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REVISION OF THE NEOTROPICAL ANACHARITINAE GENUS *ACANTHAEGILIPS* (HYM., CYNIPOIDEA, FIGITIDAE)

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ABSTRACT

We revise the genus Acanthaegilips, a genus of anacharitine figitids occurring in South America. Members of this genus are characterized by having a long scutellar spine, a unique character in the Anacharitinae. The only previously known species (A. brasiliensis) is redescribed and eleven new species are described: A. macropennis, A. ashmeadi, A. levis, A. masneri, A. diazi, A. dentis, A. occultus, A. alienus, A. exiguus, A. huggerti, and A. carinatus. A key to species is presented and distribution records are given for each species. The known records of the genus extend from the southern Neotropics to Mexico. The biology of Acanthaegilips remains unknown; other members of the Anacharitinae are parasitoids of aphid-feeding Neuroptera larvae.

KEYWORDS: Cynipoidea, Figitidae, Aspicerinae, *Acanthaegilips*, New species.

INTRODUCTION

The Figitidae constitute a diverse family of cynipoid parasites comprising the subfamilies Parnipinae, Anacharitinae, Thrasorinae, Charipinae, and Figitidae 'sensu stricto' (Ronquist 1995, 1999; Ronquist & Nieves-Aldrey, 2001). The last taxon includes the Figitinae, Aspicerinae, Eucoilinae, Pycnostigminae and Emargininae (Ronquist 1994b, 1999).

The genus discussed in this paper, *Acanthaegilips*, is one of seven genera in the Anacharitinae (Ronquist 1999). It is easily separated from other anacharitines

by the long and slender scutellar spine and some other unique features. Its distribution is entirely restricted to South and Central America, with the northernmost records reported here being from Mexico.

Figitidae are parasitoids of larvae of several insects. The recorded hosts of Anacharitinae are aphid-feeding neuropteran larvae belonging to the families Hemerobiidae and Chrysopidae (Weld 1952; Ronquist 1994a, 1995, 1999). However, hosts are unknown for many genera, including *Acanthaegilips*.

The genus *Acanthaegilips* was established by Ashmead (1897) on the basis of a single female col-

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lected in Brazil. Weld (1921) added data to the original description based on the study of the female type specimen, and Díaz (1983) recorded the genus in Argentina, describing the male for the first time. The genus was recently redescribed by Ros-Farré *et al.* (2000).

Because of its different characters, Kovalev (1996) recently separated the genus from other anacharitines and placed it in a separate monotypic family. However, phylogenetic analysis indicates that the genus belongs to a monophyletic group comprising three neotropical Anacharitinae genera: *Acanthaegilips*, *Solenofigites* and *Calofigites* (Ros-Farré *et al.*, 2000). This clade is deeply nested within the Anacharitinae. Thus, the genus cannot be maintained as a separate family (Ros-Farré *et al.*, 2000).

Here, we describe 11 new species of *Acanthaegilips*. We show that the male specimens referred to *A. brasiliensis* by Díaz (1983) belong to a new species, which is described as *A. diazi*.

Despite the widespread use of new collecting techniques, such as Malaise, Moericke, and Noyes traps, the available material of several anacharitine genera is still relatively scanty. For this work we studied 56 specimens deposited in several collections that have accumulated specimens throughout many years of collecting efforts.

MATERIAL AND METHODS

We have studied material from the following institutions (curator in brackets):

CNC – Canadian National Collections of Insects, Arachnids and Nematodes, Ottawa, Ontario, Canada (J.D. Read)

DCBU – Departamento de Biologia da Universidade Federal de São Carlos, SP, Brazil (A. Pentead-Dias)

MLP – Museo de la Plata. República Argentina (N.B. Díaz)

MACN – Museo Argentino de Ciencias Naturales (A. Roig)

MZLU-MS – Museum of Zoology Lund University, Lund, Sweden – Coll. M. Sporrang

MZUSP – Museu de Zoologia da Universidade de São Paulo, São Paulo, SP, Brazil (C.R.F. Brandão)

UB – Universitat de Barcelona, Facultat de Biologia, Barcelona, Spain – Coll. P. Ros-Farré

UCR – Universidad De Costa Rica (C. Godoy)

USNM – United States National Museum of Natural History, Smithsonian Institution, Washington, DC, USA (D. Furth)

MEAN – Museo Entomológico Asociación Nicaraguense de Entomología, Leon Nicaragua (J.M. Maes)

All holotypes were examined with SEM, without any previous coating and under very low voltage so as not to put the specimens under any risk. All other specimens, mounted on cardboard, were studied using stereomicroscopy and the drawings were obtained using camera-lucida.

The following special terms and measurements are employed in the descriptions:

- Transfacial line – shortest distance between the compound eyes.
- Postocular furrow – this furrow runs posterior to the compound eye. Ventrally, it joins the malar furrow close to the ventral margin of the eye.
- Malar furrow – this is a linear structure between the eye and the base of the mandible. It is usually formed like a noticeable furrow but sometimes it is a very weak sulcus. Nevertheless, the term malar furrow is used consistently here, in accordance with Ros-Farré *et al.* (2000).
- Notauli – in *Acanthaegilips*, the notauli are made up of a more or less distinct row of cells that also form part of the areolate sculpture covering the rest of the mesoscutum. Thus, the notauli are usually not well differentiated. *A. alienus* is an exception to this rule.
- Foveal carina – carina running from the anterior margin of the scutellar fovea posteriorly, sometimes reaching the posterior margin of the fovea.
- Median scutellar carina – carina running along the midline of the scutellum, anteriorly separating the scutellar foveae.

Remaining terms for skeletal structures and abbreviations follow Richards (1977), and Ronquist (1995).

A description of the genus is not included in this study since a comprehensive description of the genus was provided by Ros-Farré *et al.* (2000).

**Key to the identification of
Acanthaegilips species:**

1. Scutellum concave in dorsal view, roof-shaped, strongly inclined on each side of the median scutellar carina. Male flagellomeres never modified. Propodeum with three longitudinal ridges and without any sculpture between them. Notauli not made up of a row of cells of the areolate sculpture (only male known)
 *A. alienus* Ros-Farré & Pujade-Villar sp. n.
 Scutellum flat in dorsal view or only slightly inclined on each side of median scutellar carina, never roof-shaped. Male antenna with some flagellomeres from F1 to F6 slightly expanded dorsolaterally with a longitudinal ridge on the raised part. Propodeum areolate; if there are longitudinal ridges there is areolate sculpture between them. Notauli made up of a more or less distinct row of cells of the areolate sculpture 2
2. Marginal cell open; marginal vein always lacking (Figs. 5A, C), sometimes there is a very conspicuous line of hairs that looks like a vein, and the cell then appears to be closed 3
 Marginal cell closed, marginal vein present and complete (Fig. 5B) 9
3. Malar furrow strongly curved. Postocular furrows present (Figs. 4A, B, E, F), if these furrow are weakly impressed then there is a line of hairs below them. Scutellar spine narrowing abruptly before apex (Figs. 2A, C, F, G) or end of scutellar disc narrowing abruptly and scutellar spine slender all the way (Fig. 2B) 4
 Malar furrow slightly curved (Figs. 3B, C). Postocular furrow absent. Scutellar spine never narrowing abruptly and never slender in all its length (Figs. 1A, B, C, D, E, F) 8
4. Scutellar foveae with an internal longitudinal carina (foveal carina), dividing them into two areas each (Figs. 2A, C). Pronotal plate produced, in lateral view, into a sharp and strongly raised dorsal tooth (Figs. 4A, C, F). Petiole as wide as long, sometimes slightly wider than long. Scutellar spine narrowing abruptly before apex (Figs. 2A, C, G) 5
 Foveal carina absent (Figs. 2B, 2F). Pronotal plate dorsally with a very small tooth (Figs. 4B, E). Petiole 1.5 to 2.0 times wider than long. Scutellar spine narrowed abruptly before apex or slender in all its length 7
5. Malar and postocular furrows strongly impressed and without pubescence below them (Fig. 4A).
 Foveal carina reaching the posterolateral margin of the scutellar foveae (Fig. 2A) (only female known)
 *A. dentis* Ros-Farré & Pujade-Villar sp. n.
 Malar furrow effaced, postocular furrow weak but with a line of hairs running below the postocular and malar furrows (Figs. 4C, F). Foveal carina less evident and not reaching the posterolateral margin of the scutellar foveae (Figs. 2C, G) 6
6. Pronotum in lateral view with areolate sculpture. Lateral pit of fovea present (Fig. 2C) (only female known)
 *A. occultus* Ros-Farré & Pujade-Villar sp. n.
 Lateral surface of pronotum with coarse transverse carina in ventral part and with areolate sculpture in dorsal part. Lateral pit of fovea absents on female (Fig. 2G) and obstructed in male, which instead of pit has deep fovea
 *A. carinatus* Ros-Farré & Pujade-Villar sp. n.
7. Scutellar disc narrows abruptly posteriorly and the scutellar spine is slender all the way (Fig. 2B); scutellar spine straight in lateral view (Fig. 4B). Lateral pit of scutellar fovea deep (Fig. 2B)
 *A. huggerti* Sporrang & Ros-Farré n. sp.
 Scutellar spine narrowing abruptly before apex. Scutellar spine (Fig. 2F) curved in lateral view (Fig. 4E). Lateral pit of fovea superficial, indistinct (Fig. 2F) (only male known)
 *A. exiguus* Ros-Farré & Pujade-Villar sp. n.
8. Sculpture over scutum from the pronotum to the median sulcus as a carina (Fig. 3D), more evident when viewed in profile. Scutum in profile with a distinct hump. Pronotal plate, viewed laterally, with a pointed dorsal tooth (Fig. 3D)
 *A. brasiliensis* Ashmead
 Sculpture over scutum, when viewed in profile, not forming a carina. Scutum curved in profile, not humped (Fig. 3B). Pronotal plate, viewed laterally, dorsally raised but not ending in a pointed dorsal tooth (Fig. 3B) (only female known)
 *A. levis* Ros-Farré & Pujade-Villar sp. n.
9. Pronotal plate ending dorsally in a small tooth (Fig. 3C). Petiole laterally costate (only female known) .. *A. masneri* Sporrang & Ros-Farré n.sp
 Pronotal plate rounded dorsally (Figs. 3A, E, F). Petiole laterally entirely smooth or slightly carinate anteriorly 10
10. Scutellar foveae smooth in the anterior part and reticulate posteriorly, more clearly on females (Fig. 1A). Male placodeal sensilla present and abundant from F1 to the end of the antenna ...
 *A. macropennis* Sporrang & Ros-Farré sp. n.

Scutellar foveae smooth (Figs. 1E, F). Male placodeal sensilla absent dorsally on F1 and scarce or absent dorsally on some of the following flagellomeres 11
 11. Notauli complete, mesoscutum with weak areolate sculpture and between parapsidalsigna and parascutal impression without sculpture, parapsidalsigna strongly raised and conspicuous (Fig. 1F). Male placodeal sensilla present on F1 but dorsally absent from F1 to F5 and

dorsally sparse from F6 to F7 (only male known)
 *A. diazi* Ros-Farré & Pujade-Villar sp. n.
 Notauli incomplete reaching 1/2 the length of mesoscutum, mesoscutum coarsely areolate, parapsidalsigna quite conspicuous and not raised (Fig. 1E). Male placodeal sensilla absent dorsally on F1 and F2, on F3 and sometimes also on F4 very scarce
 *A. ashmeadi* Ros-Farré & Pujade-Villar sp. n.

