

# *Arquivos de Zoologia*

MUSEU DE ZOOLOGIA DA UNIVERSIDADE DE SÃO PAULO

## CONTEÚDO

RICARDO PINTO-DA-ROCHA. *SYSTEMATIC REVIEW OF THE NEOTROPICAL FAMILY STYGNIDAE (OPILIONES, LANIATORES, GONYLEPTOIDEA)*..... 163

ISSN 0066-7870

Arq. Zool., S. Paulo	São Paulo	v. 33	n. 4	p. 163-342	1997
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ISSN 0066-7870

ARQ. Zool., S. PAULO 33(4): 163-342

23.V.1997

## SYSTEMATIC REVIEW OF THE NEOTROPICAL FAMILY STYGNIDAE (OPILIONES, LANIATORES, GONYLEPTOIDEA)

RICARDO PINTO-DA-ROCHA<sup>1</sup>

### ABSTRACT

The family Stygnidae is reviewed. Its species have been recorded in central-northern South America above the Tropic of Capricorn (except in Chile and in Paraguay) and Lesser Antilles. A new classification is herein proposed based on a cladistic analysis using 35 terminals and 50 characters of external morphology and male genitalia. The eight equally parsimonious trees obtained (length= 156; CI= 46; RI= 78) are summarized by a strict consensus tree which forms the basis of the supraspecific classification. Three subfamilies are recognized as monophyletic, *Nomoclastinae*, *Heterostygninae* and *Stygninae*, including in all 26 genera and 73 species. *Phareinae* and *Ideostygninae* are synonymized with *Stygninae*. *Gaibulus* Roewer, 1943 is considered incertae sedis, because in four trees it is the sister group of *Stygninae* while in the other four trees it is the sister group of *Heterostygninae*. *Styphelus* Simon, 1879 and *S. flavitarsis* Simon, 1879 are transferred from the *Stygninae* to the *Heterostygninae*. *Pickeliana* Mello-Leitão, 1932 is revalidated from the synonym of *Protimesius*. *Ortonia* Wood, 1879 and *O. ferox* Wood, 1879 are considered genus and species inquerendae.

The following new combinations are proposed: *Innoxius magnus* (Caporiacco, 1951); *Eutimesius ephippiatus* (Roewer, 1915); *E. albicinctus* (Roewer, 1915); *E. ornatus* (Roewer, 1943); *Stygnoplus clavotibialis* (Goodnight & Goodnight, 1947); *S. longipalpus* (Goodnight & Goodnight, 1942); *S. tuberculatus* (Goodnight & Goodnight, 1942); *S. flavitarsis* (Simon, 1879); *S. antiguanus* (Roewer, 1943); *S. dominicanus* (Roewer, 1943); *Pickeliana capito* (Soares & Soares, 1974); *Pickeliana pickeli* Mello-Leitão, 1932; *Protimesius mendopticus* (H. Soares, 1978); *P. laevis* (Sorensen, 1932); *P. evelineae* (Soares & Soares, 1978); *P. albilineatus* (Roewer, 1957); *P. amplichelis* (Roewer, 1931); *Verrucastagnus caliginosus* (Pinto-da-Rocha, 1990); *Kaapora minutissimus* (Roewer, 1943); *Sickesia usta* (Mello-Leitão, 1941); *Stygnus aggerum* Sorensen, 1932; *S. ferrugineus* (Perty, 1833); *S. gertschi* (Roewer, 1963); *S. klugi* (Goodnight & Goodnight, 1943); *S. lesserti* (Roewer, 1943); *S. luteus* (Mello-Leitão, 1931); *S. mediocris* (Roewer, 1931); *S. multispinosus* (Piza, 1938); *S. pectinipes* (Roewer, 1943); *S. peruvianus* (Roewer, 1957); *S. polyacanthus* (Mello-Leitão, 1923); *S. simonis* Sorensen, 1932; *S. simplex* (Roewer, 1913); *S. weyrauchi* (Roewer, 1963).

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The following genera are considered synonyms: *Heterostygnus* Roewer, 1913 = *Stygnidius* Simon, 1879; *Dichobunistygnus* Roewer, 1915, *Hoplostygnus* Roewer, 1915, *Xanthostygnus* Mello-Leitão, 1949 = *Eutimesius* Roewer, 1913; *Styphelus* Simon, 1879, *Pseudostygnoplus* Goodnight & Goodnight, 1942, *Parastygnoplus* Goodnight & Goodnight, 1942, *Ilhastygnus* Roewer, 1943 = *Stygnoplus* Simon, 1879; *Obidosus* Roewer, 1931, *Ideostygnus* Sørensen, 1932, *Misetropius* H. Soares, 1979 = *Protimesius* Roewer, 1913; *Liophareus* Mello-Leitão, 1940, *Colomphareus* Goodnight & Goodnight, 1943, *Allophareus* Roewer, 1913 = *Phareus* Simon, 1879; *Stygnellus* Roewer, 1913, *Parastygnellus* Roewer, 1913, *Metastygnellus* Mello-Leitão, 1928, *Lojanellus* Roewer, 1931, *Diplostygnus* Mello-Leitão, 1931, *Acrostygnus* Roewer, 1931, *Henriksia* Mello-Leitão, 1933, *Chelistygnus* Roewer, 1943, *Stygnellomma* Roewer, 1943, *Stygnellops* Roewer, 1943, *Parajanellus* Goodnight & Goodnight, 1943, *Satiastygnus* Roewer, 1963, and *Stygnophareus* H. Soares, 1970 = *Stygnus* Perty, 1833.

The following species are synonymized: *Heterostygnus minutus* Roewer, 1913 = *Stygnidius inflatus* (Guérin-Meneville, 1829-1843); *Eutimesius miles* Sørensen, 1932, *Xanthostygnus fractus* Mello-Leitão, 1949 = *Eutimesius simoni* Roewer, 1913; *Bunistygnellus beebeyi* Goodnight & Goodnight, 1949, *Stenostygnellus praetiosus* Caporiacco, 1951; *Stygnoplus marginalis* Sørensen, 1932 = *Stenostygnellus flavolimbatus* Roewer, 1913; *Stenostygnoides gracilis* Roewer, 1943 = *S. cosmetitarsus* Roewer, 1913; *Liophareus mamillatus* Mello-Leitão, 1940, *Colomphareus rugosus* Goodnight & Goodnight, 1943, *Allophareus robustus* Roewer, 1963 = *Phareus raptator* (Gervais, 1844); *Diplostygnus leonardosi* Mello-Leitão, 1939, *Diplostygnus tibialis* Mello-Leitão, 1941, *Stygnophareus novaisi* H. Soares, 1970 = *Stygnus luteus* (Mello-Leitão, 1931); *Metastygnellus longimanus* Mello-Leitão, 1928, *Metastygnellus nasutus* Mello-Leitão, 1944 = *Stygnus polyacanthus* (Mello-Leitão, 1923); *Chelistygnus bellicosus* Roewer, 1943 = *Stygnus aggerum* (Sørensen, 1932).

The following genera and species are newly described: *Nomoclastes quasimodo*, sp.n.; *Innoxius*, gen.n. (type species *Stenostygnus magnus* Caporiacco, 1951); *Yapacana*, gen.n. (type species *Y. tibialis*, sp.n.); *Minax*, gen.n. (type species *M. tetraspinosus*, sp.n.); *Stygnoplus biguttatus*, sp.n.; *Stygnoplus trilineatus*, sp.n.; *Verrucastygnus*, gen.n. (type species *Stenostygnoides caliginosus* Pinto-da-Rocha, 1990); *Auranus hoeferscovitorum*, sp.n.; *Kaapora*, gen.n. (type species *Nanophareus minutissimus* Roewer, 1944); *Stygnus brevispinis*, sp.n.; *S. grasshoffi*, sp.n.; *S. heliac*, sp.n.; *S. marthae*, sp.n.; *S. tocantinensis*, sp.n. and *Protimesius trocaraincola*, sp.n..

Keywords: Cladistic analysis; Neotropics; Opiliones; systematics; Stygnidae.

## 1. INTRODUCTION

The harvestmen are arachnids characterized, according to Shultz (1990), by the following autapomorphies: second legs elongated and tactile; typical articulation between trochanter and femur; paired tracheal stigmata close to genital segment; penis and odoriferous glands on prosoma. Shultz (*op. cit.*), using cladistics, established the monophyletic group Dromopoda for (Opiliones (Scorpiones (Pseudoscorpiones (Solifugae))). This classification differs from that proposed by Weygoldt & Paulus (1979a, 1979b), that considered harvestman as a sister-group of Ricinulei + Acari. Weygoldt & Paulus developed their hypothesis based on few characters and their conclusions were biased by traditional ideas (Shultz, 1990).

The 4,500 to 5,000 harvestmen species have been recorded from almost the whole world, except for polar zones (Shear, 1982). They are classified into the two suborders: Palpatores and Laniatores (a third suborder, Cyphophthalmi, is considered a derived group within Palpatores, according to Martens, 1986). The Palpatores predominate on temperate zones and their supraespecific classification is satisfactory (see Martens, 1986; Shear, 1982). The Laniatores, on the other hand, show their greatest diversity on tropical zones and their suprageneric classification is less studied. The suborder is divided by Martens (1986) in three superfamilies (Travunioidea (Oncopodoidea + Gonyleptoidea). The family Stygnidae is included in the Gonyleptoidea.

The German arachnologist Carl F. Roewer

has settled the classification of the order Opiliones, reviewing almost all species (Roewer, 1923), erecting several subfamilies, genera and describing numerous species from all parts of the world. He began to work on early 1900's and finished on the 1960's. Roewer established some characters as important to define families (e.g. the tarsal process, erroneously called pseudonychium), others to subfamilies (e.g. number of areas on dorsal scute), and others to genera (e.g. armature on areas on dorsal scute). Roewer gave a "value" to each character that correspond to a taxon on the Linnean hierarchy, preventing other characters of being used. Roewer's classification was followed by most arachnologists in this century. This system proved to be inefficient, because it emphasized the differences instead of similarities (A.B.Kury, pers. comm.), jeopardizing the understanding of the relationships, due the difficulty in characterizing a specimen as armed or unarmed and also to the intra-specific variation.

The Stygnidae was included 50 genera and 82 nominal species, and after the present revision 26 genera and 73 species, including 5 new genera and 12 new species. The family has been characterized by eyes far from each other (eye mound separated in two parts), by the presence of a tarsal process and by the large and thin pedipalpus (Sorensen, 1932; Mello-Leitão, 1933; Shear, 1982). They are restricted to the Neotropics, occurring in South America above the Capricorn Tropic and in the Lesser Antilles. The stygnids are superficially similar to Biantidae (Shear, 1982) in body shape and in the separation of eye mound which led Mello-Leitão (1944b) to propose that Stygnidae are related to Biantidae. However, these features are here considered as convergences. Kury (1992a), using a cladistic analysis, proposed an hypothesis of relationship for the Gonyleptoidea with tarsal process, his cladogram shows that the Gonyleptidae *sensu stricto* + Cosmetidae are the sister-group of Stygnidae, based on the presence of dorsal process on the penis gland and by the short and thick stylus. These three families are the sister-group of Cranidae, a group recently separated from Gonyleptidae by Kury (1994a).

The goal of this work is to revise the family Stygnidae, pointing out new morphological features to be used in the diagnoses of the taxa, to test the validity of subfamilies and genera, to propose an

hypothesis of phylogenetic relationships and a new classification based on the cladistic methodology.

## 2. HISTORIC REVIEW OF THE STYGNIDAE

Perty (1833) described, under Gonyleptidae, *Stygnus*, *S. armatus* and *Goniosoma ferrugineum*. Koch (1839a, 1839b) redescribed and transferred *Goniosoma ferrugineum* to the genus *Stygnus* Perty. Kollar in Koch (1839a, 1839b) described *Stygnus triacanthus*. Gervais (1842) described *Stygnus inflatus*. Gervais (1844) redescribed *Stygnus* Perty and Perty's species, described and presented color illustrations of *Stygnus vesicularis* and *Goniosoma raptator*. Koch (1848) described *Stygnus forcipatus*. Wood (1869) proposed *Ortonia* and described *O. ferox*. Simon (1879) described several genera and species and erected the subfamily Stygninae, under Gonyleptidae, to include the genera *Stygnus* Perty, *Phareus* Simon, *Timesius* Simon, *Stygnoplus* Simon, *Styphelus* Simon, *Stenostygnus* Simon and invalidated erroneously the genus *Ortonia* Wood, by considering its description incorrect. Roewer (1913a, 1913b) separated the Stygninae of Simon in four subfamilies (Heterostygninae, Phareinae, Stenostygninae and Stygninae), established new genera, described species and redescribed all species known at the time. Roewer (1923) discussed the morphological characters used on the systematics of the order, redescribed all genera and known species and added keys to identify them. Mello-Leitão (1923) listed the species of Brazilian Laniatores, presented a key and described *Stignellus* [sic] *polyacanthus*. Another key for Brazilian genera of Laniatores was published by Mello-Leitão in 1926. Sorensen (1932) separated the Gonyleptidae from Simon's "Stygninae", raising the latter to family level, established genera and described species. This author established *Tegyra* (a genus with common eye mound) and included Prostygninae under Stygnidae, however, he did not include the genera of this subfamily in the key. Mello-Leitão (1933) transferred *Tegyra* to Gonyleptinae and mentioned that *Nomoclastes* was anomalous, with characters of Gonyleptidae (patella and pedipalpal length) and of Stygnidae (eye mound separated), and that its correct taxonomic placement was impossible without the study

of the type material. Mello-Leitão (1935) synonymized *Pickeliana* under *Ideostygnus*. Mello-Leitão (1935, 1939a, 1941a, 1941b, 1944b) followed Sorensen's classification, established several genera and described species from Brazil, Venezuela and Colombia. The Sorensen's classification was not accepted by Roewer (1943), who described genera and species, and proposed the subfamilies Nomoclastinae and Ideostygninae for Sorensen's genera *Nomoclastes* and *Ideostygnus* all under Gonyleptidae. Roewer (1947) proposed the new name *Stenopharellus* to substitute *Stenophareus* Roewer, 1943, preoccupied by *Stenophareus* Goodnight & Goodnight, 1943. Mello-Leitão (1949) redescribed Stygnidae, synonymized *Stenophareus* Roewer with *Stenostygnoides* and *Bunistygnellus* with *Stenostygnellus*. Goodnight & Goodnight (1942a, 1942b, 1943, 1947, 1949) followed Roewer's classification and described several genera and species. In 1951, Caporiacco described two new species and presented a list of the Venezuelan species of harvestmen. Roewer (1957, 1963) described some genera and species from Peru. H. Soares & Soares (1974) described *Protimesius capito*, noticed the variation on tarsal segmentation and figured for the first time the Stygnidae male genitalia. H. Soares & Soares (1978) revalidated *Ideostygnus*, removing it from the synonymy of *Pickeliana*. H. Soares (1978) described *Misetropius mendopticus* and synonymized *Pickeliana* Mello-Leitão and *Fonteboatius* Roewer with *Protimesius* Roewer. Pinto-da-Rocha (1990) described the first cavernicolous Stygnidae, *Stenostygnoides caliginosus*. Pinto-da-Rocha (1995b) transferred *Stenostygnus* Simon from the Stygnidae to the Biantidae, synonymized Caribbiantinae Šilhavý, 1974 with Stenostygninae Roewer, 1913 and transferred the other Stenostygninae genera to the Heterostygninae. E. Maury (pers.comm.) informed me that the Chilean *Nanophareus palpalis* Roewer is a gonyleptid due the genitalic features.

### 3. MATERIAL & METHODS

#### 3.1. Material

This study was based on the examination of 1068 specimens. The abbreviation of the name of the collections studied, cities and curator are

listed below. The abbreviations follow, in general, Arnett (1986).

- AMNH American Museum of Natural History, New York, N. I. Platnick.
- BMNH The Natural History Museum, London, P. Hillyard.
- CASC California Academy of Science, San Francisco, W. Pulawski, V. Lee.
- HSPC Helia Soares Private Collection, Universidade Estadual Paulista, Departamento de Zoologia, Botucatu, R. Jim.
- IBUT Instituto Butantan, São Paulo, A. D. Brescovit.
- INPA Instituto Nacional de Pesquisas da Amazônia, Manaus, C. Magalhães.
- SMNK Staatliches Museum für Naturkunde Karlsruhe, Karlsruhe, H. Höfer.
- MACN Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, E. Maury.
- MCNZ Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, E. H. Backup.
- MCZC Museum of Comparative Zoology, Cambridge, H. W. Levi.
- MHNC Museu de História Natural "Capão da Imbuia", Curitiba, J. C. Moura-Leite.
- MNHN Muséum National d'Histoire Naturelle, Paris, A. Muñoz-Cuevas.
- MNRJ Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, A.B. Kury.
- MPEG Museu Paraense Emílio Goeldi, Belém, W. L. Overal.
- MUSM Museo de Historia Natural, Universidad Mayor de San Marcos, San Marcos, D. Silva D.
- MZSP Museu de Zoologia da Universidade de São Paulo, São Paulo, J. L. M. Leme.
- QACZ Pontificia Universidad Católica del Ecuador, Quito, G. Onoré.
- SMFD Naturmuseum Senckenberg, Frankfurt, M. Grasshoff.
- UFMT Universidade Federal do Mato Grosso, Departamento de Biologia, Cuiabá, M. Serrano.
- USNM National Museum of Natural History, Washington, D.C., J. Coddington.
- ZMHB Museum für Naturkunde der Humboldt-

Universität zu Berlin, M. Moritz.

ZMKD Zoologisk Museum, Copenhagen, H. Enghoff.

### 3.2. Abbreviations

Synonym list: bion = bionomics data; cat = catalogue; cit = citation; dist = distribution; misp = misspelling; mis = misidentification; lect = lectotype designation; rdesc = redescription; syn = synonymy; tran = transference between subfamilies. Measurements: CL= cephalothorax length; CW= cephalothorax width; DSL= dorsal scute length; DSW= dorsal scute width; ID= interocular distance; FE= femur; MT= metatarsus; PT= patella; TA= tarsus; TI= tibia; TR= trochanter.

### 3.3. Type material and descriptions

I have examined the type material of more than 85% of the nominal species. Types were used, as much as possible, for the redescription, illustrations and measurements. The type material of the following species was searched by me in all possible repositories but was not found and considered thus as probably lost: *Stygnopulus triacanthus* (Kollar, 1839); *Timesius vesicularis* Gervais, 1842; *Nanophareus minutissimus* Roewer, 1943; *Ortonia ferox* Wood, 1869; *Metaphareus albimanus* Roewer, 1912; *Niceforoiellus assimilis* Mello-Leitão, 1941; *Stygnellus ferrugineus* (Perty, 1833); *Stygnus armatus* Perty, 1933. The species described by Caporiacco (1951), *Stenostygnellus praetiosus* and *Stenostygnus magnus*, were not studied and are deposited in the *Museo de Biología de la Universidad Central de Venezuela*. These two species and *Stenostygnellus macrochelis* Roewer, 1916 and *Ilhastygnus dominicanus* Roewer, 1943, were not requested for loan because there are no doubts about their identity and by the fact that there are several specimens in the examined collections.

After the synonymy for already described species I present information on the types within parenthesis, copying information from the original labels within quotation marks, adding comments on the preservation of some types examined or whether I have dissected them. Eventual corrections and additions are presented between brackets.

In the descriptions or redescriptions, female characters are presented only when they differ from

the males.

### 3.4. Measurements

The measurements were taken from the specimen described or redescription with micrometric ocular under stereomicroscope. The legs I-IV and dorsal scute were measured dorsally, pedipalpus laterally and chelicera frontally.

### 3.5. Male genitalia

To take out the penis, parallel cuts were made with sharp scalpel from each side of genital operculum to near the posterior margin. The detached region was lift up and the penis removed with calipers. Part of the tissues that cover the penis was removed and washed with ethylic alcohol 70%, and posteriorly diaphanized in Creosote. The genitalic characters were examined under optic microscope on excavated slide. Human hairs were used for mechanical fixation of the penis on the slide. The penis was conserved in microvials with ethylic alcohol 70%, and stored together with the specimen from which it was taken out.

### 3.6. Scanning electron microscopy

After removed, the material was immersed in commercial detergent "Veja Multi-Usa" diluted in water (1/3) and cleaned with ultrasound Thornton T-14 (with timer) for 3-20 minutes. A short period (1-3 minutes) was used for soft materials, as leg hairs and short penes, to avoid damage of the material. Next, the material was washed in water and subjected to a dehydration process passing in ethylic alcohol 80%, then alcohol 96%, xylol with alcohol (1/3), xylol with alcohol (1/1) and finally in pure xylol, for about 6h in each. After dehydrated the material was set on a stub and covered by gold on a Sputter Coater Balzer SCD 050 and examined in the scanning electron microscope ZEISS DSM 940 of the "Laboratório de Microscopia Eletrônica do Instituto de Biociências da Universidade de São Paulo".

### 3.7. Geographic distribution and records

The records for the geographic distributions were taken exclusively from labels of the examined material and from information provided by collectors or biographic data. The records for not examined species were taken from the literature. The type material cited as examined in the syn-

onymic list is not repeated in the "Material examined". The species cited by Sorensen (1932) from Texas are, in fact, from Pebas (or Pevas) in Peru (see comments about distribution of *Eutimesius simoni*).

### 3.8. Terminology

The terminology used is the usual for the Laniatores. Some characters of the dorsal scute and male genitalia are showed in figures 8 and 451-452, respectively. The interchelar space is in between the fingers of closed chelae (segments II-III). The parts of penis are named according to Kury (1991; 1992a; 1992b; 1994a, 1994b). The relative length of pedipalpal tibia and tarsus setae (without socket) is refereed as "I" for the large setae and "i" for small setae. The small setae are those that have less than half the length of the longer setae of the article. When variation occurs in the same specimen the other formula is parenthesized. These terms were used for the first time by Mello-Leitão (1939b; 1940a; 1940c; 1942) however, he has never explicitly mentioned the method he has used to codify and characterize the length of setae. Kury (1991) defined "I" as robust spine and "i" as much smaller spine but doubts remained on the interpretation of intermediary states.

### 3.9. Cladistic analysis

The polarizations were made using the outgroup method (Maddison *et al.*, 1984; Watrous & Wheeler, 1981). Outgroups used were: Cosmetidae (*Paecilaemana quadripunctata* Goodnight & Goodnight, 1942; *Cynorta vestita* Roewer, 1912; *Cosmetus variolosus* Mello-Leitão, 1942) and the early lineages of Gonyleptidae (Cobaniinae, *Cobania picea* (Bertkau, 1880); Heteropachylinae, *Chavesincola inexpectabilis* Soares & Soares, 1946; Metasarcinae, *Chacoikenotus clavifemur* Roewer, 1929). These families are, according to Kury (1992a), the sister-group of Stygnidae. A cladistic analysis (Hennig, 1966; Wiley, 1981, Wiley *et al.*, 1991; Amorim, 1994) was made using the computer program Hennig86 version 1.5 (Farris, 1988). The characters distributions were studied with

CLADOS version 1.2 program (Nixon, 1992). The programs ran in a IBM-PC 386 DX (4 Mb of RAM memory). The data matrix is on table I. (0) means plesiomorphic state, (1-5) the apomorphic state(s) and (-) absence of information or polymorphism.

The algorithms used were the approximate algorithms "mh\*" following by "bb\*", that according to Platnick (1989) are the best choice when the exact algorithm (ie) does not run. These algorithms produce the highest number of equally parsimonious trees in the shortest time. The consensus tree used was the strict consensus for finalities of classification, as suggested by Anderberg & Tehler (1990).

Only the species that I have examined the male genitalia were included in the cladistic analysis. Posteriorly, several species of the following genera were recognized as forming monophyletic groups and the matrix was simplified for optimization procedures: *Stygnus* (*S. aggerum*, *S. brevispinis*, *S. gertschi*, *S. grasshoffi*, *S. heliae*, *S. klugi*, *S. luteus*, *S. marthae*, *S. mediocris*, *S. multispinosus*, *S. pectinipes*, *S. peruvianus*, *S. polyacanthus*, *S. simplex*, *S. tocantinensis* and *S. weyrauchi*); *Stygnoplus* (*S. antiguanus*, *S. dominicanus* and *S. flavitarsis*) and *Sickesia* (*S. helmuti* and *S. usta*).

The autapomorphic characters were included in the analysis to avoid losses of information (Yeates, 1992). Some autapomorphies, *e.g.* characters 14 and 15, are male characteristics that may be synapomorphies for some groups (*e.g.* Nomoclastinae) of which only one male is known. Others synapomorphies, *e.g.* characters 6, 22 and 33, seem to be synapomorphic features not related to sexual secondary characters (22 and 33 are synapomorphies of *Nomoclastes* spp. and 6 related *Eutimesius ornatus* with *E. ephippiatus*).

The multistate characters were considered unordered, except those (18, 20 and 50) that I had reasonable evidence of the character evolution based on progressive increased size of podomeres (18 and 20, length of femur and patella of pedipalpus, respectively), increase in number (50, pairs of setae on truncus) and congruence with other characters.



## 4. SYSTEMATICS

## STYGNIDAE Simon

Gonyleptidae (*pars*); Roewer, 1913a: 8; 1923: 394; Mello-Leitão, 1923: 116; 1932: 101.

Stygninae Simon, 1879: 218.

Stygnidae; Sorensen, 1932: 283; Mello-Leitão, 1933: 102; 1935: 111; 1949: 30; Shear, 1982: 107.

Description: Anterior margin of dorsal scute slightly elevated medially, with 1 projection on each corner, 1 projection external and 1 internal side of each chelicera. Eye mound divided in two. Cephalothorax almost as wide as abdomen (dorsal scute rectangular or almost rectangular). Coxa IV usually reaches groove III. Male legs III-IV usually tuberculate. Metatarsi III-IV with 2 ventroapical setae. Distitarsi I-II with 3 segments. Male chelicera swollen in most of the species; segment I condyle-like or straight (only in males of Nomoclastinae). Pedipalpus long and thin or short and thick. Penis glans with dorsal process, absent in some species. Color usually brownish or dark-brown.

Diagnosis: The Stygnidae is related to the laniatorid families with tarsal process (Kury, 1992a) namely Cranaidae, Gonyleptidae and Cosmetidae. It differs from these in having eye mound separate in two parts (instead of a common eye mound) and dorsal scute rectangular or almost rectangular (instead of pyriform).

Sequenced classification for the family Stygnidae as adopted here (see item 6 for the discussion of the characters, table I for the data matrix, table II for the synapomorphies of each group of taxa, and figure 605 for the cladogram):

*Incertae sedis*: *Gaibulus schubarti* Roewer, 1943

Nomoclastinae Roewer, 1943

*Nomoclastes* Sorensen, 1932

*N. quasimodo*, sp.n.

*N. taedifer* Sorensen, 1932

Heterostygninae Roewer, 1913

*Stygnidius* Simon, 1979

*S. guerinii* Sorensen, 1932

*S. inflatus* (Guérin-Meneville, 1829-1843)

*Minax*, gen.n.

*M. tetraspinosus*, sp.n.

*Yapacana*, gen.n.

*Y. tibialis*, sp.n.

*Innoxius*, gen.n.

*I. magnus* (Caporiacco, 1951)

*Eutimesius* Roewer, 1913

*E. ornatus* (Roewer, 1943), comb.n.

*E. albicinctus* (Roewer, 1915), comb.n.

*E. simoni* Roewer, 1913

Species not included in the analysis:

*E. ephippiatus* (Roewer, 1915), comb.n.

*Stenostygnellus* Roewer, 1913

*S. flavolimbatus* Roewer, 1913

*S. macrochelis* (Roewer, 1916)

*Stygnoplus* Simon, 1879

*S. biguttatus*, sp.n.

*S. trilineatus*, sp.n.

*S. meinerti* Sorensen, 1932

*S. longipalpus* (Goodnight & Goodnight, 1942), comb.n.

*S. clavotibialis* (Goodnight & Goodnight, 1942), comb.n.

*S. dominicanus* (Roewer, 1943), comb.n.

*S. flavitarsis* (Simon, 1879), comb.n.

*S. forcipatus* (C.L.Koch, 1845)

*S. triacanthus* (Kollar, 1939)

*S. antiguanus* (Roewer, 1942), comb.n.

*S. tuberculatus* (Goodnight & Goodnight, 1942), comb.n.

*S. granulatus* Mello-Leitão, 1940

Genus and species not included in the analysis: *Timesius* Simon, 1879

*T. vesicularis* (Gervais, 1844)

Stygninae Simon, 1879

*Phareus* Simon, 1879

*P. raptator* (Gervais, 1844)

*Stygnus* Perty, 1833 - genus included in the analysis as only one terminal, species in alphabetical order.

*S. aggerum* Sorensen, 1932, comb.n.

*S. armatus* Perty, 1833

*S. brevispinis*, sp.n.

*S. ferrugineus* (Perty, 1833), comb.n. - *Species inquerenda*

*S. gerstschii* (Roewer, 1963), comb.n.

*S. grasshoffi*, sp.n.

*S. heliae*, sp.n.

*S. klugi* (Goodnight & Goodnight, 1943), comb.n.

*S. lesserti* (Roewer, 1943), comb.n.

*S. luteus* (Mello-Leitão, 1931), comb.n.

*S. marthae*, sp.n.

*S. mediocris* (Roewer, 1931), comb.n.

*S. multispinosus* (Piza, 1938), comb.n.  
*S. pectinipes* (Roewer, 1943), comb.n.  
*S. peruvianus* (Roewer, 1957), comb.n.  
*S. polyacanthus* (Mello-Leitão, 1923),  
 comb.n.  
*S. simonis* Sorensen, 1932, comb.n.  
*S. simplex* (Roewer, 1913), comb.n.  
*S. tocaninensis*, sp.n.  
*S. weyrauchi* (Roewer, 1963), comb.n.  
*Sickesia* H. Soares, 1979  
*S. helmuti* H. Soares, 1979  
*S. usta* (Mello-Leitão, 1941a)  
*Auranus* Mello-Leitão, 1941  
*A. hoeferscovitorum*, sp.n.  
*A. parvus* Mello-Leitão, 1941  
*Verrucastyggnus*, gen.n.  
*V. caliginosus* (Pinto-da-Rocha, 1990),  
 comb.n.  
*Stenostygnoides* Roewer, 1913  
*S. cosmetitarsus* Roewer, 1913  
*Pickeliana* Mello-Leitão, 1932  
*P. pickeli* Mello-Leitão, 1932, comb.n.  
*P. capito* (Soares & Soares, 1974), comb.n.  
*Protimesius* Roewer, 1913  
*P. mendopticus* (H. Soares, 1978), comb.n.  
*P. gracilis* Roewer, 1913  
*P. longipalpis* (Roewer, 1943)  
*P. trocaraincola*, sp.n.  
*P. evelinae* (Soares & Soares, 1974),  
 comb.n.  
*P. laevis* (Sorensen, 1932), comb.n.  
*P. albilineatus* (Roewer, 1957), comb.n.  
 Species not included in the analysis:  
*P. amplichelis* (Roewer, 1931), comb.n.  
*P. coxalis* Roewer, 1931  
*P. palpalis* (Roewer, 1931)  
 Stygninae not included in the analysis:  
*Actinostygnoides* Goodnight & Goodnight,  
 1942  
*A. carus* Goodnight & Goodnight, 1942  
*Kaapora*, gen.n.  
*K. minutissimus* (Roewer, 1943), comb.n.  
*Iguarassua* Roewer, 1943  
*Iguarassua schubarti* Roewer, 1943  
*Metaphareus* Roewer, 1912  
*M. albimanus* Roewer, 1912  
*M. punctatus* Roewer, 1913  
*Niceforoiellus* Mello-Leitão, 1941  
*N. assimilis* Mello-Leitão, 1941

*Paraphareus* Goodnight & Goodnight, 1943  
*P. tatei* Goodnight & Goodnight, 1943  
*Planophareus* Goodnight & Goodnight, 1943  
*P. pallidus* Goodnight & Goodnight, 1943  
*Stenophareus* Goodnight & Goodnight, 1943  
*S. roraimus* Goodnight & Goodnight, 1943

#### Key to the subfamilies of Stygnidae:

1. Eye mounds placed in the middle of cephalothorax (Fig. 1), apex of distitarsi III-IV bilobate (Fig. 592), pedipalpal femur and patella short and high (Fig. 2).....  
 .....Nomoclastinae  
 Eye mounds placed posteriorly on cephalothorax (Fig. 9), apex of distitarsi III-IV straight (Figs. 591, 593-595), pedipalpal femur and patella long and thin (Figs. 560-565).....2
- 2(1). Claws III-IV opposite (Fig. 590), pectinate (Fig. 591), distitarsi III-IV depressed (Fig. 590).....Heterostygninae  
 Claws III-IV parallel or subparallel, smooth; distitarsi III and IV cylindrical (Figs. 593-595).....Stygninae

#### NOMOCLASTINAE Roewer

Nomoclastinae Roewer, 1943: 43.

Diagnosis: Eye mounds placed medially on cephalothorax, close to each other, tuberculate in female, smooth in male. Area I undivided by a median groove in male. Male segment I of chelicera straight. Pedipalpal coxa, femur and patella short; femur compressed; basal sockets apex of tibia normal; tarsus depressed. Tarsi III-IV with scopula of spatulate hairs; last segment bilobate; claws III-IV smooth, subparallel; with tarsal process. Venter of coxa IV of the male with a large and curved apophysis. Ventral plate of penis thick, lateral margins slightly convex, with a row of short setae; distal margin concave. Setae shorter than width of ventral plate. Penis without dorsal process.

Note. *Nomoclastes* has 2 species but, only the male of *N. quasimodo* is known. Therefore, the male characteristics described to the subfamily might be autapomorphies of this species.

Type genus. *Nomoclastes* Sorensen, 1932.

*Nomoclastes* Sorensen

*Nomoclastes* Sorensen, 1932: 300; Roewer, 1943: 36; Mello-Leitão, 1933: 102. (Gender masculine).

Diagnosis: The same as for the subfamily.

Type species: *Nomoclastes taedifer* Sorensen, 1932, by monotypy.

*Nomoclastes quasimodo*, sp.n.

(Figs. 1-6, 449-450, 587, 592, 596)

Diagnosis: The females of this species is quite different from those of *N. taedifer* (male unknown) in having grooves I-IV indistinct, free tergite III and area III smooth. However, I prefer not to erect a new genus for a subfamily with only two species.

Etymology: The name is a noun in reference to the Victor Hugo's monster, "Quasimodo", humpbacked as this Stygnidae.

Type material: ♂ holotype, "Colombia, Cundinamarca, Finca Bela Vista (near Sasaina), 12.V.1965, P. R. & D. I. Craig leg., collected at night on foliage (CASC)"; Paratypes: idem, 3 ♀ (CASC); idem, 28.V.1965, 1♀ (CASC); idem, 5.VI.1965, 2 ♀ (MZSP-14281); idem, 4.VI.1965, 1 ♀ (CASC).

Type locality: Finca Bela Vista (near Sasaina), Cundinamarca, Colombia (04°20'N - 74°52'W).

## Male description (holotype).

Measurements: DSL 2.60; DSW 2.24; CW 1.76; ID 1.08; chelicera II 1.24; III 0.48; pedipalpus 3.18; leg I 5.14; II 10.08; III 6.84; IV 8.32.

Dorsum (Figs. 1-2): Internal paracheliceral projection larger than external. Anterior margin with 3 tubercles each side. Cephalothorax and eye mounds smooth. Lateral margins with tubercles from coxa I to middle of coxa IV. Grooves indistinct. Scute smooth, very convex, covering dorsally anterior half of coxa IV. Free tergites and anal operculum smooth.

Venter: Coxa I with median row of 5 large tubercles, 3 posterior, 3 apical; II with median row of 6, 4 apical; III with 5 shorter than others; IV tuberculate, with large curved apophysis with rounded apex, placed medially. Posterior margin, free sternites and anal operculum with 1 row of small tubercles.

Chelicera: Segment I straight, smooth; II with 1 tubercle; II with 2 teeth; III with 3 teeth. Without interchelar space.

Pedipalpus (Fig. 5): Coxa short with 1 ventromedian and 1 ventrobasal large tubercle. Trochanter with 2-3 ventral and I-2 dorsal tubercles. Femur enlarged, with 2 ventrobasal (I large) and 3 ventromedian shorter tubercles. Patella short and thick, tuberculate. Tibia: ectal iiiI, mesal iiiI. Tarsus: ectal iiii, mesal iiii, with ventral row of tubercles.

Legs (Figs. 587, 592): Coxa II with 1 tubercle anterior and 1 posterior fused apically with 1 of III. Trochanter I-IV with 1 prodorsal tubercle, ventral tubercles smaller. Femora III-IV without dorsoapical tubercles; IV sigmoid. Tarsal segmentation: 6, 10-11, 6, 7. Calcanea I and basitarsus III swollen.

Penis (Figs. 449, 450): Ventral plate with 1 row of 5 setae on lateral margins, basal setae shorter.

Colour: Brown. Dorsal scute, chelicera and pedipalpus with small black spots.

## Female description (paratype; Figs. 3,4,6).

Measurements: DSL 2.80; CL 1.28; DSW 2.52; CW 1.76; ID 0.76; chelicera: II 1.16; III 0.50; pedipalpus 3.08; leg I 4.72; II 9.10; III 6.10; IV 7.94.

Eye mounds with 3 tubercles. Dorsal scute with 5 grooves, 4 areas. Area I not divided by median groove. Chelicera segment II without tubercles. Pedipalpal trochanter with 3 ventral and 3 dorsal tubercles. Coxa I with 2 tubercles, II with 3 tubercles (posterior fused with I of III). Calcanea I and basitarsus III not swollen. Tarsal segmentation: 6, 10-12 (3-4), 6, 7. Brown, internal margins of areas with small black spots, area III with 2 paramedian black spots.

