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Three new genera of Proscopiidae (Orthoptera, Eumastacoidea)

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Abstract

Proceeding from the revision of the genus *Proscopia* Klug 1820, two groups of species are separated which do not have the characters of that genus. These species are grouped forming two new genera: *Paraproscopia* n. gen. and *Pseudoproscopia* n. gen. Both are described here, together with *Carbonellis* n. gen., a genus that contains two new species and one junior synonym. The type species are defined, tables of dimensions and keys for the identification of species provided, and new species described, principally from the collections of the National Museum of Natural History of París, France, the Instituto de Ciencias Naturales de la Universidad Nacional de Colombia, Museu de Zoologia of Universidade de Sao Paulo and the Museu de Río de Janeiro, Brasil.

Key words

taxonomy, Proscopiidae, spermatheca, phallic complex, Neotropical distribution, *Pseudoproscopia*, *Paraproscopia*, *Carbonellis*

Introduction

During the recent revision of the genus *Proscopia* Klug 1820 (Bentos-Pereira 2006), along with the genus *Taxiarchus* reinstated by Jago (1989), the male and female genital characters of the species of this large genus were found to be very diverse. A careful study of the types and some other unidentified insects in collections induced us to try to organize them in a manner to permit a more certain characterization and so avoid in the future, the erroneous identifications and numerous synonymies which have afflicted the study of some species of the Proscopiidae.

Many of the species described under the genera *Taxiarchus* and *Proscopia* differ in the sclerified plates of the phallic complex and in the form and quantity of their spermathecae, although they share a remarkably uniform external habitus. This has led us to create three new genera*: Carbonellis*, *Paraproscopia* and *Pseudoproscopia*—these are described below. They share with *Proscopia* Klug the property of having an extremely homogenous external morphology in both males and females, which enormously increases the difficulty of identification of genera and species.

The inclusion of characters derived from the female genitalia, along with the more traditional male ones, allows a more trustworthy species identification. The three genera are of Panamazonian distribution, from the mouth of that river to the region of Loreto, Peru, and extending from the Mato Grosso of Brazil via Colombia to Costa Rica.

Methods

Previously described species are synonymized on the basis of their type specimens, which were examined in the collections where they are deposited. In these collections we further identified other specimens, either as known species or as new ones. The nomenclature adopted for the male genitalia is that of Jago (*op. cit.*). The taxonomic efficacy of the female genitalia has been proven in several previous works (Bentos-Pereira 2000; 2003a, b). The genitalia of both sexes were examined after dissection and maceration in 10% KOH solution. Each specimen examined was labelled with the symbol 'abp' and a correlative number, in addition to the labels deriving from the original collection. Photos of the type specimens from the personal collection of the author and Prof. C.S. Carbonell are provided (Figs 86 to 97). The dimensions measured are those which have proven significant in this family (Bentos-Pereira 1996). The distribution maps were made, bearing in mind the biogeographical vegetation zones of Cabrera & Willink (1980), some bioecological considerations re the localities derived from personal communications from Dr. C. Amedegnato, Prof. C. S. Carbonell and Dr. Klaus Riede, and from the data on the specimen labels, mostly deriving from Dr. M. Descamps.

Specimens were from the following institutions: Museum National d'Histoire Naturelle, Paris, France (MNHNP). Academy of Natural Sciences, Philadelphia, USA (ANSP). Museu de Zoology, Universidade de Sao Paulo, Brazil (MZSP). Museu de Rio de Janeiro, Brazil (MRJ). Museum fur Naturkunde, Berlin, Germany (MN). Naturhistorisches Museum, Vienna (NHM).

Carbonellis n. gen

Etymology.— Genus dedicated to a Prof. Carlos S. Carbonell, a great specialist in Neotropical Orthoptera, a teacher and friend.

Type species.— *Carbonellis urihii* n. gen. n. sp. Fig. 90. Table 1.

Diagnosis.—Wingless, sexually dimorphic insects. Males small with the head strongly constricted behind the eyes. Fastigium small and inclined downwards. Eyes globose. Subgenital plate short and truncate. Pronotum and prosternum together forming a cylinder.

Hind femora moderately enlarged in their proximal half. Hind tibiae lacking spines on the distal extremities of their internal margins. Abdominal segments slightly inflated posteriorly. Females medium to large in size, with strong ovipositors. Head almost conical, slightly constricted below the eyes.

Table 1. Measurements (mm) of *Carbonellis* gen. nov.

	Fastigium	Eye	Head	Pronotum	Mesonotum	Metanotum	Subgenital Plate
***Carbonellis urihii* n. sp.**							
Holotype male. Brasil, Amazonas. Reserva Biológica do Cuieras. 1979. M. Descamps *leg.* abp 555	1.47	2.7	9.7	23.5	2.97	2.6	3.85
Paratype male. Brasil Amazonas. Rio Preto do Igapo Açu. Br. 319 Km 245. XII/78 B. Silva *leg.* abp 230	1.45	2.75	9.5	23.35	2.95	2.55	3.75
Paratype male. Brasil. Amazonas Jutaí 7/78 B. Silva *leg.* abp 222	1.45	2.5	9.25	22.5	2.75	2.3	3.45
Paratype female. Brasil Amazonas. Rio Preto do Igapó Açù. Br 319 Km 245. Dic. /78. B. Silva *leg.* abp 224	3.95	3.4	16.05	31.15	5.75	5.0	
Paratype female. Brasil Amazonas. Rio Preto do Igapó Açù. Br 319 Km 245. Dic. /78. B. Silva *leg.* abp 330.	3.05	3.5	14.3	30.25	5.25	5.0	
Paratype female. Brasil Amazonas Jutai 7/78 B. Silva *leg.* abp 331,	3.3	3.45	5.7	31.4	5.85	4.2	
Paratype female. Brasil Amazonas Jutai 7/78 B. Silva *leg.* abp 221	3.15	3.20	15.05	31.4	5.45	4.6	
***Carbonellis xaripë* n. sp.**							
Holotype male. Brasil, Amazonas, Jutaí. 31/10-1/11/77. M. Descamps *leg.* abp 577	1.2	2.7	8.35	22.9	2.25	2.25	2.3
Paratype male. Brasil, Amazonas, Jutaí 31/10-1/11/77 M. Descamps *leg.* abp 587.	1.3	2.7	8.8	22.55	2.35	2.35	1.8
Paratype male. Brasil. Amazonas, Jutaí 7/76 B.Silva *leg.* abp 220	1.5	2.95	8.95	21.1	2.3	2.3	2.45
Paratype male Brasil, Amazonas, Jutaí 31/10-1/11/77. M. Descamps *leg.* abp 588	1.45	2.85	9.0	23.0	2.6	2.6	2.25
Paratype female. Brasil, Amazonas, Jutaí 31/10-1/11/77, M. Descamps *leg.* abp 579.	3.6	3.45	10.85	33.6	5.55	5.3	
Paratype female. Brasil, Amazonas, Jutaí 31/10-1/11/77, M. Descamps *leg.* abp, 589,	3.9	3.5	10.85	33.5	5.1	4.0	
Paratype female. Brasil, Amazonas, Jutaí 31/10-1/11/77, M. Descamps *leg.* 590.	4.1	4.0	11.35	33.75	4.95	4.75	
***Carbonellis aripuana* (Piza) n. comb.**							
Holotypus female. Brazil, Amazonas. Aripuana River. Prainha. 3-X-X-1971. J.L. da Silva *leg.* abp 681.	3.29	3.62	17.39	33.44	5.71	5.39	

Color dark brown to light or yellowish brown, with some green tinges especially on the feet and abdomen. Spermatheca simple, single. Phallic complex formed by a complete epiphallus (Plates 1 and 2 strongly fused), an ectophallus with plates 4 joining behind and below the medial cleft; plates 10 small. Endophallus sclerified, with a characteristic double-walled ejaculatory duct, the external coat of which is strongly pleated.

Carbonellis urihii n. sp.

Etymology.—In the language of the Yanomami (the tribe which inhabits the Amazonian zone where this species was collected): belonging to the land-forest.

Type depository.—Muséum National d'Histoire Naturelle, Paris. (MNHNP).

Type locality.— Brazil. Amazonas. Reserva Biologica do Cuieiras. Material examined: Holotype male. Brazil, Amazonas. Reserva Biológica do Cuieiras. 1979. M. Descamps *leg.* abp 555. (MNHNP).

Paratype female.— Brazil, Amazonas. Rio Preto do Igapó Açú. Br 319 Km 245. Dic. /78. B. Silva *leg.* abp 224. (ANSP).
Paratype female. Brazil, Amazonas. Rio Preto do Igapó Açú. Br 319 Km 245. Dic. /78. B. Silva *leg.* abp 330. Paratype male abp 230 *idem*. (MZSP).

Paratype male.— Brazil, Amazonas Jutaí 7/78 B.Silva leg. abp 222. Paratypes females. abp 331, 221 same dates (MRJ).
Figs 1-7 & 87.

Male. Fastigium short, pyramidal, quadrangular at its base, slightly inclined downwards, with the ventral face smaller than the dorsal

one. Broad and well-marked carinae on each arista. The dorsal ones run below the eyes to the eyes' lower extremity; a short medial carina is present in the occiput between the eyes. The lateral faces of the fastigium bear a medial carina running from fastigium tip to the eyes. Eyes large and globose. Antennae broken in the holotype. The frontal carina and its Y-shaped arms at the epistomal suture nonexistent. Epistomal-labral suture straight. Integument smooth, without pits or granules.

Pronotum cylindrical. Pleural suture invisible, anterior margin straight, posterior margin scarcely projecting. Integument of the pronotum granular with longitudinal medial and paramedial lines. Dark in color with the anterior part yellow. Meso- and metanota elongate with a well-marked granular medial carina. The metanotal first abdominal suture is decorated with a thick median tubercle. First abdominal segment almost identical with the anterior one. Abdomen completely smooth. Cerci short and with rounded tips.

Epiproct short and rounded. Pallium membranous and very little sclerified. Subgenital plate well sclerified. The posterior margin is not obtuse but terminates in a point, with no central carina. The fore legs insert medially, the femur is evenly rounded over all its length, the tibia is of quadrate cross-section, with large black spines: 12 internal and 12 external. The middle legs are similar to the fore legs, but with 11 external and 13 internal tibial spines. Hind legs having the femur somewhat enlarged in its proximal half. Knees with a pair of flattened and acutely pointed spines. Hind tibiae of quadrate cross-section with serrate aristae and 7 internal and 17 external spines.

Phallic complex very similar to that of *Proscopia*, but without sclerified parts in the ejaculatory duct. Plates 1 and 2 unite, forming a well-developed epiphallus, the lophi having points which form strong sclerified hooks directed upwards. Everything in the vicinity of the lophi is covered by a membrane provided with sensory organs. This membrane is folded and partially covers the medial cleft (3). Behind, in a ventrolateral position, and associated with the anterior points of plates 4, one finds a pair of sclerites 10, which are small, not obvious, bent over themselves at a rather sharp angle. Plates 4 are wide and border completely the median cleft, overlapping it; below it they unite producing a noticeable point completely covered with sense organs. The endophallus is composed of two structures, one external and one internal with the aspect of a double funnel, with a lower part turned over itself like a tail. The internal part communicates with the ejaculatory duct, which is completely membranous. In its anterior half it is covered with a highly folded membranous sheath giving a brushy appearance. The second half is a simple wide tube. All of the membranous part of the endophallus is covered with microspines (acanthae) which give it a velvety appearance.

Female. Head conical, a little narrowed below the eyes, but not to the degree seen in the male. Fastigium scarcely larger than the eye, or the same size as the eye, trapezoidal at the base with the ventral face smaller, the apex truncate. Carinae of the aristae weak, a median supraocular carina present laterally. The dorsal carinae run below the eye up to its margin. A medial carina runs from between the eyes to the neck. Integument almost smooth. Eyes globose, though not as large as in the male. Antennae with seven segments. Antennal organ on the penultimate segment.

Pronotum cylindrical, its surface completely granular. Legs inserted a little forward of the midpoint. Anterior edge with a thick smooth margin. There is a well-marked medial dorsal line. All the first half of the pronotum is light yellow in color and the second half is dark like the rest of the animal. Posterior margin smooth, without a ring. Mesonotum longer than wide, with its surface totally granular except for some very small raised areas laterally. Meso-metanotal suture straight. Pleural sutures almost indistinguishable. Metanotum somewhat different from mesonotum; the large middle part is narrower and its margins irregular, lateral areas large and smooth. Above the pleural sutures there are high carinae which tend to unite in the midline of the dorsum. All of the posterior margin is bordered by a wide band above the suture with the first abdominal segment. This suture is slightly elevated in the middle. The first abdominal segment is completely covered with finely granular integument with two smooth areas on each side. The metanotum and the first abdominal notum are slightly inflated. The pleura have granular integument like that of the pronotum.

Legs. Femora of fore legs rounded in section, widening distally. Tibae of quadrangular cross section, 11 internal and 10 small external spines. Middle legs similar to the fore legs but stronger, with 12 external tibial spines and eight internal ones. The hind legs have moderately inflated femora, with carinae and micro tubercles. Knees with two small spines. Tibiae spotted with large flat spines, 21 exterior dorsal spines and 10 interior dorsal spines, which do not extend beyond 4/5 of the length of the tibia. Two subventral spurs and two small ventral spines on each side. Aristae serrate. Abdominal integument entirely punctate. Integument of the legs and of the abdomen spotted with dark pigment, with a medial dorsal line. Epiproct long and rounded. Cerci very small, ovipositor valves large and strong with pointed tips. Subgenital plate spatulate.

Spermatheca. A very thin prolongation with a thick membrane arises from the bursa copulatrix and terminates in a wide duct with many turns, ending in an ampulla with two large dissimilar lobulae. There is a small finger-shaped process, narrower than the duct of the spermatheca, near the base.

Carbonellis xaripë n. sp

Etymology.—"Spirit" in yanomami, in allusion to its gracile and very slender aspect.

Type depository.— Muséum National d'Histoire Naturelle, Paris. (MNHNP).

Type locality.— Brazil, Amazonas, Jutaí.

Material examined.—Holotype, male. Brazil, Amazonas, Jutaí. 31/10-1/11/77, M. Descamps *leg.* abp 577. Female Paratypes: abp 579, 589, 590. Male paratypes: abp 587, 588 (MNHNP).
Brazil. Amazonas, Jutaí 7/76 B. Silva *leg.* abp 220 (MRJ)
Figs 8-16.

Male of very fragile aspect, though of medium size. Body colored a homogenous olive green. Head strongly narrowed below the eyes. Eyes themselves large and globular. Fastigium small, continuing the line of the longitudinal axis of the head. Apex truncate, in the form of a pyramid with a square base, with aristae marked by fine carinae; the dorsal ones continue behind the eye as far as its base. A supraocular carina up to half the length of the eye occurs on the lateral part of the face. Dorsally, an interocular carina is well-marked up to the base of the eyes and faint and obsolete up to the neck. Antennae of seven segments, with the lenticular organ on the last segment.