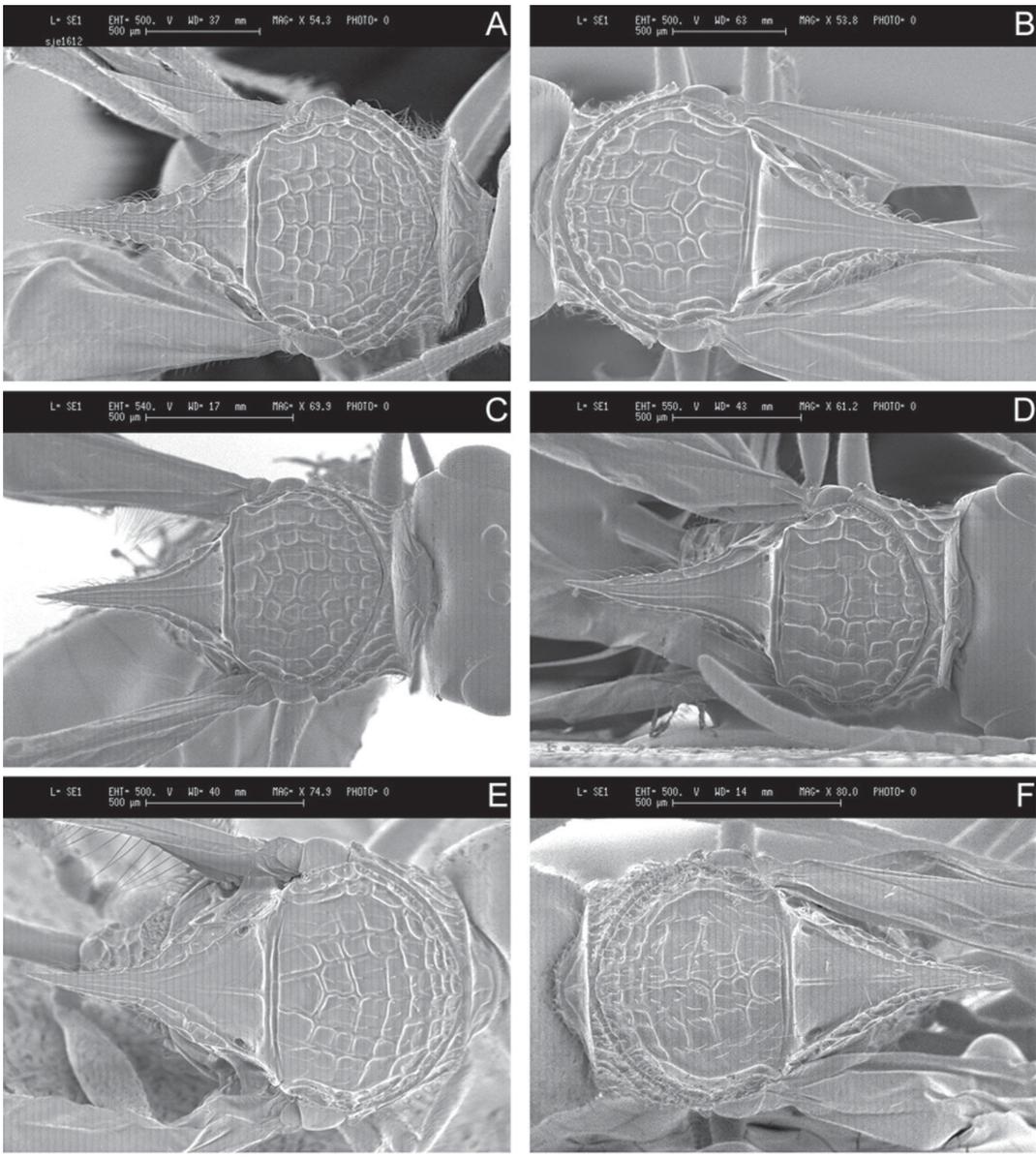


FIGURE 1. Dorsal view of thorax of *A. macropennis* sp. n. (A), *A. levis* sp. n. (B), *A. masneri* sp. n. (C), *A. brasiliensis* (D), *A. ashmeadi* sp. n. (E), *A. diazi* sp. n. (F).

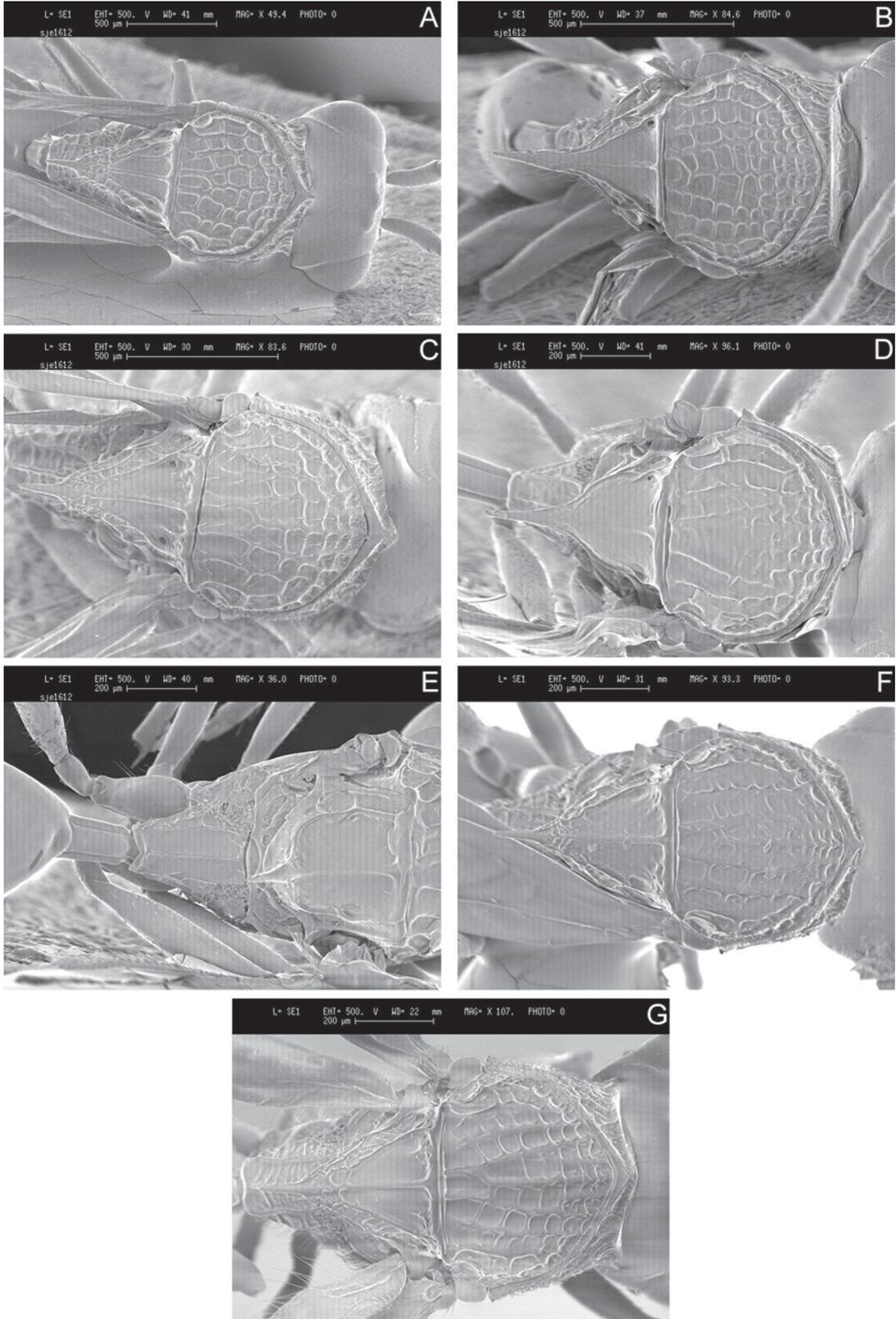


FIGURE 2. Dorsal view of thorax of *A. dentis* sp. n. (A), *A. huggeri* sp. n. (B), *A. occultus* sp. n. (C), *A. alienus* sp. n. (D), *A. exiguus* sp. n. (F), and *A. carinatus* sp. n. (G) and propodeum of *A. alienus* sp. n. (E).

**Description of the new species of
Acanthaegilips Ashmead, 1897**

***Acanthaegilips alienus* Ros-Farré &
Pujade-Villar sp. n.**

(Figs. 2D, 2E, 4D)

Studied material – 1 ♂; ♀ unknown. Holotype: 1 ♂ (MZLU-MS) 22-VII-1990 at Prov. Pedernales, Sra. Bahoruco (1350 m), República Dominicana, L. Masner col.

Etymology – This name was chosen because this species is very different from all other *Acanthaegilips* species.

Colour – Head, mesosoma and petiole black, metasoma dark reddish brown. Scape yellowish brown, pedicel and flagellomeres brown. Legs yellowish brown except the apical part of hind tibia and metatarsus, which are brown. Mandibles light brown with dark brown teeth. Veins of wings medium brown.

