Zootaxa 2868: 1–50 (2011)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

A revision of the genus *Stenonartonia* Giordani Soika 1973 (Hymenoptera: Vespidae: Eumeninae)

BOLÍVAR R. GARCETE-BARRETT
Laboratório de Biologia Comparada de Hymenoptera, Departamento de Zoologia, Universidade Federal do Paraná, Cx. Postal 19020, 81531-980 Curitiba, PR, Brazil. E-mail: bolosphex@gmail.com

Table of contents

Abstract

Stenonartonia is a neotropical genus restricted to the forested regions of South America east of the Andes. The genus is revised here and numbers 14 species. Nine new species *S. hasyva* **sp. nov.**, *S. perdita* **sp. nov.**, *S. cooperi* **sp. nov.**, *S. guaraya* **sp. nov.**, *S. rejectoides* **sp. nov.**, *S. occipitalis* **sp. nov.**, *S. tanykaju* **sp. nov.**, *S. hermetica* **sp. nov.**, *S. grossa* **sp. nov.** are discribed and illustrated. New combination is proposed for *S. mimica* (Kohl), **comb. nov.** (from *Paranortonia*). Lectotype is designated for *Nortonia polybioides* von Schulthess. A key, along with full descriptions, illustrations of morphological features and distribution maps for all of the species are given.

Key words: identification key, Neotropical region, potter wasps, taxonomy

Accepted by A. Lelej: 23 Mar. 2011; published: 5 May 2011

Introduction

Vespidae is one of the large families of aculeate Hymenoptera, worldwide with more than 5000 species and 257 genera described up to date (Sarmiento & Carpenter 2006, Carpenter unpubl.). The subfamily Eumeninae is the main group in the family, both in terms of diversity, more than 3500 species and 206 genera already described (Sarmiento & Carpenter 2006), and evolutionary importance, occupying a central position between the basal solitary subfamilies and the distal cluster of social subfamilies in the most widely accepted phylogeny of the family (Carpenter 1982; Pickett & Carpenter 2010).

The generic classification of Eumeninae starts with the work of Latreille (1802) where three genera of solitary vespids were described (*Synagris*, *Eumenes* and *Odynerus*), based on the mouthparts and the general shape of the metasoma (petiolate or not). Additional genera were described in the following decades before the appearance of the voluminous monograph by de Saussure (1852–1858). This latter work added new genera but placed most of the species in just two genera, petiolate *Eumenes* and non-petiolate *Odynerus*, dividing both genera into several subgenera and infrasubgenerical divisions designated by names (some of them corresponding to previously described genera) or Greek letters (e.g. *Gamma*, etc). This practice was followed by subsequent authors describing new species, but there was little consistency in applying the saussurean subgenera and divisions as valid generic or subgeneric names. The validity of most of de Saussure's names was finally formalized just with Opinion 893 of the International Commission on Zoological Nomenclature (1970).

The separation between *Eumenes* and *Odynerus* started to blur when de Saussure (1869) described the genus *Nortonia*, based on two species characterized by having a subpetiolate metasoma (*Odynerus intermedius* de Saussure and *Nortonia amaliae* de Saussure). From then on, *Nortonia* become a rather convenient name to apply to species with an intermediate condition, though not always in a consistent way, being sometimes applied with doubt, or with species alternatively treated as either *Nortonia* and *Odynerus* or *Eumenes* depending on the case.

In 1934, Bertoni described *Paranortonia*, based on three species (*Nortonia tolteca* de Saussure, *N. sulcata* Ducke, and *N. surinama* von Schulthess), but without type species designation, and thus created an unavailable name (Article 13.3 of Code (ICZN 1999)). Bequaert (1940) later chose *N. tolteca* as type species of *Paranortonia*. The name was synonymized under *Parazumia* de Saussure in the catalog of van der Vecht & Carpenter (1990).

Meanwhile, Giordani Soika (1936; 1938) re-defined and restricted *Nortonia* around its type species (*Odynerus intermedius*) and closely allied species in the Mediterranean basin, treating the name as a subgenus of the Palearctic genus *Pareumenes* de Saussure (originally a "division" of *Eumenes*). At this point Goirdani Soika (1936) started the relocation of other species previously treated as *Nortonia*, describing the genus *Pseudonortonia* for some African species. A few years after Giordani Soika (1941) described the genus *Paranortonia* in order to accommodate five neotropical species (*Nortonia polybioides* von Schulthess [designated as type species], *N. lugens* von Schulthess, *N. mimica* Kohl, *N. guaranitica* Bertoni and *Paranortonia flavotestacea* Giordani Soika) characterized by having a regularly convex propodeum and a transverse carina on T1. This work included neither *N. mimica* nor *N. guaranitica*. Decades after that work, Giordani Soika (1973) rectified the homonymy in a footnote, proposing *Stenonartonia* as a substitution name for *Paranortonia* Giordani Soika 1941, *nec* Bequaert 1940.

Stenonartonia has since only been briefly treated: Carpenter & van der Vecht (1991) solved the synonymy of *Stenonartonia apicipennis* (Fox) and provided new characters to recognize the genus and, based on the narrowing of the axillary fossae, suggested its inclusion in the *Pseudodynerus-Montezumia* clade of Carpenter & Cumming (1985). Garcete-Barrett (2003) redescribed *Stenonartonia guaranitica* (Bertoni). The present work provides a redescription for the genus *Stenonartonia* and the first complete identification key and descriptions for all of the species included.

Material and methods

231 specimens have been examined, most of them (144 specimens) belonging to the most common and widely distributed species, *Stenonartonia apicipennis*, followed in descending order by *S. flavotestacea* (22 specimens), *S. cooperi* (20 specimens) and *S. guaranitica* (20 specimens). The remaining species were represented by five or fewer specimens. Most of the material was studied in Curitiba, Brazil during 2008–2009. The collection of William Fox and the material deposited in the BMNH was seen during my visit to New York and London in 1998. The type

of *Nortonia mimica*, deposited in the NMW, was available as automontaged photographs kindly sent by Dominique Zimmermann. The photographs of the nests of *Stenonartonia cooperi* deposited in the BMNH were kindly provided by Gavin Broad. Here below are the acronyms of type depositories and collections that provided study material, mentioning the contact people for each one of them:

AMNH: American Museum of Natural History, New York, USA (James Carpenter).
BMNH: The Natural History Museum, London, UK (Ian Gauld, Sondra Ward and Gavin Broad).
CMNH: Carnegie Museum of Natural History, Pittsburgh, USA (John Rawlins through James Carpenter).
ETHZ: Eldgenössische Technische Hochschule-Zentrum, Zürich, Switzerland (Andreas Müller).
DZUP: Coleção de Entomologia Pe. J. S. Moure, Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, Brazil (Gabriel Melo and Marcel Hermes).
IML: Instituto y Fundación Miguel Lillo, Tucumán, Argentina (Maria Virginia Colomo).
INBPY: Museo Nacional de Historia Natural del Paraguay, San Lorenzo, Paraguay (John Kochalka).
INPA: Instituto de Pesquisas da Amazônia, Manaus, Brazil (Augusto Henriques).
MACN: Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina (not examined).
MCNV: Museo di Storia Naturale di Venezia, Venezia, Italia (Marco Uliana).
MPEG: Museu Paraense Emilio Goeldi, Belém, Brazil (Orlando Tobias Silveira).
NMW: Naturhistorisches Museum, Wien, Austria (Dominique Zimmermann).
OLML: Oberösterreichisches Landesmuseum, Linz, Austria (Josef Gusenleitner and Fritz Gusenleitner).
UCD: University of California, Davis, USA (Lynn Kimsey and Steve Heydon).
UFMG: Universidade Federal de Minas Gerais, Belo Horizonte, Brazil (Alice Kumagai and Rogério Lopes).
UNISC: Universidade de Santa Cruz do Sul, Brazil (Andreas Köhler).

The external morphology of the specimens was studied under a Zeiss Stemi SV6 stereo microscope equipped with a micrometric ocular and camera lucida. The photographs were taken with the help of Victor Nardino using a Leica DFC 500 digital camera coupled to a Leica MZ 16 stereo microscope and the images processed through Image Manager 50 and Auto-Montage Pro 5.03.0040 software in the TaxOnline facility of the DZUP. The study and drawing of the male genitalia were made with the help of a Zeiss Standard 20 microscope equipped with camera lucida. The photographic plates and line drawings were generated with Adobe Photoshop 5 and Corel Draw X3 respectively.

I have used the abbreviations F1, F2, F3, etc., to denote the first, second, third, etc, antennal flagelomeres, T1, T2, T3, etc, to denote the first, secong, third, etc., metasomal terga, and S1, S2, S3, etc., to denote the first, second, third, etc., metasomal sterna.

The measurements of some body parts were made as follows: body length was taken from the frons to the posterior border of T2; wing length was taken from the base of the costal vein to the tip of the wing; the proportions of the clypeus were taken in full face view as shown in Fig. 1; the proportions of T1 were taken in full upper view as shown in Fig. 3; S1 (Fig. 4) has a concave posterior margin and its shape and its proportions refer just to its disc (the expanded region delimited at its base by the sub-basal carina) measured as shown in Fig. 4. The width of T2 refers to its maximum width, not far behind its posterior middle.

Morphology

Morphological structures and surface sculpture mainly follow the terminology used by Bohart & Stange (1965), with additions and modifications taken from Duncan (1939), Carpenter & Cumming (1985), Gibson (1985), and Willink & Roig-Alsina (1998). The *scutellar-axillar complex*, divided into a posterior *scutellar region* and two anterolateral *axillar regions*, separated at each side by the scuto-scutellar sulcus (Gibson 1985) and the transscutellar carina (Duncan 1939), is a region barely treated in a few previous works on Eumeninae (Giordani Soika 1978; Carpenter & Cumming 1985), but with important diagnostic features for species of *Stenonartonia* and possibly good potential in contributing to the understanding of the phylogeny of the subfamily. A special consideration is taken here to describe its morphology in detail:

The *scutellum* (Fig. 2: *Sct*). Its side can either fall down into the axillary fossa in a rounded or slightly angular bend (Figs 5, 7), or be produced over the axillary fossa as a *lateral scutellar carina* or *lamella* (Figs 2, 6, 8: *cls*). The *axillary fossa* (Carpenter & Cumming 1985; "scutellar pocket" of Duncan 1939) is a sublateral depression of the scutellar region (encircled red in Fig 2), situated in what is called "axillula" by Gibson (1985; 1997). In Eumeninae its *atrium* is deep and extends latero-anteriorly under the lateral structures of the scutellar-axillar complex. In *Stenonartonia polybioides* and *S. hasyva* the atrium also expands meso-anteriorly beneath the surface of the scutellum, being visible as bubble-like transluscent "windows" close to the axilla. The "wide" or "narrow" nature of the axillary fossa (Carpenter & Cumming 1985), refers just to the shape of the opening of the axillary fossa (Figs 2, 5–8: *fa*) and depends on the development of several neighboring structures extending in different degrees as to form a complex lamellar and more or less horizontal "roof" over the atrium of the axillary fossa: the inner lamella of the scutellar crest, the lateral axillary panel, the lateral scutellar carina and even the axilla. Behind the axillary fossa, a longitudinal sulcus ending in a posterior indentation usualy marks the limit of the scutellum with the *scutellar crest* (Duncan 1939 in part) (Figs 2, 5–8: *sc*), which is the sharp lateral rim of the scutellar region, usually covered with rather long and dense inward pointing depressed hairs in Eumeninae. Here I establish the lateral extension of the trans-scutellar carina as its anterior limit, so the *anterior notal wing process* actually belongs to the lateral axillary panel. The inner border of the scutellar crest can be simple, gently falling down into the axillary fossa and having at most a subtle carina or lamella anteriorly (Fig. 5), or be developed as a more or less extensive *inner lamella* (Figs 2, 5–8: *lic*).

The *axilla* (Duncan 1939; Gibson 1997) (Fig. 2: *ax*). It has a small, rather triangular, horizontal anteromedial surface and a posterolateral declivity, an *axillar depression*, that falls confluent with the axillary fossa (Figs 5–7) and separates the axilla from the lateral axillary panel. In many cases, the overlapping of the lateral axillary panel over the axilla is such that the axillar depression gets reduced to a longitudinal, more or less oblique sulcus (Figs 6 and 8). In *Stenonartonia*, the anterior portion of the axillar depression is more or less open, forming a small anterior pocket-like cavity called here the *anterior axillary fossula* (Figs 2, 7–8: *af*). The *trans-scutellar carina* (Duncan 1939) (Figs 2, 7: *cas*) is a more or less transverse elevated line originating from the axilla just in front of the *scuto-scutellar sulcus*. It acts as a frontal wall for the atrium of the axillary fossa and separates the axillary fossa from the anterior axillary fossula when this latter exists. The *lateral axillary panel* ("lateral axillar surface" of Gibson 1985 or "lateral panel of the axilla" of Gibson 1997) (Figs 2, 5–8: *lap*) is a plate-like area, largely declivitous forward under the wing bases. This panel is almost vertical and largely obscured under the tegula in socal wasps and many eumenines, but gets more or less horizontal and advanced mesaly over the fossa in eumenines with a narrow axilary fossa opening. The posteromesal boundaries of the lateral axillary panel are marked by the *axillar carina* (Gibson 1985) (Fig. 2: *cax*), which runs obliquely outwards from the anterolateral extreme of the axilla in a gently curved, almost straight (Fig. 5) line along with the trans-scutellar carina. In eumenines with narrow axillary fossa opening the posteromesal advance of the lateral axillary panel results in a very strong sigmoid bending of the carina (Figs 6–8), so it has an independent anteromesal longitudinal section overhanging the axillar depression and a posterolateral section running together with the trans-scutellar carina under it.

The presence of acarinaria in different body regions, axillary fossae, propodeal concavity and sides, metasomal intersegmental spaces, has been recorded for Eumeninae since long ago (Bequaert 1918; Cooper 1955; Giordani Soika 1985). It is probable that the modifications of the scutellar-axillary complex observed in many eumenine genera, including *Stenonartonia*, are responding to evolutionary pressures derived from the symbiotic association of these wasps with winterschmitiid mites as suggested by Makino & Okabe (2003). Winterschmitiid mites are associated with different groups of wasps and bees, showing some specific and generic affinities. They use host acarinaria as shelters in their deutonymphal stages and have feeding habits ranging from saprophagous on nest contents (van der Vecht 1981) to parasitic on their very own host larvae and pupae (Makino & Okabe 2003), even with complex biologies involving saprophagous and parasitic phases in the same mite species (Okabe & O'Connor 2002). Recent experimental evidence (Okabe & Makino 2008) shows that parasitic mites are probably having a positive impact on their hymenopterous hosts as their feeding activities have very low negative effect, but their presence in certain numbers can inhibit the success of microhymenopteran parasitoids which would otherwise kill the host.

Geographical distribution

The distributional records were taken from the specimen labels. The geographical coordinates were positioned using Google Earth 4.3.7284.3916 (beta), exported as an XML table and then edited as DBF files per species for map editing in ESRI ArcView GIS 3.2a. The resulting metafiles were finally processed with CorelDraw X3. From distributional evidence and my own field experience, it can be said that species of *Stenonartonia* seem to be associated with forest habitats and restricted to tropical South America east of the Andes.

Stenonartonia Giordani Soika

Paranortonia Giordani Soika 1941: 154, nom. praeocc., nec Bequaert 1940. Type species *Nortonia polybioides* von Schulthess 1904, by original designation.

Stenonartonia Giordani Soika 1973: 25, footnote, replacement name for *Paranortonia* Giordani Soika 1941. Type species *Nortonia polybioides* von Schulthess 1904 by automatic designation (see *Paranortonia* Giordani Soika 1941).

Species of *Stenonartonia* may be recognized by the following combination of characters (main diagnostic ones are underlined): Mandible (Fig. 1) with 3 subapical teeth, the distal one very wide (wider than the preceding tooth) and flat edged (less evident in *S. flavotestacea*), the proximal one widely emarginated, almost bidentate and the acetabular carina ending before reaching the preapical notch; palps 6+4; antennal sockets separated from each other by about their own diameter and from the clypeus by about 1/5-1/4 the same diameter; male F9 folding over F11, forming a hook (Figs 57–64); eyes glabrous; female vertex with a semi-oval (Fig. 33) to boomerang-like (Figs 34–35) densely micropunctate specialized area, which is free of macropunctures, is covered with long and dense semi-erect pilosity, and bears two rather close together small punctiform foveae not flanked behind by a carina and placed at about the mid distance between the levels of the posterior ocelli and occipital carina; gena about as wide as the eye in lateral view; occipital carina weak to absent across the posterior interocular space; anterior pronotal face smooth, devoid of macropunctures or foveae; pronotal carina complete and not very high, rigth angled to slightly obtusely angled at humeri; lateral face of the pronotum convex or very slightly concave, with a well developed fovea near the lower angle (Figs 65–76); pretegular carina present; mesoscutum without notauli and with very weak parapsidal lines; tegula fusiform and with its posterior angle acute, reaching the tip of the parategula and with its inner margin tilted down (Figs 77–105); lateral axillary panel projected over the axillar depression (Figs 2, 77–95); axillar depression greatly narrowed to slit like and with anterior axillary fossula (Figs 7–8); inner lamella of the scutellar crest expanded over most of the atrium of the axillary fossa (Figs 7–8); opening of the axillary fossa thus relatively small (Figs 7–8); mesepisternum without a longitudinal carina under the pronotal lobe; mesepisternal and scrobal sulci well marked; epicnemial carina absent (slightly marked in the group of *S. occipitalis*) (Figs 65, 66); metanotum with a transverse ridge of teeth separating a coarsely sculptured anterior band (reduced in *S. polybioides*, *S. hasyva* and *S. perdita*) from the posterior, gently declivitous area (Figs 2, 77–86); propodeum rather smoothly declivous posteriorly, with the sublateral and posteromedial areas rather confluent and with a well marked medial channel (Figs 89–95) (the posteromedial area is marked and forms a slight concavity in the group of *S. occipitalis* and is more or less flat but undefined in the group of *S. apicipennis*) (Figs 87–88); lateral carinae and upper propodeal lamellae absent; sublateral propodeal carinae very short, adjacent to the submarginal carina; submarginal carina of the propodeum expanded at sides, forming the apical lamellae of the propodeum, which are normally projected either upward or backward; propodeal valvula lamellar and perfectly fused along the border of the apical lamella, delimited from it at most either by a crease along the fusion line or a shallow marginal notch (Figs 65–76, 123–125, 127–129, 131–136); metasoma subpetiolated to subsessil; T1 conical, campanulated or subquadrate (Figs 109–122), 0.6 to 0.77 × as broad as T2 and with a transverse carina delimiting the anterior declivity from the disc; S1 (Figs 137–148) with its petiole separated from the corresponding tergum by a well marked sulcus and with a sub-basal carina delimiting its disc; T2 (Figs 149–159) without premarginal lamella and at most with a very thin, almost vestigial, marginal lamella; S2 (Figs 36–53) evenly convex, at most slightly flattened near its base, without any sub-basal projection, truncation or longitudinal sulcus.

The key given by Carpenter & Garcete-Barrett (2003) also mentions the second recurrent vein of the fore wing ending almost interstitial between the second and the third submarginal cells. My study has shown this character to be useless, as it is extremely variable, not only in the genus, but even within the same species, with specimens vary-

ing from having the vein plainly ending into the second submarginal vein, to others with the vein absolutely interstitial.

Key to the species of *Stenonartonia*

1. Scutellum not depressed at sides, but expanded into a translucent amber colored lamella (Figs 79–83) overhanging the axillary fossa which has a very small opening. Axilla little depressed posterolateraly (Figs 79–83). Quite large yellow wasps with black markings on head and mesosoma and brown bands on metasomal terga (Figs 38–39), reminiscent of the social wasp *Agelaia fulvofasciata* (De Geer). (Species-group of *S. polybioides*) 2
- Scutellum and axilla strongly depressed towards the axillary fossa (Figs 77–78, 84–86). Scutellum without a lateral expansion (Figs 84–85) or at most a depressed one which is as dark and opaque as the remainder of the scutellum (Figs 77–78). Medium sized wasps with different color patterns (Figs 36–37, 40–53) 6
2. Scutellum with a distinct translucent bubble-like anterolateral "window" (Figs 79–80). Metanotum low and rounded in profile (Fig. 68). Propodeum covered with fine oblique striae and very reduced macropunctation (Figs 97–98). Apical margin of the clypeus straight in both sexes (Figs 11–12, 25–26). Male mid femur strongly distorted by deep ventrobasal and mesodorsal concavities (Fig. 54). Males with F9 concave ventrally and F11 curved, flattened and very elongate (Figs 58–59) 3
- Scutellum without a bubble-like anterolateral "window". Metanotum either low and rounded or high and angular in profile (Fig. 69). Propodeum with visible macropunctation mixed with either strong or very fine striae of varied direction (Figs 99–101). Apical margin of the clypeus at least slightly concave in females (Figs 13–15) and known males (Fig. 27). Known males with just a shallow basoventral flattening on the mid femur (Fig. 56). Known males with F9 cylindrical and F11 short, cylindrical and tapering apically (Fig. 60) 4
3. Sublateral propodeal surface weakly convex (Fig. 89). Anterior declivity of T1 barely convex (Figs 111 and 125). Anterior metanotal band of denser sculpture strongly tapering at sides (Fig. 79). Disc of S1 with some weak transverse striae (Fig. 139). Female clypeus almost 1.4 × wider than high (Fig. 11). Male clypeus without distinct macropunctures (Fig. 25). Male with F11 flatter and ventral concavity of F9 deeper (Fig. 58) . . . . . *S. polybioides* (von Schulthess)
- Sublateral propodeal surface markedly convex (Fig. 90). Anterior declivity of T1 strongly convex (Figs 112 and 126). Anterior metanotal band of denser sculpture thick all across (Fig. 80). Disc of S1 with a series of concentric *U*-like striae (Fig. 140). Female clypeus about 1.2 × wider than high (Fig. 12). Male clypeus with some distinct scattered macropunctures (Fig. 26). Male with F11 sub-cylindrical and ventral concavity of F9 shallower (Fig. 59) . . . . . *S. hasyva* **sp. nov.**
4. Metanotum low and convex (as in Fig. 68), with a very weak ridge (Fig. 81). Lateral axillary panel straight behind, not projected towards the axillary fossa (Fig. 81). Lateral lamella of scutellum with its border upturned, lip-like (Fig. 81). Axilla visibly depressed posterolaterally (Fig. 81). Propodeum strongly obliquely striatopunctate (Fig. 99). Apical propodeal lamella rounded above (Fig. 127). T1 narrower and gradually expanded posteriorly (Fig. 113). S1 gradually expanded (as in Fig. 140) and with some weak transverse striate . . . . . *S. perdita* **sp. nov.**
- Metanotum angularly bent in profile (Fig. 69, a little less in *S. guaraya*), with a stronger ridge (Figs 82–83). Lateral axillary panel produced behind towards the axillary fossa opening as a tongue-like projection (Figs 82–83) Lateral lamella of the scutellum thin, not upturned (Figs 82–83). Axilla hardly depressed posterolaterally (Figs 82–83). Propodeal sculpture either primarily longitudinally striate (Fig. 100) or densely punctate with very fine, hardly visible, transverse striae (Fig. 101). Apical propodeal lamella more or less angularly projecting above (Figs 128–129). T1 wider, campaniform (Figs 114–115). S1 abruptly expanded and not transversely striate (Figs 141–142) 5
5. Propodeal striae strong and mostly longitudinal, mixed above with coarse macropunctures (Figs 82, 100). T1 with well marked transverse carina, transverse sulcus and longitudinal sulcus (Fig. 114). Metanotum acutely angled in side view (Fig. 69). Posterior tongue-like projection of the lateral axillary panel longer than the parategula, produced further backward (Fig. 82). Scutellar crest with scattered pilosity which does not obscure the opening of the axillary fossa (Fig. 82). Female clypeus about 1.2 × wider than high (Fig. 14). Dark metasomal markings reddish brown (Fig. 152). Middle of T2 with macropunctures mostly obscured amongst abundant micropunctation (Fig. 152) . . . . . *S. cooperi* **sp. nov.**
- Propodeal striae very weak and almost transverse, mostly obscured by well spread dense though not very coarse macropunctation (Figs 83, 101). T1 with weak transverse carina and without either transverse or longitudinal sulci (Fig. 115). Metanotum straight angled in side view. Posterior tongue-like projection of the lateral axillary panel about as long as the parategula, poorly produced backward (Fig. 83). Scutellar crest covered with abundant and long appressed pilosity which obscures the opening of the axillary fossa (Fig. 83). Female clypeus about 1.3 × wider than high (Fig. 15). Dark metasomal markings dark chestnut (Fig. 153). Middle of T2 with well visible macropunctures amongst poor micropunctation (Fig. 153) . . . . *S. guaraya* **sp. nov.**
6. Occipital carina complete. Propodeum with a well defined rounded posterior concavity (Figs 87–88) and its lateral surface alveolate above (Figs 65–66). Apical propodeal lamella rounded and inseparably fused with the valvula (Figs 123–124). Scutellum expanded over the opening of the axillary fossa, which is this slit-like (Figs 77–78). T1 short and wide (Figs 109–110), strongly bent above in side view (Figs 123–124). S1 crescent-shaped (Figs 137–138). Specialized area of the female vertex semielliptical (Fig. 33). Epicnemial carina indicated though weak (Figs 65–66). (Species-group of *S. occipitalis*) 7
- Occipital carina interrupted behind the interocular space. Propodeum without a well defined rounded posterior concavity (Figs 91–95) and with its lateral surface regularly macropunctate above (Figs 71–76). Apical propodeal lamella more or less sharply projecting (Figs 131–136). Scutellum not expanded over the opening of the axillary fossa, which is then broadly oval (Figs 84–86). T1 variable, elongate in most of the species (Figs 116–122), but always low and gently convex above in side view (Figs 130–136). S1 variable (Figs 143–148) from crescent-shaped (Fig. 145) to elongate triangular (Fig. 144). Specialized area of

the female vertex thin, boomerang-like (Fig. 35). Epicnemial carina absent (Figs 71–76). (Species-group of *S. apicipennis*) 8

7. Propodeal concavity sharply defined above and covered with reflecting down depressed pilosity (Figs 77, 87). T1 angularly bent above in side view and with a sharp transverse carina (Figs 109, 123). S1 thicker and yellow (Fig. 137). Lateral expansion of the scutellum free of macropunctation (Figs 77, 87). Pilosity over mesosomal dorsum shorter and not obscuring the surface (Figs 65, 77, 87). Mesosoma and tegula with some yellow markings (Fig. 87). Fore wing bright orange with contrasting dark infuscate tip (Fig. 36). Mid and hind tarsi with a pattern of whitish rings (Fig. 36) . . . . . *S. rejectoides* **sp. nov.**

