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# ZOOTAXA

3979

## **Taxonomic review of the genus *Hypomicrogaster* Ashmead (Hymenoptera: Braconidae: Microgastrinae), with descriptions of 40 new species**

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## Abstract

A taxonomic review of the genus *Hypomicrogaster* Ashmead is presented with the redescription and redelimitation of the already named species *Hypomicrogaster ecus* Nixon, *H. imitator* (Ashmead), *H. tydeus* Nixon and *H. zonaria* (Say). The review also implies eleven new synonymies, and a new combination for the species *H. areolaris* (Blanchard). Also, the present revision identified 40 new *Hypomicrogaster* species: *Hypomicrogaster aodous* n. sp., *H. aplebis* n. sp., *H. cernus* n. sp., *H. crocinus* n. sp., *H. daktulios* n. sp., *H. deltis* n. sp., *H. duo* n. sp., *H. epipagis* n. sp., *H. espera* n. sp., *H. evrys* n. sp., *H. guille* n. sp., *H. hektos* n. sp., *H. hupsos* n. sp., *H. ingensis* n. sp., *H. insolitus* n. sp., *H. inversalis* n. sp., *H. koinos* n. sp., *H. largus* n. sp., *H. laxis* n. sp., *H. linearis* n. sp., *H. lineatus* n. sp., *H. luisi* n. sp., *H. masoni* n. sp., *H. mesos* n. sp., *H. mikrosus* n. sp., *H. multus* n. sp., *H. pectinatus* n. sp., *H. plagios* n. sp., *H. pollex* n. sp., *H. rugosus* n. sp., *H. scindus* n. sp., *H. sicingens* n. sp., *H. sicpollex* n. sp., *H. sicscindus* n. sp., *H. siderion* n. sp., *H. spatulae* n. sp., *H. specialis* n. sp., *H. tantillus* n. sp., *H. tetra* n. sp., *H. zan* n. sp. The *Hypomicrogaster* species are using as hosts 11 families of Lepidoptera, and 52 confirmed lepidopteran species feeding on 34 families of plants. Additionally, a fully illustrated key to all known described species of *Hypomicrogaster* is presented.

**Key words:** Africa, host records, new species, neotropics, phylogeny, parasitoids, wasp ecology

## Introduction

The genus *Hypomicrogaster* (Ichneumonoidea: Braconidae: Microgastrinae) was described by Ashmead in 1898, but it was Thomas Say (1836), curiously, who earlier described the type species for the genus *Hypomicrogaster*, from Indiana, under the name *Microgaster zonaria*. Later, Muesebeck (1922) wrote that Say's type specimen was lost, but Ashmead later identified some material as *M. zonaria* in a study of the type specimen for the synonymized species *Protapanteles recurvariae* (Ashmead 1920). According to Mason (1981), the genus *Hypomicrogaster* is characterized as containing solitary specialists on microlepidoptera in leaf-mines and other cryptic or endophytic micro-habitats based on the few (largely Nearctic) host records, especially from the original description of *Hypomicrogaster zonaria* (under the name *Protapanteles recurvariae*) from the gelechiid larva *Coleotechnites* (= *Recurvaria*) *piceaella* (Kearfott) (Table 1).

The generic limits for *Hypomicrogaster* remained essentially uncharacterized in the generic revision of Nixon (1965), who recognized eight species groups, of which currently only the *virbius* and *zonaria* species groups are now recognized under the genus. Nixon mentioned that "...in order to find a means of dividing up the large number of species from all parts of the world falling within the loose definition of *Microgaster* auctt., I have found convenient the use of *Hypomicrogaster*. I have accepted the genus in a wide sense..." The imprecision in the definition of several Microgastrine genera led to the description of some *Hypomicrogaster* species under other generic names [e.g. *Hypomicrogaster* (= *Microgaster*) *diaphanae* and *Hypomicrogaster* (= *Urogaster*) *imitator*]. This situation prevailed until Mason's (1981) revision, in which he not only re-delimited the genera *Microgaster* and *Hypomicrogaster*, but also analyzed the polyphyletic nature of the huge genus *Apanteles*. Mason pointed out that (in his more limited delimitation) the genus *Hypomicrogaster* is "one of the most strongly characterized Microgastrinae genera... a large genus in the Neotropical region where nearly all species are undescribed."

In 1992, Austin and Dangerfield revised the Australasian fauna of Microgastrinae and realized that some of the *Hypomicrogaster* species *sensu* Nixon actually belonged to other recognized genera (Table 2). The authors concluded that the genus *Hypomicrogaster* "is excluded from the Australasian fauna... apparently restricted to the New World, primarily to the Neotropical region"; this finding agrees with Mason's opinion about the genus distribution and provoked other taxonomists to think about the validity of other non-Neotropical species within the genus. In contrast to this trend, Shate and Bhoje (2000) described a new species *H. minari* from India, thus expanding the distribution of the genus to the Oriental region, and the existence of *H. imitator* (Ashmead) Nixon from Africa expands the distribution of the genus to the Afrotropical region. To date, no comprehensive revision has been conducted, so that the generic limits and detailed information regarding the geographical distribution of the *Hypomicrogaster* species are poorly defined (Table 3).

**TABLE 1.** Named species of *Hypomicrogaster* Ashmead (Braconidae: Microgastrinae) present in the New World before this study and their biological records.

Species	Author	Year	Known Hosts	Distribution	Locality
<i>acotes</i>	Nixon	1965	?	Neotropical	Brasil
<i>arcanas</i>	Nixon	1965	?	Neotropical	Brasil
<i>areolaris</i>	Blanchard <sup>1</sup>	1947	Gelechid larvae	Neotropical	Argentina
<i>diaphanae</i>	(Muesebeck)	1958	<i>Diaphania indica</i> (Saund.)	Neotropical	?
<i>ecdytolophae</i>	(Muesebeck) Marsh	1922	<i>Arogalea cristifasciella</i> (Chamb.) <i>Caloptilia elongella</i> (L.) <i>Canarsia hammondi</i> Riley <i>Coleotechnites piceaella</i> (Kearf.) <i>Ecdytolopha insiticihana</i> Zell. <i>Grapholita molesta</i> (Busck) <i>Hippia insularis</i> (Grote) <i>Laspeyresia caryana</i> (Fitch) <i>L. pomonella</i> (L.) <i>Nephopteryx uvinella</i> (Rag.) <i>Ostrinia obumbratalis</i> (Led.) <i>Psorosina hammondi</i> (Riley) <i>Rhobondo guarisana</i> Walker <i>Walshia amorphella</i> Clem.	Nearctic-Neotropical	Canada Cuba Guatemala USA
<i>ecus</i>	Nixon	1965	?	Neotropical	Brasil
<i>imitator</i>	(Ashmead) Nixon	1900	?	Neotropical	St. Vincent
<i>jocarae</i>	(Muesebeck)	1958	<i>Jocara ferrifusalis</i> Hamp.	Neotropical	?
<i>metris</i>	Nixon	1965	?	Neotropical	Brasil
<i>moscus</i>	Nixon	1965	?	Neotropical	Brasil
<i>schizurae</i>	(Muesebeck) Marsh	1922	<i>Heterocampa manteo</i> (Dblidy.) <i>Schizura concinna</i> (Smith) <i>S. unicornis</i> (Smith)	Nearctic	USA
<i>solox</i>	Nixon	1965		Neotropical	Brasil
<i>tiro</i>	(Reinhard) Marsh	1880	<i>Cnephasia virguareana</i> (Treit.)	Palaartic-Nearctic	?
<i>tydeus</i>	Nixon	1965	?	Neotropical	Brasil
<i>virbius</i>	Nixon	1965	?	Neotropical	Brasil
<i>zonaria</i>	(Say) Marsh	1836	<i>Argyresthia thujaella</i> Pack. <i>Carpocapsa pomonella</i> L. <i>Pyrausta ainsliei</i> Heinr. (?) <i>P. nubialis</i> Hb. (?) <i>P. penitalis</i> Grote (?) <i>Recurvaria piceaella</i> Kearf. <i>R. thujaella</i> Kearf.	Nearctic	USA

**Note:** Information modified after Shenefelt (1974), Marsh (1979), Muesebeck (1922, 1958), and Blanchard (1947); 1—previously placed in the genus *Apanteles* by Blanchard; ?—Unknown.

### Current systematics of the genus *Hypomicrogaster* Ashmead

Mason (1981) placed the genus *Hypomicrogaster* within the tribe Microgastrini (see Mason 1981 for details). According to Mason the genus is also defined by: the presence of an upper concave and glabrous postocciput (= vertex), propodeum usually with an areola bisected by a median carina, the presence of a small closed areolet in the fore wing, metasomal tergum I broader apically with large separated punctures, vannal lobe subapically concave in outline, and the hypopygium striate (desclerotized and pleated) medially. He also pointed out that the final instar larva possesses a mandible with a long blade bearing about 20 long teeth, palpus long, labrum with 2–4 setae, each with one setae and the skin papulae with long spines. A number of these diagnostic features appear to have

exceptions in some undescribed species otherwise appearing to belong to *Hypomicrogaster*, so the monophyletic nature of this genus, and others, has been questioned in later studies (i.e. Walker *et al.* 1990; Dowton and Austin 1998; Whitfield 2002).

According to Mason (1981), the genus “seems to be rather isolated (taxonomically<sup>1</sup>)” making the placement of it within the Microgastrinae difficult to assess. Walker *et al.* (1990), in an attempt to reanalyze Mason’s characters using an explicit matrix and cladistic methods, found the Forniciini, Cotesiini and Microplitini in combination with the Microgastrini form a basal unresolved polytomy in their consensus tree. Thus, the placement of the genus *Hypomicrogaster* is ambiguous in their published tree. Later, Whitfield *et al.* (2002) approached the phylogenetic relationships within the Microgastrinae using morphological and DNA data (16S, 28S and COI genes), but the analysis of the different molecules provided different tree topologies in which the genus is variously placed in close relationship with the genera *Dasyllagon*, *Diolcogaster*, *Dolichogenidea*, *Microgaster*, *Parapanteles* and *Protomicroplitis*. Interestingly, when the DNA data was combine with the morphological data, *Hypomicrogaster* appeared within the clade (*Microgaster* (*Choeras* (*Hypomicrogaster* (*Parapanteles* + *Papanteles*)))) (see Whitfield *et al.* (2002) for details). Later analyses using additional genes (Banks and Whitfield 2006) appeared to confirm a possible sister group relationship between *Hypomicrogaster* and *Parapanteles*.

The goal of the present study is to revise the known species and describe new species based on an extensive study of available specimens, as well as try to improve the current known biology of the genus through an extensive review and addition of host records.

**TABLE 2.** Named *Hypomicrogaster* species in their current taxonomic status, after Shenefelt (1972), Marsh (1979) and Austin and Dangerfield (1992).

Species	Author	Year	Current name	Taxonomic update date
<i>ceto</i>	(Nixon) Mason <sup>1</sup>	1965	<i>Choeras cetus</i>	1981
<i>ehaphus</i>	(Nixon) Austin & Dangerfield	1965	<i>Choeras apaphus</i>	1992
<i>morata</i>	(Wilkinson) Austin & Dangerfield	1929	<i>Sathon moratus</i>	1992
<i>papua</i>	(Wilkinson) Austin & Dangerfield	1936	<i>Choeras papua</i>	1992
<i>replendens</i>	(Wilkinson) Austin & Dangerfield	1929	<i>Sathon replendens</i>	1992
<i>suffolciensis</i>	(Morley) Mason	1902	<i>Choeras sulffokiensis</i>	1981
<i>tiro</i>	(Reinhard) Mason	1880	<i>Choeras tiro</i>	1981
<i>virbius</i>	(Nixon) Mason	1965	<i>Papanteles virbius</i>	1981
<i>labanius</i>	Nixon <sup>2</sup>	1965	<i>Diolcogaster psarae</i>	2003
<i>psarae</i>	Wilkinson <sup>2</sup>	1927	<i>Diolcogaster psarae</i>	2003
<i>wesmaeli</i> (= <i>picipes</i> )	(Ruthe) Mason	1837	<i>Paroplis wesmaeli</i>	1981

**Note:** 1—Austin and Dangerfield (1992) changed the same species to the same genus independently. 2—Currently placed by Alejandro A. Valerio & Won Young Choi.

**Note:** Information modified after Shenefelt (1972), Marsh (1979) and Pool (1996).

## Taxonomic study of the genus *Hypomicrogaster* Ashmead

### Material and methods

Examined material borrowed from the following institutions (arranged by acronym): American Entomological Institute, Gainesville, Florida, USA (AEI); American Museum of Natural History, New York, USA (AMNH); Australian National Insect Collection, Canberra, Australia (ANIC); The Natural History Museum, London, England (BMNH); California Academy of Sciences, San Francisco, USA (CAS); Canadian National Collection Montreal, Canada (CNCI); Entomology Research Collection, Purdue University Indiana, USA (ERCP); Instituto

1. Parenthesis incorporated by AAV

Alexander von Humboldt, Cartagena, Colombia (IAHC); Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica (INBio); Illinois Natural History Survey, Urbana, Illinois, USA (INHS); Museum of Comparative Zoology, Harvard University, Massachusetts, USA (MCZH); Museo de la Plata, Paseo del Bosque, La Plata, Argentina (MLPA); Museo de Insectos, Universidad de Costa Rica, San José, Costa Rica (MUCR); Ohio State University Collection, Columbus, Ohio, USA (OSUC); Rocky Mountain Systematic Entomology Laboratory, University of Wyoming, Laramie, USA (RMSL); University of Arkansas Entomological Museum, Fayetteville, USA (UAR); University of Colorado Museum, Boulder, Colorado, USA (UCMC); University of Kansas Natural History Museum, Lawrence, USA (UKA); U.S. National Museum, Washington D.C., USA (USNM).

**TABLE 3.** Previously known *Hypomicrogaster* species (Braconidae: Microgastrinae).

Species name	Author	Year	Distribution	Type locality
<i>acontes</i>	Nixon	1965	Neotropical	Brazil
<i>areolaris</i>	Blanchard	1947	Neotropical	Argentina
<i>apo</i>	(Wilkinson) Nixon	1965	Indo-Aust. Pac.	Philippines
<i>apollion</i>	Nixon	1965	Ethiop.	S. Africa
<i>botydis</i>	(Wilkinson) Nixon	1965	Indo-Aust. Pac.	Sumatra
<i>ecdylotophae</i>	(Muesebeck) Marsh	1922	Nearctic—Neotropical	Central America, USA
<i>diaphanae</i>	(Muesebeck) Mason	1958	Neotropical	Costa Rica
<i>ecus</i>	Nixon	1965	Neotropical	Brasil
<i>fomes</i>	Nixon	1965	Ethiopian	S. Africa
<i>gerontius</i>	Nixon	1965	Ethiopian	S. Natal, Africa
<i>helle</i>	Nixon	1965	Ethiopian	Nigeria
<i>hypsipyrae</i>	De Santis	1972	Neotropical	Costa Rica
<i>imitator</i>	(Ashmead) Mason	1900	Ethiopian	St. Vincent, Cabo Verde
<i>irates</i>	Nixon	1965	Indo-Australian and Pacific region	India
<i>jocarae</i>	(Muesebeck) Mason	1958	Neotropical	Cuba
<i>laurae</i>	(De Sager) Nixon	1965	Ethiopian	Belgian Congo, S. Africa
<i>libanius</i>	Nixon	1965	Indo-Australian and Pacific region	Philippines
<i>loretta</i>	Nixon	1965	Ethiopian	S. Africa, Natal
<i>metris</i>	Nixon	1965	Neotropical	Brasil
<i>minari</i>	Shate & Bhoie	2000	Oriental	India
<i>moscus</i>	Nixon	1965	Neotropical	Brasil
<i>neptha</i>	Nixon	1965	Indo-Australian and Pacific region	Philippines
<i>psarae</i>	(Wilkinson) Nixon	1965	Indo-Australian and Pacific region	Malaysia, India, Ceylan, Siam
<i>schizurae</i>	(Muesebeck) Marsh	1922	Nearctic	US
<i>seleme</i>	Nixon	1965	Paleart	Morocco
<i>solox</i>	Nixon	1965	Neotropical	Brasil
<i>tydeus</i>	Nixon	1965	Neotropical	Brasil
<i>vacillatrix</i>	Nixon	1965	Ethiopian	Uganda, Belgian Congo
<i>zonaria</i>	(Say) Marsh	1836	Nearctic	USA

In cases for which series of material are numerous in the descriptions, only the holotype and paratype material information is given in full detail, and if further information/detail is available beyond that on the holotype label, then this information is provided within parenthesis (i.e. “Punt.[arenas]”). In addition, only between 10 and 20

specimens were typically designate as paratypes, to ensure that consistent and thoroughly examined specimens were deposited.

All the new names proposed in this manuscript will be inscribed at Zoobank (<http://zoobank.org/>).

**Biological Information.** The rearing project of D. H. Janzen and W. Hallwachs at the Area de Conservación Guanacaste (A.C.G., Costa Rica, <http://janzen.sas.upenn.edu/caterpillars/database.lasso>) is the source for many of the host-plant associations, host records, cocoon material and specimens of the Neotropical species. All Janzen and Hallwach's voucher codes (yy-SRNP-xxxxx) refer to the event-based record of finding the caterpillar and rearing it. Individual wasps later treated for DNA barcoding or other individual-specific actions are assigned an additional unique voucher code in the form of DHJPARxxxxxxxx, which can be obtained from the yy-SRNP-xxxxx voucher-coded record on the Janzen and Hallwachs web site. All rearing records are reported as they appeared in Janzen and Hallwachs database at the time of this paper preparation except for the holotype information recently updated; for a current state of the motioned host records please consult the Janzen & Wallwach's database. Additional sources are the Jacobson (1991) rearing records from Perú. Another valuable source of material were L. Dyer and G. Gentry's Neotropical rearing projects (NRP, <http://www.caterpillars.org>) in Ecuador as well as the Ozark Oak caterpillar rearing program (USA) conducted by R. J. Marquis, J. B. Whitfield and colleagues (Whitfield *et al.* 1999).

Sex ratios reported in this article are given with the following format: number of males/ number of females (i.e. 3/4, meaning 3 males and 4 females). In addition, a complete literature search was conduct to compile biological information from other regions.

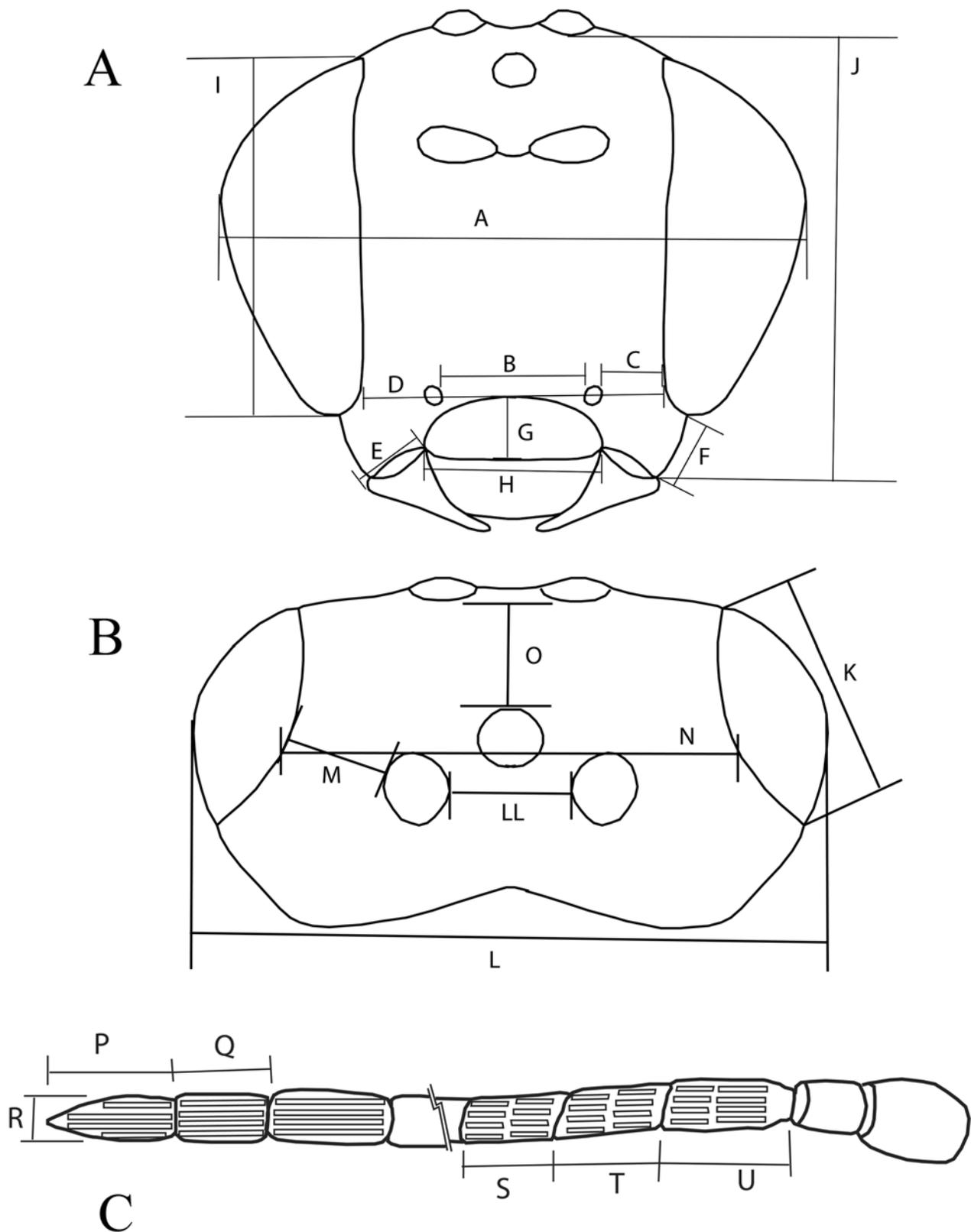
**Morphological data, sculpture, keys and illustrations.** The morphological terminology used in the species descriptions is that of Huber & Sharkey (1993), and Schuh (1989) and Austin and Dangerfield (1992); except for the morphology of the propodeum, which is used *sensu* Townes (1969, Fig. E). The cuticular sculpture terminology is that of Harris (1979), while the terminology for the wing venation is a variation of the Comstock–Needham system as used by Sharkey and Wharton (1997, Fig. 15). A series of morphological measurements were used to describe the species (see Figs. 1 & 2) and the measurements were acquired using a micrometer mounted in a stereomicroscope. The measurements were taken from a maximum of 20 specimens per species when possible. All of the specimens were identified using the generic key provided by Whitfield (1997) as well as Mason's (1981) generic definitions. The genus description follows the terminology of Whitfield *et al.* (2002) to facilitate further comparisons with other previously described genera.

Photographic illustrations were obtain using a digital camera (JVC GC-QX5HD) mounted on a Leica MZ12.5 stereomicroscope then traced using the program Adobe Illustrator (ver.10), or the drawings were made using the same microscope system equipped with a camera lucida. Environmental Scanning Electron Microscopy (ESEM) or Scanning Electron Microscopy (SEM) was done using the Philips XL30 ESEM-FEG electron microscope at the Beckman Institute (University of Illinois at U-C) to acquired additional illustrations.

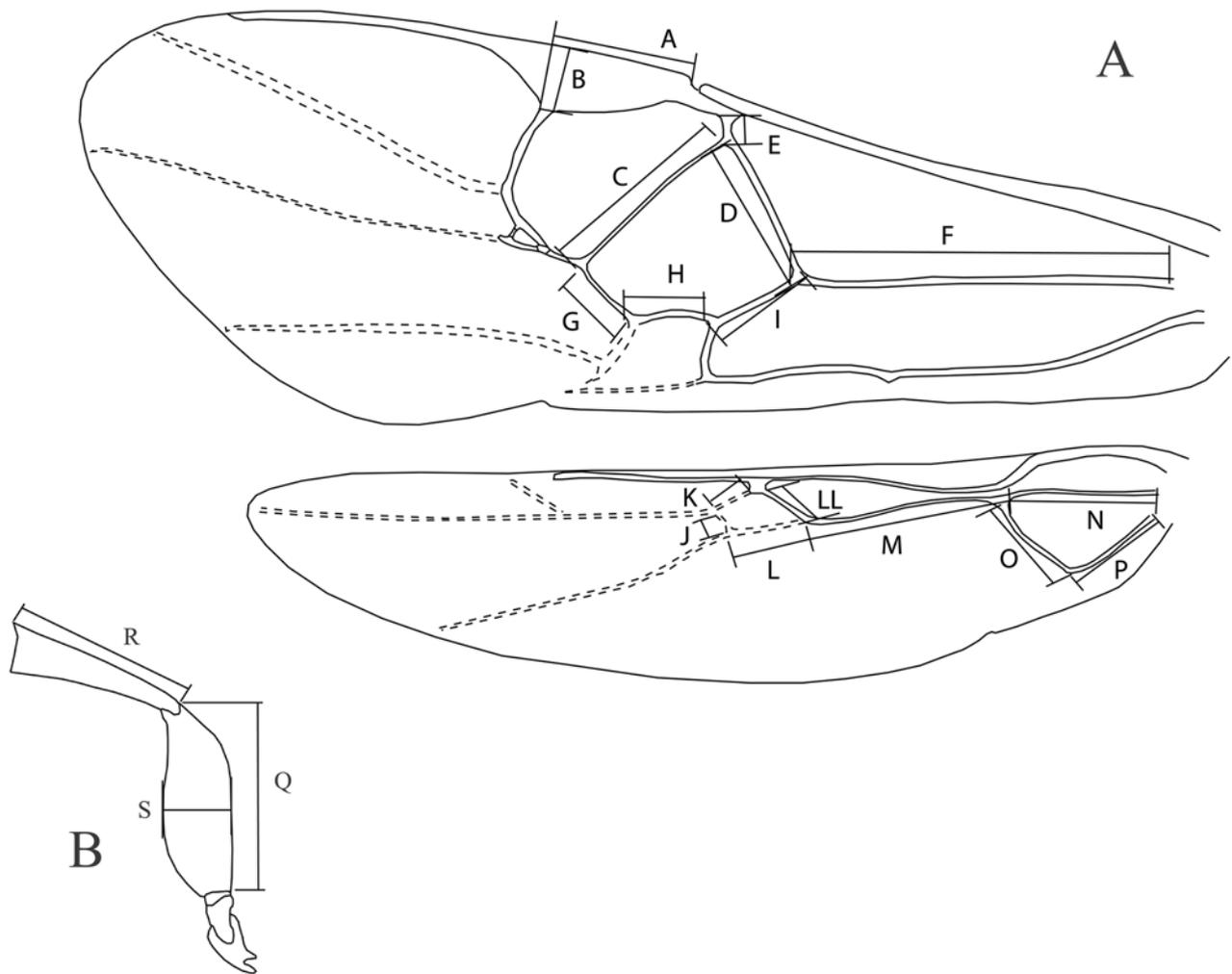
Illustration of the female genitalia was accomplished by leaving the metasoma overnight in a 10–15% KOH solution to clear, and then washing the genitalia in distilled water before dehydration in 80% and 100% alcohol (baths of 5 minutes). The genitalia were mounted in Euparal mounting medium (BioQuip Products, Inc.) and then traced using a micro-slide projector or using digital photos as described above. In addition, a series of morphological measures were used for the description and characterization of the species, which are illustrated on Figures 1 and 2.

Larval characters for the *Hypomicrogaster* were examined using the methodological protocol of Wahl (1984) with the use of lactophenol instead of Nesbitt's solution on reared cocoon remains acquired by the Janzen & Hallwach's project. Larval characters were scored following Whitfield *et al.* (2002) morphological matrix. The larval morphology follows Čapek's (1970, Fig. 1) terminology, which is a modification of terms from Finlayson (1960).

The contributions of the individual authors are: AAV: species concept, key development, imaging and diagram illustrations, databasing of specimen data, character development, manuscript development; JBW, manuscript critical review, manuscript development, microgastroid taxonomic expertise; host records.



**FIGURE 1.** Head morphological measurements used for the species descriptions: A—Face width, B—Intertentorial pit distance, C—Tentorial pit-compound eye distance, D—Face width at clypeus edge, E—Basal width of mandible, F—Malar space, G—Clypeus height, H—Clypeus width, I—Compound eye height, J—Head height, K—Compound eye width, L—Head width, LL—Inter ocellar distance, M—Ocell-ocular distance, N—Face width at upper edge of posterior ocelli, O—Torulus-anterior ocelli distance, P—Distal flagellomere length, Q—Subdistal flagellomere distance, R—Distal flagellomere width, S—Third flagellomere length, T—Second flagellomere length and U—First flagellomere length.



**FIGURE 2.** Wing venation and hind leg morphological measures taken for the species description: a) *Fore wing*: A—Pterostigma length, B—Pterostigma width, C—(RS+M)a length, D—1M length, E—1RS length, F—M+CU length, G—m-cu length, H—1Cub length, I—1CUa length, J—2r-m length; b) *Hindwing*: K—1RSa length, L—2M length, LL—1r-m length, M—1M length, N—M+CU length, O—cu-a length, P—1A length; *Hind leg*: Q—Femur length, R—Tibial length and S—Femur width.

## Results

### Taxonomy

#### Characterization of the genus *Hypomicrogaster* Ashmead

Genus *Hypomicrogaster* Ashmead 1898. Part 2—Description of new parasitic Hymenoptera. Proceedings of the Entomological Society of Washington 4: 166.

Type species *Hypomicrogaster* (= *Microgaster*) *zonaria* (Say) Muesebeck.

**HEAD.** Antennal placodes present as two ranks on proximal flagellomeres, middle flagellomeres with placodes equal in shape dorsally and ventrally; glossa truncate; postgena nitid and highly concave with concavity reaching the posterior ocellus; ocelli forming a low triangle. Gena punctate and with transverse longitudinal lineate sculpture on distal edge and basal 2/3 of postgena. **MESOSOMA.** Pronotum with two lateral grooves (ventral and dorsal); propleuron with a upwardly projecting flange on posterior dorsal edge; epicnemial carina absent; mesonotum without notauli; scutellar lunulae with a well-defined triangular shape, nitid along with scutellar distal edge; scutellum medial area on distal edge with two large costulae with a few to numerous setae present below;

metanotum anterior edge well appressed to scutellum and not exposing phragma, sublateral setae present as tuft; propodeum with anterodorsal area reduced and angled to posterior area about mid length, medial longitudinal carina typically present (in some cases absent, thus areola not divided by it), areola well-defined and closed normally but sometimes totally absent or present only as small carinae diverging from distal area of propodeum, transversal carina typically present with or without accompanying sculpture, in some species absent; costulae normally present but in some cases totally absent. *LEGS*. Hind coxae elongate, reaching to beyond second metasomal tergite; tarsal claw normally with basal tooth, but sometimes this is very reduced or in some cases the claw exhibits a conspicuously developed basal lobe instead of the usual basal long seta (two species however with a pectinate tarsal claw); fore telotarsus usually normal with a long thin seta but in some species excavated apicoventrally and with long broad sinuate seta, sometimes middle and hind telotarsus also with long and broad seta(e) and highly modified and excavated with sinuate long setae. *WINGS*. Fore wing: Vein 3Rs weakly curved; vein (1M+1Rs) angled between 20° and 60°; small to moderate-sized areolet normally with vein r-m meeting 2Rs, sometimes not closed distally; vein 2A absent. Hind wing: vein r spectral; cells 1R and 2R with almost the same width; vein 2r-m spectral; vein 2A absent; veins 2Cu and cu-a slightly concave but not sinuate in shape; vannal lobe separated from remainder of wing by a clearly defined notch, margin after widest point distally flattened or slightly concave, without setosity normally, but sometimes conspicuously setose throughout with long or short setae. *METASOMA*. First tergum with basal excavation present and without mediobasal longitudinal groove, apical section flat to slightly arched without any medioapical excavation, broad but sometimes narrow with lateral edges subparallel; junction of metasoma terga 1–2 flexible; second tergum normally strongly and transversely rectangular in shape but sometimes with subtriangular shape and wider than long; junction of tergum 2 to 3 represented by a fine distinct suture; metasoma not carapace-like; hypopygium medially strongly desclerotized and longitudinally folded into pleats when ovipositor is long, but when ovipositor short then more or less desclerotized medially and sharply folded medially without pleats; ovipositor sheaths with setae distributed throughout their lengths, variable in length (from 1/3 to more than 2x length of hind tibia), attached to second valvifer near apex on ventral side; ovipositor tapered throughout its length but sometimes short, laterally compressed and abruptly narrowing at or just beyond midlength; 8<sup>th</sup> metasomal tergite of females 2x to 4x taller than long, second valvifer tall, lorate and not expanded apically. *LARVA*. According to Mason (1981) the larva exhibits mandibles each with a long blade bearing about 20 long teeth; palpi long; labium with 2–4 setae and each maxilla with one seta. In addition, the larval skin bears long spine like setae (Mason 1981, Fig. 105). However, the larvae of the species with setose vannal lobes are currently unknown, so these characterizations might not hold throughout the genus (see further in text).

**Quick diagnosis.** Lunule very conspicuously triangular in shape plus postoccipital area very convex in shape and nitid (in dorsal view), almost reaching the posterior ocelli, propodeum with a defined areola that normally is divided by the midlongitudinal carinae (most of the time evident). If areola partially or totally absent then the following combination applies: shape of the postocciput extremely concave and nitid, almost reaching the posterior ocelli, second submarginal cell of fore wing closed distally and lunulae triangular in shape plus a very setose and even vannal lobe fringe.

### Key for the Species of the Genus *Hypomicrogaster* Ashmead (mainly females)

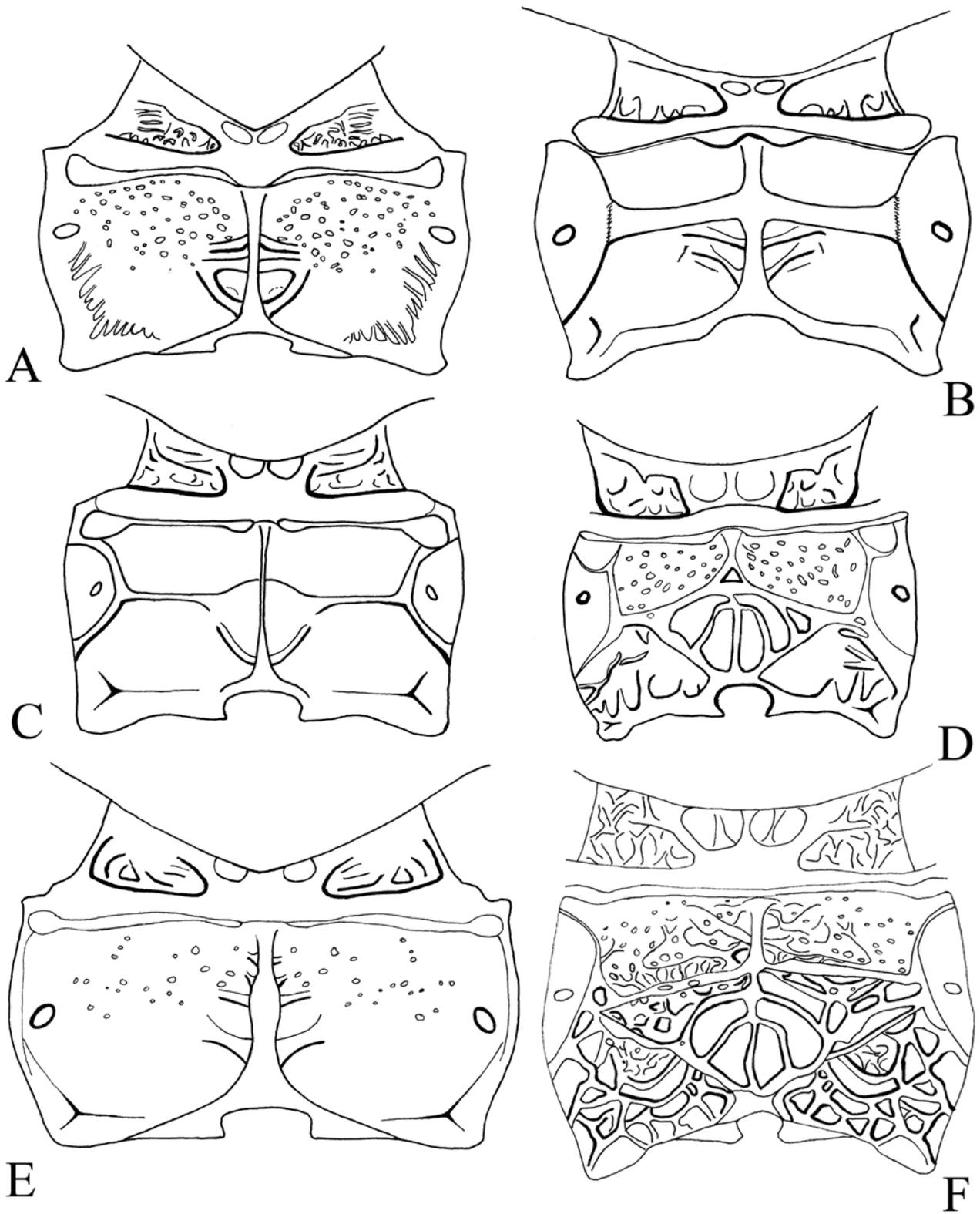
The allegedly Indian species *Hypomicrogaster minari* Shate & Bhoje is not included in the key because AAV was not able to examine specimens belonging to this species to assess the placement within the genus *Hypomicrogaster*. For the *Hypomicrogaster minari* species description and characterization see Shate and Bhoje (2000).

- |   |   |                                    |
|---|---|------------------------------------|
| 1 | From Cape Verde Islands (Africa); body mainly yellow with face black . . . . .  | <i>H. imitator</i> (Ashmead) Nixon |
| - | From the New World; body color variable . . . . .   | 2                                  |
| 2 | Wings infumate; hind wing vannal lobe edge with long setosity . . . . .   | 3                                  |
| - | Wings never infumate; hind wing vannal lobe not conspicuously setose, setae short and broad . . . . .   | 13                                 |
| 3 | Mesosoma and head mostly black, propodeum and metasoma white; propodeal transversal carina practically absent, very narrow and weakly cristate (Fig. 3B) . . . . .                                    | <i>H. siderion</i> Valerio n. sp.  |
| - | Metasoma coloration totally yellow, or yellow with black; propodeal transversal carina conspicuously present, sometimes reduced in length by areolar carina but well-defined (Fig. 3A & 4A) . . . . . | 4                                  |
| 4 | Metasoma white and black; hind leg mainly black . . . . .   | 5                                  |
| - | Metasoma and hind leg totally color yellow or with color combination other than described above . . . . .   | 6                                  |

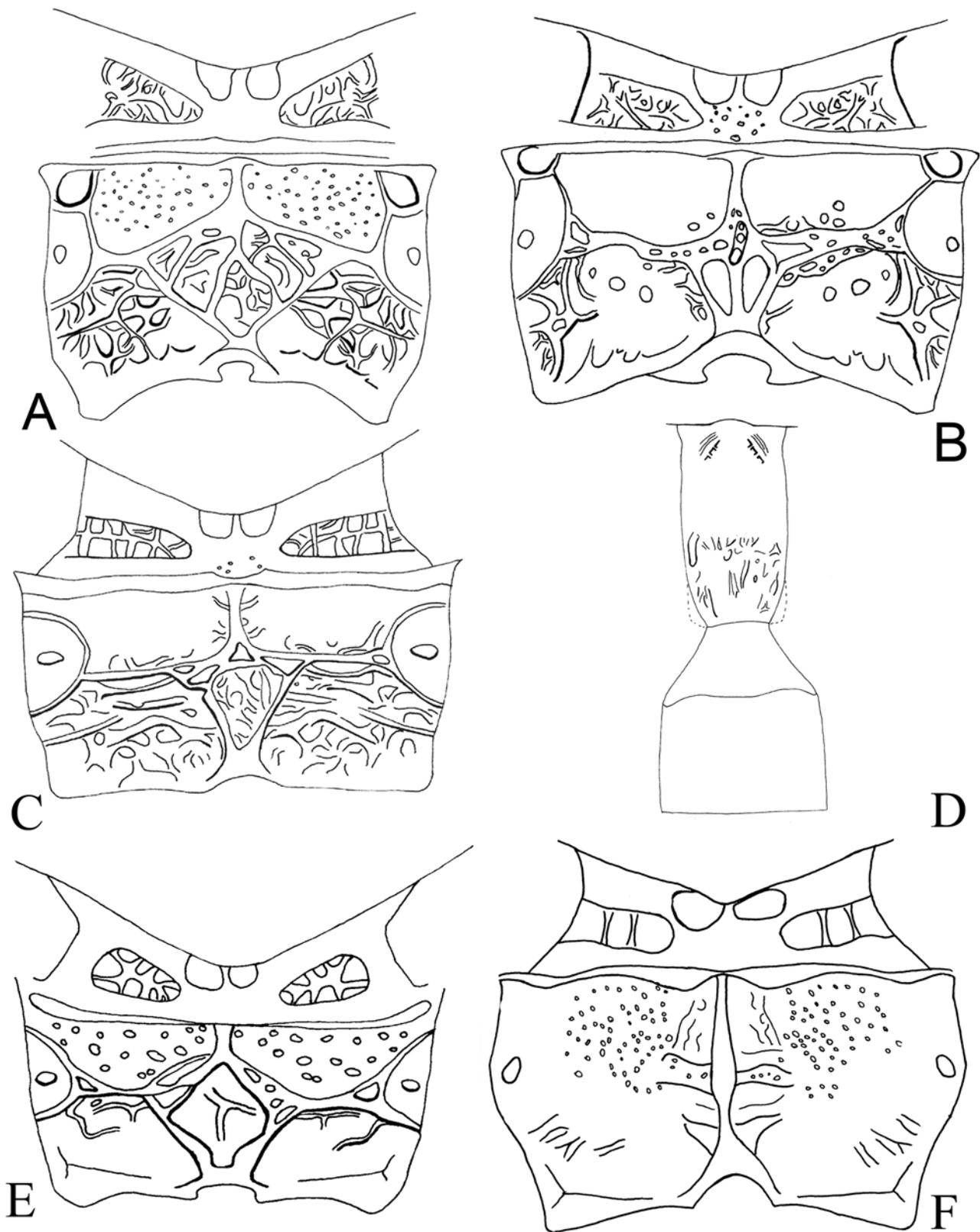
5	Tarsal claw simple; hind femur black and white (Fig. 5A); mesonotum black; scutellar groove with small well-defined and dense scrobiculate sculpture (Fig. 6C); upper clypeal margin well-defined by sulcus (Fig. 7C) . . . . .	<b><i>H. espera</i> Valerio n. sp.</b>
-	Tarsal claw pectinate (Fig. 8F); hind femora completely black; mesonotum light orange; scutellar groove with conspicuous well-defined scrobiculate sculpture (Fig. 6H); clypeal upper margin not well-defined (Fig. 7F) . . . . .	<b><i>H. pectinatus</i> Valerio n. sp.</b>
6	Tarsal claws with conspicuous elongate basal lobe (Fig. 8B) without basal tooth; body large, approximately 5–6 mm and yellow; areola with carinae very broad and not closed anteriorly (Fig. 3B) . . . . .	<b><i>H. aodous</i> Valerio n. sp.</b>
-	Tarsal claws without elongate basal lobe but with basal tooth/teeth present (Fig. 8E & 9E); body size normally smaller than 4.5 mm, if longer than 4.5 mm then body color largely black with light orange; areola with carinae thin, sometimes closed anteriorly . . . . .	7
7	Metapleuron mainly nitid (> 70%), if not then only sparse punctate sculpture present on distal 1/5; areola variable in shape as well as tarsal claws . . . . .	8
-	Metapleuron with areolate-rugulose sculpture throughout except for upper 1/4, if areolate-rugulose sculpture reduced then propodeum with areola present; tarsal claw with a narrow and long basal tooth (Fig. 8E) . . . . .	9
8	Propodeum almost nitid, except for medial propodeal carina; areola typically completely absent (Fig. 3E), but if areolar remains are present then these are not conspicuously cristate and leave the areola open over anterior 1/2, body mainly yellow and tarsal claw with basal tooth thin and long (Fig. 8E) . . . . .	<b><i>H. luisi</i> Valerio n. sp.</b>
-	Propodeum with areola present and with extensive coarse confused rugulose sculpture throughout distal 1/2 of propodeum (Fig. 6A), remainder of propodeum without rugulose sculpture; tarsal claw simple, without any basal tooth (Fig. 8D); body yellow with propodeum black or dark brown in coloration . . . . .	<b><i>H. epipagis</i> Valerio n. sp.</b>
9	Propodeal areola with well-cristate inverse “U” or “V” shaped carina, remainder of propodeal carinae well-defined, propodeal surface without confused punctate sculpture (Fig. 3D & 3F) . . . . .	10
-	Propodeal carina only with longitudinal medial carina, carinae always absent inside the areola; transverse and costular carinae not well defined by confused punctate sculpture on propodeal surface . . . . .	12
10	Mesonotum with inverse “U” shaped black area extending to edges of mesonotum (Fig. 10F); propodeum with posterolateral areas nitid and anterior 1/2 with shallow punctate sculpture (Fig. 11); hind tarsal claw with a short and broad tooth that is present on a wide but inconspicuous basal lobe . . . . .	<b><i>H. inversalis</i> Valerio n. sp.</b>
-	Mesonotum never with inverse “U” shaped black area present; posterior areas of propodeum with confuse rugulose sculpture; hind tarsal claw with a thin and elongate tooth on a conspicuous basal lobe . . . . .	11
11	Propodeum posterolateral areas with confused rugulose sculpture throughout; confused rugulose sculpture adjacent to areolar and midlongitudinal carina on anterior half of propodeum; head with postgena black, remainder of head mainly yellow. . . . .	<b><i>H. multus</i> Valerio n. sp.</b>
-	Propodeum posterolateral areas with sparse confused rugulose sculpture only on lateral and upper edges, remainder of posterolateral areas mainly nitid (Fig. 3F); anterior 1/2 of propodeum without confused rugulose sculpture adjacent to areolar and midlongitudinal carina; head with postgena yellow as is most of remainder of head . . . . .	<b><i>H. hektos</i> Valerio n. sp.</b>
12	Propodeal midlongitudinal carina broad and short on anterior edge of propodeum and sometimes not well-defined; palpi, fore and mid coxae whitish yellow; antenna dark brown with placodes well-defined, long and narrow; propodeal areola rounded anteriorly, ovipositor sheaths densely setose . . . . .	<b><i>H. daktulios</i> Valerio n. sp.</b>
-	Propodeal midlongitudinal carina long, narrow and well-defined (Fig. 4B); palpi, fore and medial coxae yellow in coloration; antennae yellow with placodes thin and not as obvious as above; areola acutely pointed dorsally with inverse “v” like shape . . . . .	<b><i>H. masoni</i> Valerio n. sp.</b>
13	Ocelli large; ocell-ocular distance smaller than lateral ocelli width, 0.8x or less (Fig. 12A); malar space conspicuously shorter than basal width of mandibles; ovipositor sheaths with widely distributed long setae throughout its length . . . . .	14
-	Ocelli normal or small (Fig. 12D); ocell-ocular distance as large as or larger than lateral ocelli width, 1x or greater; malar space sub-equal to basal width of mandibles; ovipositor sheaths with variable setal distribution and size . . . . .	15
14	Mesosoma bicolored, yellow and black; telotarsus with long thin seta at base of ventral area (Fig. 13F); propleuron with confused lineate sculpture on basal 1/5 (Fig. 6A) . . . . .	<b><i>H. sicingens</i> Valerio n. sp.</b>
-	Mesosoma black; telotarsus normal without a long thin seta at base of ventral area; propleuron without confused lineate sculpture on basal 1/5 (Fig. 6F) . . . . .	<b><i>H. ingensis</i> Valerio n. sp.</b>
15	Second metasomal tergum triangular, maximum length/ maximum width of distal edge between 1.53–1.63x (Fig. 4D); areola without midlongitudinal carina inside areolar area (Fig. 6C); ovipositor short, broad at base and curved in profile (Fig. 12C) . . . . .	<b><i>H. deltis</i> Valerio n. sp.</b>
-	Second metasomal tergum never subtriangular in shape, instead subrectangular in dorsal view; ovipositor variable but midlongitudinal carina always present through the areola but sometimes not evidently cristate . . . . .	16
16	Fore leg telotarsus with a conspicuous hook-like seta on internal face that is located on anterior 1/2 of telotarsus length but not below it (Fig. 9A, 11B, 13E), also with a set of setae facing the hooklike setae which are well-developed and conspicuous; if telotarsus modification is not extreme then hind leg telotarsus exhibits a set of long and protuberant setae on distal internal area (Fig. 18E) . . . . .	17
-	Fore leg telotarsus normal, not modified and normally without hook-like seta, if internal face with a hooklike seta then the seta is placed below half of telotarsus length (normally) and remainder of setae on ventral area not conspicuous or well-developed; hind leg telotarsus always without protuberant setae (normally less than 4) on external area . . . . .	23
17	Fore leg basitarsus shorter than telotarsus; fore telotarsus with evident long setae present on anterior 1/3 and highly modified (Fig. 12E); ovipositor short and broad in lateral view (Fig. 14C) . . . . .	<b><i>H. guille</i> Valerio n. sp.</b>
-	Fore leg basitarsus longer than telotarsus; fore telotarsus with setae present at most at midlength (Fig. 13E); hind telotarsus with setae present on internal area but not very long or strongly sinuate (Fig. 13A), if so then ovipositor thin and short, or elon-	

	gate and thin	18
18	Ovipositor sheaths length shorter than or equal to 1/3 of hind tibia length (Fig. 15C)	19
-	Ovipositor sheaths larger than 1/3 the length of hind tibia	22
19	Mesosoma mostly whitish-yellow and metasoma terga mostly yellow; ovipositor sheaths smaller than 1/2 of length of hind tibia, more or less broadened at base and slightly curved with ovipositor sheaths brown and subglobose in shape (Fig. 14C); metasomal terga never with brown colored areas present medially	<b>H. crosinus</b> Valerio n. sp.
-	Body yellow and black; ovipositor sheaths variable in length and with parallel profile in lateral view or broader distally (Fig. 12F, 16G); metasomal distal terga with medial area brown; ovipositor sheaths larger than 2/3 of length of hind tibia (Fig. 12F)	20
20	Fore telotarsus with conspicuous lobe on base of lateroexternal seta of telotarsus as well as 2 large and sinuate setae, medio longitudinal area conspicuously concave (Fig. 12B); ovipositor sheaths mainly parallel-sided in profile and densely setose (Fig. 15C)	<b>H. insolitus</b> Valerio n. sp.
-	Fore telotarsus without conspicuous lobe at base of lateroexternal seta, without conspicuous concave longitudinal area; ovipositor sheaths variable in shape but with widely spaced long setae	21
21	Ovipositor sheaths parallel-sided in profile with long dense setosity (Fig. 16G); pronotum distal 1/2 with confused rugose sculpture throughout; metapleuron with deep punctate sculpture next to dorsal edge at distal 1/3 of its length (Fig. 7E); antenna placodes evident and closely spaced with very dense sculpture between them; antenna brownish yellow	<b>H. tetra</b> Valerio n. sp.
-	Ovipositor sheaths broader distally, setae large and sparsely distributed (Fig. 12F); pronotum without rugose sculpture on lateral areas; metapleuron with shallow punctate sculpture on distal 1/3; antennal placodes very evident and widely spaced, sculpture between them present but not very dense, antenna dark brown.	<b>H. spatulae</b> Valerio n. sp.
22	Fore leg telotarsus with external edge conspicuously convex but internal edge straight in profile, ventral area with midlongitudinal area glabrous and sharply excavated (Fig. 12E)	<b>H. aplebis</b> Valerio n. sp.
-	Fore leg telotarsus with external and internal edges more or less similar in shape, ventral area mainly glabrous and slightly excavated	<b>H. specialis</b> Valerio n. sp.
23	Ovipositor sheaths at least 5.2x as wide as ovipositor, in lateral view; ovipositor brush only present in apical 1/4 of ovipositor sheath tip, ovipositor sheaths strongly truncate at distal tip (Fig. 17A & 17B)	<b>H. latus</b> Valerio n.
-	Ovipositor sheaths at most 4x as wide as ovipositor, in lateral view; ovipositor brush present throughout broadened blade of ovipositor sheaths, never with very conspicuous and well-defined truncation at tip	24
24	Ovipositor conspicuously compressed laterally, broad and short (maximum 1.2x longer than hind tibia), very broad at base and decurved in lateral view (Fig. 10C, 17C & 17E)	25
-	Ovipositor not compressed laterally, more or less round in cross section; variable in size and lateral shape from totally straight to weakly curved but not conspicuously broadened at base (Fig. 15A, 16C)	29
25	Distal 1/4 of ovipositor with flat dorsal edge that covers more than 85% of its length (fig. 17D)	<b>H. zan</b> Valerio n. sp.
-	Distal 1/4 of ovipositor with a weakly curved area that covers less than 50% of its length (Fig. 15F)	26
26	Fore leg telotarsus with strong and broad curved seta on external face (Fig. 13B, 16E); ovipositor sheaths larger than 1/2 the length of hind tibia	27
-	Fore leg telotarsus with long thin seta; ovipositor sheaths shorter than 1/3 of length of hind tibia	28
27	Mediobasal area of first metasomal tergum usually with dense longitudinal lineate sculpture (Fig. 13D); metanotum with a narrow, elongate and nitid area between the mediobasal costulae; if basal medial area of first tergum does not exhibit evident lineate sculpture then ovipositor longer than hind tibia length and evenly in lateral view at tip (Fig. 18D)	<b>H. linearis</b> Valerio n. sp.
-	First metasomal tergum with longitudinal lineate sculpture on lateral areas over basal 1/2, medial area nitid or with punctate sculpture but never with longitudinal lineate sculpture; metanotum with mediobasal costulae well separated by a broad area between them; ovipositor slightly shorter than hind tibia, and abruptly thinner over distal 1/5 (Fig. 17G & 17H)	<b>H. koinos</b> Valerio n. sp.
28	Palpi long (Fig. 10E) and light yellow; propleuron with broad lineate sculpture over basal 2/3 (Fig. 6B); mesonotum black; pronotum distal lateral area with strigate sculpture on of; ovipositor sheath edges parallel at tip and elongate in lateral view (Fig. 7F)	<b>H. plagios</b> Valerio n. sp.
-	Palpi short and brown or yellowish-brown; propleuron without confused lineate sculpture, instead punctate sculpture present (Fig. 15F); mesonotum yellow; pronotum without any strigate sculpture; ovipositor sheaths comparatively wider and short (Fig. 7D)	<b>H. mikrosus</b> Valerio n. sp.
29	Hypopygium in lateral view extended as two long arms at tip surrounding ovipositor (Fig 13B); ovipositor long and very thin in lateral view (Fig. 18B)	30
-	Hypopygium without extended arms at tip in lateral view (Fig 18F)	32
30	Body size larger than 2.3 mm; area inside propodeal areola with a smooth, poorly defined and incomplete midlongitudinal carinae; first metasomal tergum median half covered by confused rugulose sculpture mixed with coarse colliculate sculpture (Fig. 13G); distal edge of first metasomal tergum with two longitudinal depressions	<b>H. cernus</b> Valerio n. sp.
-	Body size shorter than 2.2 mm; propodeal areolar area with a well-defined and cristate midlongitudinal carina; first metasomal tergum without confused rugulose or colliculate sculpture, at most with scattered large shallow punctate sculpture; distal edge of first metasomal tergum variable	31
31	Hypopygial arms long, narrow and without setae at tip (Fig. 14B); distal edge of first metasomal tergum with elongate depressed area near margin (Fig. 14E)	<b>H. scindus</b> Valerio n. sp.
-	Hypopygial arms short, broad and exhibiting setosity at tip (Fig. 12B); ovipositor sheaths with dense setosity present through-	

