

**MANTISPIDAE (INSECTA: NEUROPTERA)**  
**PARASITIC ON SPIDER EGG SACS:**  
**AN UPDATE OF A PIONEERING PAPER BY B. J. KASTON**

Much of the early work on the neuropteran family Mantispidae concerned the serendipitous rearings of adult mantispids from spider egg sacs. One of the first such mantispid-spider associations for North America was published by B. J. Kaston (1938). It is an account of the emergence of *Mantispa fuscicornis* (sic) Banks from the egg sac of *Agelenopsis naevia* (Walckenaer) (cited as *Agelena naevia*). The spider was collected near Albion, Michigan and transported to New Haven, Connecticut where it formed the egg sac. The mantispid was found dead in the vial several weeks later. Kaston pointed out that the larva had either crawled into the spider's container in New Haven or had been transported from Michigan on the spider's body. Hungerford's (1939) observation of 10-15 first instar larvae on the pedicel of a female *Arctosa littoralis* (Hentz) prompted Kaston (1940) to conclude that his second suggestion was correct. The matter has remained closed for over 40 years.

*Mantispa fuscicornis* is one of three sibling species occurring in North America, the other two being *M. sayi* Banks and *M. uhleri* Banks (MacLeod, in Hughes-Schrader 1979). I have had *M. uhleri* under intensive laboratory examination for the past eight years; I have collected and reared the remaining two. All three are virtually indistinguishable on the basis of cytology (Hughes-Schrader 1979) and adult morphology. Nevertheless, they possess distinctive color patterns, are largely allopatric and, unless future investigations suggest otherwise, should be regarded as distinct species (MacLeod, in Hughes-Schrader 1979).

Several factors suggested that Kaston's specimen might actually be *M. uhleri*. *M. fuscicornis* was described from Florida (Banks 1911) and Kaston indicates a lack of records farther north than Virginia. In contrast, the holotype of *M. uhleri* is from Pennsylvania and there are several paratypes from Illinois and Wisconsin (Banks 1943). I have collected numerous *M. uhleri* adults and larvae in several Illinois locales but know of no *M. fuscicornis* records from this state. Similarly, of these three sibling species, Throne (1972) shows only *M. uhleri* occurring in Wisconsin. Thus, Michigan would seem to be a likely habitat for *M. uhleri*, but questionable for *M. fuscicornis*.

Secondly, Kaston's description of his specimen does not mention a broad, inverted Y-shaped line on the frons, the forks of the Y looping under the antennal sockets. These loops are distinctive; I have observed them only in *M. fuscicornis*. Since Kaston does mention the median longitudinal line on clypeus and labrum found in both species, it seems unlikely that he would have not described the loops under the antennae of *M. fuscicornis*.

Most suggestive of a misidentification is the fact that Kaston's paper precedes Banks's description of *M. uhleri* by five years. I had occasion to discuss this with Dr. Kaston several years ago and he remembered that Banks had proclaimed the specimen as *fuscicornis* after a rather cursory examination under a hand lens. "Since he had described the species himself, I was not about to question him on it." It is not possible to say whether Banks had yet formulated the idea of *M. uhleri* as a new species, but it would certainly not be surprising for him to have misidentified it under the circumstances.

Dr. Kaston was unaware of the specimen's fate and as of 1975 it could not be located at the Connecticut Agricultural Experiment Station (CAES). It has now happily reap-

peared thanks to the assistance and sharp eyes of Dr. Chris T. Maier who discovered it residing in the wrong drawer at CAES. The specimen is indeed *Mantispa uhleri* Banks.

My laboratory and field investigations (Redborg and MacLeod, in press) corroborate Kaston's contention that his larva boarded the spider in Michigan. It was probably on the pedicel or in one of the book lungs. *M. uhleri's* host range is extremely broad; it includes nearly every family of hunting spiders (Redborg and MacLeod, in press). Although agelenids are not common hosts for *M. uhleri* – probably because they are inaccessible in their funnel webs – I have collected one other specimen in association with an agelenid. Rather appropriately, the spider is *Agelenopsis kastoni* Chamberlin and Ivie. Since *M. uhleri's* host range is now the most firmly documented of any mantispid species, it is also appropriate that one of the first and most widely cited papers on the life history of mantispids turns out to be the first contribution to our knowledge of this species.

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