- Propodeal concavity diffusely defined above and covered with erect, non reflective pilosity (Figs 78, 88, 96). T1 roundly bent above in side view and with a low transverse carina (Figs 110, 124). S1 thinner and almost wholly dark (Fig. 138). Lateral expansion of the scutellum covered with macropunctures (Figs 78, 88). Pilosity over mesosomal dorsum longer and denser, obscuring most of the surface (Figs 66, 78, 88, 96). Mesosoma and tegula wholly dark (Fig. 88). Fore wing dull amberish, gradually changing to weakly brown infuscate toward the tip (Fig. 37). Mid and hind tarsi wholly dark (Fig. 37) . . . . . *S. occipitalis* **sp. nov.**

8. Medial channel of the propodeum deep and sharply defined, especially below, where it widens into a smooth concavity, and with the medial carina interrupted at the concavity, not reaching the submarginal carina (Fig. 103). T1 with a well defined medial carina along its anterior declivity (Fig. 131). S1 elongate, about 1.5 × wider than long (Fig. 144). Head and mesosoma shinier than in the remaining species (Fig. 72) . . . . . *S. flavotestacea* (Giordani Soika)

- Medial channel of the propodeum shallow and dull, without a special concavity below, and with the medial carina reaching the submarginal carina (Figs 84–86, 91–95, 102, 104–108). T1 without a defined carina along its anterior declivity (130, 132–136). S1 shorter, at least twice as wide as long (Figs 143, 145–148) 9

9. S1 crescent-shaped, more than 3 × wider than long (Fig. 145). Grayish black wasps with well defined orange yellow metasomal bands and fore wing amberish, gradually changing to brown infuscate toward the tip, reminiscent of the social wasp *Brachygastra lecheguana* (Latreille) (Figs 43, 51) . . . . . *S. guaranitica* (Bertoni)

- S1 triangular, at most 2.5 × wider than long (Figs 143, 146–148). Color pattern different (Figs 40–41, 44–47, 49–50, 52–53) 10

10. Anterior axillary fossula small and completely exposed behind the parategula, this latter being thin and careniform as seen from above (Figs 84, 91). Propodeum smoothly rounded at sides as seen from above. Medial channel covered below with erect, non reflective pilosity (Figs 84, 91, 102) . . . . . *S. mimica* (Kohl)

- Anterior axillary fossula large and largely hidden under the parategula, being this latter wider and digitiform as seen from above (Figs 85–86, 92–95). Propodeum obtusely angular at sides as seen from above. Medial channel covered below with a band of reflective, down depressed pilosity (Figs 85–86, 92–95, 104–108) 11

11. Clypeus opaque, densely shagreened and micropunctate in both sexes (Figs 20, 31). Female clypeus covered with only thin appressed pubescence and no bristles (Fig. 20). Transverse carina of T1 rather weak, interrupted at middle (Fig. 119) and ending straight at the side before reaching the level of the spiracle (Fig. 133). T2 covered with well defined macropunctures, separated amongst them by 1–2 × their own diameter at the middle and becoming very dense and coarse posteriorly, forming a well defined preapical band (Fig. 157). Tegula largely smooth and free of piliferous micropunctation externomedially (Fig. 93). Grayish black wasps with fore wings blackened along the costal region (reminiscent of the social wasp *Polybia ignobilis*) and with very reduced yellow markings on the legs (Figs 44, 52) . . . . . *S. apicipennis* (Fox)

- Clypeus at least a little shiny, without dense shagreening and with sparser micropunctation in both sexes (Figs 21–23, 32). Female clypeus with numerous yellowish bristles (Figs 21–23). Transverse carina of T1 strong and continuous at middle (Figs 120–122), reaching the level of the spiracles and curving backward at the side (Figs 134–135) except in *S. grossa* (Fig. 136). T2 covered with weaker macropunctures, separated amongst them by 2–3 × their own diameter at the middle and becoming just a little coarser but not much denser posteriorly, so a preapical band is not defined (Figs 158–159). Tegula with piliferous micropunctation over its entire surface (Figs 94–95). Rather brownish black wasps with fore wings brownish (reminiscent of the social wasps *Agelaia vicina* (de Saussure) and *Polybia minarum* Ducke) and extensive yellowish or reddish markings on the legs (Figs 45–47, 53) 12

12. Metanotal ridge sharp. Humeral angle obtuse and rounded. Macropunctation of T2 sparser and better defined amongst sparser micropunctation and pilosity (Fig. 158). Clypeus with micro and macropunctation weak and sparse in both sexes (Figs 21, 32). Mandibles and lower genae largely yellow in both sexes (Figs 21, 45). Mesonotum, metanotum and mesepisternum with some dark reddish markings (Figs 45, 75, 86, 94, 106). Fore wing lighter (amberish) basally (Figs 45 and 53) … *S. tanykaju* **sp. nov.**

- Metanotal ridge blunt. Humeral angle sharper, straight angled. Macropunctation of T2 denser and mostly obscured amongst denser micropunctation and pilosity (Fig. 159). Males unknown. Female clypeus with micro and macropunctation strong and dense, at least over its dorsal third (Figs 22–23). Females without yellow or reddish markings on mandibles, genae, mesonotum, metanotum nor mesepisternum (Figs 22–23, 46–47, 76, 95, 107–106). Fore wing more uniformly dark brown, even at its base (Figs 46–47) 13

13. T1 in side view with its anterior declivity depressed and the transverse carina bowed backward at the level of the spiracle (Fig. 135). Apical lamella of the propodeum in the shape of a small back-pointing projection separated from the valvula by a semicircular notch (Fig. 135). Clypeus covered with rather sparse and shallow macropunctation and with abundant micropunctation over its dorsal half (Fig. 22) . . . . . *S. hermetica* **sp. nov.**

- T1 with its anterior declivity convex and the transverse carina ending straight at the level of the spiracle (Fig. 136). Apical lamella of the propodeum in the shape of a large triangular up-pointing projection separated from the valvula by an obtusely angular notch (Fig. 136). Clypeus covered with abundant and well marked macropunctation and with sparser micropunctation concentrated over its dorsal third (Fig. 23) . . . . . *S. grossa* **sp. nov.**

Species-group of *Stenonartonia occipitalis*

This small group is quite distinct. Both species are rather stout bodied, similar to species in the genus *Ancistrocerus* Wesmael and share the following features: Occipital carina continuous at middle. Female vertex with specialized area broadly oval. Humeral angle projecting. Tegula densely micropunctate. Axillar depression strong. Anterior axillary fossula small and exposed. Scutellum flat, declivitous at the side, where it forms an opaque (similar to the remainder of the scutellum) lamellar projection over the opening of the axillary fossa. Opening of the axillary fossa rather slit-like. Scutellar crest separated behind from scutellum by a sulcus. Metanotal ridge high and sharp. There are weak indications of epicnemial carina. Mesepisternal sulcus deep and wide. Posterior propodeal concavity rounded and well marked. Mid propodeal carina complete. Propodeal side covered above with large, flat bottomed alveoli. Apical propodeal lamella broadly rounded and inseparably fused with the valvula. Metasomal segment 1 short and broad. T1 strongly bent above in side view and with a rather sharp transverse carina. S1 crescent shaped. T2 with pregradular area dull and gradulus shallow.

***Stenonartonia rejectoides* Garcete-Barrett, sp. nov.**
(Figs 1, 9, 33, 36, 65, 77, 87, 109, 137, 132, 149, 178)

Diagnosis and comments. *S. rejectoides* is recognized by having T1 angularly bent above and with a high transverse carina; sharply defined propodeal concavity covered with down-depressed reflective pilosity; metasomal dorsum covered with short pilosity which does not obscure the tegument; and a color pattern reminiscent of the social wasp *Polybia rejecta* (Fabricius) including a reddish tinged metasoma (due to appressed brassy pilosity in this species) and bright orange-blackish brown bicolored wings.

Description. FEMALE. *Color pattern.* Black integument with pale or whitish yellow markings as follows: mandibular disc; lateral clypeal line; short line below, along inner orbit; brief interantennal line; ventral face of scape; small spot on lower gena; small suffusion on lower pronotal corner; small suffusion in front of the pronotal fovea; some suffusion on the pronotal lobe; very thin posterior margin of pronotum; anterior and posterior tegular spots; metanotal band; small mesepisternal and metapleural precoxal spots; basal rim of the propodeal valvula; anterior line along the distal half of the fore femur; complete anterior line along fore tibia and basitarsus; brief mid and hind femur-tibia articulations; anterior line along the distal half of the mid tibia and the distal fourth of the hind tibia; mid and hind basitarsus except for the apex; basal half of mid and hind tarsomere 2; sides of mid and hind tarsomeres 3–4; a very tiny spot at the middle of the transverse carina of T1; thin posterior margin of T1 continuous forward along the lateral margin; whole S1; thin posterior margin of T2 to T5 (darker from T3). Light brown are: ventral face of pedicel and flagellum; some suffusion near the apex of the mandible; large outer suffusion at the middle of the tegula; marginal area and lower medial channel of propodeum; some suffusion on all femur-tibia articulations; all distitarsi; darkened mid spot on T6. Fore wing membrane and venation bright orange at base and dark chestnut from the pterostigma to the apex.

Measurements and proportions. Body length 9.4 mm. Wing length 8.6 mm. Clypeus 1.2 × wider than high and with its apical margin 1.2 × as wide as the interantennal distance. T1 1.2 × wider than long and 0.7 × as wide as T2. S1 broadly crescent-shaped: 3.3 × wider than its medial length and 1.9 × wider than its total length.

Structure. Clypeus moderately convex, with a slight triangular apical depression and a semicircularly concave apical margin between two rounded, translucent and slightly outward pointing teeth. Head regularly rounded, barely elevated and flattened just in the specialized area of the vertex. Occipital carina describing a regular arc and just slightly weakened at middle; humeral angle sharp and right angled in frontal view. Pronotal carina widely and shallowly emarginated below the humeral angle. Parapsidal line barely indicated. Parategula sickle shaped, cariniform above. Posterior border of the lateral axillary panel completely transverse at a short distance behind the parategula. Inner lamella of the scutellar crest briefly emarginated, so the opening of the axillary fossa is narrowly oval. Metanotum declivitous, not sharply bent in side view, and hardly reaching the propodeal concavity. Metapleural sulcus effaced. Propodeal concavity sharply defined (almost carinate) above. Mid propodeal carina complete. Submedial propodeal carina very short and thin. T1 almost right angled above in side view, with its anterior declivity nearly flat and with a very slight indication of an elevated medial line and with its transverse carina continuous, sharply elevated throughout and strongly bent backward at the level of the spiracle; longitudinal sulcus very thin but complete.

Tegumental sculpture. Clypeus covered with mostly fusiform punctures separated by intervals of about half their diameter. Head moderately smooth, covered with evenly spaced piliferous micropunctation. Mesosoma duller, especially over its dorsum, where the micropunctation is denser. Head, pronotum, mesoscutum, scutellum and mesepisternum covered with coarse, dense and slightly fusiform macropunctation which is sparser at sides. Lateral scutellar expansion free of macropunctures. Micropunctures sparser close to the outer margin of the tegula. Metanotum with anterior band irregularly crenate and posterior declivity confluently macropunctate. Sublateral propodeal surface coarsely and partly confluently alveolate, this sculpture becomes finer and irregularly sparser over the lateral surface. Medial propodeal channel opaque and finely shagreened. Metasoma quite densely micropunctate. T1 with a few scattered thin macropunctures on its anterior declivity and regularly spaced coarse macropunctures on its disc. T2 covered anteriorly with thin and widely spaced macropunctures which become rapidly coarser and denser towards sides and posteriorly, as to form a distinct marginal band. T3 to T6 densely though not very coarsely macropunctate. S1 coarsely and reticularly macropunctate. S2 finely and sparsely macropunctate, more densely at sides. S3 to S5 covered with regularly coarse and spaced macropunctation. S6 without macropunctures.
Pilosity. Whole body covered with a short, thin and not very dense brassy pubescence which become lighter (golden yellow to whitish) at sides and ventrally. The pubescence is denser on the metasomal terga, thus giving a *coopery* shine to this region. Head and metasoma with very sparse and mostly curved pale and thin setae. Propodeal concavity covered with down-depressed reflective pilosity.

MALE**.** Unknown.

Type material. Holotype ♀, BRAZIL: Amazonas: Manaus, Reserva Biológica do Cueiras, ZF2, 100 m, 02°35'S, 60°12'W, 10.vii.2008 (M.G. Hermes) [DZUP].

Distribution. Brazil: central Amazonia.

Etymology. The name of this species refers to its color pattern reminiscent of the social wasp *Polybia rejecta*.

***Stenonartonia occipitalis* Garcete-Barrett, sp. nov.**
(Figs 10, 24, 37, 48, 57, 66, 78, 88, 96, 110, 124, 138, 150, 160, 168, 179)

Diagnosis and comments. Similar to *S. rejectoides*, but differing by having T1 roundly bent above and with a lower transverse carina; more diffusely defined propodeal concavity covered by erect non reflective pilosity; metasomal dorsum covered with denser pilosity obscuring the tegument; and the color pattern reminiscent of the social wasp *Brachygastra lecheguana* in having a blackish body covered by dense golden pilosity, well marked metasomal yellow markings and amberish fore wings gradually fading into dull brown toward the apex.

Description. FEMALE. Differing from *S. rejectoides* in: *Color pattern.* The pale markings are orange yellow and distributed as follows: genal spot tiny or absent; tegula wholly dark or with little yellow on its posterior corner. Mesosoma wholly dark except for the rather obscure mesopleural and metapleural precoxal spots. Fore femur with an external preapical marking in one specimen. Hind tibia wholly dark. Tarsi wholly dark, except for the yellowish brown tarsomere 5. Transverse carina of T1 without medial spot. Metasomal bands thicker. T6 wholly yellow or at least with a large medial spot. S6 dark, marked at middle or extensively yellow. Fore wing membrane dull amberish, fading into dull brown toward its apex. Fore wing venation dark brown, amberish only at the very base of the wing.

Measurements and proportions. Body length 10.4 mm. Wing length 10 mm. Clypeus 1.2 × wider than high and with its apical margin hardly wider than the interantennal distance. T1 1.4 × wider than long and 0.7 × as wide as T2. S1 finely crescent-shaped: 3.7 × wider than its medial length and 2.2 × wider than its total length.

Structure. Interantennal sulcus deeper. Occipital carina obcordated at middle. Humeral angle bluntly pointed. Pronotum wider posteriorly. Parategula thicker, not careniform above. Scutellum more steeply declivitous at side. Lateral axillary panel projecting mesoposteriorly away from the parategula. Inner lamella of the scutellar crest almost straight, resulting in a markedly slit-like opening of the axillary fossa. Metanotum right angled in side view and briefly touching the propodeal concavity. Indications of epicnemial carina even weaker. Propodeal concavity diffusely bordered above. Submedial propodeal carina ticker, bridge-like. Apical propodeal lamella less produced upward. T1 broadly rounded above, with its anterior declivity markedly convex and its transverse carina lower and less strongly bent at the level of the spiracle.

Tegumental sculpture. Clypeus shagreened amongst the macropunctures. Whole body duller, due to a denser micropunctation. Macropunctation of head, pronotum, mesoscutum and mesepisternum slightly thinner, not espe-

cially sparse over the pronotal sides. Tegula more uniformly micropunctate and with some larger punctures scattered medially. Axilla covered with more macropunctures. Scutellum with denser macropunctation, even over its lateral expansion. Metanotum with anterior band confusedly double-crenate. Sublateral propodeal surface covered with very coarse macropunctation with careniform intervals, poorly spreading very loosely over the lateral surface and the concavity. Propodeal concavity shagreened and transversely striated. Macropunctation of T1 finer and mostly denser. Sculpture of S1 sparser. Remainder of the metasomal macropunctation a little coarser and denser.

Pilosity. Pubescence of head and mesosoma yellowish, longer, denser (partly obscuring the tegumental surface) and mixed with abundant pale semi erect setae. Propodeal concavity covered with non reflective up pointing decumbent pilosity, mixed with very thin erect setae.

MALE. Differing from the female in: *Color pattern.* Pale marking on mandible usually reduced to a sub-basal triangle. Clypeal lines thicker.

Measurements and proportions. Body length 9.1 mm. Wing length 8.1 mm. Clypeus 1.2 × wider than long and with its apical margin 1.17 × as wide as the interantennal distance.

Structure. Scutellum slightly convex. Propodeal concavity flatter and a bit more sharply defined above.

Type material. Holotype ♀, ARGENTINA: Corrientes: Las Marías, Ca. Virasoro, 10–15.xi.1969 (C. Porter) [IML]. Paratypes: ARGENTINA: Corrientes: Las Marías, Ca. Virasoro, 7.xi.1971 (C. Porter) [1 ♂, 1 ♀: IML]; same locality, 10–15.xi.1969 (C. Porter) [1 ♀: MCNV]; Misiones: Bompland [1 ♂: IBNPY].

Distribution. Argentinean Mesopotamia.

Etymology. The name refers to the complete occipital carina.

Species-group of *Stenonartonia polybioides*

This is a quite homogeneous group in both structure and color pattern. Its five species are rather large, moderately elongate bodied, with a color pattern reminiscent of the social wasp *Agelaia fulvofasciata* (De Geer) and sharing the following features: Occipital carina interrupted behind the interocular space. Female vertex with specialized area thin, arc-like. Humeral angle not projecting. Tegula smooth at the middle. Axilla flattened, not or little (*S. perdita*) depressed posterolateraly, with its posterior tip translucent amber (except in *S. perdita*). Anterior axillary fossula small and exposed. Scutellum convex, hardly declivitous at side, where it forms a partly translucent amber lamellar projection over the opening of the axillary fossa. Opening of the axillary fossa rather dimple-like. Scutellar crest separated behind from scutellum by a sulcus. Metanotal ridge variable, from almost absent to very high. Epicnemial carina absent. Mesepisternal sulcus thin. Overall propodeal shape semi oval, without either a concavity nor a flattened posterior surface, and with a well defined medial channel bearing a complete medial carina. Sublateral propodeal surface abundantly striatopunctate to striate (striae very thin and obscured by macropunctation in *S. guaraya*). Lateral propodeal surface at most sparsely macropunctate. Apical propodeal lamella reduced and inseparably fused to the valvula. Metasomal segment 1 elongate sub conical to campanulate. T1 low and gently convex above in side view, without a medial carina along its anterior declivity and with a very low and obtuse though well marked transverse carina. S1 narrowly elongate to campanulate. T2 with pregradular area dull and gradulus shallow.

Stenonartonia polybioides (von Schulthess 1904)

(Figs 11, 25, 34, 38, 58, 67, 79, 89, 97, 111, 125, 139, 151, 161, 169, 178)

Nortonia polybioides von Schulthess 1904: 272, 279, 281 [lectotype (here designated), ♀, Peru, Callanga (ETHZ)], [examined].

Paranortonia polybioides: Giordani Soika 1941: 159, fig. 6.

Diagnosis and comments: *S. polybioides* is species peculiar for having a large bubble-like anterolateral scutellar "window", one of the characters shared with *S. hasyva*, together with the much distorted male antennal tip and mid femur, as evidence of a complex axillary fossal atrium. The very wide clypeus, extremely reduced anterior metanotal band, relatively narrow propodeum with abundant thin oblique striae, and very slim metasomal segment 1 are some of the distinguishing features of this species.

Description. FEMALE. *Color pattern*. Orange yellow integument with black to blackish brown (especially lighter on vertex and legs) as follows: mandibular teeth; mandibular condyle; dorsum of scape; complex interconnected marking including the interocellar space, a submedial frontal mark (which are very thin just before reaching the antennal insertions) and the specialized area of the vertex; elongate supraocular triangle pointing mesoposteriorly; thin occipital band that splits, where the occipital carina starts, in a thick posterior stump and an anterior thin elongate drop-like arm; spot at the middle of the anterior pronotal face; short posterior L-shaped humeral line; mesoscutum except for the parategula and a submedial line; small subalar and sublobular marks; scrobal sulcus; large cup-shaped scutellar mark; thin anterior and posterior metanotal bands; mid propodeal channel; P-shaped anterior submedial mark; suffuse darkening on the submarginal sublateral dimples of the propodeum; dorsal line along mid and hind femora; inner line along hind tibia; a spot at the muscular insertion on T1; gradular ring on T2. Orange brown are: antennae, tegula at middle; lamellar areas of the scutellar-axillar complex; some important suffusion on mid and hind legs; some limited suffusion around the dark areas of the propodeum; T1 and T2 except for the apical band and a more or less extensive but diffuse yellow basal area; base of T2 to T6. Fore wing membrane hyaline grayish yellow, a bit darker along the costal region. Fore wing venation yellowish, a bit darker toward the wing base.

Measurements and proportions. Body length 11 mm. Wing length 12.7 mm. Clypeus 1.38 × wider than high and with its apical margin 1.3 × wider than the interantennal distance. T1 1.36 × longer than wide and 0.6 × as wide as T2. S1 elongate isoscelic, with gradually diverging straight sides: 1.28 × wider than its medial length and 1.02 × wider than its total length.

Structure. Clypeus very slightly convex, almost flat, without apical depression and with its apical margin straight and finely translucent. Head broadly rounded. Humeral angle not outstanding, right angled in frontal view. Pronotal carina hardly emarginated under the humeral angle. Parapsidal line very thin. Parategula foot-shaped. Scutellum with a large anterolateral translucent bubble-like “window”. Lateral axillary panel not projected porteromedially. Metanotum evenly convex, with very weak indications of toothed ridge. Posterior metapleural border marked by a very thin carina along its posterior fifth. Propodeum hardly convex and with flat sides. Submedial propodeal carina poorly elevated. Apical propodeal lamella retracted, not outstanding. T1 elongate, with rather straight and smoothly diverging sides, prominent spiracular tubercles, anterior declivity straight in side view, with the transverse carina ending straight at the level of the spiracle and with well marked transverse and longitudinal sulci. T1 to T5 and S2 to S5 with an extremely thin and translucent apical lamella.

Tegumental sculpture. Clypeus finely granulated and with very few fine scattered punctures. Head and mesosoma sub opaque, covered with abundant and moderately spaced piliferous micropunctation. Metasoma with denser micropunctation, even denser on terga and across sternal posterior margins. Frons, vertex, upper pronotal surface and mesoscutum covered with almost reticular macropunctation with rather convex intervals, which is slightly sparser on mesoscutum. Macropunctation much sparser on gena and pronotal side. Scutellum and upper mesepisternal plate covered with medium sized macropunctures separated by 0.5-1 diameter apart. Metanotum densely striatopunctate and with a reduced, hardly differentiated anterior crenate band. Lower mesepisternum covered with some few sparse macropunctures which are coarser and concentrate dorsoposteriorly. Mesepisternum finely and densely macropunctate on its dorsal three quarters. Metapleura and lateral propodeal surface almost free of macropunctures. Sublateral propodeal surface covered all over with abundant fine oblique striation and without evident macropunctation; some few macropunctures are visible just next to the lateral surface. Mid propodeal channel opaque and finely shagreened. T1 with some coarse and superficial macropunctures scattered over its anterior declivity and some finer ones scattered over its disc. T2 covered with very scattered, thin and superficial macropunctures which are suddenly coarser and moderately dense over the apical yellow band. T3 to T6 moderately densely macropunctured. S1 with some transverse weak rugae. S2 to S5 with scattered macropunctation gradually denser toward the posterior margin. S6 free of macropunctures. Apical lamella of terga and sterna free of punctures.

Pilosity. Clypeus almost bare, with just a few scattered microscopic setae. Face, vertex and most of thoracic dorsum covered with thin and dense fulvous pubescence (less evident on frons), mixed with abundant erect brownish setae. Metanotum, propodeum, lower face and sides of head and mesosoma covered with an even thinner whitish pubescence which is less evident on the head and longer on propodeum. Metasoma covered with a very short fulvous pubescence and some few setae which are erect on segment 1, decumbent on the following segments and tend to concentrate on the apical bands.

MALE. Differing from the female in: *Color pattern*. Scape not blackened above. Flagellum darker above and apically. Supraocular markings fused together with the interocellar marking. Anterior arm of the occipital band disconnected. Last tarsomere of mid and hind leg black.

Measurements and proportions. Body length 10 mm. Wing length 11.3 mm. Clypeus 1.23 × wider than high and with its apical margin 1.3 × wider than the interantennal distance.

Structure, tegumental sculpture and pilosity. General body shape more delicate and with a proportionally smaller head. F9 very concave ventrally. F11 very elongate, flattened and curved. Humeral angle sharper in frontal view. Mid femur distorted: flat behind and with a sharp carina along its front (forming a tooth in dorsal view) between a ventrobasal and a mesodorsal concavities; the latter one covered with long hairs. Propodeal striae a bit stronger. Propodeal sides flatter and with some evident macropunctures.

Type material. Lectotype ♀, PERU: Callanga, without further data [ETHZ]. Paralectotypes: same data as the lectotype [1 ♂: ETHZ]; without locality label: [1 ♀: MCNV].

Distribution. Peru: Cusco. This species is only known from the type series coming from "Callanga", a place in the Yungas, around the Manu National Park (Rasmussen & Asenjo 2009). Ducke's (1910) records of *Stenonartonia polybioides* from Iquitos (Peru) and Óbidos (Brazil) were based on individuals of *S. cooperi*.

Biology. The examined females have a mite on at least one of the axillary fossa openings. The male had mites in between the metasomal sterna.

Stenonartonia hasyva Garcete-Barrett, sp. nov.

(Figs 12, 26, 54, 59, 68, 80, 90, 98, 112, 126, 140, 162, 170, 178)

Diagnosis and comments. This species is closest to *S. polybioides*, but has a slightly narrower clypeus, more convex propodeum and T1, better defined metanotal crenate band and teeth ridge, F9 less convex ventrally and F11 less flattened.

Description. FEMALE. Differing from *S. polybioides* in: *Color pattern*. Supraocular marking elongate, fused with the postocellar marking. Sublateral propodeal marking triangular around an anterior light spot. Mid legs without dark areas and those on hind leg reduced. T1 with a thin *black* band over the transverse carina.

Measurements and proportions. Body length 12.5 mm. Wing length 12.7 mm. Clypeus 1.2 × wider than high and with its apical margin 1.3 × wider than the interantennal distance. T1 1.34 × longer than broad. S1 1.3 × wider than its medial length and 1.06 × broader than its total length.

Structure. Parategula digitiform and curved, almost right angled. Metanotal ridge more defined. Propodeum more convex, especially in dorsal view. Apical propodeal lamella as developed as de valvula. Surface of the anterior declivity of T1 definitely convex.

Tegumental sculpture. Metanotum rather coarsely macropunctate than striatopunctate and with a better defined and more regularly thick crenate anterior band. Mesepisternum covered with coarser macropunctures. Propodeal striae slightly more transverse, especially in posterior view. S1 with a series of concentric U-shaped striae.

Pilosity. A little thinner overall.

MALE. Differing from the female in: *Color pattern*. Discussed under variation.

