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**New citations of Alysiini from Spain, with a description of
Dinotrema mediocornis hispanicum nov.ssp. and of the females of
Aspilota inflatinervis and *Synaldis azorica* (Hymenoptera,
Braconidae, Alysiinae)**

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A b s t r a c t : 18 species of Alysiini are cited for the first time from Spain: *Aphaereta rubicunda* TOBIAS; *Aspilota anaphoretica* FISCHER; *A. flagellaris* FISCHER; *A. inflatinervis* FISCHER; *A. extremicornis* FISCHER; *A. variabilis* TOBIAS; *Dinotrema latitergum* (FISCHER); *D. significarium* (FISCHER); *D. spitzzickense* (FISCHER); *Orthostigma beyarslani* FISCHER; *Phaenocarpa carinthiaca* FISCHER; *Ph. fidelis* FISCHER; *Ph. livida* (HALIDAY); *Synaldis armenica* FISCHER; *S. azorica* FISCHER; *S. babyana* FISCHER; *S. distracta* (NEES), and *S. lacessiva* FISCHER. For each taxon, a diagnosis at genus level and a list of recognised hosts at family level are provided. A diagnosis is included for each species, together with its geographic distribution, and for some of them, data on their hosts or comments on their morphological variability are provided. Additionally, keys for the discrimination of the Iberian species are provided, and a subspecies of this tribe: *Dinotrema mediocornis hispanicum*, as well as the females of *Aspilota inflatinervis* and *S. azorica*, are described for the first time and illustrated. Finally, we offer a fauna-oriented comment about the Spanish Alysiini and justify the use of the taxon *Synaldis*.

K e y w o r d s : Hymenoptera, Braconidae, *Alysiini*, new cites, descriptions, Spain.

Introduction

The Alysiinae form a broad subfamily of braconids that has about 2000 species (YU et al. 2005) encompassed within two tribes: Alysiini and Dacnusiini (SHENEFELT 1974). Its monophyly is based on the possession of exodont mandibles and the fact that they are koinobiont endoparasitoids of cyclorrhaphous Diptera.

Within this broad set, and in particular among the Alysiini, the genera are commonly included in groups with no defined taxonomical category (WHARTON 2002). Thus, the genera *Aspilota* FOERSTER 1862, *Dinotrema* FOERSTER 1862, *Orthostigma* RATZEBURG 1844 and *Synaldis* FOERSTER 1862 are included in the *Aspilota*-complex (= *Aspilota* s.l.), a group characterised by displaying the following derived character states: a) a tendency to have a linear st; b) a venom reservoir with a long neck and parallel sides, and a fairly simple poison gland. For this group, one of the groups of braconids with the greatest number of species, here for the first time we cite 15 species for the Spanish fauna and we describe the females of *Aspilota inflatinervis* FISCHER 1973 and *Synaldis azorica*

FISCHER 2003, and, in particular, we describe a new subspecies of the genus *Dinotrema*: *Dinotrema mediocornis hispanicum* ssp.n. The genera *Aphaereta* FOERSTER 1862 and *Phaenocarpa* FOERSTER 1862 are included in the *Phaenocarpa*-complex, a group characterised by displaying the first flagellomere shorter than the second, and the secondary venom duct inserted close to the anterior end of an undivided reservoir (QUICKE et al. 1997). Of this group, here we cite 3 species for the first time to the Spanish fauna. A diagnosis and the world-wide and Spanish geographic distribution are included, and in some cases we add comments on the specific morphological variability. Keys for the discrimination of the species are provided. All the material examined is deposited in the collections of the "Torres-Sala" Entomological Foundation (Valencia, Spain).

The morphological terms for the body, wing venation, and biometric data follow FISCHER (1973). The following abbreviations were used: 1) Antennae: F, Fl, F2, Fm, Fp = Flagellomere(s), flagellomere 1, 2, etc., middle flagellomere(s), penultimate flagellomere. 2) Metasoma: T, T1, T2 = tergite(s), first, second tergite. 3) Wings: Fore wing: st = pterostigma; st1 = basal section of st (portion or segment of the pterostigma from its base to the insertion of r1). r, r1+r2, r3, = radial vein, combined first and second abscissa of r, third abscissa of radius (r). cc1, cc2 = first, second transverse-cubital vein. cua = distal (third) abscissa of medial vein. cu1, cu2 = 1st, 2nd abscissa of cu (= cubital vein). d = discoidal vein. nr = recurrent vein (Nervus recurrens). np = parallel vein (nervus parallelus). nv = nervulus. R = radial cell. B = brachial cell. Hind wing: cu2' = second abscissa of cubital vein. M', SM' = medial and submedial cell. nr' = radiellus (recurrent vein). r' = radial vein.

Systematic part

Genus *Aphaereta* FOERSTER 1862

Type species: *Alysia cephalotes* HALIDAY 1833

D i a g n o s i s : F2 longer than F1. Mandibles tridentate, simple; diagonal and ventral ridges well differentiated. st not differentiated from the metacarp; cu1 absent; cc1 shorter than r2; B open; np interstitial or almost interstitial. Posterior wings generally with the nr' absent. Ovipositor sheaths setose.

H o s t s : Anthomyiidae, Calliphoridae, Chloropidae, Drosophilidae, Lonchaeidae, Muscidae, Otitidae, Psilidae, Sepsidae, Sarcophagidae, Scathophagidae, Sciomyzidae, Tachinidae, Tephritidae. Although it has a large number of hosts, this genus prefers sarcophagids.

New citation for the Spanish fauna:

Aphaereta rubicunda TOBIAS 1962

D i a g n o s i s : Length: 2.5 mm. Antennae longer than body. Dorsal-most zone of mesonotum yellowish, with a pit; R reaching apex of wing; femur of last pair of legs 5 times longer than maximum width. T1 longer than its apical width.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : China, Russia, Spain (Guadalajara: Alustante (UTM: 30T 61450), 5.V.1989, 2♂♂, from pupae of *Lucilia caesar* (L. 1758) (Host det.: M. Portillo)).