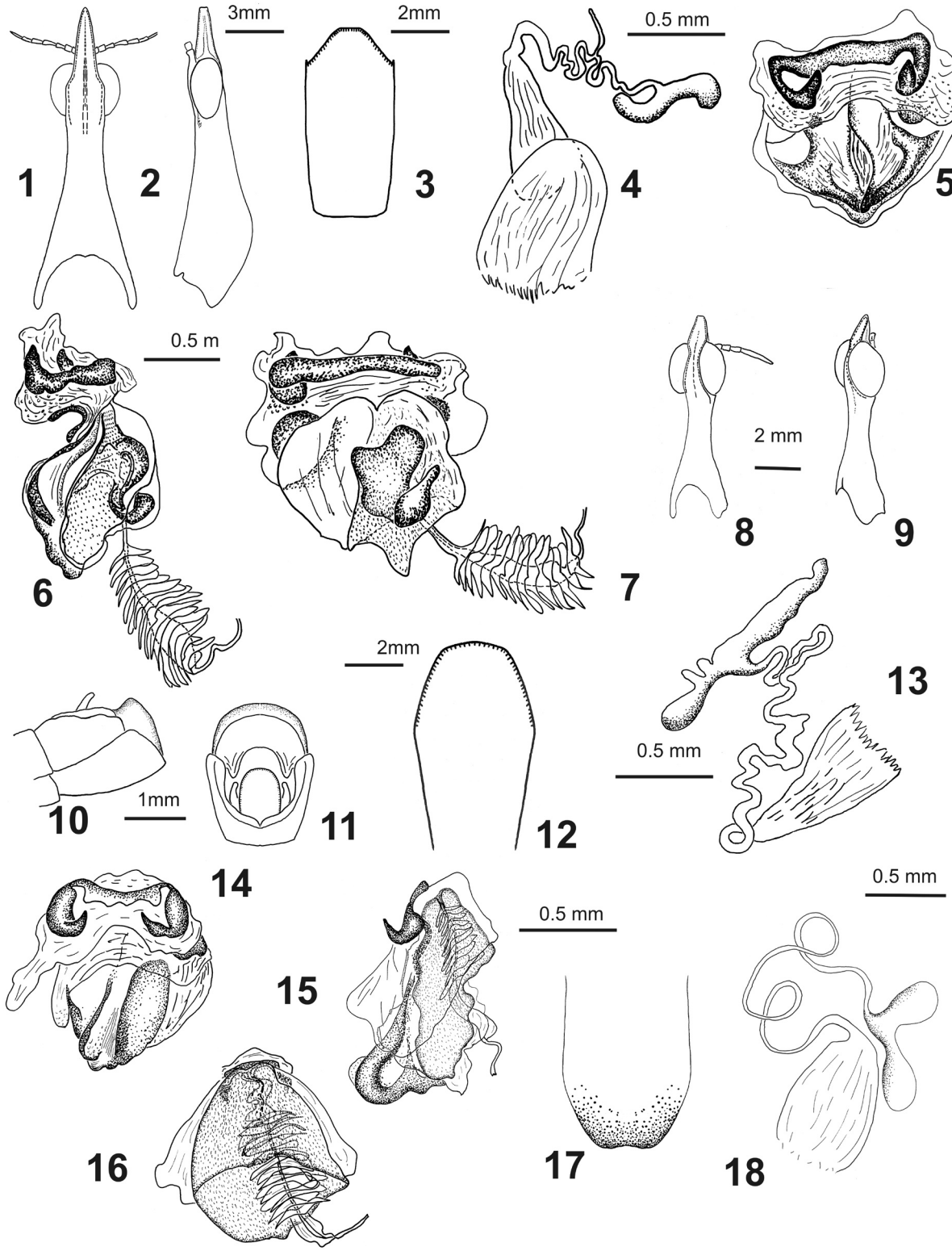

Fig. 1. *C. urihi*, female. Paratype. Head. Dorsal view. **Fig. 2.** *C. urihi*, female. Paratype. Head. Lateral view. **Fig. 3.** *C. urihi*, female. Paratype. Subgenital plate. **Fig. 4.** *C. urihi*, female. Paratype. Spermatheca. **Fig. 5.** *C. urihi*, male. Holotype. Aedeagus. Dorsal view. **Fig. 6.** *C. urihi*, male. Holotype. Aedeagus. Lateral view. **Fig. 7.** *C. urihi*, male. Holotype. Aedeagus. Ventral view. **Fig. 8.** *C. xaripe*, male. Holotype. Head. Dorsal view. **Fig. 9.** *C. xaripe*, male. Holotype. Head. Lateral view. **Fig. 10.** *C. xaripe*, male. Holotype. Subgenital plate. Lateral view. **Fig. 11.** *C. xaripe*, male. Holotype. Subgenital plate. Dorsal view. **Fig. 12.** *C. xaripe*, female. Paratype. Subgenital plate. **Fig. 13.** *C. xaripe*, female. Paratype. Spermatheca. **Fig. 14.** *C. xaripe*, male. Holotype. Aedeagus. Dorsal view. **Fig. 15.** *C. xaripe*, male. Holotype. Aedeagus. Lateral view. **Fig. 16.** *C. xaripe*, male. Holotype. Aedeagus. Ventral view. **Fig. 17.** *C. xaripe*, female. Holotype. Spermatheca. **Fig. 18.** *C. xaripe*, female. Holotype. Subgenital plate.

Pronotum cylindrical with the pleural suture visible as a line along its entire length, anterior margin rounded and thickened, posterior margin somewhat thickened, but without forming the ring characteristic of other related genera. Integument covered with small randomly distributed tubercles. Pterothorax and first abdominal segment globose. Meso- and metanota with a wide median band of granular integument, the sides smooth throughout. Pleural suture marked by carina. Meso-metanotal suture straight. Metanotal first abdominal suture marked by thick carinae on each side. Pleura scarcely granular.

Abdomen minutely punctate. All its segments are slightly inflated posteriorly. Epiproct rounded and small. Cerci as long as the epiproct, their points rounded and curved inwards. Subgenital plate rounded and hood-shaped.

Legs long and gracile. Fore femur very slightly thickened and rounded at its distal end. Tibiae almost semicircular in cross-section. Their flattened face bears spines, eight internal and 11 external. The middle pair of legs are very similar to the fore leg, although the spines are larger, again eight internal and 11 external spines. The hind legs have femora which are hardly enlarged at all basally, with faint carinae. Knees with small spines. Tibiae almost square in section, the aristae serrate with black teeth. Tibial spines large and flattened, and present only in the middle part of the tibia, 14 external and 16 internal spines. Two large and one small ventral spurs and two small ventral spines.

Phallic complex. Epiphallus complete, formed by plates 1 and 2 united by a narrow bridge. Hooks of the lophi large and long (longer than in *C. urihii*), pointing upwards and inwards. They are enclosed in a membrane which is folded over itself, covering the beginning of the large medial cleft. This last is open, with two plates 4 surrounding it in a wide V. At the margin of the cleft itself they form a border, and in the end of the cleft, where they are strongly fused together, they form a single smooth and rounded plate (not a point as in *C. urihii*). Plates 10 are firmly joined at the start of plate 4, below the epiphallus.

The endophallus, semisclerified campanulate, is composed of two tubes, one within the other, totally covered with microspines. It communicates with another double structure, but this time a membranous one, the spermatophore sac and ejaculatory duct, which outwardly present a much-folded membrane, with the aspect of a brush, and within a smooth duct which is free at its proximal end.

Female. Very similar to the male but not as gracile. Head larger and stronger, eyes less globose, fastigium with a truncate point. The subgenital plate is elongated, with a truncate tip.

Spermatheca small, composed of a distal ampulla with two diverticula of different sizes. The smaller one has two small diverticula of its own. The duct is very twisted and the lumen irregular. The bursa copulatrix is not sclerified and the spermathecal duct issues from its proximal end.

***Pseudoproscopia* n. gen.**

Proscopia Klug 1820 partim.

Etymology.— As it refers to a genus whose species were split off from *Proscopia* Klug 1820, a name is used which relates the new genus to the old one.

Typus generis.—*Proscopia scabra* Klug, 1820. Figs 88, 91.
Klug, 1820. Horae phys. Berolinensis 27: 18.
Latreille, 1825. Encycl. Method. 10: 211.
Guerin, 1828. Dict. Classique Hist. Nat. 14: 297. 1831.
Serville, Ann. Sci. Nat. 22: 265. (Proscopie).
Serville, 1939. Hist. Nat. Ins. Orth., p.571.
Brullé, 1835. Hist. Nat. Ins. 9: 211.
Blanchard, 1840. Hist. Nat. Ins., 3: 36.
Blanchard, 1845. Hist. Nat. Ins., 2: 264.
Blanchard, 1851. In Gay Hist. Fis. Polit. Chile, 6: 59.
Westwood, 1843. Arcana Ent., 2: 55.
Walker, 1870. Cat. Derm. Salt. Brit. Mus. 3: 485.
Brunner v.W., 1890. Verh. zool. bot. Gesells. Wien 40: 94.
Kirby, 1890. Scient. Pr.R. Dublin Soc. 6: 586.
Kirby, 1910. Syn. Catal. Orthopt. 3(2): 83.
Mello-Leitao, 1939. Verh.VII Int. Kongr. Ent., 1: 300.
Mello-Leitao, 1939. Rev, Mus. La Plata N. S.1: 399.
Roberts, 1941. Trans. Amer. Ent. Soc. 67: 12.
Rehn & Grant, 1959. Ent. News 70(9): 247.
Dirsh, 1961. Bull, British Mus., 10(9): 363.
Beier, 1969. Handb. Zool.,4/2,: 23.
Liana, 1972. Ann. Zool. 29(13): 431.
Descamps, 1973. Acrida 2(2): 79, 80, 89.
Carbonell, 1977. Orthopterorum Catalogus Pt. 17: 21.
Jago, 1989. Eos, 65 (1): 2.

Diagnosis.—Apterous insects, sexually dimorphic. The females very large and robust, the males small and gracile. The head of the male has globose eyes, a small pyramidal fastigium, slightly inclined forwards and downwards, and is strongly narrowed below the eyes. The head of the female is almost conical; the fastigium is variable, varying from small and pyramidal to large and quadrangular.

The phallic complex includes a complete epiphallus with strong plates 1 and 2 which are joined together. Plates 4, which border the median cleft and unite behind and below it, are variably sclerified. The endophallus is completely membranous, composed principally of a funnel-shaped structure, from which arise a small elongate spermatic chamber and a very thick ejaculatory duct, which is reinforced by a sclerite along its entire length. This sclerite can take the form of a complete tube or a channel.

The spermathecae are simple. They consist of a terminal ampulla with two diverticuli of different sizes, and a relatively short duct with a lumen of constant diameter, which in some species has digitiform prolongations. The copulatory chamber is always membranous.

Pseudoproscopia displays various colorations, generally the body is dark chestnut brown to black with tints of dark green, but some species have numerous spots of red or yellow on the epistome, pleura, pallium and epiproct of the males or, in the females, segmentally repeated patches of yellow on the abdomen.

Pseudoproscopia scabra (Klug) nov. comb.

Klug, 1820. Horae phys. Berolin. 27: 19.
Burmeister, 1838. Handb. Entomol. 2: 604.
Serville, 1839. Hist. Nat. Ins Orthopt. p. 574.
Blanchard, 1840. Hist. Nat. Ins. 3: 36.
Walker, 1870. Cat. Derm. Salt. Brit. Mus. 3: 486.
Brunner v. W., 1890. Verh. zool. bot. Gesells. Wien 40: 97.
Kirby, 1910. Syn. Catal. Orthopt. 3: 84.
Rehn, 1918. Proc. Acad. Nat. Sci. Philad. 70: 168.
Rehn, 1920. Proc. Acad. Nat. Sci. Philad. 72: 244.
Bruner, 1919. Ann. Carnegie Mus. 13: 23.
Mello-Leitao, 1939. Rev. Mus. La Plata N. S.1: 415.

Table 2. Measurements (mm) of *Pseudoproscopia* gen. nov.

	Fastigium	Eye	Head	Pronotum	Mesonotum	Metanotum	Subgenital Plate
***Pseudoproscopia scabra* (Klug) n. comb.**							
Female. French Guyana. St. Laurent de Maroni. Nov. Col. Le Moult. *leg.* abp 560.	4.95	4.15	17.05	34.35	5.45	4.4	
Female. French Guyana. St. Laurent de Maroni. Nov. Col. Le Moult *leg.* 564.	5.25	4.15	13.95	31.55	5.35	5.0	
Female. French Guyana. St. Jean de Maroni. Abril/1914. R. Benoist *leg.* abp 563.	4.6	4.05	13.25	35.7	5.52	4.85	
Female. French Guyana. Kou, Piste de Chargament PK/. Marzo/1993. Sensecaux *leg.* abp 565.	6.55	4.05	20.25	33.9	4.95	4.94	
Female. French Guyana Saul. 28/Oct/1969. Balachowsky *et al. leg.* abp 566.	6.25	4.46	19.6	39.85	5.4	4.9	
Female. French Guyana Canopi river. Alikene Mount. 11/Nov/1969. Balachowsky *et al. leg.* abp 567.	5.35	4.15	19.3	38.75	5.65	4.65	
Male. French Guyana. Kou, Piste de Fourgassi Pk 13. 07/11/1994. H. De Toulgoet & J. Navatte. *leg.* abp 573.	1.95	4.0	9.0	25.65	3.1	3.1	2.7
Male. French Guyana. Arataye river (tributary Appruages) before Parare waterfall) 16/8/80. De Sutter & Grandcolas. *leg.* abp 568.	1.55	4.0	11.0	24.4	3.3	3.0	1.9
Male. French Guyana. Acarouany Forest. 20/Oct/1969. Balachowsky *et al.* abp 569.	1.95	3.85	9.74	25.45	2.7	2.95	2.45
Male. French Guyana. Passoura. Jun. Col. Le Moult. *leg.* abp 570.	1.7	3.75	11.2	27.8	2.9	2.9	2.45
Male. French Guyana. Near St. Georges, Oyapoek. 1900 F. Geary *leg.* abp 571.	1.65	3.95	11.3	29.5	3.25	3.25	2.9
Male. French Guyana. Salto Boko Waterfalls, Oyapoek River. 1/4/76 M. Descamps *leg.* 572.	1.55	3.8	11.0	21.45	3.05	3.05	2.45
***Pseudoproscopia latirostris* (Brunner von Wattenwyl) n. comb.**							
Hololectotype male (design by CSC, 1966). Perú. Alto Amazonas. Huallaga. Dohrn coll. No. 10. 334.	0.78	2.18	9.08	26.35	3.57	3.12	2.26
Allolectotype female. (design by CSC, 1966). Perú. Alto Amazonas. Huallaga. Dohrn coll. abp 688.	4.83	3.43	18.80	34.04	5.87	5.36	
***Pseudoproscopia amedegnatoi* n. sp.**							
Holotype male. Brasil. Manaos. 11-1989. G. Couturier. *leg.* abp 556.	1.5	3.5	10.2	23.5	2.7	2.05	1.7
Paratype female. Brasil. Manaos. 11-1989. G. Couturier. *leg.* abp 574.	4.3	4.15	17.6	33.5	5.3	4.15	
Paratype female Brasil. Manaos. 11-1989. G. Couturier. *leg.* abp 558.	3.65	3.6	17.8	33.1	5.15	4.2	
***Pseudoproscopia jagoi* n. sp**							
Holotype male. Brasil, Amazonas, Reserva biológica do Cuieiras, 50 km: de Manaos. 14-4-al 15-5 de 1981: M.Descamps *leg.* abp 554.	1.9	3.25	10.65	21.85	2.9	2.65	2.1
Paratype male. Brasil, Amazonas, Reserva biológica do Cuieiras, 50 km: de Manaos. 14-4-al 15-5 de 1981: M.Descamps *leg.* abp 583.	1.3	3.0	9.4	23.35	2.6	2.6	1.7
Paratype male Brasil, Amazonas, Reserva biológica do Cuieiras, 50 km: de Manaos. 14-4-al 15-5 de 1981: M.Descamps *leg.* abp 584.	1.35	3.2	10.65	22.8	3.0	2.7	1.8
Paratype male Brasil, Amazonas, Reserva biológica do Cuieiras, 50 km: de Manaos. 14-4-al 15-5 de 1981: M.Descamps *leg.* abp 585.	1.4	3.3	10.3	21.1	2.7	2.7	2.1
Paratype female Brasil, Amazonas, Reserva biológica do Cuieiras, 50 km: de Manaos. 14-4-al 15-5 de 1981: M.Descamps *leg.* abp 578.	3.7	3.9	18.4	35.2	5.6	4.8	
***Pseudoproscopia onça* n. sp.**							
Holotype female. Colombia. Meta. Puerto Gaitan 14/3/1986. J.L. Fernandez col. No. ICN-MHN.OR216. abp 122.	6.15	3.25	17.35	33.75	5.35	4.75	
***Pseudoproscopia robusta* n. sp.**							
Holotype female. Mouth of Amazonas river. Marajó island. Dr. Laboubene *leg.* No. B.w.W. 250/95.(1895). abp 542.	4.6	3.8	18.65	30.8	6.7	5.3	
***Pseudoproscopia vazferreirai* n. sp.**							
Holotype male. Brasil Rondonia, Ariquemes. VIII-80 B. Silva col. abp 332.	1.7	2.85	10.0	28.15	2.65	3.0	4.45
Paratype male. Brasil Rondonia, Ariquemes. VIII-80 B. Silva col. abp 627.	1.55	2.55	9.1	27.0	2.4	2.95	4.45
Paratype male. Brasil Rondonia, Ariquemes. VIII-80 B. Silva col.	1.65	2.85	9.2	25.85	2.35	2.74	4.75
Paratype male. Brasil Rondonia, Ariquemes. VIII-80 B. Silva col abp 628.	1.5	2.45	10.0	25.95	2.45	2.5	3.9
Paratype male. Brasil Rondonia, Ariquemes. VIII-80 B. Silva col. abp 629.	1.55	2.75	9.7	26.05	2.9	3.0	3.75
Paratype female. Brasil Rondonia, Ariquemes. VIII-80 B. Silva col. abp 334.	3.45	3.15	16.1	36.15	5.6	5.2	

