



---

## **Proscopia Klug 1820 and the status of Taxiarchus Brunner von Wattenwyl 1890 (Orthoptera, Eumastacoidea, Proscopiidae)**

Author: Bentos-Pereira, Alba

Source: Journal of Orthoptera Research, 15(1) : 79-90

Published By: Orthopterists' Society

URL: [https://doi.org/10.1665/1082-6467\(2006\)15\[79:PKATSO\]2.0.CO;2](https://doi.org/10.1665/1082-6467(2006)15[79:PKATSO]2.0.CO;2)

# *Proscopia* Klug 1820 and the status of *Taxiarchus* Brunner von Wattenwyl 1890 (Orthoptera, Eumastacoidea, Proscopiidae)

ALBA BENTOS-PEREIRA

Universidad de Guadalajara. Centro Universitario de Los Lagos. Dpto. de Ciencias de la Tierra y la Vida. Lagos de Moreno, Jalisco, México. Email: abentos@gmail.com

## Abstract

The genus *Taxiarchus*, reinstated by Jago (1989), is revised, incorporating characters derived from the female genitalia. The outcome is to synonymize the genus with *Proscopia* Klug 1820, as has previously been suggested on the basis of external morphology alone.

However, these new characters and Jago's restrictive definitions of the proscopiid genera *Taxiarchus* have the effect of allowing this synonymy only for some species of *Proscopia*, leaving the other species originally described under that genus now belonging to other genera, which will be erected later in another paper.

In this work the boundaries of the genus *Proscopia* are defined for both sexes, *Taxiarchus* is synonymized with *Proscopia*, and two new species are described.

## Keywords

*Proscopia*, *Taxiarchus*, taxonomy

## Introduction

No other genus of proscopiids has led such a controversial life as *Taxiarchus* Brunner von Wattenwyl, 1890. Originally, the genus was described as having only a single species, *T. superbus* Brunner, 1890. Subsequently, Rehn (1906) described another species, *T. paraensis*.

Later, Hebard (1924) synonymized *Taxiarchus* with *Proscopia*. This synonymy was accepted in Carbonell's (1977) catalogue and by Liana (1972). Jago (1989) revalidated the genus and added two new combinations: *T. latirostris* (Brunner, 1890) and *T. sajax* (Scudder, 1869); he reinstated *T. paraensis*, synonymized under *P. scabra* Klug 1820 by Rehn (1918). Jago did this on the basis of studies of the phallic complex, ignoring female characters which have since proven useful at the generic level (Bentos-Pereira 2000, 2003a, 2003b.)

From our study of the spermatheca, the phallic complex, and external morphological characters, such as the presence of the mesopleural carina described originally in genera diagnosis (Brunner, 1890) or its vestiges, and from other new characters, such as the shape of the posterior border of the female subgenital plate (Liana 1972), we agree with Jago as to the identity of the species complex attributed by him to *Taxiarchus*, viz. *Proscopia superba*, *Proscopia paraensis* and *Proscopia sajax*. We do not however agree with his incorporation of *P. latirostris*. This species does indeed present the characteristic union between plates 1 and 2 proposed by Jago, but also has endophallic sclerifications which relate it to another group of species. The female allolectotype and the female paralectotype of this species are totally eviscerated, making it impossible to examine the spermatheca, which

would have provided the conclusive evidence.

The holotype female of *Proscopia gigantea* Klug 1820, has a very characteristic tuberculate carina on the mesopleura. Inspection of this specimen shows a trilobate spermatheca identical to those of the females of species agreeing with Jago's definition of *Taxiarchus*. On the principle of precedence, all of the species belonging to *Taxiarchus* are here synonymized with *Proscopia*.

From our revision to date of the majority of the species of *Proscopia*, we deduce that they can be grouped into three species complexes; two of these will be treated in another paper.

## Methods

The types examined belong to the following institutions: Brazil: Museu de Zoologia da Escola Agrícola Luiz de Queiroz de Piracicaba (ESALQ), Museu de Rio de Janeiro (MRJ); France: Museum d'Histoire Naturelle, Paris (MNHN); Austria: Naturhistorisches Museum zu Wien (NM); Colombia, Universidad Nacional. Instituto de Ciencias Naturales (ICN).

The genitalia of all these types were dissected out and the examined specimens are identified by a reference number plus the initials "abp", as well as the original data of the specimen label. This paper includes 2 tables (Tables 1, 2) with dimensions of the specimens treated, a distribution map (Fig. 34) and a list of the valid species of *Proscopia* (Table 2).

Not only the types, but also other unidentified specimens found in the collections listed above were examined. This has led to an enrichment of the known fauna, which is relatively poor in described species, like all arboreal faunas (Bentos-Pereira & Rowell 1999).

The data on the male specimens used in the key were taken from Jago (1989). Male and female genitalia were macerated in 8% KOH solution and stained in acetic carmine when structures were not clear, principally the spermathecae. Dimensions were measured according to the criteria given by Bentos-Pereira (1996), and the terminology used for the phallic complex was taken from Jago (1989). In this context I include a schematic drawing of the plates of the phallic complex in *Proscopia* (Figs 29, 30). Drawings were made with a drawing tube attached to a Nikon type SMZ 800 stereomicroscope.

A distribution map of the described species is included, based on a general map of phytogeographical zones (Cabrera & Willink 1980).

## Results

*Proscopia* Klug, 1820 *partim*

*Type species.*—*Proscopia gigantea*, by subsequent designation (Guérin-Meneville, 1828).

- 1820 Klug, Horae Phys. Berolinensis 27: 17.  
 1825 Latreille, Encycl. Method. 10: 211.  
 1828 Guérin-Meneville, Dict. Classique Hist. Nat. 14: 297.  
 1831 Serville, Ann. Sci. Nat. 22: 265.  
 1835 Brullé, Hist. Nat. Ins. 9: 211.  
 1840 Blanchard, Hist. Nat. Ins. 3: 36.  
 1843 Westwood, Arcana Ent. 2: 55.  
 1845 Blanchard, Hist. Nat. Ins. 2: 264.  
 1851 Blanchard, in Gay, Hist. Fis. Polit. Chile 6:59.  
 1879. Walker, Cat. Derm. Salt. Brit. Mus. 3: 485.  
 1890 Brunner von Wattenwyl, Verh. zool.-bot. Ges. 40: 94.  
 1890 Brunner von Wattenwyl, Verh. zool.-bot. Ges. 40: 109.  
 1890 Kirby, Scient. Pr. R. Dublin Soc. 6: 586.  
 1910 Kirby Syn. Cat. Orth. 3(2): 83, 87.  
 1924 Hebard, Trans. Amer. Ent. Soc. 50: 93.  
 1939 Mello-Leitao, Rev. Mus. La Plata N.S. 1: 399.  
 1939 Mello-Leitao, Verh. VII Int. Kongr. Ent. 1: 300.  
 1941 Roberts, Trans Amer. Ent. Soc. 67: 12, 20.  
 1941 Roberts, Trans. Amer. Ent. Soc. 67: 12.  
 1959 Rehn & Grant, Ent. News 70(9): 247.  
 1961 Dirsh, Bull. British Mus. 10(9): 363.  
 1972 Beier, Handb. Zool. 4/2, 2/9: 29.  
 1972 Liana, Ann. Zool. 29(13): 431.  
 1973 Descamps, Acrida 2(2): 79, 80, 83.  
 1977 Carbonell, in Beier, Orthopterorum Catalogus Pt. 17: 21.  
 1989 Jago, Eos 65:2, 297.

