THE NEOTROPICAL ORB-WEAVER GENERA *EDRICUS* AND *WAGNERIANA* (ARANEAE: ARANEIDAE)

HERBERT W. LEVI

ABSTRACT. *Edricus* and *Wagneriana* species are Neotropical, nocturnal orb weavers. *Edricus* species are found from Mexico and Panama to Ecuador. Most *Wagneriana* species are found in the Amazon area and southeastern South America. Because of the similarity of the structure of male and female genitalia and the presence of a paramedian apophysis in the male palpus, they are related to *Alpaida*, *Eriophora*, *Parawixia*, and *Verrucosa*.

There are two species of *Edricus*, both previously known from only one sex, and 39 species of *Wagneriana*, 26 of them new. That is, only one-third of the species were previously known. *Anawixia* Chamberlin and *Paraverriucosa* Mello-Leitão are subjective synonyms of the name *Wagneriana*. Eight species names are synonymized.

INTRODUCTION

This is one of a series of papers authored by Levi through the period 1968–1990 intended to make it possible to identify Neotropical orb weavers. The araneid orb weavers are the third largest spider family with 2,600 named species world-wide (Platnick, personal communication, 1989). About one-third of the Neotropical orb-weaver species have now been revised. Despite the popularity of orb weavers as research subjects in studies of behavior, ecology, and silk production, identification has been severely hampered because the descriptions of species are scattered through old literature and were made (as is unfortunately still sometimes done) without reference to or comparison with previously described species. Some had been placed in wrong genera and frequently males and females were described under different names. A future goal of these studies is the analysis of interrelationships among genera. This can be done only by examining and comparing all species of each genus and only after most of the genera are revised.

Revised here are the genera *Edricus* and *Wagneriana* which share a similar abdomen shape and similar genitalia, both synapomorphies. The species of the two genera have been confused despite their distinctive carapace and sternum shapes.

Only one common species of *Wagneriana* was previously readily recognized, *W. tauricornis*, common in Florida. Roewer (1942) and Bonnet (1959) list four other species. The collections available included 39 different species, some of which had been placed in other genera of the family.

METHODS AND MATERIALS

The methods were the same used in my previous papers: careful comparison of the structures of the genitalia of males and females made by illustrating them to separate species. The features that make the genus distinct are also illustrated, although a careful comparison of genera has to wait until the species of more of them are known. Species descriptions cite the distinguishing features and the localities where specimens have been found. Despite this, problems invariably remain. Some of them can be resolved by studying specimens, others by using more sophisticated methods. (But molecular studies

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would be inappropriate for this study, as they would not facilitate recognition or placement of specimens into the species or matching of names with specimens.) Remaining problems are that some species can be clearly recognized in one sex only (e.g., there are difficulties in separating females of W. jelskii, W. maseto, and W. transitoria, also females of hassleri and silvae). Another persistent problem is whether differences between specimens from different places represent species differences or geographical variation (e.g., W. huanc a, Figs. 149, 150). In some cases the association of males with females may remain uncertain (e.g., W. taim).

Eye ratios. The diameters of the posterior median eyes and lateral eyes as seen in profile are measured by comparison with the diameter of the anterior median eye as seen in profile. The distances between the borders of the anterior median eyes and between the anterior median eyes and anterior lateral eyes are measured by comparison with the diameter of the anterior median eyes in profile. The distances between the posterior median eyes and between the posterior median eyes and posterior lateral eyes are measured by the comparison with the diameter of the posterior median eyes as seen in profile. The method was first suggested by H. Homann (personal communication) as an alternative to giving absolute measurements or reporting the fractions as read in a micrometer. However, the measurements here and those in my other araneid papers are only rough calculations as araneid specimens of the same species are quite variable in their eye diameter and placement, and commonly one or two eyes are deformed or missing (e.g., the anterior median eyes of the holotype of W. janeiro are absent).

Internal female genitalia. Illustrations were made by mounting the epigynum temporarily in Hoyer's medium on a microscope slide, the dorsal side facing up. Since Wagneriana epigyna are lightly sclerotized and relatively flat they are easier to examine than the epigyna of species of other genera.

Paratypes and holotypes. Other than the holotype and doubtful specimens, all specimens examined of a new species are marked and reported as paratypes. This permits wide distribution of paratypes to museums in Central and South America and will facilitate future identification of specimens. Holotypes are deposited in a museum with a professional arachnologist as curator or may have to be returned to the country where collected. Rarely is the specimen illustrated or described not the holotype, but if the holotype is in poor condition, a better specimen was used for description and illustration. If an adequate illustration was made earlier I did not make another even if better specimens of the same species were found later. The holotypes of previously named species have been examined and illustrated over a period of twenty years because many had been misplaced. (Misplaced specimens are a unique problem of revising a very large family.) Some specimens for which my information was incomplete could not be borrowed a second time (those of the Caracas and Rio de Janeiro museums).

ACKNOWLEDGMENTS

The specimens used for this revision belong to or are deposited in the following collections, whose curators I thank for making the specimens available to me:

AMNH American Museum of Natural History, New York, United States; N. Platnick, L. Sorkin

BMNH British Museum (Natural History), London, England; P. Hillyard, F. Wanless

CAS California Academy of Sciences, San Francisco, United States; W. J. Pulawski, D. Ubick

CNC Canadian National Collections, Ottawa, Canada; C. Dondale
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<td>DU</td>
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<td>IRSNB</td>
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tion, Washington, D.C., United States; J. Coddington
YDL Y. D. Lubin
ZMK Zoologisk Museum, Copenhagen, Denmark; H. Enghoff
ZSM Zoologische Staatssammlung, Munich, Germany

I would also like to thank Renner L. C. Baptista for his help in locating obscure Brazilian collecting sites, Allen Dean for a gift of specimens, W. Eberhard, J. A. Kochalka, and Yael Lubin for ecological information, Dee Woessner for word processing the keys, Lorna Levi for rewording sentences and carefully reading the whole manuscript, and Diana Sherry for converting the manuscript into an electronic version. Laura Leibensperger helped throughout with all researches. Two reviewers made valuable suggestions to improve the manuscript.

The beginning of this revision was supported by National Science Foundation grants B-5133, GB-36161, BMS 75-05719, DEB 76-15568, DEB 79-23004, DEB 80-19732, and BSR 83-12771. Publication costs for this study were covered in part by the Wetmore-Colles Fund.

Edricus O. P.-Cambridge

Edricus O. P.-Cambridge, 1890: 57. Type species Edricus spinigerus by monotypy. The generic name is masculine (Bonnet, 1956: 1647).

Note. The literature is confused because females of the common Wittica crassicauda (Keyserling) were erroneously matched with Edricus males and placed in the genus Edricus. Also several Alpaida (see list below) species had been described in Edricus.

Diagnosis. Unlike those of related genera and most other araneids, the carapace and sternum of Edricus are modified. The carapace in both sexes is elongated and narrowed in the thoracic region (Figs. 3, 7, 11, 14) and the sternum is posteriorly narrowed and elongated (Figs. 4, 8, 12, 15). Unlike those of most other araneids, except Pronous, the posterior median eyes of Edricus are almost 1.5 to 2 times the diameter of the anterior medians (Fig. 5). The height of the clypeus equals three to four diameters of the anterior median eyes (Fig. 5). The prosomal modifications, the high clypeus and the large posterior median eyes are synapomorphies for the two species of Edricus. Unlike that of Wagneriana the palpus has a paramedian apophysis in the shape of a toad-stool on its side (PM in Figs. 6, 13). The fourth leg is as long as or longer than the first, another synapomorphy for the two species. (The fourth leg is also longer than the first in the unrelated Micrathena species, Levi, 1985.)

Description. Carapace, chelicerae, endites, sternum orange-brown. Coxae orange to orange-brown. Legs orange-brown. Abdomen with some black and white pigment. Carapace without macrosetae. Abdomen with four pairs of lateral tubercles and three posterior median ones. In males the anterior lateral tubercles are prominent spines (Figs. 7, 14). The shape of the abdomen with pairs of tubercles and posterior median tubercles (Fig. 3, 11) resembles that of Wagneriana. The epigynum has a median lobe (Figs. 1, 9) also resembling that of Wagneriana. Both these similarities are regarded as synapomorphies.

Epigynum small with a posterior median plate that differs in shape in the two species (Figs. 2, 10). Male palpal patella with one macroseta. The male of E. productus has a tooth on the endite and a hook on the first coxa (Fig. 8), E. spinigerus has lost both. Edricus productus has a macroseta on the fourth trochanter, E. spinigerus does not. The second tibia has a small spur with one or two macrosetae in males of E. productus (Fig. 7), with one macroseta in E. spinigerus (Fig. 14). The palpus is similar in structure to that of Wagneriana species. The conductor is on the ventral face of the palpus as in Wagneriana, Parawixia, and Alpaida (not near the rim as in Araneus).

Distribution. There are only two species, one in Mexico, the other in Central America to Ecuador (Map 1).
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Map 1. Distribution of Edricus species.

Misplaced Species


*E. eupalaestris* Mello-Leitão, 1943: 177 is *Wagneriana eupalaestris* (Mello-Leitão).


*E. truncatus* (Keyserling, 1865); Roewer, 1942: 762 is *Alpaida truncata* (Keyserling). See Levi, 1988: 472.

Unrecognizable species

*Edricus rubricornis* Mello-Leitão, 1940: 204. Female holotype from Colatina, Espirito Santo, Brazil (MNRF), lost.

**KEY TO EDRICUS SPECIES**

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2(1). Posterior median plate of epigynum in posterior view almost as long as wide (Fig. 2); Mexico (Map 1) ... *productus*

- Posterior median plate of epigynum in posterior view about twice as wide as long (Fig. 10); Panama to Ecuador (Map 1) ...

3(1). Third coxa separated from fourth by about their diameter (Fig. 8); palpus with median apophysis rounded laterally (Fig. 6); Mexico (Map 1) .......... *productus*

- Third coxa adjacent to fourth (Fig. 15); palpus with median apophysis angular laterally (Fig. 13); Panama to Ecuador (Map 1) .........* spinigerus*

**Edricus productus** O.P.-Cambridge

Figures 1–8; Map 1


**Description.** Female from Escuintla, Chiapas. Sternum orange with median white streak. Venter of abdomen with a pair of white blotches framed by black. Posterior median eyes 1.5 diameters of anterior medians, anterior laterals 0.9 diameter, posterior laterals 1 diameter. Anterior median eyes 1.2 diameters apart. Posterior median eyes 2.5 diameters apart. Abdomen as in Figure 3. Total length 15 mm. Carapace 6.3 mm long, 2.8 mm wide. First femur 3.5 mm; patella and tibia 4.1 mm; metatarsus 2.6 mm; tarsus 1.1 mm. Second patella and tibia 3.5 mm; third, 2.5mm. Fourth femur 4.5 mm; patella and tibia 4.4mm; metatarsus 3.1 mm, tarsus 1.0 mm.

Male from Tepic, Nayarit. Posterior me-
Edricus spinigerus O. P.-Cambridge

Figures 9–15; Map 1


Description. Female from Ecuador.

Legs orange-brown with indistinct, dusky longitudinal streaks. Venter of abdomen black between epigynum and spinnerets with a white line on each side, white bordered with black on each side behind spinnerets. Posterior median eyes 2.2 diameters of anterior medians, anterior laterals 0.9 diameter, posterior laterals 0.9 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.1 diameters apart. Abdomen as in Figure 11. Total length 8.0 mm. Carapace 3.0 mm long, 1.6 mm wide. First femur 2.5 mm; patella and tibia 2.7 mm; metatarsus 1.9 mm; tarsus 1.0 mm. Second patella and tibia 2.3 mm; third, 1.7 mm. Fourth femur 3.0 mm; patella and tibia 3.1 mm; metatarsus 2.1 mm; tarsus 0.9 mm.

Male from Depto. Cauca, Colombia. Coxae brown; legs dusky orange. Posterior median eyes 1.6 diameters of anterior me-

Scale lines. 1.0 mm, genitalia, 0.1 mm.
dians, anterior laterals 0.8 diameter, posterior laterals 0.8 diameter. Anterior median eyes 1.2 diameters apart. Posterior median eyes 1.4 diameters apart, 1.3 diameters from laterals. Endite without tooth. First coxa without hook. Fourth trochanter without macroseta. Second tibia thicker than first, with a distal spur and one macroseta (Fig. 14). Total length 6.5 mm. Carapace 3.0 mm long, 1.5 mm wide. First femur 2.4 mm; patella and tibia 2.7 mm; metatarsus 2.0 mm; tarsus 1.0 mm. Second patella and tibia 2.1 mm; third, 1.6 mm. Fourth femur 2.7 mm; patella and tibia 2.7 mm; metatarsus 2.1 mm; tarsus 0.8 mm.

Illustrations. The illustrations were made from specimens from Pichincha Province, Ecuador.

Variation. Total length of females 8.0 to 10.2 mm, of males 6.5 to 7.1.

Diagnosis. The female can be separated from that of E. productus by the shape of the epigynum, wider than long in posterior view (Fig. 10), and by the different outline of the carapace (Fig. 11). The male is separated by the shape of the distal end of the median apophysis (Fig. 13), by the outline of the sternum (Fig. 15), and by the lack of a macroseta on the fourth trochanter.

Natural History. The specimens from Tinalandia were collected by beating vegetation. Lubin (personal communication, 1989) found an immature in a nearly vertical web, 10 cm in diameter, 5 cm above ground. The adult female was a meter away, an immature male in a similar-sized web 5 to 10 cm above ground and 10 cm in diameter. The web was symmetrical with an open hub, the female sat cephalic region down in the hub. Another male and female were collected sitting together under a leaf about 10 cm from the female’s web.

Records. COLOMBIA Cauca: Pacific coastal plain NW Guapi, Jan. 1973, δ (W. Eberhard, MCZ). ECUADOR Pichincha: Rio Palenque, km 47 on Santo Domingo-Quevedo Road, 150 m, 15 Mar. 1982, 2, δ, imm. (Y. Lubin YDL 383, MCZ); Rio Pi-

Wagneriana F. P.-Cambridge

Wagneria McCook, 1894: 203. Type species by monotypy Epeira tauricornis O. P.-Cambridge. The name is preoccupied by Wagneria Robineau-Desvoidy, 1830, for a dipteran, and by Gistl, 1848, for a mollusk (Neave, 1940: 650).


Anauixia Chamberlin, 1916: 258. Type species by monotypy and original designation A. atopa Chamberlin, 1916: 258 [= W. translitoria (C. L. Koch)]. NEW SYNONYMY.

Paraverrucosa Mello-Leitão, 1939a: 64. Type species by monotypy and designation P. neglecta Mello-Leitão, 1939a: 65. NEW SYNONYMY.

