Meetings

Arachnology

With the recent revival of interest in whole animals, two concurrent meetings in Paris, 8–13 April 1968, were organized: the Fourth European and International Congress of Arachnology sponsored by the Centre International de Documentation Arachnologique and the First International Congress of Myriapodology. Although about 100 arachnologists from 21 countries attended, including many from Great Britain and several with French aid from Poland, Yugoslavia, Rumania, and Czechoslovakia, only two arachnologists from the United States succeeded in participating (on their personal or institutional funds, both having been denied the use of travel funds from federal grants).

The daily sessions were supplemented by two evenings of movies on arachnids. Two excellent new teaching films made in France were shown—one on the scorpion *Buthus occitanus* by M. Auber, the other on pseudoscorpions. J. A. L. Cooke showed 4 of 12 teaching films on spiders made by G. H. Thompson and E. R. Skinner (Oxford University) on prey capture and on courtship and mating. Of even greater interest were the research films.

Although social spiders were reported in the literature almost 100 years ago, there had been no further investigation until now. B. Krafft reported on and showed movies of *Agelena socialis* from Gabon, South Equatorial Africa, a colony of which is kept in Krafft's laboratory in Strasbourg. B. Kullmann (University of Bonn) illustrated his talk on the social eresid spider *Stegodyphus sarasinorum* from West Pakistan with movies; he passed around to the members of the audience a colony of the spiders built in a frame. Spiders peeked at the arachnologists out of nooks in the webs. Kullmann's film showed an insect thrown into the web being attacked from all sides and subdued by spiders which then fed on it communally, numerous animals sitting around the captured prey. The last spider left feeding removed the remains from the web. In the Krafft movie, *Agelena socialis* hunting together on their communal sheet web could recognize each other's movements. The hunting resembled a pack of wolves closing in on large prey. The spiders do not fight as long as they have enough room. Numerous *Stegodyphus* colonies may be interconnected, the individuals moving from one colony to another. They leave their communal web if it is invaded by mice. Eggsacs are made only in well-established communities. The social *Stegodyphus* has 40 eggs in a sac, whereas a related nonsocial species has 400 to 600. Colonies may be initiated by as few as three or four individuals.

The wolf spider *Arctosa variana* has the ability to orient itself astronomically both by day and night. Using mirrors, P. Tongiorgi (University of Pisa) changed the direction of the moonlight and, with it, the landward flight direction of the spider on water, and showed us that the spiders orient by moonlight. The importance of polarized moonlight has not been demonstrated.

Slit sense organs found on the surface of appendages of arachnids are now all believed to be mechanoreceptors according to the neurophysiologist G. Barth (University of Munich). Electrophysiological experiments indicated that a single-slit sense organ on the tarsus is sensitive to sound. The structure differs from the lyriform organ on the distal tip of the metatarsus in having a nerve ending at the outer membrane. In the lyriform organ the nerve ends on the side of the slit. While this explains the function of these organs, we still do not know the location of the olfactory sense of spiders. Behavior would indicate that the acute olfactory sense organs are found in the leg tips, but there is at present no experimental evidence for this. At various times in the past the slit sense organs have been described as olfactory; no evidence for this exists.

The scanning electron microscope was used by B. Kullmann to examine the spigots of the cribellum, the spinning plate of cribellate spiders. Each half has 20,000 spigots, which under the microscope look like slightly contracted tubes having five pleats. Each cribellate silk thread is thus made up of 40,000 elements.

A contribution to the question of phylogeny of cribellate spiders was made by L. Glatz (University of Göttingen), who has studied the behavior and anatomy of certain cribellate spiders in relation to their closest ecribellate relatives. Glatz has indicated that the tiny cribellate Oecobiidae are related to the larger ecribellate Urocteidae, a family limited to the Old World. He reported at the meeting on the behavior and anatomy of two uloborid spiders which, although they make orb webs, may not be as closely related to the Araneidae as previously thought because they lack poison glands. They compensate for this deficiency by thickly wrapping their prey with silk. A study of the mouthparts of the Uloboridae and other families showed that these structures, as might be expected, are correlated with the spiders' feeding habits. These results strongly counter recent work done in Finland in which the cribellum is disregarded as a character of phylogenetic importance.

The congress papers will be made available in a publication of the Muséum National d'Histoire Naturelle. The next congresses are planned together in Brno, Czechoslovakia for 1971.

HERBERT W. LEVI
Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts 02138
C. D. DONDALE
Canada Department of Agriculture Research Institute, Belleville, Ontario

Calendar of Events

National Meetings

October

7. **Industrial Pharmaceutical Technology,** 7th mtg., Chicago, Ill. (J. Ellis, Abbott Labs., North Chicago, Ill. 60064)

7–10. **Thermal Conductivity,** 8th, Lafayette, Ind. (W. H. Shafer, Thermophysical Properties Research Center, 2595 Yeager Rd., West Lafayette, Ind. 47906)

7–11. **Activation Analysis** Conf., 3rd, Gaithersburg, Md. (National Bureau of Standards, Office of Technical Information and Publications, Room A500/101, Washington, D.C. 20234)

7–11. **Instrument Symp.** and Research Equipment Exhibit, 18th, Bethesda, Md. (J. B. Davis, National Institutes of Health, Bethesda 20014)