Key to separation of Iberian species

- 1 Mesonotum without dorsal pit.....2
- Mesonotum with dorsal pit.....4
- 2 Head, maximum 1.7 times broader than long. T1 without defined central carina.....
.....*A. falcigera* GRAHAM, ♀ ♂
- Head more than 1.7 times broader than long. T1 with defined central carina.....3
- 3 Body robust. Antennae with 20-22 antennomeres.....*A. minuta* (NEES), ♀ ♂
- Thin body. Antennae with 18-20 antennomeres.....*A. difficilis* NIXON, ♀ ♂
- 4 Ovipositor shorter than posterior tibiae. Antennae with 19 antennomeres. r longer than width of st*A. brevis* TOBIAS, ♀
- Ovipositor as long as or longer than posterior tibiae. Antennae with 22 to 28 antennomeres5
- 5 Dorsal-most zone of mesonotum reddish-yellow. Notauli only developed at start.....
.....*A. rubicunda* TOBIAS, ♂
- Mesonotum dark. Notauli well developed.....6
- 6 Setae of apical third of posterior tibiae shorter than width of tibia. Distal flagellomeres as wide as long.....*A. major* (THOMSON), ♀ ♂
- Setae of apical third of posterior tibia as long as width of tibia. Distal flagellomeres longer than broad*A. tenuicornis* NIXON, ♀

Genus *Aspilota* FOERSTER 1862

Type species: *Alysia ruficornis* NEES von ESENBECK 1834

D i a g n o s i s : Mandibles small, simple, often with tooth 1 diminished with respect to tooth 3, external surface almost smooth, ridges diagonal and ventral, often poorly developed and even absent. Anterior tentorial pits broadened, generally extending to ventral edge of eye. Flagellum short, with few flagellomeres, generally more setose towards the base. Notauli short, generally not extending beyond of the declivity of the mesoscutum. st reduced, linear, the metacarp not being distinguished; cc1 shorter than r2; nr clearly postfurcal; B closed.

H o s t s : Anthomyiidae, Phoridae, Platypezidae.

New citations for the Spanish fauna:

Aspilota anaphoretica FISCHER 1973

D i a g n o s i s : Length: 1.8 mm. Head twice as broad as long, not widened behind eyes; antennae (♀: 17 antennomeres, ♂: 19); eyes as long as temples; tooth 1 developed normally, tooth 3 lobe-shaped. Sternaulus crenellate, reaching anterior edge. r2 more than twice as long as cc1; d longer than nr. Ovipositor sheaths 1.5 times longer than T1.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : Austria, Greece, Hungary, Korea, Spain (Soria: Gormaz (UTM: 30T 50459), 11.8.1977, 2♂♂, 6♀♀).

Aspilota extremicornis FISCHER 1976

D i a g n o s i s : Length: 1.7 mm. F1 4.8 times longer than broad, flagellomeres central 3.1 times longer than broad; tooth 1 of mandibles developed normally, perhaps slightly smaller than tooth 3; temples longer than eyes. Mesoscutellum without central pit. T1 at least twice as long as apical width.

Geographic distribution and material studied: Austria, Spain (Burgos: Sotopalacios (UTM: 30T 44470), 23.6.1987, 4♂♂).

***Aspilota flagellaris* FISCHER 1973**

Diagnosis: Length: 1.9 mm. Eyes as long as temples; antennomere 1 of flagellum 4 to 6 times longer than broad; tooth 1 developed normally, tooth 3 with lobe shape. r2 2.7 times longer than cc1, r3 developed normally, d longer than nr. Metasoma black as from T1.

Geographic distribution and material studied: Austria, Korea, Spain (Guadalajara: Alustante, 10.6.1994, 8♂♂).

***Aspilota inflatineris* FISCHER 1973 (Figs 1, 2)**

Diagnosis: Length: 1.5 mm. F1 4 times or more longer than broad; eyes as long as temples; tooth 1 of mandibles developed normally, tooth 3 lobe-shaped. r2 at least 2.7 times longer than cc1, r3 weak, although clearly thickened, above all at centre, d longer than nr. Mesoscutellum without dorsal pit. T1 at least twice as long as its apical width.

Geographic distribution and material studied: Austria, Hungary, Korea, Spain (Guadalajara: Alovera (UTM: 30T 48449), 10.6.1984, 2♂♂, 3♀♀, from puparia of *Megaselia affinis* (WOOD 1909) (Host det.: M. Portillo)).

Description of female

Body length: 1.6 mm.

♀.- Head: 1.8 times broader than long, 1.6 times broader than mesonotum, clearly widened between temples; eyes as long as temples; distance between toruli and eyes as long as diameter of the former, the distance between these less; posterior part of head markedly cleft, upper parts bare, some fine setae only on posterior part of head, setigerous points unrecognisable; ocelli small, the distance between them greater than the diameter of an ocellus, distance between an exterior ocellus and the interior edge of eye as large as the width of the ocellar area; epicranial suture absent. Head 1.7 times broader than face. Face 1.3 times as broad as high, with very fine light-coloured setae along the central carina, with some longer setae near the inferior edge of the eyes; edges of eyes curved, diverging downwards. Clypeus 2.3 times broader than high, trapezoidal, markedly swollen, with a few fine setae, separated from face by a smooth groove. Paraclypeal area broadened next to edge of eye, very deep and clearly delimited, three times broader than high, upper and lower edges straight and parallel. Mandibles along central line 1.4 times longer than broad apically; lower edge straight, upper edge slightly curved upwards as from basal third, and this therefore broadened distally; tooth 1 rounded, not broader than tooth 2, a sharp angle between tooth 1 and tooth 2; tooth 2 sharp and protruding; tooth 3 rounded and lobe-shaped, as broad as teeth 1 and 2 together, setae on outer edge surpassing apex of tooth 2; outer surface smooth; maxillary palpi as long as height of head. Eyes, seen laterally, 1.4 times higher than long, only very slightly longer than width of temples. Antennae filiform, as long as body, 20-segmented; F1 scarcely thinner than other flagellomeres, four times as long as wide; F2 3.7 longer than wide and 0.9 times the length of F1; Fm and Fp 2.5 times longer than wide; flagellomeres separated from one another in a moderately evident way, most setae shorter than width of flagellomeres, only some apical setae of the same length; two sensilla visible in lateral view.

Mesosoma: 1.3 times longer than high, 1.6 times higher than head, upper part strongly swollen. Mesoscutum 1.2 times broader than long, uniformly rounded in front of tegulae, without setae, with only a short fine setosity (pilosity) on the declivity; notauli developed finely on front, reaching disc, their assumed trajectory is insinuated by a row of fine hairs along a fine line; without mid pit; sides rounded all over, marginal sulci simple. Prescutellar sulcus moderately deep, finely crenellate at bottom, divided, each lateral field as long as wide. Scutellum, postaxillae and lateral areas of metanotum almost completely smooth. Propodeum provided with basal carina and central transverse carina on front half, anterior part almost horizontal and shiny, very slight irregular, the posterior part finely wrinkled, spiracles not apparent. Lower furrow of each side of pronotum finely crenellate. Sternaulus crenellate, reaching neither the front edge of the middle coxa, nor the anterior margin of the mesopleuron, front mesosternal furrow simple, posterior marginal furrow finely crenellate. Posterior femur 4.7 times longer than wide, posterior tarsus as long as posterior tibia.

Fore wing: r emerges from behind the base of the st by at least a length equivalent to that of r1; r1 twice as long as the width of the st; r2 2.7 times longer than cc1; r3 curved outwards, weak behind base, but markedly thickened, 2.5 times longer r2; R reaches end of wing; nr in postfurcal position by a distance equivalent to its own length; B 2.5 times longer than broad, distally only slightly widened; cua broken at centre.