Diagnosis. The carapace is high, the cephalic region slightly swollen behind the eyes (Figs. 18, 23), and in the female the sides of the thoracic region are usually glabrous, often dark (Figs. 16, 27, 38, 63). The carapace of the female may have a pair of macrosetae or more in the thoracic groove (Figs. 32, 38; Levi, 1976, figs. 62, 63, 64, 67). The glabrous often dark sides of the carapace as well as the macrosetae in the thoracic groove are synapomorphies of the species of Wagneriana. The macrosetae may be absent, perhaps secondarily lost. The paramedian apophysis of the male palpus is an L-shaped rod (Fig. 19), lying on its side, rarely rounded (U-shaped) or with an acute angle (V-shaped), a synapomorphy shared by all species of Wagneriana but not so in Edricus species. The terminal apophysis and embolus are fused (Figs. 19, 20). Another synapomorphy of Wagneriana species is the modification of the base of the median apophysis above the radix; it may have a small depression (Fig. 28) or teeth (Fig. 19), but lacks the large concavity of the median
apophysis of males of *Eriophora* and *Parawixia*. In most genera of araneids the attachment of the median apophysis is not modified; it may be a sclerotized bar or may not be sclerotized.

**Description.** The coloration of all species is about the same: carapace, sternum, legs yellowish to orange-brown. Carapace often with dusky marks and sides of thoracic region usually, but not always, dark and shiny, and cephalic region with some white setae (Fig. 63). Sternum always darker than coxae. Legs usually with indistinct dusky rings. Abdomen spotted with shades of brown, usually without folium often with dark median band (Figs. 57, 86); no two specimens of a species are identical. Venter gray to black with indistinct white marks. All *Wagneriana* species have a narrow, soft abdomen, longer than wide with nine to 15 tubercles (Figs. 27, 70, 153), three pairs anterior and middle on sides, one pair posterior on sides, and two or three in a posterior, median line (the most posterior tube rcle above the spinnerets, which may face posteriorly or ventrally, may be lacking). The most anterior pair of tubercles may be double in *W. uzaga, W. spicata, W. gavensis*, and *W. iguape* and this is consistent in all specimens of several species (Figs. 126, 128, 132). The tubercles of some specimens of several species may be sclerotized spines. There is no median anterior tubercle (except in *W. turrigera* [Figs. 203, 204], which may not belong here). The position of the tubercles of the abdomen is a synapomorphy shared with *Edricus* and *Parawixia* species. The abdomen may be truncate behind the spinnerets (Fig. 64) or may have a postanal tail (Fig. 66); both shapes may be found in different specimens of the same species. Posterior median eyes usually slightly smaller than anterior medians, laterals the smallest (Figs. 17, 18).

Another apomorphy of *Wagneriana* species shared with *Edricus* is the shape of the epigynum, a wide median lobe often with a minute, light scape at its tip (Figs. 24, 45). It is not rebordered and lacks a median anterior notch (or pocket) as in *Alpaida* (a pocket is present in *W. yacuma*, Fig. 172, and the epigynum is rebordered in *W. gavensis*, Fig. 134). Posteriorly the epigynum has a median plate and two lateral plates, the lateral plates continue ventrally and form the wide median lobe in ventral view (Figs. 25, 30). The seminal receptacles of all females were illustrated, although it is not known whether this will be useful. They are easily examined unlike those of some other araneid genera. The receptacles of some species are consistently thin-walled (Fig. 125), others thick-walled (Fig. 118).

In males the carapace is much narrower in front than in females, high in the thoracic region, with few short setae and lateral eyes not on tubercles (Figs. 21–23). All males have one patellar macroseta on the palpus; endite has a large tooth (Figs. 22, 23) facing a tubercle on proximal end of palpal femur. First coxa with a distal, ventral hook (Figs. 22, 23) and in larger species with a dorsal tubercle that fits against the carapace rim. As in *Parawixia* and *Wixia* some species have one or more macrosetae on fourth trochanter. Second femur (sometimes also third and fourth, rarely first) with ventral row of macrosetae. In all species second tibia thicker than first, more or less swollen, with short, strong macrosetae. Abdomen similar to that of female but smaller (Fig. 128).

The terminal apophysis and embolus are fused (Figs. 19, 20). The terminal division, the terminal apophysis and embolus, is a triangular structure, fan-shaped, its outer edge modified in various species. The fan-shaped terminal division is a synapomorphy shared with *Edricus* and *Parawixia* species. Some female individuals have lost the macrosetae on the carapace and some males have lost the macrosetae on the fourth trochanter (in species that normally have them). In all species there is considerable individual variation in markings and in color, size, length, and prominence of tubercles, and the length of the postanal tail. Two species always have the tubercles
drawn out: *W. grandicornis* (Figs. 65, 66) and *W. heteracantha* (Fig. 108). Only one species, *W. neglecta*, consistently has a long tail (Figs. 119, 122). Most species are surprisingly similar in appearance and can not be separated by color pattern or body shape; they have to be separated by the genitalia.

**Natural History.** All species make a complete orb web and hang cephalic region down in the middle. There is no retreat (Plate 1).

W. Eberhard (personal communication) found that *W. tauricornis* and *W. undecimtuberculata* take their web down when not in use (usually but not always in the daytime) and then sit at exposed sites like the tips of thin branches with their legs pressed to their bodies. Their irregular outlines make them hard to recognize as a spider. When they have an orb they generally hang in the hub or sit on one of the frame or anchor lines facing away with a line to the hub held by leg IV.

**Distribution.** All species are Neotropical. Only *W. tauricornis* extends its range into more temperate North America, and *W. spicata* is found in Mexico. Most species are found in the Amazon drainage and southeastern South America (Maps 2–4).

**Doubtful placement**

One species, *W. turrigera*, has been placed in *Wagneriana* for convenience; it may have to be placed
in a new genus when males are found. Wagneriana turrigera differs from other Wagneriana by having a low carapace and a long anterior median projection from the abdomen (Figs. 200-204).

The separation and determination of specimens of W. heteracantha, W. neglecta, and W. eupalaestris remains uncertain, as is the separation of the females of W. transitoria, W. jelskii, W. maseta, and hassleri and silvae.

Misplaced species

Wagneriana minutissima Mello-Leitão, 1941: 250. Male holotype from Rio Negro, total length 1.5 mm, MNRJ no. 58298, is a Kaira.

**KEY TO FEMALE WAGNERIANA**

1. Anterior pair of tubercles of abdomen double (Figs. 132, 138, 143) 2
   - Anterior pair of tubercles single (Figs. 27, 32, 38) 5

2(1). Thoracic region with two macrosetae, (Fig. 132); Mexico to Costa Rica (Map 4)  • Wagneriana spicata
   - Carapace without macrosetae (Figs. 138, 143); southeastern Brazil to Paraguay 3

3(2). Posterior median plate of epigynum round, wider than lateral plates in posterior view (Fig. 124)  • Wagneriana uzaga
   - Posterior median plate narrow, lateral plates wide (Figs. 136, 141) 4

4(3). In ventral view, epigynum length 1 to 1.5 width, tip at the point of an acute angle (Figs. 134, 135)  • Wagneriana gavensis
   - In ventral view, epigynum wider than long, tip at the point of a shallow angle (Fig. 140)  • Wagneriana iguape

5(1). Thoracic region with at least a pair of macrosetae (Figs. 27, 32, 38)  • Wagneriana taboga
   - Thoracic region without macrosetae (Figs. 63, 80, 86) 17

6(5). Epigynum longer than wide in posterior view (Figs. 55, 151, 197) 7
   - Epigynum wider than long to square in posterior view (Figs. 46, 50, 61) 9

7(6). In posterior view, median plate with a median constriction ventrally (top of Fig. 197); Amazon drainage, Peru (Map 4)  • Wagneriana pakitza
   - Median plate entire (Figs. 151, 161) 8

8(7). In posterior view, dorsal swollen area of median plate triangular (bottom of Fig. 151); Peru (Map 4)  • Wagneriana huanca
   - Dorsal, swollen area of median plate rectangular (Fig. 55); southern Venezuela (Map 4)  • Wagneriana neblina

9(6). In ventral view, epigynum with anterior pocket (Fig. 172); Bolivia to Mato Grosso, Brazil (Map 4)  • Wagneriana yacuma
   - Epigynum without notch 10

10(9). In posterior view, median plate of epigynum with lateral, ventral constriction (top of Fig. 73); Espírito Santo State to Rio Grande do Sul, Brazil (Map 3)  • Wagneriana taim
   - Posterior median plate without such constriction (Fig. 68) 11

11(10). Epigynum in ventral view framed on each side by lateral lobes (Fig. 67); in posterior view, median plate consisting of two round lobes (Fig. 68); Panama to Venezuela, Colombia (Map 3)  • Wagneriana taboga
   - Epigynum in ventral view not framed; median plate without lobes 12

12(11). In posterior view, median plate narrow dorsally; posterior border to soft area less than half width of median plate (bottom of Figs. 25, 36, 46) 13
   - Median plate wide dorsally (bottom of Fig. 41) 15

13(12). Median plate heart-shaped (Fig. 36); Venezuela, Guianas, Amazon drainage (Map 3)  • Wagneriana jelskii
   - Posterior median plate otherwise (Figs. 25, 46) 14

14(13). In posterior view, dorsal area of median plate swollen and set off (bottom of Fig. 25); Panama to Amazon drainage (Map 3)  • Wagneriana undecintuberculata
   - Dorsal area of posterior median plate flat (Fig. 46); Peru (Map 3)  • Wagneriana bamba

15(12). In ventral view, base of epigynum forms acute angle (Fig. 40); in posterior view, posterior median plate ventral margin almost straight (top of Fig. 41); Guian-
as, Amazon drainage to central Argentina (Map 3) \textit{transitoria}.

- Base of epigynum rounded (Figs. 29, 49); median posterior plate dorsally swollen (Figs. 30, 50) \textit{maseta} \(16\)

16(15). In posterior view, posterior median plate narrower dorsally than ventrally (Fig. 50); Amazon drainage (Map 3) \textit{jacaza}.

- Posterior median plate swollen dorsally on each side (Fig. 30); Venezuela, Guianas, Peru, Amazon drainage (Map 3) \textit{maseta} \(19\)

17(5). Abdomen with anterior median projection (Figs. 203, 204); Venezuela (Map 4) \textit{turrigera} \(18\)

- Abdomen anteriorly rounded (Fig. 63) \(18\)

18(17). Abdomen with only one pair of lateral tubercles enlarged (Figs. 63–66); Costa Rica, Pernambuco State, Brazil (Map 4) \textit{grandicornis} \(19\)

- Abdomen with most tubercles short or all extended (Figs. 108, 158) \(19\)

19(18). Abdomen with most tubercles forming
long soft spines (Fig. 108); Minas Gerais State, Brazil, to central Argentina (Map 4) heteracantha
- Abdomen with most tubercles shorter (Figs. 158, 163) 20

20(19). Epigynum in posterior view longer than wide (Figs. 156, 161, 166) 21
- Epigynum in posterior view square to wider than long (Fig. 146) 24

21(20). In ventral view, base of epigynum with a neck (as in Figures 191, 192); ventral surface of head with a pair of dark marks (Fig. 191); southeastern U.S. to Venezuela and Ecuador (Map 4) tauricornis
- No such neck present (Figs. 156, 166) 22

22(21). In posterior view, median plate of epigynum round and containing median longitudinal groove (Fig. 156); Cuba, Hispaniola (Map 4) vega
- Epigynum with median plate otherwise 23

23(22). In posterior view, median plate constricted in middle with a neck (Fig. 166); Colombia to Peru (Map 4) tayos
- Median plate with mid-ventral depression (Fig. 161); Guianas, Amazon drainage (Map 4) acrosomoides

24(21). In posterior view, median plate T-shaped (Fig. 146); Chaco, Paraguay (Map 4) madrejon
- Posterior median plate otherwise 25

25(24). In posterior view, median plate with a constriction (Figs. 178, 183, 188) 26
- Median plate without such constriction (Figs. 78, 111) 28

26(25). In ventral view, posterior margin of base of epigynum on each side of tip straight; no dark V-shaped mark (Fig. 157); Roraima Terr., Brazil (Map 4) roraima
- Posterior margin of epigynum in ventral view rounded; epigynum with V-shaped dark mark ventrally (Figs. 177, 182) 27

27(26). In posterior view, constriction of posterior median plate narrow (Fig. 178); Guianas, lower Amazon (Map 4) hassleri
- Constriction of posterior median plate wide (Fig. 183); upper Amazon (Map 4) siva

28(25). In ventral view, epigynum base oval and set off in ventral view (Fig. 77); posterior view as in Figure 78; Rio de Janeiro, Sao Paulo States, Brazil (Map 3) janeiro
- Epigynum not set off anteriorly in ventral view (Figs. 110, 116) 29

29(28). In posterior view, lateral plates wider than median plate (Figs. 111, 117) 30
- Posterior median plate wider than lateral plates (Figs. 84, 94, 99) 31

30(29). Abdomen usually with narrow tail (Fig. 119); Trinidad to northern Argentina (Map 4) neglecta
- Abdomen usually short (Fig. 113); Sao Paulo State to Rio Grande do Sul, Brazil, Paraguay (Map 4) eupalaestrus

31(29). In posterior view, median plate with wide transverse groove (Fig. 94); Costa Rica to southern Brazil (Map 3) atuna
- Posterior plate without such groove (Figs. 84, 99) 32

32(31). Posterior median plate with rounded ventral lateral lobes (Figs. 84, 85); northern Colombia, western Venezuela (Map 3) cobella
- Posterior plate without such lobes 33

33(32). In posterior view, median plate with dark septum above tip (top of Fig. 99) and posterior median plate round (Fig. 99); posterior margins in ventral view forming acute angle (Fig. 98); Sao Paulo State to central Argentina (Map 3) juquita
- No such dark septum; posterior plate rectangular (Fig. 89); posterior margin of base of epigynum almost straight (Fig. 88); Amazon area of Ecuador, Peru to Espirito Santo State, Brazil (Map 3) lechuza

KEY TO MALE WAGNERIANA
Anterior lateral tubercle of abdomen bifid (Fig. 128) 2
- Anterior lateral tubercle of abdomen simple or indistinct (Fig. 171) 5

2(1). Mexico to Costa Rica (Map 4) palpus as in Figure 133 spicata
- Southeastern Brazil to Paraguay 3

3(2). Median apophysis with thumb-shaped projection (Fig. 139) gavensis
- Median apophysis without such projection (Figs. 127, 144) 4