*Description.*—Apterous insects, external sexual dimorphism restricted to terminalia, size and shape of the head (Fig. 9).

Males: (Figs 9-13) small, with the head somewhat narrowed behind and below the eyes. Eyes, globose, large. Fastigium conical, approximately as long as major axis of eye. Antennae longer than head. Prothorax cylindrical, with pleural suture marked by a raised area or carina. Prosternum flat. Mesopleuron with an anterior carina marked by a variable row of blunt teeth. Hind femur moderately inflated at its base. Hind tibiae lacking interior dorsal spines at the tip, but possessing them on the external carina. Lower margin of the hind femur smooth, without teeth.

Apex of male abdomen globose with a short, obtusely rounded subgenital plate.

Phallic complex: plates 1 and 2 are always present, united by a very narrow bridge. Plates 4 present, convex in profile, fused to plate 4b which is thereby rendered indistinguishable. Ejaculatory duct little sclerified distally but heavily sclerified proximally. Ejaculatory sac simple and membranous. There are no other distinguishable sclerites.

Female: (Figs 1-8, 14-18): approximately twice the size of the male. Head conical with a well-developed fastigium, generally also conical, in length exceeding considerably the major axis of the eye. Antennae scarcely exceed the head. Body like that of male, but more robust. Ovipositor valves large, robust, the edges smooth or minutely serrate. Epiproct elongated and rounded. Subgenital plate of the female elongate, with a tendency to have spatulate median prolongations, or to be spatulate in its entirety. Female genitalia

comprise three separate elongate spermathecae, inserted in a dorsal prolongation of the bursa copulatrix of variable form and size. Both the bursa and this prolongation are sclerified to some extent.

*Proscopia gigantea* Klug 1820.  
(Figs 1-5, 19, 24)

- 1820 Klug, Horae phys. Berolinensis 27: 18.  
 1825 Latreille, Encycl. Method., Insectes 7: 212.  
 1828 Guérin-Meneville, Dict. Classique Hist. Nat. 14: 297.  
 1831 Serville, Ann. Sci. nat. Paris 22(86): 265.  
 1838 Burmeister, Hand. Ent. 2(2): I-VIII: 604.  
 1870 Walker, Cat. Derm. Salt. British Mus. 3: 486.  
 1890 Brunner von Wattenwyl, Verh. zoo.-bot. Ges. 40: 97.  
 1919 Kirby. Syn. Cat. Orth. 3(2): 87.  
 1939 Mello-Leitão, Rev. Mus. La Plata Zool. (N.S.) 1: 402.  
 1941 Roberts, Trans. Amer. Ent. Soc. 67: 12.  
 1977 Carbonell, In Beier [ed.]. Orthopterorum Catalogus 17: 22.  
 1989 Jago, Eos 65(1): 282.

*Type locality.*— South America, Brazil, Pará.

*Location of type.*— Museum für Naturkunde, Berlin (MNB).

*Material examined.*— Brazil, Pará, Mangabeira, Mocajuba. X-1953. O. Rego leg (MRJ). Females abp 336, 676. Brazil, Amazonas. Porto Velho Br. 319 Km 320 B. Silva leg (MRJ) Female abp 329. Brazil, Amazonas. Reserva Biológica de Cuieiras 15/4 - 15/5/1981 M. Descamps leg. (MNHNP). Female abp 559.

*Description.*— Large insect, in color dark brown, almost black. Only the internal faces of the hind femora are lighter in color. The entire integument is microsculptured.

Head: Subconical, a little narrowed below the eyes. Tip of fastigium quite sharply pointed, with sharp edges more rounded towards the base, more acute distally. Eyes not very conspicuous.

Pronotum: Subcylindrical, with the pleural suture marked by a line and a fine dorsal carina. Anterior margin straight, with a rather low median projection, the posterior margin forming a poorly marked thickening. Starting from the projection on the anterior margin, a fine carina runs dorsally and medially along the entire pronotum. Integument roughly granulated. Meso- and metanota are very different from the pronotum: the mesonotum has the integument microsculptured throughout, although less densely than on the pronotum; the mesopleura are almost smooth, with a striking carina above, bearing five large tubercles like rounded teeth. The mesonotal suture is straight. The metanotum has areas of smooth integument in its anterior part, but is laterally and elsewhere covered with granules. Posterior margin elevated, with a tubercle in the midline.

Abdomen: Totally smooth with a median dorsal line.

Ovipositor: Valves large and strong with minutely serrate edges.

Subgenital plate: With a short, broad, spatulate median prolongation. Additionally there are small indentations and projections along its margins.

Genitalia: Bursa copulatrix thick, almost without folds and with sclerified zones. This gives rise dorsally to a short tube that divides into two. One branch (a) is a long duct terminating in two small prolongations. The other branch divides into two longer winding tubes. At the tip of one there is a long globose expansion (b) and



Fig. 1. *P. gigantea*. Holotype. Female. Head. Dorsal view.

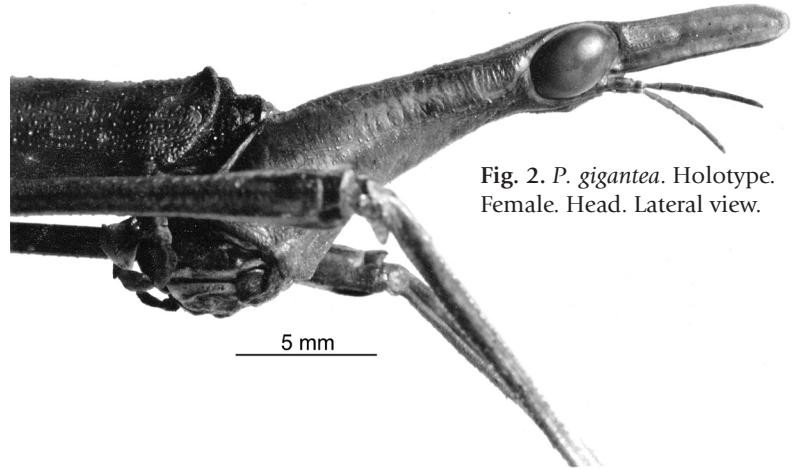


Fig. 2. *P. gigantea*. Holotype. Female. Head. Lateral view.