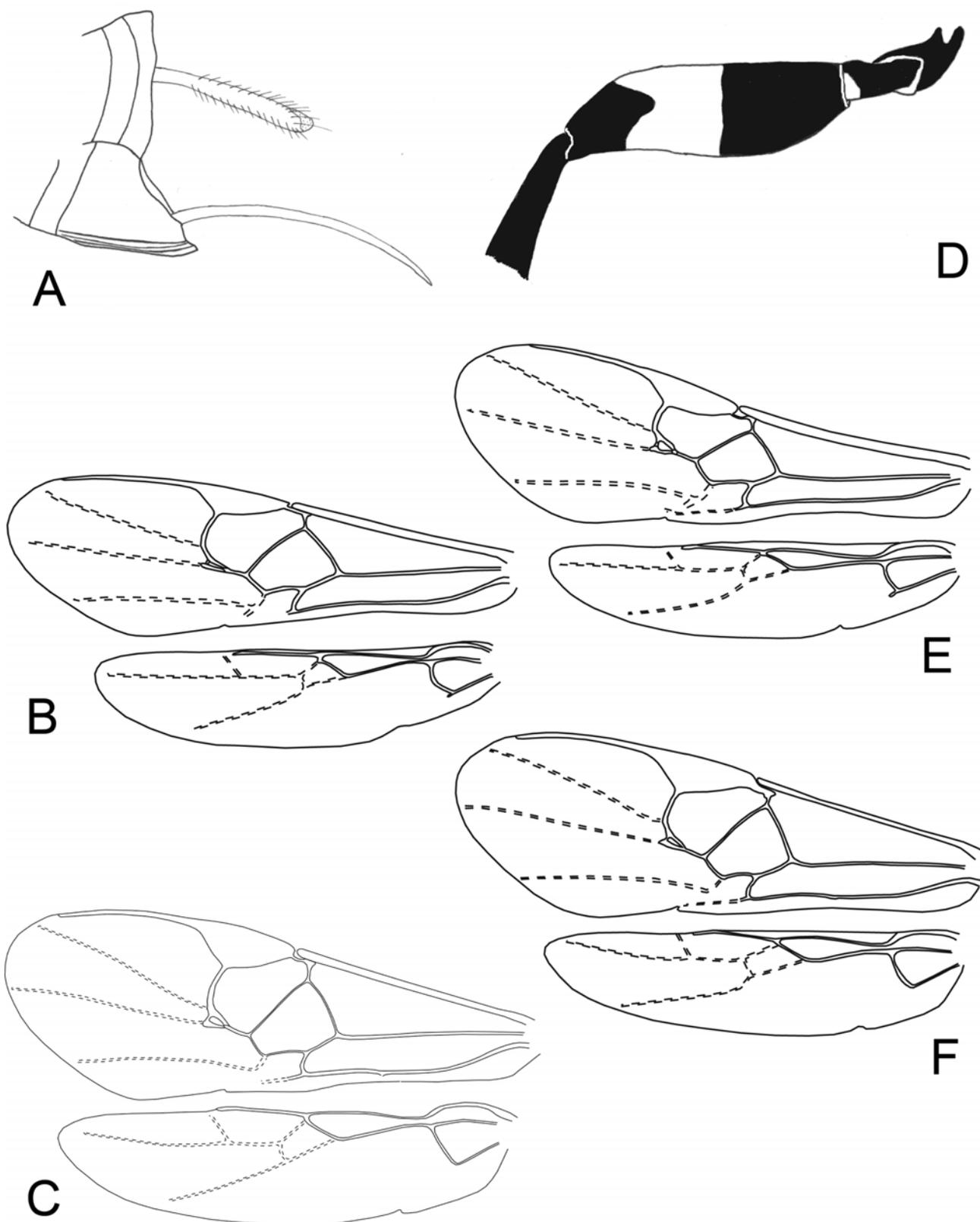
	out and with a set of long setae at tip; distal edge of first metasomal tergum with two semicircular depressions near margin (Fig. 13C) . . . . .	<i>H. sicscindus</i> Valerio n. sp.	
32	Mesonotum yellow or orange (very light in coloration), remainder of mesosoma with a different color (propodeum black, metapleuron black, dark brown or yellow) . . . . .		33
-	Mesonotum black as remainder of mesosoma . . . . .		35
33	Ovipositor sheaths with setosity reduced and sparsely distributed (Fig. 14D); body normally shorter than 2.5 mm . . . . .	<i>H. tantillus</i> Valerio n. sp.	
-	Ovipositor sheaths with dense setosity, setae variable in size but closely spaced; body size larger than 2.5 mm . . . . .		34
34	Ratio of fore wing veins Cua/Cub more than 1.4x; mesosoma and metasoma mainly yellow, in some specimens distal terga of metasoma brown in coloration . . . . .	<i>H. ecus</i> Nixon	
-	Ratio of fore wing veins Cua/Cub less than 1.4x; body bicolored (yellow and black, in some specimens with two tones of yellow and black) (Fig. 19) . . . . .	<i>H. areolaris</i> (Blanchard) Valerio comb. nov.	
35	First metasomal tergum with basal 2/3 totally covered in longitudinal lineate sculpture mixed with punctate sculpture (Fig. 13H); ovipositor between 2.2-2.23x as long as hind tibia length . . . . .	<i>H. lineatus</i> Valerio n. sp.	
-	First metasomal terga with anterior 1/2 without longitudinal punctate sculpture and normally nitid medially, if lineate sculpture present then only on lateral areas; ovipositor length variable . . . . .		36
36	Ovipositor length greater than 1.75x the length of hind tibia and with the exposed section of the ovipositor sheaths longer than hind tibia; base of ovipositor sheaths at attachment with second valvifer narrow; ovipositor (95% of the time) very thin in lateral view and even in width throughout . . . . .		37
-	Ovipositor shorter than 1.75x the length of hind tibia; ovipositor and ovipositor sheaths variable in shape; base of ovipositor sheaths at attachment with second valvifer shape variable . . . . .		41
	<b>Note:</b> Only <i>Hypomicrogaster zonaria</i> and <i>H. rugosus</i> exhibit a narrow base of ovipositor sheaths at attachment with second valvifer for the second part of couplet 37.		
37	Body size larger than 4.1 mm (approximately 4.6 mm) and massive in lateral view (Fig. 16F); tarsal claws simple, without basal tooth or lobe . . . . .	<i>H. sicpollex</i> Valerio n. sp.	
-	Body size less than or equal to 4.1 (usually much smaller) and normal in lateral view; tarsal claws with a basal tooth or lobe, or tarsal claws pectinate . . . . .		38
38	Hind tarsal claws pectinate with two basal teeth (Fig. 14F); first metasomal tergum covered in dense, fine confused colliculate sculpture; hypopygium clearly expanded at tip but not divided medially; second metasomal tergum length/width ratio less than 0.3x . . . . .	<i>H. duo</i> Valerio n. sp.	
-	Tarsal claws variable in shape but never pectinate; first metasomal tergum never covered with fine colliculate sculpture; hypopygium not distally expanded; second metasomal tergum length/width ratio greater than 0.3x . . . . .		39
39	Hind tarsal claws with an obvious tooth just before basal lobe (Fig. 9D); ventral edge of pronotum very narrow (approximately 1/10 of posterior edge height) . . . . .	<i>H. hupos</i> Valerio n. sp.	
-	Tarsal claws of hind leg variable but not as described above; ventral edge of pronotum never as narrow as described above . . . . .		40
40	Hind tarsal claws with tooth which is conspicuously broad and located far from basal area of claw (Fig. 9F); fore telotarsus without long and thin hook-like seta on externolateral area . . . . .	<i>H. mesos</i> Valerio n. sp.	
-	Hind tarsal claws with long and thin tooth on basal area of claw; fore telotarsus without a long and thin hook-like seta on externolateral area . . . . .	<i>H. largus</i> Valerio n. sp.	
41	Body size larger than 4.2 mm, massive; with a very clearly demarcated large pit-like sternaulus (Fig. 6G) . . . . .	<i>H. pollex</i> Valerio n. sp.	
-	Body size smaller than 4.2 mm; specimens without a large pit-like sternaulus (Fig. 6C) . . . . .		42
42	Metapleuron with confused rugulose sculpture throughout (Fig. 7A), if sculpture reduced on metapleuron then cicatroce sculpture on area below pleural suture; body size 2.58-3.2 mm; ovipositor length between 1.4 and 1.44x as long as hind tibia length . . . . .	<i>H. rugosus</i> Valerio n. sp.	
-	Metapleuron without rugulose sculpture throughout, normally exhibiting dense punctate sculpture on areas around dorsal and posterior edges; if metapleuron has rugulose sculpture then body size smaller than 1.9 mm; ovipositor length variable . . . . .		43
43	Basal attachment of ovipositor sheaths very broad (Fig. 18A); ovipositor sheaths 3.3x as wide as maximum width of ovipositor in lateral view; ovipositor sheaths short and globose in shape (Fig. 18A) . . . . .	<i>H. evryis</i> Valerio n. sp.	
-	Basal attachment of ovipositor sheaths narrow (Fig. 7G); shape of ovipositor sheaths variable but never as globose as described above . . . . .		45
44	Mesonotum length/width ratio less than 1.23x; body size larger than 4.6 mm; body color mainly reddish brown (Fig. 24) . . . . .	<i>H. tydeus</i> Nixon	
-	Mesonotum length/width ratio greater than 1.23x; body size 2.18-4.4 mm; body color normally dark brown but sometimes almost completely yellow (Fig. 25) . . . . .	<i>H. zonaria</i> (Say) Muesebeck	



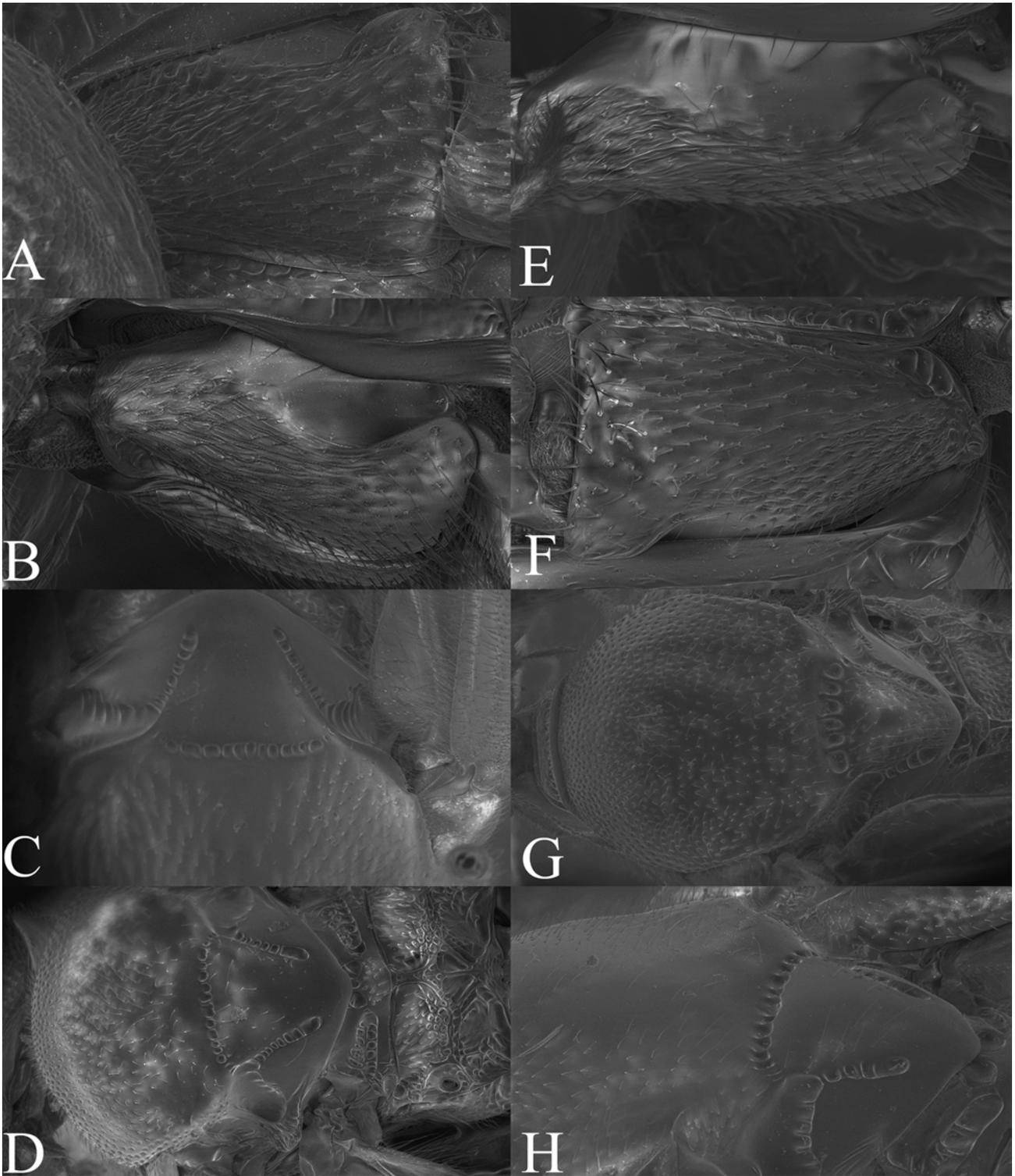
**FIGURE 3.** Propodeum (in dorsal view) for *Hypomicrogaster espera* n. sp. (A), *H. aodous* n. sp. (B), *H. siderion* n. sp. (C), *H. multus* n. sp. (D), *H. luisi* n. sp. (E) and *H. hektos* n. sp. (F).



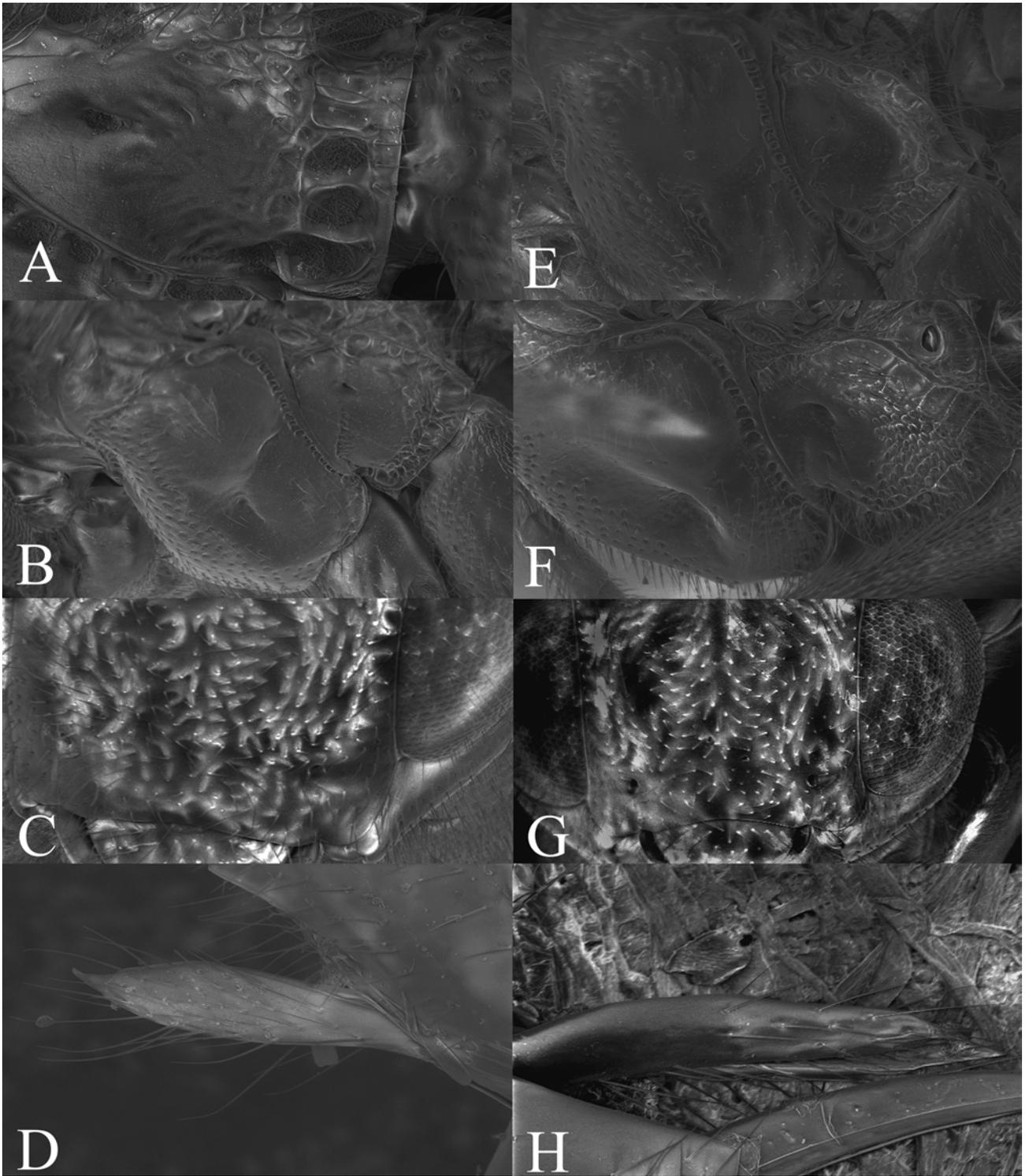
**FIGURE 4.** Propodeum (in dorsal view) for *Hypomicrogaster epipagis* n. sp. (A), *H. masoni* n. sp. (B), *H. deltis* n. sp. (C), *H. scindus* n. sp. (E) and *H. pectinatus* (F); *H. deltis* n. sp. first metasomal tergum shape and sculpture (D).



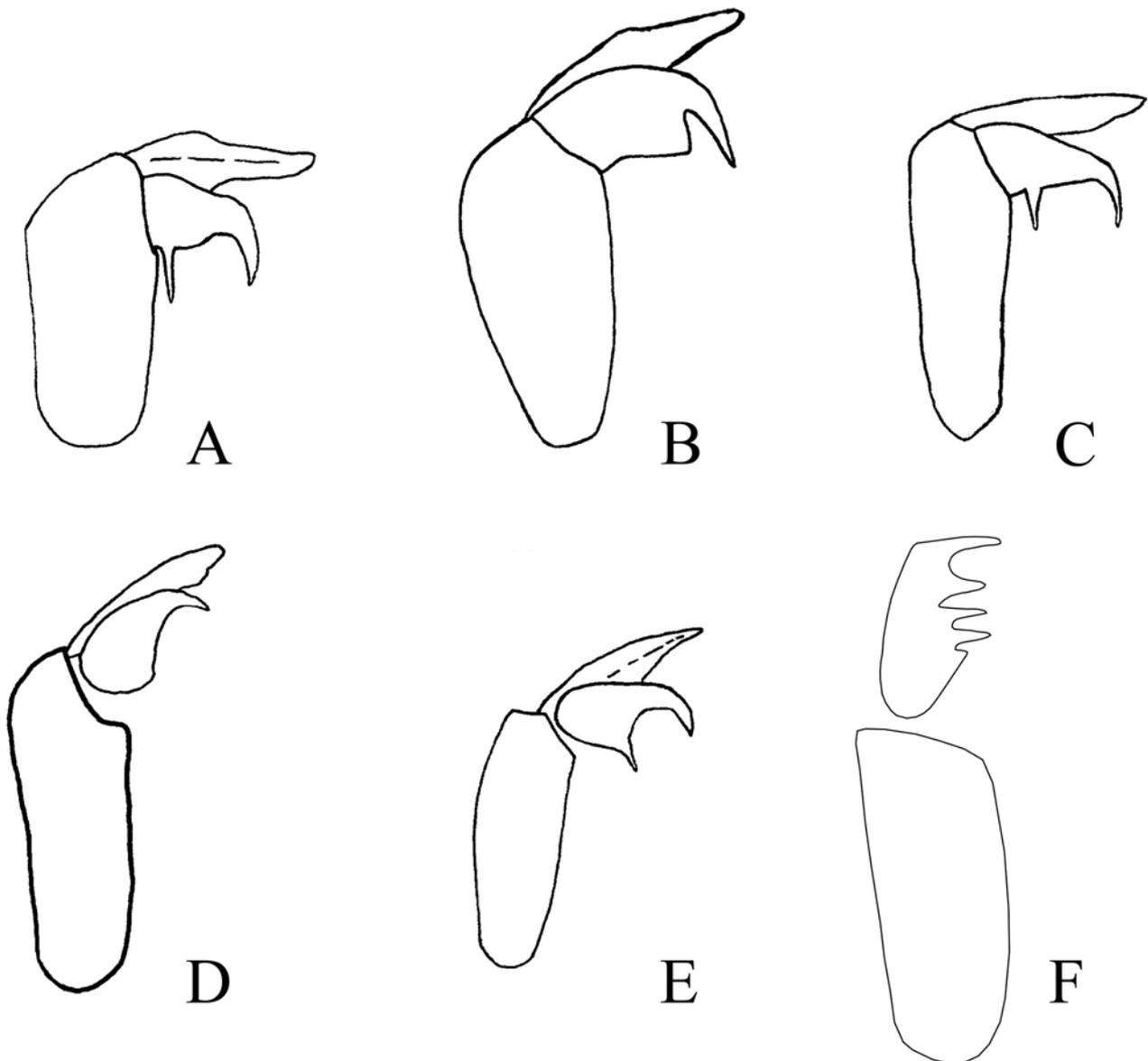
**FIGURE 5.** *Hypomicrogaster multus* n. sp. ovipositor and ovipositor sheaths (in lateral view) (A); *H. espera* n. sp. hind leg patten of coloration in lateral view (D); wing venation for the species *H. luisei* n. sp. (B), *H. cernus* n. sp. (C), *H. pectinatus* n. sp. (E) and *H. zonaria* (F).



**FIGURE 6.** Propleuron (in lateral view) of *Hypomicrogaster sicingens* n. sp. (A) , *H. plagios* n. sp. (B), *H. koinos* n. sp. (E) and *H. ingensis* n. sp. (F); scrobal groove (in dorsal view) of *H. espera* n. sp. (C), *H. koinos* n. sp. (D), *H. sicpollex* n. sp. (G) and *H. pectinatus* n. sp. (H).



**FIGURE 7.** Mesosoma in lateral view of *Hypomicrogaster rugosus* n. sp. (A), *H. evrus* n. sp.(B), *H. pollex* n. sp. (D) and *H. spatulae* n. sp. (E); frontal view of clypeus for *H. espera* n. sp. (C) and *H. pectinatus* n. sp. (F); ovipositor sheaths (in lateral view) for *H. mikrosus* n. sp. (D) and *H. plagios* n. sp. (E).



**FIGURE 8.** *Hypomicrogaster* tarsal claws morphology (in lateral view) for the species *H. espera* n. sp. (A), *H. aodous* n. sp. (B), *H. siderion* n. sp. (C), *H. multus* n. sp. (D), *H. luisi* n. sp. (E), and *H. pectinatus* n. sp. (F).

#### **Description of type species previously named and their taxonomic status**

##### ***Hypomicrogaster areolaris* (Blanchard) Valerio n. comb.**

(Fig. 17)

*Microgaster blanchardi* (= *Apanteles areolaris*) (Blanchard) Muesebeck, 1958 : 441

##### **New synonymies.**

*Apanteles areolaris* Blanchard, 1947: 6–8.

*Hypomicrogaster diaphaniae* Muesebeck, 1958 : 414 .

*Hypomicrogaster acontes* Nixon, 1965 : 215.

*Hypomicrogaster solox* Nixon, 1965 : 215.

*Hypomicrogaster metrix* Nixon, 1965 : 215.

*Hypomicrogaster moscus* Nixon, 1965 : 215.

*Female.* Body length = 2.7–4.2 mm. *Body color:* Mainly black as ovipositor sheaths except: scutellum and

mesonotum (dorsal and ventral areas) and mesopleuron orange; propleuron light orange as clypeus and labrum; palpi whitish yellow; ocelli yellow as scape, pedicel (except lateral external areas brownish yellow) and legs (except distal 1/3 of hind tibia and distal tip of hind femur and tarsal claws of hind leg dark brown); fore wing veins dark brown except basal 2/3 of 1-1a and M+CU basal 1/2; hind wing veins yellow except SC+R and R1 dark brown.

*Head.* Antenna with antennal placodes well defined and visible, without sculpture between them; face areolate-rugulose; clypeus with shallow punctate sculpture; gena with punctate sculpture except upper 2/3 with mixture between lineolate and areolate sculpture; vertex punctate; gena and postgena nitid. *Mesosoma.* Propleuron punctate with less defined sculpture distally; pronotum lateral areas with weak and conspicuous scrobiculate sculpture ventrally and fine scrobiculate sculpture along dorsal groove, frontal area densely punctate (denser anteriorly but increasingly sparse distally); scutellar sulcus crossed by 13 fine well-defined costulae; scutellum with sparse punctate sculpture, lateral areas with costulate sculpture becoming coarser posteriorly, posterior scutellar edge nitid; axilla through mesonotum with fine scrobiculate sculpture; metanotum anterior half nitid, remainder of metanotum with confused rugose sculpture, medial area with two large costulae and distal area setose; propodeum with areola, transversal carina and costulae well demarcated, anterior 1/3 with confused rugose sculpture along carinate areas, areolar area with weak rugose sculpture, middle of posterior lateral areas nitid except edges and spiracular areas with confused rugose sculpture, mesopleural sternaulus forming a deep elongate hole, dorsal and anterior 1/3 punctate, posterior and dorsal edge with fine punctate sculpture, epistomal scrobe present, remainder of mesopleuron nitid; metapleuron with dorsal and posterior areas with confused foveate sculpture (posterior areas with larger foveae), otherwise nitid, also with a large and deep medial pit. *Wings.* Fore wing length = 2.75–4.32. *Legs.* Fore leg telotarsus not modified and without long hook-like seta, length not longer than remainder of tarsomeres combined; tarsal claw simple with basal tooth. *Metasoma.* First tergum with basal 2/3 laterally and distally with lineolate sculpture and with longitudinal medial area nitid, distal half exhibiting coarse punctate sculpture and two small depressions near distal edge, second tergum nitid, distal edge exhibiting a semicircular shape; ovipositor sheaths 1.2 x length of hind tibia.

**Material examined.** *Hypomicrogaster solox* holotype labeled “Brasil, Nova Teutonia, 27°11’B 52°23’L, 17/viii/1937, Fritz Plaumann, BM 1937-748,” deposited at BMNH; paratype *H. acontes*, same locality of *H. solox* holotype except date and BMNH number: 8/iv/1938, BM 1938-682; *H. moscus* type same locality as *H. solox* except date and BM number: 19/v/1938, BM 1937-682; *H. metrix* type same locality of *H. solox* except date and BM number: 3/viii/1937, BM 1937-656. Two female paratypes from USNM with labels: “Tuxtepec, Oax., Mex, J. Camelo G., June 1934, #925” and “C.R., San Pedro de Montes de Oca, #3539, C.H. Ballou, ex *Margaronia nitidalis* Crom., (CR#3213) emerged 2.23. ’35”.

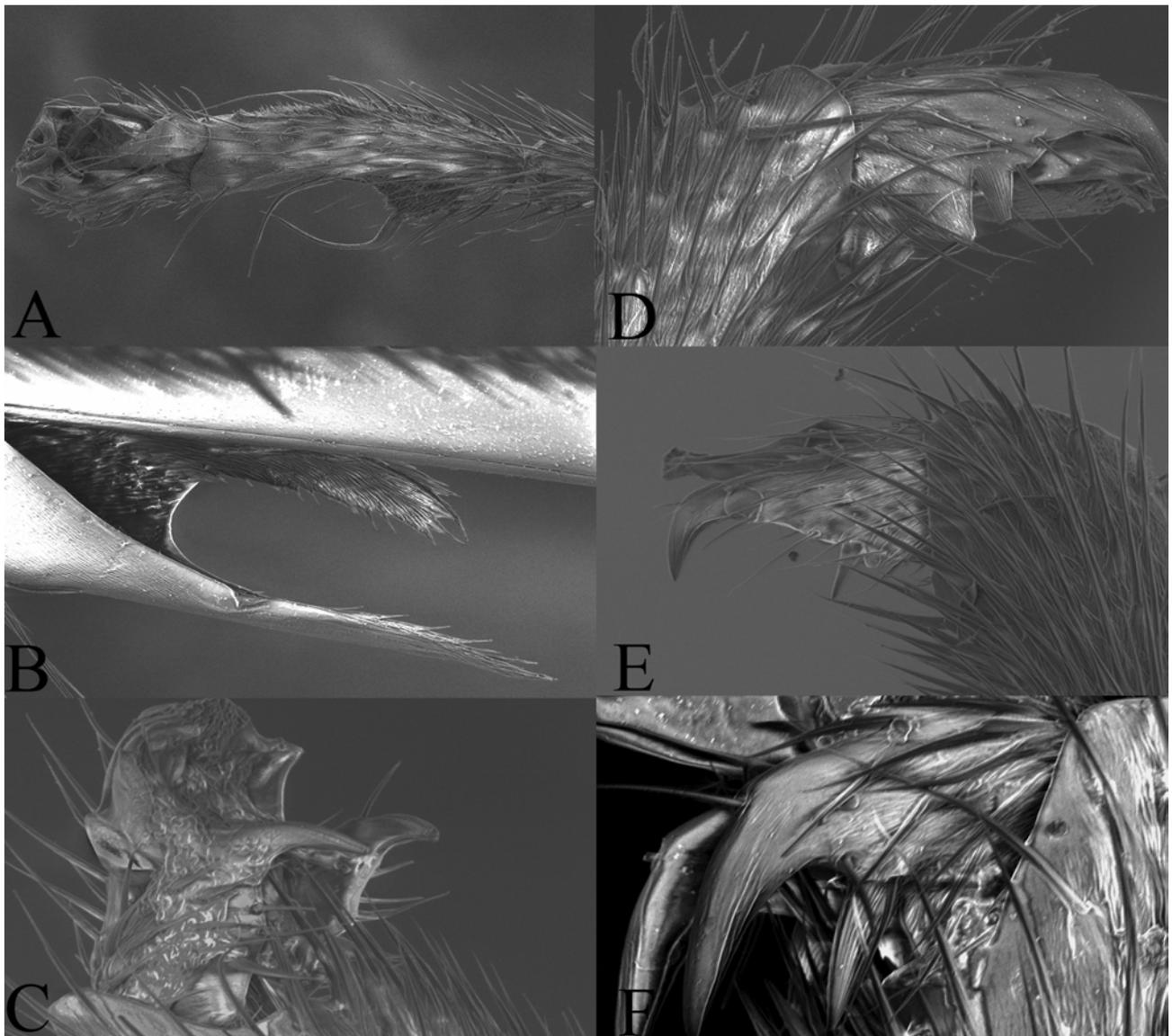
Other localities for examined material: Argentina, Horco Molle, Tucuman, 7–13/iii/1966, L.A. Stage; Brazil, Nova Teutonia, 27°11S 52°23W, Fritz Plauman; Belize, Toledo District, Blue Creek, 89°3W 16°12N, 23/i/1982, Sweep, A.T. Finnamore; Costa Rica, Cartago, Turrialba, 30/v/1976, Malaise, 8am–5 pm, M. Wasbauer; Ecuador, Pichincha, 16 km S.E. Santo Domingo, 500 m, Tinalandia, 4–14/vi/1976, SandJ Peck; Jamaica, Fern Gulli, St. Ann’s Parish, 14/ix/1917, H. Morrison; Mexico, Morelia, Cuernavaca, xi/1974, NLH Krauss; Panama, Las Cumbres, Canal Zone, iii/1983, H. Wolda; Uruguay, Tacuarembó, 40 km NW Tacuarembó, 10–16/ii/1963; USA, Florida, 7/vii/1929, Florida fruit fly trap survey.

**Comments.** Blanchard deposited the *Hypomicrogaster areolaris* type at an unknown museum in Argentina, and it could not be borrowed for this study; however, the species description in Spanish fits perfectly the descriptions of *Hypomicrogaster solox* and *H. diaphanae*. Muesebeck (1958) treats *H. diaphanae* as separate from *H. areolaris* based on the infumation of the wings but after review a series of 65 individuals, the observed degree of infumation is not a consistent character. Blanchard (1947) mentions that the wings are “ligeramente pigmentadas” (translation: slightly pigmented) but the *H. solox* type as well as the *H. diaphanae* paratypes could be considered as slightly pigmented on the wings! Muesebeck never examined the type specimen and the described pattern of coloration for *H. areolaris* is a better diagnostic character for this species (even with the degree of variation observed in the series) and the description of Muesebeck fits the one of Blanchard in this aspect.

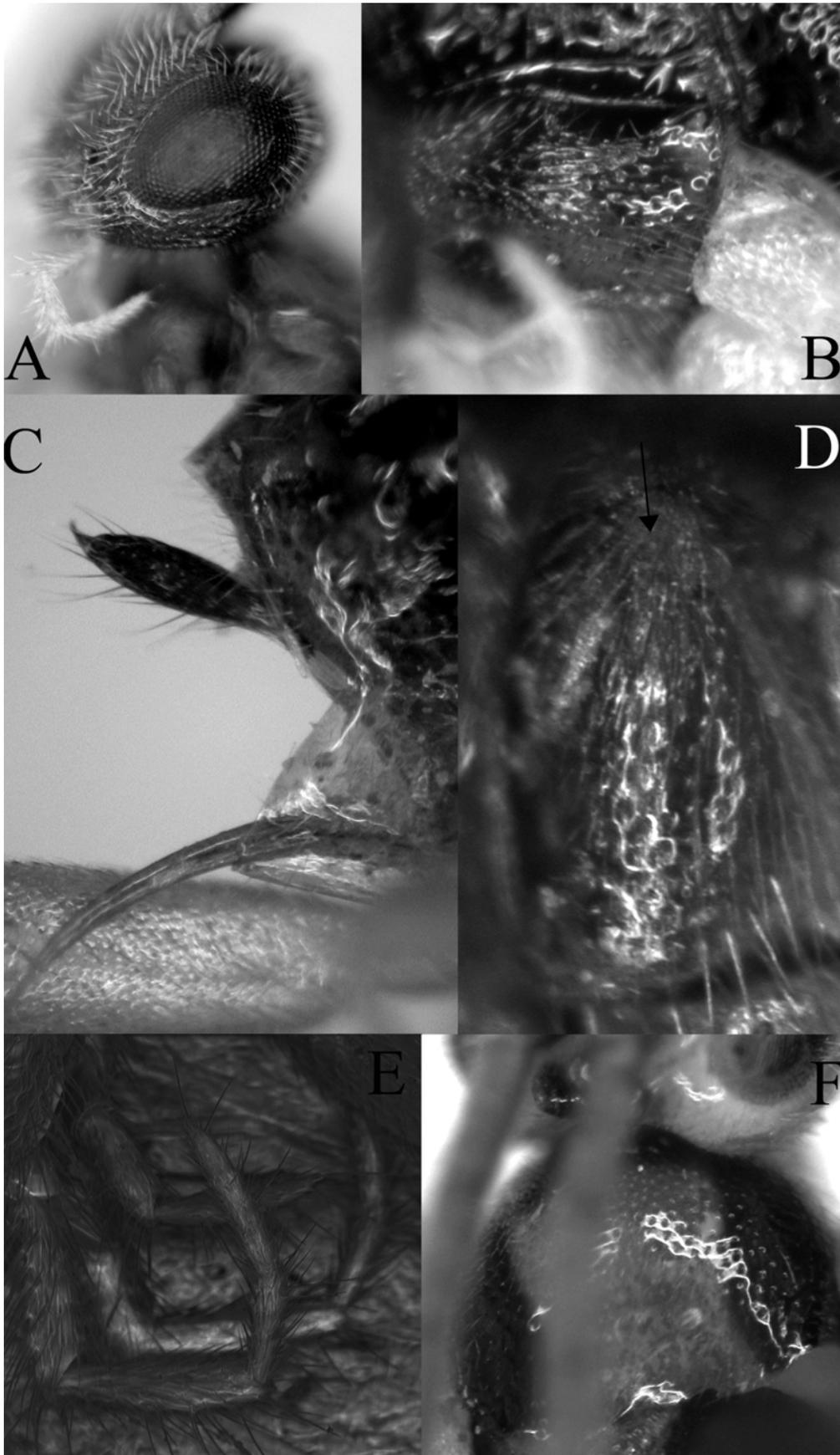
The following variations in color and sculpture were observed in the revised material: scutellum light brownish with edges of mesopleuron and propleuron all brown; metasomal terga 3–5 yellow or yellow with medial area brown in color; density of punctate sculpture on the first tergum variable from very sparse to dense and sometimes accompanied by lineolate sculpture; sometimes propodeal posterolateral areas completely covered in confused

rugose sculpture; mesopleuron sometimes with dark colored areas; face sometimes with confused foveate sculpture; second tergum distal edge occasionally straight.

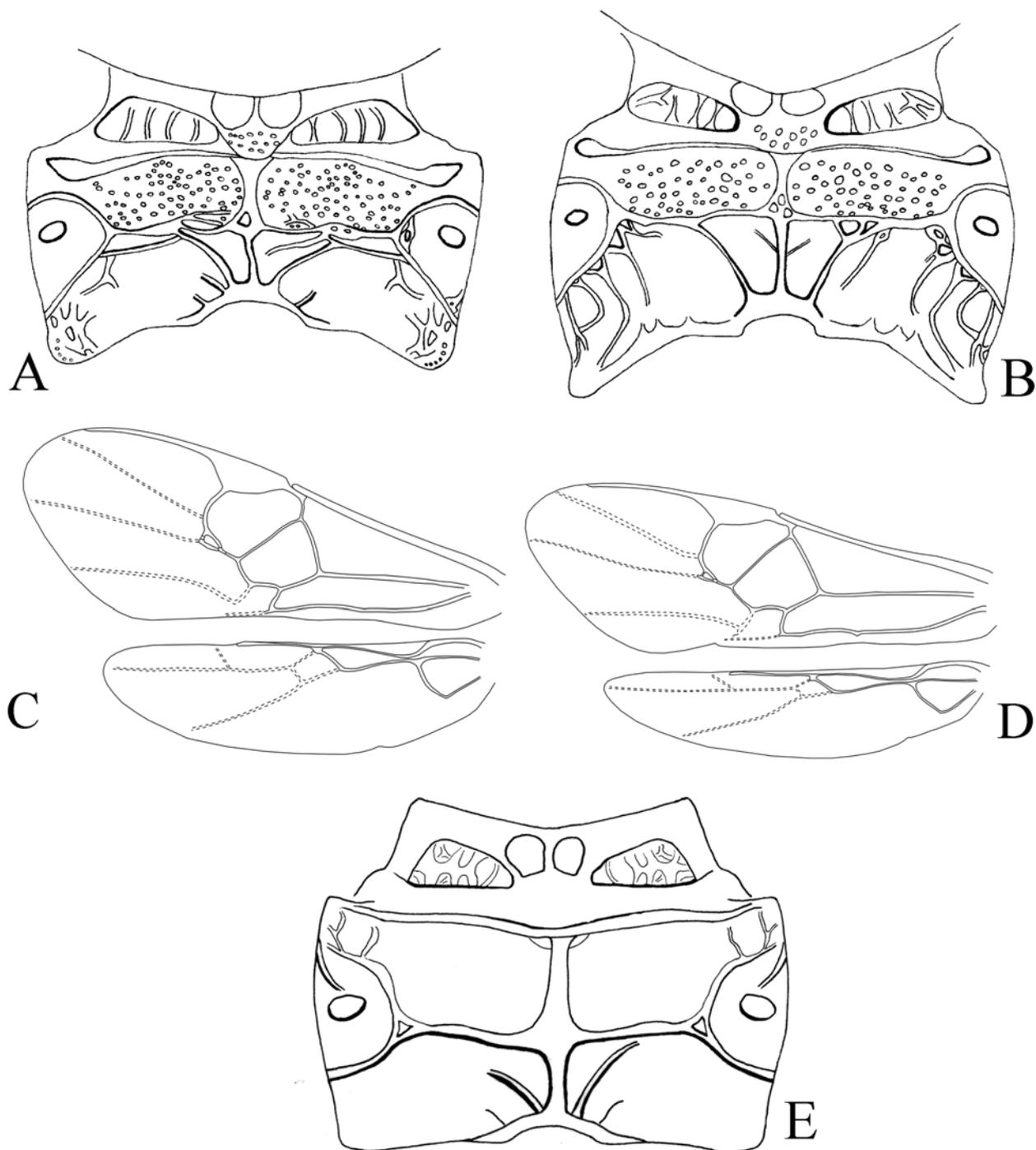
**Rearing records.** Five females reared from *Diaphania hyalinata* (Pyralidae) feeding on zucchini plants at Estación Favio Baudit (Costa Rica) and one female specimen collected on *Boehmeria* sp (Urticaceae) in Florida according to Needham. In addition, Blanchard in the original description mentions that Fernando Bourquin in Argentina reared the holotype specimen from an unidentified larva of the family Gelechiidae feeding on *Solanum bonariensis* (Solanaceae). More recently, Janzen and Hallwachs reared one specimen from *Diaphania* sp. (Crambidae) feeding on *Stemmadenia robinsoni* (Apocynaceae) and producing gregarious cocoons (04-SRNP-30786).



**FIGURE 9.** Fore telotarsus shape (in lateral view) for *Hypomicrogater guille* n. sp. (A); hypopygium terminal expansions (in lateral view) for *H. sicsindus* n. sp. (B); hind tarsal claws shape (in lateral view) for *H. koinos* n. sp. (C), *H. hupsos* n. sp. (D), *H. ingensis* n. sp. (E), and *H. mesos* n. sp. (F).



**FIGURE 10.** *Hypomicrogaster plagios* n. sp., compound eye shape (in frontal view) (A), propleuron (in lateral view) (B) and terminal segment of mandibular palpi shape (in frontal view) (E); *H. mikrosus* n. sp. ovipositor and ovipositor sheaths shape (in lateral view) (C) and propleuron (in lateral view) (D); mesonotum (in dorsal view) for *H. inversalis* n. sp. (F).



**FIGURE 11.** Propodeum (in dorsal view) and wing venation for *Hypomicrogaster sicpollex* (A & C) and *H. pollex* (B & D); propodeum (in dorsal view) of *H. inversalis n. sp.* (E).

***Hypomicrogaster ecus* Nixon**

(Fig. 18)

*Hypomicrogaster acontes* Nixon, 1965 : 213.

*Female.* Body length = 2.74–3.48 mm. *Body color:* Mainly yellow, except black metasomal terga 5–8 as well as head except mandibles, clypeus, labrum as well as scape and pedicel yellow (last two with lateroexternal areas brown), lateral edge of mesonotum, ovipositor sheaths; ocelli brownish yellow; wings hyaline with veins brownish yellow.

*Head.* Head height/width = 1.27–1.38; compound eye height/width = 1.69–1.78; intertentorial pit distance = 0.19–0.25 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.85–3.20; width of face at dorsal clypeal edge = 0.40–0.47 mm; clypeus width/height = 2.25–3.8; vertex width/distance between anterior ocellus and edge of torulus = 1.94–2.80; length of first flagellomere = 0.23–0.28 mm; first flagellomere length/width = 1; length of first flagellomere/length of second flagellomere = 1; length of first flagellomere/length of third flagellomere = 1.00–1.06; distal flagellomere length = 0.12–0.15 mm; distal flagellomere length/penultimate flagellomere length = 1.16–1.43; distal flagellomere length/width = 1.88–2; malar space height/basal width of mandible = 0.85–0.91; ocell-ocular distance/lateral ocelli distance = 0.67–0.88. Face with weak confused foveate sculpture present, upper keel conspicuous; gena punctate sculpture, dorsal 1/3 with more evident punctate sculpture, distal 1/2 as well as postgena with less conspicuous punctate sculpture at junction but mixed with longitudinal transversal lineate sculpture; remainder of postgena nitid; frons almost nitid except for very scattered and weak punctate sculpture; vertex nitid as postgena. *Mesosoma.* Mesosoma length/width = 1.17–1.28; mesosoma length = 0.61–0.92 mm; mesosoma height = 0.45–0.53 mm. Propleuron punctate with basal 1/3 exhibiting confused rugulose sculpture; pronotum lateral ventral edge with confused scrobiculate sculpture, frontodorsal groove with foveate sculpture, otherwise nitid; mesonotum punctate, denser at anterior area than near to scutellar sulcus where is nitid; scutellar sulcus with nine large costulae; scutellum nitid except few fine punctures parallel to lateral edges, costulate sculpture of lateral areas from small to large distally; axilla throughout mesonotum with fine scrobiculate sculpture; propodeum anterior 1/3 with scattered punctate sculpture, areola and transversal medial carina well-defined, medial carina defined and divided at anterior edge of areola; transversal carina outside of areola with confused foveate sculpt, costula present as well as punctate sculpture, ventrolateral areas nitid except confused rugose sculpture at edges, remainder of propodeum nitid; mesopleuron with punctate sculpture at anterior 1/3 as well as dorsal area, dorsal edge with scattered scrobiculate sculpt, distal edge almost nitid except for few confused scrobiculate sculpture, epistomal scrobe present and defined by confused foveate sculpture, notauli as an elongate depression; metapleuron dorsal edge with weak and scattered foveate sculpture, ventrally with large and confused foveate sculpture, medial area with shallow depression on it, otherwise nitid. *Wings.* Fore wing length = 3.01–3.48 mm; 1RS length = 0.09–0.25 mm; 1CUa length/2Cub length = 1.43–1.69; length RS+Ma = 0.4–0.59 mm; length M+CU = 1.11–1.30 mm; 1M length/ m-cu length = 1.79–2.00; pterostigma length/height = 1.6–1.79. Hind wing: 1M length = 0.48–0.60 mm; 1M length/2M length = 1.63–2.00; 1M length/M+CU length = 1.24–1.33; length r-m/length Cua = 0.80–0.83; 1RSa length/2r-m = 1.20–2.00; 1A length = 0.31–0.44 mm. *Legs.* Hind femur length = 0.98–1.15 mm; hind femur length/width = 3.04–3.20; hind tibia length/hind femur length = 1.13–1.24. Fore leg telotarsus not modified and not longer than basitarsus; tarsal claw with an elongate basal tooth. *Metasoma.* First tergum basal width = 0.25–0.33 mm; first tergum length/distal width = 1.17–1.35; second tergum length/distal width = 0.33–0.39; third tergum length/distal width = 0.33–0.48; hypopygium length = 0.79–1.20 mm. First tergum nitid except distal half with few and scattered punctate sculpture mixed with lineolate sculpture; second terga nitid as remainder of terga, distal edge more or less flat in shape; ovipositor approximately 1.2x as long as hind tibia.

*Male.* Similar to female but body size slightly smaller than females.

**Material examined.** BMNH female holotype with label “Brasil, Nova Teutonia 27°11’ B 52°23” L, 29/vi/1938, Fritz Plaumann, BM 1938-682; also eight females, four males. Females: Brasil, Amazonas, Hwy zf 2, km 20.7, ca 60 km N Manaus, 02°30’S 06°15’W, 16/viii/79, terra firme. (4) Brasil, Bahia, Encruzilhada, 980 m, xi/1974, Col. M. Alvarenga, two females with same data except altitude and date: xi/1972, 960 m. Paraguay, Salto del Guaira, xii/1971. Males: all collected by M. Alvarenga: Brasil: Guanabara, Reprêsa Rio Grande, xii/1967, one same data except date: xii/1966; Minas Gerais, Piedra Azul xi/1972; Mangaratiba, Muriqui R.d.J., vii/1969. Material identified deposited at USNM (one female), CNCI (six females, one male) and AEI (three males).

**Comments.** Only previously known from female holotype at BMNH. This is the only species that is completely yellow, making this coloration a good diagnostic character.

### ***Hypomicrogaster imitator* (Ashmead) Nixon**

(Fig. 19)

*Hypomicrogaster imitator* Nixon, 1965 : 213.

*Urogaster imitator* Ashmead, 1900 : 68–69

*Female*. Body length (without the head) = 2.18 mm. *Body color*: Mainly yellow except metasomal terga 6–9 dark brown as tarsal claws of fore and middle leg as well as distal tip of hind femur, distal 1/4 of hind tibia, ovipositor sheaths, bottom of axilla throughout mesonotum; lateral edges of first metasomal terga, areola, costula brownish yellow as lateral edges of propodeum. Wings hyaline with venation brownish yellow.

*Head*. ABSENT. *Mesosoma*. Mesosoma length/width = 0.72; mesosoma length = 1.04 mm; mesosoma height = 0.72 mm. Propleuron basal 1/3 with confused cicatrose sculpture, remainder of propleuron with confused foveate sculpture; pronotum with anterior 1/3 with narrow scrobiculate sculpture also present at lateral grooves but much smaller and less denser at posterior 1/3 of them, area between lateral groove nitid, dorsal edge 1/5 and ventral edge 1/3 of posterior edge height; mesonotum with dense and fine punctate sculpture which becomes less dense and much larger and shallower towards scutellar groove without reaching it; scutellar sulcus with nine small and well-defined costulae; scutellum essentially nitid except few fine punctate sculpture at medial area of it, lateral costulate sculpture becoming larger toward posterior area; axilla through mesonotum essentially nitid except for very few weak transversal lineate sculpture at anterior edge of lunulae; propodeum anterior 1/3 with large confused foveate sculpture, remainder of propodeum nitid except for few confused rugose sculpture around areola and transversal carina, spiracular area with confused foveate sculpture, costulae completely present; mesopleuron anterior 1/3 as well as dorsal area with punctate sculpture, epistomal scrobe present but almost nitid except for very few confused scrobiculate sculpture as well as distal edge of mesopleuron, dorsal edge with small and well-defined scrobiculate sculpture; metapleuron dorsal and distal area with scattered, few and confused scrobiculate sculpture, medial area with a deep pit, remainder of metapleuron nitid. *Legs*. Hind femur length = 0.73 mm; hind femur length/width = 3.22; hind tibia length/hind femur length = 1.21. Fore leg telotarsus not modified and shorter than remainder of tarsomeres combined; tarsal claws simple with a short basal tooth at mid-distal area. *Wings*. Fore wing length = 2.48 mm; 1RS length = 0.09 mm; 1CUa length/1CUB length = 1.29; length RS+Ma = 0.38 mm; length M+CU = 0.90 mm; 1M length/ m-cu length = 2.17; pterostigma length/height = 1.44. Hind wing: 1M length = 0.48 mm; 1M length/2M length = 2.71; 1M length/M+CU length = 1.73; length r-m/length Cua = 0.81; 1RSa length/2r-m = 0.88; 1A length = 0.25 mm. *Metasoma*. First tergum basal width = 0.20 mm; first tergum length/distal width = 1.49; second tergum length/distal width = 0.27; third tergum length/distal width = 0.48; hypopygium length = 0.68 mm. First tergum with lateral areas of basal 1/3 with confused rugose sculpture, remainder basal 1/3 nitid, distal 2/3 with large confused punctate sculpture that is denser at distal edge of it, distal edge with two depressions; second tergum with distal edge flat, nitid as well as remainder of terga.

**Material examined.** BMNH female holotype with label “San Vincent Island, West Indies, 99-331, Col. H.H. Smith # 207 BM type 3-1128”.

**Comments.** This is the only known species for the genus formally recognized to be present outside the New World (collected in Cabo Verde, Africa), however, is very possible that more species that are new can be recognized on the African continent. The holotype does not have a head, one hind leg, tarsomeres of middle and hind leg as well as a set of wings. However, according to Ashmead’s description “head, except face, black; flagellum brown, the scape and pedicel pale... extreme tips of hind tibiae and their tarsi more or less subfuscous.” The mentioned coloration makes this species very similar to *H. ecus* but *H. imitator* has fewer setae on the metasomal terga, which are more elongate and thin than those of *H. ecus*.

### ***Hypomicrogaster tydeus* Nixon**

(Fig. 20)

*Hypomicrogaster tydeus* Nixon, 1965 : 215

#### **New Synonymies.**

*Hypomicrogaster arcanus* Nixon, 1965 : 213

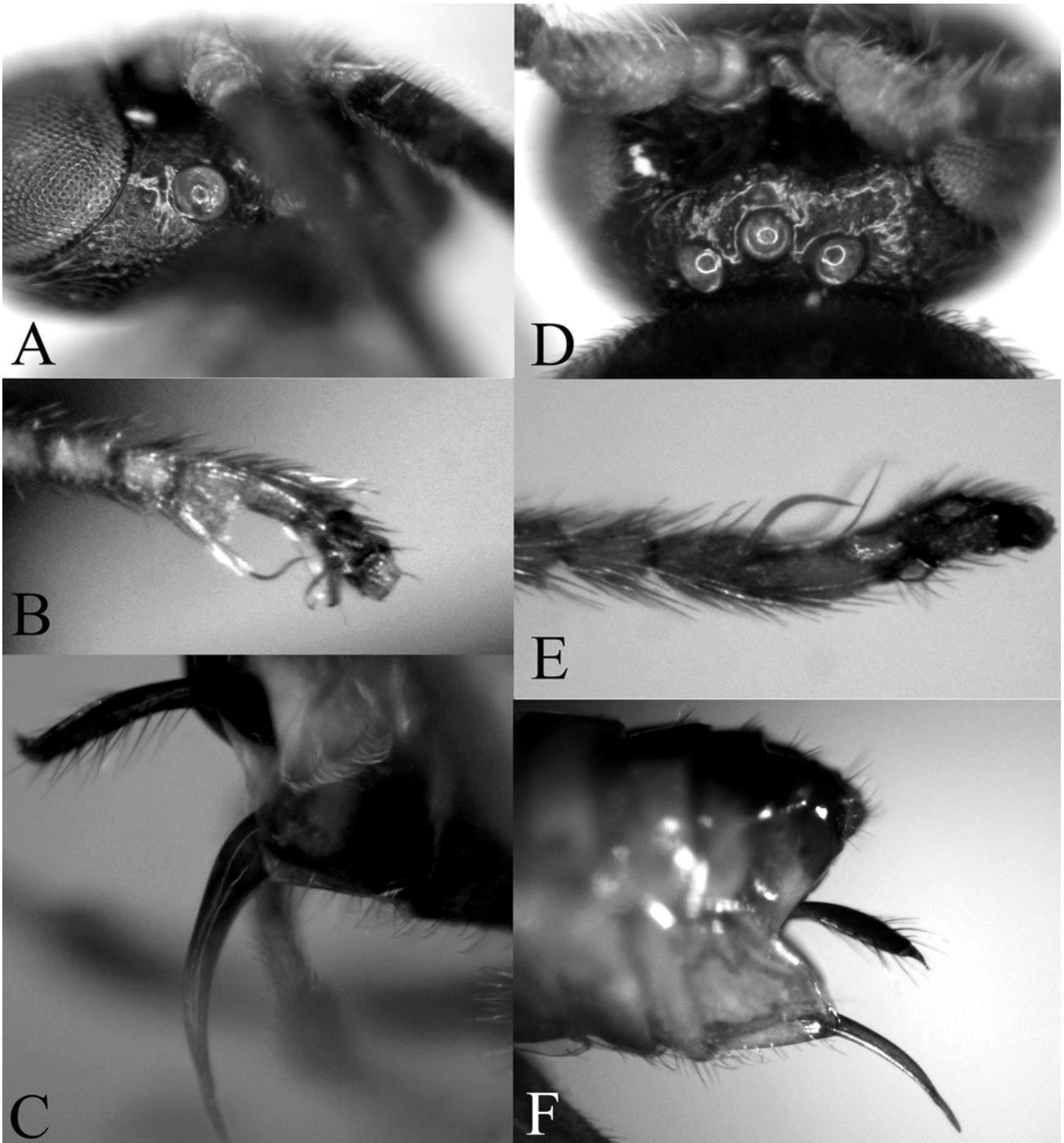
*Female*. Body length = 4.70 mm. *Body color*: Mainly black as ovipositor sheaths with exception of distal 1/2 of hind coxae, tip of hind femur, distal 1/3 of hind tibia as well as trochanters and labrum yellow; palpi whitish yellow, scape and pedicel yellow with lateral external areas brownish yellow; wings hyaline, fore wing stigma dark brown, remainder of veins light yellow as hind wing veins.