4(3). Terminal apophysis and conductor projecting above tegulum (Figs. 127, 144) iguape
- Terminal apophysis and conductor surrounded by tegulum (Fig. 127) uzaga

5(1). Embolus long and filiform (Figs. 170, 181) siva
- Embolus not filiform (Figs. 121, 127) 9

6(5). Embolus with loop (Figs. 170, 186) 7
- Embolus almost straight (Figs. 176, 181) 8

7(6). Median apophysis distally pointed as in Figure 186; upper Amazon (Map 4) siva
- Median apophysis distally rounded as in Figure 170; Colombia to Peru (Map 4) tayos

8(6). Median apophysis with tooth and short
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<th><strong>eldorado</strong></th>
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<td>Median apophysis with diagonal keel (Fig. 181); Guianas, lower Amazon (Map 4)</td>
<td><strong>hassleri</strong></td>
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<td>Embolus a gently curved prong, its length almost half the diameter of palpus bulb (Fig. 44); Guianas, Amazon drainage to central Argentina (Map 3)</td>
<td><strong>transitoria</strong></td>
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<td>Embolus not a long, gently curved prong (Figs. 71, 164)</td>
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<td>Conductor almost as large as median apophysis, visible diameters about equal (Fig. 164); Guianas, Amazon drainage (Map 4)</td>
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<td>Long axis of median apophysis parallel to that of cymbium (Fig. 195); southeastern U.S. to Venezuela and Ecuador</td>
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<td>Truncate end of median apophysis round (Fig. 121); Trinidad to northern Argentina (Map 4)</td>
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<tr>
<td>Truncate end of median apophysis trapezoidal (Fig. 114); Sao Paulo to Rio Grande do Sul States, Brazil, Paraguay (Map 4)</td>
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<td>Median apophysis distally rounded and with two large teeth, one in front of other (Fig. 92); Amazon drainage area of Ecuador, Peru to Espirito Santo State, Brazil (Map 3)</td>
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<td>Median apophysis otherwise (Fig. 154)</td>
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<td>Conductor almost circular, covering embolus (Fig. 154); Bahia State, Brazil (Map 4)</td>
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<td>20(19). Base of embolus hidden by a flap from conductor and median apophysis with longitudinal and transverse keels (Fig. 28); Panama to Amazon drainage (Map 3)</td>
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<td>Median apophysis with tooth and lobes (Fig. 76); Espirito Santo to Rio Grande do Sul States, Brazil (Map 3)</td>
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<td>24(23). Median apophysis short with tubercle on &quot;lower&quot; margin (Fig. 87); northern Colombia, western Venezuela (Map 3)</td>
<td><strong>cobella</strong></td>
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<td>26(25). Median apophysis with rounded lobes as in Figure 39; Venezuela, Guianas, Amazon drainage (Map 3)</td>
<td><strong>felskii</strong></td>
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<td>27(26). Tegulum with knob distally (Fig. 81); Rio de Janeiro, Sao Paulo States, Brazil (Map 3)</td>
<td><strong>janeiro</strong></td>
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<td>28(27). Embolus truncate (Fig. 53); Guatemala</td>
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<tr>
<td>Embolus pointed (Fig. 58); southern Venezuela (Map 4)</td>
<td><strong>neblina</strong></td>
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**Wagneriana undecimtuberculata** (Keyserling)

Figures 24–28; Map 3

**Epeira undecimtuberculata** Keyserling, 1865: 805, pl. 18, figs. 1, 2, 9, 8. Female lectotype here designated from New Granada [historical name for
Edricus and Wagneriana • Levi 377

Map 4. Distribution of Wagneriana species.

Colombia and Panama, in BMNH, examined. Keyserling, 1892: 92, pl. 4, fig. 69, ♀, ♂.
Acrosoma tumida Taczanowski, 1879: 120, pl. 1, fig. 34, ♀. Female holotype from Amable Maria, [Dep- to. Junin], Peru, in PAN, examined. First synony-
Wagneriana undecimtuberculata: — F. P.-Cam-
bridge, 1904: 498, pl. 47, figs. 17, 18, ♀, ♂. Roewer,

Description. Female from Panama.
Carapace orange to dark brown. Legs
ringed orange and brown. Venter of abdomen with two light patches. Carapace with two macrosetae (Fig. 27). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.5 diameters apart. Abdomen with 9 to 11 tubercles (Fig. 27). Total length 8.7 mm. Carapace 3.9 mm long, 2.9 mm wide. First femur 4.1 mm; patella and tibia 4.9 mm; metatarsus 2.4 mm; tarsus 1.1 mm. Second patella and tibia 4.2 mm; third, 2.3 mm; fourth, 3.5 mm.

Male from Panama. Color as in female. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.7 diameter apart. Posterior median eyes 1.1 diameters apart. Fourth trochanter with a thick, short macroseta. Total length 7.2 mm. Carapace 3.6 mm long, 2.7 mm wide. First femur 3.1 mm; patella and tibia 3.4 mm; metatarsus 2.1 mm; tarsus 0.8 mm. Second patella and tibia 3.2 mm; third, 2.0 mm; fourth, 2.9 mm.

Variation. The specimens illustrated came from Panama. Total length of females 7.2 to 11.7 mm, of males 6.2 to 7.4.

Diagnosis. In posterior view the epigynum differs from those of _W. spinosa_ and _W. transitoria_ by having the median dorsal area swollen and narrow (bottom of Fig. 25), while in _W. maseta_ (Fig. 30) and _W. transitoria_ (Fig. 41) it is wide, and in _W. jelskii_ (Fig. 36) it is narrow and not swollen. The male differs in the sculpturing of the median apophysis, which has a proximal "vertical" keel and a median "horizontal" keel, together forming a T on its side (Fig. 28).

Natural History. Specimens have been found in a rain forest in Panama, on an oil palm in central Colombia, around a house in a suburb of Cali, in a banana plantation in a vertical orb web, and in a disturbed area in Ecuador.

Distribution. Panama, Amazonas State of Brazil, to eastern Peru (Map 3).

Records. PANAMA Chiriquí: David, 9 (AMNH, MCZ); Bugaba, 9 (MIUP). Panama: Canal area, 9, 9, very common (AMNH, MCZ). TRINIDAD Port of Spain, 9, 9 (AMNH, MCZ); Arima, 9 (AMNH). VENEZUELA Aragua: Rancho Grande, 9 (AMNH). Táchira: Res. Forestal, 9 (MCZ). COLOMBIA Bolívar: Cartagena, 9 (MCZ). Santander: Rio Opón, 1,000 m, 9 (AMNH); Rio Suárez, 800–1,000 m, 9 (AMNH). Cundinamarca: nr. Sasaima, 9 (DU). Antioquia: Turbo, 9 (MCZ); Mutatá, 9, 9 (MCZ). Chocó: 20 km N Palestina, Rio San Juan, 9 (AMNH). Meta: 5 km W Villavicencio, 820 m, 9, 9 (CAS); Villavicencio, 9 (AMNH); Restrepo, 9 (MCZ). Valle: 5 km W Delfina, 400 m, 9 (AMNH); Cali, 1,000 m, 9, 9 (MCZ); Rio Tuluá, 1,100 m, 9 (MCZ); Guapi, 100 m, 9 (MCZ). Putumayo: nr. Pto. Asis, Rio Putumayo, 9 (MCZ); Caquetá: Rio Orteguaza, 9 (AMNH). ECUADOR Esmeraldas: 11 km SE San Lorenzo La Chiquita, 5 m, 9 (MCZ). Napo: Coca, Rio Napo, 9 (MCZ); Cuyabeno, Tarapoa, 9 (MCZ). Morona-Santiago: Los Tayos, 05°70'S, 57°00'W, 9 (MCZ). PERU Huánuco: Monsón Valley, Tingo María, 29 (CAS); Cucharas, 29 (CAS). Cueva de las Lechuza, Tingo María, 9, 9 (AMNH); Tingo María, 9, 9 (AMNH, CAS, MHNSM); Dantas-La Molina, SW Puerto Inca, 09°38'S, 75°00'W, 9 (MHNSM). Madre de Dios: Estiron, Río Carbón, 9 (MHNSM); Atacaya, Río Carbón, 9 (MHNSM). BRAZIL Amazonas: Tefé, 9 (MCZ); Igarape Belém nr. confluence Rio Solimões, 9.


*Scale lines.* 1.0 mm, genitalia, 0.1 mm.
Wagneriana maseta new species
Figures 29–34; Map 3

Holotype. Male holotype with one female paratype from near Hacienda Mozambique, about 15 km N of Puerto Lopez, Depto. Meta, Colombia, 500 m, Aug. 1978 (W. Eberhard), in MCZ.

Description. Female paratype from Puerto Lopez, Colombia. Carapace orange to brown-black. Legs yellow ringed brown-black. Venter of abdomen blackish. Carapace with two macrosetae (Fig. 32). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.9 diameter apart. Posterior median eyes 1.1 diameters apart. Abdomen with 11 tubercles (Figs. 32, 33). Total length 9.4 mm. Carapace 3.2 mm long, 2.5 mm wide. First femur 3.5 mm; patella and tibia 4.2 mm; metatarsus 2.1 mm; tarsus 0.9 mm. Second patella and tibia 3.5 mm; third, 2.0 mm; fourth, 3.0 mm.

Male holotype. Color as in female. Posterior median eyes 0.7 diameter of anterior medians, anterior laterals 0.6 diameter, posterior laterals 0.5 diameter. Anterior median eyes 0.6 diameter apart. Posterior median eyes 1.1 diameters apart. Fourth trochanter with two short macrosetae. Abdomen as in female. Total length 8.3 mm. Carapace 3.6 mm long, 2.7 mm wide. First femur 4.0 mm; patella and tibia 4.7 mm; metatarsus 2.4 mm; tarsus 0.9 mm. Second patella and tibia 3.4 mm; third, 2.2 mm; fourth, 3.1 mm.

Illustrations. The illustrations were made from the male holotype and female paratypes from Puerto Lopez.

Variation. Total length of females 8.2 to 11 mm, of males 7.1 to 8.3.

Diagnosis. In ventral view, the epigynum is more rounded behind (Fig. 29) than that of W. transitoria (Fig. 40) and, in posterior view, the median plate has bulges dorsally on the sides (bottom of Fig. 30) with a low area ventrally. The palpus differs from W. jelskii and W. transitoria by the shape of the short embolus, the large conductor, supporting the embolus, and the many-pointed median apophysis (Fig. 34).

Natural History. Specimens were collected in a savanna by tree fogging, in Guanico, Venezuela, and from wasp nests near Manaus, Brazil.

Distribution. Venezuela, Guianas, Colombia, Amazon area south to Ecuador (Map 3).


Wagneriana jelskii (Taczanowski), new combination
Figures 35–39; Map 3

Epeira jelskii Taczanowski, 1873: 139. Male lectotype here designated from Cayenne, French Guiana, in PAN, examined (not female paralectotype).

Note. The female paralectotype of W. jelskii is W. transitorium. Simon (1895: 818), though he probably did not examine specimens, synonymized the name W. jelskii with W. transitorium. The male par-
The lectotype (here designated) of *Epeira velutina* Taczanowski (1878: 159) from Amable María, Depto. Junín, Peru, is also *W. jelskii*. The lectotype and other paralectotypes of *E. velutina* belong to *Parawixia*. The type series of both *Epeira jelskii* and *Epeira velutina* were collected by wasps who did not distinguish between the species. They were harvested from wasp nests by the collector K. Jelski.

**Description.** Female from Browns Berg, Surinam. Carapace orange and dark brown with white setae. Legs yellowish with brown rings. Venter gray with two white patches. Carapace with two macrosetae (Fig. 38). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes their diameter apart. Abdomen with 11 tubercles (Fig. 38). Total length 5.7 mm. Carapace 3.1 mm long, 2.7 mm wide. First femur 3.9 mm; patella and tibia 4.5 mm; metatarsus 2.3 mm; tarsus 1.1 mm. Second patella and tibia 3.7 mm; third 2.1 mm; fourth, 3.4 mm.

Male from Ikurua River, Guyana. Color as in female. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.6 diameter apart. Posterior median eyes their diameter apart. Fourth trochanter with one short macroseta. Total length 8.3 mm. Carapace 3.5 mm long, 2.5 mm wide. First femur 3.8 mm; patella and tibia 4.5 mm; metatarsus 2.5 mm; tarsus 0.9 mm. Second patella and tibia 3.1 mm; third, 2.1 mm; fourth, 2.5 mm.

**Illustration.** The illustrations were made from a female from Browns Berg, Surinam, and a male from Ikurua River, Guyana.

**Note.** The match of male with female is uncertain although male and female were collected at the same locality in Bolivia.

**Variation.** Total length of females 8.2 to 10.7 mm, of males 7.6 to 8.3.

**Diagnosis.** The female differs from *W. undecimtuberculata* by the heart-shaped posterior median plate of the epigynum, with its dorsal margin (bottom of Fig. 36) not raised. The male differs by lacking the proximal sclerotized lobe of the conductor of the palpus present in related species, and by having a distal lobe on the median apophysis (Fig. 39).

**Natural History.** The male from Guyana was collected in a forest savanna, the male from Bolivia in a high forest. Both the females from Bolivia were collected at night. The specimens from Manaus, Brazil, came from a wasp nest.

**Distribution.** Trinidad, northern Venezuela, Amazon drainage (Map 3).


**Wagneriana transitoria** (C. L. Koch)

**Figures 40–44; Map 3**

*Acrosoma transitorium* C. L. Koch, 1839: 119, pl. 298, fig. 518, δ. Female holotype from Brazil, in ZSM, destroyed during World War II.

*Epeira spinosa* Taczanowski, 1873: 141, pl. 5, fig. 18,
Female lectotype from St. Laurent du Maroni, French Guiana, in PAN, here designated. First synonymized by Simon, 1895.

Anaricus transitorius:—Simon, 1895: 818.

Edricus transitorius:—Petrunkevitch, 1911: 338.

Bonnet, 1956: 1648.

Anactia atopa Chamberlin, 1916: 258, pl. 20, fgs. 1–3, 4. Male holotype from San Miguel, 6,000 ft [1,800 m], Depto. Ayacucho, Peru, in MCZ, examined by Roewer, 1942: 778. Bonnet, 1955: 315. NEW SYNONYM.

Anactia transitoria:—Roewer, 1942: 854.

[Wagneriana vermiculosa Mello-Leitão, 1949: 10, imm. Penultimate instar female holotype from Rio Holuene (Rio Coluene) confluence with Rio Xingu, Mato Grosso, Brazil, in MNRJ. DOUBTFUL NEW SYNONYM.