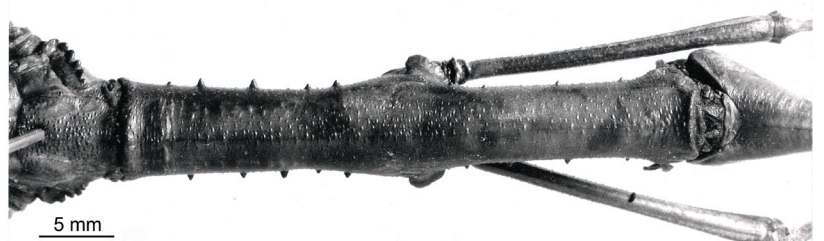


Fig. 4. *P. gigantea*. Holotype. Female. Pronotum. Dorsal view.



Fig. 3. *P. gigantea*. Holotype. Female. Pronotum. Lateral view.

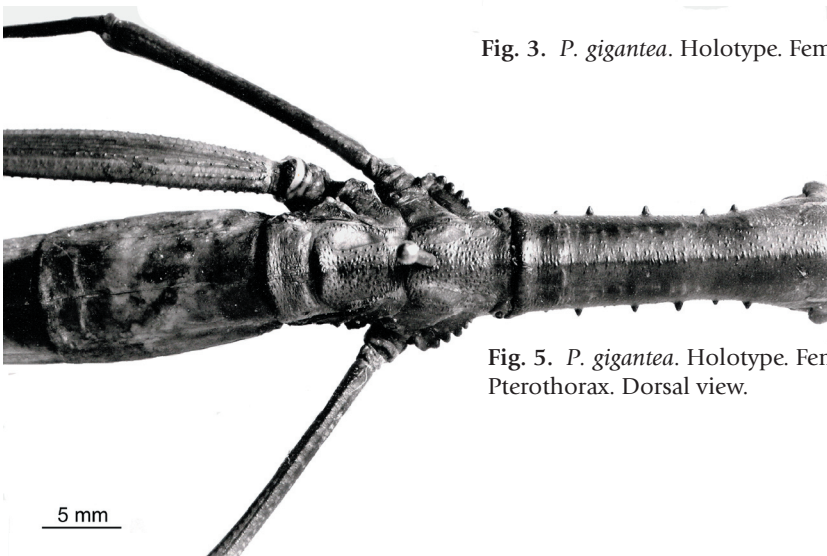


Fig. 5. *P. gigantea*. Holotype. Female. Pterothorax. Dorsal view.





Fig. 6. *P. bivittata*. Holotype. Female. Subgenital plate.

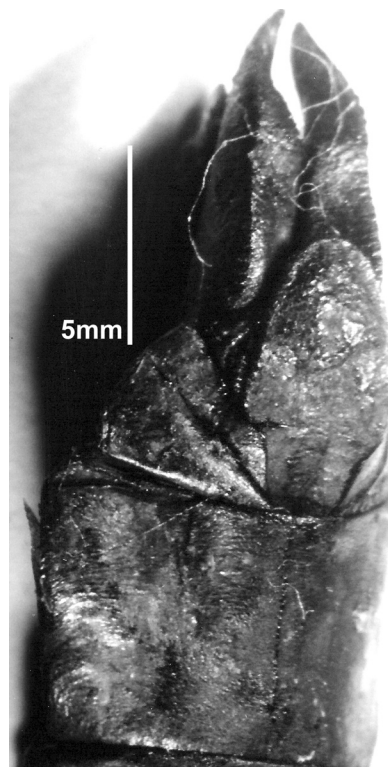


Fig. 7. *P. bivittata*. Holotype. Female. Epiproctus.

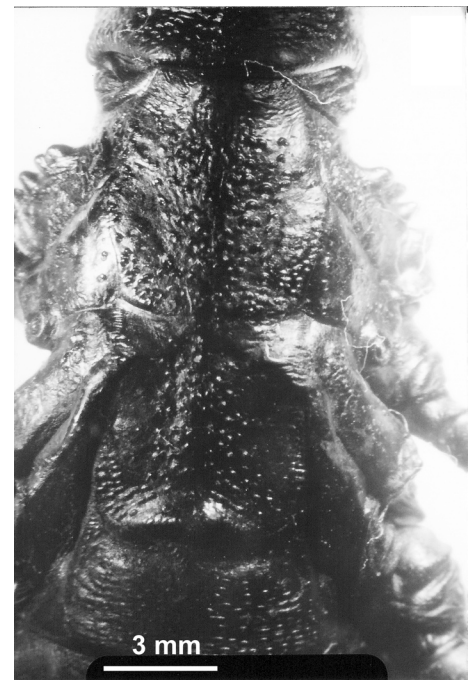


Fig. 8. *P. bivittata*. Holotype. Female. Pterothorax.

the other (c) has a small digitiform diverticulum near its base.

*Proscopia bivittata* Piza 1946  
(Figs 6-8, 20, 25)

1946 Piza, An. Esc. Sup. Agr. Queiroz, Univ. Sao Paulo 3: 166.  
1977 Carbonell, In Beier [Ed.]. Orthopterorum Catalogus 17: 21.

*Type locality*.— Brazil, Amazonas, Manaus.

*Location of type*.— Escola Agrícola Luiz de Queiroz, Piracicaba, Brazil. (ESALQ).

*Material examined*.— Holotype female: Brazil, Amazonas, Manaus. Dic. 1936. ESALQ-MZLQ-I-0012. abp 679 (completely eviscerated).

Brazil, Amazonas, Jutai, 7/78. B. Silva leg. (MRJ) Females abp 223, 677, 678.

There are some differences from *P. gigantea*, which it resembles externally.

The anterior margin of the pronotum bears a wide median notch, bordered by a fine pale-colored carina. The prothoracic pleural suture is also different, being made conspicuous by a narrow, pale yellow, dorsal crease. The posterior margin of the pronotum is marked with a thick ring of inflated tegument, light yellow in color.

The mesopleural suture is less well marked than in *P. gigantea* and only has three blunt tubercles above it.

The ovipositor is more obviously serrate than in *P. gigantea*.

The subgenital plate has a well developed medial prolongation

of a characteristic shape, shown in Figs 6 and 25.

The complex of three spermathecae is formed from two broad prolongations which arise from a wide basal prolongation of the bursa copulatrix. One of these two forms a long fine tube, with a rounded ampulla a little before the most distal part, which is very narrow. The other tube bifurcates immediately, giving rise to two simple tubes of different lengths. The bursa copulatrix has two quite large longitudinal sclerites.

*Proscopia soror* Brunner von Wattenwyl  
(Figs 9-15, 22, 27, 31-33)

1890 Brunner von Wattenwyl, Verh. zoo-bot. Ges. 40: 98. *Proscopia soror*.

1910 Kirby, Syn. Cat. Ortho. 3(2): 84.

1939 Mello-Leitão. Rev. Mus. La Plata Zool. (N.S.) 1: 418.

1972 Liana, Ann. Zool. 29(13): 410.

1977 Carbonell, In Beier [Ed.]. Orthopterorum Catalogus 17: 25.

*Type locality*.— Brazil, Alto Amazonas.