*Head.* Head height/width = 1.28; compound eye height/width = 1.80; intertentorial pit distance = 0.18 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.50; width of face at dorsal clypeal edge = 0.35 mm; clypeus width/height = 2.71; vertex width/distance between anterior ocellus and edge of torulus = 3.00; length of first flagellomere = 0.23 mm; first flagellomere length/width = 2.38; length of first flagellomere/length of second flagellomere = 1.06; length of first flagellomere/length of third flagellomere = 1.12; distal flagellomere length = 0.13 mm; distal flagellomere length/penultimate flagellomere length = 1.67; distal flagellomere length/width = 1.25; malar space height/basal width of mandible = 0.86; ocell-ocular distance/lateral ocelli distance = 1.00. Clypeus and face with smooth punctate sculpture, except area next to clypeus nitid and area below toruli with dense confuse colliculate sculpture mixed with punctate sculpture; frons scrobal areas nitid, lateral areas with punctate sculpture as well as distal area and anterior 1/2 of vertex; remainder of vertex with few fine punctate sculpture; temple with denser and more defined punctate sculpture extending over the gena (except ocular ring nitid) and gena-postgena junction area; gena-postgena junction area with transversal lineate sculpture at lower 2/3 of head height; remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.28; mesosoma length = 0.69 mm; mesosoma height = 0.50 mm. Propleuron basal 1/2 with confuse sinuate lineate sculpture, remainder of propodeum with confused punctate sculpture; pronotum with anterior 1/3 with well-defined and narrow scrobiculate sculpture which is present as well on the lateral grooves, been there smaller and denser than on anterior 1/3, area between lateral grooves nitid and with a transversal sinuate depression next to posterior edge, dorsal edge with upper distal area next to posterior edge with dense fine punctate sculpture; mesonotum with fine and dense punctate sculpture which becomes larger and less dense towards posterior edge, area around scutellar groove nitid; scutellar groove with 13 small and well-defined costulae; scutellum basically nitid except for fine and small punctate sculpture that is denser at distal 1/ of its length, lateral costulate sculpture from small to larger towards posterior area; axilla throughout mesonotum with confused scrobiculate sculpture reaching 1/2 of it width, lunulae anterior edge slightly obscured by sculpture; metapleuron with sub rectangular shape, with two holes at mid posterior area and scattered punctate sculpture below them, otherwise nitid; axilla through metanotum with deeply impressed and confused costulate sculpture; propodeum anterior 1/2 basically nitid except area around transversal and areolar carinae with large foveate sculpture, areola and transversal carina well-defined as well as costula, transversal carina with confused foveate sculpture on it, distal area covered on confused rugose sculpture as well as spiracular area; mesopleuron dorsal and area below sternauli punctate, dorsal and distal edge with well-defined and small costulate sculpture, sternauli has an elongate pit with a sharply defined groove on it, epistomal scrobe present and weakly defined by confused foveate sculpture, remainder of mesopleuron nitid; metapleuron with large scrobiculate sculpture at dorsal and distal edge, medial pit present. *Legs.* Hind femur length = 0.85 mm; hind femur length/width = 3.40; hind tibia length/hind femur length = 1.13. Fore leg telotarsus normal, not modified, and shorter than basitarsus; tarsal claws simple with basal tooth at mid-distal area; telotarsus normal. *Wings.* Fore wing length = 5.20 mm; 1RS length = 0.13 mm; 1CUa length/1CUB length = 1.38; length RS+Ma = 0.45 mm; length M+CU = 1.02 mm; 1M length/ m-cu length = 1.69; pterostigma length/height = 1.40. Hind wing: 1M length = 0.45 mm; 1M length/2M length = 2.00; 1M length/M+CU length = 1.44; length r-m/length Cua = 0.66; 1RSa length/2r-m = 1.80; 1A length = 0.23 mm. *Metasoma.* First tergum basal width = 0.25 mm; first tergum length/distal width = 1.21; second tergum length/distal width = 0.36; third tergum length/distal width = 0.38; hypopygium length = 0.64 mm. First tergum with basal 2/3 nitid, distal 1/3 with large confused and shallow punctate sculpture throughout, presence of two deep areas at distal edge of tergum; remainder of terga nitid; hypopygium slightly divided posteriorly and with medio longitudinal folds ; ovipositor elongate and 1.3 times as long as hind tibia length; ovipositor sheaths elongate.

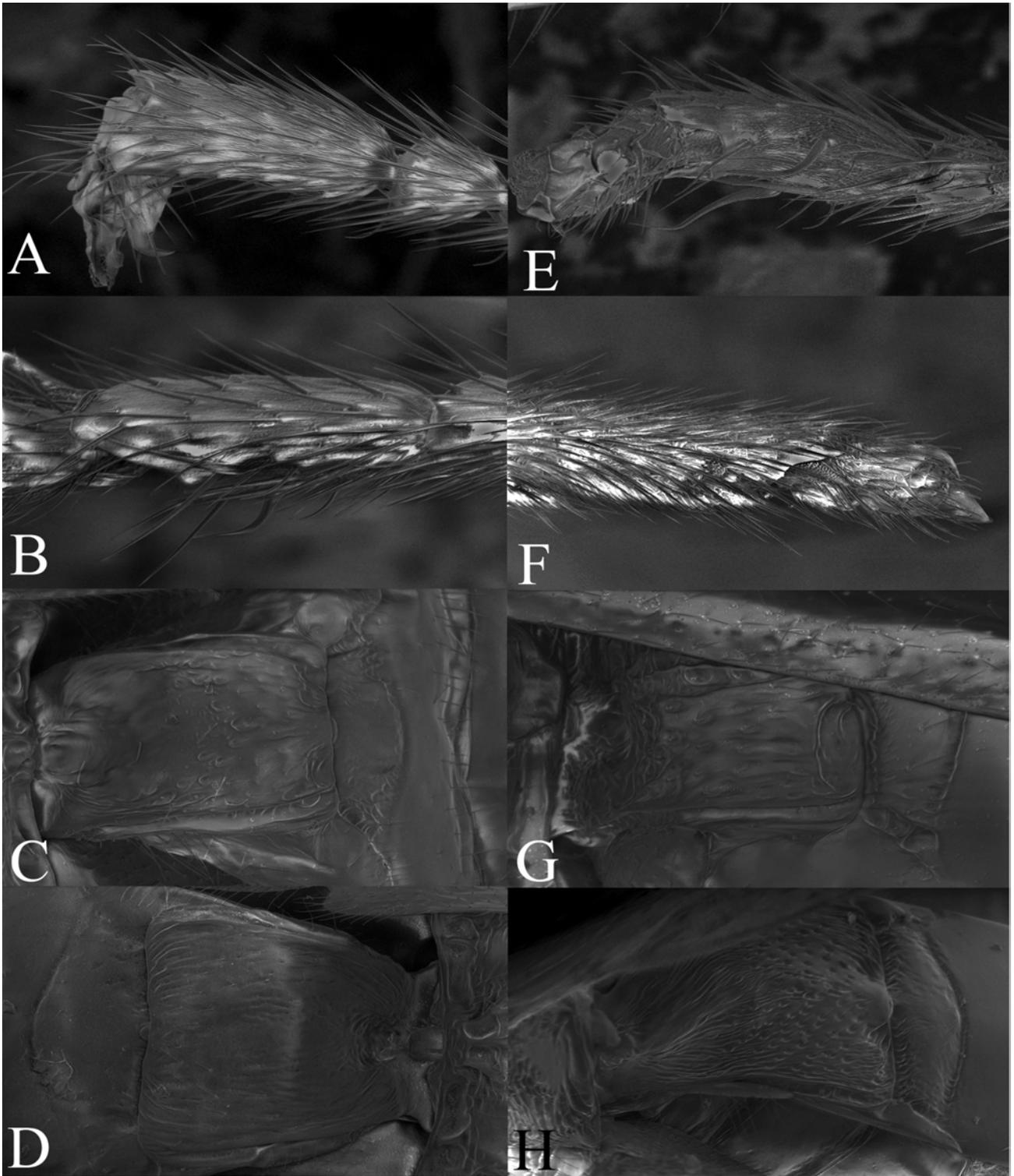
**Material examined.** BMNH female holotype with label “Brasil, Nova Teutonia 27°11’ B 53°23’ L, 12/v/1938, Plaumann BM 1938-682.” Also BMNH female holotype of *H. arcana*s with label “Brasil, Nova Teutonia, 27°11’ B 52°23’ L, 11/v/1938, Plaumann BM 1938-682.”

**Comments.** *Hypomicrogaster arcana*s and *H. tydeus* were distinguished by Nixon based on the shape of first tergum (elongate vs. “chubby”) as well as using the shape of the median field of terga 2+3, but after revising the material, I consider this just intraspecific variation. The following variation in the specimens was observed: propodeum with less rugose sculpture, first metasomal tergum more elongate and clean of punctate sculpture, propodeum totally yellow as well as hind coxae.

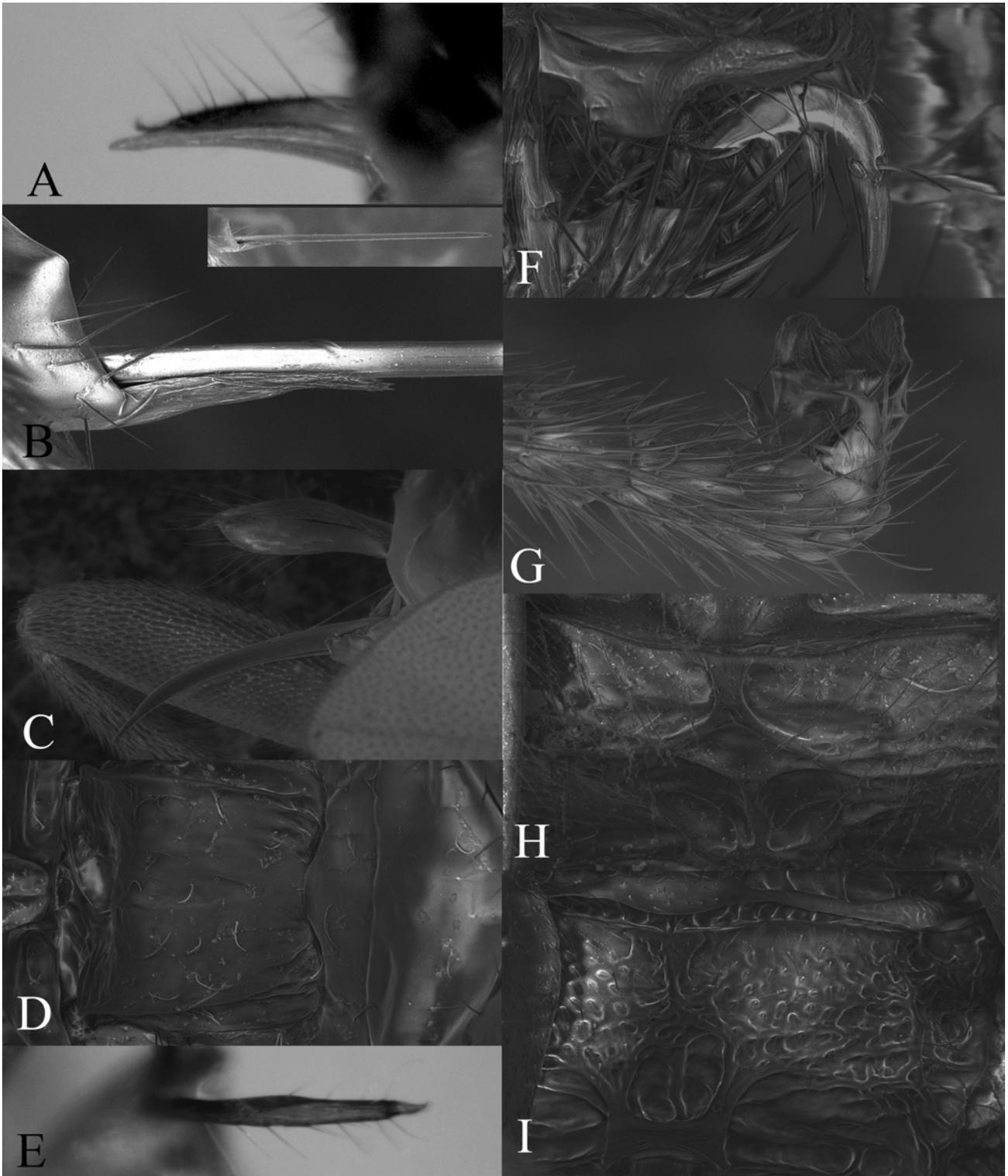
*Hypomicrogaster tydeus* appears to be very similar to *H. zonaria* but because of the small number of specimens acquired for this taxonomic revision I decided to keep provisionally *H. tydeus* as a separate species from *H. zonaria*.



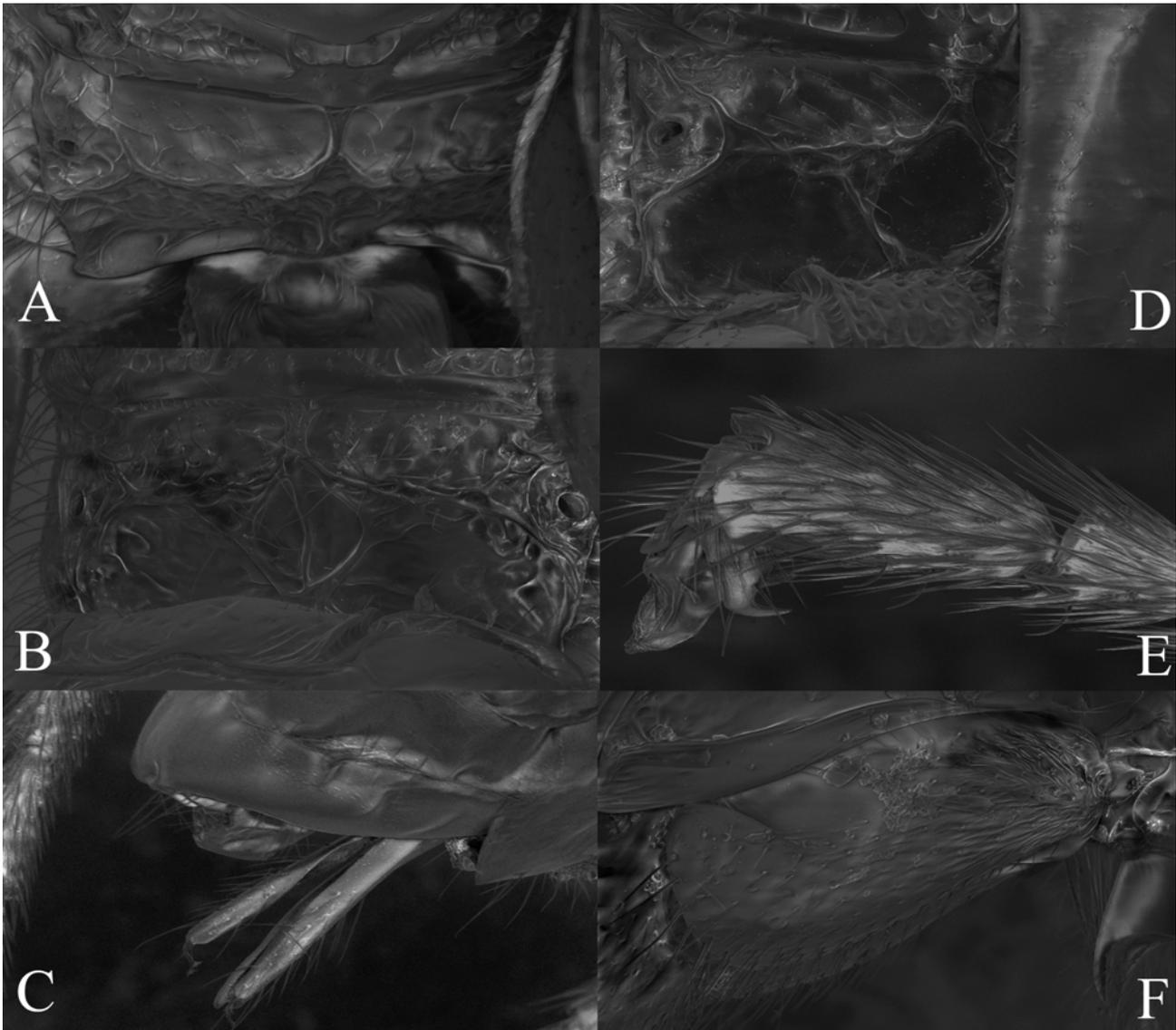
**FIGURE 12.** Ocell-ocular distance for *Hypomicrogaster sicingens* n. sp. (A) and *H. zonaria* (Say) (B); fore telotarsus shape (in lateral view) for *H. insolitus* n. sp. (C) and *H. guille* n. sp. (E); ovipositor shape (in lateral view) of *H. deltis* n. sp. (C), and ovipositor sheaths shape (in lateral view) of *H. spatulae* n. sp. (F).



**FIGURE 13.** Hind leg telotarsus (in lateral view) of f *Hypomicrogaster specialis* n. sp. (A); fore leg telotarsus (in lateral view) of *H. linearis* n. sp. (B), *H. aplebis* n. sp. (E) and *H. sicingens* n. sp. (F); metasomal terga (in dorsal view) of *H. sicsindus* n. sp. (C), *H. linearis* n. sp. (D), *H. cernus* n. sp. (G) and *H. linearis* n. sp. (H).



**FIGURE 14.** Ovipositor and ovipositor sheaths (in lateral view) of *Hypomicrogaster guille* **n. sp.** (A), *H. scindus* **n. sp.** (B) and *H. crocinus* **n. sp.** (C); ovipositor sheaths of *H. tantillus* **n. sp.** (D); propodeum (in dorsal view) of *H. daktulios* **n. sp.** (H) and *H. duo* **n. sp.** (I); tarsal claws (in lateral view) of *H. duo* **n. sp.** (F) and *H. crocinus* **n. sp.** (G); metasomal terga (in dorsal view) of *H. scindus* **n. sp.** (E).



**FIGURE 15.** Propodeum (in dorsal view) of *Hypomicrogaster sicsindus* n. sp. (A), *H. spatulae* n. sp. (B) and *H. cernus* n. sp. (D); fore telotarsus (in lateral view) of *H. plagios* n. sp. (E); ovipositor sheaths (in lateral view) for *H. insolitus* n. sp. (C) and propleuron (in lateral view) of *H. mikrosus* n. sp. (F).

***Hypomicrogaster zonaria* (Say) Nixon**

(Fig. 21)

*Microgaster zonaria* Say, 1836–7 : 263

*Protapanteles recurviriae* Ashmead, 1903 : 114 [Syn. Muesebeck, 1922 : 24]

*Microgaster recurvitae* (Ashmead) Muesebeck, 1920 : 570

**New Synonymies.**

*Hypomicrogaster* (= *Microgaster*) *ecdytolophae* (Muesebeck) Marsh, 1974 : 285

*Microgaster ecdytolophae* Muesebeck, 1922 : 24–25

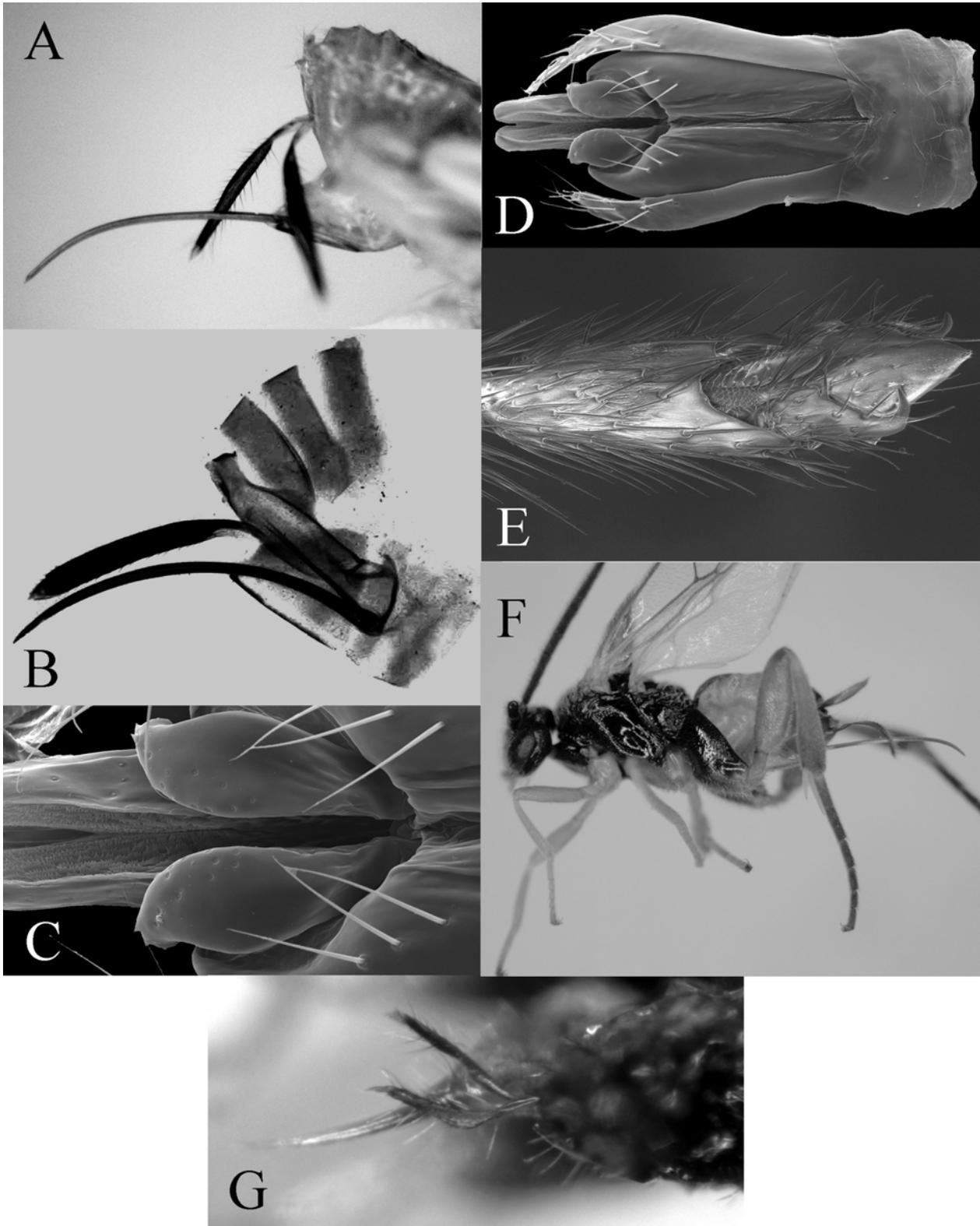
*Hypomicrogaster hysipylae* De Santis, 1972 : 223–224

*Hypomicrogaster* (= *Microgaster*) *jocarae* (Muesebeck) Mason, 1981 : 64

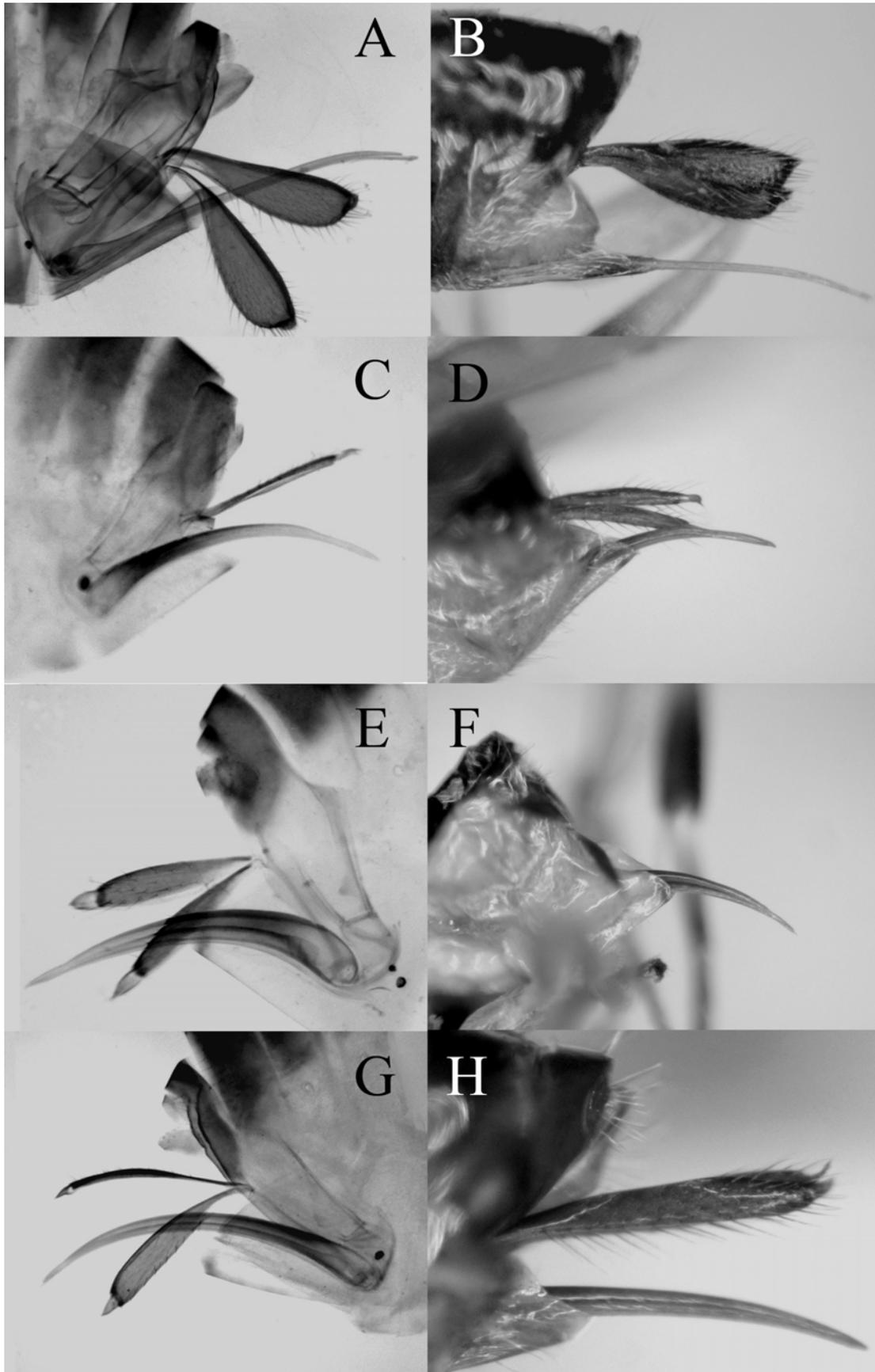
*Female.* Body length = 2.18–4.42 mm. *Body color:* Legs yellow (except tarsal claws, hind tarsomeres, hind femur distal tip, hind tibia distal tip brownish yellow) as propleuron anterior and posterior edges, metasoma (except first tergum, medial area of terga 4 to 7, medio longitudinal area of hypopygium, ovipositor sheaths brown), tegula, ocelli, clypeus, labrum, palpus, ovipositor, scape and pedicel (except lateroexternal area); antenna brownish yellow; compound eyes silver; remainder of body dark brown. Wings hyaline; fore wing with veins light brownish

yellow as well as pterostigma, but most of veins M+CU and 1-1A whitish yellow; hind wing with veins yellowish. *Head.* Head height/width = 1.13–1.20; compound eye height/width = 1.60–1.66; intertentorial pit distance = 0.17–0.28 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.60–3.7; width of face at dorsal clypeal edge = 0.34–0.50 mm; clypeus width/height = 2.60–3.38; vertex width/distance between anterior ocellus and edge of torulus = 1.80–1.90; length of first flagellomere = 0.18–0.30 mm; first flagellomere length/width = 2.22–2.40; length of first flagellomere/length of second flagellomere = 1.06–1.18; length of first flagellomere/length of third flagellomere = 1.06–1.14; distal flagellomere length = 0.10–0.14 mm; distal flagellomere length/penultimate flagellomere length = 0.83–1.20; distal flagellomere length/width = 1.80–2.00; malar space height/basal width of mandible = 0.75–0.83; ocell-ocular distance/lateral ocelli distance = 1.19–1.40. Clypeus and face with dense and well-defined punctate sculpture, mid area of face with less defined and denser punctate sculpture, face medial keel present but not evident; frons with scrobal areas nitid, lateral and distal area as well as anterior vertex with few scattered punctate sculpture present; remainder of vertex with fine and denser punctate sculpture as well as temple; gena with larger and dense punctate sculpture at junction area with postgena as well as transversal lineate sculpture, remainder of gena with fewer and less defined punctate sculpture, except ocular ring nitid; remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.15–1.20; mesosoma length = 0.92–1.41 mm; mesosoma height = 0.61–0.98 mm. Propleuron with anterior 1/3 with confuse longitudinal lineate sculpture, otherwise with punctate sculpture; pronotum lateral areas with anterior 1/2 with few smooth and narrow transversal ridges, lateral upper and ventral grooves with dense and well-defined transversal ridges, ventral groove wider than upper groove and with fewer and more separated transversal ridges present, area between grooves with fine and confuse punctulate sculpture, dorsal edge at posterior 1/2 with dense and fine punctate sculpture, dorsal 0.15 and ventral groove 0.3 of posterior edge height; mesonotum with dense and well-defined punctate sculpture, the sculpture becomes larger and slightly less denser towards scutellar groove without reaching it; scutellar groove with 10 to 14 small and not so well defined costulae, mid ones as much as 2 times as large as lateral ones; scutellum with evenly distributed and shallow punctate sculpture, lateral areas with costulate sculpture, distal costulae more elongate and larger than previous ones; axilla through mesonotum with a series of broad transversal ridges at anterior edge of lunulae and reaching half of its width, remainder of axilla nitid; metanotum nitid, rectangular in shape and with ridge between medio distal costulae thin and elongate; axilla through metanotum with confuse rugulose sculpture throughout; propodeum with anterior lateral areas with dense shallow punctate sculpture which mixed up with confuse rugulose sculpture near areolar and transversal carinae, confuse rugulose sculpture over areolar, transversal and most of posterior lateral areas at which is better defined and less dense than one present at areolar area, posterior lateral areas with medial and distal areas almost nitid, midlongitudinal carina present inside areola but partially obscure by confuse rugulose sculpture as well as transversal and areolar carinae, anterior midlongitudinal carinae well-cristate and evident as well as costulae, costulae completely present, spiracular area with few confuse rugose sculpture; mesopleuron with anterior edge as well as upper anterior 1/3 and ventral 1/2 with punctate sculpture, sternaulus has a deep sort depression with few smooth and fine transversal ridges, epistomal scrobe with few thin and weak transversal ridges which are obscured by punctate sculpture, dorsal edge with fine well-defined transversal ridges as well as posterior edge, posterior edge with much fewer and more less denser transversal ridges, area at posterior 1/3 of dorsal edge punctate, otherwise nitid; metapleuron with medial pit present, pleural sulcus present and with few transversal ridges, dorsal and distal edge with bib and thin transversal ridges better defined and denser at dorsal edge, areas around dorsal and distal edges with confuse rugulose sculpture mixed with punctate sculpture. *Legs.* Hind femur length = 0.68–2.46 mm; hind femur length/width = 3.00–3.42; hind tibia length/hind femur length = 1.04–1.18. Fore telotarsus smaller in length than fore basitarsus, telotarsus not modified but with a broad hook-like setae at internolateral area of it (*H. koinos* style); hind telotarsus with two distal long and broad setae at internolateral area; tarsal claws with thin and long basal tooth. *Wings.* Fore wing length = 2.30–3.99 mm; 1RS length = 0.06–0.16 mm; 1CUa length/1CUb length = 1.33–1.60; length RS+Ma = 0.34–0.62 mm; length M+CU = 0.80–1.10 mm; 1M length/ m-cu length = 1.8–1.83; pterostigma length/height = 1.15–1.40. Hind wing: 1M length = 0.32–0.67 mm; 1M length/2M length = 2.13–2.29; 1M length/M+CU length = 1.75–1.79; length r-m/length Cua = 0.76–0.83; 1RSa length/2r-m = 1.00–1.50; 1A length = 0.23–0.45 mm. *Metasoma.* First tergum basal width = 0.18–0.33 mm; first tergum length/distal width = 0.95–1.19; second tergum length/distal width = 0.29–0.40; third tergum length/distal width = 0.28–0.42; hypopygium length = 0.53–1.10 mm. First metasomal tergum with basal 1/3 with medial area nitid, lateral areas with well-defined longitudinal lineate sculpture, remainder 2/3 with punctate sculpture which mixes up with fine and confuse rugulose sculpture which extends toward distal area of basal 1/3, distal 1/3 with punctate sculpture larger and better defined than in mid 1/3 as well with few longitudinal sculpture

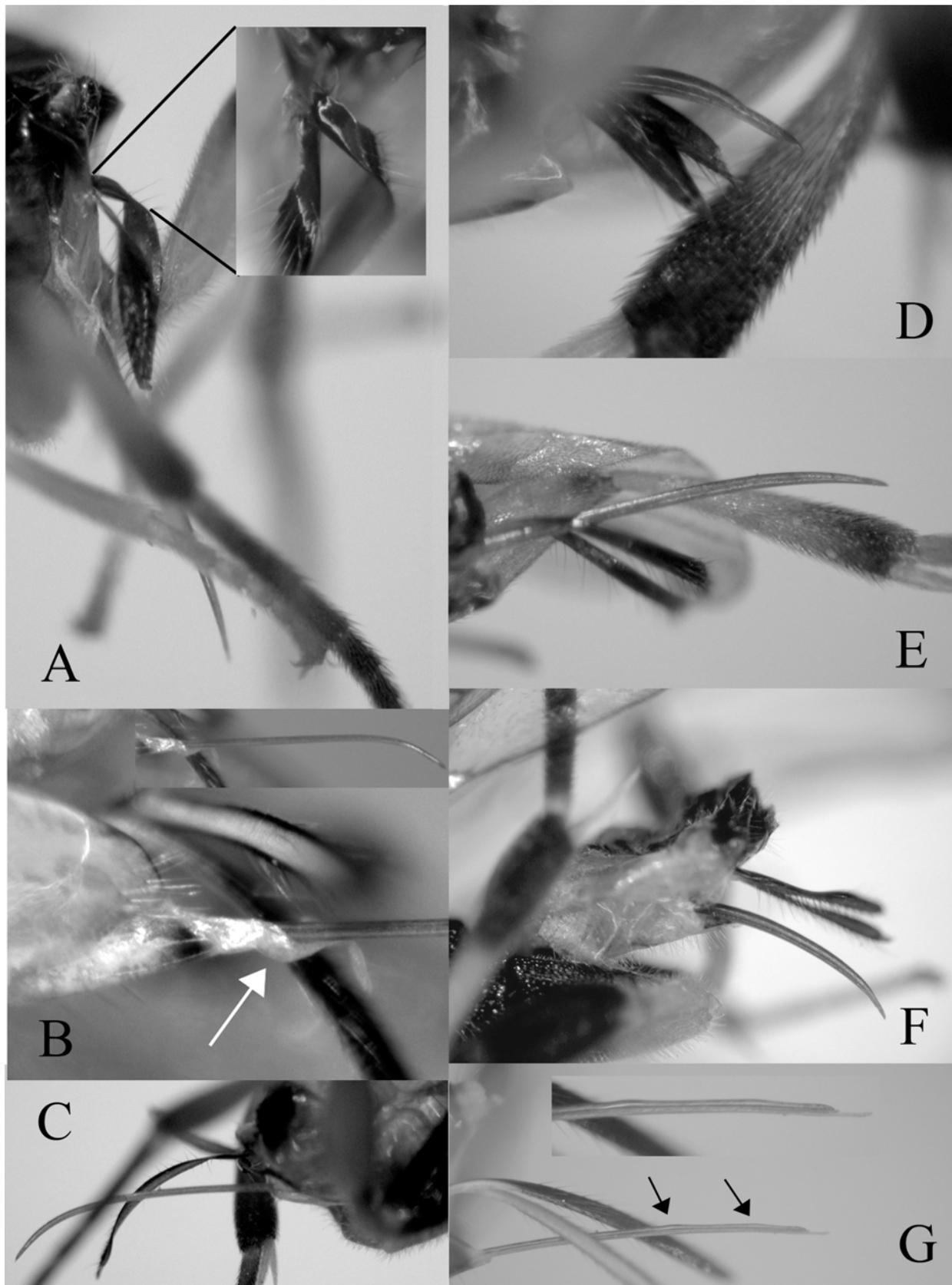
at lateral areas; second tergum nitid as remainder of terga; hypopygium with longitudinal folds and slightly divided distally; ovipositor sheaths elongate in dorsal view and between 0.3 and 1.3 times as long as hind tibial length; ovipositor thin and elongate in lateral view, and as long as 0.5 to 1.64 times as long as hind tibia length.



**FIGURE 16.** Female (A & B) and male (C & D) genitalia for the species *Hypomicrogaster luisi* n. sp; *H. koinos* n. sp. fore telotarsus (in lateral view) (E); lateral habitus of *H. sicpollex* n. sp. (F) and *H. tetra* n. sp. ovipositor sheaths (in lateral view)(G).



**FIGURE 17.** Ovipositor sheaths and ovipositor shape (in lateral view) for the species *Hypomicrogaster laxus* n. sp. (A & B), *H. zan* n. sp. (C & D), *H. plagios* n. sp. (E & F) and *H. koinos* n. sp. (G & H).



**FIGURE 18.** *Hypomicrogaster evrys* n. sp. ovipositor sheaths shape and attachment area (in lateral view) (A); ovipositor and ovipositor sheaths shape (in lateral view) for *H. sicpollex* n. sp. (C), *H. linearis* n. sp. (D), *H. lineatus* n. sp. (E), *H. pollex* n. sp. (F) and *H. hupsos* n. sp. (H); hypopygium longitudinal folds for *H. cernus* n. sp. (B) [arrow points at the hypopygium expansion].

*Males.* Similar to female.

**Material examined.** *Hypomicrogaster hypsipylae*: From MLPA, 2 female paratypes: Costa Rica, Turrialba, Santa Cruz, 6-xii-1971, Col. Grimpma, s/pupas de *Hypsipyla grandella* Zel. From USNM two females with data: Costa Rica, Turrialba, ex *Hypsipyla grandella* Zel. *Hypomicrogaster jocarae*: two female paratypes: Cuba, Habana, Santiago de Vegas, 2 Feb. 1932, Col. A. Otero, EEA Cuba Ento. N° 9803a, lot # 35-1093; one female same lot number with no other information present. *Hypomicrogaster ecdyctolophae*: from USNM, two females: USA, Arkansas, Bentonville, 23/vii/1919, Quaintance No. 16471, Ex. Canarcia sp. reared by D. Isley, Paratype No. 23987; another female with same data. From MLPA, two female paratypes.

Additionally, a series of specimens sorted by W.R.M. Mason (1961, 1972 and 1977), G.S. Walley, J.B. Whitfield and C.F.W. Muesebeck for *Hypomicrogaster ecdyctolophae*, *H. zonaria*, and *H. jocarae* were examined as well as new material reared by Janzen and Hallwachs in Costa Rica.

**Comments.** This is a very morphologically variable species whose its distribution extends throughout the whole American continent (from Canada to the South Cone).

On the description of the mentioned species cover under the name *H. zonaria* were mainly based on color variation and in sets of morphology which did not covered the morphological plasticity exhibit by this species. As an example, within the original specimen series of *H. jocarae*, the coxae of one of the females examined were completely yellow but other females exhibit a brownish yellow at the anterior area of it, consequently the Muesebeck key (1958) for the Neotropical species of *Hypomicrogaster* (under the genus name *Microgaster*) is useless. In other instances, the description of the species was done without examining any other holotype specimen, but the color variation assessed by the author; in example *H. hypsipylae* by De Santis in 1972.

The following variation in coloration was observed for the species: hind coxae from completely yellow to completely brown, hind tibial spurs from completely yellow to whitish yellow, all metasomal terga completely brown or with terga 1 to 6 completely yellow, palpus whitish yellow, antenna dark brown, distal 1/3 of hind tibia and femur (in some cases distal 1/2 of tibia brown in coloration), propleuron with anterior and posterior edges yellow which contrast with remainder of areas brown, mesosternum with two yellow to reddish brown longitudinal stripes, pronotum laterodorsal edge from completely brown to totally yellow as well as ventrolateral edge, axilla through mesonotum and metanotum more reddish in coloration than remainder of mesosoma, hind basitarsus with anterior area yellow and remainder of basitarsus dark brown (extension of yellow anterior area is variable), epicnemial ridges from completely yellow to completely dark brown, hypopygium medio longitudinal area without the brown coloration, clypeus from completely yellow to completely brownish yellow in coloration, fore and hind wing with all veins light brown.

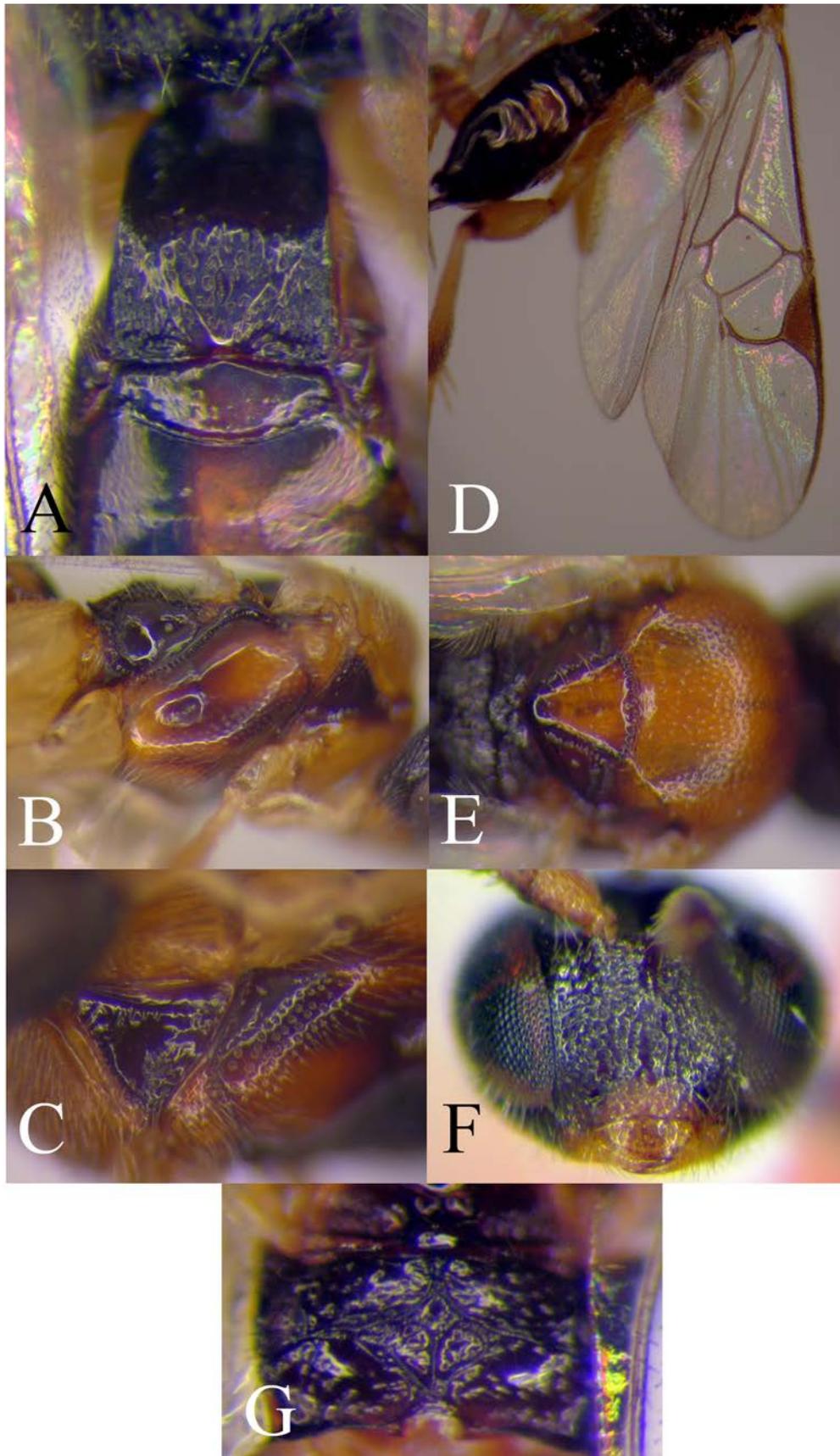
The following variation in sculpture or morphology was observed: face keel evident, well-cristate as bulging triangular facial mid area; facial punctate sculpture less defined next to compound eyes as well as upper 1/3 of it; punctate sculpture at distal area of frons as well as anterior 1/2 of vertex denser than previously described; longitudinal transverse sculpture at gena-postgena junction area less evident; pronotum lateral area between lateral grooves mainly nitid except for very few and inconspicuous punctulate sculpture; propodeum anterior lateral areas almost free of confuse rugulose sculpture as well as posterior lateral areas and areola, transversal carina well-cristate and evident; rugulose sculpture absent from first metasomal tergum but tergum at distal 1/2 with very few large and shallow punctate sculpture, and no lineate sculpture present at all on tergum, sometimes tergum completely nitid except for one or two large and shallow punctures next to posterior edge; broadness of hook-like setae at fore telotarsus variable but always present at distal 1/4 of its length; fore wing with areola open, areola size variable but not extremely large as in the genus *Microplitis*; posterior 1/2 of metapleuron almost nitid; sternaulus nitid; scutellum with punctate sculpture mainly present at lateral areas and anterior 1/2 of it almost nitid.

**Rearing records.** This species has been reared from: *Evagora*<sup>1</sup> sp.; Ex. *Pulicanaria picanella* (?); *Hypsipyla grandella* (Pyralidae) feeding on one unidentified Meliaceae plant, *Cedrela* sp.; *Ecdyctolopha tortricornis* feeding on *Macadamia* sp. (Proteaceae); unidentified caterpillar feeding on *Tsuga* sp. (Pinaceae); *Recurvaria apicutripunctella* (Gelechiidae) on *Tsuga canadiensis* (Pinnaceae); reared from an unidentified notodontid larva; Ex. *A. annettova* (?) on *Juniperus* sp. (Cupressaceae); Crambid larva feeding on *Cestrum nocturnum* (Solanaceae) and *Udranomía kikkawai* (Hesperiidae) feeding on *Ouratea lucens* (Ochnaceae).

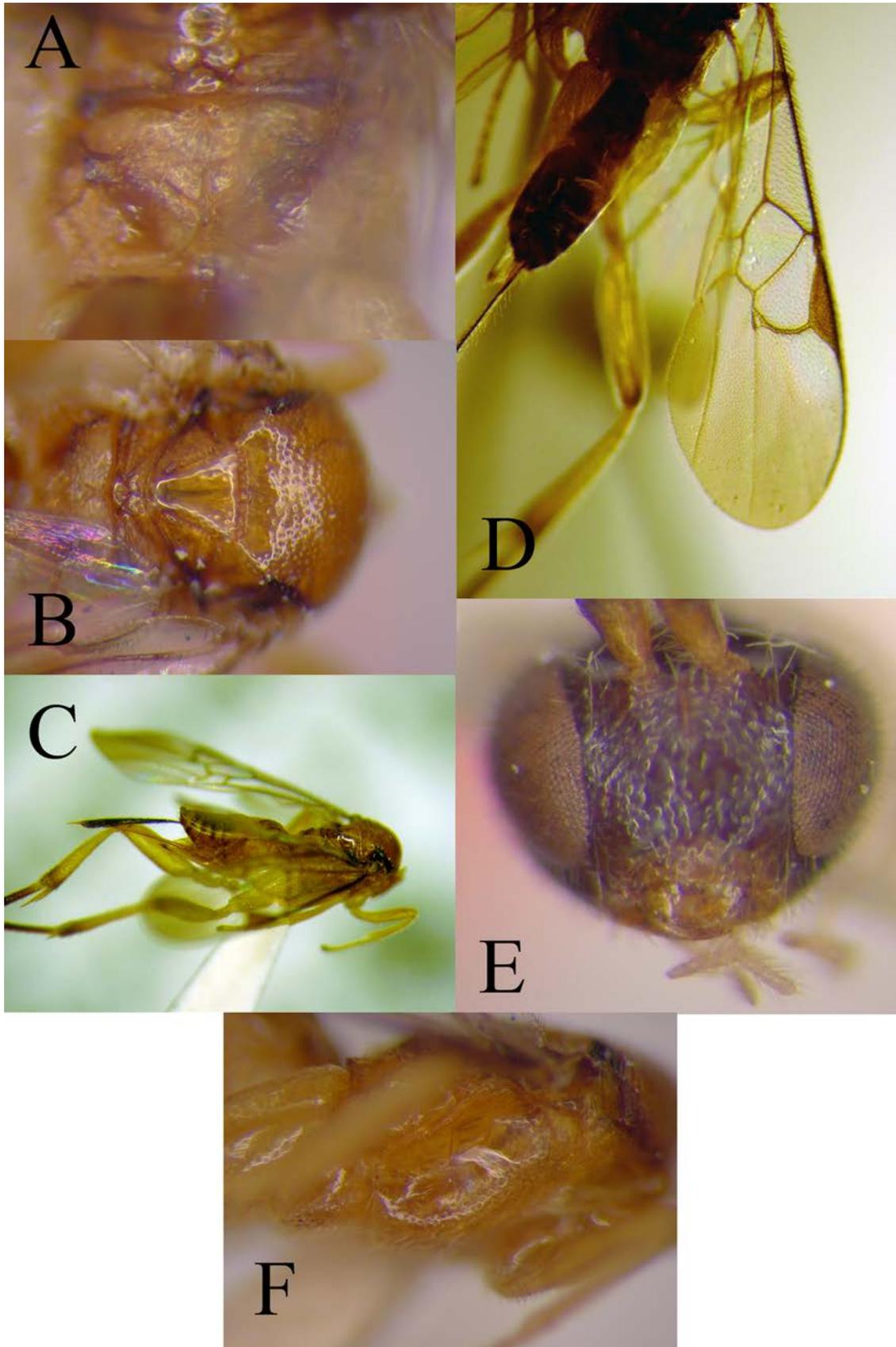
Related Voucher numbers: 01-SRNP-11608 and 02-SRNP-4106.

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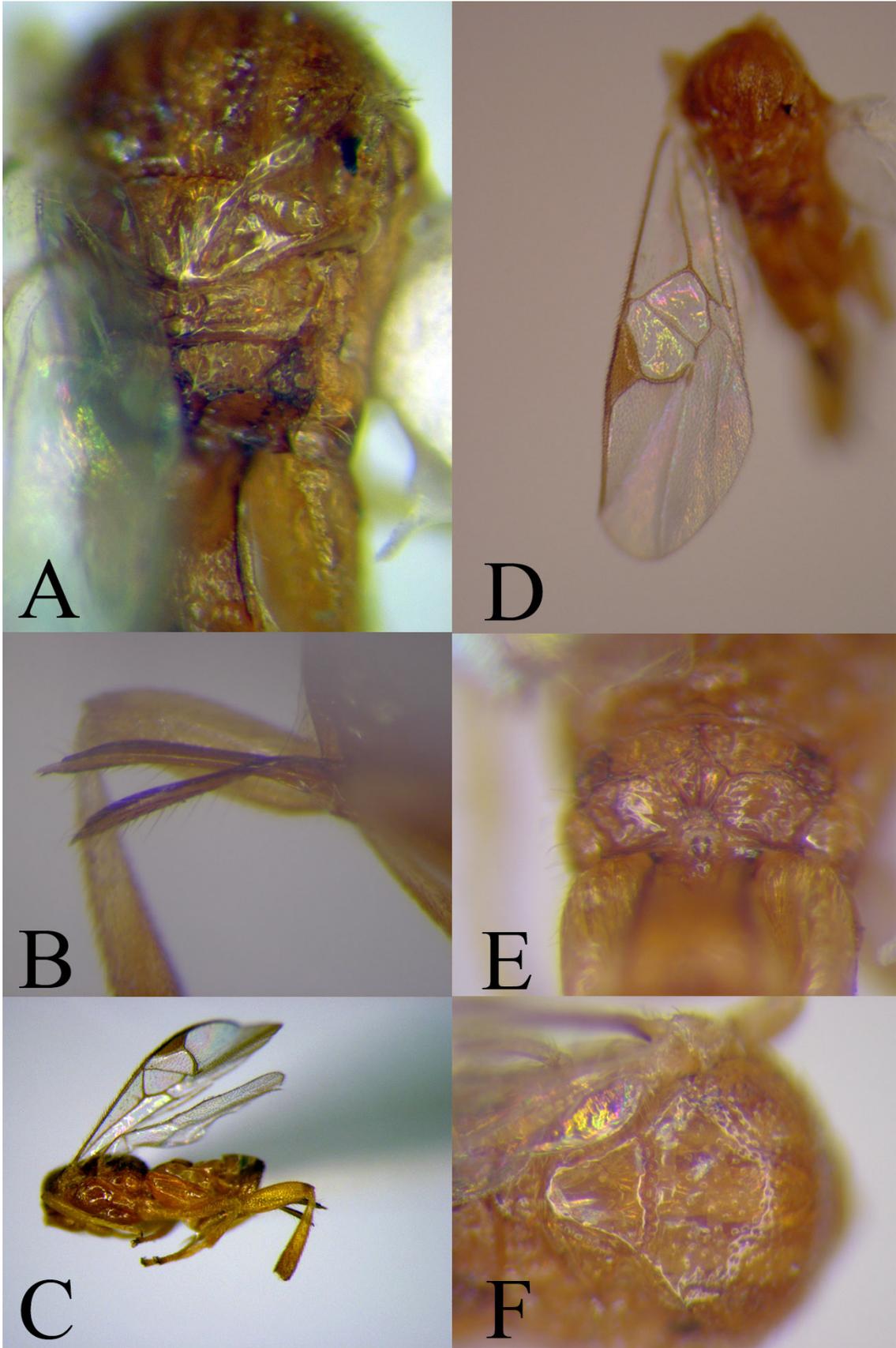
1. The genus *Evagora* is currently divided into three other lepidopteran genera.



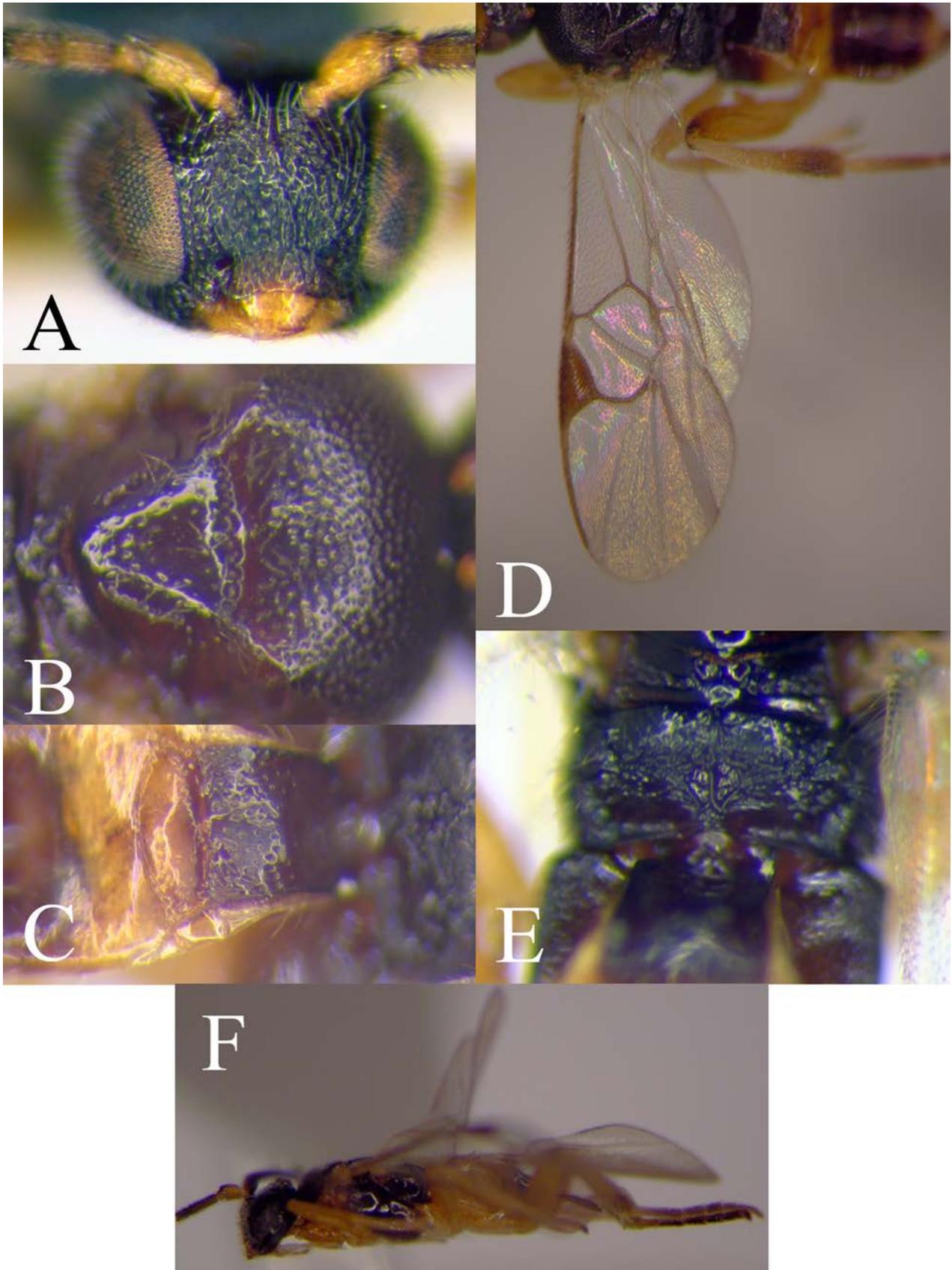
**FIGURE 19.** *Hypomicrogaster areolaris* (Blanchard) **n. comb.** Metasomal terga 1–3 in dorsal view (A), mesopleuron in lateral view (B), propleuron (in lateral view) (C), wing venation (D), mesonotum (in dorsal view) (E), head (in frontal view) (F) and propodeum (in dorsal view) (G).