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Beier, 1972. Handb. Zool., 4/2, 2/9: 22.
Liana, 1972, Ann. Zool. 29(1113): 28.
Descamps 1973. Acrida 2: 77-95.
Carbonell, 1977. Orthopterorum Catalogus Pt. 17: 24.
Descamps, 1979. Ann. Soc. Ent. France (n.s.). 15(2): 311.
Jago, 1989. Eos. 65(1): 299.

Type depository.— Museum f. Naturkunde, Berlin. (MN).

Type locality.—Brazil, Pará.

Material examined.— French Guyanne. St. Laurent de Maroni. Nov. Col. Le Moult. Females. abp 560, 564. (MNHNP).
French Guyanne. St. Jean de Maroni. Abril/1914. R. Benoist *leg.* Female. abp 563. (MNHNP).
French Guyanne. Kou, Piste de Chargament PK/. Marzo/1993. Sensecaux *leg*. Females abp 565. (MNHNP).
French Guyanne. Saul. 28/Oct/1969. Balachowsky *et al.* Female abp 566. (MNHNP).
French Guyanne. Canopi rivière près Alikene M. 11/Nov/1969. Balachowsky *et al.* Female. abp 567. (MNHNP).
French Guyanne. Arataye Rivière (*af.* Appruages Rivière) avant Parare, chute d'eau. 16/8/80. De Sutter & Grandcolas. Males abp 557, 568. (MNHNP).
French Guyanne. Acarouany. Forêt 20/Oct/1969. Balachowsky *et al.* Male abp 569. (MNHNP).
French Guyanne. Passoura. Jun. Col. Le Moult. Male abp 570. (MNHNP).
French Guyanne. Près St. Georges, Oyapoek. 1900 F. Geary. Male abp 571. (MNHNP). French Guyanne. Boko, chute d'eau. Oyapoek. 1/4/76 M, Descamps. *leg.* Male abp 572. (MNHNP).
French Guyanne. Kou, Piste de Fourgassi Pk 13. 07/11/1994. H. DeToulgoet & J. Navatte. *leg.* Male abp 573. (MNHNP).
Figs 17-26.

Male. Large for the genus, very gracile and elegant. Head strongly narrowed below the eyes, which in turn are very large and very globose. The ocular zone is considerably wider than the insertion of the mouthparts. Fastigium small, subconical. Dorsal face rounded and slightly inclined downwards, ventral face straight and flat. The lateral faces bear a wide median carina. The aristae have fine and rather weak carinae, which continue behind the eye to its lower apex. The integument of the head is neither smooth nor granular, but slightly rugose, with some punctations. Antennae with seven segments and antennal organs on the fifth and seventh; there appear to be two such organs on the seventh segment. The color of the head is dark green, with abundant light spots, possibly yellow in the living insect, especially on the genae and epistomal region.

Pronotum cylindrical. Fore legs inserted a little anterior to the midpoint. Lateral margins completely straight. Anterior margin recurved, with a wide median embayment. Posterior margins lightly thickened, forming an irregular ring, which is much thicker laterally than dorsomedially, having a totally smooth border, which again is much wider laterally and of a lighter color. The pleural suture is marked by a line, and dorsally, in its first half, by a very regular array of conspicuous tubercles. In the second half, the size and distribution of the tubercles is less regular. All of the integument of the pronotum is finely granular, with a rather well-marked medial line. Towards the posterior part of the second half there are numerous transverse striae. The meso-and metanota have approximately the same form. They are slightly inflated, separated by a curved suture, and are identical in design. There is a wide medial band of granular integument bordered laterally by two large areas of smooth integument. The pleural sutures are conspicuous, raised and with some randomly distributed tubercles.

The first abdominal segment is different: almost completely granular, it has only two small smooth areas anteriorly. The abdomen is (otherwise) almost completely smooth. The terminal segments are considerably inflated. The short and partially cleft subgenital plate entirely covers the tip of the abdomen.

The pallium is invisible, covered by the dorsal margin of the subgenital plate and the edge of the epiproct, which are in contact with each other. The epiproct is wide and has a subacute point; the cerci are rather large with rounded tips. The phallic complex has a complete epiphallus (plates 1 and 2) joined by a long narrow bridge. Plate 1 has two rounded lateral prolongations, cleft in the middle, very noticeable towards the caudal extremity. Plates 2 are unusually thick and wide, heavily sclerified, terminating in a small hook, blunt at its tip, pointed towards the midline and upwards. About half of the medial cleft is covered by a thick membrane. Below this one sees it is bordered dorsally by plates 4, wide and provided with striae and numerous sense organs. Behind and below the cleft these plates unite with plate 4b. The sclerification is much more pronounced in this zone. The endophallus is mostly membranous, with a large irregular sclerite in its ventral part, continuing up to the start of the ejaculatory duct.

Female. A large, robust insect. The large number of specimens examined (26 females, 39 males and 30 nymphal females of various instars) makes it clear that the coloration is extremely variable. The commonest facies is a dark brown coloration over most of the body with randomly distributed paler patches, or alternatively a lighter ground color with dark patches. Another variant is to have head and thorax of a dark brown or yellowish brown color and the abdomen much paler.

The head is strong and robust, much narrowed behind the eyes, which are small but globose. The proportions of the head differ from those of the male; the insertion of the mouthparts is approximately twice as broad as the ocular region. Fastigium well developed, with a blunt apex. The aristae have fine carinae, which tend to get thicker towards the tip. These thickenings are approximately the same on dorsal and ventral carinae. In a few individuals the dorsal carinae are thicker than the ventral ones. There is also variation in the shape of the apex: this is rounded in some specimens, straight in others and occasionally with a shallow semicircular notch. Antennae with seven segments, almost the same length as the fastigium.

Pronotum cylindrical, the posterior half somewhat wider than the anterior half. Not so granular as in the male. The anterior and posterior margins are the same as in the male. A line marks the pleural suture, but lacks the dorsal chain of tubercles seen in the male. The mesonotum, metanotum and notum of the first abdominal segment have a wide median band of granular integument. To the sides of this there are two small zones of smooth integument, and then above the pleural sutures the integument is granular again, but without forming carinae or tubercles on them. At the caudal extremity of the first abdominal segment there is a wide band of granular integument that extends across the entire width of the

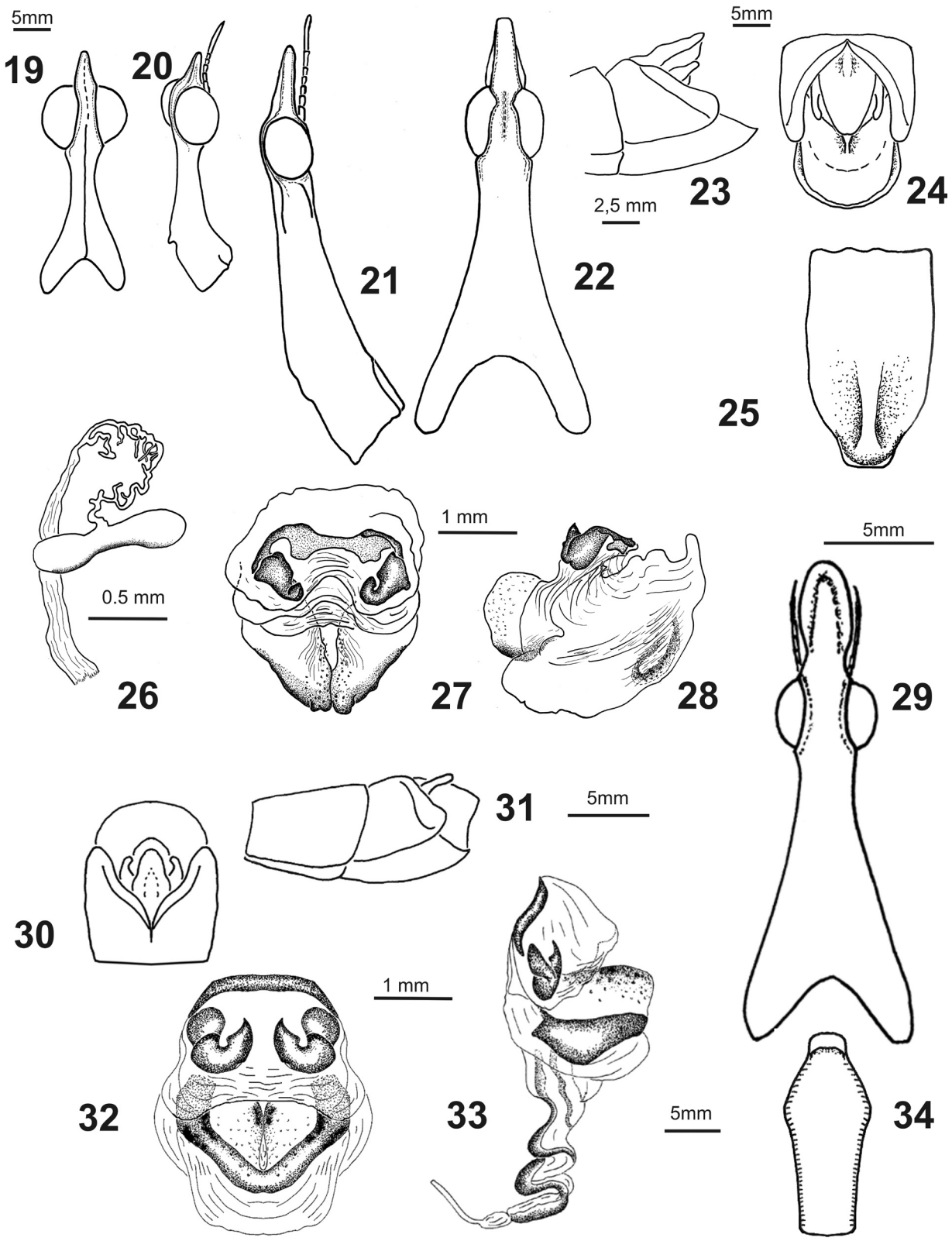

Fig. 19. *P. scabra*, male. Head,. Dorsal view. **Fig. 20.** *P. scabra*, male. Head. Lateral view. **Fig. 21.** *P. scabra*, female. Head. Lateral view. **Fig. 22.** *P. scabra*, female. Head. Dorsal view. **Fig. 23.** *P. scabra*, male. Subgenital plate. Lateral view. **Fig. 24.** *P. scabra*, male. Subgenital plate. Dorsal view. **Fig. 25.** *P. scabra*, female. Subgenital plate. **Fig. 26.** *P. scabra*, female. Spermatheca. **Fig. 27.** *P. scabra*, male. Aedeagus. Dorsal view. **Fig. 28.** *P. scabra*, male. Aedeagus. Lateral view. **Fig. 29.** *P. latirostris*, female. Head. Dorsal view. **Fig. 30.** *P. latirostris*, male. Holotype. Subgenital plate. Dorsal view. **Fig. 31.** *P. latirostris*, male. Holotype. Subgenital plate. Lateral view. **Fig. 32.** *P. latirostris*, male. Holotype. Aedeagus. Dorsal view. **Fig. 33.** *P. latirostris*, male. Holotype. Aedeagus. Lateral view. **Fig. 34.** *P. latirostris*, female. Subgenital plate.

segment, followed by a raised and conspicuous carina of smooth integument, which rather gives the impression of there being a seat mounted on the pterothorax. The mesopleuron has an irregular anterior margin, which does not convey the appearance of a chain of tubercles as it does in *Proscopia*.

Abdomen practically smooth with a well-marked medial dorsal line. Epiproct large and wide with a completely round tip. Cerci very small and inconspicuous. Ovipositor with large strong valves, having smooth edges and relatively sharp points, especially the lower valves. Subgenital plate has a truncate posterior margin.

The legs are robust, especially the femora, slightly recurved and thickened at their distal extremities. The hind femur is conspicuously thickened in its basal half. The integument of the legs is completely granular, and that of the dorsal carinae too. Knees armed with strong spines. Tibiae of square cross-section, with smooth nonserrate carinae, but with strong flattened dorsal spines that extend all the way to the distal extremity. Ventral spines absent.

Spermatheca with a distal lengthened irregular ampulla, duct extremely long and twisted, joining to the copulatrix bursa by a dorsal extension.

***Pseudoproscopia latirostris* (Brunner Von Wattenwyl) n. comb**.

Brunner von Wattenwyl, 1890. Verh. zool. bot. Gesells. Wien 40:
Mello-Leitão, 1939. Rev. Mus. La Plata Zool. (N.S.) 1: 407.
Carbonell, 1977. In Beier. [Ed.] Orthopterorum Catalogus. 17: 23.
Jago, 1989. Eos. 65(1): 299.

Type depository.— Naturhistorisches Museum. Vienna. (NHM).

Type locality.— Perú, Alto Amazonas, Huallaga.

Material examined.— Hololectotype male (designated by CSC, 1966). Perú. Alto Amazonas. Huallaga. Dohrn coll. No. 10. 334. abp 238.(NHM).
Alolectotype female. Same data, abp 688 Paralectotype female. Same data, abp 689 (NHM).
Figs. 29-34.

Male. Head as in the great majority of this group, very narrow below the eyes, which are large and globose. The fastigium departs slightly different from the usual: it is sharply inclined downwards and very flattened dorsoventrally. There is a large white patch on the epistome and the genae, which again is commonplace. The antennae have seven segments, with lenticular organs on the sixth and seventh.
The pronotum is very narrow, with parallel sides. The anterior margin has two paralateral tubercles above, over the neck and a well-marked medial depression. All of the integument is very granular and has randomly arranged large spines, especially on the sides above the pleural suture, which is marked by a weak line. The posterior margin is thickened, forming a very protuberant ring of smooth cuticle.

