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Three new genera of Banchinae (Hymenoptera: Ichneumonidae) from Central and South America

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Three new genera and four new species of Banchinae are described from Central and South America: *Terrylee* gen. n., is described from Peru and Honduras to accommodate *Terrylee olearius* sp. n. and *Terrylee peruensis* sp. n. (type species: *Terrylee peruensis* sp. n.); *Valdiviglypta* gen. n. and *Pristiboea* gen. n. are described from Chile (type species: *Valdiviglypta nimbus* sp. n. and *Pristiboea leiomano* sp. n.). *Terrylee* and *Pristiboea* are placed in the tribe Atrophini, *Valdiviglypta* tentatively in the tribe Glyptini. All the three new genera are morphologically very distinctive and two have such character suites that they may not immediately be recognizable as banchines. By describing these three Neotropical genera from Chile, Honduras and Peru we aim to draw further attention to the considerable morphological variation within the ichneumonid subfamily Banchinae.

Keywords: taxonomy; Banchinae; Amazonia; Central America; South America

Introduction

The ichneumonid subfamily Banchinae is globally distributed and usually well represented in all faunas. Where known, all species are koinobiont endoparasitoids of Lepidoptera larvae. Whilst a few genera (e.g. *Lissonota* and *Glypta*) are virtually cosmopolitan and very species-rich in the north temperate areas (e.g. Aubert 1978; Dasch 1988) there has been recent recognition of high generic diversity and species richness in the neotropics, mainly thanks to the tremendous efforts of Ian Gauld and co-workers in monographing the Costa Rican fauna (Gauld 2002). There are about 1700 described species and 61 genera of Banchinae now recognized (Yu et al. 2005), but with the banchine fauna of many areas of the world poorly known and a number of undescribed genera from tropical regions in museum collections.

The main aim of the present work is to describe three new genera discovered in Central and South America. All of them are distinctive and two have such distinctive character suites that they may not immediately be recognizable as banchines. By describing these genera we aim to draw further attention to the morphological variation within Banchinae, which is considerable.

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Materials and methods

The specimens of the new genera are deposited in the following collections: Natural History Museum, London, UK (BMNH), Smithsonian Institution, Washington, DC, USA (USNM) and The Zoological Museum, University of Turku, Finland (ZMUT). Two specimens of *Terrylee peruensis* sp. n. and two specimens of *T. olearius* sp. n., deposited at USNM, are currently on loan to ZMUT.

Observations at ZMUT were made using Olympus SZX10 and SZ40 stereomicroscopes. Layer photos of the holotype females and male paratypes of *Terrylee peruensis* and *T. olearius* (USNM/ZMUT) were taken using an Olympus SZX16 stereomicroscope attached to an Olympus E520 digital camera. Digital photos were combined using the programmes Deep Focus 3.1 and Quick PHOTO CAMERA 2.3. At BMNH, images of uncoated specimens were taken using a Leo 1455VP low vacuum scanning electron microscope and images of whole specimens were taken with a Canon EOS 450D digital camera with a Pentax 50 mm macro lens, with several partially focused images combined using Helicon Focus v. 4.80 software. Morphological terminology follows Gauld (2002). Fore wing length is given from the hind edge of the tegula to the apex of the wing. Ovipositor length is measured from its base, i.e. anterior to the apex of the metasoma.

Taxonomy

Genus ***Terrylee*** gen. n. Broad, Sääksjärvi & Veijalainen (Figures 1–5)

Type-species: *Terrylee peruensis* Broad, Sääksjärvi & Veijalainen.

Diagnosis

Terrylee is one the most distinctive genera of the subfamily Banchinae. It may easily be separated from all other banchine genera by the combination of the following characters: highly polished and shiny cuticle (Figures 1–5), long mandibles, with the upper tooth about three times longer than the lower tooth, wide gena, extremely narrow occiput, backward-facing "pocket" on the dorsal part of the pronotum (Figure 2), reduced hind wing venation and strongly upcurved ovipositor (Figures 1, 4).

Description

Small-sized (body length *c*.3–4.4 mm, excluding ovipositor, wing length *c*.3–3.8 mm) insects with highly polished and shiny cuticle, reduced hind wing venation, narrow occiput, small compound eyes, strongly up-curved ovipositor and black or dark brown, patterned orange, yellow and white (Figures 1, 3, 4). Clypeus evenly convex and wide, about 2.2–2.5 times as wide as high; in anterior view with margin almost transverse and with some long hairs (Figure 5). Malar space wide, *c*.0.9–1.3 times basal width of mandible. Mandible long and rather strongly tapered apically, with some long hairs and with upper tooth clearly longer (*c*.3 times) than lower tooth. Lower face subquadrate and weakly convex, with rather weak vertical swelling

Figure 1. *Terrylee peruensis* holotype female, whole insect.