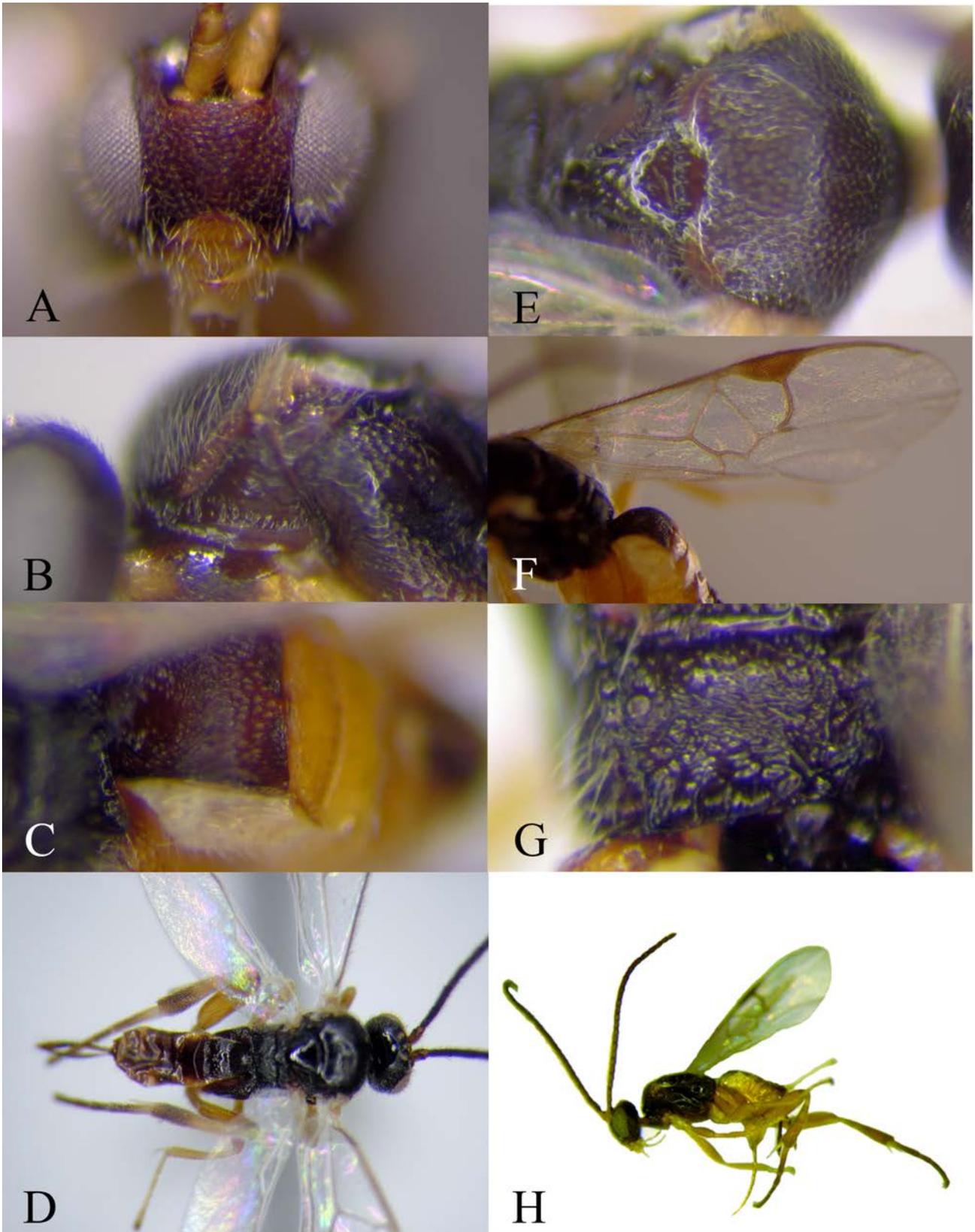
**FIGURE 20.** *Hypomicrogaster ecus* Nixon propodeum (in dorsal view) (A), mesonotum (in dorsal view) (B), lateral habitus (C), wing venation (D), head (in frontal view) (E) and mesopleuron (in lateral view) (F).



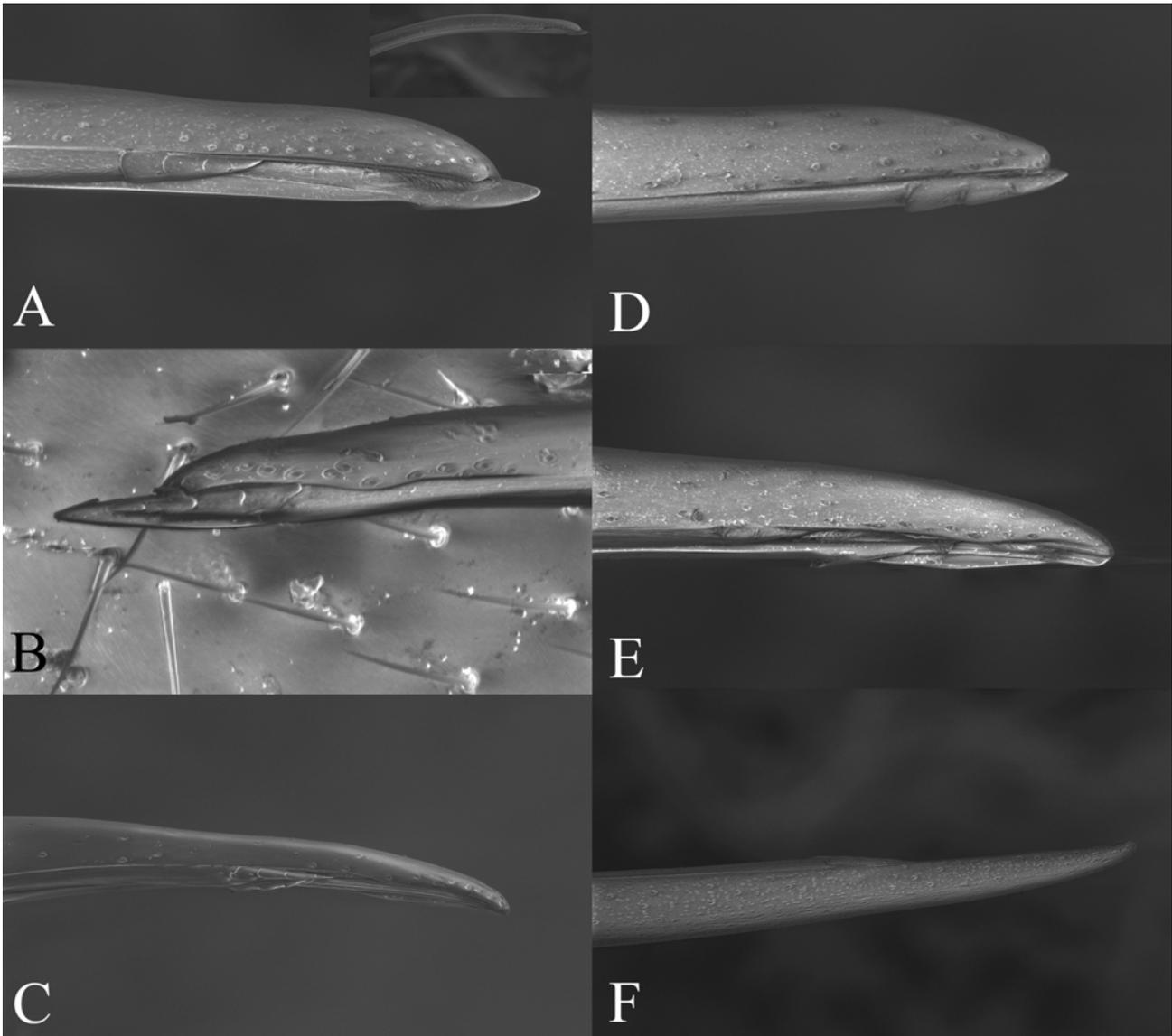
**FIGURE 21.** *Hypomicrogaster imitator* Nixon mesosoma (in dorsal view) (A), ovipositor sheaths and ovipositor (in lateral view) (B), lateral habitus (C), wing venation (D), propodeum (in dorsal view) (E) and mesonotum (in dorsal view) (F).



**FIGURE 22.** *Hypomicrogaster tydeus* Nixon head (in frontal view) (A), mesonotum (in dorsal view) (B), metasomal terga (in dorsal view) (C), wing venation (D), propodeum (in dorsal view) (E) and lateral habitus (F).



**FIGURE 23.** *Hypomicrogaster zonaria* (Say) Muesebeck head (in frontal view) (A), propleuron in dorsal view (B), metasomal terga 1–2 in dorsal view (C), body color (in dorsal view) (D), mesonotum (E), wing venation (F), propodeum (in dorsal view) (G), and lateral (H).



**FIGURE 24.** Ovipositor tip (in lateral view) of *Hypomicrogaster siderion* n. sp. (A), *H. mikrosus* n. sp. (B), *H. deltis* n. sp. (C), *H. multus* n. sp. (D), *H. lineatus* n. sp. (E) and *H. espera* n. sp. (F).

### New species descriptions

#### *Hypomicrogaster aodous* Valerio n. sp.

(Fig. 6B)

*Female.* Body length = 5.35–5.46 mm. *Body color:* Yellow; externolateral area of scape honey yellow as ovipositor sheaths, medio longitudinal area of hypopygium, ovipositor, distal tip of hind femur, distal 1/3 of hind tibia, distal 2/3 of basitarsus as remainder of tarsomeres and tarsal claws; antenna dark brown as empodium; ocelli light yellow; compound eyes silver; head and mesonotum with slightly darker yellow than remainder of body. Wings infumate, veins dark brown.

*Head.* Head height/width = 1.33–1.38; compound eye height/width = 1.57–1.63; intertentorial pit distance = 0.37–0.39 mm; tentorial pit distance/distance tentorial pit to compound eye = 1.92–2.66; width of face at dorsal clypeal edge = 0.7–0.72 mm; clypeus width/height = 2.21–2.52; vertex width/distance between anterior ocellus and edge of torulus = 2.08–2.1; length of first flagellomere = 0.4–0.44 mm; length of first flagellomere/length of second flagellomere = 0.96–1.08; length of first flagellomere/length of third flagellomere = 1.08–1.21; distal

flagellomere length = 0.29–0.31 mm; distal flagellomere length/penultimate flagellomere length = 1.42–1.46; distal flagellomere length/width = 2.22–2.7; malar space height/basal width of mandible = 0.90–1.10; ocell-ocular distance/lateral ocelli distance = 1.20–1.25. Face and clypeus with shallow, dense punctate sculpture; frons essentially nitid except for scrobal areas with basal 1/4 with fine transversal lineate sculpture; vertex with distal 1/2 with few fine, shallow punctate sculpture, otherwise nitid; gena with anterior 1/2 with few fine punctate sculpture, remainder of gena with large, shallow punctate sculpture as temple; postgena with area towards gena with few longitudinal transversal lineate sculpture, otherwise nitid. *Mesosoma*. Mesosoma length/width = 1.24–1.29; mesosoma length = 2.06–2.18; mesosoma height = 1.38–1.45 mm. Propleuron with anterior medial 1/4 with punctate sculpture, otherwise nitid; pronotum nitid as lateral grooves; mesonotum with dense fine punctate sculpture with becomes less dense towards scutellar groove, not reaching it; scutellar groove with 11 costulae present, medial ones 4x as large as lateral ones; axilla through mesonotum nitid; scutellum with few scattered fine punctate sculpture, lateral areas with costulate sculpture which is more less the same width but becoming more elongate, larger towards distal area; propodeum mainly nitid except by few shallow and scatted punctate sculpture, transversal, medio longitudinal and costula well-cristate and defined, areola present only as a “v” shaped transversal carinae at distal area of midlongitudinal carina, midlongitudinal carina broad at anterior 1/3 of propodeum; mesopleuron with anterior 1/3 with fine punctate sculpture, anterior dorsal dorsal and posterior edge with small, dense scrobiculate sculpture, epistomal scrobe with few confused punctate sculpture present, remainder of edges nitid, sternauli as a short broad nitid depression, remainder of mesopleuron nitid; metapleuron with dorsal edge with spaced, large scrobiculate sculpture, distal edge with scrobiculate sculpture which is denser than the one present at dorsal edge, small medial depression present, distal 1/3 with large punctate sculpture present, remainder of metapleuron nitid. *Legs*. Hind femur length = 1.6–1.63 mm; hind femur length/width = 2.85–2.90; hind tibia length/hind femur length = 1.05–1.23. Fore basitarsus longer than fore telotarsus, telotarsus normal; tarsal claw without basal tooth, instead a well-developed basal lobe present. *Wings*. Fore wing length = 6.67 mm; IRS length = 0.15–0.19 mm; 1CUa length/1CUb length = 0.90–0.96; length RS+Ma = 0.94–0.97 mm; length M+CU = 2.18 mm; 1M length/ m-cu length = 1.86–2.04; pterostigma length/height = 2.00–2.05. Hind wing: 1M length = 1.14–1.17 mm; 1M length/2M length = 2.5–2.52; 1M length/M+CU length = 1.62–1.63; length r-m/length Cua = 1.00–1.05; 1RSa length/2r-m = 1.73–1.75; 1A length = 0.53–0.61 mm. *Metasoma*. First tergum basal width = 0.46–0.50 mm; first tergum length/distal width = 1.04–1.19; second tergum length/distal width = 0.26–0.30; third tergum length/distal width = 0.55–0.60; hypopygium length = 1.23–1.38 mm; First tergum with few shallow punctate sculpture throughout; remainder of terga nitid; hypopygium not extremely divided at tip, longitudinal folds present; ovipositor sheaths, elongate and between 1.27 and 1.33 times as long as length of hind tibia.

*Male*. Similar as females.

**Material examined.** Holotype, female, “Colombia, Amazonas, PNN, Hamacayacu, Caño Mata-Mata, Malaise, M. Kelsey, Feb. 89, IAVHHB135.” Paratype: male, Colombia, Amazonas, PNN Hamacayacu, Malaise, Feb. 1989, Col. M. Kelsey, IAVHHB168. Holotype deposited at IAHC, paratype deposited at USMN.

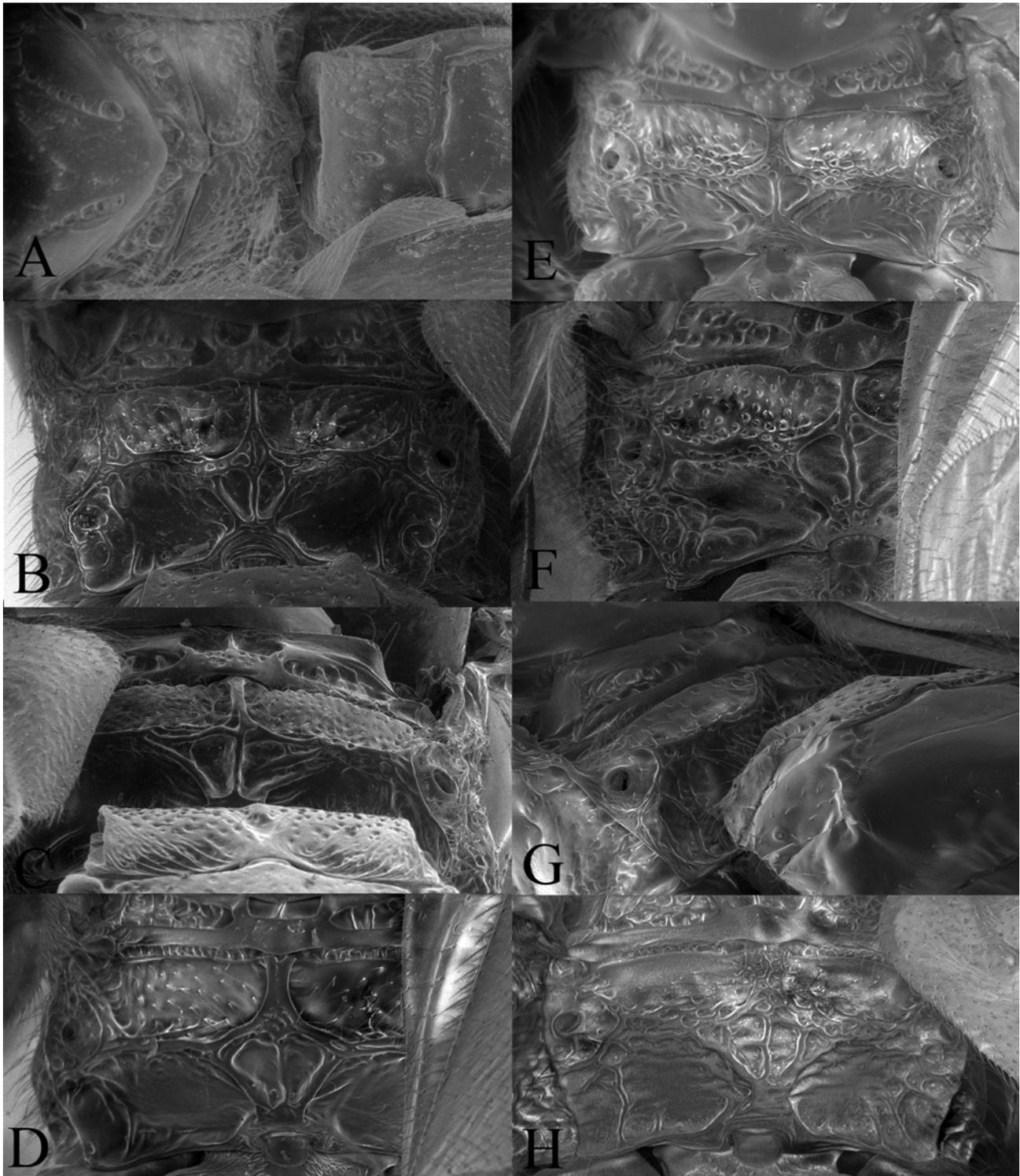
**Comments.** The following variation in coloration was observed: ocelli darker in coloration, dark brown spot at tip of hind femur, coloration of hind femur less contrasting than previously described, antenna with four terminal flagellomeres yellow. This is the only *Hypomicrogaster* species with the tarsal claws modified with a huge basal lobe. The described coloration is diagnostic for this species.

**Etymology.** Gender, neutral. This species is named in relation to the “toothless” hind tarsal claws; “aodous” in Greek means “without teeth”.

### ***Hypomicrogaster aplebis* Valerio n. sp.**

(Fig. 11E)

*Female*. Body length = 3.50 mm. *Body color*: Mainly dark brown; metasoma (except medial area of distal terga from 5<sup>th</sup> tergum), legs (except hind tarsomeres, tibial distal 1/3 and femur distal tip), ocelli, scape, pedicel, axilla through metanotum light yellow as propleuron basal 1/4 and distal tip; compound eyes silver; front and middle coxae whitish as palpi; remainder of body dark brown. Wings hyaline with fore wing C+SC+R basal 1/4, 1-1A basal 1/2 yellow as well as hind wing veins yellow, remainder of veins brownish yellow.



**FIGURE 25.** Propodeum (in dorsal view) of *Hypomicrogaster sicingens* n. sp. (A), *H. masoni* n. sp. (B), *H. sicpollex* n. sp. (C), *H. ingensis* n. sp. (D), *H. koinos* n. sp. (E), *H. rugosus* n. sp. (F), *H. evryis* n. sp. (G) and *H. zan* n. sp. (H).

*Head.* Head height/width = 1.33; compound eye height/width = 1.73; intertentorial pit distance = 0.20 mm; tentorial pit distance/distance tentorial pit to compound eye = 4.00; width of face at dorsal clypeal edge = 0.40 mm; clypeus width/height = 2.38; vertex width/distance between anterior ocellus and edge of torulus = 2.50; length of first flagellomere = 1.05 mm; first flagellomere length/width = 2.5; length of first flagellomere/length of second flagellomere = 1.00; length of first flagellomere/length of third flagellomere = 1.05; distal flagellomere length = 0.15 mm; distal flagellomere length/penultimate flagellomere length = 1.5; distal flagellomere length/width = 2.40;

malar space height/basal width of mandible = 0.70; ocell-ocular distance/lateral ocelli distance = 1.00. Face and clypeus with foveate sculpture, upper keel almost absent; gena punctuated except at scrobal areas; vertex punctate with ocell-ocular area almost nitid except for few punctate sculpture present; gena with anterior 1/2 with confused punctate sculpture, distal 1/2 with denser punctate sculpture mix with longitudinal transversal sculpture as well as basal 2/3 of postgena, remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.27; mesosoma length = 0.76 mm; mesosoma height = 0.5 mm. Propleuron with medial 2/4 with longitudinal lineate sculpture, punctate sculpture present throughout; pronotum lateral area with basal 1/3 of lateral upper and ventral groove with dense fine scrobiculate sculpture, pronotum medial area with confused rugulose sculpture, otherwise nitid; mesonotum with dense punctate sculpture almost reaching scutellar groove; scutellum groove with 14 small costulae of same width; scutellum mainly nitid except for very few fine punctate sculpture present, lateral area with costulate sculpture becoming larger and wider posteriorly; axilla through mesonotum with few small transversal lineate sculpture next to lunulae as well as distal edge, otherwise nitid; metapleuron with distal 2/3 with confused rugulose sculpture, otherwise nitid; propodeum with confused rugulose sculpture at spiracular similarly inside areola, as well as around areola carina at posterior lateral areas, posterior lateral area medial areas nitid, transversal carina with rugulose sculpture on it; medial carina present and less cristate inside areola, costula present and cristate; mesopleuron with anterior 1/2 punctate, sternali present as an elongate nitid depression, dorsal, distal and anterior edges with fine confused dense scrobiculate sculpture as epistomal scrobe; metapleuron posterior 1/3 punctate, dorsal and distal edge with rugulose sculpture, medial pit present, otherwise nitid. *Legs*. Hind femur length = 0.90 mm; hind femur length/width = 3.27; hind tibia length/hind femur length = 1.19. Fore telotarsus modified with two very long and broad setae at middle of curved area, hind telotarsus with a set of terminal broad setae at external face of it, fore telotarsus smaller than basitarsus; tarsal claw with a basal long tooth. *Wings*. Fore wing length = 3.02 mm; 1RS length = 1.25 mm; 1CUa length/1CUb length = 1.38; length RS+Ma = 0.50 mm; length M+CU = 1.13 mm; 1M length/ m-cu length = 2.36; pterostigma length/height = 1.44. Hind wing: 1M length = 0.56 mm; 1M length/2M length = 2.25; 1M length/M+CU length = 1.41; length r-m/length Cua = 0.77; 1RSa length/2r-m = 1.63; 1A length = 0.30 mm. *Metasoma*. First tergum basal width = 0.28 mm; first tergum length/distal width = 1.05; second tergum length/distal width = 0.32; third tergum length/distal width = 0.45; hypopygium length = 0.65 mm. First tergum with basal 1/3 with few fine longitudinal sculpture towards lateral area, distal edge with few rugulose sculpture, remainder of tergum nitid as remainder of terga; hypopygium not divided at tip and with longitudinal folds present.

**Material examined.** Holotype, female, "Brasil, Sinop, Mato Grosso, 12°31'S/ 55°37'W, x/1974, M. Alvarenga." Holotype deposited at MCZH.

**Etymology.** Gender, masculine. This species is named after highly modified fore telotarsus; "aplebis" in Latin means not common in reference to the fore telotarsus morphology.

### ***Hypomicrogaster cernus* Valerio n. sp.**

(Figs. 3C, 11G, 13D, 16B)

*Female*. Body length = 2.83 mm. *Body color*: Legs yellow (except tarsal claws, arolium, hind femur distal tip, hind tibia distal 1/4, hind tarsomeres), mandibles (except distal tip), ovipositor, clypeus, tegula, mesonotum lateral upper edge, anterior tip of propleuron, hypopygium (except distal edge brownish yellow, extended arms white), metasomal sterna, metasomal pleura, ocelli, scape and pedicel (except externolateral areas brownish yellow); compound eyes silver; area in front and next to scutellar groove as well as area below fore wing attachment reddish brown; metasomal terga (except first and second) brownish yellow; remainder of body dark brown as ovipositor sheaths. Wings hyaline, fore wing veins light brownish yellows except pterostigma darker in color and 1-1a whitish yellow; hind wing veins whitish yellow.

*Head*. Head height/width = 1.23; compound eye height/width = 1.70; intertentorial pit distance = 0.21 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.83; width of face at dorsal clypeal edge = 0.38 mm; clypeus width/height = 2.38; vertex width/distance between anterior ocellus and edge of torulus = 2.25; length of first flagellomere = 0.24 mm; first flagellomere length/width = 1.05; length of first flagellomere/length of second flagellomere = 1.06; length of first flagellomere/length of third flagellomere = 1.06; distal flagellomere length = 0.10 mm; distal flagellomere length/penultimate flagellomere length = 1.14; distal flagellomere length/width =

1.33; malar space height/basal width of mandible = 0.88; ocell-ocular distance/lateral ocelli distance = 1.25. Clypeus with large and confuse shallow punctate sculpture; face with shallow and large punctate sculpture which becomes less dense and more shallow towards toruli, face keel present and not well cristate; frons with scrobal areas nitid, lateral areas with few punctulate sculpture and distal area nitid as anterior area of vertex; vertex posterior and distal area with dense punctate sculpture well-impressed as temple, remainder of gena with very shallow punctate sculpture except ocular ring nitid; postgena with longitudinal transversal lineate sculpture as junction area with gena. *Mesosoma*. Mesosoma length/width = 1.20; mesosoma length = 1.10 mm; mesosoma height = 0.70 mm. Propleuron with only scattered and smooth punctate sculpture which is denser at distal 1/4 than remainder of propleuron; pronotum lateral area with anterior 1/2 as well as ventral groove with large smooth and well-defined scrobiculate sculpture, upper groove with smaller but as well-defined scrobiculate sculpture as ventral groove but becoming progressively shorter towards distal edge, area between lateral grooves nitid, dorsal edge 1/6 and ventral edge 1/4 of distal edge height; mesonotum with dense punctate sculpture which became slightly less dense towards distal edge as well as less defined and more shallower; scutellar groove with 11 small and well-defined costulae; scutellum with scatter punctate sculpture throughout and denser at lateral areas, lateral areas with narrow costulate sculpture which become wider, elongate and higher towards distal edge; axilla trough mesonotum with short and broad ridges at anterior edge of lunulae, ridges just extend next to lunulae edge and not extending further, otherwise nitid; metanotum nitid; axilla through metanotum with confuse rugulose sculpture throughout; propodeum with areola well-defined but midlongitudinal carina very smooth and poorly defined as well as incomplete (seems like is absent at first sight), transversal carina present but looking rugulose throughout its length, costula cristate and well defined, first lateral areas with large punctate sculpture throughout its area, posterior lateral areas with few confuse rugulose sculpture at anterior edge but otherwise nitid, spiracular area with mainly nitid; mesopleuron with anterior 1/4 punctate, sternauli an elongate depression which exhibits confuse and smooth lacunose sculpture, dorsal edge with anterior area mainly nitid and remainder of edge with dense small and well-defined scrobiculate sculpture, epistomal scrobe with large smooth spaced transversal ridges that mix with a dense punctate sculpture, distal edge with one evident transversal ridge, remainder of mesopleuron nitid; metanotum with medial pit present, distal edge with few punctate sculpture as well as area next to dorsal edge, dorsal edge with well-defined and large scrobiculate sculpture, distal edge with confuse and scattered rugose sculpture, remainder of metapleuron nitid. *Legs*. Hind femur length = 0.82 mm; hind femur length/width = 3.30; hind tibia length/hind femur length = 1.19. Fore leg with telotarsus smaller than basitarsus, telotarsus normal and without hook-like seta present; tarsal claw with a short broad base basal tooth. *Wings*. Fore wing length = 3.05 mm; 1RS length = 0.12 mm; 1CUa length/1CUB length = 1.05; length RS+Ma = 0.43 mm; length M+CU = 1.10 mm; 1M length/ m-cu length = 2.00; pterostigma length/height = 1.55. Hind wing: 1M length = 0.50 mm; 1M length/2M length = 1.66; 1M length/M+CU length = 1.60; length r-m/length Cua = 1.44; 1RSa length/2r-m = 1.50; 1A length = 0.22 mm. *Metasoma*. First tergum basal width = 0.28 mm; first tergum length/distal width = 0.84; second tergum length/distal width = 0.27; third tergum length/distal width = 0.42; hypopygium length = 0.70 mm. First metasomal tergum basal 1/3 with medial area nitid and lateral areas with fine longitudinal lineate sculpture, and distal area with confuse colliculate sculpture mixed with confuse rugulose sculpture as medial 1/3, distal 1/3 with medio longitudinal area slightly depressed and with confuse rugulose sculpture as well as confuse colliculate sculpture on most of its length, remainder of distal 1/3 of tergum with large confuse impressed sculpture, distal edge with two depressed areas along its edge and with smooth and confuse rugulose sculpture on them; second metasomal tergum with very shallow punctate sculpture at distal area which is more evident towards lateral edges; remainder of metasomal terga nitid; ovipositor thin throughout its length and 2 times as long as hind tibia length; ovipositor sheaths with globose shape at distal 1/4 of it in lateral view.

**Material examined.** Holotype, female, "Colombia, Magdalena, PPN Santa Marta, La Estación, 10°48'N 73°39'W, 2220 m, Malaise, 31/vii–15/viii/2000, J. Cantillo Leg." Holotype deposited at IAHC.

**Comments.** This is the largest species of *Hypomicrogaster* with divided hypopygium forming two extended arms, in combination with an areola that exhibits a very short and weak smooth medial longitudinal carina.

**Etymology.** Gender, neutral. This species is named after the divided posterior edge of the hypopygium; "cernus" in Latin means separated.

***Hypomicrogaster crocinus* Valerio n. sp.**

(Figs. 12C, 12G)

*Female.* Body length = 3.02 mm. *Body color:* Mainly light yellow. Head dark brown as hind femur tip, hind tibia distal 1/3, hind leg tarsomeres; hind tarsal claws brownish yellow as arolium, distal 1/2 ovipositor sheaths, antenna (except scape and pedicel yellow except lateroexternal areas); compound eyes silver; ocelli light orange; palpi white; propodeal carinae with light brownish yellow as well as pronotal edges, metanotum around lunulae, scutellar groove, dorsal edge of mesopleuron and edges of metapleuron; metasomal terga 2 to 8 with more pale yellow coloration than first tergum; clypeus, labrum and ovipositor yellow. Wings hyaline, fore wing veins brownish yellow except base of C+SC+R, 1-1A; pterostigma darker in coloration; hind wings veins m+cu, 1-A, and Cu-a whitish yellow as C+SC+R, remainder of veins brownish yellow.

*Head.* Head height/width = 1.29; compound eye height/width = 1.66; intertentorial pit distance = 0.20 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.25; width of face at dorsal clypeal edge = 0.39 mm; clypeus width/height = 2.14; vertex width/distance between anterior ocellus and edge of torulus = 2.00; length of first flagellomere = 0.33 mm; first flagellomere length/width = 3.5; length of first flagellomere/length of second flagellomere = 1.27; length of first flagellomere/length third flagellomere = 1.31; distal flagellomere length = 0.16 mm; distal flagellomere length/penultimate flagellomere length = 1.18; distal flagellomere length/width = 1.66; malar space height/basal width of mandible = 0.86; ocell-ocular distance/lateral ocelli distance = 0.92. Face and clypeus punctate becoming larger in size towards upper area of face, medial face area nitid and triangular in shape; frons with distal and lateral areas with small fine punctate sculpture but not as dense and evident as face sculpture, scribal areas nitid; gena with anterior 1/2 with scattered punctate sculpture (except temple with dense, evident punctate sculpture), distal 1/2 with dense punctate sculpture mixed with longitudinal transversal lineate sculpture as well as junction postgena area at basal 2/3, remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.33; mesosoma length = 1.14 mm; mesosoma height = 0.8 mm. Propleuron with longitudinal lineate sculpture at basal 1/2, fine punctate sculpture present throughout; pronotum lateral area with middle section with few, large, spaced and narrow scrobiculate sculpture, upper lateral groove with small well-defined scrobiculate sculpture, ventral groove with few, well-defined and small scrobiculate sculpture, distal medial area with fine punctate sculpture, otherwise nitid; mesonotum with dense punctate sculpture which became larger in size and slightly less dense towards scutellar groove; scutellar groove with eight large costulae, medial ones larger than lateral ones, all with same width; scutellum with fine small punctate sculpture throughout it, lateral area with costulate sculpture from small and narrow basally to larger and wider distally; axilla through mesonotum with 4 short, broad and well-defined transversal ridges next to lunulae, otherwise nitid, metanotum anterior and distal 1/3 nitid, otherwise with rugulose sculpture; pronotum with anterior 1/2 with shallow large punctate sculpture, carinae well-cristate except for median longitudinal carina inside areola which is less evident, transversal carina with fine sinuate lineate sculpture on it, distal 1/2 with spaced and well-defined rugulose sculpture at distal and lateral edge but remainder of distal 1/2 nitid as well as areola inside; mesopleuron anterior 1/3 punctate as dorsal and ventral 1/2 of it, notauli as an elongate depression exhibiting confused colliculate sculpture on it, ventrodistal corner with few large punctate sculpture, dorsal and epistomal scrobe with clearly defined scrobiculate sculpture (mesepimeral groove with more spaced and larger sculpture), distal edge with few narrow scrobiculate sculpture; metapleuron dorso an distal edges with spaced and large scrobiculate sculpture, distal 1/3 with dense and well-defined punctate sculpture around edges and mixed with scrobiculate sculpture present there, medial pit present, otherwise nitid. *Legs.* Hind femur length = 0.89 mm; hind femur length/width = 3.35; hind tibia length/hind femur length = 0.88. Fore leg with telotarsus not as long as basitarsus, not very modified but a long seta present at external face of telotarsus; tarsal claw with thin basal tooth. *Wings.* Fore wing length = 2.98 mm; 1RS length = 0.11 mm; 1CUa length/1CUb length = 1.38; length RS+Ma = 0.45 mm; length M+CU = 1.00 mm; 1M length/ m-cu length = 1.85; pterostigma length/height = 1.60. Hind wing: 1M length = 0.45 mm; 1M length/2M length = 1.70; 1M length/M+CU length = 1.32; length r-m/length Cua = 0.79; 1RSa length/2r-m = 1.14; 1A length = 0.31 mm. *Metasoma.* First tergum basal width = 0.25 mm; first tergum length/distal width = 1.36; second tergum length/distal width = 3.40; third tergum length/distal width = 0.43; hypopygium length = 0.39 mm. First tergum with basal 1/3 with fine longitudinal lineate sculpture at lateral areas, remainder of 1/3 nitid, distal 1/3 with distal area with fine few small well-defined punctate sculpture, remainder of tergum nitid; second tergum nitid as remainder of terga; hypopygium folded medially, without longitudinal folds; ovipositor short, broad as long as 0.94x length of hind tibia; ovipositor sheaths globose in lateral view with setae scattered throughout but not densely setose.

**Material examined.** Holotype, female, "Brasil, Carvaru, Pernambuco, iv/1972, M. Alvarenga." Holotype deposited at CNCI.

**Etymology.** Gender, neutral. This species is named after the yellow coloration of the body; "crocinus" in Latin means yellow in coloration.

***Hypomicrogaster daktulios* Valerio n. sp.**

(Fig. 12H)

*Female.* Body length = 3.29 mm. *Body color:* Mainly dark brown. Antenna dark brown (except scape) as head (except toruli edges yellow), hind coxae (except distal 1/5) metanotum (except lateral areas), propodeum, scutellar groove, lateral areas of scutellum (except distal edge), metasomal terga 4–8 as well as anterior edge second terga, irregular spot at anterior 1/3 third tergum, first tergum basal 1/3 and lateral areas of remainder of tergum, ovipositor sheaths, tip hind femur, hind tibia distal 1/2, hind tarsomeres, mesopleuron (except large and irregular yellow spots on it); telotarsus middle leg, ocellar area; palpi white as well as fore and middle coxae, hind tibial spurs; ovipositor yellow as ocelli; remainder of body yellow. Wings hyaline, fore wing veins brownish except base 1-1A as M+CU basal 1/5, pterostigma dark brown; hind wing with veins M+CU, C+SC+R, 1A whitish, remainder of veins brown yellow.

*Head.* Head height/width = 1.30; compound eye height/width = 1.80; intertentorial pit distance = 0.25 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.20; width of face at dorsal clypeal edge = 0.47 mm; clypeus width/height = 2.00; vertex width/distance between anterior ocellus and edge of torulus = 2.50; length of first flagellomere = 0.28 mm; first flagellomere length/width = 2.11; length of first flagellomere/length of second flagellomere = 1.02; length of first flagellomere/length of third flagellomere = 1.13; distal flagellomere length = 0.16 mm; distal flagellomere length/penultimate flagellomere length = 1.43; distal flagellomere length/width = 2.00; malar space height/basal width of mandible = 1.00; ocell-ocular distance/lateral ocelli distance = 1.20. Face and clypeus with shallow and large punctate sculpture throughout, face medial upper keel not well-defined or cristate; frons punctate at lateral areas, distal area with few punctate sculpture, scrobal area with few transversal fine lineate sculpture though its length; vertex densely punctate, distal 1/2 with punctate sculpture less evident and smaller than distal 1/2; gena with anterior 1/2 with punctate sculpture that is less evident and less deeper than posterior 1/2 as well as temple, junction with postgena with longitudinal transversal lineate sculpture at basal 2/3 of postgena and becoming less evident towards cervix, remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.15; mesosoma length = 1.42 mm; mesosoma height = 1.08 mm. Propleuron with punctate sculpture throughout, no longitudinal lineate or rugulose sculpture present; pronotum lateral area with lateroventral groove with few large spaced and shallow scrobiculate sculpture, upper lateral groove with well-defined evident scrobiculate sculpture which becomes less defined towards distal area of pronotum, anterior 1/3 with medium size well-defined scrobiculate sculpture, distal edge upper 1/3 with confused rugulose sculpture. otherwise nitid; mesonotum with dense punctate sculpture throughout, not reaching scutellar groove; scutellar groove with 16 well-defined small costulae, approximately of same width; scutellum with few fine punctate sculpture throughout, lateral area with costulate sculpture which became elongate and larger towards distal area; axilla through mesonotum medial area next to lunulae with a transversal short and broad lineate sculpture, otherwise nitid; metanotum with anterior 1/3 nitid, remainder of metanotum with confused sculpture with distal edge nitid; propodeum anterior 1/2 sparsely punctate with anterior edge nitid, midlongitudinal carina with anterior 1/3 short and broad, transversal carinae with confused rugulose sculpture on it as well as around external area of areolar carinae, areola with midlongitudinal carinae well-defined and cristate, remainder of area inside areola nitid, posterior lateral areas with confused rugulose sculpture throughout but becoming less evident towards medial area; mesopleuron anterior 1/3 punctate as well as ventral anterior 1/2, sternauli as an elongate depression with very few transversal fine and small ridges, distal 1/3 at distal 1/2 with few punctate sculpture, dorsal edge with large spaced to a dense small and well-defined scrobiculate sculpture towards distal edge, epistomal scrobe with spaced well-defined scrobiculate sculpture; metapleuron distal 1/4 with dense small defined punctate, dorsal edge with large spaced scrobiculate sculpture as well as distal edge but sculpture mixed with confused rugulose sculpture, medial pit present, otherwise nitid. *Legs.* Hind femur length = 1.13 mm; hind femur length/width = 3.29; hind tibia length/hind femur length = 0.85. Fore telotarsus smaller in length than basitarsus, normal in shape; hind tarsal claw with

basal long seta and a series of thin setae between tip and basal seta. *Wings*. Fore wing length = 3.81 mm; 1RS length = 0.13 mm; 1CUa length/1CUB length = 1.22; length RS+Ma = 0.64 mm; length M+CU = 0.70 mm; 1M length/ m-cu length = 1.88; pterostigma length/height = 1.78. Hind wing: 1M length = 0.58 mm; 1M length/2M length = 2.00; 1M length/M+CU length = 1.09; length r-m/length Cua = 0.75; 1RSa length/2r-m = 1.42; 1A length = 0.40 mm. *Metasoma*. First tergum basal width = 0.36 mm; first tergum length/distal width = 1.09; second tergum length/distal width = 0.31; third tergum length/distal width = 0.35; hypopygium length = 1.06 mm. First tergum with basal 1/4 with fine longitudinal lineate sculpture at lateral areas, medial area with few transversal lineate sculpture, distal 1/2 with shallow punctate sculpture becoming more large towards distal edge of tergum; second tergum nitid as remainder of terga; hypopygium with longitudinal folds present, distal tip divide as two short arms like extensions, ovipositor elongate and thin throughout its length and as long as 1.71x length of hind tibia; ovipositor sheaths sparsely setose.

**Material examined.** Holotype, female, "Costa Rica, Guanacaste, Arenal, West side Volcán Cacao, 900 m, 1988–1989". Holotype deposited at RMSL 1989.

**Etymology.** Gender masculine. This species is named after the colored rings of the toruli; "daktulios" in Greek means rings.

### *Hypomicrogaster deltis* Valerio n. sp.

(Figs. 2C, 2D, 10C, 22C)

*Female*. Body length = 3.00–3.20 mm. *Body color*: Palpi white as fore and middle coxae, hind coxa distal 1/2, most of latero and ventral area of metasoma; Labrum yellow as legs (except hind femur distal tip, hind tibiae distal 1/2, and tarsomeres brownish yellow), pronotum with middle of lateroventral edge, ocelli, tips of propleuron, scape and pedicel (except lateroexternal area brownish yellow), metasomal terga 2<sup>nd</sup> and 3<sup>rd</sup>, hypopygium and ovipositor sheaths; antenna with light brownish yellow color as pronotum laterodorsal edge, fore wing subalar area, clypeus; lunulae reddish brown as area in front of scutellar groove; compound eyes silver;; ovipositor basal 1/2 brown, otherwise yellow; remainder of body dark brown. Wings slightly infumate, fore wing with veins 1-1A as M+CU basal 2/3 brownish yellow remainder of veins brown; hind wing vein SC+R+R1 brown, remainder of veins brownish yellow.

*Head*. Head height/width = 1.25–1.30; compound eye height/width = 0.57–0.66; intertentorial pit distance = 0.20–0.22 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.57–2.67; width of face at dorsal clypeal edge = mm; clypeus width/height = 2.10–2.30; vertex width/distance between anterior ocellus and edge of torulus = 2.66–3.08; length of first flagellomere = 0.28–0.32 mm; first flagellomere length/width = 2.75–3.12; length of first flagellomere/length of second flagellomere = 1.04–1.10; length of first flagellomere/length of third flagellomere = 1.09–1.10; distal flagellomere length = 0.41–0.46 mm; distal flagellomere length/penultimate flagellomere length = 1.16–1.30; distal flagellomere length/width = 2.60–2.80; malar space height/basal width of mandible = 1.00; ocell-ocular distance/lateral ocelli distance = 0.75–0.90. Face upper keel present and cristate; clypeus with confuse punctate sculpture present, remainder of face with more clearly defined punctate sculpture; frons with distal 1/3 of scrobal areas with fine transversal lineate sculpture, remainder of scrobal areas nitid, distal and lateral areas of frons with scattered fine punctate sculpture as much of vertex; vertex lateral areas with dense and conspicuously present punctate sculpture as gena (except ocular ring nitid); postgena with transversal longitudinal ridges at basal 2/3 of it as well as junction area with gena, otherwise nitid. *Mesosoma*. Mesosoma length/width = 1.28–1.30; mesosoma length = 1.15–1.25 mm; mesosoma height = 0.83–0.95 mm. Propleuron with confuse rugose sculpture along 2/3 of its length, punctate sculpture present throughout; pronotum lateral area with upper groove with few short transversal ridges, ventral groove with distal 1/2 with larger and less defined scrobiculate sculpture than anterior 1/2 and propleuron anterior 1/2; ventral and dorsal edge approximately 1/6 of distal edge height; mesonotum with anterior 1/2 with dense, small and well-defined punctate sculpture, distal 1/2 with punctate sculpture larger, less dense and defined than anterior 1/2; scutellar groove with 10 costulae, medial ones more defined and larger than lateral ones; axilla through mesonotum with transversal ridges which became less defined towards external edge, the ridges goes throughout the axilla width; scutellum punctate with lateral areas with transversal costulate sculpture which becomes more wider and elongate distally; metanotum with anterior 1/3 nitid as distal edge, otherwise with transversal ridges mixed with smooth confuse rugulose sculpture;

propodeum with anterior 1/2 nitid with the exception of few spaced rugulose sculpture next to transversal and costula, posterior lateral areas with rugulose sculpture throughout but becoming less evident and almost absent towards medial area, areola well-defined and without midlongitudinal carinae inside areola but few confuse and smooth rugulose sculpture present, spiracular areas with few confuse colliculate sculpture present; mesopleuron with anterior 1/3 punctate as well as distal corner of ventral half, sternauli as a short, deep and transversal depression that exhibits some fine longitudinal lineate sculpture, epistomal scrobe with dense punctate sculpture, dorsal edge with dense and well-defined scrobiculate sculpture, distal edge punctate; metapleuron medial pit present, punctate sculpture present next to dorsal and distal edge (large and dense sometimes), dorsal edge with spaced and large transversal ridges, distal edge with smaller and denser transversal ridges than dorsal edge, otherwise nitid. *Legs*. Hind femur length = 0.95–1.05 mm; hind femur length/width = 3.45–3.50; hind tibia length/hind femur length = 1.14–1.18. Fore telotarsus modified and with a large and evident curve seta at mid length of telotarsus. Fore leg telotarsus smaller in length than fore basitarsus. *Wings*. Fore wing length = 3.3–3.58 mm; 1RS length = 0.10–0.12 mm; 1CUa length/1CUB length = 1.20–1.27; length RS+Ma = 0.50–0.55 mm; length M+CU = 1.22–1.23 mm; 1M length/m-cu length = 1.78–2.00; pterostigma length/height = 1.74–1.76. Hind wing: 1M length = 0.50–0.58 mm; 1M length/2M length = 1.92–2.00; 1M length/M+CU length = 1.42–1.53; length r-m/length Cua = 0.80; 1RSa length/2r-m = 1.20–1.25; 1A length = 0.35–0.40 mm. *Metasoma*. First tergum basal width = 0.26–0.28 mm; first tergum length/distal width = 2.67–3.08; second tergum length/distal width = 0.54–0.58; third tergum length/distal width = 0.52–0.56; hypopygium length = 0.25 mm. First metasomal tergum narrower at distal edge than basal edge, distal 1/2 with shallow and large punctate sculpture mixed with very few confuse and smooth rugulose sculpture, basal 1/2 with longitudinal lineate sculpture mixed with confuse rugose sculpture at lateral areas and medial depression conspicuously present; second metasomal tergum triangular in shape and nitid; remainder of terga subrectangular in shape and nitid; hypopygium with longitudinal folds present; ovipositor curved in lateral view with distal 0.2 slightly curved dorsally, ovipositor broad and 1/2 the length of hind tibia length; ovipositor sheaths with setae spread throughout its length.

**Material examined.** Holotype, female, “Brasil, Est. Rió de Janeiro, Silva Jardim, vii/1974, F.M. Oliveira.” Paratypes, two females: Brasil, Vilhena, Rondonia, 21°40’ S / 60°08’ W, xi/1973, Col. M. Alvarenga; Brasil, Mato Grosso, Sinop, x/1974, Col. M. Alvarenga, Malaise trap. Holotype and paratypes deposited at CNCI.

**Comments.** This is the only species which presents a triangular shaped second metasomal tergum and modified fore telotarsus in combination with the absence of the midlongitudinal carina inside the areolar area. One of the specimens exhibit a transversal semicircular carinae at middle length of first metasomal tergum and with distal 1/3 completely covered by punctate sculpture. Also in one of the specimens the midlongitudinal carina appears to be present but is very inconspicuously and weak; rugose sculpture at posterior lateral areas throughout its length and sometimes present at anterior 1/2.

**Etymology.** Gender, masculine. This species is named after the triangular shaped second metasomal tergum; “deltis” in Latin means “of triangular shape”.

### ***Hypomicrogaster duo* Valerio n. sp.**

(Figs. 12F, 12I)

*Female*. Body length = 2.72 mm. *Body color*: Ovipositor yellow as legs (except tarsal claws and basal area of hind coxae), ocelli, labrum, mandibles, tegula, anterior 2/3 of metasomal pleura; compound eyes silver; palpi whitish yellow as hind tibial spurs; scape and pedicel light brownish yellow as tarsal claws, hypopygium; remainder of body dark brownish yellow. Wings hyaline, fore wings with veins yellowish brown except basal 2/3 of M+CU, most of 1-1A and basal 1/4 of C+SC+R; hind wing veins yellowish.

*Head*. Head height/width = 1.31; compound eye height/width = 1.60; intertentorial pit distance = 0.15 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.40; width of face at dorsal clypeal edge = 0.31 mm; clypeus width/height = 2.14; vertex width/distance between anterior ocellus and edge of torulus = 2.58; length of first flagellomere = 0.24 mm; first flagellomere length/width = 2.71; length of first flagellomere/length of second flagellomere = 1.00; length of first flagellomere/length of third flagellomere = 1.19; distal flagellomere = ?; malar space height/basal width of mandible = 0.88; ocell-ocular distance/lateral ocelli distance = 1.13.

Clypeus and face with dense and confused punctate sculpture, face with more shallow and less defined

sculpture at upper 1/2 of it; frons with scrobal areas with few transversal and fine lineate sculpture at basal area of it, remainder of scrobal area nitid, lateral areas with fine and inconspicuously present punctulate sculpture present as well as on vertex and gena postgena junction area with gena; gena with ocular ring nitid; postgena with junction are with gena without transversal lineate ridges, otherwise nitid. *Mesosoma*. Mesosoma length/width = 0.94; mesosoma length = 1.24 mm; mesosoma height = 0.84 mm. Propleuron with anterior 1/3 essentially nitid except for few scattered fine punctate sculpture, remainder of propleuron with dense fine and well-defined punctate sculpture; pronotum lateral areas with anterior 1/2 with smooth and shallow scrobiculate sculpture, ventrolateral groove with a more compact scrobiculate sculpture than the one present at anterior 1/2 of pronotum, dorsolateral groove with few inconspicuous transversal ridges at anterior 1/2 but posterior 1/2 without them and with dense and small punctate sculpture, posterior edge with upper 1/2 with fine punctate sculpture, area between grooves with few smooth and shallow irregular depressions, upper edge 1/5 and ventral edge 0.4 of posterior edge height; mesonotum with anterior 1/2 with dense, small and slightly confuse punctate sculpture which becomes more spaced, larger, shallower and more defined towards scutellar groove, almost reaching it. Scutellar groove with nine well-defined costulae of approximately same width, medial ones 3x as large as lateral ones; scutellum with few scattered fine punctate sculpture throughout its length, lateral area with dense costulate sculpture which becomes more elongate and wider towards posterior area; axilla through metasoma with five well-defined ridges across its width originating from anterior lunulae edge, otherwise nitid; metanotum with very small, subtriangular in shape and nitid, medial area with two large costulae divided by a small and thin bridge; axilla through metanotum essentially nitid except for two thin and transversal ridges across its width; propodeum with anterior 1/2 of midlongitudinal carina as well as transversal carina and costula covered on confuse and dense rugulose sculpture which extends to the areola inside as well as anterior lateral areas and spiracular areas, posterior lateral areas with dense and large confuse rugose sculpture at anterior 2/3 of it, remainder of it mainly nitid except for few transversal and confuse ridges across this area; mesopleuron with anterior edge punctate, sternauli as an elongate depression, epistomal scrobe with well-defined and dense scrobiculate sculpture as dorsal edge, remainder of area ?; metapleuron with medial pit present as well as pleural suture, dorsal edge as well as posterior edge with large, dense and thin transversal ridges (posterior edge with fewer than dorsal edge), area around dorsal and posterior edge with confuse dense and large punctate sculpture, otherwise nitid. *Legs*. Hind femur length = 0.68 mm; hind femur length/width = 3.00; hind tibia length/hind femur length = 1.22. Fore telotarsus normal in shape and with two broad setae at externolateral areas of it, the upper one smaller in length than the most ventral; tarsal claws pectinate with two basal teeth. *Wings*. Fore wing length = 3.20 mm; 1RS length = 0.10 mm; 1CUa length/1CUb length = 0.94; length RS+Ma = 0.38 mm; length M+CU = 0.90 mm; 1M length/ m-cu length = 1.86; pterostigma length/height = 1.38. Hind wing: 1M length = 0.45 mm; 1M length/2M length = 1.80; 1M length/M+CU length = 2; length r-m/length Cua = 0.92; 1RSa length/2r-m = 1.75; 1A length = 0.20 mm. *Metasoma*. First tergum basal width = 0.25 mm; first tergum length/distal width = 0.93; second tergum length/distal width = 0.21; third tergum length/distal width = 0.31; hypopygium length = 0.60 mm. First metasomal tergum covered in dense, small and confuse colliculate sculpture throughout its length, tergum basal 1/2 with few lineate sculpture at lateral areas, distal 1/2 with mid area slightly depressed, tergum distal 1/4 with few longitudinal lineate sculpture not well-defined, second metasomal tergum very narrowing in dorsal view and with few shallow, large and poorly defined punctate sculpture at lateral areas; remainder of terga nitid; hypopygium clearly expanded at tip but not divided medially, longitudinal folds present; ovipositor sheaths elongate, thin in lateral view and densely covered by long setae throughout its exposed length; ovipositor 2.06x as long as hind tibia length, thin and even in lateral view.

**Material examined.** Holotype, female, "Honduras, El Zamorano, ix/1953, (Col.) NLH Krauss, # 4402." Holotype deposited at USNM.

**Comments.** Mesopleuron not observable by the position of the hind leg, which is in front of it. This is the only other species of *Hypomicrogaster* with a pectinate claw; *H. pectinatus* can be clearly distinguished from *H. largus* by the black and orange colorations as well by the infumate wings present in the former mentioned species.

**Rearing records.** According to the specimen label, the specimen was reared from a lepidopteran leaf-miner feeding on *Lantana camara* L. (Verbenaceae).

**Etymology.** Gender, neutral. This species is named after the two conspicuous teeth on the hind tarsal claws; "duo" in Latin means two.

***Hypomicrogaster epipagis* Valerio n. sp.**

(Fig. 2A)

*Female.* Body length = 4.48 mm. *Body color:* Mainly slight yellowish orange; antenna (except most of external lateral area of scape) black as edges of first metasomal tergum at basal 1/2, femur distal tip, medio longitudinal area of hypopygium, ovipositor sheaths, ocellar area, pronotum, metanotum, lunulae, dorsal edge of mesopleuron, frontal area of pronotum plus ventrolateral area, arolium, hind tibia distal 1/4; hind tarsomeres dark honey yellow as well as tarsal claws; compound eyes silver; ocelli brownish yellow, ovipositor yellow remainder of body yellowish orange. Wings infumate, veins brown except pterostigma with posterior 1/2 darker.

*Head.* Head height/width = 1.32; compound eye height/width = 1.75; intertentorial pit distance = 0.28 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.00; width of face at dorsal clypeal edge = 0.53 mm; clypeus width/height = 2.56; vertex width/distance between anterior ocellus and edge of torulus = 2.44; length of first flagellomere = 0.33 mm; first flagellomere length/width = 2.62; length of first flagellomere/length of second flagellomere = 1.05; length of first flagellomere/length of third flagellomere = 1.00; distal flagellomere length = 0.19 mm; distal flagellomere length/penultimate flagellomere length = 1.33; distal flagellomere length/width = 2.4; malar space height/basal width of mandible = 0.66; ocell-ocular distance/lateral ocelli distance = 1.00. Face and clypeus with very fine, sharp punctate sculpture as lateral areas of frons (remainder of frons nitid) and vertex; gena with anterior 1/2 with dense, small and fine punctate sculpture, distal 1/2 with punctate sculpture larger and deeper specially at upper 1/3 of it; post gena with conspicuous punctate sculpture at basal 2/3 of it, otherwise nitid. *Mesosoma.* Mesosoma length/width = 1.44; mesosoma length = 1.82 mm; mesosoma height = 0.98 mm. Propleuron with small sharp punctate sculpture throughout; pronotum with upper lateral groove with few small scrobiculate sculpture, ventral groove nitid, upper distal corner punctate, otherwise nitid; mesonotum densely punctuated, which became less dense towards scutellar groove, not reaching it; scutellar groove with nine large, well-defined costulae; scutellum with small, spaced punctate sculpture throughout, lateral areas with costulate sculpture which is larger towards distal area; axilla through mesonotum with a series confused transversal ridges near lunulae, otherwise nitid; metanotum with anterior 1/4 nitid, remainder of metanotum with confused rugulose sculpture except distal edge nitid; propodeum anterior 1/2 with dense and well-defined punctate sculpture throughout, posterior 1/2 (including areola) with rugulose sculpture, all carinae present and well cristate, specially the areolar ones which appears to be in an upper level than remainder ones; mesopleuron with anterior 1/2 with fine, small punctate sculpture as well as most of upper area of it, sternauli present as a long shallow nitid depression, ventrodiscal area with confused punctate sculpture, dorsal and distal edge (less evident and spaced here) with dense small scrobiculate sculpture, epistomal scrobe with dense, confused, shallow and small scrobiculate sculpture over it; metapleuron more than 3/4 covered by confused rugulose sculpture, upper 1/3 nitid with medial pit present (inside the pit confused small rugulose sculpture present), dorsal edge with large spaced scrobiculate sculpture present, distal edge more clean. *Legs.* Hind femur length = 1.06 mm; hind femur length/width = 2.72; hind tibia length/hind femur length = 3.88. Telotarsus normal, not modified or with long hook-like setae at the interiorlateral area of it; telotarsus smaller in length than basitarsus; tarsal claw simple, without basal tooth on it, but a series of setae present on it. *Wings.* Fore wing length = 4.77 mm; 1RS length = 0.14 mm; 1CUa length/1CUB length = 0.83; length RS+Ma = 0.63 mm; length M+CU = 0.88 mm; 1M length/ m-cu length = 1.67; pterostigma length/height = 0.52. Hind wing: 1M length = 0.80 mm; 1M length/2M length = 2.22; 1M length/M+CU length = 1.38; length r-m/length Cua = 0.91; 1RSa length/2r-m = 1.33; 1A length = 0.47 mm. *Metasoma.* First tergum basal width = 0.41 mm; first tergum length/distal width = 1.12; second tergum length/distal width = 0.92; third tergum length/distal width = 0.36; hypopygium length = 1.1 mm. First tergum with basal 1/5 with fine lineate sculpture present at lateral areas, remainder of first tergum nitid as remainder of terga; hypopygium with longitudinal folds, not divided at tip; ovipositor thin, elongate, as long as 1.4x length of hind tibia.