The mesonotum ends in a point with a median band of granular integument, zones of smooth integument laterally and a wide carina of smooth cuticle bordering the pleural suture. The metanotum is almost the same; the pointed caudal part bears a truncated medial spine. The first abdominal notum has a rather high medial carina, equal to the spine on the metanotum.The pleura of both segments are rugose, without having tubercles or well-defined spines.

The abdomen is smooth, with some micropores. Each articulation is slightly thickened. The last two have a rather weak medial carina.

Terminalia globose, with epiproct as shown in Figure 30. The cerci have rounded points, and are large, but don't reach the end of the epiproct. The subgenital plate is short, terminating in a posterior margin with a wide-rounded notch. The well-sclerified pallium has a narrow but deep medial groove.

The first pair of legs has square-section femora, without carinae. The tibiae have 12 and eight external and internal spines respectively. The second pair is the same as the first pair, but with 12 and 18 external and internal spines. The hind legs have the femur somewhat enlarged at its base with two dorsal carinae, one larger than the other. Knees with small spines. The tibiae have13 external and nine internal spines.

Phallic complex a little different from that of the rest of the genus. The epiphallus is almost completely sited within a fold of membrane. This fold is modified to form depths which in part contain the lophi. Plate 1 is completely smooth, slightly twisted in lateral view. Plates 2 are wide, but flat, also somewhat twisted. The hooks (of the lophi)are directed upwards, but are flattened and chamfered. The two parts of the epiphallus touch each other but do not fuse.

The membrane covers one third of the medial cleft. The cleft is well-separated from plates 4, which fuse indistinguishably with plate 4b and end in a wide band below the epiphallus. The endophallus is very characteristic. It is formed from two concentric layers of membrane, twisted helically. The more external has a long sclerite running its entire length. Both layers terminate in a small membranous ampulla, into which also opens the membranous ejaculatory duct.

Female. The female has the same tegumentary patterns as the male. The head is a little different from the rest of *Pseudoproscopia*. The carinae of the aristae of the fastigium are greatly thickened in the distal part, giving it the appearance of a helix, similar to *Corynorhynchus* or *Nodutus* (Mello Leitao 1939, Bentos-Pereira1998), in which the ventral crests are parallel and the dorsal ones divergent.

The epiproct is also similar to that of the male, but the cerci are much smaller and have sharp points. The subgenital plate is very elongated, with a spatulate median prolongation. The specimens examined had been completely eviscerated and it was not possible to see the spermatheca.

***Pseudoproscopia amedegnatoi* n. sp.**

Etymology.— Dedicated to Dr. Christiane Amedegnato of the National Museum of Natural History, Paris, distinguished orthopterologist.

Type Locality.— Brazil, Amazonas, Manaos.

Type depository.— Muséum National d'Histoire Naturelle, Paris. (MNHN).

Material examinined.— Holotype male. Brazil. Manaos. 11-1989. G. Couturier. *leg*. abp 556. Paratypes female abp 574, 558. Same data (MNHN).
Figs 35-43.

Male. Small and gracile. Head with the fastigium very small and slightly inclined downwards. Eyes very large, globose and protruding. The head is abruptly narrowed behind the eyes and then widens gradually up to the zone of insertion of the mouthparts, which is as wide as the ocular zone. Antennae broken. The fastigium has a rounded apex; the dorsal face is strikingly wider than the ventral

Table 3. Measurements (mm) of *Paraproscopia* gen. nov.

	Fastigium	Eye	Head	Pronotum	Mesonotum	Metanotum	Subgenital Plate
***Paraproscopia aberrans* (Hebard) n. comb.**							
Holotype. Male Colombia. Villavicencio H. 151 V_1919. (A. María) No. 881. abp 684.	1.98	3.20	8.87	26.96	2.31	2.59	2.11
Colombia. Meta Villavicencio. (21). A. María. *leg.* Det. by Hebard 1932. Topotype Male. N.Jago. det.1988. abp 685.	1.91	2.68	9.33	25.61	2.20	2.61	2.79
Colombia. Boyacá Muzo. 1923. A. María *leg.* Male. abp 686.	1.69	3.22	8.80	27.05	2.45	2.75	2.48
Colombia Boyacá Muzo. 1925. A. María *leg.* Female. abp 687. Det. by Hebard 1926.	1.25	2.64	9.50	25.69	3.53	4.16	
***Paraproscopia matogrossensis* (Piza & Wiendl) n. comb.**							
Holotype female. Brazil. Mato Grosso. A. Mello *leg.* 14-2-68. MZLQ-I-0106. abp 144.	2.95	4.45	4.05	8.35	10.95	4.65	
***Paraproscopia pyramidalis* (Brunner von Wattenwyl) n. comb.**							
Alto Amazona. Hololectotype. No. 16.549. abp 239.	1.20	2.54	8.49	21.35	2.1	2.19	
***Paraproscopia riedei* n. sp.**							
Holotype male: Provenance: captive culture at Freiburg University, Germany, 1st. generation. Original Provenance: ECUADOR, Prov. Sucumbios, San Pablo de Kantesiya, Rio Aguarico, lat. 0 °15´S, long. 76°27´W, *leg.* K. Riede & K. Duffner, abp 129, ANSP.	1.64	2.22	9.38	21.02	2.43	2.66	
Amazonas. Parque Nacional Amancayacu, tierra firme, mata-mata, lat. 3°49'16" S, long. 70°15'40"W Agosto 30–Septiembre 5/ 97 Malaise, *leg.* B. Brown, G. Kung, ICN-MHN OR 262, abp176.	1.59	2.38	9.59	21.83	2.78	2.79	
Paratype female: ECUADOR, Prov. Sucumbios, San Pablo de Kantesiya, Rio Aguarico, lat. 0°15´S, long. 76°27´W, *leg.* K. Riede & K. Duffner abp 130. ANSP.	2.89	2.4	15.02	26.62	4.7	3.45	
***Paraproscopia sei* n. sp**							
Holotype male. Brazil, Pará. Serra dos Carajás. II-1988. Magno y Roppa *leg.* abp 337.	1.10	3.74	9.01	26.69	3.98	2.74	
Paratype female. Brazil. Pará. Serra dos Carajás. II-1988. Magno y Roppa *leg.* abp 335.	7.43	3.39	18.36	21.07	4.50	3.88	
Paratype female. Brazil, Pará. Serra dos Carajás. II-1988. Magno y Roppa *leg.* abp 690.	7.87	3.22	18.10	20.97	4.55	3.97	

one, both being bordered by fine carinae on their aristae. Dorsally this carina also borders the eyes, and ends a little below them, fading out on the gena. The integument of the head is smooth and slightly uneven. Pronotum cylindrical, extremely narrow, much more so than the abdomen.

Fore legs inserted a little in front of the midpoint of the pronotum (the same in the female). The latter is much less granular than in the female and much more irregular in size. Even at the posterior part of the pronotum there are more short transverse striae than tubercles. The anterior margin of the pronotum has a wide semicircular carina only. A subtle medial line is apparent here and there along all the length, more due to pigmentation that to sculpturing of the integment. The pleural suture is invisible in the first half of the pronotum and is marked by a line in the second half. Posterior margin straight, but marked by a wide ring of smooth, light-colored, cuticle.

Mesonotum formed by the prescutum and the scutum with insignificant, almost obsolete, tubercles and some transverse striae. The pleural sutures are marked by wide flattened carinae. The suture with the metanotum is rounded and has a medial high point which ends in a weak tubercle drawn out transversely.

The metanotum has a narrow medial zone forming a band which widens abruptly in the final part of the segment, into a tranverse half-moon of granular cuticle. The lateral zones are smooth. The metanotum also has wide and flat carinae, somewhat lower in the midline, marking the pleural sutures, which are continued as wide carinae marking the suture with the first abdominal tergum. This, as in the female, commences with a depression behind the suture, and has a medial carina which thins out caudally. All of the integument is very slightly, randomly granular.

The abdomen is smooth, with the caudal extremity of each seg-

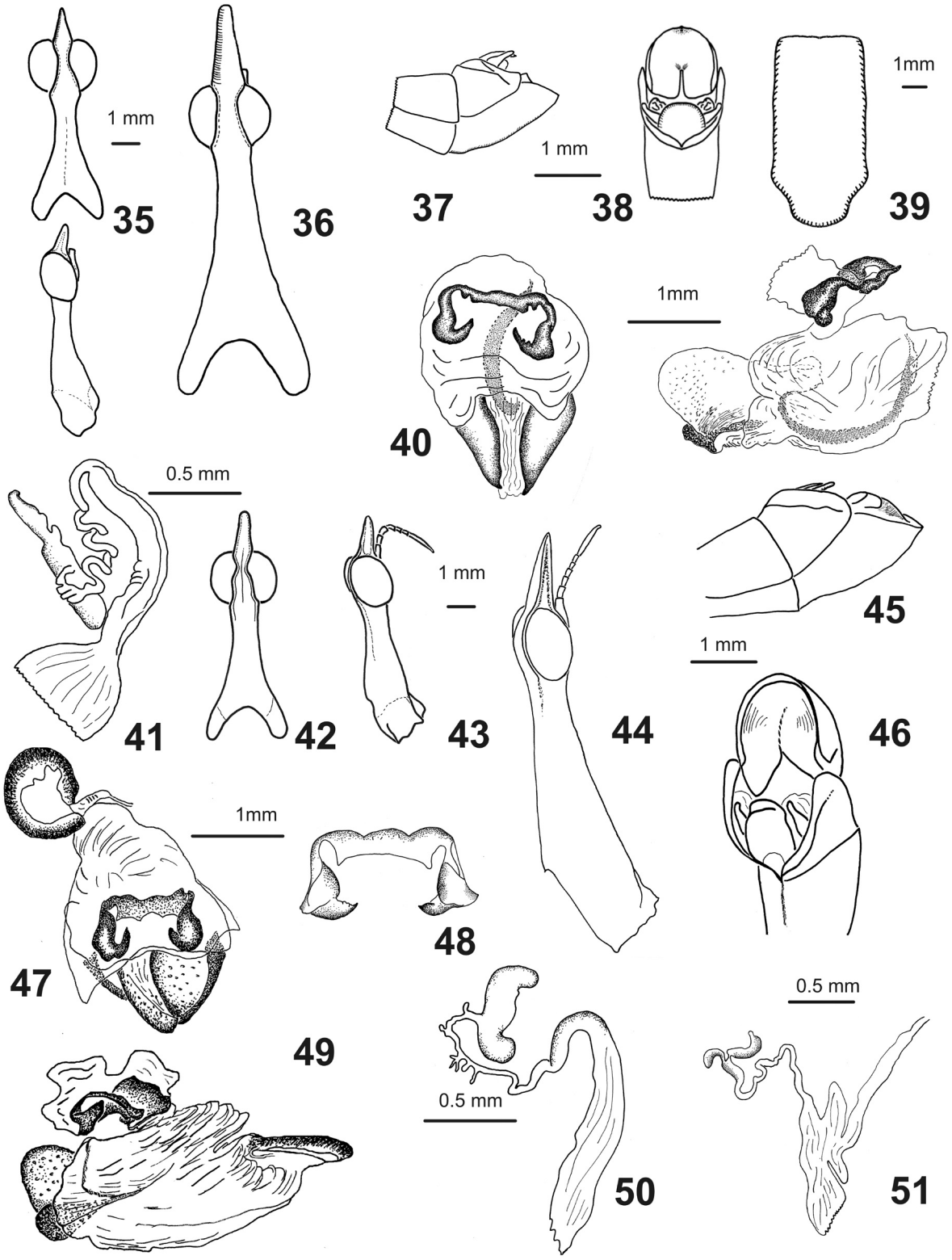

Fig. 35. *P. amedegnatoi*, male. Holotype. Head. Dorsal and lateral view. **Fig. 36.** *P. amedegnatoi*, female. Paratype. Head. Dorsal view. **Fig. 37.** *P. amedegnatoi*, male. Holotype. Subgenital plate. Lateral view. **Fig. 38.** *P. amedegnatoi*, male. Holotype. Subgenital plate. Dorsal view. **Fig. 39.** *P. amedegnatoi*, female. Paratype. Subgenital plate. **Fig. 40.** *P. amedegnatoi*, male. Holotype. Aedeagus. Dorsal and lateral view. **Fig. 41.** *P. amedegnatoi*, female. Paratype. Spermatheca. **Fig. 42.** *P. jagoi*, male. Holotype. Head. Dorsal view. **Fig. 43.** *P. jagoi*, male. Holotype. Head. Lateral view. **Fig. 44.** *P. jagoi*, female. Paratype Head. Lateral view. **Fig. 45.** *P. jagoi*, male. Holotype. Subgenital plate. Lateral view. **Fig. 46.** *P. jagoi*, male. Holotype. Subgenital plate. Dorsal view. **Fig. 47.** *P. jagoi*, male. Holotype. Aedeagus. Dorsal view. **Fig. 48.** *P. jagoi*, male. Holotype. Plates 1, 2 (Epiphallus). **Fig. 49.** *P. jagoi*, male. Holotype. Aedeagus. Lateral view. **Fig. 50.** *P. jagoi*, female. Paratype. Spermatheca. **Fig. 51.** *P. onça*, female. Paratype. Spermatheca.

ment slightly thickened. There is also a general gradient of inflation along the abdomen, which results in the genital segments being very globose.

Epiproct rounded with a subacute point. Cerci cylindrical, somewhat narrower at their tip, very long, of the same size as the epiproct. Subgenital plate sclerified, short; its caudal extremity is inserted below the paraprocts and epiproct, forming a closed chamber with a very small pallium. It has a marked medial process at its caudal extremity and a small notch. The insertion into the anterior segment is completely rounded.

Legs very slender and long. The femora, as always, are somewhat thickened, scarcely more so than the tibia, but are of the same length as these. The hind femur has a small basal thickening extending almost to its mid-point. Integument almost smooth, the dorsal carinae obsolete; the few tubercles that are present are randomly arranged and inconspicuous. Knees with two spines. Tibiae of square cross section with inconspicuous carinae. Dorsal spines large and flat: the external ones extend to the tip of the tibia, while the internal ones do not.

Phallic complex. Epiphallus formed by the union of both plates 1 and 2. Plate 1 is elongated and regular in shape, trapezoidal, with the larger base being anterior. Plates 2 have two very different zones, the insertion zone, elongate and slender and a wide zone which terminates in two hooks with rounded tips elongated towards the midline. The membrane which includes the epiphallus is very delicate and leaves almost all the medial cleft exposed. This is bordered by plates 4, which as in other species do not reach completely to the margin of the cleft. Laterally they project strongly, with the appearance of rounded beaks, and are totally covered with sensilla. Ventrally the cleft is closed by a short and heavily sclerified Plate 4b, almost quadrangular in shape. The completely membranous endophallus has a wide double chamber with a heavily sclerified elongate zone visible dorsally.

Female. Large and rather robust. The head completely different from that of the male, almost conical, but with a narrowing below the eyes. The latter are neither very large nor very protuberant, considering the size of the head. Antennae longer than the fastigium, with seven segments. Fastigium conical, terminating in a subacute point. The ventral face is narrower than the dorsal one, but both are equally smooth. The dorsal face has a medial impressed line, which continues as a well-marked medial interocular carina. All the aristae are well-defined by carinae which border them, and the dorsal carinae continue to below the eyes, closely following the eyes' profile. The integument of the head is almost smooth, with some rugosities and very few granules, which are almost always arranged linearly.

The pronotum is completely tubular and cylindrical, the sides strictly parallel. The fore legs are inserted slightly forward of the pronotal midpoint, but the two parts of the pronotum are identical. The anterior margin of the pronotum is rounded and in the midline has a very weak longitudinal carina. This carina starts and ends in two small tubercles, of a different shape from those which cover the body of this species, being more elongate. All of the pronotum is completely covered with rounded granules: these unusual in being of a lighter color than the rest of the integument, giving the pronotum a velvety and brilliant look.