Measurements and proportions. Body length 11.5 mm. Wing length 12.7 mm. Clypeus 1.19 × wider than high and with its apical margin 1.17 × wider than the interantennal distance.

Structure, tegumental sculpture and pilosity. General body shape not much more delicate and head just a bit proportionally smaller than in the female. Clypeus covered with sparse and evident superficial macropunctures. Antennal apex as in *S. polybioides*, but F9 les concave and F11 sub cylindrical. Mid femur as in *S. polybioides*. Lateral propodeal surface covered with sparse thin macropunctures.

Variation. The paratypes may differ from the description as follows. Darkening of the scape reduced in the male. Postocellar marking absent. Supraocular marking shorter. Sublateral propodeal marking reduced to a short postspiracular line. Black markings on T1 reduced (with band over carina absent in the male).

Type material. Holotype ♀, BRAZIL: Rondônia: Vilhena, 15.x.1986 (C. Elias) [DZUP]. Paratypes: GUYANA: Mazaruni, 25.viii.1937 (O.W. Richards & Smart) [1 ♀: MCNV]; BRAZIL**:** Amazonas: Estrada Manaus-Balbina, Am 240, km 12, Pousada Água Viva, 16.x.2004 (M.L. Oliveira & S.T.P. Amarante) [1 ♂: INPA]; Pará: Melgaço, Caxiuanã Estação Científica Ferreira Penna, Percurso 11, Heliporto, 27.iii.1998 (O. Silveira & J. Pena) [1 ♀: MPEG]; Belém, Mocambo, Malaise trap, 14.iii.1978 [1 ♀: MPEG].

Distribution. Guyana and Brazilian Amazonia.

Biology. The holotype seems to have the axillary fossa openings closed by mites.

Etymology. *Hasyva* is a Guarani adjective meaning difficult or painful, indicating my initial difficulties in separating this species from *Stenonartonia polybioides*.

Stenonartonia perdita Garcete-Barrett, sp. nov.

(Figs 13, 39, 81, 99, 113, 127, 178)

Diagnosis and comments. This species has an intermediate combination of characters between *S. cooperi* and the couple formed by *S. polybioides* and *S. hasyva*. The absence of scutellar "windows" and the striatopunctate, rather than just striate, propodeal sculpture puts it closer to *S. cooperi*, but the convex metanotum with a poorly developed crest, the lateral axillary panel not projecting posteriorly, the straight oblique propodeal striae, the narrower proportions of T1 and S1 (and the striate surface of this latter) put *S. perdita* closer to *S. polybioides* and *S. hasyva*. *Stenonartonia perdita* is peculiar in having the lateral lamella of the scutellum bumped up and with its border upturned.

Description. FEMALE. Similar to *S. polybioides*, but differing as follows: *Color pattern*. Antenna without dark markings; frontal mark more lanceolate; supraocular mark broader, fused with the postocellar mark and forming a continuous band with the supraocular and of the other side; humeral mark club-like; propodeum with a short postpiracular line and a submedial thick band or rear-pointing triangle briefly fused with the one of the other side; legs with no dark markings; T1 with anterior declivity yellow and with black anteromedial marking, transverse carina and some subapical suffusion; gradulus of T2 black at sides.

Measurements and proportions. Body length 12.2 mm. Wing length 12.4 mm. Clypeus 1.24 × wider than long and with its apical margin 1.1 × wider than the interantennal distance. T1 1.32 × longer than wide and 0.6 × as wide as T2. S1 1.37 × wider than its medial length and 1.15 × wider than its total length.

Structure. Clypeus with very slight apical depression and its apical margin very slightly concave; scutellum without anterolateral "window"; posterior metapleural border not marked; propodeum convex at side in dorsal view; apical propodeal lamella as developed as the valvula and slightly produced upwards; T1 with upper and lateral surfaces convex as in *S. hasyva*.

Tegumental sculpture. Clypeus covered with fine and shallow though evident sparse macropunctation; mesepisternum covered with abundant macropunctures nearly as in *S. cooperi*; metanotal punctation as in *S. hasyva*; metapleura and propodeal sides covered with a number of well marked fine and sparse macropunctures; propodeal striation as in *S. hasyva* in direction, but coarsely striatopunctate rather than just striate.

Pilosity as in *S. hasyva*.

MALE. unknown.

Type material. Holotype ♀, BRAZIL: Pará: Serra Norte, Fofoca, 16.ix.1985 (M. Zanuto) [MPEG]. Paratype: BRAZIL: Pará: Floresta Nacional Carajás (STA–col2TA), 4.ii.2010 (A.R. Lima) [1 ♀: UFMG].

Distribution. Brazil: Serra dos Carajás in eastern Amazonia.

Etymology. The name *perdita* means "lost", refers to the specimens originate from a place separated from the known distribution of other species of *Stenonartonia*.

Stenonartonia cooperi Garcete-Barrett, sp. nov.

(Figs 2, 3, 8, 14, 27, 56, 60, 69, 82, 100, 114, 138, 141, 152, 163, 171, 176, 177, 178)

Nortonia polybioides (nec von Schulthess 1904): Ducke 1910: 187.

Diagnosis and comments. This species differs from *S. polybioides* and *S. hasyva* by the absence of an anterolateral scutellar "window" and by having: lateral axillary panel produced mesoposteriorly in a tongue-like projection; metanotum strongly angular in side view; the propodeal striation strong, longitudinal below and visibly mixed with coarse macropunctation above; clypeal apex slightly but definitely emarginated; apical propodeal lamella projecting upward; T1 wide campanulate; male mid femur just slightly concave ventrally near its base and the antennal hook of the male simple and reduced.

Description. FEMALE. Differing from *S. polybioides* in: *Color pattern*. Supraocular marking detached from the eye, elongated, touching the postocellar marking and with an additional arm extending to the occipital band. Occipital band reduced and with its anterior arm detached. Mesonotal yellow lines curving outward in front. Tegula with a blackish inner border. Axilla and lateral axillary panel black. Sublateral propodeal marking in the shape of a large black triangle with a small anterior yellow dot. Dark areas on mid and hind legs darker and sharper.

Measurements and proportions. Body length 12 mm. Wing length 13.1 mm. Clypeus 1.19 × wider than high and with its apical margin 1.1 × wider than the interantennal distance. T1 1.16 × longer than wide and 0.63 × as wide as T2. S1 campaniform, with slightly curved sides: 1.63 × wider than its medial length and 1.22 × wider than its total length.

*Structure***.** Clypeus with a small translucent semicircular apical depression and with its apical margin slightly concave. Interantennal carina slightly sharper. Parategula digitiform. Scutellum more convex and without anterolateral "window". Axilla broader. Lateral axillary panel elongate tongue-like produced posteromesally, partly overlapping the posterior tip of the axilla and reaching the scutellar border. Metanotum acutely projecting in lateral view, with a well marked toothed ridge. Posterior metapleural border not marked. Propodeum more convex. Mid propodeal carina higher. Submedial propodeal carina higher and lamellar, translucent. Apical propodeal lamella expanded and angularly projected upward in lateral view. T1 broad campaniform, with a stronger transverse carina curving backward at the level of the spiracle, with a broader transverse sulcus and with the longitudinal sulcus a little wider but a bit shallower and continuing for short in front of the transverse carina.

Tegumental sculpture. Specialized area of the vertex split in two. Scutellar and mesepisternal macropunctures coarser and separated by less than their own diameter. Metanotum coarsely macropunctured and with a well defined anterior band. Metapleura with indications of thin sparse macropunctures. Propodeal side with moderately abundant macropunctures. Sublateral propodeal surface covered with strong striae which are diagonal just above, turn longitudinal below, do not reach the medial channel and is mixed with coarse macropunctation which is especially evident anteromesally. S1 with a very thin medial carina and covered with irregular and shallow striatopunctation which is transverse at the base and become longitudinal shortly behind. Metasomal punctation coarser and more sharply defined.

Pilosity. Thinner and shorter, except for the propodeum, which bears longer hairs.

MALE. Differing from the female in: *Color pattern***.** Discussed under variation.

Measurements and proportions. Body length 10.6 mm. Wing length 12.3 mm. Clypeus 1.04 × wider than high and with its apical margin 1.3 × wider than the interantennal distance.

Structure and tegumental sculpture. General body shape not especially delicate neither the head especially smaller than in the female. Clypeus with a deeper apical emargination. F9 cylindrical. F11 short, finger-like, slightly tapering apically. Mesepisternal macropunctation denser. Mid femur rather normal, with just a slight basal depression ventrally. Propodeum as convex as in the female. Propodeum with thinner striae wish are almost striatopunctures above.

Variation. The color pattern described above is typical of the Colombian specimens. There is some variation in the extent of the black markings: The postocellar marking can touch the occipital band so there can be a black preoccipital area with a pair of large yellow dots inside. The occipital band is almost absent in the male from Santarém. The humeral line can be large or reduce to a small dot. The axillar region can be largely yellow. The metanotum may have the dark areas quite reduced. The mid propodeal carina can be either black or yellow. The extent of the sublateral propodeal marking is the most geographically related variation: It is very large in individuals from the upper Amazon (Colombia, Peru, and Ecuador), to the point that the specimens from Mocoa have the propodeal declivity black with just a couple of thin submedial yellow lines. The specimen from Rondônia has the marking as in *S. polybioides*. The specimens from Guianas, Tumucumaque and Bragança have it split in a short postspiracular line and a small submedial dot. The specimens from Santarém and Óbidos have no sublateral markings.

Biology. The specimens from La Macarena and La Chorrera were collected, and some of them labeled as emerged from, in association with two nests now deposited in the BMNH and referred with notebook numbers 147 and 99 by Martin Cooper. They were built on the underface of a leaf and are made of reddish to yellowish clay. The nest from La Chorrera is better preserved and has three more or less rectangularly shaped cells placed in a slanted pattern. The nest from La Macarena is mostly destroyed, but seems like it has a similar structure. Almost all of the specimens carry acari in their axillary fossa openings. A mite is even visible through the translucent cuticle of the inner lamella of the scutellar crest in one of the specimens from Surinam.

Type material. Holotype ♀, COLOMBIA: Amazonas: La Chorrera, 14–23.viii.1976 (M. Cooper) [MCNV]. Paratypes: COLOMBIA: Amazonas: La Chorrera, 14–23.viii.1976 (M. Cooper) [1 ♀: BMNH]; Meta: La Macarena, 20–29.xi.1976 (M. Cooper) [1 ♀: MCNV; 2 ♀: BMNH]; Putumayo: Mocoa, 31.x.1974 (M. Cooper) [1 ♀: MCNV]; ECUADOR: Napo: Coca, iii.1982 (G. Onore) [1 ♀: OLML]; PERU**:** Amazonas: Iquitos, 1.viii.1906 (Ducke) [1 ♂, 1 ♀: MPEG]; SURINAME**:** Raleigh Vallen, Voltzberg Res., Foengoe, 04°43'N, 56°12'W, 26.i–15.ii.1982 (J.M. Carpenter & D. Trail) [1 ♀: MCNV]; Raleigh Vallen, Voltzberg Res., Voltzberg Camp, 90 m, 29.i–13.ii.1982 (J.M. Carpenter & D. Trail) [1 ♀: MCNV]; without precise locality, 6.v.1965 (J.v.d. Vecht) [1 ♀: MCNV]; FRENCH GUIANA: Saint Jean du Maroni, viii. (Le Moult) [1 ♀: AMNH]; BRAZIL: Pará: Tumucumaque, Paru do Oeste, iv.1966 (W. França) [1 ♀: MPEG]; Óbidos, i.1908 [1 ♀: MPEG]; same locality, 27.xii.1904 (Ducke) [1 ♀: MPEG]; Santarém [1 ♂: MCNV]; Belém, Mocambo, mata de terra firme, Malaise trap, 9.v.1978 [1 ♀: MPEG]; Bragança, 5.vii.1908 (Ducke) [1 ♀: MPEG]; Rondônia: Território Federal Rondônia, 11.ix.1963 (Eduardo) [1 ♀: INPA].

Distribution. Widespread in the Amazonian region of Colombia, Ecuador, Peru, and Brazil, as well as in Suriname and French Guiana.

Etymology. This species is dedicated to Martin Cooper, a well known wasp collector and vespid taxonomist. Antonio Giordani Soika labeled several specimens with this name but never described the species.

Stenonartonia guaraya Garcete-Barrett, sp. nov.

(Figs 15, 70, 83, 101, 115, 129, 142, 153, 178)

Diagnosis and comments. This species is distinct in the group of *S. polybioides* by having the propodeal striae almost transverse, very weak, obscured by dense macropunctation and also: transverse carina of T1 weak; overall pilosity very sparse and short; metasomal macropunctation coarser and deeper and dark areas of the metasoma dark brown. As in *S. cooperi* there are no scutellar "windows", but the metanotum is not so prominent in profile and the lateral axillary panel is less produced backwards.

Description. FEMALE. Differing from *S. polybioides* in: *Color pattern.* Scape black dorsally. Flagellum brown dorsally. Black markings of the head wholly interconnected as in the darker headed specimens of *S. cooperi*, but with the frontal mark briefly interrupted midway to the antennal socket. Humeral line shaped like a baseball bat. Mesoscutum with an additional lateral yellow line. Medial line of scutellum thinner. Metanotum entirely yellow. Propodeum yellow, with only the medial channel and a subtle sublateral spot darkened. Legs without dark markings. T1 extensively yellowish on its anterior half; metasomal terga with the dark areas darker brown, partly blackish. S2 with some basal darkening. Fore wing venation brown, a bit lighter along the costal region.

Measurements and proportions. Body length 12.6 mm. Wing length 11.3 mm. Clypeus 1.28 × wider than high and with its apical margin as wide as the interantennal distance. T1 1.21 × longer than wide and 0.67 × as wide as T2. S1 campaniform, with slightly curved sides: 1.8 × wider than its medial length and 1.27 × wider than its total length.

Structure. Clypeus slightly more convex and with its apical margin definitely concave. Pronotal carina more weakly emarginated below the humeral angle. Parapsidal line undistinguishable. Parategula hook-shaped. Axilla broader. Lateral axillary panel shortly tongue like produced posteromesally, hardly overlapping the posterior tip of the axilla and not reaching the scutellar border. Scutellum slightly more convex and without anterolateral "window". Metanotum right angled in profile, with a well marked toothed ridge. Posterior metapleural border not marked. Propodeum strongly convex and with a very narrow medial channel. Apical propodeal lamella expanded and slightly angular upward in lateral view. T1 broadly campaniform, with a weak transverse carina which is slightly retuse forward and shortly interrupted at the middle and hardly reaches the level of the spiracle, with a very superficial longitudinal sulcus and without transverse sulcus.

Tegumental sculpture. Clypeus covered with a well marked but shallow macropunctation over its upper quarter. Pronotum coarsely macropunctate, even on its lateral surface. Scutellar macropunctures coarser and separated by less than their own diameter. Metanotum covered with coarse, almost confluent macropunctures and with a well marked anterior band. Mesepisternal macropunctures abundant, separated amongst them by 0.5 to 1 diameter. Metapleura and propodeal side with some thin scattered macropunctures. Sublateral propodeal surface covered with dense and shallow macropunctation obscuring a very thin, weak and almost transverse striation that does not

reach the medial channel. Disc of T1 with well defined macropunctation. S1 covered with coarse and dense macropunctation. T2 covered with well defined and moderately spaced macropunctures which turn much denser and coarse on the apical yellow band.

Pilosity. Overall pilosity shorter and less evident. Inner lamella of the scutellar crest covered with long appressed hairs pointing toward the opening of the axillary fossa and partly obscuring it.

MALE. Unknown.

Type material. Holotype ♀, BOLIVIA: Santa Cruz: Santa Cruz, Jardín Botánico, 26–27.vii.1977 (C. Porter & Calmbacher) [IML].

Distribution. Bolivia: Santa Cruz de la Sierra.

Etymology. This species is named after the Guarayos, the Guarani people from Santa Cruz province in Bolivia.

Species-group of *Stenonartonia apicipennis*

This is the largest and morphologically heterogenous group. Its seven species are medium sized, moderately stout to moderately elongate bodied wasps reminiscent in shape and/or color pattern of different socials wasps in the genera *Polybia* Lepeletier, *Agelaia* Lepeletier and *Brachygastra* Spinola. General features for their species include: occipital carina interrupted behind the interocular space. Female vertex with specialized area thin, boomerang-like. Humeral angle variable, projecting or not. Tegula extensively covered with micropunctation (medially smooth in *S. apicipennis*). Axillar depression strong, extensive and almost vertical. Anterior axillary fossula deep and partly hidden under the parategula (reduced and exposed in *S. mimica*). Scutellum flattened above and falling almost vertically into the axillary fossa, without lamellar projection above this latter. Opening of the axillary fossa oval and rather large. Scutellar crest separated behind from scutellum by a sulcus (sulcus absent in *S. flavotestacea*). Metanotal ridge variable, low and blunt of high and sharp. Epicnemial carina absent. Mesepisternal sulcus thin. Posterior metapleural border effaced (feebly marked in *S. flavotestacea*). Propodeum variable, slightly subtruncate, smoothly declivitous or slightly convex behind and with the medial channel diffusedly to sharply differentiated in direct correspondence with its degree of narrowness. Mid propodeal carina well developed (interrupted below in *S. flavotestacea*). Propodeal sublateral surface macropunctate to slightly striatopunctate in variable density and coarseness, but never alveolate or striate. Lateral propodeal surface covered with macropunctation of moderate density and coarseness. Apical propodeal lamella angular in lateral view and projected upward of backward in different degrees above the propodeal valvula. Propodeal valvula poorly to markedly differentiated from the apical propodeal valvula by a basal crease and/or a marginal dislocation or emargination. Metasomal segment 1 very broadly to moderately narrowly campanulate and moderately narrower than the second one. T1 roundly to obtusely bent in side view, with or without a medial carina along its anterior declivity, with a low, obtuse and variably marked transverse carina, without transverse sulcus and with a very weak to inexistent longitudinal sulcus. S1 variable, transversely crescent-shaped to elongate isoscelic. T2 with pregradular area smooth and shiny and gradulus groove-like (shallow in *S. flavotestacea*).

Stenonartonia mimica (Kohl 1907), comb. nov.

(Figs 4, 16, 17, 40, 41, 71, 84, 91, 102, 116, 130, 143, 154, 179)

Nortonia mimica Kohl 1907: 248, 247 [holotype, ♀, Brazil: Rio Grande do Sul (NMW), examined].
Paranortonia mimica: Giordani Soika 1941: 159.

Diagnosis and comments. This species is outstanding in the group by being the only one with a small and exposed anterior axillary fossula as well as: parategula narrow, sharp above; propodeum with sides regularly convex in dorsal view, with a moderately well differentiated medial channel devoid of reflective pilosity. The propodeal valvula is separated from the apical propodeal lamella by a blunt crease and is hardly dislocated from it along the margin. They are small wasps with brown and partly amberish wings and a color pattern reminiscent of either typical *Agelaia multipicta* (Haliday) [pale form] or *A. vicina* (de Saussure) [melanic form].

Description. FEMALE. *Color pattern* (pale form). Black integument with diffuse dark reddish brown areas as follows: mandibular margins; propodeal sides, disc and sides of the declivity of T1; base of T2; sides of S2; thin

basal suffusion on yellow bands of metasomal segments 3–5; metasomal segment 6. Yellow markings as follows: disc of mandible; scape ventrally; broad lateral line on clypeus; inner orbit from clypeal border to the level of the hind ocelli; frontal line from between the antennal sockets to the mid ocellus; whole genae from almost the mid vertex down to mandible and extending to the hypostomal region; thin anterior band and posterior margin of pronotum including lateral lobe; thick humeral line; anteriorly outcurving submedial mesonotal line; tegula except for a light brown medial spot; large lateral scutellar blotch; thick metanotal band; mesepimeron and posterior two thirds of mesepisternum (except for the sulci); most of metapleura; large submedial propodeal spot below; mid propodeal carina partly; submarginal carina at sides; whole anterior leg and mid and hind tarsi; mid and hind coxa largely; anterior face of mid and hind femora (the latter with a large darkening at middle); whole mid and hind tibia except for a small inner subapical darkening; hind and lateral margin of T1; whole S1; apical band on metasomal segments 2–5 (thinner on terga); medial spot on metasomal segment 6. Ventral face of flagellum brown, gradually lighter toward apex. Fore wing membrane light amberish brown, more intense along the costal region. Fore wing venation light amberish brown, turning brown toward the apex.

Measurements and proportions. Body length 9.1 mm. Wing length 9.4 mm. Clypeus 1.1 × wider than high and with its apical margin 0.9 × as wide as the interantennal distance. T1 as wide as long and 0.7 × as wide as T2. S1 equilateroid, 2.25 × wider than its medial length and 1.55 × wider than its total length.

Structure. Clypeus cordiform, moderately convex, with sides of its free part almost straight, with a slight apical depression and with a small but definite apical emargination between two rather blunt, hardly carenate, down pointing teeth. Humeral angle weak, obtuse in frontal view. Pronotal carina almost straight below the humeral angle. Parapsidal line very weak. Parategula sickle-shaped, careniform above. Scutellum slightly convex. Anterior axillary fossula small, shallow and exposed behind the parategular emargination. Lateral axillary panel poorly produced mesoposteriorly. Metanotum almost right angled in side view and with a well marked though low toothed ridge. Propodeum semi oval, regularly convex and almost not angled at sides as seen from above (there is no crease between the lateral and sublateral surfaces). Mid propodeal channel rather shallow but distinguishable and strongly narrowed above. Mid propodeal carina complete. Apical propodeal lamella projecting backward and separated from the valvula by a blunt longitudinal crease, both hardly dislocated along the margin. T1 conical, smoothly convex above, with a well marked transverse carina projecting backward at the middle and curving backward at the level of the spiracle.

Tegumental sculpture. Clypeus subshiny, covered with thin reticulation, very sparse and shallow micropunctures and moderately spaced macropunctation. Head and mesosomal sculpture differing from *S. apicipennis* in: overall surface much less opaque due to a sparser and thinner micropunctation; anterior metanotal band better defined, very densely and confluently macropunctate; tegula subshiny, covered with moderately spaced micropunctation all over; metapleura with just a few thin macropunctures below; lateral propodeal surface more sparsely macropunctate; sublateral propodeal surface transversely shagreened and covered with dense and moderately thin macropunctation which is gradually sparser toward the spiracle; mid propodeal channel sub opaque, densely micropunctate. Metasoma subshiny, covered with moderately dense micropunctation which is sparser at sterna. T1 with thin macropunctures scattered over its anterior declivity and moderately sparse on its disc. T2 covered with thin sparse macropunctures becoming coarser but not much denser mesoposteriorly. S1 coarsely and densely macopunctate. S2 covered with scattered macropunctures which become coarser and denser mesoposteriorly. Metasomal segment 3–5 covered with moderately dense macropunctures. T6 with a few scattered thin macropunctures. S6 without macropunctures.

Pilosity. Body covered with a short, sparse and semidecumbent to semi erect *brownish* pubescence which becomes lighter and appressed on the thoracic sides and the propodeum and is appressed and thinner on metasoma. Posterior propodeal declivity covered with non-reflective upward and outward pointing pilosity.

MALE. Unknown.

Variation. The holotype is the only know individual with the pale pattern. The remaining of the examined material show a melanic pattern differing as follows: most of the yellow markings are rather orange tinged (on mandible, clypeus and legs) or ferrugineous (on antennae, genae and mesosoma except for the pronotum). Many markings show reduction as follows: clypeal line broken at middle or present just below; orbital line reaching only up to the ocular sinus, an isolated upper spot can also exist; frontal line reduced to an interantennal spot and sometimes also a mid frontal spot; anterior pronotal band absent; posterior pronotal margin interrupted at middle; humeral line diffuse, almost inexistent; mesoscutal line very thin and vanishing far from the pronotal margin;

scutellar blotch small and dark or absent; T1 with diffuse lateral markings and very thin posterior band; remaining of metasoma with very thin and medially interrupted bands, those on T2 and beyond S3 rather ferrugineous. The melanic form is reported from places above 300 meters above the sea level. The pale form probably comes from lesser altitudes, as also seems to happen with *S. flavotestacea* and the social wasp *Polybia fastidiosuscula* de Saussure.

Material examined. BRAZIL: Paraná: Londrina, 4.x.1985 (Exc. Dep. Zool.) [1 ♀: DZUP]; Rio Grande do Sul: without precise locality (Stieglmayr) [1 ♀ Holotype: NMW]; Santa Catarina: Nova Teutônia, 300–500 m, 27°11'S, 52°23'W, ii.1965 (F. Plaumann) [1 ♀: UCD]; São Paulo: Cajuru, Fazenda Rio Grande, 21°12'S, 47°09'W, 2–18.xii.1999 (G.A.R. Melo & Nascimento) [2 ♀: DZUP].

Distribution. Southern and South Eastern Brazil. Probably mostly in highlands.

Stenonartonia flavostestacea (Giordani Soika 1941)

(Figs 18, 28, 29, 42, 49, 50, 61, 72, 103, 117, 131, 144, 155, 164, 172, 179)

Paranortonia flavotestacea Giordani Soika 1941: 155, Figs 1–4 [lectotype, ♀, "*Brazile*: Itatiaya" (MCNV), examined]; 1973: 25 (lectotype designation).
Stenonartonia flavotestacea: Borsato & Ratti 1999: 76 (list).
Stenonartonia sp.: Hermes & Melo 2008: 365.

Diagnosis and comments. *S. flavotestacea* is a rather slender bodied species, readily recognizable for having the mid propodeal channel modified along its lower half in the shape of a sharply edged, smooth, shinning and ecarinated concavity. Other important features include: very elongate clypeus; sharply defined medial carina along the anterior declivity of T1; apical propodeal lamella strongly projected backward though inseparably fused with the valvula; propodeum nearly as smoothly convex as in *S. mimica* and overall body surface subshiny. They are medium sized wasps with amberish brown wings and a color pattern reminiscent of either typical *Agelaia multipicta* (in the pale form) or *A. vicina* (in the melanic form).

Description. FEMALE. *Color pattern* (melanic form). Brownish black integument with yellow to brownish yellow markings as follows: mandibular disc, grading to brown toward the apex; ventral face of flagellum from F2 to the apex; thin lateral line on clypeus; thin inner orbit from the clypeal border to the ocular sinus; long external orbit; anterior pronotal margin below the lateral fovea; lateral indication of posterior pronotal margin; pronotal lobe; outer margin of the tegula (briefly darkened at the middle); small subalar spot; short vertical inferoposterior mesepisternal line; metapleura largely below; large sublateral propodeal spot below; fore coxa; lateral and ventral line along mid coxa; laterodorsal line along hind coxa; anterodorsal line along all femora and tibiae; darkened posterior line along mid coxa and all tibiae; all tarsi; darkened lateral line on T1 extending across the posterior margin as a very thin band; whole S1; medially tapering and briefly interrupted posterior bands on metasomal segments 2–5 (each one successively darker posteriorly); propodeum with marginal area and medial channel below dark testaceous. Wing membrane amberish brown, more intense along the costal region. Wing venation dark brown, a bit yellowish along the costal region and the stigma.