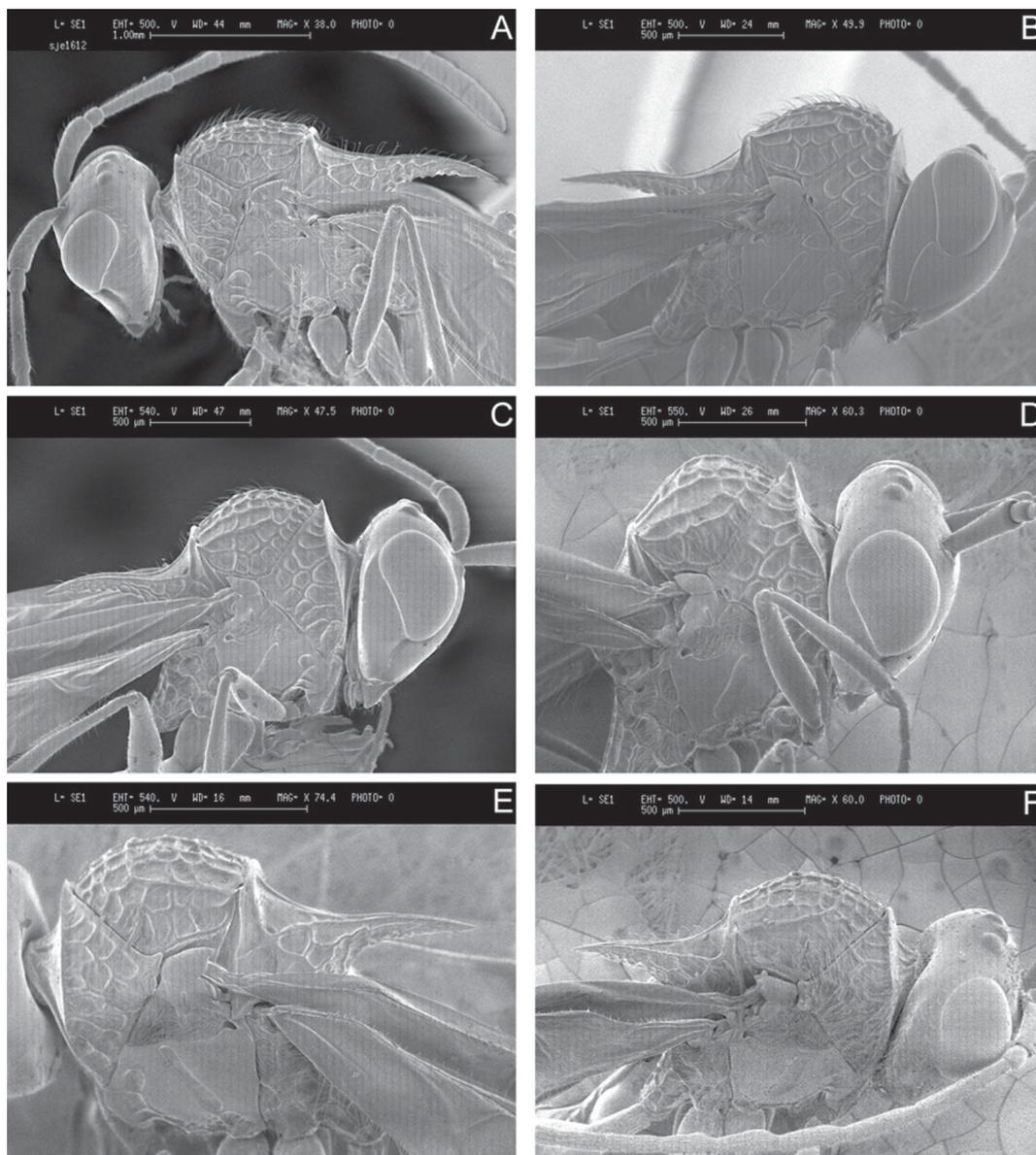


FIGURE 3. Lateral view of *A. macropennis* sp. n. (A), *A. levis* sp. n. (B), *A. masneri* sp. n. (C), *A. brasiliensis* (D), *A. ashmeadi* sp. n. (E) and *A. diazi* sp. n. (F).

Head— Without pubescence. Malar furrow in upper part very curved. Postocular furrow present. Occipital carina strong (Fig. 4D). Malar space 0.62 times the height of the compound eye. Transfacial line 0.54 times the greatest width of head and 1.31 times the height of a compound eye. Pleurostomal lines weak. Antennal foramina separated from each other by 1.43 times the distance between the foramen and the compound eye.

Antennae — F1 to F4 cylindrical with a very small expansion at the apex, following flagellomeres cylindrical

cal. Length of F1 1.2 the length of F2. Antennae without pubescence. Antennal formula: 10 (4.5): 3 (3.8): 11.5 (2.9): 9.5 (3.0): 10 (3.0): 10 (3.0): 10 (3.0): 10 (3.0): 10 (3.0): 10 (3.0): 9 (3.0): 9 (3.0): 12.5 (3.0). Placodeal sensilla start on F1. There are no modified flagellomeres.

Mesosoma— Anterior pronotal plate without pubescence. In dorsal part transversely carinate changing to granulate laterally in level with the submedian depressions. Lateral pronotal carinae projecting dorsomedially to

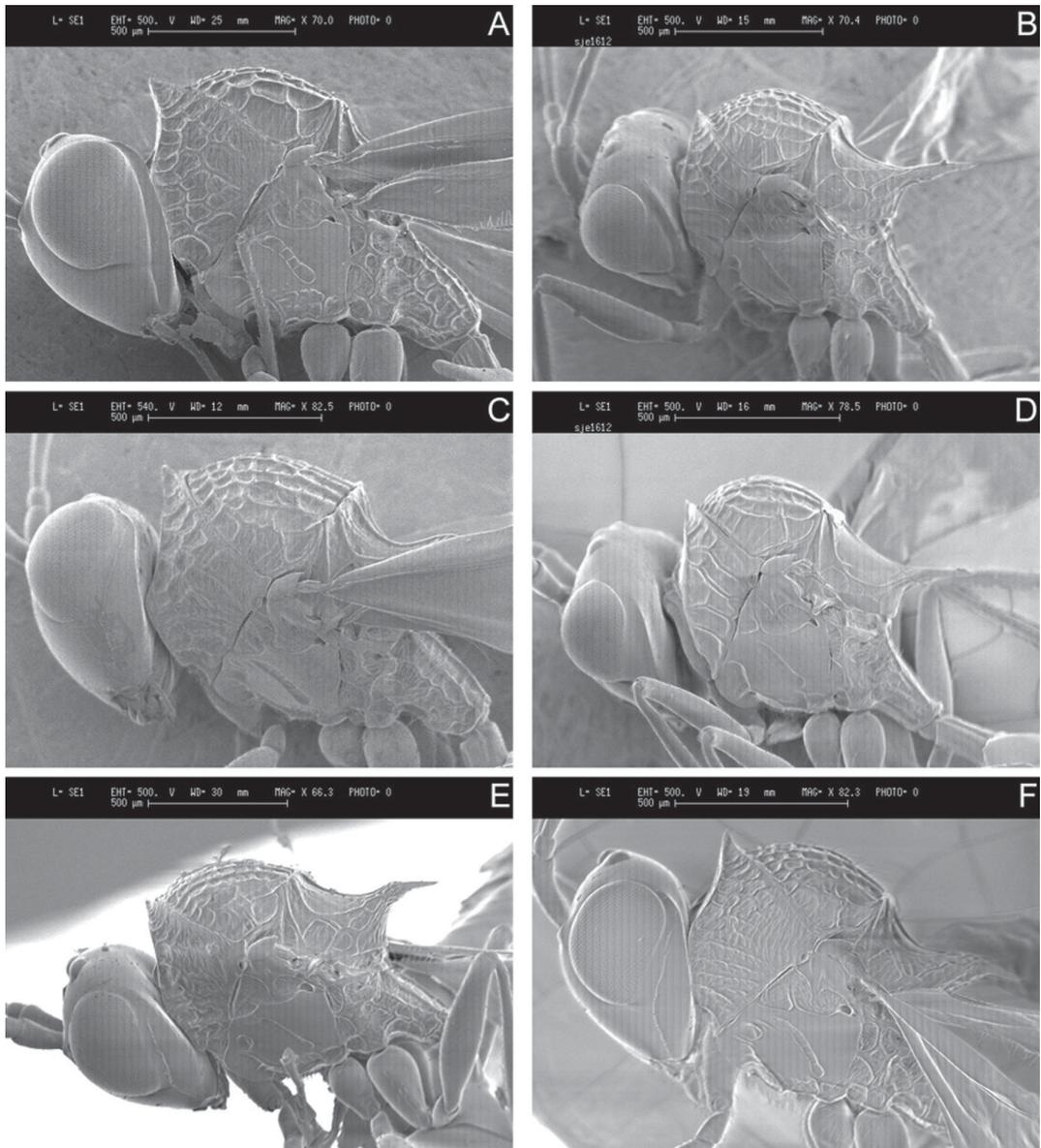


FIGURE 4. Lateral view of *A. dentis* sp. n. (A), *A. huggerti* sp. n. (B), *A. occultus* sp. n. (C), *A. alienus* sp. n. (D) *A. exiguus* sp. n. (E) and *A. carinatus* sp. n. (F).

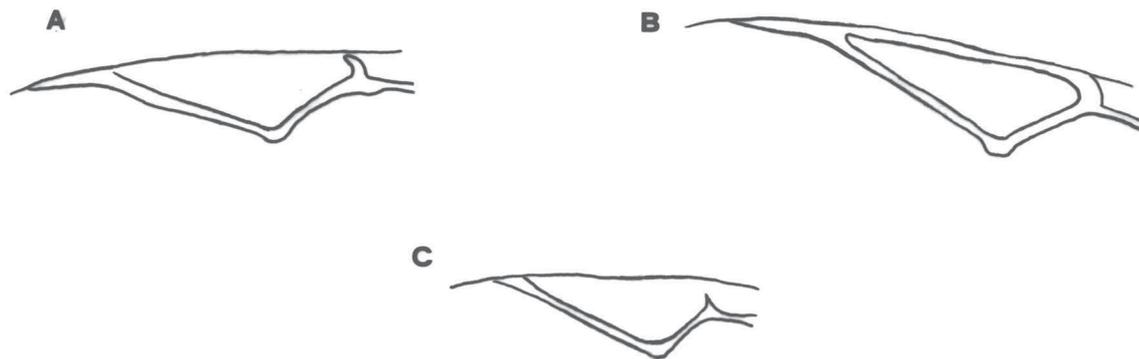


FIGURE 5. Anterior wing (without pubescence) of *A. brasiliensis* (A), *A. masneri* sp. n. (B) and *A. dentis* sp. n. (C).

form a small tooth (Fig. 4D). Lateral surface of pronotum with scattered hairs and with coarse areolate sculpture. Mesoscutum in lateral view 1.55 times higher than long; in dorsal view 1.37 times wider than long. Median mesoscutal impression weak, slightly longer than broad, notauli strongly and clearly impressed reaching 2/3 the length of mesoscutum, they are crossed by transverse carinae, they are not made up of a sequence of cells of the areolate sculpture (Fig. 2D). Line of hairs on the anterior and lateral margins of the scutum absent. Scutellum in dorsal view with the same length as the mesoscutum. Dorsal, posterolateral and posterior surfaces of scutellum smooth. Scutellum concave roof-shaped, median scutellar carina almost obsolete, only visible as a carina near the anterior margin. Lateral pit of scutellar fovea elongated and narrow, 2.7 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 7.7 times the width of the pit. Scutellar disc in lateral view slopping to base of scutellar spine. End of scutellar disc narrowing abruptly to base of scutellar spine, which is slender, all the way (Fig. 2D) and straight (Fig. 4D). Mesopleural impression wide, straight and with transverse carinae. Mesopleural triangle with scattered hairs (Fig. 4D). Propodeum smooth between lateral and median propodeal carinae (Fig. 2E) and areolate in lateral areas.

Wings – Marginal cell open 2.73 times longer than wide. R1 absent. Marginal pubescence of the wing starting from the apical 3/4 of marginal cell but it is very sparse to the end of the cell.

Metasoma – Petiole 1.8 times as long as wide. Petiole with two dorsolateral furrows and ventrally with one longitudinal carina; weakly carinate laterally near anterior and posterior margins. Third abdominal tergum dorsally 0.81 the length of the fourth tergum.

Acanthaegilips ashmeadi Ros-Farré & Pujade-Villar sp. n.