*Location of type*.— Naturhistorisches Museum (NM) Wien.

*Material examined*.— Holotype male, Brazil Alto Amazonas No. 13772 (NM) abp 237. Alectotype female Brazil Alto Amazonas No. 6281 (NM) abp 236. Both labeled by C. S. Carbonell, 1966.

Female: Head approximately conical, but with an irregular narrowing below the eyes. Fastigium large, larger than major axis of the eye, somewhat inclined forwards and downwards; antennae longer than fastigium. The integument of head and thorax is finely spotted with black. The pronotum has a medial black line and another one



Fig. 9. *P. soror*. Holotype. Male.

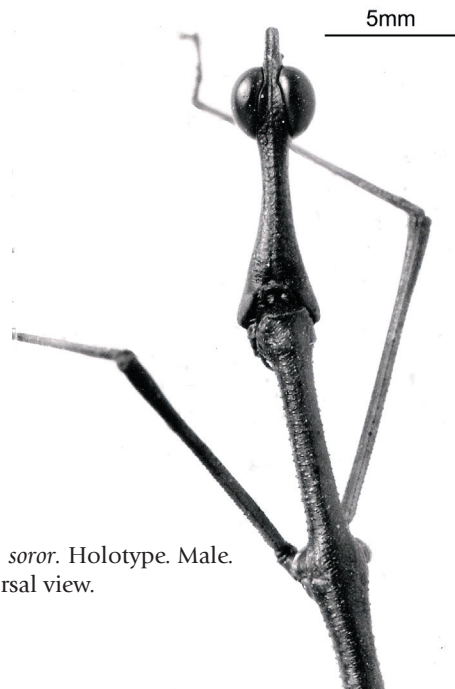


Fig. 11. *P. soror*. Holotype. Male. Head. Dorsal view.

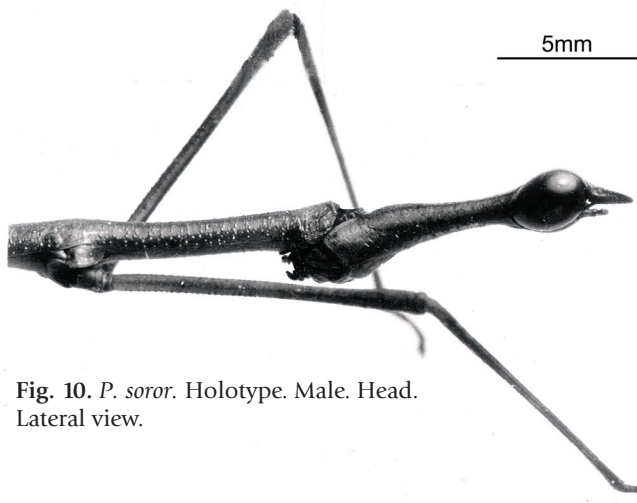


Fig. 10. *P. soror*. Holotype. Male. Head. Lateral view.

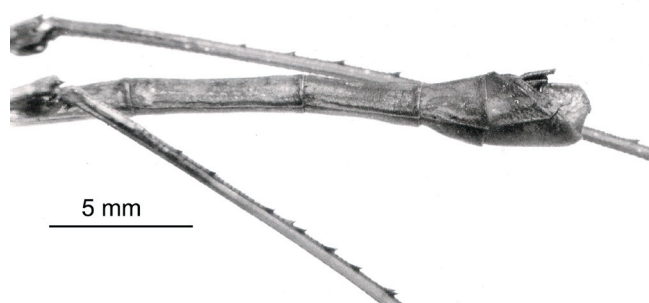


Fig. 12. *P. soror*. Holotype. Male. Terminalia. Lateral view.

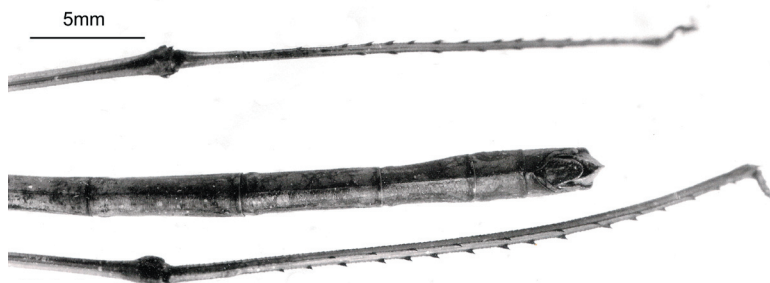


Fig. 13. *P. soror*. Holotype. Male. Terminalia. Dorsal view.



Fig. 15. *P. soror*. Female. Head. Lateral view.



Fig. 14. *P. soror*. Female. Head. Dorsal view.





Fig. 16. *P. monnei*. Holotype. Female. Subgenital plate.

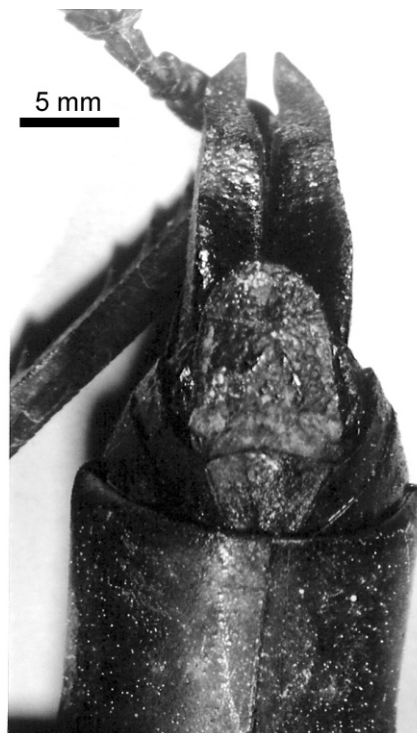


Fig. 17. *P. monnei*. Holotype. Female. Epiproctus.



Fig. 18. *P. monnei*. Holotype. Female. Pterothorax.

marking the pleural suture. Meso- and metanota subequal, separated by a straight suture. There is a relatively wide median band of rugose cuticle, bordered laterally by smooth cuticle. Metanotum with an oblique elevation in its anterior part. Abdomen smooth and opaque with a median carina.

Epiproct larger and elongate. Ovipositor valves smooth and strong. Subgenital plate large and spatulate.

Genitalia: Spermatheca formed from three, short and thick, lobules which debouch together into a thick duct. One of them, the largest one, has a small apical diverticulum, the other two are subequal. The duct which gives rise to them narrows towards its junction with the dorsal part of the copulatory chamber, which is not sclerified. This short and wide duct has some small lateral prolongations.

Male: Shows the differences in size and form of the head customary in this group. The patterning of the integument is identical to that of the female. Subgenital plate short; the pallium is sclerified, cleft medially.