and some scattered punctures and hairs. Margins of antennal sockets raised to form round lamellae. Inner margins of antennal sockets unspecialized, about as high as other margins. Frons highly polished and very slightly concave. Eyes and ocelli small, ocellar–ocular distance about 2.5 times maximum diameter of lateral ocellus. Gena wide and shiny, about 0.05–1.0 times as broad as compound eye (Figures 2, 4). Occipital carina dorsally complete, its lower part joining hypostomal carina distinctly above base of mandible. Occiput very narrow. Antenna moderately slim, not white-banded. Scape apically truncate, about 40° from transverse. Subapical flagellomeres with placoid sensilla evenly distributed. Mesosoma rather long and low, about twice as long as high, highly polished and shiny (Figures 2, 4). Pronotum rather long and shiny, in dorsal and lateral view with a pocket-like structure, posterior margin with rather weak swelling just opposite pocket-like structure (Figure 2). Epomia present, rather strongly developed and long, more or less central on pronotum. Dorsal, posterior corner of pronotum slightly twisted, partly exposing pre-spiracular sclerite. Mesoscutum convex and centrally somewhat flattened, highly polished, with some small punctures. Notauli very weakly developed and short but separating lateral lobes, or apparently absent. Mesopleurum shiny, with scattered punctures and hairs. Epicnemium with weak secondary carina near lower corner of pronotum. Sternaular region of mesopleurum weakly impressed. Epicnemial carina short, hardly reaching lower corner of pronotum, with lower part weakly sinuous. Metapleuron with submetapleural carina broadened anteriorly into relatively broad lobe. Propodeum short and fairly evenly rounded, with rather long hairs (Figure 2), carination varying from only pleural and

Figure 2. *Terrylee peruensis* holotype female, head, mesosoma and first tergite of metasoma, lateral.

posterior transverse carinae strong to pleural, posterior transverse, lateromedian longitudinal and lateral longitudinal carinae behind posterior transverse carina strong. Propodeal spiracle subcircular. Fore, mid and hind tibiae slimly clavate (outer surface subapically concave). Tarsal claws small and pectinate. Tarsomeres cylindrical. Fore wing with vein *3rs-m* entirely absent. *2m-cu* with a single short bulla close to *M*. Vein *cu-a* distal to base of *Rs&M*. Hind wing with very reduced venation, distal abscissa of *Rs* absent; *M* present only as a small stubb; distal abscissas of *Cu1* and *1A* absent. Tergite I, in lateral view, with spiracle positioned anterior to centre, about 0.38–0.4 of length from base, in dorsal view smooth and polished, with or without weak dorsal impression, with lateromedian longitudinal carinae present as short vestiges anteriorly. Sternite I short, not reaching back to spiracle, in lateral view forming evenly rounded, rather weak lobe (Figure 2). Tergite II subquadrate, with shallow but wide thyridia anteriorly. Laterotergites II–III rather narrow and turned under, laterotergites IV–V not clearly separated from their respective tergites. Female with subgenital plate moderately large and evenly but rather weakly sclerotized. Ovipositor strongly up-curved, about same length as hind tibia, apex subcylindrical, without dorsal subapical teeth or denticles, with weak subapical notch dorsally (Figure 1).

Etymology

Terrylee is named in honour of Dr Terry Lee Erwin, in recognition of his pioneering work on tropical rain forest canopies and for providing us with the ichneumonids of the diverse canopy fogging samples he has collected. The type species of the genus, *T.*

Figure 3. *Terrylee peruensis* paratype male, whole insect.

peruensis, was found from samples collected by Dr Erwin in Peruvian Amazonia. The gender of the genus name is masculine.

Remarks

We have found two species belonging to this new genus. *Terrylee peruensis* is only known from Peru and *T. olearius* from Honduras. The distribution of the genus is very interesting as there are no specimens known from Costa Rica, where the banchine fauna has recently been revised and is relatively very well known (Gauld 2002).

Terrylee peruensis sp. n. Broad, Sääksjärvi & Veijalainen
(Figures 1–3)

Material examined

The trails below are illustrated on the maps in Erwin (1990) and Wilson and Sandoval (1996). The "/ number" refers to trail marker, e.g. "Trocha Tachigali / 47" means 47 × 50 m, or 2350 m, from the zero mark on the Trocha Tachigali trail.

Holotype (♀). Trocha Tachigali / 47, Pakitza, Río Manu, Madre de Dios, Peru, 6 October 1991, 345 m altitude, T.L. Erwin and M.G. Pogue collectors. Insecticidal