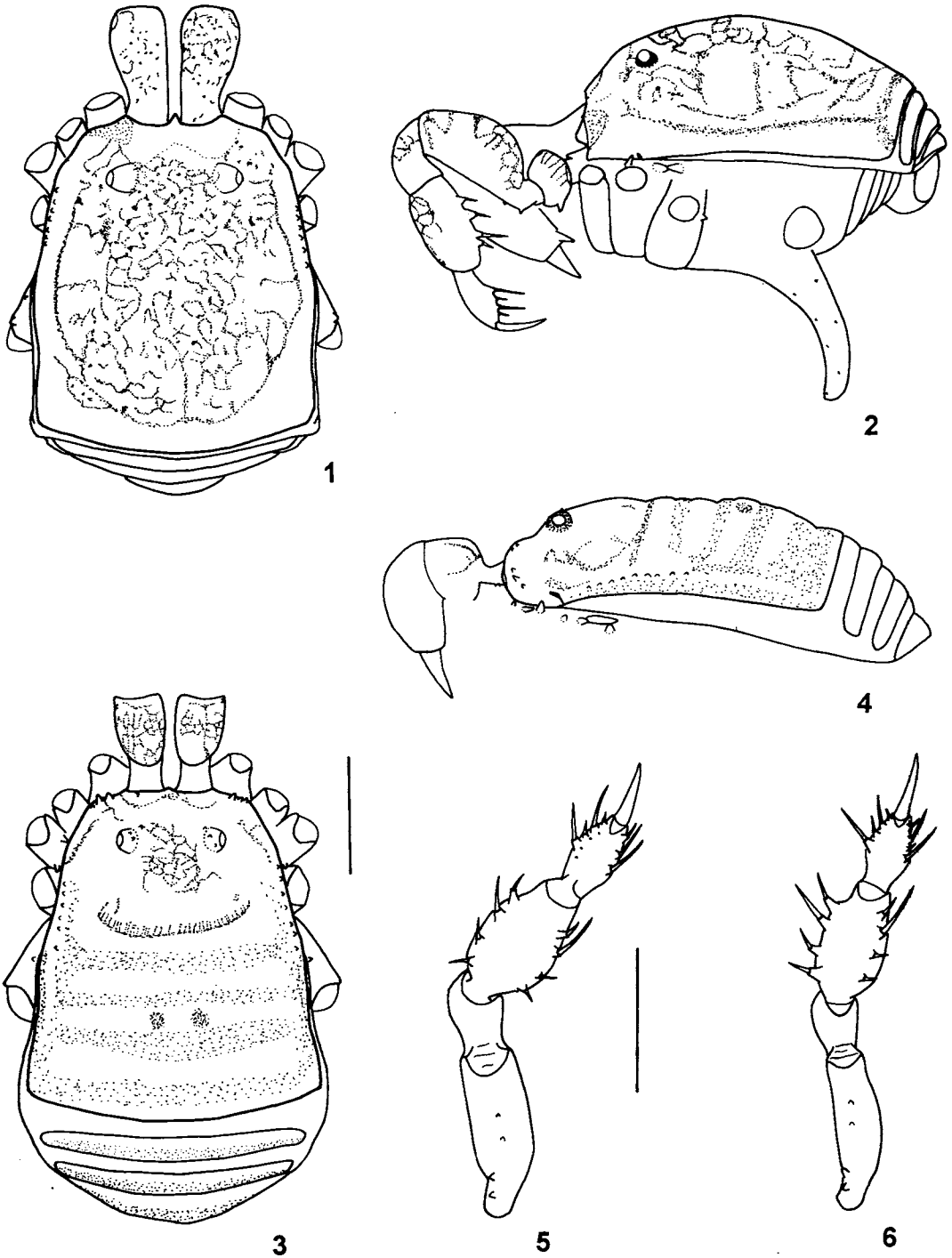
Bionomics: Type series collected at night on foliage.

Distribution (Fig. 596): Recorded only from type locality.

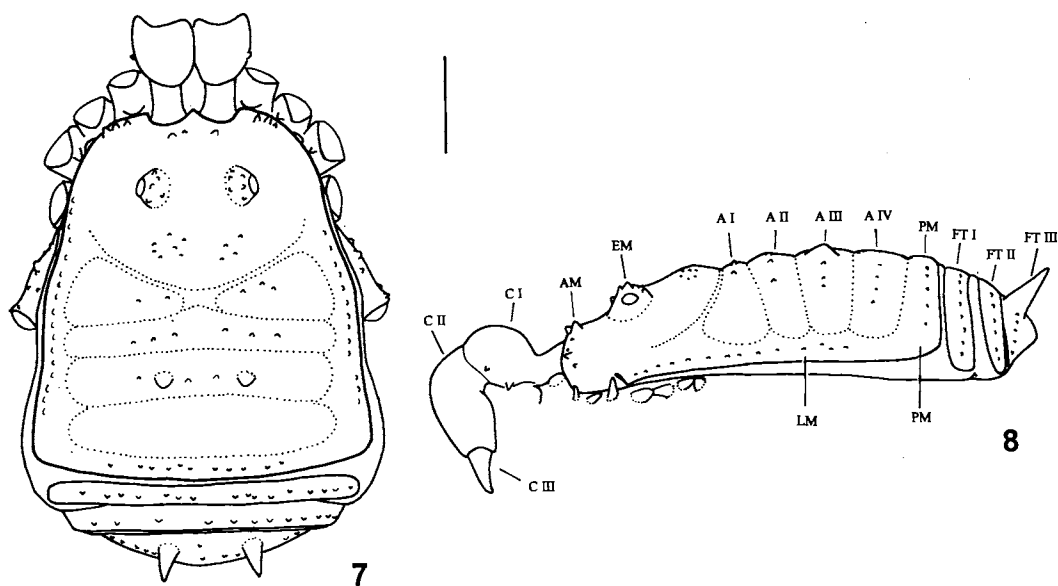
*Nomoclastes taedifer* Sorensen

(Figs. 7-8)

*Nomoclastes taedifer* Sorensen, 1932: 300, fig. 11; Roewer, 1943: 36. (Female holotype "N.



Figs. 1-6. *Nomoclastes quasimodo*, sp.n. Male (holotype): 1, habitus, dorsal view; 2, lateral view; 5, left pedipalpus, tibia and tarsus. Female (paratype): 3, habitus, dorsal view; 4, lateral view; 6, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.



Figs. 7-8. *Nomoclastes taedifer* Sorensen. Female (holotype): 7, habitus, dorsal view; 8, lateral view. Scale bar, 1 mm. Abbreviations: A I= area I; A II= area II; A III= area III; A IV= area IV; AM= anterior margin; LM= lateral margin; PM= posterior margin; C I= cheliceral segment I= C II= cheliceral segment II= C III= cheliceral segment III (movable finger); EM= eye mound; FT I= free tergite I; FT II= free tergite II; FT III= free tergite III.

Granada [Colombia], # 15a, # 91.8.1.1049, Keyserling coll., Roewer revid. 1934, # 10389, alle Beine fehlen", damaged material with almost all appendices lost, except 1 pedipalpus and 1 patella and tibia, BMNH, examined).

Diagnosis: The female of this species differs from that of *N. quasimodo* in having two tubercles on area III and free tergite III.

Female redescription (holotype and original description).

Measurements: DSL 2.68; CL 1.16; DSW 2.76; CW 1.88; ID 0.76; chelicera: II 1.04; III 0.58.

Dorsum (Figs. 7, 8): Anterior margin with 3 large tubercles each side, 3 median (lateral larger). Eye mounds tuberculate. Cephalothorax with 2 eminencies small-tuberculate, behind eye mounds. Lateral margins with tubercles from basal part of coxa III to beginning of area IV. Area I divided, with 2-3 small tubercles; II with 3 small tubercles each side; III with 2 wide and short eminencies, 2 small tubercles between them and 1 on left side. Area IV and free tergites I-II with 1 row of small tubercles. Free tergite III with 2 large and several small tubercles irregularly disposed. Anal

operculum small-tuberculate.

Venter: Coxa I with median row of 6 large tubercles, 3 posterior, 3 apical; II with 1 median row of 6 small tubercles, 4 posterior, 2 apical and several irregularly disposed; III with 1 median row of 6 tubercles, 3 posterior, 4 apical, several irregularly disposed; IV irregularly tuberculate. Posterior margin and free sternites with 1 row of large tubercles. Anal operculum small-tuberculate.

Chelicera: Segment I with 2 prolateral tubercles; II-III small-tuberculate.

Pedipalpus: Coxa with 1 large ventral and 1 dorsal tubercle. Trochanter with 1 large ventral and 3 small dorsal tubercles. Femur compressed, with 4 ventral tubercles. Patella short. Tibia with 3 ectal and 4 mesal setae. Tarsus with 4 ectal and 4 mesal setae (lili).

Legs: Short and thick. Coxa I with 2 large tubercles (1 towards coxa II); II with 1 large tubercle near odoriferous gland, 1 fused apically with 1 of III; III partially visible dorsally, with 1 tubercle fused apically with 1 of IV; IV short, tuberculate, apex reaching groove II, with several tubercles, median larger. Femora II-IV sigmoid. Tarsal segmentation: 6, ?, 6, 7.

Colour: Reddish-brown, according to the original description. The holotype is brownish, probably due to depigmentation by alcohol.

Male unknown.

Type locality: Colombia.

Distribution: Recorded only from type locality.

#### HETEROSTYGNINAE Roewer

Heterostygninae Roewer, 1913b: 576; 1923: 179, 196; Mello-Leitão, 1932: 429; 1949:32.

Stygninae (*pars*) Simon, 1879: 218.

Stenostygninae (*pars*) Roewer, 1913a: 162; Mello-Leitão, 1932: 418; 1949: 32.

Diagnosis: Eye mounds smooth; placed posteriorly on cephalothorax, near groove I. Area I divided by a median groove. Segment I of chelicera condyle-like. Pedipalpal coxa, femur and patella long (length similar to dorsal scute); femur and patella cylindrical and thin. Last article of tarsi III-IV depressed, apex straight; from once to twice the anterior article length. Claws of legs III-IV opposite, pectinate; scopula densely covered by spatulate hairs; tarsal process well developed. Penis: ventral plate slender; distal setae shorter than width of ventral plate.

Type genus: *Heterostygnus* Roewer, 1923. According to the article 40 of the International Code of Zoological Nomenclature, adopted by the XV International Congress of Zoology, the name Heterostygninae must not be changed, not even with the synonym here proposed of the type genus, *Heterostygnus*, with *Stygnidius* Simon, 1879.

Key to the genera of Heterostygninae.

1. Cephalothorax with 1 median spine (Fig. 150).....*Stygnoplus*  
Cephalothorax with 1 wide eminence or small-tuberculate (Figs. 50, 74).....2
- 2(1). Area III unarmed (Fig. 42).....*Innoxius*  
Area III with 2 spines (Figs. 9, 17).....3
- 3(2). Area I with 2 large spines (Fig. 26).....*Minax*  
Area I smooth or small-tuberculate.....4
- 4(3). Dorsal scute with white spots or regions (Figs. 49, 57, 73).....5  
Dorsal scute without white spots or re-

- gions.....6
- 5(4). Chelicera segment I with 1 large retrolateral tubercle (Fig. 73), legs III-IV short and thick, tibia IV clavate (Figs. 79-80).....*Stenostygnellus*  
Chelicera segment I without large tubercle, legs cylindrical and long (Figs. 52, 53).....*Eutimesius*
- 6(4). Dorsal scute with 3 areas (Fig. 9), patella and tibia IV of the small-tuberculate.....7  
Dorsal scute with 4 areas, (Figs.39-40), patella and tibia IV of the with large tubercles.....*Yapacana*
- 7(6). Area III with geminate spines (Fig. 556), basitarsus III of swollen .....*Timesius*  
Area III with separate spines (Fig. 9), basitarsus III of not swollen.....*Stygnidius*

#### *Stygnidius* Simon

*Stygnidius* Simon, 1879: 223; Roewer, 1913b: 445, 455; 1923: 580; Mello-Leitão, 1923: 580; 1926: 366; 1932: 430; Sorensen, 1932: 284, 290. (Gender masculine).

*Heterostygnus* Roewer, 1913b: 445; 1923: 577; Mello-Leitão, 1926: 366; Roewer, 1931: 158; Mello-Leitão, 1932: 432 (Type species: *Heterostygnus minutus* Roewer, 1913b, by monotypy). *Syn.n.*

Synonymic note: *Heterostygnus* is considered a junior synonym of *Stygnidius* because both type species are synonymous.

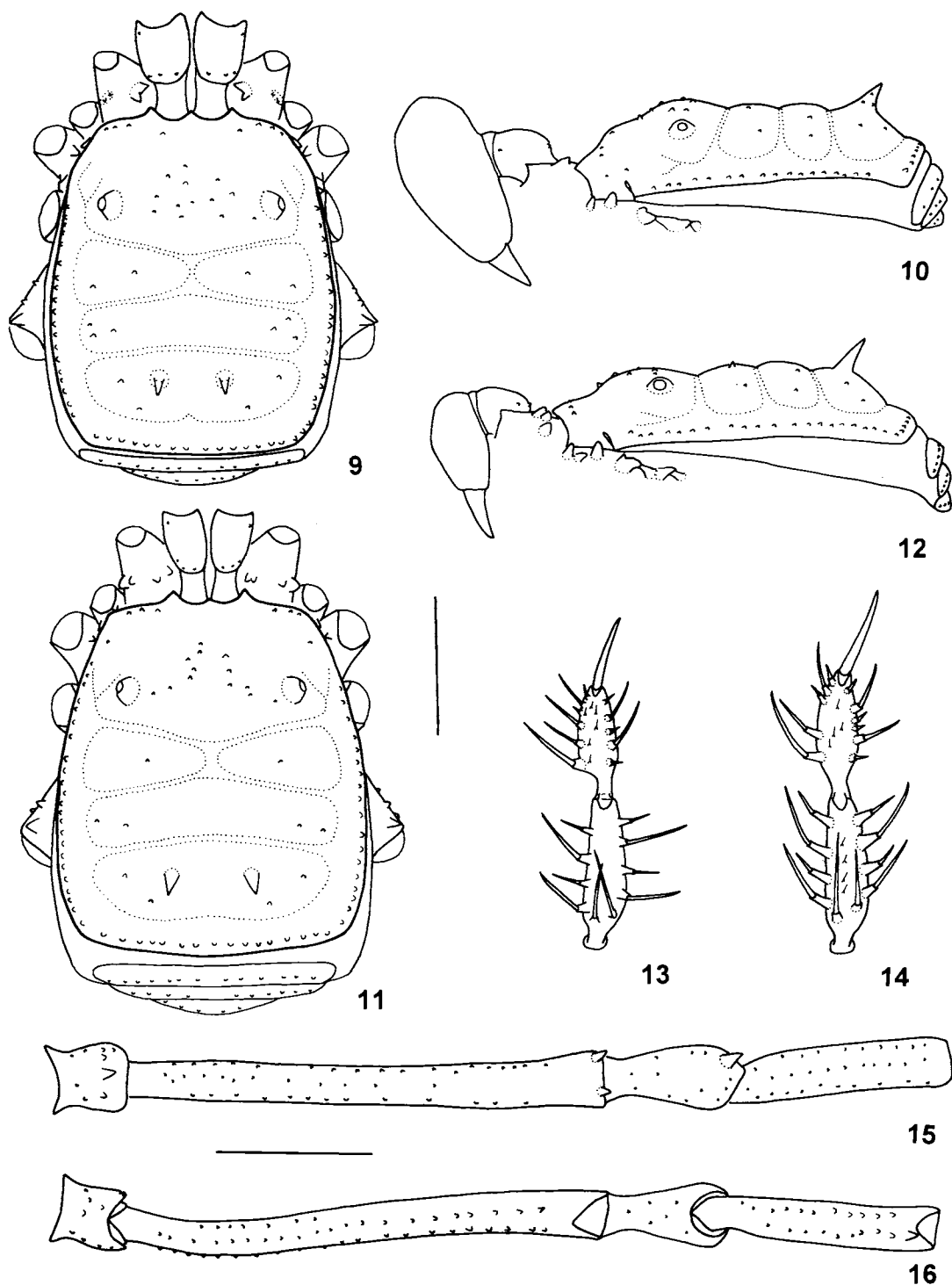
Diagnosis: Dorsal scute rectangular, without white spots. Cephalothorax without eminence or spine. Area III with 2 spines. Chelicera small-tuberculate. Apex of basal sockets of pedipalpal tibia normal. Penis: with 1 pair of ventral setae; short dorsal process; basal 1/2 membranous; truncus with 2 pairs of setae; ventral plate narrowed basally; distal margin concave; 2 pairs of distal setae laterally.

Type species: *Stygnus inflatus* Guérin-Meneville, 1829-1843, by monotypy.

#### *Stygnidius guérinii* Sorensen

(Figs. 9-16, 451-452, 596)

*Stygnidius guérinii* Sorensen, 1932: 291. (Male



Figs. 9-16. *Stygmids guerinii* Sorensen. Male (holotype): 9, habitus, dorsal view; 10, lateral view; 13, left pedipalpus, tibia and tarsus; 15, trochanter, femur, patella and tibia of the right IV leg, dorsal; 16, same, ventral. Female (paratype): 11, habitus, dorsal view; 12, lateral view; 14, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

holotype "Cayenne [French Guiana], # 168, 13.II.1889, M.", UZMD, dissected, examined).

Diagnosis: Differs from *S. inflatus* in having short spines on area III (long in *S. inflatus*) and tibia IV without dorsal tubercles (instead of 1 dorsobasal tubercle).

Male redescription (holotype).

Measurements: DSL 2.32; CL 0.92; DSW 2.00; CW 1.76; ID 1.20; chelicera: II 1.68; III 0.68; pedipalpus 4.08; leg I 6.20; II ?; III 7.80; IV 10.28.

Dorsum (Figs. 9-10): Anterior margin with 2 tubercles each side. Cephalothorax with central tubercles. Lateral margins with tubercles from coxa III to posterior margin. Area I with 2 tubercles each side; II with 3 each side; III with 2 short backwards spines, with tuberculate base; 2-4 tubercles each side. Posterior margin with 16 tubercles. Free tergite I with 12 tubercles; II with 13; III with 9 tubercles irregularly disposed.

Venter: Coxa I with 2 anterior tubercles, 1 median row of 5 large, 3 posterior, 3 apical; II with 1 median row of 6, 3 posterior, 3 apical; III with 3 apical, 7 irregularly disposed; IV with 3 oblique rows of 4 each one, 5 apical. Posterior margin and free sternites with 1 row of tubercles, longer laterally.

Chelicera: Segment I with 4 tubercles; II with 2 median wide, 2 small distal; III with 1 basal wide, 2 median wide, 2 distal small.

Pedipalpus (Fig. 13): Coxa with 5 ventral tubercles, 2 bifid dorsal. Trochanter with 2 ventral and 1 dorsal tubercle. Femur with 3 ventrobasal tubercles. Patella swollen at distal 1/3. Tibia: ectal IIIiIi, mesal IIIiIi. Tarsus: ectal ilIiIi, mesal IIIiIi, 1 ventral row of tubercles.

Legs (Figs. 15-16): Coxa I with 1 tubercle; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 enlarged fused anteriorly with 1 of II and posteriorly with 1 of IV; IV with 1 dorsoapical, 2-3 lateral. Trochanter III with 5 ventral tubercles, 1 dorsal; IV with 5 ventral, 2 dorsal, 1 prolateral. Femur III with 2 dorsoapical tubercles; IV with 2 ventral rows of tubercles on distal 1/3, 2 small dorsal tubercles. Patella IV with 1 dorsomedian tubercle. Tibia IV with 2 ventral rows of tubercles (some apical larger). Claws with 5 teeth.

Penis (Figs. 451-452): Ventral plate with 2 distal and 2 intermediary pairs of setae.

Colour: Brown. Chelicera black reticulate.

Female redescription (paratype; Figs. 11, 12, 14).

Measurements: DSL 2.60; CL 1.00; DSW 2.08; CW 1.76; ID 1.24; chelicera: II 1.10; III 0.58; pedipalpus 4.88; leg I 5.92; II 13.04; III 8.74; IV 10.84.

Anterior margin with 3 tubercles each side. Area I with 1 tubercle and II-III 2 each side. Free tergite I with 13 tubercles; II with 10; III with 6. Pedipalpal tarsus: ectal ilIiIi, mesal IIIiIi. Coxa I with 2 tubercles. Patella III without dorsal tubercles. Tarsal segmentation: 6, 9, 6, 7.

Type locality: Cayenne, French Guiana. The Cayenne used by the last century authors extended to a wider area than nowadays.

Distribution (Fig. 596): Recorded only from type locality.

Material examined: French Guiana. Cayenne 3 ♂ & 2 ♀ (MNHN).

### *Stygnidius inflatus* (Guérin-Méneville)

(Figs. 17-24, 453-454, 596)

*Stygnus inflatus* Guérin-Méneville, 1829-1843: 13; Gervais, 1842: 3, fig. 3; 1844: 111 (rdesc.). (Male holotype "Cayenne [French Guiana], # 3015", MNHN, holotype pinned, dried and maintained in alcohol with 3 males and 2 females that certainly do not belong to the type material, examined).

*Stygnidius inflatus*; Simon, 1879: 223 (rdesc.); Roewer, 1913b: 556, fig. 179 (rdesc.); 1923: 580, fig. 729 (rdesc.); Mello-Leitão, 1932: 430 (rdesc.).

*Stygnoplus inflatus*; Roewer, 1913b: 452 (rdesc.); 1923: 579 (rdesc.).

*Stygnidius inflatus*; Mello-Leitão, 1923: 179 (misp).

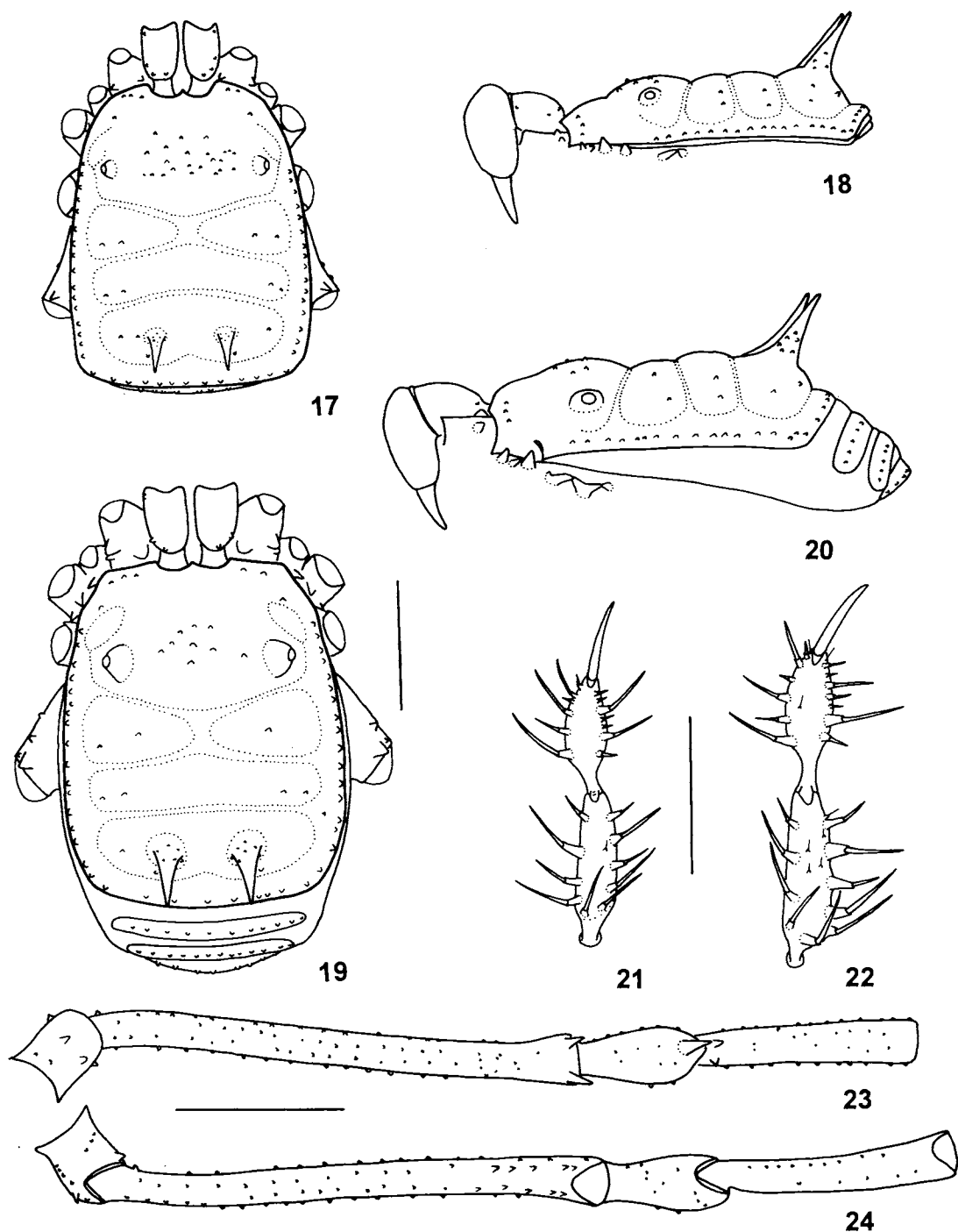
*Heterostygnus minutus* Roewer, 1913b: 446, fig. 175; 1923: 577, fig. 724 (rdesc.); 1931: 158 (dist.); Mello-Leitão, 1931: 432 (rdesc.). (Male and 10 female syntypes "Guyana [French Guiana], Haut Caserverne [in Cayenne], F. Geay leg., 1898, # 2323, type" MNHN, examined). *Syn.n.*

Diagnosis: See *S. guerinii*.

Male redescription (syntype of *H. minutus*).

Measurements: DSL 2.16; CL 0.92; DSW





Figs. 17-24. *Stygnidius inflatus* (Guérin-Meneville). Male (holotype de *Heterostygnus minutus*): 17, habitus, dorsal view; 18, lateral view; 21, left pedipalpus, tibia and tarsus; 23, trochanter, femur, patella and tibia of the right IV leg, dorsal; 24, same, ventral. Female (paratype): 19, habitus, dorsal view; 20, lateral view; 22, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

1.76; CW 1.60; ID 1.12; chelicera: II 1.02; III 0.54; pedipalpus 4.52; leg I 5.44; II 11.20; III 7.12; IV 9.44.

Dorsum (Figs. 17-18): Anterior margin with 2-3 tubercles each side. Cephalothorax with tubercles between eye mounds. Lateral margins with tubercles from coxa III to posterior margin. Area I-II with 2 tubercles each side; III with 3 each side, with 2 long backwards spines, parallel, with tuberculate base. Posterior margin with 11 tubercles. Free tergite I with 10 tubercles; II-III with 7. Anal operculum with tubercles on posterior margin and medially.

Venter: Coxa I with 1 median row of 6 tubercles, 3 apical; II with 4 anterior, 3 median, 4 posterior, 4 apical; III with 1 median row of 7, 2 posterior, 3 apical; IV with 2 apical. Coxa IV, stigmatic area and genital operculum irregularly tuberculate. Posterior margin and free sternites with 1 row of tubercles. Anal operculum with tubercles on posterior margin.

Chelicera: Slightly swollen. Segment I with 4 tubercles; II-III with small teeth. Without interchelar space.

Pedipalpus (Fig. 21): Coxa with 3 dorsobasal and 5 ventral tubercles. Trochanter with 1 dorsal and 2 ventral tubercles. Femur straight. Patella swollen at distal 1/3. Tibia: ectal, IIiIi, mesal IIIiIi. Tarsus: ectal IIIiIiIi, mesal IiIiIi.

Legs (Figs. 23-24): Coxa I with 2 tubercles; II with 2; III with 1 fused apically with 1 of IV; IV with 1 dorsoapical, 1-3 lateral. Trochanter I with 2 ventral tubercles; II with 1 dorsomedian, 2 retrolateral, 4 ventral; III with 2 prolateral, 1 dorsal, 3 ventral; IV with 1 prolateral, 2 large dorsal, 2 small dorsal, 6 retrolateral, 3 ventral. Femora I-III straight, IV curved; III with 1 large dorsoapical and 1 small tubercles; IV with 2 dorsoapical (posterior larger), 2 ventral and 1 prolateral tubercles, 2 dorsal rows of tubercles. Patella IV tuberculate, 1 large dorsoapical tubercle. Tibia IV with 2 rounded dorsobasal tubercles. Tarsal segmentation: 6, 9, 6, 7.

Penis (Figs. 453-454): Ventral plate with 2 distal, 1 intermediary and 2 ventral pairs of setae.

Colour: Dark-brown, cephalothorax black reticulate. Areas and margins with black spots. Margins of areas black. Pedipalpus, chelicera and legs brownish with black spots.

Female redescription (paratype; Figs. 19-20, 22):

Measurements: DSL 2.32; CL 0.92; DSW 2.04; CW 1.76; ID 1.20; chelicera: II 1.12; III 0.64; pedipalpus 5.20; leg I 6.36; II 12.60; III 8.32; IV 11.04.

Zone between eyes with less tubercles than male. Area I with 1-2 tubercles each side; III with 1-2 each side. Posterior margin with 8 tubercles. Free tergite I with 11 tubercles; II with 12, III with 8. Pedipalpal tibia ectal IIIiIi, mesal IIIiIi. Coxa III with 1 enlarged tubercle fused apically with 1 of II and 1 of IV. Patella IV with 1 small dorsoapical tubercle. Tarsal segmentation: 6, 9, 6, 7.

Type locality: Cayenne, French Guiana. The Cayenne used by the last century authors extended to a wider area than nowadays.

Distribution (Fig. 596): Venezuela (Mérida), French Guiana, Surinam.

Material examined: Venezuela. *Mérida*: Mérida, 1 ♂ (MNHN-17151); Surinam. *Marowijne*, Anapaiake (River Loma), 1 ♀ (AMNH); idem, 1 ♀ (MZSP-14233).

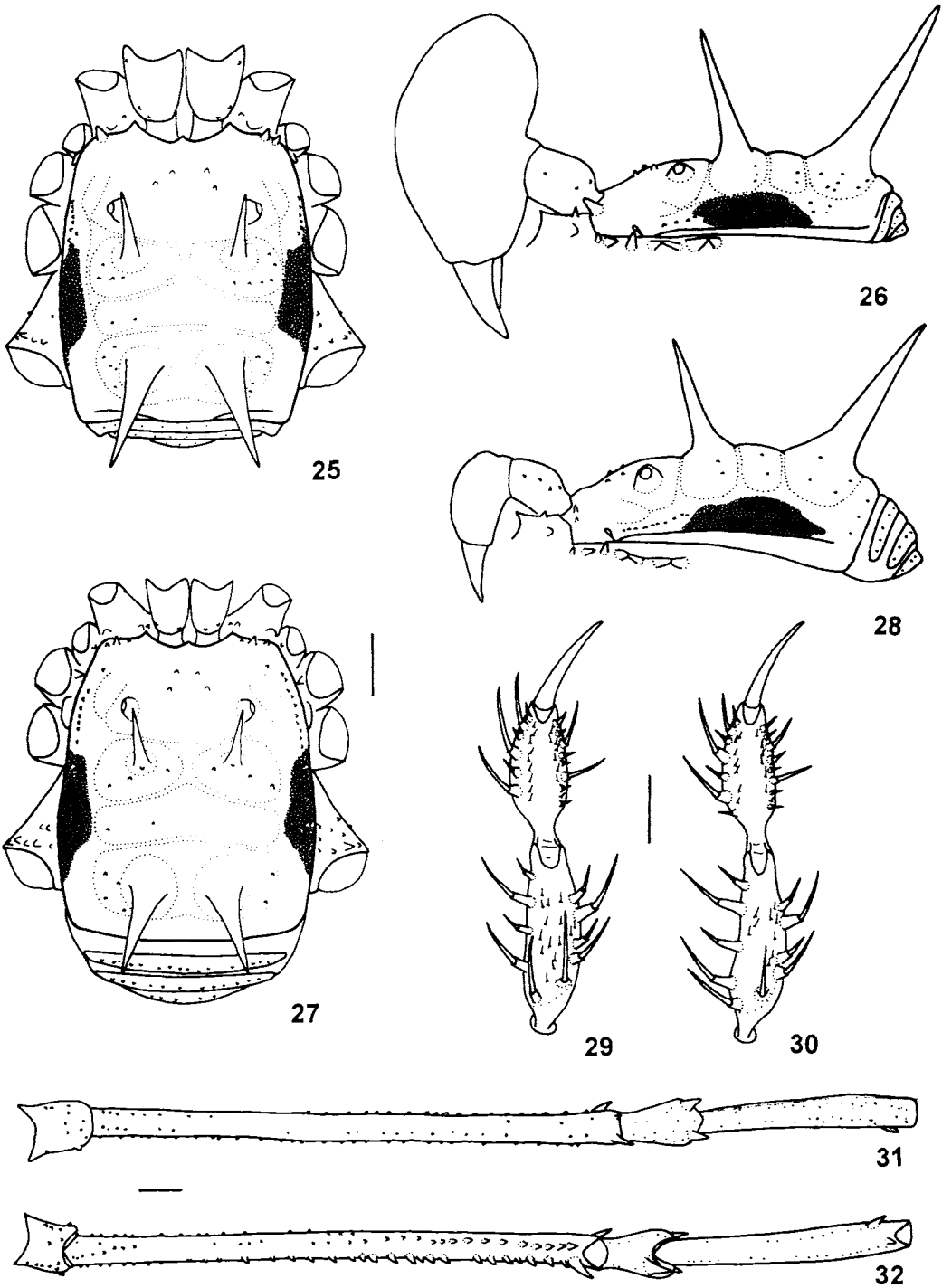
Note: The opilionids cited as *S. inflatus* by Friebe & Adis (1983) are *Auranus parvus* (Stygninae).

### *Minax*, gen.n.

Etymology: *Minax* = threatening, masculine, Latin adjective in reference to the habitus.

Diagnosis: Dorsal scute with lateral margins convex. Cephalothorax tuberculate. Lateral margins with white spots. Areas I-III with 2 spines. Chelicera small-tuberculate. Apex of basal sockets of pedipalpal tibia normal. Penis: with distal U-shaped cleft; ventral plate narrow and long basally; with setae placed medially and ventrally; truncus with 4 pairs of setae and dorsal process; basal half of glans membranous. *Minax* resembles *Stygnidius*, *Yapacana* and *Timesius* by the lack of eminence or spine on cephalothorax. The morphology of penis relates it to *Yapacana*, *Innoxius* and *Eutimesius*. It differs from all Heterostygninae by the tarsi III-IV without scopula and presence of 2 long spines on area I.

Type species: *Minax tetraspinosus*, sp.n., by present designation.



Figs. 25-32. *Minax tetraspinosus*, gen.n. sp.n.. Male (holotype): 25, habitus, dorsal view; 26, lateral view; 29, left pedipalpus, tibia and tarsus; 31, trochanter, femur, patella and tibia of the right IV leg, dorsal; 32, same, ventral. Female (MZSP): 27, habitus, dorsal view; 28, lateral view; 30, left pedipalpus, tibia and tarsus. Gray spots mean white color. Scale bars: 1 mm.

*Minax tetraspinosus*, sp.n.

(Figs. 25-32, 459-460, 596)

Etymology: *Tetra*= from Greek four, *spinosus*= from Latin spine, an adjective in reference to the spines of areas I and III.

Type material: ♂ holotype "Venezuela, Igarapé forest of upper Río Yaciba, 7.XII.1953, W. M. Beebe leg., AMNH"; ♂ paratype, same data as holotype, MZSP-14259; ♀ paratype "Venezuela, Amazonas, Neblina Base Camp., 25.I-28.II.1985, R. W. MacDiarmid leg., USNM"; 2 ♂ paratypes "Venezuela, Territorio Federal Amazonas, Depto Río Negro, Neblina Base Camp on río Mawarinuma, 140 m, 0°50'N, 66°10'W, 3.II-5.III.1984, R. G. Zweifel coll."

Type locality: Upper río Yaciba, Amazonas, Venezuela.

## Male description (holotype):

Measurements: DSL 4.40; CL 1.56; DSW 4.12; CW 3.68; ID 2.36; chelicera: II 2.68; III 1.00; pedipalpus 14.75; leg I 19.55; II 43.47; III 30.24; IV 40.33.

Dorsum (Figs. 25-26): Anterior margin with 1-2 large tubercles each side. Cephalothorax with 4 median tubercles. Lateral margins with 1 row of tubercles from coxa I to middle of IV. Area I with 5-6 minute tubercles; I and III with 2 long spines, divergent (forwards on I, backwards on III); II smooth. Free tergites I-III with 1 row of minute tubercles. Anal operculum minute-tuberculate.

Venter: Coxa I with 1 median row of 5 large tubercles, 2 apical; II with 1 median row of 7-8 large, 2-3 posterior, 3 apical; III with 1 median row of 7, 3 posterior, 3 apical; IV with 1 median row of 8, 4 apical. Posterior margin and free sternites with 1 row of tubercles. Anal operculum minute-tuberculate.

Chelicera: Swollen. Segment I with 3 tubercles; II with 1 large median, 3 small distal; III with 1 wide basal, 1 wide median, 3 small distal. With interchelar space.

Pedipalpus (Fig. 29): Coxa with 2 large ventral and 2 dorsal tubercles. Trochanter with 2 ventral and 1 dorsal tubercles. Femur slightly curved, with 7 ventral tubercles. Patella swollen at distal 1/3. Tibia: ectal IIili, mesal IIili, with ventral tubercles irregularly disposed. Tarsus: ectal iililii, mesal lilili, with 1 ventral row of tubercles each side.

Legs (Figs. 31-32): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused with 1 of III; III with 1 posterior fused with 1 of IV; IV tuberculate. Trochanter I with 3 ventral tubercles; II with 2 ventral, 2 retrolateral; III with 6 ventral, 2 prolateral, 2 retrolateral, 2 large dorsoapical and several minute tubercles; IV with 8 ventral, 3 prolateral, 1 retrolateral, 6 dorsal minute tubercles. Femora I-IV straight; III-IV with 2 large dorsoapical tubercles; III with 2 ventrodiscal rows of tubercles (anterior larger); IV with 2 ventral rows on distal 2/3 (anterior larger). Patella IV with 1 ventroanterior tubercle, 1 dorsoapical anterior and 1 dorsoapical posterior large tubercles. Tibia IV with 2 subapical ventral tubercles. Metatarsus IV with 2 ventral rows of tubercles near apex. First and second segments of tarsus I swollen, claws smooth. Tarsal segmentation: 7, 19, 7, 8.

Penis (Figs. 459-460): Ventral plate with 2 distal, 1 intermediary and 1 ventral pairs of setae. Distal part of truncus swollen.

Colour: Dark-brown. Longitudinalmedian region of cephalothorax, chelicera and pedipalpus black reticulate. With 2 white spots on lateral margins at areas I-II. Pedipalpus and legs I-IV with black spots.

## Female description (paratype, Figs. 27-28, 30):

Measurements: DSL 4.72; CL 1.76; DSW 3.96; CW 3.44; ID 2.00; chelicera: II 2.00; III 1.40; pedipalpus 14.39; leg I 17.75; II 40.80; III 29.08; IV 39.99.

Anterior margin with 2-4 tubercles each side. Area III with 3-4 tubercles each side. Chelicera: segment II with 5 small tubercles; III with 3. Pedipalpal coxa with 2 prolateral and 1 retrolateral tubercles. Tarsal segmentation: 7, 16, 6, 8. Pedipalpal tarsus ectal iililiii, mesal ililili.

Bionomics: Holotype collected on igarapé forest.

Distribution (Fig. 596): Venezuela (Amazonas).

*Yapacana*, gen.n.

Etymology: In reference to the type locality, Cerro Yapacana, feminine noun.

Diagnosis: Dorsal scute with lateral margins

convex, without white spots. Cephalothorax tuberculate. Area III with 2 spines. Chelicera small-tuberculate. Apex of basal sockets of pedipalpal tibia normal. Penis: with distal U-shaped cleft; ventral plate narrow and long; with setae placed medially and ventrally; truncus with 6 pairs of setae; without dorsal process; basal half of glans membranous. Resembles *Stygnidius*, *Minax* and *Timesius* by the lack of an eminence or spine on cephalothorax and differs from all other species of Heterostygninae by the size and placement of tubercles on male leg IV.

Note: *Yapacana* and *Innoxius* are both monotypic and sistergroups. However, I preferred not to include them in the same genus due to the enormous gap showed by external morphological features.