Genitalia: These were found to be in bad condition. Plates 1 and 2 are well developed and united by the narrow isthmus said by Jago (1989) to be characteristic of the group. Plates 4 are strongly sclerified, covering practically all the distal part of the complex. The endophallus has a strong, much-pleated, sclerite, lying at the end of the ejaculatory duct, partially in the ejaculatory vesicle.

*Proscopia monnei* sp. n.  
(Figs 16, 17, 18, 21, 26)

*Etymology*.—Dedicated to Dr. Miguel Angel Monné from Museu de Rio de Janeiro.

*Type locality*.—Brasil, Amazonas, Km. 320.

*Location of type*.—Museu Nacional de Rio de Janeiro (MRJ).

*Material examined*.—Holotype female. Brazil, Amazonas, near Porto Velho (Rondonia). BR 319 Km 320 3/1979. B. Silva leg. (MRJ) abp 329.

*Description*.—Big insect, dark brown, lighter on the inner face of third femur only. Subconical head with occipital carina from tip of fastigium to neck. Small eyes not protruding. Antennae broken.

Prothorax with lateral suture with a little dorsal carina. Right and (thin) anterior edges and posterior edge thick, forming a ring. A medial carina runs dorsally with two little tubercles laterally at its onset.

Pterothorax completely microsculptured. Pleural sutures obsolete. Mesopleurae with the anterior carina formed by five rounded tubercles.

Meso-metanotal suture smooth.

Abdomen completely smooth with some sparse micropunctations.

Large, rounded epiproct. Subgenital plate as in Fig. 26.

Ovipositor with robust microserrated valves.

Spermathecae quite similar to *P. bivittata*. Copulatory chamber thick, poorly folding with sclerifications. From its top arises a short duct that early is divided in two equal-diameter ducts one of them with a globular ampulla near the bifurcated tip. The other is divided into two thin, long ducts, one with a digital prolongation near the origin and the other simple.

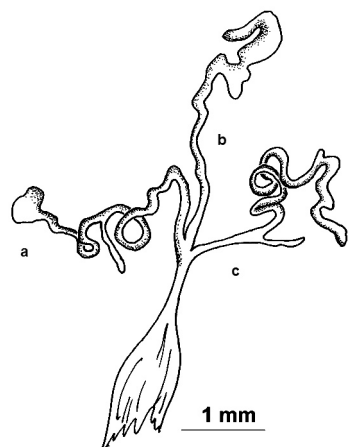


Fig. 19. *P. gigantea*.  
Spermatheca.

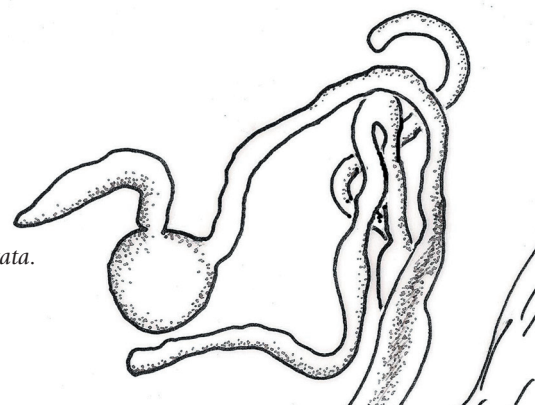


Fig. 20. *P. bivittata*.  
Spermatheca.

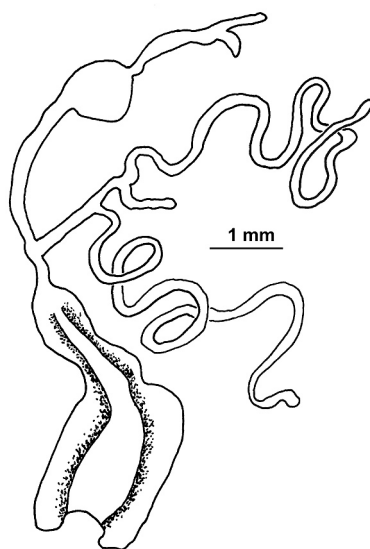


Fig. 21. *P. monnei*. Spermatheca.

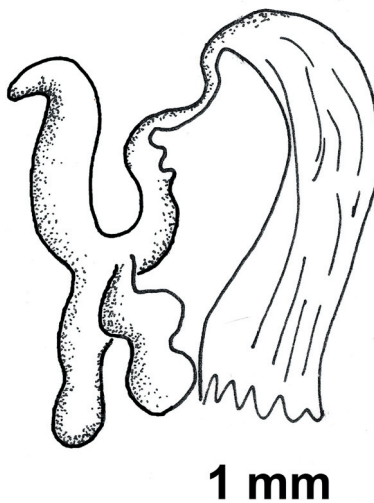


Fig. 22. *P. soror*. Spermatheca.

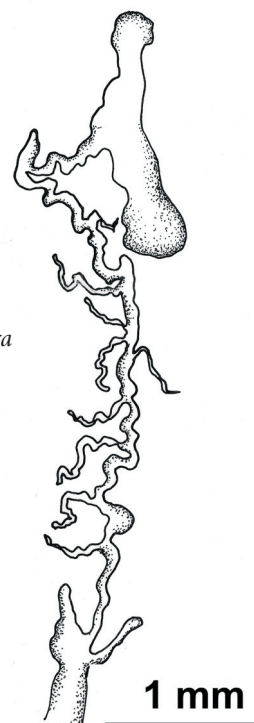


Fig. 23. *P. nigra*.  
Spermatheca.

*Proscopia nigra* n. sp.  
(Figs 23, 28)

*Etymology*.— from the Latin: *nigro*, -a, -um, black, referring to the abundance of black markings.

*Type locality*.— Colombia, Amazonas, Amancayacu.

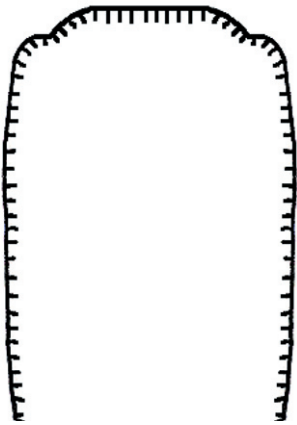
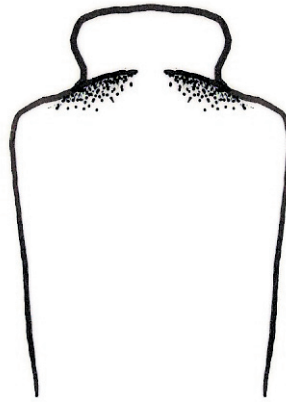
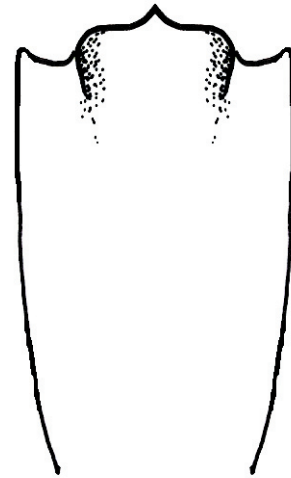
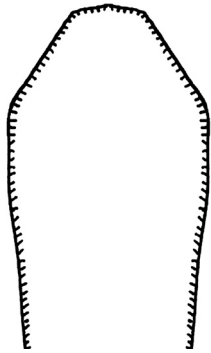
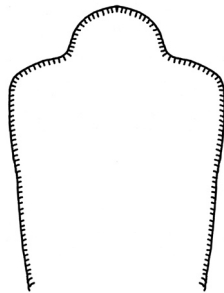
*Location of type*.— Universidad Nacional de Colombia, Instituto de Ciencias Naturales (ICN).