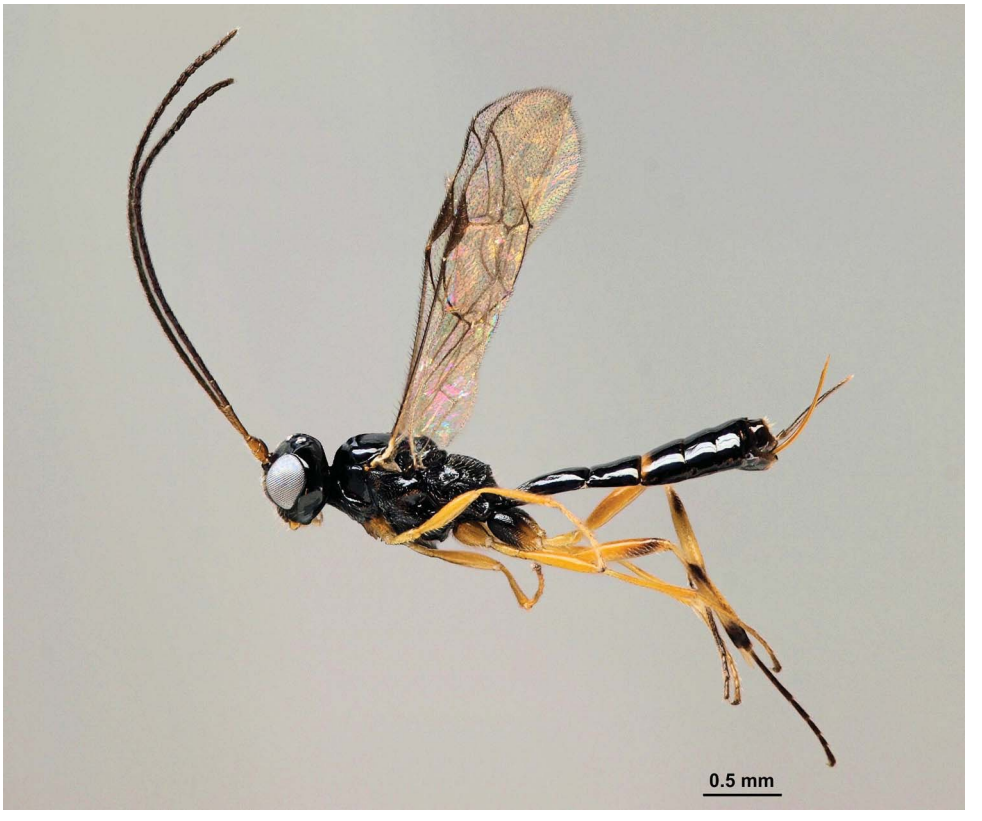

Figure 4. *Terrylee olearius* holotype female, whole insect.

fogging of a medium-sized tree with lianas, dead leaves and vines 2–15 m up, green foliage to 10 metres with some draft up. Lot # 205 in Erwin's database (USNM).

Paratypes (1 ♀, 2 ♂♂). One ♂ as in holotype (USNM). One ♀ Trocha Cana Brava / 7, Pakitza, Río Manu, Madre de Dios, Peru, 9 October 1991, 330 m altitude, T. L. Erwin and M. G. Pogue collectors. Insecticidal fogging of *Astrocaryum chambria* Burret dry leaves (nine fronds) to 4.5 m height. Lot # 215 in Erwin's database (ZMUT).

One ♂ Trocha Zungaro / 4.8, Pakitza, Río Manu, Madre de Dios, Peru, 26 September 1991, 330 m altitude, T. L. Erwin collector. Insecticidal fogging of the bamboo *Guadua weberbaueri* Pilger, green, at 4–5 m, open around. Lot # 114 in Erwin's database (BMNH).

Female: whole insect, see Figure 1; head, mesosoma and first tergite, see Figure 2; fore wing length *c*.3.8 mm. Antenna with 26–28 flagellomeres, first flagellomeres long. Tergite I *c*.1.6 times as long as apically wide, tergite II *c*.1.1 times as wide as long. Body almost entirely very polished and shiny with some long whitish hairs, mesopleurum more punctuate (with hairs), metapleurum with only a very few punctuates with hairs; mesopleurum, metapleurum and hind coxae partly very finely coriaceous. Other characters as in generic description.

Figure 5. *Terrylee olearius* holotype female, face.

Colour: head yellowish-orange, with mandibles (except for orange-brownish teeth) and clypeus white, frons, interocellar area, occipital area and occiput shiny black. Antennae dark brown. Mesosoma more or less entirely shiny black, with ventral corners of propleuron and pronotum, upper posterior corner of pronotum yellowish-brownish, tegula creamy white. Metasoma blackish-brown, with tergites I–II more or less black (with brownish hind rim), thyridia brownish, tergite III onwards fading from blackish to brown, sternites creamy whitish with some brownish areas. Subgenital plate creamy whitish. Ovipositor orange, ovipositor sheaths dark brown. Fore leg yellowish, with coxa, trochanter and trochantellus whitish. Mid leg yellowish, coxa whitish, trochanter black (yellowish distally), trochantellus brownish (with a small yellowish spot), distal tarsomeres fading into light brown. Hind leg brownish, coxa

whitish (in lateral view with a large dark brown spot), trochanter black (yellowish distally), trochantellus brownish (with small yellowish spot), femur yellowish (brown distally), tibia with two yellowish longitudinal stripes. Wings hyaline, pterostigma and wing veins light brown.

Variation: scutellum and hind rim of metanotum vary from black to brown.

Male: whole insect, see Figure 3. Similar to female in size, structure and colour; 28–29 flagellomeres.

Etymology

The specific name is derived from Peru.

Remarks

All the *Terrylee peruensis* specimens were collected by insecticidal canopy fogging in close proximity to the Pakitza Vigilante Station (11°56′47″ S, 71°17′00″ W), Río Manu, Madre de Dios, Peru, in September and October 1991. Two previous publications, Erwin (1990) and Wilson and Sandoval (1996), accurately detail the area, its climate, different forest types and other studies conducted there, as well as the study arrangements. In short, two distinct seasons with annual mean fluctuation in rainfall and temperature can be distinguished, and the tropical lowland rainforest vegetation is characterized by one or two canopy layers with several super-emergent trees and herbaceous or shrubby understory (Erwin 1990).

The tropical lowland rainforests of the Río Manu region harbour one of the most biodiverse – and ecologically one of the most poorly known – faunas on earth (Wilson and Sandoval 1996). As for arthropods, the ground beetle (Coleoptera: Carabidae; Erwin 1990), butterfly (Lepidoptera; Robbins et al. 1996) and spider (Araneae; Silva and Coddington 1996) communities are considered especially species-rich. Undoubtedly, several peculiar undescribed arthropod taxa are yet to be found from Manu.

Terrylee olearius sp. n. Broad, Sääksjärvi & Veijalainen (Figures 4, 5)

Material examined

Holotype (♀). Honduras, Olancho: 11 km N Catacamas, 14°56′56″N, 85°54′53″ W, 2010 ± 5 m, ridgetop cloud forest, Malaise, 9-12.V.2010, LLAMA#Ma-C-02-1-02 (USNM).

Paratypes (3♀♀). One ♀ as in holotype (USNM). One ♀ as in holotype (ZMUT), one ♀ as in holotype (BMNH).