The pleural suture is well marked, and in its anterior half there is nothing special about the tubercles which border it, in contrast to the situation over its posterior half, where the suture is bordered by a line of tubercles, a little larger than usual and placed more closely together, making them conspicuous. Posterior margin of the pronotum is wavy and a little thickened; laterally there is also a terminal band that is lighter and smoother.

Mesonotum with a wide median granular band; laterally there are at least three rounded zones of smooth cuticle bounded by granular cuticle. Pleural sutures smooth. The pleura themselves very granular, including the areas of folded cuticle; these granules give an appearance distantly similar to that of species of *Proscopia*.

Metanotum separated from mesonotum by a curved suture. The metanotum medially has a straight band of granular integument, much narrower than on the mesonotum, with areas of smooth cuticle to either side. This feature is modified in its anterior half by the presence of two transverse folds which extend to join together in the midline, dividing the medial band, and continuing on the pleura. From this fold the pleural suture begins to be marked by a thick carina with tubercles on its summit, which fades out on the first abdominal segment.

The first abdominal segment is separated from the metanotum by a suture with a medial notch. This suture is marked on the metanotum by a noticeable heightening along its entire length, with a thick and elongate median tubercle in the notch previously mentioned. On the side of the first abdominal segment there is a depression with mostly smooth cuticle. At this point arises a medial carina, the thickness of which diminishes towards the rear, well marked and completely covered with granulations. The rest of the integument of the segment has randomly arranged granulations, neither abundant nor very large.

The abdomen is completely smooth with a well-marked medial line. The epiproct is large and completely rounded at the tip. The ovipositor valves are large, long but not very robust. The edges of the dorsal valves are barely serrate, their tips terminating in upwardly directed pointed hooks. The ventral valves are more rounded. Fore and middle legs relatively small for the size of the animal. The femora are always more robust than the tibia, but are short. They are somewhat thickened distally.

The third pair of legs also has the femur moderately thickened, with two prominent spines on the knee. Dorsal carinae very well marked, and all the cuticle is entirely covered with the same sculpturing as that of the thorax. The tibia are curved, with the aristae strongly emphasized by slightly serrate carinae. Dorsal spines large and wide, the external spines extending right to the distal tip, the internal spines stop before that point.

Spermatheca. A long and thick membranous prolongation arises from the dorsal surface of the bursa copulatrix, and narrows abruptly to form a long winding tube with three digitiform prolongations at its distal end. It runs into an ampulla with two different diverticuli. One is preapical, wider than long, and smooth, whereas the other is apical, longer than wide, and bears numerous folds.

Pseudoproscopia jagoi n. sp

Etymology.— Species dedicated to the recently deceased orthopterologist Dr. N.D. Jago.

Type depository.— Muséum National d'Histoire Naturelle, Paris. (MNHNP).

Type Locality.— Brazil, Amazonas. Manaus.

Material examined.— Holotype male. Brazil, Amazonas, Reserva biológica do Cuieiras, 50 Km. from Manaos. 14-4 al 15-5 de 1981: M. Descamps *leg.* abp 554 (MNHNP).
Paratype females, same dates. abp 578 (MNHNP).
Paratype males, same dates. abp583, 584, 585 (MNHNP).
Figs 44-51.

Male. Head small with a very marked postocular constriction, fastigium small, slanting downwards. Eyes large and globose, forming the widest part of the head. This narrows below the eyes and widens again at the insertion of the mouthparts, but does not again attain the width of the ocular zone. Coloration uniformly dark with a lighter spot, possibly yellow in life, in the epistomal region.

Pronotum cylindrical, with few and faint granulations. Anterior margin with a medial semicircular carina, but no trace of a medial dorsal line. Posterior margin almost smooth, forming a lighter ring; lateral line scarcely visible.

The mesonotum varies between being completely smooth and having a rather narrow median line of somewhat granular integument. Pleural suture smooth. Suture with the metanotum semicircular and almost obsolete. Metanotum with a medial line in the shape of a weak hour-glass, with some granulation. Laterally smooth, and with a thick flattened carina which marks the pleural suture and is in continuity with the carina marking the suture with the first abdominal segment, thus partially circumscribing the segment.

The first abdominal segment has only an elevated median line or carina. The metathoracic pleura are completely smooth. The abdomen is as narrow as the pronotum. The posterior part of each segment is very slightly inflated. Epiproct, cerci and subgenital plate similar to those of *P. amedegnatoi* n. sp. The most obvious difference is that the pallium is light yellow in color, like the epistomal spot.

Phallic complex. Very small, but well sclerified. The epiphallus is similar to that of *P. amedegnatoi*, but the lophi are shorter and more pointed and plate 1 has two conspicuous notches on its dorsal border and two sharp lateral points on its caudal margin. The membrane that covers the medial cleft is much thicker and longer, covering it up to the middle. Plates 4 are divergent, and instead of uniting below and behind (the cleft), they join a little in front if it, in dorsal view, reinforced by a thick and projecting plate 4b. The endophallus is completely membranous and heavily folded. The elongated sclerite, with clear-cut borders, runs the entire length of the ejaculatory duct, which is thick throughout, including its membranous part. It communicates with the ejaculatory chamber via a membranous valve.

Female. Head almost conical with a constriction below the eyes, which are neither large nor very globose. The widest part of the head is at the insertion of the mouthparts, which is approximately twice as wide as the ocular zone. Fastigium straight and slightly inclined downwards with a subacute point. Its dorsal face is larger than its ventral one and all the aristae are traced by a fine carina, which continues dorsally to the lower end of the eyes. The integument of the head is smooth, without tubercles or granules. Antennae long, with seven segments.

The fore legs insert approximately in the middle of the prothorax. This is completely cylindrical; the two halves differ slightly, in that the more posterior is slightly wider. Anterior margin with a medial notch but no carina. The integument is granular, and the granules are variable in color, being sometimes paler than the ground, sometimes the same color. Pleural suture marked by a line which bears a chain of tubercles on its dorsal part; these, however, are not especially conspicuous:one sees them only in lateral view. The posterior margin is smooth and without special characteristics.

Mesonotum with a weakly defined broad median band, scarcely granular, and with smooth zones at either side. Meso-metanotal suture smooth. Metanotum more or less the same as the mesonotum, but within its anterior part, there is a somewhat tangential transverse fold which continues as a pleural fold. Metanotal-first abdominal suture marked by a high carina on the metanotum and a transverse depression in the first abdominal segment. Posteriorly this segment has a very weak medial carina and some lateral granulosities. Pleura randomly granular.

Abdomen smooth with a well-marked medial line. Epiproct large, elongate, with a subacute point. Cerci small. Ovipositor valves large and strong, with sharp points and finely serrate margins. In the ventral part of the lower valve there is a medial zone completely covered with large conspicuous teeth.

Spermatheca. Simple. The duct starts from a dorsal prolongation of the bursa. The duct has numerous short digitiform prolongations, giving the impression of wrinkles. It ends in an elongate ampulla with a smaller preapical diverticulum, round and smooth, that terminates in a more pointed final process.

Pseudoproscopia onça n. sp.

Etymology.— *onça*, Portuguese for jaguar. An allusion to the leonine color of this species, mottled with darker spots.

Type locality.— Colombia. Meta. Puerto Gaitán.

Type depository.— Colección Instituto de Biología. Universidad Nacional de Colombia. (ICN).

Material examined.— Holotype female. Colombia. Meta. Puerto Gaitán 14/3/1986. J.L. Fernandez *leg.* l. No. ICN-MHN.OR216. abp 122.(ICN).
Fig. 52.

Female. Head strongly narrowed below the eyes; these are small and rather globose. Fastigium conical with a truncate tip. Aristae not especially well marked with carinae. The ventral face of the fastigium is markedly smaller than the dorsal one. Antennae with eight segments; antennal organs on the sixth and eighth.

Pronotum with straight lateral margins, but these are slightly divergent in the anterior half. Anterior margin straight, with a rather weak tuberculate carina in the median zone. Posterior margin straight. Laterally, the pleural suture is almost invisible, especially in the first half. This suture is punctuated dorsally by small spines. All of the integument is finely tuberculate with small dark spots on a tawny ground.

The mesonotum is elongate with a weak medial line barely outlined, and with smaller tubercles than those of the pronotum. Pleural sutures smooth. The metanotum is smaller and of the same design, the metanotal/first abdominal suture is straight, but with a small raised medial line and a small medial tubercle. The pleura are smooth.

The abdomen is smooth with a single medial carina. The epiproct is large, elongate and rounded. The ovipositor valves are strong and bordered in black. The upper ones are smooth; the lower ones have a small denticle behind the sharp point and two large teeth following a smooth space. Subgenital plate with a rounded extremity.

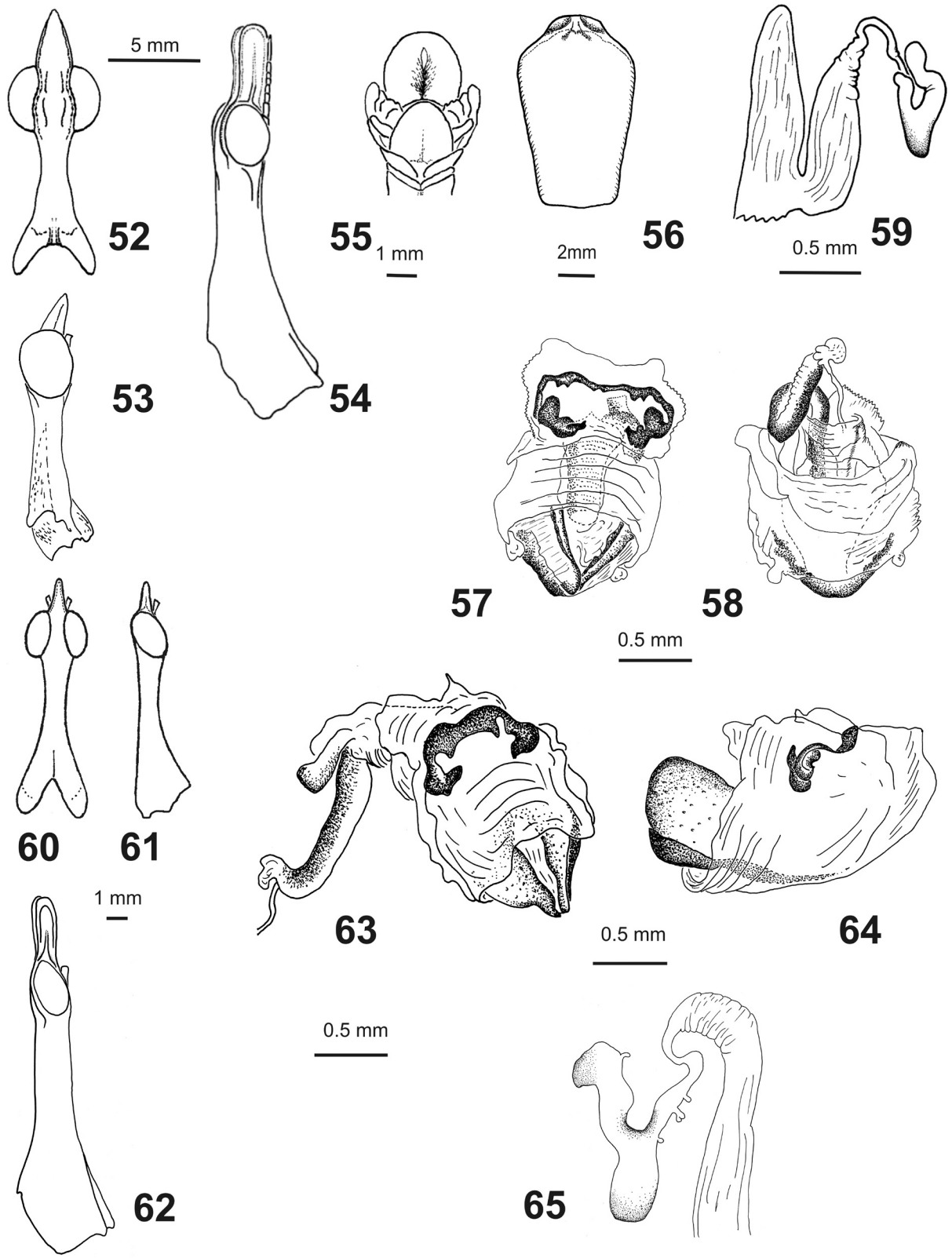

Fig. 52. *P. robusta*, male. Holotype. Head. Dorsal view. **Fig. 53.** *P. robusta*, male. Holotype. Head. Lateral view. **Fig. 54.** *P. robusta*, female. Paratype. Head. Lateral view. **Fig. 55.** *P. robusta*, male. Holotype. Subgenital plate. Dorsal view. **Fig. 56.** *P. robusta*, female. Paratype. Subgenital plate. **Fig. 57.** *P. robusta*, male. Holotype. Aedeagus. Dorsal view. **Fig. 58.** *P. robusta*, male. Holotype. Aedeagus. Ventral view. **Fig. 59.** *P. robusta*, female. Paratype. Spermatheca. **Fig. 60.** *P. vazferreirai*, male. Holotype. Head. Dorsal view. **Fig. 61.** *P. vazferreirai*, male. Holotype. Head. Lateral view. **Fig. 62.** *P. vazferreirai*, female. Paratype. Head. Lateral view. **Fig. 63.** *P. vazferreirai*, male. Holotype. Aedeagus. Dorsal view. **Fig. 64.** *P. vazferreirai*, male. Holotype. Aedeagus. Lateral view. **Fig. 65.** *P. vazferreirai*, female. Paratype. Spermatheca.

First pair of legs with a rounded femur with numerous minute pits, the tibia quadrate in cross-section. Aristae serrate with 15 internal spines and 14 external ones. The second pair of legs is almost identical to the first, the femur a little more quadrate and also pointed. The tibae are the same as those of the fore legs. They have 12 internal spines and 10 external ones. The hind pair has the femora thickened in their proximal portion and very tuberculate carinae. The tibiae are bowed with 13 dorsal external spines and eight internal ones.

Spermatheca. The bursa copulatrix gives rise dorsally to a single long and winding tube, which terminates in an ampulla from which arise two short narrow tubes opening into two ampullae of different sizes.

***Pseudoproscopia robusta* n. sp.**

Etymology.— From latin *robustus*, *–a*, *-um*, robust.

Type depository.— Muséum National d'Histoire Naturelle, Paris. (MNHNP).

Type Locality.— Brazil. Amapá. Ilha Marajó.

Material examined.— Holotype female. Bocas do Amazonas. Ilha Marajó. Dr. Laboubene *leg.* No. B.w.W. 250/95. (1895). abp 542 (MNHNP).

Paratypes male: Brazil. Amazonas. Manacapuru. 9-11/11/77. M. Descamps *leg.* abp 576, 592, 593, 594 (MNHNP).

Paratypes female. *Idem* dates. abp 550, 591.
French Guyanne. Female. Captive culture at Muséum National d'Histoire Naturelle, Paris. abp 581. (MNHNP).
French Guyanne. Male. Captive culture at Muséum National d'Histoire Naturelle. Paris. abp 582. (MNHNP).
Figs 53-60.

Female. Large and very robust. Head very narrow below the eyes, which are small but globose. Fastigium relatively short, with flattened carinae which thicken distally such that the fastigium acquires the aspect of a prism. The ventral carinae of the fastigium are smaller than the dorsal. There is a short central carina laterally.

