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Contribution to the knowledge of the family Mymaridae Haliday (Hymenoptera: Chalcidoidea) in Navarra, North of Iberian peninsula

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ABSTRACT

Thirteen species of the family Mymaridae Haliday (Hymenoptera, Chalcidoidea) are added to the faunal list of Navarra (North of Iberian Peninsula): *Alaptus fusculus* Walker, *A. pallidicornis* Förster, *Anaphes diana* (Girault), *Cleruchus* sp., *Dicopus minutissima* Enock, *Erythmelus flavovarius* (Walker), *E. panis* (Enock), *Eustochus atripennis* Curtis, *Litus cynipseus* Haliday, *Mymar taprobanicum* Ward, *Ooctonus vulgatus* Haliday, *Stephanodes similis* (Förster) and *Stethynium triclavatum* Enock. Details about their European distribution and biology are also included. The specimens were collected with a Malaise trap in the locality of Cadreita, in the South of Navarra, and with a sweep net from corn fields in sixty localities around Navarra.

Keywords: *Hymenoptera*, *Mymaridae*, *Zea mays*, Navarra, Iberian peninsula.

RESUMEN

Contribución al conocimiento de la familia Mymaridae Haliday (Hymenoptera: Chalcidoidea) en Navarra, norte de la península Ibérica

Se añaden trece especies de la familia Mymaridae Haliday (Hymenoptera, Chalcidoidea) a la fauna de Navarra (norte de la Península Ibérica): *Alaptus fusculus* Walker, *A. pallidicornis* Förster, *Anaphes diana* (Girault), *Cleruchus* sp., *Dicopus minutissima* Enock, *Erythmelus flavovarius* (Walker), *E. panis* (Enock), *Eustochus atripennis* Curtis, *Litus cynipseus* Haliday, *Mymar taprobanicum* Ward, *Ooctonus vulgatus* Haliday, *Stephanodes similis* (Förster) y *Stethynium triclavatum* Enock. Se incluyen detalles acerca de la distribución de estas especies en Europa. Todos los ejemplares fueron recolectados utilizando una trampa Malaise, colocada en la localidad de Cadreita, y una manga entomológica, en campos de maíz de 60 localidades a lo largo de Navarra.

Palabras clave: *Hymenoptera*, *Mymaridae*, *Zea mays*, Navarra, Península Ibérica.

INTRODUCTION

The family Mymaridae was mentioned from the Iberian Peninsula for the first time by Ricardo GARCÍA-MERCET (1912). Only fifteen species has been recorded later by ANNECKE & DOUTT (1961), DYSART (1971), AESCHLIMANN (1977), WORNER et al. (1989), LLORENS (1990), LLORENS & GARRIDO (1992), MANSILLA et. al. (1995), CHIAPPINI et al. (1996), HUBER & FIDALGO (1997) and BAQUERO & JORDANA (1999).

In Navarra the corn is cultivated without insecticides; this allow us to study the useful associated fauna to the pests present in the horticultural area of Navarra. A large number of mymarids were captured, especially *Anagrus atomus* (Linnaeus, 1767) and *Gonatocerus litoralis* (Haliday, 1833). Some species of the family Mymaridae reduce considerably the populations of Cicadellidae or Delphacidae (BENREY & LAMP, 1993).

The object of this work is to increase the knowledge of the family Mymaridae in the Iberian Peninsula, contributing with figures and measures (table 1) that enable recognition of the species found, and compare the specimens captured with those of other regions. This work is justified by the little knowledge of this family of Hymenoptera in the Iberian Peninsula.

MATERIALS AND METHODS

The specimens were collected with a Malaise trap near corn fields and peach trees in the locality of Cadreita (south of Navarra), from 18-VI-1992 to 3-IX-1992, and with a sweep net in sixty localities around Navarra, between 1992 and 1995 on corn leaves.

The studied material is deposited in the Department of Zoology and Ecology, Faculty of Sciences, University of Navarra.

List of sampling stations with details of UTM co-ordinates and altitude in meters: Acedo, 30TWN62, 490 540 m; Amaiur (Maya), 30TXN2384, 282 m; Ancin, 30TWN6623, 482 m; Aniz, 30TXN1675, 380 m; Arga (río); Arguedas, 30TXM1767, 243 m; Arrayoz, 30TXN1779, 140 m; Bacaicoa, 30TWN7449, 515 m; Bigüezal, 30TXN5324, 1100 m; Cadreita, 30TXM0673, 276 m; Caparroso, 30TXM1090, 321 m; Castejón, 30TXM0771, 273 m; Corella, 30TXM0869, 370 m; Echarren, 30TWN9650, 460 m; Elgorriaga, 30TXN0777, 144 m; Elizondo, 30TXN2078, 202 m; Erice, 30TWN0148, 652 m; Eulz, 30TWN7727, 470 m; Huarte-Arakil, 30TWN8655, 471 m; Irañeta, 30TWN8753, 459 m; Irati, 30TXN46, 900 m; Marcaláin, 30TXN0751, 480 m; Marcilla, 30TXM0487, 290 m; Mintxate, 30TXN6955, 900 m; Murieta, 30TWN6923, 465 m; Narvarte, 30TXN1176, 138 m; Oieregui, 30TXN1278, 135 m; Peralta, 30TWM9888, 292 m; Sangüesa, 30TXN4117, 404 m; Santesteban, 30TXN0876, 123 m; Sorogáin, 30TXN3062, 800 m; Urdiain, 30TWN7149, 549 m; Urzainqui, 30TXN6743, 725 m.