*Material examined*.— Holotype female. Colombia. Amazonas. Amancayacu. No date, C. Campos leg. (ICN) ICN-O-0267 abp 172.

*Description*.— Insect of medium to large size. Body very dark brown with black spots. Head narrowed below the eyes. Fastigium of quadrate cross section with a truncate tip, the four angles ornamented with carinae which continue dorsally to behind the eyes. From the tip of the fastigium a practically obliterated carina runs medially to halfway between the eyes. Eyes globular with dark stripes. Integument with fine granules and dark punctures. Antennae short, seven segments,

antennal organ only on the 7<sup>th</sup> segment. A triangular depression is situated above the epistome. Pronotum strongly granular with dark flared spots, the anterior border forming a thick fold with a fine black carina on top of it. Pleural suture almost indistinguishable. Meso- and metanota with small spots atop each granule in the wide roughly medial band and some spots in the lateral smooth zones. Only the pleural suture of the metanotum has carinae. The pleura have rather conspicuous granules, which are more or less flared but fall short of defining a complete carina. Between the metathorax and the first abdominal segment there is a short wide transverse carina, bow-shaped, with its concave surface directed to the posterior end. Abdomen richly punctate and with a fine medial carina. Epiproct large, with a rounded tip. The posterior part of the subgenital plate is wider than the anterior part. Posterior margin with a clearly developed rounded prolongation. Ovipositor valves



Fig. 24. *P. gigantea*. Subgenital plate.Fig. 25. *P. bivittata*. Subgenital plate.Fig. 26. *P. monnei*. Subgenital plate.Fig. 27. *P. soror*. Subgenital plate.Fig. 28. *P. nigra*. Subgenital plate.

strong and smooth. Femora of the fore legs strongly rounded towards the joint, the tibia almost square in section, the corner ridges not very prominent, although slashed with black, nine internal tibial spines and 11 external spines. The femora and tibiae of the middle legs are similar in structure but more robust, with eight external and 10 internal tibial spines. The hind femur is slightly inflated up to the middle of its length, and has strong and obvious dorsal carinae with microspines. Integument with small tubercles. Two strong spines on the knees. Hind tibiae of square cross section, with the corner ridges slashed with black; with 18 internal and 12 external hind tibial spines.

Genitalia: Somewhat different from the rest of the group, but nevertheless the three characteristic lobules are conserved. Bursa copulatrix small and sclerified. In its dorsal region it gives rise to three tubes simultaneously, with no common duct. Two of these three tubes are short and subequal, and the third is very long with numerous digitiform prolongations and an asymmetric terminal ampulla.

### Discussion

This work, in conjunction with Jago's 1989 revision, should finally put an end to the innumerable conflicts that have developed between the genera *Taxiarchus* and *Proscopia*. It is the inclusion of feminine genitalic characters, which in the family Proscopiidae have proven to be definitive at the generic level, that have permitted this.

*P. nigra* is the most different of all, but nonetheless its external aspect is very similar to that of the other *Proscopia*.

From the examination of the distribution map (Fig. 34) the Amazonian distribution of the species of this genus is apparent. It is necessary to collect more in this zone and to undertake further research into the distribution and biology and most importantly, into how the modification of Amazonian basin and deforestation influence the biodiversity and habits of this group.

### Key to the identification of some *Proscopia* species.

#### Males

- 1 Phallic complex with plates 1 and 2 both well developed . . . . . 2
- 1' Phallic complex with plate 2 very strong, but plate 1 weak and narrow . . . . . *P. sajax*
- 2 Tips of the lophi sharp and large and turned upwards . . . . . 3
- 2' Tips of lophi almost blunt, but turned upwards . . . . . *P. paraensis*
- 3 Junction of plates 1 and 2 rather wide . . . . . *P. superba*
- 3' Junction of plates 1 and 2 extremely delicate . . . . . *P. soror*

#### Females.

- 1 Mesopleural carina present, if only as a vestige . . . . . 2
- 1' Mesopleural carina absent . . . . . *P. soror*
- 2 Subgenital plate with very conspicuous but small, medial prolongation . . . . . 3
- 2' Subgenital plate with a wide posterior prolongation . . . . . *P. gigantea*
- 3 Spermatheca a triple complex, with digital prolongations in the ducts . . . . . 4
- 3' Spermatheca triple, but ducts smooth . . . . . *P. bivittata*
- 4 Spermatheca with only one digital prolongation . . . . . *P. monnei* sp. n.
- 4' Spermatheca with several digital prolongations. . . . . *P. nigra* sp. n.

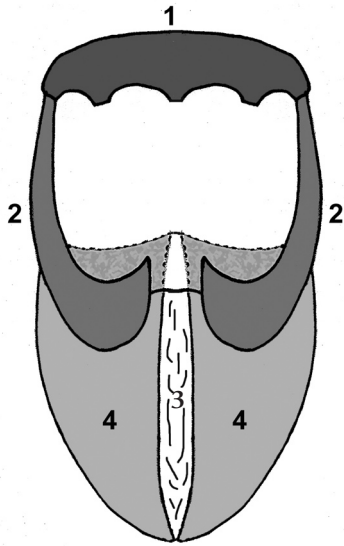


Fig. 29. *Proscopia*. Aedeagus. Theoretical scheme, dorsal. 1: Plate 1 (Jago's schematic phallic complex). 2: Plate 2 or lophi. 3: Medial slit. 4: Valvular plates.

#### Acknowledgements

I am grateful to Professors Carlos Carbonell and C.H.F. Rowell for their help, critical revisions and discussion of ideas. C. Amedegnato greatly improved this work with certain comments. To the latter two my thanks also for hospitality and teaching during an unforgettable stay. The National Museum of Natural History, Paris, contributed with an invitation to work with its collection. I thank the curators of various Museums for their generous loans of the material here revised, especially Drs Ulrike Aspöck of the Naturhistorisches Museum, Austria, and M.A. Monné y Eliana Canello of the Museos de Rio de Janeiro and de Zoología de Sao Paulo, Brazil, for the use of their facilities and the cordiality with which they received me.