Type species: *Yapacana tibialis*, sp.n., by present designation.

*Yapacana tibialis*, sp.n.

(Figs. 33-40, 457-458, 596)

Etymology: In reference to the tubercles of tibia IV.

Type material: ♂ holotype and 2 ♀ paratypes "Venezuela, Amazonas, Cerro Yapacana, 900 m, 19-22.II.1978, C. W. Myers & J. Daly leg, from bromeliad on ground and low on trees", AMNH; ♀ paratype, same data as holotype, MZSP-14258.

Male description (holotype):

Measurements: DSL 3.80; CL 1.44; DSW 3.24; CW 2.88; ID 1.76; chelicera: II 3.60; III 1.52; pedipalpus 8.08; leg I 11.28; II 21.39; III 17.38; IV 19.48.

Dorsum (Figs. 33-34): Anterior margin with 5 tubercles each side (3 external larger). Median region of cephalothorax slightly elevate, tuberculate medially. Cephalothorax with 2 lateral tubercles each side. Lateral margins with tubercles from coxa II to posterior margin. Area I with 1 tubercle each side; II and IV smooth; III with 2 lateral tubercles, 2 long, divergent and backwards spines. Posterior margin with 1 row of tubercles. Free tergites I-III with 1 row of minute tubercles. Anal operculum tuberculate on posterior margin.

Venter: Coxa I with 1 median row of 6 tubercles, 0-2 posterior, 3 apical; II with 1 median row of 9-10, 5-6 posterior, 3 apical; III with 5 anterior, 1 median row of 7-8, 6 posterior, 4 apical;

IV with 3 apical, irregularly disposed. Posterior margin and free sternites with 1 row of tubercles (larger laterally). Anal operculum with tubercles on posterior margin.

Chelicera: Swollen. Segment I with 5 tubercles; II with 1 wide median, 3 small distal; III with 1 wide basal, 1 wide median, 2 small distal. With interchelar space.

Pedipalpus (Fig. 37): Coxa with 4-5 ventral tubercles (apical larger), 3 large dorsal (prolateral bifid). Trochanter with 2 ventral (apical larger) and 1 dorsal tubercles. Femur slightly curved, with 4 ventrobasal tubercles. Patella swollen at distal half. Tibia: ectal Iliiii, mesal Iliii, with ventral tubercles irregularly disposed. Tarsus: ectal iliiiii, mesal Iliiii, with ventral tubercles irregularly disposed.

Legs (Figs. 39-40): Coxa I with 2 tubercles; II with 1 anterior; III with 1 enlarged tubercle fused apically with 1 of II and 1 of IV; IV with 1 enlarged dorsoapical tubercle. Trochanters I-IV with 3 ventral tubercles (basal larger); II with 2 retrolateral, 1 dorsal; III with 2 retrolateral; IV with 1 prolateral, 1 retrolateral larger, 4 dorsal (apical larger). Femora I-IV straight; II-IV with 2 dorsoapical tubercles (posterior larger); III with 1 retroventral row of tubercles on distal 1/4; IV with 2 ventral rows of tubercles on distal 1/4 (tubercles larger medially). Patella IV with 1 dorsal increasing size row of 5-6 tubercles. Tibia IV with 1 proventral (subapical larger) and 1 retrolateral row of tubercles, 1 subapical anterior and several dorsoanterior tubercles. Claws with 6 teeth, first article of tarsus I slightly swollen. Tarsal segmentation: 6, 16, 6, 7.

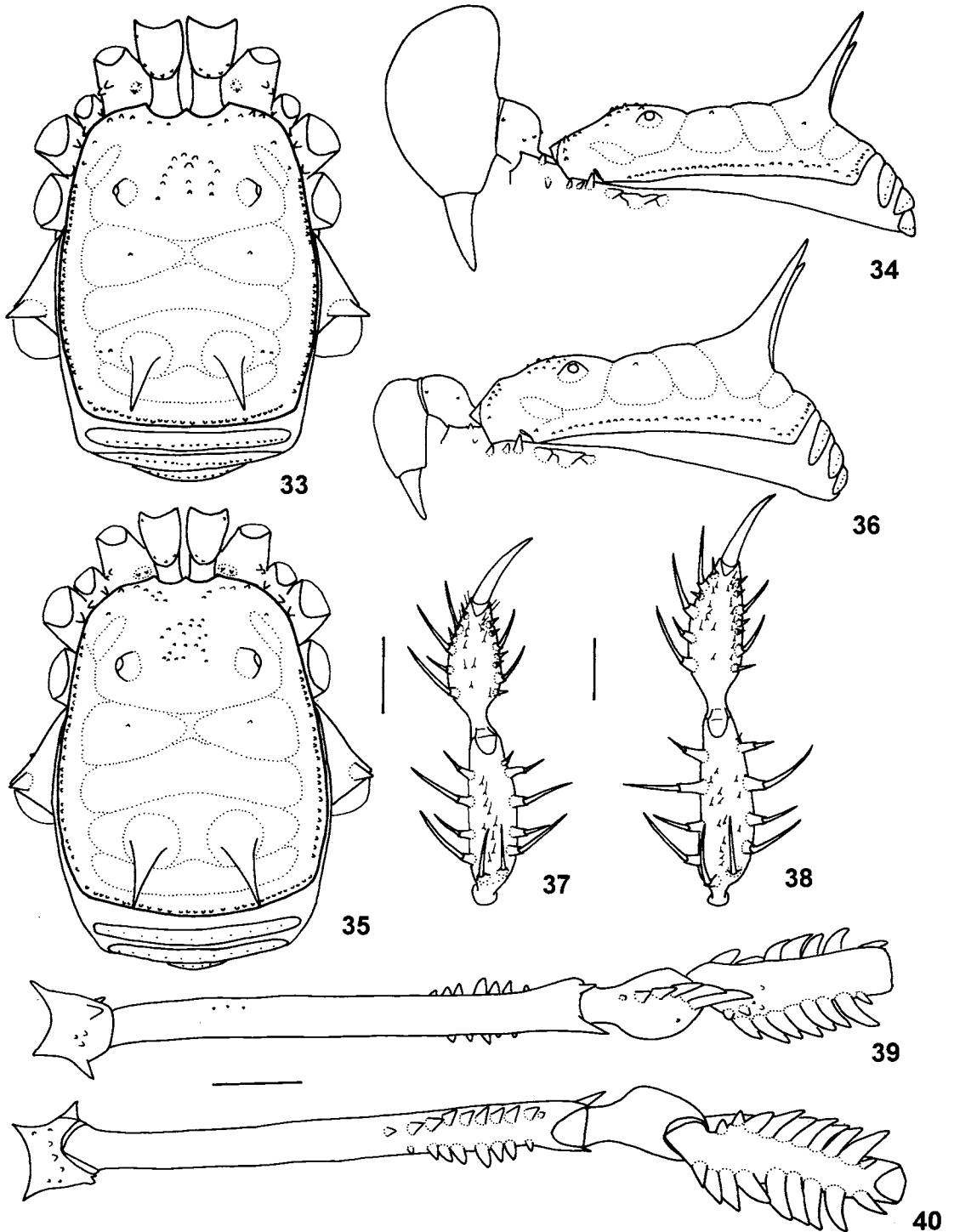
Penis (Figs. 457-458): Ventral plate with 2 distal, 2 intermediary and 1 ventral pairs of setae.

Colour: Cephalothorax dark-brown. Margins of dorsal scute and borders of areas almost black. Legs I-III brownish; IV darker. Pedipalpus and chelicera yellowish. Venter, cephalothorax and chelicera black reticulate.

Female description (paratype; Figs. 35-36, 38):

Measurements: DSL 4.12; CL 1.60; DSW 3.32; CW 2.84; ID 1.72; chelicera: II 1.92; III 1.00; pedipalpus 8.48; leg I 11.48; II 24.85; III 16.00; IV 21.95.

Anterior margin with 5-7 tubercles. Area III without lateral tubercles. Dorsoapical tubercle of



Figs. 33-40. *Yapacana tibialis*, gen.n. sp.n.. Male (holotype): 33, habitus, dorsal view; 34, lateral view; 37, left pedipalpus, tibia and tarsus; 39, trochanter, femur, patella and tibia of the right IV leg, dorsal; 40, same, ventral. Female (paratype): 35, habitus, dorsal view; 36, lateral view; 38, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

coxa IV smaller than male. Femora smooth ventrally. Patella-tibia IV smooth. Tarsal segmentation: 6, 14-15, 6, 7. Dorsal scute and legs brownish.

**Bionomics:** The type material was collected on bromeliads on ground and on low trees.

**Type locality:** Cerro Yapacana, Amazonas, Venezuela (03°44'N - 66°48'W).

**Distribution (Fig. 596):** Recorded only from type locality.

### *Innoxius*, gen.n.

**Etymology:** *Innoxius*= unarmed, masculine, Latin adjective in reference to the dorsal scute.

**Diagnosis:** Dorsal scute almost rectangular, wider at groove II and posterior margin, without white spots. Cephalothorax with 1 enlarged eminence. Area III smooth. Chelicera small-tuberculate. Apex of basal sockets of pedipalpal tibia normal. Penis: with dorsal process; on basal half glans membranous; ventral plate with ventral setae, distal setae placed medially, base narrowed and large; truncus with 4 pairs of setae; distal margin U-shaped cleft. *Innoxius* differs from all other Heterostygninae by dorsal scute outline, coxa IV enlarged and presence of eminence on cephalothorax. The short and wide femur-tibia IV resembles those of *Stenostygnellus*. The features of penis relate it to *Yapacana*, *Minax* and *Eutimesius*.

**Type species:** *Stenostygnus magnus* Caporiacco, 1951, by present designation.

### *Innoxius magnus* (Caporiacco), comb.n.

(Figs. 41-48, 455-456, 596)

*Stenostygnus magnus* Caporiacco, 1951: 22, fig. 12; Pinto-da-Rocha, 1995b: 196 (cit.). (Immature male holotype, Mérida, Mérida, Venezuela, according to original description, Museo de la Biología da Universidad Central de Venezuela, not examined).

**Male redescription (HSPC).**

**Measurements:** DSL 5.92; CL 3.00; DSW 4.42; CW 3.67; ID 2.50; chelicera: II 6.42; III 2.92; pedipalpus 9.48; leg I 10.72; II 16.88; III 13.24; IV 16.60.

**Dorsum (Figs. 41-42):** Anterior margin with 6 tubercles each side. Cephalothorax with 1 enlarged and rounded small-tuberculate eminence. Eye mounds short. Lateral margins with tubercles from apex of coxa II to apex of III. Areas I-IV minute-tuberculate. Posterior margin with 1 row of minute tubercles. Free tergites I-III with 2 rows of minute tubercles. Anal operculum with minute tubercles irregularly disposed.

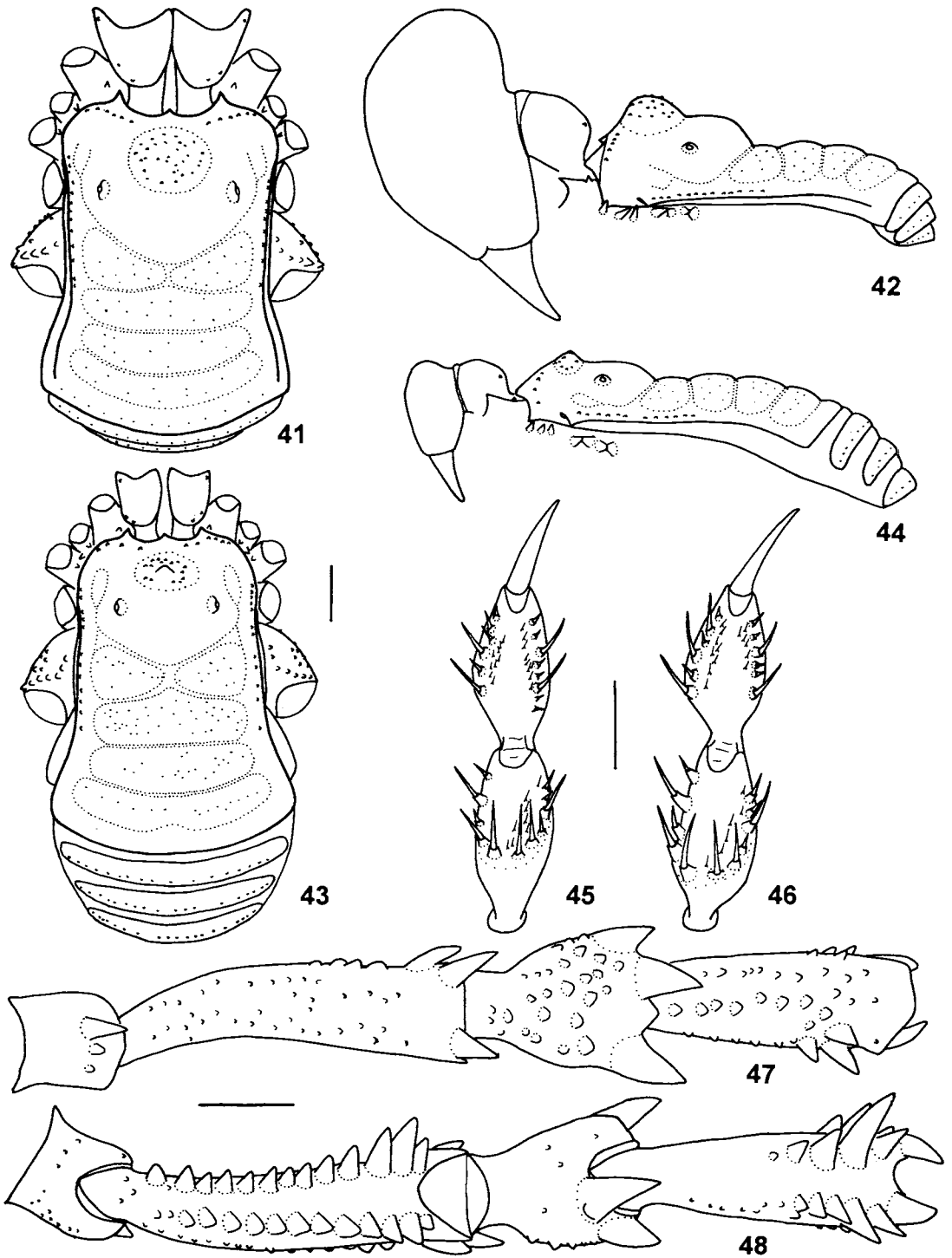
**Venter:** Coxa I with 3 anterior tubercles, 1 median row of 6-7 larger, 5 apical; II with 3 anterior, 1 median row of 13, 3 posterior, 5 apical; III with 4 anterior, 1 median row of 15, 6 posterior, 5 apical; IV irregularly tuberculate (apical larger). Posterior margin and free sternites with 1 row of minute tubercles. Anal operculum irregularly tuberculate.

**Chelicera:** Swollen. Segment I with 3 tubercles; II with 1 oblique row of tubercles, fixed finger with 3 small distal; III with 1 wide basal, 1 wide median and 2 small distal teeth. With interchelar space.

**Pedipalpus (Fig. 45):** Coxa with 16-17 ventral and 1 dorsal tubercles. Trochanter with 2 ventral (apical larger) and 1 dorsal tubercles. Femur, compressed, curved, with 1 ventrobasal tubercle. Patella swollen at distal half. Tibia: ectal IiiIii, mesal IiiIi, tuberculate ventrally. Tarsus: ectal iIiiIii, mesal IiiIii, 2 ventral rows of tubercles.

**Legs (Figs. 47-48):** Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 fused apically with 1 of IV; IV reaching groove II, wider, tuberculate. Trochanter I with 5 ventral and 1 retrolateral tubercles; II with 10 ventral, 1 prolateral, 2 dorsal; III with 10 ventral, 1 retrolateral apical, 5 prolateral; IV with 14 small ventral, 5 prolateral, 1 retrolateral apical, 11 dorsal (2 larger, 1 of which curved). Femora-tibiae III-IV with large dorsal tubercles. Femora I-IV curved; III-IV with 2 ventral rows of tubercles increasing in size (posterior larger); III with 1 retrolateral row; IV with 1 prolateral row, 2 lateroapical and 2 larger dorsoapical tubercles. Patella IV with 2 large prolateral, 1 large retrolateral and 1 large ventroapical anterior tubercles. Tibia IV with 2 ventral rows of tubercles, 2 ventroapical backwards, with subapical lateral tubercles (posterior larger). Claws with 4 teeth, scopula dense, long tarsal process. Tarsal segmentation: 6, 18, 7, 8.

**Penis (Figs. 455-456):** Ventral plate with 2



Figs. 41-48. *Innoxius magnus* (Caporiacco), comb.n. Male (HSPC): 41, habitus, dorsal view; 42, lateral view; 45, left pedipalpus, tibia and tarsus; 47, trochanter, femur, patella and tibia of the right IV leg, dorsal; 48, same, ventral. Female (MZSP): 43, habitus, dorsal view; 44, lateral view; 46, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.



distal, 2 intermediary and 1 ventral pairs of setae.

Colour: Brownish (the specimen seems to be collected just after the ecdysis). The specimen from Piedras Blancas is brownish with femur-tibia IV dark-brown.

Female description (MZSP; Figs. 43-44, 46):

Measurements: DSL 5.83; CL 2.58; DSW 4.17; CW 3.17; ID 1.83; chelicera: II 2.75; III 1.08; pedipalpus 8.04; leg I 9.08; II 15.20; III 12.76; IV 15.72.

Cephalothorax eminence smaller than male. Pedipalpal tarsus: ectal Iiliii, mesal Iiliii. Legs without large dorsal tubercles: III smooth. Femur IV thinner than male, with 2 ventral rows of tubercles. Tibia IV with 3 small ventral tubercles. Patella IV with 1 ventroapical posterior tubercle. Tarsal segmentation: 6(3), 15- 17(3), 7, 8.

Type locality: Mérida, Mérida, Venezuela (08°36'N - 71°08'W).

Distribution (Fig. 596): Venezuela (Mérida).

Material examined: Venezuela. *Mérida*: Piedras Blancas (Pico de Aquila), 4200 m, 1 ♀ & 1 ♂ (MZSP-14284); Mérida, Edgar *leg.*, 1 ♂ (HSPC).

### *Eutimesius* Roewer

*Eutimesius* Roewer, 1913b: 453; 1923: 579; Mello-Leitão, 1926: 366; 1932: 431; Sorensen, 1932: 284, 292. (Gender masculine).

*Dichobunistygnum* Roewer, 1915: 104; 1923: 461; Mello-Leitão, 1926: 347; 1932: 420 (Type species: *Dichobunistygnum ephippiatus* Roewer, 1915, by monotypy). *Syn.n.*

*Hoplostygnum* Roewer, 1915: 107; 1923: 462; Mello-Leitão, 1926: 348; 1932: 419 (Type species: *Hoplostygnum albicinctus* Roewer, 1915, by monotypy). *Syn.n.*

*Xanthostygnum* Mello-Leitão, 1949: 32 (Type species: *Xanthostygnum fractus* Mello-Leitão: 1949, by original designation). *Syn.n.*

Diagnosis: Dorsal scute with lateral margins convex. Cephalothorax with 1 enlarged eminence. Lateral margins and areas of dorsal scute with white spots. Area III with 2 spines. Chelicera small-tuberculate. Apex of basal sockets of pedipalpal tibia normal. Penis: with distal U-

shaped cleft; ventral plate narrow and long at base; setae placed medially and ventrally; truncus with 4 pairs of setae and dorsal process; basal half of the glans membranous.

Synonymic note: The type species of *Xanthostygnum* is synonymous of that of *Eutimesius*. The type species of *Eutimesius*, *Dichobunistygnum* and *Hoplostygnum* form a monophyletic group presenting three synapomorphies (see table II) and I prefer to consider these genera as synonymous instead of maintaining monotypic genera.

Type species: *Eutimesius simoni* Roewer, 1913, by monotypy.

Key to the species of *Eutimesius*:

1. Areas II-III divided (Figs. 54, 57).....2  
Areas II-III not divided.....3
- 2(1). Lateral margins of dorsal scute without white spots; area III with 4 tubercles each side (Fig. 57).....*E. ornatus*  
Lateral margins of dorsal scute with white spots; area III with 2 tubercles each side (Fig. 54).....*E. ephippiatus*
- 3(1). Spines of area III geminate, areas II-III without white spots (Fig. 65).....*E. simoni*  
Spines of area III separate, areas II-III with white spots (Fig. 49).....*E. albicinctus*

### *Eutimesius albicinctus* (Roewer), comb.n.

(Figs. 49-53, 463-464, 597)

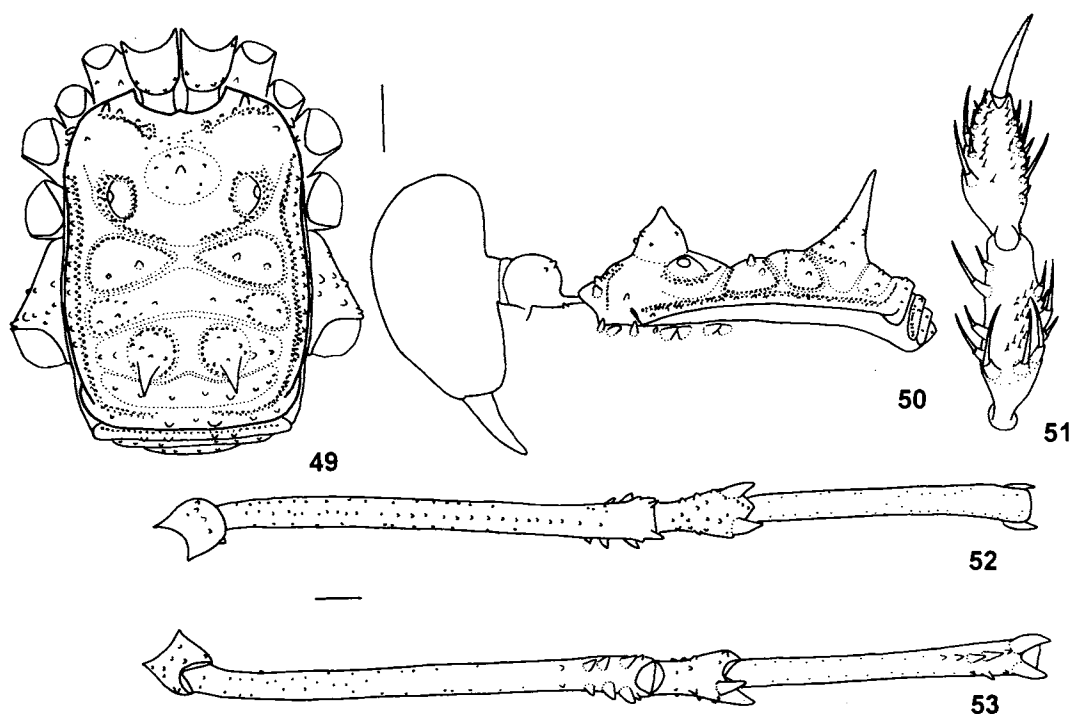
*Hoplostygnum albicinctus* Roewer, 1915: 107, fig. 58; 1923: 462, fig. 581 (rdesc.); Caporiacco, 1951: 42 (cit.); Pinto-da-Rocha, 1995b: 196 (cit.). (Male holotype, "Venezuela, Mérida, + 2000 m, type, CR-1096", SMFD, dissected, examined).

Diagnosis: This species differs from *E. ephippiatus* and *E. ornatus* in having areas II-IV not divided and from *E. simoni* in having spines of area III separated.

Male redescription (holotype):

Measurements: DSL 4.56; CL 2.04; DSW 3.68; CW 3.40; ID 2.08; chelicera: II 4.36; III 2.08; pedipalpus 9.68; leg I 16.79; II 34.39; III 24.27; IV 32.05.

Dorsum (Figs. 49-50): Anterior margin with 4-5 tubercles each side (2 large). Cephalothorax with



Figs. 49-53. *Eutimesius albicinctus* (Roewer). Male (holotype): 49, habitus, dorsal view; 50, lateral view; 51, left pedipalpus, tibia and tarsus; 52, trochanter, femur, patella and tibia of the right IV leg, dorsal; 53, same, ventral. Gray spots mean white color. Scale bars: 1 mm.

1 wide tubercle each side and several anterior smaller; eminence tuberculate, with 1 large median tubercle. Lateral margins with tubercles from middle of coxa II to apex of coxa IV. Area 1 with 2 tubercles each side; II with 3-4 each side; III with 2-3 each side, 2 slightly divergent and backwards spines with tuberculate base; IV with 8 tubercles. Posterior margin with 6 tubercles. Free tergite I with 4 tubercles; II with 6; III with 4. Anal operculum small-tuberculate on posterior margin.

Venter: Coxa I with 2-3 anterior tubercles, 1 median row of 6-7, 3 posterior, 4-5 apical; II with 10 small anterior, 1 median row of 8-9, 5 posterior, 3 apical; III with 5 anterior, 1 median row of 8, 10 posterior, 3 apical; IV irregularly tuberculate, 5 apical. Posterior margin and free sternites with 1 row of minute tubercles. Anal operculum with 1 median row of minute tubercles and 1 on posterior margin.

Chelicera: Swollen. Segment I with 5 tubercles; II with 1 wide basal, 4 small distal; III with 1 wide basal, 1 wide median, 4 small distal. With interchelar space.

Pedipalpus (Fig. 51): Coxa with 6-7 ven-

tral tubercles (apical larger), 1-2 dorsal (1 larger). Trochanter with 2 ventral tubercles (apical larger), 1 dorsal. Femur slightly curved, swollen at distal 1/3, with 1 ventrobasal tubercle. Patella swollen at distal half. Tibia: ectal IIIlii, mesal IIIli, with ventral tubercles. Tarsus: ectal IIIlii (IIIli), mesal IIIlii, with 2 ventral rows of tubercles.

Legs (Figs. 52-53): Coxa I with 2 tubercles; II with 1 anterior, 1 median, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate. Trochanter I with 2 retrolateral tubercles, 3 ventral; II with 2 prolateral, 2 retrolateral, 6 ventral, 2 dorsal; III with 3 prolateral, 2 retrolateral, 5 ventral, 3 dorsal; IV with 3 prolateral, 2 retrolateral, 6 ventral, 5 dorsal. Femora I-IV straight; III-IV with 2 ventral rows of 5 increasing in size tubercles each at apex, 2 small dorsoapical tubercles. Patellae II-IV with 1 large dorsolateroanterior tubercle, 1 large retrolateral, 1 large ventroapical anterior; IV with dorsal and ventral tubercles. Tibiae II-IV with 2 ventroapical tubercles; III-IV with 1 ventroposterior row of 5 tubercles (penultimate larger). Claws with 5 teeth, basitarsus I swollen.

Tarsal segmentation: 5-6 (2-3), 26, 11-10, 12-13.

Penis (Figs. 463-464): Ventral plate with 3 distal, 2 intermediary and 1 ventral pairs of setae.

Colour: Dorsal scute brown, small white spots irregularly disposed, white band almost continuous on lateral and posterior margins. Anterior margin with 1 white band each side. Cephalothorax with small white spots, concentrate near eye mounds. Margin of area I and base of spines with white band. Area II with white ellipsis. Chelicera reticulate. Legs I-IV darker. Free tergites with 1 band of white spots.

Female unknown.

Type locality: Mérida, Mérida, Venezuela (08°36'N - 71°08'W).

Distribution (Fig. 597): Recorded only from type locality.

***Eutimesius ehippiatus*** (Roewer), comb.n.

(Figs. 54-56)

*Dichobunistygnus ehippiatus* Roewer, 1915: 105, fig. 57a-b; 1923: 462, fig. 580 (rdesc.); Pinto-da-Rocha, 1995b: 196 (cit.). (Female holotype "Columbien, Quindina, Linia, type, CR-1084" SMFD, examined).

Diagnosis: *E. ehippiatus* resembles *E. ornatus* by presence of a longitudinal median groove on areas I-IV, its female differs from those of *E. ornatus* in having white spots on lateral margin.

Female redescription (holotype):

Measurements: DSL 3.76; CL 1.60; DSW 3.36; CW 3.00; ID 200; chelicera: II 2.00; III 0.96; pedipalpus 8.40; leg I 13.73; II 33.51; III 22.13; IV 29.39.

Dorsum (Figs. 54-55): Anterior margin with 4 tubercles each side, external larger. Cephalothorax with conic eminence, with small tubercles and 2 large apical tubercles. Lateral margins with 1 row of tubercles from middle of coxa II to middle of III. Areas I-IV divided; I with 2-3 tubercles each side; II with 2 each side; III with 1-2 each side, with 2 divergent spines backwards, base tuberculate; IV with 4 tubercles each side. Posterior margin with 10 tubercles. Free tergite I with 9 tubercles; II with 8; III with 6. Anal operculum tuberculate on posterior margin.

Venter: Coxa I with 1 median row of 4-5 tubercles, 3 apical; II with 1 median row of 6-8, 3 apical; III with 1 median row of 7-8, 3 posterior, 4 apical; IV with 2 oblique rows of 8 and 5 tubercles, 6 apical. Posterior margin and free sternites with 1 row of small tubercles. Anal operculum with 1 median and 1 posterior rows of tubercles.

Chelicera: Segment I with 1 dorsoposterior tubercle, 2 retrolateral; II-III with 6 small tubercles.

Pedipalpus (Fig. 56): Coxa with 5 ventral tubercles (apical larger), 2 dorsal retrolateral (posterior larger). Trochanter with 2 ventral (apical larger) and 1 dorsal tubercles. Femur straight, with 1 ventrobasal tubercle. Patella swollen at distal half. Tibia: ectal IIIlii, mesal IIIli, ventral tubercles irregularly disposed. Tarsus: ectal IIIlii, mesal IIIli, 2 ventral rows of tubercles.

Legs: Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate. Trochanter I with 3 ventral tubercles; II with 3 ventral, 2 retrolateral; III with 4 ventral, 2 retrolateral; IV with 6 ventral, 2 prolateral and 2 retrolateral tubercles. Femora I-IV straight; III-IV with 2 dorsoapical tubercles, posterior larger; III with 2 ventroposterior tubercles; IV with 2 ventral rows of tubercles on distal region. Patella IV with 1 ventroanterior tubercle. Claws with 5 teeth. Tarsal segmentation: 7, 18-19, 9, 10.

Colour: Holotype depigmented, brownish. White spots on anterior lateral margins, lateral of cephalothorax, surrounding eye mounds, on margins of areas I-IV and on ventral anal operculum (U-shaped spot). Posterior margin and free tergites with small white spots.

Male unknown.

Type locality: Quindina-Linia (?), Colombia.

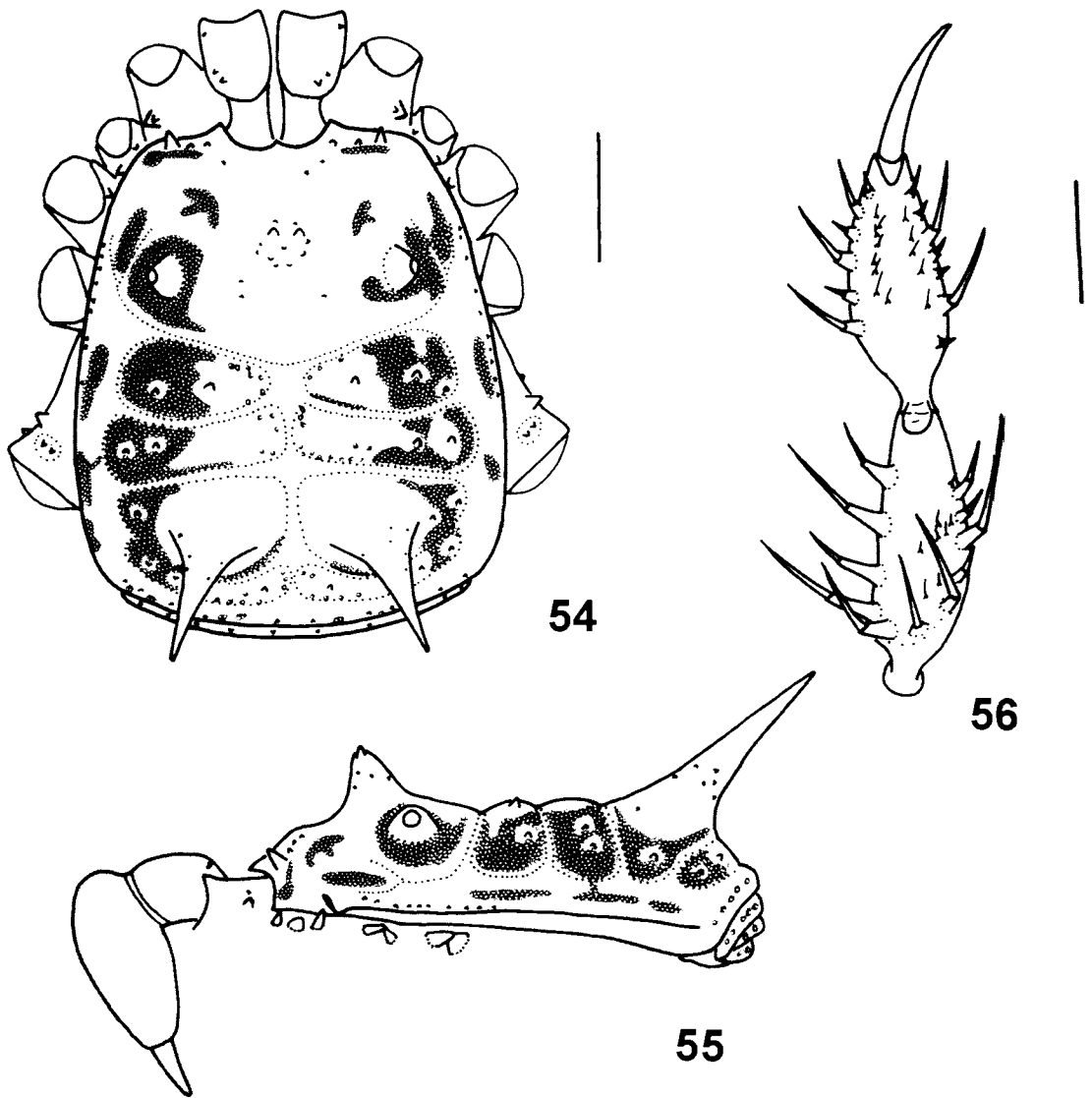
Distribution: Recorded only from type locality.

***Eutimesius ornatus*** (Roewer), comb.n.

(Figs. 57-64, 461-462, 597)

*Bunistygnellus ornatus* Roewer, 1943: 37 fig. 37-37a; Pinto-da-Rocha, 1995b: 196 (cit.). (Male holotype, "Columbien, Bogotá, typus, CR-3862", SMFD, dissected, examined).

Diagnosis: This species is closely related



Figs. 54-56. *Eutimesius ephippiatus* (Roewer), comb.n. Female (holotype): 54, habitus, dorsal view; 55, lateral view; 56, left pedipalpus, tibia and tarsus. Gray spots mean white color. Scale bars: 1 mm.

to *E. ephippiatus* by presence of a longitudinal median groove on areas I-IV, its female differs from those of *E. ephippiatus* by the lack of white spots on lateral margin.

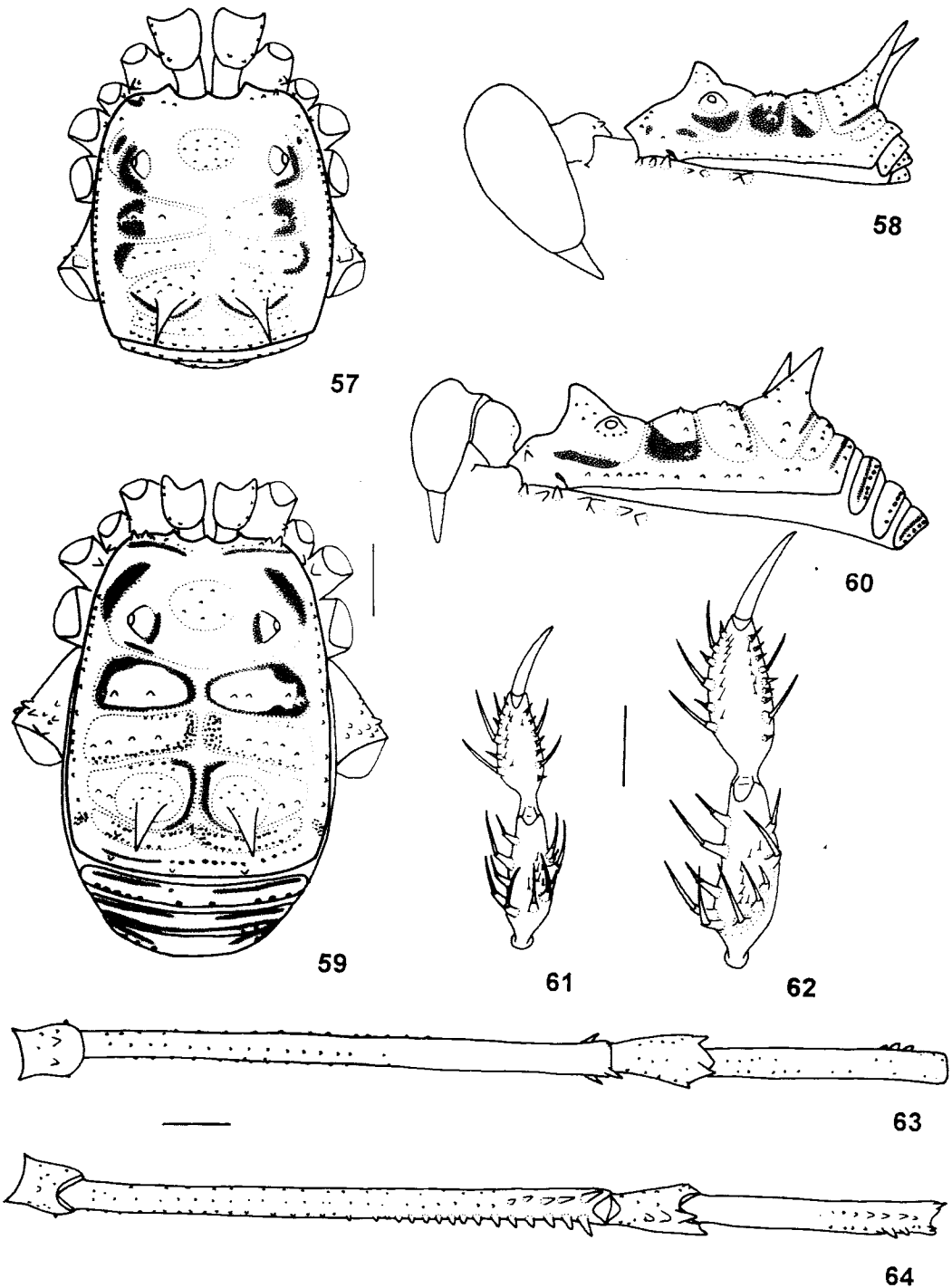
**Male redescription (holotype):**

Measurements: DSL 3.36; CL 1.60; DSW 3.08; CW 2.96; ID 1.92; chelicera: II 3.00; III 1.28; pedipalpus 8.04; leg I 10.79; II ?; III 16.67; IV 23.12.