RESULTS

From 94,083 arthropods extracted from 72 samples, 7.72% were mymarids, 61.64% of which belonged to the genera *Anagrus* Haliday and 17.88% to the species *Mymar taprobanicum* Ward. The rest of genus considered in this paper are poorly represented in the samples. *Zyginidia scutellaris* (Herrich-Schäffer, 1838), was the more abundant cicadellid in these fields, but *Macrosteles sexnotatus* (Fallén, 1806) and *Psammotettix alienus* (Dahlbom, 1951) were also present.

	Alaptus fusculus	*Alaptus pallidicornis*	*Anaphes diana*	*Cleruchus sp.*	*Dicopus minutissima*	*Erythmelus panis*	*Erythmelus flavovarius*
Body	0.51	0.42	0.59	0.89 metasoma: 0.42	0.46	0.55-0.66 0.62±0.04	0.58
Scape	0.062	0.068	0.110	0.110	0.075	0.080-0.092 0.087±0.004	0.100
Pedicel	0.033	0.040	-	0.042	0.038	0.030-0.037 0.033±0.002	0.040
F1	0.030	0.030	-	0.015	0.037	0.014-0.017 0.015±0.001	0.013
F2	0.045	0.045	0.033	0.020	0.026	0.012-0.019 0.017±0.002	0.018
F3	0.040	0.038	0.047	0.022	0.028	0.020-0.023 0.021±0.001	0.018
F4	0.035	0.035	0.045	0.022	0.032	0.022-0.032 0.029±0.003	0.020
F5	0.034	0.032	0.050	0.022	0.032	0.052-0.063 0.060±0.004	0.020
F6	-	-	0.045	0.022	0.032	-	-
F7	-	-	-	-	0.030	-	-
F8	-	-	-	-	-	-	-
Clava	0.097	0.090	0.110	0.095	0.092	0.092-0.110 0.101±0.005	0.100
FWL	0.45	0.44	0.60	0.52	0.39	0.35-0.44 0.40±0.03	0.44
FWW	0.050	0.044	0.082	0.038	0.040	0.050-0.065 0.058±0.004	0.085
L/W	9.0	10	7.32	13.68	9.75	6.31-7.64 6.92±0.45	5.18
FLMC	0.18	0.18	0.15	0.17	0.21	0.19-0.22 0.21±0.01	0.15
C/FWW	3.6	4.09	1.83	4.47	5.25	3.15-3.82 3.57±0.20	1.82
Fore tibia	0.16	0.14	0.21	0.15	0.15	0.120-0.145 0.142±0.012	0.14
Ovip. L	0.24	0.18	0.135	0.24	0.09	0.20-0.22 0.21±0.01	0.185
O/T3	1.50	1.28	0.64	1.62	0.60	1.33-1.67 1.49±0.09	1.28
n° of measures	n=1	n= 1	n= 1	n= 1		n= 9	n= 1

(Continuación Tabla 1)