*Male.* Coloration completely yellow, but metasomal terga 5 to 7 with medio distal area dark brown; exposed genitalia dark in coloration; midlongitudinal propodeal carina reduced, weak, posterior lateral areas of propodeum with less rugulose sculpture; scutellar groove with 8 costulae; remainder of male morphology similar to female description.

**Material examined.** Holotype, female, "Uruguay, San Miguel, 29/iv/62." Paratype: one male, Bolivia, El Beni, El Porvenir Stn., NE of San Boria, 8/viii/1988. Holotype and paratype deposited at USNM.

**Comments.** No collector is mentioned in holotype labels. Male specimen with antennae broken.

**Rearing records.** Holotype specimen reared from *Epipagis albiquettalis* (Pyraloidea: Crambidae) according with attached label.

**Etymology.** This species is named after the genus of the only known host record for the species *Epipagis*.

***Hypomicrogaster espera* Valerio n. sp.**

(Figs. 1A, 3D, 4C, 5C, 6A, 22F)

*Female.* Body length = 4.36 mm. *Body color:* Tricolor. Clypeus honey yellow as labrum, fore and middle leg tarsal claws; ocelli yellow; compound eyes silver; propleuron yellow as mesonotum, mesopleuron (except distal edge), middle leg distal 2/3, front leg and palpi; head, antenna, remainder of middle leg, scutellum, metanotum and propodeum black as hind leg (except basal 3/4 coxae, femur medial 1/3 white), metasomal terga, ovipositor sheaths, most of hypopygium and metasomal tergum 8 lateral areas; remainder of metasomal whitish; hind leg tarsal claws dark brown. Wings infumate, wing veins brown except base of fore wing C+SC+R whitish.

*Head.* Head height/width = 1.28; compound eye height/width = 1.65; intertentorial pit distance = 0.30 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.16; width of face at dorsal clypeal edge = 0.55 mm; clypeus width/height = 2.25; vertex width/distance between anterior ocellus and edge of torulus = 2.10; length of first flagellomere = 0.34 mm; length of first flagellomere/length of second flagellomere = 0.92; length of first flagellomere/length of third flagellomere = 1.00; distal flagellomere length = ?; distal flagellomere length/penultimate flagellomere length = ?; distal flagellomere length/width = ?; malar space height/basal width of mandible = 0.90; ocell-ocular distance/lateral ocelli distance = 1.12. Face and clypeus with fine, shallow punctate sculpture; frons essentially nitid except lateral upper areas with few small punctate sculpture; vertex with ocell-ocular area nitid, posterior 1/2 with dense fine punctate sculpture; gena with scattered punctate sculpture, basal 2/3 and temple with denser and more defined punctate sculpture; postgena densely punctate at area close to gena mixed with longitudinal transversal lineate sculpture (except on temple), remainder of postgena nitid.

*Mesosoma.* Mesosoma length/width = 1.22; mesosoma length = 0.34 mm; mesosoma height = 1.14 mm. Propleuron with longitudinal lineate sculpture at basal 1/4, remainder of propleuron with punctate sculpture; pronotum with anterior 1/3 with few smooth spaced confused scrobiculate sculpture, upper groove mostly nitid except distal area with few confused small scrobiculate sculpture, ventral one with few shallow irregular spots; mesonotum densely punctate which became less dense towards the scutellar groove, not reaching it; scutellar groove with 16 small well defines costulae of same width, lateral ones smaller; scutellum with very few fine punctate sculpture, lateral area with costulate sculpture very narrow anteriorly becoming more elongate and large; axilla through mesonotum with set of short transversal ridges at lateral area, otherwise nitid; metanotum with basal 1/3 nitid, otherwise with confused, spaced rugulose sculpture; propodeum with anterior 1/2 with punctate sculpture, posterior half nitid except for distal edge with confused broad lineate sculpture, transversal carina highly reduce as a small transversal lateral projection of the midlongitudinal carina at middle length, areola present as an inverse triangle at distal part of midlongitudinal carina; mesopleuron with anterior 1/3 punctate, sternauli as a shallow depression with few confused rugose sculpture, upper distal corner with punctate sculpture; metanotum dorsal edge with spaced, large scrobiculate sculpture, distal edge with denser and smaller scrobiculate sculpture, medial pit present as well as ventral 1/4 of metapleuron, otherwise nitid. *Legs.* Hind femur length = 1.30 mm; hind femur length/width = 2.93; hind tibia length/hind femur length = 1.17. Fore leg basitarsus smaller than telotarsus, telotarsus normal with a broad curve seta at interior face of it, tarsal claw with a long thin setae present at mid-basal area. *Wings.* Fore wing length = 5.16 mm; 1RS length = 0.14 mm; 1CUa length/1CUB length = 0.96; length RS+Ma = 0.64 mm; length M+CU = 1.66 mm; 1M length/ m-cu length = 2.29; pterostigma length/height = 2.00. Hind wing: 1M length = 5.80 mm; 1M length/2M length = 4; 1M length/M+CU length = 1.66; length r-m/length Cua = 0.95; 1RSa length/2r-m = 1.33; 1A length = 0.47 mm. *Metasoma.* First tergum basal width = 0.39 mm; first tergum length/distal width = 2.14; second tergum length/distal width = 0.30; third tergum length/distal width = 0.45; hypopygium length = 1.1 mm. First tergum with basal 1/3 with fine longitudinal sculpture at lateral areas, medial terga area with shallow irregular rugose sculpture, distal 1/4 with shallow punctate sculpture, otherwise nitid as remainder of terga; hypopygium with folds, not divided at tip; ovipositor thin, elongate as large as 1.52 times as long as hind tibial length.

**Material examined.** Holotype, female, "Costa Rica, San José, Zurqui de Moravia, 1600 m, v/1992, Col. P. Hanson." Holotype deposited at RMSEL.

**Comments.** The described pattern of coloration is diagnostic for this species; this is the only species with infumate wings that has the described pattern of coloration.

**Etymology.** Gender, feminine. This species is named after the long time that it took to be identified as a *Hypomicrogaster* species; “espera” in Latin means waiting.

***Hypomicrogaster evrys* Valerio n. sp.**

(Figs. 16A, 23G)

*Female.* Body length = 3.05 mm. *Body color:* Pterostigma yellow as mandibles (except tips), palpi, propleuron anterior edge as posterolateral flange, legs (except tarsal claws, hind tarsomeres, hind coxae anterior 2/3, hind femur distal tip, hind tibia distal 1/2), metasoma anterior 1/2 and hypopygium as patchy areas, internal face of scape and pedicel; clypeus brownish yellow; compound eyes silver; ocelli light yellow; fore and mid coxae whitish yellow; remainder of body dark brown. Wings hyaline; fore wing veins light brown except anterior area of 1-1A, M+CU, C+SC+R whitish.

*Head.* Head height/width = 1.25; compound eye height/width = 3.05; intertentorial pit distance = 0.25 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.30; width of face at dorsal clypeal edge = 0.42 mm; clypeus width/height = 2.50; vertex width/distance between anterior ocellus and edge of torulus = 3.00; length of first flagellomere = 0.22 mm; first flagellomere length/width = 2.25; length of first flagellomere/length of second flagellomere = 0.95; length of first flagellomere/length of third flagellomere = 1.06; distal flagellomere length = 0.13 mm; distal flagellomere length/penultimate flagellomere length = 1.25; distal flagellomere length/width = 2.20; malar space height/basal width of mandible = 0.82; ocell-ocular distance/lateral ocelli distance = 1.00. Clypeus and face with confuse foveate-rugulose sculpture, face upper keel present and well-defined; frons with scrobal areas nitid, lateral and distal areas as well as vertex with well-defined and large punctate sculpture; temple with larger punctate sculpture than the on present on vertex; gena at junction area with postgena with longitudinal transversal lineate sculpture, remainder of gena with less defined and shallow elongate foveate sculpture; remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.04; mesosoma length = 1.20 mm; mesosoma height = 0.80 mm. Propleuron with anterior edge with longitudinal lineate sculpture mixed with colliculate like sculpture, otherwise with punctate sculpture which becomes shallower and denser towards anterior 1/3 of it; pronotum lateral anterior 1/3 with few confuse punctate sculpture at base and distal half of it nitid, lateral ventral groove with fine and smooth transversal ridges which are less dense towards posterior 1/4, upper groove with dense, small and confuse punctate sculpture, distal upper 1/2 of posterior edge with dense punctate sculpture, area between grooves mostly nitid except for anterior ventral half of it with confuse transversal ridges, dorsal edge 0.15 and ventral edge 1/4 of posterior edge height; mesonotum with anterior half with dense and small well-defined punctate sculpture, posterior 1/2 with gradually less dense and larger in size towards scutellar groove without reaching it; scutellar groove with well-defined 11 costulae, lateral ones 3x smaller than middle one; scutellum with punctulate sculpture throughout its length and denser at posterior edge, lateral areas with costulate sculpture which becomes more elongate and wider towards posterior area; axilla throughout mesonotum with few confuse cicatrose sculpture at anterior edge of lunulae, lunulae with edge not sharply defined by sculpture, remainder of axilla nitid; metanotum with sub rectangular shape and nitid, medio posterior costulae separated by a broad short ridge; axilla through metanotum with confuse rugulose sculpture; propodeum with anterior lateral areas with large punctate sculpture and few rugulose sculpture next to areola and midlongitudinal carinae as well as transversal carinae, rugulose sculpture inside areola as well as posterior lateral areas, midlongitudinal carinae inside areola less cristate and visible, costula present and spiracular area with confuse rugulose sculpture; mesopleuron with sternaulus as an elongate and nitid transversal depression, anterior edge punctate as area around mesepimeral groove, mesepimeral groove with broad and smooth short ridges which are less evident by punctate sculpture; dorsal edge with well-defined scrobiculate sculpture, distal edge nitid as remainder of mesopleuron; metapleuron medial pit present as well as pleural suture, pleural suture with fine and smooth transversal ridges, area next to posterior edge with dense punctate sculpture, dorsal and posterior edge with dense and large transversal ridges, posterior edge with confuse rugulose sculpture too. *Legs.* Hind femur length = 0.90 mm; hind femur length/width = 3.00; hind tibia length/hind femur length = 1.18. Fore leg telotarsus normal in shape, without a hook-like setae, tarsal claws with a short broad tooth at basal area. *Wings.* Fore wing length = 3.32 mm; 1RS length = 0.14 mm; 1CUa length/1CUb length = 1.22;

length RS+Ma = 0.53 mm; length M+CU = 1.78 mm; 1M length/ m-cu length = 2.18; pterostigma length/height = 1.30. Hind wing: 1M length = 0.46 mm; 1M length/2M length = 1.48; 1M length/M+CU length = 1.37; length r-m/length Cua = 0.80; 1RSa length/2r-m = 1.30; 1A length = 0.32 mm. *Metasoma*. First tergum basal width = 0.28 mm; first tergum length/distal width = 1.22; second tergum length/distal width = 0.32; third tergum length/distal width = 0.47; hypopygium length = 0.61 mm. First metasomal tergum with distal 1/3 with few large and shallow punctate sculpture, remainder of tergum nitid except lateral areas next to posterior edge with fine lineate sculpture, tergum with medio longitudinal area of posterior 1/2 with confuse colliculate sculpture; remainder of terga nitid; ovipositor sheaths very broad at base and globose in shape in lateral view as well as broad (3.3 x as broad as ovipositor broadness in lateral view), setae long and scattered present throughout its length; ovipositor elongate, thin and about 1.06 x as long as hind tibia length; hypopygium divided at tip but not elongate extensions present.

**Material examined.** Holotype, female, "Costa Rica, Prov.[incia] Limón, Pococi, PN Braulio Carrillo, Est. Quebrada González, 400–500 m, 23/iv/002, Col. P. Hanson and C. Godoy, Malaise #67600." Holotype deposited at INBio.

**Comments.** The shape of the ovipositor sheaths characterizes this species.

**Etymology.** Gender, masculine. This species is named after the broad basal area of the ovipositor sheaths; "evrys" in Latin mean broad.

### ***Hypomicrogaster sicpollex* Valerio n. sp.**

(Figs. 4G, 9A, 9C, 14F, 16C)

*Female.* Body length = 4.65 mm. *Body color:* Mandible and labrum yellow as fore and mid leg (except base of mid tibia light brownish), hind trochanter, anterior edge of propleuron, ocelli, tegula, scape (except posterior and lateroexternal edge), most of third metasomal tergum, metasomal pleura and sterna (except hypopygium with a medio longitudinal brown area), hind tibia basal 1/4, ovipositor (slightly darker than hypopygium); hind trochantellus and femur light orange as well as two longitudinal colored lines on mesosternum, lateral dorsal edge of pronotum and clypeus; metasomal terga 4 to 8 brownish yellow as ovipositor sheaths and remainder of hind tibia; tarsal claws dark brownish yellow as hind tarsomeres and distal 1/6 of hind tibia; compound eyes silver; hind tibial spurs whitish yellow; remainder of body dark brown. Wings hyaline, fore wing veins brown with pterostigma slightly darker than remainder of veins; hind wing with C+SC+R, SC+R and R1 brownish yellow, remainder of veins light yellow.

*Head.* Head height/width = 1.28; compound eye height/width = 1.88; intertentorial pit distance = 0.36 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.50; width of face at dorsal clypeal edge = 0.62 mm; clypeus width/height = 3.27; vertex width/distance between anterior ocellus and edge of torulus = 2.60; length of first flagellomere = 0.36 mm; first flagellomere length/width = 2.42; length of first flagellomere/length of second flagellomere = 1.00; length of first flagellomere/length of third flagellomere = 1; distal flagellomere length = ? mm; distal flagellomere length/penultimate flagellomere length = ?; distal flagellomere length/width = ?; malar space height/basal width of mandible = 0.66; ocell-ocular distance/lateral ocelli distance = 1.45. Clypeus and face with well-defined punctate sculpture as well as frons lateral areas; frons scrobal areas nitid, distal areas with more fine and less conspicuously demarked punctate sculpture as anterior area of vertex; vertex posterior area with few confuse punctulate sculpture, lateral area with well-defined punctate sculpture as distal 1/2 of temple; gena with remainder of temple and ocular ring with mostly nitid except for well confuse and shallow punctate sculpture, basal 2/3 with transversal longitudinal lineate sculpture at junction area with postgena; postgena with area next to transversal longitudinal lineate sculpture with confuse punctate sculpture, remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.46; mesosoma length = 1.90 mm; mesosoma height = 1.25 mm. Propleuron with punctate sculpture throughout, basal 1/5 with confuse colliculate sculpture present; pronotum lateral area with anterior 1/3 with few broad and well-defined transversal ridges, ventral edge with well-defined, large, narrow and dense scrobiculate sculpture, dorsal groove with contrasting smaller scrobiculate sculpture when compared with ventral edge, area between groove with few well-defined punctate sculpture at upper 1/2 of it, otherwise nitid, ventral edge is 1/5 and dorsal edge is 1/10 of posterior edge height; mesonotum densely punctate anteriorly but becoming slightly shallower and sparse towards distal edge and reaching close to scutellar groove; scutellar groove with deeply impressed costula which are well-defined, medial ones about two times as large as lateral ones;

scutellum with fine well-defined punctate sculpture at lateral areas of it and medially essentially nitid, lateral edges with wide short costulae that became more elongate and wider distally; axilla through mesonotum with two short and well-defined transversal ridges that not reach the mid area of it, otherwise nitid; metanotum nitid; axilla through metanotum with three transversal narrow bridges and distal edge nitid; propodeum with transversal, areolar and midlongitudinal carina well-defined and cristate as well as costula, anterior lateral areas with dense fine punctate sculpture, posterior lateral Ares with few broad rugulose sculpture at upper and laterodistal area of it remainder of area nitid, inside areola mainly nitid by the exception of a conspicuously present transversal carinae; mesopleuron with anterior edge punctate as well as anterior 1/2 of dorsal edge and posterior ventral 1/2 (this area with few scattered punctate sculpture), sternauli as a deep transversal nitid depression, epistomal scrobe with few large punctate sculpture at anterior 1/2 of it and remainder of area nitid, dorsal edge with dense and well-defined scrobiculate sculpture, distal edge with two short ridges on it, remainder of mesopleuron nitid; metanotum with distal 1/3 with dense fine punctate sculpture, dorsal and distal edge with a series of large, well-defined and narrow transversal ridges, medial pit present and remainder of area nitid. *Legs*. Hind femur length = 1.50 mm; hind femur length/width = 3.00; hind tibia length/hind femur length = 1.16. Fore telotarsus simple, not modified or with elongate and modified setae at externolateral area and smaller than fore basitarsus; tarsal claws large and simple, without basal lobe or tooth. *Wings*. Fore wing length = 5 mm; 1RS length = 0.22 mm; 1CUa length/1CUb length = 1.58; length RS+Ma = 0.80 mm; length M+CU = 1.98 mm; 1M length/ m-cu length = 1.96; pterostigma length/height = 1.92. Hind wing: 1M length = 0.78 mm; 1M length/2M length = 1.94; 1M length/M+CU length = 1.1; length r-m/length Cua = 0.68; 1RSa length/2r-m = 1; 1A length = 0.52 mm. *Metasoma*. First tergum basal width = 0.48 mm; first tergum length/distal width = 1.28; second tergum length/distal width = 0.23; third tergum length/distal width = 0.44; hypopygium length = 1.1 mm. First metasomal tergum with lineate sculpture present at lateral areas and reaching the mid length of it, medial area of tergum basal 1/2 with mainly nitid and with confuse foveate sculpture, distal tergum 1/2 with large punctate sculpture except at distal 1/4 with foveate sculpture present; second metasomal tergum with confuse shallow and large punctate sculpture, remainder of terga nitid; hypopygium desclerotized medially, not divided and with folds; ovipositor thin throughout its length and as long as 1.9 times as long as hind tibia (ovipositor 3.5 mm in length); ovipositor sheaths not evenly dense setose throughout its length.

**Material examined.** Holotype, female, "Mexico, Sin[aloe], 20 miles E. Concordia, 3000 [m], 12 Aug[ust] 1964, W.R.M. Mason." Holotype deposited at CNCI.

**Comments.** This species is characterized by the conspicuous body size, the length of the ovipositor and ovipositor sheaths as well by the thin ovipositor shape in lateral view. The holotype specimen has the entomological pin through the scutellum anterior area so the scutellar groove is partially destroyed. Distal flagellomeres of both antennae missing from specimen.

**Etymology.** Gender, neutral. This species is named after the unusual body size that is similar to the species *H. pollex* n. sp.; "sicpollex" means in Greek similar to pollex.

### ***Hypomicrogaster guille* Valerio n. sp.**

(Figs. 7A, 10E, 12A)

*Female*. Body length = 3.08 mm. *Body color*: Mainly dark brown as tarsomeres, tip of hind femur, hind tibia distal 1/4, metasomal first tergum, metasomal terga 5–8, antenna flagellomeres, hind coxae basal 1/3; remainder of metasoma, legs, tarsal claws yellow as ocelli, ovipositor and ovipositor sheaths, scape and pedicel (except external lateral areas); palpi whitish; compound eyes silver; ventral edge of mesopleuron reddish brown as area below fore wing. Wings hyaline, hind wing light yellow as fore wing M+CU basal 1/4, 1-1A anterior 1/2, remainder of veins as pterostigma brownish yellow.

*Head*. Head height/width = 1.27; compound eye height/width = 1.57; intertentorial pit distance = 0.23 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.00; width of face at dorsal clypeal edge = 0.45 mm; clypeus width/height = 2.20; vertex width/distance between anterior ocellus and edge of torulus = 2.57; length of first flagellomere = 0.29 mm; first flagellomere length/width = 2.88; length of first flagellomere/length of second flagellomere = 0.95; length of first flagellomere/length of third flagellomere = 1.05; distal flagellomere length = ?; distal flagellomere length/penultimate flagellomere length = ?; distal flagellomere length/width = ?; malar space height/basal width of mandible = 0.90; ocell-ocular distance/lateral ocelli distance = 1.33. Face and clypeus with

foveate sculpture, face upper keel evident; frons nitid except upper area of scrobal areas with fine transversal lineate sculpture; vertex anterior 1/2 with few punctate sculpture present, remainder of vertex with conspicuous punctate sculpture; gena with anterior 1/2 with few punctate sculpture present, remainder of gena with punctate sculpture mixed with longitudinal transversal lineate sculpture as well as basal 2/3 of postgena, temple densely punctate; remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.41; mesonotum length = 1.36; mesosoma height = 1.00 mm. Propleuron with basal 1/3 with longitudinal lineate sculpture, punctate sculpture throughout except distal tip of propleuron; pronotum lateral area with upper and ventral groove with shallow confused punctate sculpture, anterior 1/4 medial area with confused colliculate sculpture, otherwise nitid; mesonotum densely punctate becoming less dense towards scutellar groove; scutellar groove with five large costulae, middle one 2x as large as lateral ones; scutellum with scattered fine punctate sculpture at anterior 1/3, otherwise nitid; lateral area with costulate sculpture becoming larger and wider towards distal area; metanotum distal 1/3 with deep and few transversal lineate sculpture, remainder of metanotum nitid except distal edge with confused fine rugose sculpture; propodeum anterior 1/3 with confused large punctate sculpture throughout, midlongitudinal carina well-defined, transversal and ventral areolar carinae with confused punctate sculpture on them, areolar internal area nitid, laterodistal area with dorsal and lateral edges with confused fine rugulose sculpture, otherwise nitid, spiracular area with confused rugulose sculpture; mesopleuron with anterior 1/2 punctate as well as dorsal area of mesopleuron, sternauli as an elongate depression that exhibits confused rugulose sculpture, edges with confused scrobiculate sculpture as well as epistomal scrobe, otherwise nitid; metapleuron distal and ventral edge with large scrobiculate sculpture and area around it with deep punctate sculpture, medial pit present, otherwise nitid. *Legs*. Hind femur length = 1.13 mm; hind femur length/width = 3.75; hind tibia length/hind femur length = 1.20. Fore leg telotarsus larger in length than basitarsus very modified as well as remainder of leg telotarsus, fore telotarsus with two setae well above middle length point, very conspicuous. *Wings*. Fore wing length h = 3.72 mm; 1RS length = 0.13 mm; 1CUa length/1CUB length = 1.10; length RS+Ma = 0.58 mm; length M+CU = 1.36 mm; 1M length/ m-cu length = 1.85; pterostigma length/height = 2.11. Hind wing: 1M length = 0.60 mm; 1M length/2M length = 2; 1M length/M+CU length = 1.50; length r-m/length Cua = 1; 1RSa length/2r-m = 1.20; 1A length = 0.33 mm. *Metasoma*. First tergum basal width = 0.28 mm; first tergum length/distal width = 1.54; second tergum length/distal width = 0.41; third tergum length/distal width = 0.53; hypopygium length = 0.45 mm. First tergum with basal 1/3 with fine longitudinal sculpture, distal tergum edge with two depressed areas as well as very few lineate sculpture, otherwise with shallow lineate sculpture; second tergum nitid as remainder of terga; ovipositor broad at base and laterally compressed, as long as 0.84 times as long as hind tibia.

**Material examined.** Holotype, female, "Ecuador, Napo, P. Misahualli, 350 m, Feb. 18–22/1983, Col. M. Sharkey." Holotype deposited at CNCI.

**Comments.** The type specimen without middle legs as well as one hind leg, antenna present until 4<sup>th</sup> flagellomere, remainder of antenna absent.

**Etymology.** Gender, neutral. This species is named in memory of the Costa Rican biologist Guillermo "guille" Marín Cruz; "Salud hermano!"

### ***Hypomicrogaster hektos* Valerio n. sp.**

(Fig. 1F)

*Female*. Body length = 4.25 mm. *Body color*: Toruli black as ocelli area, propleuron dorsal 1/2 as edges, propodeum (except lateral upper edge as well as sculpture at medial area of distal 1/4), metanotum, scutellum groove, lunulae, axilla through mesonotum, propodeum, first metasomal tergum basal 1/2 as well as edges at distal 1/2, metasomal terga medial area at distal edge; hypopygium edges as well (medio longitudinal area brownish yellow), hind femur tip, hind tibia distal 1/5, hind telotarsus, postgena, ovipositor sheaths and mesopleuron with two irregular shaped area at dorsal 1/2 as well as one elongate spot at ventrodorsal 1/2; head and remainder of mesosoma light orange; remainder of metasoma yellow as well as ocelli, legs, tegula, as basal area of fore wing; antenna brownish yellow as mandible at basal area, clypeus edges; compound eyes silver. Wings infuscate, wing veins brown except fore wing vein C+SC+R yellow as M+CU basal 1/2, 1-1A basal 2/3, hind wing M+CU and Cu. *Head*. Head height/width = 1.35; compound eye height/width = 1.68; intertentorial pit distance = 0.30 mm; tentorial pit distance/distance tentorial pit to compound eye = 4.00; width of face at dorsal clypeal edge = 0.50 mm;

clypeus width/height = 2.64; vertex width/distance between anterior ocellus and edge of torulus = 3.22; length of first flagellomere = 0.33 mm; first flagellomere length/width = 2.7; length of first flagellomere/length of second flagellomere = 0.93; length of first flagellomere/length of third flagellomere = 2.70; distal flagellomere length = 0.23 mm; distal flagellomere length/penultimate flagellomere length = 2.57; distal flagellomere length/width = 1.50; malar space height/basal width of mandible = 0.75; ocell-ocular distance/lateral ocelli distance = 1.00. Face and clypeus with dense punctate sculpture, medial keel present but weak or well-defined; frons densely punctate at lateral and distal area, scrobal areas nitid; vertex densely punctate as well as ocell-ocular area; gena punctate, distal 1/2 with more conspicuous punctate sculpture at junction with postgena; remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.45; mesosoma length = 1.80 mm; mesosoma height = 1.04 mm. Propleuron with fine dense punctate sculpture, no longitudinal lineate sculpture present; pronotum lateral areas with upper groove with well-defined small scrobiculate sculpture, ventral groove with dense less defined and shallow scrobiculate sculpture which becomes smaller in size towards medial area of ventral groove, distal area of ventral groove with a conspicuous depression on it, anterior 1/3 with tall, narrow scrobiculate sculpture, dorsal and ventral longitudinal areas of pronotum broad; mesonotum with dense punctate sculpture throughout but becoming less dense and larger in size towards scutellar groove; scutellar groove with seven costulae, medial ones 2.5 times as large as lateral ones, all of approximately same width; scutellum with fine small punctate sculpture at lateral areas, medial area virtually nitid, lateral area with costulate sculpture which becomes wider and elongate towards distal area; axilla through mesonotum with broad transversal ridges across its width and present throughout its length; metanotum with distal 1/3 nitid, remainder of metanotum with confused rugulose sculpture; propodeum anterior 1/2 with anterior 1/3 nitid, medial 1/3 punctate and distal 1/3 rugulose close to areaolar and midlongitudinal carinae, carinae well-cristate and thin, costula present and with confused colliculate sculpture present at spiracular area, posterior lateral areas with confused rugulose sculpture throughout, areola area with an inverse “U” shape carina present, and with very few and smooth not well-defined rugulose sculpture; mesopleuron with ventral 1/2 punctate as well as upper 1/3 with fine punctate sculpture, sternauli as an elongate depression well-defined depression that presents lineate like sculpture on it, dorsal edge with well-defined small scrobiculate sculpture, distal edge with epistomal scrobe with narrow and well-defined scrobiculate sculpture; metapleuron with anterior 1/4 nitid, remainder of metapleuron with confused rugulose sculpture, ventral 1/2 at medial area with a set of transverse lineate sculpture present, edges with large and spaced rugulose sculpture, distal edge with sculpture less dense and spaced that dorsal edge sculpture. *Legs*. Hind femur length = 1.18 mm; hind femur length/width = 3.13; hind tibia length/hind femur length = 1.40. Tarsal claws with two long setae that are conspicuously broad; fore leg with telotarsus smaller in size than basitarsus, normal in shape. *Wings*. Fore wing length = 4.83 mm; 1RS length = 0.15 mm; 1CUa length/1CUb length = 0.96; length RS+Ma = 0.65 mm; length M+CU = 1.85 mm; 1M length/ m-cu length = 1.95; pterostigma length/height = 1.84. Hind wing: 1M length = 0.83 mm; 1M length/2M length = 1.94; 1M length/M+CU length = 1.43; length r-m/length Cua = 0.86; 1RSa length/2r-m = 1.14; 1A length = 0.45 mm. *Metasoma*. First tergum basal width = 0.30 mm; first tergum length/distal width = 0.96; second tergum length/distal width = 0.33; third tergum length/distal width = 0.52; hypopygium length = 1.15 mm. Basal 1/3 with longitudinal lineate sculpture at lateral areas, medial 1/3 with large shallow punctate sculpture, distal 1/3 with small and scattered fine punctate sculpture, distal edge without depressed areas, second tergum nitid as remainder of terga; hypopygium with longitudinal folds present and distal tip not divided, distal lateral edge of if sinuate; ovipositor elongate and thin.

**Material examined.** Holotype, female, “Brasil, Rondonia, Piedra da Sino, Teresopolis, 2000 m, 14/iii/1990, S.A. Marchal.” Holotype deposited at CNCI.

**Comments.** Ovipositor in holotype specimen broken.

**Etymology.** Gender, neutral. This species is named after the song “The number of the beast” performed by Iron Maiden. “Hektos” in Greek means six, in reference to the lyrics “six, six, six... the number of the beast...”

### ***Hypomicrogaster hupsos* Valerio n. sp.**

(Figs. 7D, 16H)

*Female.* Body length = 3.32 mm. *Body color:* Hind femur distal tip brownish yellow as distal 2/3 of hind tibia, hind tarsomeres, tarsal claws as metasoma terga 4<sup>th</sup> to 8<sup>th</sup>, antenna and hypopygium; palpi whitish yellow as coxae and

trochanters of fore and mid leg, hind leg trochanters, distal 1/3 of hind coxae, basal 1/2 of hind tibia, hind tibiae spurs, basal area of hind basitarsus, basal sternite of metasoma; remainder of legs yellow as tegula and ovipositor; remainder of metasoma; compound eyes silver and ocellus light yellow; area in front of scutellar groove as well as lunulae reddish orange in coloration, remainder of body reddish brown. Wings hyaline with a slight yellowish tone on them; fore wings veins light yellow in coloration with pterostigma and C+SC+R more intense in coloration; hind wing veins light yellow with C+SC+R and 1A whitish yellow.

*Head.* Head height/width = 1.65; compound eye height/width = 1.52; intertentorial pit distance = 0.23 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.71; width of face at dorsal clypeal edge = 0.46 mm; clypeus width/height = 1.83; vertex width/distance between anterior ocellus and edge of torulus = 1.5; length of first flagellomere = 0.25 mm; first flagellomere length/width = 1.42; length of first flagellomere/length of second flagellomere = 1; length of first flagellomere/length of third flagellomere = 0.95; distal flagellomere length = 0.18 mm; distal flagellomere length/penultimate flagellomere length = 2; distal flagellomere length/width = 1.16; malar space height/basal width of mandible = 1.00; ocell-ocular distance/lateral ocelli distance = 1.20. Clypeus and most of face with smooth shallow and very inconspicuously defined large punctate sculpture, face lateral areas around compound eyes with more evident punctate sculpture, face keel not evident; ocular ring nitid; frons with scrobal areas nitid, remainder of frons as well as vertex with punctate sculpture; temple as well as gena and gena-postgena junction area with larger and less defined shallow punctate sculpture, basal 2/3 of gena-postgena junction area with two smooth transversal lines of lineate sculpture; remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.33; mesosoma length = 1.28 mm; mesosoma height = 0.96 mm. Propleuron with basal area with confuse punctate sculpture, remainder of propodeum with punctate sculpture except externolateral edge nitid; propleuron with anterior 1/3 with few narrow scrobiculate sculpture which continues within the ventrolateral groove, dorsolateral groove with smaller and less defined scrobiculate sculpture, area between grooves nitid, posterior upper corner with few punctate sculpture present, dorsal edge 1/4 and ventral edge 1/10 of posterior edge height; mesonotum with anterior 1/2 with dense, small and well-defined punctate sculpture, remainder of mesonotum with larger and spaced punctate sculpture that almost reaches the scutellar groove; scutellar groove with seven well-defined costula of approximately same width, medial ones 2x as large as lateral ones; scutellum with smooth punctate sculpture, lateral areas with small and smooth costulate sculpture which becomes more elongate and wider towards posterior area; axilla through mesonotum nitid and anterior edge of lunulae well-defined; mesonotum very narrow and small, subtriangular in shape and nitid, medio distal area with two costula divided by a narrow and short bridge; axilla through metanotum with one transversal ridge at mid width, otherwise nitid; propodeum with carinae well-defined, anterior lateral areas with area around midlongitudinal carinae and transversal carinae with confuse rugose sculpture and remainder of area nitid, spiracular area with confuse rugose sculpture, areola nitid except by midlongitudinal carina, posterior lateral areas with few large and smooth irregular carination at edges except posterior one nitid as remainder of area; mesopleuron with anterior 1/4 punctate, sternauli as a deep transversal and nitid depression, epistomal scrobe essentially nitid except by punctate sculpture, dorsal edge with well-defined, dense and small transversal ridges, posterior edge with one large and smooth mid ridge, remainder of distal edge nitid except at mid height of it with few punctate sculpture; metapleuron with deep medial pit present as well as pleural suture with few smooth transversal ridges, dorsal edge with a series of narrow transversal ridges across its length and more clearly defined and deep than the ones present at posterior edge, area around posterior edge with cicatrose sculpture. *Legs.* Hind femur length = 0.93 mm; hind femur length/width = 3.22; hind tibia length/hind femur length = 1.15. Fore telotarsus normal, without modification or setae at externolateral area of it; tarsal claw with clear dentations between basal lobe and basal teeth. *Wings.* Fore wing length = 3.36 mm; 1RS length = 0.13 mm; 1CUa length/1CUB length = 1.21; length RS+Ma = 0.70 mm; length M+CU = 1.12 mm; 1M length/ m-cu length = 2.00; pterostigma length/height = 1.37. Hind wing: 1M length = 0.54 mm; 1M length/2M length = 2.15; 1M length/M+CU length = 1.54; length r-m/length Cua = 0.80; 1RSa length/2r-m = 1; 1A length = 0.25 mm. *Metasoma.* First tergum basal width = 0.25 mm; first tergum length/distal width = 1.11; second tergum length/distal width = 0.38; third tergum length/distal width = 0.52; hypopygium length = 0.68 mm. First metasomal tergum with basal 1/2 with smooth lineate sculpture at lateral areas, medial area nitid, tergum posterior 1/2 with large, dense and shallow punctate sculpture and posterior edge with few short and not well-defined lineate sculpture edge; second metasomal tergum essentially nitid as remainder of terga; ovipositor 1.83x as long as hind tibia length, with two small bumps at posterior 1/2 otherwise evenly throughout its length; ovipositor sheaths broad, densely setose; hypopygium with longitudinal folds and not extended posteriorly.

*Male.* Similar to females.

**Material examined.** Holotype, female, "Ecuador, Pichincha, 16 Km S.E. Santo Domingo, Tinalandia, 680 m, 15–30/vi/1975, [Col.] S. and J. Peck." Holotype deposited at CNCI.

**Etymology.** Gender, masculine. This species is named after the conspicuous pectination of the hind tarsal claws; "hupsos" in Greek means exalted.

***Hypomicrogaster ingensis* Valerio n. sp.**

(Figs. 4F, 7E, 23D)

*Female.* Body length = 3.50 mm. *Body color:* Mainly black; clypeus, labrum, propleuron tips, dorsolateral edge pronotum, tegula, subalar area surrounded by epistomal scrobe, legs (except distal tip hind femur, distal 1/3 hind tibia, hind tarsomeres, tarsal claws), metasoma (except terga and medio longitudinal area of hypopygium) yellow; palpi whitish; compound eyes silver; ocelli yellow as ovipositor, scape and pedicel (except externolateral areas); mesonotum distal corners yellowish brown with an orange line in front of scutellar groove; ovipositor sheaths brown; remainder of body black. Wings hyaline, veins light brownish yellow (except fore wing basal 1/4 of 1-1A and hind wing veins).

*Head.* Head height/width = 1.45; compound eye height/width = 1.50; intertentorial pit distance = 0.27 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.40; width of face at dorsal clypeal edge = 0.47 mm; clypeus width/height = 2.11; vertex width/distance between anterior ocellus and edge of torulus = 1.58; length of first flagellomere = 0.28 mm; first flagellomere length/width = 2.25; length of first flagellomere/length of second flagellomere = 0.92; length of first flagellomere/length of third flagellomere = 0.97; distal flagellomere length = 0.16 mm; distal flagellomere length/penultimate flagellomere length = 1.10; distal flagellomere length/width = 2.22; malar space height/basal width of mandible = 0.45; ocell-ocular distance/lateral ocelli distance = 0.60.

Face and clypeus with foveate sculpture; frons with punctate sculpture at lateral and distal area (less evident here), scrobal areas nitid; vertex and gena with dense punctate sculpture more strongly accentuated towards distal area; postgena with longitudinal transversal lineate sculpture at junction with gena at basal 2/3 of it, remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.26; mesosoma length = 1.51; mesosoma height = 0.52 mm.

Propleuron with anterior area without confused rugulose sculpture, remainder of area punctate; pronotum lateral area with medial area with larger, more spaced, narrower and fewer scrobiculate sculpture compared with upper lateral groove, ventral groove with confused spaced scrobiculate sculpture, otherwise nitid; mesonotum densely punctate throughout almost reaching scutellar groove; scutellar groove with 11 costulae less wider and larger in size at lateral areas; scutellum punctate throughout, lateral areas with colliculate sculpture becoming more wider distally, with same width throughout; axilla through mesonotum with 4 transversal ridges not well-defined or cristate which not cross throughout; metanotum with distal 1/3 with confused rugose sculpture, otherwise nitid; propodeum with areola present and cristate as transversal carina, midlongitudinal carina less cristate inside areola remainder of carina well cristate, propodeal anterior 1/2 with shallow large punctate sculpture denser and conspicuous next to areolar and transversal carinae, inside areola with smooth rugulose sculpture present, posterior lateral areas with rugose sculpture next to carinae been more evident towards areolar and transversal carina and medial areas with few rugulose sculpture, spiracular area with confused small rugulose sculpture; mesopleuron anterior 1/2 with large punctate sculpture as well as distal area, sternauli as an elongate depression exhibiting confused rugulose sculpture and its medial with more cristate sculpture, epistomal scrobe with confused scrobiculate sculpture, edges (except epistomal scrobe) with small dense scrobiculate sculpture, distal edge with more confused scrobiculate sculpture; metapleuron distal 1/3 with spaced punctate sculpture becoming denser towards edge, dorsal edge with large spaced scrobiculate sculpture, distal edge with scrobiculate denser and smaller one, medial pit present. *Legs.* Hind femur length = 1.34 mm; hind femur length/width = 3.66; hind tibia length/hind femur length = 0.84. Fore telotarsus normal, not modified, seta at telotarsus normal and not hook like; tarsal claws with basal long and thin seta. *Wings.* Fore wing length = 3.80 mm; 1RS length = 0.15 mm; 1CUa length/1CUb length = 1.35; length RS+Ma = 0.75 mm; length M+CU = 1.3 mm; 1M length/ m-cu length = 2.46; pterostigma length/height = 2.14. Hind wing: 1M length = 0.59 mm; 1M length/2M length = 2.00; 1M length/M+CU length = 1.19; length r-m/length Cua = 0.8; 1RSa length/2r-m = 1.80; 1A length = 0.44 mm. *Metasoma.* First tergum basal width = 0.34 mm; first tergum length/distal width = 1.05; second tergum length/distal width = 0.29; third tergum

length/distal width = 0.38; hypopygium length = 0.89 mm. First tergum basal 1/2 with fine longitudinal sculpture at lateral areas and shallow punctate sculpture at remainder 1/3 except medial area nitid, tergum distal 1/2 with large shallow punctate sculpture becoming denser at edges of tergum, distal tergum 1/5 with fine lineate sculpture at distal edge of tergum, otherwise nitid; second tergum nitid as remainder of terga; hypopygium with longitudinal folds present and not divided at tip; ovipositor elongate and thin throughout and as long as 1.46 times the length of hind tibia.

*Male.* Similar to females.

**Material examined.** Holotype, female, "Brasil, Represa Rio Grande, Guanabara, vi/1972, F.H. Oliveira." Paratype: one male: Brasil, Guan., Floresta da Tijuca, iv/1986, Col. Alverenga and Seabra. Holotype deposited at CNCI, paratype deposited at AEI.

**Etymology.** Gender, neutral. This species is named after the remarkably huge ocellus; "ingensis" in Latin means remarkable.

### ***Hypomicrogaster insolitus* Valerio n. sp.**

(Figs. 10B, 13C)

*Female.* Body length = 4.08 mm. *Body color:* Mainly brown; antenna honey yellow at distal 1/2 as fore wing veins (except pterostigma, r, 2RS, 2M brown); metasoma (except terga 1 and 4–8 brown), legs (except hind tibia distal 1/3, hind tibial distal tip, hind tarsomeres, propodeum basal 1/5 yellow as clypeus, labrum, scape, pedicel; palpi whitish yellow; area beneath wings light orange as pronotum dorsal edge, propleuron distal 1/5 as front scribal areas, lunulae; compound eyes silver; ocelli yellow as fore and middle tarsal claws; hypopygium with a brownish yellow longitudinal line present which becomes wider towards distal edge of hypopygium; remainder of body brown. Wings hyaline, with a very light brownish coloration, hind wing with whitish yellow color veins as well as fore wing veins 1-1A basal 2/3 and M+CU basal 1/4, remainder of veins brownish in color.

*Head.* Head height/width = 1.23; compound eye height/width = 1.65; intertentorial pit distance = 0.18 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.00; width of face at dorsal clypeal edge = 0.38 mm; clypeus width/height = 2.2; vertex width/distance between anterior ocellus and edge of torulus = 2.43; length of first flagellomere = 0.23 mm; first flagellomere length/width = 2.88; length of first flagellomere/length of second flagellomere = 0.95; length of first flagellomere/length of third flagellomere = 1.05; distal flagellomere length = 0.14 mm; distal flagellomere length/penultimate flagellomere length = 2.75; distal flagellomere length/width = 1.38; malar space height/basal width of mandible = 0.90; ocell-ocular distance/lateral ocelli distance = 1.33. Face and clypeus with foveate sculpture, face medial keel present and slightly defined; frons with confused punctate sculpture present, scrobal areas nitid; vertex with punctate sculpture at distal 1/2, anterior 1/2 with few punctate sculpture, ocell-ocular area nitid; gena punctate sculpture, temple punctate sculpture more evident, junction area with postgena mixed with transverse longitudinal lineate sculpture at basal 2/3; remainder of postgena nitid.

*Mesosoma.* Mesosoma length/width = 1.23; mesonotum length = 1.04; mesosoma height = 0.72 mm. Propleuron with anterior basal 1/3 with confused longitudinal lineate sculpture, remainder of propleuron with few fine punctate sculpture; pronotum lateral areas with upper and ventral groove with small dense and well-defined scrobiculate sculpture, anterior 1/3 with few spaced elongate scrobiculate sculpture, otherwise nitid; mesonotum with dense punctate sculpture throughout, not reaching scutellum groove; scutellum groove with 10 small costulae, costulae of approximately same size; scutellum with fine punctate sculpture around edges, remainder nitid, lateral areas with costulate sculpture which becomes more elongate towards distal area; axilla through mesonotum with a set of fine thin and short transversal lineate sculpture throughout edge of lunulae making it less defined at edges; metanotum with medial 1/3 with few rugulose sculpture present, otherwise nitid; pronotum with anterior 1/2 with foveate sculpture throughout, midlongitudinal carina well-defined spiracular area with fine confused rugulose sculpture as well as transversal carina and areaolar distal 1/2, posterior lateral areas with few rugulose sculpture present at edges (except distal one) as well as inside areola, transversal carina not well-defined as costula carina; mesopleuron with anterior 1/3 punctate, sternauli as a depression with "o" like shape and with costulate sculpture on it, epistomal scrobe with dense punctate sculpture, remainder of mesopleuron edges with fine dense scrobiculate sculpture (except anterior edge), otherwise nitid; metapleuron with dorsal and distal edge with large confused rugulose sculpture, ventral 1/3 with confused punctate sculpture. *Legs.* Hind femur length = 1.13 mm; hind femur

length/width = 3.75; hind tibia length/hind femur length = 1.2. Fore telotarsus very modified with an evident basal lobe for the large curved setae present at external area of telotarsus, medio longitudinal area concave and glabrous; telotarsus longer than basitarsus; tarsal claws with a short and broad basal tooth, internal tarsal claw with a series of long and conspicuously looking elongate setae as secondary tarsal teeth. *Wings*. Fore wing length = 3.88 mm; 1RS length = 0.1 mm; 1CUa length/1CUB length = 1.14; length RS+Ma = 0.38 mm; length M+CU = 0.92 mm; 1M length/ m-cu length = 1.86; pterostigma length/height = 1.58. Hind wing: 1M length = 0.39 mm; 1M length/2M length = 1.63; 1M length/M+CU length = 1.29; length r-m/length Cua = 0.75; 1RSa length/2r-m = 1.67; 1A length = 0.23 mm. *Metasoma*. First tergum basal width = 0.20 mm; first tergum length/distal width = 1.15; second tergum length/distal width = 0.33; third tergum length/distal width = 0.53; hypopygium length = 0.40 mm. First tergum with basal 1/5 and distal 1/3 with scattered punctate sculpture, distal edge with two short parallel depressions, remainder of tergum nitid as remainder of terga; hypopygium not divided at tips and without longitudinal folds but folded medially; ovipositor elongate and thin throughout and as long as 0.78 times the length of hind tibia; ovipositor sheaths densely setose.

**Material examined.** Holotype, female, “Brasil, Mato Grosso, Sinop, x/1974, (Col.) M. Alvarenga, Mal. Trap.” Holotype deposited at CNCI.

**Comments.** The shape of the fore telotarsus is diagnostic for this species. Because of the large ocellus we hypothesize, this species could be nocturnal.

**Etymology.** Gender, masculine. This species is named after the atypical fore telotarsus modification exhibited by this species; “insolitus” in Latin mean atypical.

### *Hypomicrogaster inversalis* Valerio n. sp.

(Figs. 8F, 9E)

*Male*. Body length = 4.40 mm. *Body color*: Externolateral areas of scape and pedicel blackish as inverse “U” shaped area of mesonotum, most mesopleural area (except upper 1/3), arolium; tarsal claws slightly brownish yellow; compound eyes silver; ocelli yellow; distal tip of hind tibia slightly darker than remainder of tibia yellow as well as hind tarsomeres; metanotum, mesopleuron upper 1/3, remainder of antenna (except scape and pedicel) and remainder of mesonotum slightly orange as propodeal carinae; area around each ocelli with a brownish colored area; remainder of body yellow. Wings infumate, veins light brownish yellow, pterostigma light in color compared with remainder of veins.

*Head*. Head height/width = 1.28; compound eye height/width = 1.62; intertentorial pit distance = 0.28 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.20; width of face at dorsal clypeal edge = 0.55 mm; clypeus width/height = 2.33; vertex width/distance between anterior ocellus and edge of torulus = 4.16; length of first flagellomere = 0.38 mm; first flagellomere length/width = 3.00; length of first flagellomere/length of second flagellomere = 1.00; length of first flagellomere/length of third flagellomere = 1.00; distal flagellomere length = 0.25 mm; distal flagellomere length/penultimate flagellomere length = 1.25; distal flagellomere length/width = 3.30; malar space height/basal width of mandible = 1.20; ocell-ocular distance/lateral ocelli distance = 1.16. Clypeus and face with scattered and small punctuate sculpture except for face upper 1/3 with denser and more foveate like smooth sculpture, upper face keel present but not conspicuously evident; frons scrobal areas mainly nitid except for few transversal lineate sculpture present, lateral and distal area with fine punctuate sculpture as vertex; vertex lateral areas as gena with larger punctuate sculpture than facial one; gena nitid around compound eye and with transversal longitudinal lineate sculpture at junction area with post gena at basal 2/3; remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.72; mesosoma length = 1.85 mm; mesosoma height = 1.00 mm. Propleuron with basal 1/8 with confuse rugose sculpture present, remainder of propleuron with punctate sculpture which becomes more shallow and inconspicuous next to distal edge; pronotum lateral area with upper groove with few transversal ridges, ventral groove with shallower and smooth confuse scrobiculate sculpture, anterior 1/2 with well-defined scrobiculate sculpture, dorsal edge 1/5 of distal edge height, ventral edge 1/10 of distal edge height; mesonotum with dense and small punctate sculpture which became more larger and more spaced towards scutellar groove; scutellar groove with well-defined costulae; scutellum ?, lateral area with narrow and short costulae which become more elongate and wider posteriorly; axilla through mesonotum nitid and anterior edge of lunulae sharply defined; metanotum with two elongate posterior medial pits, anterior lateral 1/3 nitid and

triangular shaped, distal edge broad and nitid, remainder of metanotum with confuse transversal ridges across its area; propodeum with anterior 1/2 with few inconspicuously present punctate sculpture as well as posterior lateral areas, posterior lateral areas with few broad and short carinae at distal edge of it as well as few smooth and very shallow confuse rugose sculpture at lateral and anterior edge, midlongitudinal carina with confuse colliculate sculpture at anterior 1/2, otherwise nitid, propodeal carinae well-cristate and defined, areola close but lateral carina very thin and not as evident as transversal carina, inside areola basically nitid except for reduced smooth and shallow rugose sculpture present as well as spiracular area; mesopleuron with anterior 1/3 and ventral half punctate, epistomal groove with dense and well-defined scrobiculate sculpture, distal edge nitid, sternauli as a short elongate and nitid transversal depression, remainder of mesopleuron nitid; metapleuron with medial pit small and pleural suture punctate, dorsal edge with well-defined transversal ridges, distal edge as a depression without sculpture, few fine punctate sculpture present close to dorsal edge, otherwise nitid. *Legs.* Hind femur length = 1.22 mm; hind femur length/width = 3.06; hind tibia length/hind femur length = 1.22. Tarsal claws distal edge with a short and thin basal tooth next to the basal lobe, which is not conspicuously evident; fore telotarsus smaller than fore basitarsus and not modified. *Wings.* Fore wing length = 4.60 mm; 1RS length = 0.20 mm; 1CUa length/1CUb length = 1.00; length RS+Ma = 0.65 mm; length M+CU = 1.50 mm; 1M length/ m-cu length = 2.10; pterostigma length/height = 2.00. Hind wing: 1M length = 0.78 mm; 1M length/2M length = 2.21; 1M length/M+CU length = 1.40; length r-m/length Cua = 0.84; 1RSa length/2r-m = 1.60; 1A length = 0.42 mm. *Metasoma.* First tergum basal width = 0.40 mm; first tergum length/distal width = 1.10; second tergum length/distal width = 0.27; third tergum length/distal width = 0.29. First metasomal tergum distal 1/2 with few shallow and not evident punctate sculpture, basal 1/2 nitid, second metasomal tergum nitid as remainder of terga.

**Material examined.** Holotype, male, "Argentina, Buenos Aires, La Banlandra, 19–30/xi/1968, C.C. Poter." Holotype deposited at CNCI.

**Comments.** The entomological pin of the specimen goes through the scutellum so the description of the species lacks this area on it. This is the only species of infusate wings that present an inverse black "U" shaped area on its mesonotum. Unfortunately no females were found for the species description. This species is very similar to *H. multus* n. sp. but the color pattern on the mesonotum is very distinctive.

**Etymology.** Gender, feminine. This species is named after the inverse "U" shaped carina on the propodeum; "inversalis" means in Latin inverse.

### ***Hypomicrogaster koinos* Valerio n. sp.**

(Figs 4E, 4D, 7C, 14E, 15G, 15H, 23E)

*Female.* Body length = 3.16–2.32 mm. *Body color:* Mainly dark brown; scape (except externolateral area brownish yellow) yellow as propleuron anterior and posterior tips, clypeus, labrum, legs (except hind coxae, hind tibial distal 1/3, hind femur distal tip dark brown); hind tibial spurs whitish yellow as palpi; ocelli yellowish; compound eyes silver; hypopygium medio longitudinal area brownish yellow, remainder of hypopygium yellow as metasomal pleurites; remainder of body dark brown. Wings hyaline, hind wing veins yellowish, except vein C+SC+R brownish yellow as fore wing veins, pterostigma darker than remainder of veins in fore wing.

*Head.* Head height/width = 1.37–1.44; compound eye height/width = 1.71–1.73; intertentorial pit distance = 0.21–0.25 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.50–2.83; width of face at dorsal clypeal edge = 0.40–0.48 mm; clypeus width/height = 2.16–2.75; vertex width/distance between anterior ocellus and edge of torulus = 2.86–2.94; length of first flagellomere = 0.23–0.28 mm; first flagellomere length/width = 1.60–2.00; length of first flagellomere/length of second flagellomere = 1; length of first flagellomere/length of third flagellomere = 1.06–1.10; distal flagellomere length = 0.13–0.15 mm; distal flagellomere length/penultimate flagellomere length = 1.60–2.00; distal flagellomere length/width = 1.25–1.33; malar space height/basal width of mandible = 0.75–0.90; ocell-ocular distance/lateral ocelli distance = 1.00–1.20. Face and clypeus punctate, mixed with confused colliculate sculpture, upper face area with foveate sculpture, face medial keel present and defined; frons lateral and distal area with fine and sparse confused punctate sculpture, scrobal areas nitid; vertex with ocellular area almost nitid except for very few punctate sculpture, remainder of vertex with punctate sculpture present; gena with anterior 1/2 with punctate sculpture, punctate sculpture at temple more evident, distal 1/2 with punctate sculpture mixed with transversal longitudinal punctate present at junction with postgena at basal 2/3; remainder of postgena nitid.

*Mesosoma*. Mesosoma length/width = 1.24–1.35; mesosoma length = 1.08–1.40 mm; mesosoma height = 0.80–1.00 mm. Propleuron with punctate sculpture throughout, basal 1/4 with longitudinal lineate sculpture, distal tip nitid; pronotum lateral area with upper groove with small dense and well-defined scrobiculate sculpture, ventral groove with wider less defined and more spaced scrobiculate sculpture than one present on upper groove, anterior 1/3 with larger less defined and confuse scrobiculate sculpture; mesonotum with dense and fine punctate sculpture which become less dense and larger towards the distal area, almost reaching scutellar groove; scutellar groove with 13 to 17 costulae more or less defined, medial costulae larger and wider than lateral ones which are less defined too; scutellum almost nitid except for very few and small punctate sculpture, lateral areas with costulae sculpture becoming more elongate and wider towards distal area; axilla though mesonotum with few short well-defined and spaced ridges at lunulae edge, otherwise nitid; metanotum with anterior 1/3 nitid, remainder of metanotum with fine rugulose sculpture except distal edge nitid; pronotum anterior 1/2 with dense foveate sculpture throughout mixed with confused rugulose sculpture next to carinae, spiracular area with confuse fine rugulose sculpture as anterior 1/2 of posterior lateral areas, remainder of posterior lateral areas nitid, areolar inside area with confused rugulose sculpture that is also present on transversal carinae, midlongitudinal carina less defined inside areola. *Legs*. Hind femur length = 0.28–0.33 mm; hind femur length/width = 3.27–3.30; hind tibia length/hind femur length = 1.11–1.13. Fore leg telotarsus smaller in length than basitarsus, normal in shape but a broad short seta at basal 1/3 of it; tarsal claw with medial seta long and thin. *Wings*. Fore wing length = 2.39–2.90 mm; IRS length = 0.09–0.13 mm; 1CUa length/1CUB length 1.2–1.52; length RS+Ma = 0.45–0.53 mm; length M+CU = 0.65–0.78 mm; 1M length/ m-cu length = 1.89–2.00; pterostigma length/height = 1.48–1.60. Hind wing: 1M length = 0.48–0.59 mm; 1M length/2M length = 1.81–2.00; 1M length/M+CU length = 1.47–1.56; length r-m/length Cua = 0.81–1.00; 1RSa length/2r-m = 1.25–1.33; 1A length = 0.28–0.38 mm. *Metasoma*. First tergum basal width = 0.23–0.30 mm; first tergum length/distal width = 1.24–1.35; second tergum length/distal width = 0.44–0.47; third tergum length/distal width = 0.42–0.48; hypopygium length = 0.60–0.73 mm. First metasomal tergum almost totally nitid except distal 1/4 with sparsely and shallow punctate sculpture, remainder of terga nitid; hypopygium folded medially, with longitudinal folds; ovipositor short, broad at base but not extremely, between 0.85 and 1.03 times the length of hind tibia; ovipositor sheaths thin and between 0.50 and 0.60 of hind tibia length.