Metasoma: as long as head and mesosoma together. T1 2.5 times longer than wide on posterior part, very weak forwards and narrowed in a straight line, with longitudinal fissures; spiracles located at centre of lateral margins and not apparent; dorsal fossae not very deep, basal notch longer than wide, basal carinae converging backwards and are finally included within sculpture.

Colouration: Black. In yellow: scape, pedicel, annellus, mouthparts, legs, tegulae and wing venation. Wing membrane hyaline.

The female of this species is like the male, but differs by having 20-segmented antennae.

***Aspilota variabilis* TOBIAS 1962**

D i a g n o s i s : length: 1.5 mm. Mandible along mid-line 1.7 to 2 times longer than apical width, tooth 1 developed normally, sometimes smaller than tooth 3. Prothorax dark; Mesoscutellum without dorsal pit; sternaulus reaching anterior edge, posterior mesopleural sulcus crenellate; propodeum with broad pentagonal areola, rough. r2 maximally 1.7 times longer than cc1. T1 at least twice as long as apical width.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : Former Czechoslovakia, Korea, Poland, Russia, Spain (Soria: Medinaceli (UTM: 30T 55456), 10.VII.1984, 1♀).

Key for separation of Iberian species

- 1 Tooth 1 short, small, only present as angle, more or less vertically distanced from tooth 2, optimally almost unappreciable with respect to other teethgroup *A. fasciatae*
- Tooth 1 developed normally, maximally slightly smaller than tooth 2, not departing from it vertically, on optimum occasions visible with respect to teeth 2 and 3group *A. lobidens*

group *A. fasciatae*

Propodeum with pentagonal areola. Sternaulus reaching neither anterior edge of mesopleuron nor central coxae (only one species)..... *A. insolita* TOBIAS, ♀

group *A. lobidens*

- 1 Temples longer than eyes.....2
- Temples as long as eyes or shorter6
- 2 r3 4 times as long as r2. Head strongly inclined downwards, broader between temples than between eyes. Mesosoma and metasoma very compressed.....
..... *A. compressa* (HALIDAY), ♀
- r3 between 2.7-3.5 times longer than r2. Head slightly inclined downwards.....3
- 3 T1, at least twice as long as broad.....4
- T1 1.6 times longer than broad.....5
- 4 F1 4.8 times longer than broad, central flagellomeres 3.1 times longer than broad
..... *A. extremicornis* FISCHER, ♂
- F1 3 longer than broad, central flagellomeres maximally 1.8 times longer than broad.....
..... *A. propedaemon* FISCHER, ♀
- 5 Lateral fields of scutellar sulcus broader than long. r2 twice as long as cc1. Metasoma, as from T1, yellow or brown. Antennae with 22-25 antennomeres.....
..... *A. efoveolata* (THOMSON), ♀ ♂
- Lateral fields of scutellar sulcus not broader than long. r2 1.7 times longer than cc1. Metasoma black. Antennae with 16 antennomeres *A. valenciensis* FISCHER, ♀
- 6 Antennae with maximum of 14 antennomeres7
- Antennae with at least 16 antennomeres8
- 7 Antennae with 13 antennomeres. r3 3 times longer than r2. Head slightly wider between temples than between eyes..... *A. minima* (THOMSON), ♀ ♂
- Antennae with 14 – 15 antennomeres. r3 2.2 times longer than r2. Head not broadened behind eyes..... *A. propeminimam* FISCHER, Tormos, Pardo & Asís, ♀
8. r2 a maximum of 1.7 times longer than cc1 *A. variabilis* TOBIAS, ♀
- r2 more than twice as long as cc1.....9
9. Eyes 1.6 times longer than temples. T1 1.6 times longer than wide. Propodeum irregular, with poorly defined cells, matt. Ovipositor sheaths shorter than T1.....
..... *A. ruficornis* (NEES), ♀ ♂
- Eyes the same length as temples. T1 2.3-4 times longer than broad10
10. r2 at least 2.7 times longer than cc1. F1 4 times longer than broad.....11
- r2 a maximum of 2.5 times longer than cc1. F1 a maximum of 3.5 times longer than broad; if r2 is 2.7 times longer than cc1, then antennae only have 18 antennomeres.....13
11. Antennae with 20 or more antennomeres (Fig. 1). r3 weak, although clearly thickened at centre (Fig. 2)..... *A. inflatinervis* FISCHER, ♀ ♂
- Antennae with at least 20 antennomeres. r3 with normal morphology12
12. Distance between ocelli equal to their diameter. Sternaulus reaching anterior edge.....
..... *A. flagellaris* FISCHER, ♂
- Small ocelli, distance between them greater than their diameter. Sternaulus not reaching anterior edge *A. flagimilis* FISCHER, ♀
13. Sternaulus clearly crenellate, reaching anterior edge. Ovipositor sheaths 1.5 times longer than T1 *A. anaphoretica* FISCHER, ♀ ♂
- Sternaulus weakly crenellate, short, Ovipositor sheaths shorter than T1
..... *A. fuscicornis* (HALIDAY), ♀ ♂

Genus *Dinotrema* FOERSTER 1862

Type species: *Dinotrema erythropa* FOERSTER 1862.

D i a g n o s i s : Mandibles small, simple, tridentate. Anterior tentorial pits reduced, not reaching ventral edge of eyes. st reduced, linear, ccl generally present, absent in some species, shorter than r2; m-cu clearly postfurcal. Ovipositor sheaths setose.

H o s t s : Anthomyiidae, Phoridae, Platypezidae.

New citations for the Spanish fauna:

Dinotrema latitergum (FISCHER 1975)

Aspilota latitergum FISCHER 1975

D i a g n o s i s : T1 2.5 times longer than apical width. r2 2.25 times longer than cc1. Sulcus of posterior edge of mesopleuron crenellate.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : Austria, Spain (Soria: Covalada (UTM: 30T 51464), 14.VIII.1977, 2♂♂, from puparia of *Spiniphora* sp. (Host det.: M. Portillo)).

Dinotrema mediocornis hispanicum nov.ssp. (Figs 3, 4)

D i a g n o s i s : Length: 2.3 mm. The specimens of this new subspecies are exactly like *D. mediocornis mediocornis* (FISCHER 1973), from which it is distinguished by the following character states: a) T1 (petiole) is red instead of dark, and b) female antennae with 18-19 antennomeres. The male is new (is described for the first time), very similar to female, but antennae with 23 antennomeres.

Type material: Spain: Burgos: Sotopalacios, 20.VIII.1979, 1♀ (Holotype), 22.VIII.1979, 6♂♂, 23♀♀ (Paratypes).

E t y m o l o g y : The name of this subspecies refers to Spain, the country of which it is described for first time.

Body length: 2.3 mm.