	Eustochus atripennis	***Litus cynipseus***	***Mymar taprobanicum***	***Ooctonus vulgatus***	***Stephanodes similis***	***Stechynium triclavatum***
Body	0.95-1.32 1.09±0.12	0.65-0.70 0.069±0.02	0.70-0.78	1.22	0.94-1.30 1.12±0.10*	0.68-0.89 0.76±0.07
Petiole	0.41-0.60 0.47±0.07	-	-	0.12	0.16-0.20 0.18±0.01	-
Metasoma	0.14-0.18 0.16±0.01	-	-	0.48	0.41-0.47 0.44±0.02	-
Scape	0.125-0.180 0.144±0.020	0.14-0.16 0.15±0.01	0.250-0.230	0.170	0.100-0.110 0.103±0.005	0.060-0.078 0.067±0.006
Pedicel	0.060-0.075 0.070±0.005	0.05	0.052-0.055	0.060	0.042-0.050 0.048±0.003	0.032-0.041 0.037±0.003
F1	0.065-0.085 0.072±0.006	0.03	0.055-0.060	0.055	0.080-0.092 0.084±0.004	0.025-0.034 0.028±0.003
F2	0.066-0.088 0.074±0.008	0.04	0.245-0.270	0.050	0.090-0.108 0.099±0.006	0.032-0.042 0.037±0.003
F3	0.064-0.078 0.069±0.004	0.03-0.04	0.025-0.030	0.045	0.072-0.084 0.077±0.005	0.023-0.033 0.030±0.003
F4	0.055-0.064 0.057±0.003	0.03-0.04	0.028-0.032	0.032	0.060-0.070 0.063±0.004	0.023-0.033 0.029±0.003
F5	0.043-0.055 0.047±0.004	0.03	0.030-0.032	0.032	0.050-0.065 0.058±0.005	0.023-0.032 0.028±0.002
F6	0.038-0.047 0.042±0.003	0.03-0.04	0.045	0.030	0.057-0.072 0.063±0.005	0.025-0.040 0.032±0.003
F7	-	-	-	0.044	-	-
F8	-	-	-	0.040	-	-
Clava	0.138-0.160 0.144±0.007	0.14-0.15 0.14±0.01	0.130-0.138	0.115	0.136-0.150 0.145±0.005	0.103-0.122 0.112±0.005
FWL	0.98-1.28 1.09±0.11	0.71-0.78 0.75±0.03	1.00-1.05	0.97	1.18-1.27 1.24±0.03	0.54-0.66 0.61±0.04
FWW	0.29-0.43 0.35±0.05	0.05-0.06	0.110-0.120	0.33	0.28-0.33 0.31±0.02	0.123-0.170 0.151±0.013
L/W	2.91-3.38 3.13±0.15	12.98-14.60 13.85±0.64	8.69-9.54	2.94	3.81-4.27 4.05±0.167	3.81-4.42 4.41±0.18
FLMC	0.15-0.22 0.17±0.02	0.25-0.30 0.26±0.02	0.34-0.37	0.082	0.14-0.15 0.14±0.005	0.140-0.170 0.153±0.010
C/FWW	0.35-0.54 0.49±0.06	4.31-5.45 4.91±0.54	2.83-3.36	0.24	0.42-0.53 0.47±0.04	0.82-1.26 1.02±0.10
Fore tibia	0.42-0.56 0.49±0.04	0.25-0.27 0.26±0.01	0.41-0.44	0.35	0.36-0.42 0.39±0.02	0.180-0.225 0.198±0.012
Ovip. L	0.86-1.12 0.95±0.08	0.22-0.24 0.23±0.01	0.25-0.27	0.38	0.26-0.29 0.27±0.02	0.27-0.33 0.30±0.02
O/T3	1.70-2.15 1.96±0.13	0.81-0.92 0.87±0.04	0.59-0.63	1.09	0.66-0.72 0.70±0.02	1.38-1.61 1.53±0.06
nº of measures	n= 8	n= 5	n= 3	n= 1	n= 7, * n= 17	n=16

Table 1: Measurements (Min-max, mean±sd, in mm) of some females captured in Navarra. Abbreviations: **F1-F6**, = funicular articles. **FWL** = fore wing length; **FWW** = fore wing width; **L/W** = length/width ratio of fore wing; **FLMC** = longest marginal cilia of fore wing. **C/FWW** = longest marginal cilia of the fore wing/width of fore wing ratio. **HWL** = hind wing length; **HLMC**, hind wing longest marginal cilia. **Fore tibia** = length of fore tibia. **Ovip. L** = length of the ovipositor. **O/T3** = ovipositor/fore tibia lengths ratio.

***Alaptus fusculus* Walker, 1846**

Figs. 1A, 5A.

Distribution: described by WALKER (1846) from a specimen captured by Haliday from England. SOYKA (1948) found the species in Germany and Netherlands. DEBAUCHE (1948) mentioned its presence in Belgium (one female).

Hosts: HINCKS (1959) cited the capture of this species by Dr. E. Broadhead as parasitoid of eggs of the psocoptera *Mesopsocus immunis* (Stephens, 1836) and *M. unipunctatus* (Müller, 1764) from England. It was cited ex eggs of the psocoptera *Stenopsocus* (=*Graphopsocus*) *cruciatus* (Linnaeus, 1768) by Enock (KRYGER, 1950).

Material examined: Cadreita (30-II-1992, 1 ♀; 20-VII-1992, 1 ♀; 24-IX-1992; 1♂; 24-IX-1992, 1 ♀), E. Baquero leg.

***Alaptus pallidicornis* Förster, 1856**

Figs. 1B, 5B.

Distribution: there are many references from England excluding the type material. Later has been cited from Germany and Netherlands (SOYKA, 1939), Belgium (DEBAUCHE, 1948), Egypt (SOYKA, 1950), Bulgaria (DONEV, 1978) and Denmark (TRJAPITZIN, 1978).

Hosts: the first reference is over eggs of *Stenopsocus cruciatus* Linnaeus, 1767 (Insecta, Psocoptera) from England (KRYGER, 1950). DEBAUCHE (1948) found this species ex *Peridela pedicularia* (Linnaeus), 1758 on *Taxus baccata* Linnaeus. It has been reared on leaves of *Laurocerasus officinalis* Linnaeus infested with psocids from England (HINCKS, 1959).