**Material examined.** Holotype, female, “Costa Rica, Guanacaste, S. Rosa Park, 18 Sep. 77, D.H. Janzen, Dry Hill.” Paratypes: 19 females: Brasil, Belem, Utinga, xii/1966, Col. S.J. Oliveira; Rio de Janeiro, Ilha Jaguanum, 10/ix/1982, Col D. Hunt; Para, jacareacanga, xii/1968, M. Alvarenga. Colombia, PNN Farallones de Cali Anchicaya, 3°26N 76°48W, 650 m, Malaise, 1/16/01-1/30/01, S. Sarria, Leg. M.1547. Costa Rica, San José, Zurqui de Moravia, 1600 m, v/1992, Col. P. Hanson; Guanacaste, ACG, Sendero Arenales, 1080 m, 322861N 375817E, 19/ix/1999, Col. M. Pereira; Puntarenas, Buenos Aires, Estación Alta Mira, Cerro Frantzius, 2137 m, 12/iii–12/iv/2001, D. Rubi, L\_S\_574450\_334150, # 62125; Guanacaste, ACG, Sector Santa Rosa, Sendero Natural, 290 m, 313086N 359911E, 17/xi/1990, Gusaneros. Mexico: (3) Chiapas, Mustle, 440 m, near Huixtla, x/1970, Mal. Trap, Col. Welling. Trinidad, W.I. Arima valley, 800–1200 ft., 10–22/ii/1964; (2) Tamaulipas, Gómez Farias, 19/i/1975, RO and CA Kendall. Trinidad, W.I., Arima Valley, 800–1200 ft., 10–22/ii/1964. Paraguay, Paso Yoban, iv, Col. F. Schade (no further data present on label). Venezuela, San Esteban, xi/1939, Col. Pablo Anduze. USA, Michigan, Ann Harbor, H and M Townes. Ecuador, (E) Dureno, 23–28/ix/1977, 200 m, L. Pena.

Holotype and 3 paratypes deposited at AEI, 1 paratype deposited at AMNH, 4 paratypes deposited at CNCI, 2 paratypes deposited at IVHC, 3 paratypes deposited at USNM, 1 paratypes deposited at MCZH, 1 paratype deposited at UCD, 2 paratypes deposited at INBio and 1 paratype deposited at RMSL.

**Comments.** The following color variation was observed fore and middle coxae whitish yellow, pronotum lateral upper edge yellow as well as exterior edge of pronotum collar at mid-section, pterostigma with same brown tonality that remainder of veins in fore wing, edge in front of scutellar groove reddish or yellowish brown, tegula from yellow to whitish yellow. Also the posterior lateral areas of pronotum with anterior 1/2 with small colliculate sculpture, sometimes foveate sculpture of anterior 1/2 of pronotum becomes confused foveate sculpture towards anterior edge.

**Rearing records.** *Achlyodes selva* (Hesperiidae) feeding on *Zanthoxylum melanostictum* (Rutaceae); *Aguna* sp. (Hesperiidae) feeding on *Bauhinia guianensis* (Fabaceae); *Aguna asander* (Hesperiidae) feeding on *Bauhinia unguolata* (Fabaceae); *Anarmodia nebulosalis* (Crambidae) *Dendropanax arboreus* (Araliaceae); *Calydna sternula* (Riodinidae) feeding on *Schopfia schreberi* (Opiliaceae); *Ceratocilia sixolalis* (Crambidae) feeding on *Neea* sp (Nyctaginaceae); *Desmia octomaculalis* (Crambidae) feeding on *Notopleura tolimensis* (Rubiaceae); *Dysodia* sp.3

(Thyrididae) feeding on *Piper auritum* (Piperaceae); *Dysodia* sp. 4 (Thyrididae) feeding on *Myriocarpa longipes* (Urticaceae); *Dysonia* sp. 6 (Thyrididae) feeding on *Guarea rhopalocarpa* (Meliaceae) and *Desmopsis schippii* (Annonaceae); *Eulepidotis folium* (Noctuidae) feeding on *Licania arborea* (Chrysobalanaceae), *Sterculia apetala* (Sterculiaceae); *Eulepte* sp (Crambidae) feeding on *Tabebuia impetiginose* (Largenoniaceae); *Eulepidotis rectimargo* (Noctuidae) feeding on *Luehea candida* (Tiliaceae); *Eulepidotis folium* (Noctuidae) feeding on *Licania arborea* (Chrysobalanaceae); *Elachistidae* (?) feeding on *Trichilia martiana* (Meliaceae); *Elasmia mandela* (Notodontidae) feeding on *Thouinidium decandrum* (Sapindaceae); *Enyo ocypete* (Sphingidae) feeding on *Tetracera volubilis* (Dilleniaceae); Gelechiidae feeding on *Bombacopsis quinatum* (Bombacaceae); *Herpetogramma* sp. 10 (Crambidae) feeding on *Justicia aurea* (Acanthaceae); *Hyalothyrsus neleus* (Hesperiidae) feeding on *Swartzia cubensis* (Fabaceae); *Nisoniades godma* (Hesperiidae) *Solanum hazenii* (Solanaceae); *Nystalea ebalea* (Notodontidae) feeding on *Spondias mombin* (Anacardiaceae), *Anacardium occidentale*, *Anacardium excelsum* (Anacardiaceae) and *Astronium graveolens* (Anacardiaceae); *Nystalea aequipars* (Notodontidae) feeding on *Clusia rosea* (Clusiaceae); *Nystalea striata* (Notodontidae) feeding on *Myrcia splendens* (Myrtaceae); *Nystalea collaris* (Notodontidae) feeding on *Eugenia* sp (Myrtaceae) and *Eugenia monticola* (Myrtaceae); *Nystalea morona* (Notodontidae) *Garcinia intermedia* (Clusiaceae); *Nystalea nigrescens* (Notodontidae) *Garcinia intermedia* (Clusiaceae); *Nystalea superciliosa* (Notodontidae) feeding on *Bursera simaruba* (Burseraceae); *Nystalea* sp (Notodontidae) feeding on an unidentified Burseraceae, *Anacardium excelsum* (Anacardiaceae) and *Garcinia intermedia* (Clusiaceae); Noctuidae feeding on *Calliandra tergermina* (Fabaceae); *Omiodes cunicularis* (Crambidae) feeding on *Dalbergia retusa* (Fabaceae); *Opsiphanes quiteria* (Nymphalidae) feeding on *Chamaedorea tepejilote* (Arecaceae); *Orzarba* nr. *melanodonta* (Noctuidae) feeding on *Justicia aurea* (Acanthaceae); *Phanus vitreus* (Hesperiidae) feeding on *Inga sapindoides* (Fabaceae) and *Inga longispica* (Fabaceae); *Pentobesa pinna* (Notodontidae) feeding on *Inga vera* (Fabaceae), *Lonchocarpus macrophyllus* (Fabaceae), and *Guarea* sp (Meliaceae); *Phycodes cynara* (Noctuidae) feeding on *Calycophyllum candidissimum* (Rubiaceae); *Pyraustinae* (Crambidae) feeding on *Sabicea villosa* (Rubiaceae); *Poresta* spl (Notodontidae) feeding on *Tapirira brenesii* (Anacardiaceae); *Rosema attenuata* (Notodontidae) feeding on *Inga vera* (Fabaceae); *Rosema* sp.1 (Notodontidae) feeding on *Inga herrerae* (Fabaceae); *Tachuda discreta* (Notodontidae) feeding on *Cupania glabra* (Sapindaceae); *Telemiades antiopae* (Hesperiidae) feeding on *Inga longispica* (Fabaceae); Thyrididae feeding on *Guarea* sp (Meliaceae), *Guarea rhopalocarpa* (Meliaceae); *Udranomia kikkawai* (Hesperiidae) feeding on *Ouratea lucens* (Ochnaceae); and *Wanda sadotha* (Pyralidae) feeding on *Picramnia antidesma* (Simaroubaceae).

**Voucher numbers.** 00-SRNP-10059, 00-SRNP-11021, 00-SRNP-11568, 00-SRNP-11570, 00-SRNP-11793, 00-SRNP-11911, 00-SRNP-1268, 00-SRNP-13298, 00-SRNP-1353, 00-SRNP-1356, 00-SRNP-1424, 00-SRNP-1462, 00-SRNP-15246, 00-SRNP-15248, 00-SRNP-15249, 00-SRNP-15250, 00-SRNP-15255, 00-SRNP-15410, 00-SRNP-1557, 00-SRNP-1564, 00-SRNP-17722, 00-SRNP-1974, 00-SRNP-20097, 00-SRNP-2017, 00-SRNP-2045, 00-SRNP-2788, 00-SRNP-2888, 00-SRNP-3354, 00-SRNP-3355, 00-SRNP-4035, 00-SRNP-4047, 00-SRNP-7148, 00-SRNP-7167, 00-SRNP-7797, 00-SRNP-987, 00-SRNP-989, 00-SRNP-992, 00-SRNP-994, 00-SRNP-995, 00-SRNP-996, 00-SRNP-997, 00-SRNP-998, 01-SRNP-4335, 01-SRNP-10513, 01-SRNP-11296, 01-SRNP-11430, 01-SRNP-11773, 01-SRNP-11810, 01-SRNP-13050, 01-SRNP-13053, 01-SRNP-18078, 01-SRNP-24473, 01-SRNP-2825, 01-SRNP-3229, 02-SRNP-31285, 02-SRNP-10539, 02-SRNP-15350, 02-SRNP-17982, 02-SRNP-20019, 02-SRNP-29964, 02-SRNP-30106, 02-SRNP-30107, 02-SRNP-30119, 82-SRNP-151, 83-SRNP-1051, 83-SRNP-150, 83-SRNP-764, 84-SRNP-1178, 84-SRNP-1232, 84-SRNP-1301, 87-SRNP-1099, 87-SRNP-1175, 87-SRNP-655, 87-SRNP-690, 87-SRNP-695, 87-SRNP-766, 87-SRNP-920, 90-SRNP-1335, 90-SRNP-2209, 91-SRNP-136, 91-SRNP-2059, 91-SRNP-2182, 91-SRNP-2239, 92-SRNP-4078, 92-SRNP-4593, 92-SRNP-4598, 92-SRNP-4607, 93-SRNP-4528, 93-SRNP-6243, 93-SRNP-8088, 94-SRNP-10046, 94-SRNP-4959, 94-SRNP-5760, 94-SRNP-5811, 94-SRNP-5812, 94-SRNP-5917, 94-SRNP-6321, 94-SRNP-6482, 94-SRNP-6549, 94-SRNP-6552, 94-SRNP-6554, 94-SRNP-8580, 94-SRNP-8671, 94-SRNP-8688, 94-SRNP-8689, 94-SRNP-8706, 94-SRNP-9500, 94-SRNP-9502, 95-SRNP-10030, 95-SRNP-10047, 95-SRNP-10138, 95-SRNP-6246, 95-SRNP-7808, 95-SRNP-8732, 95-SRNP-9453, 97-SRNP-4365, 97-SRNP-5841.1, 97-SRNP-9849, 97-SRNP-985, 97-SRNP-9850, 98-SRNP-12842, 98-SRNP-12885, 98-SRNP-14235, 98-SRNP-4469, 98-SRNP-4477, 98-SRNP-4511, 98-SRNP-4515, 98-SRNP-6100, 98-SRNP-7347, 98-SRNP-7348, 98-SRNP-7350, 98-SRNP-7351, 98-SRNP-7352, 98-SRNP-7353, 98-SRNP-7354, 98-SRNP-7355, 98-SRNP-7357, 98-SRNP-7358, 98-SRNP-7383, 99-SRNP-10539, 99-SRNP-13491, 99-SRNP-13665, 99-SRNP-13666, 99-SRNP-1583, 99-

SRNP-3190, 99-SRNP-515, 99-SRNP-5779, 94-SRNP-8542, 03-SRNP-14520, 03-SRNP-14520, 03-SRNP-14571, 03-SRNP-14759, 03-SRNP-19180, 03-SRNP-7170, 03-SRNP-8163, 03-SRNP-8230, 03-SRNP-20225.

**Etymology.** Gender, neutral. This species is named based on how often it has been reared; “koinos” in Greek means common.

***Hypomicrogaster largus* Valerio n. sp.**

*Female.* Body length = 2.40–4.10 mm. *Body color:* Palpi whitish yellow as legs coxae, hypopygium area of longitudinal folds, trochanters, base of hind basitarsus, metasoma pleurites basal area; hind tibial spurs yellowish as remainder legs (except hind femur distal tip, hind tarsomeres and hind tibia distal 1/2), remainder of metasoma (except terga 1<sup>st</sup> and 4<sup>th</sup> to 8<sup>th</sup>), ocellus, basal area of propleuron, ovipositor, scape and pedicel (except externolateral areas), tegula, labrum, mandibles (except distal tips); remainder of antenna lightly brownish yellow as mid longitudinal area of hypopygium; compound eyes silver; area in front of scutellar groove light reddish orange; remainder of body dark brownish yellow. Wings hyaline; fore wings veins light brownish yellow with pterostigma and C+SC+R darker in coloration, except M+CU basal area and basal 1/2 of 1-1A yellowish except R1 with a brownish yellow color.

*Head.* Head height/width = 1.30–1.33; compound eye height/width = 1.62–1.79; intertentorial pit distance = 0.19–0.28 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.00–3.14; width of face at dorsal clypeal edge = 0.36–0.54 mm; clypeus width/height = 2.50–3.00; vertex width/distance between anterior ocellus and edge of torulus = 2.40–2.53; length of first flagellomere = 0.23–0.30 mm; first flagellomere length/width = 2.25–2.40; length of first flagellomere/length of second flagellomere = 1.00; length of first flagellomere/length of third flagellomere = 1.04–1.13; distal flagellomere length = 0.11–0.15 mm; distal flagellomere length/penultimate flagellomere length = 1.20–1.28; distal flagellomere length/width = 2.00–2.25; malar space height/basal width of mandible = 0.86–0.90; ocell-ocular distance/lateral ocelli distance = 1.00–1.11. Clypeus and face with shallow and dense lineate sculpture, face with mid longitudinal area with considerably less quantity and definition of punctate sculpture, remainder of face area with punctate sculpture which almost turn into foveate sculpture slightly resembling longitudinal lineate sculpture at first glance, face keel present but not conspicuous; frons with scrobal areas with few transversal lineate sculpture at externo = posterior lateral area, lateral areas as well as distal area with confuse punctate sculpture, vertex too; temple as well as gena-postgena junction area with larger and shallow punctate sculpture than the one present at vertex, gena-postgena junction area with smooth longitudinal transverse lineate sculpture, remainder of postgena nitid as well as ocular ring. *Mesosoma.* Mesosoma length/width = 1.06–1.14; mesosoma length = 0.83–1.43 mm; mesosoma height = 0.65–1.00 mm. Propleuron with punctate sculpture throughout its length except externolateral edge nitid, anterior area with smooth and confuse lineate sculpture present that can reach the mid section of the propleuron; pronotum lateral area with anterior 1/3 with two large and clean costulae, dorsal as well as ventrolateral groove with well-defined scrobiculate sculpture, ventral groove scrobiculate sculpture larger and conspicuously less dense than the one present at dorsolateral groove, posterior distal upper corner with dense and confuse punctate sculpture next to posterior edge, remainder of area between grooves nitid, dorsal edge 1/5 and ventral edge 1/5 of posterior edge height; mesonotum with anterior area with dense and well-defined punctate sculpture which becomes less dense and larger as well as more shallow towards scutellar groove and almost reaching it; scutellar groove with seven to 11 costulae; scutellum with scattered punctate sculpture present mainly at longitudinal lateral areas, mid longitudinal area nitid, lateral areas with not well-defined costulate sculpture which becomes more elongate and larger as better defined towards posterior area; axilla through metanotum with two short and smooth transversal ridges next to the scutellum at anterior lunulae edge, remainder of lunulae as well as axilla nitid; metanotum nitid and subrectangular in shape mid distal costulae divided by a short thin bridge; axilla through metanotum with confuse rugulose sculpture; propodeum with anterior lateral areas with large, shallow punctate sculpture, areas right next to medio longitudinal and areolar as well as transversal carinae with fine confuse rugulose sculpture which extends over the transversal and costula as well as anterior and lateral edges of posterior lateral areas, remainder of posterior lateral areas nitid as well as inside areola except for midlongitudinal carina well-defined, spiracular area with confuse rugulose sculpture; mesonotum with anterior edge punctate as well as anterior 1/2 of dorsal area but punctate sculpture less dense and less defined, sternauli as a transversal depression at mid pleuron length which exhibits confuse punctate sculpture, epistomal scrobe with few smooth and not conspicuously present transversal ridges, dorsal edge with dense, small and well-

defined scrobiculate sculpture, posterior edge nitid as remainder of mesopleuron; metapleuron with medial pit present deeply impressed, pleural suture slightly impressed and nitid, dorsal edge with large, narrow and well spaced transverse ridges, posterior edge with shorter, smaller and less defined transverse ridges, area next to posterior edge with large and confuse punctate sculpture. *Legs.* Hind femur length = 0.78–1.23 mm; hind femur length/width = 3.06–3.39; hind tibia length/hind femur length = 0.81–1.04. Fore telotarsus normal in shape and not modified at ventral area of it, externolateral area with a long and narrow setae as well as two distal long narrow setae at distal edge of telotarsus in ventral face of it; tarsal claws with a basal tooth. *Wings.* Fore wing length = 2.8–3.95 mm; IRS length = 0.10–0.13 mm; 1CUa length/1CUB length = 1.20–1.28; length RS+Ma = 0.45–0.68 mm; length M+CU = 0.95–1.18 mm; 1M length/ m-cu length = 2.07–2.33; pterostigma length/height = 1.56–2.1. Hind wing: 1M length = 0.43–0.71 mm; 1M length/2M length = 1.88–2.19; 1M length/M+CU length = 1.54–1.68; length r-m/length Cua = 0.72–0.82; 1RSa length/2r-m = 1.11–1.27; 1A length = 0.28–0.40 mm. *Metasoma.* First tergum basal width = 0.21–0.45 mm; first tergum length/distal width = 1.30–1.36; second tergum length/distal width = 0.36–0.45; third tergum length/distal width = 0.35–0.67; hypopygium length = 0.62–1.15 mm. First metasomal tergum with longitudinal lineate sculpture at lateral areas, otherwise nitid, tergum posterior 1/2 with large and shallow punctate sculpture becoming larger and less dense towards posterior edge, anterior mid area nitid, distal edge with two depressed areas, tergum narrow and rectangular in shape in dorsal view; second metasomal tergum normally nitid but sometimes with few irregular and smooth longitudinal depressions at lateral and next to posterior edge; remainder of terga nitid; hypopygium with longitudinal folds and not extended or divided distally; ovipositor thin and elongate in lateral view and between 2.11–2.42x as long as hind tibial length; ovipositor sheaths with dense setosity throughout its exposed length, setosity short and very dense.

**Material examined.** Holotype, female, “Ecuador, Pich.[incha], S.[anto] Domingo, 16 km S.E. Tinalandia, 680 m, 15/vi/1976, (Col.) Peck.” Paratypes, females: 19 females, Argentina, 13/i/1966, HandM Townes. Belize, Central America, Toledo dist., blue creek, 89°3’W 16°12’N, 21/i/1982, sweep sample, Col. A.T. Fynnmore. Brasil, Quatro Barros, near Curitiba, 7/ii/1966, H and M Townes, Mato Grosso, Cáseres, xi/1984, Col. M. Alvarenga; Mato Grosso, Sinop, xi/1975, Col. M. Alvarenga, Malaise trap; Saõ Paulo, Setta Baquiana, 13–17/i/1969. Canada, Notario, Ottawa, 11/vii/1991. Colombia, Amazonas, PNN Amacayacu, Matamata, 3°41’S 70°15’W, 150 m, Malaise, 20–27/xi/2000, Col. A. Parente, Leg. M.1119; PNN Amacayacu, Matamata, 3°46’S 70°18’W, 150 m, Malaise, 19–27/xi/2000, Col. B. Amado, Leg. M.1318; Nariño, RN La Planada via Hondon, 1°15’N 78°15’W, 1930 m, 16/vi–2/vii/2000, M. 262, Col. G. Oliva. Costa Rica, Alajuela, P.N. Arenal, Sendero Mena, 600 m, 17/iv–19/v/2001, Col. G. Carballo, Malaise, #62409; Limón, 16 km W. Guápiles, 400 m, xii/1989, Col P. Hanson; Puntarenas, Rd. To Rincón, 10 km W. Pan-Amer. Hwy, 100 m, ii–iii/1989, Col. Hanson and Gauld; Puntarenas, R.F. Golfo Dulce, 24 km W. Piedras Blancas, 200 m, iii/1993, Col. P. Hanson. Ecuador, Napo, 10 km N.E. Tena, 400 m, 19–20/ii/1983, Col. L. Master. Grand Caiman, George Town, 15–30/iii/1965, Col. J.R. McLintock. Guatemala, Jalapa, 3 km S. Jalapa, 1400 m, 12/ix/1987, Col M. Sharkey. Panama, Las Cumbres, Canal Zone, March 1979, Col. H. Holda. Republica Dominicana, La Cumbre, 400 m, 21/iii/1978, Col. L. Master. USA, Ohio, Cleveland, 9/ix/1934. Mexico, Sin[aloa], 20 mi E. Concordia, 3000 m, 12/viii/1964, Col. WRM Mason.

Holotype and 10 female paratypes deposited at CNCI, three female paratypes deposited at AEI, three female paratypes deposited at AVHI, one female paratype deposited at MCZH, two female paratypes deposited at RMSL, one female paratype deposited at OSUC, one female paratype deposited at MUCR.

**Comments.** The following color variation was observed: hind coxae from totally yellow to almost totally dark brown, ovipositor sometimes brownish yellow, tarsal claws dark brownish yellow instead of yellowish, hypopygium area of longitudinal folds yellow instead of whitish yellow, second metasomal tergum as well as third totally brownish yellow, propleuron almost totally yellow, extension of confuse punctate sculpture next to posterior edge at pronotum varies greatly, scutellar groove costulae varies greatly in shape and degree of definition; depressed areas at posterior edge of first metasomal tergum can or cannot be present depending on the specimen as well as the degree of punctate sculpture at posterior 1/2 of tergum.

**Rearing records.** Reared from an unidentified Elachistidae larvae feeding on an unidentified Lauraceae as well as an unidentified Euphorbiaceae plant and *Machaerium seemanii* (Fabaceae); one ex. *Coleophora asterophagelia* by J.F. Landy; ex. *Hypsiphyla grandella* (Pylalidae) on Meliaceae and *Cedrela* sp (Meliaceae); ex. *Ecdytolopha torticornis* (Tortricidae) on Macadamia (Proteaceae). Related voucher numbers: 02-SRNP-20511, 03-SRNP-20510.

**Etymology.** Gender, neutral. This species is named after the thin and large ovipositor; “largus” in Latin means large.

***Hypomicrogaster laxis* Valerio and Mason n. sp.**

(Figs. 15A, 15B)

*Female.* Body length = 2.76–3.44 mm. *Body color:* Mainly dark brown. Scape and pedicel yellow as well as tegula, labrum, ocelli, legs (except hind femur distal tip, hind tibia distal 1/3, hind tarsomeres, hind coxae basal 1/2, metasomal sterna and pleurites, hypopygium (except distal edge), ovipositor; ovipositor sheaths with medial area honey yellow as propleuron anterior tip; palpi whitish yellow as hind tibial spurs; remainder of body dark brown. Wings hyaline, hind wing veins transparent as fore wing veins 1-1A basal 2/3, M+CU basal 1/3, remainder of fore wing slightly brown yellow, pterostigma and C+SC+R vein darker than remainder of veins.

*Head.* Head height/width = 1.32–1.33; compound eye height/width = 1.63–1.70; intertentorial pit distance = 0.28–0.33 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.25–3.33; width of face at dorsal clypeal edge = 0.48–0.55 mm; clypeus width/height = 2.60–2.67; vertex width/distance between anterior ocellus and edge of torulus = 1.81–2.08; length of first flagellomere = 0.28–0.30 mm; first flagellomere length/width = 2.00–2.50; length of first flagellomere/length of second flagellomere = 1.00–1.09; length of first flagellomere/length of third flagellomere = 0.75–1.25; distal flagellomere length = 0.14–0.18 mm; distal flagellomere length/penultimate flagellomere length = 1.22–1.40; distal flagellomere length/width = 1.55–1.57; malar space height/basal width of mandible = 1.00–1.35; ocell-ocular distance/lateral ocelli distance = 1.10–1.11. Face and clypeus with punctate sculpture, clypeus sculpture less defined, large or spaced than face’s one; frons with punctate sculpture present except on scrobal areas nitid; vertex densely punctate and more conspicuous at posterior 1/2; gena with temple with conspicuous punctate sculpture, anterior 1/2 with fine punctate sculpture, posterior 1/2 with larger punctate sculpture mixed with longitudinal transverse lineate sculpture at junction with post gena at basal 2/3 of it; remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.25–1.30; mesosoma length = 1.12–1.28 mm; mesosoma height = 0.76–0.92 mm. Propleuron with basal 1/3 with longitudinal punctate sculpture, remainder of propleuron punctate except distal upper tip nitid; pronotum lateral area with anterior 1/3 with few tall and narrow scrobiculate sculpture, upper groove with small fine well-defined scrobiculate sculpture, ventral groove with tall fine scrobiculate sculpture, otherwise nitid; mesonotum with dense punctate sculpture almost reaching scutellar groove, scutellar groove with 10 to 15 small costulae of approximately same width; scutellum with fine punctate sculpture throughout, lateral areas with costulate sculpture becoming more elongate towards distal area and of same width throughout; axilla through mesonotum with few small well-defined transversal ridges next to lunulae, otherwise nitid; metanotum with anterior 1/2 nitid, remainder of metanotum with confused rugulose sculpture; pronotum with anterior 1/2 with large shallow punctate sculpture, areola carinae as well as transversal and midlongitudinal carina present but less cristate and less defined by confused rugulose sculpture on them as inside of areola, lateroposterior areas with confused rugulose sculpture at edges of carinae (medial and distal edge of it nitid), costula present and spiracular area with fine confused rugulose sculpture; mesopleuron with punctate sculpture at anterior 1/3, sternauli as an elongate depression which presents small confused colliculate sculpture at medial area of it, epistomal scrobe with dense small and confused scrobiculate sculpture, dorsal edge with large scrobiculate sculpture, distal edge with larger and more spaced scrobiculate sculpture that the one present at dorsal edge, otherwise nitid; metapleuron with dorsal and distal edge with large scrobiculate sculpture present, area around the distal 1/3 of metapleuron punctate, medial pit present, otherwise nitid. *Legs.* Hind femur length = 0.93–1.08 mm; hind femur length/width = 2.93–3.00; hind tibia length/hind femur length = 1.18–1.19. Fore telotarsus normal in shape and smaller in length than fore basitarsus; tarsal claws with thin, short, and well-defined seta at basal area of claws. *Wings.* Fore wing length = 3.00–3.52 mm; 1RS length = 0.41–0.48 mm; 1CUa length/1CUb length = 0.64–0.69; length RS+Ma = 0.53–0.65 mm; length M+CU = 1.18–1.45 mm; 1M length/ m-cu length = 0.58–0.66; pterostigma length/height = 1.19–1.54. Hind wing: 1M length = 0.50–0.65 mm; 1M length/2M length = 1.73–2.10; 1M length/M+CU length = 1.18–1.30; length r-m/length Cua = 0.86–0.90; 1RSa length/2r-m = 1.83–2.25; 1A length = 0.35–0.48 mm. *Metasoma.* First tergum basal width = 0.33–0.48 mm; first tergum length/distal width = 0.75–0.86; second tergum length/distal width = 0.26–0.29; third tergum length/distal width = 0.33–0.38; hypopygium length = 0.58–0.65 mm. First tergum with basal 1/2 without punctate sculpture present but edges with

fine longitudinal lineate sculpture present, distal 1/2 with large shallow punctate sculpture, distal edge with two parallel depressions with lineate sculpture on them, second tergum with few punctate sculpture on anterior edge but remainder of tergum essentially nitid, third tergum nitid as remainder of terga; hypopygium not divided at tip and with longitudinal folds; ovipositor elongate and thin throughout, as long as 1.5x the length of hind tibia; ovipositor sheaths at least as 5.6x as width of ovipositor at mid length in lateral view, distal tip more or less rectangular in shape and with 5 to 6 evident and broad setae.

**Material examined.** Holotype, female, “[USA], Kerrville, Tx., May 1<sup>st</sup> 1988, H. and M. Towns.” Paratypes: one same data as holotype, 9 same data as holotype except date: (1) 4/v/1988, (2) 6/v/1988, (5) 12/v/1988, (1) 14/v/1988. USA: Texas, Fredericksburg, 13/v/1988, Col. HandM Towns, 7 with same data except date: (1) 9/V/1988, (1) 7/V/1988, (1) 3/V/1988, (2) 11/V/1988, (2) 30/VI/1988; Kansas, Montgomery Co., Elk city Reservoir, 22/v/1970, Col. G.F. Hevel; (2) Kansas, Riley Co. Konza Prairie 2, 39°04'N 92°36'E, 14–12/vi/1997, Col. C.N. Lewis. Canada, Ontario, Pt. Pelle N.P., 23/vi/1968, Mal. Trap; (2) Ontario, St. Lawrence Island Nat. Park, Thwartway Isl.

Holotype and 19 paratypes deposited at AEI, three paratypes deposited at CNCI and one paratype deposited at USNM.

**Comments.** The following color variation was observed: hypopygium brown as remainder of metasoma, ovipositor sheaths almost black in color, propleuron completely black, scape lateral areas brown larger than normally seen, mesopleuron with distal tip yellow or totally yellow at ventral area of I as well as a longitudinal slightly orange spot in coloration; hind coxae with basal 1/3 to 2/3 black in coloration, pronotum dorsal edge at lateral area with more pale coloration than remainder of pronotum.

**Etymology.** Gender, neutral. This species is named after the very wide ovipositor sheaths; “laxus” in Latin means wide.

### *Hypomicrogaster linearis* Valerio n. sp.

(Figs. 11B, 11D, 11H, 16D)

*Female.* Body length = 3.08 mm. *Body color:* Lateral edges of metasomal second tergite yellow as remainder of pleurites and sternites as well as hypopygium (except medio longitudinal region dark brown), legs (except hind coxae basal 1/2, hind femur distal tip, hind tibia distal 1/3), palpi, labium, mandibles, tegula, scape and pedicel (except lateroexternal area brownish), ocelli; hind tarsomeres brownish yellow as well as remainder of antenna; ovipositor brownish yellow except distal 1/3 yellow; compound eyes silver; basals 2/3 of hind tibia whitish yellow; remainder of body dark brown. Wings hyaline, fore wing veins yellowish brown with veins M+CU and 1-1A lighter in coloration and pterostigma and C+SC+R darker than other veins; hind wing veins yellowish brown.

*Head.* Head height/width = 1.39; compound eye height/width = 1.52; intertentorial pit distance = 0.24 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.16; width of face at dorsal clypeal edge = 0.43 mm; clypeus width/height = 2.20; vertex width/distance between anterior ocellus and edge of torulus = 2.41; length of first flagellomere = 0.22 mm; first flagellomere length/width = 2.25; length of first flagellomere/length of second flagellomere = 1.2; length of first flagellomere/length of third flagellomere = 1.28; distal flagellomere length = 0.10 mm; distal flagellomere length/penultimate flagellomere length = 1.14; distal flagellomere length/width = 1.60; malar space height/basal width of mandible = 0.90; ocell-ocular distance/lateral ocelli distance = 1.33. Clypeus and face with conspicuous punctate sculpture, face's keel present and slightly cristate; frons with scrobal areas with fine and dense transversal lineate sculpture except for basal 1/4 of it, lateral areas with scattered punctate sculpture, distal area with dense punctate sculpture at mid section and lateral areas with sparse punctate sculpture as anterior vertex; vertex with inter ocellar areas nitid, remainder of vertex with dense punctate sculpture; temple with large and shallow punctate sculpture which becomes more defined and deeper towards postgena, remainder of gena with shallow punctate sculpture except ocular ring nitid as well as junction area with postgena with longitudinal transverse lineate sculpture; postgena with punctate sculpture at basal 2/3 of it with remainder of area nitid. *Mesosoma.* Mesosoma length/width = 0.92; mesosoma length = 1.25 mm; mesosoma height = 0.75 mm. Propleuron with most of its area with confuse and shallow rugulose sculpture which mix with punctate sculpture, distal 1/4 and interior lateral edge only with fine punctate sculpture; pronotum lateral area with anterior 1/3 with fine transversal ridges and depressions, lateral upper groove with well-defined short transversal ridges, ventral lateral groove with denser and more numerous transversal ridges than upper lateral groove as well as less well-

defined which extends into the area between lateral grooves as poorly defined longitudinal ridges, dorsal and ventral edge 1/5 of posterior edge height; mesonotum with dense and closely grouped punctate sculpture which becomes less dense but larger and shallower towards scutellar groove, the punctate sculpture does not reach the scutellar groove; scutellar groove with 20 very small and poorly defines costulae; scutellum with very few punctulate sculpture, otherwise nitid, lateral areas with few costulate sculpture of approximately same width but posterior one longer than anterior ones; axilla through mesonotum with few poorly defined short transversal edges at anterior edge of lunulae, lunulae with anterior edge poorly defined by sculpture, remainder of axilla nitid; metanotum subrectangular in shape and nitid; axilla through metanotum with two short transversal ridges and external edges with confuse rugulose sculpture; propodeum with anterior lateral areas with sparse punctate sculpture and mainly nitid, midlongitudinal carina (outside areola) as well as transversal and costula well-defined, areola with confuse and dense rugose sculpture which obscures the midlongitudinal carina, spiracular areas with dense rugulose sculpture as well as posterior lateral areas except medial areas nitid and posterior edge with few well-defined carina reaching it; mesopleuron with anterior 1/4 punctate as well as anterior 1/3 of upper edge, sternauli as an elongate and nitid depression except for a transversal and confusedly punctate mark at mid length of it, epistomal scrobe with short and spaced transversal ridges which are not conspicuously present by punctate sculpture, dorsal edge with small and very dense scrobiculate sculpture, distal edge with two large and very short carina but mainly nitid, remainder of mesopleuron nitid; metapleuron with medial pit present and deep, pleural suture present and nitid, distal 1/2 of area around dorsal edge as well as area around distal edge with fine and confuse rugulose sculpture mixed with punctate sculpture, dorsal and distal edge with spaced and bid transversal ridges, remainder of area nitid. *Legs.* Hind femur length = 0.88 mm; hind femur length/width = 2.80; hind tibia length/hind femur length = 1.20. Fore telotarsus shorter than fore basitarsus, telotarsus normal with one broad curved seta at distal edge of it on externolateral edge of it. Tarsal claws with a thin and large basal tooth.

*Wings.* Fore wing length = 3.00 mm; 1RS length = 0.10 mm; 1CUa length/1CUb length = 1.05; length RS+Ma = 0.50 mm; length M+CU = 1.03 mm; 1M length/ m-cu length = 2.36; pterostigma length/height = 1.37. Hind wing: 1M length = 0.49 mm; 1M length/2M length = 3.00; 1M length/M+CU length = 1.77; length r-m/length Cua = 0.70; 1RSa length/2r-m = 1.25; 1A length = 0.24 mm. *Metasoma.* First tergum basal width = 0.24 mm; first tergum length/distal width = 1.06; second tergum length/distal width = 0.38; third tergum length/distal width = 0.45; hypopygium length = 0.58 mm. First metasomal tergum with longitudinal lineate sculpture throughout its length except at mid are of posterior half of tergum which is nitid, posterior 1/3 of tergum with few large and shallow punctate sculpture; second metasomal tergum nitid as remainder of terga; ovipositor slightly latero compressed and x times length of hind tibia, with distal 1/4 conspicuously narrower than remainder of ovipositor in lateral view; hypopygium with longitudinal folds and not divided medially; ovipositor sheaths more or less broad in lateral view.

**Material examined.** Holotype, female, "Costa Rica, Guanacaste, ACG, Sector San Cristóbal, Quebrada San Francisco, 690 m, 316916N 385419E, 29/v/2003, Col, Osvaldo Espinosa, 03-SRNP-6425." Holotype deposited at INBio.

**Comments.** *Hypomicrogaster linearis* is very similar to *H. koinos* but can be separated from it by the presence of longitudinal lineate sculpture throughout the basal 1/2 of the tergum and the narrow bridge between the metanotum medio distal costulae. For more details see *H. koinos* description. Additionally, *H. lineatus* is the only other species with longitudinal lineate sculpture throughout the basal 1/2 of the first tergum but *H. lineatus* does not present a hook-like seta at fore telotarsus, also *H. lineatus* ovipositor is longer and narrower than the one exhibited by *H. linearis*.

**Rearing records.** Specimens reared from *Omiodes humeralis* (Crambidae) feeding on *Inga oerstediana* (Fabaceae). Sex ratio 1/5

**Etymology.** Gender, feminine. This species is named after the presence of linear sculpture on the first metasomal tergum, linearis.

### ***Hypomicrogaster lineatus* Valerio n. sp.**

(Figs. 16E, 22E)

*Female.* Body length = 3.84–3.92 mm. *Body color:* Distal 1/2 of hind coxae yellow as ocellus, anterior and distal area of propleuron, ventral half of clypeus, labrum, tegula, legs (except tarsal claws brownish yellow as well as

hind femur distal tip, hind tibia distal 2/5, hind tarsomeres), scape and pedicel (except external lateral areas dark brown); mesosternum with two longitudinal yellowish areas; compound eyes silver; middle longitudinal area of hypopygium as distal tip of it brownish yellow as 5<sup>th</sup> to 8<sup>th</sup> metasomal terga; remainder of body with dark brown coloration. Wings hyaline, fore wing veins light brown except pterostigma and C+SC+R darker in coloration, M+CU and 1-1A basal 3/4 yellowish; hind wing veins C+SC+R, SC+R and R1 light brownish yellow, remainder of veins slightly yellow.

*Head.* Head height/width = 1.32–1.37; compound eye height/width = 1.60–1.65; intertentorial pit distance = 0.25–0.28 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.33–3.67; width of face at dorsal clypeal edge = 0.48 mm; clypeus width/height = 2.08–2.17; vertex width/distance between anterior ocellus and edge of torulus = 3.12–3.33; length of first flagellomere = 0.26–0.28 mm; first flagellomere length/width = 2.10–2.60; length of first flagellomere/length of second flagellomere = 1.04–1.10; length of first flagellomere/length of third flagellomere = 1.05–1.10; distal flagellomere length = 0.15 mm; distal flagellomere length/penultimate flagellomere length = 1.50–2.00; distal flagellomere length/width = 1.50–2.00; malar space height/basal width of mandible = 1.00; ocell-ocular distance/lateral ocelli distance = 1.27–1.33. Clypeus and face with confuse colliculate sculpture present; clypeus with shallow punctate sculpture; face with shallow and confuse areolate-rugulose sculpture present which is more defined at lateral areas of upper face; frons with scrobal areas nitid, lateral and distal area with shallow and confuse punctulate sculpture as anterior vertex; vertex with area around ocellus nitid, distal area with dense fine punctate sculpture, lateral areas with dense punctate sculpture as gena (except ocular ring nitid); postgena basal 2/3 with longitudinal transversal lineate sculpture as well as junction area with gena, remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.22–1.34; mesosoma length = 0.94–0.95 mm; mesosoma height = 0.65–0.70 mm. Propleuron with dense punctate sculpture throughout its length, basal 3/4 with longitudinal lineate sculpture present; pronotum lateral areas with anterior 1/2 with tall, well demarked and sinuate scrobiculate sculpture, upper lateral groove with large well demarked scrobiculate sculpture which become more close and slightly smaller towards distal edge, ventral groove with few smooth confuse and tall scrobiculate sculpture, dorsal edge 1/5 and ventral edge 1/4 of distal edge height; mesonotum densely punctate which became slightly less dense towards scutellar groove; scutellar groove with 13 well-defined small costulae, middle ones 3 times as large as lateral ones; scutellum with punctate sculpture which is denser at lateral areas than middle section of it, lateral areas with small well define costulate sculpture and with costulae of same size and width; axilla through mesonotum with a series of transversal thin ridges on the anterior edge of lunulae, dorsal area of anterior edge with confuse dense and fine rugulose sculpture making the edge less clearly defined; metanotum nitid with medio distal areas with two large clearly define costulae; axilla through metanotum with confuse rugulose sculpture present; propodeum with anterior 1/2 with large punctate sculpture, area next to transversal, areolar and costula with send fine and confuse rugulose sculpture as well as spiracular areas, remainder of propodeum as well as transversal and areolar carinae with confuse fine rugulose sculpture over it, making the carina to be less evident and cristate, posterior lateral areas with more broad and larger rugulose sculpture and nitid at medial area, costula well-cristate and evident; mesopleuron with anterior 1/2 punctate as medial area of posterior 1/2, sternauli as an elongate deep impression which present a series of small transversal ridges at mid area of it and otherwise nitid, epistomal scrobe with confuse transversal ridges mixed with punctate sculpture, dorsal edge with anterior area nitid and remainder of area with small well-defined scrobiculate sculpture, distal edge with few small, smooth, and confuse rugulose sculpture, remainder of mesopleuron nitid; metapleuron medial pit present as well as coxae sulcus, area around them nitid, dorsal and distal edge with spaced large transversal ridges and area around them with dense punctate and rugulose sculpture present. *Legs.* Hind femur length = 1.12 mm; hind femur length/width = 3.00–3.75; hind tibia length/hind femur length = 1.16–1.17. Fore leg telotarsus smaller in length than basitarsus; telotarsus normal not modified and without hook-like setae on external face of it; tarsal claw with a long and thin basal tooth. *Wings.* Fore wing length = 3.84–3.92 mm; 1RS length = 0.12–0.13 mm; 1CUa length/1CUB length = 1.18–1.27; length RS+Ma = 0.62–0.65 mm; length M+CU = 0.85–0.90 mm; 1M length/ m-cu length = 2.00–2.33; pterostigma length/height = 1.74–1.77. Hind wing: 1M length = 0.48–0.62 mm; 1M length/2M length = 1.37–1.67; 1M length/M+CU length = 1.12–1.38; length r-m/length Cua = 0.83–0.84; 1RSa length/2r-m = 1.50–1.60; 1A length = 0.35–0.40 mm. *Metasoma.* First tergum basal width = 0.35 mm; first tergum length/distal width = 1.00–1.16; second tergum length/distal width = 0.26–0.28; third tergum length/distal width = 0.40–0.53; hypopygium length = 1.09–1.10 mm. First metasomal tergum with smooth, dense and fine longitudinal lineate sculpture throughout its area, junction area with distal 1/2 with few shallow punctate sculpture which mixed with

longitudinal sculpture, remainder area with deep punctate sculpture with mix with fine longitudinal lineate sculpture at lateral area as well as distal edge of tergum; second tergum with few poorly defined rugulose sculpture at anterior edge, remainder of tergum as terga nitid; hypopygium with longitudinal folds; ovipositor with normal width in lateral view as well as elongate, between 2.2 and 2.23 times as long as hind tibia length; ovipositor sheaths with long setae throughout its length and not densely present.

**Material examined.** Holotype, female, “[USA], N.Y., Ithaca, 24 August, [18]94.” Paratypes, one female: (USA), Virginia, Falis Church, Collection N. Banks.

Holotype deposited at USNM, paratype material deposited at MCZH.

**Comments.** The paratype specimen does not present any date of collecting on the label contrasting with the holotype specimen. However, the holotype date on the label appears as '94 and was inferred as 1894 instead of 1994 by the coloration of the label as well by the type of entomological pin present in the specimen. Paratype with a variant in the venation coloration: fore wing veins yellowish with pterostigma brownish yellow, hind wing with all veins whitish in coloration. In addition, the paratype exhibits a more yellowish brown pronotum lateral upper edge. The entomological pin in the paratype does not allow observation of the scutellar groove.

**Etymology.** Gender, masculine. This species is named after the presence of lineate sculpture across the first metasomal tergum.

### ***Hypomicrogaster luisi* Valerio n. sp.**

(Figs. 1E, 3B, 6E, 14A, 14B, 14C, 14D)

*Female.* Body length = 4.13–4.64 mm. *Body color:* Yellow. Ovipositor sheaths brownish yellow as well as antenna flagellomeres, scape externolateral areas, hypopygium medio longitudinal area, hind leg tarsomeres and distal tip of tibia; mesonotum slightly orange in color; ocelli yellow; compound eyes silver; lateral pleurites of metasomal terga 1 and 2 whitish yellow; palpi yellow as remainder of body; tarsal claws yellow. Wings infumate with veins brown.

*Head.* Head height/width = 1.30–1.35; compound eye height/width = 1.62–1.65; intertentorial pit distance = 0.45–0.50 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.71–3.00; width of face at dorsal clypeal edge = 0.85–0.92 mm; clypeus width/height = 1.85–2.55; vertex width/distance between anterior ocellus and edge of torulus = 2.05–2.27; length of first flagellomere = 0.28–0.31 mm; length of first flagellomere/length of second flagellomere = 1; length of first flagellomere/length of third flagellomere = 1.00–1.10; distal flagellomere length = 0.25–0.30 mm; distal flagellomere length/penultimate flagellomere length = 1.14–1.17; distal flagellomere length/width = 1.95–2.00; malar space height/basal width of mandible = 0.95–1.00; ocell-ocular distance/lateral ocelli distance = 1.25–1.27. Face and clypeus with dense, shallow confused punctuate sculpture; frons with scrobal areas nitid, remainder of frons with fine punctuate sculpture as well as vertex; vertex with ocell-ocular area with less dense punctuate sculpture; gena with punctuate sculpture; postgena with smooth transversal lineate sculpture at basal 2/3 combined with few punctuate sculpture. *Mesosoma.* Mesosoma length/width = 1.30–1.40; mesosoma length = 1.15–1.33 mm; mesosoma height = 0.83–1.05 mm. Propleuron with punctate sculpture throughout; pronotum with lateral grooves present but nitid as remainder of pronotal lateral areas; mesonotum with dense, fine punctate sculpture which became less dense towards scutellar groove, not reaching it; scutellar groove with 14 costulae, medial ones 2x larger than smaller lateral ones; axilla through mesonotum nitid; scutellum with few scattered fine punctate sculpture, lateral areas with costulate sculpture which became more wider and long towards the distal area; metanotum with medial 1/3 with confused rugulose sculpture, otherwise nitid; propodeum without transversal or costula, sometimes areola totally absent or sometimes just two short transversal carina at distal area of medial carina, area below spiracle with long transversal sculpture, anterior propodeal 1/2 with few scattered punctate sculpture; mesopleuron with anterior 1/4 punctate as well as 1/2 of upper and ventral area, sternauli nitid and as an elongate depression as well as epistomal scrobe, dorsal and distal edge with dense scrobiculate sculpture; metapleuron with dorsal and distal edge with spaced scrobiculate sculpture mixed with few punctate sculpture, medial pit present. *Legs.* Hind femur length = 1.85–2.03 mm; hind femur length/width = 2.89–3.08; hind tibia length/hind femur length = 1.19–1.20. Fore telotarsus smaller in length than fore basitarsus, not modified; tarsal claw with short, broad basal seta. *Wings.* Fore wing length = 4.14–4.64 mm; 1RS length = 0.11–0.14 mm; 1CUa length/1CUb length = 1.23–1.26; length RS+Ma = 0.95–1.63 mm; length M+CU = 1.84–2.08 mm;

1M length/ m-cu length = 1.75–1.88; pterostigma length/height = 2.06–2.15. Hind wing: 1M length = 0.73–0.78 mm; 1M length/2M length = 1.92–2.35; 1M length/M+CU length = 1.47–1.68; length r-m/length Cua = 0.90–1.00; 1RSa length/2r-m = 1–1.43; 1A length = 0.38–0.46 mm. *Metasoma*. First tergum basal width = 0.52–0.65 mm; first tergum length/distal width = 1.00–1.19; second tergum length/distal width = 0.29–0.30; third tergum length/distal width = 0.37–0.38; hypopygium length = 1.25–1.60 mm. Terga nitid except distal 1/3 of first metasomal tergum with shallow, scattered punctate sculpture; hypopygium not divided at tip, longitudinal folds present; ovipositor thin throughout its length and between 1.16 and 1.21x hind tibia's length.

*Males*. Body length 3.61–4.25 mm, fore wing length = 1.70–1.80 mm. Similar as females.

**Material examined.** Holotype, female, “Argentina, Orán, Abra Grande, Salta, C. Porter, iv-18 to v-5-69.” Paratypes, 21 females: five specimens with same data as holotype. Brasil, Mato Grosso, Sinop, x/1974, M. Alvarenga, Malaise. Costa Rica: Heredia, Est. La Selva, 50–150 m, 10.26 N 84.01 W, ii–iv/1993, Col. P. Hanson, huertos, Malaise trap set by G. Wright; Heredia, 3 km S. Puerto Viejo, OTS-La Selva, 100 m, vii/1992, Col. P. Hanson; Puntarenas, Golfito, Estación Agujas, 300 m, 9/i/2001, J. Azofeifa, Malaise, L\_S\_526550\_276750, #61325; Puntarenas, PN Corcovado, Est. Sirena, 100 m, ii/1990, Col. G. Fonseca; Puntarenas, Golfo Dulce, 3 km SW Rincón, 10 m, vi–vii/1989, P. Hanson, (2) Limón, Valle de la Estrella, Reserva Biológica Hitoy Cerere, Sendero Toma de agua, 100–140 m, 17/iii–17/iv/2000, F. Umaña, Malaise. Colombia, Magdalena, PNN Tayrona, Pueblito, 11°20'N 74°02'W, 225 m, Malaise, 4–20/xii/2000, Col. R. Henríquez. Leg; 2 with same locality except date 30/ix–26/x/2000. Ecuador: Pich.[incha], 16 km SE Sto. Domingo, 4–14/vi/1976, Col. SandJ Peck. Mexico, Veracruz, 33 km NE Catemaco, 160 m, vii/1983, SandJ Peck. Peru, ix/1962, Col. R.D. Shenefelt.

Holotype and two female paratypes deposited at MCZH, three paratypes deposited at IAVHC, six paratypes deposited at CNCI, two paratypes deposited at RMSL, six paratypes deposited at INBio, and two paratypes deposited at INHS.

**Comments.** The following color variation was observed: ocellar area with dark brown coloration or collar around ocelli, medial area of terga 3 to 6 with an irregular medial dark brown spot; propodeum, metapleuron whitish in color as metanotum; tarsal claws yellow with tips dark brown. One male with most of metasoma black (in dorsal view).

**Rearing records.** *Anarmodia nebulosalis* (Crambidae) feeding on *Dendropanax arboreus* (Araliaceae); *Dysodia* spp. (Thyrididae) feeding on *Piper auritum* (Piperaceae), *Myriocarpa longipes* (Urticaceae), *Urera caracasana* (Urticaceae), *Desmopsis schippii* (Annonaceae), *Lonchocarpus macrophyllus* (Fabaceae), *Guarea* sp. (Meliaceae), *Guarea bullata* (Meliaceae), and *Guarea rhopalocarpa* (Meliaceae).

**Voucher numbers.** 00-SRNP-11568, 00-SRNP-11570, 00-SRNP-11793, 00-SRNP-1268, 00-SRNP-1353, 00-SRNP-1356, 00-SRNP-1424, 00-SRNP-1462, 00-SRNP-1557, 00-SRNP-1561, 00-SRNP-1564, 00-SRNP-987, 00-SRNP-989, 00-SRNP-992, 00-SRNP-994, 00-SRNP-995, 00-SRNP-996, 00-SRNP-997, 00-SRNP-998, 01-SRNP-2660, 01-SRNP-5360, 01-SRNP-5522, 02-SRNP-18409, 02-SRNP-19862, 02-SRNP-4135, 02-SRNP-4136, 02-SRNP-3137, 02-SRNP-7712, 03-SRNP-11396, 03-SRNP-11396, 03-SRNP-11394, 04-SRNP-31357, 04-SRNP-31371, 04-SRNP-31373, 04-SRNP-31376, 04-SRNP-31387, 04-SRNP-31405, 04-SRNP-31465, 04-SRNP-31511, 04-SRNP-33241, 04-SRNP-33242, 04-SRNP-40246, 04-SRNP-40246, 04-SRNP-42231, 99-SRNP-13491, 04-SRNP-31357, 04-SRNP-31371, 04-SRNP-31373, 04-SRNP-31376, 04-SRNP-31387, 04-SRNP-31405, 04-SRNP-31465, 04-SRNP-31511, 04-SRNP-33241, 04-SRNP-33242, 04-SRNP-40246, 04-SRNP-40246, 04-SRNP-42231, 99-SRNP-5747 and WCCTR 4175 (5 specimens).

**Etymology.** Gender masculine. This species is named after Luis A. Valerio, father of the first author AAV.

### ***Hypomicrogaster masoni* Valerio n. sp.**

(Figs. 2B, 23B)

*Female*. Body length = 3.29 mm. *Body color*: Body mainly yellow; metasomal terga 4–7 dark brown (except anterior edges) as metanotum, lunulae, scutellar groove, axilla through mesonotum with anterior 1/3 as well as distal 1/2 medial area with a triangular shape as well as lateral areas of distal 1/3, metanotum (except two yellow spots on it), mesopleuron ventral 1/2, pronotum upper and ventral edge, ocelli area, ovipositor sheaths, hypopygium medio longitudinal area; hind tibial distal 1/5 brownish yellow as hind tarsomeres, antenna (except scape and pedicel lateral areas brownish yellow), arolium; tarsal claws yellow as remainder of body; ocelli

brownish yellow; compound eyes silver. Wings infumate, hind wing C+SC+R yellowish as well as M+CU basal 2/3, 1A basal area, remainder of veins brown as fore wing veins, pterostigma yellowish brown.

*Head.* Head height/width = 1.30; compound eye height/width = 1.16; intertentorial pit distance = 0.27 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.40; width of face at dorsal clypeal edge = 0.48 mm; clypeus width/height = 2.00; vertex width/distance between anterior ocellus and edge of torulus = 1.92; length of first flagellomere = 0.31 mm; first flagellomere length/width = 2.86; length of first flagellomere/length of second flagellomere = 0.98; length of first flagellomere/length of third flagellomere = 0.95; distal flagellomere length = 0.20 mm; distal flagellomere length/penultimate flagellomere length = 1.3; distal flagellomere length/width = 2.36; malar space height/basal width of mandible = 0.78; ocell-ocular distance/lateral ocelli distance = 1.01. Face and clypeus with dense fine small punctate sculpture, face medial area with punctate sculpture which becomes foveae sculpture towards upper area of face; lateral areas of frons punctate as well dorsal area and ocell-ocular space, scrobal areas nitid; vertex anterior 1/2 with fine sparsely punctate sculpture, distal 1/2 with larger and denser punctate sculpture present; gena with anterior 1/2 with fine punctate sculpture, distal 1/2 with denser and larger punctate sculpture mixed with transversal longitudinal lineate sculpture at junction for the basal 2/3 of it; remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.33; mesosoma length = 1.48 mm; mesosoma height = 0.98 mm. Propleuron with fine punctate sculpture throughout and longitudinal lineate sculpture absent; pronotum lateral area with upper groove with dense small scrobiculate sculpture except distal area with less dense and shallower with not as well-defined scrobiculate sculpture present, ventral groove with spaced large and not as well-defined scrobiculate sculpture, anterior 1/3 with few not well-defined scrobiculate sculpture, upper distal corner with large punctate sculpture; mesonotum with dense punctate sculpture throughout almost reaching scutellar groove; scutellar groove with 13 to 14 costulae well-defined, medial ones slightly larger than lateral ones, all with same width; scutellum with fine small punctate sculpture, lateral areas with costulate sculpture which becomes more elongate towards distal area, all approximately with same width; axilla through mesonotum with a series of transversal short and well-defined ridges, otherwise nitid; metanotum anterior 1/5 nitid as well as distal 1/5, remainder with confused rugose sculpture; propodeum anterior 1/2 with shallow large punctate sculpture, spiracular area with confused rugulose sculpture, midlongitudinal carinae at anterior 1/2 well-defined remainder inside areola less cristate and slightly sinuate, transversal carinae with punctate sculpture on it, areolar area nitid, costula well-defined but not too cristate, posterior lateral areas with rugulose sculpture at edges (except distal one with very few) and medial area almost nitid; mesopleuron anterior 1/2 as ventral 1/3 punctate, sternauli as an elongate depression with few small and confused imbricate like sculpture, dorsal edge with well-defined scrobiculate sculpture of medium size, distal edge more spaced large rugose sculpture, epistomal scrobe well depressed and almost nitid except for few shallow small confused scrobiculate sculpture, otherwise nitid; metapleuron mostly nitid, distal 1/5 with small fine punctate sculpture, dorsal edge with spaced well-defined scrobiculate sculpture, distal edge with less well-defined scrobiculate sculpture mixed with confused rugulose sculpture. *Legs.* Hind femur length = 1.14 mm; hind femur length/width = 3.48; hind tibia length/hind femur length = 0.86. Fore telotarsus shorter in length than basitarsus, normal in shape, tarsal claws with a long thin basal setae. *Wings.* Fore wing length = 4.41 mm; 1RS length = 0.13 mm; 1CUa length/1CUB length = 1.05; length RS+Ma = 0.63 mm; length M+CU = 0.7 mm; 1M length/m-cu length = 1.72; pterostigma length/height = 1.94. Hind wing: 1M length = 0.60 mm; 1M length/2M length = 1.67; 1M length/M+CU length = 1.21; length r-m/length Cua = 0.86; 1RSa length/2r-m = 1.71; 1A length = 0.38 mm. *Metasoma.* First tergum basal width = 0.34 mm; first tergum length/distal width = 1.09; second tergum length/distal width = 0.3; third tergum length/distal width = 0.32; hypopygium length = 0.98 mm. First tergum with basal 1/3 with confused fine longitudinal lineate sculpture and medial area nitid, remainder of tergum with shallow large punctate sculpture which became less defined and more irregular towards distal edge, distal edge with two short parallel depression, remainder of terga nitid; hypopygium divided at tip into two short arm like structures and elongate in lateral view; ovipositor elongate and thin throughout and 1.54x as long as hind tibia length; ovipositor sheaths with well spaced setae.