Note. Although Koch’s illustration is not diagnostic for species recognition, it seems reasonable to use his name, the oldest name for a Brazilian Wagneriana species having two macrosetae on the carapace, for the most common, widespread species. Taczanowski’s lectotype of E. spinosa is in a vial with three immature. Another female marked spinosa by Taczanowski from Cayenne may be W. maset, but this is not certain.

Simon (1895) synonymized Epeira jel- skii Taczanowski and Epeira spinosa Taczanowski with transitoria. A vial labeled W. transitoria was found in the Simon collection containing two females from “Muloui Portal” [ ]; one was W. jelskii and the other W. maset.

Description. Female from Dpto. Huánuco, Peru. Carapace dark brown to orange with white setae. Legs yellowish with irregular black rings. Venter of abdomen black with some white pigment under transparent integument, black on sides and posterior of center. Carapace with two macrosetae (Fig. 43). Posterior median eyes same diameter as anterior medians, laterals 0.9 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Abdomen with 11 tubercles (Fig. 43). Total length 8.8 mm. Carapace 3.8 mm long, 2.7 mm wide. First femur 3.9 mm; patella and tibia 4.6 mm; metatarsus 2.4 mm; tarsus 0.9 mm. Second patella and tibia 3.8 mm; third, 2.1 mm; fourth, 3.4 mm.

Male holotype of A. atopa. Cephalic region orange, thoracic region brown. Legs orange with brown rings. Abdomen dusky. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter. Anterior median eyes slightly less than their diameter apart. Posterior median eyes 1.2 diameters apart. Fourth trochanter with one short macroseta. Total length 7.0 mm. Carapace 3.4 mm long, 2.5 mm wide. First femur 4.1 mm; patella and tibia 4.3 mm; metatarsus 2.4 mm; tarsus 1.0 mm. Second patella and tibia 3.1 mm; third, 2.1 mm; fourth, 2.9 mm.

Illustrations. The female illustrated came from Depto. Huánuco, Peru; the male is the holotype of A. atopa.

Variation. Total length of females 5.6 to 9.6 mm, of males 4.8 to 8.1. One female from Bolivia lacked the characteristic macrosetae on the carapace. Many females have more than two setae on the carapace. The outline of the characteristic acute tip of the epigynum in ventral view is variable.

Diagnosis. The epigynum can be separated from those of W. maset and W. jelskii (Figs. 29, 35) by the acute angle formed by the tip in ventral view (Fig. 40) and by the shape of the posterior median plate in ventral view and narrow lateral plates in posterior view (top of Fig. 41). The male can be separated from related species by the gently curved embolus positioned at a right angle close to the edge of the cymbium and the shape of the median apophysis, which has a longitudinal curved keel ending in a small basal knob (Fig. 44).

Natural History. Some specimens have been taken from wasp nests. Females came from a cerrado shrub from Mato Grosso State, Brazil.

Distribution. Venezuela, Amazon drainage, to southern Argentina (Map 3).

FRENCH GUIANA nr. Cayenne (MCZ). COLOMBIA Caquetá: Río Orteguaza, 200 m (AMNH). Cundinamarca: “Cosomoco, 800 m” [Susumuco], (NHMW). AMAZONAS: 8–16 km W Leticia (MPM). ECUADOR Napo: Bridge over Río Cuyabeno (MCZ). Pastaza: Montalvo (MECN). PERU Loretto: Indiana (MHNSM). Pasco: Río Isocozacín (MHNSM); Pan de Azúcar [?], (AMNH). San Martín: Río Huallaga, Saposa, 424 m, (CAS). Ucayali: Pucallpa (AMNH). Huánuco: División, 1,700 m (AMNH); Boquerón del Padre Abad (MHNSM); Cuevas de las Lechuza, Tango María (AMNH). Junín: Utcuyacu, 1,600–2,200 m (AMNH). BRAZIL Amapá: Serra do Navio (MEG). Roraima: Ouro Prêto do Oeste (MNRF). Pará: Aldeia, Araeu, Gurupi-Uma, 50 km E Canindé; Río Gurupi (AMNH, MZSP 3299, 3368); 30 km S Belém (CAS); Belém (MCZ, MEG); Jacará-Acanga (AMNH). AMAZONAS: Tefé (MCZ); Reserva Ducke, Manaus (CAS, MCN); Manaus, (MEG, INPA, MZSP 1899, 3010, NRMS); km 62 Manaos to Cararará (MCN 9484); Chicago, Río Japurá (NRMS); Río Negro, Umarituba (NRMS). ALAGOAS: Mangabeiras (MZSP 8291). Bahia: Fazenda Escalvada, Mucuri (MCN 11105). Mato Grosso: 260 km N Xavantina, 400 m (MCZ); Xingu Culuene (MNRF); Utiariti (K. Lenko, MZSP 5626); Barra dos Bugres (MNRF); Barra do Tapirapé (AMNH, MZSP 3383, 3401); Chapada dos Guimarães (MCN 12329). Mato Grosso do Sul: Três Lagoas (MZSP 3669). Minas Gerais: Pedra Azul (AMNH). São Paulo: Botucatu (IMPR); Mata do Procopua, Porto Ferreira (MZSP 6446). Paraná: Rôlandia (AMNH); Alto Paranã, Jaguarara (AMNH). Río Grande do Sul: Porto García, Tenente Portela (MCN 4613); Garruchos, São Borja (MCN 8722, 8770); Salto do Yucuma, (MCN 12856, 12857). PARAGUAY Alto Paranã: km 12 de Strossnegg, Centro Forestal de Alto Paranã (IBNP). BOLIVIA La Paz: Yungas de Palmas (ZSM). Beni: Estac. Beni, 5 km N El Porvenir (USNM); Cavinas (USNM). ARGENTINA Misiones: Eldorado (AMNH); Parque Nac. Iguazu (MEG); Montecarlo (MEG); Depto. San Antonio (MEG). Río Negro: El Bolsón (AMNH).

Wagneriana bamba new species Figures 45–48; Map 3

Holotype. Female holotype from Huanacabamba, Quebrada Castillo, NW of Isocozacín, 345 m, 10°10’S, 75°15’W, Pasco, Peru, 13 Sept. 1987 (D. Silva D.), in MHNSM. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange, sides of thoracic region dark brown. Legs orange to brown, indistinctly ringed. [Abdomen damaged.] Carapace with two macrosetae (Fig. 48). Posterior median eyes 0.9 diameter of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes their diameter apart. Abdomen with four pairs of lateral tubercles and three median posterior (Fig. 48). Total length 10 mm. Carapace 3.7 mm long, 2.7 mm wide. First femur 4.1 mm; patella and tibia 4.8 mm; metatarsus 2.5 mm; tarsus 1.1 mm. Second patella and tibia 4.0 mm; third, 2.3 mm; fourth, 3.5 mm.

Diagnosis. The shape of the posterior median plate of the epigynum, which is oval (Fig. 46), differs from that of W. transitoria. (Fig. 41).

Wagneriana jacaza new species Figures 49–52; Map 3

Holotype. Female holotype from Jacareacanga, Pará State, Brazil, Oct. 1959 (M. Alvarenga), in AMNH. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace orange to dark brown with white setae. Legs orange with brown rings. Venter of abdomen with white V-shaped mark on light brown. Carapace with two macrosetae (Fig. 52). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Abdomen with 11 tubercles (Fig. 52). Total length 11.3 mm. Carapace 4.0 mm long, 2.9 mm wide. First femur 4.4 mm; patella and tibia 4.8 mm;
metatarsus 2.7 mm; tarsus 1.1 mm. Second patella and tibia 4.2 mm; third, 2.4 mm; fourth, 3.7 mm.

Illustration. The holotype was illustrated.

Note. W. carinagua might be the male of this species.

Diagnosis. In ventral view, the posterior margin of the epigynum is round (Fig. 49), and, in posterior view, the median plate is narrower dorsally than ventrally (Fig. 50).


Wagneriana carinata F. P.-Cambridge

Figure 53; Map 3


Description. Male holotype. Carapace brownish black, cephalic region yellowish. Legs yellowish. Venter of abdomen dusky underlain by white pigment spots, black on each side of petiole. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes slightly more than their diameter apart. Fourth trochanter with one short macroseta. Abdomen with 11 tubercles. Total length 6.0 mm. Carapace 2.7 mm long, 1.8 mm wide. First femur 3.1 mm; patella and tibia 3.5 mm; metatarsus 1.9 mm; tarsus 0.8 mm. Second patella and tibia 2.4 mm; third, 1.8 mm; fourth, 2.2 mm.

Note. A female in the vial with the male holotype is W. tauricornis. The female is not mentioned in the original description. No other specimens of W. carinata have been found.

Diagnosis. The median apophysis has a distinctive shape, its “lower” edge appears rolled up (Fig. 53).

Wagneriana neblina new species

Figures 54–59; Map 4

Holotype. Female holotype from Cerro de Neblina, base camp, 140 m, on low foliage, 0°50'N, 66°10'W, Territ. Fed. Amazonas, Venezuela, 21–28 Feb. 1985 (W. E. Steiner), in USNM. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace dusky orange-brown with some short white hair on cephalic region. Legs yellow with dark brown rings. Venter of abdomen with two white patches side by side. Carapace with three macrosetae (Fig. 57). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes their diameter apart. Abdomen with 11 tubercles (Fig. 57). Total length 9.8 mm. Carapace 3.6 mm long, 2.9 mm wide. First femur 4.2 mm; patella and tibia 5.0 mm; metatarsus 2.5 mm; tarsus 1.0 mm. Second patella and tibia 4.5 mm; third, 2.3 mm; fourth, 3.6 mm.

Male from type locality. Color as in female, but no rings on first two pairs of legs.
Posterior median eyes 0.6 diameter of anterior medians, laterals 0.4 diameter. Anterior median eyes 0.6 diameter apart. Posterior median eyes slightly less than their diameter apart. Fourth trochanter with one short thick macroseta. Abdomen with ten tubercles and a long tubular tail (Fig. 59). Total length 7.5 mm. Carapace 3.0 mm long, 2.3 mm wide. First femur 3.4 mm; patella and tibia 3.4 mm; metatarsus 1.8 mm; tarsus 0.9 mm. Second patella and tibia 2.8 mm; third, 1.7 mm; fourth, 2.3 mm.

Diagnosis. The female differs from W. maseta by the longer than wide outline of the epigynum (Fig. 54). The male differs from others by the shape of the median apophysis (Fig. 58).

Natural History. Specimens were collected with a Malaise trap over a small stream.


Wagneriana grandicornis Mello-Leitão
Figures 60-66; Map 4


Description. Immature female holotype. Carapace brown, cephalic region yellowish. Clypeus with a brown band lying between lateral eyes on each side and touching posterior median eyes. Legs ringed brown. Venter with a black patch. Eyes facing forward. Posterior median eyes 1.2 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes 1.5 diameters apart. Posterior median eyes 1.3 diameters apart. Abdomen with a pair of large, lateral projections and small tubercles (Figs. 65, 66). Total length 7.5 mm. Carapace 2.0 mm long, 1.5 mm wide. First femur 2.1 mm; patella and tibia 2.2 mm; metatarsus 1.0 mm; tarsus 0.5 mm. Second patella and tibia 2.0 mm; third, 1.2; fourth, 1.4 mm.

Note. The only adult that might belong to this species is a female found in Costa Rica (Figs. 60-64). Its abdomen is short (Figs. 63, 64), but probably within the variation of the species. Its measurements are total length 5.8 mm. Carapace 2.3 mm long, 1.8 mm wide. First femur 2.6 mm; patella and tibia 2.9 mm; metatarsus 1.4 mm; tarsus 0.7 mm. Second patella and tibia 2.5 mm; third, 1.3 mm; fourth, 2.1 mm. Figures 65, 66 were made from the holotype.

Diagnosis. This species differs from all others by having the most anterior lateral tubercles of the abdomen projecting dorsally (Figs. 63-66).

Records. COSTA RICA Heredia: La Selva, 4 km SE Puerto Viejo, from trap nest collection, prey of wasp Trypoxylon lactitarse, 29 July 1980, ♂ [uncertain if W. grandicornis], (R. E. Coville AR Ø9, MCZ).

Wagneriana taboga new species
Figures 67-71; Map 3

Holotype. Female holotype from Summit, Panamá Prov., Panama, July 1950 (A. M. Chickering), in MCZ. The specific name is a noun in apposition after a locality where the species is abundant.

Description. Female from Taboga Island. Carapace orange to brownish black. Legs orange with black patches. Venter of abdomen with a black square between epigynum and spinnerets. Carapace with two macrosetae (Fig. 70). Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.2 diameters apart. Abdomen with 11 tubercles (Fig. 70). Total length 4.8 mm. Carapace 2.1 mm long, 1.5 mm wide. First femur 1.8 mm; patella and tibia 2.1 mm;


*Scale lines.* 1.0 mm, genitalia, 0.1 mm.
metatarsus 1.3 mm; tarsus 0.5 mm. Second patella and tibia 1.8 mm; third, 1.1 mm; fourth, 1.5 mm.

Male from Taboga Island. Color as in female. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes their diameter apart. Fourth trochanter with one short macroseta. Abdomen tubercles less distinct than those of female. Total length 3.9 mm. Carapace 2.1 mm long, 1.5 mm wide. First femur 2.1 mm; patella and tibia 2.3 mm; metatarsus 1.2 mm; tarsus 0.5 mm. Second patella and tibia 1.7 mm; third, 1.1 mm; fourth, 1.7 mm.

Illustration. The illustrations were made from specimens from Taboga Island.

Variation. The tip of the epigynum may be transparent (Fig. 67) or dark brown and sclerotized. Total length of females 4.7 to 6.5 mm, of males 3.6 to 4.2.

Diagnosis. The epigynum is relatively flat unlike that of other species (Fig. 67) and the posterior median plate has two lobes (Fig. 68). The male palpus differs from that of similar species by having a black sclerotized prong, part of the terminal apophysis, protruding from the distal edge of the tegulum (Fig. 71).

Natural History. Specimens have been collected in woods at night in Panama and from vegetation in the Depto. Magdalena, Colombia.

Distribution. Panama, western Venezuela, and Colombia (Map 3).


Wagneriana taim new species Figures 72–76; Map 3

Holotype. Female holotype from Novo Hamburgo, Rio Grande do Sul State, Brazil, 4 Nov. 1985 (A. A. Lise), in MCN no. 14352. The specific name is a noun in apposition after the locality of the male paratype.