(Figs. 1E, 3E)

Studied material – 6 ♂, 3 ♀. Holotype: 1 ♀ (MZLU-MS) 20-XII-1983 at Cuzco, Agua Caliente (PERU) Lars Huggert col. Paratypes: Peru: 1 ♀ (MZLU-MS), 21-XII-83 at Cuzco, Machu Pichu, Lars Huggert col. 1 ♂ & 1 ♀ (MZLU-MS) 28-XII-1983 same Holotype's data. 2 ♂ (MZLU-MS) same Holotype's data. 1 ♂ (MZUSP) 1/2-VII-1964 at Machu Pichu (2600-2800 m), B. Malkin col. Venezuela: 1 ♂ (USNM) 30-IV-1981 at Merida, Mucui nr. Tabay, Masner & Marsh col. 2 ♂ (MZLU-MS) 24-VIII-1992 at Trujillo, Mosquey, near Bocono (1500 m). Cofee plant, L. Masner col.

Etymology – This name was chosen to honour Mr. William Harris Ashmead (1855-1908), U.S.A, who established the genus *Acanthaegilips*.

Length of head + mesosoma + metasoma in female: 2.75 mm; in male: 3.1 mm to 3.9 mm.

Colour – Female. Head, thorax and gaster black. Legs yellowish brown except hind coxa, which is black, and hind femur, tibia and tarsus, which are dark brown. Antennae dark brown, F7 to F10 ventrally lighter. Mandibles yellowish brown with darker teeth. Male. Differs from female in having the antennae entirely black. Veins of wings dark brown.

Head – Female. Head with scattered short hairs. Malar furrow slightly curved. Postocular furrow absent. Occipital carina absent. Malar space 0.58 to 0.71 times the height of the compound eye. Transfacial line 0.53 to 0.55 times the greatest width of head and 1.03 to 1.08 times the height of a compound eye. Antennal

foramina separated from each other by the same distance as that between the foramen and the compound eye. Pleurostomal lines weak. Male. Malar space 0.50 to 0.63 times the height of the compound eye. Transfacial line 0.52 to 0.57 times the greatest width of head and 1.03 to 1.10 times the height of a compound eye.

Antennae – Female. F1 to F3 cylindrical with a very small expansion at the apex. Following flagellomeres cylindrical. Length of F1 1.4 to 1.5 the length of F2. Scape and pedicel with sparse pubescence. The pubescence on the flagellomeres getting shorter and denser towards the 4 or 5 last flagellomeres, which have dense but very short pubescence. Antennal formula: 10 (3.5): 3 (2): 15 (2): 10 (2): 9 (2): 9 (2): 6.5 (2): 6 (2): 5 (3): 5 (3): 5 (3): 4 (2): 8 (2). Placodeal sensilla start on F2 but they are absent on the dorsal part of this segment and very scarce on dorsal part of F3. Male. Length of F1 1.36 to 1.44 times the length of F2. Flagellomeres covered with very short pubescence. Placodeal sensilla start on F1 but they are absent in the dorsal part of F1 and F2, on F3 and sometimes also on F4 they are very scarce at the dorsal part. F3 to F5 slightly expanded dorsolaterally with a longitudinal ridge on the raised part. Antennal formula: 13 (5.8): 4.5 (5.0): 25 (5.0): 18 (4.9): 17 (4.9): 17 (4.8): 15 (4.7): 15 (4.7): 12.5 (4.7): 12 (4.8): 11.5 (4.8): 11.5 (4.8): 11 (4.7): 13.5 (4.5).

Mesosoma – Female. Anterior pronotal plate rounded dorsally (Fig. 3E) and with a few white hairs near lateral and dorsolateral margins; near the dorsal margin there is a weak trace of transversely carinate sculpture. Lateral surface of pronotum with sparse pubescence and with coarse areolate sculpture. Mesoscutum in lateral view 1.70 to 1.80 times higher than long; in dorsal view 1.30 to 1.42 times wider than long. Median mesoscutal impression short, not much longer than wide. Notauli reaching 1/2 the length of mesoscutum (Fig. 1E). There is a conspicuous line of hairs on the anterior and lateral margins of the mesoscutum. Scutellum in dorsal view 1.22 to 1.43 times the length of the mesoscutum. Scutellar foveae smooth, median and lateral ridges of the scutellar foveae sometimes not continuous and never straight to the end sometimes divided in smaller carinae. Lateral pit of scutellar fovea 1.4 to 1.5 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 3.1 to 3.3 times the width of the pit. Scutellar spine broad at base and narrowing gradually (Fig. 1E). Scutellar disc in lateral view slightly sloping to base of scutel-

lar spine, which is horizontally directed at base and slightly curved downwards towards apex. Mesopleural impression wide straight and smooth or, in some specimens, with weak transverse carinae. Mesopleural triangle densely pubescent anteriorly, sparsely pubescent posteriorly. Propodeum with coarse areolate sculpture. Lateral propodeal carinae and median propodeal carinae absent. Male. Anterior pronotal plate with a few hairs near lateral margins. Mesoscutum in lateral view 1.53 to 1.65 times higher than long. Scutellum in dorsal view 1.13 to 1.28 times the length of the mesoscutum.

Wings – Female. Marginal cell closed 3.13 to 3.20 times longer than wide. Marginal pubescence of the wing present starting from vein R1. Male. Marginal cell 2.9 to 3.0 times longer than wide.

Metasoma – Petiole 3.0 to 3.3 times as long as wide. Petiole dorsally smooth; laterally smooth but near the anterior end there are a few short carinae; ventrally costate. Third abdominal tergum dorsally 0.75 to 0.88 the length of the fourth tergum. Male. Petiole 3.2 to 3.3 times as long as broad. Third abdominal tergum dorsally 0.69 to 0.85 the length of the fourth tergum.

***Acanthaegilips carinatus* Ros-Farré &
Pujade-Villar sp. n.**

(Figs. 2G, 4F)

Studied material – 1 ♂, 1 ♀. Holotype: 1 ♀ (DCBU) 31-VIII-98 346 p.m. São Carlos (Brasil) Carlos Henrique col. Paratype: 1 ♂ (MZUSP) same data of holotype.

Etymology – This name was chosen because of the coarse transverse carinae of the pronotal sides.

Length of head + mesosoma + metasoma in female: 2.33 mm; in male: 2.63 mm.

Colour – Female. Head and metasoma black. Thorax dorsally black, laterally reddish dark brown. Mandibles light yellowish brown with darker tooth. Scape and pedicel and ventral side of flagellomeres light brown, dorsal side of flagellomeres brown. Legs light brown with medium brown coxae. Male. Scape and pedicel light brown, flagellomeres changing to dark brown. Hind legs medium to dark brown.

Head – Female. Head without pubescence, except for lines of hairs running with malar and postocular furrows. Malar furrow very weak, only marked by a change in the integument curvature; postocular furrow weak. Occipital carina strong. Malar space 0.63 times the height of the compound eye. Transfacial line 0.53 times the greatest width of the head and 1.07 times the height of a compound eye. Pleurostomal lines well impressed. Antennal foramina separated from each other by 2.25 times the distance between the foramen and the compound eye. Male. Malar furrow only marked by a change on the integument curvature but not as weak as in the female. Malar space 0.55 times the height of the compound eye. Transfacial line 0.52 times the greatest width of the head and with the same length as the height of a compound eye. Antennal foramina separated from each other by 2.16 times the distance between the foramen and the compound eye.

Antennae – Female. Flagellomeres cylindrical (slightly narrower on basis and apex). Length of F1 1.25 the length of F2. Antenna without pubescence except for a few hairs on scape. Antennal formula: 10 (4): 3 (3): 10 (2.8): 8 (2.5): 7 (2.5): 7 (2.7): 6.5 (2.9): 6 (3): 5.7 (3): 5.5 (3): 5 (3): 5 (3): 10 (3). Placodeal sensilla start on F2 they are not scarce in this antennomere. Male. Flagellomeres cylindrical (slightly narrower on basis and apex). Length of F1 1.25 the length of F2. Antenna without pubescence except for a few hairs on scape. Antennal formula: 11 (4): 3.5 (3.5): 12.5 (3): 10 (3): 9 (3): 9.8 (3.5): 9 (3.5): 9 (3): 8.5 (3): 8 (3): 8 (3): 7.5 (3): 7.2 (3): 10.2 (3). Placodeal sensilla start on F1 and they are not scarce in any antennomere. F3 to F5 and first 1/3 of F6 slightly expanded dorsolaterally with a longitudinal ridge on the raised part.

Mesosoma – Female. Lateral pronotal carinae projecting dorsomedially to form a very much raised tooth (Fig. 4F).

Anterior pronotal plate with a few scattered hairs near dorsolateral margins and transversely carinate. Lateral surface of pronotum densely pubescent in ventral part with coarse transverse carinae, in dorsal part with areolate-rugose sculpture. Mesoscutum in lateral view 1.67 times higher than long; in dorsal view 1.25 times wider than long. Median mesoscutal impression short, longer than wide. Notauli complete (Fig. 2G). Line of hairs on the anterior and lateral margins of the scutum absent. Scutellum in dorsal view 1.05 times the length of the mesoscutum. Scutellar foveae in anterior part with an internal short longitudinal carina, dividing the ante-

rior area of each fovea into two areas, scutellar foveae mostly smooth with rugose sculpture near its posterior margin. Lateral pit of scutellar fovea absent. Scutellar spine broad, narrowing abruptly before apex (Fig. 2G). Scutellar disc in lateral view steeply slopping to base of scutellar spine, which is upwards directed at base and curved downwards, the apex is ventrally directed. Mesopleural impression rather narrow strongly curved in the apical part and with a lot of transverse carinae (Fig. 4F). Mesopleural triangle with very sparse pubescence. Propodeum with areolate sculpture, lateral and median propodeal carinae present, these are flat and wide in upper part. Male. Mesoscutum in lateral view 1.55 times higher than long; in dorsal view 1.19 times wider than long. Scutellum in dorsal view with the same length as that of the mesoscutum. Scutellar foveae more sculptured posteriorly than in the female. Lateral pit of scutellar fovea obstructed. Scutellar spine very slightly curved. Mesopleural impression not as curved as in the female.

Wings – Female. Marginal cell open 2.88 times longer than wide. R1 practically absent. Marginal pubescence of the wing starting from the apical 1/2 of marginal cell but it is very sparse to the end of the cell. Male. Marginal cell 3.38 times longer than wide. Marginal pubescence starting from the basal 1/3.

Metasoma – Female. Petiole as long as wide. Petiole dorsally smooth, laterally and ventrally costate. Third abdominal tergum dorsally 0.5 times the length of the fourth tergum. Male. Petiole wider than long. Dorsally, laterally and ventrally costate.

***Acanthaegilips dentis* Ros-Farré &
Pujade-Villar sp. n.**

(Figs. 2A, 4A)

Studied material – 1 ♀; ♂ unknown. Holotype: 1 ♀ (UCR) 16-XI-1994 at Heredia, Est. Biol. La Selva. (100 m) (Costa Rica). 10°26'N/84°01'W Fot 38, P. Hanson col.

Etymology – This name was chosen because the tooth of the anterior pronotal plate, which is very much raised.