Female: whole insect, see Figure 4; mandibles, clypeus, face, scape and first flagellar segment, see Figure 5; fore wing length *c*.3 mm. Antenna with 25 flagellomeres, first flagellomeres long. Tergite I *c*.1.9 times as long as apically wide, tergite II *c*.1 times as wide as long. Body almost entirely polished, shiny, with some long whitish hairs, mesopleurum and metapleurum more punctate (with hairs); propodeum with pleural, posterior transverse, lateromedian longitudinal, lateral longitudinal carinae behind

posterior transverse carina strong: mesopleurum, metapleurum, hind coxa partly very finely coriaceous. Other characters as in generic description.

Colour: head shiny black, mandibles (except orange-brown teeth), ventral half of clypeus dull yellow (Figure 5), palps whitish-yellow. Antennae dark brown, scape, underside of basal three or so flagellomeres yellowish-brown. Mesosoma more or less entirely shiny black, upper posterior corner of pronotum yellowish-brownish, tegula creamy white. Metasoma more or less entirely shiny black, tergite III with anterior yellowish-brown band, apical tergites fading to dark brown, sternites creamy whitish with some brown areas. Subgenital plate dark brown, posterior part yellowish-brown. Ovipositor yellowish-orange, ovipositor sheaths dark brown. Fore and mid legs dull yellow, final tarsomeres fading very slightly to light brown. Hind leg dull yellow, apical half of coxa dark brown, lateral-posterior part of femur with brown spot, tibia with two brown bands and tarsomeres brown. Wings hyaline, pterostigma, wing veins light brown.

Male: unknown.

Diagnosis

This species can easily be distinguished from *T. peruensis* sp. n. by, especially, the shiny black colouration of the head and more complete carination of the propodeum, with the pleural, posterior transverse, lateromedian longitudinal and lateral longitudinal carinae behind the posterior transverse carina all strong. The head of *T. peruensis* is yellowish-orange and only the pleural and posterior transverse carinae are strong. The two species are also geographically widely separated, with *T. olearius* only known from Central America (Honduras) and *T. peruensis* only known from South America (Peru).

Etymology

The specific name olearius is the Latin adjective meaning "oily", referring to the overall shiny black appearance of this species.

Remarks

All the known specimens of *Terrylee olearius* were collected in a Malaise trap in Honduras.

Genus ***Pristiboea*** gen. n. Broad, Sääksjärvi & Veijalainen (Figures 6–8)

Type species: *Pristiboea leiomano* Broad, Sääksjärvi & Veijalainen. Monotypic.

Diagnosis

Pristiboea seems to be most closely related to *Hadeleboea* Ugalde & Gauld. Like *Hadeleboea*, the one known specimen of *Pristiboea* has the clypeus notched, the frons convex and the hind rim of the metanotum strongly, triangularly produced laterally. Unlike *Hadeleboea*, the areolet is closed (vein *3rs-m* present) in *Pristiboea*, the tibiae

Figure 6. *Pristiboea leiomano* holotype female, whole insect.

have strong spines (Figure 7C), the tarsal claws lack pectination and the ovipositor is strikingly autapomorphic. Unlike any previously described banchine, both lower and upper ovipositor valves of *Pristiboea* have paired, lateral ridges bearing rows of small teeth (Figure 8A, B).

Description

Medium-sized (body length *c*.9 mm, excluding ovipositor, wing length 7 mm), thorax a little elongate, black and white, with strongly serrate ovipositor. Clypeus gently rounded, apically flattened and medially notched, 1.6 times as wide as high;

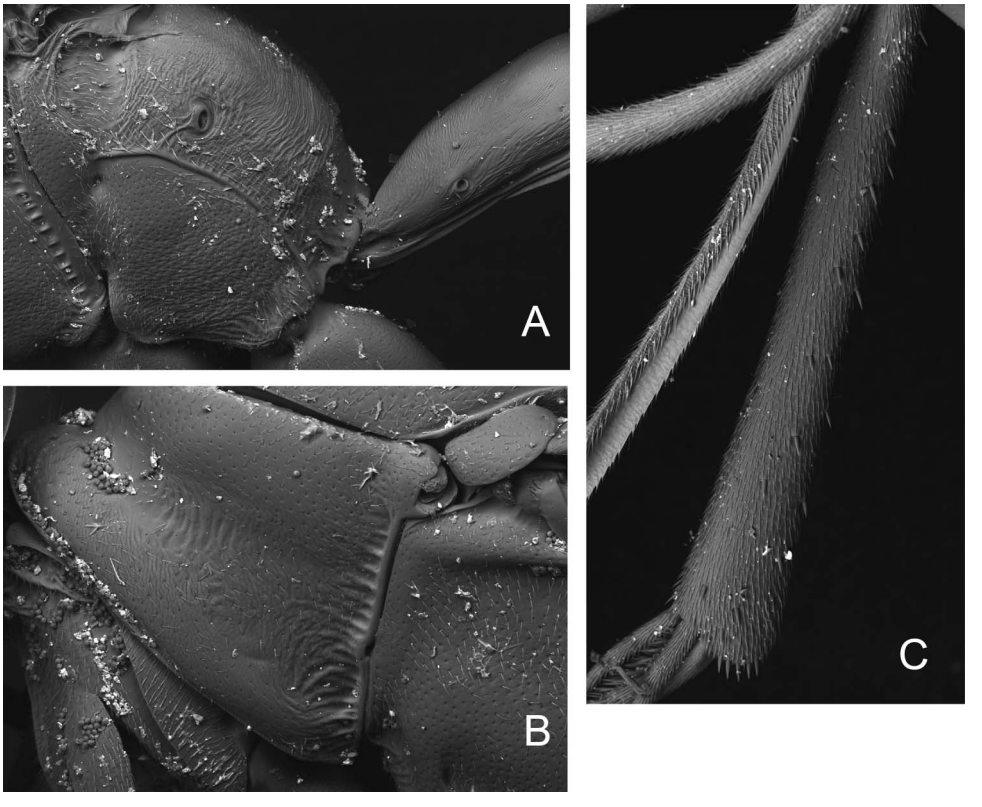

Figure 7. *Pristiboea leiomano* holotype female, (A) propodeum, lateral, (B) pronotum, lateral, (C) hind tibia, outer face.