Description. Female holotype. Cephalic region yellowish, with a transverse dark line behind eyes, line curved on each side (Fig. 75), thoracic region brown. Legs yellowish with brown rings. Venter brown with white spots under integument. Carapace with two macrosetae (Fig. 74). Posterior median eyes 0.7 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes slightly more than their diameter apart. Abdomen with 11 tubercles (Fig. 75). Total length 8.2 mm. Carapace 3.5 mm long, 2.5 mm wide. First femur 3.8 mm; patella and tibia 4.6 mm; metatarsus 2.3 mm; tarsus 0.9 mm. Second patella and tibia 3.8 mm; third, 2.2 mm; fourth, 3.4 mm.

Male from Taim, Rio Grande do Sul, Brazil. Cephalic region yellowish, sides of carapace black, both covered with sparse, short, white setae. Legs yellowish with brown to black rings. Venter of abdomen
spotted dusky. Posterior median eyes same diameter as anterior medians, anterior laterals same diameter, posterior laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Fourth trochanter with one short macroseta. Abdomen with one small anterior pair of tubercles and four posterior pairs, and a median posterior tubercle. Total length 5.5 mm. Carapace 2.1 mm long, 1.7 mm wide. First femur 2.6 mm; patella and tibia 2.7 mm; metatarsus 1.4 mm; tarsus 0.7 mm. Second patella and tibia 2.0 mm; third, 1.3 mm; fourth, 1.8 mm.

Illustration. The female holotype is illustrated.

Note. It is uncertain that the male is conspecific.

Variation. Total length of females 9.2 to 12.0 mm. Some females lack carapace setae.

Diagnosis. The female is separated from others by the shape of the ventrally constricted posterior median plate in posterior view (top of Fig. 73); the male is separated by the presence of a long distal lobe of the tegulum, the drop-shaped embolus, and the shape of the median apophysis (Fig. 76).


Wagneriana janeiro new species
Figures 77–81; Map 3

Holotype. Female holotype from Rio de Janeiro, Brazil, 26 May 1979 (C. J. Becker), in MCN no. 8582. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Cephalic region orange with some white setae, sides of thoracic region brown to black. Legs yellowish with brown rings. Venter of abdomen black between epigynum and spinnerets with a white line on each side of dark patch. Carapace without macrosetae. (Anterior median eyes absent from holotype only.) Lateral eyes 0.6 diameter of posterior median eyes. Posterior median eyes 1.2 diameters apart. Laterals separated slightly less than their diameter. Abdomen with only eight tubercles (Fig. 80). Total length 5.8 mm. Carapace 2.3 mm long, 1.7 mm wide. First femur 2.2 mm; patella and tibia 2.7 mm; metatarsus 1.3 mm; tarsus 0.7 mm. Second patella and tibia 2.3 mm; third, 1.3 mm; fourth, 2.0 mm.

Male from Botucatu. Color as in female, but with a transverse dark patch on cephalic region. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.6 diameter apart. Posterior median eyes their diameter apart. Fourth trochanter with one short macroseta. Abdomen with about 11 tubercles. Total length 5.2 mm. Carapace 2.5 mm long, 2.0 wide. First femur 2.5 mm; patella and tibia 3.0 mm; metatarsus 1.7 mm; tarsus 0.7 mm. Second patella and tibia 2.3 mm; third, 1.3 mm; fourth, 2.1 mm.

Note. The male and the females were matched because they were collected at the same site. The female holotype has only six eyes, an abnormality. The lateral edge of the median apophysis differs slightly in the two males.

Illustration. The female holotype and the male from Botucatu were illustrated.

Variation. Total length of females 6.0 to 6.3 mm.
Diagnosis. The epigynum in ventral view is oval and set-off all around (Fig. 77), unlike that of other species, which lack an anterior lip. The oval area contains two dark patches (Fig. 77). In posterior view of the epigynum, the lateral plates appear ventrally swollen (Fig. 78). The male differs from others by the shape of the median apophysis in the palpus (Fig. 81).


Wagneriana cobella new species Figures 82–87; Map 3

Holotype. Female holotype from Cuchillo Cebolleta, San Pedro, 1,920 m, Sierra Nevada de Santa Marta, Depto. Magdalena, Colombia, in lower montane forest, 10 May 1975 (J. A. Kochalka), in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace yellow-orange. Legs dusky orange, indistinctly ringed. Venter of abdomen black with a pair of light lines. Carapace without macrosetae. Eyes subequal. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Abdomen with eight tubercles (Fig. 86). Total length 6.2 mm. Carapace 2.8 mm long, 2.0 mm wide. First femur 2.5 mm; patella and tibia 3.1 mm; metatarsus 1.8 mm; tarsus 0.8 mm. Second patella and tibia 2.7 mm; third, 1.6 mm; fourth, 2.5 mm.

Male paratype. Posterior median eyes same diameter as anterior medians, anterior laterals 0.8 diameter of anterior medians, posterior 0.7 diameter. Anterior median eyes slightly more than their diameter apart. Posterior median eyes their diameter apart. Fourth trochanter with one short, relatively slender macroseta. Total length 5.5 mm. Carapace 2.7 mm long, 2.2 mm wide. First femur 2.9 mm; patella and tibia 3.1 mm; metatarsus 1.7 mm; tarsus 0.7 mm. Second patella and tibia 2.5 mm; third, 1.5 mm; fourth, 2.1 mm.

Variation. Total length of females 6.2 to 7.4 mm. The specimen from Venezuela has the tip of the epigynum torn off (Fig. 83). The white coloration of the female holotype and of the male paratype was damaged because of the presence of formaldehyde in the alcohol. The Venezuelan paratype has white pigment where the holotype is light on the abdomen.

Diagnosis. The median plate of the epigynum in posterior view is short and wide (Fig. 84) unlike the epigynum of any other species. The male has a characteristically shaped median apophysis distally bent on itself, and a cone-shaped, pointed embolus (Fig. 87).

Natural History. Specimens have been collected at high elevations, 1,560–2,200 m, in cloud forest in Venezuela and in low vegetation in Colombia.


Wagneriana lechuza new species Figures 88–92; Map 3

Holotype. Female holotype from Cueva de La Lechuza, Tingo Maria, Huánuco, Peru, 31 May 1967 (A. F. Archer, S. Risco), in AMNH. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange to dark brown. Legs orange with irregular black rings. Venter black with an orange longitudinal band on each side. Carapace without macrosetae (Fig. 91). Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.8 diameter, posterior laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart.


Figure 102. *W. carimagua* n. sp., male palpus.


*Scale lines.* 1.0 mm, genitalia, 0.1 mm.
Posterior median eyes 0.8 diameter apart. First femur with a distal, mesal field of four macrosetae. Abdomen with four tubercles on each side and two median posteriorly (Fig. 91). Total length 7.2 mm. Carapace 3.1 mm long, 2.5 mm wide. First femur 3.0 mm; patella and tibia 3.5 mm; metatarsus 2.0 mm; tarsus 0.9 mm. Second patella and tibia 3.1 mm; third, 1.9 mm; fourth, 2.9 mm.

Male from Tambopata Reserve. Color as in female. Carapace with many white setae. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.5 diameter apart. Posterior median eyes their diameter apart. Fourth trochanter without macroseta. Fourth femur with seven short macrosetae on tubercles. Abdomen as in female. Total length 7.5 mm. Carapace 3.4 mm long, 2.5 mm wide. First femur 3.4 mm; patella and tibia 4.0 mm; metatarsus 2.2 mm; tarsus 0.9 mm. Second patella and tibia 3.0 mm; third, 2.0 mm; fourth, 2.9 mm.

Illustrations. The illustrations were made from the female holotype and a male from the Tambopata Reserve, Peru.

Note. Male and female were matched by one collection with both sexes.

Variation. Total length of females 6.4 to 9.0 mm, of males 5.9 to 8.5. The largest specimen is the one collected in Espíritu Santo, Brazil.

Diagnosis. The epigynum of this species differs by being almost rectangular in ventral view with the posterior margin forming a transverse straight line (Fig. 88) and in posterior view having the median plate constricted in the middle (Fig. 89). The male palpus has a tegulum bearing a projection on the distal edge of the palpus, a squarish median apophysis and a short, gently curved embolus (Fig. 92).


Wagneriana atuna new species

Figures 93–97; Map 3

Holotype. Female holotype from Cali, 1,000 m, Depto. Valle, Colombia, 1 Apr. 1964 (P. B. Schneble), in MCZ. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace dusky orange-yellow. Legs dusky orange with indistinct narrow black rings. Venter of abdomen with a white square between epigynum and spinnerets. Carapace without macrosetae. Eyes small and subequal. Anterior median eyes 2 diameters apart. Posterior median eyes 2.7 diameters apart. Abdomen soft, with 11 tubercles (Fig. 96). Total length 4.5 mm. Carapace 2.1 mm long, 1.9 mm wide. First femur 2.2 mm; patella and tibia 2.5 mm; metatarsus 1.1 mm; tarsus 0.5 mm. Second patella and tibia 2.2 mm; third, 1.2 mm; fourth, 1.8 mm.

Male from Cali. Color as in female but cephalic region light, sides of thoracic region dark. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes slightly less than their diameter apart. Posterior median eyes 1.3 diameters apart. Fourth trochanter with one short macroseta. Total length 5.2 mm. Carapace 2.1 mm long, 1.6 mm wide. First femur 2.1 mm; patella and tibia 2.3 mm; metatarsus 1.2 mm; tarsus 0.5 mm. Second patella and tibia 1.9 mm; third, 1.2 mm; fourth, 1.7 mm.
Illustrations. The illustrations were made from the female holotype and a male from Cali, Colombia.

Note. The match of males to females is not certain. The male from Cali has relatively larger eyes than the female.

Variation. Total length of females 4.5 to 6.0 mm, of males 4.5 to 5.2. A female from Costa Rica has a long tail and was 9.3 mm total length. The female from Belém, Brazil, has the posterior median plate of the epigynum concave and more sclerotized than that of other specimens.

Diagnosis. In posterior view of the epigynum, the median plate has a transverse groove (Fig. 94). The male has one macroseta on the fourth trochanter and the palpus has the wide cymbium covering most of the radix with the embolus just outside its edge (Fig. 97). The terminal apophysis is rounded on one side and the median apophysis is oval and without large lobes (Fig. 97).

Natural History. The male from Guyana came from a forest savanna.

Distribution. From Costa Rica to Paraguay (Map 3).


Wagneriana juquia new species
Figures 98–101; Map 3

Holotype. Female holotype from Fazenda Poco Grande, Juquiá, São Paulo State, Brazil, 21–26 July 1949 (F. Lane), in MZSP no. 7360. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange, sides of thoracic region darker. Legs light orange. Venter of abdomen between epigynum and spinnerets underlain by white pigment, dusky behind epigynum. Carapace without macrosetae. Posterior median eyes 1.2 diameters of anterior medians, anterior laterals 0.8 diameter, posterior laterals 1 diameter. Anterior median eyes 1.4 diameters apart. Posterior median eyes 1.2 diameters apart. Abdomen with 11 tubercles (Fig. 101). Total length 5.5 mm. Carapace 2.0 mm long, 1.5 mm wide. First femur 2.0 mm; patella and tibia 2.3 mm; metatarsus 1.2 mm; tarsus 0.5 mm. Second patella and tibia 1.9 mm; third, 1.0 mm; fourth, 1.7 mm.

Illustration. The female holotype was illustrated.

Note. Wagneriana juquia may belong with the male of W. uropygialis.

Variation. Total length of females 5.0 to 7.0 mm. The holotype is the only specimen with a long tail (Fig. 101).

Diagnosis. Unlike other species W. juquia has a dark, sclerotized septum ventrally on the posterior face, below the tip of the epigynum (top of Fig. 99).


Wagneriana carimagua new species
Figure 102; Map 3

Holotype. Male holotype from Carimagua, 100 m, Dpto. Meta, Colombia, Oct. 1973, grass and brush
along fence (W. Eberhard), in MCZ. The specific name is a noun in apposition after the type locality.

**Description.** Male holotype. Carapace light orange, sides of thoracic region dusky anteriorly. Sternum dusky with three pairs of clear spots. Coxae yellowish; legs yellowish with dusky spots and rings. Abdomen dusky. Posterior median eyes 0.6 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 1.5 diameters apart. Posterior median eyes slightly less than their diameter apart. Fourth trochanter with two short macrosetae. Abdomen with a pair of anterior tubercles, and posteriorly two median tubercles in a line. Total length 5.8 mm. Carapace 2.9 mm long, 2.3 mm wide. First femur 3.2 mm; patella and tibia 3.8 mm; metatarsus 2.3 mm; tarsus 1.0 mm. Second patella and tibia 3.0 mm; third, 1.8 mm; fourth, 2.9 mm.

**Note.** This might be the male of *W. jacaza.*

**Diagnosis.** The two elongate lobes of the median apophysis (Fig. 102) differ from that of all other species.

**Wagneriana uropygialis (Mello-Leitão), new combination**

**Figures** 103, 104; **Map** 3


**Description.** Male holotype. Carapace, sternum, legs yellow-white. Dorsum of abdomen blackish with median dorsal area lighter, a pair of white spots on anterior margin separated by black (Fig. 104); venter black with some white pigment spots near spinnerets (Fig. 104). Eyes subequal. Anterior median eyes 1.2 diameters equal. Posterior median eyes slightly more than a diameter apart. Abdomen elongate (shrivelled) with a posterior line of three tubercles (Fig. 104). Total length 4.2 mm. Carapace 2.1 mm long, 1.4 mm wide. First femur 1.7 mm; patella and tibia 2.2 mm; metatarsus 1.1 mm; tarsus 0.7 mm. Second patella and tibia 1.7 mm; third, 1.2 mm; fourth, 1.7 mm.

**Note.** The shape of the paramedian apophysis, an L on its side (Fig. 103), suggests that this species is a *Wagneriana.* The female *W. juguia* may be conspecific.

**Diagnosis.** This male differs from others by the relatively long median apophysis (Fig. 103).

**Wagneriana heteracantha** (Mello-Leitão), new combination

**Figures** 105–109; **Map** 4


**Note.** The type of *Marxia labidura* is lost. Its size suggests that it may have been this species or perhaps *W. palaeastris.*

**Description.** Female from Canela, Rio Grande do Sul. Cephalic region orange with a dark transverse band behind eyes and two dark patches, sides of thoracic region brown-black. Legs yellowish with brown to black rings. Venter of abdomen with a black square having a white line on each side enclosing three pairs of white spots. Carapace without macrosetae. Pos-

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Scale lines. 1.0 mm, genitalia 0.1 mm.
terior median eyes 1.2 diameters of anterior medians, anterior laterals 1.1 diameters, posterior laterals 1 diameter. Anterior median eyes 1.1 diameters apart. Posterior median eyes 1.5 diameters apart. Abdomen with 11 drawn out tubercles (Fig. 108). Total length 12.0 mm. Carapace 4.1 mm long; 3.1 mm wide. First femur 3.8 mm; patella and tibia 4.4 mm; metatarsus 2.3 mm; tarsus 1.1 mm. Second patella and tibia 3.8 mm; third, 2.3 mm; fourth, 3.4 mm.