Discussion: the diagnostic characteristic of the descriptions of this species agree with those of the specimen captured. There are only some differences between the antennal segment F2 and the ovipositor following the measurements of DEBAUCHE (1948).

Material examined: Cadreita (24-IX-1992, 1 ♀), E. Baquero leg.

***Anaphes (Anaphes) diana* (Girault, 1911)**

Figs. 1C, 5C.

Distribution: this species was described from England. Later has been cited from France, Iberian Peninsula ('Cataluña' and 'Andalucía'), south of Italy, Rumania, Bulgaria, Greece, Turkey, Iraq, Algeria, Morocco, New Zealand and Syria (AESCHLIMANN, 1986). Some biotypes from France and Greece were imported to Australia in 1976. The introduction failed probably due to dry climate (AESCHLIMANN, 1986; AESCHLIMANN et al., 1988). SCHAUFF (1984) cited this species from U.S.A. because importation and rearing.

Hosts: this minute mimarid has a clearly preference for the eggs of Coleoptera, and specially for the Curculionidae of genus *Sitona* (Coleoptera, Curculionidae, Brachyderinae) (AESCHLIMANN, 1986). This author has demonstrated that the species is capable to live over some species of *Sitona*.

Biology: its reproduction is partially bisexual with arrhenotokous parthenogenesis, thelytokous in females segregated each other (AESCHLIMANN, 1975). Posterior studies have demonstrated that bisexual and thelytokous parthenogenetic specimens live together in the nature (AESCHLIMANN, 1986).

Material examined: Cadreita (24-IX-1992, 1 ♀), E. Baquero leg.

***Cleruchus* sp. 1**

Figs. 2A, 5E.

Hosts of the genus: *C. fransseni* from Java was described from specimens obtained ex eggs of Locustidae (Orthoptera). Other undetermined species, from Malaysia, was cited ex eggs of *Callimerus arufer* (Coleoptera, Cleridae) (SUBBA RAO & HAYAT, 1983).

Discussion: the measurements of the ovipositor allow us to discriminate our specimens from the species described (TRJAPITZIN, 1978). The most similar species seems *C. megatrichus* Novicky, 1965 due to the similarity of the long wing microtrichias and the number of the cilia on the anterior margin of the wind.

Material examined: Sorogain (25-V-1996, 1 ♀, yellow *pan-trap* in beech forest), Acedo (2-IX-1997, 2 ♀♀, grass under *Quercus*), E. Baquero leg.

***Dicopus minutissima* Enock, 1909**

Figs. 2B, 5F.

Distribution: Only know from England.

Hosts: the genus has been cited as parasitoid of Diaspididae (HUBER, 1986).

Discussion: we have found a small difference in the length of the clava between the captured specimen and the description of the species.

Material examined: Arga river (upper part) (date of capture missing, 1 ♀), J. Arbea leg.

***Erythmelus flavovarius* (Walker, 1846)**

Figs. 2C, 5G.

Distribution: the type material was obtained from England (ENOCK, 1909 and 1914). Later, the species was cited from Belgium (DEBAUCHE, 1948). TRJAPITZIN (1978) refer his presence from Netherlands and Denmark.

Hosts: unknown.

Discussion: there is a small difference in the chaetotaxy and in the general dimensions given by DEBAUCHE (1948). Nevertheless, the specimens obtained have been identified as *E. flavovarius* (Walker, 1846) using the descriptions of the European species.

Material examined: Arguedas (19-VII-1993, 1 ♀), Cadreita (24-IX-1992, 1 ♀; 7-X-1992, 1 ♀), E. Baquero leg.

***Erythmelus panis* (Enock, 1909)**

Figs. 2D, 5H.

Distribution: described by ENOCK from England (1909). Posterior references: Belgium (DEBAUCHE, 1948), England, Denmark and Austria (TRJAPITZIN, 1978).

Hosts: unknown.

Material examined: Oieregui (20-VII-1994, 1 ♀ and 1 ♂), Elizondo (20-VII-1994, 1 ♂), Santesteban (20-VII-1994, 1 ♀), Arrayoz (20-VII-1994, 1 ♀ and 1 ♂), Aniz (20-VII-1994, 1 ♀), Elgorriaga (20-VII-1994,

1 ♂), Amaiur (20-VII-1994, 1♀ and 1♂), Urdax, 20-VII-1994, 1♂), Echarren (20-VII-1995, 1♀), Ancin (18-VIII-1995, 1♀), Sangüesa (28-VIII-1995, 6♀♀ y 1♂), Cadreita (24-IX-1992, 10♀♀; 24-IX-1992, 3♀♀; 07-X-1992, 1♀), E. Baquero leg.

Eustochus atripennis Curtis, 1832

Figs. 3A, 5I.