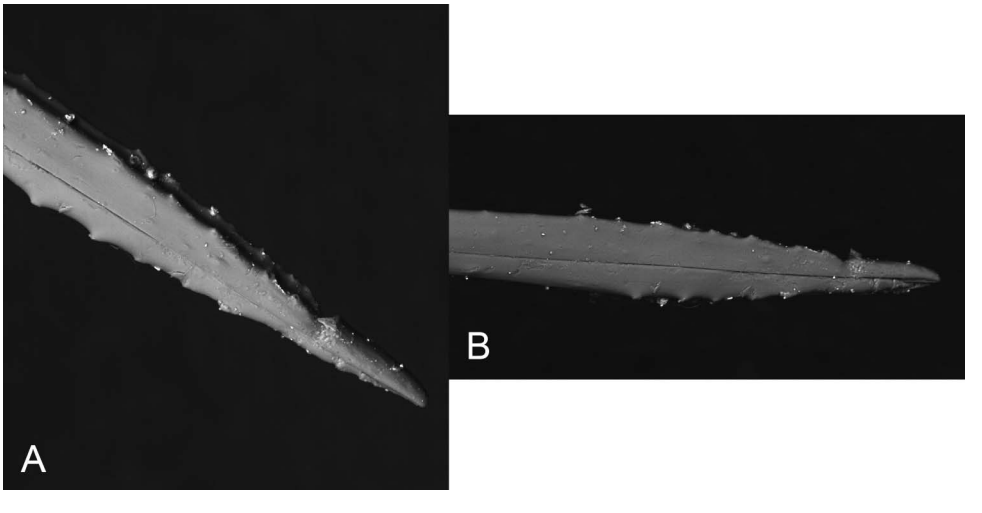

Figure 8. *Pristiboea leiomano* holotype female, ovipositor tip, (A) dorso-lateral, (B) lateral.

sparse, long hairs evenly distributed. Malar space 0.7 times basal width of mandible. Mandible evenly tapered, lower tooth very slightly shorter than upper. Face transverse and with low, longitudinal, central swelling. Margins of antennal sockets not raised. Inter-antennal carina apparently absent but difficult to see on the one specimen available. Frons convex, punctate, slightly depressed near anterior border of fore ocellus. Temples strongly narrowed. Eyes and ocelli small, ocellar–ocular distance 1.5 times maximum diameter of lateral ocellus. Occipital carina complete, joining hypostomal carina distinctly above base of mandible. Antenna slim, not white-banded. Scape a little longer than wide, truncate about 40° from transverse. Flagellomeres with placoid sensilla evenly distributed. Pronotum (Figure 7B) with rather long anterior, dorsal surface, lacking horizontal groove. Epomia absent. Dorsal, posterior corner of pronotum slightly twisted, in dorsal view triangular and not concealing spiracular sclerite. Notauli distinct anteriorly (but not reaching front margin of mesoscutum), fading out around level of tegula. Epicnemial carina present, ending distant from front edge of mesopleurum, just above level of lower corner of pronotum. Sternaulus absent. Mesepisternal sulcus distinct, narrow and unsculptured. Posterior transverse carina of mesosternum absent. Metapleurum with submetapleural carina strongly expanded anteriorly as vaguely trapezoidal lobe (Figure 7A). Metanotum with lateral sections produced as blunt, triangular lobes, pointing towards small projections on anterior face of propodeum. Propodeum gently rounded, with faint longitudinal groove medially. Propodeum with pleural carina present, other carinae absent although with area of sculptural differentiation at place of posterior transverse carina. Propodeal spiracle sub-circular. Legs slender, all tibiae bearing strong, spine-like setae scattered over outer surface and with row of apical spines (Figure 7C). Tarsal claws slender and weakly curved, lacking teeth but with long setae basally. Tarsomeres cylindrical. Tibial spurs long, inner spur *c*.1.3 times as long as outer. Inner hind tibial spur 0.5 times length of hind basitarsus. Fore wing with vein *3rs-m* longer than *2rs-m*, areolet petiolate. Vein *2m-cu* with two bullae, gap between shorter than length of bulla. Vein *cu-a* distal to base of *Rs&M* by 0.35 times length of *cu-a* and strongly inclivous. Hind wing with *Cu1* present, much closer to *1A* than to *M*. Upper outer corner of sub-basal cell slightly obtuse. Tergite I, in lateral view, with spiracle positioned at anterior 0.35. Dorsal and lateral longitudinal carinae lacking. Tergite evenly narrowing from base to apex. Sclerotized part of first sternite not fused with tergite and ending at about 0.2 of length of tergite. Second tergite transverse; thyridia narrow, transverse, close to anterior margin. Laterotergites II–III narrow, turned under, laterotergite IV onwards not separated. Subgenital plate large, triangular, ending some distance short of posterior level of apical tergite, with membranous, narrow triangular area postero-medially. Ovipositor straight, with dorsal, apical notch, 0.6 times length of fore wing. Upper valve with paired, longitudinal ridges apically, each ridge bearing small, low teeth over apical 0.18 of ovipositor; lower valves each with a longitudinal ridge bearing small teeth, thus giving a rectangular, serrate shape to ovipositor tip (Figure 8A, B). Upper valves flattened dorsally.