Antennae not surpassing the fastigium in length, of seven segments with a small lenticular organ on the seventh. Prothorax cylindrical. Fore legs inserted about centrally. The anterior margin of the prothorax is raised and has a large semicircular notch. All of integument of the pronotum is thickly covered with granules, with a conspicuous medial carina with small tubercles. Pleural suture marked by its line. Coloration dark without any lighter patches.

Mesonotum, metanotum and tergum of first abdominal segment more or less identical. There is a strongly granular medial area with two small smooth lateral areas in the mesonotum and one solitary elongated one on the metanotum. The meso- and metanota are separated by a straight inconspicuous suture. The metanotum and the first abdominal segment are separated by a suture marked by a wide raised carina, with a central part further raised without becoming a tubercle. Similarly the metanotum has a tranverse fold in its first half that runs to the pleuron, forming a triangular fold in the anteriolateral part. The pleura are entirely rugose.

The legs are large and strong. The femora of the first and second pair of legs are thickened distally. The hind femora are thickened along two thirds of their length, with high and tuberculate carinae. Knees with two large spines. Tibiae strong and bowed, with four carinae on the very serrate aristae. Dorsal spines large and flattened; there are 18 external spines which extend to the distal extremity and nine internal spines which stop before the distal extremity.

Ovipositor large and strong with smooth valves. Subgenital plate with a short medial spatulate prolongation with rounded borders laterally.

Spermatheca. Rather simple. A prolongation arises dorsally from the bursa copulatrix which narrows abruptly and forms a short thick tube, terminating in a single elongate ampulla. This ampulla has two subequal diverticula of irregular shape.

Male. Very similar to the female, apart from the difference in size. Phallic complex very characteristic; the epiphallus has plates 1 and 2 joined together, but still distinguishable as such. Plate 1 is very narrow with two lateral prolongations, and two points on the posterior margin. Lophi very strong and sclerified, wide and rounded, with final hooks elongated, abruptly tapering, and the points converging inwards towards the midline.

The membrane that partially covers the median cleft is very thick, opaque and much folded transversely. There are two small lateral prolongations completely covered with sense organs. The medial cleft is covered almost to its border by enormous plates 4, to which are joined plates 4b, themselves very thick and sclerified below and behind the medial cleft.

The endophallus is complex. It consists of two concentric layers, the more internal forming a highly sclerified tube, and the external one a much-folded funnel, also sclerified but much less so. This is what communicates with the border of the medial cleft. The internal tube is very wide, has some transverse folds and ends in a membranous ampulla into which the ejaculatory duct opens.

***Pseudoproscopia vazferreirai* n sp.**

Etymology.— Species dedicated to Prof. Dr. Raúl Vaz Ferreira of the University of the Republic, Uruguay.

Type locality.— Brazil. Rondonia. Ariquemes.

Type depository.— Academy of Natural Sciences of Philadelphia.. (ANSP).

Material examined.— Holotype Male. BRASIL. Rondonia, Ariquemes. VIII-80 B. Silva col. abp 332; (ANSP).
Paratype same dates. Male. abp 627, (MNHNP).
Paratype male same dates abp 628. Paratype female. abp 334. (MZSP). 8.
Paratype male same dates abp 629,630. (MNRJ).
Figs 61-66.

Male. Head extremely long and narrow. Fastigium rather conspicuous, sloping downwards from well-defined faces. The lateral faces terminate in a sharp point and the dorsal and ventral ones are trapezoidal, the apical minor base being half the size of the major base. The aristae are provided with microserrate carinae, except dorsally, where the carina is smooth and extends behind the eyes to a point a little below the lower edge of the eye.

The eyes are globose and enormous in proportion to the head.

Prothorax cylindrical with the notal-sternal suture only visible in its second half. The fore legs are inserted a little forward of the mid point. Integument with very marked transverse striae and small tubercles which are more abundant laterally than dorsally.

The anterior margin of the pronotum is not overly open; it has a medial straight part with a smooth edge. The smooth posterior margin forms a thickened ring, smooth and projecting. Meso and metanota very elongated; the latter is slightly inflated. Both share a thin medial granulated band and have smooth lateral zones on their sides. The pleural sutures are marked dorsally by noticeable carinae, thick and granulated. The mesonotum also has a transverse band of granulated integument similar to the medial band, which it divides into two dissimilar parts. Pleura with microgranulated zones, somewhat effaced on epimera and episterna. The first abdominal segment is very short, separated from the metanotum by a sinuous suture, somewhat elevated in its medial part.

Abdomen with small transverse striae and minute pitting. End of the abdomen very square. Epiproct rounded, with cerci almost as long as the epiproct. They cerci have rounded points and are rather fine. Subgenital plate with completely rounded margins, short and with a sclerified pallium. The anterior margin of the pallium has a large medial notch.

First pair of legs long and very thin. Femur rounded. Tibia almost the same, except one sees aristae in the distal third. Eight external and 12 internal spines. The middle legs are almost the same as the fore legs, but somewhat shorter. Ten external and 12 internal tibial spines. The hind legs have the basal part of the femur minimally thickened, dorsal carinae are present. Knees with noticeable pointed spines, somewhat flattened. Tibiae of quadrate section with very serrate aristae. Spines large and flattened, seven internal and 13 external. The former do not attain the distal extremity of the tibiae, as is characteristic of the group. All the specimens are of a dull brown color, except for the hind legs which are noticeably lighter, almost of caramel color.

Phallic complex. The epiphallus is formed of plates 1 and 2 and completely joined by a narrow bridge. The lophi, thickened and rather flattened, terminate in sharp hooks directed upward and medially. Plate 1 has two paramedial prolongations, a caudal one which is somewhat longer and a cephalic one which is shorter and rounded. All of this is included in a rather thick membrane which partially covers the medial cleft (3). Anteriorly this membrane has a fine medial prolongation. The median cleft is bordered by plates 4, which unite in a point behind and below. These plates extend almost to the margin of the cleft, but without touching it, leaving a conspicuous space of membrane between the plate and the cleft. This margin is reinforced by a thick, heavily sclerified, carina in the the form of a lip, similar to, but narrower than, the structure seen in the genus *Prosarthria.* Plates 4 are short and not continued laterally, although there is a small sclerification below the epiphallus, probably plates 10. Plate 4b is well sclerified in the form of a very open V. The endophallus is a double membranous sac terminating in a heavily sclerified tube that is completely rolled up on itself. This tube in turn terminates in a small membranous pouch which is continued by a short ejaculatory duct, also membranous.

Female. Head conical, extremely narrow behind the eyes and suddenly thickened at the insertion of the mouthparts. Fastigium with a quadrangular base and subparallel aristae. Apex blunt. The aristae have well-marked carinae, the dorsal ones broader than the ventral ones at the distal extremity. Eyes large and globose. With a dorsal medial carina which runs from the apex of the fastigium to the neck. Integument very strongly granulated with numerous dark patches.

Pronotum with lateral margins straight and parallel and fore legs inserted ventrolaterally a little in front of the midline. Anterior margin of pronotum with two wide paramedial notches. Immediately after these there is a conspicuous transverse carina of semicircular form, runing from the start of one notch to the other. Posterior margin scarcely thickened. Pleural suture very distinct. Dorsally there is a medial line much more distinct in its lower half. The integument is a light caramel color with numerous dark patches of variable size and location.

The terga of the meso- and metathorax and the first abdominal segment are subequal in color and pattern, with a wide medial band of granular integument and smoother areas to either side. The pleural sutures are indistinct. The metanotum has two transverse lateral crests which stop before the medial band. These crests continue over all the metepisternum. The meso-metanotal suture is a darker curved line. The metanotal-first abdominal suture is almost straight and well-marked by a higher border in its medial part, but only on the metanotal side. The thoracic segments have a tendency towards inflation.

The abdomen is much smoother than the thorax, with pitting. It almost completely lacks dark patches and has a well-marked final dorsal carina. The epiproct is large and rounded. The cerci are very small and with very pointed tips. The ovipositor valves are large, strong, sharply pointed and bordered with black. The subgenital plate has a spatulate medial prolongation. The foreleg femora are strongly curved, thickened at their distal extremity, with well-marked aristae and subquadrangular in section. The tibiae are of quadrangular cross section, with dark serrate aristae and strong sharp spines, 121 external and 13 internal.

The middle legs are very similar to the fore legs. Eleven external tibial spines and 11 internal ones. The hind legs have the femur spotted with the same color as the head, with conspicuous tuberculate dorsal and ventral carinae. The knees have large rounded spines with sharp points. The tibiae are of quadrate section, slashed with dark color; the spines are large, sharp and flattened, and as for all the genus, there are no distal internal spines, but eight internal dorsal spines and 16 external ones.

Spermatheca very small, formed from an axial prolongation of the bursa copulatrix which terminates in a short cylindrical duct with two small short digitiform prolongations. This duct terminates in an irregular bilobed ampulla. The preapical diverticulum is very small in comparison with the apical one, which is large and irregular.

***Paraproscopia* n. gen.**

Proscopia Klug 1820 *partim*.

Etymology.— Named in relationship with *Proscopia* Klug because some species of this genus were split off from *Proscopia* Klug 1820.

Type species.— *Proscopia aberrans*. Hebard 1923.
Brunner v.W. 1890. Verh. zool. bot. Gesells. Wien 40: 98.
Giglio-Tos, 1898. Boll. Mus. Univ. Torino 13(311): 38.
Kirby, 1910. Syn. Catal. Orthopt. 3: 85.
Hebard, 1923. Trans. Amer. Entom. Soc. 49: 196.
Hebard, 1933. Trans. Amer. Entom. Soc. 59: 42.
Mello-Leitao, 1939. Rev, Mus. La Plata N. S.1: 410.
Carbonell, 1977. Orthopterorum Catalogus Pt. 17: 22,24.
Jago, 1989. Eos 65(1): 282.
Table 3.

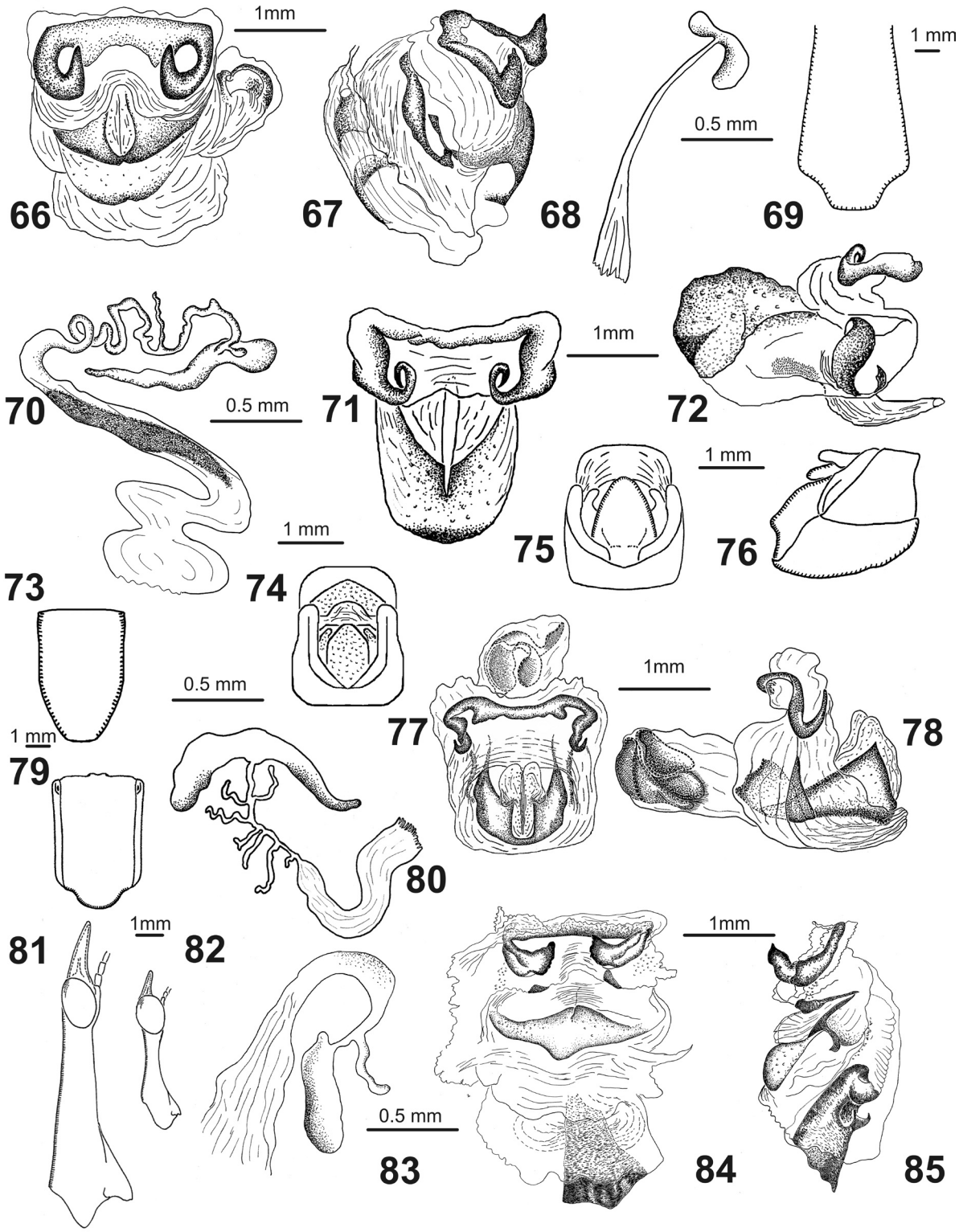

Fig. 66. *P. aberrans*, male. Holotype. Aedeagus. Dorsal view. **Fig. 67.** *P. aberrans*, male. Holotype. Aedeagus. Lateral view. **Fig. 68.** *P. aberrans*, female. Spermatheca. **Fig. 69.** *P. matogrossensis*, female. Holotype. Subgenital plate. **Fig. 70.** *P. matogrossensis*, female. Holotype. Spermatheca. **Fig. 71.** *P. pyramidalis*, male. Holotype. Aedeagus. Dorsal view. **Fig. 72.** *P. pyramidalis*, male. Holotype. Aedeagus. Lateral view. **Fig. 73.** *P. pyramidalis*, female. Subgenital plate. **Fig. 74.** *P. pyramidalis*, male. Holotype. Subgenital plate. Dorsal view. **Fig. 75.** *P. riedei*, male. Holotype. Subgenital plate. Dorsal view. **Fig. 76.** *P. riedei*, male. Holotype. Subgenital plate. Lateral view. **Fig. 77.** *P. riedei*, male. Holotype. Aedeagus. Dorsal view. **Fig. 78.** *P. riedei*, male. Holotype. Aedeagus. Lateral view. **Fig. 79.** *P. riedei*, female. Paratype. Subgenital plate. **Fig. 80.** *P. riedei*, female. Paratype. Spermatheca. **Fig. 81.** *P. riedei*, female. Paratype. Head. Lateral view. **Fig. 82.** *P. riedei*, male. Holotype. Head. Lateral view. **Fig. 83.** *P. sei*, female. Paratype. Spermatheca. **Fig. 84.** *P. sei*, male. Holotype. Aedeagus. Dorsal view. **Fig. 85.** *P. sei*, male. Holotype. Aedeagus. Lateral view.

Diagnosis.— Apterous insects with sexual dimorphism restricted externally to differences in general body size and to the form and size of the head. The main characteristic shared by all species is the presence of a complex structure at the end of the ejaculatory duct in the endophallus, sometimes comprised of several sclerites as well as membranes, and which has the aspect of a valve.

In addition these species always exhibit a complete epiphallus, although plates 1 and 2 may not be joined, and many species have plates 6 and 10. The subgenital plates of the females are much less variable and are less taxonomically important than in the other closely related genera described here. The spermatheca exhibits a unique terminal ampulla and duct with numerous finger-like prolongations of varied size and number.