Dorsum (Figs. 57-58): Anterior margin with 3 tubercles each side. Cephalothorax with 1-2 lateral tubercles, minute-tuberculate conic emi-

nence placed medially. Lateral margins with 1 row of tubercles from apex of coxa II to apex of III. Areas I-IV divided, IV projecting on III; I with 3-4 tubercles each side; II with 4 each side; III with 10-11, 2 divergent and backwards spines with base tuberculate; IV with 10. Posterior margin with 14 tubercles. Free tergites I-II with 10 tubercles; III with 7. Anal operculum tuberculate on posterior margin.

Venter: Coxa I with 2 anterior tubercles, 1 median row of 6, 3 apical; II with 3 anterior, 1 median row of 9-10, 3 apical; III with 4 anterior, 1



Figs. 57-64. *Eutimesius ornatus* (Roewer), comb.n. Male (holotype): 57, habitus, dorsal view; 58, lateral view; 61, left pedipalpus, tibia and tarsus; 63, trochanter, femur, patella and tibia of the right IV leg, dorsal; 64, same, ventral. Female (MCZC): 59, habitus, dorsal view; 60, lateral view; 62, left pedipalpus, tibia and tarsus. Gray spots mean white color. Scale bars: 1 mm.

median row of 9-10, 5 posterior, 4 anterior; IV with 4 anterior, 1 oblique row of 11, 7 posterior, 5 apical. Posterior margin, free sternites and posterior margin of anal operculum with 1 row of tubercles.

Chelicera: Swollen. Segment I with 4-5 tubercles; II with 1 wide median, 3 small distal; III with 1 wide basal, 1 wide median, 3 small distal. With interchelar space.

Pedipalpus (Fig. 61): Coxa with 5 ventral tubercles, 2 dorsal. Trochanter with 3 ventral tubercles (1 larger), 1 dorsal. Femur straight, with 1 ventrobasal tubercle. Patella swollen at distal half. Tibia: ectal IIIliI, mesal IIIli (iliiI), tuberculate ventrally. Tarsus: ectal iliiIii, mesal IliIli, 1 ventral row of small tubercles.

Legs (Figs. 63-64): Coxa I with 2 tubercles; II with 2; III with 1 anterior, 1 posterior fused apically with 1 of IV; IV tuberculate, with 1 wide dorsoapical tubercle. Trochanter I with 3 ventral tubercles; II with 3 ventral, 2 dorsal; III with 5 ventral, 2 dorsal; IV with 8 ventral, 1 retrolateral, 5 dorsal (2 larger). Femora I-IV straight; III-IV with 2 ventral rows of tubercles (anterior on almost all extension, posterior on distal 1/4), 3 dorsoapical tubercles (posterior larger). Patellae III-IV with 1 large ventroapical tubercle, 3 large ventral, 2 enlarged dorsoapical posterior and several smaller. Tibia IV with 2 ventral rows of tubercles on distal 1/3, 2 apical backwards. With scopula, claws with 3 teeth. Tarsal segmentation: 8(4), ?, 9, 9.

Penis (Figs. 461-462): Ventral plate with 2 distal, 1 intermediary and 2 ventral pairs of setae.

Colour: Dorsal scute brown. Chelicera, pedipalpus and femora I-III greenish. Other segments of legs I-III yellowish. Leg IV dark-brown. With white spots on lateral of eye mounds, surrounding 2 lateral tubercles of area I, on lateral margins of area II and on posterior margin of area III. Ventral anal operculum with 1 white band each side.

Female description (MCZC, Figs. 59-60, 62):

Measurements: DSL 4.64; CL 1.88; DSW 3.76; CW 3.36; ID 2.20; chelicera: II 2.20; III 1.12; pedipalpus 9.56; leg I 11.80; II 23.15; III 18.83; IV 24.02.

Anterior margin with 2 large lateral tubercles and several smaller in the middle. Area I with 3-4 tubercles each side; II with 4 each side; III with 2 each side; IV with 11. Pedipalpal tarsus, ectal iliiIii (iliiIii). Coxa IV more tuberculate than male,

without wide dorsoapical tubercle. Femora III-IV with 2 ventral rows of tubercles on distal 1/5. Patella-tibia IV smooth. Tarsal segmentation: 7(3), 18-17(3), 9, 10. With band of white spots on lateroanterior margin, lateral of eye mounds, lateral elevation of cephalothorax near groove I, margin of area I, posterior margin and free tergites.

Type locality: Bogotá, Cundinamarca, Colombia (04°36'N - 74°05'W).

Distribution (Fig. 597): Recorded from Colombia (Cundinamarca) and Venezuela (Táchira).

Material examined: Venezuela. *Táchira*: (NE of San Cristobal), 10,000 feet, dung traps, 18-22.V.1974, S. Peck leg., 1 ♀ (MCZC).

#### *Eutimesius simoni* Roewer

(Figs. 65-72, 465-466, 578-579, 597)

*Eutimesius simoni* Roewer, 1913b: 453, figs. 178; 1923: 579, figs. 727-728 (rdesc.); Mello-Leitão, 1926: 431 (key); 1932: 431 (rdesc.); H. Soares, 1970: 334 (dist.). (Male lectotype, 2 males and 3 females paralectotypes, by present designation, "*Zmilus miles* E. S., Pevas [Pebas], # 3834, *Eutimesius* [*Eutimesius*] *simoni*, male/female, Perusia [Peru], Amazonas [Loreto], type" MNHN, examined).

*Eutimesius miles* Sorensen, 1932: 293, fig. 10 (2 females syntypes "*Zmotus miles* W. S., Texas [Pebas, Peru], Will. Sorensen, 13.11.1889", UZMD, examined). *Syn.n.*

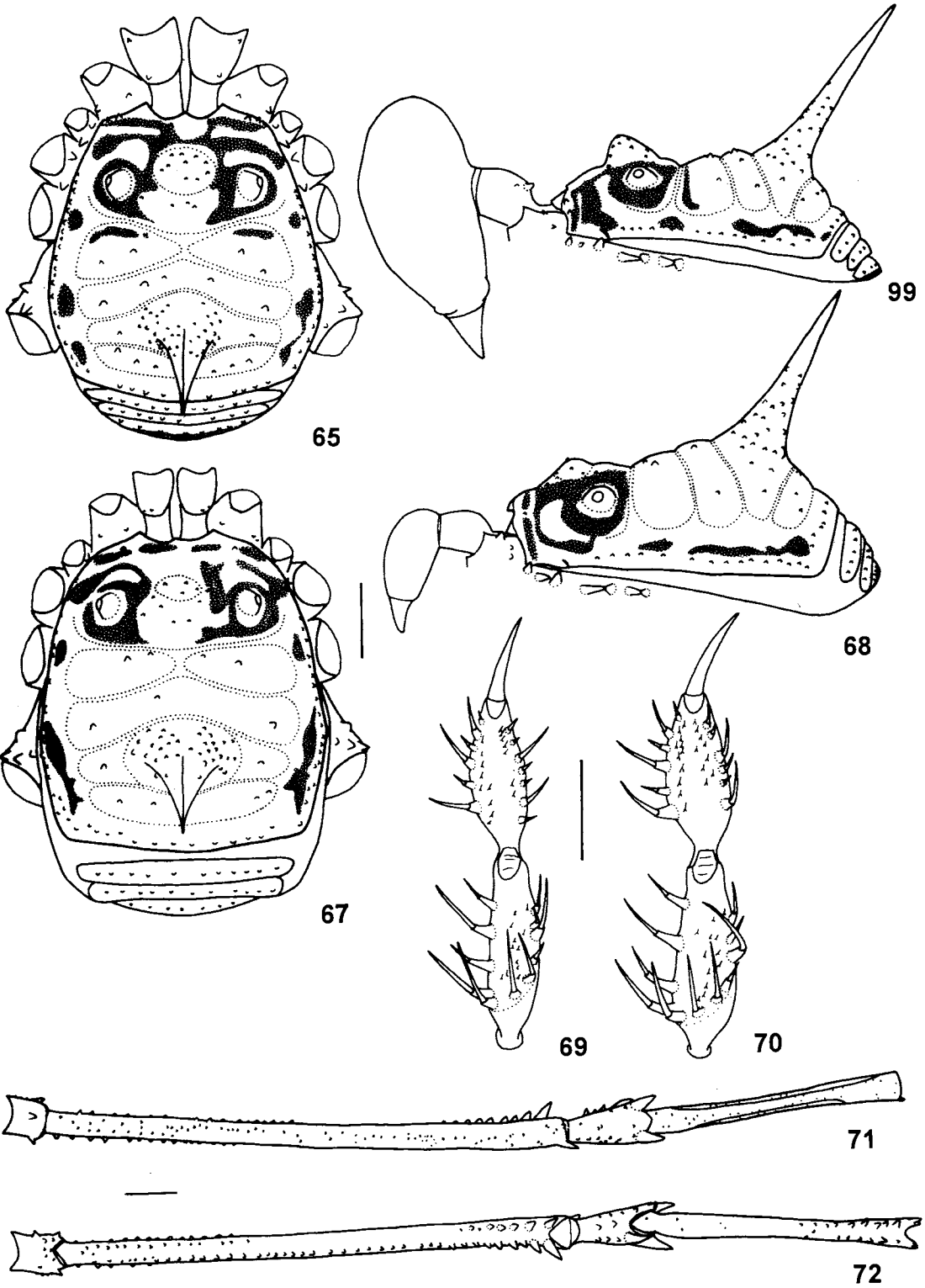
*Xanthostygnus fractus* Mello-Leitão, 1949: 32; Pinto-da-Rocha, 1995b: 196 (cit.). (Male holotype, damaged, "Amazonas, Mte [Monte] Benjamin Constant, Rio Itapecuhy [Itacuai], V.1942, Parko leg." MNRJ, examined). *Syn.n.*

Diagnosis: Differs from all others species of the genus by the presence of geminate spines on area III.

Male redescription (MUSM):

Measurements: DSL 3.67; CL 1.75; DSW 3.33; CW 2.92; ID 1.92; chelicera: II 3.52; III 1.44; pedipalpus 9.08; leg I 17.31; II 51.76; III 26.47; IV 34.47.

Dorsum (Figs. 65-66): Anterior margin with 2 tubercles each side. Cephalothorax with 1 me-



Figs. 65-72. *Eutimesius simoni* Roewer. Male (MUSM): 65, habitus, dorsal view; 66, lateral view; 69, left pedipalpus, tibia and tarsus; 71, trochanter, femur, patella and tibia of the right IV leg, dorsal; 72, same, ventral. Female (MUSM): 67, habitus, dorsal view; 68, lateral view; 70, left pedipalpus, tibia and tarsus. Gray spots mean white color. Scale bars: 1 mm.

dian tuberculate eminence; tubercles irregularly disposed behind of eminence and between eye mounds. Lateral margins with tubercles from middle of coxa II to posterior margin. Area I with 2 tubercles each side; II with 5; III with 1 each side, with 2 long median geminate spines, backwards, with base tuberculate; IV with 3 tubercles each side. Posterior margin with 9 tubercles. Free tergite I with 10 small tubercles; II with 9; III with 8. Anal operculum with minute tubercles on posterior margin.

Venter: Coxa I with 1 median row of 5-6 tubercles, 3 apical; II with 1 median row of 8, 2 posterior, 2 apical; III with 1 median row of 8, 4 posterior, 2 apical; IV with 4 anterior, 1 oblique row of 7, 4 posterior, 4 apical. Genital operculum and stigmatic area tuberculate. Posterior margin and free sternites with 1 row of tubercles. Anal operculum with minute tubercles.

Chelicera: Swollen. Segment I with 2 tubercles; II with 6 small teeth; III with 1 wide median and 4 small distal teeth. With interchelar space.

Pedipalpus (Fig. 69): Coxa with 2 prolateral, 2 dorsal and 5 ventral tubercles. Trochanter with 1 dorsal and 1 ventral tubercles. Femur slightly curved, with 4 small ventrobasal tubercles. Patella swollen at distal 1/3. Tibia: ectal IIII, mesal IIII, with ventral tubercles. Tarsus: ectal IIII, mesal IIII, with 2 ventral rows of tubercles.

Legs (Figs. 71-72): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate. Trochanter I with 1 ventral tubercle; II with 1 dorsal, 2 ventral; III with 1 prolateral, 4 dorsal, 2 retrolateral, 4 ventral; IV with 5 prolateral (apical larger), 2 dorsal (1 larger), 2 retrolateral (apical larger), 5 ventral. Femora I-IV straight; III-IV with 2 ventral rows of tubercles (anterior larger on all extension; posterior larger on distal part), with 2 dorsoapical tubercles. Patella III with 1 large ventroapical tubercle and several smaller; IV with 1 large retrolateral, 1 dorsal row of 7, 1 large retrolateral, 4 large ventral (apical larger) and several tubercles irregularly disposed. Tibia IV triangular diameter, 2 ventral rows of tubercles on distal 1/4, 2 lateroapical tubercles. Metatarsus III-IV thinner than anterior segments. Leg I much thin. Claws with 7 teeth. Tarsal segmentation: 8, 17-18, 10, 11.

Penis (Figs. 465-466, 578-579): Ventral plate with 1 distal, 1 intermediary and 1 ventral

pairs of setae.

Colour: Yellowish, cephalothorax darker, dorsum with small black punctation. Chelicera and pedipalpus yellow with small black spots. Legs with black spots; II brown; III-IV and chelae dark-brown. Cephalothorax with white spots on anterior margin and surrounding eye mounds. Lateral margins with white spots near groove I and area III. Free tergite III with 1 white band.

Female redescription (MUSM, Figs. 67-68, 70):

Measurements: DSL 4.12; CL 1.52; DSW 3.60; CW 3.04; ID 1.88; chelicera: II 1.72; III 0.96; pedipalpus 9.08; leg I 16.27; II 39.29; III 25.97; IV 33.39.

Anterior margin with 1 tubercle each side. Median eminence of cephalothorax smaller than male. Area II with 3 tubercles; IV with 5. Posterior margin with 15 tubercles. Free tergites I-II with 11 tubercles; III with 7. Patella IV small-tuberculate. Tibia IV cylindrical. Tarsal segmentation: 8, 17-18, 10-9, 11.

Type locality: Pebas, Loreto, Peru (03°10'S - 71°50'W).

Distribution (Fig. 597): Colombia (Guainia), Ecuador (Napó, Los Ríos), Peru (Loreto), Brazil (Amazonas).

Note. Sorensen (1932) records from Texas (U.S.A.) were a misinterpretation of the labels. The specimens were labeled as Pevas (the right is Pebas) and were donated by E. Simon to Sorensen who, probable understood the Simon's label as from Texas.

Material examined: Ecuador. *Napó*: Pastaza (Dureno, South río Aguarico, 76°40'W, 150/200 m), 25/30.IX.1977, Pena *leg.*, 1 ♂ (AMNH); Santa Clara, 3.VII.1976, P. M. Turner, 1 ♀ (MCZC); *Los Ríos*: Pichilingue, 70 m, V.1976, I. Williner *leg.*, 1 ♀ (MLP-22400); Peru. *Loreto*: Jenaro Herrera, 04°55'S - 73°45'W, 100 m, 24.VIII.1988, D. Silva *leg.*, 4 ♂ & 2 ♀ (MUSM); Colombia. *Guainia*: Puerto Asis (río Putumayo), W. Eberhard *leg.*, 1 ♂ (MCZC); Brazil. *Amazonas*: Benjamin Constant, IX-1962, K. Lenko *leg.*, 1 ♂ (MZSP-14287); rio Suarez, 800-1000 m, 11-17.VIII.1984, 1 ♂ (AMNH).

### *Stenostygnellus* Roewer

*Stenostygnellus* Roewer, 1913: 163, 165; 1923: 460;



Mello-Leitão: 1926: 348; 1932: 419; 1949: 32; Caporiacco, 1951: 43; Pinto-da-Rocha, 1995b: 194, 196 (cit.). (Gender masculine).

*Bunistygnellus* Roewer, 1916: 122; 1923: 462; Mello-Leitão: 1926: 348; 1932: 419; 1949: 32 (syn. of *Stenostygnellus*). (Type species: *Bunistygnellus macrochelis* Roewer, 1916, by monotypy).

Diagnosis: Dorsal scute with lateral margins convex. Cephalothorax with 1 enlarged median eminence, small-tuberculate with 1 large apical tubercle. Lateral margins and areas I-IV with or without white spots. Area III with 2 spines. Chelicera with 1 enlarged retrolateral apical tubercle. Apex of basal sockets of pedipalpal tibia bifid. Penis: distal U-shaped cleft; ventral plate narrow and short at base, with setae placed medially and ventrally; truncus with 4 pairs of setae; without dorsal process; only basal part of the glans membranous. *Stenostygnellus* is closely related to *Stygnoplus* by the loss of penis dorsal process, glans with basal membranous region, ventral plate narrower and short and apex of sockets of pedipalpal tibia bifid. It differs from all other Heterostygninae in having one wide retrolateral tubercle on segment I of male chelicera and one enlarged eminence with one large apical tubercle.

Type species: *Stenostygnellus flavolimbatus* Roewer, 1913, by monotypy.

### *Stenostygnellus flavolimbatus* Roewer

(Figs. 73-80, 467-468, 596)

*Stenostygnellus flavolimbatus* Roewer, 1913a: 165, fig. 2; 1923: 60, fig. 579 (rdesc.); Caporiacco, 1951: 42 (cit.); Pinto-da-Rocha, 1995b: 196 (cit.). (Female holotype "Venezuela, Caracas, *Stygnoplus flavolimbatus* E.S., # 3416, *Stenostygnellus* n.g. *flavilimbatus* n.sp." MNHN, very damaged, only the body and 1 leg IV preserved, examined).

*Bunistygnellus beebei* Goodnight & Goodnight, 1949: 23, fig. 4; Caporiacco, 1951: 43 (cit.); Pinto-da-Rocha, 1995b: 196 (cit.). (Male holotype "Venezuela, [Aragua], Rancho Grande, # 45439, *Beebei leg*", right chelicera lost, left damaged, examined). *Syn.n.*

*Stenostygnellus praetiosus* Caporiacco, 1951: 20, fig. 11; Pinto-da-Rocha, 1995b: 196. (accord-

ing to original description: male holotype, Venezuela, Aragua, Rancho Grande, 10.VII.1949, *Racenis leg.*, # 211, Museo de Biología, Universidad Central de Venezuela, not examined). *Syn.n.*

Synonym note: I have not seen material of *S. praetiosus*. I concluded that *S. praetiosus*, *S. beebei* and *S. flavolimbatus* are synonymous based by the descriptions, drawings and published distribution.

Diagnosis: Areas I-II with white spots (without spots in *S. macrochelis*), long dorsoapical tubercles on femur IV (short in *S. macrochelis*), male tibia IV with 1 row of wide tubercles (without a row of wide tubercles in *S. macrochelis*).

Male redescription (holotype of *B. beebei*):

Measurements: DSL 4.48; CL 2.08; DSW 4.36; CW 4.32; ID 2.84; pedipalpus 10.44; leg I 12.36; II 22.42; III 16.20; IV 20.72.

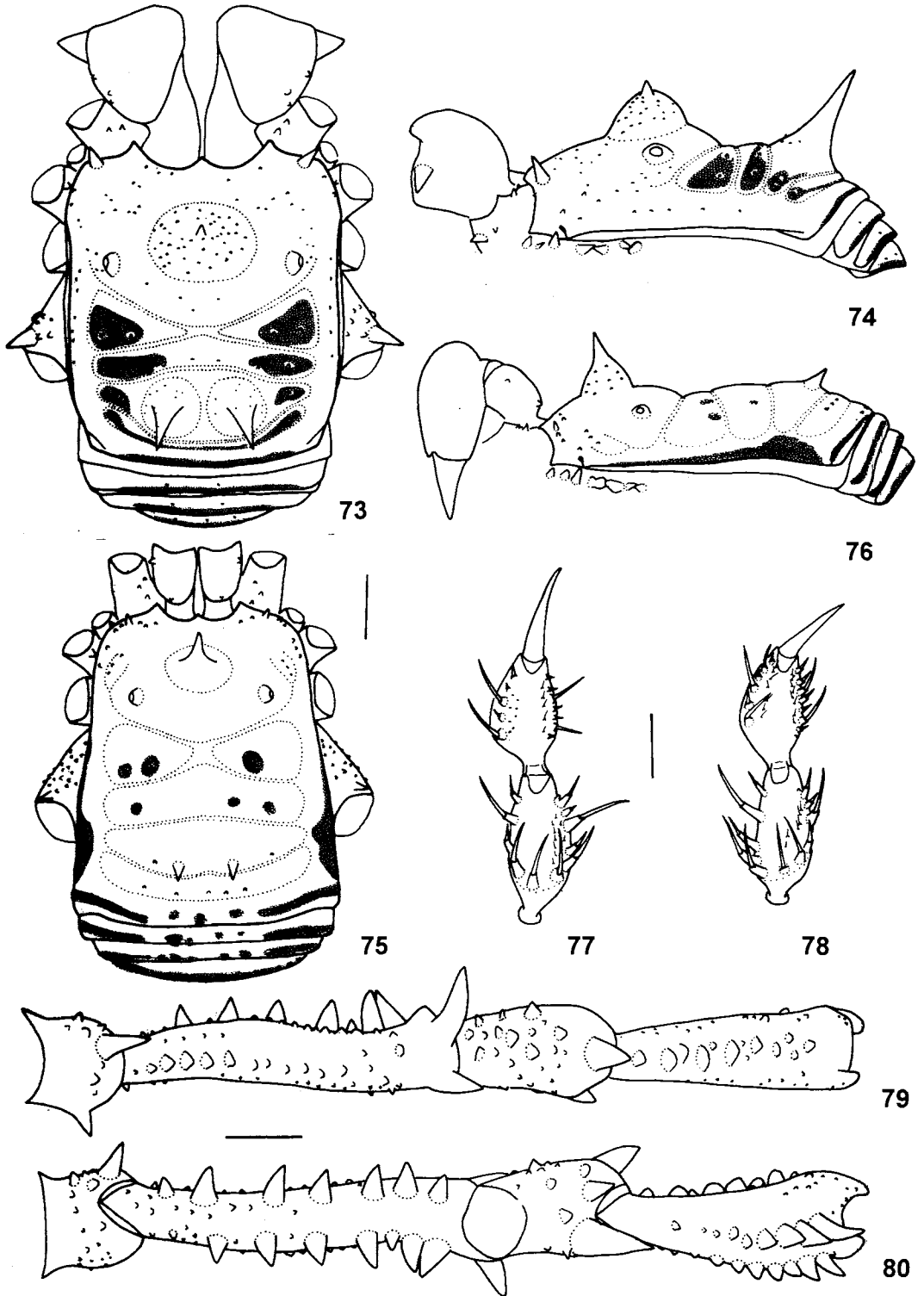
Dorsum (Figs. 73-74): Anterior margin with 1 large tubercle each side, smaller tubercles between them. Lateral margins small-tuberculate from coxa II to posterior margin. Area I with 2 tubercles each side; II with 6; III elliptical, 1-2 each side, 2 large, backwards and divergent spines, with base tuberculate; IV concave, with 1 tubercle on left side. Posterior margin smooth. Free tergites I-III and anal operculum minute-tuberculate.

Venter: Coxa I with 3 anterior tubercles, 1 median row of 5 large, 4 apical; II with 9 anterior, 1 median row of 10, 16 posterior, 3 apical; III-IV irregularly tuberculate, Stigmatic area and anal operculum irregularly tuberculate. Free sternites with 1 row of tubercles, lateral larger.

Chelicera: Swollen. Segment I with 5 retrolateral tubercles; II damaged.

Pedipalpus (Fig. 77): Coxa with 2 dorsal and 11-12 ventral tubercles (apical larger). Trochanter with 2 large ventral and 1 dorsal tubercles. Femur very curved, with 2 ventral tubercles. Patella swollen at distal half. Tibia: ectal IIIiii, mesal IIIii, 1 ventral row of tubercles. Tarsus: ectal IIIiii, mesal IIIiii, 3 ventral rows of tubercles.

Legs (Figs. 79-80): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 large dorsoapical tubercle. Trochanter I with 4 ventral tubercles; II with 3 dorsal (1 enlarged), 2 retrolateral, 9 ventral; III



Figs. 73-80. *Stenostygnellus flavolimbatus* Roewer. Male (holotype de *B. boeberi*): 73, habitus, dorsal view; 74, lateral view; 77, left pedipalpus, tibia and tarsus; 79, trochanter, femur, patella and tibia of the right IV leg, dorsal; 80, same, ventral. Female (holotype): 75, habitus, dorsal view; 76, lateral view; 78, left pedipalpus, tibia and tarsus. Gray spots mean white color. Scale bars: 1 mm.

with 8 small dorsal, 3 retrolateral (apical larger), 8 ventral; IV with 6 dorsal (apical enlarged), 2 prolateral (apical larger), 2 retrolateral (apical larger), 10 ventral. Femora I-IV curved, with 2 large dorsoapical tubercles (posterior larger on I-III; anterior larger on IV); III with 2 ventral rows of tubercles (larger on distal half); IV with 2 ventral rows of tubercles in almost all extension. Patellae III-IV with dorsal tubercles, 1 ventroapical large; IV with 1 dorsoapical, 1 prolateral apical, 1 retrolateral apical. Tibiae III-IV with 2 ventral rows of tubercles; IV compressed, swollen at distal part, with 1 dorsal row of wide and short tubercles, 2 ventroapical large and forwards. Claws with 6 teeth. Tarsal segmentation 7, 17-16, 8, 9.

Penis (Figs. 467-468): Ventral plate with 3 distal and 1 ventral pairs of setae.

Colour: Brown. Chelicera dark-brown, segment I black reticulate. Cephalothorax, legs and pedipalpus with small black spots. Areas I-III with white spots each side, except around of tubercles; IV with 1 spot covering almost all area, except around tubercles and on anteromedian part. Lateral margins with 1 white spot subquadrate near areas III-IV. Posterior margin with white spots laterally. Free tergites I-III with 2 small white spots behind tubercles. Tibiae I-II and metatarsus I-IV yellowish with black rings.

Female redescription (holotype; Figs. 75-76, 78):

Measurements: DSL 5.17; CL 2.25; DSW 3.92; CW 3.33; ID 2.08; chelicera: II 2.84; III 1.60.

Anterior margin with 1 large tubercle near each side and several small tubercles. Cephalothorax longer than male, with narrowed base. Area I with 1-2 tubercles each side; II with 3; III with 1 each side, short and parallel spines; IV wider than male. Tubercles of areas I-II, posterior margin and free tergites I-III surrounded by white spots. Lateral margins with 1 white band, wider near areas III-IV. Posterior margin with 1 white band each side and white spots at middle. Free tergite I with 6 tubercles; II with 11; III with 13 and 1 white band. Chelicera: segment I with 2 tubercles. Pedipalpus: coxa with 3 dorsal tubercles; tarsus, mesal I-II-III. Coxa IV dorsoapical tubercle smaller than male. Femur IV with 3 ventroapical anterior and 4 ventroapical posterior tubercles. Patella IV with tubercles smaller than male. Tibia IV with 2 ventral rows of tubercles, dorsal smaller. Tarsal

segmentation (Roewer, 1913a): 7, 16, 8, 9.

Type locality: Caracas, Distrito Federal, Venezuela (10°30'N - 66°55'W).

Distribution (Fig. 596): Venezuela (Distrito Federal, Aragua).

Material examined: Venezuela. *Distrito Federal*: Sabaneta, 1 ♀ (HSPC).

### *Stenostygnellus macrochelis* (Roewer)

(Figs. 81-85, 469-470, 561, 596)

*Bunistygnellus macrochelis* Roewer, 1916: 123, fig. 23; 1923: 462, fig. 582 (rdesc.); Soares, 1945: 386 (cat); Caporiacco, 1951: 42 (cit.); Pinto-da-Rocha, 1995b: 196 (cit.). (Male holotype, from Venezuela, between Sierra de Maracaibo and Sierra de la Perijá, SMFD, not examined). *Stygnoplus marginalis* Sorensen, 1932: 299 (Female syntype, "13.11.89, Mus. Dresden, Patr. ign." UZMD, dried, was pinned, with several segments lost, examined). *Syn.n.*

*Stenostygnellus macrochelis*; Mello-Leitão, 1949: 32.

Diagnosis: See *S. flavolimbatus*.

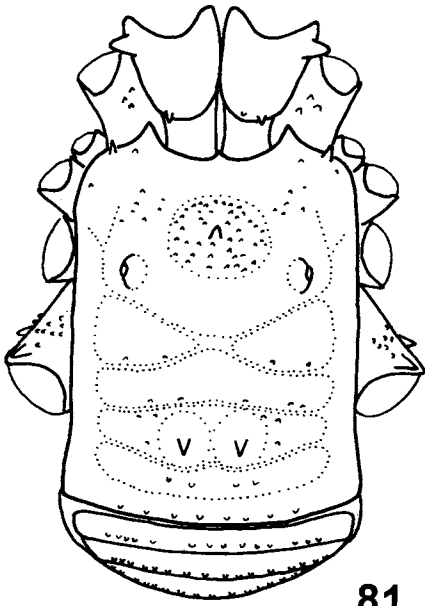
Male redescription (IBUT-147):

Measurements: DSL 4.88; CL 2.48; DSW 4.00; CW 3.60; ID 2.40; chelicera: II 5.58; III 3.00; pedipalpus 10.16; leg I 11.26; II 18.92; III 14.32; IV 17.33.

Dorsum (Figs. 81-82): Anterior margin with 4 tubercles each side (1 larger). Cephalothorax with small tubercles scattered. Area I with 2 tubercles each side; II with 2-3 each side; III with 2 short, parallel and backwards spines, 3 small tubercles each side; IV with 4. Posterior margin with 8 tubercles. Free tergite I with 15 tubercles; II with 16; III with 15. Anal operculum irregularly tuberculate.

Venter: Coxa I with 3 anterior, 1 median row of 6, 3-5 posterior and 3 apical tubercles; II with 7 anterior, 1 median row of 9, 9 posterior, 5 apical; III with 10 anterior, 1 median row of 7, 18 posterior, 3 apical; IV with 4 apical, irregularly tuberculate. Posterior margin and free sternites with 1 row of tubercles (larger laterally). Anal operculum irregularly tuberculate.

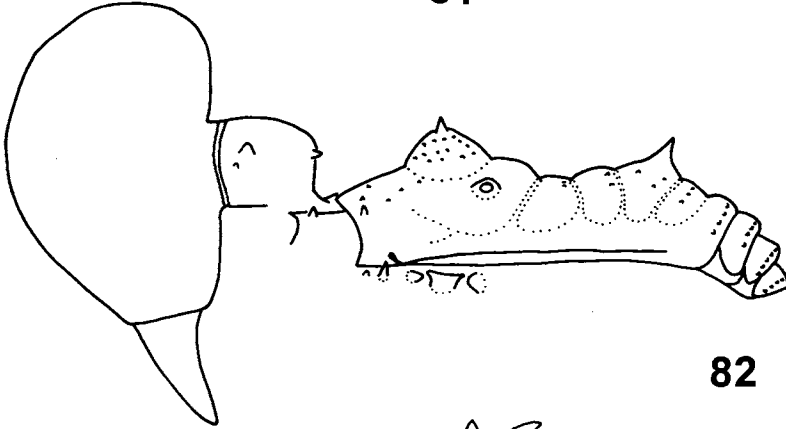
Chelicera: Swollen. Segment I with 4 tubercles; II with 1 wide basal, 1 wide median, 2



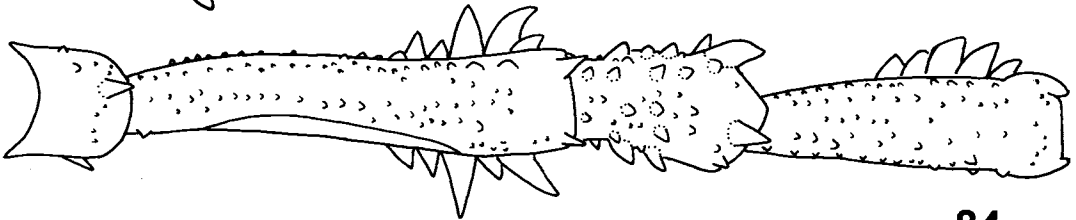
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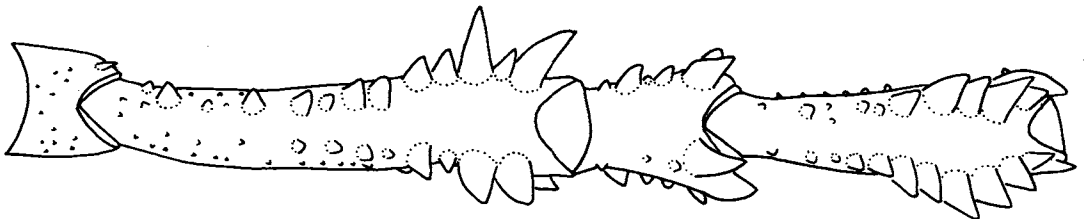
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Figs. 81-85. *Stenostygnellus macrochelis* (Roewer). Male (IBUT-147): 81, habitus, dorsal view; 82, lateral view; 83, left pedipalpus, tibia and tarsus; 84, trochanter, femur, patella and tibia of the right IV leg, dorsal; 85, same, ventral. Scale bars: 1 mm.

small distal; III with 1 wide basal, 1 wide median and 2 small distal. With interchelar space.

Pedipalpus (Fig. 83, 561): Coxa with 12-14 ventral tubercles, 3 dorsal. Trochanter with 3 ventral tubercles (median larger), 1 large dorsal. Femur curved, with 5 ventral and 1 retrolateral median tubercles. Patella swollen at distal half. Tibia: ectal IiIiIi (iIiIii), mesal IiIiIi, tuberculate. Tarsus: ectal iIiiIii, mesal IiIiIi, with 3 rows of tubercles.

Legs (Figs. 84-85): Coxa I with 1 tubercle; II with 1 anterior, 1 posterior; III with 1 median wider; IV with 1 anterior, 1 large lateral and 1 large dorsoapical tubercle. Trochanter I with 5 ventral tubercles; II with 4 ventral, 2 retrolateral, 5 dorsal (central larger); III with 1 prolateral, 11 ventral, 2 retrolateral (apical larger), 8 dorsal; IV with 2 prolateral, 8 ventral, 1 retrolateral apical larger, 11 dorsal (1 larger). Femora-tibiae III-IV with wide dorsal tubercles. Femora I-IV curved; II-IV with 2 dorsoapical tubercles; III-IV with 2 ventral rows of increasing size tubercles. Patella IV with 1 anterior and 1 posterior large ventral tubercles, 1 dorsoapical. Tibiae III-IV with 2 ventral rows of increasing size tubercles, 2 lateroapical backwards. Claws with 5 teeth. Tarsal segmentation: 7, 17-16, 8, 9.

Penis (Figs. 469-470): Ventral plate with 3 distal, 2 intermediary and 1 ventral pairs of setae.

Colour: Brown. Chelicera, margins of dorsal scute, border of areas I-IV and legs I-IV darker. Chelicera black reticulate. Free tergite II with 1 white band each side; III with 1 white band.

Female unknown.

Type locality: Between Maracaibo and Serra de la Perija, Zulia, Venezuela.

Distribution (Fig. 596): Venezuela (Distrito Federal, Mérida).

Material examined: Venezuela. *Distrito Federal*: Sabaneta, 10.III.1956, 1 ♂ (HSPC); El Junquito, 2.VII.1950, Marcuzzi *leg.*, 2 ♂ (IBUT-147); *idem*, 1 ♂ (HSPC).

### *Stygnoplus* Simon

*Stygnoplus* Simon, 1879: 222; Roewer, 1913b: 445, 448; 1923: 578; Mello-Leitão, 1926: 366; 1932: 431; Sorensen, 1932: 284, 294. (Gender masculine).

*Styphelus* Simon, 1879: 221; Roewer, 1913b: 441; 1923: 576; Mello-Leitão, 1932: 424; 1935: 112 (Type species: *Styphelus flavitarsis* Simon, 1879: 221, by monotypy). *Syn.n.*

*Pseudostygnoplus* Goodnight & Goodnight, 1942a: 10 (Type species: *Pseudostygnoplus longipalpus* Goodnight & Goodnight, 1942a, by original designation). *Syn.n.*

*Parastygnoplus* Goodnight & Goodnight, 1942b: 17 (Type species: *Parastygnoplus tuberculatus* Goodnight & Goodnight, 1942b, by original designation). *Syn.n.*

*Ilhastygnus* Roewer, 1943: 63 (Type species: *Ilhastygnus dominicanus* Roewer, 1943, by precedence of page). *Syn.n.*

Diagnosis: Dorsal scute with lateral margins convex. Cephalothorax with 1 large median spine. Lateral margins without white spots. Areas I-IV and posterior margin with or without white spots. Areas I-III with 2 spines. Chelicera small-tuberculate. Apex of basal sockets of pedipalpal tibia bifid. Penis: with distal U-shaped cleft; ventral plate narrow and short basally, with setae placed medially; without ventral setae; truncus with 4 pairs of setae; without dorsal process; basal part of the glans membranous.

Synonymic note: The type species of *Styphelus*, *Pseudostygnoplus*, *Parastygnoplus* and *Ilhastygnus* forming a monophyletic group presenting three synapomorphies (see table II).

Type species: *Stygnus forcipatus* C.L.Koch, 1845, by monotypy.

Key to the males of *Stygnoplus*:

1. Dorsal scute with white spots (Figs. 91, 149); tibia IV not swollen medially (Fig. 155).... 2
- Dorsal scute without white spots; tibia IV swollen medially (Fig. 105).....3
- 2(1). Areas I-III with white bands; lateral margins with white spots; posterior margin without white spot (Fig. 149).....*S. trilineatus*
- Areas I-III without white bands; lateral margins without white spots; posterior margin with 2 white spots (Fig. 91).....*S. biguttatus*
- 3(1). Tibia IV with large tubercles dorsomedially (Fig. 118).....4
- Tibia IV with small tubercles dorsomedially (Fig. 105).....10
- 4(3). Areas I-III without tubercles.....

- .....*S. triacanthus*  
 Areas I-III tuberculate.....5
- 5(4).Tibia IV with 1 large dorsolateral tubercle  
 (Fig. 139).....*S. longipalpus*  
 Tibia IV with 2 or more large dorsal  
 tubercles.....6
- 6(5).Tibia IV with 2 large and sinuous dorsal  
 tubercles (Fig. 134).....7  
 Tibia IV with 3 or more tubercles (Fig. 118)  
 .....8
- 7(6).Trochanter IV with 2 large tubercles;  
 tubercles of dorsal scute of different size  
 (area I-II larger); spine of cephalothorax  
 on an elevation.....*S. granulosis*  
 Trochanter IV with 1 large tubercles;  
 tubercles of dorsal scute of similar in size;  
 spine of cephalothorax without elevate  
 base.....*S. antiguanus*
- 8(6).Patella IV strongly clavate, with 1 dorsal row  
 of tubercles (Fig. 126), chelicera swollen  
 (Fig. 121).....*S. forcipatus*  
 Patella IV slightly clavate, with 0-2 dorsal  
 tubercles (Fig. 110), chelicera (Fig. 108)  
 as on female .....9
- 9(8).Femur IV with 2 ventroapical tubercles (Fig.  
 110), coxa IV with several tubercles (Fig.  
 107); penis with setae on ventral plate.....  
 .....*S. dominicanus*  
 Femur IV with 1 ventroapical tubercle (Fig.  
 119), coxa IV with 1 lateral tubercle (Fig.  
 112), penis without setae on ventral  
 plate.....*S. flavitarsis*
- 10(3). Femur IV with 1 ventrorotrolateral row of  
 tubercles, dorsoapical tubercles large (Figs.  
 105-106).....*S. clavotibialis*  
 Femur IV without ventrorotrolateral row of  
 tubercles, dorsoapical tubercles small (Figs.  
 147-148).....*S. meinerti*

***Stygnoplus antiguanus* (Roewer), comb.n**  
 (Figs. 86-90, 471-472, 598)

*Ilhastygnus antiguanus* Roewer, 1943: 64 fig. 78.  
 (Male holotype, "Antigua, typus, CR-8837"  
 SMFD, dissected, examined).