♂.- Head: 1.8 times as wide as long, 1.3 times as wide as mesoscutum, between temples practically as wide as between eyes; eyes not protuberant, as long as temples; distance between toruli and distance of them from eyes as great as their diameter; occiput excavated, upper surface bare, only a few fine setae on its sides; ocelli slightly protuberant, distance between them twice as long as diameter of an ocellus, the distance between lateral ocellus and internal edge of eye as large as width of ocellar field. Head 1.6 times as wide as face. Head 1.4 times as wide as high, swollen, only flat on sides and without setae, with clear dense setosity directed upwards, setose punctation not recognizable, with some longer setae close to eyes, edges of eyes slightly curved and parallel. Clypeus twice as wide as high, trapezoidal, slightly swollen, with fine setae, separated from face by a smooth groove. Paraclypeal pits inclined, oval, their distance to eyes as great as their diameter. Head, in lateral view, as long as high; eyes, in lateral view, 1.7 as high as long, temples very slightly broader than length of eyes. Mandible 1.4 times as long as wide apically, widened distally, upper edge curved upwards, lower edge directed slightly downwards and hence widened in distal portion; tooth 1 rounded at apex, tooth 2 sharp, an acute notch between tooth 1 and tooth 2, tooth 3 rounded throughout width, a right angle between tooth 2 and tooth 3, outer edge of tooth 3 equipped with setae; external

surface of tooth 3 with setae; outer surface completely bare; maxillary palpi as long as height of head. Antennae filiform, not as long as body, 23-segmented; F1 4 times longer than broad, only slightly narrower than others, Fm and Fp 1.8 times longer than wide; flagellomeres clearly separated from one another, setae longer than or as long as width of antennomeres of flagellum, three sensillae visible in lateral view.

Mesosoma: One third longer than high, 1.7 times higher than head, upper part swollen. Mesonotum 1.3 times wider than high, uniformly rounded in front of the tegulae, devoid of setae, with fine setae only on anterior declivity; notauli only developed at start, its assumed trajectory being insinuated by lines of fine setae; mid pit lengthened linearly, sides bordered all over, marginal sulci inconspicuous, reaching notauli. Prescutellar sulcus smooth, divided, each lateral field as long as wide. Scutellum, postaxillae and lateral areas of metanotum smooth. Propodeum with longitudinal carina and costulae complete, wrinkled around carinae, the point at which the carinae cross extended forming a small point; spiracles inconspicuous. Anterior furrow of the side of prothorax slightly crenellate. Sternaulus crenellate, shortened on both sides. Anterior mesosternal furrow and epicoxal furrow crenellate only on basal-most part; marginal posterior furrow punctate on basal zone, above almost smooth. Posterior femur 4.4 times longer than wide. Posterior tarsus as long as posterior tibia.

Fore wing: r emerges from behind the base of the st at a distance slightly shorter than the length of r1; r1 twice as long as width of st; r2 2.6 times longer than ccl; r3 curved outwards, 1.8 times longer than r2; R reaches tip of wing; nr. weakly postfurcal; cu2 only slightly narrowed distally; d twice as long as nr.; nv weakly postfurcal; B twice as long as wide, broadened distally; np emerges from below the middle of the distal side of B.

Metasoma: As long as head and mesosoma together. T1 2.3 times longer than wide on posterior part, uniformly narrowed forwards, striated longitudinally, basal notch as wide as long, basal carinae converging backwards on anterior third, dorsal fossae deep. Distal tergites folded above. Ovipositor sheaths 1.7 times longer than T1, the part surpassing the apex of the last segment of the metasoma as long as T1.

Colouration: Black. Yellow: mouthparts, legs, tegulae and wing venation. Scape and pedicel brown. T1 red. Ventral zone of metasoma partly brown, wing membrane hyaline.

♀. - Like male except antennae 18-19-segmented.

***Dinotrema significarium* (FISCHER 1973)**

Aspilota significaria FISCHER 1973

D i a g n o s i s : Length: 2 mm. Fm 2.5 times longer than wide; tentorial pits slightly wider than distance to eyes; mandibles maximally 1.5 times longer than wide; tooth 2 not surpassing tooth 1, tooth 3 as developed as tooth 2. Mesoscutum bare, at least on lateral lobes; sternaulus reaching neither anterior edge of mesopleuron, nor middle coxae; posterior femur 4.5 times longer than wide; wing membranes hyaline, r2 maximally 2.5 times longer than ccl; nr postfurcal by a distance considerable shorter than its own length. Ovipositor sheaths almost as long as T1.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : Austria, Greece, Hungary, Korea, Spain (Guadalajara: Anguita (UTM: 30T 55454), 10.VIII.1976, 11 ♂♂, 2 ♀♀).

Geographic distribution and material studied: (Burgos: Covalada, 9.VIII.1989, 2♂♂).

Keys for the separation of Iberian fauna

- | | | |
|---|--|-----------------------------------|
| 1 | st wider than length of r1 | group <i>D. speculum</i> , ♀ ♂ |
| | Remark: <i>D. speculum</i> (HALIDAY) was ascribed to the Genus <i>Prosapha</i> FOERSTER 1862, later it was transferred to <i>Dinotrema</i> . Compare BELOKOBYLSKIJ (2007). | |
| | | <i>D. speculum</i> (HALIDAY 1838) |
| - | st of same or less wider than length of r | 2 |
| 2 | Mesoscutum without dorsal pit | group <i>D. fulvicornis</i> , ♀ |
| - | Mesoscutum with dorsal pit (often small and difficult to observe) | 3 |
| 3 | Propodeum with a central carina, or a central longitudinal fold, laterally to this smooth, ridges more or less developed, mainly at centre, laterally always reduced | 4 |
| - | Propodeum with extended sculpture or with stria arranged in a different way, at least with carinae complete | group <i>D. cratocerum</i> , ♀ |
| 4 | Spiracles of propodeum large, very marked, with a diameter slightly less than the distance to the anterior edge | group <i>D. erythrope</i> , ♂ |
| | | <i>D. erythrope</i> FOERSTER 1862 |
| | Spiracles of propodeum small or inconspicuous | group <i>D. nigricornis</i> |

D. cratocerum species group

- | | | |
|---|---|--|
| 1 | T1 at least 2.4 times longer than wide..... | 2 |
| - | T1 maximally 2.3 times longer than wide..... | 3 |
| 2 | Sulcus of posterior edge of mesopleuron crenellate..... | <i>D. latitergum</i> (FISCHER), ♂ |
| - | Sulcus of posterior edge of mesopleuron smooth..... | <i>D. flagelliforme</i> (FISCHER), ♀ |
| 3 | Sternaulus not reaching either front edge or central coxae..... | 4 |
| - | Sternaulus reaching front edge or central coxa or both..... | 5 |
| 4 | Antennae with 20 or more antennomeres..... | <i>D. areolatum</i> (STELFOX & GRAHAM), ♀ |
| - | Antennae with 18 or less antennomeres..... | <i>D. concinnum</i> (HALIDAY), ♀ |
| 5 | d maximally 1.7 times longer than nr..... | <i>D. spitzzickense</i> (FISCHER), ♂ |
| - | d more than 1.8 times longer than nr..... | 6 |
| 6 | r2 maximally 1.8 times longer than cc1..... | <i>D. propomella</i> FISCHER, ♀ |
| - | r2 more than 2.3 times longer cc1 (Fig. 4)..... | <i>D. mediocornis</i> (FISCHER), ♀ |
| | T1 dark. Antennae with 18 antennomeres..... | <i>D. mediocornis mediocornis</i> (FISCHER), ♀ |
| | T1 red. Antennae with 18-23 antennomeres (Fig. 3)..... | <i>D. mediocornis hispanicum</i> nov. ssp., ♂♂ |