Measurements and proportions. Body length 11.5 mm. Wing length 12.5 mm. Clypeus 1.05 × wider than long and with its apical margin 0.9 × as wide as the interantennal distance. T1 1.26 × longer than wide and 0.68 × as wide as T2. S1 elongate isoscelic: 1.55 × wider than its medial length and 1.27 × wider than its total length.

Structure. Clypeus elongate, funnel shaped, slightly convex, with a very shallow apical depression and a slightly convex apical margin between two blunt outpointing teeth. Distal preapical tooth narrower than in other species of *Stenonartonia*. Humeral angle hardly salient, slightly obtuse in frontal view. Pronotal carina almost straight below the humeral angle. Parapsidal line very thin. Parategula digitiform and convex above. Scutellum almost flat. Anterior axillary fossula large, deep and partly hidden below the parategula. Lateral axillary panel narrowly projected mesoposteriorly. Metanotum very obtuse in lateral view, bearing a blunt toothed ridge with a higher medial tooth. Posterior metapleural border marked by a weak impressed line, sometimes effaced. Propodeum semi oval, regularly convex and at most just barely obtusely angled at sides as seen from above (crease between the lateral and sublateral surfaces almost inexistent). Mid propodeal channel abruptly expanded on its lower half, forming a sharply edged drop-shaped bowl. Mid propodeal carina interrupted at the lower basin. Submedial propodeal carina short and flattened. Apical propodeal lamella angularly projecting backward and insepara-

bly fused with the valvula. T1 elongate conical, obtusely convex in side view, with a sharply defined medial carina along its anterior declivity, with a well marked wavy transverse carina projecting backward at middle and hardly reaching the level of the spiracle.

Tegumental sculpture. Clypeus subshiny, very weakly shagreened and covered with shallow and moderately sparse macropunctures. Body subshiny, very finely and sparsely micropunctate; just lower metapleura and lateral propodeal surface duller, sub vertically microstriated. Head, pronotum and mesothorax covered with moderately dense mid sized macropunctation, sparser on scutellum, mesepisternum and pronotal sides. Tegula covered with well marked and moderately spaced micropunctation, absent in just a very reduced area close to the external margin. Metanotum with an irregularly reticulate anterior band and with concentrated macropunctures behind. Propodeum and lower metapleura covered with thin macropunctures separated by about their own diameter, denser above on propodeum. Expansion of the mid propodeal channel perfectly polished. T1 with thin macropunctures scattered over its anterior declivity and moderately sparse on its disc but denser along the mid line. S1 covered with coarse and moderately dense macropunctation. T2 covered with thin and sparse macropunctures that become just slightly coarser and denser at the middle, close to the posterior margin. S2 covered with sparse mid sized macropunctures which become sparser close to the hind margin. Metasomal segments 3–6 (except for the macropuncture free S6) covered with abundant and moderately dense mid size macropunctation.

Pilosity. Body covered with a short semi erect and sparse fulvous pubescence mixed with lighter erect and a bit longer setae. The pilosity becomes lighter and appressed on the thoracic sides and the propodeum, outward pointing on the posterior declivity of this latter. Metasomal pilosity appressed and with less evident setae.

MALE. Differing from the female in: *Color pattern*. F10 and F11 completely light colored, remainder of the color pattern and its variation as in the female and discussed under variation.

Measurements and proportions. Body length 10.4 mm. Wing length 11.4 mm. Clypeus 1.05 × wider than high and with its apical margin 0.8 × as wide as the interantennal distance.

Structure and tegumental sculpture. General body shape more delicate and with a proportionally smaller head. Propodeum shorter. F9 cylindrical. F11 short, finger-like and moderately tapering toward the apex. Metasomal macropunctation coarser and denser.

Variation. The color pattern given above is described from the holotype, which belongs to the melanic form. The light markings in the melanic form (with lighter individuals reported from Nova Teutônia and Argentina) may vary as follows: mandibular marking larger; clypeal line interrupted at middle or present just below as a spot; a frontal line may be present; a supraocular marking may exist; the posterior orbit may be shorter or extend further upward; the hind pronotal margin may be almost complete, but generally diffuse; there may be a more or less defined humeral line; there can be dark traces of a submedial mesoscutal line posteriorly, of a lateral scutellar blotch and of a metanotal band; the subalar spot may be absent; the sublateral propodeal spot may be absent, reduced or extend laterally as to get fused with the metapleural marking; the metasomal band are commonly absent, but may be well marked in southern specimens.

A pale form presents the following color pattern: Intense yellow integument with black markings (smaller ones rather blackish brown) as follows: mandibular teeth and condyle; central clypeal spot; bulb and dorsum of scape; pedicel above; dorsum of flagellum with the exception of F9 at apex and F10 and F11 entirely; interocellar region connected to supraocular and frontal markings; occipital region above and a medial line running forward from it; large spot at the middle of the anterior pronotal face; thick humeral line; mesoscutum with the exception of the parategula and a thick submedial line; axilla; borders and medial longitudinal line on scutellum; metanotal hind border and axilla; anterior face of mesepisternum; lateral sulci and sutures of mesosoma; lateral band, mesoanterior border and medial channel of propodeum; dorsoposterior face of mid and hind coxae; mid and hind trochanters dorsally; inner face of hind the hind femur largely; inner subapical suffusion on mid and hind tibia; dorsum of T1 largely; basal three quarters of T2; three basal markings on S2; metasomal segments 3–5 except for the broad posterior band. Orange brown are: ventral face of pedicel and flagellum; medial spot and lateral margin of the tegula; apex of F9; F10 and F11 entirely; T6 except for an apical spot and S6 except for a lateral spot. Wing a bit clearer than in the melanic form.

The melanic form is recorded from places above 300 meters above the sea level in Southern Brazil and north eastern Argentina and looks like the local populations of the social wasps *Agelaia vicina* and *Polybia fastidiosuscula* and the congeneric *Stenonartonia mimica* and *S. tanykaju*. The pale form is known from two males from lowland in Paraguay and look like the local populations of *A. multipicta* and *P. fastidiosuscula*.

Material examined. BRAZIL: Rio de Janeiro: Itatiaia, 10.ii.1927 (Dr. Seitz) [1 ♀ Holotype: MCNV]; same locality, 16.ii.1927 (Dr. Seitz) [1 ♂: IML]; BRAZIL: Paraná: Piraquara, Mananciais da Serra, 8.ii.2003 (G.A.R. Melo) [1 ♀, 1 ♂: DZUP]; same locality, 18.xii.2006 (A. Aguiar) [1 ♂: DZUP]; same locality, iii.2007 (M.G. Hermes) [1 ♀: DZUP]; Piraquara, ii.2006 (P.C. Grossi) (3 ♀: DZUP]; same locality, 3.ii.2006 (M.G. Hermes) [1 ♀: DZUP]; same locality, 23.xi.2006 (A. Pires) [1 ♂: DZUP]; same locality, 4.xii.2006 (M.G. Hermes) [1 ♂: DZUP]; Tijucas do Sul, Vossoroca, 18.iv.1970 (J. Moure) [1 ♀: DZUP]; Guaratuba, Pontal do Itararé, 4.iii.2007 (P.C. Grossi) [1 ♂: DZUP]; Santa Catarina: Campo Alegre, iv.1946 (A. Maller) [1 ♀: MCNV]; Nova Teutônia, 21.ii.1963 (F. Plaumann) [1 ♂: MCNV]; same locality, i.1966 (F. Plaumann) [1 ♂: MCNV]; same locality, 30.iii.1966 (F. Plaumann) [1 ♂: AMNH]; same locality, xi.1966 (F. Plaumann) [1 ♀: AMNH]. PARAGUAY: Itapúa, Pirapó, Pirapó, 1–31.xii.1971 (L. Peña) [2 ♂: AMNH]; ARGENTINA: Misiones: Bernardo de Irigoyen, 12.xi.1973 (Escobar & Claps) [1 ♂: IML].

Distribution. Southern and South Eastern Brazil, Argentinean Mesopotamia and Paraná basin of Paraguay. Mostly in highlands.

Biology. There is no direct evidence about the mid propodeal channel of this species acting as an acarinarium, but the structure and polished surface of its lower sector is strongly reminiscent of acarinaria in other eumenines: pregradular area of T2 in the genus *Parancistrocerus* Bequaert (Bohart 1952; Carpenter & Garcete-Barrett 2003) and propodeal depressions in *Acarepipona insolita* Giordani Soika (Giordani Soika 1985). Similarly located but deeper acarinaria are reported for *Acarozumia amaliae* (de Saussure) and *Pseudonortonia gambiensis* (Meade Waldo) (Giordani Soika 1985). The lower posterior surface, even with no especial modification, have been reported to bear acari in *Pseudonortonia bisuturalis* (de Saussure) (Bequaert 1918), *Ancistrocerus antilope* (Panzer) (Cooper 1955) and *Stenonartonia apicipennis* (Fox) (this work).

***Stenonartonia guaranitica* (Bertoni 1918)**
(Figs 19, 30, 43, 51, 62, 73, 85, 92, 104, 118, 132, 145, 156, 165, 173, 181)

Nortonia guaranitica Bertoni 1918a: 195, 207 (holotype, ♀, Paraguay: "Puerto Bertoni" (INBP), examined].
Paranortonia guaranitica: Giordani Soika 1941: 161.
Stenonartonia guaranitica: Garcete-Barrett 2003: 40, Figs 3a–3d.

Diagnosis and comments. *Stenonartonia guaranitica* is a relatively stout bodied species with a short T1, a very transverse crescent shaped S1 and prominent apical propodeal lamella, readily dislocated from the valvula in side view. They are medium sized, grayish wasps with dull amberish wings, dark mesosoma and strongly banded mesosoma reminiscent of the social wasp *Brachygastra lecheguana*.

Description. FEMALE. *Color pattern*. Black integument with light orange yellow markings as follows: short lower inner orbit; small suffuse spot at the posterior pronotal corner; short inner line along fore femur; diffuse apical ring on mid and hind femora; anterior face of mid tibia; external line along mid and hind tibiae; suffuse lateral margin and sometimes also a medial posterior spot on T1; some suffusion on S1; thick apical bands on metasomal segments 2–6. Brown are: flagellum ventrally; mandible except for the teeth and the basal triangle; apical tarsomeres; S1 largely. Wing membrane and venation dull amberish, gradually turning into dull brown toward the apex.
Measurements and proportions. Body length 9.8 mm. Wing length 9.6 mm. Clypeus 1.1 × wider than long and with its apical margin 0.9 × as wide as the interantennal distance. T1 1.36 × wider than long and 0.77 × as wide as T2. S1 very transversely crescent-shaped: 3.4 × broader than its medial length and 2.10 × broader than its total length.
Structure. Clypeus cordiform, moderately convex above and gradually flatter below, with a shallow apical depression and small but marked semicircular emargination between two shortly carinate and slightly outpointing teeth. Humeral angle weak, obtuse in frontal view. Pronotal carina slightly undulated below the humeral angle. Parapsidal line vestigial. Parategula broad and short, thumb-like, almost triangular. Scutellar-axillar complex as described for *S. flavotestacea*. Metanotum right angled in side view and bearing a low but well defined toothed ridge. Propodeum short, semi truncate, with the lateral surface flat, the sublateral surface convex and with a diffusely defined posterior concavity where the medial channel is ill defined. Mid propodeal carina complete and sublateral propodeal carina low and lamellar. Apical propodeal lamella projected backward and separated from the valvula by both a longitudinal crease and a marginal dislocation. T1 wide campanulate, regularly convex in side view, without longitudinal carina and with a weak and straight transverse carina that hardly reaches the level of the spiracle.

Tegumental sculpture. Clypeus moderately opaque, slightly shagreened, covered with abundant micropunctation (especially on its upper half) and abundant shallow and moderately spaced macropunctation. Body surface and micropunctation as in *S. apicipennins*. Head and mesosomal sculpture differing from *S. apicipennis* in: overall macropunctation partly coarser and overall a bit sparser; tegula wholly covered with well marked and moderately dense micropunctures; metanotum with a reticularly macropunctate anterior band and with moderately dense macropunctation behind; upper metapleura bearing a series of weak and thin striae; lower metapleura and lateral propodeal surface more coarsely macropunctate; sublateral propodeal surface reticularly macropunctate and slightly striolate obliquely, especially below. T1 with a few very thin macropunctures scattered on its anterior declivity and with moderate macropunctation on its disc, coarser along its midline. S1 densely and coarsely macropunctate. T2 covered with moderately spaced macropunctation becoming gradually coarser and a little denser toward the posterior and lateral margins. Macropuncture of S2 as in T2 but specially coarser at middle. Metasomal segments 3–5 covered with moderately dense macropunctation which is a little sparser on sterna. Metasomal segment 6 with thin macropunctures obscured by the micropunctation.

Pilosity. Body covered with a grayish fulvous subappressed pubescence mixed with sparse semi erect setae. Posterior propodeal declivity with a mid lower area of downward appressed and reflective silvery pubescence. Metasomal pilosity appressed and with less evident setae.

MALE. Differing from the female in: *Color pattern*. Mandible mainly black, at most with a short sub-basal line. Clypeus yellow with thin black margins, at most with a short mesobasal line eventually connected to the basal margin. Scape yellow ventrally. Inner orbit reaching up to the ocular sinus. There is an interantennal spot. Antenna from F9 to the apex mostly orange brown. Metasomal segment 7 with a band across its middle.

Measurements and proportions. Body length 8.5 mm. Wing length 8.1 mm. Clypeus 1.04 × wider than high and with its apical margin 1.06 × as wide as the interantennal distance.

Structure. Clypeus more oval, with a translucent apical margin and with a deeper concavity between blunter and non-carenated teeth. F9 cylindrical. F11 short, fingerlike and a slightly tapering point. Propodeum shorter, with a more abrupt posterior declivity.

Material examined. BRAZIL: Rio Grande do Sul: Santa Cruz do Sul, 12.xii.2007 (F. Noronha) [1 ♂: UNISC]; Viamão, Parque Estadual de Itapuã, 22.xi.2003 (B. Truylio) [1 ♂: PUCRS]; Santa Catarina: Nova Teutonia, 9.xi.1964 (F. Plaumann) [1 ♀: MCNV]; PARAGUAY: Alto Paraná: Puerto Bertoni, xii.1911 (A.W. Bertoni) [1 ♀ holotype: IBNPY]; same locality, ix.1919 (A.W. Bertoni) [1 ♀: DZUP]; same locality, x.1919 (A.W. Bertoni) [1 ♀: IBNPY]; same locality, xi.1919 (A.W. Bertoni) [2 ♀, 1 ♂: DZUP; 1 ♂: IBNPY]; ARGENTINA: Corrientes: Monte Caseros, iv.1978 (M.A. Fritz) [1 ♂: AMNH]; Entre Ríos: Salto Grande, iv.1978 (M.A. Fritz) [1 ♀, 1 ♂: AMNH]; Misiones: Parque Nacional Iguazú, 24.xi.1980 (A. Willink, P. Fidalgo, Claps & Dominguez) [1 ♀: IML]; Dos de Mayo, ix.1978 (M.A. Fritz) [1 ♀: AMNH]; Leandro N. Alem, Inst. Alberdi, 17–19.xi.1969 (C. Porter) [1 ♀: IML]; San Javier, 12.xi.1971 (C. Porter) [1 ♀: IML].

Distribution. Southern and South Eastern Brazil, Argentinean Mesopotamia and Paraná basin of Paraguay. In lowlands.

***Stenonartonia apicipennis* (Fox 1902)**

(Figs 20, 31, 44, 52, 55, 63, 74, 93, 105, 119, 133, 146, 157, 166, 174, 180)

Odynerus (*Stenancistrocerus*) *apicipennis* Fox 1902: 44, 67 (key), ♀, ♂ (lectotype, ♀, Brazil: “Chapada" (CMNH), examined]; also from Corumbá; Zavattari 1911:55 (Paraguay: San Bernardino); Bertoni 1918b: 207 (Paraguay).

Odynerus (*Ancistrocerus*) *apicipennis*: Dalla Torre 1904: 40 (cat.); Zavattari 1912: 195 (division *Stenancistrocerus*; Paraguay: San Bernardino).

Odynerus apicipennis: Brèthes 1906: 357, f. 31 (Paraguay: Villa Morra); 1909a: 59 (mimetism with *Odynerus* (*Stenodynerus*) *griseolus* Brèthes); Carpenter & van der Vecht 1991: 232 (lectotype designation).

Nortonia lugens von Schulthess 1904: 274, 280, 281, 283 [holotype, ♀, “Perú” (ETHZ), examined]; Ducke 1910: 187 (Brazil: Ceará: Serra de Baturité, 800 m); Bertoni 1918a: 194. (Paraguay: Puerto Bertoni; synonym: *Odynerus* (*Stenodynerus*) *paraguayensis* Brèthes; mimetism with *Polybia atra* [= *Polybia ignobilis* Haliday]).

Odynerus (*Stenodynerus*) *paraguayensis* Brèthes 1909b: 234 [holotype, ♂, Paraguay: "Puerto Bertoni" (MACN), not examined].

Odynerus apicalipennis [!]: Bertoni 1911: 112 (Paraguay: Puerto Bertoni, on flowers of *Talinum patens*).

Stenonartonia apicipennis: Carpenter & van der Vecht 1991: 211, 232 (synonyms: *Nortonia lugens* von Schulthess, *Odynerus paraguayensis* Brèthes; distribution: Brazil; Bolivia; Paraguay and Argentina); Garcete-Barrett 2003: 41 (figs 3e–3h).

Diagnosis and comments. This species is readily recognizable for its opaque and setae-free clypeus, triangular S1, very marked and apically concentrated macropunctation on T2, very prominent apical propodeal lamella, slightly concave propodeal declivity, largely puncture-free tegula, weak transverse carina on T1 and largely black body covered with a thin grayish pilosity and grayish hyaline wings with blackened costal region, a color pattern reminiscent of the widespread and common social wasp *Polybia ignobilis*. The type of *Odynerus paraguayensis* Brèthes was not examined, but from the description, the provenance of the specimen and the precedent synonymy established by Bertoni (1918a) and Carpenter & van der Vecht (1991), there is no doubt about its status.

Redescription. FEMALE. *Color pattern*. Black integument with pale yellow as follows: short inner orbit; small suffusion on the hind margin of pronotum; anterior and posterior tegular angles, united by a very thin outer marginal line; medially interrupted metanotal band; small and diffuse mesepisternal and metapleural precoxal spots; inner face of fore femur and tibia; diffuse apical ring on all femora; anterior (diffuse or even absent) line along mid and hind tibiae; very thin posterior and lateral margin of T1; S1 on all its margins. There can be brown areas as follows: flagellum ventrally from F5 to the apex; sometimes a diffuse subapical area on the mandible; some very dark suffusion on tibiae and tarsi; dark and very thin and suffuse posterior margin of metasomal segments 2–6. Fore wing membrane mostly grayish (lighter at tips) but black along the costal region. Fore wing venation brownish black.

Measurements and proportions. Body length 12.2 mm. Wing length 11 mm. Clypeus 1.03 × widen than high and with its apical margin 1.08 × wider than the interantennal distance. T1 as wide as long and 0.71 × as wide as T2. S1 wide triangular: 2.11 × wider than its medial length and 1.59 × wider than its total length.

Structure. Clypeus differing from that of *S. guaranitica* by having a wider apical emargination. Humeral angle very weak, rounded and slightly obtuse in frontal view. Pronotal carina slightly angulate, almost straight below the humeral angle. Parapsidal line very slightly marked. Parategula thumb-shaped. Scutellar-axillar complex as in *S. flavotestacea*, but with the mesoposterior projection of the lateral axillary panel a little broader. Metanotum almost evenly declivitous in lateral view, with a complete but low toothed ridge. Propodeum as in *S. guaranitica*, but more elongate, with a less abrupt posterior declivity, with a shallower medial depression, with the sublateral carina elevated into a translucent carina and with the apical lamella more sharply produced. T1 conical, low and obtusely convex in side view, with a straight and very weak transverse carina which is briefly interrupted at middle and hardly reaches the level of the spiracle.

Tegumental sculpture. Clypeus opaque, finely reticulate, sub-shagreened and covered with abundant micropunctation which is progressively denser above (especially on its upper half) and with many shallow and not very coarse macropunctures separated by about their own diameters. Whole body sub opaque, covered with moderately dense micropunctation. Head and mesothoracic dorsum a bit less opaque than the remainder. Head, pronotum and mesothorax covered with dense medium size macropunctation which is sparser at sides and on scutellum. Tegula with a large micropuncture-free mesolateral area. Anterior metanotal band confluently double-crenate. Lateral propodeal surface covered with fine and sparse macropunctures which become gradually denser and coarser toward the spiracle and with some shagreened close to the submarginal carina. Sublateral propodeal surface covered with dense macropunctation that become coarser and almost obliquely striatopunctate below. Medial propodeal depression finely and sparsely macropunctate, especially below, where some transverse striolation is evident. T1 with some thin scattered macropunctures on its anterior declivity and with moderately spaced macropunctation on its disc, especially concentrated along its midline. S1 coarsely and densely macropunctate. T2 covered with macropunctation which is thin and sparse at its base but gradually coarser and denser backward as to form a distinct premarginal band of very coarse and dense punctation. S2 with moderately spaced mid sized macropunctation which is coarser medially. Metasomal segments 3–5 covered with dense macropunctation which is sparser on sterna. Metasomal segment 6 moderately covered with thin macropunctation.

Pilosity. Body covered with a very short and thin ashy fulvous decumbent pubescence intermixed with sparse semi erect setae which are longer on propodeum and on T1. Propodeum with a lower medial band of reflective downpressed pilosity. Pubescence on metasoma more plainly appressed.

MALE. Differing from the female in: *Color pattern*. Clypeus with a submedial curved line than can be fused above with its pair as to form a large horseshoe shaped marking. Inner orbit extending up to the ocular sinus. Interantennal spot present. Mandible usually yellow on its basal depression. F11 light colored. Light markings on legs more sharply defined.

Measurements and proportions. Body length 10.3 mm. Wing length 8.2 mm. Clypeus 0.96 × as wide as high and with its apical margin 1.2 × as wide as the interantennal distance.

Structure and tegumental sculpture. Clypeus oval, narrower, with a deeper apical emargination between non-carinated teeth. F9 cylindrical. F11 short, fingerlike, slightly thick and sharp-pointed. Propodeum shorter, with a more abrupt posterior declivity. Tergal macropunctation coarser and denser, especially on the premarginal band, which is reticular, with many confluent points in several specimens.

Type material. PERU: without further data [1 ♀, holotype of *Nortonia lugens*: ETHZ]; BRAZIL: Mato Grosso: Chapada dos Guimarães, iii (no collector) [1 ♀, lectotype of *Odynerus apicipennis*: CMNH]; same locality, xii (no collector) [1 ♂, paralectotype of *Odynerus apicipennis*: CMNH]; Mato Grosso do Sul: Corumbá, iv (no collector) [1 ♂, paralectotype of *Odynerus apicipennis*: CMNH].