Etymology

Pristiboea is derived from the Greek *pristis*, "saw", referring to its ovipositor morphology, and *Deleboea*, the banchine genus which used to encompass various genera with

an expanded postero-lateral rim of the metanotum (see Ugalde and Gauld 2002). The gender of the genus name is feminine.

Pristiboea leiomano sp. n. Broad, Sääksjärvi & Veijalainen
(Figures 6–8)

Material examined

Holotype (♀). "Putaendo [Chile] 28.XI.82 M. Pino." (BMNH)

Female: whole insect, see Figure 6; fore wing length 7 mm. Antenna with 29 flagellomeres. Tergite I 1.35 times as long as apically wide, tergite II 0.65 times as wide as long. Body almost entirely finely coriaceous and with close, small, shallow punctures. Mandible basally coriacous and medially punctate, smooth on apical two thirds. Pronotum with longitudinal striation/crenulation over central, lateral area and posterior margin. Mesopleurum with speculum unsculptured, shiny. Propodeum with stronger coriacous sculpture than thorax, dorsal surface with transverse striations, short posterior face lacking striations. Coxae coriaceous, femora closely, finely punctate. Metasoma with sparse punctation, with tergites I–III coriaceous, then progressively less sculptured towards apex. Other characters as in generic description.

Colour: body basically black with copious white markings described as follows: head with broad, inner orbits up to top of head, outer orbits up to two thirds height of eye, as broad as mandible base at lower end, progressively narrowing; basal half of clypeus and two diverging lines from upper edge of clypeus to one third face height; large basal patch of mandible; pronotum with broad anterior stripe; mesopleurum with three white spots, on subtegular ridge, upper end of epicnemial carina and lower, posterior corner; mesoscutum with lateral, anterior stripes to just inside notauli; mesoscutum with central spot; scutellum with large central spot; postscutellum with small, central spot; tergite I with narrow, apical stripe over central two thirds, tergite VII with complete, broad, apical stripe, stripe increasing in size and extent over intervening tergites; sclerotized parts of sternites black, membranous areas creamy white, hypopygium largely brown/black with broad, apical rim. Thyridia brown. Legs with coxae black, large white marks on lateral surface of fore and mid coxae, longitudinal stripe on upper, lateral surface of hind coxa; trochanter of all legs dorsally black, fading to red laterally/ventrally; remainder of legs red, fading to dark brown/black on apical tarsomeres, with hind tarsus predominantly dark brown/black; inner faces of trochanters with narrow, apical, off-white streak and fore trochantellus predominantly cream-coloured.

Male: unknown.

Etymology

The specific name is taken from the Hawaiian leiomano, a fearsome-looking, shark-toothed club, and is to be treated as a noun in apposition.

Remarks

Nothing is known of the biology or habitat associations of this species.

Genus ***Valdiviglypta*** gen. n. Broad, Notton, Sääksjärvi & Veijalainen
(Figures 9, 10)

Type species: *Valdiviglypta nimbus* Broad, Notton, Sääksjärvi & Veijalainen. Monotypic.

Diagnosis

Valdiviglypta is a striking genus, with its large size, high and rather complete carination on the propodeum, strongly sculptured first metasomal tergite and a sternaulus-like groove that originates on the mesosternum.

Description

Large (body length *c*.17 mm, excluding ovipositor, wing length 16 mm), mostly black with strongly infuscate wings. Clypeus flattened, slightly concave, but convex basally, 1.8 times as wide as high, lower margin rounded, with some long hairs medially and basally. Malar space 0.6 times basal width of mandible. Mandible wide basally, strongly, triangularly narrowed, with long, sparse hairs and lower tooth slightly shorter than upper. Face transverse and with prominent, rounded, central swelling. Margins of antennal sockets slightly raised. Low inter-antennal carina present, frons slightly convex, heavily sculptured, head depressed at margins of ocelli, with well-defined grooves adjacent hind ocelli. Temples strongly narrowed, eyes large. Ocellar–ocular distance 1.5 times maximum diameter of lateral ocellus. Occipital carina complete, laterally with slightly sinuous section, joining hypostomal carina

Figure 9. *Valdiviglypta nimbus* holotype female, whole insect.