***Paraproscopia aberrans* (Hebard, 1923) n. comb.**

Hebard, 1923. Trans. Amer. Entom. Soc. 49: 196.
Hebard, 1933. Trans. Amer. Entom. Soc. 59: 42.
Mello-Leitao, 1939. Rev, Mus. La Plata N. S.1: 410.
Carbonell, 1977. Orthopterorum Catalogus Pt. 17: 22.
Jago, 1989. Eos 65(1): 282.

Type locality.— Colombia, Villavicencio.

Type depository.—Academy of Natural Sciences, Philadelphia (ANSP).

Material examined.—Holotype male. Colombia: Villavicencio, Intendencia del Meta, Elevation 1400 feet. (H. 151) V-1919. A. María *leg*. Type No. 881. abp 684 (ANSP).
Colombia. Meta Villavicencio. (21). A. María. *leg*. Det. by Hebard 1932. Topotype. N. Jago. det.1988. abp 685 (ANSP).
Colombia. Boyacá, Muzo. 1923. A. María *leg*. Male. abp 686. (ANSP).
Colombia Boyacá, Muzo. 1925. A. María *leg*. Female. abp 687. Det. by Hebard 1926. (in bad condition). (ANSP).
Figs 67-69.

Male. The holotype is malformed, possibly due to a defective moult. Fastigium pyramidal, small and pointed, inclined downwards with well-marked wide carinae on the aristae. The dorsal carinae continue as far as the bottom of the eye. Dorsally there is also a medial carina which runs from the apex until it becomes obsolete below the eyes.

All the integument has sparsely distributed small transverse wrinkles. The anterior margin of the pronotum has a smooth lighter border, with three weak lines of the same color which extend over its first quarter. It has dense granulation and small short tranverse folds. The lateral suture is marked by a conspicuous line and a row of small dorsal tubercles, lighter in color than the rest of the integument. The posterior border is like the anterior one. The color is olive green where the lines are, the margins and tubercles being much lighter, often almost yellow.

The meso- and metnota are of the same design. They have a rather wide band of granular integument and smooth lateral areas. The metanotum is of trapezoidal shape and is slightly inflated. The meso-metanotal suture is a smooth line. The pleura too are smooth and of the same color as the nota, a light yellow brown. The first abominal segment has the same color and the same design as the pterothoracic segments, but much weaker. The suture between the metanotum and the first abdominal segment is marked by a smooth carina, which has a median tubercle towards the metanotum. On the side of the first abdominal segment there are two lateral depressions.

The legs lack any special features, are long, of quadrate or semiquadrate cross-section, with nonserrate borders. The hind femora are scarcely thickened, with high tuberculate carinae. Abdomen smooth. Terminalia globose. Color very dark, of the same olive-green tone with numerous black spots. The holotype has a larger spot on the subgenital plate. The epiproct is almost triangular, with large conical cerci which are almost sharply pointed. Pallium very sclerified with a rounded smooth border. Subgenital plate with truncate posterior margin. Phallic compex. Epiphallus with plates 1 and 2 strongly fused. Plate 1 has a straight anterior margin and two long lateral prolongations, with rounded tips, on its posterior margin. The membrane containing the epiphallus is extremely delicate, but very large, with two long lateral prolongations with numerous very small sense organs. The membrane barely covers the beginning of the medial cleft. This is surrounded by plates 4, but atypically these do not extend to its margins. These plates 4 are well sclerified, flattened and very extensive, in the form of a triangle, one of the angles of which is very elongated and ends below plates 2. In turn plates 2 articulate at each side with a large unique plate (which could be formed from the union of plates 6 and 10) as it has a straight part where it articulates with plate 4 and is semicircular at the end under the epiphallus. Plate 4b is unusually large, sclerified, and V-shaped. Both this and the previously mentioned structures are completely covered with sense organs.

The endophallus is double. There is an outer membranous layer, extensive and folded, and an internal part, much narrower, with sclerifications which define its form and structure. It starts with a sclerified half-ring, continues with a membranous part which terminates in a well-sclerified conical tube that does not come to a point. Instead this tube invaginates, giving rise to a very long ejaculatory duct that is delicate and membranous, partially covered by a bell-shaped membrane; this membrane is folded, though not as much as in the aedeagus of *Carbonellis*

Female. The specimen is badly damaged. It has the look of an immature. Head with a very short fastigium, bluntly pointed, sloping downwards, with well-marked carinae on the aristae, as in the male. Eyes quite large and almost globose. The head is narrowed below the eyes, recalling that of the male. Pronotum with scuplturing similar to that of the male, but without the dorsal tubercles on the lateral suture. There are large pale symmetrical spots with darker borders. Meso- and metanota are somewhat different from each other. Both have a wide median band of granular integment; in the metanotum this enlarges posteriorly to cover the entire width of the segment. The smooth lateral areas here repeat the pattern of the spots of the pronotum, being light with dark borders. Legs like those of the male, with no special features, except that the hind femora are flattened laterally, and at their end have a dorsoventral thickening unusual in the Proscopidae.

The first abdominal segment smooth, with patterns of light bands bordered with darker color. Epiproct almost triangular. Cerci very small. Ovipositor valves fragile and straight.

Spermatheca very small. It is formed from a prolongation of the bursa copulatrix from which originates a straight smooth tube that ends in an irregular ampulla; the preapical diverticulum of this is smaller than the apical, and both are elongate.

***Paraproscopia matogrossensis* (Piza & Wiendl, 1969) n. comb.**

Piza and Wiendl, 1969. Rev. Agric. Piracicaba 44: 59.
Carbonell, 1977. Orthopterorum Catalogus Pt. 17: 21.

Type locality.— Brasil: Mato Grosso.

Type depository.— Escola de Agricultura "Luiz de Queiroz" (ESALQ).

Material examined.— Holotype female. Brazil. Mato Grosso. 14-2-68. A. Mello. *leg*. MZLQ-I0106. abp144. (ESALQ).
Figs 70-71.

Female. Head conical, narrowing behind the eyes. Fastigium almost quadrangular, with its central face smaller than its dorsal one. The end is truncate, slightly inclined downward. Aristae marked by rather thick carinae which follow the line of the eye dorsally. On the lateral face of the fastigium, above the eye in the midline, there is another short, weak carina.

Eyes globose. Antenae with seven segments, lenticular organs on the sixth and seventh. The medial part of the anterior margin of the pronotum is straight. Integument of the pronotum completely covered with prominent small tubercles and little pits. There is also a faint medial line. Posterior margin straight. Pleural suture almost imperceptible, marked by a line. On the meso- and metanota the pitting of the integment continues, but the margins of the pits are less sharp, particularly in a wide medial band. The pleural suture is visible only in the metathorax. Pleura granular.

The metanotum-first abdominal suture is marked by a high and relatively wide fold. The first abdominal segment has an anterior protuberance made up of many small tubercles together. The medial line, faint up to this point, now becomes conspicuous and continues so over the entire abdomen, the integument of which is smooth but with abundant pitting.

The fore legs have a femur with a relatively square cross-section, with poorly marked aristae; the tibiae are much more square in section than the femur, with serrate aristae, 13 internal spines and no external spines. The middle legs are very similar, though the femur is smoother and more robust. The tibae has nine internal spines and 10 external ones. The hind leg is longer than the middle leg, and the femur is somewhat thickened at its base. The knees bear two large spines. The tibiae have seven dorsal internal spines which do not range to its tip, and 11 external spines which do.

Epiproct large, elongated and with a rounded tip. Cerci very small. Ovipositor valves strong and smooth. Subgenital plate with a wide tongue-like process with rounded borders. Spermatheca consisting of a wide proximal duct which has a darker and more sclerified zone. This duct ends in a very long thin winding tube which bears a single large digitiform prolongation, shortly before terminating in a large elongated distal ampulla; the ampulla is divided into two diverticula, a short preapical one and another much larger (approximately 5 × as long).

***Paraproscopia pyramidalis* (Brunner v. Wattenwyl, 1890) n. comb.**

Brunner v. W., 1890. Verh. zool. bot. Gesells. Wien 40: 98.
Giglio-Tos, 1898. Boll. Mus. Univ. Torino 13(311): 38.
Kirby, 1910. Syn. Catal. Orthopt. 3: 85.
Mello-Leitao, 1939. Monogr. Proscopidos p. 410.
Carbonell, 1977. Orthopterorum Catalogus Pt. 17: 24.

Type locality.— Perú. Alto Amazonas.

Type depository.—Naturhistorisches Muséum, Vienna (NHM).

Material examined.— Alto Amazonas. No. 16.549. Hololectotype, Male CSC/66. abp 239. (NHM). Female. Identification label of Brunner von Wattenwyl and label of C.S. Carbonell, 1996, without dates.
Figs 72-75.

Male. Head characteristic, strongly narrowed below the eyes, which are noticeably large and globose. Fastigium flattened dorsoventrally, ending in a point slightly inclined downwards. Conspicuous carinae on the aristae and in the middle of the dorsal face which continue to the end of the eyes.

Pronotum with parallel margins. Anterior and posterior margins simple and smooth. Meso- and metanota similar, with a medial carina which widens towards the rear up to the first abdominal segment, in which it is almost imperceptible. The pleural sutures of the metanotum are marked by a carina; the abdominal segments are smooth, having only a medial line. Epiproct rounded, cerci flattened dorsoventrally. Subgenital plate short and subquadrate.

The fore femora are almost round in cross-section. The tibiae have eight internal spines and 10 very small external ones. The middle legs are similar to the fore legs, but with 15 internal and 11 external tibial spines. The hind legs have a subequal, double-dorsal carina on the femora; the knees have two spines, the tibiae 12 external and seven internal spines.

Phallic complex: the epiphallus is formed from a narrow plate 1 lacking prolongations, strongly joined to plates 2, which are large, well-sclerified and conspicuous. The lophi end in a hook formed from a very fine point completely twisted upon itself. A large medial cleft is situated between the two weakly sclerified plates 4, joined by a very wide part behind and below. Below this junction there is a sclerite of almost trapezoidal shape, very strongly sclerified, plate 4b. Sclerites corrresponding to plates 6 and 10 have not been found.

Endophallus membranous, heavily folded on itself to form a membranous chamber with a sclerified floor and covered with very small spines. This chamber has internally a large, conspicuous, heavily sclerified element; seen ventrally this resembles a hollowed out knife, covered with heavily sclerified small scales, which terminates in a twisted handle also covered with small scales. Laterally the element has the aspect of a half-S, with a thin basal part and thicker distal part, and a tube completing the membranous part. The ejaculatory duct arises immediately below this.

Female. Head conical, large and strong, similar to those of other females of this group. Antennae of seven segments with lenticular organs on the sixth and seventh. Pronotum finely granular, with a subtle medial line. Pleural suture conspicuous. Posterior margin of pronotum with a small medial notch. Mesonotum totally granular except for two dark smooth lateral patches. The same pattern is seen in the pleura where the smooth patches are almost dorsal. The metanotum, like the mesonotum, terminates in a medial crest. The tergum of the first abdominal segment is also granular with a conspicuous medial carina. The epiproct is elongate and rounded. The subgenital plate is elongated in the form of a gentle curve; the tip is transversely truncated.

Female completely evicerated.

Table 4. Species included in the new genus.

***Carbonellis* n. gen.**	
Carbonellis urihii n. gen. n. sp. ***Typus generis***	
Carbonellis xaripë n. gen n.sp	
Carbonellis aripuana (Piza) n. comb.	
***Pseudoproscopia* n. gen.**	
Species that formerly usually belonged to *Proscopia* (Klug)	**New species**
Pseudoproscopia scabra (Klug) n. comb. ***Typus generis.***	*Pseudoproscopia amedegnatoi* n. sp
Pseudoproscopia latirostris (Brunner Von Wattenwyl) n. comb	*Pseudoproscopia jagoi* n. sp
Pseudoproscopia panamensis (Bentos-Pereira & Rowell) n. comb	*Pseudoproscopia onça* n. sp.
Pseudoproscopia septentrionalis (Bruner) n. comb	*Pseudoproscopia robusta* n. sp.
	Pseudoproscopia vazferreirai n. sp.
***Paraproscopia* n. gen.**	
Species that formerly usually belonged to *Proscopia* (Klug)	**New species**
Paraproscopia aberrans (Hebard, 1923) n. comb. **Typus generis**	*Paraproscopia riedei* n. sp
Paraproscopia matogrossensis (Piza & Wiendl, 1969) n. comb.	*Paraproscopia sei* n. sp.
Paraproscopia pyramidalis (Brunner von Wattenwyl, 1890) n. comb.	

***Paraproscopia riedei* n. sp.**

Etymology.— Dedicated to Dr. Klaus Riede.

Type locality.— Ecuador. Sucumbios. San Pablo de Kantesiya. Río Aguarico.

Type depository.— Academy of Natural Sciences of Philadelphia. (ANSP).

Material examined.— Holotype male: Provenance: captive culture at Freiburg University, Germany, 1st generation. Original Provenance: ECUADOR, Prov. Sucumbios, San Pablo de Kantesiya, Río Aguarico, lat. 0 °15´S, long. 76°27´W, *leg.* K. Riede & K. Duffner, abp 129, ANSP. Paratype female: Provenance, *idem* anterior, abp 130. ANSP.

Paratype female: Provenance, as above. abp 130. ANSP. Paratypes: male and female, Provenance: as above. Dr. C.H.F. Rowell, personal collection. 1 male and female. ECUADOR, Prov. Sucumbios, San Pablo de Kantesiya, Rio Aguarico, lat. 0 °15´S, long. 76°27´W, *leg.* K. Riede, ZFMK.

Paratype male. COLOMBIA, Amazonas. Parque Nacional Amancayacu, tierra firme, mata-mata, lat. 3°49'16'' S, long. 70°15'40''W, Agosto 30–Septiembre 5/ 97 Malaise, *leg.* B. Brown, G. Kung, ICN-MHN OR 262, abp 176. ICN.
Figs. 76-83, 89.

Male: Head narrowed behind the eyes. Eyes large and globose. Fastigium small, quadrangular in cross-section, rounded at the apex, slightly inclined downwards, flattened dorsoventrally, with four well-marked carinae, two of which continue dorsally to behind the eyes. Laterally a median supraocular carina.

There can also be a median dorsal carina which reaches (though indistinctly) the neck region. Tegument of the head rugose with numerous pits. Antennae broken in the type. In other specimens they have seven segments (including scape and pedicel) with lenticular organs on the sixth and seventh segments. The clypeus, labrum and part of the genae are marked with a prominent yellow spot, contrasting with the dark brown color of the rest of the head.

Thorax tubular, straight. The first pair of legs inserts ventrally in the midline. Pronotum without dorsal carinae, covered with prominent dense granules. The anterior margin has a narrow smooth border with a shallow median semilunar notch ending in two minute processes. Posterior margin thickened and hoop-shaped. Pleural suture is visible posteriorly. Pro-episternum the same yellow color as the spots on the head.

Cuticle of the mesothorax pitted, more markedly in a wide central band. The metathorax has a flat-pitted medial carina, flanked by areas of smooth cuticle. The shape of the metathorax is characteristic, having a medial constriction with a transverse sulcus. Pterothoracic pleura quite smooth, and lighter than the surrounding structures. Pleural sutures bordered by a fine carina.