Diagnosis: The males of this species resemble those of *S. dominicanus*, *S. flavitarsis*, *S. granulosis* and *S. triacanthus* in having ventral and dorsal large tubercles on median part of tibia

IV and 1 dorsal row of tubercles on patela IV and it differs from other *Stygnoplus* in having coxa IV small-tuberculate instead of with one or more large tubercles.

Male redescription (holotype):

Measurements: DSL 3.72; CL 1.84; DSW 3.56; CW 3.32; ID 2.36; chelicera: II 4.20; III 2.24; pedipalpus 9.60; leg I 13.84; II 23.45; III 16.19; IV 20.47.

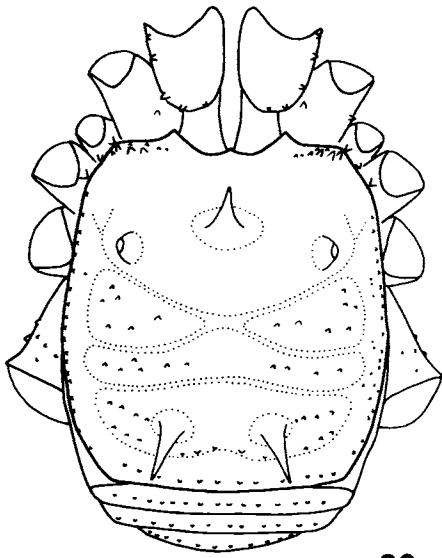
Dorsum (Figs. 86-87): Anterior margin with 7 tubercles each side (3 larger). Cephalothorax with 1 long and central erect spine. Lateral margins with 1 row of tubercles from coxa II to posterior margin. Area I with 6-7 tubercles each side; II with 4-6 each side; III with 2 lateral rows of 3-4 tubercles, 2 divergent spines backwards, 2 tubercles behind each spine. Posterior margin with 1 row of 11 tubercles. Free tergite I with 14 tubercles; II-III with 12. Anal operculum with tubercles on median and posterior region.

Venter: Coxa I with 2 anterior tubercles, 1 median row of 6-7, 2 apical; II with 7 anterior, 1 median row of 10, 5 posterior, 4 apical; III with 1 median row of 10, 8 posterior, 3 apical; IV with 2 oblique rows. Posterior margin and free sternites with 1 row of tubercles. Anal operculum with 1 row of tubercles on median region and posterior margin.

Chelicera: Swollen. Segment I with 5 tubercles; II with 1 wide median, 2 small distal; III with 1 wide basal, 1 wide median, 4 small distal. With interchelar space.

Pedipalpus (Fig. 88): Coxa with 11 ventral tubercles, 1-2 dorsal. Trochanter with 2 ventral tubercles (1 larger), 1 dorsal. Femur straight, slightly swollen at apex, with 10-11 small ventral tubercles (basal larger), 1 dorsal row of 6-7 small tubercles. Patella swollen at distal half. Tibia: ectal IIIIi, mesal IIIIi, with ventral tubercles irregularly disposed. Tarsus: ectal IIIIiii, mesal IIIIi, with 1 ventral row of tubercles.

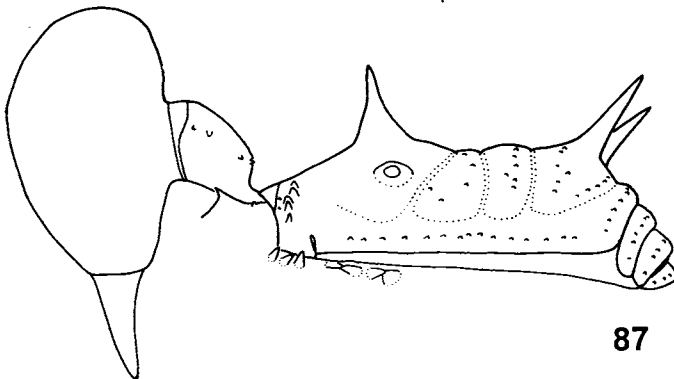
Legs (Figs. 89-90): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV small-tuberculate. Trochanter I with 3 ventral tubercles; II with 4 ventral, 1 retrolateral, 1 dorsal; III with 5 ventral, 2 retrolateral, 3 dorsal; IV with 9 ventral, 2 retrolateral, 1 large and 8 small dorsal. Femora I and IV slightly curved, II-



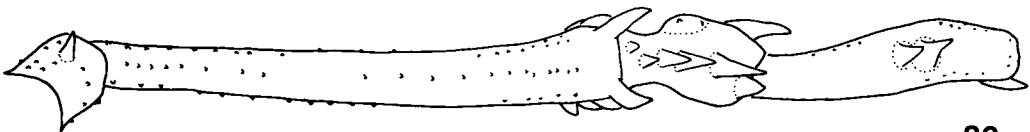
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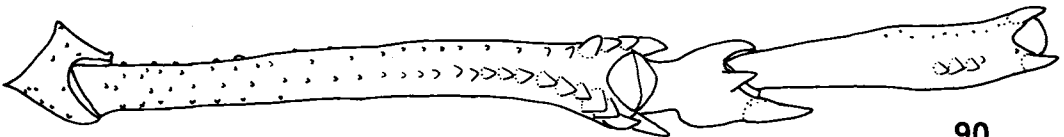
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87



89



90

Figs. 86-90. *Stygnoplus antiguanus* (Roewer), comb.n. Male (holotype): 86, habitus, dorsal view; 87, lateral view; 88, left pedipalpus, tibia and tarsus; 89, trochanter, femur, patella and tibia of the right IV leg, dorsal; 90, same, ventral. Scale bars: 1 mm.

III straight; II-IV with 2 dorsoapical tubercles (posterior larger); III-IV with 2 ventral rows on distal 1/3 (anterior row larger). Patella IV with 1 large ventral tubercle, 5 large dorsoposterior (apical larger), 1 prolateral and 1 retrolateral tubercles. Tibia IV with 2 large, geminate dorsal tubercles, swollen behind tubercles, with 2-3 ventromedian and 2 ventroapical backwards tubercles. Claws with 4 teeth. Tarsal segmentation: 7, 14, 7, 8. First and second segments of tarsus I swollen.

Penis (Figs. 471-472): Ventral plate with 2 dorsal and without intermediary pairs of setae.

Colour: Brown. Median and anterior region of cephalothorax and chelicera black reticulate. Lateral region of cephalothorax with wide black reticulate spots. Leg IV dark-brown. Dorsal scute with small black spots.

Female unknown.

Type locality: Antigua (17°09'N - 61°49'W).

Distribution (Fig. 598): Recorded only from type locality.

***Stygnoplus biguttatus*, sp.n.**

(Figs. 91-98, 473-474, 580-581, 585, 590-591, 598)

Diagnosis: The males of this species resemble those of *S. forcipatus* and *S. trilineatus* in having two ventrolateral and 1 dorsal rows of tubercles on tibia IV and differ in having the spine of cephalothorax with wide base and two white spots on posterior margin.

Etymology: Latin adjective in reference to the two color spots on posterior margin.

Type material: ♂ holotype, "Venezuela, [Nueva Esparta], Cerro El Copey NE, 31.XII.1951", (MZSP). Paratypes: 1 ♂ & 2 ♀, same data as holotype, "13.XII.1951", (HSPC).

Type locality: Cerro el Copey, Nueva Esparta, Venezuela.

Male description (holotype):

Measurements: DSL 7.33; CL 3.50; DSW 3.00; CW 2.92; ID 2.12; chelicera: II 4.20; III 2.36; pedipalpus 9.32; leg I 11.90; II 21.97; III 16.07; IV 20.65.

Dorsum (Figs. 91-92): Anterior margin with 2 tubercles each side (mesal larger). Cephalothorax with 1 spine upwards, base wide and

smooth. Lateral margins with 2 tubercles near coxa III. Area I-III with 2-3 tubercles each side; III with 2 spines slightly backwards, 2 tubercles behind each spine. Posterior margin with 2 tubercles. Free tergites I-III with 1 row of minute tubercles. Anal operculum with minute anterior tubercles, at middle and on posterior margin.

Venter: Coxa I with 3-4 anterior tubercles, 1 median row of 6-7, 2 posterior, 3 apical; II with 7 anterior, 1 median row of 11, 4 posterior, 3 apical; III with 5 anterior, 1 median row of 9, 4 posterior; IV with 4 apical, irregularly tuberculate. Posterior margin with 2 rows of minute tubercles. Free sternites and posterior margin of anal operculum with 1 row of minute tubercles.

Chelicera: Segment I with 4 tubercles; II with 1 small basal, 1 wide median; III with 1 wide basal, 1 wide median. With interchelar space.

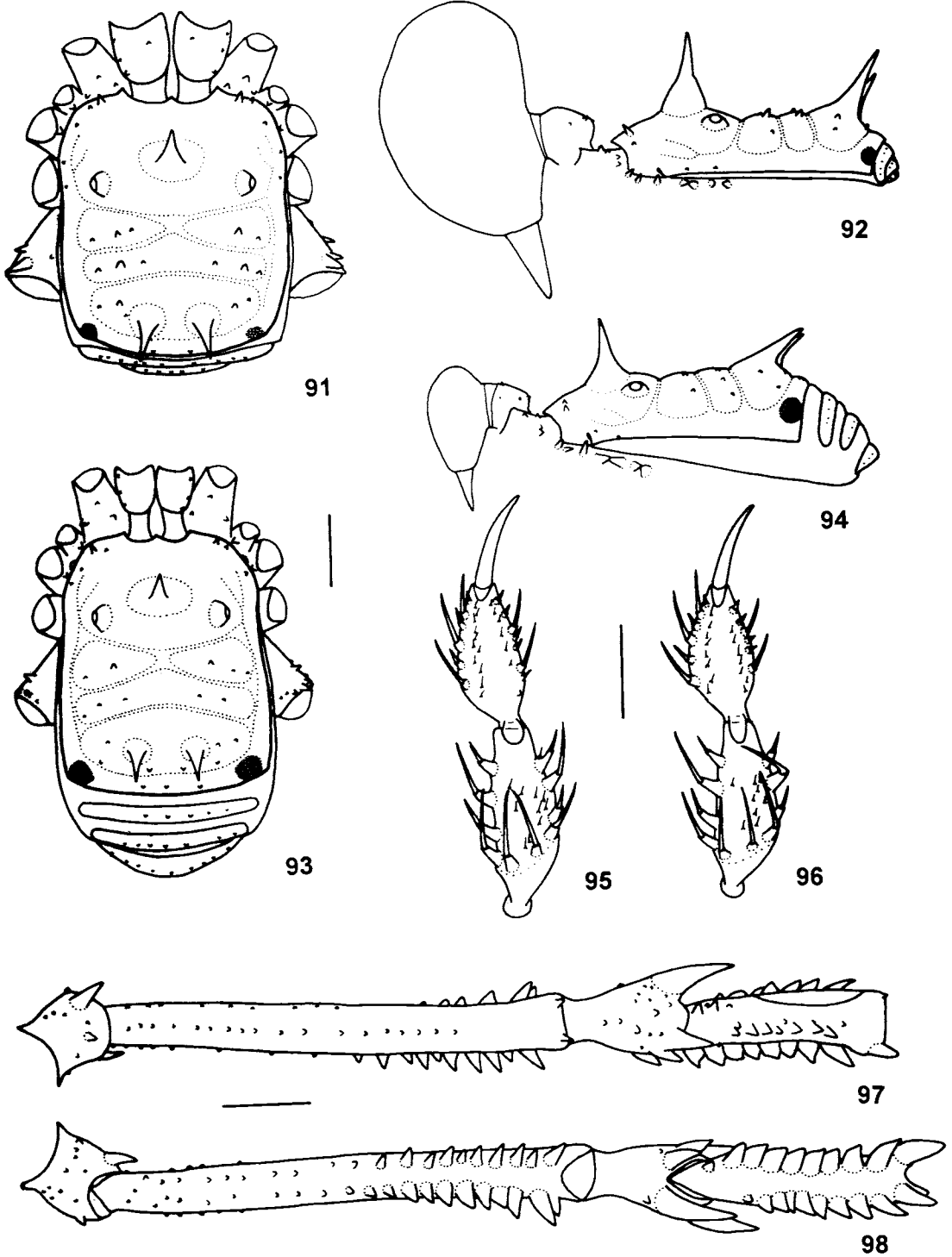
Pedipalpus (Fig. 95, 585): Coxa with 8-9 ventral tubercles, 2 dorsal. Trochanter with 2 ventral tubercles, 1 dorsal. Femur slightly curved, with 6 ventral tubercles. Patella swollen at distal 1/3. Tibia ectal IliIi, mesal IliIi, tuberculate ventrally. Tarsus: ectal IliIi, mesal IliIi, 2 ventral rows of tubercles.

Legs (Figs. 97-98): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior; IV with 1 anterior, 2 large lateral, 1 large dorsoapical. Trochanter I with 3 ventral tubercles (central larger); II with 4 ventral (basal larger), 2 retrolateral, 1 dorsal; III with 4 ventral, 1 prolateral, 2 retrolateral (apical larger); IV with 7 ventral, 2 prolateral, 2 retrolateral (apical larger), 7 dorsal (1 larger). Femur I slightly curved; II-IV straight, with 2 dorsoapical tubercles (posterior slightly larger); III-IV with 2 ventral rows (all extension of III, distal half of IV). Patellae III-IV with 1 large ventroapical and 1 large prolateral tubercles; IV with 1 large ventroapical posterior. Tibiae III-IV with 1 ventroposterior row of tubercles; IV with 1 dorsal row, 1 ventroanterior row of geminate tubercles, 2 ventroapical backwards. Claws with 5 teeth (Figs. 590-591). Tarsal segmentation: 7, 16-17, 7, 8.

Penis (Figs. 473-474, 580-581): Ventral plate with 2 dorsal and without intermediary pairs of setae.

Colour: Dark-brown. Areas and margins of dorsal scute darker. Cephalothorax spine and chelicera black reticulate. Posterior margin with 2 white spots each side.





Figs. 91-98. *Stygnoplus biguttatus*, sp.n. Male (holotype): 91, habitus, dorsal view; 92, lateral view; 95, left pedipalpus, tibia and tarsus; 97, trochanter, femur, patella and tibia of the right IV leg, dorsal; 98, same, ventral. Female (paratype): 93, habitus, dorsal view; 94, lateral view; 96, left pedipalpus, tibia and tarsus. Gray spots mean white color. Scale bars: 1 mm.

Female description (paratype; Figs. 93-94, 96):

Measurements: DSL 3.36; CL 1.56; DSW 2.92; CW 2.64; ID 1.72; chelicera: II 2.12; III 1.12; pedipalpus 8.04; leg I 9.62; II 18.35; III 13.71; IV 18.19.

Area I with 2-3 tubercles each side; II with 2-3 each side; III with 2-3 each side. Pedipalpal tarsus ectal iiiiii (iiiiiii). Femora III-IV with 2 ventroapical rows of tubercles. Coxa III with 1 posterior tubercle fused with 1 of IV. Patellae III-IV with dorsoapical and ventral tubercles smaller than male. Tibia IV with 1 ventroposterior row of tubercles. Tarsal segmentation: 6, 16, 7, 8. Posterior margin and free tergites I-III with 3 small white spots.

Distribution (Fig. 598): Recorded only from type locality.

*Stygnoplus clavotibialis* (Goodnight & Goodnight), comb.n.  
(Figs. 99-106, 475-476, 597)

*Pseudostygnoplus clavotibialis* Goodnight & Goodnight, 1947: 9, figs. 15, 16, 18. (Male holotype, 5 males and 3 females paratypes, "Navy Base, S.W. Trinidad, november 1944, coll: R. Ingl [Ingle] leg.", AMNH; 1 paratype, same data as holotype (MZSP-14260); holotype dissected, examined).

*Pseudostygnoplus longipalpus*; (*pars*) Goodnight & Goodnight, 1942a: 10.

Diagnosis: The males of this species resemble to those of *S. dominicanus*, *S. flavitarsis*, *S. forcipatus* and *S. longipalpus* in having 1 retrolateral row of tubercles in almost all extension of femur IV and they differ from those by the tibia IV slightly swollen subdistally and without large tubercles.

Male redescription (holotype):

Measurements: DSL 3.72; CL 1.80; DSW 3.60, CW 3.36, ID 2.20, chelicera: II 3.64, III 2.04; pedipalpus 9.64; leg I 12.12; II 24.82; III 16.24; IV 21.84.

Dorsum (Figs. 99-100): Anterior margin with several tubercles, those behind pedipalpal coxa and coxa I larger. Cephalothorax with several small tubercles near anterior margin, 1 large

central spine forwards. Lateral margins with 1 row of tubercles from coxa II to middle of area III. Area I with 2 median tubercles; II with 3-4 lateromedian; III with 2 divergent, backwards spines, 6-7 tubercles 2-3 on spines base), 4 lateral. Posterior margin with 5 small tubercles. Free tergite 1 with 9 tubercles; II with 10; III with 5. Anal operculum tuberculate.

Venter: Coxa I with 1 median row of 7, 3 apical and 3 posterior tubercles; II with 2 rows, 3 apical; III with 2 rows, 3 apical; IV irregularly tuberculate. Stigmatic area with tubercles near genital operculum. Free sternites with 1 row of tubercles. Anal plate small-tuberculate.

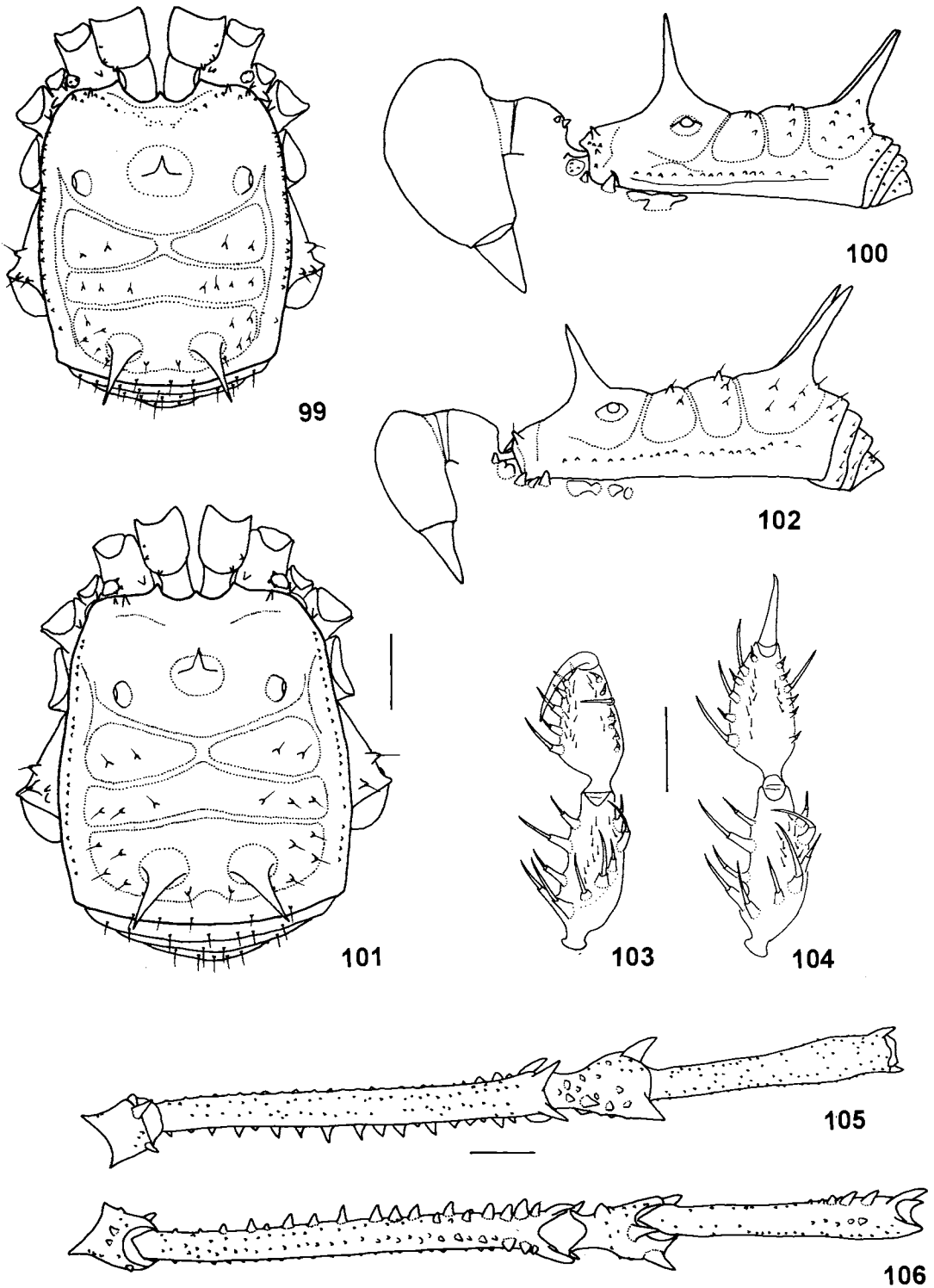
Chelicera: Segment I with 2 tubercles; II with 1 wide, 3 small teeth; III with 2 wide, 3 small.

Pedipalpus (Fig. 103): Coxa with 1 enlarged dorsoanterior tubercle, 1 projection rounded and tuberculate, 8 ventral tubercles (apical larger). Trochanter with 3 ventral tubercles. Femur slightly curved, with 5 small ventral tubercles. Patella swollen at distal half. Tibia: ectal iiiii, mesal lili. Tarsus: ectal iiiiii, mesal lili.

Legs (Figs. 105-106): Coxa I with 2 tubercles, posterior towards II; II with 1 anterior, 1 fused apically with 1 of III; III with 1 enlarged towards IV; IV tuberculate. Trochanter I with 4 ventral tubercles; II with 2 dorsal (apical larger), 4 ventral, 2 prolateral, 2 retrolateral; III with 3 dorsoapical, 2 prolateral, 2 retrolateral, 5 ventral; IV with 4 dorsal, 3 prolateral, 2 retrolateral, ventral. Femur I slightly curved; II-III with 2 ventral rows of tubercles (posterior larger), 1 retrolateral, 2 dorsoapical tubercles; IV with 2 dorsal rows of tubercles, 2 dorsoapical tubercles, 1 prolateral and 1 retrolateral row of tubercles, 2 ventral rows of tubercles increasing size apically. Patella IV with wide tubercles, 1 enlarged, 1 prolateral basal, 1 retroapical, 1 prolateral dorsal, 1 large ventroapical. Tibia IV swollen at distal half, with 2 rows of tubercles increasing size apically. Tarsal segmentation: 7, 15-18, 7, 8. Claws III-IV with 4 teeth.

Penis (Fig. 475-476): Ventral plate without dorsal and intermediary setae.

Colour (Port of Spain, AMNH; holotype depigmented): Dark-brown. Legs and grooves I-IV lighter. Chelicera, pedipalpus, around cephalothorax spine and lateral of cephalothorax black reticulate.



Figs. 99-106. *Stygnoplus clavotubialis* (Goodnight & Goodnight), comb.n. Male (holotype): 99, habitus, dorsal view; 100, lateral view; 103, left pedipalpus, tibia and tarsus; 105, trochanter, femur, patella and tibia of the right IV leg, dorsal; 106, same, ventral. Female (AMNH): 101, habitus, dorsal view; 102, lateral view; 104, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Female description (Port of Spain) (Figs. 101-102, 104):

Measurements: DSL 4.20; CL 2.12; DSW 3.84; CW 3.36; ID 2.04; chelicera: II 2.28, III 1.44; pedipalpus 9.32; leg I 10.72; II 29.88; III 16.39; IV 21.26.

Legs I-IV: Tubercles smaller than in male. Coxa III with I posterior tubercle; IV with I anterior. Tubercle of trochanter III large. Tarsal segmentation: 6, 17-19, 7, 8. Pedipalpus: tibia ectal IIII, mesal IIII; tarsus ectal IIII, mesal IIII.

Type locality: U.S.Navy Base, Trinidad & Tobago.

Distribution (Fig. 597): Trinidad.

Material examined: Trinidad & Tobago, Slimk, 12.XII.1954, A. M. Nadler *leg.*, 1 ♀ (AMNH); Caparo, 15.III.1910, Whepley *leg.*, 2 ♂ paratypes (AMNH); Sangre Grande, XII.1944, R. H. Montgomery *leg.*, 1 ♂ paratype (AMNH); Port of Spain, H. George Hill, 25.VIII.1966, E. N. Kjellesvig-Waering *leg.*, 3 ♂ & 2 ♀ (AMNH); Piarco, 1.III.1959, A. M. Nadler *leg.*, 1 ♀ (AMNH); idem, 27.XI.1954, A. M. Nadler *leg.*, 1 ♂ (AMNH); idem, 3/6.I.1955, 3 ♀ (AMNH); Simula, 29/30.XII.1954, A. M. Nadler *leg.*, 1 ♀ (AMNH); Arima Road near to Blanchisseuse, 29.XII.1954, A. M. Nadler *leg.*, 1 ♀ (MZSP); idem, 30.XI.1963, E. N. Kjellesvig-Waering *leg.*, 1 ♀ & 1 ♂ (MZSP-14230); 1 mi. W. Morne, 23.VI.1968, J. Boos & E. N. Kjellesvig Waering *leg.*, 1 ♀ (AMNH).

***Stygnoplus dominicanus* (Roewer), comb. n.**

(Figs. 107-111, 477-478, 598)

*Ilhastygnus dominicanus* Roewer, 1943: 63, fig.

77. (Male holotype, from Dominica, coll. Roewer #5332/2, SMFD, not examined).

Diagnosis: The males of this species resemble those of *S. antiguanus*, *S. flavitarsis*, *S. granulosa* and *S. triacanthus* in having ventral and dorsal large tubercles on median part of tibia IV and one dorsal tubercles on patella IV and they differ from all species of *Stygnoplus* in having normal male chelicera.

Male redescription (USNM):

Measurements: DSL 3.76; CL 1.68; DSW 3.36; CW 3.16; ID 2.08; chelicera: II 2.52; III 1.32;

pedipalpus 9.81; leg I 12.48; II 24.81; III 18.17; IV 23.26.

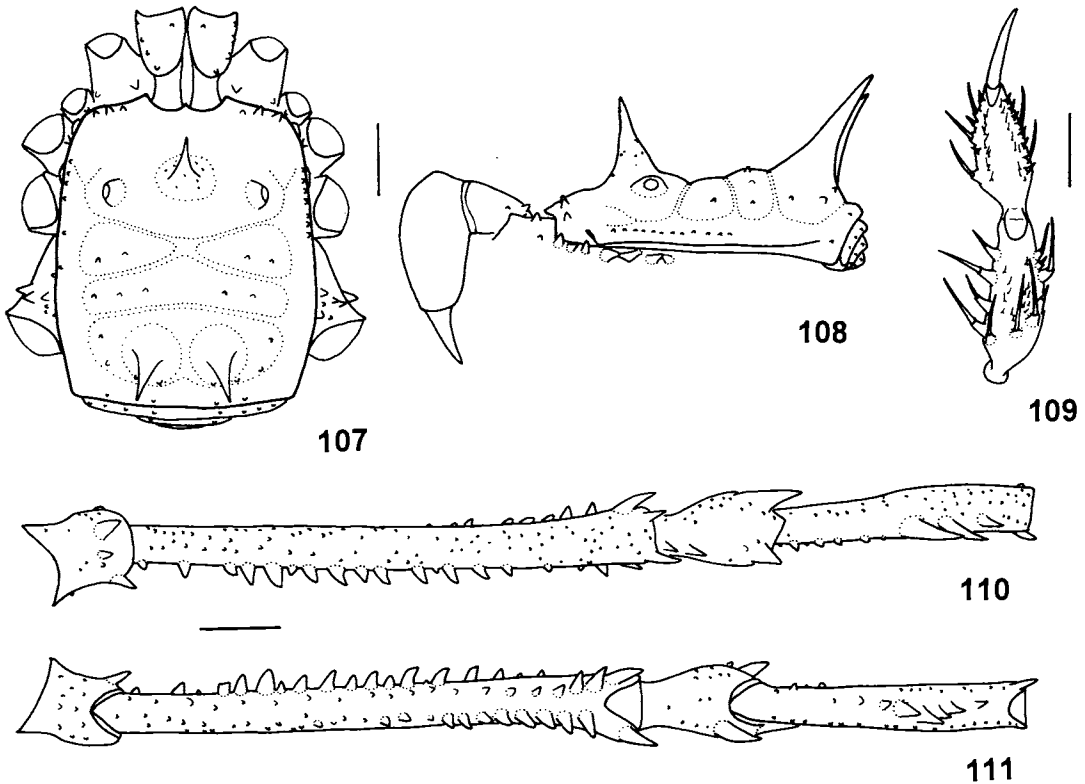
Dorsum (Figs. 107-108): Anterior margin with 3 large tubercles each side. Cephalothorax with 1 large central spine forwards, with base tuberculate. Lateral margins with tubercles between coxae II-III. Area I with 2 tubercles each side; II with 2-3 each side; III, with 2 slightly divergent backwards spines, 2 tubercles each side and 2 behind each spine. Posterior margin with 4 tubercles. Free tergite I with 9 tubercles; II with 8; III with 5. Anal operculum with tubercles on anterior and posterior margins.

Venter: Coxa I with 5 anterior tubercles, 1 median row of 4-5, 3 apical; II with 1 median row of 7-8, 3-5 posterior, 4 apical; III with 1 median row of 6, 6 posterior, 4 apical; IV with 4 apical, irregularly tuberculate. Posterior margin, free sternites and posterior margin of anal operculum with 1 row of small tubercles.

Chelicera: Not swollen. Segment I with 5 tubercles; II with 5 small, III with 1 wide median, 3 small distal.

Pedipalpus (Fig. 109): Coxa with 12 ventral tubercles, 2 wide dorsal. Trochanter with 2 ventral tubercles, 1 dorsal. Femur straight, with 1 increasing size row of 7, 1 prolateral median, 2 prolateral apical, 1 dorsal row of 5 small. Patella swollen at distal half, small-tuberculate. Tibia: ectal IIII, mesal IIII, ventral tubercles irregularly disposed. Tarsus: ectal IIII, mesal IIII, 2 ventral rows of tubercles.

Legs (Figs. 110-111): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1-2 large lateral tubercles. Trochanter I with 3 ventral tubercles; II with 4 ventral, 1 retrolateral, 1 dorsal; III with 4 ventral, 1 prolateral apical, 1 retrolateral apical, 1 basal; IV with 8 ventral, 2 prolateral, 1 large retrolateral apical, 7 dorsal (1 larger). Femora I-IV straight; III-IV with 2 dorsoapical tubercles (posterior larger), 2 ventral rows of tubercles (anterior in almost all extension, posterior on distal 1/4), with 1 retrolateral row from base to distal 1/3, with 1 distal pair of tubercles backwards. Patella IV with 1 ventroapical anterior, 5 dorsal (2 basal larger), 1 prolateral and 1 retrolateral dorsal tubercles. Tibia IV swollen medially, with 3 dorsomedian tubercles backwards (basal larger),



Figs. 107-111. *Stygnoplus dominicanus* (Roewer), comb.n. Male (NMNII): 107, habitus, dorsal view; 108, lateral view; 109, left pedipalpus, tibia and tarsus; 110, trochanter, femur, patella and tibia of the right IV leg, dorsal; 111, same, ventral. Scale bars: 1 mm.

with retrolateral tubercles, 6 large ventral, 2 ventroapical backwards (posterior larger). Claws with 5 teeth. Tarsal segmentation: 7-8, 19, 8, 9.

Penis (Figs. 477-478): Ventral plate with 2 dorsal and without intermediary pairs of setae.

Colour: According to Roewer (1943) body and appendages rusted.

Female unknown.

Type locality: Dominica (16°43'N-61°03'W).

Distribution (Fig. 598): Dominica.

Material examined: Dominica. Clarke Hall, 6.XI.1966, A. B. Gurney leg., 1 ♂ (USNM); 3 miles Eastern of Port Casse, 7-8.XI.1966, A. B. Gurney leg., 1 ♂ (USNM).

***Stygnoplus flavitarsis* (Simon), comb.n.**

(Figs. 112-119, 479-480, 598)

*Styphelus flavitarsis* Simon, 1879: 221; Roewer,

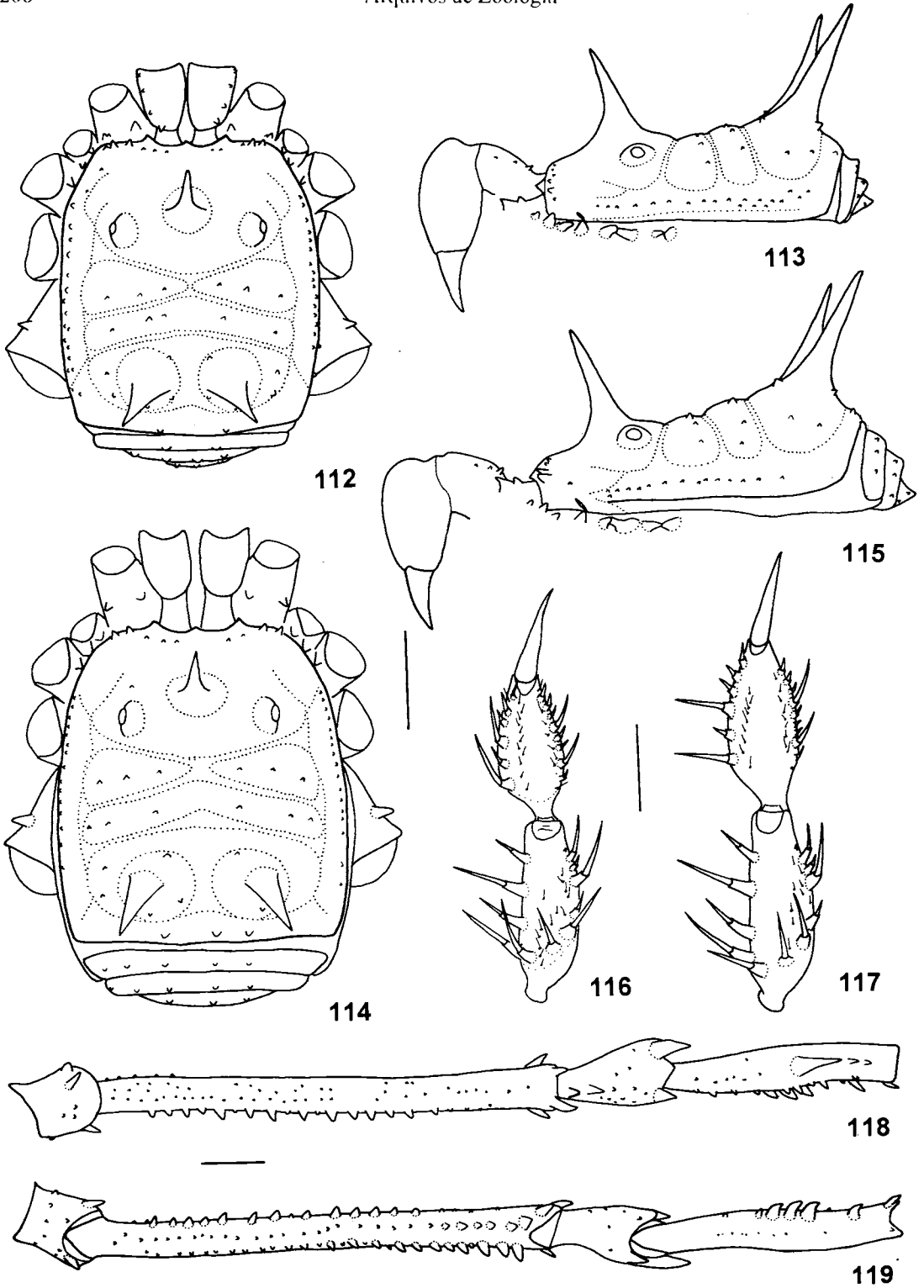
1913b: 442 (rdesc.); 1923: 576 fig. 723 (rdesc.); Šilhavý, 1973b: 145 (cit.); Cokendolpher & Camilo-Rivera, 1989: 9, 10, 13 (cit., dist.). (Male holotype, immature, "Guadeloupe, # 3113, E. S.", MNHN, examined).

Diagnosis: The males of this species resemble those of *S. antiguanus*, *S. dominicanus*, *S. granulosus* and *S. triacanthus* in having large ventral and dorsal tubercles on median part of tibia IV and 1 dorsal row of tubercles on patella IV and differ from those in having only one large tubercle on coxa IV.

Male redescription (Matouba):

Measurements: DSL 4.00; CL 1.80; DSW 3.48; CW 3.30; ID 2.00; chelicera: II 2.20; III 1.24; pedipalpus 16.07; leg I 13.74; II 29.64; III 20.45; IV 26.19.

Dorsum (Figs. 112-113): Anterior margin with 3 large tubercles each side, 2-3 small in the middle. Lateral margins with 1 row of tubercles



Figs. 112-119. *Stygnophus flavitarsis* (Simon), comb.n. Male (AMNH): 112, habitus, dorsal view; 113, lateral view; 116, left pedipalpus, tibia and tarsus; 118, trochanter, femur, patella and tibia of the right IV leg, dorsal; 119, same, ventral. Female (AMNH): 114, habitus, dorsal view; 115, lateral view; 117, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

from coxa II to area III. Cephalothorax with 1 large spine forwards. Area I with 3 tubercles each side; II with 5; III with 2 large spines, very divergent, 2 tubercles on lateral area, 3 on internal base of spines. Posterior margin with 2 tubercles. Free tergite I with 2 small tubercles; II with 5; III with 3. Anal operculum with several small tubercles irregularly disposed.

Venter: Coxa I with small anterior tubercles, 1 median row of 5 large and 3 apical tubercles; II with 1 median row of 6 large, 5 posterior, 4 apical; III with 8 median, 6 posterior, 4 apical; IV with 3 oblique rows (with 3, 6, 6 tubercles). Stigmatic area with 4 central tubercles. Posterior margin and free sternites with 1 row of tubercles.

Chelicera: Not swollen. Segment I with 5 tubercles; II-III with 1 wide basal, 4 medium distal. Without interchelar space.

