such a key would be especially useful for determining the genus where the basis for determination depends upon wings only as might be the case with queen ants since they lose their wings soon after mating. Male ants are apt to retain their wings.

Different Sorghum Genotypes Evaluated for Resistance to the Maize Weevil, *Sitophilus zeamais*, (Motschulsky), (Coleoptera: Curculionidae). MUSTAPHA EBRIMA NJIE. Purdue University, West Lafayette, Indiana 47907.—A total of 118 different sorghum genotypes were screened for resistance to the maize weevil using both “free and no-choice” design commonly called the “cafeteria”. All but one of the experiments were done under conditions of optimum temperature, relative humidity (R.H.) and grain moisture content. The exception was done under low humidity conditions (i.e. 45% R.H.). Some of the tests were studied for 70 days, and some for a longer period of 100 days. Criteria used for evaluation were preference, progeny produced, weight loss of grain and developmental period of the larva. Individual lines were evaluated for tannin content, endosperm hardness, and density. None of these factors seemed to have had an effect. However, in the 100-day tests, it was found that the weevils died rather than consume pericarp. Hence, pericarp is probably a factor for resistance to the maize weevil in sorghum.