***D. fulvicornis* species group**

- 1 Eyes very small. Temples 6.5 times longer than eyes *D. brevissimicornis* (STELFOX & GRAHAM), ♀
- Eyes of normal size, approximately as long as temples *D. dentatum* TOBIAS, ♀

***D. nigricornis* species group**

- 1 Mandibles twice as long as wide. Eyes 1.5 times longer than temples 2
- Mandibles maximally 1.5 times longer than wide. Eyes maximally slightly longer than temples 3
- 2 Mesosoma 1.4 times longer than high, with brown shine under light. T1 red. Lateral fields of prescutellar sulcus smooth. *D. castaneithorax* (FISCHER), ♀
- Mesosoma only slightly longer than high, dark. T1 black. Lateral fields of each prescutellar sulcus with a small longitudinal striation. *D. phoridarum* (GOIDANICH), ♀ ♂
- 3 Tooth 2 of mandibles not surpassing tooth 1, the latter protruding almost as much as the former. 4
- Tooth 2 clearly surpassing tooth 1. d 2.5 times longer than nr. *D. paucicrenis* (FISCHER), ♀
- 4 Head 1.6 times wider than long, 1.9 times wider than mesonotum *D. parapunctatum* (FISCHER), ♂
- Head more than 1.6 times wider than long, maximally 1.5 times wider than mesoscutum. 5
- 5 Ovipositor sheaths as long as metasoma. Fm 1.5 times longer than wide *D. divisum* (STELFOX & GRAHAM), ♀
- Ovipositor sheaths approximately of the same length as T1. Posterior femur 4.5 times longer than wide. Flagellum dark. *D. significarium* (FISCHER), ♀ ♂

Genus *Orthostigma* RATZBURG 1844

Type species: *Aphidius flavipes* RATZBURG 1844

D i a g n o s i s : mandibles small, tridentate, at base of teeth with a well defined transverse keel, in the form of a half moon; ventral carina absent; tooth 3 generally wide, rounded; tooth 1 generally very small. Sulcus between antennae and eyes, generally present. r emerging close to base of st; m-cu postfurcal. Ovipositor sheaths moderately and scarcely setose.

H o s t s : Phoridae.

New citation for the Spanish fauna:

***Orthostigma beyarslani* FISCHER 1995**

D i a g n o s i s : Length: 1.6 mm. Head 1.9 times longer than wide, scarcely widened behind eyes; flagellomere 1 longer than 2; upper transverse facial suture present. Mesoscutum with dorsal pit; st with sides parallel, st1 at least twice longer than r1, of normal width in ♂, scarcely differentiated from metacarp; r clearly distanced from origin of st; r2 1.7 times longer than ccl; propodeum highly reticulated. T1 red.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : Turkey, Spain (Guadalajara: Alovera, 63 ♂, 80 ♀).

C o m m e n t : In some specimens the head is slightly widened behind eyes (13 ♀, 8 ♂).

17♂♂), or T1 is almost dark (50♀♀, 40♂♂). Therefore, this taxon could include two varieties.

Keys for separation of Iberian fauna

- 1 st scarcely differentiated from metacarp. r2 1.7 times longer than cc1. Propodeum highly reticulated..... *O. beyarslani* FISCHER, ♀ ♂
- st clearly differentiated from metacarp2
- 2 Antennae, with 25-27 antennomeres, at least 1.5 times longer than body. 1.5 mm.....
.....*O. longicorne* KÖNIGSMANN, ♂
- Antennae with fewer antennomeres, maximally 1.3 times longer than body3
- 3 Face only weakly convex, almost flat at centre. Clypeus undifferentiated
.....*O. longicubitale* KÖNIGSMANN, ♀
- Face markedly convex. Clypeus differentiated4
- 4 r2 at least 1.9 times longer than cc15
- r2 maximally 1.8 times longer than cc16
- 5 Propodeum densely reticulated *O. antennatum* TOBIAS, ♀
- Propodeum with pentagonal areola *O. sculpturatum* TOBIAS, ♀
- 6 F1 1.3-1.4 times longer than F2. Scutellum slightly longer than scutellar sulcus.
.....*O. pumilum* (NEES), ♀
- F1 1.1-1.2 times longer than 27
- 7 Legs, at least partly, dark brown to black..... *O. maculipes* (HALIDAY), ♂
- Legs yellow-dark to reddish.....8
- 8 Sternaulus reaching anterior margin of mesopleuron... *O. pseudolaticeps* KÖNIGSMANN, ♀
- Sternaulus not reaching anterior margin of mesopleuron.....*O. laticeps* (THOMSON), ♀ ♂
..... (= *O. latinervis* PETERSEN 1959)

Genus *Phaenocarpa* FOERSTER 1862

Type species: *Alysia picinervis* HALIDAY 1838

D i a g n o s i s : F2 longer than F1. Mandibles tridentate, frequently with a deep incision between tooth 1 and tooth 2. Occiput and scutellum without spiny (spinose) or conical protuberances. Notauli narrow, weakly sculptured, often developed up to meso-notal pit. st well differentiated; cell B closed; np almost interstitial or at east arising markedly above middle of outer side ob B; r2 longer than cc1; nr antefurcal/interstitial. Scutellar sulcus and propodeum rough. Metapleuron with a transverse depression on anterior part. T2 smooth.

H o s t s : Anthomyiidae, Clusiidae, Calliphoridae, Drosophilidae, Muscidae, Sarcophagidae, Scathophagidae, Sciomyzidae, Syrphidae. Although it has a large number of hosts, this genus shows a preference for Diptera Calyptratae, especially Anthomyiidae and Scathophagidae.

New citations for the Spanish fauna:

Phaenocarpa carinthiaca FISCHER 1975

D i a g n o s i s : Length: 4.5 mm. Head not widened behind eyes, face without vertical

sulci, arched and crenellate, closed to edges of eyes; mandibles without differentiated cleft between teeth 1 and 2. Lateral fields of scutellar sulcus as long as wide. R almost reaching wing apex; nr interstitial; nv scarcely postfurcal. Ovipositor sheaths shorter than body, 1.5 times longer than posterior tibia. Palpi and legs yellow.

Geographic distribution and material studied: Austria, China, Germany, Georgia, Spain (Burgos: Suzana (UTM: 30T 50473), 10.VIII.1996, 1 ♀, from puparia of *Delia antiqua* (MEIGEN 1826)).