Length of head + mesosoma + metasoma: 2.55 mm.

Colour – Head and metasoma black. Mandibles yellow. Metasoma dark reddish brown. Mandibles light brown

with medium brown teeth. Antennae light brown with exception of the four last flagellomeres, which are dark brown. Legs light brown with the exception of the metafemur and the metatibia, which are dark brown. Veins of wing light brown.

Head – Without pubescence. Malar furrow very curved, postocular furrow well impressed (Fig. 4A). Occipital carina strong. Clypeal zone not marked and pleurostomal lines very weak. Malar space 0.65 times the height of the compound eye. Transfacial line 0.58 times the greatest width of the head and 1.11 times the height of a compound eye. Antennal foramina separated from each other by 1.5 times the distance between the foramen and the compound eye.

Antennae – F1 to F4 cylindrical with a very small expansion at the apex, following flagellomeres cylindrical. Length of F1 1.33 the length of F2. Scape with scattered short hairs, pedicel and flagellomeres glabrous. Antennal formula: 10 (3): 2 (2): 8 (2): 6 (2): 5.5 (2): 5.5 (2): 4.5 (2): 4 (2): 4 (2): 4 (2.5): 4 (3): 4 (3): 8 (3). Placodeal sensilla start on F3 but they are dorsally scarce and ventrally absent on this flagellomere, on F4 they are ventrally scarce.

Mesosoma – Lateral pronotal carinae projecting dorsomedially to form a very much raised tooth (Fig. 4A). Anterior pronotal plate with short scattered hairs on the margins and with a very conspicuous rugose sculpture. Lateral surface of pronotum with dense pubescence and with areolate sculpture. Mesoscutum in lateral view 1.66 times higher than long; in dorsal view 1.17 times wider than long. Median mesoscutal impression short, longer than broad. Notauli complete (Fig. 2A). Line of hairs on the anterior and lateral margins of the scutum absent. Scutellum in dorsal view 1.05 times the length of the mesoscutum. Scutellar foveae smooth and with an internal longitudinal carina dividing them into two areas each. There is rugose sculpture at the area compressed between the end of scutellar foveae and before the apex. Lateral pit of scutellar fovea almost circular, 1.1 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 2.78 times the width of the pit. Scutellar spine broad narrows abruptly before apex (Fig. 2A). Scutellar disc in lateral view steeply sloping to base of scutellar spine, which is strongly directed upwards at base and curved downwards, so that the apex is ventrally directed. Mesopleural impression rather narrow curved in the apical part and with few coarse transverse carinae (Fig. 4A).

Mesopleural triangle sparsely pubescent anteriorly and more sparsely pubescent posteriorly (Fig. 4A). Propodeum with areolate sculpture. Median and lateral propodeal carinae present.

Wings – Marginal cell open 2.6 times longer than wide. R1 short not reaching the margin of the wing. Marginal pubescence of the wing starting from the apical 1/3 of marginal cell but it is very sparse to the end of the cell.

Metasoma – Petiole 1.12 times as long as wide. Petiole dorsally, laterally and ventrally costate. Third abdominal tergum dorsally 0.63 the length of the fourth tergum.

***Acanthaegilips diazi* Ros-Farré &
Pujade-Villar sp. n.**

(Figs. 1F, 3F)

Studied material – 3 ♂; ♀ unknown. Holotype: 1 ♂ (MLP) 16-11-81 at San Javier, San Miguel de Tucumán, Tucumán (República Argentina) S. Mulvany, N. Díaz, G. Armesto, P. Fidalgo col. Paratypes: 2 ♂, Same Holotype's data.

Etymology – This name was chosen to honour Dra. Norma Beatriz Díaz, Argentina, who loaned us all type specimens of this species.

Length of head + mesosoma + metasoma: 2.9 mm to 3.4 mm.

Colour – Head black, mesosoma black with exception of the lateroventral margins of pronotum, the anterior and lateral margins of mesoscutum, the mesopleural triangle and the notauli, which sometimes are red or amber colour. Metasoma blackish brown. Pedicel reddish brown, scape and F1 to F5 or F6 black to blackish brown with reddish colour on the apex, following flagellomeres changing to light brown. Mandibles light brown with medium brown teeth. Legs yellow with exception of the last ones, which are dark to medium brown.

Head – Covered by quite dense long pubescence. Malar furrow slightly curved, in upper part strongly curved. Postocular furrow absent. Occipital carina present. Malar space 0.61 to 0.65 times the height of the compound eye. Transfacial line 0.51 to 0.52 times the greatest width of the head and 1.07 to 1.10 times the height of a com-

pound eye. Pleurostomal lines weak. Antennal foramina separated from each other by 1.20 to 1.25 times the distance between the foramen and the compound eye.

Antennae – Flagellomeres cylindrical. Length of F1 1.46 the length of F2. Scape and pedicel with sparse pubescence. Flagellomeres covered with short dense pubescence. Antennal formula: 16 (5.5): 5 (4): 22 (3.5): 15 (3.5): 14 (4): 14 (3.5): 12 (3.5): 12 (3.5): 12 (3.5): 11.8 (3.3): 10 (3.3): 9.5 (3.2): 8.5 (3.5): 14 (3). Placodeal sensilla start on F1 but they are dorsally absent from F1 to F5; Sensilla are very sparse on dorsal part of F6 and F7. F3 to F5 slightly expanded dorsolaterally with a longitudinal ridge on the raised part.

Mesosoma – Anterior pronotal plate rounded dorsally (Fig. 1F) with quite dense pubescence at the lateral areas and sparse pubescence in lateroanterior margins, near the dorsal margin weakly transversely carinate. Lateral face of pronotum with dense long pubescence, the sculpture is between rugose and areolate. Mesoscutum in lateral view 1.69 to 2.03 times higher than long; in dorsal view 1.24 to 1.27 times wider than long. Median mesoscutal impression very short as long as broad. Notauli complete and well differentiated. The areolate sculpture of the mesoscutum is laterally effaced, in some specimens is weak in medial part (Figs. 1F, 3F). There is a very conspicuous line of hairs on the anterior and lateral margins of the mesoscutum. Scutellum in dorsal view 1.0 to 1.1 times the length of the mesoscutum. Scutellar foveae smooth (Fig. 1F) the lateral carinae of fovea are not straight in the posterior part. Lateral pit of scutellar fovea big, 1.5 to 2.0 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 2.87 to 3.50 times the width of the pit. Scutellar spine broad at base narrowing gradually towards apex (Fig. 1F). Scutellar disc in lateral view slightly sloping to base of scutellar spine, which is horizontally directed at base and very slightly curved downwards towards apex (Fig. 3F). Mesopleural impression straight and wide (strongly wider on the basal part) and without transverse carinae. Parapsidal signa strongly marked and continuous, sometimes meeting on the anterior part. Mesopleural triangle with dense pubescence anteriorly and sparse pubescence posteriorly. Propodeum with coarse, areolate sculpture, lateral and median propodeal carinae absent.

Wings – Marginal cell closed, 3.22 to 3.40 times longer than wide. Marginal pubescence of the wing starting from vein R1.

Metasoma – Petiole 2.0 to 2.2 times as long as wide, dorsally smooth, laterally smooth, dorsolaterally near the anterior end costate, ventrally longitudinally costate. Third abdominal tergum dorsally 1.00 to 1.08 the length of the fourth tergum.

***Acanthaegilips exiguus* Ros-Farré &
Pujade-Villar sp. n.**

(Figs. 2F, 4E)

Studied material – 1 ♂; ♀ unknown. Holotype: 15 ♂ (USNM) XII-1967 at Kingston, Jamaica, NLH Krauss col.

Etymology – This name was chosen due to the small length of this species.

Length of head + mesosoma + metasoma: 2.29 mm.

Colour – Head black, metasoma medium to light reddish brown with exception of propodeum and apex of scutellar spine, which are dark brown. Metasoma blackish brown. Antennae light brown. Mandibles reddish brown with darker tooth. Legs brown with exception of the tibia and tarsus of the first and medium legs, which are light brown. Veins of wings medium brown.

Head – Covered with very short and scattered hairs. Malar furrow very curved and not much strongly impressed. Postocular furrow present and not much strongly impressed (Fig. 4E). There are some scattered hairs in the postocular furrow and in the upper part of malar furrow. Pleurostomal lines weak. Occipital carina absent. Malar space 0.47 times the height of the compound eye. Transfacial line 0.5 times the greatest width of the head and 1.0 times the height of a compound eye. Antennal foramina separated from each other by 2.61 times the distance between the foramen and the compound eye.

Antennae – All flagellomeres cylindrical not expanded in width towards apex. Length of F1 1.2 times the length of F2. Antennae without pubescence. Antennal formula 9 (4.2): 3 (3.5): 11 (3): 9 (3): 9 (3): 9 (3): 9 (3.1): 8.8 (3.1): 8.5 (3.1): 8 (3.2): 8 (3.2): 8 (3): 7.5 (3): 10 (3). Placodeal sensilla start on F1 and they are not scarce on this antennomere. F3 to F5 weakly expanded dorsolaterally with a longitudinal ridge on the raised part.

Mesosoma – Lateral pronotal carinae projected dorsomedially to form a small and few raised tooth (Fig. 4E). Pronotal plate with few scattered short hairs, and with coriaceous sculpture. Lateral surface of pronotum with quite dense pubescence, weak areolate-reticulate sculptured in the apical part and with irregular transverse carinae in the ventral part. Mesoscutum in lateral view 1.48 times higher than long; in dorsal view 1.22 times wider than long. Median mesoscutal impression very short and little longer than broad, notauli complete (Fig. 2F). Line of hairs on the anterior and lateral margins of the mesoscutum absent. Carinae between areolate sculpture wider and shinier than all other species of the group. Scutellum in dorsal view 0.91 times the length of the mesoscutum. Scutellar foveae smooth in the most part and with rugose sculpture in their posterior part (Fig. 2F). Lateral pit of fovea obstructed, superficial 1.6 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 3.8 times the width of the pit. Scutellar spine broad narrowing abruptly before apex. Scutellar disc in lateral view steeply slopping to base of scutellar spine, which is directed upwards at base and curved downwards, so that the apex is ventrally directed. Mesopleural impression narrow curved in upper part and with abundant weak transverse carinae. Mesopleural triangle glabrous. Propodeum with areolate sculpture. Median and lateral propodeal carinae present. The lateral carinae are wide and flat in upper part.

Wings – Marginal cell open 2.75 times longer than wide. R1 absent. Marginal pubescence of the wing starting from the apical 2/3 of marginal cell but it is very sparse to the end of the cell.

Metasoma – Petiole 1.8 times as long as wide, dorsally smooth, laterally and ventrally costate. Third abdominal tergum dorsally 0.6 times the length of the fourth tergum.

***Acanthaegilips huggerti* Sporrang &
Ros-Farré sp. n.**

(Figs. 2B, 4B)

Studied material – 2 ♀ & 2 ♂. Holotype: 1 ♀ (NZLU-MS) 25-II-1983 at Pich, Rio Psique, 5 km N of Guallabamba, (Ecuador) L. Huggert col. Paratypes: Ecuador: 1 ♀ (MZLU-MS), 13-II-1983 at Napo, Baeza, L. Huggert col. Nicaragua: 1 ♂ (UB), 18-XII-94 at Carr. Matagalpa, Jinotega. J. M. Maes col. 1 ♂ (MACN).