Prothoracic femur rather rounded with almost obsolete dorsal carinae with small dark serrate edges. Tibia of quadrangular cross-section, the corners bearing small carinae and well-defined serrate edges. Formula for the tibial spines: 10/11 external/ internal (9/12 in the Colombian specimen). Mesothoracic femur smoother than the prothoracic; tibiae identical. Tibial spines 10/11 (10/12 in the Colombian specimen). Metathoracic femur dilated over its basal two-thirds. Medial dorsal carinae with microtubercles (more visible in the Colombian specimen because there they are darker than the rest of the cuticle), with narrow serrate edges. Knees with two spines. Tibial spines 14/10 (the Colombian specimen: 17/10).

First abdominal segment small, notum with numerous transverse striae lateral to a medial carina continuous with that of the metanotum. Carina bordered by a small row of tubercles. Remaining abdominal segments with cuticle more finely and less densely pitted than that of the head and thorax. All have an almost imperceptible median carina, and a tendency to a slight dilation posteriorly, especially in the more anterior segments. The type has an irregular dorsal pale spot in the anterior part of the second abdominal segment; the Colombian specimen has two pale spots in the same region.

Epiproct rhomboidal, not very pointed posteriorly. Cerci of almost the same length as the epiproct, curved in towards the midline and with rounded tips. Subgenital plate short and blunt. Pallium well sclerified. The color of the end of the abdomen is lighter than the rest, as is all the ventral region.

Phallic complex membranous, with plates 1 and 2 joined by a bridge, somewhat narrowed at its junction. Plates 2 end in hooks with the points directed upwards, well separated from the midline. All of the epiphallus is heavily sclerified and included in a delicate membrane which partially occludes the central cleft. This cleft (3) is small and wide, bordered by a sclerite formed from plates 4, which unite ventrally to give a single plate. Laterally there are two plates, which form an S-shaped structure, formed by plates 6 and 10, inclined towards the caudal extremity. These plates can be very close together, as in the type, or somewhat separated as in the Colombian specimen. The ejaculatory duct has at its base a curious, heavily sclerified structure in the form of a spoon, cleft basally, united with an elongate distal structure terminating in two transverse winglets. The basal spoon has a series of elongated teeth, similar to a comb, on the sides of the cleft and in the lower part of the winglets. This structure is continued posteriorly by an endophallic membrane and anteriorly by a short membranous ejaculatory duct.

Female: Very similar to the male but larger. Head conical, without postocular constriction. Eyes less protuberant than in the male. Antennae with seven segments, lenticular organs on segments seven, six and four.

Pronotum with the suggestion of a medial carina. Anterior margin like that of the male; angles of the median notch less marked. Posterior hoop also less marked. Cuticular sculpturing less pronounced. Pleural suture marked by a conspicuous line. Mesothoracic median carina well marked and wide. Cuticular pitting coarser than in the male. Lateral sutures rather weak. Metathorax very similar to mesothorax, but suture with the first abdominal segment has a small fold. Pleura smooth. The entire coloration is more homogenous than in the male and in some areas differs considerably from the male as in the pterothoracic pleura, which are dark. The yellow spots of the head and prothoracic epimera are however the same as in the male.

Prothoracic femora smooth, tibiae with 13/8 spines. Mesothoracic femora with two dorsolateral carinae, tibiae with 9/11 spines. Metathoracic femora with two dorsal carinae and granular cuticle; tibial spines 14/8. Hind knees with two large sharp dorsal spines. First abdominal segment with two small tubercles in the midline; cuticular pitting clearly finer than elsewhere. Remaining segments of the abdomen as those of male. Epiproct in the form of an elongated tongue; subgenital plate with a projecting rounded margin. Valves of ovipositor strong and smooth with sharp tips.

Spermatheca: ampulla with a preapical globular diverticulum and a narrow, elongate apical portion, twice as long as the preapical diverticulum. The very narrow and convoluted duct bears seven diverticuli of differing lengths and communicates with an elongate and heavily pleated bursa copulatrix.

Paraproscopia sei n. sp.

Etymology.— "acridomorph grasshopper" in the the Karajá language, the language of an almost extinct indigenous tribe which historically dominated all the area of the Serra dos Carajas and lower and central Araguaia, in the Brasilian state of Pará.

Type locality.— Brasil, Pará. Serra dos Carajás.

Type depository.— Museu de Rio de Janeiro. (MRJ).

Material examined.— Holotype male. Brazil, Pará. Serra dos Carajás. II-1988. Magno y Roppa *leg*. abp 337. Type damaged (MRJ). Paratypus female. *Idem* dates. abp 335 (MRJ).

Paratype female.— Same dates. abp 690 (MRJ).
Figs 84-86.

Male: head greatly narrowed below the eyes, which are very large and globose, much wider across than the zone of insertion of the mouthparts. Fastigium small, with four faces well-defined by noticeable carinae on each arista; vertex subacute, sloping forwards and downwards. Dorsally there is a well-defined medial carina extending from the interocular space to the neck.

Pronotum cylindrical with transverse striae. Pleural suture obsolete. Anterior margin of the pronotum slightly thickened with an enlarged edge and a smooth depression in the midline. Posterior margin of pronotum a rather narrow ring. Mesonotum with a broad median band of integument, dotted with small patches of more shiny cuticle, continuing onto the metanotum and the first abdominal notum. Pleural sutures marked by a fine carina, starting on the second half of the mesonotum and continuing along all the metanotum. Metanotal-first abdominal suture with a medial elevation. The pleura of both segments are smooth.

Abdomen smooth with barely a suggestion of a medial line. Starting with the seventh, the segments are conspicuously thickened and the caudal part of each segment is slightly inflated. Terminalia in bad condition.

Legs. The first pair are very long and thin, both the femur and the tibia. The femur is subquadrate in cross-section, with numerous small spines arranged in the form of an irregular row. The distal extremity of the femur is distinctly thickened. The tibia is also of square section and has its distal end thickened, but less so than the femur. The second pair of legs is similar to the first pair, but shorter and more robust. The tibiae have 12 external and 11 internal spines. The hind femur is somewhat enlarged in its proximal half. Rather large spines (2) are on the knees. Hind tibiae of square cross section with serrate carinae on each arista and with 15 external and eight internal spines, which as in other species of this group, do not attain the distal extremity of the tibia.

Phallic complex. The epiphallus is formed by the union of plates one and two. Plate 1 is smooth on its posterior margin and has two thick processes on the anterior one where it unites with plates 2. These last are very thick and strong along their entire extent. They terminate in short sharp points which are turned upwards and towards the center of the complex. The medial cleft is completely bordered by plates 4, and close it completely, one overlapping the other. Behind and below they unite, forming a thick and strongly sclerified single plate which extends proximally, forming a wide blade that articulates in its medial region with plates 6. Below the epiphallus, articulating with plates 6, are two wide triangular plates, plates 10. This is an unusual shape for these plates, which typically form a medial arc. In dorsal view one sees their medial extremity below the membrane which covers the medial cleft.

The endophallus is formed of a delicate transparent membrane in its external part, while internally there is a sclerified chamber that terminates in another delicate membrane, which is followed by the invagination of the medial cleft (3). The sclerified structure has the shape of a half-tube, open dorsally, with its wider mouth directed towards the anterior part of the phallic complex. It is very sclerified and completely covered with small blunt spines (acanthae). The margin which relates to the medial cleft undergoes a partial inversion outwards, forming a fish-tailed structure twisted upwards: this is as well-sclerified as the rest of the tube, and its points are even more

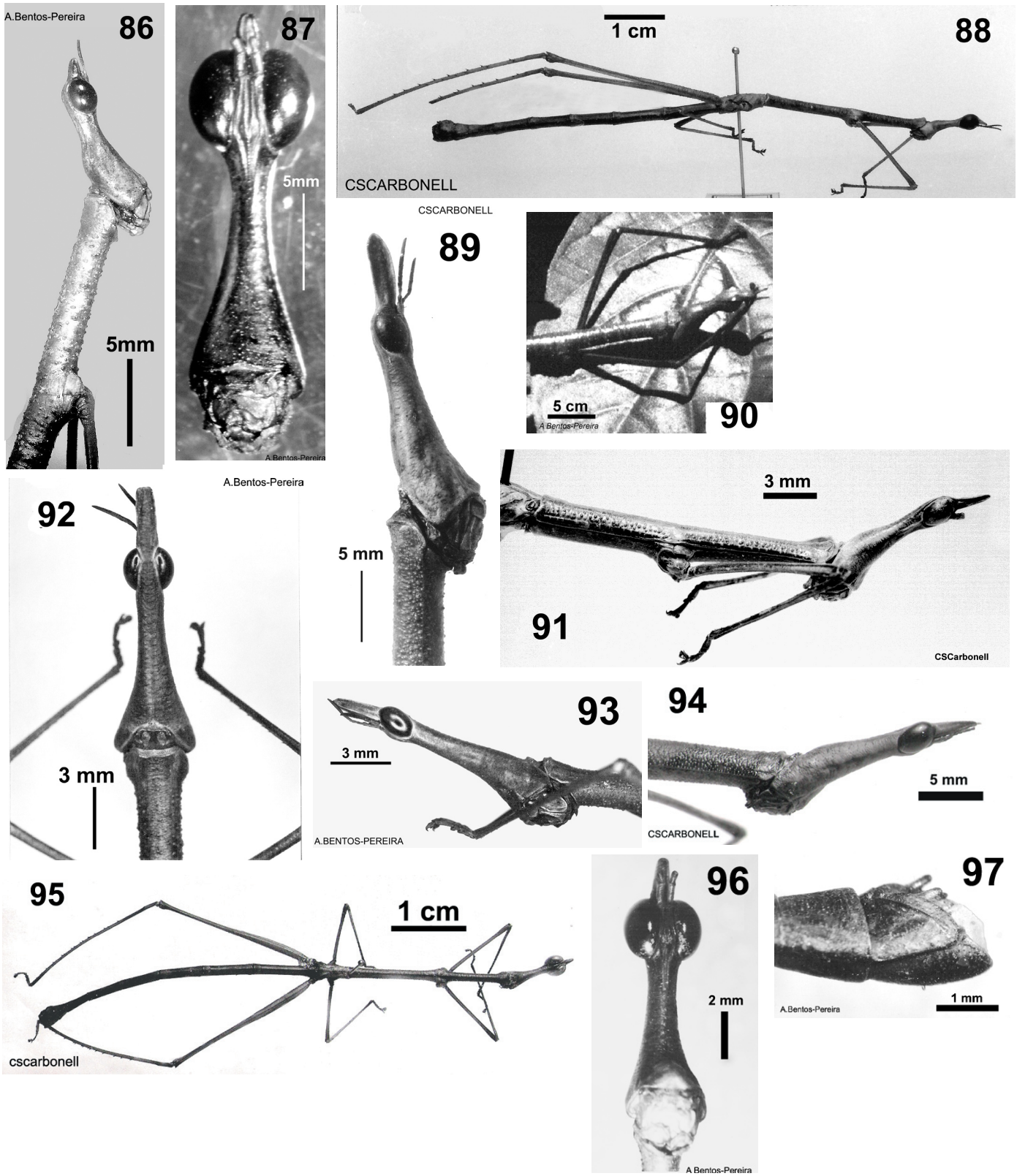

Fig. 86. *C. urihi*, male. Paratype. Head and pronotum. **Fig. 87.** *C. xaripe*, male. Paratype. Head. **Fig. 88.** *P. latirostris*, male. Holotype. **Fig. 89.** *P. latirostris*, female. Head Lateral view. **Fig. 90.** *P. panamensis*, female. Head. **Fig. 91.** *P. septentrionalis*, female. Head. **Fig. 92.** *P. matogrossensis*, female. Holotype. Head. Dorsal view. **Fig. 93.** *P. matogrossensis*, female. Holotype. Head. Lateral View. **Fig. 94.** *P. pyramidalis*, female. Holotype. Head. Lateral view. **Fig. 95.** *P. pyramidalis*, male. **Fig. 96.** *P. riedei*, male. Holotype. Head. Ventral View. **Fig. 97.** *P. riedei*, male. Holotype. Subgenital plate. Lateral view.

Fig. 98. Probable distribution of *Carbonellis* n. gen. **Fig. 99.** Probable Distribution of *Pseudoproscopia* n. gen. **Fig. 100.** Probable distribution of *Paraproscopia* n. gen.

strongly sclerified. The most proximal extremity communicates with a very short membranous chamber which terminates in the ejaculatory duct.

Female. Of medium size, and small in comparison with the females of the rest of the group. Head conical, with a fastigium with apical expansions of the aristae, giving it a quadrangular shape. The dorsal face is considerably wider than the ventral one. The entire margin of the expansions is bordered by a fine carina.

There are no other carinae, neither on the fastigium nor on the rest of the head. Antennae of seven segments, with the lenticular organ on the last one. They do not exceed the apex of the fastigium. Eyes globose with dark spots.

Pronotum clearly divided into two unequal parts by the insertion of the fore legs. The anterior part has convex sides, the posterior part straight ones. The anterior margin of the pronotum above the neck, is rounded, bordered by a carina which forms a medial point directed caudally. All of the integument is pitted with large circles with a distinct border and transverse striae, except on the posteror margin, which forms a wide ring bearing only striae. Pleural suture distinct, especially in its first half. The medial dorsal line is marked by a chain of small tubercles.

Mesonotum with a wide granular medial band and smooth sides. Pleural sutures scarcely delineated by a flattened and indistinct carina. Meso-metanotal suture almost straight. Metanotum with a transverse fold which starts on the pleuron in its anterior part. The rest of it is the same as on the mesonotum. The metanotal-first abdominal suture makes a wide curve with a small median tubercle.

The abdomen has a smooth integument with five dorsal carinae, of which only the medial one is well marked. Epiproct large and lingulate with a very rounded tip.Cerci very small and sharply pointed. Ovipositor with smooth, sharply pointed, valves. Posterior margin of the subgenital plate rounded.

Spermatheca. A short thick duct terminates in a simple elongate ampulla. There is a rather thick digitiform prolongation in its final quarter, almost as long as the terminal ampulla itself.

Discussion

Treatment of this group of species belonging to three new genera completes my revision of the genus *Proscopia.* (Bentos-Pereira 2006). Many species remain to be examined, and certainly many more to be described, both from the wild and from museum collections, but the observations made to date necessitated the steps already taken. It was the marked differences in the phallic complexes of the males, as well as the complementary differences in the spermathecae and subgenital plates of the females, that enabled us to make this revision.

The female characters have been rather little used in the past, although Liana (1972,1980) used them repeatedly to validate synonymized species or simply to augment poor descriptions. This group contains some of the largest insects in the world with some of the strangest characters. These inhabitants of tropical amazonian and montane rainforests show an external homogeneity that has complicated their taxonomic study to such an extent that many of them have changed genera several times in the past 100 y.

The species of *Carbonellis*, a genus which we can consider to be central amazonian, resemble each other closely and share their habitat, but are readily separated on phallic characters.

The genus *Pseudoproscopia* has the widest distribution, pan-Amazonian and extending from the Guyanas to Panama and Costa Rica, with the most northerly species of the group being *P. septentrionalis* and *P. panamensis*. Despite this wide range it is very homogenous both in its external characers and in those of the phallic complex and spermatheca.

Paraproscopia is also distributed in the Amazon, but restricted to its western part, extending from the Mato Grosso in the south up to the center of Colombia in the north.

Variety of collection localities for the species studied here suggests that they are a group most tolerant of modification of their habitat.

Some of the species studied here, such as *Pseudoproscopia robusta* and *Paraproscopia riedei*, have been used for neurobiological and ecological studies by Museums and Institutes in Europe, which kindly provided specimens to the present author. At the moment of their revision, now some time past, *P. riedei* was still maintaining intact all of its characters, but *P. robusta*, in a culture in the MHNP derived from French Guiana, was starting to show serious external malformations, doubtless due to endogamy and the lack of suitable conditions for the imaginal moult. None the less, its sexual characters were still unchanged.

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