***Phaenocarpa fidelis* FISCHER 1970**

Diagnosis: Length: 2.0 mm. Head not widened behind eyes; mandibles without differentiated cleft between teeth 1 and 2. Notauli not reaching posterior fovea; lateral fields of scutellar sulcus as long as wide. R almost reaching apex of wing; d slightly shorter than nr. T1 twice as long as posterior width, its sides almost parallel; Ovipositor sheaths as long as posterior tibia.

Geographic distribution and material studied: Austria, Georgia, Hungary, Japan, Kazakhstan, Moldova, Russia, Switzerland, Spain (Burgos: Buggedo (UTM: 30T 50472), 10.VIII.1985, 1 ♀).

***Phaenocarpa livida* (HALIDAY 1838)**

Alysia livida HALIDAY 1838

Diagnosis: Length: 2.1-2.3 mm. Head not widened behind eyes; mandibles with sides parallel, with a differentiated cleft between teeth 1 and 2, tooth 2 with an intercalar protuberance; maxillary palpi with six segments, labial with 4; tentorial pit oval, transverse, distance to eye equal to or longer than its diameter. Notauli only differentiated at beginning; lateral fields of scutellar sulcus as long as wide. R almost reaching wing apex; r emerging from basal half of st; Cu2 four times longer than cc2, narrow distally. Ovipositor sheaths as long as posterior tibia. Body black, with propleura, and sometimes T1, reddish yellow or brown.

Geographic distribution and material studied: Austria, Bulgaria, Czechoslovakia, United Kingdom, Georgia, Hungary, Ireland, Japan, Kazakhstan, Moldova, Netherlands, Norway, Romania, Poland, Russia, Slovenia, Sweden, Switzerland, Spain (Burgos: Medinaceli, 15.VII.1988, 23 ♂ ♂), former Yugoslavia.

Keys for separation of Iberian fauna

- 1 Lateral fields of scutellar sulcus 1.5 to 2 times wider than long group *P. ruficeps*
..... One species: *P. ruficeps* (NEES), ♀ ♂
- Lateral fields of prescutellar sulcus as long as wide 2
- 2 Mandibles with a small sharp cleft between teeth 1 and 2 group *P. picinervis* 3
Mandibles with small arched protuberance between teeth 1 and 2 (Intercalar tooth)
..... group *P. flavipes* 4
- 3 cc2 surrounded by long sloping setae giving diffused brown colour to edges. 3.1 mm.
..... *P. picinervis* (HALIDAY), ♂
- cc2 with normal morphology. 2.1-2.3 mm *P. livida* (HALIDAY), ♂
- 4 Antennomere 2 more than 1.5 times longer than first one 5

- Antennomere 2 less than 1.5 times longer than first one. 3.5 mm.....*P. flavipes* (HALIDAY), ♀ ♂
- 5 Ovipositor sheaths maximally as long as posterior tibia. Antennae with a maximum of 30 antennomeres.....6
- Ovipositor sheaths at least 1.5 times longer than posterior tibia. Antennae with more than 30 antennomeres. 4.5 mm.....*P. carinthiaca* FISCHER, ♀
- 6 T1 twice as long as posterior width. 2.0 mm.....*P. fidelis* FISCHER, ♀
- T1 maximally 1.5 times longer than posterior width. 3.5 mm.....*P. conspurcator* HALIDAY, ♀

Genus *Synaldis* FOERSTER 1862

Type species: *Bassus concolor* NEES von ESENBECK 1814

D i a g n o s i s : Mandibles tridentate. First transverse-cubital vein absent. Sternaulus crenulate. Metasoma of females compressed at least behind.

H o s t s : Anthomyiidae, Phoridae, Platypezidae.

New citations for the Spanish fauna:

Synaldis armenica FISCHER 1993

D i a g n o s i s : Length: 1.2 mm. Head widened behind eyes; eyes as long as temples; flagellomeres at least twice as long as wide; mandibles as long as wide or only slightly longer; paraclypeal fields not reaching edge of eyes. Notauli well differentiated on anterior part; dorsal pit of mesoscutum not very differentiated; lateral fields of prescutellar sulcus wider than long, striated inside; propodeum black, uniformly convex, completely smooth and shiny; its lateral furrows crenellate; legs yellow.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : Armenia, Mongolia, Spain (Guadalajara: Alustante, 5.IX.2002, 4♂♂, 3♀♀).

Synaldis azorica FISCHER 2003 (Figs 5, 6)

D i a g n o s i s : Length: 1.6 mm. Head not much broadened between temples. Face scarcely setose; flagellomeres with not markedly differentiated or without stria (tyloides, sensilla); flagellomeres approximately twice as long as wide. Flagellomere 1 usually slightly narrower than following ones; mandibles not wider distally than basally. Mesosoma black; mesoscutum with dorsal pit, glabrous, except for imaginary line of notauli; posterior costal sulcus smooth, with appreciable punctation: spiracle of propodeum small, almost unappreciable propodeum practically smooth.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : Azores, Spain (Guadalajara: Alovera, 6.VI.1999, 6♂♂, 13♀♀).

Description of female

Body length: 1.6 mm.

♀.- Head: 2.1 times wider than long, 1.7 times wider than face, 1.4 times wider than mesoscutum, 3.6 times wider than T1; eyes not protruding, head rounded at temples and here as wide as between eyes; eyes as long as temples, distance between toruli and between these and eyes as long as their diameter; occiput excavated; ocelli moderately large, distance between them twice as large as their diameter; epicranial suture present;

upper part mainly without setae, only a few setae on sides and on ocellar field. Face 1.6 times wider than high, weakly swollen, with a fairly dense setosity curved upwards, close to eyes several long erect setae, central elevation weak. Tentorial pits almost wider than their distance to eyes. Clypeus 2.2 times as wide as high, trapezoid, slightly swollen, with scattered fine setae, separated from face by a sulcus. Mandibles 1.3 times longer than wide; upper edge curved inwards at its centre, lower one straight, at base as wide as at apex; tooth 2 sharp and not very protruding; tooth 1 narrow; tooth 3 clearly rounded, sharp clefts between teeth, outer surface smooth, a sinuated ridge emerging from tooth 1; edges, except for tooth 2, with a thin edge; tooth 3 with a few very short, curved and erect setae; maxillary palpi as long as height of head. Antennae as long as body, 20-segmented, F1-3 of same length, following ones only slightly shorter; F1 2.5 times longer than wide, most antennomeres of flagellum between 2 and 2.3 times longer than wide, clearly separated from one another, their setae maximally as long as width of flagellomeres, in lateral view 3 sensilla recognizable.

Mesosoma: 1.4 times longer than high, upper part arched; mesoscutum longer than wide, rounded on anterior part; notauli developed on anterior declivity; marginal furrow crenellate on front part, almost devoid of setae, some large setae only in front and on the imaginary course of the notauli; dorsal fovea linearly prolonged. Prescutellar sulcus divided, each lateral field as long as wide and smooth. Postaxillae smooth. Lateral fields of metanotum wide, crenellate on posterior part. Propodeum with pentagonal areola, with central carina insinuated, basal carina and costulae, anterior fields from smooth to irregular, posterior ones slightly wrinkled, with clear lines at sides. Both furrows of sides of pronotum converge below, finely crenellate. Prepectal sulcus crenellate, sternaui shortened on either sides, crenellate. Mesopleuron completely smooth. Posterior femur 5 times as long as wide.