Male from Carmo do Rio Claro, Minas Gerais. Color as in female. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes slightly more than their diameter apart. Fourth trochanter with two short macrosetae. Abdomen with a tail. Total length 9.0 mm. Carapace 3.4 mm long, 2.5 mm wide. First femur 3.2 mm; patella and tibia 3.5 mm; metatarsus 2.1 mm; tarsus 0.9 mm. Second patella and tibia 2.9 mm; third, 1.8 mm; fourth, 2.7 mm.

Illustrations. The female from Canela and the male from Carmo do Rio Claro were illustrated.

Note. Males and females have been collected together.

Variation. Total length of females 11 to 13.7 mm, of males 5.6 to 9.7. Males have one tubercle on the fourth trochanter; some males have one tubercle on one side, two on the other.

Diagnosis. The female can be separated from others by the long abdominal tubercles (Fig. 108), and the shape of the epigynum. The posterior median plate of the epigynum is as wide as wide as the lateral plates in posterior view (Fig. 106), while in both W. neglecta (Fig. 117) and W. eupalaestris (Fig. 111) the median plate is narrower. The male palpus has a distal lobe on the tegulum (top of Fig. 109) and the median apophysis has a median vertically placed keel, neither structure being present in the two related species.

Distribution. From Minas Gerais State of Brazil to Río Negro Prov. of Argentina (Map 4).


Wagneriana eupalaestris (Mello-Leitão), new combination

Figures 110–115; Map 4

Edricus eupalaestris Mello-Leitão, 1943: 177, fig. 17, d. Male holotype from Río Grande do Sul, Brazil, in MNRJ, examined.


Description. Female from Campos de Jordão, São Paulo. Carapace orange, darker in midline, sides of thoracic region black. Sternum black. Coxae yellowish; legs yellowish with indistinct dark rings. Venter of abdomen with a black longitudinal band. Carapace without macrosetae. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter of anterior medians. Anterior median eyes 1.5 diameters apart. Posterior median eyes 1.5 diameters apart. Lateral eyes separated by almost their diameter. Abdomen with 10 tubercles, the one above spinnerets missing (Fig. 113). Total length 7.3 mm. Carapace 2.9 mm long, 2.1 mm wide. First femur 2.5 mm; patella and tibia 2.9 mm; metatarsus 1.5 mm; tarsus 0.8 mm. Second patella and tibia 2.4 mm; third, 1.5 mm; fourth, 2.3 mm.

Male holotype. Color as in female. Pos-
terior median eyes same diameter as anterior medians, lateral eyes 0.9 diameter of anterior medians. Anterior median eyes 1.1 diameters apart. Posterior median eyes 1.1 diameters apart. Fourth trochanter with one short macroseta on one side, two on other. Abdomen with tail (Fig. 115). Total length 7.5 mm. Carapace 2.7 mm long, 2.1 mm wide. First femur 3.0 mm; patella and tibia 3.5 mm; metatarsus 2.0 mm; tarsus 0.8 mm. Second patella and tibia 2.7 mm; third, 1.7 mm; fourth, 2.4 mm.

Illustrations. The female from Campos do Jordão, São Paulo State, the male from Viamão, Rio Grande do Sul State, were illustrated.

Variation. Total length of females 7.3 to 11.2 mm, of males 5.3 to 9.2. A large male from Viamão is most like the holotype of W. eupalaestris, including the long abdomen. In some females the abdomen has a tail.

Diagnosis. This species is smaller than W. neglecta; there does not seem to be a size overlap. The female usually has a short abdomen and relatively short abdominal tubercles (Fig. 113). The female differs from that of W. heteracantha in having the median plate of the epigynum narrower in posterior view than the lateral plates (Fig. 111). The male differs from W. neglecta by having one or two macrosetae on the fourth coxa, from W. heteracantha by lacking the lobe at the distal edge of the tegulum and the median keel of the median apophysis (Fig. 114).

Distribution. From Minas Gerais State of Brazil to Misiones Prov. of Argentina (Map 4).


Wagneriana neglecta (Mello-Leitão), new combination

Figures 116-122; Map 4


Description. Female from Kartabo, Guyana. Carapace orange-brown darkest on sides of thoracic region; light between median eyes. Legs orange to brown, femora darkest. Venter black. Carapace without macrosetae. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.9 diameter apart. Posterior median eyes 1.4 diameters apart. Abdomen with three pairs of lateral tubercles and 3 to 5 pairs of posterior ones (Fig. 119). Total length 15 mm. Carapace 5.4 mm long, 3.5 mm wide. First femur 4.1 mm; patella and tibia 5.3 mm; metatarsus 2.7 mm; tarsus 1.1 mm. Second patella and tibia 4.7 mm; third, 2.7 mm; fourth, 3.8 mm.

Male from Trinidad. Color as in female except for carapace brown, lighter in midline, and light between eyes. Posterior median eyes 0.7 diameter of anterior medians, anterior laterals 0.5 diameter, posterior laterals 0.4. Anterior median eyes 0.7 diameter apart. Posterior median eyes 1.3 diameters apart. Fourth trochanter without macroseta. Abdomen with tubercles at posterior end (Fig. 122). Total length 11.4 mm. Carapace 3.9 mm long, 2.8 mm wide. First femur 3.9 mm; patella and tibia 4.4 mm; metatarsus 2.0 mm; tarsus 0.7 mm.
Second patella and tibia 3.4 mm; third, 2.0 mm; fourth, 2.7 mm.

Illustrations. Illustrations of the female were made from the holotype of W. tuberculicauda, those of the male from a specimen from Trinidad.

Variation. Total length of females 12.3 to 16 mm, of males 9.5 to 10.7.

Diagnosis. Wagneriana neglecta is larger than W. eupalaestris and W. heteracantha and both sexes have a long tail (Figs. 119, 122); in the two related species only the male may have a long tail. As in the related two species, W. neglecta lacks a ventral tubercle at the tip of the tail. The posterior median plate of the epigynum is relatively narrow as in W. eupalaestris (Fig. 117). The male lacks macrosetae on the trochanter unlike W. eupalaestris and W. heteracantha. The truncate distal end of the median apophysis (Fig. 121) is smaller than that of W. eupalaestris (Fig. 114) and W. uzaga (Fig. 127).

Natural History. Males were collected by sweeping brush in Trinidad.

Distribution. Trinidad to Jujuy Prov. of Argentina (Map 4).


Wagneriana uzaga new species

Figures 123–128; Map 4

Holotype. Female holotype from Parque Nacional Iguazu, Misiones Prov., Argentina, Jan. 1966 (M. E. Galiano), in MACN no. 8791. The specific name is an arbitrary combination of letters.

Description. Female holotype. Carapace yellowish, cephalic region with two pairs of darker patches, sides of thoracic region dark dusky. Legs yellowish with dusky rings. Venter of abdomen black with a white line on each side. Carapace without macrosetae. Eyes small and subequal. Anterior median eyes 2.2 diameters apart. Posterior median eyes 2.5 diameters apart. Lateral eyes separated by their diameter. Abdomen with anterior lateral double tubercles (Fig. 126). Total length 6.5 mm. Carapace 3.2 mm long, 2.4 mm wide. First femur 2.5 mm; patella and tibia 2.9 mm; metatarsus 1.5 mm; tarsus 0.7 mm. Second patella and tibia 2.6 mm; third, 1.6 mm; fourth, 2.4 mm.

Male from Dpto. Chaco, Paraguay. Much darker than female with a light, longitudinal band on each side of abdomen. Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.8 diameter, posterior laterals 0.7 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.5 diameters apart. Fourth trochanter with two short macrosetae, a thick one on a tubercle and a thin one not on a tubercle. Abdomen with anterior pair of double tubercles (Fig. 128). Total length 5.0 mm. Carapace 2.5 mm long, 1.8 mm wide. First femur 2.3 mm; patella and tibia 2.7 mm; metatarsus 1.3 mm; tarsus 0.7 mm. Second patella and tibia 2.2 mm; third, 1.1 mm; fourth, 1.7 mm.

Illustrations. Figures 123–125 were made from the holotype, Figure 126 from a female from Paraguay, the figures of the male from a specimen from Chaco, Paraguay.

Note. Female and males were matched because both have the anterior tubercle on the abdomen double and because of the similarity of their genitalia to those of W. eupalaestris and W. heteracantha.

Variation. Total length of females 6.0 to 7.1 mm, of males 5.0 to 5.7.

Diagnosis. This species differs from most similar species by having the anterior lateral tubercle of the abdomen double (Figs. 126, 128). It is most similar to W. spicata
found in Mexico but differs by being smaller and having weakly sclerotized, pear-shaped seminal receptacles (Fig. 125). The posterior view of the epignum differs from that of *W. eupalaestris* (Fig. 111) by having a wider median plate (Fig. 124). The male differs from *W. eupalaestris* in the sculpturing of the blunt end of the median apophysis (Fig. 127).

**Distribution.** Mato Grosso do Sul State of Brazil to Paraguay and Misiones Prov. of Argentina (Map 4).


**Wagneriana spicata** (O. P.-Cambridge)

**Figures 129–133; Map 4**

*Epeira spicata* O. P.-Cambridge, 1889: 45, pl. 6, fig. 4, imm. Immature male holotype from Valley of the Motagua, Guatemala, in BMNH, examined.

*Turkeheimia armata* O. P.-Cambridge, 1893: 114, pl. 14, fig. 11, δ. Female holotype from Rincón, Guerrero [16 km S Chilpancingo], Mexico, 2,800 ft [850 m], in BMNH, examined. First synonymized by F. P.-Cambridge, 1904.


**Description.** Female from Chiapas. Carapace orange to black-brown. Legs orange with black rings and black spots. Ven- ter of abdomen black with paired and unpaired light spots. Carapace with two macrosetae (Fig. 132). Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.8 diameter, posterior laterals 0.7 diameter. Anterior median eyes 0.6 diameter apart. Posterior median eyes their diameter apart. Abdomen with 13 tubercles, the anterior pair double (Fig. 132). Total length 11.4 mm. Carapace 4.6 mm long, 3.6 mm wide. First femur 4.2 mm; patella and tibia 5.4 mm; metatarsus 2.8 mm; tarsus 1.1 mm. Second patella and tibia 4.5 mm; third, 2.7 mm; fourth, 4.3 mm.

Male from Chiapas. Color as in female but darker. Posterior median eyes 0.7 diameter of anterior medians, anterior laterals 0.7 diameter, posterior laterals 0.6 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes their diameter apart. Fourth trochanter with two short macrosetae. Abdomen as in female. Total length 8.7 mm. Carapace 4.5 mm long, 3.6 mm wide. First femur 4.6 mm; patella and tibia 5.7 mm; metatarsus 3.1 mm; tarsus 1.2 mm. Second patella and tibia 4.4 mm; third, 2.7 mm; fourth, 4.2 mm.

**Natural History.** Immature specimens 2.7 mm long have the macrosetae on the carapace and the bifid spine on the abdomen.

**Variation.** Total length of females 8.2 to 12.3 mm, of males 7.6 to 8.3. The illustrations were made from specimens from Chiapas, Mexico.

**Diagnosis.** The pair of double anterior tubercles (Fig. 132) separates females from other species in Mexico and Central America. In posterior view of the epignum the narrow median plate is distinctive (Fig. 130). Males can be separated from most other species by having two macrosetae on the fourth trochanter, by the two lobes of the tegulum, one apical and one lateral, and by the shapes of median and terminal apophyses (Fig. 133).

**Distribution.** Mexico to Costa Rica (Map 4).

Male from Représa. Color dark brown to black. Posterior median eyes 1.5 diameters of anterior medians, anterior lat- erals 0.7 diameter, posterior laterals 0.7 diameter. Anterior median eyes slightly less than their diameter apart. Posterior median eyes slightly more than their diameter apart. Fourth trochanter without macroseta. Total length 5.0 mm. Carapace 3.0 mm long, 2.3 mm wide. First femur 2.5 mm; patella and tibia 2.9 mm; metatarsus 1.7 mm; tarsus 0.7 mm. Second patella and tibia 2.5 mm; third, 1.6 mm; fourth, 2.3 mm.

Illustrations. Figures 134, 136–138 were made from a female from Angra dos Reis, Figure 135 from a female from Teresópolis, Figure 139 from a male from Paineiras, Rio de Janeiro.

Note. Both males from Rio de Janeiro State are in poor condition, they may once have been dry. The males were not collected with a female but were matched because of the similar large median eyes and because both female and male genitalia are similar to those of W. iguape. In a male from São Paulo State, the shape of the palpal sclerites, the median apophysis, tegulum, and conductor is intermediate between W. gavensis and W. iguape, but the embolus is sickle-shaped as in W. gavensis.

Diagnosis. The female is separated from others by the long, wide epigynum having transverse grooves on the venter surrounded by a lip (Figs. 134, 135), the male by the elongate, projecting median apophysis and sickle-shaped embolus (Fig. 139).


143. Dorsal. 144. Male palpus.

148. Dorsal.

Scale lines. 1.0 mm, genitalia, 0.1 mm.

Wagneriana iguape new species
Figures 140–144; Map 4

Holotype. Female holotype from Iguape, São Paulo State, Brazil (Leonardos), in MNRJ. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Carapace orange-brown. Legs dusky orange with indistinct dark rings. Venter brown between epigynum and spinnerets, a lighter band on each side. Carapace without macrosetae. Cephalic region bulging, eyes large, posterior median eyes with large black rings. Posterior median eyes 1.5 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes 0.5 diameter apart. Posterior median eyes 0.7 diameter apart. Abdomen with three pairs of lateral tubercles, the first double, one pair posterior, and only one median posterior (Fig. 143). Total length 7.5 mm. Carapace 3.2 mm long, 2.4 mm wide. First femur 2.8 mm; patella and tibia 3.4 mm; metatarsus 1.8 mm; tarsus 0.8 mm. Second patella and tibia 2.9 mm; third, 1.9 mm; fourth, 2.7 mm.

Male from São Paulo State. Color as in female but carapace with a median brown streak and brown bands on sides of thoracic region. Thoracic depression a cross shape. Posterior median eyes 1.3 diameters of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes their diameter apart. Fourth trochanter without macroseta. Abdomen with three pairs of tubercles, the most anterior pair double, and a small posterior median tubercle. Total length 5.5 mm. Carapace 2.8 mm long, 2.3 mm wide. First femur 2.5 mm; patella and tibia 3.1 mm; metatarsus 1.7 mm; tarsus 0.9 mm. Second patella and tibia 2.5 mm; third, 1.5 mm; fourth, 2.3 mm.