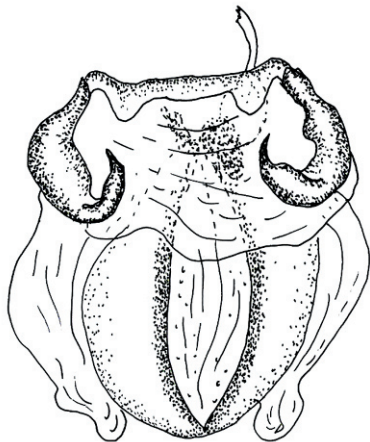


Fig. 31. *P. soror*. Holotype. Male. Aedeagus. Dorsal view.

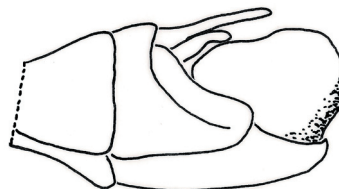


Fig. 32. *P. soror*. Holotype. Male. Subgenital plate. Lateral view.



Fig. 33. *P. soror*. Holotype. Male. Subgenital plate. Dorsal view.

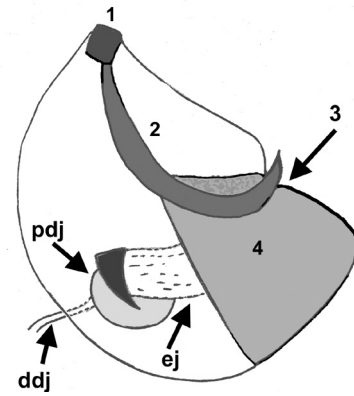


Fig. 30. *Proscopia*. Aedeagus. Theoretical scheme, lateral. pdj: Plate between ejaculatory duct and ejaculatory vesicle; ddj: Ejaculatory duct; ej: ejaculatory vesicle. 1: Plate 1 (Jago's schematic phallic complex). 2: Plate 2 or lophi. 3: Medial slit. 4: Valvular plates.

#### References

- Bentos-Pereira A., 1996. El género *Astromascopia* Jago 1989. Caracterización de las especies que lo constituyen. M. s. Thesis, PEDECIBA, Montevideo, 106 pp.
- Bentos-Pereira A. 2000. *Orienscopia* n. gen. (Orthoptera, Proscopiidae) and its species. Journal of Orthoptera Research 9: 149-159.
- Bentos-Pereira A. 2003a. *Mariascopia* n. gen. (Orthoptera, Eumastacoidea, Proscopiidae). Journal of Orthoptera Research 12: 149-157
- Bentos-Pereira A. 2003b. The tribe Tetanorhynchini, nov. (Orthoptera, Caelifera, Proscopiidae). Journal of Orthoptera Research 12: 159-171.
- Bentos-Pereira A., Rowell C.H.F. 1999. The genus *Proscopia* Klug, 1820 (Orthoptera, Caelifera, Eumastacoidea, Proscopiidae) in Central America, with description of a new species. Revue Suisse de Zoologie 106: 627-641.
- Blanchard E. 1852. In Gay: Historia física y política de Chile, Zoología. Vol. VI, pp.60-64.-
- Brunner Von Wattenwyl K. 1890. Monographie der Proscopiiden. Verhandlungen der k.k. zoologisch-botanischen Gesellschaft, Wien XL. 87-124, pl. 3, 4, 5.

Table 1. Species included in the genus *Proscopia* Klug 1820.

<i>Proscopia attenuata</i> Walker, 1870	Species not examined
<i>Proscopia bivittata</i> Piza, 1946	
<i>Proscopia brevicornis</i> Klug, 1820	Species not examined
<i>Proscopia geniculata</i> Mello Leitao 1939	Species not examined
<i>Proscopia gigantea</i> Klug, 1820	
<i>Proscopia granosa</i> Walker 1870	Species not examined
<i>Proscopia granulata</i> Klug 1820	Species not examined
<i>Proscopia heteropoda</i> Stoll 1813	Type lost*
<i>Proscopia monnei</i> sp. n.	
<i>Proscopia nigra</i> sp. n.	
<i>Proscopia paraensis</i> (Rehn 1906) comb. nov.	According to Jago, 1989
<i>Proscopia rileyi</i> . Mello Leitao	Species not examined
<i>Proscopia rondoni</i> Mello Leitao 1939	Species not examined
<i>Proscopia sajax</i> Scudder 1869 comb. rest.	According to Jago, 1989
<i>Proscopia soror</i> Brunner von Wattenwyl 1890	
<i>Proscopia subgranulata</i> Walker 1870	Species not examined
<i>Proscopia sublaevis</i> Walker 1870	Species not examined
<i>Proscopia superba</i> (Brunner von Wattenwyl 1890) comb. nov.	According to Jago, 1989

\*The illustration in the article in which this species is described shows a non-existent (impossible) insect, possessing long antennae like those of an Ensiferan, and a first pair of legs like those of a Dictyopteran.

- Cabrera A.L., Willink A. 1980. Biogeografía de América Latina. Monografía No. 13 Serie de Biología. OEA. Washington.D.C.
- Carbonell C.S. 1977. Superfamily Proscopioidea, family Proscopiidae. Pars 17 of Max Beier (Ed.) Orthopterorum Catalogus. W.J. Junk, The Hague, 29 pp.
- Dirsh V.M. 1961. A preliminary revision of the families and subfamilies of Acridoidea (Orthoptera: Insecta). Bulletin British Museum of Natural History 10: 351-419.
- Guerin-Meneville F.E. 1846. Iconographie du Règne Animal de G. Cuvier. Insectes. Paris
- Hebard M. 1924a. Studies in the Acrididae of Panama (Orthoptera). Transactions American Entomological Society 50: 75-140, pl. 6-8.
- Jago N.D. 1989. The genera of the Central and South American grasshopper family Proscopiidae (Orthoptera: Acridomorpha). EOS, Madrid, 65: 249-307
- Kirby W.F. 1910. A Synonymic Catalogue of Orthoptera. Vol. 3. Orthoptera Saltatoria. Part. 2. (Locustidae *vel* Acrididae). British Museum, London, 674 pp.
- Klug F. 1890. *Proscopia*, novum Insectorum Orthopterorum genus. Horae Physicae Berolinensis, Bonnae 15-26, pl. 3, 4.
- Liana A. 1972. Etudes sur les Proscopiidae (Orthoptera). Pol. Akad. Nauk. Inst. Zool., Annales Zoologici 29: 381-459.
- Mello-Leitao, C. De. 1939a. Notes sur les proscopides. Verhandlungen VII Internationaler Kongress für Entomologie Wien, 1: 292-302
- Mello-Leitao C. De. 1939b. Estudio monográfico de los Proscópidos. Revista del Museo de La Plata (N.S.) 1 (Zool.8) 279-450, pl. 1-12
- Rehn J. A. G. 1906. A new species of proscopiid (Acrididae) from the Amazon Region. Entomological News 17: 332-334.
- Rehn J.A.G. 1918. On a collection of Orthoptera from the State of Pará, Brazil. Proceedings Academy of Natural Sciences. Philadelphia. 70: 144-236, 2 pl.
- Roberts H.R. 1941. A comparative study of the subfamilies of the Acrididae (Orthoptera) primarily on the basis of their phallic structures. Proceedings Academy of Natural Sciences, Philadelphia 93: 201-246.
- Serville J. G. Audinet 1831. Revue methodique des insectes de l'Ordre des Orthoptères. Annales des Sciences Naturelles, Paris., 22:28-65, 134-167, 262-292. [Note: acridoids in pp. 262-292.]
- Serville J.G. Audinet, 1839. Histoire naturelle des insectes. Orthoptères. Collection des suites a Buffon. Paris, Librairie encyclopedique de Roret. xvii + 776 pp., Atlas, 4 pp., + 14 pl.
- Walker F. 1870. Catalogue of the specimens of Dermaptera Saltatoria, in the collection of the British Museum. Part 3, pp. 425-604. British Museum, London.
- Westwood J.O. 1843. *Arcana Entomologica*. 2 vols. W. Smith. London.