*Male.* Similar to female.

**Material examined.** Holotype, female, "Brasil, S. Bovaina, 1650 m, S. José Barreiro, SP. i/69." Paratype, one male, Brasil, Rio de Janeiro, Guanabara, ii/1972, M. Alvarenga. Holotype and paratype specimens deposited at CNCI.

**Etymology.** Gender, masculine. This species is named after the famous Canadian braconidologist W.R.M. Mason.

***Hypomicrogaster mesos* Valerio n. sp.**

(Fig. 7F)

*Female.* Body length = 3.20 mm. *Body color:* Clypeus, labrum, mandibles yellow as scape and pedicel (except lateroexternal areas), ocellus, propleuron basal 1/2 and distal 1/5, pronotum dorsal edge, legs (except tarsal claws yellowish brown as well as remainder of hind tarsomeres, hind femur distal tip, hind tibia distal 1/4), metasoma (except terga i–ii as well as terga iv–viii and ovipositor sheaths), tegula; palpi whitish yellow as anterior tip of hind basitarsus, hind tibial spurs; compound eyes silver; remainder of body dark brownish yellow. Wings mainly hyaline but a slightly tone of brownish yellow present on them, fore wing with veins brownish yellow as well as hind

*Wings.*

*Head.* Head height/width = 1.30; compound eye height/width = 1.65; intertentorial pit distance = 0.23 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.71; width of face at dorsal clypeal edge = 0.45 mm; clypeus width/height = 2.75; vertex width/distance between anterior ocellus and edge of torulus = 3.00; length of first flagellomere = 0.28 mm; first flagellomere length/width = 2.75; length of first flagellomere/length of second flagellomere = 1.04; length of first flagellomere/length of third flagellomere = 1; distal flagellomere = ? mm; malar space height/basal width of mandible = 0.80; ocell-ocular distance/lateral ocelli distance = 1.20. Clypeus and face with large shallow punctate sculpture which becomes more confuse and less defined next to compound eyes as well as face mid area; frons with scrobal area with fine dense and shallow punctate sculpture as distal area and anterior vertex; remainder of vertex and temple with punctate sculpture present as remainder of gena (except ocular ring) and junction area with postgena; postgena mainly nitid except at basal 2/3 of junction area with gena with confuse longitudinal transversal lineate sculpture present. *Mesosoma.* Mesosoma length/width = 1.19; mesosoma length = 1.24 mm; mesosoma height = 0.96 mm. Propleuron with anterior 1/3 with confuse rugulose sculpture, remainder of area with punctate sculpture which is less defined next to confuse rugulose sculpture and less deeply impressed and larger towards posterior edge; pronotum lateral areas with anterior 1/3 essentially nitid except for two large shallow and poorly defined costulae, dorsolateral edge with dense and well-defined scrobiculate sculpture at anterior 1/2 of it, remainder of dorsolateral groove with smaller, denser and less defined scrobiculate sculpture, ventrolateral groove with scrobiculate sculpture as the one described for anterior 1/2 of dorsolateral groove, area between grooves nitid except at area next to posterior edge with confuse dense and small punctate sculpture, dorsal edge 1/5 and ventral edge 1/3 of posterior edge height; mesonotum with anterior 1/3 with dense and small punctate sculpture, remainder of notum with more large and less defined punctate sculpture towards scutellar groove, the punctate sculpture does not reach the scutellar groove; scutellar groove with nine well-defined costulae, medial costulae 2x larger than lateral ones as well as more wider; scutellum mainly nitid except for few large, scattered and shallow punctate sculpture towards lateral areas, lateral areas with costulate sculpture which becomes more elongate, larger and wider towards distal area of it; axilla through mesonotum mainly nitid except for five very short and smooth transversal ridges next to anterior edge of a well-defined lunulae; metanotum subrectangular in shape and nitid; axilla through metanotum with confuse rugose sculpture, distal edge nitid; propodeum with anterior lateral areas with large shallow and scattered punctate sculpture, medio longitudinal as well as areolar and costula well-defined, confuse rugulose sculpture present on transversal carinae as well as inside areola and also present next to anterior and lateral edges of posterior lateral areas, distal edge nitid as most of posterior lateral areas, spiracular areas with confuse and smooth rugulose sculpture; mesopleuron with anterior edge as well as anterior 1/2 of dorsal area punctate, sternauli as a deep impression with a well demarked transversal and nitid suture at mid length of it, epistomal scrobe with punctate sculpture, dorsal edge with distal; 1/2 with dense, small and well-defined transversal ridges which are larger in width towards posterior edge, posterior edge nitid and area next to it with few punctate sculpture, remainder of mesopleuron nitid; metapleuron with deep medial pit, pleural suture present and nitid, dorsal edge with a series of broad transversal ridges and area next to the with few large and deeply impressed punctate sculpture, distal edge with two short and not conspicuously present transversal ridges, mainly nitid but area next to it with dense and confuse rugulose sculpture, remainder of metapleuron nitid. *Legs.* Hind femur length = 0.98 mm; hind femur length/width = 3.25; hind tibia length/hind femur length = 1.15. Fore telotarsus smaller than basitarsus and with a tarsal claw which exhibits a broad and elongate tooth next to apical hook of claw well before of mid length of claw; telotarsus not modified and without a hook-like setae on it. *Wings.* Fore wing length = 3.58 mm; 1RS length = 0.13 mm; 1CUa length/1CUB length = 1.50; length RS+Ma = 0.53 mm; length M+CU = 1.2 mm; 1M length/ m-cu length = 1.88; pterostigma length/height = 1.67. Hind wing: 1M length

= 0.52 mm; 1M length/2M length = 1.90; 1M length/M+CU length = 1.44; length r-m/length Cua = 0.90; 1RSa length/2r-m = 1.00; 1A length = 0.30 mm. *Metasoma*. First tergum basal width = 0.30 mm; first tergum length/distal width = 1.17; second tergum length/distal width = 0.33; third tergum length/distal width = 0.51; hypopygium length = 0.75 mm. First metasomal tergum with lateral areas with well-defined lineate sculpture, mid area nitid, remainder of tergum with large shallow and well-defined punctate sculpture, distal 1/5 of tergum with few scattered and broad longitudinal lineate sculpture present; second tergum nitid as remainder of tergum; hypopygium with longitudinal medial folds and not divide or conspicuously extended; ovipositor thin and smooth in lateral view as long as 1.87x as long as length of hind tibia.

**Material examined.** Holotype, female, "Brasil, Nova Teutonia, 27°11' S 52°23' W, 300–500 m, xii/1968, (Col.) F. Plaumman." Holotype deposited at CNCI.

**Comments.** Holotype specimen with head detached from body and antenna broken and incomplete as well as fore legs.

**Etymology.** Gender, masculine. This species is named after the anteriorly placement of the mid- basal tooth on the hind tarsal claws, "mesos" in Greek means middle.

### ***Hypomicrogaster mikrosus* Valerio n. sp.**

(Figs. 5D, 8C, 13F, 22B)

*Female.* Body length = 3.05–3.17 mm. *Body color:* Mainly yellow; head dark brown as antenna (except scape and pedicel); scape and pedicel dark honey yellow as metapleuron, propodeum and metanotum as well as hind femur distal tip, hind tibia distal 1/3, hind tarsomeres, ovipositor sheaths, axilla through mesonotum, lunulae; compound eyes silver; ocelli, palpi, clypeus and labrum yellow as remainder of body. Wings hyaline, fore wing veins brownish, hind wing veins whitish yellow.

*Head.* Head height/width = 1.28–1.30; compound eye height/width = 1.62–1.69; intertentorial pit distance = 0.23 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.73–3.00; width of face at dorsal clypeal edge = 0.42–0.44 mm; clypeus width/height = 2.71–3.00; vertex width/distance between anterior ocellus and edge of torulus = 2.05–2.07; length of first flagellomere = 0.26–0.28 mm; first flagellomere length/width = 2.57–2.62; length of first flagellomere/length of second flagellomere = 0.94–1.00; length of first flagellomere/length of third flagellomere = 1.03–1.05; distal flagellomere length = 0.15 mm; distal flagellomere length/penultimate flagellomere length = 1.25; distal flagellomere length/width = 2.00–2.22; malar space height/basal width of mandible = 0.71–0.85; ocell-ocular distance/lateral ocelli distance = 0.90–1.00. Face and clypeus with dense punctate sculpture which becomes more confused towards upper face area, face with few transversal lineate sculpture at lateral areas parallel to compound eyes; frons with punctate sculpture at lateral areas, punctate sculpture at distal area less evident as well as vertex, scrobal areas nitid; gena with anterior 1/2 with punctate sculpture, distal 1/2 with punctate sculpture mixed with longitudinal transversal lineate sculpture at basal 2/3 of junction with postgena, temple with more defined and larger punctate sculpture; remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.24–1.27; mesosoma length = 1.26–1.29 mm; mesosoma height = 0.83–0.89 mm. Propleuron with basal 1/2 with fine longitudinal lineate sculpture, large punctate sculpture throughout; pronotum lateral area with upper groove with few fine well-defined and small scrobiculate sculpture, ventral groove nitid, anterior 1/3 with few shallow and short transversal ridges; mesonotum with dense punctate sculpture anteriorly but becoming less dense and more scattered as well as larger in size towards distal area, not reaching scutellar groove; scutellar groove with 10 well-defined costulae of approximately same size and width; scutellum with few punctate sculpture parallel to lateral edges, lateral edges with costulate sculpture which became more elongate, less dense and wider towards distal area; axilla throughout mesonotum with few broad short transversal ridges next to lunulae, otherwise nitid; metanotum anterior 1/4 nitid as well as distal edge and distal 1/4, remainder of metanotum with fine confused rugulose sculpture; propodeum with costula as well as midlongitudinal carina well-defined (except inside areola less cristate and thin), transversal carina with confused rugulose sculpture on it making it looks less defined, rugulose sculpture at edges of posterior lateral areas (except distal one nitid as well as inside areola), medial area of lateroposterior areas nitid, propodeum anterior 1/2 with large shallow punctate sculpture which is denser next to carinae, spiracular area with fine confused rugulose sculpture; mesopleuron with anterior 1/2 punctate as well as distal area of ventral 1/2, dorsal and distal edge with dense small scrobiculate

sculpture which is less evident and cristate at distal edge, epistomal scrobe with few shallow confused spaced scrobiculate sculpture, otherwise nitid; metapleuron anterior 1/2 nitid, except medial pit with punctate sculpture, posterior 1/2 with dense confused rugulose sculpture at dorsal and distal edge mixed with punctate sculpture close to it, otherwise nitid. *Legs*. Hind femur length = 1.00–1.02 mm; hind femur length/width = 3.25–3.37; hind tibia length/hind femur length = 1.15–1.16. Fore leg telotarsus shorter than basitarsus length, normal in shape and without a long thin seta at distal 1/3 of externolateral area. Tarsal claw with broad, short and well-defined seta. *Wings*. Fore wing length = 3.29–3.17; 1RS length = 0.13 mm; 1CUa length/1CUb length = 1.36–1.43; length RS+Ma = 0.50–0.51 mm; length M+CU = 1.13–1.14 mm; 1M length/ m-cu length = 1.86–1.92; pterostigma length/height = 1.47–1.71. Hind wing: 1M length = 0.52–0.53 mm; 1M length/2M length = 1.94–2.00; 1M length/M+CU length = 1.36–1.57; length r-m/length Cua = 1.21–1.33; 1RSa length/2r-m = 1.6–1.73; 1A length = 0.33 mm. *Metasoma*. First tergum basal width = 0.28–0.30 mm; first tergum length/distal width = 1.00–1.07; second tergum length/distal width = 0.29–0.30; third tergum length/distal width = 0.44–0.46; hypopygium length = 0.44–0.47 mm. First tergum with basal 1/3 with few fine longitudinal lineate sculpture at edges, medial area nitid, remainder 2/3 with few scattered large shallow punctate sculpture; second tergum nitid as remainder of terga; hypopygium not divided at distal tip, with not well-defined longitudinal folds, ovipositor sheaths short and spoon like in lateral view; ovipositor short, laterally compressed, broad at basal area and slightly curve in lateral view; setae long and located in a scattered way throughout ovipositor sheaths.

**Material examined.** Holotype, female, “Argentina, Tucuman, Quebrada Lules, 9/xiii/1964, C.C. Porter.” Paratype, one female with same data as holotype. Holotype and paratype deposited at USNM.

**Comments.** The following color variation was observed: antennal basal 1/4 lighter honey brown color than remainder of antenna, metasomal terga (except first tergum) dark honey brown. Type specimen with the antenna without the four last terminal flagellomeres.

**Etymology.** Gender, neutral. This species is named by the short and compressed ovipositor; “mikros” in Greek means short.

### ***Hypomicrogaster multus* Valerio n. sp.**

(Figs. 1D, 3A, 6D, 22D)

*Female*. Body length = 4.08–4.64 mm. *Body color*: Mainly yellow. Antenna (except scape) dark brown as ovipositor sheaths, inter ocellar area, area of fore wing attachment, propodeal spiracular, transversal and anterior 1/3 midlongitudinal carina, distal 1/5 of hind tibia, empodium, tarsomeres hind leg (except basal 1/2 of basitarsus); propodeum, metanotum, distal edge of scutellum honey yellow as well as tip of hind femur, medio longitudinal area of hypopygium; metasomal terga 6 and 7 with a small brown spot medially; pterostigma with anterior 1/2 yellow, otherwise brown; remainder of body yellow. Wings infumate with veins dark brown in coloration.

*Head*. Head height/width = 1.29–1.44; compound eye height/width = 1.72–1.83; intertentorial pit distance = 0.25–0.27 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.14–3.67; width of face at dorsal clypeal edge = 0.46–0.50 mm; clypeus width/height = 2.45–2.60; vertex width/distance between anterior ocellus and edge of torulus = 2.90–3.11; length of first flagellomere = 0.30–0.35 mm; first flagellomere length/width = 2.40–2.66; length of first flagellomere/length of second flagellomere = 0.92–1.09; length of first flagellomere/length of third flagellomere = 0.96–1.00; distal flagellomere length = 0.17–0.18 mm; distal flagellomere length/penultimate flagellomere length = 1.14–1.27; distal flagellomere length/width = 1.75–2.00; malar space height/basal width of mandible = 0.73–0.75; ocell-ocular distance/lateral ocelli distance = 0.86–1.00. Face and clypeus with dense fine and small punctuate sculpture; frons nitid; vertex with anterior 1/2 with fine punctuate sculpture, remainder of vertex with larger punctuate sculpture over it; gena with anterior 1/2 with confused punctuate sculpture, remainder of gena with transversal lineate sculpture mixed with confused punctuate sculpture as well as basal 2/3 of postgena (remainder of postgena nitid), temple of gena with conspicuous large punctuate sculpture. *Mesosoma*. Mesosoma length/width = 0.98–1.08; mesonotum length = 1.15–1.33 mm; mesosoma height = 0.60–0.65 mm. Propleuron with longitudinal lineate sculpture at basal 1/3 of it, otherwise with fine punctuate sculpture; pronotum with lateral grooves with dense and small scrobiculate sculpture on them, remainder of pronotum nitid; mesonotum with fine and dense punctuate sculpture that almost reach scutellar groove, area around scutellar groove nitid; scutellar groove with 8 costulae, medial ones larger than lateral ones; axilla through mesonotum with

five to six short and well-defined transversal bridges; scutellum with few setae present at distal edges, lateral edges with costulate sculpture with became wider and longer towards distal area, otherwise nitid; metapleuron with spaced and confused rugulose sculpture; propodeum with anterior 1/2 with large, dense, shallow and confused punctate sculpture, carinae well-defined and cristate, posterior lateral areas with few spaced rugulose sculpture which became denser and confused towards areolar and transversal carinae, distal areas less sculptured, spiracular area with confused rugulose sculpture present; mesopleuron with anterior and dorsal edges with spaced scrobiculate sculpture, epistomal scrobe with inconspicuous, confused and dense punctate sculpture, anterior and dorsal 1/2 with dense punctate sculpture, sternauli as an elongate nitid depression; metapleuron completely covered in large, spaced rugulose sculpture, area at edges with less dense and less spaced rugulose sculpture. *Legs.* Hind femur length = 1.00–1.80 mm; hind femur length/width = 2.86–3.07; hind tibia length/hind femur length = 1.35–1.40. Telotarsus not as long as basitarsus of fore leg, tarsal claw with basal thin tooth. *Wings.* Fore wing length = 3.86–4.00 mm; 1RS length = 0.13–0.15 mm; 1CUa length/1CUb length = 0.56–0.84; length RS+Ma = 0.58–0.65 mm; length M+CU = 0.95–1.03 mm; 1M length/ m-cu length = 1.75–1.88; pterostigma length/height = 1.90–1.95. Hind wing: 1M length = 0.70–0.75 mm; 1M length/2M length = 2.15–2.25; 1M length/M+CU length = 1.47–1.50; length r-m/length Cua = 0.84–0.90; 1RSa length/2r-m = 1.00–1.12; 1A length = 0.38–0.43 mm. *Metasoma.* First tergum basal width = 0.27–0.35 mm; first tergum length/distal width = 0.96–1.05; second tergum length/distal width = 0.29–0.33; third tergum length/distal width = 0.46–0.48; hypopygium length = 0.90–0.98 mm. First tergum with basal 1/2 exhibiting fine longitudinal lineate sculpture at lateral areas, remainder of tergum nitid as remainder of terga; hypopygium with longitudinal folds, not divided medially at apex and 1.2x length of hind tibia; ovipositor elongate and thin throughout its length.

*Male.* Mesopleuron almost completely black as well as sterna, tarsal claws with distal tip brown, remainder of morphological features similar as females.

**Material examined.** Holotype, female, “Brasil, Represa Rio Grande, Guanabara, vii/1972, F.H. Oliveira.” Paratypes (one male, three females): Females, one same data as holotype except date: Sept. 1972; Argentina, Tinogasta-Loro, Huasi, Catamarca, feb.9/1966, Col. C.C. Porter. Brasil, Rio de Janeiro, Conceicao de Macubo, ix/1978, Col. M. Alverenga. Male: Venezuela, Merida, 2 Km NW La Azulita, 11/iv/1988, Col. A.T. Finnamore. Material deposited at CNCI.

**Comments.** The following color variation was observed: propodeum and metanotum more obscure in coloration, edges of first tergum honey yellow, tarsal claws brown, axilla through mesonotum almost completely dark brown, mesopleuron edges dark brown, terga 6 and 7 almost without coloration. Areola sometimes presented as a short transversal carina at top and a “v” shaped carina at distal area of the midlongitudinal carina.

**Etymology.** Gender masculine. This species is named after the extensive sculpture present on the propodeum; “multus” in Latin means many.

### ***Hypomicrogaster pectinatus* Valerio n. sp.**

(Figs. 2F, 3E, 4H, 5F, 6F)

*Male.* Body length = 4.75 mm. *Body color:* Head, scape, pedicel black as distal edge and medio longitudinal area of mesonotum, mesonotum medio lateral areas with two spots, metasomal terga, metasomal sterna (except first sternite), genitalia, metapleuron, propodeum, metanotum, scutellum distal edge and lateral areas, hind leg (except coxae light yellow with scattered black spots, tibial spurs whitish yellow); tarsal claws dark brown as antenna; fore and hind leg yellow as palpus, labrum; remainder of metasoma white; remainder of mesonotum and mesopleuron light orange as propleuron; compound eyes silver; ocellus yellow. Wings infumate with veins brown.

*Head.* Head height/width = 1.23; compound eye height/width = 1.85; intertentorial pit distance = 0.33 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.89; width of face at dorsal clypeal edge = 0.55 mm; clypeus width/height = 2.73; vertex width/distance between anterior ocellus and edge of torulus = 2.62; length of first flagellomere = 0.35 mm; first flagellomere length/width = 3.11; length of first flagellomere/length of second flagellomere = 1.03; length of first flagellomere/length of third flagellomere = 1.03; distal flagellomere length = 0.20 mm; distal flagellomere length/penultimate flagellomere length = 1.00; distal flagellomere length/width = 2.67; malar space height/basal width of mandible = 1.33; ocell-ocular distance/lateral ocelli distance = 1.40. Face and clypeus with shallow fine punctate sculpture, face with less evident sculpture; face keel present and nitid,

weak; frons with shallow punctate sculpture at lateral and distal area, scrobal areas nitid; vertex with small shallow punctate sculpture which is very less dense than temple sculpture; gena with anterior 1/2 with few punctate sculpture, distal half as area contiguous with postgena densely punctate; remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.43; mesosoma length = 2.08 mm; mesosoma height = 1.15 mm. Propleuron with fine punctate sculpture throughout, anterior edge with few foveate sculpture present; pronotum lateral area with upper groove with few scattered confuse punctate sculpture, ventral groove nitid, medial groove with few confuse punctate sculpture, remainder of areas nitid, pronotum collar 1/5 as height of distal edge; mesonotum with dense punctate sculpture anteriorly which becomes very scattered and few towards scutellar groove, not reaching it; scutellar groove with 13 well-defined costulae, medial one four times as large as distal lateral ones, all of approximately same width; scutellum with few punctate sculpture at lateral areas as well as medial area, otherwise nitid, lateral area with two narrow costulae sculpture with a very elongate and wider distal costula; axilla through mesonotum mainly nitid except for a broad and well-defined transversal lineate sculpture at anterior edge of lunulae; metanotum with anterior 1/3 with few foveate sculpture, distal edge nitid, remainder of areas depressed and with 2 well-defined transversal ridges; propodeum anterior 3/5 punctate, remainder of posterior areas with few transversal smooth wide ridges next to lateral and distal edge, posterior lateral areas mainly nitid, midlongitudinal carina present and cristate as well as not sinuate, transversal carina present as two short and well-cristate carinae at medial area of propodeum, areola with only distal carinae conspicuously present, costula present only posteriorly and weak, area of areola nitid; mesopleuron with anterior 1/5 and ventral area punctate, dorsal edge with well-defined and dense scrobiculate sculpture, distal edge nitid as well as sternauli, sternauli present as a longitudinal shallow depression, epistomal scrobe with few punctate sculpture and not well delimited except at distal 1/3, otherwise nitid; metapleuron with dorsal and distal 1/2 of it with dense punctate sculpture as well as setose, dorsal edge with large spaced scrobiculate sculpture, distal edge with denser and smaller scrobiculate sculpture, medial pit present, otherwise nitid. *Legs*. Hind femur length = 1.4 mm; hind femur length/width = 3.26; hind tibia length/hind femur length = 1.24. Tarsal claws pectinate, three tooth present; fore telotarsus smaller in length than basitarsus. *Wings*. Fore wing length = 4.65 mm; 1RS length = 0.12 mm; 1CUa length/1CUB length = 0.94; length RS+Ma = 0.7 mm; length M+CU = 1.96 mm; 1M length/ m-cu length = 1.69; pterostigma length/height = 2.45. Hind wing: 1M length = 1.03 mm; 1M length/2M length = 1.95; 1M length/M+CU length = 1.57; length r-m/length Cua = 1.09; 1RSa length/2r-m = 1.22; 1A length = 0.65 mm. *Metasoma*. First tergum basal width = 0.43 mm; first tergum length/distal width = 1.15; second tergum length/distal width = 0.23; third tergum length/distal width = 0.35. First tergum with few punctate sculpture scattered throughout distal 1/3, basal area with few short well-defined longitudinal lineate sculpture, remainder of tergum nitid; second tergum mainly nitid except at distal 1/3 of it with few punctate sculpture associated with setation as well as remainder of terga.

**Material examined.** Holotype, female, “Bolivia, La Paz, Suapi, 1200–1600 m, xi-25-89, L. Peña.” Holotype deposited at CNCI.

**Comments.** This is the only species with pectinate tarsal claws; also, the described pattern of coloration is diagnostic. The only other similar species to *H. pectinatus* is *H. espera* but the tarsal claws of the latter are simple.

**Etymology.** Gender, neutral. This species is named by its unique morphology of the hind tarsal claws, “pectinatus” in reference to the pectinate tarsal claws.

### ***Hypomicrogaster plagios* Valerio n. sp.**

(Figs. 4B, 5E, 8A, 13E, 15E, 15F)

*Female.* Body length = 3.24–2.82 mm.

*Body color:* Mainly dark brown; clypeus lower area, labrum, propleuron distal upper area, legs (except hind tibia distal 1/4 dark brown, hind tibia basal 1/4 whitish yellow as tegula, arolium, hind femur distal tip, hind tarsomeres), metasoma (except terga and ovipositor sheaths), palpi yellow; ocelli yellow; compound eyes silver. Antenna dark honey yellow (except scape and pedicel yellowish in color); 2nd and 3rd metasomal terga brownish yellow; area in front scutellar groove light orange as well as mesonotum laterodistal areas; propleuron basal tip whitish yellow and distal tip yellow; remainder of body dark brown. Wings hyaline, hind wing veins whitish yellow as fore wing veins C+SC+R, base of vein M+CU and 1A, remainder of veins brownish in color.

*Head.* Head height/width = 1.36–1.38; compound eye height/width = 1.6–1.68; intertentorial pit distance =

0.23–0.25 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.33–3.60; width of face at dorsal clypeal edge = 0.41–0.48 mm; clypeus width/height = 2.75–3.40; vertex width/distance between anterior ocellus and edge of torulus = 2.80–2.92; length of first flagellomere = 0.24–0.28 mm; first flagellomere length/width = 2.38–2.56; length of first flagellomere/length of second flagellomere = 1; length of first flagellomere/length of third flagellomere = 1; distal flagellomere length = 0.15–0.16 mm; distal flagellomere length/penultimate flagellomere length = 1.30–1.50; distal flagellomere length/width = 2.12–3.00; malar space height/basal width of mandible = 0.67–0.72; ocell-ocular distance/lateral ocelli distance = 1.33–1.38. Face and clypeus with large shallow punctate sculpture mixed with fine confused colliculate sculpture, punctate sculpture on clypeus smaller in size; frons densely punctate except scrobal areas with dense fine transversal lineate sculpture throughout; vertex with punctate sculpture as frons; gena with anterior 1/2 with punctate sculpture which is less dense, evident and large than present on posterior 1/2 which is mixed with transverse lineate sculpture at junction area with postgena; remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.26–1.35; mesosoma length = 1.18–1.40; mesosoma height = 0.74–0.84 mm. Propleuron with basal 2/3 with broad evident longitudinal lineate sculpture, remainder of propodeum with punctate sculpture present; pronotum lateral area with basal 1/3 with few large and spaced scrobiculate sculpture, upper groove with small dense well-defined scrobiculate sculpture, ventral groove with tall spaced and less dense scrobiculate sculpture, area between lateral grooves with fine strigate sculpture, otherwise nitid; mesonotum with dense punctate sculpture which becomes less dense towards distal scutellar groove, areas at which typically notauli is present with almost denser fine punctate sculpture; scutellar groove with 12 to 18 costulae of similar width and length, medial ones slightly larger than lateral ones; scutellum with fine punctate sculpture parallel to lateral edge, otherwise nitid, lateral areas with costulate sculpture which becomes more elongate and wider towards distal area; axilla throughout mesonotum with broad well-defined set of ridges next to lunulae but less defined next to wing attachments, otherwise nitid; metanotum with medial 1/3 with confused rugulose sculpture, remainder of areas nitid; pronotum with anterior 1/2 with dense and medium size punctate sculpture mixed with confuse rugulose sculpture next to carinae as well as inside areola and around it, midlongitudinal carina well-defined outside areola but inside areola less cristate, transversal carina with confused rugulose sculpture on it and becoming less evident as well as anterior midlongitudinal carina, posterior lateral areas with sinuate lineate sculpture next to areolar carina and shaping hole like structures at anterior 1/2 of them, remainder of pronotum covered by rugulose sculpture (except distal edge), costula well-defined and with confused rugulose sculpture next to it; mesopleuron with punctate sculpture at anterior 1/3 as well as 1/2 of dorsal area, sternaulus as an amorphic depression with confused colliculate sculpture on it, ventral distal area with few punctate sculpture present, epistomal scrobe with dense small confused punctate sculpture, dorsal edge with small well-defined scrobiculate sculpture, distal edge with scrobiculate sculpture less cristate and defined as dorsal edge, otherwise nitid; metapleuron dorsal and distal edge with large spaced rugulose sculpture (more spaced and mixed with fine confused sculpture at distal edge), dorsal edge with punctate sculpture next to it, medial pit present, otherwise nitid. *Legs*. Hind femur length = 0.85–0.94 mm; hind femur length/width = 3.1–3.13; hind tibia length/hind femur length = 1.21–1.23. Fore basitarsus longer in length than telotarsus, telotarsus normal in shape; tarsal claw with a short thin medial seta present. *Wings*. Fore wing length = 3.48–3.16 mm; 1RS length = 0.10–1.15 mm; 1CUa length/1CUb length = 1.10–1.25; length RS+Ma = 0.50–0.55 mm; length M+CU = 1.05–1.20 mm; 1M length/ m-cu length = 1.79–1.94; pterostigma length/height = 1.60–1.88. Hind wing: 1M length = 0.50–0.58 mm; 1M length/2M length = 1.92–2.22; 1M length/M+CU length = 1.44–1.81; length r-m/length Cua = 0.66–0.71; 1RSa length/2r-m = 1.25–1.40; 1A length = 0.28–0.33 mm. *Metasoma*. First tergum basal width = 0.25–0.30 mm; first tergum length/distal width = 0.97–0.98; second tergum length/distal width = 0.30–0.35; third tergum length/distal width = 0.32–0.41; hypopygium length = 0.51–0.65 mm. First tergum with basal 1/2 nitid at medial area, remainder of basal 1/2 with confused aciculate sculpture, remainder of tergum with large shallow spaced and confused punctate sculpture, distal tergum 1/4 with few longitudinal lineate sculpture next to edges; second terga nitid as remainder of terga; hypopygium not divided at tip, without longitudinal folds present; ovipositor slightly curved in lateral view, basal area broad and as long as 0.74x as long as hind tibia length; ovipositor sheaths in lateral view almost parallel in shape.

**Material examined.** Holotype, female, “Costa Rica, Alajuela, ACG, Sector San Cristóbal, Rió Cucaracho, 640m, 316803N 384086E, 17/ii/2000, F. Quesada, VN 99-SRNP-515.”

Paratypes one male and 10 females: five specimens with same data as holotype; Costa Rica, Guanacaste, ACG, Sector Santa Rosa, Quebrada Puercos, 155 m, 315645 N 364473E, 17/vii/1999, Gusaneros; Costa Rica,

Guanacaste, ACG, Sector Cacao, Sendero Arenales, 1080 m, 322861 N 375817E, 19/viii/2000, M. Pereira; Costa Rica, Guanacaste, Santa Cruz, Vista del Mar, Torre Cocesna, 970m, 18/viii–8/ix/2000, Col. Y. Cárdenas, # 58049; Costa Rica, Alajuela, Estación San Ramón Oeste, 620 m, 3–19/iv/1994, C. Cano, # 2818; Costa Rica, Guanacaste, P.N. Rincón de la Vieja, Estación las Pailas, 800 m, 19–25/vii/1993, D. García, #2818, one male (?) same data except collector and date: 17–28/vii/1993, K. Taylor. Holotype and paratypes deposited at INBio.

**Comments.** The following color and carinae variations were observed: wings with a slightly dusky color present, midlongitudinal carinae almost absent by very reticulate sculpture on it, pronotum with anterior 1/2 with only punctate sculpture present, posterior lateral areas almost completely nitid, epistomal scrobe less defined by sculpture present around it, first metasomal tergum without aciculate sculpture present at basal 1/3 of terga instead few longitudinal lineate sculpture present at medial area and distal 1/3 of tergum denserly punctate.

**Rearing records.** *Actinote leucomelas* (Nymphalidae) feeding on an unidentified Asteraceae; *Rosema attenuata* (Notodontidae) feeding on *Inga vera* (Fabaceae); *Rosema* sp. (Notodontidae) feeding on *Inga herreriae* (Fabaceae). The following sex ratios were observed: 1/8, 7/13, 0/1; Pyralid larva feeding on *Mollinedia pinchotiana* (Monimiaceae).

**Voucher numbers.** 99-SRNP-10539, 99-SRNP-515, and 00-SRNP-10539.

**Etymology.** Gender, neutral. This species is named after the laterally compressed ovipositor; “plagios” in Latin means lateral.

### ***Hypomicrogaster pollex* Valerio n. sp.**

(Figs. 5D, 9B, 9E, 16F)

*Female.* Body length = 4.55 mm. *Body color:* Clypeus light orange; mandible yellow as fore and mid leg (except for hind leg most of femur with light brownish yellow and telotarsus in both legs darker yellow than remainder of leg), metasoma (except terga and mid longitudinal area of hypopygium), basal area and distal outer flange of propleuron, ocelli; compound eyes silver; palpi whitish yellow as fore and mid legs coxae and trochanters, distal 1/3 of hind coxae, basal 1/2 hind tibia, basal 1/2 hind basitarsus, hind tibial spurs; remainder of body dark brown. Wings hyaline, fore wing veins brownish except pterostigma and C+SC+R dark brown; hind wing venation dark yellow.

*Head.* Head height/width = 1.18, compound eye height/width = 1.64, intertentorial pit distance = 0.29 mm, tentorial pit distance/distance tentorial pit to compound eye = 2.88, width of face at dorsal clypeal edge = 0.50 mm, clypeus width/height = 2.60, vertex width/distance between anterior ocellus and edge of torulus = 2.77, length of first flagellomere = 0.34 mm, first flagellomere length/width = 2.50, length of first flagellomere/length of second flagellomere = 1.00, length of first flagellomere/length of third flagellomere = 1.00, distal flagellomere length = 0.15 mm, distal flagellomere length/penultimate flagellomere length = 1.33, distal flagellomere length/width = 2.00, malar space height/basal width of mandible = 0.75; ocell-ocular distance/lateral ocelli distance = 1.08. Face and clypeus with deep punctate sculpture, face with upper 1/3 with deeper punctate sculpture than remainder of face as well as more foveate like and mixed with confuse colliculate sculpture, face keel present and not evident or conspicuously cristate; frons with scrobal areas with transversal fine lineate sculpture at exterior 1/2, remainder of scrobal area nitid, frons lateral areas with deep punctate sculpture but distal area essentially nitid as anterior 1/2 of vertex; vertex distal area with fine deep dense punctate sculpture; temple with dense and deep punctate sculpture as remainder of gena (except ocular ring nitid), junction area with postgena with few narrow transversal lineate sculpture; postgena mainly nitid except at basal 2/3 with punctate sculpture present laterally. *Mesosoma.* Mesosoma length/width = 1.35; mesosoma length = 0.82 mm; mesosoma height = 0.48 mm. Propleuron with punctate sculpture throughout its length, basal area with less defined sculpture than remainder of propleuron; pronotum lateral area with basal 1/3 essentially nitid except by the smooth small and dense transversal ridges of upper lateral groove, ventral groove with fewer and less demarked transversal ridges than upper groove, area between grooves nitid except upper distal corner with punctate sculpture present, dorsal and ventral edge 1/5 of distal edge height; mesonotum densely punctate which become slightly larger and more spaced at mid are of distal 1/2, sculpture almost reaching scutellar groove; scutellar groove with eight costulae conspicuously evident, middle ones as much as 3 times the width of lateral ones and all of them of approximately same height; scutellum with dense and well demarked punctate sculpture, lateral areas with wide costulae not changing a lot in dimensions

towards distal area; axilla through mesonotum nitid; metanotum triangular in shape and nitid; axilla through metanotum with three broad and short transversal ridges, distal edge slightly punctate at external area; propodeum with medial carina as well as transversal, spiracular and areolar carinae well-defined and cristate, spiracular area nitid, anterior lateral areas densely and deeply impressed punctate sculpture, posterior lateral areas essentially nitid except for few smooth longitudinal carina over it, areolar area with few smooth and short transversal carina; mesopleuron with anterior 1/2 of upper area as well as anterior edge punctate, sternauli as an semi-transversal longitudinal wide nitid depression, epistomal scrobe with smooth broad transversal ridges, dorsal edge with dense and well-defined scrobiculate sculpture, distal edge with two short poorly defined transversal ridges, remainder of mesopleuron nitid; metapleuron with dense and well-defined punctate sculpture at distal 1/2, anterior 1/2 nitid and medial pit present, dorsal and posterior edge with large and spaced transversal ridges, posterior edge. *Legs*. Hind femur length = 1.25 mm; hind femur length/width = 3.22; hind tibia length/hind femur length = 1.2. Fore leg telotarsus smaller in length than basitarsus, tarsal claw with a long and thin basal tooth. *Wings*. Fore wing length = 4.55 mm; 1RS length = 0.11 mm; 1CUa length/1CUb length = 1.18; length RS+Ma = 0.60 mm; length M+CU = 1.38 mm; 1M length/ m-cu length = 2.11; pterostigma length/height = 1.59. Hind wing: 1M length = 0.62 mm; 1M length/2M length = 2.27; 1M length/M+CU length = 1.19; length r-m/length Cua = 0.72; 1RSa length/2r-m = 1.20; 1A length = 0.40 mm. *Metasoma*. First tergum basal width = 0.56 mm; first tergum length/distal width = 1.17; second tergum length/distal width = 0.21; third tergum length/distal width = 0.37; hypopygium length = 0.82 mm. First metasomal tergum with fine longitudinal carina at lateral edges of basal 1/2 been not conspicuously evident, medial area of basal 1/2 nitid except for distal edge with few punctate sculpture present, distal 1/2 with punctate sculpture throughout becoming more foveate like towards distal edge of tergum and no medio longitudinal nitid area present; second metasomal tergum with shallow, confuse and fine scrobiculate sculpture; remainder of terga nitid; hypopygium with longitudinal folds, less sclerotized medially and partially divided distally; ovipositor broad and short in profile and as long as xx times as hind tibial length; ovipositor sheaths short, broad and evenly dense setose throughout its length.

*Male*. Similar to female.

**Material examined.** Holotype, female, “Colombia, Chaqueta, PNN Chiribiquete P(uer)to. Abeja, CII60, 260 m, Planicie 0°4’N 72°27’W, Malaise, 2/ii/2000, C. Arenas Leg.” Paratype, one male: Ecuador, Napo, Dureno, 200 m, 8–23/ix/1977, Col. L.E. Peña. Holotype deposited at IAVH and paratype deposited at CNCI.

**Comments.** This species can be separated from any other species by its conspicuous body size, a short and broad ovipositor in combination with the short and broad ovipositor sheaths. The only other similar species in size and shape is *H. sicpollex* but the shape and length of this species contrasts with the one exhibit by *H. pollex*. This species could be an extreme phenotype of *H. sicpollex* (or vice versa) but in the lack of more material and biological information, they are presented as two different species in this study.

**Etymology.** Gender, masculine. This species is named for being very large “as your toe”; “pollex” in Latin means “large toe”.

### ***Hypomicrogaster rugosus* Valerio n. sp.**

(Figs. 5A, 23F)

*Female*. Body length = 2.58–3.18 mm. *Body color*: Hind coxae distal tip as well as hind trochantellus whitish yellow as mid and hind tibial spurs, hind tibia basal area, propleuron anterior 1/3, palpi, hind basitarsus basal area, metasoma interpleural membrane; remainder of legs (except tarsal claws, hind femur distal; tip, hind tibia distal 1/3 and hind tarsomeres) yellow as clypeus, mandibles, scape and pedicel except lateroexternal areas, metasomal terga, ovipositor sheaths, propleuron posterior fringe, tegula; labrum light orange as dorsal edge of pronotum lateral area; compound eyes silver; ocelli light yellow; remainder of body dark brown. Wings hyaline, fore wing veins brownish yellow except 1-1A anterior 1/2 area and M+CU anterior 1/4, C+SC+R vein lighter in color than pterostigma; hind wing veins whitish yellow except R1 light brownish yellow.

*Head*. Head height/width = 1.27–1.30; compound eye height/width = 1.68–1.70; intertentorial pit distance = 0.20–0.25 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.86–3.20; width of face at dorsal clypeal edge = 0.41–0.45 mm; clypeus width/height = 2.86–3.10; vertex width/distance between anterior ocellus and edge of torulus = 2.71–2.75; length of first flagellomere = 0.19–0.25 mm; first flagellomere length/width =

1.88–2.33 ; length of first flagellomere/length of second flagellomere = 0.88–1.05; length of first flagellomere/length of third flagellomere = 1.00–1.10; distal flagellomere length = 0.10–0.15 mm; distal flagellomere length/penultimate flagellomere length = 1.14–1.5; distal flagellomere length/width = 1.90–2.00; malar space height/basal width of mandible = 0.72–0.75; ocell-ocular distance/lateral ocelli distance = 1.00–1.08. Clypeus and face with confuse foveate sculpture that is mixed with fine dense and confuse colliculate sculpture, face keel present and usually conspicuous, mid face area with defined punctate sculpture; frons with scrobal areas with few smooth to clearly demarked transversal lineate sculpture at posterior 1/2 of it, lateral area as distal area with dense punctate sculpture as vertex; temple with more deeply impressed and larger punctate sculpture; gena (except ocular ring nitid) with more less defined punctate sculpture as well as junction area with postgena which also present longitudinally transverse lineate sculpture, remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.19–1.22; mesosoma length = 1.00–1.40 mm; mesosoma height = 0.75–1.00 mm. Propleuron with punctate sculpture throughout, anterior edge as well as external lateral edge with denser and less defined sculpture becoming almost foveolate in shape; propleuron lateral area with anterior 1/3 with few large and well-defined scrobiculate sculpture, which become smoother and wider at ventrolateral groove, dorsolateral groove with well-defined and dense scrobiculate sculpture ( distal area slightly smaller in size) and 1/2 the height of the one exhibited at ventrolateral area, distal upper corner with few punctate sculpture, area between lateral grooves from essentially nitid to completely covered by transversal narrow ridges, dorsal edge 1/10 and ventral edge 1/5 of posterior edge height; mesonotum with anterior 1/2 with dense and well-defined punctate sculpture, posterior 1/2 with larger and more spaced punctate sculpture which does not reach the scutellar groove; scutellar groove with eight to nine well-defined costulae, lateral ones three times smaller than mid one and of approximately the same width; scutellum with shallow and large scattered punctate sculpture mainly concentrated at lateral areas, mid area of it almost nitid except by very few punctate sculpture, lateral area with costulate sculpture of approximately same width but becoming very elongate towards posterior area; axilla through mesonotum nitid and anterior edge of lunulae well-defined ; metanotum subrectangular in shape, mid posterior costulae with a broad and short ridge between the two costulae; axilla through metanotum with two or three transversal bridges, otherwise nitid; propodeum with midlongitudinal carina not well-cristate inside areola but in some individuals this carina is completely cristate and well-defined , anterior lateral areas with dense and large punctate sculpture and the areas around medio-longitudinal and the transversal carinae with small and confuse rugulose sculpture , transversal carinae sometimes with confuse rugulose sculpture on it, costula well-defined and spiracular area with few confuse rugulose sculpture, posterior lateral areas with anterior and lateral edges with confuse rugulose sculpture, remainder of posterior lateral areas nitid as well as distal edge, areola with few smooth and not conspicuously evident rugose sculpture, areolar carinae well-defined ; mesopleuron with anterior 1/5 as well as upper anterior 1/3 punctate as well as epistomal scrobe, epistomal scrobe not conspicuously present, sternauli as deep impression with a transversal groove which exhibits dense and fine punctate sculpture, area below sternauli with confuse rugulose sculpture (the degree of sculpture present varies from almost absent to conspicuously present, dorsal edge with well-defined scrobiculate sculpture, posterior edge almost nitid except for punctate sculpture at posterior ventral corner of mesopleuron, otherwise nitid; metapleuron completely covered by confuse rugulose sculpture mixed with punctate sculpture at posterior 1/2 of its length, dorsal and posterior edge with large, spaced and narrow transversal ridges, medial pit present as well as pleural suture. *Legs*. Hind femur length = 0.78–1.03 mm; hind femur length/width = 2.93–3.10; hind tibia length/hind femur length = 1.16–1.19. Fore telotarsus smaller in length than fore basitarsus, telotarsus normal, not modified but exhibits an elongate and thin setae at externolateral area not hook-like shaped in combination of two also elongate and thin setae at ventroposterior edge of fore telotarsus. *Wings*. Fore wing length = 2.70–3.35 mm; 1RS length = 0.08–0.15 mm; 1CUa length/1CUb length = 1.15–1.20; length RS+Ma = 0.42–0.58 mm; length M+CU = 1.05–1.25 mm; 1M length/ m-cu length = 2.00–2.12; pterostigma length/height = 1.29–1.89. Hind wing: 1M length = 0.41–0.5 mm; 1M length/2M length = 1.82–1.83; 1M length/M+CU length = 1.18–1.43; length r-m/length Cua = 0.70–0.73; 1RSa length/2r-m = 1.44–1.71; 1A length = 0.25–0.35 mm. *Metasoma*. First tergum basal width = 1.00–1.40 mm; first tergum length/distal width = 0.95–0.96; second tergum length/distal width = 0.26–0.29; third tergum length/distal width = 0.44–0.45; hypopygium length = 0.70–0.88 mm. First metasomal tergum with anterior 1/3 with lineate sculpture at lateral areas of it in addition, tergum anterior 1/2 with and inverted “U”shaped area of smooth and confuse rugulose sculpture but middle area of “U”shaped area nitid, tergum posterior 1/2 with shallow and scattered punctate sculpture, mid longitudinal area slightly depressed and nitid; second metasomal tergum nitid as remainder of terga; hypopygium with longitudinal folds and not divided or

expended at distal tip; ovipositor thin and elongate in lateral view and as long as xx times of hind tibia length; ovipositor sheaths with a dense setosity over its length.

*Males.* Similar to female, sculpture at metapleuron less evident and body size slightly smaller than observed in females.

**Material examined.** Holotype, female, "Costa Rica, Guanacaste, ACG, Sector El Hacha, Sendero Bejuquilla, 280 m, 334534N 369348E, 10/vii/1997, 97-SRNP-4624." Paratypes: 14 females: Brasil, Rondonia, Rancho Grande, 62 km S. Ariquemés, 165 m, 1032S 6248W, 12–22/xi/1991. Bolivia, Dept. Beni, Río Manore at mouth of Río Ibare, 18–20/viii/1965. Colombia, Choco, PNN Utria, Sendero Boroboro, 0603N 7732W, 10 m, 1–5/vii/2000, Malaise Trap # 15, Brwon and Campos; Amazonas, km 22 vía Calderón t. firme, 040252N 645932W, 4/ix/1997; Amazonas, Amacayacu, Mocagua, 150 m, 12–19/iii/2000, A. Parente, Malaise. Costa Rica, Guanacaste, Estación Pitilla 9 km S. de Santa Cecilia, 700 m, i/1995, P. Ríos, L\_N\_329950\_380450, # 4358; Puntarenas, R.F. Golfo Dulce, 24 km W. Piedras Blancas, 200 m, iii/1993, Col. P. Hanson; Puntarenas, 3 km S. Rincón, 10 m, ii–iii/1989, P. Hanson and I Gauld; Guanacaste, Sector San Cristóbal, Sendero Pinyal, 630 m, 316959N 383890E, F. Quesada, 00-SRNP-574. Ecuador, Pichincha, 17 km E Santo Domingo, Tinalandia, 800 m, 7–10/v/1987, B. Brown and L. Coote. Perú, Avispas, 20–30/ix/1962, Col. R.D. Shenefelt. Mexico, Chiapas, Mustle, 440 m near Huixtla, x/1970, Malaise trap, Col. Welling. Panamá, Darien, 1967, C.A. Tripleton.

Holotype and three paratypes deposited at INBio, two paratypes deposited at AEI, three paratypes deposited at CNCI, two paratypes deposited at RMSL, three paratypes deposited at IAHC and one paratype deposited at USNM.

**Comments.** Face with colliculate/foveate sculpture varying on the degree of density as well as definition, in some individuals propleuron punctate sculpture well-defined and evenly distributed; propleuron in some individuals with posterior lateral upper corner with dense punctate sculpture and lateroventral groove with transversal ridges which extend across area between upper and ventrolateral grooves; propodeum with midlongitudinal carina well-cristate inside areola; metapleuron with confuse rugulose sculpture at posterior 1/2 varies in the amount covered by it, from completely covered to present at dorsal and posterior edge at areas around it, otherwise nitid; first tergum with lineate sculpture extending to posterior 1/3 of tergum length and "U" shaped rugulose sculpture almost absent;

**Rearing records.** *Achlyodes busirus* (Hesperiidae) feeding on *Citrus sinensis* (Rutaceae); *Aguna* sp. (Hesperiidae) feeding on *Bauhinia guianensis* (Fabaceae); *Aguna asander* (Hesperiidae) feeding on *Bauhinia unguolata* and *Bauhinia guianensis* (Fabaceae); *Aguna coeloides* (Hesperiidae) feeding on *Bauhinia guianensis* (Fabaceae); *Hyalothyris neleus* (Hesperiidae) feeding on *Swartzia cubensis* (Fabaceae); *Udranomia kikkawai* (Hesperiidae) feeding on *Ouratea lucens* (Ochnaceae); *Ocyba calathana* (Hesperiidae) feeding on *Dyphysa americana* (Fabaceae); *Drephalys alcmon* (Hesperiidae) feeding on *Hirtella racemosa* (Chrysobalanaceae); *Omiodes humeralis* (Crambidae) feeding on *Inga punctata* (Fabaceae); *Phanus* sp. (Hesperiidae) feeding on *Inga longispica* and *Inga sapindoides* (Fabaceae); *Phanus vitreus* (Hesperiidae) feeding on *Inga sapindoides* and *Inga longispica* (Fabaceae); *Nystalea morona* (Notodontidae) feeding on *Garcinia intermedia* (Clusiaceae); Hesperiid larvae feeding on *Inga longispica* (Fabaceae); *Hemiceras pallidula* (Notodontidae) feeding on *Inga punctata* (Fabaceae); *Hyalothyris neleus* (Hesperiidae) feeding on *Swartzia cubensis* (Fabaceae).

**Voucher numbers.** 00-SRNP-2045, 00-SRNP-2555, 00-SRNP-2563, 00-SRNP-2888, 00-SRNP-2917, 01-SRNP-9244, 01-SRNP-11142, 01-SRNP-24439, 01-SRNP-24472, 01-SRNP-24474, 01-SRNP-24478, 01-SRNP-2824, 01-SRNP-9243, 02-SRNP-14782, 02-SRNP-15353, 02-SRNP-31326, 02-SRNP-31327, 02-SRNP-31609, 02-SRNP-31707, 02-SRNP-32026, 02-SRNP-34067, 02-SRNP-34130, 02-SRNP-4197, 02-SRNP-8634, 02-SRNP-15347, 02-SRNP-15349, 02-SRNP-15351, 02-SRNP-15356, 00-SRNP-2049, 02-SRNP-21273, 02-SRNP-31284, 02-SRNP-31316, 02-SRNP-31608, 02-SRNP-31610, 02-SRNP-33209, 02-SRNP-33302, 92-SRNP-2049, 02-SRNP-4469, 02-SRNP-5339, 02-SRNP-5745, 02-SRNP-5864, 03-SRNP-20167, 03-SRNP-20034, 92-SRNP-2972, 92-SRNP-3152, 92-SRNP-3153, 92-SRNP-3653, 92-SRNP-5003, 92-SRNP-4142, 94-SRNP-8555, 95-SRNP-11310, 95-SRNP-4455, 97-SRNP-4106, 97-SRNP-4364, 97-SRNP-4622, 97-SRNP-4624, 97-SRNP-4625, 98-SRNP-4465, 98-SRNP-4470, 98-SRNP-4472, 98-SRNP-4479, 98-SRNP-4509, 98-SRNP-4513, 98-SRNP-4514, 98-SRNP-4517, 98-SRNP-4519, 98-SRNP-4992, 99-SRNP-2406, 02-SRNP-31328

**Etymology.** Gender, Masculine. This species is named for the extended rugulose sculpture present over the metapleuron.

***Hypomicrogaster scindus* Valerio n. sp.**

(Figs. 2E, 12B, 12E)

*Female.* Body length = 1.97 mm. *Body color:* Mainly dark brown; clypeus, labrum, antenna dirty honey yellow as metasomal terga 2 and 3, hypopygium distal 1/4, hind femur distal tip, hind tibial distal 1/3, hind tarsomeres; legs, hind coxae basal 1/2 yellow as scape and pedicel (except external lateral area dark brown), ovipositor, tarsal claws, sternauli, metasomal pleurites; remainder of hypopygium whitish as palpi; remainder of body dark brown. Wings hyaline, fore wing veins and pterostigma brownish yellow, hind wing veins slightly yellow in color.

*Head.* Head height/width = 1.41; compound eye height/width = 1.50; intertentorial pit distance = 0.17 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.75; width of face at dorsal clypeal edge = 0.64 mm; clypeus width/height = 2.18; vertex width/distance between anterior ocellus and edge of torulus = 1.93; length of first flagellomere = 0.37 mm; first flagellomere length/width = 2.4; length of first flagellomere/length of second flagellomere = 1.09; length of first flagellomere/length of third flagellomere = 1; distal flagellomere length = ?; distal flagellomere length/penultimate flagellomere length = ?; distal flagellomere length/width = ?; malar space height/basal width of mandible = 0.66; ocell-ocular distance/lateral ocelli distance = 1.13. Clypeus and face lower 1/2 densely punctate, punctate sculpture becoming foveate sculpture at upper 1/2 face; upper face keel not conspicuous; lateral areas of frons with punctate sculpture, distal area with less dense and conspicuous punctate sculpture, scrobal areas nitid; vertex with scattered punctate sculpture; gena with anterior 1/2 with punctate sculpture less scattered, defined and denser than gena posterior 1/2, punctate sculpture at temple larger and more conspicuous; postgena with longitudinal transversal lineate sculpture at basal 2/3 as well as junction with gena, otherwise nitid. *Mesosoma.* Mesosoma length/width = 1.26; mesosoma length = 0.83 mm; mesosoma height = 0.64 mm. Propleuron with fine longitudinal lineate sculpture at basal 2/3 of it with is denser at basal 1/3, punctate sculpture present throughout; pronotum lateral area with basal 1/3 with few large shallow scrobicular sculpture, upper groove with very small well-defined scrobicular sculpture, ventral groove with large well-defined and narrow scrobiculate sculpture, upper distal corner with few confused punctate sculpture; mesonotum with dense punctate sculpture, two almost completely nitid areas at mid lateral area, punctate sculpture almost reaching scutellar groove; scutellar groove with 13 costulae present, medial ones 3x as large as lateral ones as wider; scutellum with fine punctate sculpture scattered throughout, lateral areas with costulate sculpture which became more elongate and wider at distal area; axilla through mesonotum without transversal ridges, mainly nitid except for few smooth shallow irregular depressions next to lunulae; metanotum anterior and posterior 1/3 nitid, remainder of metanotum with rugulose sculpture; propodeum with anterior 1/2 with shallow confused foveate sculpture which is also present inside the areola, confused rugulose sculpture at edges at posterior lateral areas but medio distal area with less evident, transversal carina sinuate by confused large punctate sculpture on it, spiracular areas nitid, midlongitudinal carina broad at anterior 1/3 but inside areola less evident and less cristate; mesopleuron with anterior 1/3 punctate, sternauli as an elongate depression with medial area with few confused scrobiculate sculpture and areas around sternaulus with confused irregular fine shallow depressions, epistomal scrobe with confused shallow punctate sculpture, dorsal edge with dense small well-defined scrobiculate sculpture, distal edge with confused rugulose sculpture not as well-cristate as dorsal edge scrobiculate sculpture, distal 1/3 with ventral area with few punctate sculpture, otherwise nitid; metapleuron with medial pit present, dorsal and distal edge with large spaced scrobiculate sculpture, otherwise nitid. *Legs.* Hind femur length = 1.17 mm; hind femur length/width = 3.20; hind tibia length/hind femur length = 3.75. Fore leg telotarsus normal without a hook-like seat at interior face of it; tarsal claws with a short and thin setae at mid-distal area of it. *Wings.* Fore wing length = 2.18 mm; 1RS length = 0.06 mm; 1CUa length/1CUb length = 1.26; length RS+Ma = 0.34 mm; length M+CU = 0.14 mm; 1M length/ m-cu length = 0.38; pterostigma length/height = 1.78. Hind wing: 1M length = 0.33 mm; 1M length/2M length = 1.90; 1M length/M+CU length = 1.31; length r-m/length Cua = 0.40; 1RSa length/2r-m = 1.75; 1A length = 0.25 mm. *Metasoma.* First tergum basal width = 0.17 mm; first tergum length/distal width = 1.41; second tergum length/distal width = 0.23; third tergum length/distal width = 0.43; hypopygium length = 0.59 mm. First tergum with basal 1/2 with few fine lateral lineate sculpture short in length, distal 1/2 with confused shallow foveate sculpture not reaching distal edge, lateral areas at distal 1/4 with longitudinal lineate sculpture next to distal edge, otherwise nitid; second tergum nitid as remainder of terga; hypopygium divided at tip as two long narrow arms, no longitudinal folds present; ovipositor as long as 1.12x as long as hind tibial edge, thin an elongate throughout; ovipositor sheaths elongate and completely covered in by long dense setosity.