Distribution: Described by Walker from a specimen collected on grass in a forest near Middlesex. Later was cited some times from England until its reference from Belgium by DEBAUCHE (1948) in a sample of dead leaves. The last references are from Denmark, Germany (KRYGER, 1950) and Switzerland, with description of the male (VIGGIANI, 1970).

Hosts: unknown.

Discussion: the specimen deposited in the Spinola Coll. (Turin) was designed as neotype by Graham (1982), considering it originally from Ireland because HALIDAY (1833) cited *E. atripennis* in his '*Irish Insects*' catalogue.

Material examined: Bigüezal, oak forest (17-VI-1982, 2♀♀; 31-VIII-1982, 3♀♀), Erice, beech forest (17-VI-1982, 1♀), Irati (18-IX-1982, 1♀), Urzainqui (13-VI-1990, 1♀), E. Baquero leg.

Litus cynipseus Haliday, 1833

Figs. 3B, 5J.

Distribution: described and cited from England (HALIDAY, 1833; WALKER, 1846; FÖRSTER, 1847; ENOCK, 1909). Later has been found from Denmark as *L. krygeri* (KIEFFER, 1913), Belgium (DEBAUCHE, 1948) and Italy (VIGGIANI, 1973). In TRJAPITZIN (1978) is cited its presence from East Europe.

Hosts: KIEFFER (1913) described *L. krygeri* from specimens obtained ex eggs of *Ocypus olens* L. GIRAULT (1914) cited this species as parasitoid of Hydrometridae. VIGGIANI (1973) described the male from specimens reared from eggs of *Staphylinus* sp. and *Ocypus olens* L.

Material examined: Erice (17-VI-1982, 1♀, trap in a larch forest of *Larix* sp.), Marcalain (4-VI-1986, 2♀♀, pinewood), Mintxate (18-VII-1990, 1♀, trap in a mountain meadow of a beech forest), Irati (28-IV to 23-VIII-2000, 21♀♀, pit fall and Malaise trap in a beach-silver fir forest), E. Baquero leg.

Mymar taprobanicum Ward, 1875

Figs. 3C, 5K.

Distribution: WARD (1875) described this species by from Ceylon (Sri Lanka). Later indistinguishable specimens were captured from South Africa (ANNECKE, 1961), Puerto Rico (*Mymar antillanum* Dozier, 1937), Australia (*Mymar tyndalli* Girault, 1912) and Egypt (*Oglobiniella aegyptiaca* Soyka, 1950) (ANNECKE, 1961). In 1966, VIGGIANI cited the presence of the species from Italy. In the Iberian Peninsula, until the present reference, this species has been cited from Los Monegros (ASKEW, 1998).

Hosts: although is present in distant regions, there are no precise references about its biology, or relation with his habitual host. SUBBA RAO & HAYAT (1983) refereed its supposed relation with trips (Insecta, Thysanoptera) (the original reference is FALLÉN, that saw a female feeding beside them). This species has been cited as responsible of reduce the density of cicadellids and delfacids in rice fields in Thailand (BENREY & LAMP, 1993).

Discussion: MANI (1942) described the species *Mymar indicum* from a unique specimens (male), but VIGGIANI (1966) stated that probably was the male of *Mymar taprobanicum* Ward, 1875. The species was definitively synonymyzed by SUBBA RAO & HAYAT (1983). In the collection of samples of corn fields from Navarra, is interesting that only three males have been captured (from 1142 specimens in total).

Material examined: Cadreita (30-VI-1992, 6♀♀; 20-VII-1992, 12♀♀; 06-VIII-1992, 22♀♀; 26-VIII-1992, 70♀♀; 03-IX-1992, 166♀♀; 24-IX-1992, 325♀♀ and 1♂; 04-VIII-1992, 208♀♀; 26-VIII-1992, 55♀♀ and 1♂; 03-IX-1992, 78♀♀; 24-IX-1992, 112♀♀; 07-X-1992, 76♀♀; 30-X-1992, 5♀♀), Caparroso (25-VIII-1993, 1♀), Marcilla (25-VIII-1993, 1♀), Castejón (25-VIII-1993, 2 ♀♀), Peralta (1-XII-97, 1♂), E. Baquero leg.

***Ooctonus vulgatus* Haliday, 1833**

Figs. 3D, 5L.

Distribution: the species was described from England. Later was cited by Debauche as a new species, *Ooctonus wesmaeli* Debauche, 1948 from Belgium. MATHOT (1969) cited its presence from Norway.

Hosts: unknown. Other species of the genus are egg parasitoids of Cicadellidae and Cercopidae.

Discussion: HINCKS (1952), after the study of many European specimens stated that *Ooctonus vulgatus* Haliday, 1833 cited by SOYKA (1950), it was a new species: *Ooctonus soykai* Hincks, 1952.

Material examined: Arrayoz (27-IV-1991, 1 ♀), E. Baquero leg.

***Stephanodes similis* (Förster, 1847)**

Figs. 4C, 5O.