Etymology – This name was chosen to honour Dr. Lars Huggert, Sweden, who has collected the type specimen.

Length of head + mesosoma + metasoma in female: 2.58 mm; in male: 2.63 mm.

Colour – Female. Head and mesosoma black, metasoma blackish brown. Antennae light or reddish brown. Mandibles light yellowish brown with reddish brown teeth. Legs light brown with exception of the basal 2/3 of the metacoxa, which is dark brown. Veins of wing yellowish brown. Male. Differs from female in having scape and pedicel light brown, flagellomeres medium to dark brown, lighter lateroventrally.

Head – Female. Head with scattered short hairs. Malar furrow in upper part very curved. Postocular furrow present. Occipital carina strong. Malar space 0.58 to 0.62 times the height of the compound eye. Transfacial line 0.53 to 0.56 times the greatest width of the head and 1.15 to 1.16 times the height of a compound eye. Pleurostomal lines very marked. Antennal foramina separated from each other by 1.17 to 1.20 times the distance between the foramen and the compound eye. Male. Malar space 0.6 to 0.7 times the height of the compound eye. Transfacial line 0.54 to 0.58 times the greatest width of the head and 1.11 to 1.25 times the height of the compound eye. Antennal foramina separated from each other by 1.25 to 1.29 times the distance between foramen and the compound eye.

Antennae – Female. Pubescence of the antenna practically indistinguishable. F1 to F3 cylindrical with a very small expansion at the apex, following flagellomeres cylindrical. Length of F1 1.25 to 1.28 the length of F2. Antennal formula: 7 (2.5): 3 (2): 7.5 (1.5): 6 (1.5): 5.5 (2): 5.5 (2): 5.5 (2): 5 (2): 4.5 (2): 4.5 (2): 4.5 (2): 4 (2): 8 (2). Placodeal sensilla start on F2 but they are absent on dorsal part of this antennomere, on F3 and F4 they are scarce on dorsal part. Male. Flagellomeres cylindrical. Length of F1 1.2 to 1.4 the length of F2. Antenna without pubescence. Antennal formula: 7 (3): 3 (3.5): 12 (2.5): 8.5 (3): 8 (3): 8.5 (3): 9 (3): 8.5 (3): 8 (3): 9 (3): 8 (3): 7 (3): 7 (3): 10.2 (3). F1 to F5 and weakly in basal 1/3 of F6 slightly expanded dorsolaterally with a longitudinal ridge on the raised part. Placodeal sensilla start on F1 and they are not scarce on this segment.

Mesosoma – Female. Anterior pronotal plate almost glabrous with coriaceous sculpture. Lateral pronotal carinae projecting dorsomedially to form a blunt, little tooth (Fig. 4B). Lateral surface of pronotum with scattered

hairs and with coarse areolate sculpture. Mesoscutum in lateral view 1.6 times higher than long; in dorsal view 1.29 times wider than long. Median mesoscutal impression very short, at most little longer than broad. Notauli reaching 1/2 or 1/3 the length of mesoscutum (Fig. 2B). Line of hairs on the anterior and lateral margins of the mesoscutum absent. Scutellum in dorsal view of the same length as that of the mesoscutum. Scutellar foveae smooth with some weak sculpture at its posterior margin. Lateral pit of scutellar fovea rather small and almost circular, 1.2 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 4.0 times the width of the pit. End of scutellar disc narrowing abruptly to base of scutellar spine, which is slender all the way (Fig. 2B). Scutellar disc in lateral view steeply slopping to base of scutellar spine. Scutellar spine straight not directed ventrally (Fig. 4B). Mesopleural impression rather narrow straight and with few transverse carinae. Mesopleural triangle glabrous. Propodeum areolate but not coarsely, median and lateral propodeal carinae present. Male. Mesoscutum in lateral view 1.60 to 1.67 times higher than long; in dorsal view 1.15 to 1.33 times wider than long. Scutellum in dorsal view of the same length as that of the mesoscutum. Lateral pit of scutellar fovea 1.20 to 1.33 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 3.33 times the width of the pit. Mesopleural impression with only one or two weak transverse carinae.

Wings – Female. Marginal cell open; between 2.70 and 2.80 times longer than wide. R1 practically non-existent. Marginal pubescence of the wing starting from vein R1. Margin of the marginal cell sparsely pubescent anteriorly and densely pubescent apically. Male. Marginal cell 3.14 to 3.44 times longer than wide; its margin rather densely pubescent anteriorly and apically.

Metasoma – Female. Petiole between 1.7 and 2.0 times as long as wide. Petiole dorsally smooth laterally and ventrally longitudinally costate. Third abdominal tergum dorsally between 0.60 and 0.71 the length of the fourth tergum.

Acanthaegilips levis Ros-Farré &
Pujade-Villar. sp. n.

(Figs. 1B, 3B)

Studied material – 2 ♀; ♂ unknown. Holotype: 1 ♀ (UCR) III-1995 at San José, Zurquí de Moravia

(1600 m), (Costa Rica), Hanson & Godoy col. Paratype: Costa Rica: 1 ♀ (UCR), X/XII-1990 and same Holotype's data.

Etymology – This name was chosen because the scutellum in dorsal view is very smooth, flat and shining and the lateral carinae of scutellar foveae are weakly impressed.

Length of head + mesosoma + metasoma: 2.9 mm to 3.1 mm.

Colour – Although we only examined two specimens they had different colour. Head black, mesosoma and metasoma black or dark brown. Antennae medium brown or black with amber colour towards apex from F1 to F5. Mandibles medium or light brown with reddish brown teeth. Legs medium to dark brown with exception of procoxa and mesocoxa, which are light brown. Veins of wing medium brown.

Head – Covered with very few scattered quite long hairs. Malar furrow slightly curved; postocular furrow absent (Fig. 3B). Occipital carina weak. Pleurostomal lines well impressed and wide. Malar space 0.61 to 0.63 times the height of the compound eye. Transfacial line 0.57 times the greatest width of the head and 1.21 times the height of a compound eye. Antennal foramina separated from each other by 1.00 to 1.14 times the distance between the foramen and the compound eye.

Antennae – F2 to F4 weakly expanded in width at the apex, following flagellomeres cylindrical. Length of F1 1.5 the length of F2. Scape and pedicel covered with very sparse pubescence. First flagellomeres covered with sparse pubescence this is getting dense towards last flagellomeres. Antennal formula: 12 (3): 3 (2): 14 (2): 9 (2): 8 (2): 7 (2): 6 (2): 5.5 (2): 5 (3): 5 (3): 5 (3): 4.5 (3.5): 11 (3). Placodeal sensilla start on F1 but they are ventrally absent at the basal 1/2 and scarce at the upper 1/2 of F1 and absent on the dorsal part of F1 and F2 and scarce on the dorsal part of F3.

Mesosoma – Anterior pronotal plate very raised dorsomedially but rounded not forming a tooth (Fig. 3B) and with sparse pubescence on the lateral margins, in dorsal part weakly transversely carinate and changing to coriaceous in level with the submedian depressions. Lateral surface of pronotum covered with sparse pubescence and with coarse areolate sculpture. Mesoscutum in lateral view 1.45 times higher than long; in dorsal view 1.25 times wider than long. Median

mesoscutal impression very short a little longer than broad. Notauli reaching $1/2$ to $2/3$ the length of mesoscutum (Fig. 1B). There is a weak line of hairs on the anterior and lateral margins of the mesoscutum. Scutellum in dorsal view 1.31 times the length of the mesoscutum. Scutellar foveae nude (Fig. 1B). Scutellar spine dorsally very smooth, lateral ridges of the foveae not much marked, and narrowing gradually. Lateral pit of scutellar fovea rather big and oval, 1.45 to 1.50 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 3.60 to 3.90 times the width of the pit. Scutellar spine broad at base and narrowing gradually towards apex (Fig. 1B). Scutellar disc in lateral view slopping to base of scutellar spine, which is slightly upwards directed and almost horizontally directed towards apex but the apex not ventrally directed (Fig. 3B). Mesopleural impression wide and straight with 3 or 4 very effaced transverse carinae (Fig. 3B). Mesopleural triangle with sparse pubescence anteriorly and with some scattered hairs posteriorly. Propodeum with coarse areolate sculpture, lateral and median propodeal carinae absent.

Wings – Marginal cell open 3.37 to 3.50 times longer than wide. R1 arriving near the margin but not reaching it as in the Fig. 3A. Marginal pubescence starting from vein R1.

Metasoma – Petiole 2.6 times as long as wide, smooth dorsally, laterally and ventrally costate. Third abdominal tergum dorsally 0.68 times the length of the fourth tergum.

***Acanthaegilips macropennis* Sporrong & Ros-Farré. sp. n.**

(Figs. 1A, 3A)

Studied material – 10 ♂ & 4 ♀. Holotype: 1 ♀ (in CNC) 17-II-1983 at Napo bellow Papallacta 3000 m, (Ecuador), L.M. Masner col. Paratypes: Ecuador: 4 ♂ & 1 ♀ same Holotype's data. 6 ♂ & 2 ♀ (in MZLU-MS) 24-II-83 at Napo Papallacta 3800 m., Lars Huggert col.

Etymology – This name was chosen because the large wings, which this species has in common with several species of *Eucoilinae* collected at the same altitudes.

Length of head + mesosoma + metasoma in female: 3.5 mm to 4.4 mm; in male: 3.2 mm to 3.9 mm.

Colour – Female. Head and mesosoma black, metasoma blackish brown. Scape, pedicel, F1 and F2 black, remaining flagellomeres changing to brown. Mandibles brown with reddish brown teeth. Legs dark brown. Veins of wing medium to dark brown. Male. Differs from female in having all of the flagellomeres black.

Head – Female. Covered by sparse long hairs. Malar furrow slightly curved; postocular furrow absent (Fig. 3A). Occipital carina absent. Malar space 0.77 to 0.92 times the height of the compound eye. Transfacial line 0.56 to 0.58 times the greatest width of the head and 1.15 to 1.43 times the height of a compound eye. Pleurostomal lines very weak. Antennal foramina separated from each other by 0.76 to 0.80 times the distance between the foramen and the compound eye. Male. Malar space 0.66 to 0.77 times the height of the compound eye. Transfacial line 0.54 to 0.57 times the greatest width of the head and 1.0 to 1.2 times the height of a compound eye. Antennal foramina separated from each other by 0.5 to 0.8 times the distance between the foramen and the compound eye.