Fore wing: r3 2.2 times longer than r1 + r2; nv postfurcal at a distance equivalent to its own length.

Metasoma: T1 2.3 times longer than wide, sides parallel, only weakly narrowed at front; the sides parallel with edge, weakly swollen, wrinkled, dorsal carinae developed only on front part.

Colouration: Black. Yellow: Scape, pedicel, annellus, mouthparts, legs, tegulae and wing venation, wing membrane hyaline.

The female of this species is similar to the male, but differing in their 18-segmented antennae.

***Synaldis babyana* FISCHER 1973**

D i a g n o s i s : Length: 2.7 mm. Head widened behind eyes; antennae with 25-26 antennomeres, most of them nearly twice as long as wide. Mesoscutum with dorsal pit; posterior costal sulcus of mesopleuron clearly differentiated or punctate. Propodeum with many wrinkles. Wing membrane brown.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : Austria, Hungary, Spain (Guadalajara: Anguita, I.VIII.1995, 1 ♂).

***Synaldis lacesiva* FISCHER 1975**

D i a g n o s i s : Length: 1.5 mm. Eyes glabrous; antennae with 15-17 antennomeres barely longer than wide (flagellomere 1 1.5 times longer than wide), shorter than body; mandibles as long as wide or only slightly longer; paraclypeal fields not reaching edges of eyes. Mesosoma 1.3 times longer than high; lateral fields of prescutellar sulcus smooth; central and posterior coxae dark; posterior femur three times as long as wide, dark. Mesoscutum with dorsal pit. Propodeum uniformly convex, completely smooth and shiny. T1 dark.

G e o g r a p h i c d i s t r i b u t i o n a n d m a t e r i a l s t u d i e d : Austria, Canary Islands, Madeira Islands, Spain (Soria: Medinaceli, 2.IX.2000, 7 ♀ ♀).

Key for separation of Iberian fauna

- 1 Mesoscutum without dorsal pit *S. latistigma* FISCHER, ♀ ♂
- Mesoscutum with dorsal pit 2
- 2 Posterior mesopleural furrow crenellate or at least punctate 3
- Posterior mesopleural furrow smooth 4
- 3 Wing membrane milky. Legs yellow *S. maxima* FISCHER, ♀ ♂
- Dark membrane hyaline. Posterior coxae dark *S. babiliana* FISCHER, ♂
- 4 Propodeum sculptured 5
- Propodeum completely smooth and shiny with/without central longitudinal carina or medial longitudinal rugosity or also with transverse carina 8
- 5 Antennomeres of ♀ approximately 1.5 times longer than wide; flagellomere 1 much narrower than following ones, legs partially or wholly dark *S. concolor* (NEES), ♀ ♂
- Antennomeres of ♀ twice as long as wide, flagellomere 1 only slightly narrower than following ones. Legs red or yellow 6
- 6 Mandibles not widened towards apex. (Fig. 5) 7
- Mandibles clearly widened towards apex. Tooth 1 more developed than tooth 3 *S. ultima* FISCHER, ♀ ♂
- 7 Propodeum with wrinkles *S. distracta* (NEES), ♀ ♂
- Propodeum with more or less smooth fields. (Fig. 6) *S. azorica* FISCHER, ♀ ♂
- 8 Mandibles at least twice as long as wide. Mesosoma 1.4-1.5 times longer than high *S. nitidula* (MASI), ♀
- Mandibles as long as wide or only slightly longer. Mesosoma 1.2-1.3 times longer than high 9
- 9 Posterior femur three times longer than high. Central and posterior coxae dark. F1 1.5 times longer than wide (antennae shorter than body) *S. lacesiva* FISCHER, ♀
- Posterior femur 3.5-4 times longer than wide. F1 twice as long as wide *S. armenica* FISCHER, ♀ ♂

All the information available about the systematic, taxonomy and biology of Spanish Alysiini is currently included in the monograph "Bracónidos de España" (DOCAVO et al. 2007) and in two articles on the Spanish species of the genus *Eudinostigma* TOBIAS (FISCHER et al. 2006) and *Aspilota* (FISCHER et al. in press). Thus, of the more than 1000 species of Alysiini described around the world (YU et al. 2005), the Spanish fauna of that tribe is considered to comprise only 64 species. It is therefore not surprising that this low number should be expanded considerable, as may be seen in the keys for determination (proportion of known species with respect to those cited, or described here, owing to the

most recent prospections performed in as yet unexplored Spanish biotopes. Of the 47 provinces into which Spain is divided, species of Alysiini have only been described in 13 (Albacete, Alicante, Castelló de la Plana, Cuenca, Lleida, Madrid, Palencia, Salamanca, Santander, Segovia, Teruel, Valencia, Zamora). Samplings in unexplored provinces (Burgos, Guadalajara, Soria), which have their own particular biotopes, have as expected provided a large number of new citations and, in certain cases, hosts which, although already known for other species of the genus, were obtained for the first time for the species in question (*Aphaereta rubicunda* TOBIAS/*Lucilia caesar* (L.), *Aspilota inflatinervis* FISCHER/*Megaselia affinis* (WOOD), *Dinotrema latitergum* (FISCHER)/*Spiniphora* sp., *Phaenocarpa carinthiaca* FISCHER/*Delia antiqua* MEIGEN). This is indicative that much remains to be done as regards the gaining of reliable knowledge about the Spanish Alysiinae fauna

The use of the genus *Synaldis* FOERSTER 1862 need no longer any justification. Some previous taxonomists did not accept this genus because it is so near to *Aspilota* FOERSTER 1862 or *Dinotrema* FOERSTER 1862, and they regarded the lack of the vein *cc*1 not as a generic character. As a rule, the presence or absence of veins in the wings was always regarded as a character for separation of genera or higher taxa. Moreover, the genus *Synaldis* is used also by other authors, like J. Papp or more recently BELOKOBYLSKIJ (2007).

Zusammenfassung

Neue Angaben über die Alysiini Spaniens mit Beschreibung von *Dinotrema mediocornis hispanicum* ssp. n. sowie der Weibchen von *Aspilota inflatinervis* und *Synaldis azorica* (Hymenoptera, Braconidae, Alysiinae).