Distribution: described from Germany (FÖRSTER, 1847). Its actual distribution is very wide and includes Europe, North America and Argentina. It was cited from Navarra by HUBER & FIDALGO (1997).

Hosts: unknown. Other species of the genus are egg parasitoids of Nabidae and Cicadellidae (HUBER & FIDALGO, 1997).

Discussion: this is the unique species of the genus presents in Europe.

Material examined: Cadreita (30-VI-1992, 3♀♀; 06-VIII-1992, 1♂; 03-IX-1992, 1♀; 24-IX-1992, 2♀♀ and 1♂), Corella (19-VII-1993, 1♂), Caparroso (17-VIII-1993, 1♀ and 3♂♂; 25-VIII-1993; 2 ♀♀ and 4♂♂), Castejón (25-VIII-1993, 2♀♀ and 5♂♂), Corella (17-VII-1994, 1♀), Lodosa (19-VII-1994, 1♀ and 1♂), Calahorra (La Rioja, 19-VII-1994, 1♀), Lodosa (19-VII-1994, 1♀), Narvarte (20-VII-1994, 1♀), Echarren (20-VII-1995, 3♀♀ and 1♂), Huarte-arakil (20-VII-1995, 1♀), Bacaicoa (20-VII-1995, 10♀♀ and 4♂♂), Urdiain (20-VII-1995, 1♂), Eulz (18-VIII-1995, 1♀ and 1♂), Murieta 18-VIII-1995, 1♀ and 1♂), E. Baquero leg.

***Stethynium triclavatum* Enock, 1909**

Figs. 4D, 5P, 5P'.

Distribution: Europe, North America and the Indian subcontinent. In Europe is present from England, Belgium, Germany, France, Austria, Denmark and Rumania (HUBER, 1987).

Hosts: species exclusively related with cicadellid eggs (Homoptera, Cicadellidae). HUBER (1987) listed the references known until the moment for the species host's.

Discussion: HUBER (1987) designed the type material. In the same paper stated that the specimens from India are approximately a 20% smaller that European and American. Mentioned a fossil species too: *Stethynium townesi* Thuróczy, 1983 found from Baltic Amber and described by him as very similar to *Stethynium triclavatum* Enock, 1909 although with some differences in the winds and antennae of the holotype (a female).

Material examined: Cadreita (30.06.1992, 1♀; 24.09.1992, 9♀♀ and 1♂; 03.09.1992, 3♀♀; 24.09.1992, 9♀♀; 07.10.1992, 13♀♀; 30.10.1992, 4♀♀), Irañeta (20.07.1995, 1♀), E. Baquero leg.

Other genera

In the study some specimens for a species of ***Camptoptera*** Förster (Figs. 1D, 5D) and for at least two species of ***Polynema*** Haliday (Figs. 4A-B, 5M-N) have been captured. These two genus include a great number of species described by Soyka from Austria and other countries with superficial descriptions or without any description. At this moment, and waiting a revision of the type material of this author, is very difficult identify with certainty the species of these two genera.

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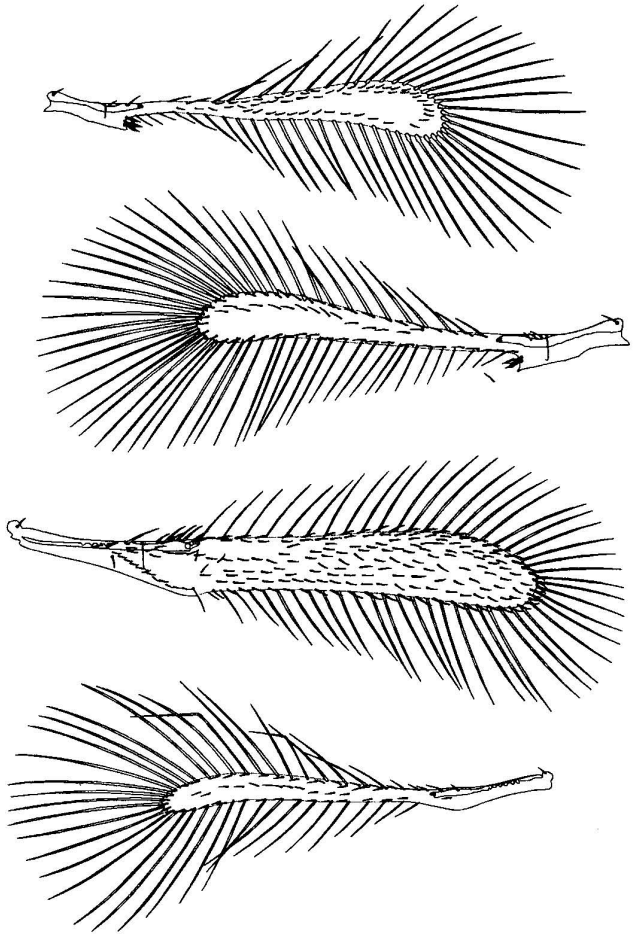