Antennae – Female. F1 to F4 slightly expanded in width at the apex. Length of F1 1.41 to 1.60 the length of F2. Scape and pedicel covered with sparse pubescence. Flagellomeres covered with dense pubescence. Antennal formula: 14 (3.5): 4 (3): 15 (3): 10 (3): 8 (3.2): 7 (3.2): 6 (3.5): 6 (3.6): 6 (3.7): 5 (4): 5 (4): 5 (4): 11 (4). Placodeal sensilla start on F2 but they are absent dorsally on F2, F3 and first $1/3$ of F4. Male. Flagellomeres cylindrical. Length of F1 1.3 to 1.5 the length of F2. Flagellomeres covered with short sparse pubescence. Antennal formula: 9 (4): 3 (3): 14.5 (3): 11 (2.8): 10 (2.8): 10 (3): 9 (2.8): 9 (2.7): 9 (2.5): 9 (2.4): 8 (2.4): 8 (2.4): 8 (2.4): 11 (2.3). Placodeal sensilla start on F1 and only lacks in a small area of basal part of F1. F3 to F5 slightly expanded dorsolaterally with a longitudinal ridge on the raised part.

Mesosoma – Female. Anterior pronotal plate rounded dorsally or weakly incised (Fig. 3A) and with long white pubescence at the lateral areas and sparse pubescence on the central area, near the dorsal margin smooth or with a weak trace of transversely carinate sculpture. Lateral surface of pronotum with quite dense pubescence and with coarse areolate sculpture. Mesoscutum in lateral view 1.5 to 1.6 times higher than long; in dorsal view 1.2 to 1.4 times wider than long. Median mesoscutal impression very short, at most a little longer than broad. Notauli reaching $1/2$ to $2/3$ the length of mesoscutum (Fig. 1A). There is a conspicuous line of

hairs on the anterior and lateral margins of the mesoscutum. Scutellum in dorsal view 1.40 to 1.47 times the length of the mesoscutum. Scutellar foveae smooth in the anterior part and with rugose sculpture in the posterior part (Fig. 1A). Lateral pit of scutellar fovea big, 1.4 to 1.7 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 2.8 to 3.2 times the width of the pit. Scutellar spine broad at base narrowing gradually towards apex (Fig. 1A). Scutellar disc in lateral view slightly sloping to base of scutellar spine, which is horizontally directed at base and slightly curved downwards towards apex (Fig. 3A). Mesopleural impression straight and wide (wider on the basal part) and without transverse carinae. Mesopleural triangle with dense pubescence anteriorly and sparse pubescence posteriorly. Propodeum with coarse, areolate sculpture, lateral and median propodeal carinae absent. Male. Mesoscutum in lateral view 1.50 to 1.68 times higher than long; in dorsal view 1.06 to 1.20 times wider than long. The line of hairs on the anterior and lateral margins of the mesoscutum is weak. The scutellar foveae less sculptured than in the female. Scutellum in dorsal view 1.27 to 1.42 times the length of the mesoscutum. The distance from median scutellar carina to the inner margin of the pit 2.4 to 2.6 times the width of the pit. Scutellar spine almost straight in lateral view, the apex not ventrally directed. Mesoscutal impression not as wide as in the male.

Wings – Female. Marginal cell closed, 3.0 to 3.2 times longer than wide. Marginal pubescence of the wing starting from vein R1. Male. Marginal cell 2.9 to 3.0 times longer than wide.

Metasoma – Female. Petiole 3.00 to 3.25 times as long as wide, dorsally smooth, laterally smooth with short longitudinal carinae near the anterior end, ventrally longitudinally carinate. Third abdominal tergum dorsally 0.85 to 0.96 the length of the fourth tergum. Male. Petiole 2.66 to 3.00 times as long as wide. Third abdominal tergum dorsally 0.82 to 1.07 the length of the fourth tergum.

Acanthaegilips masneri Sporrong &
Ros-Farré. sp. n.

(Figs. 1C, 3C)

Studied material – 3 ♀; ♂ unknown. Holotype: 1 ♀ (CNC) 18-VIII/3-IX-192 at Aragua (1100 m), Rancho

Grande N.P. (Venezuela), L. Masner col. Paratypes: Venezuela: 2 ♀ (MZLU-MS) 12-IV-1994 at Aragua, Tiara env. (1250 m), Forest. SS. L. Masner col.

Etymology – This name was chosen to honour Dr. Lubomir Masner, Canada, who has collected all the type specimens.

Length of head + mesosoma + metasoma: 2.9 mm to 3.1 mm.

Colour – Head, pronotum, mesopleuron, mesoscutum and scutellar spine black. Scutum, mesopleural triangle, metanotum and metasoma dark reddish brown. Procoxa and mesocoxa brown, trochanters and proximal margin of the tibiae light brown remaining part of the legs medium to dark brown. Mandibles light yellowish brown with reddish brown teeth. Scape dark brown with lighter apex, pedicel light reddish brown, F1 to first half of F2 brown, last half of the F2 to F8 light reddish brown, F9 to F11 dark brown. Veins of wing dark brown.

Head – Covered with scattered short hairs. Malar furrow slightly curved; postocular furrow absent (Fig. 3C). Occipital carina weak. Pleurostomal lines very marked. Malar space 0.46 to 0.58 times the height of the compound eye. Transfacial line 0.48 to 0.53 times the greatest width of the head and 1.00 to 1.11 times the height of a compound eye. Antennal foramina separated from each other by 0.63 to 0.95 times the distance between the foramen and the compound eye.

Antennae – F1 cylindrical with a very small expansion at the apex, following flagellomeres cylindrical but F2 and F3 slightly narrower at basis. Scape and pedicel covered with short sparse pubescence, flagellomeres covered with short pubescence. Length of F1 1.18 to 1.25 the length of F2. Antennal formula: 13 (4): 2.5 (3): 13 (2): 11 (2): 9 (2): 8 (2): 6 (2.5): 6 (2.5): 5 (2.5): 4.5 (3): 4 (3): 4 (3): 9 (3). Placodeal sensilla start on F2 but they are dorsally scarce in this segment and sometimes dorsally in the first half of F3.

Mesosoma – Anterior pronotal plate near the lateral margins with a few hairs; near the dorsal margin with weak irregular transverse carinae. Lateral pronotal carinae projecting dorsomedially to form a not very raised tooth (Fig. 3C). Lateral surface of pronotum covered by sparse pubescence and with coarse areolate sculpture. Mesoscutum in lateral view 1.61 to 1.73 times higher than long; in dorsal view 1.36 times wider than long.

Median mesoscutal impression and notauli reaching $1/3$ to $1/2$ the length of mesoscutum. There is a conspicuous line of hairs on the anterior and lateral margins of the mesoscutum. Scutellum in dorsal view 1.26 to 1.37 times the length of the mesoscutum. Scutellar foveae smooth (Fig. 1C), scutellar spine dorsally smooth. Lateral pit of scutellar fovea rather small and almost circular 1.1 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 3.7 times the width of the pit. Scutellar spine broad at base narrowing gradually towards apex (Fig. 1C). Scutellar disc in lateral view steeply slopping to base of scutellar spine, which is directed slightly upwards at base and curved downwards, so that the apex is pointing in a posteroventral direction. Mesopleural impression wide straight and without transverse carinae. Mesopleural triangle densely pubescent anteriorly, sparsely pubescent posteriorly. Propodeum with coarse areolate sculpture; lateral and median propodeal carinae absent.

Wings – Marginal cell closed 2.90 to 3.14 times longer than wide. Marginal pubescence starting from vein R1.

Metasoma – Petiole 2.25 to 2.33 times as long as wide. Petiole dorsally smooth; lateroventrally and ventrally longitudinally costate. Third abdominal tergum dorsally 0.56 to 0.70 times the length of the fourth tergum.

***Acanthaegilips occultus* Ros-Farré &
Pujade-Villar sp. n.**

(Figs. 2C, 4C)

Studied material – 1 ♀; ♂ unknown. Holotype: 1 ♀ (MZLU-MS) 11/14-IV-1994 at Aragua, Parque Nacional H. Pittier, La Trilla (200 m), (Venezuela) L. Masner Col. (M.S.).

Etymology – This name was chosen because the malar furrow of this species is very weak.

Colour – Head, mesosoma and metasoma black. Antennae light reddish brown, except the last four flagellomeres, which are dark brown. Mandibles light yellowish brown with reddish brown teeth. Front and middle legs light brown, hind legs brown. Veins of wing yellowish brown.

Head – Head without pubescence, except for a line of hairs running from base of mandible along gena behind malar and postocular furrows and a few hairs

forming a perpendicular line just below eye along upper part of malar furrow. Malar furrow very weak and curved, only marked by a change in the integument curvature; postocular furrow weak. Occipital carina strong. Pleurostomal lines weak. Malar space 0.70 times the height of the compound eye. Transfacial line 0.50 times the greatest width of the head and 1.17 times the height of a compound eye. Antennal foramina separated from each other by 1.6 times the distance between the foramen and the compound eye.

Antennae – F1 to F8 cylindrical with a very small expansion at the apex, following flagellomeres cylindrical. Length of F1 1.27 the length of F2. Antenna without pubescence, except for a few hairs on scape. Antennal formula: 8 (3): 3 (2): 7 (2): 5.5 (2): 5.5 (2): 5.5 (2): 4.5 (2): 4 (2): 4 (2): 4 (2): 4 (2.5): 8 (2.5). Placodeal sensilla start on F2 and they are little scarce on this antennomere.

Mesosoma – Lateral pronotal carinae projecting dorsomedially to form a much raised tooth (Fig. 4C). Anterior pronotal plate with a few scattered hairs near dorsolateral margins and weakly transversely carinate. Lateral surface of pronotum with dense pubescence and with areolate sculpture. Mesoscutum in lateral view 1.58 times higher than long; in dorsal view 1.20 times wider than long. Median mesoscutal impression reaching $1/4$ part of the length of the mesoscutum. Notauli complete (Fig. 2C). Line of hairs on the anterior and lateral margins of the scutum absent. Scutellum in dorsal view of the same length as that of the mesoscutum. Scutellar foveae in anterior part with an internal short longitudinal carina dividing the anterior area of each fovea into two areas, scutellar foveae smooth with few irregular sculpture near its posterior margin. Lateral pit of scutellar fovea almost circular, 1.1 times longer than wide; the distance from median scutellar carina to the inner margin of the pit 3.5 times the width of the pit. Scutellar spine broad, narrowing abruptly before apex (Fig. 2C). Scutellar disc in lateral view steeply slopping to base of scutellar spine, which is upwards directed at base and curved downwards, the apex is ventrally directed. Mesopleural impression rather narrow, weakly curved in the apical part and with few coarse transverse carinae (Fig. 4C). Mesopleural triangle with sparse pubescence. Propodeum with areolate sculpture, lateral and median propodeal carinae present.

Wings – Marginal cell open 2.5 times longer than wide. R1 practically non-existent. Marginal pubescence of

the wing starting from the apical 2/3 of marginal cell but it is very sparse to the end of the cell.

Metasoma – Petiole between 1.0 and 1.5 times as long as wide, it is not possible to know exactly this measure because the third tergum is covering the posterior part of the petiole in the holotype. Petiole dorsally smooth, laterally and ventrally costate. Third abdominal tergum dorsally 0.65 times the length of the fourth tergum.