Illustrations. The illustrations were made from the holotype and a male from São Paulo State.

Note. Male and female have been matched because both have the double anterior tubercle on the abdomen.

Variation. Total length of females 5.5 to 7.7 mm, of males 5.1 to 5.5.

Diagnosis. This species is separated from others by the large posterior median eyes and the double tubercle on the anterior of the abdomen (Fig. 143). Both characters are present in females and males. In ventral view the epigynum has a raised T-shaped bar (Fig. 141). The palpus has a large conductor with a distal spherical knob (Fig. 144).

Distribution. Rio de Janeiro State of Brazil to Paraguay (Map 4).


Wagneriana madrejon new species
Figures 145–148; Map 4

Holotype. Female holotype from Madrejón, Parque Nacional Defensores del Chaco, Depto. Chaco, Paraguay, 12 Dec. 1981 (J. A. Kochalka), in IBNP. The specific name is a noun in apposition after the type locality.
*Description.* Female holotype. Cephalic region orange with some white setae. Sides of thoracic region brown to black. Legs yellowish with black rings. Venter of abdomen with white pigment between epigynum and spinnerets. Carapace without macrosetae. Posterior median eyes 1.3 diameters of anterior medians, laterals 0.8 diameter. Anterior median eyes their diameters apart. Posterior median eyes their diameter apart. Abdomen with 17 tubercles, 4 pairs on sides, 3 proximal and 3 distal on tail and 3 ventrally on tail (Fig. 148). Total length 8.3 mm. Carapace 2.3 mm long, 2.0 mm wide. First femur 2.5 mm; patella and tibia 2.9 mm; metatarsus 1.4 mm; tarsus 0.6 mm. Second patella and tibia 2.4 mm; third, 1.5 mm; fourth, 2.2 mm.

*Diagnosis.* The abdomen has 17 tubercles, more than any other species (Fig. 148). In posterior view, unlike that of other species, the epigynum has a T-shaped, raised fold, with the vertical member of the T between the lateral plates (Fig. 146).

**Wagneriana huancana** new species

*Figures 149–153; Map 4*

**Holotype.** Female holotype from Huancabamba, Quebrada Castillo, NW of Iscozacin, 345 m, Pasco, Peru, 10°10'S, 75°15'W, 13 Sept. 1987 (D. Silva D.), in MHNSM. The specific name is an arbitrary combination of letters.

*Description.* Female holotype. Carapace orange-brown to brown with white setae. Legs yellow, ringed dark brown. Venter of abdomen with white pigment in center. Carapace with two macrosetae. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.8 diameter apart. Posterior median eyes their diameter apart. Abdomen [damaged], with three pairs of lateral and three posterior median tubercles (Fig. 153). Total length 11.0 mm. Carapace 4.2 mm long, 3.2 mm wide. First femur 4.7 mm; patella and tibia 5.5 mm; metatarsus 2.9 mm; tarsus 1.0 mm. Second patella and tibia 4.8 mm; third, 2.6 mm; fourth, 3.9 mm.

*Illustrations.* Figures 150, 151–153 were made from the holotype, Figure 149 from a female from the Amazonas Dept., Peru.

*Variation.* Total length of females 11.0 to 11.4 mm.

*Diagnosis.* Unlike that of most *Wagneriana* species, the epigynum is longer than wide with the dorsal part of the posterior median plate swollen as seen in posterior view (bottom of Fig. 151). The epigynum is larger in size than that of *W. acrosomoides*.

**Paratype.** PERU Amazonas: Montenegro, Bagua, 350 m, 29 Sept.–1 Oct. 1963, © (Herrer, P. Wygodzinsky, AMNH).

**Wagneriana alma** new species

*Figure 154; Map 4*

**Holotype.** Male holotype from Fazenda Almada, Urucuca, Bahia State, Brazil, 27 Nov. 1977 (J. S. Santos), in MCN no. 15924. The specific name is an arbitrary combination of letters.

*Description.* Male holotype. Carapace orange, darkest posteriorly with dark A-shaped thoracic mark. Legs orange with only faint rings. Venter of abdomen with white spots behind epigastric groove, black in front of spinnerets. Posterior median eyes same diameter as anterior medians, anterior laterals 0.6 diameter, posterior laterals 0.5 diameter. Anterior median eyes slightly less than their diameter apart. Posterior median eyes their diameter apart. Fourth trochanter without macroseta. Abdomen with a pair of anterior tubercles, and five tubercles at posterior end. Total length 4.8 mm. Carapace 2.3 mm long, 1.5 mm wide. First femur 2.4 mm; patella and tibia 2.6 mm; metatarsus 1.4 mm; tarsus 0.6 mm. Second patella and tibia 2.0 mm; third, 1.2 mm; fourth, 1.8 mm.

*Diagnosis.* The male has a large shield-shaped conductor supporting the embolus; the black shape of the embolus can be seen above the conductor (Fig. 154).

**Wagneriana vegas** new species

*Figures 155–159; Map 4*

**Holotype.** Female holotype and immature male paratype from Santiago de las Vegas, Cuba (Horne and Houser), in MCZ. The specific name is a noun in apposition after the type locality.
Description. Female holotype. Carapace orange-brown, cephalic region darker than sides with short white setae; lightest between median eyes and between lateral eyes. Legs light orange with brown rings. Venter of abdomen black. Carapace without macrosetae. Posterior median eyes 1.1 diameters of anterior medians, anterior laterals 0.8 diameter, posterior laterals 0.9 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Abdomen with 11 or more shrivelled and difficult to distinguish tubercles (Fig. 158). Total length 5.0 mm. Carapace 2.0 mm long, 1.8 mm wide. First femur 2.3 mm; patella and tibia 2.5 mm; metatarsus 1.3 mm; tarsus 0.5 mm. Second patella and tibia 2.2 mm; third, 1.3 mm; fourth, 1.9 mm.

Male from Dominican Republic. Color as in female, but cephalic region lighter than thoracic region. Posterior median eyes 0.8 diameter of anterior medians, anterior laterals 0.8 diameter, posterior laterals 0.5 diameter. Anterior median eyes slightly less than their diameter apart. Posterior median eyes slightly less than their diameter apart. Fourth trochanter with one short macroseta. Abdomen with long tail. Total length 4.5 mm. Carapace 2.2 mm long; 1.8 mm wide. First femur 2.3 mm; patella and tibia 2.7 mm; metatarsus 1.3 mm; tarsus 0.6 mm. Second patella and tibia 2.2 mm; third, 1.3 mm; fourth, 1.9 mm.

Note. Banks considered this female specimen from Cuba to be W. tauricornis.

Variation. The median plate in posterior view of the epigynum is wider dorsally in specimens from Hispaniola than in the one illustrated from Cuba (Fig. 156). Total length of females 5.0 to 6.7 mm.

Diagnosis. In posterior view of the epigynum the median plate is almost circular and contains a median groove (Fig. 156). The male palpus has a short small embolus (center of Fig. 159) and a median apophysis with a distal, fleshy hook (Fig. 159).

Natural History. The male was collected from a broad-leaf and pine forest.

Distribution. Cuba, Hispaniola (Map 4).

Paratypes. DOMINICAN REPUBLIC

Wagneriana acrosonoides
(Mello-Leitão), new combination
Figures 160–164; Map 4


Note. The abdomen, with the attached epigynum, is separate from the prosoma of the holotype of W. acrosonoides but they probably belong together.

Description. Female from Depto. Meta, Colombia. Carapace orange, sides of thoracic region darker. Legs orange without rings. Venter of abdomen black with a pair of white patches. Carapace without macrosetae. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart. Posterior median eyes 1.2 diameters apart. Abdomen with 9 tubercles, the third pair indistinct (Fig. 163). Total length 4.5 mm. Carapace 2.1 mm long, 1.6 mm wide. First femur 1.8 mm; patella and tibia 2.2 mm; metatarsus 1.1 mm; tarsus 0.5 mm. Second patella and tibia 1.8 mm; third, 1.1 mm; fourth, 1.7 mm.

Male from Meta, Colombia. Color as in female but abdomen lighter. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.9 diameter apart. Posterior median eyes 1.4 diameters apart. Fourth trochanter with two short macrosetae. Abdomen as in female. Total length 3.7 mm. Carapace 1.9 mm long, 1.6 mm wide. First

Figure 154. W. alma n. sp., male left palpus.


Scale lines. 1.0 mm, genitalia, 0.1 mm.
femur 1.8 mm; patella and tibia 2.1 mm; metatarsus 1.1 mm; tarsus 0.5 mm. Second patella and tibia 1.7 mm; third, 1.1 mm; fourth, 1.5 mm.

Illustrations. The illustrations were made from specimens from Meta Dep., Colombia.

Variation. Total length of females 4.5 to 5.8 mm, of males 3.7 to 3.8.

Diagnosis. The epigynum is slightly longer than wide, pointed and distally swollen (Fig. 160). In posterior view it has a ventral depression and a dorsal pair of bulges (Fig. 161). The palpus of the male has a characteristically shaped flat conductor in the middle of the palpus, and a median apophysis with a median "vertical" keel (Fig. 164).

Natural History. Females have been collected in campo grassland in Mato Grosso State. The specimens from near Manaus, Brazil, came from a wasp nest.

Distribution. Guianas and Amazon drainage (Map 4).


*Wagneriana* tayos new species
Figures 165–171; Map 4

**Holotype.** Female holotype and male paratype from Los Tayos, 3°06’ S, 76°12’ W (as 78°12’ W in error on label), Morona-Santiago Prov., Ecuador, 24 July 1976, cliffs by stream-bed near main cave entrance (N. Engler), in MCZ. The specific name is a noun in apposition after the type locality.

**Note:** The latitude and longitude on the label is a Peruvian locality, a misprint.

**Description.** Female holotype. Carapace brown, darkest on sides of thoracic region, white setae on cephalic region. Legs light brown with darker rings. Venter of abdomen with black square constricted by a pair of white spots in front of spinnerets (Fig. 169). Carapace without macrosetae. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Abdomen with four pairs of lateral tubercles and two posterior median ones (Fig. 168). Total length 7.0 mm. Carapace 2.6 mm long, 1.8 mm wide. First femur 2.5 mm; patella and tibia 2.8 mm; metatarsus 1.6 mm; tarsus 0.6 mm. Second patella and tibia 2.4 mm; third, 1.3 mm; fourth, 2.1 mm.

Male collected with female. Color as in female. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes slightly less than one diameter apart. Posterior median eyes 1.2 diameters apart. Fourth trochanter with one short macroseta. Abdomen as in female (Fig. 171). Total length 5.3 mm. Carapace 2.5 mm long; 1.8 mm wide. First femur 2.5 mm; patella and tibia 3.0 mm; metatarsus 1.7 mm; tarsus 0.6 mm. Second patella and tibia 2.3 mm; third, 1.5 mm; fourth, 2.2 mm.

Illustrations. The illustrations were made from the holotype and the male paratype collected with it.

Variation. The terminal apophysis of the male collected at Tambopata differs considerably, but other sclerites of the palpus are as in the paratype illustrated. Total length of females 5.6 to 7.0 mm.
Figure 176. *W. eldorado* n. sp., male palpus.


*Scale lines.* 1.0 mm, genitalia, 0.1 mm.
**Diagnosis.** The posterior view of the epigynum of the female differs from that of *W. acrosomoides* (Fig. 161) by having a neck in the middle of the median plate (Fig. 166); in the cleared epigynum the connecting ducts are long with a loop at the ventral end (Fig. 167). The male differs by the long, slender, gracefully curved embolus in the palpus and by lacking the "vertical" keel on the median apophysis (Fig. 170) present in *W. silvae* (Fig. 186).

**Natural History.** A hot air balloon (Radeau des Cîmes) was used to collect the male from a forest canopy in French Guiana.

**Distribution.** French Guiana, Colombia to southern Peru (Map 4).


**Wagneriana yacuma** new species

Figures 172–175; Map 4

**Holotype.** Female holotype from Espíritu, Río Yacuma, Depto. El Beni, Bolivia, in vegetation, 15 April 1954 (W. Forster and O. Schindler), in ZSM. The specific name is a noun in apposition after the type locality.

**Description.** Female holotype. Carapace brown-black, center of cephalic region orange with white setae. Legs dusky orange with blackish rings. Venter of abdomen with indistinct white pigment square enclosing black pigment anteriorly, sides brown and black. Carapace with two macrosetae; thoracic depression a deep round pit (Fig. 175). Posterior median eyes same diameter as anterior medians, anterior laterals 0.7 diameter, posterior laterals 0.8 diameter. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Abdomen with 11 tubercles (Fig. 175). Total length 7.5 mm. Carapace 2.6 mm long, 2.1 mm wide. First femur 2.7 mm; patella and tibia 3.2 mm; metatarsus 1.6 mm; tarsus 0.7 mm. Second patella and tibia 2.9 mm; third, 1.6 mm; fourth, 2.5 mm.

**Diagnosis.** The epigynum of this species differs from all other *Wagneriana* species by having a transverse notch anteriorly on its ventral surface (Fig. 172), resembling that of *Alpaida* species.

**Paratype.** A female paratype from the type locality collected on 16 April 1954 (ZSM).

**Doubtful record.** BRAZIL Mato Grosso: São Félix, 8 Apr. 1961, η (AMNH).

**Wagneriana eldorado** new species

Figures 176; Map 4

**Holotype.** Male holotype from Eldorado, Misiones Prov., Argentina, Nov. 1970 (M. E. Galiano), in MACN no. 8792. The specific name is a noun in apposition after the type locality.

**Description.** Male holotype. Cephalic region yellowish, thoracic region blackish brown. Legs yellowish with some narrow dark rings. Venter of abdomen mostly black with a white line on each side. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter of anterior medians. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Fourth trochanter without macroseta. Abdomen with only indications of tubercles. Total length 3.8 mm. Carapace 1.9 mm long, 1.5 mm wide. First legs lost. Second patella and tibia 1.8 mm; third, 1.1 mm; fourth, 1.7 mm.

**Diagnosis.** This species differs from *W. hassleri* by having differently shaped median and terminal apophyses (Fig. 176).

**Wagneriana hassleri** new species

Figures 177–181; Map 4

**Holotype.** Male holotype from Rapununi River, near Mt. Makarapan, Rapununi County, Guayana, 5 Oct.
1937 (W. G. Hassler), in AMNH. The species is named after the collector.