**Material examined.** Holotype, female, “Brasil, Represa Rió Grande, Guanabara, v/72, M. Alvarenga.” Holotype deposited at CNCI.

**Comments.** Antenna of holotype broken at tips.

**Etymology.** Gender, neutral. This species is named after the divided posterior edge of the hypopygium; “scindus” in Latin means “division or split”.

***Hypomicrogaster sicingens* Valerio n. sp.**

(Figs. 4A, 10A, 11F, 23A)

*Female.* Body length = 3.90 mm. *Body color:* Head, propodeum, antenna dark brown as; metapleuron; mesopleuron distal 1/2 honey yellow as hind leg tarsomeres, femur distal tip, tibial distal tip, ovipositor sheaths, empodium, tarsal claws; first metasomal tergum light orange as well as mesonotum, remainder of body yellow as scape and pedicel (except lateroexternal areas of scape and pedicel). Wings hyaline, hind wing veins slightly yellow in color as fore wing vein 1-1A basal 1/4, remainder of veins brown; pterostigma anterior tip yellowish brown, otherwise brown.

*Head.* Head height/width = 1.43; compound eye height/width = 1.54; intertentorial pit distance = 0.26 mm; tentorial pit distance/distance tentorial pit to compound eye = 4.13; width of face at dorsal clypeal edge = 0.45 mm; clypeus width/height = 2.50; vertex width/distance between anterior ocellus and edge of torulus = 1.78; length of first flagellomere = 0.31 mm; first flagellomere length/width = 2.50; length of first flagellomere/length of second flagellomere = 1.00; length of first flagellomere/length of third flagellomere = 0.95; distal flagellomere length = 0.17 mm; distal flagellomere length/penultimate flagellomere length = 1.22; distal flagellomere length/width = 2.20; malar space height/basal width of mandible = 0.50; ocell-ocular distance/lateral ocelli distance = 0.70. Face and clypeus with large shallow punctate sculpture; frons with punctate sculpture at lateral areas which became less dense and more confused and sparse towards distal area, scrobal areas nitid; vertex with dense punctate sculpture as distal 1/2 of gena; gena distal 1/2 punctate sculpture mixed with transversal lineate sculpture as basal 2/3 of postgena, remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.17; mesosoma length = 1.48 mm; mesosoma height = 1.07 mm. Propleuron with anterior 2/3 with longitudinal fine lineate sculpture, punctate sculpture less dense than lineate sculpture; pronotum basal 1/3 with large well-defined scrobiculate sculpture, upper lateral groove with fine small and well-defined scrobiculate sculpture, ventral lateral groove with wider spaced scrobiculate sculpture, otherwise nitid; mesonotum with densely shallow punctate sculpture becoming less dense towards scutellar groove without reaching it; scutellar groove with 13 costulae, middle ones larger than lateral ones, all approximately with the same width; scutellum with few scattered punctate sculpture, lateral area with costulate sculpture becoming wider and elongate towards distal area; axilla almost totally nitid except for medial area with conspicuous transversal ridges next to lunulae; metanotum with anterior 1/3 nitid as distal edge, remainder of metanotum with confused rugose sculpture; propodeum anterior 1/2 with confused rugulose sculpture throughout except anterior edge, spiracular, transversal and anterior areolar carinae present but not evidently cristate, area around areola with confused rugulose sculpture as well as inside the areola, posterior lateral area with confused rugose sculpture at edges been the lateral edges with more conspicuously sculpture on then, remainder of post-lateral areas nitid, spiracular area with confused rugose sculpture; mesopleuron with anterior 1/3 punctate, sternauli as an elongate nitid depression, posterior ventral mesopleuron punctate, dorsal as distal edges with dense scrobiculate sculpture, epistomal scrobe with dense small confused scrobiculate sculpture; metapleuron mostly nitid, medial pit present, distal edge with spaced scrobiculate sculpture which is nitid between ridges, distal edge with few ridges present. *Legs.* Hind femur length = 1.25 mm; hind femur length/width = 3.20; hind tibia length/hind femur length = 1.13. Fore telotarsus normal, not modified and with one broad seta at internolateral area of it and distal in placement; tarsal claw with a short and broad basal tooth. *Wings.* Fore wing length = 4.23 mm; 1RS length = 0.17 mm; 1CUa length/1CUB length = 1.16; length RS+Ma = 0.65 mm; length M+CU = 1.48 mm; 1M length/m-cu length = 1.83; pterostigma length/height = 1.67. Hind wing: 1M length = 1.25 mm; 1M length/2M length = 2.05; 1M length/M+CU length = 2.81; length r-m/length Cua = 1.58; 1RSa length/2r-m = 1.05; 1A length = 0.18 mm. *Metasoma.* First tergum basal width = 0.31 mm; first tergum length/distal width = 1.06; second tergum length/distal width = 0.21; third tergum length/distal width = 0.43; hypopygium length 0.94 mm. First tergum with shallow large punctate sculpture throughout, basal 1/3 with lateral long and fine lineate sculpture, medial area of

basal 1/3 almost nitid except for very few punctate sculpture, distal edge with two depressed areas parallel to distal edge; second tergum nitid as remainder of terga; hypopygium not divided at tip, with longitudinal folds present; ovipositor elongate and thin throughout its length and 1.7 times as long as hind tibial length.

*Male.* Similar to females.

**Material examined.** Holotype, female, "Brasil, Guanabara, Represa Rió Grande, vi/1972, F.H. Oliveira." Paratype, one male: Brasil, Guan., Floresta da Tijuca, iv/1966, Col. Alvarenga and Seabra. Holotype and paratype deposited at CNCI.

**Comments.** The following color variation was observed: abdominal terminal terga brown in color, wing veins darker in color than previously described, propodeum less dark than previously described.

**Etymology.** Gender, neutral. This species is named after the huge ocelli, which are also present in *H. ingensis*; "sicingens" in Latin means "remarkably similar".

### *Hypomicrogaster sicscindus* Valerio n. sp.

(Fig. 7B)

*Female.* Body length = 2.31 mm. *Body color:* Mainly dark brown; Scape and pedicel yellow as labrum, palpi, fore and middle leg, hind leg (except tibial distal 1/4 and tarsomeres yellow brown), metasoma (except lateral area of terga 4<sup>th</sup> to 8<sup>th</sup>, anterior edge second tergum, ovipositor sheaths), tegula; compound eyes silver; ocelli yellow. Wings hyaline, fore wing veins light brown, hind wing light yellow veins.

*Head.* Head height/width = 1.88; compound eye height/width = 1.72; intertentorial pit distance = 0.17 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.75; width of face at dorsal clypeal edge = 0.33 mm; clypeus width/height = 2.42; vertex width/distance between anterior ocellus and edge of torulus = 2.38; length of first flagellomere = 0.16 mm; first flagellomere length/width = 2.20; length of first flagellomere/length of second flagellomere = 0.91; length of first flagellomere/length of third flagellomere = 0.91; distal flagellomere length = 0.11 mm; distal flagellomere length/penultimate flagellomere length = 1.40; distal flagellomere length/width = 1.75; malar space height/basal width of mandible = 0.88; ocell-ocular distance/lateral ocelli distance = 0.63. Face and clypeus with confused fine punctate sculpture, upper keel not evident; frons lateral areas with scattered and very fine punctate sculpture as distal area and anterior 1/2 of vertex, remainder of frons nitid; posterior vertex with punctate sculpture with large shallow and more evident punctate sculpture than anterior 1/2; gena with anterior 1/2 with few scattered punctate sculpture becoming denser towards posterior area, posterior 1/2 with larger and denser punctate sculpture as well as upper 1/3 of gena, transverse longitudinal lineate sculpture present at limit with postgena; postgena mainly nitid. *Mesosoma.* Mesosoma length/width = 1.19; mesosoma length = 0.48 mm; mesosoma height = 0.67 mm. Propleuron with fine confused strigate sculpture at basal 1/3, punctate sculpture present throughout; pronotum with lateral anterior 1/3 with less defined, denser and spaced scrobiculate sculpture than the scrobiculate sculpture present at ventral lateral groove, upper lateral groove with small well-defined and broad ridged scrobiculate sculpture, upper corner at distal edge with confused punctate sculpture, otherwise nitid; mesonotum densely punctate which become slightly less dense towards scutellar groove and less defined on it; scutellar groove with 11 small and well-defined costula of same size and width; scutellum with fine punctate sculpture throughout, lateral area with narrow and dense costulate sculpture which become larger and wider at distal area; lunulae with anterior edge not well-defined by fine and narrow costulate sculpture; axilla through mesonotum with few well-defined short ridges at lunulae edge, otherwise nitid; metanotum with anterior and posterior 1/4 nitid, remainder of metanotum with confused rugulose sculpture at lateral 2/3 of it, otherwise nitid; propodeum with anterior edge nitid, remainder of anterior 1/2 with large well-defined punctate sculpture next to areolar carinae and on transversal and upper areolar carinae making it less defined, remainder of area with some smooth slight shallow like depressions, inside areola with rugulose sculpture present and midlongitudinal carina less defined and more straight at distal areolar area; posterior lateral area with fine confused rugulose sculpture throughout; mesopleuron anterior 1/2 punctate as ventrodiscal tip of distal area, sternauli as an elongate nitid shallow depression; dorsal edge with dense large scrobiculate sculpture, distal edge with shallow medium size scrobiculate sculpture, epistomal scrobe defined by confused shallow scrobiculate sculpture, dorsal area with few punctate sculpture, otherwise nitid; metapleuron medial pit present and nitid, dorsal edge with spaced scrobiculate sculpture which is smaller in size than the one present at distal edge, otherwise nitid. *Legs.* Hind femur length =

0.70 mm; hind femur length/width = 3.21; hind tibia length/hind femur length = 1.2. Fore leg telotarsus normal and without a hook-like seta on them, basitarsus longer than telotarsus. *Wings*. Fore wing length = 2.55 mm; 1RS length = 0.09 mm; 1CUa length/1CUb length = 1.08; length RS+Ma = 0.39 mm; length M+CU = 0.88 mm; 1M length/mcu length = 1.77; pterostigma length/height = 1.67. Hind wing: 1M length = 0.44 mm; 1M length/2M length = 1.93; 1M length/M+CU length = 1.55; length r-m/length Cua = 0.9; 1RSa length/2r-m = 2.25; 1A length = 0.22 mm. *Metasoma*. First tergum basal width = 0.2 mm; first tergum length/distal width = 1.6; second tergum length/distal width = 0.32; third tergum length/distal width = 0.25; hypopygium length = 0.76 mm. First tergum with basal 1/2 with small shallow irregular punctate sculpture, lateral areas with fine longitudinal sculpture, distal 1/2 with large shallow irregular punctate sculpture and distal edge with two depressed areas which are carinate; second tergum with anterior edge with few confused punctate sculpture, otherwise nitid as remainder of terga; ovipositor 1.47x as long as length of hind tibia as well as elongate and thin throughout its length, ovipositor sheaths elongate and narrow; hypopygium without longitudinal folds and divided distally in two short arms.

**Material examined.** Holotype, female, "Brasil, Cerepolis, III-12-66, Hand M Townes." Holotype deposited at AEI.

**Comments.** The sternauli exhibits few smooth rugose areas on it.

**Etymology.** Gender, neutral. This species is named after the divided posterior edge of hypopygium also present in *H. scindus*; "sicsindus" in Latin means "similar division".

### ***Hypomicrogaster siderion* Valerio n. sp.**

(Figs. 1C, 6C, 22A)

*Female*. Body length = 5.60 mm. *Body color*: Mainly white. Antenna and Head dark brown as well as mesonotum, pronotum, scutellum, metapleuron, mesopleuron, hind leg tarsomeres, tarsal claws, ovipositor sheaths, distal tip hind tibia (remainder of hind tibia yellow); fore and middle leg honey yellow except dorsal area of femur which are more darker as well as medial longitudinal area of hypopygium, a line shape spot at tip of hind coxa which extend to hind trochanter; trochantellus white in color as well as fore and middle coxae and palpi as reminder body white. Wings infumate with veins dark brown in color.

*Head*. Head height/width = 1.26; compound eye height/width = 1.56; intertentorial pit distance = 0.30 mm; tentorial pit distance/distance tentorial pit to compound eye = 4.30; width of face at dorsal clypeal edge = 0.55 mm; clypeus width/height = 2.30; vertex width/distance between anterior ocellus and edge of torulus = 3.00; length of first flagellomere = 0.38 mm; length of first flagellomere/length of second flagellomere = 1.07; length of first flagellomere/length of third flagellomere = 1.07; distal flagellomere length = 0.28 mm; distal flagellomere length/penultimate flagellomere length = 3.30; distal flagellomere length/width = 0.95; malar space height/basal width of mandible = 0.75; ocell-ocular distance/lateral ocelli distance = 1.17. Head face and clypeus with punctate sculpture which became less defined towards medial face, face medial keel not well-cristate but present; frons with scrobal areas nitid, lateral areas punctuate, distal area with few punctate sculpture; vertex with ocell-ocular area with few fine punctate sculpture as well as anterior half of it, posterior 1/2 densely punctuated; gena with anterior half with few punctate sculpture present but denser at ventral 1/4, remainder of gena as well as postgena more defined and more densely punctate than anterior 1/2 of gena. *Mesosoma*. Mesosoma length/width = 1.48; mesonotum length = 1–1.1; mesosoma height = 0.68 mm. Propleuron with dense and fine punctate sculpture present; pronotum anterior lateral area from nitid to confused scrobiculate sculpture posteriorly at dorsolateral groove, ventrolateral groove with weak scrobiculate sculpture present; mesonotum densely punctate which becomes less dense and larger towards the scutellar groove (not reaching it); scutellar groove with 10 costulae of similar width, medial costulae two times as large as lateral ones; scutellum subtriangular in shape, mostly nitid, with few setae present next to edges, lateral areas with costulate sculpture which becomes wider and longer towards distal area; axilla though mesonotum mainly nitid except for few broad and well short defined transversal ridges at distal lateral edges of lunulae; propodeum transversal carina less defined than remainder of carinae of propodeum, broad in shape, costula present and fine in shape, areola not completely present with only the posterior 1/3 of it preset a set of "v" shaped transversal carina at distal area of midlongitudinal carina, medial carina present and broad, remainder of propodeum nitid; mesopleuron with anterior 1/4 as well as dorsal 1/2 and ventral 1/2 punctate, sternauli as a deep elongate depression which exhibits medially some dense and small costulae sculpture,

dorsal and distal edge with dense and small costulate sculpture, epistomal scrobe nitid and slightly depressed, otherwise nitid; metapleuron nitid except for dorsal edge with spaced and large transversal lineate sculpture, medial deep depression present. *Legs*. Hind femur length = 1.4 mm; hind femur length/width = 3.30; hind tibia length/hind femur length = 1.23. Tarsal claws with a short, broad basal tooth, fore leg basitarsus larger than telotarsus, telotarsus not modified or with long setae at external face of it. *Wings*. Fore wing length = 5.60 mm; 1RS length = 0.15 mm; 1CUa length/1CUB length = 0.85; length RS+Ma = 0.75 mm; length M+CU = 1.12 mm; 1M length/m-cu length = 2.25; pterostigma length/height = 2.10. Hind wing: 1M length = 0.92 mm; 1M length/2M length = 2.18; 1M length/M+CU length = 1.57; length r-m/length Cua = 1.08; 1RSa length/2r-m = 1.2; 1A length = 0.42 mm. *Metasoma*. First tergum basal width = 0.35 mm; first tergum length/distal width = 1.45; second tergum length/distal width = 0.29; third tergum length/distal width = 0.42; hypopygium length = 1.22 mm. First tergum mainly nitid except for large and shallow punctate sculpture at distal 1/2 of tergum, basal 1/2 with medio lateral areas with fine lineate sculpture; hypopygium not divided at tip instead round, with folds medially and ovipositor elongate at thin throughout and 1.6x as long as hind tibia length.

*Males*. Similar to female, male slightly smaller than female, body length = 4.88 mm.

**Material examined.** Holotype, female, "Ecuador, Pichincha, 16 km S.E. Santo Domingo, Tinalandia, 680 m, v/1995, SandJ Peck." Paratype: male, same data as holotype except date: 1975. Holotype and paratype deposited at CNCI.

**Etymology.** Gender, masculine. The species name is to honor W.R.M. Mason, who was first person to identify and named (but unfortunately did not publish) this unique new species.

### *Hypomicrogaster spatulae* Valerio n. sp.

(Figs. 5E, 10F, 13B)

*Female*. Body length = 2.83–3.05 mm. *Body color*: Mainly dark brown; clypeus, labrum, antenna (except scape and pedicel) brownish yellow as well as ovipositor sheaths, terga 4–8 medial area, hind femur tip, hind tibia distal 1/3, hind tarsomeres, remainder of legs yellow as remainder of metasomal terga, propleuron distal tip and basal 1/5, pronotum dorsolateral edge, scape (except externolateral area brownish yellow), pedicel, ovipositor; mesonotum ventrolateral area reddish brown; ocelli yellow; compound eyes silver. Wings hyaline, veins brownish yellow, except 1-1A basal 1/3 whitish yellow as palpi, tip C+SC+R.

*Head*. Head height/width = 1.29–1.38; compound eye height/width = 1.54–1.59; intertentorial pit distance = 0.2 mm; tentorial pit distance/distance tentorial pit to compound eye = 2.66; width of face at dorsal clypeal edge = 0.38 mm; clypeus width/height = 2.38–2.88; vertex width/distance between anterior ocellus and edge of torulus = 2.70–2.71; length of first flagellomere = 0.21–0.23 mm; first flagellomere length/width = 2.25–2.42; length of first flagellomere/length of second flagellomere = 0.90–0.94; length of first flagellomere/length of third flagellomere = 0.94–1.00; distal flagellomere length = 0.14–0.15 mm; distal flagellomere length/penultimate flagellomere length = 1.33–2.20; distal flagellomere length/width = 1.38–1.50; malar space height/basal width of mandible = 0.75–1.00; ocell-ocular distance/lateral ocelli distance = 1.00–1.10. Face and clypeus punctate, upper keel face not conspicuously bulging; frons nitid except lateral area with punctate sculpture as well as very few transversal lineate sculpture at basal area of scrobal areas; vertex densely punctate at distal 1/2, remainder of vertex with few scattered punctate sculpture; gena temple densely punctate, anterior 1/2 with scattered punctate sculpture; distal 1/2 with punctate sculpture mixed with transversal lineate sculpture as well as junction area of postgena, remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.28–1.32; mesosoma length = 1.02–1.05; mesosoma height = 0.73–0.75 mm. Propleuron with basal 1/2 with fine longitudinal lineate sculpture, punctate sculpture throughout (except distal tip nitid); propleuron with lateral area ventral groove with large shallow scrobiculate sculpture, upper groove with more confused and smaller scrobiculate sculpture, medial area with confused rugulose, anterior 1/3 with one confused transversal thin ridge on it, otherwise nitid; mesonotum densely punctate and almost reaching scutellar groove; scutellar groove with nine to 12 small costulae of approximately same width; scutellum with scattered punctate sculpture throughout, lateral area with costulate sculpture which becomes larger and wider towards distal area; axilla through mesonotum nitid; metapleuron with distal 1/2 with rugulose sculpture, otherwise nitid; propodeum with anterior 1/3 with large shallow foveate sculpture mixed with confused rugulose sculpture around to the medio longitudinal, spiracular and transversal carinae, spiracular area with confused rugulose

sculpture, areola's inside area nitid with midlongitudinal carina less cristate than anterior 1/3, posterior lateral area with confuse rugulose sculpture next to carina areas with medial area nitid; mesopleuron with anterior 1/2 punctuates well as upper mesopleuron area, sternauli as a pit like depression with three costulae of small size inside it, edges as well as epistomal scrobe (except ventral edge) with fine small well-defined scrobiculate sculpture, otherwise nitid; metapleuron with medial pit present, dorsal and distal edge with large confused rugulose sculpture, otherwise nitid. *Legs*. Hind femur length = 0.85 mm; hind femur length/width = 3.78; hind tibia length/hind femur length = 1.09–1.12. Fore telotarsus length smaller than basitarsus, telotarsus modified with set of large and broad setae at middle of its length, distal and middle telotarsus with a set of long setae at externolateral area. *Wings*. Fore wing length = 2.92–3.10 mm; 1RS length = 0.09–0.10 mm; 1CUa length/1CUb length = 1.34–1.38; length RS+Ma = 0.43 mm; length M+CU = 0.93 mm; 1M length/ m-cu length = 1.16–2.00; pterostigma length/height = 1.50–1.60. Hind wing: 1M length = 0.42–0.45 mm; 1M length/2M length = 2.13–2.25; 1M length/M+CU length = 1.5–1.64; length r-m/length Cua = 0.78–0.88; 1RSa length/2r-m = 1.43–1.67; 1A length = 0.25–0.28 mm. *Metasoma*. First tergum basal width = 0.21–0.22 mm; first tergum length/distal width = 1.43–1.45; second tergum length/distal width = 0.43–0.46; third tergum length/distal width = 0.45–0.48; hypopygium length = 0.32–0.38 mm. First tergum with basal 1/3 with fine longitudinal lineate sculpture at lateral areas, distal 1/3 with large shallow punctate sculpture, distal 1/3 with large shallow punctate sculpture at lateral areas (sometimes this area is nitid) with some longitudinal lineate sculpture in lateral areas, otherwise nitid as remainder of terga; hypopygium not divided at tip and without longitudinal folds; ovipositor short and laterally compressed, distal 1/3 width conspicuously narrow than remainder of ovipositor as slightly curve and approximately 0.8 times the length of hind tibia; ovipositor sheaths length less than 1/3 of hind tibia.

**Material examined.** Holotype, female, “Brasil, Amazonas, Estirar do Ecuador, Río Javari, ix/1979, M. Alvarenga.” Paratypes: three females: Brasil, Caruaru, Pernanbuco, iv/1972, Col. M. Alvarenga; Brasil, Vilhena, Rondonia, 21°40’S 60°08’W, xi/1973, Col. A. Alvarenga; Ecuador, Pichincha, 16 km SE Santo Domingo Tinalandia, 680 m, 1975, Col. S. and J. Peck. Holotype and paratypes deposited at CNCI.

**Comments.** The following color variation was observed: metasomal terga completely brownish brown, presence of a reddish brownish line in front of scutellar groove, 1-1A anterior 1/2 yellow, antenna dark brown, hind coxae basal 1/2 brown in color, tip of hypopygium honey yellow as well as tarsal claws, hind tibial distal 1/2 dark brown, mesopleuron ventral 1/3 light orange.

**Etymology.** Gender, neutral. This species is named after the short ovipositor; “spatulae” in Latin means small sword.

### *Hypomicrogaster specialis* Valerio n. sp.

(Fig. 11A)

*Female*. Body length = 2.52–3.34 mm. *Body color*: Mainly dark brown; antenna honey yellow; clypeus, labrum yellow as legs (except hind tarsomeres, tip of hind femur and distal 1/2 hind tibia), metasomal terga (except medial area of terga 4 through 8 brown in color), scape (except external lateral areas) and pedicel, remainder of body dark brown; compound eyes silver; ocelli yellow. Wings hyaline, fore wing veins C+SC+R as basal 1/6 light yellow in color as hind wing veins, remainder of veins brownish yellow.

Head. Head height/width = 1.22–1.33 compound eye height/width = 1.50–1.60; intertentorial pit distance = 0.18–0.24 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.16–3.50; width of face at dorsal clypeal edge = 0.36–0.40 mm; clypeus width/height = 2.30–2.57; vertex width/distance between anterior ocellus and edge of torulus = 2.50–2.57; length of first flagellomere = 0.21–0.25 mm; first flagellomere length/width = 2.50–2.83; length of first flagellomere/length of second flagellomere = 1.00–1.06; length of first flagellomere/length of third flagellomere = 1.05–1.06; distal flagellomere length = 0.10–0.14 mm; distal flagellomere length/penultimate flagellomere length = 1.33–1.34; distal flagellomere length/width = 1.38–1.60; malar space height/basal width of mandible = 0.80–0.86; ocell-ocular distance/lateral ocelli distance = 1.00–1.25. Face and clypeus with foveate sculpture, gena with anterior 1/2 with few confused punctate sculpture, distal 1/2 with more conspicuous punctate sculpture as well as transversal lineate sculpture as well as basal 2/3 of it, remainder of postgena nitid; lateral areas of frons with fine punctate sculpture, distal area with fewer punctate sculpture, otherwise nitid; vertex punctate throughout with ocell-ocular area less dense punctate. *Mesosoma*. Mesosoma

length/width = 1.27–1.32; mesonotum length = 0.63–0.86; mesosoma height = 0.50–0.58 mm. Propleuron with basal 1/3 with fine longitudinal lineate sculpture, punctate sculpture present throughout; pronotum lateral areas with dorsal groove with very few small scrobiculate sculpture, ventral groove with shallow confused scrobiculate sculpture as well as distal lateral edge of pronotum, lateral anterior 1/3 with slightly rugose sculpture present; mesonotum with dense punctate sculpture that almost reach scutellar groove; scutellar groove exhibiting between 11 and 16 small and well-defined costulae; scutellum with fine dense punctate sculpture, lateral areas with costulate sculpture which became more elongate and wider towards distal area; axilla through mesonotum with transversal lineate sculpture next to lunulae, otherwise nitid; metanotum medial 1/3 with rugulose sculpture, otherwise nitid; pronotum medial carina well-defined, areolar carina at internal and external face with confused rugulose sculpture as well as transversal and costula, spiracular area with confused rugulose sculpture, posterior lateral areas mainly nitid with confused rugulose sculpture at edges; anterior 1/2 with scattered punctate sculpture specially around carinae; mesopleuron with anterior 1/3 punctate as well as upper area of mesopleuron, sternauli as an elongate depression with medial area with fine shallow scrobiculate sculpture as edges around mesopleuron (except ventral and epistomal scrobe mainly nitid); metapleuron with ventral and distal edge with large confused rugulose sculpture, medial pit present, distal 1/3 with deep punctate sculpture that mix with rugulose sculpture at edges. *Legs*. Hind femur length = 0.70–0.92 mm; hind femur length/width = 3.08–3.11; hind tibia length/hind femur length = 1.18–1.20. Fore telotarsus smaller than basitarsus, telotarsus modified and with a long thin seta at externolateral area; tarsal claw with tooth present anteriorly and broad in shape. *Wings*. Fore wing length = 2.68–3.24 mm; 1RS length = 0.10–0.13 mm; 1CUa length/1CUb length = 1.29–1.44; length RS+Ma = 0.40–0.52 mm; length M+CU = 0.90–1.13 mm; 1M length/ m-cu length = 1.71–2.00; pterostigma length/height = 1.53–1.57. Hind wing: 1M length = 0.43–0.55 mm; 1M length/2M length = 2.05–2.13; 1M length/M+CU length = 1.50–1.54; length r-m/length Cua = 0.86–0.88; 1RSa length/2r-m = 1.13–1.20; 1A length = 0.25–0.38 mm. *Metasoma*. First tergum basal width = 0.23–0.33 mm; first tergum length/distal width = 1.00–1.10; second tergum length/distal width = 0.31–0.36; third tergum length/distal width = 0.38–0.43; hypopygium length = 0.55–0.70 mm. First tergum with distal 1/4 with few shallow punctate sculpture, otherwise nitid as remainder of terga; hypopygium not divided at tip and with desclerotized longitudinal folds present; ovipositor elongate and thin throughout its length and between 1.23–1.59 times as long as hind tibial length.

*Male*. Similar to females.

**Material examined.** Holotype, female, “Brasil, Amazonas, Hwy ZF 2, km 19, ca 60 km N. Manaus, 02°30’S 060°15’W, 17/vii/1979, Terra firme, Canopy fogging project, TRS#09.”

Paratypes 30 females, 1 male: 4 females and 1 male same data as holotype except date: 16/vii/1979; (2) Brasil, Cab. De Veado, D.F., 1000 m, 14–30/x/1970, Mal. trap. Bolivia, Provincia Bara (?), Col. Steinbach. Costa Rica, Cartago, A.C. La Amistad, Turrialba, Est. Grano de Oro, 1120 m, iii/1994, Col. C. Campos, #2892; Heredia, Puerto Viejo, 50 m, Rain Forest, ii/1980, Col. W. Mason; Guanacaste, Estc. Pitilla, 9 km S, Santa Cecilia, 700 m, v/1989, Col. I. Gauld; (2) Guanacaste, Santa Rosa Nat. Park, 26/vi/1977, riparian, Col. D.H. Janzen, one same data except date: 24/vi/1977; Guanacaste, ACG, Estación Pitilla, 9 Km S. Santa Cecilia, 700 m, v/1994, Col. P. Ríos, Malaise, #2896; Guanacaste, GCA, Sector Santa Rosa, 8–18/vi/1995, Col. Dadelahi, Price and Zitani, tropical dry forest at open field next to road to playa Naranjo, Malaise trap; (2) Guanacaste, Bagaces, P.N Palo Verde, Estación Palo Verde, 10 m, 10/x–10/xi/2000, Col. I. Jiménez, malaise, #60220; Guanacaste, Bosque Nacional Diríá, Retallano, Alrededor de la torre de control de incendios, 600–700 m, 15/xi–16/xii/2001, Col. I Jiménez, Malaise, #66658; Guanacaste, ACG, Sector Santa Rosa, Area Administrativa, 295 m, 31°32’97’’N 35°92’36’’ E, 3/v/1983, Col D.H. Janzen; Guanacaste, Sector Santa Rosa, Sendero Natural, 6/xi/2001, Col. Gusaneros; Guanacaste, Sector El Hacha, finca Arraya, 295 m, 33°29’10’’N 37°10’62’’E, 11/ix/2002, Col. D. García; Guanacaste, Sector Potrerillos, Río Azufrado, 5/xi/2000, Col. Gusaneros; one, same data except date: 6/vi/2001; Puntarenas, Golfito, Estación Agujas, Cerro Rincón, 745 m, 15/ii–15/iii/2000, Col. J. Azofeifa, Malaise, #55250. Colombia, Valle del Cauca, PNN Farallones de Cali, Anchicaya, 3°26’N 76°48’W, 730 m, Malaise, 30/i–13/ii/2001, Col. S. Sarria, Leg. M. 1528. Ecuador, Pichincha, Santo Domingo, 47 Km S. R. Palenque 200 m 18–30/v/1975, Col. Peck. Panamá, Las Cumbres, 17–30/iii/1982, Col. H. Wolda; Canal Zone, iii/1983, Col. W. Wolda. Paraguay, Caballero, 24/xi/1971, Col. L. Peña.

Holotype and six paratypes (one of them a male) deposited at MCZH, five paratypes deposited at CNCI, three paratypes deposited at AEI, one paratype deposited at RMLS, one paratype deposited at USNM and 14 paratypes deposited at INBio.

**Comments.** The following color variation was observed metasomal terga completely brown as well as clypeus, vein C+SC+R brownish yellow, area around sternauli reddish yellow, ocelli brownish yellow; two longitudinal yellow lines at mesosternum; clypeus almost black. In some specimens distal 1/3 of first metasomal terga with denser punctate sculpture as described previously; in some specimens area below sternauli with fine and confuse longitudinal sculpture but the degree and extension of it varies between specimens.

**Rearing records.** *Eulepidotis folium* (Noctuidae) feeding on *Licania arborea* (Chrysobalanaceae); *Eulepidotis rectimargo* (Noctuidae) feeding on *Luehea candida* (Tiliaceae) and *Sterculia apetala* (Sterculiaceae) and *Wanda sadotha* (Pyralidae) feeding on *Picramnia antidesma* (Simaroubaceae).

The following sex ratios were observed for the species: 1/4, 2/2.

**Voucher numbers.** 00-SRNP-7167, 00-SRNP-7797, 00-SRNP-7148, 01-SRNP-13055, 01-SRNP-13075, 01-SRNP-13298, 02-SRNP-13266, 02-SRNP-30107, 02-SRNP-30107, 02\_SRNP-30109, 02-SRNP-30119, 02-SRNP-30125, 02-SRNP-30155, 03-SRNP-13074, 03-SRNP-13078, 03-SRNP-13080, and 83-SRNP-150.

**Etymology.** Gender, neutral. This species is named after the specialized modifications present on the fore tarsal claws; “specialis” means special in Latin.

### ***Hypomicrogaster tantillus* Valerio n. sp.**

(Fig. 12D)

*Female.* Body length = 2.14–2.42 mm. *Body color:* Mainly yellow. Head brown as well as metasoma first tergum, propodeum metapleuron, lunulae, scutellum distal edge, medial area of metasomal terga 4–7, ovipositor sheaths; metapleuron dorsal lateral edge brownish yellow as hind femur tip, hind tibia 1/4, arolium, tarsal claws tip (otherwise light yellow); palpi whitish as hind tibial spurs; antenna brownish yellow (except scape and pedicel but externolateral area brownish yellow); axilla through mesonotum distal 1/3 light brown; ocelli yellow; compound eyes silver; remainder of body yellow. Wings hyaline with a slightly pale yellowish color, fore wing vein 1-1A basal 3/4, m-cu, RS+Ma light yellow, remainder of veins light brown; hind wing veins yellowish.

*Head.* Head height/width = 1.32–1.33; compound eye height/width = 1.19–1.60; intertentorial pit distance = 0.18–0.19 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.00–3.50; width of face at dorsal clypeal edge = 0.34–0.35 mm; clypeus width/height = 2.58–2.67; vertex width/distance between anterior ocellus and edge of torulus = 1.76–1.80; length of first flagellomere = 0.18–0.22 mm; first flagellomere length/width = 2.00; length of first flagellomere/length of second flagellomere = 1.00; length of first flagellomere/length of third flagellomere = 1.00–1.07; distal flagellomere length = 0.10–0.11 mm; distal flagellomere length/penultimate flagellomere length = 1.13–1.33; distal flagellomere length/width = 1.50–1.60; malar space height/basal width of mandible = 0.66–0.75; ocell-ocular distance/lateral ocelli distance = 1.10–1.11. Face and clypeus with large punctate sculpture which is well-defined, face medial keel well-defined and nitid; lateral areas of frons with punctate sculpture as well as distal area, scrobal areas nitid; vertex with ocell-ocular area nitid, remainder of vertex with few punctate sculpture; gena with anterior 1/2 with scattered punctate sculpture, distal 1/2 with punctate sculpture which is mixed with longitudinal transversal lineate sculpture as well as basal 2/3 of postgena, temple with conspicuously evident punctate sculpture; remainder of postgena nitid. *Mesosoma.* Mesosoma length/width = 1.29–1.31; mesosoma length = 0.90–1.00 mm; mesosoma height = 0.63–0.73 mm. Propleuron with basal 1/3 with fine longitudinal lineate sculpture, punctate sculpture present throughout; pronotum lateral area with large narrow and few scrobiculate sculpture at basal 1/3, upper lateral groove as well as ventral lateral groove with small dense and slightly confused scrobiculate sculpture, distal upper 1/2 with punctate sculpture next to upper edge; mesonotum with dense punctate sculpture which becomes sparser towards scutellar groove, not reaching it; scutellar groove with 15 well-defined costulae, medial ones three times as large as lateral ones; scutellum with dense fine punctate sculpture throughout, lateral area with costulate sculpture which becomes more elongate and wider towards distal area; pronotum anterior 1/2 with large shallow punctate sculpture, transversal carinae with fine confused rugulose sculpture as well as interior areolar area as around areolar carinae and costula, posterior lateral area with confused rugulose carinae except distal edge and medial area of it, midlongitudinal carina less evident inside areola; mesopleuron anterior 1/4 punctate as well as upper 1/3, sternauli as an oval like nitid depression, distal lower corner with few punctate sculpture, dorsal edge with small dense well-defined scrobiculate sculpture, epistomal scrobe with few small well-defined punctate sculpture, otherwise nitid; metapleuron with

dorsal and distal edge only with rugose sculpture, medial pit present, metapleuron distal 1/3 with punctate sculpture next to dorsal and distal edge, otherwise nitid. *Legs*. Hind femur length = 0.63–0.73 mm; hind femur length/width = 3.10–3.40; hind tibia length/hind femur length = 1.17–1.20. Fore telotarsus smaller in length than basitarsus, normal in shape and without long seta present at externolateral area of telotarsus; tarsal claws with a short broad setae at mid length of it. *Wings*. Fore wing length = 1.92–2.00 mm; 1RS length = 0.08–0.10 mm; 1CUa length/2Cub length = 1.13–1.30; length RS+Ma = 0.35–0.39 mm; length M+CU = 0.83–0.88 mm; 1M length/ m-cu length = 1.78–2.00; pterostigma length/height = 1.38–1.50. Hind wing: 1M length = 0.38–0.42 mm; 1M length/2M length = 1.88–1.90; 1M length/M+CU length = 1.45–1.54; length r-m/length Cua 0.75–0.86; 1RSa length/2r-m = 1.25; 1A length = 0.23–0.25 mm. *Metasoma*. First tergum basal width = 0.23–0.25 mm; first tergum length/distal width = 1.09–1.19; second tergum length/distal width = 0.29–0.38; third tergum length/distal width = 0.31–0.44; hypopygium length = 0.53–0.55 mm. First tergum with basal 1/2 with fine long lineate sculpture at lateral areas, medial area nitid, distal 1/2 with few shallow bib punctate sculpture, distal edge with two parallel depressed areas which present punctate sculpture, otherwise nitid as remainder of terga; hypopygium not divided at distal tip and longitudinal folds present; ovipositor between 1.35–1.47x as long as hind tibia; ovipositor sheaths with scattered setae throughout its length and between 0.6 and 0.9 times the length of hind tibia; ovipositor thin throughout its length.

**Material examined.** Holotype, female, “Brasil, 980m, Bahia, Encruzilhada, xi/1974, M. Alvarenga.” Paratypes, 16 females same data as holotype, one same data except date and elevation: xi/1972, 960 m. One, Argentina, El Pintado, 650 m, 27–29/ix/1968, Col. Luis Peña. Brasil, Represa Rio Grande, Guanabara, 1–15/ix/1972. Holotype and 17 paratypes deposited at CNCI, two paratypes deposited at AEI.

**Comments.** The following color variation was observed: dark brown body color, metapleuron brown with irregular yellow areas, pronotum slightly brown, one longitudinal ventral brown line at mesosoma, ocelli silver, tarsal claws light brown, antenna dark brown, metapleuron mainly yellow, ovipositor sheaths light brown in combination with C+SC+R yellow in color, fore and middle leg tarsomeres whitish yellow. In addition, the vertex exhibits a more reduce area of punctate sculpture, which is less evident than previously described, and propodeum with upper distal corner at lateral area punctate.

**Etymology.** Gender, neutral. This species is named after its small body size; “tantillus” in Latin means “so small in size”.

### ***Hypomicrogaster tetra* Valerio n. sp.**

(Fig. 14G)

*Female*. Body length = 2.12 mm. *Body color*: Mainly dark brown; antenna brownish yellow as clypeus ventral edge, hypopygium longitudinal medial area, tegula, propleuron distal tip, metasoma second tergum; metasoma third tergum yellow as hypopygium, basal metasomal pleurites (otherwise brownish yellow), hind coxae distal 1/5, ovipositor, legs (except hind leg femur distal tip, tibia distal 1/3, tarsomeres, arolium), propleuron basal area; palpi whitish yellow; labrum yellow as ocelli, fore and mid coxae, remainder of body dark brown. Wings hyaline, fore wing veins slightly brown except basal area of C+SC+R, M+CU, 1-1A, hind wing veins whitish yellow

*Head*. Head height/width = 1.33; compound eye height/width = 1.65; intertentorial pit distance = 0.18 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.50; width of face at dorsal clypeal edge = 0.33 mm; clypeus width/height = 3.00; vertex width/distance between anterior ocellus and edge of torulus = 1.08; length of first flagellomere = 0.20 mm; first flagellomere length/width = 3.20; length of first flagellomere/length of second flagellomere = 1.00; length of first flagellomere/length of third flagellomere = 1.02; distal flagellomere length = 0.11 mm; distal flagellomere length/penultimate flagellomere length = 1.29; distal flagellomere length/width = 3.00; malar space height/basal width of mandible = 0.63; ocell-ocular distance/lateral ocelli distance = 1.25. Face and clypeus punctate, face with lateral sculpture becoming confused foveate sculpture at temple; frons lateral areas punctate, distal area with few punctate sculpture present, scrobal areas nitid; vertex with ocell ocular area less densely punctate than remainder of vertex, distal 1/2 with more conspicuously present punctate; gena temple with conspicuously present punctate sculpture, anterior 1/3 with few punctate sculpture present, distal 1/3 densely and more conspicuously punctate sculpture mixed with longitudinal transverse lineate sculpture at junction with postgena at its basal 2/3; remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.29; mesosoma

length = 0.88 mm; mesosoma height = 0.60 mm. Propleuron with only punctate sculpture throughout; pronotum lateral area with anterior 1/3 with few confused smooth and spaced scrobiculate sculpture, upper groove with dense small well-defined scrobiculate sculpture, ventral groove with large spaced and confused scrobiculate sculpture, area between grooves with confused fine rugulose sculpture; mesonotum with dense punctate sculpture which becomes more scattered and larger towards posterior area and almost reaching scutellar groove; scutellar groove with nine costulae not evident, medial ones two times as large and width than lateral ones; scutellum with very few punctate sculpture on it, lateral areas with costulate sculpture which becomes more elongate and wider distally; axilla through mesonotum with confused colliculate sculpture on edge of lunulae making the edge less defined, one transversal ridge at area next to scutellar groove, otherwise nitid; metanotum posterior 1/3 nitid, otherwise with confused rugulose sculpture; propodeum with anterior 1/2 with few large shallow punctate sculpture, spiracular area almost nitid except for few confused colliculate sculpture, posterior lateral areas with confused rugulose sculpture at distal and lateral edges as well around areolar carina but remainder of area with increasingly less dense and defined sculpture towards nitid medial area of posterior lateral areas, confused rugulose sculpture on transversal carinae making it less defined, areola inside area (not observed by specimen condition); mesopleuron anterior 1/3 punctate as well as dorsal area anterior 1/2, sternauli as an elongate depression with smooth and confused colliculate sculpture, ventrodiscal area punctate, epistomal scrobe almost nitid at anterior 1/2 with few punctate sculpture, distal 1/2 with large costulae on it, dorsal edge with fine confused small scrobiculate sculpture, distal edge with few small nitid grooves present throughout, otherwise nitid; metapleuron distal 1/4 with deep punctate sculpture present next to and distal edge, dorsal and distal edge with spaced scrobiculate sculpture mixed with punctate sculpture, medial pit present, otherwise nitid. *Legs.* Hind femur length = 0.70 mm; hind femur length/width = 3.29; hind tibia length/hind femur length = 1.56. Fore telotarsus modified with externolateral long setae at distal 1/2 of its length, telotarsus small in length than fore basitarsus; hind telotarsus with extenolateral set of seta present; tarsal claws with a conspicuous and elongate basal tooth. *Wings.* Fore wing length = 2.52 mm; 1RS length = 0.10 mm; 1CUa length/1Cub length = 1; length RS+Ma = 0.39 mm; length M+CU = 0.83 mm; 1M length/ m-cu length = 2.08; pterostigma length/height = 1.50. Hind wing: 1M length = 0.4 mm; 1M length/2M length = 2.46; 1M length/M+CU length = 1.45; length r-m/length Cua = 0.80; 1RSa length/2r-m = 1.25; 1A length = 0.25 mm. *Metasoma.* First tergum basal width = 0.23 mm; first tergum length/distal width = 1.33; second tergum length/distal width = 0.32; third tergum length/distal width = 0.32; hypopygium length = 0.4 mm. First tergum with distal 1/3 with confused foveate sculpture next to distal edge which becomes punctate sculpture towards anterior edge, remainder ?; second tergum nitid as remainder of terga; hypopygium without longitudinal folds and not divided at distal tip; ovipositor broad at base, slightly curved in lateral view and laterally compressed and about 0.51 times as long as hind tibial length; ovipositor sheaths parallel in lateral view and with setae sparsely placed throughout its length.

*Male.* Similar to females.

**Material examined.** Holotype, female, "Colombia, Amazonas, PNN Amacayacu, San Martin, 3°46'S 70°18'W, 150 m, Malaise, 11/3/00/-11/11/00, B. Amado leg., M1313." Holotype deposited at IAHC.

**Comments.** The close position of the first metasomal tergum on top of the propodeum does not allow for the description of the propodeum or the basal area of the tergum.

**Etymology.** Gender, neutral. The name of this species is based in the fact that this was the fourth species with a short ovipositor for the genus *Hypomicrogaster* to be identified; "tetra" means four in Greek.

### ***Hypomicrogaster zan* Valerio n. sp.**

(Figs. 15C, 15D, 23H)

*Female.* Body length = 2.22–2.68 mm. *Body color:* Mainly dark brown; metasomal terga 2 and 3 yellow as fore and middle leg (except coxae), hind leg (except tibial distal 1/3, femur distal tip and tarsomeres dark brown), ovipositor, propleuron mainly as dorsal edge, mid and lateral area of pronotum, scape (except lateroexternal area dark brown), ocelli, metasomal sternae as pleurites; fore and middle coxae whitish yellow as well as hind tibial spurs and palpi, otherwise yellow; Wings essentially hyaline but slightly infuscate tone depending on light, hind wing veins honey yellow, fore wing veins brown with pterostigma darker in coloration than remainder of veins.

*Head.* Head height/width = 1.30–1.33; compound eye height/width = 1.50–1.60; intertentorial pit distance =

0.20–0.23 mm; tentorial pit distance/distance tentorial pit to compound eye = 3.60–4.00; width of face at dorsal clypeal edge = 0.28–0.35 mm; clypeus width/height = 2.52–2.57; vertex width/distance between anterior ocellus and edge of torulus = 2.83–3.14; length of first flagellomere = 0.20–0.23 mm; first flagellomere length/width = 1.00; length of first flagellomere/length of second flagellomere = 1.00; length of first flagellomere/length of third flagellomere = 0.98–1.00; distal flagellomere length = 0.11–0.15 mm; distal flagellomere length/penultimate flagellomere length = 1.13–1.33; distal flagellomere length/width = 2.25–2.40; malar space height/basal width of mandible = 0.86–1.00; ocell-ocular distance/lateral ocelli distance = 1.22–1.25. Face and clypeus densely punctate; frons with scattered punctate sculpture, distal area with fewer punctate sculpture, scrobal areas with upper area with few fine transversal lineate sculpture; vertex with densely punctate, lateral areas with punctate sculpture larger in size and more evident; gena with anterior 1/2 with fine punctate sculpture, distal 1/2 with larger and more conspicuous punctate sculpture mixed with transversal lineate sculpture present, also present at junction postgena basal 2/3; remainder of postgena nitid. *Mesosoma*. Mesosoma length/width = 1.27–1.42; mesosoma length = 0.83–1.10 mm; mesosoma height = 0.52–0.65 mm. Propleuron with basal 1/4 with few lineate sculpture, fine punctate sculpture present throughout; pronotum lateral area at anterior 1/3 with few tall spaced scrobiculate sculpture, upper lateral groove with small scrobiculate sculpture, ventral groove with tall narrow dense scrobicular sculpture, remainder of lateral area nitid; mesonotum densely punctate which become less dense and more spaced towards scutellar groove, not reaching it; scutellar groove with 10 to 13 small well-defined costulae, middle ones 2x as large as lateral ones, all with the same width; scutellum with scattered fine punctate sculpture throughout, lateral areas with costulate sculpture becoming more elongate and wider; axilla thought mesonotum with few broad transversal short ridges next to lunulae mixed with smooth and confused rugulose sculpture, otherwise nitid; metanotum with anterior and distal 1/4 nitid, remainder of metanotum with confused rugulose sculpture; propodeum with spiracular and midlongitudinal carina cristate and well-defined, remainder of carinae not as well-defined by confused rugulose sculpture on them as well as inside of areolar area (but more spaced and better defined), confused rugulose carinae at distal lateral areas next to lateral and ventral edges, spiracular area with confused and fine rugulose sculpture, otherwise nitid; mesopleuron with anterior 1/3 punctate, sternauli as an oblong depression with few small colliculate sculpture on it placed longitudinally, ventral 1/2 of posterior distal 1/3 punctate, dorsal and distal edge with fine scrobiculate sculpture, epistomal scrobe with confused shallow dense and small scrobicular sculpture, otherwise nitid; metapleuron with dorsal and distal edge with large spaced rugulose sculpture, area around it with punctate sculpture, medial pit present and remainder nitid. *Legs*. Hind femur length = 0.68–0.83 mm; hind femur length/width = 3.30–3.40; hind tibia length/hind femur length = 1.18–1.22. Tarsal claws with short broad basal tooth, basal lobe slightly developed; telotarsus of fore leg smaller in length than basitarsus, normal in shape and with a broad long setae at external lateral area of it. *Wings*. Fore wing length = 2.44–2.84 mm; 1RS length = 0.08–0.18 mm; 1CUa length/1Cub length = 0.94–1.00; length RS+Ma = 0.35–0.44 mm; length M+CU = 0.83–1.13 mm; 1M length/ m-cu length = 2.14–2.18; pterostigma length/height = 1.47–1.52. Hind wing: 1M length = 0.40–0.48 mm; 1M length/2M length = 1.70–1.90; 1M length/M+CU length = 1.41–1.45; length r-m/length Cua = 0.66–0.71; 1RSa length/2r-m = 1.14–1.20; 1A length = 0.25–0.33 mm. *Metasoma*. First tergum basal width = 0.15–0.23 mm; first tergum length/distal width = 1.53–1.55; second tergum length/distal width = 0.40–0.45; third tergum length/distal width = 0.46–0.47; hypopygium length = 0.42–0.45 mm. First tergum with basal 1/2 with longitudinal fine lineate sculpture at lateral areas, distal tergum 1/2 with dense large shallow punctate sculpture, distal edge of tergum with two short transversal depressions, remainder of tergum nitid as remainder of terga; hypopygium not divided at tip and medially fold without longitudinal folds; ovipositor between 0.74 and 0.78x as length of hind tibia; ovipositor broad at base, curve at lateral view, approximately distal 1/4 of its length with a dorsal flat area in lateral view; ovipositor sheaths with parallel shape in lateral view.

*Male*. Similar to females.

**Material examined.** Holotype, female, “Costa Rica, Guanacaste, ACG, Sector San Cristóbal, Quebrada Cementerio, 700 m, 316916N 384527 E, 19/viii/1998, G. Sihezar.” Paratypes: 17 males, 62 females; Costa Rica, Alajuela, ACG, Sector San Cristóbal, Quebrada cementerio, 660m, 19/viii/1998, Col. G. Sihezar; Costa Rica, Alajuela, Sector San Ramón, 620 m, 12–13/iii/1994, Col. D. García, #2768; one specimen same data except collector and date: 13–28/iii/1994, Col K. Taylor, #2763; Brasil, Teutonia, Santa Catarina, 9/iv/1952, F. Plaumann.

Holotype and six paratypes deposited at INBio, one paratype deposited at AEI, and two paratypes deposited at USNM.

**Comments.** The following color variation was observed: propleuron honey yellow as well as hind coxae;

distal edge of mesopleuron lightly orange in color as well as area of fore wing attachment; tarsal claws from honey yellow to dark brown.

**Rearing records.** Host *Orzarba* nr. *melanodonta* (Noctuidae) feeding on *Justicia aurea* (Acanthaceae). The following sex ratios were observed: 1/9, 1/6, 1/5, 2/5, 4/10, 2/5, 0/8, 2/8, 2/9.

**Voucher numbers.** 98-SRNP-7347, 98-SRNP-7348, 98-SRNP-7350, 98-SRNP-7351, 98-SRNP-7352, 98-SRNP-7353, 98-SRNP-7354, 98-SRNP-7355, and 98-SRNP-7358.

**Etymology.** Gender, neutral. The species name is a random combination of letters without any meaning.

## Discussion

After the taxonomic revision of the previously named species of the genus *Hypomicrogaster*, two species were placed within the genus *Diolcogaster* Ashmead as new combinations (*H. labanius* Nixon and *H. psarae* Wilkinson, Table 2). In addition, 10 new synonymies were established for the species *H. areolaris* (Blanchard) and *H. zonaria* (say), demonstrating the inadequacy of the existing species classification, which was based primarily on color variation (see *H. zonaria* comments section). Additionally, the species *H. areolaris* (Blanchard) Valerio is treated as a new combination for the previously known species *Apanteles areolaris* Blanchard (1947).

The present taxonomic revision identified 40 new *Hypomicrogaster* species which are using 11 families of Lepidoptera as host (four of them microlepidopteran) and 52 confirmed lepidopteran species feeding on 34 families of plants. In the light of this new biological information, it is more than clear that the previous notion that *Hypomicrogaster* species attacks only microlepidopteran hosts was a bias view from the previously known host record. The use of macrolepidopteran hosts by the genus *Hypomicrogaster* creates a further set of questions about the origin of specialization by some of the species on this group of lepidopteran taxa, as well as how the change in ovipositor length is affecting host choice (or vice versa) We do not know how the ovipositor is used during oviposition. Unfortunately, there has been no behavioral study for the genus in terms of how the species with short or long ovipositor are utilizing their ovipositors during oviposition.

The previous most recent genus delimitation done by Mason (1981) is far from complete; if we take in consideration the very atypical species like *H. deltis* **n. sp.** with a triangular shaped second metasomal tergum and a very peculiar short ovipositor (Fig. 6D & 19C), or *Hypomicrogaster espera* **n. sp.**, which exhibits a very elongate ovipositor, infumate wings and a very distinctive body color like that exhibited by *H. siderion* **n. sp.**

In terms of host use, it is very interesting to find that some species, as *Hypomicrogaster koinos* **n. sp.**, with a wide range of hosts, are the least numerous species represented in this clade, contrasting clearly with the specialist species like *M. luisi* **n. sp.** It is important to point out that there is a good number of new species with short ovipositors (i.e. *H. specialis* and *H. plagios*), which contradicts the ideas proposed by Mason (1981) about the placement of *Hypomicrogaster* only within the “microlepidopteran suite of characters” for the Microgastriinae genera. Furthermore, the fact that some species with short ovipositor can use as host both micro- and macrolepidopterans (i.e. *H. koinos* **n. sp.**) puts in jeopardy the idea that the species are physically limited by the length of their ovipositor to a particular type of hosts (Price 1972).

One interesting set of characters exhibited by the species with short ovipositor is the presence of a modified fore telotarsus (Fig. 12B & 12E) along with the presence of a set of long and broad setae on the ventrolateral area of the mid and hind telotarsus (Fig. 17A). In our opinion, these structures are likely to be used by the females to physically attach themselves to the caterpillar larva during oviposition. According to R. D. Shenefelt (J.B. Whitfield per. comm.) pectination in the tarsal claws is indicative of an evolutionary correlation between a very setose host and the parasitoid “mounting” the host, for which the pectinate tarsal claws facilitate the attachment of the female to the setae on the host. However, it seems that this correlation is not perfect. In the genus *Hypomicrogaster* only two species exhibit this type of tarsal claws (Fig. 4F), *H. pectinatus* and *H. ingensis*; the rest of known species parasitizing setose lepidopteran caterpillars do not possess this putative adaptation at all. Instead, it seems they have acquired a new morphology to deal with the physical attachment to the setose cover of the larvae they are using. Unfortunately, there is no study so far conducted on tarsal claw use during oviposition either.

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