18 Arten der Tribus Alysiini werden zum ersten Mal für die Fauna Spaniens gemeldet: *Aphaereta rubicunda* TOBIAS; *Aspilota anaphoretica* FISCHER; *A. flagellaris* FISCHER; *A. inflatinervis* FISCHER; *A. extremicornis* FISCHER; *A. variabilis* TOBIAS; *Dinotrema latitergum* (FISCHER); *D. significarium* (FISCHER); *D. spitzzickense* (FISCHER); *Orthostigma beyarslani* FISCHER; *Phaenocarpa carinthiaca* FISCHER; *Ph. fidelis* FISCHER; *Ph. livida* (HALIDAY); *Synaldis armenica* FISCHER; *S. azorica* FISCHER; *S. babyana* FISCHER; *S. distracta* (NEES) und *S. lacessiva* FISCHER. Für jede Art wird eine kurze Diagnose auf Genus-Ebene gegeben, und ebenso eine Aufstellung der bekannten Wirte auf der Familien-Ebene. Die geografische Verbreitung der Arten wird angegeben, auch werden für einige Arten Angaben über Wirte und morphologische Variabilität gemeldet. Schließlich werden Bestimmungsschlüssel zur Unterscheidung der iberischen Arten vorgeschlagen. Beschrieben werden erstmals die Subspezies *Dinotrema mediocornis hispanicum*, sowie die Weibchen von *Aspilota inflatinervis* und *Synaldis azorica*, auch Abbildungen werden gegeben. Eine Rechtfertigung der Verwendung des Gattungsbegriffes *Synaldis* wird gegeben.

References

- BELOKOBYLSKIJ S.A. (2007): Key for identification of Hymenoptera of the Russian Far East, IV, editor A.S. Lelej. — Russian Acad. Sci., Dept. of Far East, Vladivostok.
- DOCAVO I., TORMOS J. & M. FISCHER (2007): Bracónidos de España (Hym., Braconidae). Síntesis general de la familia. Subfamilia Alysiinae. — Patronato Valenciano de Zoología "Ignacio Docavo", Valencia.

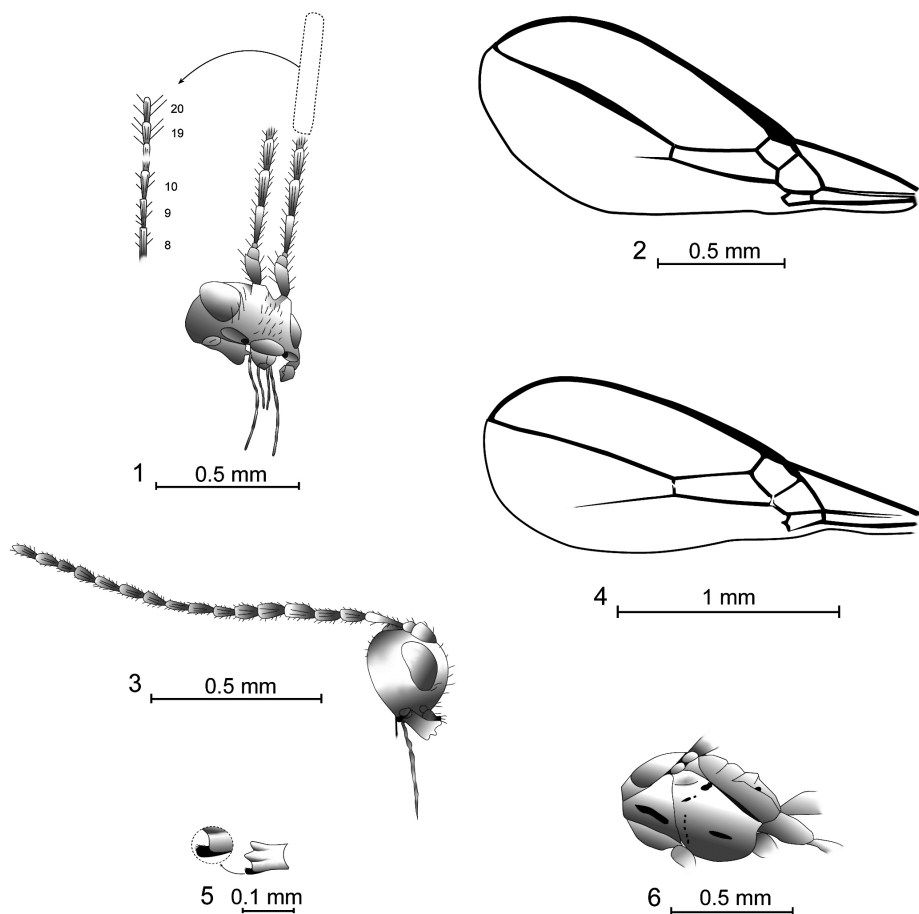
- FISCHER M. (1972, pro 1973): Das Tierreich. Hymenoptera, Braconidae, Opiinae (Paläarktische Region). — Lief 91: xii + 620 pp. Walter der Gryter, Berlin.
- FISCHER M., TORMOS J., PARDO X., ASÍS J.D., GAYUBO S.F., LÓPEZ E. & J. SELFA (2006): Descriptions of adults, immature stages and venom apparatus of two new species of *Eudinostigma* TOBIAS (Hymenoptera, Braconidae), hyperparasitoids of *Phryxe caudata* (Rondani) (Diptera, Tachinidae). — Rev. Suisse Zool. **113** (4): 1-11.
- FISCHER M., TORMOS J., PARDO X. & J.D. ASÍS (in press): Description of adults, preimaginal phases and venom apparatus of a new species of *Aspilota* FOERSTER from Spain, with comments and a discussion on immature stages of Alysiinae (Hymenoptera, Braconidae). — Zool. Stud.
- FOERSTER A. (1862): Synopsis der Familien und Gattungen der Braconen. — Verh. naturh. Ver. preuß. Rheinl. & Westphalens **19**: 225-288.
- QUICKE D.L.J., ACHTERBERG C. van & H.C. GODFRAY (1997): Comparative morphology of the venom gland and reservoir in opiine and alysiine braconid wasps (Insecta, Hymenoptera, Braconidae). — Zool. Scr. **26**: 23-50.
- SHENEFELT R.D. (1974): Pars 7, Alysiinae. Pp. 937-1113. — In: VECHT J. van der & R.D. SHENEFELT (eds), Hymenopterorum Catalogus (nova editio). Dr. W. Junk, The Hague.
- WHARTON R.A. (2002): Revision of the Australian Alysiini (Hymenoptera: Braconidae). — Invertebr. Syst. **16**: 7-105.
- YU D.S., van ACHTERBERG K. & K. HORSTMANN. (2005): World Ichneumonoidea 2004. Taxonomy, Biology, Morphology and Distribution. CD/DVD. Taxapad, Vancouver, Canada. www.taxapad.com (Achterberg: Braconidae; Horstmann: Ichneumonidae).

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Figs 1-6: *Aspilota inflatinervis* FISCHER: (1) head in fronto-lateral view with detail of antennae. (2) right anterior wing. *Aspilota mediocornis hispanicum* ssp. n.: (3) head in lateral view with detail of antennae. (4) right anterior wing. *Aspilota azorica* FISCHER: (5) right mandible. (6) mesosoma with detail of propleuron, mesopleuron, and propodeum.

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