Figure 1: A, *Alaptus fusculus* Walker; **B,** *A. pallidicornis* Förster; **C,** *Anaphes diana* (Girault); **D,** *Camptoptera* sp. 1. Bar: 0,1 mm

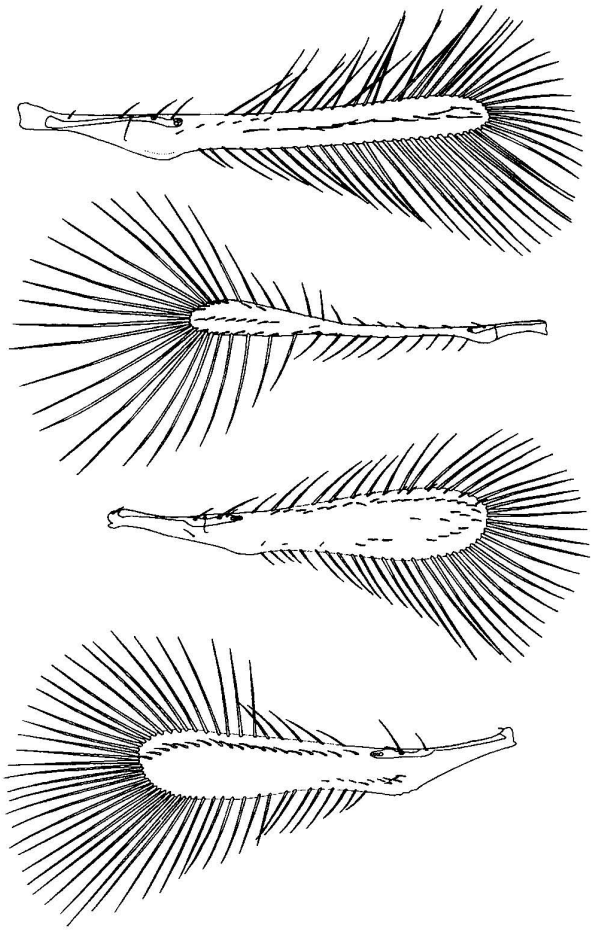

Figure 2: A, *Cleruchus* sp.1; **B,** *Dicopus minutissima* Enock; **C,** *Erythmelus flavovarius* (Walker); **D,** *E. panis* (Enock). Bar: 0,1 mm

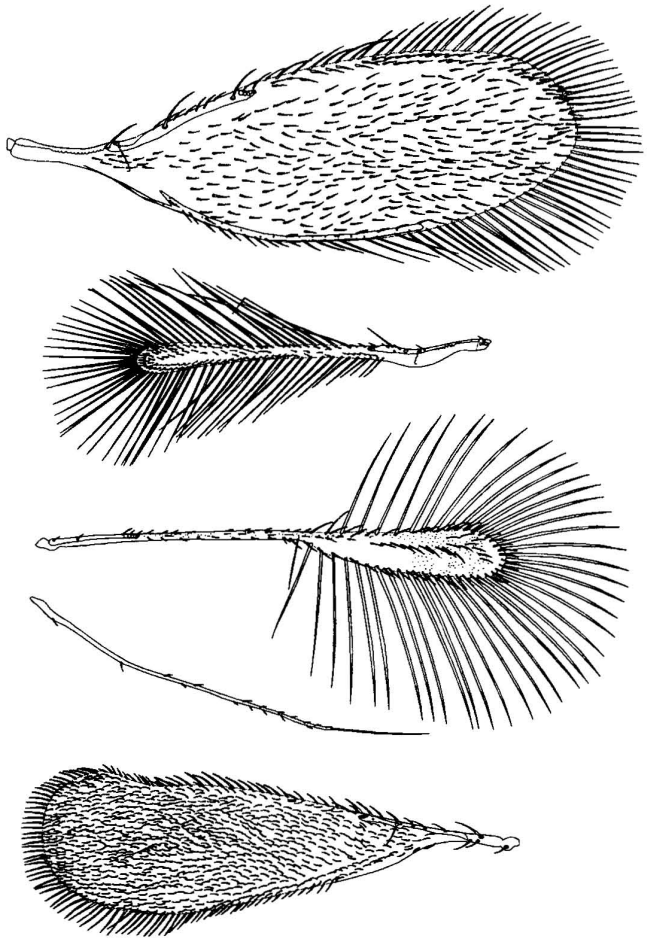

Figure 3: A, *Eustochus atripennis* Curtis; **B,** *Litus cynipseus* Haliday; **C,** *Mymar taprobanicum* Ward (fore and hindwing); **D,** *Ooctonus vulgatus* Haliday. Bar: 0,1 mm