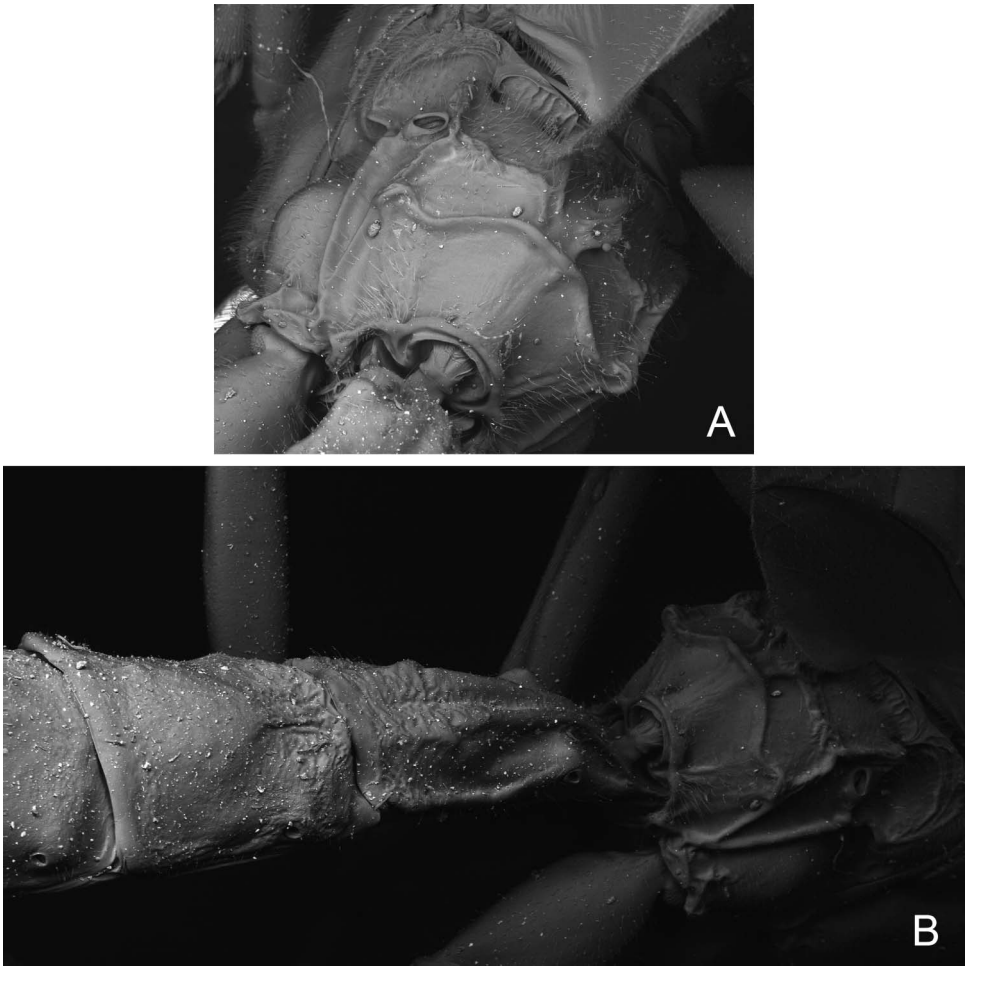

Figure 10. *Valdiviglypta nimbus* holotype female, (A) propodeum, dorsal, (B) propodeum and first to third tergites of metasoma.

distinctly above base of mandible. Antenna slim, white-banded sub-apically. Scape a little longer than wide, truncate about 45° from transverse. Flagellomeres with placoid sensilla evenly distributed. Pronotum short, with well-developed transverse groove. Epomia strong, straight. Dorsal, posterior corner of pronotum slightly twisted, in dorsal view rounded and not entirely concealing spiracular sclerite. Notauli distinct to two thirds length of mesoscutum, central lobe of mesoscutum protruding. Mesopleurum bulging out and with deep concavities around episternal scrobe (linking to mesopleural suture) and posterior half of subtegular region. Epicnemial carina present, ending distant from front edge of mesopleurum, just above level of lower corner of pronotum. Mesosternum with crenulate groove (ventrally displaced sternaulus?) originating at sternal angle of epicnemial carina, ending about mid-point of mesopleurum, closer to division of mesopleurum and mesosternum. Mesepisternal sulcus deep and strongly crenulate. Episternum bulging ventrally relative to coxal insertions. Lateral sections

of posterior, transverse mesosternal carina (near hind coxa) high, carina otherwise absent. Metapleurum with submetapleural carina obtusely triangularly broadened anteriorly, as shallow lobe with strong crenulae. Propodeum steeply declivous, with most carinae present and strongly developed (Figure 10A). Area superomedia confluent with area basalis. Area petiolaris not marked. Central sections of longitudinal median carinae, postero-lateral corner of area dentipara and hind rim of propodeum particularly strongly developed. Propodeal spiracle oval. Legs slender, lacking spines or pegs. Tarsal claws slender and weakly curved, each claw with three or four very short teeth. Tarsomeres cylindrical. Hind tibial spurs short, about 0.2 times length of hind basitarsus. Fore wing with vein *3rs-m* longer than *2rs-m*, areolet petiolate. Vein *2m-cu* with two narrow, widely spaced bullae. Vein *cu-a* distal to base of *Rs&M* by 0.4 times length of *cu-a* and strongly inclivous. Hind wing with *Cu1* present, about equidistant between *1A* and *M*. Tergite I, in lateral view, with spiracle positioned at anterior 0.45 and strongly protruding. Dorsal longitudinal carinae very strongly raised and close together, ending in two rounded protrusions at 0.8 of tergite length (Figure 10B). Tergite I with deeply excavate areas laterally and posterior to spiracle. Lateral carina present posteriorly, blunt but strong. Sclerotized part of sternite I not fused with tergite I and ending at about 0.4 of length of tergite. Tergite II about as long as wide, with raised central, roughly triangular area and broad, shallow depressions laterally, deepest anteriorly (Figure 10B). Anterior edge of tergite II with depressed, lateral areas. Laterotergites II–III narrow, turned under, laterotergite IV weakly separated from tergite, posterior laterotergites not separated. Subgenital plate large, triangular, but not quite extending to posterior level of apical tergite, with membranous, narrow triangular area postero-medially. Ovipositor slightly curved but basically straight, with dorsal, apical notch, 0.6 times length of fore wing.

Etymology

Valdiviglypta is named after the type locality, Valdivia, and the genus name *Glypta*, as we consider this genus to be best placed in the tribe Glyptini. The gender of the genus name is feminine.

