New data on the Mymaridae fauna in the Iberian Peninsula (Hymenoptera, Chalcidoidea) from a carrion community

Nuevos datos sobre la fauna de Mymaridae (Hymenoptera, Chalcidoidea) de la Peninsula Ibérica de una comunidad sarcosaprófaga

A study of the entomosarcosaprophagous community in an arid environment in south-eastern Iberian Peninsula involving a baited device (ARNALDOS SANABRIA, 2000) has allowed us to collect and study some specimens of the family Mymaridae, a group not very known, and almost unknown in relation to decomposing carrion. In fact, the only previous reference is due to ANDERSON & VANLAERHOVEN (1996), who referred genus *Alaptus* as belonging to the sarcosaprophagous community in the British Columbia. It is worth noting that species present in but not directly related to a cadaver (opportunists or accidental species) may be of forensic importance in certain circumstances, and that it becomes very necessary to know the local and regional sarcosaprophagous fauna and catalogue all the ecological categories of the carrion community. The data provided here enlarge the faunistic knowledge of the family Mymaridae in the Iberian Peninsula, and are the first known in relation with decomposing carrion in Europe. Samplings were carried out in a semiurban environment near the city of Murcia. The taxa collected and studied are the following:

1.— ***Alaptus* sp.** Westwood, 1839. Genus *Alaptus* is mainly a Psocoptera egg-parasite (LIENHARD, 1998). Some references to its association with Coccidae (Homoptera) are known, although some authors suggest that it is due to the fact that the eggs of Psocoptera frequently exist among Coccoidean colonies. ANDERSON & VANLAERHOVEN (1996) found this genus in decomposing remains during the decomposition stage (days 17-42). In our study it was collected mainly during the decomposition stage. Of note is that, during the autumn, genus *Alaptus* was the only taxon of Mymaridae collected. Until now, in the Iberian Peninsula, this genus was only known from Valencia. Studied specimens: 25/05/96 1♀, 8/08/96 1♀, 9/09/96 1♀, 24/10/96 1♀, 29/10/96 2♀♀, 15/11/96 1♀, 19/02/97 1♂, 1/03/97 1♀.

2.— ***Alaptus pallidicornis*** Förster, 1856. This species is a Psocoptera egg-parasite, and has been cited on eggs of *Lachesilla pedicularia* (Linnaeus, 1758) (Insecta, Psocoptera) in Germany, Holland and Belgium (DEBAUCHE, 1948). It was only collected in winter during the advanced decomposition stage. This is the first reference of this species in the sarcosaprophagous community and the first for the Iberian Peninsula, thus enlarging the distribution of the species to include the Mediterranean area. Studied specimens: 9/03/97 1♀, 14/03/97 1♀.

3.— ***Anagrus atomus*** (Linnaeus, 1767). This species has been cited throughout Europe, parasitizing several species of Cicadellidae (Hemiptera, Auchenorhyncha). In our study it was collected in winter, during the decomposition stage, although their known hosts were not collected. This is the first reference of the species in relation to decomposing remains. Up to now, this species had been cited in the Iberian Peninsula only from Navarra (northern Spain) (BAQUERO & JORDANA, 1999). Thus, the present record enlarges its known distribution. Studied specimens: 9/02/97 1♀, 21/02/97 1♀.

4.— ***Camptoptera* sp.** Förster, 1856. This genus is a parasite of certain families of Coleoptera, Homoptera, Hymenoptera, Lepidoptera and Thysanoptera (HUBER & LIN, 1999). It was collected in summer and winter samplings, during the decomposition and advanced decomposition stages. This is the first record of the genus in relation to decomposing remains. Studied specimens: 5/08/96 1♀, 5/02/97 1♀, 1/03/97 2♀♀, 7/03/97 1♀, 17/03/97 1♀.

5.— ***Erythmelus panis*** Enock, 1909. Although the genus is cosmopolitan, the species had not been cited in the Iberian Peninsula and, thus, the actual reference is of particular interest. Only one specimen was collected, in the spring sampling, during the advanced decomposition stage. This is the first reference to the species in relation to the sarcosaprophagous fauna. Studied specimens: 2/06/96 1♀.

6.— ***Gonatocerus litoralis*** (Haliday, 1833). This is a common European species, which parasites the eggs of *Macrosteles sexnotatus* (Fallen, 1806) and other Cicadellidae species. It was collected in spring, during the decomposition and advanced decomposition stages. This is the first reference in relation to decomposing remains and, also, the first reference to its presence in the Iberian southeast. Studied specimens: 19/05/96 1♀, 16/06/96 1♂.

7.— ***Polynema sp.*** Haliday, 1833. It has been cited as a parasite of some Homoptera (BALDUF, 1928), Braconidae (Hymenoptera) (NOYES & VALENTINE, 1989), Odonata, Miridae(AL-GHAMDI & STEWART, 1993) and Nabidae

(Hemiptera). In Thysanoptera has been cited on the basis of one reference for *Polynema indica* Narayanan & Subba, 1961. We found it in spring and winter during the decomposition and advanced decomposition stages. This is the first reference to the genus among sarcosaprophagous fauna and from the Iberian southeast. Studied specimens: 21/05/96 1♀, 10/06/96 1♀, 23/02/97 1♂.

8.— *Stethynium triclavatum* Enock, 1909. This species had been cited from Europe, South America and Asia, always as a parasite of the eggs of the family Cicadellidae. We collected a single specimen, in summer, during the decomposition stage. This is the first reference from decomposing remains and the first reference to the species from the Iberian southeast. Studied specimens: 6/08/96 1♀.

From a faunistic point of view, the data provided contribute to enlarging our knowledge concerning the presence and distribution of the family Mymaridae in the Iberian Peninsula. GARCIA-MERCET (1912) cited the first species from Valencia, *Parvulinus aurantii* Garcia-Mercet, 1912 (now included in genus *Alaptus*). Only thirteen species of Mymaridae have been cited subsequently (BAQUERO & JORDANA, 1999). In southeast Spain only *Alaptus minimus* Walker, 1846 has been cited (LLORENS & GARRIDO, 1992), as a parasite of white flies (Hemiptera, Sternorhyncha, Aleyrodidae). All the taxa identified at species level in this paper have previously been collected in Navarra (BAQUERO, per. com.), where *Anagrus atomus* was found as a parasite of the eggs of *Zyginidia scutellaris* Herrich-Schäffer, 1838, in corn.

Because they are parasites of other constituents of the sarcosaprophagous community, Mymaridae are constitutive of oportunistic and accidental components of it, according to SMITH (1986). It is important to note that insects may play various roles in the process of a death investigation (BYRD & CASTNER, 2001) and, although certain categories of arthropods do not permit direct accurate estimation of the postmortem interval, their study and evaluation provide very valuable data on the environmental conditions and characteristics of the forensic scene, the geographic origin, the season of the year and the decomposition stage of the corpse. In forensic entomological practice, all these data may contribute to the estimation of the postmortem interval, and research is needed to develop a geographical database of insect succession on carrion in a variety of habitats (ANDERSON, 2001). Because of that, the data provided are interesting not only from the faunistic but also from the applied to forensic sciences point of view.

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