Additional material. BRAZIL: Ceará: Serra de Baturité, 800 m, 23.iv.1909 (Ducke) [1 ♂: MPEG]; Mato Grosso: Cáceres, 9.xii.1984 (C. Elias) [1 ♀: UFPR]; same locality, 27.iii.1985 (C. Elias) [1 ♀: DZUP]; Minas Gerais: Patrocínio, 5.x.1965 (C. Elias) [1 ♀: DZUP]; Passos, iii.1960 (C. Elias) [1 ♀: DZUP]; same locality, v.1961 (C. Elias) [1 ♂: DZUP]; Paraná: Parque Estadual de Vila Velha, 25°14'S, 49°59'W, 23.xi.2002 (G.A.R. Melo) [1 ♀: DZUP]; Rio Grande do Sul: Santa Cruz do Sul, 6.ii.2002 (D. J. Krise) [1 ♀: UNISC]; same locality, 20.xi.2003 (A. Köhler) [1 ♀: UNISC]; Santa Catarina: Nova Teutonia, 4.x.1956 (F. Plaumann) [1 ♂: MCNV]; same locality, x.1964 (F. Plaumann) [1 ♀: MCNV]; same locality, i.1965 (F. Plaumann) [1 ♂: MCNV; 2 ♂: UCD]; same locality, 20.xii.1972 (F. Plaumann) [1 ♂: UCD]; São Paulo: Teodoro Sampaio, Parque Estadual Morro do Diabo, 22°31'S, 52°19'W, 14.ii.1999 (G.A.R. Melo) [1 ♂: UFPR]; São Paulo, 29-31.i.1969 (C. Porter) [1 ♂: AMNH]; Santo Amaro, 26.ix.1926 (S.V. Ohaus) [1 ♂: MCNV]; without locality, 1848 (C. Beske) [1 ♀: MCNV]; BOLIVIA: La Paz: Nor Yungas, Coroico, without further data [1 ♀: UCD]; Santa Cruz: Piedra Blanca, iv [1 ♀: CMNH]; PARAGUAY: Alto Paraná: Puerto Bertoni, without date (A. W. Bertoni) [2 ♂: DZUP; 1 ♂ and 2 ♀: IML]; same locality, xii [1 ♀: DZUP]; same locality, i.1909 [1 ♂: DZUP]; same locality, xii.1909 (A.W. Bertoni) [1 ♀: DZUP]; same locality, iv.1919 (A.W. Bertoni) [2 ♂: DZUP]; same locality, xi.1919 (A.W. Bertoni) [1 ♀, 2 ♂: DZUP]; Caaguazú: Santa Rosa del Mbutuy, 15 km SE Colonia Juan Ramón Chávez, 14-15.ii.2008 (J. Halada) [2 ♂: OLML]; Canindeyú: Reserva Natural del Bosque Mbaracayú, 26–27.iv.1997 (B. Garcete) [1 ♂: IBNPY]; Reserva Natural del Bosque Mbaracayú, Jejui-mi, 10.i.1997 (B. Garcete) [1 ♂: DZUP]; Reserva Natural del Bosque Mbaracayú, La Morena, 15–16.i.1997 (B. Garcete) [1 ♂: DZUP]; Reserva Natural del Bosque Mbaracayú, Lagunita, 10.ix.1995 (B. Garcete) [1 ♂: DZUP]; same locality, 13.ix.1995 (B. Garcete) [1 ♂: DZUP]; Reserva Natural del Bosque Mbaracayú, Trayecto Horqueta-mi–Lagunita, 18.i.1997 (B. Garcete) [1 ♂: DZUP]; Reserva Natural del Bosque Mbaracayú, Trayecto Jejui-mi–Lagunita, 14.i.1997 (B. Garcete) [1 ♀: IBNPY; 1 ♀ DZUP]; Villa Ygatimí, 22.iv.1920 [1 ♀: DZUP]; Capital: Asunción, iv.1920 [1 ♂: DZUP]; Jardín Botánico, 11.iv.1999 (B. Garcete) [1 ♀, 5 ♂: DZUP]; Villa Morra, 4.xii.1906 (J.D. Anisits) [1 ♀: MCNV]; Concepción: Estancia Don Carlos, 25.ii.1997 (B. Garcete) [1 ♀, 2 ♂: DZUP]; same locality, 26.ii.1997 (B. Garcete) [5 ♂: DZUP]; same locality, 27.ii.1997 (B. Garcete) [3 ♂: DZUP]; same locality, 28.ii.1997 (B. Garcete) [2 ♀, 3 ♂: DZUP; 1 ♂: IBNPY]; same locality, 1.iii.1997 (B. Garcete) [2 ♀, 2 ♂: DZUP]; Retiro Saité, 22°5'19"S, 57°37'19"W, 15–17.x.1999 (B. Garcete) [1 ♀: DZUP]; Cordillera: San Bernardino (Babarczy) [1 ♀, 1 ♂: MCNV]; Piribebuy, Compañía Naranjo, Barrio San José, 28–30.iii.2002 (B. Garcete) [1 ♂: DZUP]; Itapúa: Parex, Estancia Parabel, 14.ii.1997 (B. Garcete) [1 ♀: DZUP]; Alto Verá, Estancia Mendieta, 9–11.ii.1999 (B. Garcete) [1 ♀ and 1 ♂: DZUP]; Paraguarí: Pirayú, 7.iii.1997 (B. Garcete) [1 ♂: DZUP]; Ybycuí, Parque Nacional Ybycuí, 18.i.1993 (B. Garcete) [1 ♀: IBNPY; 1 ♂: DZUP]; same locality, 1–4.v.1996 (B. Garcete) [1 ♂: DZUP]; San Pedro: Río Ypané, Cororó, ii.1979 (M.A. Fritz) [1 ♂: AMNH]; same locality, xii.1983 (M.A. Fritz) [2 ♂: AMNH]; Lima, 27.iii.1920 [1 ♂: IBNPY]; ARGENTINA: Corrientes: Ituzaingo, without date, (M. A. Fritz) [1 ♂: AMNH]; same locality, x.1981 (M. A. Fritz) [1 ♂: AMNH]; same locality, xii.1982 (M. A. Fritz) [1 ♀: AMNH]; Las Marías, Ca. Virasoro, 10-15.xi.1969 (C. Porter) [5 ♀ and 4 ♂: IML]; same locality, 7.xi.1971 (C. Porter) [3 ♂: IML]; Paso de la Patria, 5-7.xi.1969 (C. Porter) [1 ♀: MCNV]; same locality, 1.xi.1971 (C. Porter) [1 ♂: IML]; Santa Ana, 8.v.1971 (C. Porter & L. Stange) [1 ♂: IML]; Sombrerito, 8.xi.1969 (C. Porter) [1 ♀: IML]; Jujuy: Calilegua, 13.ii.1950 (A. Willink & F. Monrós) [1 ♂: IML]; Misiones: Cataratas del Iguazú, 5-9.xi.1970 (C. Porter & L. Stange) [1 ♀: IML]; Dos de Mayo, 18.xi.1973 (Escobar & Claps) [1 ♂: IML]; Iguazú, 30.i–13.iii.1945 (K. Hayward, A. Willink & R. Golbach) [3 ♂: IML]; Leandro N. Alem, Inst. Alberdi, 17–19.xi.1969 (C. Porter) [1 ♀: IML]; Puerto Esperanza, xii.1976 (M.A. Fritz) [1 ♂: AMNH]; Salta: 24 km W Aguas Blancas, Cpto Jakolica, 2.vii.1973 (C. Porter & E. Demarest) [2 ♀: IML]; Aguaray, 18.ii.1950 (R. Golbach) [1 ♀: IML]; Pocitos, xi.1978 (M.A. Fritz) [3 ♂: AMNH]; Rio Pescado (Est. YPF), 19–25.xi.1967 (C. Porter & E. Willink) [1 ♀: AMNH]; Río Pescado, 20 km W Orán, 25.xi.1979 (A. Willink, P. Fidalgo & Dominguez) [1 ♂: IML]; Río Pescado, Ca. Orán, 22°53'S, 64°27'W, 11-20.vii.1970 (C. Porter) [2 ♀: IML]; same locality, 12.vii.1970 (C.

Porter) [1 ♀: IML]; Río Piedras, 20 km W El Galpón, 27.ii.1979 (A. Willink, P. Fidalgo & Dominguez) [1 ♂: IML]; Rosario de Lerma, xii.1986 (M.A. Fritz) [1 ♂: AMNH]; Ruta 34, 12 km N Urundel, Arroyo Riacho Seco, 24–29.vii.1978 (C. Porter & P. Fidalgo) [1 ♀: IML]; San Martín, Macueta, 1–3.vi.1977 (P. Fidalgo) [1 ♀: IML]; Tucumán: El Cadillal, 17.iv.1966 (L. Stange) [1 ♀: IML]; Mts, Parque Biológico, 700 m, 24.xi.1974 (L. Stange) [1 ♂ IML]; Quebrada de Lules, 2.ii.1927 (R.C. & E.M. Shannon) [1 ♀: IML]; Reserva Forestal, Ruta 9 ca. El Cadillal, 20.vi.1973 (C. Porter & E. Demarest) [1 ♀: IML]; Tafí, Horco Molle, 9-11.xi.1969 (C. Porter) [1 ♀: IML]; same locality, 19.xi.1970 (C. Porter) [1 ♀: IML]; same locality, 1.xii.1971 (C. Porter) [1 ♂]; Horco Molle, Sierras San Javier, 700 m, 22.iii.1974 (L. Stange) [1 ♀: IML]; without locality label: [1 ♂ DZUP].

Distribution. Andean Piedmont of Argentina; Parana-Paraguay basin of Brazil, Paraguay and Argentina, and an isolated records from the Serra de Baturité in Ceará, North Eastern Brazil and from Peru and the Bolivian Yungas. The holotype of *Nortonia lugens* is the only recorded Peruvian specimen so far. Von Schulthess (1904) circumstantially argued it could come from Callanga. More collectings are needed as to confirm the distribution of this species along the Bolivian and Peruvian Yungas and North Eastern Brazil. The distribution of this species has a noteworthy coincidence with the Seasonally Dry Forest phytogeographic unit defined by Prado (2000).

Biology. Bertoni (1911) records this species visiting flowers of *Talinum patens* (Portulaccaceae). It is not uncommon on flowers of *Hyptis* sp. (Lamiaceae) and *Borreria* sp. (Rubiaceae) in Paraguay. One of the males from Cororó and deposited in the AMNH bears abundant mites in the axillary fossae and over the posterior declivity of the propodeum, in a similar way as illustrated by Giordani Soika (1985: 191: fig. 3) for the African *Pseudonortonia malelensis* (Bequaert).

Stenonartonia tanykaju Garcete-Barrett, sp. nov.

(Figs 7, 21, 32, 35, 45, 53, 64, 75, 86, 94, 106, 120, 134, 147, 158, 167, 175, 181)

Diagnosis and comments. This is a moderately small species with a conical and strongly transversely carenated T1. It looks a lot like *S. mimica* at first sight, but the wide anterior axillary fossula, partly covered under the finger-like parategula, and the propodeum, slightly creased and obtusely angulate at sides and almost flat on its posterior declivity readily separate this species.

Description. FEMALE. *Color pattern*. Black integument with yellow to testaceous markings as follows: base of mandibles; inner orbit from clypeal border up to the ocular sinus; scape ventrally; interantennal spot; thin, short and darkened frontal line; comma shaped line between the eye and the posterior ocellus; lower gena, even posteriorly; thin and medially interrupted hind pronotal margin; small suffusion on the lower corner of pronotum and larger one on the pronotal lobe; thin and short submedial line on mesoscutum which can be absent; darkened subalar spot; small mesepisternal and metapleural precoxal spots; lower submedial propodeal spot; fore coxa largely; inner face of fore femur; fore tibia except for a large external darkening; all tarsi; apical ring extending over the apical three fourths of the anterior and the dorsoposterior face of mid and hind femur respectively; external face and apical ring of mid and hind tibia; hind and lateral margin of T1, getting diffuse at sides; whole S1 with some darkening; very diffuse and darkened apical margin on metasomal segments 2–5. There are some brown areas as follows: flagellum ventrally, getting lighter toward the apex; gradual mesal darkening on mandible toward apex; thick posterior diagonal strip on tegula; lateral suffusion on metasomal segment 2; almost whole metasomal segment 6. Wing color pattern as in *S. mimica*.

Measurements and proportions. Body length 9.8 mm. Wing length 10 mm. Clypeus 1.12 × wider than high and with its apical margin 0.9 × as wide as the interantennal distance. T1 as wide as long and 0.71 × as wide as T2. S1 shaped as in *S. apicipennis*, 2.43 × wider than its medial length and 2.15 × wider than its total length.

Structure. Clypeus cordiform, with rounded sides, moderately convex, with a shallow apical depression and a semicircularly concave emargination between two sharp and carinated downpointing teeth. Humeral angle, pronotal carina, parapsidal line and metanotum as in *S. mimica*. Parategula digitiform and convex above. Scutellar-axillar complex as in *S. apicipennis*. Propodeum a little more elongate than in *S. apicipenis* and with its posterior declivity almost completely flat by confluence of the sublateral face, the medial depression and the extremely shallow and poorly defined medial channel. Propodeum slightly longitudinally creased behind the spiracle, obtusely angular at side in upper view, with a complete medial carina and the sublateral carina short and sharp. Apical propodeal lamella as in S. mimica, but with lateral crease and with the valvula obtusely dislocated from it. T1 differing from that of *S. mimica* in being a little less convex and with the transverse carina straighter at middle.

Tegumental sculpture. Clypeus sub opaque, finely reticulated, with very few micropunctures and covered with shallow and moderately spaced macropunctures. Body surface as in *S. mimica*, but duller and with thinner macropunctation, metasomal segments with less differentiated apical band and propodeum with macropunctation sparser medially and less evident shagreening.

Pilosity. Differing from *S. mimica* by having the clypeus covered with numerous yellowish setae and the propodeal pilosity as in *S. apicipennis*.

MALE. Differing from the female in: *Color pattern*. Clypeus yellow with a large mid basal black pyriform spot. Yellow area of mandible more extensive. Antennae lighter below, with F9 extensively and F10 and F11 entirely yellowish. Frontal and metanotal markings sharper. Mid and hind femur lighter externally. T1 with a sublateral spot on its anterior declivity and with its disc brownish. Metasomal segment 2 brownish.

Measurements and proportions. Body length 8.5 mm. Wing length 9.2 mm. Clypeus as wide as high and with its apical margin barely wider than the interantennal distance.

Structure and tegumental sculpture. Clypeus small, almost without apical depression, with its apical margin translucent, including the non-carinated teeth and with its surface sub shinning, without micropunctures and with even thinner and sparser macropunctures.

Type material. Holotype ♀, BRAZIL: Paraná: Piraquara, Mananciais da Serra, 26.ii.2006 (G.A.R. Melo) [DZUP]. Paratypes: BRAZIL: Paraná: Tijucas do Sul, Associação dos Professores, 10.iv.2003 (A.M. Siqueira) [1 ♀: DZUP]; Santa Catarina: Nova Teutônia, iv.1964 (F. Plaumann) [1 ♂: MCNV]; same locality, 300–500 m, 27°11'S, 52°23'W, ii.1965(F. Plaumann) [1 ♂: MCNV].

Distribution. Highlands of Paraná and Santa Catarina in Southen Brazil.

Etymology. The name of this species comes from the Guarani laguage: *tañykã* means jaw and *ju* means pale or yellow colored, referring to the yellow marked gena of this species.

Stenonartonia hermetica Garcete-Barrett, sp. nov.

(Figs 22, 46, 95, 107, 121, 135, 148, 159, 181)

Diagnosis and comments. *S. hermetica* is a moderately large and blackish species similar to *S. apicipennis* in some respects, but with a more rounded, less duller and setae-covered clypeus, a laterally more angulate and posteriorly flatter propodeum and a stronger transverse carina on T1 that put it closer to *S. tanykaju*. The extensively micropunctate clypeus, salient humeral angle, smoothly declivitous metanotum and peculiarly shaped apical propodeal lamella and valvula complex set apart this species. Its color pattern is reminiscent of the social wasp *Polybia minarum* in having very few yellow markings, reddish marked legs, dark brown wings and brownish pilosity.

Description. FEMALE. *Color pattern*. Black integument with the following yellow markings: lower inner orbit not reaching the ocular sinus; lateral traces of posterior pronotal margin; diminutive mesepisternal and metapleural precoxal spots; small spot around the sublateral propodeal carina; thin line at the base of the propodeal valvula; thin and darkened posterior and lateral margin of T1; boundaries of S1. Light reddish brown are: flagellum below; outer tegular margin; inner face and apical ring of fore femur; inner face and external line on fore tibia; all tarsi; apical ring on mid and hind femora; anterior face and posterior line of mid and hind tibiae; almost imperceptible hind margin of metasomal segments 2–6. Fore wing membrane dark brown infuscate. Fore wing venation blackish brown.

Measurements and proportions. Body length 11.2 mm. Wing length 11.5 mm. Clypeus 1.18 × as wide as high and with its apical margin 0.77 × as wide as the interantennal distance. T1 hardly wider than long and 0.69 × as wide as T2. S1 as in *S. apicipennis*, 2.32 × wider than its medial length and 1.65 × wider than its total length.

Structure. Head and mesosoma as in *S. tanykaju* but clypeus wider; humeral angle moderately produced, right angled though blunt pointed in frontal view; pronotal carina widely undulated below the humeral angle; parapsidal line obsolescent; metanotum smoothly declivitous and with an extremely blunt toothed ridge; propodeum flatter posteriorly; apical propodeal lamella small, without lateral crease but marginally separated from the valvula by a well marked semicircular notch. T1 differing from that of *S. apicipennis* by being strongly depressed above, with a flattened anterior declivity, with clearly salient spiracular tubercles and with a strong undulated transverse carina which is strongly bent backward at the level of the spiracle.

Tegumental sculpture. Clypeus subopaque, finely reticulate, with dense micropunctation on its upper half that rapidly dissipates below and covered with moderately to plainly spaced, thin, shallow and partly obscured macro-

punctures. Whole body sub opaque, covered with dense micropunctation. Sculpture of head and mesosoma as in *S. apicipennis* but sparser, shallower and differing in the following details: tegula covered with moderately dense micropunctation; anterior metanotal band covered with medium sized macropunctures, hardly forming crenation; propodeal declivity less dull, without transverse shagreening and covered with thin and sparse macropunctation, a little dense above and absent below at the middle. Mesosoma dull, densely micropunctate, less so on S1 and S2. T1 without evident macropunctures on its anterior declivity and with moderately sparse, shallow and very thin ones on its disc. S1 covered with dense and shallow macropunctation. T2 with sparse, very thin macropunctation obscured among the micropunctation and just a bit coarser on a posterior premarginal band. S2 covered with thin and sparse macropunctures. Macropunctation of metasomal segments 3–5 similar to that on the premarginal area of T2. Metasomal segment 6 covered with thin and sparse macropunctures.

Pilosity. Body covered with a thin, decumbent and moderately sparse brownish pubescence mixed with abundant pale, curved and semi erect setae. Pilosity longer and paler yellowish to silvery on thoracic sides and propodeum. Propodeum with a lower medial band of reflective downward appressed pilosity. Pubescence on metasoma thinner, denser and more plainly appressed.

MALE. Unknown.

Type material. Holotype ♀, BRAZIL: Paraná, Piraquara, Piraquara, 30.xi.2005 (M.G. Hermes) [DZUP].

Distribution. Brazil: highlands of Paraná.

Etymology. The name of this species makes reference to the hermetic, almost esoteric difficulty I had in recognizing this species as a good one and also makes indirect reference to the collector of the holotype, my colleague and friend Marcel Gustavo Hermes.

Stenonartonia grossa Garcete-Barrett, sp. nov.

(Figs 23, 47, 76, 108, 122, 136, 179)

Diagnosis and comments. This species looks much like *S. hermetica* in structure and color pattern, but differs in having a coarser macropunctation on clypeus, head and mesosoma; a larger apical propodeal lamella obtusely dislocated marginally from the valvula; a broader and dorsally more convex T1 with the transverse carina hardly reaching the level of the spiracle, and the more plainly black general color, due to a shorter, sparser and lighter pilosity.

Description. FEMALE. Differing from *S. hermetica* in: *Measurements and proportions*. Wing length 11.7 mm. Clypeus 1.13 × as wide as high and with its apical margin 0.89 × as wide as the interantennal distance. S1 2.24 × wider than its medial length and 1.56 × longer than its total length. S1 2.24 × longer than its medial length and 1.56 × longer than its total length.

Structure. Apical clypeal teeth broader. Humeral angle less produced. Pronotal sides more convex in dorsal view. Propodeal declivity slightly depressed along the medial line. Apical propodeal lamella longer, obliquely pointing upward, separated from the valvula by a slight lateral crease and a very obtuse marginal dislocation. T1 diverging more abruptly behind, with hardly salient spiracular tubercles, with a convex anterior declivity and with the transverse carina ending straight at the level of the spiracle.

Tegumental sculpture. Clypeus covered with sparse micropunctation and well marked moderately dense and coarse macropunctation. Body overall less dull, with sparser micropunctation. Macropunctation on head and mesosoma sharper and deeper. Posterior propodeal depression slightly shagreened in part. T1 with defined punctures on its anterior declivity. Macropunctation of S1 deeper. Remainder of metasoma with more evident macropunctation.
Pilosity. Shorter, sparser and lighter.

MALE. Unknown.

Type material. Holotype ♀, BRAZIL: Rio de Janeiro, Nova Friburgo, 14–19.xi.2007 (P.C. Grossi) [DZUP].

Distribution. Brazil: highlands of Rio de Janeiro.

Biology. The holotype bears several mites in its axillary fossae.

Etymology. The name of this species refers to its relatively large body size and T1 compared to other species in the group of *S. apicipennis*. In Argentinean jargon the term “grosso” means “generous friend”, indirectly referring to the collector of the holotype, my colleague and friend Paschoal Grossi.

Acknowledgements

My sincere thanks to the people who facilitated the study of specimens and their patience with delayed devolutions, especially John Kochalka, Marco Uliana and Fritz and Josef Gusenleitner. To Romina Gimenez for the insistence on getting myself involved in a postgraduate program. To the CNPq for the financial support to the project that finally yielded this work. To my dissertation tutor Gabriel Melo for his support as part of his Laboratory. To Orlando Tobias Silveira and Rodney Cavichioli, acting as members of the evaluation board, for critical review of my dissertation. To James M. Carpenter for corrections and suggestions on an early version of the manuscript and review of it. To Marcel Hermes and Paschoal Grossi for their assistance as great colleagues in critical moments and to my "virtual" companions who, chatting through the other side of the web, have made several nights of manuscript writing more agreeable: Sergio Ríos, Silvia De Oliveira Lagôa and Lourdes Valdez. Two anonymous reviewers greatly helped to improve the original manuscript.

References

Bequaert, J. (1918) Vespidae of the Belgian Congo. *Bulletin of the American Museum of Natural History*, 39, 1–384.

Bequaert, J. (1940) *Monobia*, *Montezumia* and *Pachymenes*, Neotropical elements in the Nearctic Fauna (Hymenoptera,Vespidae). *Annals of the Entomological Society of America*, 33, 96–102.

Bertoni, A.W. (1911) Contribución á la biología de las abejas y avispas del Paraguay. *Anales del Museo Nacional de Buenos Aires*, 3(15), 97–146.

Bertoni, A.W. (1918a) Contribución al conocimiento de los himenópteros diplópteros americanos (especies y nidos nuevos o poco conocidos). *Anales Científicos Paraguayos*, 2(3), 184–202.

Bertoni, A.W. (1918b) Catálogo de los véspidos sociales y solitarios del Paraguay. *Anales Científicos Paraguayos*, 2(3), 203–208.

Bertoni, A.W. (1934) Contribución al conocimiento de los Eumenéidos. El antiguo género *Eumenes* Latr. (s. lat.) (nuevo punto de vista para la clasificación). *Revista de la Sociedad Científica del Paraguay*, 3(4), 109–122.

Bohart, R.M. (1952) The California species of mite bearing *Stenodynerus*. *Proceedings of the Entomological Society of Washington*, 54, 38–53.

Bohart, R.M. & Stange, L.A. (1965) A revision of the genus *Zethus* in the Western Hemisphere (Hymenoptera: Eumenidae). *University of California Publications in Entomology*, 40, 1–208.

Borsato, W. & Ratti, E. (1999) Antonio Giordani Soika (1913–1997): la produzione scientifica. *Memorie della Societá Entomologica Italiana*, 77, 43–103.

Brèthes, J. (1906) Véspidos y euménididos sudamericanos (nuevo suplemento). *Anales del Museo Nacional de Buenos Aires*, 3(6), 311–377.

Brèthes, J. (1909a) Hymenópteros nuevos de las Repúblicas del Plata y del Brazil. *Anales del Museo Nacional de Buenos Aires*, 3(12), 49–69.

Brèthes, J. (1909b) Hymenoptera Paraguayensis. *Anales del Museo Nacional de Buenos Aires*, 3(12), 225–256.

Carpenter, J. (1982) The phylogenetic relationships and natural classification of the Vespoidea (Hymenoptera). *Systematic Entomology*, 7, 11–38.

Carpenter, J.M. & Cumming, J.M. (1985) A character analysis of the North American Potter wasps (Hymenoptera: Vespidae; Eumeninae). *Journal of Natural History*, 19, 877–916.

Carpenter, J.M. & Garcete-Barrett, B.R. (2003) A key to the Neotropical genera of Eumeninae (Hymenoptera: Vespidae). *Boletín del Museo Nacional de Historia Natural del Paraguay*, 14(1–2), 52–73.

Carpenter, J.M. & Vecht, van der. (1991) A study of the Vespidae described by William J. Fox (Insecta: Hymenoptera), with assessment of taxonomic implications. *Annals of Carnegie Museum*, 60(3), 211–241.

Cooper, K.W. (1955) Venereal transmission of mites by wasps, and some evolutionary problems arising from the remarkable association of *Enslinella trisetosa* with the wasp *Ancistrocerus antilope*. Biology of Eumenine Wasps II. *Transactions of the American Entomological Society*, 80, 119–174.

Dalla Torre, K.W. (1904) Vespidae. *Genera Insectorum*, 19, 1–108.

Ducke, A. (1910) Sur quelques euménides (guêpes solitaires) du Brésil. *Revue d'Entomologie*, 28, 180–193.

Duncan, C.D. (1939) *A contribution to the biology of North American vespine wasps*. Stanford University Publications in Biology, 8, 1–272.

Fox, W. (1902) Contributions to a knowledge of the Hymenoptera of Brazil, Nº. 8.–Eumenidae, continued (genus *Odynerus*). *Proceedings of the Academy of Natural Sciences of Philadelphia*, 1902, 44–69.

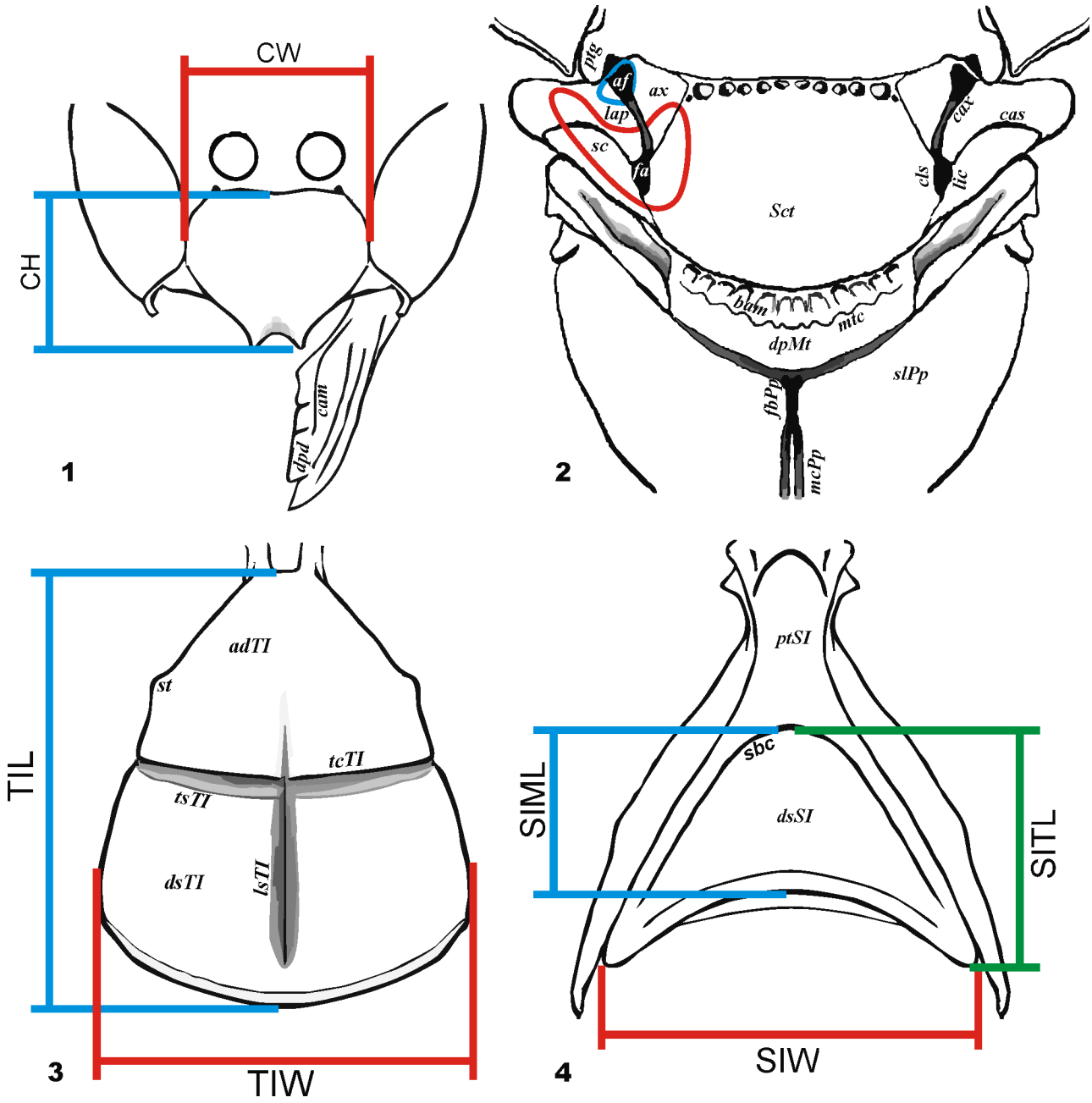
Garcete-Barrett, B.R. (2003) Notas sobre Eumeninae neotropicales III (Hymenoptera: Vespidae). *Boletín del Museo Nacional de Historia Natural del Paraguay*, 14(1–2), 36–42.