Pedipalpus (Fig. 116): Coxa with 5 ventral tubercles (apical larger), 3 dorsal. Trochanter with 2 large ventral tubercles, 1 large dorsal. Femur with 1 ventral row of 7 large tubercles (basal larger), 1 prolateral median, 1 dorsal row of 8 small tubercles. Patella swollen at distal half, small-tuberculate. Tibia: ectal IliIiI, mesal IliIi, tuberculate ventrally. Tarsus: ectal IliIiIiI, mesal IliIiI, 2 ventral rows of tubercles.

Legs (Figs. 118-119): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 large lateral tubercle. Trochanter I with 3 large ventral tubercles; II with 4 large ventral, 1 prolateral, 2 retrolateral, 1 large dorsal; III with 5 large ventral, 2 prolateral, 2 retrolateral, 3 small dorsal; IV with 6 ventral, 2 prolateral, 2 retrolateral (apical larger), 1 large dorsal, 5 small tubercles. Femora II-IV with 1 posterior row of tubercles; III-IV with 2 dorsoapical (posterior larger), with 2 ventral rows of tubercles (anterior larger); IV with 2 ventral rows, 1 retrolateral row to near apex, 1 large dorsoapical tubercle, 1 apical anterior smaller, 1 prolateral, 1 retrolateral. Patella IV with 1 large ventroapical tubercle, 1 prolateroanterior larger, 1 retrolateral small, 1 large dorsobasal. Tibia IV with 1 large and curved dorsal tubercle, near middle, followed by 2 smaller, 1 retrolateral row, 1 ventroapical posterior, 1 ventral row of 5 increasing size tubercles followed by 1 small. Tarsus I with first and second articles swollen. Claws with 4 teeth. Tar-

sal segmentation 7, 18, 7, 8.

Penis (Figs. 479-480): Ventral plate without dorsal and intermediary setae.

Colour: Dark-brown. Median anterior region of cephalothorax, chelicera, femora III-IV apices and patella IV black reticulate. Lateral and posterior margins, spines of area III and free tergites almost black. Pedipalpus and legs I-IV with black spots.

Female description (Matouba; Figs. 114-115, 117):

Measurements: DSL 4.48; CL 1.92; DSW 4.08; CW 3.92; ID 1.96; chelicera: II 2.24; III 1.40; pedipalpus 10.54; leg I 13.72; II 31.17; III 21.69; IV 27.66.

Area II with 6 tubercles. Posterior margin with 3 tubercles. Free tergite I with 6 small tubercles; II-III with 5. Pedipalpal coxa with 2 dorsal tubercles. Chelicera: segment II with 1 wide anterior and 4 small distal; III with 1 wide anterior, 3 small. Patella-tibia IV smooth. Tarsal segmentation: 6, 18-19, 7, 8.

Type locality: Guadalupe (16°17'N - 61°08'W).

Distribution (Fig. 598): Recorded only from Guadalupe island.

Material examined: Guadalupe, Domaine Duclos, 27.VI.1960, Vauries *leg.*, 1 ♀ (AMNH); Matouba, 7.VII.1960, 1 ♂ & 3 ♀ (AMNH); same data, 1 ♀ (MZSP-14229).

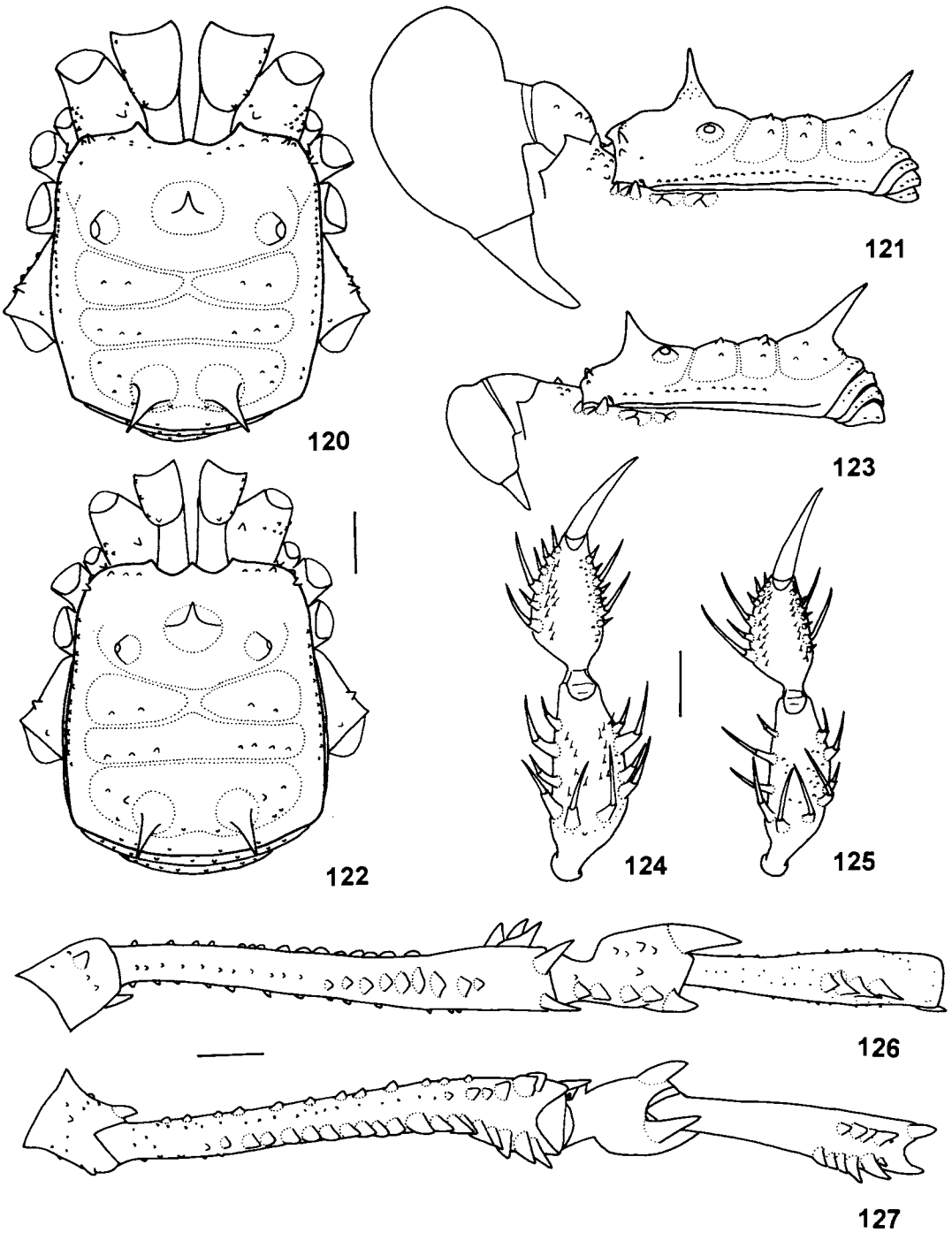
### *Stygnoplus forcipatus* (C.L.Koch)

(Figs. 120-127)

*Stygnus forcipatus* C.L.Koch, 1845: 19 (vol.12), fig. 969; Moritz, 1971: 197 (cat). (Male lectotype, 2 males & 1 female paralectotypes, by present designation, "Columb. [Colombia], *Stygnus inflatus* Guér., Moritz *leg.*, # 895", pin holed, dried, ZMHB, examined).

*Stygnoplus forcipatus*, Simon, 1879: 222; Roewer, 1913a: 450, fig. 177 (rdesc.); 1923: 579, fig. 726 (rdesc.); Sorensen, 1932: 295 (key).

Diagnosis: The males of this species resemble those of *S. biguttatus* and *S. trilineatus* in having two ventral and one dorsal row of tubercles on tibia IV. They differ from *S. biguttatus* in having one dorsal row of large tubercles on femur IV



Figs. 120-127. *Stygnopius forcipatus* (C.L.Koch). Male (lectotype): 120, habitus, dorsal view; 121, lateral view; 124, left pedipalpus, tibia and tarsus; 126, trochanter, femur, patella and tibia of the right IV leg, dorsal; 127, same, ventral. Female (paralectotype): 122, habitus, dorsal view; 123, lateral view; 125, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.



and white spots on posterior margin; from *S. trilineatus* by the lack of white lines on posterior margin.

Male redescription (lectotype):

Measurements: DSL 5.25; CL 2.50; DSW 4.75; CW 4.50; ID 3.33; chelicera: II 6.42; III 3.33; pedipalpus 12.56; leg I 14.72; II 28.25; III 20.76; IV 26.25.

Dorsum (Figs. 120-121): Anterior margin with 3-4 large tubercles, 3 small each side. Cephalothorax with small sparse tubercles, 1 large spine upwards, base wide and tuberculate. Lateral margins with tubercles from apex of coxa II to posterior margin. Area I with 2 tubercles each side; II with 3 each side; III with 2 very divergent backwards spines, 2 tubercles between spines, 2 behind each one, 3 on each side. Posterior margin with 4 tubercles. Free tergite I with 5 tubercles; II with 7; III with 4. Anal operculum with small tubercles irregularly disposed.

Venter: Coxa I with 2 anterior tubercles, 1 median row of 5 large, 2 apical; II with 5 anterior, 1 median row of 8; 3 posterior, 4 apical; III with 1 median row of 8, 4 apical; IV irregularly tuberculate. Posterior margin and free sternites with 1 row of tubercles. Anal operculum tuberculate on median line and on posterior margin.

Chelicera: Segment I with 4-5 tubercles; II with 1 wide median, 3 distal; III with 1 wide basal and 1 median, 3 distal. With interchelar space.

Pedipalpus (Fig. 124): Coxa with 1 large dorsal tubercle, 1 prolateral, several small retrolateral and ventral. Trochanter with 1 large and curved dorsal, 2 ventral. Femur curved, swollen at distal 3/4; 11 ventral tubercles, 10 prolateral, 8 retrolateral, 9 dorsal. Patella, tibia and tarsus small-tuberculate dorsally. Patella swollen at distal half. Tibia: ectal IIIiI, mesal IIIiI, small-tuberculate ventrally. Tarsus: ectal IIIiIii, mesal IIiIii, 2 ventral rows of tubercles.

Legs (Figs. 126-127): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate. Trochanter II with 2 dorsal tubercles (central large), 1 retrolateral apical, 5 ventral; III with 3 dorsal, 1 lateroanterior, 1 retrolateral basal, 1 retrolateral apical, 3 ventral; IV with 1 large and 2 small dorsal, 1 prolateral, 1 large retrolateral, 1 retrolateral basal, 8 ventral.

Femur I curved, small-tuberculate; II-IV with 2 ventral rows of tubercles in all extension, 2 dorsoapical (on II-III posterior larger, on IV anterior larger); III-IV with 1 retrolateral row on distal 1/4; IV with dorsal tubercles from middle to near apex. Patella IV swollen at distal half, with 1 dorsal row of 4 large tubercles, 1 large prolateral, 1 retrolateral, 1 large and curved ventroapical tubercle. Tibia IV swollen at distal half, with 3 dorsomedian curved tubercles, 2 ventral rows on distal 1/3, 2 apical. Claws with 4 teeth. Tarsal segmentation: 6, 16, 7, 8.

Colour: Dark-brown. Chelicera black reticulate. Metatarsus III with light rings.

Female redescription (paralectotype; Figs. 122-123, 125):

Measurements: DSL 4.24; CL 2.20; DSW 4.00; CW 3.68; ID 2.24; chelicera: II 2.48; III 1.28; pedipalpus 10.48; leg I ?; II 23.80; III ?; IV 21.17.

Posterior margin with 6 tubercles. Pedipalpus thinner than male, coxa with 4 ventral tubercles, femur with 7 ventral. Free tergite I with 5 tubercles; II with 6; III with 7. Chelicera: segment I with 4 tubercles. Coxa IV less tuberculate than male. Femora II-IV with 2 dorsoapical tubercles (posterior larger). Patella-tibia small-tuberculate. Tarsal segmentation: 6, 15, 6, 7.

Type locality: Colombia.

Distribution: Colombia.

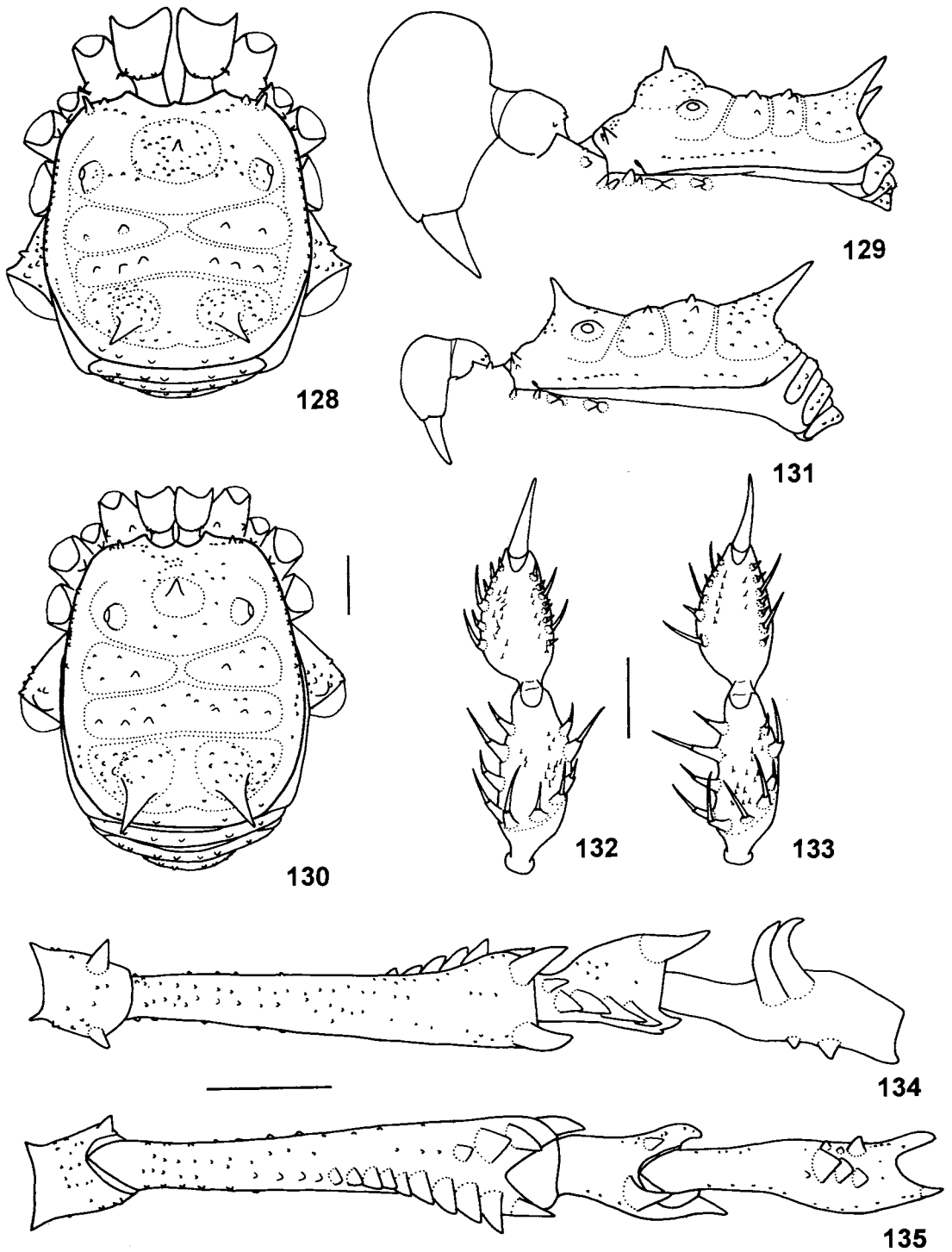
Material examined: Colombia. 1 ♂ & 1 ♀ (ZMHB-4245, 4246).

*Stygnoplus granulosus* Mello-Leitão

(Figs. 128-135, 481-482, 560, 597)

*Stygnoplus granulosus* Mello-Leitão, 1940a: 99; Soares, 1945: 386 cat); Caporiacco, 1951: 20 (dist.). (Male lectotype, 1 male & 5 females paralectotypes, by present designation "Venezuela, Gallipan, Berthier leg., tipos, HSPC-1063, MNRJ" MNRJ, lectotype dissected, examined).

Diagnosis: The males of this species differ from those of *Stygnoplus* in having a wide eminence with one apical spine on cephalothorax, femur IV short and wide apicad and patella IV with two curved tubercles.



Figs. 128-135. *Stygnopius granulatus* Mello-Leitão. Male (lectotype): 128, habitus, dorsal view; 129, lateral view; 132, left pedipalpus, tibia and tarsus; 134, trochanter, femur, patella and tibia of the right IV leg, dorsal; 135, same, ventral. Female (paralectotype): 130, habitus, dorsal view; 131, lateral view; 133, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

**Male redescription (lectotype):**

Measurements: DSL 4.55; CL 2.50; DSW 4.33; CW 3.75; ID 3.00; chelicera: II 5.17; III 2.67; pedipalpus 9.64; leg I 11.28; II 21.84; III 15.68; IV 19.17.

Dorsum (Figs. 128-129): Anterior margin with 6 tubercles each side (2 larger). Cephalothorax with 1 enlarged eminence, tuberculate, with 1 short central spine; tuberculate between eminence and eye mounds. Eye mounds minute-tuberculate. Lateral margins with tubercles from coxa III to area III. Area I with 2 wide tubercles each side; II with 3-4 wide each side; III with several tubercles on lateral and near posterior margin, 2 divergent backwards spines, with tuberculate base. Posterior margin with 5 tubercles. Free tergite I with 6 tubercles; II with 8; III with 5. Anal operculum small-tuberculate.

Venter: Coxa I with 4 anterior tubercles, 1 median row of 7 large; 3 apical; II with 3 anterior, 1 median row of 11, 8 posterior, 5 apical; III with 1 anterior row of 7, 8 posterior, 5 apical; IV irregularly tuberculate. Posterior margin and free sternites with 1 row of minute tubercles. Anal operculum with 1 row with minute tubercles at middle and 1 at posterior margin.

Chelicera: Segment I with 3 tubercles; II with 1 wide median, 3 small distal; III with 1 wide basal and 1 median, 2 small distal. With interchelar space.

Pedipalpus (Fig. 132, 560): Coxa with 14-15 ventral tubercles, 3 wide dorsal. Trochanter with 3 ventral (central larger), 1 dorsal. Femur curved, swollen near apex, with 6 ventral tubercles, 3 prolateral, 7 dorsal. Patella swollen at distal half. Tibia: ectal IIili, mesal IIIli, small-tuberculate. Tarsus: ectal iiiiilii, mesal Iliiii, 2 ventral rows of tubercles.

Legs (Figs. 134-135): Coxa I with 2 tubercles; II with 1 anterior, 1 median, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate. Trochanter I with 3 ventral tubercles, 1 retrolateral; II with 3 ventral (central larger), 1 retrolateral, 3 dorsal (apical larger); III with 5 ventral (central larger), 2 prolateral, several small dorsal; IV with several small ventral tubercles, 1 large retrolateral, 1 large dorsoapical and several small tubercles. Femora II-IV slightly curved, with 2 dorsal tubercles; I-II with 1 ventral row; III with 2 ventral rows (posterior larger); IV swollen at distal half, with 2 ventral rows

(anterior larger, posterior with 4 large tubercles). Patella IV with 1 large ventral tubercle, 1 large prolateral, 1 large retrolateral, 1 dorsal row of 5 large. Tibiae III-IV swollen near apex; IV with 2 large geminate sinuous dorsal tubercles; IV with 2 ventroapical backwards, 3 submedian ventral. Claws with 5 teeth. Tarsal segmentation: 6, 13, 7, 8.

Penis (Figs. 481-482): Ventral plate with 2 dorsal and without intermediary pairs of setae.

Colour: Dark-brown. Anterior region, eminence and posterior region of cephalothorax and chelicera black reticulate. Cephalothorax and pedipalpus with black spots. Areas I-III, lateral and posterior margins with small black spots. Free tergites and leg IV darker. Metatarsus I-IV with yellowish rings.

**Female redescription (paralectotype; Figs. 130-131, 133):**

Measurements: DSL 4.40; CL 1.68; DSW 3.84; CW 3.28; ID 2.16; chelicera: II 2.16; III 1.20; pedipalpus 8.12; leg I 10.52; II 17.56; III 14.64; IV 18.31.

Cephalothorax with several tubercles near anterior margin, 3 tubercles between eye mounds. Eyes mounds smooth. Eminence shorter than male. Area I with 4-5 tubercles each side; II with 14. Posterior margin with 4 tubercles. Free tergite I with 5 tubercles; II-III with 7. Chelicera: segment I with 2 tubercles; II-III with 4 small teeth. Pedipalpus: trochanter with 2 ventral tubercles; femur straight, with 5 ventral, 3 dorsal, 4 retrolateral; tibia ectal IIili, mesal IIIli; tarsus ectal iiiiilii, mesal Iliiii. Coxa I with 1 tubercle; II without median tubercle; IV with 1 wide dorsoapical tubercle. Femur IV with 4 ventroapical posterior tubercles. Patella and tibia IV smooth. Tarsal segmentation: 6, 14, 7, 8.

Type locality: According to the original description is Venezuela, Los Venados (10°33'N - 66°54'W) however, according to the label is another closely situated locality Venezuela, Gallipan (10°36'N - 66°54'W).

Distribution (Fig. 597): Venezuela (Distrito Federal, Miranda, Nueva Esparta). Caporiacco (1951) recorded this species from Venezuela at Cerro Copey and Isla Margarita.

Material examined: Venezuela. Distrito Federal: Rancho Grande, 12.VII.1945, W. Beebe

*leg.*, 1 ♂ (AMNH); Mulatal, 1 ♂ & 1 ♀ (HSPC); *Aragua*: Pie de Cerro, C. Garcia. E. *leg.*, 29.III.1952, 1 ♀ & 1 ♂ (HSPC); *Miranda*: west of Birongo (Cueva Alfredo Jahn), J. Coddington *leg.*, 1 ♀ & 1 ♂ (USNM).

***Stygnoplus longipalpus* (Goodnight & Goodnight), comb.n.**  
(Figs. 136-140, 483-484, 597)

*Pseudostygnoplus longipalpus* Goodnight & Goodnight, 1942a: 10, fig.22; 1943: 13; 1947: 10, fig.17. (Male holotype, "Kamakusa, [Mazurini-Potaro], British Guyana, feb. 1923, H. Lange *leg.*, male holotype", AMNH, examined).

Diagnosis: The males of this species can be recognized by the presence of 1 enlarged dorsal tubercle on tibia IV.

Male redescription (holotype):

Measurements: DSL 3.36; CL 1.96; DSW 3.36; CW 3.48, ID 2.24, chelicera: II 3.84, III 1.88; pedipalpus 10.00; leg I 15.14; II 33.23; III 21.90; IV 29.58.

Dorsum (Figs. 136, 138): Anterior margin with 2 tubercles near pedipalpal coxa. Cephalothorax with 1 large central spine, slightly forwards. Lateral margins with 1 row of tubercles from coxa III to middle of area III. Area I with 2 tubercles each side; II with 3; III with 2 divergent spines backwards, 3 basal tubercles, 2 behind each spine, 2 between them, 5 lateral. Posterior margin, tergites I-III and anal operculum with small tubercles.

Venter: Coxa I with 1 median row of 6, 4 posterior and 3 apical tubercles; II-III with 1 median row of 7, 3 posterior, 3 apical; IV with 2 irregular row of 8 and 5, 5 posterior, 3 apical.

Chelicera: Swollen. Segment I with 4 tubercles; II with 3 small teeth; III with 4 small teeth.

Pedipalpus (Fig. 137): Coxa with 2 dorsal tubercles, 7 ventral. Trochanter with 2 ventral tubercles, 1 dorsal central. Femur slightly curved. Patella swollen at distal half. Tibia: ectal IIIli, mesal IIIli, sparse ventral tubercles. Tarsus: ectal IIIli, mesal IIIli, 1 ventral row of small tubercles.

Legs (Figs. 139-140): Coxa I with 2 tubercles; II with 1 large anterior, 1 towards III; III with 1 towards IV; IV with 1 dorsoapical, 1 large lateral and several small. Trochanter I with 1 ven-

tral tubercle; II with 2 dorsoapical, 4 ventral; III with 5 ventral, 1 prolateroanterior, 1 retrolateral, 3 dorsal; IV with 1 dorsoapical, 1 ventroapical and several sparse. Femur I slightly curved; II with 2 rows of tubercles on distal half, 2 dorsoapical tubercles (posterior 3 times larger); IV with 2 rows on ventral half increasing size apically, 2 dorsoapical tubercles. Patella IV with 2 dorsoapical tubercles (anterior larger), 2 lateral, 3 ventroapical. Tibia IV with 2 ventroapical tubercles, 1 central dorsal. Tarsal segmentation: 4, 16, 7, 8. Claws III-IV with 6 teeth.

Penis (Figs. 483-484): Ventral plate with 1 pair of dorsal setae, without intermediary setae.

Colour: Dark-brown. Cephalothorax, chelicera and trochanters I-III black reticulate. Areas I-III, spines, patella and tibia IV with black spots.

Female unknown.

Type locality: Kamakusa, Mazurini-Potaro, Guyana (05°57'N - 59°02'W).

Distribution (Fig. 597): Recorded only from type locality.

***Stygnoplus meinerti* Sorensen**  
(Figs. 141-148, 485-486, 598)

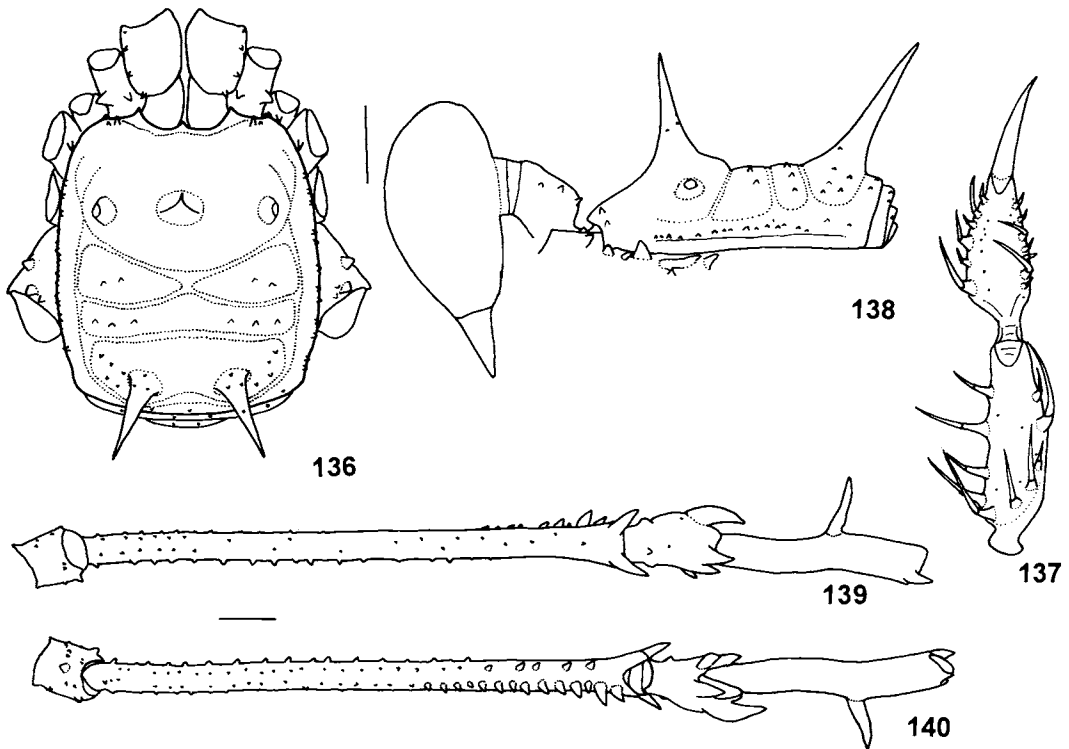
*Stygnoplus meinerti* Sorensen, 1932: 297. (Male lectotype, female paralectotype, by present designation "Venezuela, 1891, Meinerti *leg.*, 17.6.94", UZMD, male dissected, examined).

Male redescription (lectotype):

Measurements: DSL 4.58; CL 2.08; DSW 2.04; CW 1.88; ID 1.28; chelicera: II 4.17; III 2.08; pedipalpus 10.01; leg I 12.67; II 22.74; III 25.24; IV 23.00.

Dorsum (Figs. 141-142): Anterior margin with 3 wide and 2 small tubercles. Cephalothorax with small mediananterior tubercles, 1 central spine forwards, with tuberculate base. Lateral margins with tubercles from coxa II to III. Area I with 2 tubercles each side; II with 3 each side; III with 2 divergent spines backwards, 5 tubercles each side, 2 behind each spine. Posterior margin with 5 tubercles. Free tergite I with 6 tubercles; II-III with 8. Anal operculum with 1 median row of tubercles and 1 on posterior margin.

Venter: Coxa I with 3-4 anterior tubercles,



Figs. 136-140. *Stygnopius longipalpus* (Goodnight & Godnight), comb.n. Male (holotype): 136, habitus, dorsal view; 138, lateral view; 137, left pedipalpus, tibia and tarsus; 139, femur, patella and tibia of the right IV leg, dorsal; 140, same, ventral. Scale bars: 1 mm.

I median row of 6-7 large, 2-3 apical; II with 5-6 anterior, 1 median row of 9-10, 4 posterior, 4 apical; III with 1-2 anterior, 1 median row of 8, 9 posterior, 4 apical. Posterior margin and free sternites with 1 row of small tubercles. Anal operculum with 2 median rows, 1 row on posterior margin.

Chelicera: Swollen. Segment I with 5-6 tubercles; II with 1 wide median, 3 small distal; III with 1 wide basal, 1 wide median, 2 small distal. Without interchelar space.

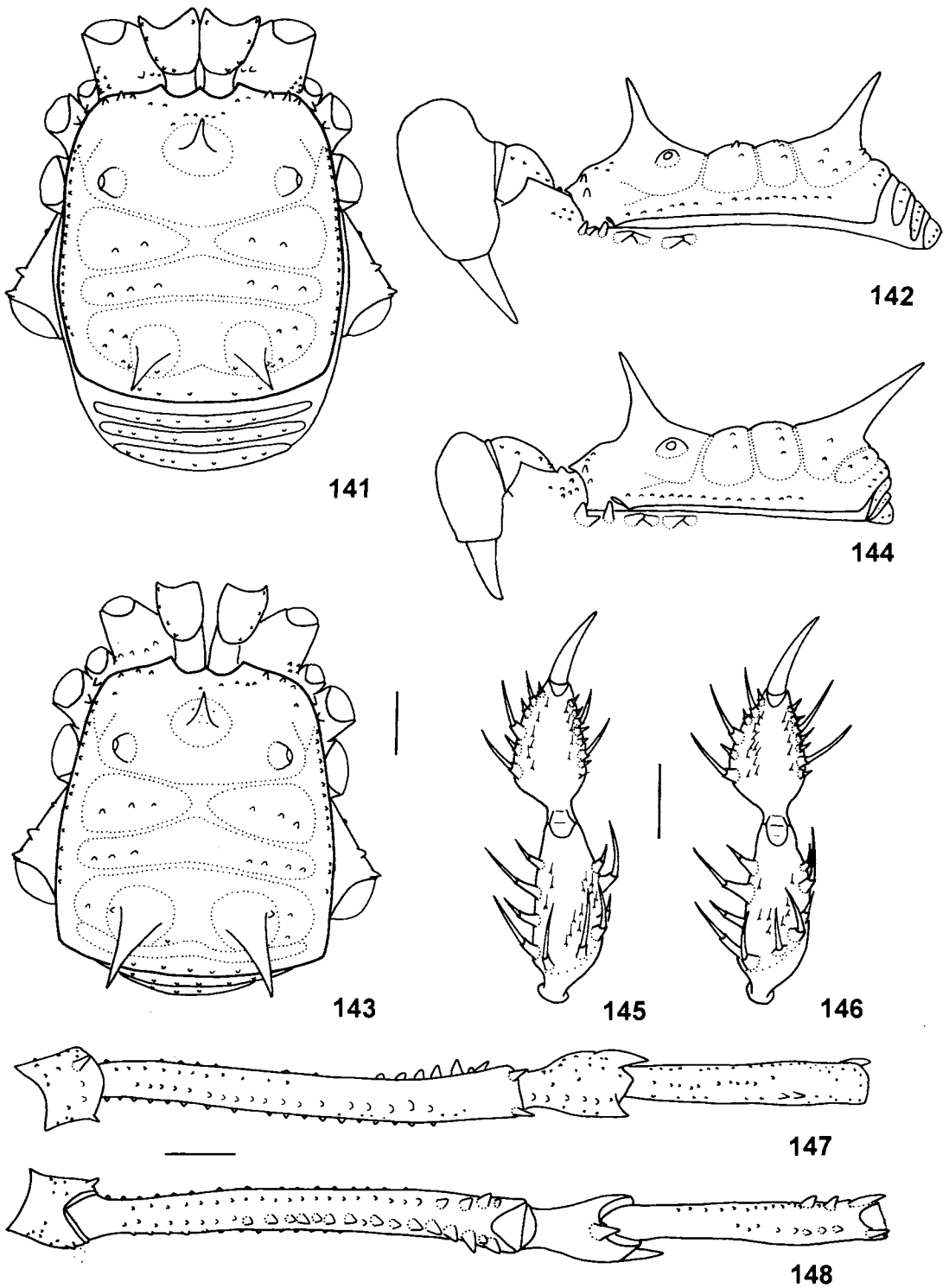
Pedipalpus (Fig. 145): Coxa with 12 ventral, 3 dorsolateral, 7-8 retrolateral. Trochanter with 3 ventral tubercles (median larger), 1 large dorsal. Femur slightly curved, 1 ventral row of 10 increasing size tubercles, 2 prolateral rows (with 7 and 3 tubercles), 1 retrolateral row of 7-8. Patella swollen at distal half, tuberculate. Tibia: ectal IIIIi, mesal IIIi, tuberculate ventrally. Tarsus: ectal IIIIi, mesal IIIi, 2 ventral rows of tubercles.

Legs (Figs. 147-148): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically

with 1 of IV; IV with 3 lateral tubercles. Trochanter I with 1 prolateral tubercle, 4 ventral; II with 4 ventral, 2 retrolateral, 3 dorsal (central larger); III with 11 ventral, 3 prolateral, 9 dorsal; IV with 9 ventral, 4 prolateral, 3 retrolateral (distal larger), 9 dorsal (1 large). Femora I and IV slightly curved; II-III straight; III-IV with 2 dorsoapical tubercles (on III posterior larger, on IV both similar), 2 ventral increasing size rows (anterior on distal 2/3, posterior only on apex), 1 retrolateral row. Patella IV with 1 large ventroapical tubercle, 1 dorsoapical and other large posterior, with dorsal tubercles smaller. Tibia IV swollen near apex, 2 ventral rows of tubercles, 2 ventroapical backwards, 2 dorsal on swollen part. Claws with 5 teeth, first and second articles of tarsus I swollen. Tarsal segmentation: 6, 15, 7, 8.

Penis (Figs. 485-486): Ventral plate with 2 dorsal and 1 intermediary pairs of setae.

Colour: Brown. Anterior region of cephalothorax and chelicera black reticulate. Areas I-III darker.



Figs. 141-148. *Stygnoplus meinerti* Sorensen. Male (lectotype): 141, habitus, dorsal view; 142, lateral view; 145, left pedipalpus, tibia and tarsus; 147, trochanter, femur, patella and tibia of the right IV leg, dorsal; 148, same, ventral. Female (paralectotype): 143, habitus, dorsal view; 144, lateral view; 146, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Female redescription (paralectotype, Figs. 143-144, 146):

Measurements: DSL 4.58; CL 1.92; DSW 4.17; CW 3.67; ID 2.42; chelicera: II 2.50; III 1.42; pedipalpus 9.99; leg I 11.50; II 24.66; III 17.99; IV 23.58.

Area I with 3 tubercles each side; II with 3-4 each side; III with 2-3 each side; IV with 8. Posterior margin with 5 tubercles. Free tergite I with 6 tubercles; II with 9; III with 7. Femur IV with 2 ventral rows of small tubercles on distal 1/3. Patella IV with wide and short dorsal tubercles, without ventral tubercles. Tibia IV with small tubercles in almost all extension. Tarsal segmentation: 6, 16, 7, 8.

Type locality: Venezuela.

Distribution (Fig. 598): Venezuela (Carabobo).

Material examined: Venezuela. *Carabobo*: Puerto Cabello, 6.X.1893, Sievert *leg.*. 1 ♂ & 3 ♀ (UZMD-90.010b).

***Stygnoplus triacanthus* (Kollar)**

(Fig. 555)

*Stygnus triacanthus* Kollar in Koch, 1839a: 11; 1839b: 23, fig. 549; Gervais, 1844: 461 (cit.). (Male holotype, South America, according to Kollar in Koch, 1839, lost according to J. Gruber, pers. comm. not examined).

*Stygnoplus triacanthus*; Simon, 1879: 222; Roewer, 1913b: 448, fig. 176; 1923: 578, fig. 725.

Diagnosis: The males of this species resemble those of *S. dominicanus*, *S. antiguanus*, *S. flavitarsis* and *S. granulatus* in having ventral and dorsal large tubercles on median part of tibia IV and one dorsal tubercles on patella IV. They differ from these species in having three large ventral tubercles on swollen part of tibia IV.

Male redescription (according to Roewer, 1913b):

Dorsum (Fig. 555): Cephalothorax without tubercles, with 1 large spine with wide base. Eye mounds smooth. Areas I-III smooth; III with 2 divergent backwards spines. Posterior margin with 1 row of tubercles. Anal operculum smooth.

Venter: Coxa I, II and IV with wide tubercles irregularly disposed; III with 2 rows of wide

tubercles. Anal operculum smooth.

Chelicera: Swollen. Segment I tuberculate.

Pedipalpus: 2 times longer than body length. Coxa-trochanter smooth. Femur swollen apically, with 1 ventral row of tubercles. Patella clavate. Tibia with ectal IIIIi, mesal IIIII. Tarsus mesal iiiiii, ectal iiiiIi.

Legs: Trochanter I-III with enlarged tubercles. Femora III-IV sigmoid, with 2 ventral rows increasing size apically; IV with 2 large dorsal tubercles. Patella IV with 2 dorsoapical tubercles. Tibia IV swollen medially, with 3 dorsal curved tubercles, 4 ventral. Basitarsus I swollen. Tarsal segmentation: 6, 17, 7, 8.

Colour: Body dark-yellow dorsally and ventrally. Legs I-II, tarsi III-IV, chelicera and pedipalpus dark-yellow. Legs III-IV: coxa-tibia lighter. Spines yellow pale apically.

Female unknown.

Type locality: South America.

***Stygnoplus trilineatus*, sp.n.**

(Figs. 149-156, 487-488, 598)

Diagnosis: The males of this species resemble those of *S. biguttatus* and *S. forcipatus* in having two ventral and 1 dorsal rows of tubercles on tibia IV and differ from all species of *Stygnoplus* in having white lines on areas I-III.