**Description.** Female from Kuyuwini River. Carapace orange and dark brown. Legs orange with brown rings. Venter of abdomen with a black square behind epigmum, a white line on each side, and white pigment between black area and spinnerets. Carapace without macrosetae. Posterior median eyes same diameter as anterior medians, anterior laterals 0.9 diameter of anterior medians, posterior 0.8 diameter. Anterior median eyes 0.7 diameter apart. Posterior median eyes their diameter apart. Abdomen with 4 pairs of tubercles and two posterior median ones, the second one small (Fig. 180). Total length 6.3 mm. Carapace 2.8 mm long, 2.1 mm wide. First femur 2.7 mm; patella and tibia 3.2 mm; metatarsus 1.9 mm; tarsus 0.8 mm. Second patella and tibia 2.7 mm; third, 1.5 mm; fourth, 2.5 mm.

Male holotype. Color as in female. Posterior median eyes 0.8 diameter of anterior medians, laterals 0.6 diameter. Anterior median eyes 0.5 diameter apart. Posterior median eyes their diameter apart. Fourth trochanter with one small, short macroseta. Abdomen as in female. Total length 4.0 mm. Carapace 2.1 mm long, 1.5 mm wide. First femur 2.1 mm, other articles broken off. Second patella and tibia 1.9 mm; third, 1.1 mm; fourth, 1.6 mm.

**Illustrations.** The illustrations were made from the male holotype and female paratype from Guyana.

**Note.** Males and females have not been collected together. Determination labels by di Caporiacco with the specimens from Kuyuwini had the female named W. undecimaculata and the male taurocimoris. The trochanter macrosetae are broken off in the holotype but present in the paratype.

**Variation.** Total length of males 4.0 to 4.2 mm.

**Diagnosis.** In posterior view of the epigmum the females differ from W. silvae (Fig. 183) by having the neck of the median plate narrower (Fig. 178). The male palpus has both the embolus and median apophysis shorter (Fig. 181) than in W. silvae (Fig. 186).

**Natural History.** The specimen from Ukuruua River was collected in a forest savanna.

**Distribution:** Guyana, lower Amazon area (Map 4).


**Wagneriana silvae new species**

**Figures 182-186; Map 4**

**Holotype.** Male holotype from Puesto de Vigilancia, Pakitza, Zona Reservada de Manu Depto., Madre de Dios, 11°58’S, 71°18’W, Peru, night collecting, 2 Oct. 1987 (D. Silva D., J. Coddington), in USNM. The species is named after the collector Diana Silva D.

**Description.** Female from Zona Reservada de Tambopata, Peru. Carapace dark brown, cephalic region orange. Legs yellow with dusky rings. Venter of abdomen with a dusky square. Carapace without macrosetae. Posterior median eyes same diameter as anterior medians, laterals 0.7 diameter of anterior medians. Anterior median eyes their diameter apart. Posterior median eyes their diameter apart. Abdomen with 11 tubercles (Fig. 185). Total length 6.5 mm. Carapace 2.9 mm long, 2.0 mm wide. First femur 2.7 mm; patella and tibia 3.2 mm; metatarsus 1.7 mm; tarsus 0.8 mm. Second patella and tibia 2.7 mm; third, 1.5 mm; fourth, 2.4 mm.

Male holotype. Color as in female but carapace brown with eye region orange and a posterior orange triangular mark pointing posteriorly on cephalic region. Posterior median eyes 0.9 diameter of anterior medians, laterals 0.7 diameter. Anterior median eyes 0.4 diameter apart. Posterior median eyes 0.8 diameter apart. Fourth trochanter with one macroseta. Total length 5.0 mm. Carapace 2.5 mm long, 1.8 mm wide. First femur 2.5 mm; patella and tibia 2.8 mm; metatarsus 1.5 mm; tar-
sus 0.7 mm. Second patella and tibia 2.2 mm; third, 1.3 mm; fourth, 2.0 mm.

Illustrations. The illustrations were made from the holotype and specimens from the Tambopata Reserve.

Variation. Total length of females 6.2 to 7.3 mm, of males 4.4 to 5.0.

Diagnosis. The female is difficult to separate from that of W. hassleri found in Guyana (Fig. 178). It may differ in posterior view of the epigynum by having the neck of the posterior plate wider (Fig. 183), but it is not certain that this difference is present in all females. The male differs from W. hassleri by having both a longer embolus and a longer median apophysis (Fig. 186), from W. tayos by having a “vertical” keel on the median apophysis (Fig. 186).

Distribution: Amazon drainage, Peru to Bolivia (Map 4).


Wagneriana roraima new species
Figures 187–190; Map 4

Holotype. Female holotype and one female paratype from Ilha do Maracá, Roraima Territory, Brazil, 29 July 1987 (A. A. Lise). Holotype in MCN no. 19655, paratype in MCN no. 18808. The specific name is a noun in apposition after the type locality.

Description. Female holotype. Cephalic region orange with some white setae, sides of thoracic region brown-black. Legs yellowish with brown rings. Venter of abdomen with black square behind epigynum, on each side of square a white line ending in a white spot in front of spinnerets. Carapace without macrosetae. Posterior median eyes same diameter as anterior medians, laterals 0.6 diameter of anterior medians. Anterior median eyes 0.8 diameter apart. Posterior median eyes 0.8 diameter apart. Abdomen with 10 tubercles, most posterior tubercles missing (Fig. 190). Total length 6.5 mm. Carapace 2.7 mm long, 2.2 mm wide. First femur 2.9 mm; patella and tibia 3.4 mm; metatarsus 1.9 mm; tarsus 0.8 mm. Second patella and tibia 2.9 mm; third, 1.6 mm; fourth, 2.5 mm.

Diagnosis. In ventral view the epigynum appears triangular (Fig. 187) and in posterior view the median plate has a neck (Fig. 188) as in W. hassleri (Fig. 178).

Wagneriana tauricornis
(O.P.-Cambridge)

Figures 191–195; Map 4

Epeira tauricornis O. P.-Cambridge, 1889: 44, pl. 6, figs. 2, 3, 9, 10. Many syntype specimens from numerous localities in Guatemala and Chiriqui Prov., Panama, in BMNH, examined. Keyserling, 1892: 90, pl. 4, fig. 68, 6.


Wagnera tauricornis:—McCook, 1894: 204, pl. 13, figs. 1, 2, 9, 10.


*Scale lines.* 1.0 mm, genitalia, 0.1 mm.
Description. Female from Veracruz, Mexico. Carapace orange to dark brown, darkest on sides of thoracic region. Legs orange with brown to black rings. Venter of abdomen with indistinct paired white patches. Posterior median eyes same diameter as anterior medians, laterals 0.8 diameter of anterior medians. Anterior median eyes their diameter apart. Posterior median eyes 1.5 diameters apart. Abdomen with five pairs of tubercles and three posterior median tubercles (Fig. 194). Total length 5.0 mm. Carapace 2.3 mm long, 1.5 mm wide. First femur 2.1 mm; patella and tibia 2.4 mm; metatarsus 1.3 mm; tarsus 0.5 mm. Second patella and tibia 2.1 mm; third, 1.2 mm; fourth, 1.9 mm.

Male from Veracruz, Mexico. Color as in female. Posterior median eyes 0.7 diameter of anterior medians, laterals 0.5 diameter. Anterior median eyes 0.4 diameter apart. Posterior median eyes 1.2 diameters apart. Fourth trochanter with one short macroseta. Abdomen as in female. Total length 4.2 mm. Carapace 2.1 mm long, 1.7 mm wide. First femur 2.3 mm; patella and tibia 2.5 mm; metatarsus 1.3 mm; tarsus 0.5 mm. Second patella and tibia 1.8 mm; third, 1.3 mm; fourth, 1.8 mm.

Illustrations. The illustrations were made from specimens from Veracruz State, Mexico.

Variation. Total length of females 4.5 to 6.7 mm, of males 3.8 to 4.9.

Diagnosis. In posterior view the epi-gynum differs from that of other species by having a neck (Fig. 192), and it differs from that of W. pakitzia (Fig. 197) by its proportions and by lacking macrosetae on the carapace (Fig. 194). The palpus of the male differs from that of other species by having a whale-shaped “vertical” median apophysis (Fig. 195).

Natural History. The species is commonly collected by the edge of a sweeping forest and has been collected from a palm forest in Quintana Roo State, Mexico, a tropical wet forest and a cloud forest in Costa Rica, and from leaves of agave in Colombia.

Distribution. Florida, Gulf States of United States, Mexico to Venezuela and northern Peru (Map 4).

Additional records. MEXICO Tamaulipas: nr. Gomez Farias (MCZ). San Luis Potosi: Xilitla (MCZ); Huichichuayan (AMNH); Valles (AMNH); Tamazunchale (AMNH). Nayarit: San Blas (MCZ); Tepic (AMNH). Veracruz: 40 km NW Alvarado (REL); Papantla (AMNH); Catemaco [Playa Azul] (AMNH); Fortín de las Flores (AMNH, REL); Atoyac (AMNH); Acayuca (AMNH); nr. La Palma (MCZ); Tampico (USNM). Hildalgo: 20 km NE Tlanchezinol, 760 m (MCZ). Oaxaca: Soyaltepec (AMNH). Yucatan: 3 km E Chichen Itza (MCZ); Colonia Yucatan (AMNH). Quintana Roo: Kohunlich ruins, 15°26’N, 88°48’W (MCZ). Chiapas: Palenque ruins (MCZ, AMNH); Escuinatl (MCZ); Selva de Ocate, 32 km NW Ocozocautla (CAS). GUATEMALA Nueva Concepción (CAS). HONDURAS Lago de Yojoa, 600–650 m (AMNH); Lantetillo (MCZ). NICARAGUA San Marcos (MCZ). COSTA RICA Heredia: La Selva (MCZ, USNM); 1 km N Montana Azul, 1,500 m (DU); NE San Rafael, 1,400 m (MCZ). Alajuela: San Mateo, Higuito (USNM). Limon: 5.5 km E Guálpies (DU); Hamburg Farm (NHMW). Cartago: Turrialba, (CAS). Guanacaste: Carrillo (MCZ). Puntarenas: nr. Tarcoles, 20–50 m (MCZ); Las Cruces (MCZ); Corcovado Natl. Park (MCZ); Osa Peninsula (MCZ). San Jose: Bajo La Hondura, 1,360 m, 1,600 m (MCZ); San Pedro (MCZ); San Jose (AMNH). Cartago: Cartago (AMNH, MCZ); Turrialba (AMNH, MCZ); San Isidro General (MCZ). PANAMA Chiriqui: Volcán (MCZ); trocha Dir. Continental, Carret. Fortuna a Chiriqui Grande (MIUP). Cocle: El Valle (AMNH). Colon-Panamá: Panama Canal area, very common (AMNH, MCZ, MIUP). BAHAMA ISLANDS: Nassau (AMNH). HAITI Port au Prince (MCZ). JAMAICA very common (AMNH, MCZ). VENEZUELA Miranda: Guatopo Natl. Park, Santa Cruzita, 450 m (USNM). Carabobo: Golfo Triste (AMNH). Aragua: Rancho Grande (AMNH). COLOMBIA Magda-
lena: San Pedro, 1,400 m (JAK); Serra Nueva Granada, 1,300 m (JAK). Anto-
quia: Guarne, 2,000 m (MCZ); San Vin-
cente (MHNMM). Valle: Anchicaya, 400 m, 
common (MCZ). ECUADOR Pichincha: 
nr. La Palma (MCZ); Tinalandia, 12 km 
E Santo Domingo de los Colorados, 750 m 
(FSCA); km 113, via Pto. Quito (MECN). 
Los Ríos: Est. Cient., P. F. Davila, Jau-
neche (MECN); Montalvo (AMNH). Bo-
livar: Balzapamba (MCZ, AMNH). PERU 
Tumbes: Palmal [?] (PAN); Lechugal 
(PAN).

Wagneriana pakitza new species 
Figures 196–199; Map 4

Holotype. Female holotype from Zona Reservada 
Pakitza Depto., Madre de Dios, Peru, 11°58'S, 71°18'W, 
3, 4 Oct. 1987 (J. Coddington, D. Silva 
D.), in MHSN. The specific name is a noun in 
apposition after the type locality.

Description. Female holotype. Carapace 
orange-yellow and brown-black with 
two patches of dense white, thin setae. Legs 
orange-yellow, ringed dark brown. Venter 
of abdomen with some indistinct white 
pigment in center. Carapace with two ma-
crosetae (Fig. 199). Posterior median eyes 
0.8 diameter of anterior medians, anterior 
laterals 0.6 diameter, posterior laterals 0.5 
diameter. Anterior median eyes 0.8 di-
ameter apart. Posterior median eyes their 
diameter apart. The laterals are separated 
by their diameter. Abdomen with four 
pairs of lateral tubercles and three poste-
rior median ones (Fig. 199). Total length 
14.5 mm. Carapace 3.9 mm long, 2.9 mm 
wide. First femur 4.7 mm; patella and tibia 
5.6 mm; metatarsus 2.9 mm; tarsus 1.1 mm. 
Second patella and tibia 4.7 mm; third, 2.6 
mm; fourth, 4.0 mm.

Diagnosis. Wagneriana pakitza is larg-
er than W. tauricornis. The carapace of 
W. pakitza has a pair of macrosetae (Fig. 
199) unlike that of W. tauricornis (Fig. 
194). The epigynum resembles that of 
W. tauricornis, but differing by lacking the 
two black marks of the tip in ventral view 
(Fig. 196). In posterior view the neck of 
the epigynum of W. pakitza is near the 
ventral tip (top of Fig. 197), while that of 
W. tauricornis is closer to the middle (Fig. 
192).

Wagneriana turrigera Schenkel 
Figures 200–204; Map 4

Wagneriana turrigera Schenkel, 1953: 24, fig. 22, 9. 
Female holotype from El Pozon, Falcon Prov., 

Note. Schenkel placed a question mark 
before the name of the genus in the origi-
nal description.

Description. Female holotype. Carapace, 
legs light brown. Dorsum of abdo-
men yellow-white (Fig. 203); venter dusky. 
Posterior median eyes 0.8 diameter of 
anterior medians, laterals 0.7 diameter. An-
terior median eyes their diameter apart. 
Posterior median eyes their diameter apart. 
Abdomen as in Figures 203, 204. Total 
length 6.0 mm. Carapace 2.0 mm long, 1.5 
mm wide. First femur 2.5 mm; patella and 
tibia 3.2 mm; metatarsus 2 mm; tarsus 0.8 
mm. Second patella and tibia 2.5 mm; 
third, 1.7 mm; fourth, 2.5 mm (after Schenkel).

Note. This is the only species with a 
median anterior hump that is drawn out 
into a tube (Figs. 203, 204). It may not 
belong to Wagneriana. It was first thought 
to be an immature Wixia; however, sem-
inal receptacles are present. The holotype 
may be a penultimate instar female ready 
to molt.

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