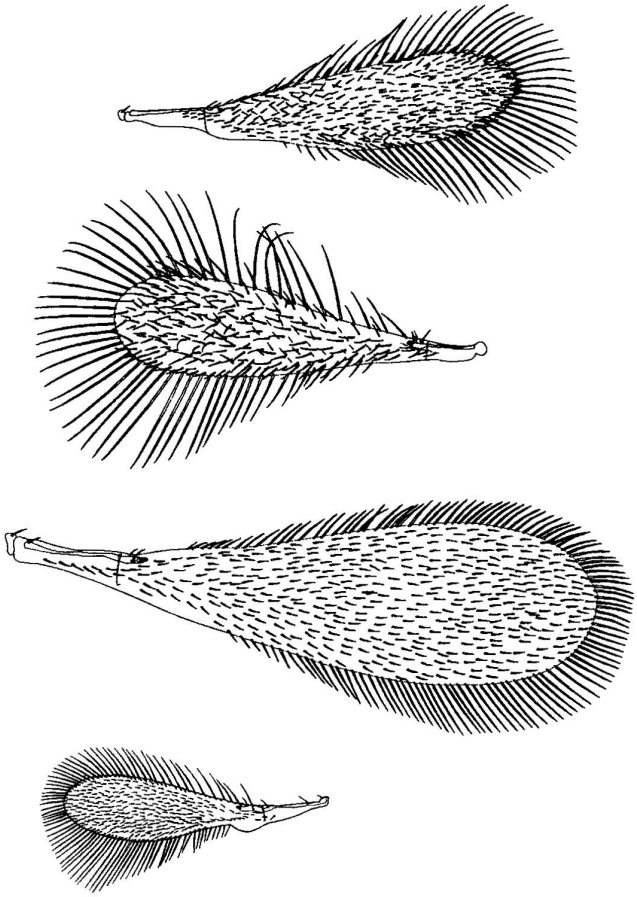

Figure 4 A, *Polynema* sp.1; **B,** *Polynema* sp.2; **C,** *Stephanodes similis* (Förster), **D,** *Stethynium triclavatum* Enock. Bar: 0,1 mm

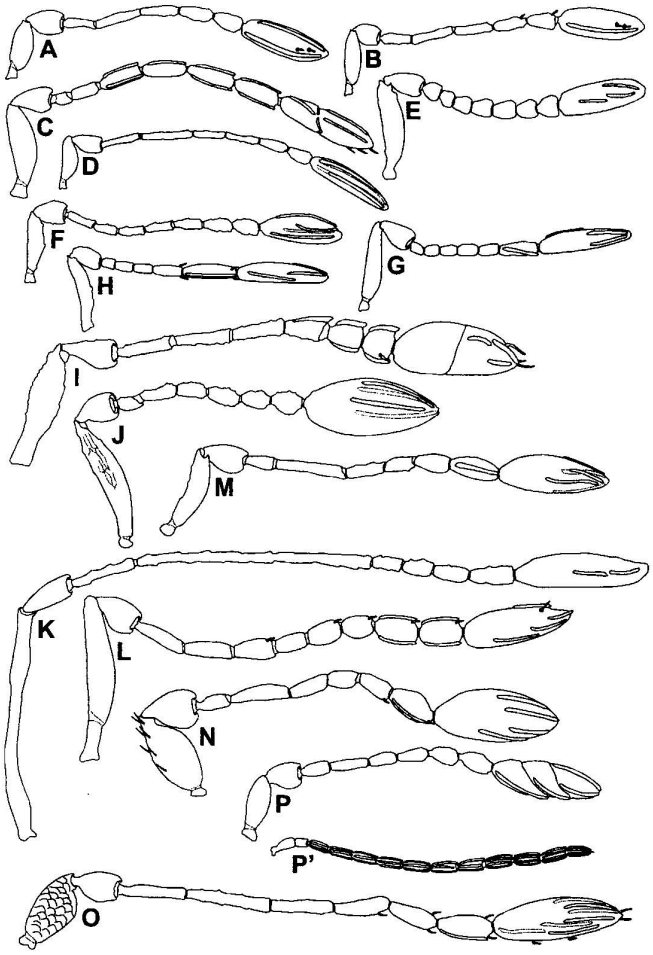

Figure 5: A, *Alaptus fusculus* Walker; **B,** *A. pallidicornis* Förster; **C,** *Anaphes diana* (Girault); **D,** *Camptoptera* sp. 1; **E,** *Cleruchus* sp.1; **F,** *Dicopus minutissima* Enock; **G,** *Erythmelus flavovarius* (Walker); **H,** *E. panis* (Enock); **I,** *Eustochus atripennis* Curtis; **J,** *Litus cynipseus* Haliday; **K,** *Mymar taprobanicum* Ward; **L,** *Octonus vulgatus* Haliday; **M,** *Polynema* sp.1; **N,** *Polynema* sp.2; **O,** *Stephanodes similis* (Förster); **P,** *Stethynium triclavatum* Enock, female; **P',** *S. triclavatum*, male. Bar: 0,1 mm.