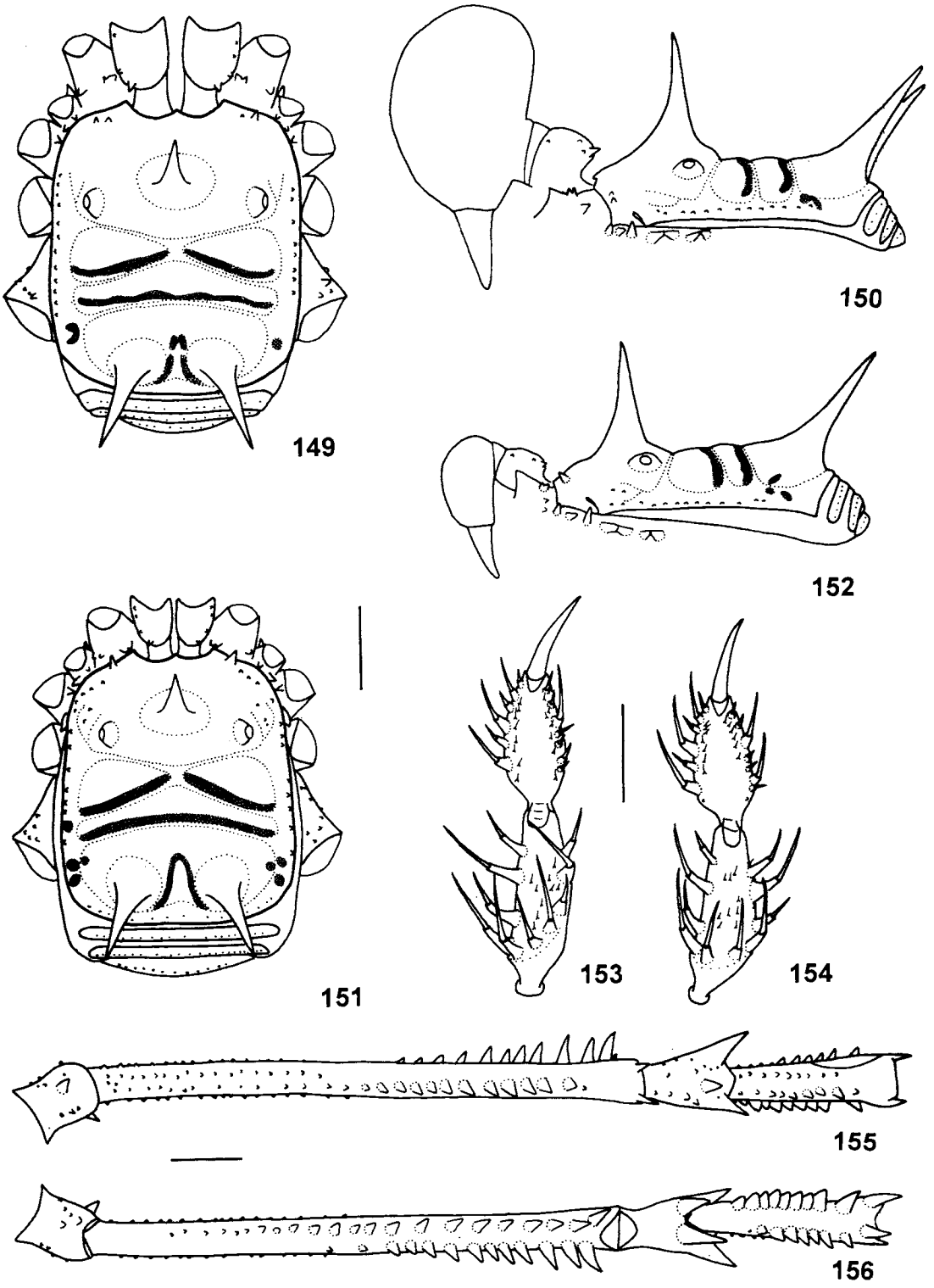
Etymology: In reference to the three white bands on dorsal scute.

Type material: ♂ holotype & ♀ paratype "Venezuela, Miranda, Guatopo Nat. Park, Agua Blanca, 450 m, 13.II.1984, J. Coddington", USNM.

Male description (holotype):

Measurements: DSL 3.44; CL 1.60; DSW 3.00; CW 2.88; ID 2.12; chelicera: II 3.76; III 2.04; pedipalpus 9.32; leg I 12.58; II 28.77; III 18.74; IV 25.30.

Dorsum (Figs. 149-150): Anterior margin with 2 tubercles each side. Cephalothorax with 1 large median upwards spine. Lateral margins with tubercles from apex of coxa II to near apex of IV. Areas I-III minute-tuberculate; III with 2 long divergent spine, backwards. Posterior margin minute-tuberculate. Free tergites with 1 row of



Figs. 149-156. *Stygnoplus trilineatus*, sp.n.. Male (holotype): 149, habitus, dorsal view; 150, lateral view; 153, left pedipalpus, tibia and tarsus; 155, trochanter, femur, patella and tibia of the right IV leg, dorsal; 156, same, ventral. Female (paratype): 151, habitus, dorsal view; 152, lateral view; 154, left pedipalpus, tibia and tarsus. Gray spots mean white color. Scale bars: 1 mm.



minute tubercles. Anal operculum with 2 anterior rows and 1 on posterior margin of minute tubercles.

Venter: Coxa I with 2 anterior tubercles, 4 large median, 1-2 posterior, 2 large apical; II with 4 anterior, 1 median row of 7-9, 5-6 posterior, 4 apical; III with 6 anterior, 1 median row of 8, 8 posterior, 5 apical; IV with 6 anterior, 1 oblique row of 10, 14 posterior. Posterior margin and free sternites with 1 row of minute tubercles. Anal operculum with 1 median row of tubercles, several irregularly disposed.

Chelicera: Swollen. Segment I with 3-4 tubercles; II with 1 median, 2 distal; III with 1 basal, 1 median, 2 distal. With interchelar space.

Pedipalpus (Fig. 153): Coxa with 7 ventral (apical larger) and 3 dorsal (prolateral larger) tubercles. Trochanter with 2 ventral and 1 dorsal tubercles. Femur slightly curved, 4 small ventral tubercles. Patella swollen at distal 1/4. Tibia: ectal IIIi, mesal IIIi, tuberculate ventrally (concentrate ectally) and dorsally. Tarsus: ectal IIIi, mesal IIIi.

Legs (Figs. 155-156): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate. Trochanter I with 3 wide ventral tubercles; II with 4 wide ventral, 2 retrolateral, 3 dorsal; III with 6 ventral (4 wide), 4 dorsal; IV with 10 ventral, 1 retrolateral apical, 7 dorsal (1 larger). Femora 1-IV straight; II-IV with 2 dorsoapical tubercles (posterior larger); III-IV with 2 ventral rows of large tubercles (larger on distal half). Patella II with 1 dorsomedian tubercle; IV, flattened prolaterally, 1 dorsocentral, 1 dorsoapical anterior, 1 posterior. Tibia IV, flattened prolaterally, 2 ventral rows of geminate tubercles, 2 apical, 2 dorsal rows. Tarsus I with first and second articles slightly swollen. Claws with 5 teeth. Tarsal segmentation: 7, 17, 7, 8.

Penis (Figs. 487-488): Ventral plate without apical and intermediary setae.

Colour: Brown, areas I-II and spines darker. Region around cephalothorax spine and chelicera black reticulate. Tibiae I-IV and metatarsus I-IV with black rings. Posterior margin of areas I-II and region between spines with white band. Lateral margins with 1 white spot near posterior margin. Free tergites with 1 white narrow band.

Female description (paratype, Figs. 151-152, 154):

Measurements: DSL 3.32; CL 1.40; DSW 2.84; CW 2.60; ID 1.68; chelicera: II 1.92; III 1.00; pedipalpus 8.44; leg I 9.72; II 24.86; III 16.82; IV 23.42.

Anterior margin with 1 large tubercle each side. Cephalothorax with tubercles laterally. Lateral margins with 2-3 white spots. Chelicera segment I with 4-5 tubercles. Pedipalpus: coxa with 1 bifid dorsal and 1-2 simple dorsal tubercles; Tarsus ectal, IIIi, mesal IIIi. Free tergites I-III and free sternites with 1 white band. Tarsal segmentation: 6, 15, 7, 7-8. Posterior margin and region between spines of area III with 1 white spot.

Type locality: Agua Blanca, Parque Nacional Guatopo, Miranda, Venezuela.

Distribution (Fig. 598): Recorded only from type locality.

*Stygnoplus tuberculatus* (Goodnight & Goodnight), comb.n.  
(Figs. 157-159, 598)

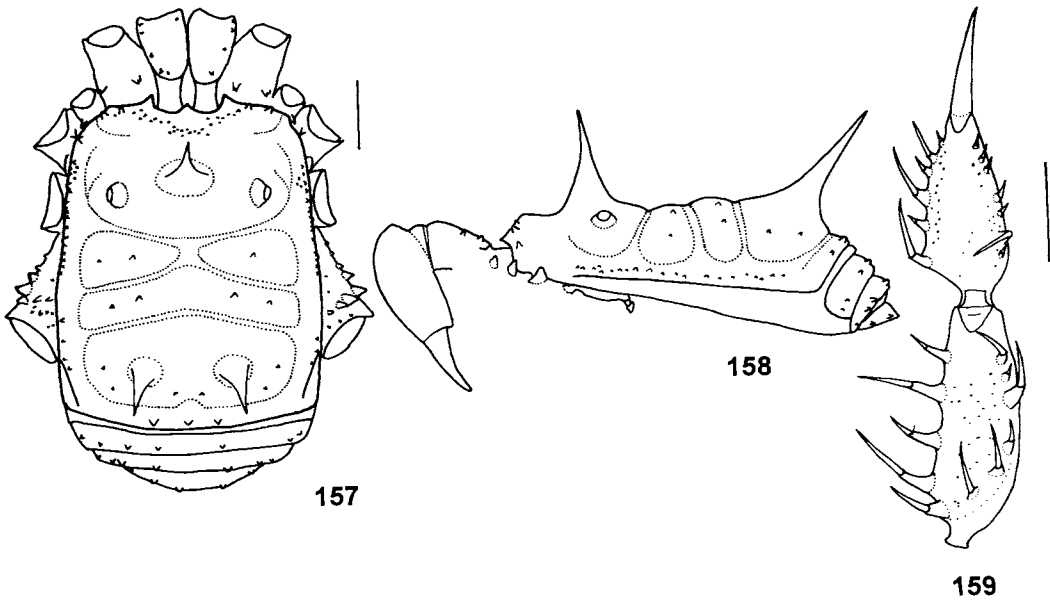
*Parastygnoplus tuberculatus* Goodnight & Goodnight, 1942b: 17, fig.38. (Holotype female, "Long Ditton, near Roseau, Dominica, B.W.I. [British West Indies], June 20, 1911, F. Lutz leg., male holotype", AMNH, examined).

Female redescription (holotype):

Measurements: DSL 4.72; CL 2.04; DSW 3.88; CW 3.48; ID 2.24; chelicera: II 2.64; III 1.48; pedipalpus 10.60; leg I 12.12; II 26.97; III 19.54; IV 25.28.

Dorsum (Figs. 157-158): Anterior margin, with small median tubercles, 2-3 large on each side. Cephalothorax with 1 central forwards spine. Lateral margins with 1 irregular row of tubercles from coxa II to middle of area III, smooth on area II. Area I with 1-2 small tubercles; II with 2 small; III with 2 backwards divergent spines, 4 lateral tubercles, 2 central. Posterior margin with 3 central tubercles. Free tergite I with 8 tubercles; II with 10; III with 7. Anal operculum small-tuberculate.

Venter: Coxa I with 1 row of 5 tubercles, 3 apical; II with 1 row of 8, 5 posterior, 4 apical; III with 1 row of 8-9, 3 apical, 8 small posterior; IV with several tubercles irregularly disposed. Free sternites with 1 row of tubercles. Anal operculum smooth.



Figs. 157-159. *Stygnopus tuberculatus* (Goodnight & Goodnight), comb.n. Female (holotype): 157, habitus, dorsal view; 158, lateral view; 159, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Chelicera: Segment I with 4-6 tubercles; II with 5; III with 3.

Pedipalpus (Fig. 159): Coxa with 2 bifid dorsal tubercles, 1 ventral row of 6, 3 apical. Trochanter with 2 dorsal and 1 ventral tubercles. Femur with 1 ventral row of tubercles in almost all extension. Patella swollen at distal half, with 2-3 ventral tubercles. Tibia: ectal *ililii*, mesal *ilili*, small-tuberculate ventrally. Tarsus ectal *ilililii*, mesal *ililii*, small-tuberculate ventrally.

Legs: Coxa I with 1 tubercle; II with 1 anterior, 1 posterior; III with 1 posterior; IV with large and small tubercles. Trochanter II with 2 dorsal tubercles, 2 retrolateral, 4 ventral; III with 8 dorsal, 7 ventral, 1 apical retrolateral; IV with 3 dorsoapical, 1 large retrolateral, 4 prolateral, 5 ventral. Femur IV with 2 apical acute tubercles, 1 retrolateral row of large tubercles. Tibia swollen apically. Tarsal segmentation: 6, 19-20, 8, 9. Claws III-IV with 4 teeth, last IV article swollen.

Colour: Dark-brown. Cephalothorax, spines of area III, lateral margins and free tergites darker. Chelicera and pedipalpus black reticulate.

Male unknown.

Type locality: Long Ditton, Dominica

(16°43'N - 61°03'W).

Distribution (Fig. 598): Recorded only from type locality.

#### *Timesius* Simon

*Timesius* Simon, 1879: 225; Roewer, 1913b: 458 (rdesc.); 1923: 581 (rdesc.); Mello-Leitão, 1932: 431 (rdesc.). (Gender masculine).

Diagnosis: Dorsal scute with lateral margins convex. Cephalothorax without eminence or spine. Area III with 2 geminate spines. Chelicera small-tuberculate. Basitarsus III of male swollen. Without white spots on dorsal scute. The lack of an eminence on cephalothorax relate it to *Stygnidius*, *Minax* and *Yapacana*. Unfortunately, the penis is unknown and the relationships remain unknown. The only species known of the genus, *T. vesicularis*, resembles *E. simoni* by having spines of area III geminate, but differs from this and other Heterostygninae species by the presence of basitarsus III swollen.

Type species: *Stygnus vesicularis* Gervais, 1844, by monotypy.

*Timesius vesicularis* (Gervais)

(Fig. 556)

*Stygnus vesicularis* Gervais, 1844: 111 pl. 46 fig.

8. (Male holotype, Colombia, M. Justin Goudot leg., lost according to A. Muñoz-Cuevas (MNHN), pers. comm., not examined).

*Timesius vesicularis*; Simon, 1879: 225; Roewer, 1913b: 458, fig. 180; 1923: 581, fig. 730.

Male redescription (according to Roewer, 1913b):

Dorsum (Fig. 556): Anterior margin straight, without tubercles. Cephalothorax smooth. Lateral margins with 1 row of tubercles. Areas I-III with 1 row of tubercles. Posterior margin and free tergites with 1 row of tubercles. Anal operculum smooth.

Venter: Coxae I-IV with wide tubercles irregularly disposed. Free sternites with 1 row of small tubercles.

Chelicera: Swollen. Segment I tuberculate.

Pedipalpus: 2 times longer than body length. Coxa conic, smooth. Trochanter and femur smooth. Patella clavate. Tibia: mesal-ectal iiiiIi, 1 large and thin central tubercle ventrally. Tarsus: mesal-ectal iiiiIi.

Legs: Trochantera I-IV tuberculate. Femur IV tuberculate. Tarsal segmentation: 7, 15, 6, 8.

Colour: Rusty pale yellow. Appendages slightly lighter than body.

Female unknown.

Type locality: Colombia.

## STYGNINAE Simon

Stygninae Simon, 1879: 218; Roewer, 1913b: 425; Mello-Leitão, 1923: 178, 196; 1932: 420; 1949: 32.

Phareinae Roewer, 1913a: 154; Mello-Leitão, 1932: 416; 1949: 31. *Syn.n.*Ideostygninae Roewer, 1943: 62; Mello-Leitão, 1949: 32; Soares & Soares, 1978: 81. *Syn.n.*Diagnosis: Eye mounds smooth or tuberculate; placed posteriorly on cephalothorax, near groove I. Area I usually divided by a median groove (except in *Kaapora minutissimus*). Segment I of chelicera condyle-like. Pedipalpal coxa, femur and patella large; femur and patella cylindrical and thin. Last article of tarsus III-IV cy-lindrical, two to three times the anterior article size; claws parallel or subparallel; smooth (pectinate only in *Sickesia helmuti*); without scopula or with scopula with thin hairs not spatulate; tarsal process well developed or reduced. Penis: ventral plate thick (thin only in *Auranus parvus*), distal setae larger than ventral plate width (shorter in *A. parvus*).Type genus: *Stygnus* Perty, 1833.

## Key to the genera of the Stygninae:

1. Area III smooth, small-tuberculate or with 2 wide tubercles.....2
  - Area III with 2 spines (Figs. 160, 168).....5
- 2(1). Area III with 2 wide tubercles (Fig. 424).....
  - .....*Iguarassua*
  - Area III small-tuberculate or smooth.....3
- 3(2). Cephalothorax with 1 wide anterior eminence (Figs. 435-436).....*Planophareus*
  - Cephalothorax smooth.....4
- 4(3). Area I divided by a median groove, pedipalpal coxa with several dorsal tubercles (Fig. 432).....*Paraphareus*
  - Area I undivided, pedipalpal coxa with 1 wide dorsal tubercle (Fig. 559).....*Kaapora*
- 5(1). Cephalothorax with 1 spine, free tergite III with 1 pair of enlarged tubercles (Figs. 168, 184).....6
  - Cephalothorax smooth or with 1 eminence, free tergite with tubercles similar in size.....7
- 6(5). Spine of cephalothorax placed on anterior margin, forwards, eye mounds with tubercles (Fig. 168).....*Sickesia*
  - Spine of cephalothorax central, eye mounds smooth (Fig. 184).....*Stygnus*
- 7(5). Pedipalpal femur and patella larger than dorsal scute.....8
  - Pedipalpal femur and patella shorter than dorsal scute.....9
- 8(7). Tarsal process absent, small sized species (dorsal scute = 2.3-2.7 mm).....*Pickeliana*
  - Tarsal process well developed, median to large sized species (dorsal scute = 3.08-5.75 mm).....*Protimesius*
- 9(7). Cephalothorax with 1 rounded median or long and bifid eminence.....10
  - Cephalothorax smooth or small-tuberculate.....12

- 10(9). Cephalothorax with 1 bifid eminence (Fig. 557).....*Niceforoiellus*  
Cephalothorax with 1 rounded eminence....11
- 11(10). Dorsal scute areas with white spots around tubercles, eye mounds smooth (Fig. 427).....*Metaphareus*  
Dorsal scute areas without white spots, eye mounds tuberculate (Fig. 160).....*Phareus*
- 12(9). Dorsal scute swollen at groove II, coxa IV with 1 dorsoapical tubercle (Fig. 438).....  
.....*Stenophareus*  
Dorsal scute rectangular, coxa IV without dorsoapical tubercle.....13
- 13(12). Dorsal scute with 3 areas.....*Auranus*  
Dorsal scute with 4 areas.....14
- 14(13). Dorsal scute densely tuberculate (Fig. 325).....*Verrucastygneus*  
Dorsal scute with tubercles at areas and lateral margins (Fig. 333).....15
- 15(14). Anterior margin smooth, lateral and posterior margins with 1 row of tubercles (Fig. 333).....*Stenostygnoidea*  
Anterior margin tuberculate, lateral and posterior margins less tuberculate (Fig. 421).....*Actinostygnoidea*

### *Phareus* Simon

- Phareus* Simon, 1879: 219; Roewer, 1912: 149; 1913a: 155; 1923: 457; Mello-Leitão, 1926: 347; 1932: 417. (Gender masculine).
- Liophareus* Mello-Leitão, 1940b: 309 (Type species: *Liophareus mamillatus* Mello-Leitão, 1940b, by original designation). *Syn.n.*
- Colomphareus* Goodnight & Goodnight, 1943: 10 (Type species: *Colomphareus rugosus* Goodnight & Goodnight, 1943, by original designation). *Syn.n.*
- Allophareus* Roewer, 1963: 60 (Type species: *Allophareus robustus* Roewer, 1963, by monotypy). *Syn.n.*

Diagnosis: Dorsal scute rectangular. Cephalothorax with 1 wide medioanterior eminence. Eye mounds tuberculate. Area I divided by a median groove; III with 2 spines. Free tergites with tubercles similar in size. Pedipalpal femur large; basal sockets apex of tibia normal. With tarsal process, without scopula. Penis: ventral plate with 5 basal and 8-9 distal (large and cylindrical)

pairs of setae; without dorsal process, with fan-like ventral process. *Phareus* is related to *Stygneus* and *Sickesia* by the presence of a pedipalpal patella moderately long, male patella IV with one ventroapical and one dorsoapical posterior large tubercles. It differs from all other Stygninae in having wide tubercles on areas I-III, posterior margin and free tergites.

Type species: *Goniosoma raptator* Gervais, 1844, by monotypy.

### *Phareus raptator* (Gervais)

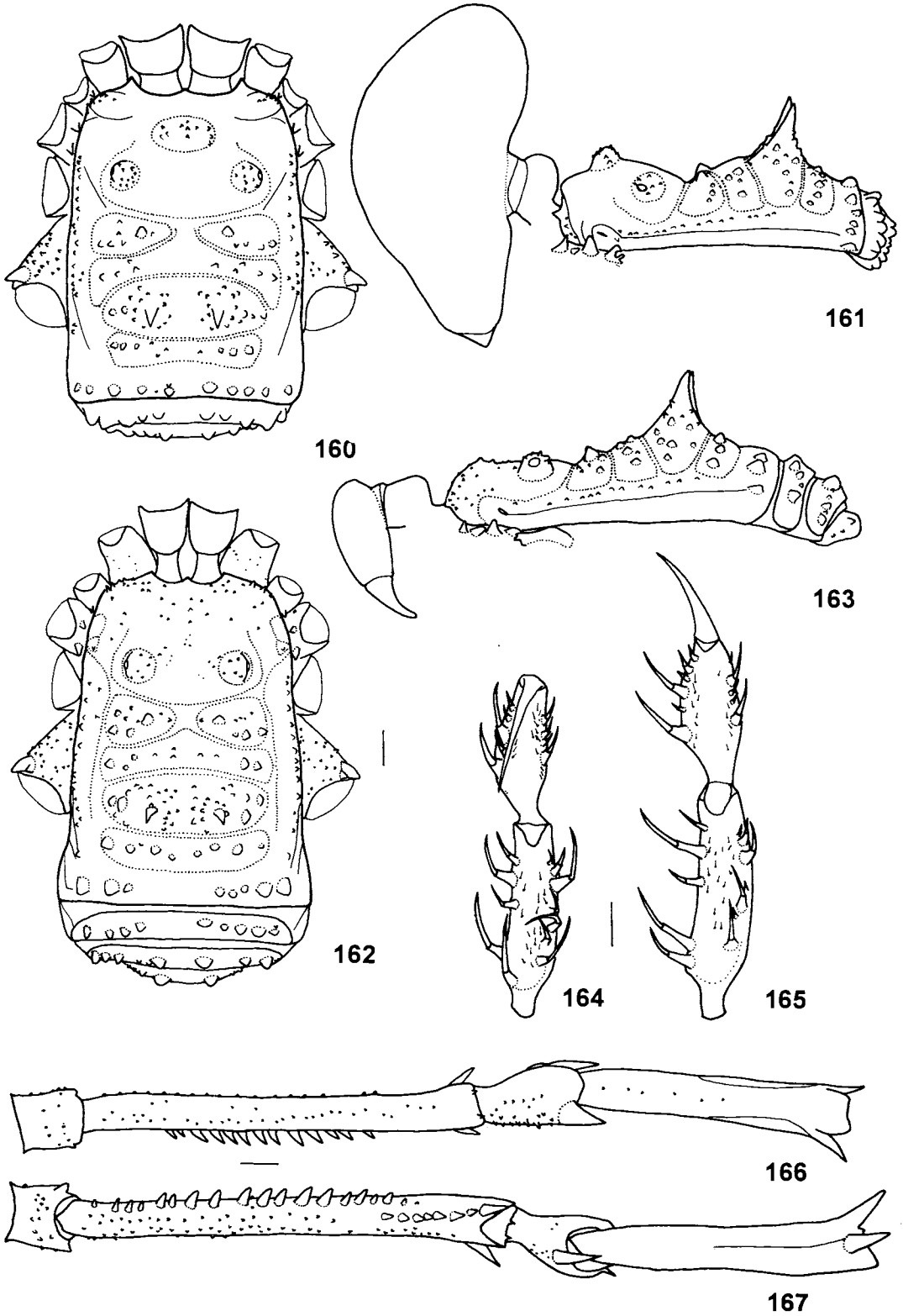
(Figs. 160-167, 489-490, 582, 599)

- Goniosoma raptator* Gervais, 1844: 107 (vol. 3), pl.47, figs. I, 1a. (Male holotype, from Santa Fé de Bogotá, [Cundinamarca], Colombia, M. Parzudacki leg., MNHN, lost according to A. Muñoz-Cuevas, pers. comm., not examined).
- Phareus raptator*; Simon, 1979: 219 (rdesc.); Roewer, 1912: 149 (rdesc.); 1913a: 155, figs. 68-69 (rdesc.); 1923: 457, fig. 475-476 (rdesc.).
- Liophareus mamillatus* Mello-Leitão, 1940b: 309, fig. 10; Soares, 1945: 386 (cat.). (Female holotype, "Bogotá, [Cundinamarca, Colombia], Niceforo M. leg. typus, # 236", MNRJ, examined). *Syn.n.*
- Colomphareus rugosus* Goodnight & Goodnight, 1943: 10, figs. 32-35. (Male holotype, "*Colomphareus rugosus*, Columbia, male holotype", AMNH, examined). *Syn.n.*
- Allophareus robustus* Roewer, 1963: 60 fig. 26-28. (Male holotype, "Columbien [Colombia], Houserrate [Montserrat], ca. 3200 m, 17.XII.1955, Sturm leg. # 12721/1, holotypus", SMFD, examined). *Syn.n.*

Male redescription (holotype of *C. rugosus*):

Measurements: DSL 7.58, CL 3.42, DSW 6.17, CW 5.92, ID 3.56, chelicera: II 8.58; III 3.33; pedipalpus 19.00; leg I 24.89; II ?; III 35.09; IV 45.61.

Dorsum (Figs. 160-161): Anterior margin with several tubercles. Cephalothorax with 1 wide central tuberculate eminence. Lateral margins with 1 irregular row of tubercles in almost all extension. Area I with 6-7 tubercles (central pair larger); II forwards, 5 tubercles each side; III with 2 straight upwards spines, base tuberculate, 3 median tubercles each side; IV with 4-6 tubercles. Posterior



Figs. 160-167. *Phareus raptator* (Gervais). Male (holotype de *Colomphareus rugosus*): 160, habitus, dorsal view; 161, lateral view; 164, left pedipalpus, tibia and tarsus; 166, trochanter, femur, patella and tibia of the right IV leg, dorsal; 167, same, ventral. Female (holotype de *Liophareus mamillatus*): 162, habitus, dorsal view; 163, lateral view; 165, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

margin with 12 wide tubercles. Free tergite I with 10 wide tubercles, II with 8, III with 4. Anal plate smooth.

Venter: Coxae I-IV irregularly tuberculate, I with 5 apical, II and III with 4 apical tubercles. Stigmatic area and anal plate hairy. Free sternites small-tuberculate.

Chelicera: Swollen. Segment I smooth; fixed finger and segment III shorter, with 1 wide basal and 1 small distal teeth.

Pedipalpus (Fig. 164): Coxa with 6 ventral tubercles. Trochanter with 2 dorsal, 3 ventral. Femur with 1 row of 11-13 small ventral and 3 prolateral tubercles. Patella swollen at distal half. Tibia: ectal compressed, IIIli, mesal liilii, small-tuberculate ventrally. Tarsus: ectal liilii, mesal liilii, small-tuberculate laterally.

Legs (Figs. 166-167): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior bifid; III-IV small-tuberculate, 1 large lateroapical tubercle. Trochanter I with 4 dorsal 3 ventral and 2 prolateral tubercles; II with 5 dorsal, 14 ventral, 2 retrolateral; III with 14 dorsal, 11 ventral, 2 prolateral, 3 retrolateral; IV irregularly tuberculate, 1 prolateral, 1 retrolateral larger. Femur III with 1 ventral row of tubercles on distal half, 2 small dorsoapical tubercles, with 1 retrolateral row on basal half; IV with 2 small dorsoapical tubercles, 1 retrolateral row of tubercles in almost all extension, 1 ventral posterior with 2 large apical tubercles. Patella III with 1 bifid posterodorsal and 1 ventroapical tubercles; IV tuberculate, 1 large dorsoapical, 1 large ventroapical. Tibia IV compressed, flattened ventrally, 2 ventroapical tubercles. Tarsal segmentation: 6, ?, 6, 7, according to Goodnight & Goodnight (1943).

Penis (Figs. 489-490, 582): Lateral margins of ventral plate parallel, distal margin concave.

Colour: Dark-brown almost black. Chelicerae, pedipalpus and legs I-III lighter.

Female redescription (holotype of *L. mamillatus*; Figs. 162, 163, 165):

Measurements: DSL 8.42, CL 3.42, DSW 5.92, CW 5.33, ID 2.92, chelicera: II 3.58, III 2.08; pedipalpus 18.70; leg I 23.79; II ?; III 38.08; IV ?.

Pedipalpus: tibia ectal liilii, mesal liilii; tarsus ectal liilii, mesal liilii; both small-tuberculate ventrally. Tubercles of legs smaller than male.

Coxa II with posterior tubercle no bifid; III with 1 enlarged tubercle fused with 1 of II. Without large tubercles on patella-tibia III and trochanter IV. Tarsal segmentation: 6, 16, 6, 6 according to Mello-Leitão (1940b).

Note: Simon (1879) suggested that *Ortonia ferox* Wood might be a junior synonym of *P. raptator*. However, Wood (1869) noticed that the holotype (probable lost according to Cokendolpher & Peek, 1991) had 1 spine on dorsal scute and *P. raptator* has 2 spines. The figure showed by Wood is poorly informative and it is impossible to confirm Simon's supposition. I prefer to maintain *Ortonia* Wood, 1869 and *Ortonia ferox* Wood, 1869 as *genus* and *species inquerendae*.

Bionomics: Specimens from Guasca and South Bogota collected under rocks.

Type locality: Colombia. Cundinamarca. Bogotá (04°36'N - 74°05'W).

Distribution: Recorded only from type locality.

Material examined: Colombia. without locality, 1 ♀ (MNHN-3014); *Cundinamarca*. 15 km S of Bogota, 3.III.1969, P. & P. Spangler *leg.*, under rocks, 8-9000 feet, 1 ♂ (USNM); Guasca, 21.V.1946. E. A. Chapin *leg.*, 1 ♀ (USNM).

### *Sickesia* H. Soares

*Sickesia* H. Soares, 1979: 401. (Gender feminine).

Diagnosis: Dorsal scute slightly wider at groove III. Cephalothorax with 1 anterior spine. Eye mounds with tubercles. Area I divided by a median groove; III with 2 spines. Free tergite III with 1 pair of tubercles larger than others. Pedipalpal femur large; basal sockets apex of tibia normal. With tarsal process, without scopula. Penis: large and cylindrical, ventral plate with 3 distal and 3 basal pairs of setae; glans with dorsal process. This genus is closely related to *Stygnus* in having two large tubercles on free tergite III and 1 large spine on cephalothorax, differs from *Stygnus* in having the eye mounds tuberculated and the spine of cephalothorax forwards and close to anterior margin.

Type species: *Sickesia helmuti* H. Soares, 1979, by original designation.

*Sickesia helmuti* H. Soares

(Figs. 168-175, 491-492, 599)

*Sickesia helmuti* H. Soares, 1979: 401, figs. 1-9.(Male holotype and female paratype "Teles Pires, Alto Tapajós [Mato Grosso, Brazil], H. Sick *leg.*, VIII.50, F. B. C., HSPC-666, HSPC-667", female paratype, same data as holotype [HSPC-667], HSPC, holotype dissected, examined).Diagnosis: Differs from *S. usta* by having pectinate claws on tarsi III-IV.

Male redescription (holotype):

Measurements: DSL 2.76; CL 1.24; DSW 2.72; CW 2.20; ID 1.24; chelicera: II 2.20; III 1.04; pedipalpus 4.48; leg I 7.04; II 13.20; III 10.84; IV 10.62.

Dorsum (Figs. 168-169): Anterior margin with 6-8 tubercles each side. Cephalothorax tuberculate, 1 large anterior forwards spine. Lateral margins with 2 rows of tubercles (external from coxa II to posterior margin). Area I with 7-11 tubercles each side (1 larger); II with 18 (2 larger); III with 18, with 2 spines slightly divergent, backwards. Posterior margin with 2 central with 1 larger each side and 6 laterad tubercles. Free tergite I-II with 2 central with 1 larger each side, 4-5 laterad; III with 4 central with 1 larger each side, 2-3 laterad. Anal plate with 1 anterior row of tubercles and 2 posterior rows.

Venter: Coxa I with 2 anterior tubercles, 2 median rows of 5 tubercles, 1 posterior row of 4, 3 apical; II with 8 anterior, 1 median row of 7, 1 posterior row of 8, 4 apical; III irregularly tuberculate, with 4 apical; IV irregularly tuberculate. Posterior margin and free sternites with 1 row of tubercles (larger laterally). Anal plate with 1 median and 1 posterior row of tubercles.

Chelicera: Swollen. Segment I with 4 tubercles; II with 3 small distal teeth; III with 1 anterior, 1 median wide and 2 small distal teeth. With interchelar space.

Pedipalpus (Fig. 172): Coxa with 1 ventral and 1 dorsal tubercles. Trochanter with 3 ventral tubercles. Femur slightly curved, with 6 ventral tubercles. Patella swollen at distal half, tuberculate dorsally. Tibia: flattened prolaterally, ectal IIIIi, mesal IIIiI, tuberculate ventral and dorsally. Tarsus: ectal IIIIi, mesal IIIiI, tuberculate ventrally.

Legs (Figs. 174-175): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically

with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 lateral and 1 dorsoapical large tubercles. Trochanter I with 4 large ventral tubercles, 3 retrolateral (basal larger); III with 2 large retrolateral; IV with 2 retrolateral apical, 2 large dorsoapical. Femora III-IV with 2 ventral rows of tubercles, large on distal half, 1 prolateral, 1 retrolateral, 2 dorsoapical similar in size. Patella IV with 1 large ventral, 1 prolateral, 2 retrolateral and 1 dorsal tubercles. Tibia IV with 2 ventral rows of wide tubercles. Claws parallel with 4 teeth, Tarsal segmentation: 6, 9, 6, 7.

Penis (Figs. 491-492): Ventral plate narrow distally, lateral margins parallel, distal margin straight.

Colour: Dark-brown. Margins of dorsal scute and free tergites almost black. Chelicera black reticulate.

Female redescription (paratype; Figs. 170-171, 173):

Measurements: DSL 2.88; CL 1.24; DSW 2.88; CW 2.08; ID 1.04; chelicera: II 1.14; III 0.66; pedipalpus 4.64; leg I 6.68; II 12.56; III 9.36; IV 13.67.

Anterior margin with 5-6 tubercles. Area I with 7-8 tubercles each side; II with 15; III with 13. Posterior margin with 17 tubercles. Free tergite I with 14 tubercles; II with 4 central with 1 large each side; III with 4 central with 1 large each side, 3 laterad. Tarsal segmentation: 6, 9-10, 6, 7.

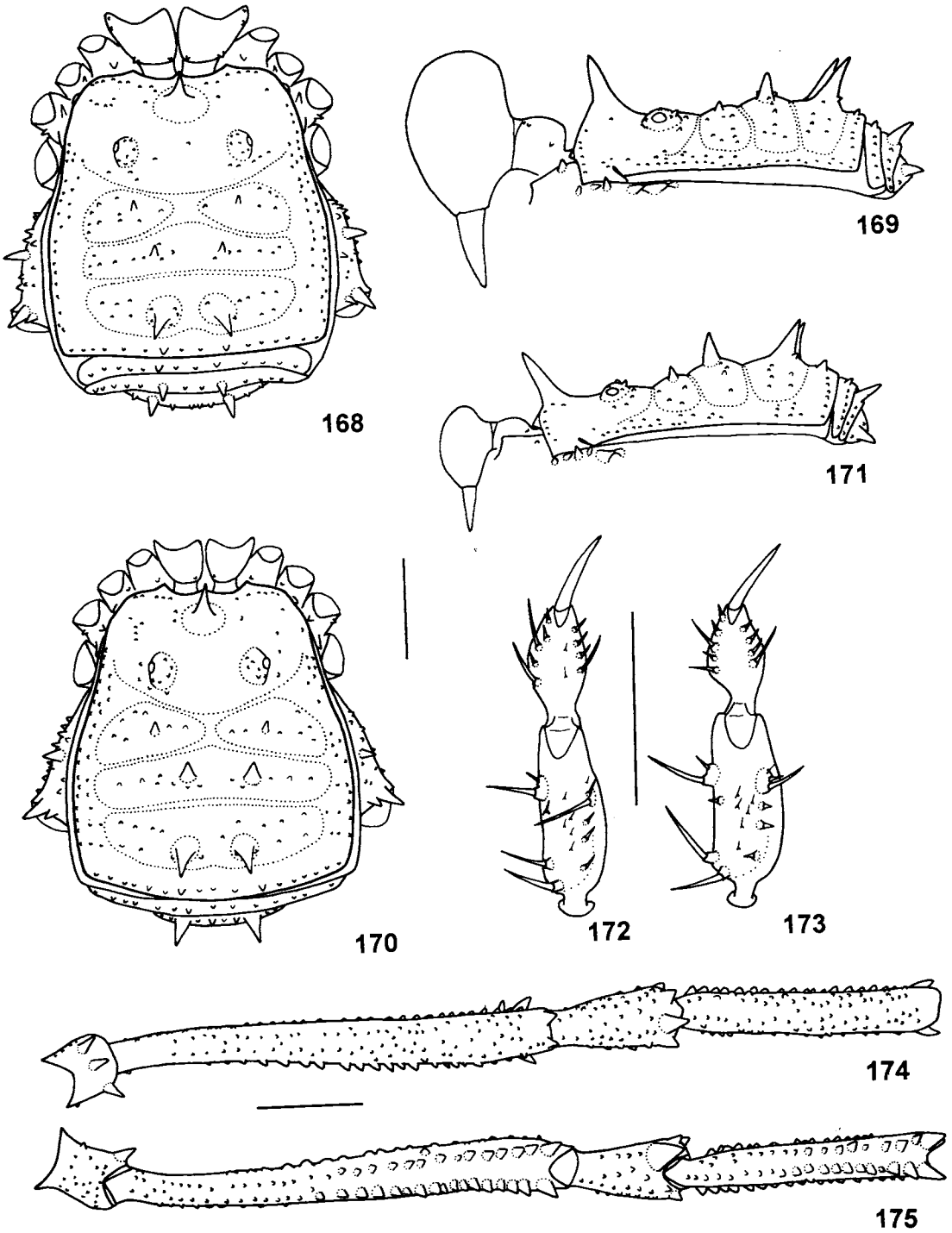
Type locality: Brazil, Mato Grosso, rio Teles Pires (07°20'S - 58°02'W).