Gibson, G.A.P. (1985) Some pro- and mesothoracic structures important for phylogenetic analysis of Hymenoptera, with a review of terms used for the structures. *Canadian Entomologist*, 117, 1395–1443.

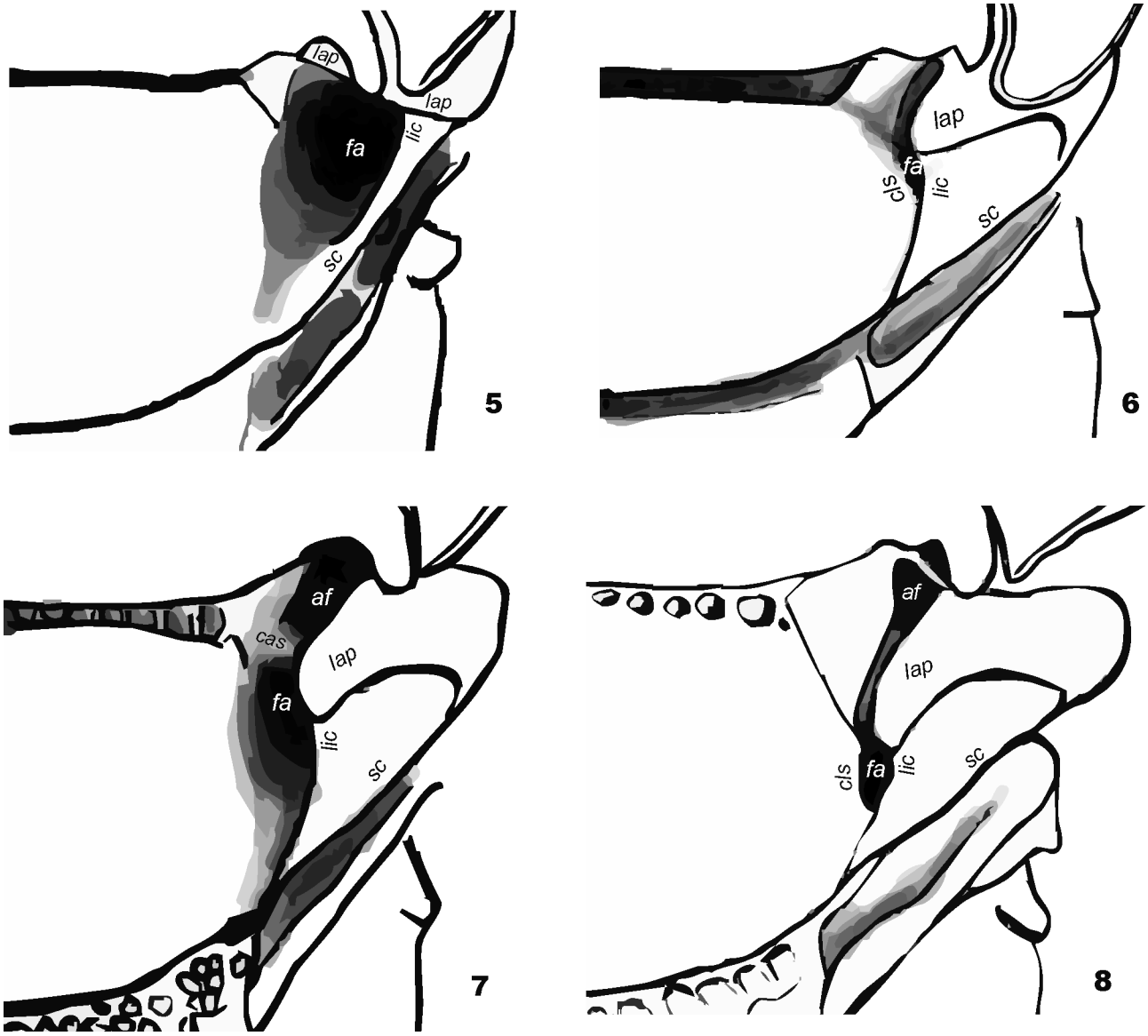
Gibson, G.A.P. (1997) Morphology and terminology. *In*: Gibson G.A.P., Huber J.T. & Woolley J.B. (Eds.), *Annotated Keys to the Genera of Nearctic Chalcidoidea (Hymenoptera)*. NRC Research Press, Ottawa, Ontario, pp. 16–44.

Giordani Soika, A. (1936) Caratteri del genere *Nortonia* Sauss and descrizione di due nuove especie (Hymen. Vepidae). *Annali del*

Museo Civico di Storia Naturale di Genova, 60(15), 267–271.
Giordani Soika, A. (1938) Le specie del sottogenere *Nortonia* Sauss. (Hym. Vespidae). *Annali del Museo di storia naturale di Genova*, 60(17), 111–116.
Giordani Soika, A. (1941) Studi sui vespidi solitari. *Bolletino della Società Veneziana di Storia Naturale and del Museo Civico di Storia Naturale*, 2, 130–278.
Giordani Soika, A. (1973) Designazione di lectotipi ed elenco dei tipi di Eumenidi, Vespidi and Masaridi da me descritti negli anni 1934-1960. *Bollettino del Museo Civico di Storia Naturale di Venezia*, 24, 7–53.
Giordani Soika, A. (1978) Tabella per l'identificazione dei generi Europei della famiglia Eumenidae (Hym. Vespoidea). *Lavori della Societá Veneziana di Scienze Naturali*, 3, 30–35.
Giordani Soika, A. (1985) Sulla presenza di acarinari nei vespidi solitari and descrizione dell'*Acarepipona insolita* n. gen. n. sp., com um acarinario di nuovo tipo. *Bollettino del Museo Civico di Storia Naturale di Venezia*, 34, 189–196.
Griffin, F.J. (1939) On the dates of publication of Saussure (H. de): Études sur la famille des Vespides 1–3. 1852–1858. *Journal of the Society for the Bibliography of Natural History*, 1, 211–212.
Hermes M.G. & Melo, G.A.R. (2008) Revision and cladistic analysis of the eumenine wasp genus *Pseudodynerus* de Saussure (Hymenoptera, Vespidae, Eumeninae). *Systematic Entomology*, 33, 361–394.
International Commission on Zoological Nomenclature (ICZN). (1970) Opinion 893. Eumenidae names of Saussure (Hymenoptera): Grant of availability to certain names proposed for secondary divisions of Genera. *Bulletin of Zoological Nomenclature*, 26, 187–191
International Commission on Zoological Nomenclature (ICZN). (1999) *International Code of Zoological Nomenclature*. Fourth edition. ITZN, London. i–xxix + 1–306.
Kohl, F.F. (1907) Zoologische Ergebnisse der Expedition der Kaiserlichen Akademie der Wissenschaften nach Sudarabien und Socotra im Jahre 1898–1899. Hymenopteren. *Denkschriften der Kaiserlichen Akademie der Wissenschaften in Wien. Mathematisch-Naterwissenschaftliche Klasse*, 71(1), 170–301; 11 plates.
Latreille, P.A. (1802) *Histoire naturelle générale et particulière des Crustacés et des Insectes. Ouvrage faisant suite à l'Histoire Naturelle générale et particulière, composée par Leclercq de Buffon, et rédigée par C.S. Sonnini, membre de plusiers Sociétés savantes.* Vol. 3. Imprimerie F. Dufart, Paris, i—xii + 13–467 pp.
Makino, S. & Okabe, K. (2003) Structure of acarinaria in the wasp *Allodynerus delphinalis* (Hymenoptera: Eumenidae) and distribution of deutonymphs of the associated mite *Ensliniella parasitica* (Acari: Winterschmidtiidae) on the host. *International Journal of Acarology*, 29, 251–258.
Okabe, K. & Makino, S. (2008) Parasitic mites as part-time bodyguards of a host wasp. *Proceedings of the Royal Society (B)*, 275, 2293–2297.
Okabe, K. & O'Connor, B.M. (2002) *Kurosaia jiju*, a new genus and species of mite (Acari, Winterschmidtiidae) associated with the solitary wasp *Anterhynchium flavomarginatum* (Hymenoptera, Vespidae) in Japan. *International Journal of Acarology*, 28, 67–83.
Pickett, K.M. & Carpenter, J.M. (2010) Simultaneous Analysis and the Origin of Eusociality in the Vespidae (Insecta: Hymenoptera). *Arthopods Systematics & Phylogeny*, 68 (1), 3–33.
Prado, D.E. (2000) Seasonally dry forests of Tropical South America: from forgotten ecosystems to a new phytogeographic unit. *Edinbourg Journal of Botany*, 57(3), 437–461.
Rasmussen, C. & Asenjo, A. (2009) A checklist to the wasps of Peru (Hymenoptera, Aculeata). *ZooKeys*, 15, 1–78.
Sarmiento, C.E. & Carpenter, J.M. (2006) Familia Vespidae. *In*: Fernández, F. & Sharkey, M.J. (Eds.), *Introducción a los Hymenoptera de la Región Neotropical*. Sociedad Colombiana de Entomología y Universidad Nacional de Colombia, Bogotá, pp. 539–556.
Saussure, H. de (1852–1853) *Études sur la famille des Vespides 1: Monographie des Guêpes solitaires ou de la tribu des Eumeniens*. J. Cherbuliez, Genève & V. Masson, Paris, i–xlx + 1–286 pp. + 22 pls. (1852) 1–128 + pl. 2–5, 7, 10, 14; (1853) i–xlx + 129–286 + pl. 1, 6, 8, 9, 11–13, 15–22. (Dates of publication after Griffin 1939).
Saussure, H. de (1853–1858) *Études sur la famille des Vespides 2: Monographie des Guêpes Sociales ou de la tribu des Vespiens*. V. Masson, Paris & J. Kessmann, Genève, i–cxliv + 256 pp. + 37 pls. (1853) 1–96 + pl. 2–8, 13; (1854) 97–256 + pl. 9, 10–12, 14–34; (1855) pl. 1; (1857) i–xlviii + pl. 35–37; (1858) xlix–cxliv + pl. 19 bis, 30 bis. (Dates of publication after Griffin 1939).
Saussure, H. de (1854–1856) *Études sur la famille des Vespides. Toisième partie comprenant la Monographie des Masariens et un supplement a la Monographie des Euméniens*. V. Masson, Paris & J. Kessmann & J. Cherbuliez, Genève, 352 pp. + 15 pls. (1854) 1–48 + pl. 1–5; (1855) 49–192 + pl. 6–14; (1856) 289–352 + pl. 15, 16. (Dates of publication after Griffin 1939).
Saussure, H. de (1869) Hyménoptères divers du musée Godeffroy. *Stettiner Entomologische Zeitung*, 30, 53–64.
Schulthess, A. von (1904) Beiträge zur Kenntnis der *Nortonia*-Arten (Hym. Vesp.). *Zeitschrift für Hymenopterologie und Dipterologie*, 4, 270–283.
Vecht, J. van der (1981) *Paraliris*, an oriental genus of mite-bearing larrine wasps. *Mittleinungen der Schweizerische Entomologische Gesellshaft*, 54, 357–361.
Vecht, J. van der & Carpenter, J.M. (1990) A catalog of the genera of the Vespidae (Hymenoptera). *Zoologische Verhandelingen*, 260, 3–62.
Willink, A. & Roig-Alsina, A. (1998) Revision del género *Pachodynerus* Saussure (Hymenoptera: Vespidae, Eumeninae). *Contributions of the American Entomological Institute*, 30(5), 1–117.
Zavattari, E. (1911) Beiträge zur Kenntnis der Hymenopterenfauna von Paraguay. *Zoologische Jahrbücher*, 31, 39–58.
Zavattari, E. (1912) Materialien für eine Monographie der Neotropischen Eumeniden. *Archiv für Naturgeschichte*, 78A(4), 1–272.



FIGURES 1–4. External morphology. 1. *Stenonartonia rejectoides*, female clypeus and mandible, frontal view. 2–3. *S. cooperi*. 2. Dorsal view of the female hind mesosoma, with the atria of the axillary fossa and anterior axillary fossula marked in red and blue respectively; 3. Female T1, dorsal view. 4. *S. mimica*, female S1, ventral view. *adTI*, anterior declivity of T1; *af*, anterior axillary fossula; *ax*, axilla; *bam*, anterior metanotal band; *cam*, acetabular carina; *cas*, trans-scutellar carina; *cax*, axillar carina; *CH*, clypeal height; *cls*, lateral scutellar carina; *CW*, clypeal width; *dpd*, distal subapical tooth; *dpMt*, posterior declivity of the metanotum; *dsSI*, disc of S1; *dsTI*, disc of TI; *fa*, opening of the axillary fossa; *fbPp*, basomedian propodeal fovea; *lap*, lateral axillary panel; *lic*, inner lamella of the scutellar crest; *lsTI*, longitudinal sulcus of T1; *mcPp*, mid propodeal channel; *mtc*, metanotal toothed ridge; *ptg*, parategula; *ptSI*, petiole of S1; *sbc*, sub-basal carina of S1; *sc*, scutellar crest; *Sct*, scutellum; *SIML*, medial length of S1; *SITL*, total length of S1; *SIW*, width of S1; *slPp*, sublateral propodeal surface; *st*, spiracular tubercle; *tcTI*, transverse carina of T1; *TIL*, length of T1; *tsTI*, transverse sulcus of T1.

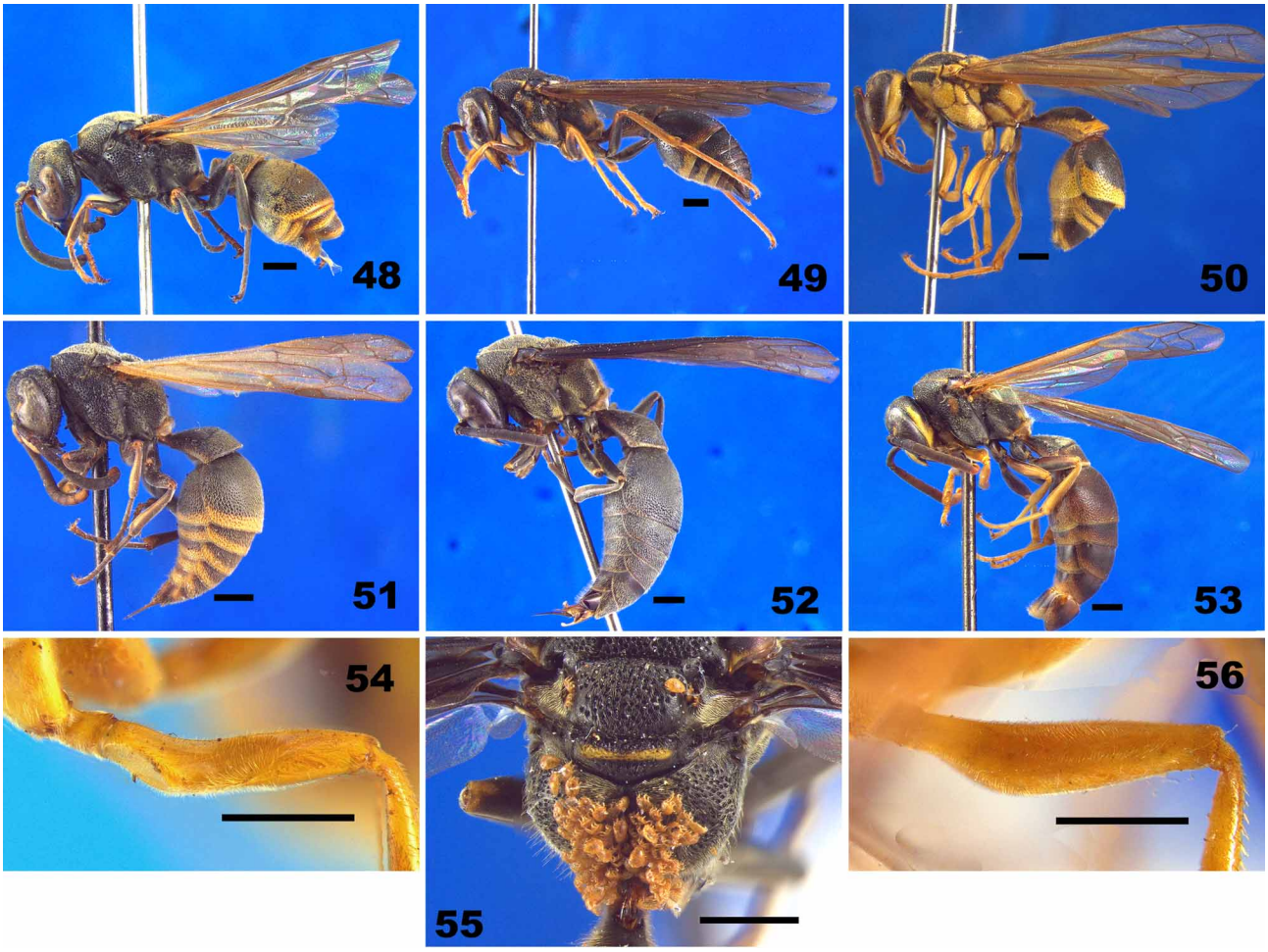


FIGURES 5–8. Scutellar-axillar complex in Eumeninae. 5. *Brachymenes dyscherus* (de Saussure). 6. *Monobia angulosa* de Saussure. 7. *Stenonartonia tanykaju* **sp. nov**. 8. *S. cooperi* **sp. nov**. *af*, anterior axillary fossula; *cas*, trans-scutellar carina; *cls*, lateral scutellar carina; *fa*, opening of the axillary fossa; *lap*, lateral axillary panel; *lic*, inner lamella of the scutellar crest; *sc*, scutellar crest.

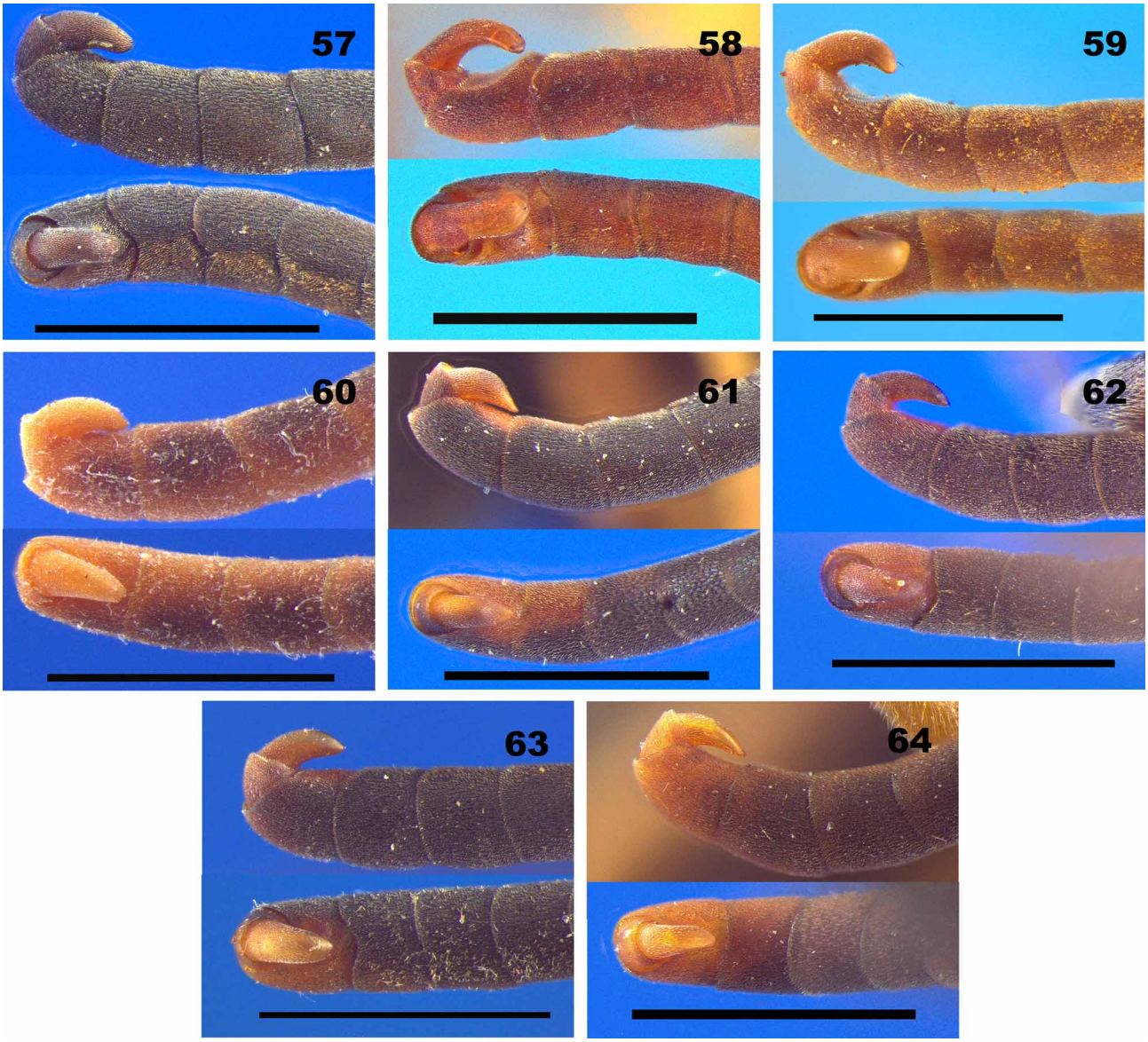
FIGURES 9–23. Female head, frontal view. 9. *Stenonartonia rejectoides* **sp. nov.**, holotype. 10. *S. occipitalis* **sp. nov.**, paratype. 11. *S. polybioides*, paralectotype. 12. *S. hasyva* **sp. nov.**, paratype. 13. *S. perdita* **sp. nov.**, holotype. 14. *S. cooperi* **sp. nov.**, holotype. 15. *S. guaraya* **sp. nov.**, holotype. 16. *S. mimica*, holotype. 17. *S. mimica*, melanic form. 18. *S. flavotestacea*, holotype. 19. *S. guaranitica*, holotype. 20. *S. apicipennis*. 21. *S. tanykaju* **sp. nov.**, holotype. 22. *S. hermetica* **sp. nov.**, holotype. 23. *S. grossa* **sp. nov.**, holotype. Scale = 1 mm.

FIGURES 24–35. 24–32. Male head, frontal view. 33–35. Female head, dorsal view. 24. *Stenonartonia occipitalis* **sp. nov.**, paratype. 25, 34. *S. polybioides*, paralectotypes. 26. *S. hasyva* **sp. nov.**, paratype. 27. *S. cooperi* **sp. nov.**, paratype. 28. *S. flavotestacea*, melanic form. 29. *S. flavotestacea*, pale form. 30. *S. guaranitica*. 31. *S. apicipennis*. 32, 35. *S. tanykaju* **sp. nov.**, paratypes. 33. *Stenonartonia rejectoides* **sp. nov.**, holotype. Scale = 1 mm.

FIGURES 36–47. Female habitus, lateral view. 36. *Stenonartonia rejectoides* **sp. nov.**, holotype. 37. *S. occipitalis* **sp. nov.**, paratype. 38. *S. polybioides*, lectotype. 39. *S. perdita* **sp. nov.**, holotype. 40. *S. mimica*, holotype. 41. *S. mimica*, melanic form. 42. *S. flavotestacea*, holotype. 43. *S. guaranitica*, holotype. 44. *S. apicipennis***,** holotype of *Nortonia lugens*. 45. *S. tanykaju* **sp. nov.**, holotype. 46. *S. hermetica* **sp. nov.**, holotype. 47. *S. grossa* **sp. nov.**, holotype. Scale = 1 mm.

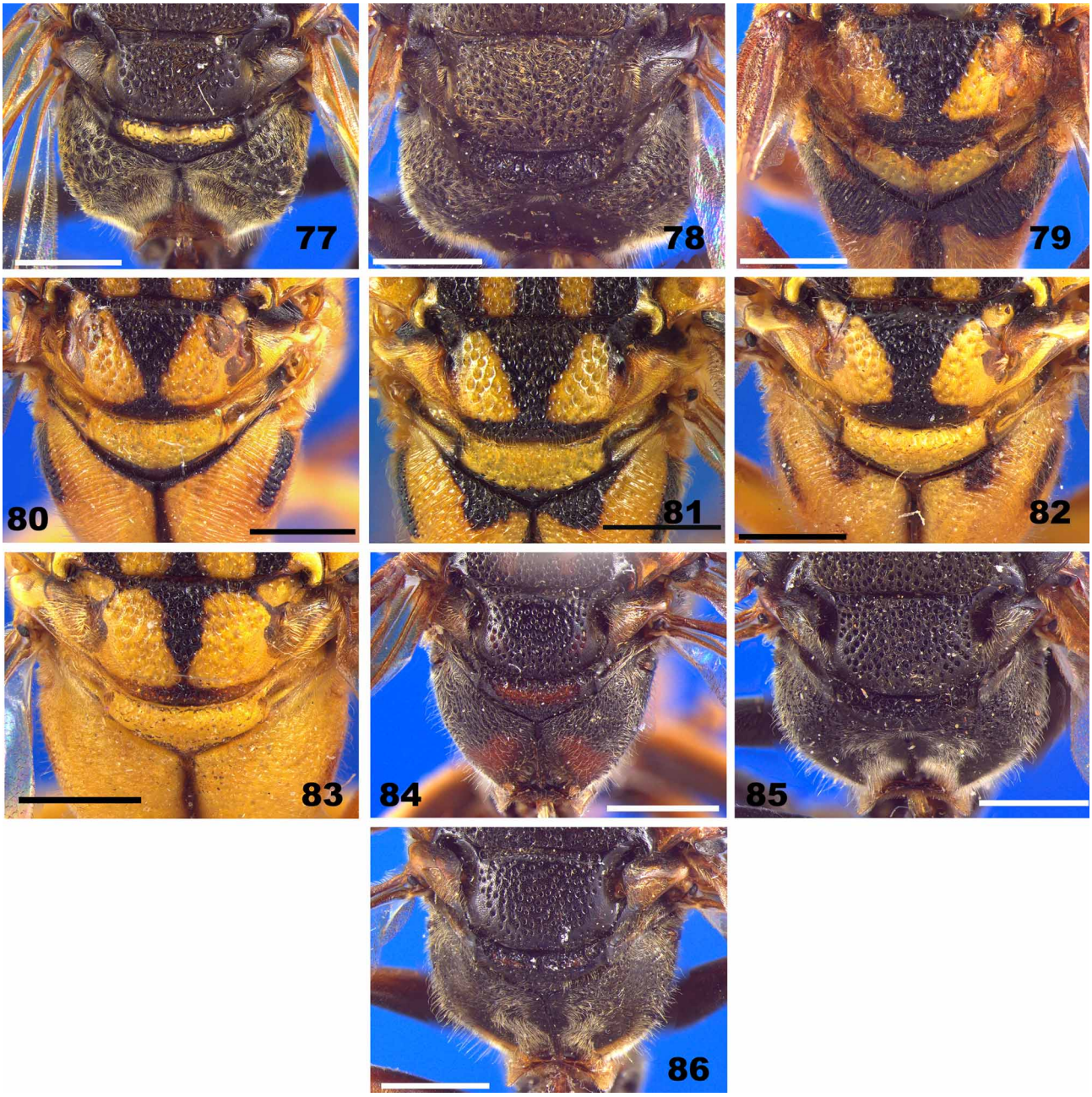


FIGURES 48–56. 48-53. Male habitus, lateral view. 53, 55. Male mid femur, anterior view. 54. Male scutellum, metanotum and propodeum, dorsoposterior view. 48. *Stenonartonia occipitalis*, paratype. 49. *S. flavotestacea*, melanic form. 50. *S. flavotestacea*, pale form. 51. *S. guaranitica*. 52, 55. *S. apicipennis*. 53. *S. tanykaju* **sp. nov.**, paratype. 54. *S. hasyva* **sp. nov.**, paratype. 56. *S. cooperi* **sp. nov.**, paratype. Scale = 1 mm.