Table 2. Dimensions of *Proscopia* (mm).

Species	Fastigium	Eye	Head	Pronotum	Mesonotum	Metanotum	Subgenital Plate
<b><i>P. bivittata</i></b>							
Holotype female Brazil. Amazonia. Manaus. XII-1936. MZLQ-I-0012. (ESALQ). abp 679.	4.55	3.10	16.33	31.95	6.00	4.00	
Brazil, Amazonas, Jutai, 7/78. B. Silva leg.(MRJ) ♀ abp 223,.	4.30	3.45	16.40	32.20	5.35	4.00	
Brazil, Amazonas, Jutai, 7/78. B. Silva leg.(MRJ) ♀677,	4.35	3.20	16.25	32.00	5.35	4.25	
Brazil, Amazonas, Jutai, 7/78. B. Silva leg.(MRJ) ♀678	4.32	3.20	15.40	32.85	4.50	4.15	
<b><i>P. monnei sp. n.</i></b>							
Holotype female. Brazil, Amazonas, Porto Velho. BR 319 Km 320 3/1979. B. Silva leg. (MRJ) abp 329	4.70	3.35	17.45	32.35	5.05	4.65	
<b><i>P. gigantea</i></b>							
Brazil, Pará, Mangabeira, Mocajuba. X-1953. O. Rego leg (MRJ). ♀abp 336,	7.45	4.10	20.85	39.00	6.20	4.85	
Brazil, Pará, Mangabeira, Mocajuba. X-1953. O. Rego leg (MRJ). ♀♀abp 336, 676.	9.50	3.50	23.00	40.50	7.35	5.10	
<b><i>P. soror</i></b>							
Holotype male. Brazil Alto Amazonas no dates. No. 13772 (NM)abp 237.	1.58	2.24	10.95	25.47	2.68	2.64	0.97
<b><i>P. nigra sp. n.</i></b>							
Holotype female. Colombia. Amazonas. Amancayacu. No date. O. Campos leg.(ICN) abp 172	2.85	3.15	13.45	27.75	4.65	3.85	



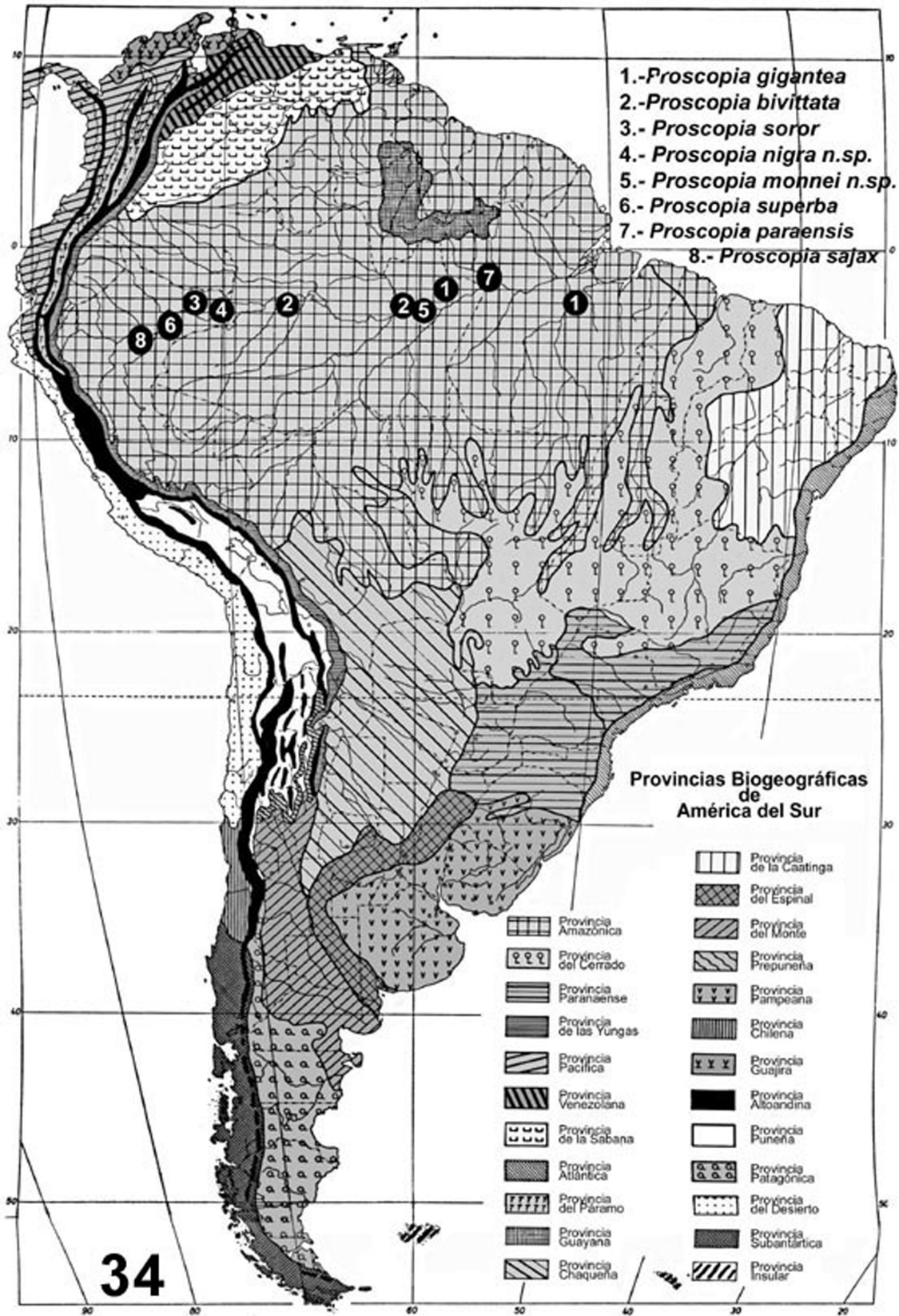


Fig. 34. Distribution map.