Valdiviglypta nimbus sp. n. Broad, Notton, Sääksjärvi & Veijalainen
(Figures 9, 10)

Material examined

Holotype (♀). "Prov. Valdivia, Valdivia – CHILE 13.XI.80 E. Krahmer" (BMNH).

Female: whole insect, see Figure 9; fore wing length 16 mm. Antenna with 36 flagellomeres. Tergite I about 2.3 times as long as apically wide, tergite II 1.15 times as long as wide. Head and mesosoma with fine, regular punctation, except clypeus coriaceous. Mandible basally, medially coriaceous and medially strongly punctate, apically smooth. Head with background sculpture finely coriaceous, mesosoma lacking background sculpture. Propleurum with some transverse striation on lower part. Pronotum with striation and aciculation anteriorly/ventrally, anterior edge strongly punctate. Punctation strongest on mesosternum and epicnemium. Rear part of mesopleurum impunctate, propodeum (except metapleurum) impunctate. Coxae and femora

regularly, finely punctate; legs with fine micro-reticulation. Metasoma with tergite I smooth but with some postero-lateral rugosity and anterior third of tergite II with rugosity. Hind edges of tergites I and II with shiny, transverse band, sculpture otherwise "satiny". Metasoma progressively shinier posteriorly. Other characters as in generic description.

Colour: black, white in the following areas: 17.5 sub-apical flagellomeres (apical flagellomere black), tarsomere IV of fore leg, tarsomeres III–IV of mid leg, tarsomeres II–V of hind leg (except V black apically and I off-white apically). Fore femur with pale brown area apically on anterior face; mandible with brown medio-dorsal patch. Sternites mostly dark brown, sternites II–IV with antero-lateral oval, pale patches; membranous areas pale. Wings strongly infuscate, brown.

Male: unknown.

Etymology

The specific name is derived from the Latin noun for rain or cloud, *nimbus*, referring to its dark wings, and is to be treated as a noun in apposition.

Remarks

Nothing is known of the biology of *Valdiviglypta nimbus* and we have no information on the habitat in which the one known specimen was collected.

Discussion

Most Banchinae can be readily recognized by the combination of an anteriorly expanded submetapleural carina (e.g. Figure 7A), evenly curved posterior transverse carina of the propodeum (with other carinae reduced) and notched ovipositor. However, some or all of these characters do not apply to aberrant genera and species. Gauld and Wahl (2000) proposed two further apomorphies for the subfamily: placoid sensilla absent from the sub-apical, ventral surface of the antennal flagellum and the upper posterior corner of the pronotum flattened and twisted (e.g. Figure 7B). However, they did not fully investigate the presence or absence of these two character states within Banchinae and within the wider Ophioniformes group of subfamilies. The three genera described in this paper all have even distributions of placoid sensilla over the dorsal and ventral surfaces of the flagellum, as do some other banchine genera (some *Banchus* group: specimens in BMNH). Some genera of Metopiinae have dorsal placoid sensilla only, as do Pedunculinae, most Ichneumoninae and many Cryptinae. Additionally, a flattened and slightly twisted upper hind corner of the pronotum is also found in many Ctenopelmatinae, where the character may be useful in defining tribes or genus-groups (Broad and Wharton, in prep.), *Sphinctus* (Tryphoninae), *Lycorina* (Lycorininae) and *Poecilocryptus* (Labeninae). Within the Ophioniformes group both of these characters are phylogenetically informative but are by no means autapomorphic for Banchinae. Useful recognition characters are the anteriorly widened submetapleural carina, strong posterior transverse carina of the propodeum, rather large and triangular hypopygium and notched ovipositor.

The Banchinae currently comprises three tribes, Atrophini, Banchini and Glyptini. Although each is readily diagnosable the tribes are not well characterized by apomorphies and there is little evidence that each of these tribes is reciprocally monophyletic (Wahl 1988; Quicke et al. 2009). Two genera described here, *Terrylee* and *Valdiviglypta*, do not strongly resemble any other described genera.

Despite its strange habitus, *Terrylee* may be placed in the subfamily Banchinae by the possession of the following diagnostic features: tarsal claws pectinate, subgenital plate large, ovipositor with a subapical notch, and the dorsal, posterior corner of the pronotum slightly twisted. Within Banchinae, *Terrylee* may further be classified in the tribe Atrophini by the long ovipositor and the absence of lateromedian grooves on metasomal tergites II–IV.

Pristiboea is readily placed in the tribe Atrophini and belongs to the *Deleoboea* group of genera, as discussed under "remarks".

Assigning *Valdiviglypta* to a tribe is problematic but we assume that it belongs to Glyptini on the basis that diagonal grooves are present, but faint, on the second tergite, and the propodeum has more complete carination than is normal in Banchinae, which is most similar to the glyptine genus *Teleutaea*. The first of these characters is putatively apomorphic but the second may be plesiomorphic. Banchinae generally lack all but the posterior transverse carina of the propodeum but a few genera possess traces of the median longitudinal carinae. Other than *Valdiviglypta*, the banchines with the most complete propodeal carination are a few species of *Teleutaea* and *Apophua*. Although the Glyptini possess the adult apomorphy of diagonal grooves on some metasomal tergites, Wahl (1988) could find no apomorphies in the larval head capsule, relative to the other tribes. A working hypothesis is that *Teleutaea* and *Valdiviglypta* are relatively basal genera of Banchinae and that Glyptini are possibly paraphyletic with respect to the remaining Banchinae.

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