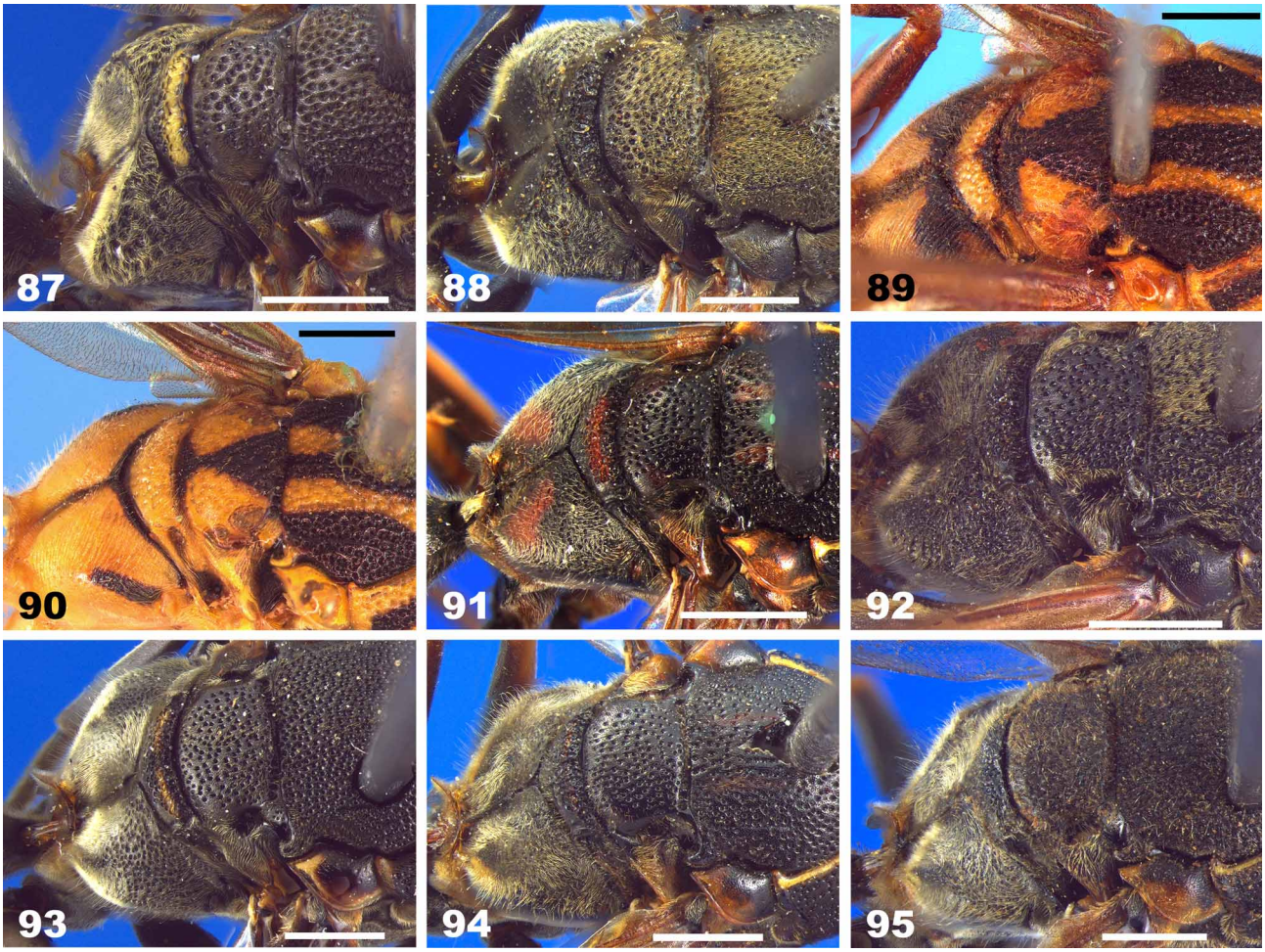


FIGURES 57–64. Male antennal apex, lateral (above) and ventral (below) views. 57. *Stenonartonia occipitalis* **sp. nov.**, paratype. 58. *S. polybioides*, paralectotype. 59. *S. hasyva* **sp. nov.**, paratype. 60. *S. cooperi* **sp. nov.**, paratype. 61. *S. flavotestacea*, melanic form. 62. *S. guaranitica*. 63. *S. apicipennis*. 64. *S. tanykaju* **sp. nov.**, paratype. Scale = 1 mm.

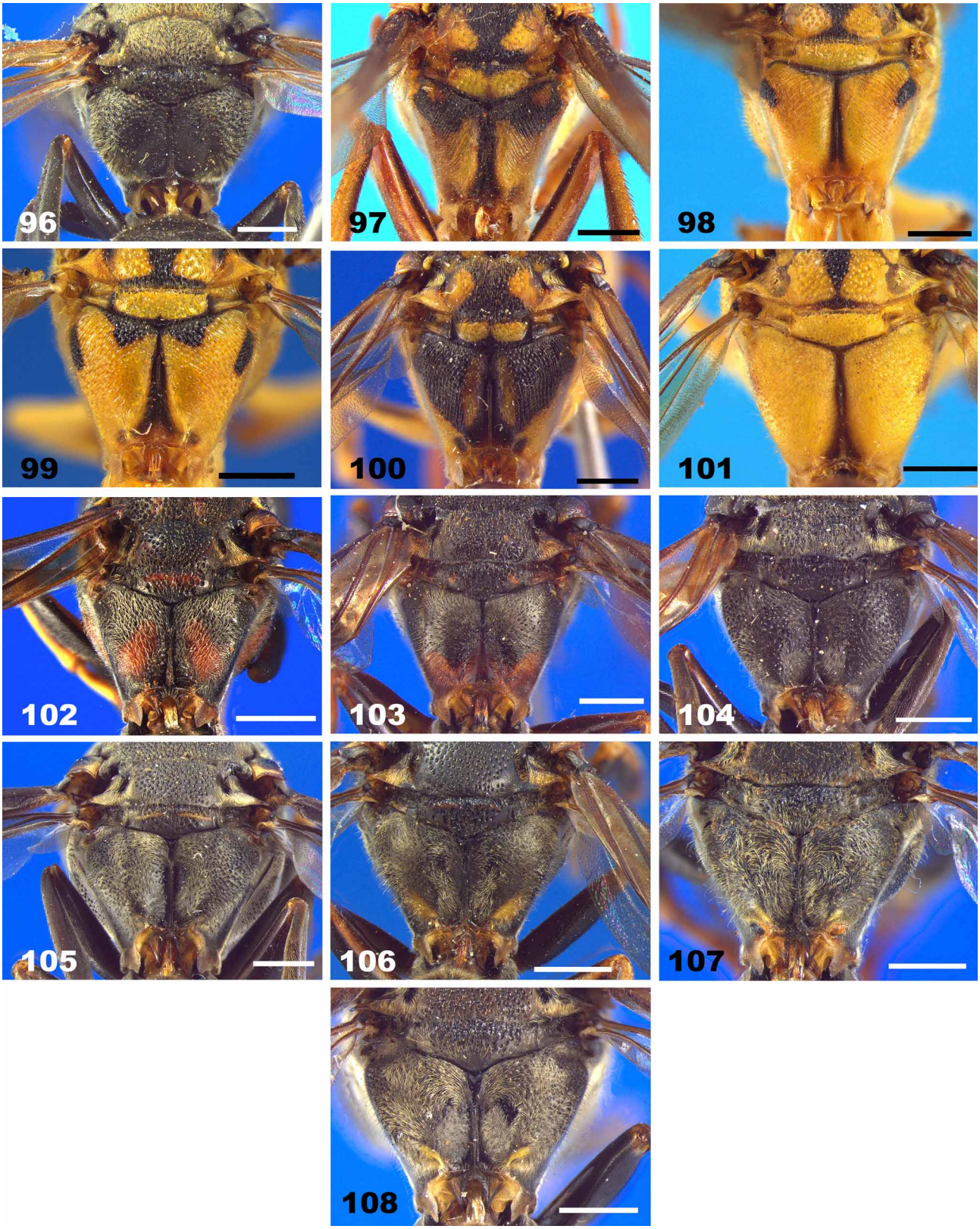
FIGURES 65–76. Female mesosoma, lateral view. 65. *Stenonartonia rejectoides* **sp. nov.**, holotype. 66. *S. occipitalis* **sp. nov.**, paratype. 67. *S. polybioides*, paralectotype. 68. *S. hasyva* **sp. nov.**, paratype. 69. *S. cooperi* **sp. nov.**, paratype. 70. *S. guaraya* **sp. nov.**, holotype. 71. *S. mimica*, melanic form. 72. *S. flavotestacea*, melanic form. 73. *S. guaranitica*, holotype. 74. *S. apicipennis*. 75. *S. tanykaju* **sp. nov.**, holotype. 76. *S. grossa* **sp. nov.**, holotype. Scale = 1 mm.



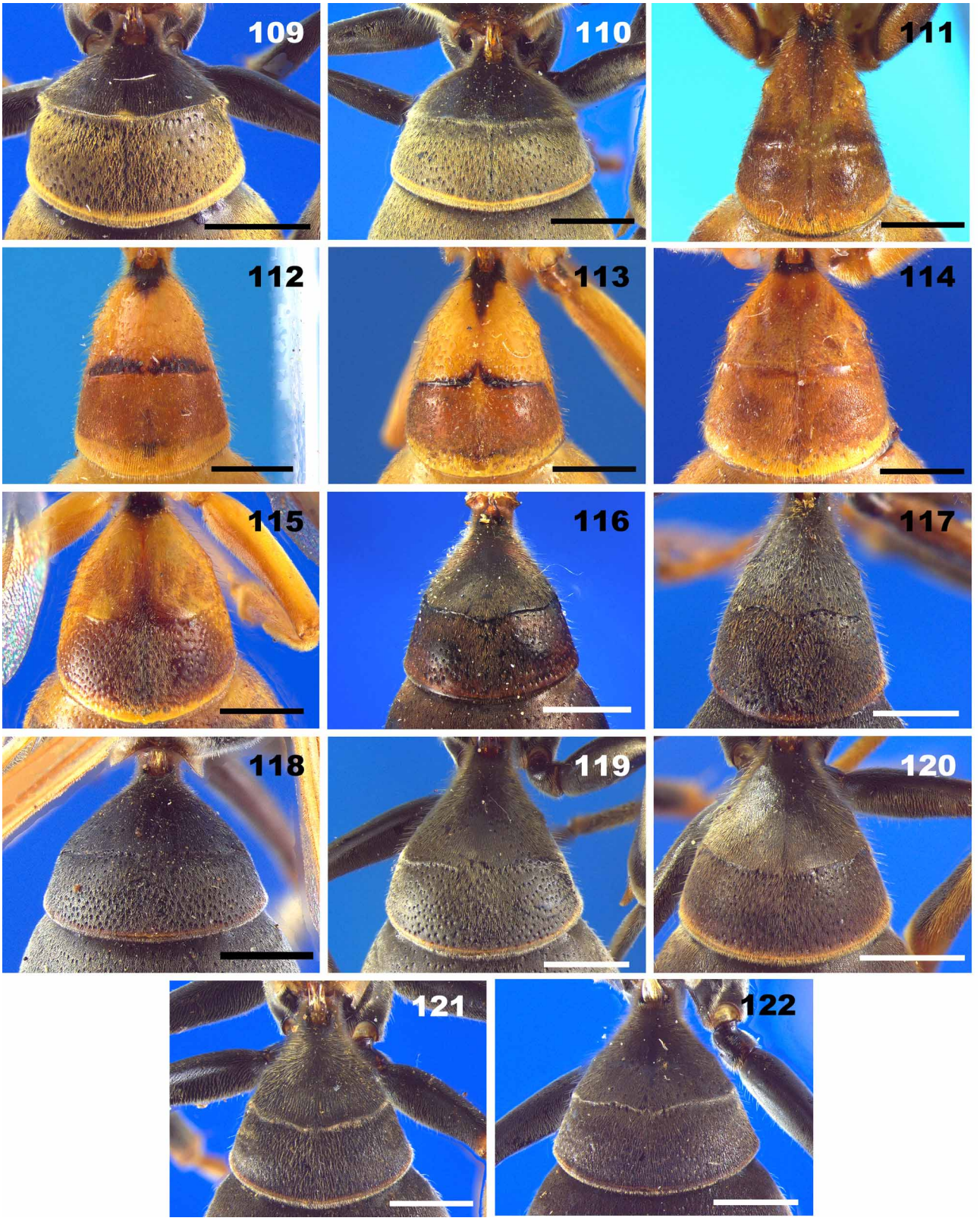
FIGURES 77–86. Female hind mesosoma, dorsal view. 77. *Stenonartonia rejectoides* **sp. nov.**, holotype. 78. *S. occipitalis* **sp. nov.**, paratype. 79. *S. polybioides*, lectotype. 80. *S. hasyva* **sp. nov.**, paratype. 81: *S. perdita* **sp. nov.**, holotype. 82. *S. cooperi* **sp. nov.**, paratype. 83. *S. guaraya* **sp. nov.**, holotype. 84. *S. mimica*, melanic form. 85. *S. guaranitica*. 86. *S. tanykaju* **sp. nov.**, paratype. Scale = 1 mm.



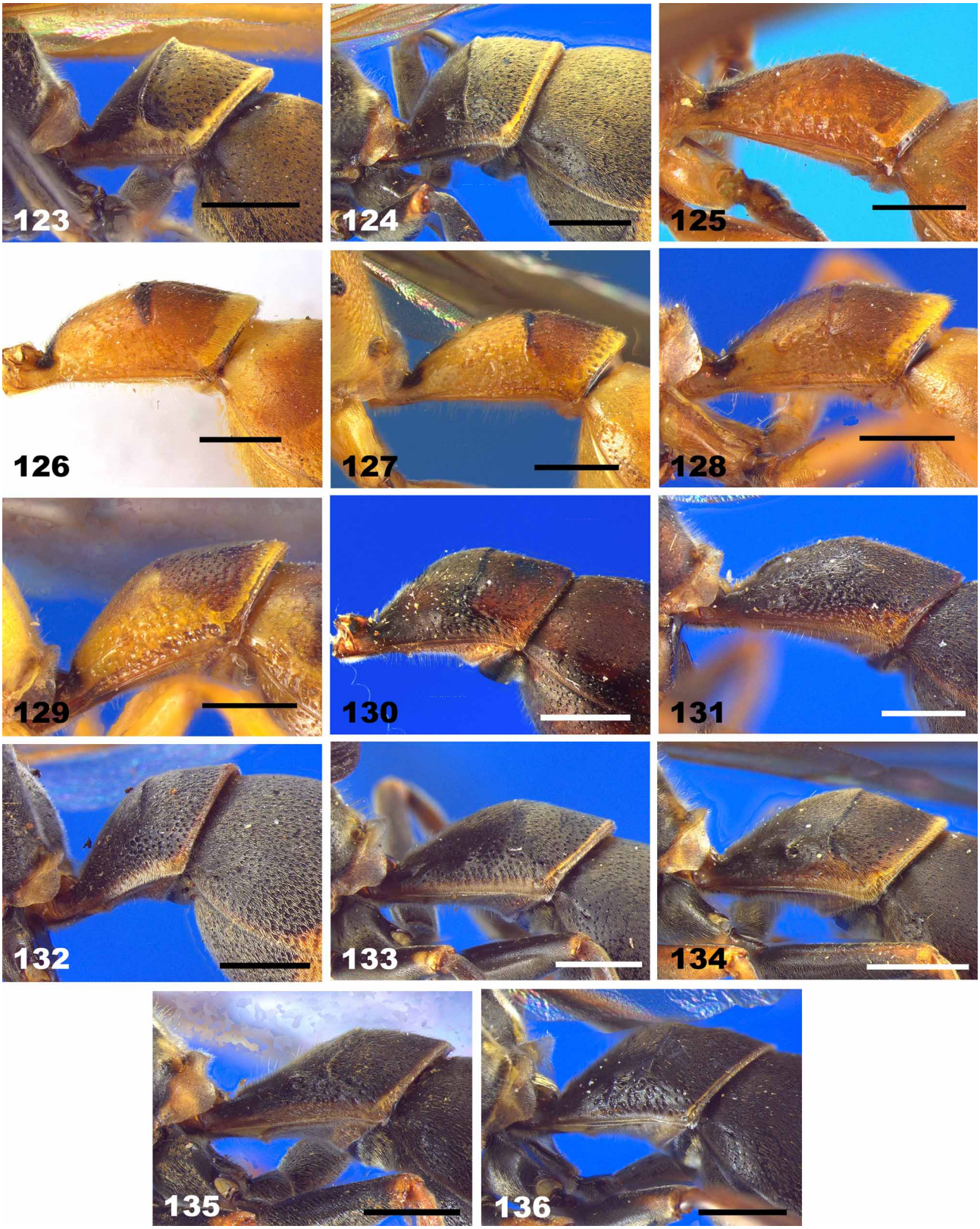
FIGURES 87–95. Female hind mesosoma, dorsolateral view. 87. *Stenonartonia rejectoides* **sp. nov.**, holotype. 88. *S. occipitalis* **sp. nov.**, paratype. 89. *S. polybioides*, lectotype. 90. *S. hasyva* **sp. nov.**, paratype. 91. *S. mimica*, melanic form. 92. *S. guaranitica*. 93. *S. apicipennis*. 94. *S. tanykaju* **sp. nov.**, paratype. 95. *S. hermetica* **sp. nov.**, holotype. Scale = 1 mm.



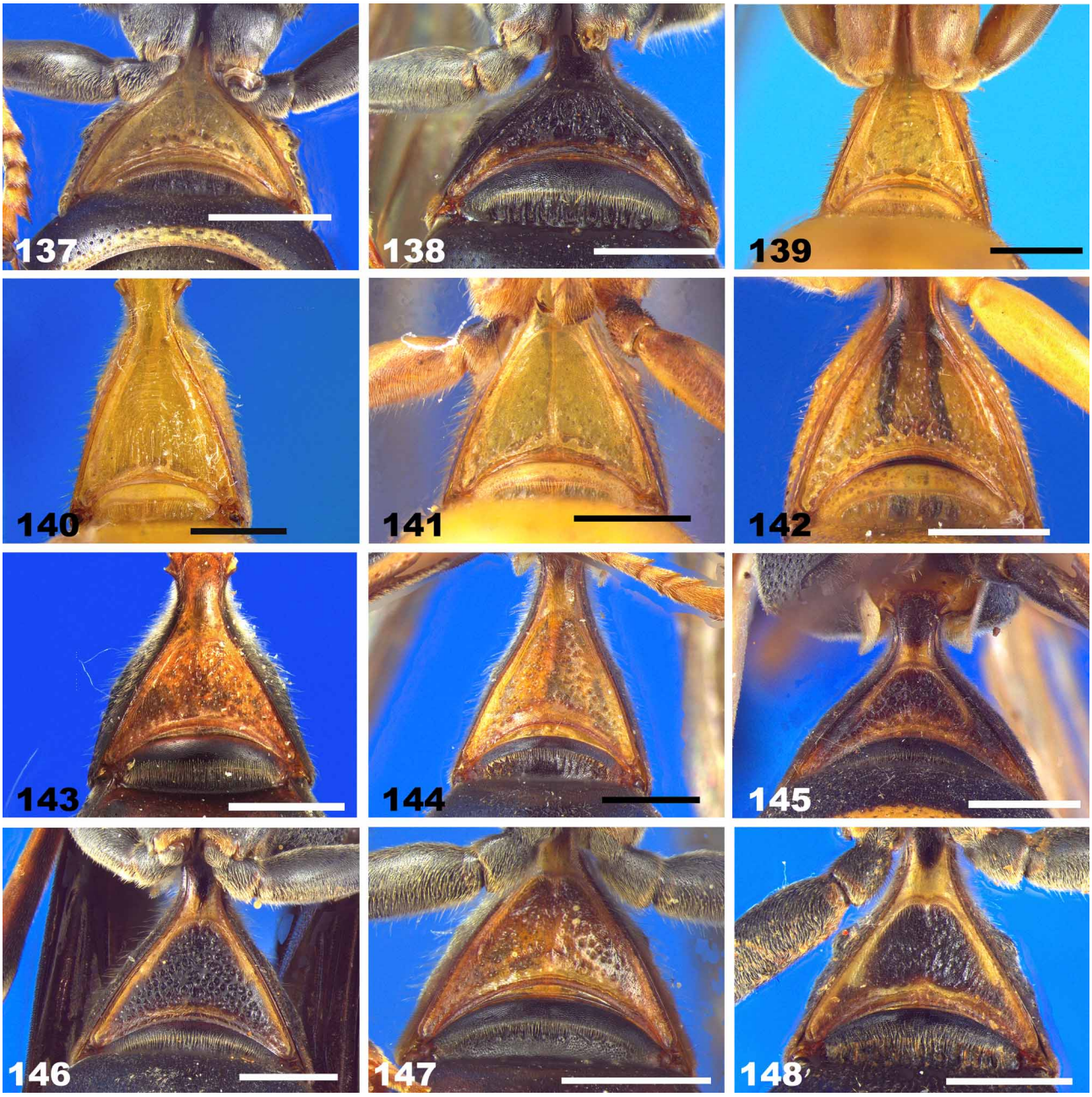
FIGURES 96–108. Female propodeum, posterior view. 96. *Stenonartonia occipitalis* **sp. nov.**, paratype. 97. *S. polybioides*, lectotype. 98. *S. hasyva* **sp. nov.**, paratype. 99. *S. perdita* **sp. nov.**, holotype. 100. *S. cooperi* **sp. nov.**, paratype. 101. *S. guaraya* **sp. nov.**, holotype. 102. *S. mimica*, melanic form. 103. *S. flavotestacea*, melanic form. 104. *S. guaranitica*. 105. *S. apicipennis*. 106. *S. tanykaju* **sp. nov.**, paratype. 107. *S. hermetica* **sp. nov.**, holotype. 108. *S. grossa* **sp. nov.**, holotype. Scale = 1 mm.



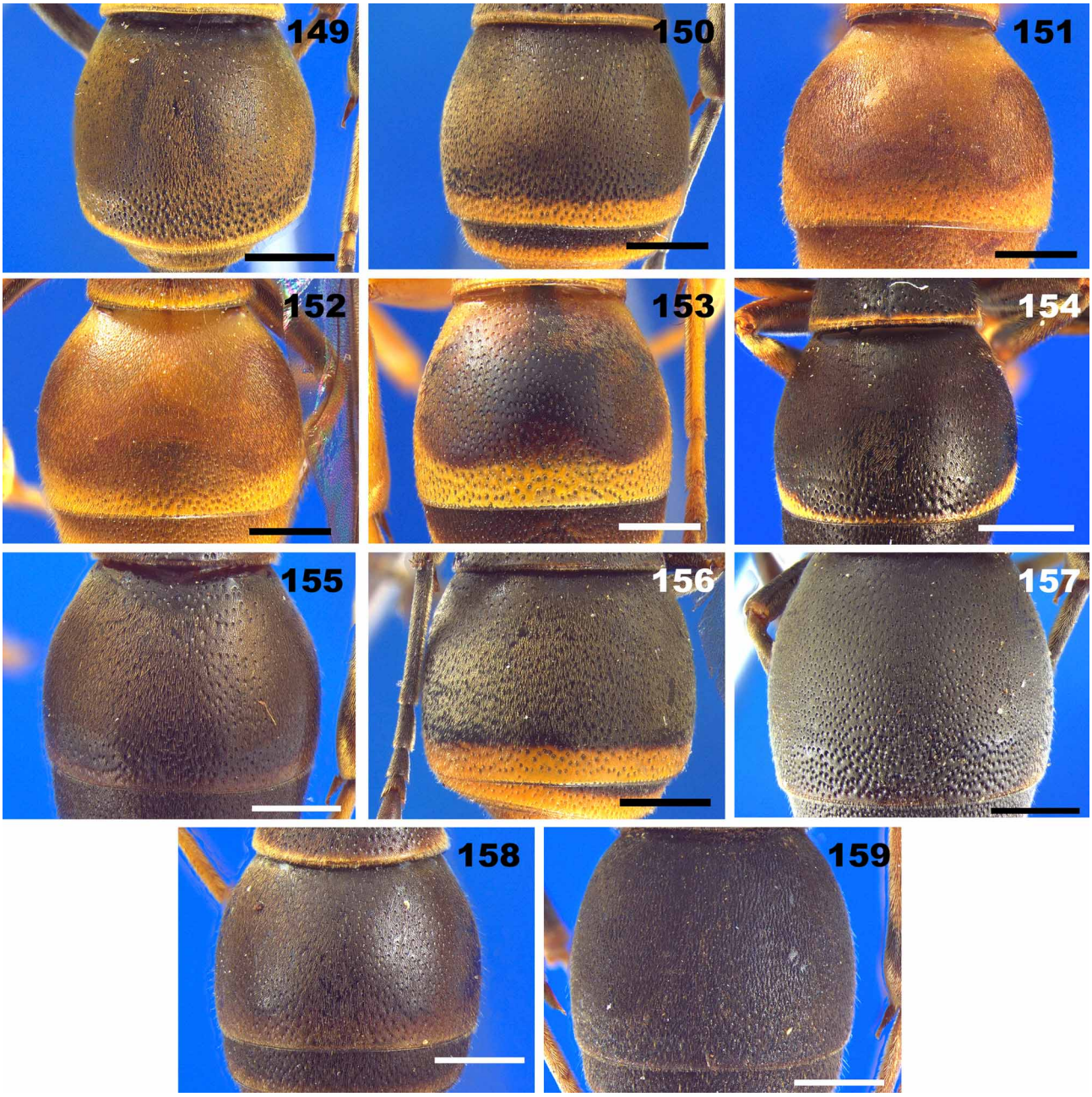
FIGURES 109–122. Female T1, dorsal view. 109. *Stenonartonia rejectoides* **sp. nov.**, holotype. 110. *S. occipitalis* **sp. nov.**, paratype. 111. *S. polybioides*, lectotype. 112. *S. hasyva* **sp. nov.**, paratype. 113. *S. perdita* **sp. nov.**, holotype. 114. *S. cooperi* **sp. nov.**, paratype. 115. *S. guaraya* **sp. nov.**, holotype. 116. *S. mimica*, melanic form. 117. *S. flavotestacea*, holotype. 118. *S. guaranitica*, holotype. 119. *S. apicipennis*. 120. *S. tanykaju* **sp. nov.**, holotype. 121. *S. hermetica* **sp. nov.**, holotype. 122. *S. grossa* **sp. nov.**, holotype. Scale = 1 mm.