Redescription of *Acanthaegilips brasiliensis*

(Figs. 1D, 3D)

Acanthaegilips brasiliensis Ashmead, (1897: 67)

Acanthaegilips brasiliensis Ashmead, Dalla Torre & Kieffer, (1910: 47)

Acanthaegilips brasiliensis Ashmead, Weld, (1921: 434)

Acanthaegilips brasiliensis Ashmead, Weld, (1950: 96 & 171)

Acanthaegilips brasiliensis Ashmead, Díaz, (1983: 46)

Studied material—16 ♀ & 3 ♂. Holotype: 1 ♀ (n° 23645 USNM) Collected in April at Chapada (Brazil), Ashmead collection (det. Ashmead), antenna mounted. Label data: Chapada, April; Coll Ashmead. *Acanthaegilips brasiliensis* f. Type. Additional material: Brazil: 1 ♀ Alvarenga col. 1 ♀ (DCBU) 12-X-1987 at Fazenda Jacutinga, light trap, (MZLU-MS) VII-1992 at Represa Rio Grande, Guanabara, M.U.F. col. Mexico: 1 ♂ & 1 ♀ (CNC) 8-VI-1969 at Chis. 5700 ft. 20 mi, Yerba Buena, Malaise trap. N. Bochill col. Guatemala: 1 ♀ (USNM) VII-1980 at Antigua (1500-1600 m), N.L.H.Krauss col. Bolivia: 1 ♀ (CNC) 19/20-XII-1955 at Chulumani (1700 m), Yungas, L.E. Pena col. Costa Rica: 2 ♀ (USNM) 14-IV-1985 at San Antonio de Escazu (300 m), F-SAZ-125, W.Eberhard col. 1 ♀ (UCR) VI/VIII-1993 at Cartago, Dulce Nombre, Viviero Linda Vista (1300 m), P. Hanson col. 1 ♀ (UCR) VIII/IX-1995 at Alajuela Est. Biol. San Ramon (900 m) P. Hanson col. 2 ♀ (MZLU-MS) 14/25-V-1988 at San Jose, Escazu, F.D. Parker col. 1 ♀ (MZLU-MS) 22/27-V-1998 at San Jose, Escazu, F.D. Parker col. 1 ♀ (MZLU-MS) 21/26-V-1988 at San Jose, Escazu, F.D. Parker col. 1 ♀ (MZLU-MS) 24/30-I-1988 at San Jose, Escazu, F.D. Parker col. 2 ♀ (MZLU-MS) 8-II-1987 at San Jose, Escazu, G.E. Bohart col. 1 ♂ (UCR) IX/X-1989 at Guanac, Estac. Mengo, SW, Volcan Cacao (1100 m). Honduras: 1 ♂ (n° 35396 USNM) in 17-II-1918 at Tegucigalpa, F.J. Dyer col.

Length of head + mesosoma + metasoma in female: 2.6 mm to 3.2 mm; in male: 2.6 mm to 2.9 mm.

Colour – Female. Head wholly black. Antennae segments light brown with exception of the scape, which is black in its basal part, and F9 to F11, which are dark brown. Mandibles light brown with darker tooth. Scutum and mesopleural triangle reddish brown; mesopleuron, scutellar spine, propodeum and metasoma almost black. Legs medium to dark brown except for the procoxa, mesocoxa and tarsi, which are light brown. Gaster blackish brown. Veins of wings medium brown. Male. Entirely black with exception of the first and second legs, which are light yellowish brown.

Head – Female. Covered with scattered medium long hairs. Malar furrow slightly curved. Postocular furrow absent. Occipital carina present. Malar space 0.60 to 0.71 times the height of the compound eye. Pleurostomal lines strong. Transfacial line 0.52 to 0.57 times the greatest width of the head and 1.17 to 1.30 times the height of a compound eye. Antennal foramina separated from each other by 0.7 to 0.9 times the distance between the foramen and the compound eye. Male. Malar space 0.61 times the height of the compound eye. Transfacial line 0.54 times the greatest width of the head and 1.04 to 1.08 times the height of a compound eye. Antennal foramina separated from each other by the same distance as that between the foramen and the compound eye.

Antennae – Female. Flagellomeres cylindrical, not expanded in width towards apex. Length of F1 1.38 to 1.43 the length of F2. Antennae covered with short, dense pubescence. Antennal formula: 10 (3): 3 (2): 12.5 (2): 9 (2): 8 (2): 8 (2): 6 (3): 5 (2): 5 (2.5): 4.5 (3): 4.5 (3): 4 (3): 9 (3). Placodeal sensilla start on F2, but they are dorsally scarce in the basal part of this flagellomere. Male. F1 1.5 the length of F2. Flagellomeres covered by very short, dense pubescence. Antennal formula: 11 (5): 4 (4): 18 (4): 12.5 (4): 11 (3.5): 11 (3): 10.9 (3.3): 10.5 (3.5): 10 (3.5): 9 (3.8): 8 (3.8): 8 (3.5): 8 (3.2): 11 (3.2). Placodeal sensilla start on F1, they are dorsally scarce in the basal part of F1. F2 to F4 slightly expanded dorsolaterally with a longitudinal ridge on the raised part.

Mesosoma – Female. Lateral pronotal carinae projecting dorsomedially to form a raised tooth (Fig. 3D). Anterior pronotal plate with scattered long hairs on the lateral margins and with weak transverse cari-

nae. Lateral surface of pronotum with very sparse pubescence and with coarse areolate sculpture. Mesoscutum in lateral view 1.63 to 1.93 times higher than long; in dorsal view 1.20 to 1.53 wider than long. Median mesoscutal impression reaching between 1/3 and 1/2 the length of the scutum, notauli complete, the basal cell reaching to the 1/3 the length of mesoscutum (Fig. 1D). Sculpture over mesoscutum from the pronotum to the mesoscutal impression as a strong carina, when viewed in profile, mesoscutum humped, in part because of this carina, also seen in profile (Fig. 3D). There is a conspicuous line of hairs on the anterior and lateral margins of the mesoscutum. Scutellum in dorsal view 1.21 to 1.36 times the length of the mesoscutum. Scutellar foveae nude. Lateral pit of scutellar fovea 1.15 to 1.40 longer than wide; the distance from median scutellar carina to the inner margin of the pit 3.16 to 4.30 times the width of the pit. Scutellar spine broad at base and narrowing gradually towards apex (Fig. 1D). Scutellar disc in lateral view steeply sloping to base of scutellar spine, which is directed slightly upwards at base and curved downwards towards apex, which is ventrally directed. Mesopleural impression wide (wider on the basal part) straight and with weak transverse carinae or smooth. Mesopleural triangle densely pubescent anteriorly and very sparsely pubescent posteriorly (Fig. 3D). Propodeum with coarse areolate sculpture, median and lateral propodeal carinae absent. Male. Mesoscutum in lateral view 1.75 times higher than long; in dorsal view 1.25 to 1.32 wider than long. Basal cell of notauli shorter than in the female. Scutellum in dorsal view 1.42 times the length of the mesoscutum. Lateral pit of scutellar fovea 1.15 to 1.35 times longer than wide; the distance from median scutellar carina to the inner margin of the pit is 2.45 to 2.90 times the width of the pit. Scutellar spine less curved than in the female.

Wings – Female. Marginal cell open 3.00 to 3.18 times longer than wide. R1 practically reaching the margin of the wing like in the figure 5A. Marginal pubescence of the wing starting from vein R1. Male. Marginal cell 2.73 to 3.27 times longer than wide.

Metasoma – Female. Petiole 2.2 to 2.5 times as long as wide, dorsally smooth, laterally and ventrally costate. Third abdominal tergum dorsally 0.51 to 0.75 the length of the fourth tergum. Male. Petiole 2.7 times as long as wide. Third abdominal tergum 0.77 the length of the fourth tergum.

DISCUSSION

The *Acanthaegilips* genus presents two morphologically distinct groups. The first group is characterised by having the malar furrow slightly curved and by lacking the postocular furrow; the second group by having the malar furrow strongly curved in the upper part and the postocular furrow present. The first group includes *A. macropennis*, *A. levis*, *A. masneri*, *A. brasiliensis*, *A. ashmeadi* and *A. diazi*; the second group includes *A. dentis*, *A. huggerti*, *A. occultus*, *A. alienus*, *A. exiguus* and *A. carinatus*.

Members of the first group have the occipital carina weakly marked and the scutellar spine (dorsal view) narrowing gradually towards the apex, occasionally slightly constricted medially but never narrowing abruptly close to the apex. The marginal cell is open or closed; if it is open then R1 is always present. The propodeum is entirely areolate.

Members of the second group have a strongly marked occipital carina, with the exception of *A. exiguus*, which only has a faint carina. The scutellar spine is slender throughout or narrows abruptly close to the apex. The vein R1 is very short practically absent. The propodeum is areolate except in *A. alienus*, in which this sculpture is missing between the lateral propodeal carinae. Normally, longitudinal propodeal carinae are distinct despite the areolate sculpture [as opposed to the first group of species]. In *A. occultus* and *A. carinatus* the malar and postocular furrows are very weakly impressed but there is a line of hairs running slightly posterior to them.

In the species for which both sexes are known (*A. macropennis*, *A. brasiliensis*, *A. ashmeadi*, *A. carinatus*, *A. huggerti*), the males and females are very similar morphologically. Therefore, we are confident that we have correctly separated the two species known only by males from the four species known only by females.

Acanthaegilips alienus is very different from other members of the genus in the structure of the scutellar spine, the absence of modified flagellomeres in the males, the structure of the notauli and the absence of sculpture between the propodeal carinae. The last state differs from the likely ground-plan state of the Anacharitinae, in which the areolate sculpture covers the entire propodeum and more or less entirely obscures the propodeal carinae (Ros-Farré *et al.*, 2000). The apomorphic state obviously evolved secondarily within the Anacharitinae through loss of the areolate sculpture making the propodeal carinae more conspicuous.

Two potentially important diagnostic characters for separating species of *Acanthaegilips* are the distribution of sensilla in the antennae and the position and number of modified flagellomeres. Unfortunately, we have not been able to explore the utility of these characters fully linked to sex – The first character varies between males and females and the second character occurs only in males – and both sexes are currently known for only half the species.

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RESUMO

Revisamos Acanthaegilips, um gênero de figítideos anacharítíneos que ocorre na América do Sul. Membros desse gênero são caracterizados por apresentar um longo espinho escutelar, caráter único entre os Anacharitinæ. A única espécie conhecida anteriormente (A. brasiliensis) é redescrita e onze espécies novas descritas: A. macropennis, A. ashmeadi, A. levis, A. masneri, A. diazi, A. dentis, A. occultus, A. alienus, A. exiguus, A. huggerti e A. carinatus. Uma chave para a identificação das espécies é apresentada e registros de distribuição apresentados para cada espécie. Os registros para o gênero estendem-se do Sul da Neotrópica ao México. A biologia de Acanthaegilips permanece desconhecida; outros membros

de Anacharitinæ são parasitóides de larvas de Neuroptera que alimentam-se de afídeos.

PALAVRAS-CHAVE: Cynipoidea, Figitidae, Aspicerinae, *Acanthaegilips*, Novas espécies.

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