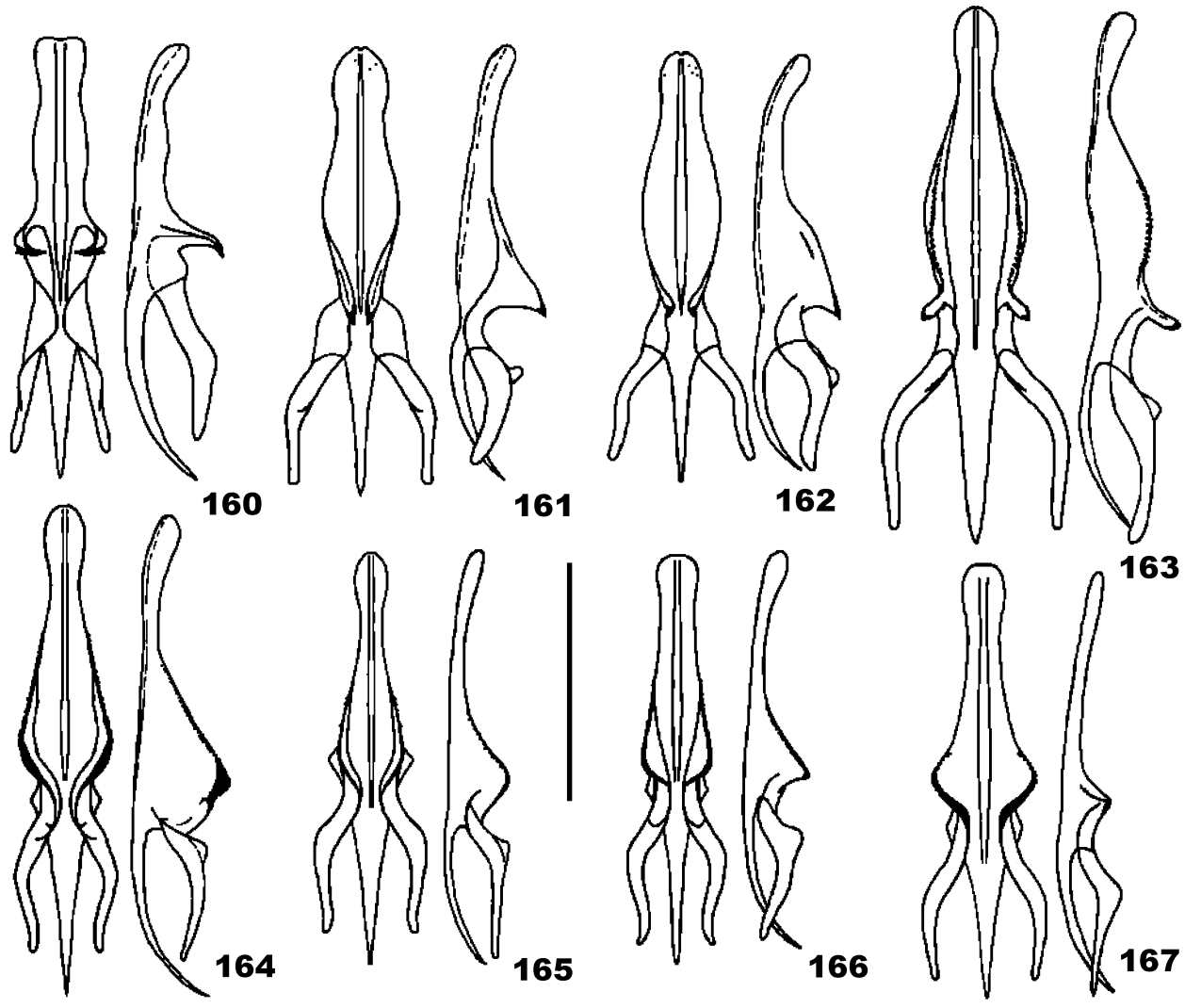
FIGURES 123–136. Female T1, lateral view. 123. *Stenonartonia rejectoides* **sp. nov.**, holotype. 124. *S. occipitalis* **sp. nov.**, paratype. 125. *S. polybioides*, paralectotype. 126. *S. hasyva* **sp. nov.**, paratype. 127. *S. perdita* **sp. nov.**, holotype. 128. *S. cooperi* **sp. nov.**, paratype. 129. *S. guaraya* **sp. nov.**, holotype. 130. *S. mimica*, melanic form. 131. *S. flavotestacea*, holotype. 132. *S. guaranitica*, holotype. 133. *S. apicipennis*. 134. *S. tanykaju* **sp. nov.**, holotype. 135. *S. hermetica* **sp. nov.**, holotype. 136. *S. grossa* **sp. nov.**, holotype. Scale = 1 mm.



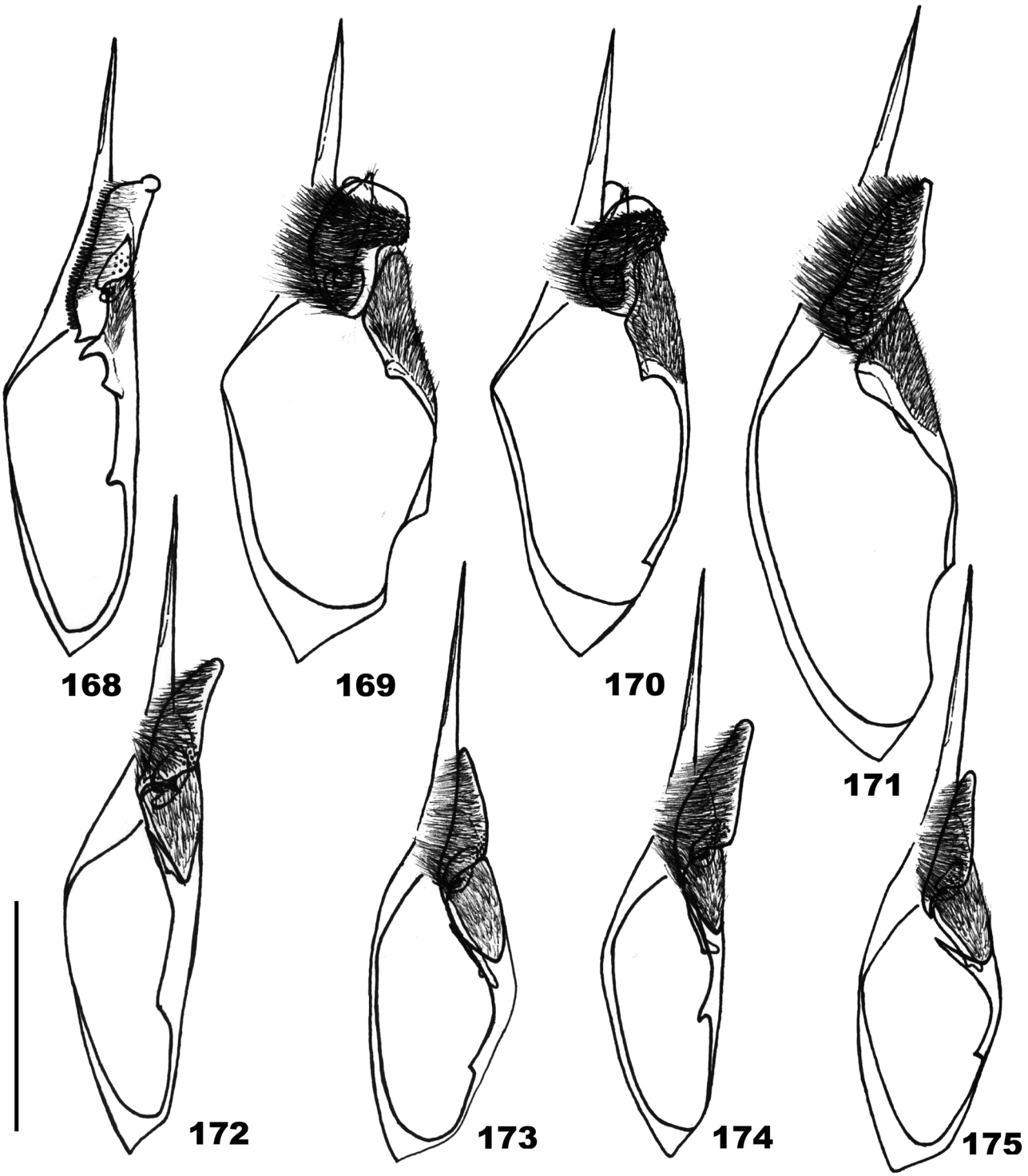
FIGURES 137–148. Female S1, ventral view. 137. *Stenonartonia rejectoides* **sp. nov.**, holotype. 138. *S. occipitalis* **sp. nov.**, paratype. 139. *S. polybioides*, lectotype. 140. *S. hasyva* **sp. nov.**, paratype. 141. *S. cooperi* **sp. nov.**, paratype. 142. *S. guaraya* **sp. nov.**, holotype. 143. *S. mimica*, melanic form. 144. *S. flavotestacea*, holotype. 145. *S. guaranitica*, holotype. 146. *S. apicipennis*. 147. *S. tanykaju* **sp. nov.**, holotype. 148. *S. hermetica* **sp. nov.**, holotype. Scale = 1 mm.



FIGURES 149–159. Female T2, dorsal view. 149. *Stenonartonia rejectoides* **sp. nov.**, holotype. 150. *S. occipitalis* **sp. nov.**, paratype. 151. *S. polybioides*, lectotype. 152. *S. cooperi* **sp. nov.**, paratype. 153. *S. guaraya* **sp. nov.**, holotype. 154. *S. mimica*, melanic form. 155. *S. flavotestacea*, melanic form. 156. *S. guaranitica*. 157. *S. apicipennis*. 158. *S. tanykaju* **sp. nov.**, paratype. 159. *S. hermetica* **sp. nov.**, holotype. Scale = 1 mm.



FIGURES 160–167. Male aedeagus, ventral (left) and lateral (right) views. 160. *Stenonartonia occipitalis* **sp. nov.**, paratype. 161. *S. polybioides*, paralectotype. 162. *S. hasyva* **sp. nov.**, paratype. 163. *S. cooperi* **sp. nov.**, paratype. 164. *S. flavotestacea*. 165. *S. guaranitica*. 166. *S. apicipennis*. 167. *S. tanykaju* **sp. nov.**, paratype. Scale = 1 mm.



FIGURES 168–175. Male paramere and volsella, inner view. 168. *Stenonartonia occipitalis* **sp. nov.**, paratype. 169. *S. polybioides*, paralectotype. 170. *S. hasyva* **sp. nov.**, paratype. 171. *S. cooperi* **sp. nov.**, paratype. 172. *S. flavotestacea*. 173. *S. guaranitica*. 174. *S. apicipennis*. 175. *S. tanykaju* **sp. nov.**, paratype. Scale = 1 mm.

FIGURES 176–177. Nest of *Stenonartonia cooperi*. 176. Ventral view. 177. Lateral view.

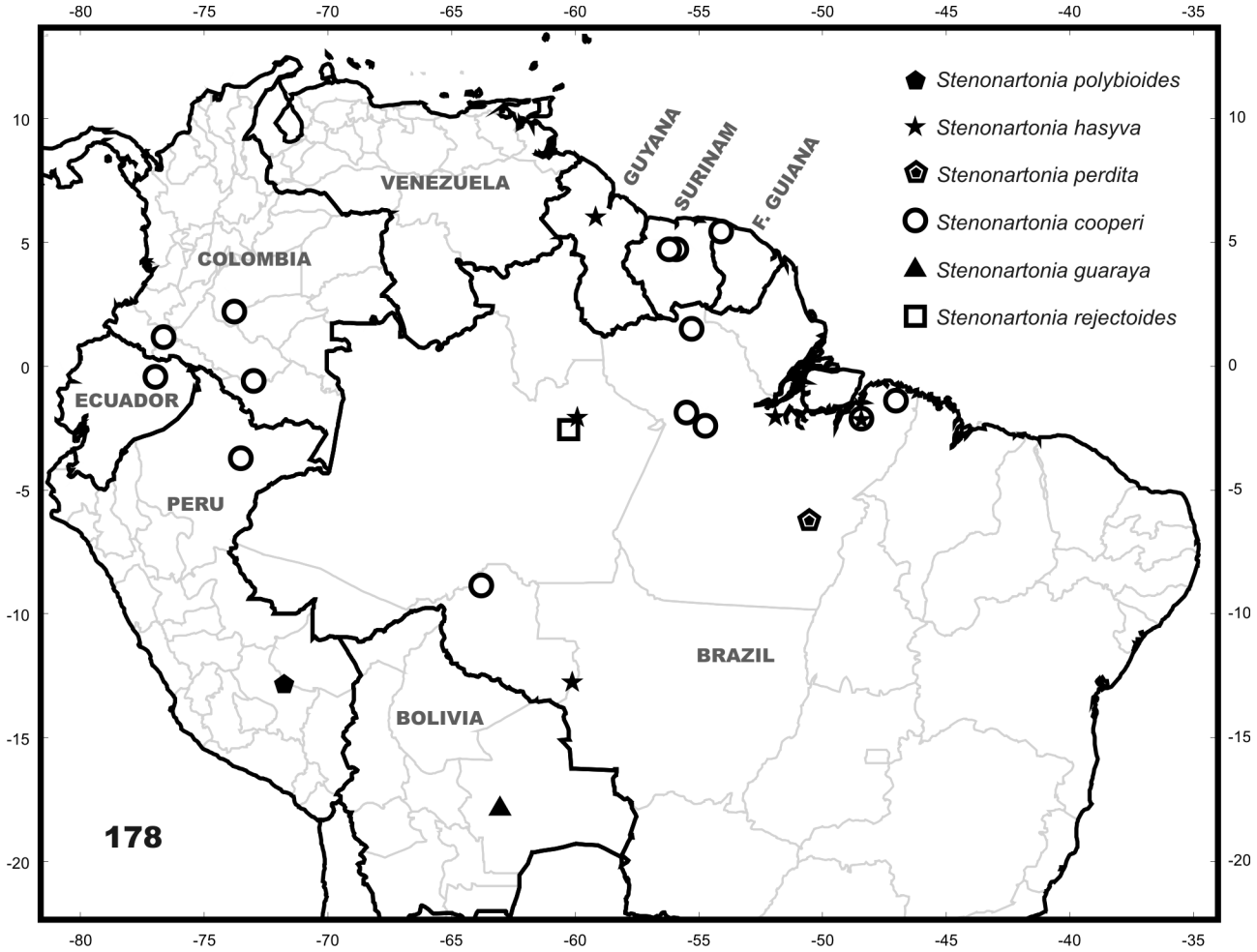


FIGURE 178. Distribution of *Stenonartonia* species.

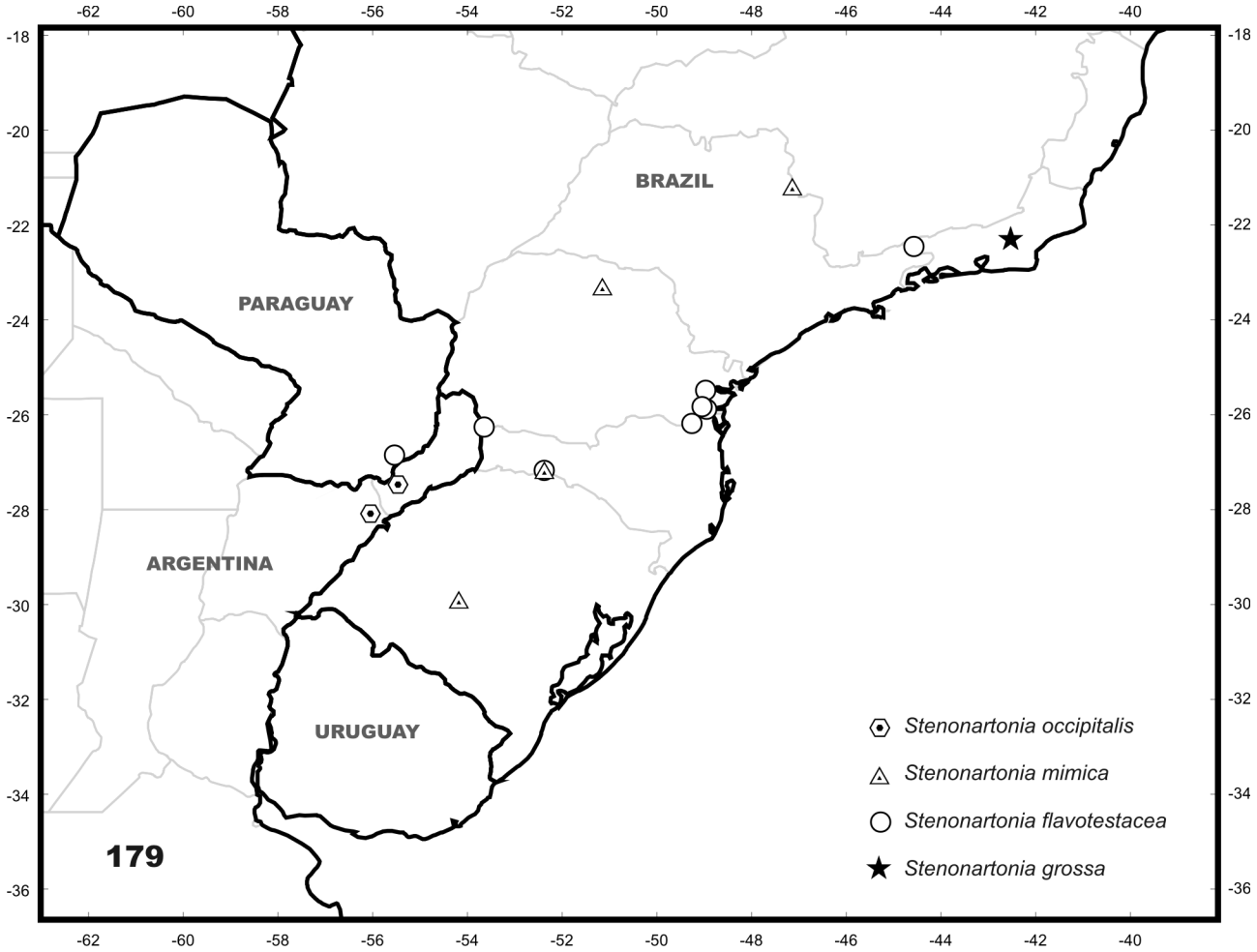


FIGURE 179. Distribution of *Stenonartonia* species.

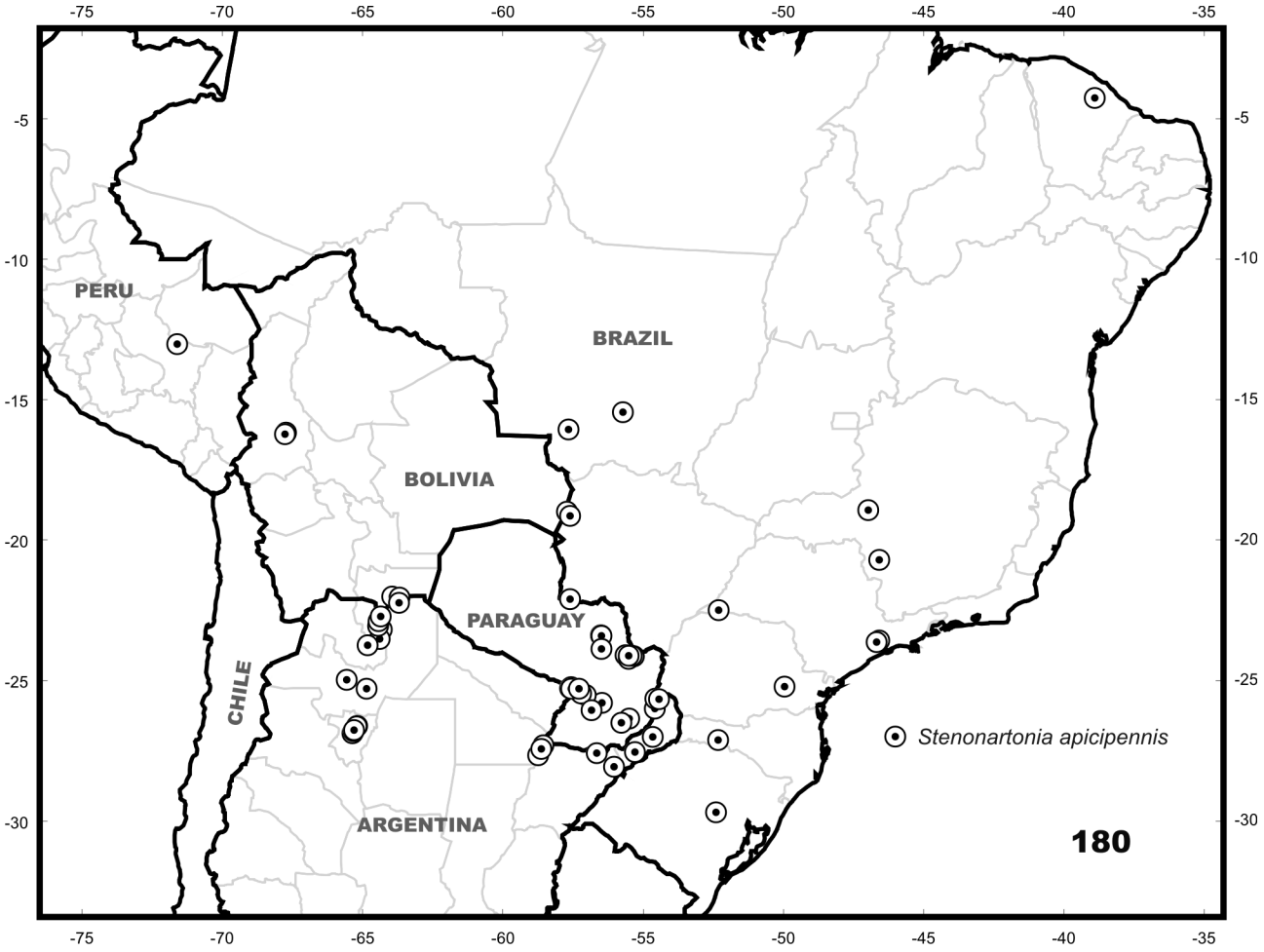


FIGURE 180. Distribution of *Stenonartonia apicipennis*.

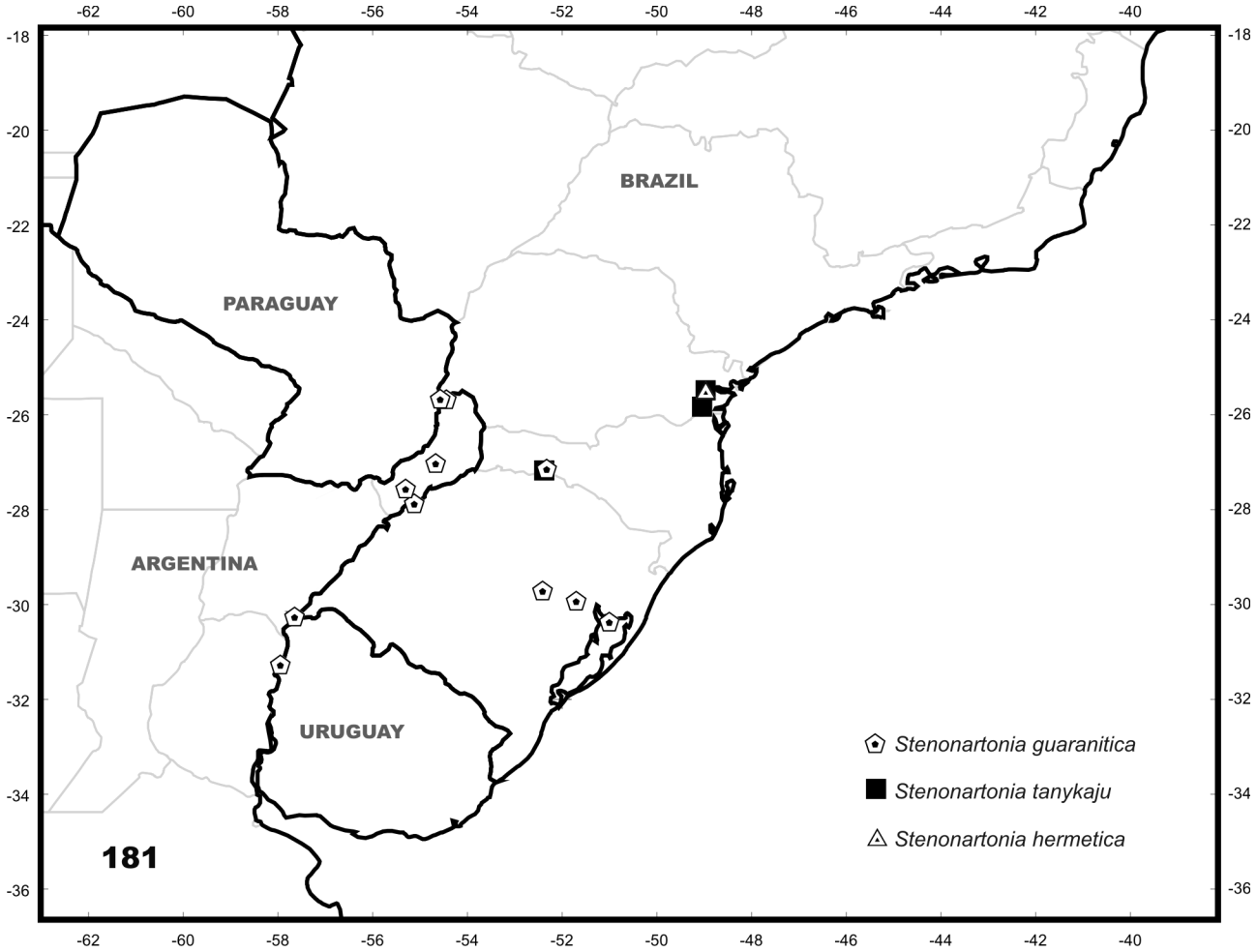


FIGURE 181. Distribution of *Stenonartonia* species.