Distribution (Fig. 599): Recorded only from type locality.

*Sickesia usta* (Mello-Leitão), comb. n.

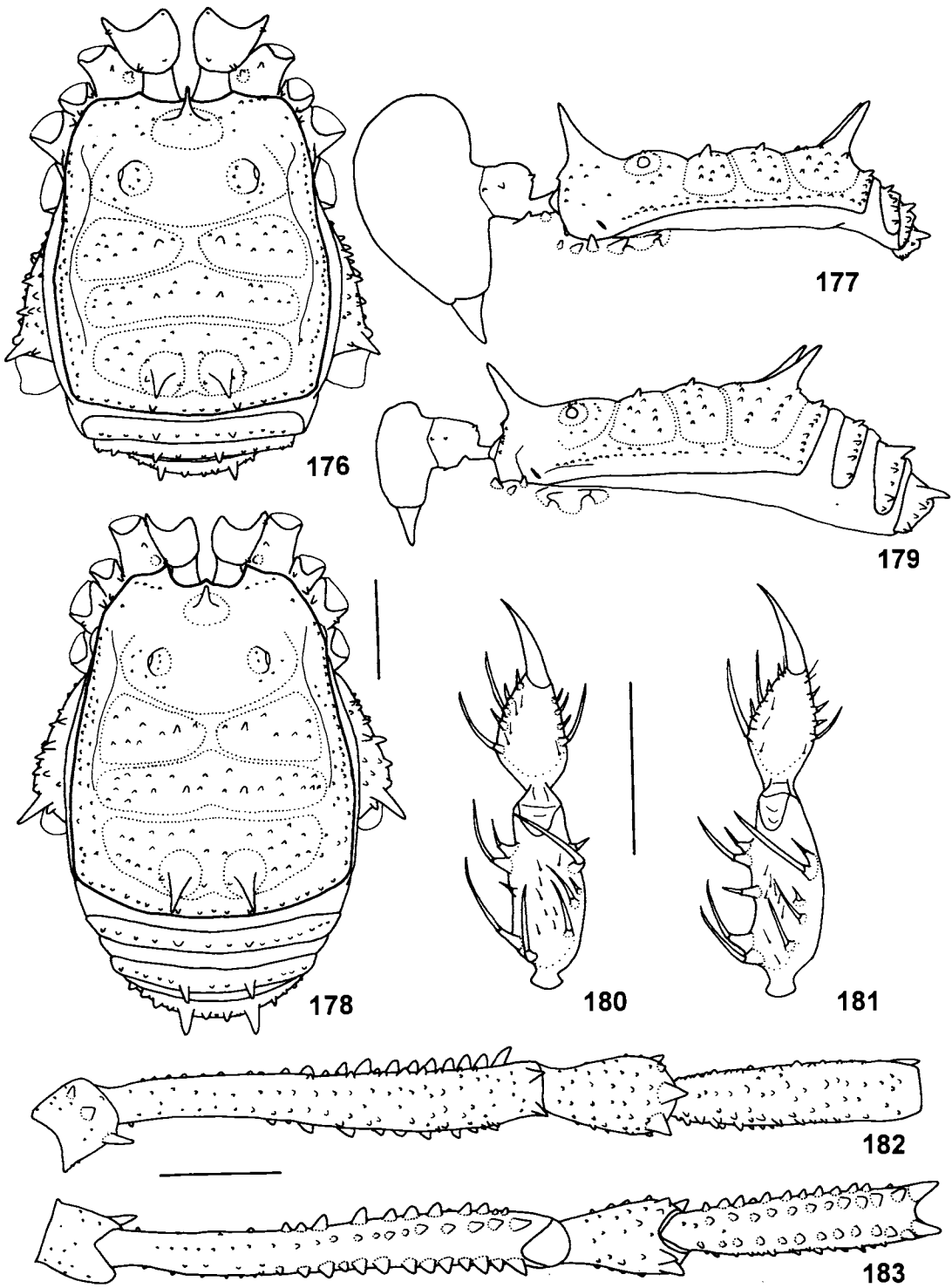
(Figs. 176-183, 493-494, 574-575, 599)

*Diplostygnus ustus* Mello-Leitão, 1941a: 442; Soares, 1945: 387 (cat.). (Male lectotype, 2 males and 1 female paralectotypes, by present designation, "B. [Barra] do Tapirapé [Santa Terezinha, Mato Grosso, Brazil], L. de Carvalho *leg.*, typus, MNRJ-257", 2 male and 1 female paralectotypes, MNRJ; 14 males and 25 females, MNRJ-1472; examined).Diagnosis: Differs from *S. helmuti* in having smooth claws on tarsi III-IV.



Figs. 168-175. *Sicknessia helmuti* H. Soares. Male (holotype): 168, habitus, dorsal view; 169, lateral view; 172, left pedipalpus, tibia and tarsus; 174, trochanter, femur, patella and tibia of the right IV leg, dorsal; 175, same, ventral. Female (paratype): 170, habitus, dorsal view; 171, lateral view; 173, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.





Figs. 176-183. *Sicknessia usta* (Mello-Leitão), comb.n. Male (MNRJ): 176, habitus, dorsal view; 177, lateral view; 180, left pedipalpus, tibia and tarsus; 182, trochanter, femur, patella and tibia of the right IV leg, dorsal; 183, same, ventral. Female (MNRJ): 178, habitus, dorsal view; 179, lateral view; 181, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

## Male redescription (MNRJ):

Measurements: DSL 2.92; CL 1.16; DSW 2.84; CW 2.32; ID 1.16; chelicera: II 2.44; III 1.20; pedipalpus 4.50; leg I 8.26; II 11.68; III 8.84; IV 11.28.

Dorsum (Figs. 176-183): Anterior margin with 3-4 tubercles each side. Cephalothorax small-tuberculate, 1 forwards spine near anterior margin. Lateral margins with tubercles from coxa II to posterior margin. Areas I-II with 1 pair of large tubercles and several irregularly disposed; III tuberculate, 2 slightly divergent backwards spines. Posterior margin with 20 tubercles. Free tergites I-II with 3 central with 1 larger each side and 5 laterad tubercles; III with 3 central with 1 larger larger each side, 4 laterad. Anal plate with 1 anterior and 1 row straight, 1 posterior row curved.

Venter: Coxa I with 1 anterior and 1 median rows of 5 large tubercles each, 4 posterior, 3 apical; II, 4 anterior, 7 median, 5 posterior, 3 apical; III-IV irregularly tuberculate; III with 4 apical. Stigmatic area tuberculate, 1 posterior row of tubercles. Free sternites with 1 row of tubercles.

Chelicera: Segment I with 4 tubercles; II and III with 1 wide median and 3 small distal; III with 1 wide basal teeth.

Pedipalpus (Fig. 180): Coxa with 1 ventral and 2 dorsal tubercles. Trochanter with 2 ventral and 1 dorsal tubercles. Femur with 1 ventral row of tubercles, several small dorsal. Patella swollen at distal half, small-tuberculate. Tibia: ectal IIIi, mesal IIIi, tuberculate ventral and dorsally. Tarsus: ectal IIIi, mesal IIi, 1 ventral row of tubercles.

Legs (Figs. 182-183): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 enlarged fused with 1 of IV; IV tuberculate, 1 dorsoapical larger. Trochanter I with 5 ventral (3 large) and 1 dorsal tubercles; II with 6 ventral, 2 retrolateral, 2 dorsal; III with 4 ventral (2 larger), 2 retrolateral and 1 dorsal larger, several small; IV small-tuberculate, 1 retrolateral larger, 1 dorsoapical larger with 1 smaller each side. Femora I-IV curved, with 2 ventral rows of tubercles increasing size from middle to apex, 2 dorsal similar in size; IV with 1 posterior row at distal 2/3. Patella III with 1 ventral, 1 dorsal and 1 retrolateral tubercles; IV with 1 ventral, 1 prolateral, 2 retrolateral, 1 dorsal. Tibia IV with 2 ventral rows of tubercles finishing with 2 larger, 1 retrolateral row of tubercles. Tarsal segmentation: 6, 9, 6, 7.

Penis (Figs. 493-494, 574-575): Ventral plate with lateral margins parallel. Stylus with 1 small subapical prominence spine-like.

Colour: Dark-brown. Cephalothorax anterior to spine black reticulate. Lateral and posterior margins of cephalothorax and free tergites with black spots. Apex of femur, patella and tibia IV darker.

## Female redescription (MNRJ, Figs. 178-179, 181):

Measurements: DSL 3.28; CL 1.24; DSW 2.92; CW 2.16; ID 0.92; chelicera: II 1.44; III 0.84; pedipalpus 4.20; leg I 6.56; II 11.12; III 8.72; IV 11.40.

Anterior margin with 4 tubercles each side. Segment I of chelicera with 1 posterior tubercle; II with 5 small distal; II with 1 wide median, 2 distal. Femora III-IV with 2 ventral rows of tubercles, 2 dorsoapical. Patella III with 1 and IV with 2 dorsoapical tubercles. Tarsal segmentation: 6, 9, 6, 7.

Bionomics: According to the labels, several specimens from Barra do Tapirapé were collected under rotten logs.

Type locality: Barra do Tapirapé, Santa Terezinha, Mato Grosso, Brazil (10°41'S - 50°38'W).

Distribution (Fig. 599): Brazil (Mato Grosso and Pará).

Material examined: Brazil. *Pará*: Belém, 1976, R. Ferreira *leg.*, 1 ♂ & 1 ♀ (HSPC-632); *Mato Grosso*: Santa Terezinha (Barra do Tapirapé), same data, under rotten logs, 28 ♂ & 55 ♀ (MNRJ); same data, B. Malkin *leg.*, 29.XII.1965, 1 ♂ & 1 ♀ (MZSP-14238).

*Stygnus* Perty

*Stygnus* Perty, 1833: 207; Koch, 1839a: 11; Gervais, 1844: 110; Simon, 1879: 220; Roewer, 1913b: 427; 1923: 572; Mello-Leitão, 1923: 178, 196; 1926: 366; Roewer, 1931: 150; Sorensen, 1932: 284; Mello-Leitão, 1932: 422; 1935: 112. (Gender masculine).

*Stygnellus* Roewer, 1913b: 434; 1923: 574; Mello-Leitão, 1923: 196; 1926: 365; Roewer, 1931: 150; Mello-Leitão, 1932: 423; 1935: 112 (Type species: *Goniosoma ferrugineum* Perty, 1833, by monotypy). *Syn.n.*

*Parastygnellus* Roewer, 1913b: 436; 1923: 574; Mello-Leitão, 1926: 365; 1932: 423; 1935: 112

- (Type species: *Parastygnellus simplex* Roewer, 1913b, by monotypy). *Syn.n.*
- Metastygnellus* Mello-Leitão, 1928: 13; Roewer, 1931: 149, 152; Mello-Leitão, 1932: 425; 1933: 103; 1935: 112 (Type species: *Metastygnellus longimanus* Mello-Leitão, 1928, by original designation). *Syn.n.*
- Lojanellus* Roewer, 1931: 153; Mello-Leitão, 1932: 426; 1935: 112 (Type species: *Lojanellus mediocris* Roewer, 1931, by monotypy). *Syn.n.*
- Diplostygnus* Mello-Leitão, 1931: 144; 1935: 112; (Type species: *Diplostygnus luteus* Mello-Leitão, 1931, by original designation). *Syn.n.*
- Acrostygnus* Roewer, 1931: 150, 151; Mello-Leitão, 1932: 424; 1935: 112 (Type species: *Stygnellus polyacanthus* Mello-Leitão, 1923, by original designation). *Syn.n.*
- Henriksia* Mello-Leitão, 1933: 103; 1935: 112 (Type species: *Stygnus simonis* Sorensen, 1932, by original designation). *Syn.n.*
- Chelistygnus* Roewer, 1943: 60 (Type species: *Chelistygnus bellicosus* Roewer, 1943, by monotypy). *Syn.n.*
- Stygnellomma* Roewer, 1943: 61 (Type species: *Stygnellomma lesserti* Roewer, 1943, by monotypy). *Syn.n.*
- Stygnellops* Roewer, 1943: 61 (Type species: *Stygnellops pectinipes* Roewer, 1943, by monotypy). *Syn.n.*
- Parajanellus* Goodnight & Goodnight, 1943: 13 (Type species: *Parajanellus klugi* Goodnight & Goodnight, 1943, by original designation). *Syn.n.*
- Satiastygnus* Roewer, 1963: 70 (Type species: *Satiastygnus gertschi* Roewer, 1963, by original designation). *Syn.n.*
- Stygnophareus* H.Soaes, 1970: 334 (Type species: *Stygnophareus novaisi* H.Soaes, 1970, by original designation). *Syn.n.*

Diagnosis: Dorsal scute slightly wider at groove III. Cephalothorax with 1 central spine (near anterior margin only in *S. brevispinis*). Eye mounds smooth. Area I divided by a median groove; III with 2 spines. Free tergite III with 2 tubercles larger than others. With tarsal process. Scopula absent (present only in *S. gertschi*). Pedipalpal femur large; basal sockets apex of tibia normal. Penis ventral plate with lateral margins parallel, with 3, rarely 4 pairs (*S. polyacanthus*

of distal (wide and large) and 3-4 basal pairs of setae; with dorsal process. Males of *Stygnus* only can be distinguished mainly by the careful combination of the following characteristics: number and size of tubercles on dorsal scute and free tergites; pedipalpal setae on tibia; number and size of tubercles on leg IV; shape of the segments of the leg IV; penis. Females of *Stygnus* are very alike and the specific identification is extremely difficult if based only in this sex.

Synonymic note: The extensive generic synonymy under *Stygnus* reveals the uselessness of the Roewerian system which considered as important features to distinguish genera the armature of cephalothorax, areas, posterior margin and free tergites and number of tarsal articles. This system allowed taxonomists to erect 13 genera, most of them monotypic.

Type species: *Stygnus armatus* Perty, 1833, by monotypy.

#### Key to the males of *Stygnus*.

1. Free tergite III with 1 pair of large tubercles, I-II with small tubercles similar in sizes.....2
- Free tergites I-III with 1 pair of large tubercles.....3
- 2(1).Femur IV with large tubercles in almost all extension.....*S. armatus*
- Femur IV with large tubercles only at apex.....*S. simplex*
- 3(2).Cephalothorax spine small and placed near anterior margin (Fig. 193).....*S. brevispinis*
- Cephalothorax spine large and central (Fig. 185).....4
- 4(3).Tibia IV oval (Fig. 288) or clavate (Fig. 304).....5
- Tibia IV rectangular (Fig. 190).....7
- 5(4).Tibia IV oval, femur IV with 1 ventroanterior row of 12 large tubercles (Figs. 288-289).....*S. polyacanthus*
- Tibia IV clavate, femur IV with 1 ventroanterior row of 5-6 large tubercles (Figs. 304-305).....6
- 6(5).Patella IV with 1 dorsoposterior row of tubercles, 1 large anteroapical tubercle (Figs. 238-241).....*S. luteus*

- Patella IV without dorsoposterior row of tubercles, 1 large and wide anteroapical tubercle (Figs. 304-305).....*S. tocaninensis*
- 7(4). Legs III-IV with scopula (Fig. 595).....*S. gertschi*
- Legs III-IV without scopula (Fig. 594).....8
- 8(7). Femur IV without retrolateral row of tubercles.....*S. grasshoffi*
- Femur IV with retrolateral row of tubercles reaching almost 1/3 of segment length.....9
- 9(8). Femur IV large (length relation dorsal scute/femur IV = 0.54-0.56), femur IV tuberculate only at apex.....10
- Femur IV short (length relation = 0.63-0.83), femur IV tuberculate at least distal 1/3.....11
- 10(9). Tibia IV smooth (Fig. 281).....*S. peruvianus*
- Tibia IV with 2 apical tubercles (Fig. 228).....*S. klugi*
- 11(9). Areas I-III with tubercles similar in size.....*S. marthae*
- Areas I-III with tubercles of different size.....12
- 12(11). Femur IV with 1 prolateral row in almost all extension.....13
- Femur IV with 1 prolateral row in 1/3-2/3 of extension.....15
- 13(12). Femur IV with 1 prolateral row of 4 large tubercles (Figs. 309-310).....*S. weyrauchi*
- Femur IV with 1 prolateral row of 10 or more large tubercles (Figs. 190-191).....14
- 14(13). Tibia IV with 2 ventral rows of tubercles (Fig. 190), patella IV with 1 dorsoapical central tubercle (Fig. 191).....*S. aggerum*
- Tibia IV with 2 ventroapical tubercles (Fig. 257), patella IV without dorsoapical tubercle.....*S. mediocris*
- 15(12). Patella IV with dorsal and ventral tubercles of several size, eye mounds tuberculate (Figs. 219-220).....*S. heliae*
- Apical tubercles larger than others, eye mounds smooth (Figs. 264-265).....16
- 16(15). Femur IV large tubercles contiguous (Fig. 273).....*S. pectinipes*
- Femur IV large tubercles widely separate (Fig. 265).....*S. multispinosus*

*Stygnus aggerum* Sorensen, comb. n.

(Figs. 184-191, 495-496, 600)

*Stygnus aggerum* Sorensen, 1932: 286. (Male lectotype, 3 females paralectotypes, by present designation "*Stygnus aggerum* W. S. [spec. orig.], Las Trincheiras, [Distrito Federal, Venezuela], 11.22/11/91, Meinert M. leg., 11.7.94", UZMD, male dissected, examined).

*Metastygnellus aggerum*; Mello-Lcitão, 1933: 103.

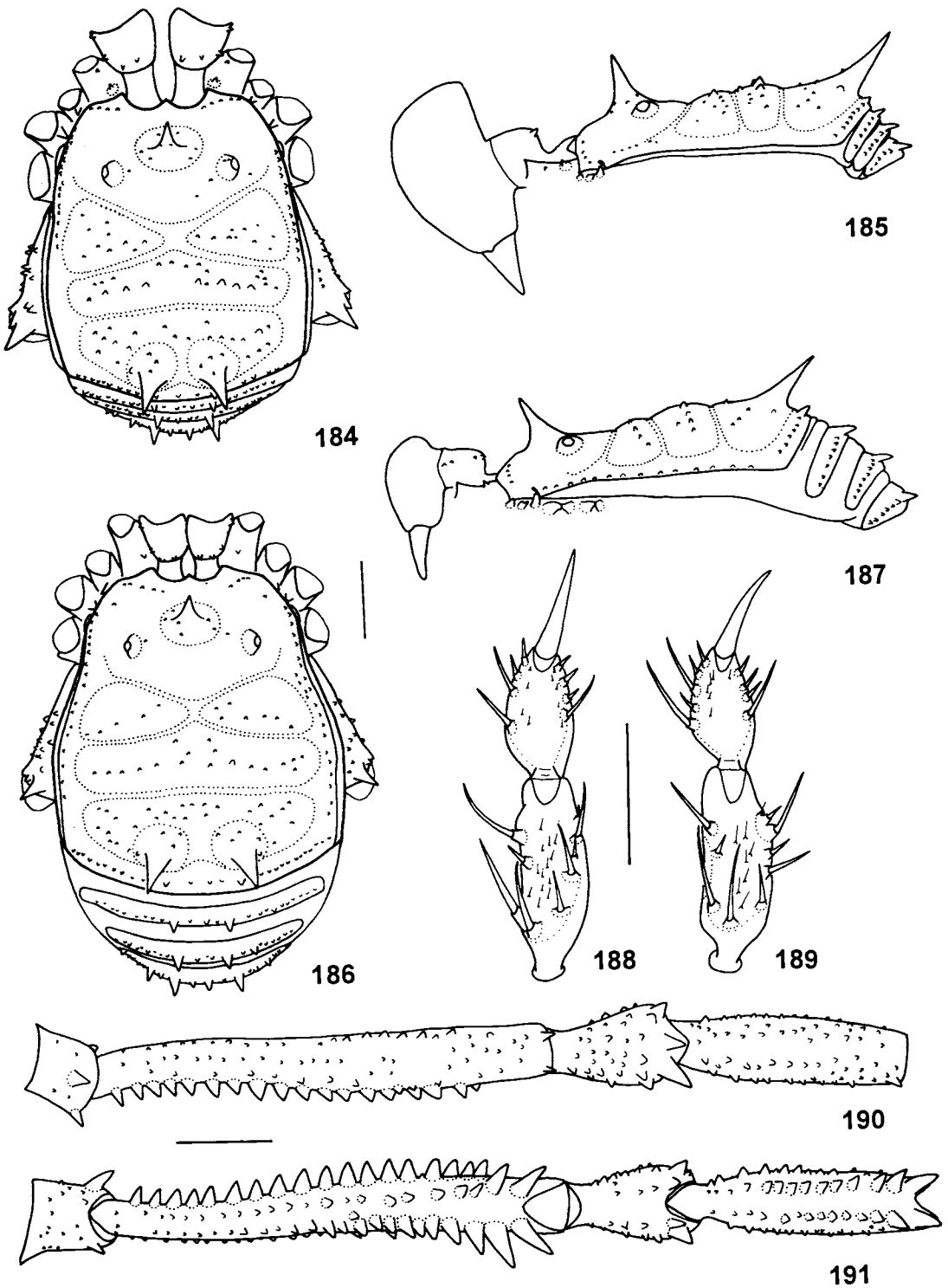
*Chelistygnus bellicosus* Roewer, 1943: 60, figs. 71, 71a-b; Caporiacco, 1951: 43 (cit.). (Male and female syntypes "Venezuela, Mérida, # 8835", SMFD, examined). *Syn.n.*

Diagnosis: The males of this species resemble those of *S. brevispinis*, *S. gertschi*, *S. heliae*, *S. klugi*, *S. mediocris*, *S. peruvianus* and *S. weyrauchi* in having one lateral and two ventral (growing in size apicad) rows of tubercles on femur IV, patella IV tuberculate, only apical larger (Figs. 190-191). They differ from those of *S. brevispinis* by the large spine on cephalothorax; from those of *S. gertschi* by the lack of scopula; from those of *S. heliae* by the smooth eye mounds; from those of *S. klugi* and *S. peruvianus* by the areas I-III much tuberculate; from those of *S. mediocris* and *S. weyrauchi* by penis.

## Male redescription (lectotype):

Measurements: DSL 3.64; CL 1.36; DSW 3.36; CW 2.84; ID 1.64; chelicera: II 3.08; III 1.40; pedipalpus 6.20; leg I 9.40; II 17.00; III 12.68; IV 16.57.

Dorsum (Figs. 184-185): Anterior margin with 4-5 tubercles each side. Cephalothorax small-tuberculate; 1 large slightly forwards spine, with tuberculate base. Lateral margins with tubercles from middle of coxa II to middle of III. Area I with 10 tubercles each side; II with 22 tubercles, larger posteriorly; III with 2 large backwards spines, slightly divergent, tuberculate base, 8 tubercles of several size each side, 5 on medioanterior part. Posterior margin with 23 tubercles (behind of spines larger). Free tergite I with 5 central with 1 large each side and 7-8 laterad tubercles; II with 4 central with 1 large each side, 7-8 laterad; III with 5 central with 1 large each side, 5 laterad. Anal plate with tubercles irregularly disposed, 1



Figs. 184-191. *Stygmus aggerum* (Sorensen). Male (lectotype): 184, habitus, dorsal view; 185, lateral view; 188, left pedipalpus, tibia and tarsus; 190, trochanter, femur, patella and tibia of the right IV leg, dorsal; 191, same, ventral. Female (paralectotype): 186, habitus, dorsal view; 187, lateral view; 189, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

row near posterior margin.

Venter: Coxa I with 3 large anterior tubercles, 1 median row of 6 large tubercles, 4 posterior, 3 large apical; II with 7 anterior, 1 median row of 6 large, 5 posterior, 4 apical; III with 1 median row of 7, 5 posterior, 4 apical. Genital operculum and stigmatic area tuberculate. Free sternites with 1 row of tubercles (lateral larger). Anal plate with tubercles on anterior part and 1 row on posterior margin.

Chelicera: Segment I with 6 tubercles; chelae wrinkled medially; II with 1 wide basal, 4 medianposterior; III with 1 wide basal, 1 wide median, 5 small distal. Without interchelar space.

Pedipalpus (Fig. 188): Coxa dorsal, with 1 wide basal tubercle, 1 apical; with 2 ventral tubercles (1 large). Trochanter with 1 dorsal and 2 ventral tubercles. Femur slightly curved, with 1 row of 5 ventral tubercles on basal half, 9 prolateral. Patella swollen at distal 1/3, small-tuberculate. Tibia slightly compressed, ectal IIIli, mesal IIili, small-tuberculate dorsally and 1 ventral row and several irregularly disposed ventrally. Tarsus: ectal Iiii, mesal IIii (IIiii) small-tuberculate dorsally and 2 ventral rows.

Legs (Figs. 190-191): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 large dorsoapical tubercle. Trochanter I with 5 ventral tubercles (1 central and 2 apical larger), 1 retrolateral basal; II with 3 dorsal (central larger) 1 prolateral, 2 retrolateral, 6 ventral; III with 3 dorsal (apical slightly larger), 2 prolateral, 2 retrolateral large, 6 ventral; IV with 1 dorsal large, 2 retrolateral (apical larger), 1 prolateral apical, several small ventral. Femora I-IV slightly curved, with 2 dorsoapical tubercles (posterior of I-III larger, anterior of IV larger), IV larger than others; III-IV with 2 ventral rows of tubercles (larger apically), 1 retrolateral row in almost all femur extension (larger at femur IV); IV with 1 prolateral row. Patella III with 1 ventroapical tubercle; apex of IV with 2 ventral, 1 prolateral, 1 retrolateral, 3 dorsal. Tibiae III-IV with 2 ventral rows of tubercles (apical larger); IV with bifid apical tubercle on left leg. Tarsal segmentation: 6, 10-9(2-3), 6, 7. First article of tarsus I slightly swollen.

Penis (Figs. 495-496): Ventral plate with 2 intermediary and 3 basal pairs of setae.

Colour (holotype of *C. bellicosus*): Dark-brown, margins of dorsal scute and leg IV darker. Chelicera and spine of cephalothorax black reticulate.

Female redescription (paralectotype; Figs. 186-187, 189):

Measurements: DSL 3.88; CL 1.32; DSW 3.60; CW 2.80; ID 1.48; chelicera: II 1.74; III 1.22; pedipalpus 6.32; leg I 9.28; II 16.91; III 12.72; IV 16.44.

Tubercles and spine of cephalothorax smaller than male. Area I with 8-10 tubercles each side; II with 18; III with tubercles in all area. Free tergite I with 3 central tubercles with 1 large each side, 8-9 laterad; II with 4 central with 1 large each side, 7-8 laterad; III with 3 central with 1 large each side, 7 laterad. Pedipalpus: coxa without dorsoapical tubercle; tibia ectal IIIili, mesal Iii; tarsus: ectal Iiii, mesal Iilii (IIii). Legs with tubercles smaller and lesser than male. Tibia IV with apical tubercles. Tarsal segmentation: 6, 10-9, 6, 7. Brown, darker on anterior and lateral margins and free tergites. Cephalothorax with small black spots; spine with black reticulate base.

Type locality: Las Trincheiras, Distrito Federal, Venezuela (10°33'N - 66°59'W).

Distribution (Fig. 600): Venezuela (Distrito Federal, Mérida).

Note: The male (SMFD-291) cited erroneously as *Chelistygnus bellicosus* by ROEWER (1943), belongs to a new species, *Stygnus grasshoffi*, sp.n..

### *Stygnus armatus* Perty

*Stygnus armatus* Perty, 1833: 203, 207, pl. 40, fig. 3; Koch, 1839a: 11; Gervais, 1844: 111; Simon, 1879: 220; Mello-Leitão, 1923: 178, 196 (cit., key); 1932: 422 (rdesc.). (Male holotype, Rio Negro, Amazonas, Brazil, according to original description, probably lost, not examined).

Diagnosis: *S. armatus* and *S. simplex* differ from other species of genus in having 1 pair of

large tubercles on free tergite III and none large tubercle on tergites I-II. *S. armatus* has femur IV with ventral tubercles in almost all extension, instead of with few tubercles on apex as in *S. simplex*. The other characteristics shown by Perty (1833) and Gervais (1844) are present in almost all *Stygnus* species and are insufficient to diagnosed this species.

Type locality: Rio Negro, Amazonas, Brazil.

Note: The specimens described by Roewer (1913b:427, fig. 168 and 1923: 572, fig. 717) from Pará belong to *Stygnus luteus*.

***Stygnus brevispinis*, sp.n.**

(Figs. 192-199, 497-498, 601)

Diagnosis: This species differs from all other *Stygnus* in having a short spine on cephalothorax close to anterior margin.

Etymology: In reference to the small spine on cephalothorax.

Type material: ♂ holotype and 1 ♀ paratype, "Bolivia, Dept Santa Cruz; La Bola, Jan.8, 1991, Goloboff, Santisteban & McHugh leg.", AMNH, ♂ dissected.

Type locality: La Bola, Santa Cruz, Bolivia (17°45'W - 63°14'S).

Note. The spine on anterior margin is a synapomorphy of *Sickesia*. However, *S. brevispinis* has no tubercle on eye mound and ventral plate narrower distally, characteristics of *Sickesia* spp.

**Male description (holotype):**

Measurements: DSL 4.44; CL 1.88; DSW 3.88; CW 3.24; ID 1.60; chelicera: II 3.84; III 1.92; pedipalpus 6.14; leg I 10.56; II 19.12; III 13.44; IV 18.44.

Dorsum (Figs. 192-193): Anterior margin with 7-8 tubercles each side. Cephalothorax with 1 small median forwards spine. Lateral margins with tubercles from coxa II to posterior margin. Area I with 6 tubercles each side, 1 pair larger; II with 13 (1 pair larger); III with 2 divergent backwards spines with tuberculate base, 3-4 tubercles each side, 1 medioanterior, 1 behind each spine. Posterior margin with 21 tubercles. Free tergite I with 3 central tubercles with 1 larger each side and 6-7 lateral tubercles; II with 3 central with 1 pair larger each side, 5-6 laterad; III with 4 cen-

tral (1 large) with 1 pair larger each side, 3 laterad. Anal plate with 2 median rows (posterior irregular) and 1 row on posterior margin.

Venter: Coxa I with 8 anterior tubercles, 1 larger median row with 6, 3 posterior, 4 apical; II with 6 anterior, 7 median, 4 posterior, 4 apical; III with 4 anterior, 6 median, 9 posterior, 4 apical; IV irregularly tuberculate. Stigmatic area irregularly tuberculate, posterior margin with 1 row of tubercles. Free sternites with 1 row of tubercles. Anal plate with 1 median row curved and other on posterior margin.

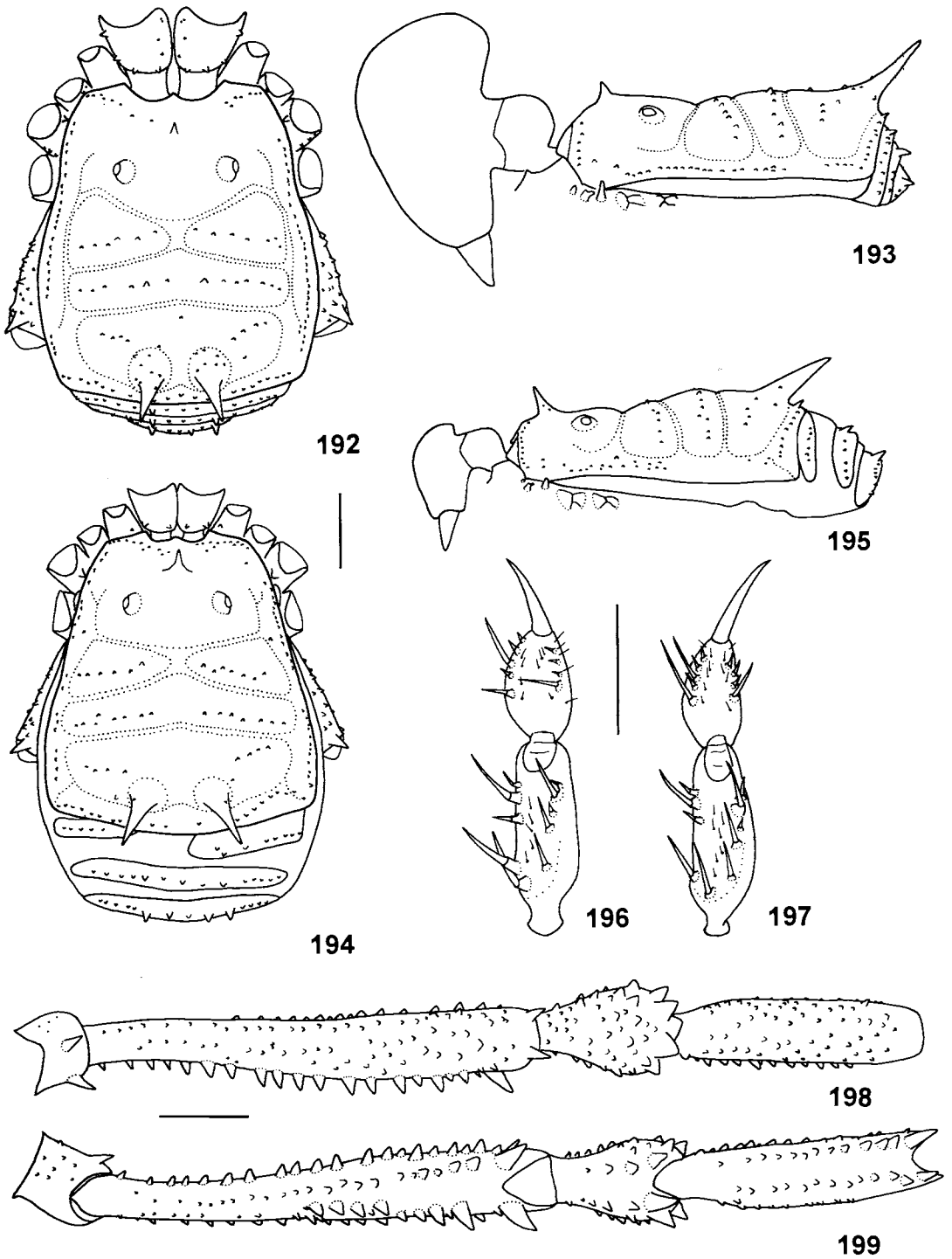
Chelicera: Swollen. Segment I with 6 tubercles; II with 1 wide median, 4 small distal teeth; III with 1 wide basal, 1 wide median and 3 smaller distal.

Pedipalpus (Fig. 196): Coxa with 1 large ventral and 1 small dorsal tubercle. Trochanter with 2 large ventral and 1 small dorsal tubercle. Femur curved, with 9 ventral tubercles, minute-tuberculate dorsally. Patella swollen at distal half, small-tuberculate. Tibia: ectal Iiili, mesal Iiili, with ventral and dorsal tubercles, compressed. Tarsus: ectal Iiii, mesal Iiili, tuberculate ventrally.

Legs (Figs. 198-199): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 large dorsoapical tubercle. Trochanter I with small dorsal tubercles, 3 large ventral; II with 8 ventral (2 larger), 2 retrolateral, several small dorsal (1 larger); III with 6 ventral (2 large), 2 retrolateral (apical larger), small dorsal; IV with 10 ventral, 2 retrolateral, 1 dorsoapical large. Femora I-IV slightly curved, with 2 apical tubercles (posterior larger); III-IV with 2 ventral rows of tubercles, larger at distal half, 1 retrolateral in all extension, 1 prolateral with smaller tubercles. Patella II with 3 dorsoapical, 1 large ventral on right leg and small on left leg; IV with 2 ventral (anterior larger), 2 prolateral, 1 retrolateral, 3 dorsoapical. Tibia IV with 2 ventral rows of tubercles (apical posterior larger). Claws subparallel, tarsal process large, scopula with 1/3 of article size. Tarsal segmentation: 6, 12, 6, 7. Tarsus I first article swollen.

Penis (Figs. 497-498): Ventral plate with 2 intermediary and 3 basal pairs of setae.

Colour: Dark-brown. Chelicera and medioanterior part of cephalothorax black reticulate. Dorsal scute and legs with small black spots. Leg IV darker to tibia.



Figs. 192-199. *Stygmus brevispinis*, sp.n. Male (holotype): 192, habitus, dorsal view; 193, lateral view; 196, left pedipalpus, tibia and tarsus; 198, trochanter, femur, patella and tibia of the right IV leg, dorsal; 199, same, ventral. Female (paratype): 194, habitus, dorsal view; 195, lateral view; 197, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.



Female description (paratype; Figs. 194-195, 197):  
Measurements: DSL 4.52; CL 1.72; DSW 3.80; CW 2.80; ID 1.36; chelicera: II 2.04; III 1.24; pedipalpus 5.48; leg I 9.60; II 16.72; III 12.60; IV 17.46.

Anterior margin with more tubercles than male. Spine of cephalothorax larger than male. Area I with 6-7 tubercles (central pair larger); II with 15; III. spines more backwards than male. Free tergite I divided in 2 parts of different size, teratologic. Femora II-IV without lateral rows of tubercles, more curved than male. Patella IV with 1 ventroapical tubercle, 1 prolateral, 2 retrolateral, 2 dorsal. Tarsal segmentation: 6, 10, 6, 7.

Distribution (Fig. 601): Recorded only from type locality.

*Stygnus ferrugineus* (Perty), comb.n.

*Goniosoma ferrugineum* Perty, 1833: 202; Gervais, 1844: 108. (Female holotype, Brazil, probably lost, not examined).

*Stygnus ferrugineus*; C.L.Koch, 1839a: 11; 1839b: 26, fig. 550; Simon, 1879: 221.

*Stygnellus ferrugineus*; Roewer, 1913b: 435, fig. 171; 1923: 574, fig. 720; Mello-Leitão, 1923: 178; 1932: 423, fig. 280.

Note: This species shows the habitus of the *Stygnus* species however, it is impossible to diagnose this species based on Perty (1833) and Gervais (1844) descriptions. I prefer to maintain this species as *species inquerenda*.

*Stygnus gertschi* (Roewer), comb. n.

(Figs. 200-207, 499-500, 600)

*Satiastygnus gertschi* Roewer, 1963: 71, fig. 46. (Male holotype, female allotype, female and 2 males paratypes "Columbien [Colombia], Monterreduodo [Monterredondo], u. Steinen, 23-26.VII.55, Sturm leg., male typus, female allotypus, 3 male paratyp." SMFD-12718/5, male dissected, examined).

Diagnosis: This species differs from all other species of *Stygnus* in having scopula on tarsi III-IV. Male redescription (holotype):

Measurements: DSL 3.72; CL 1.64; DSW

3.28; CW 2.92; ID 1.68; chelicera: II 3.36; III 1.60; pedipalpus 6.64; leg I 9.48; II 16.64; III 13.04; IV 16.97.

Dorsum (Figs. 200-201): Anterior margin with 3 minute tubercles each side. Cephalothorax with 1 central forwards spine. Eye mounds smooth. Lateral margins with tubercles from apex of coxa II to middle of III. Area I with 3 tubercles each side; II with 9; III with 3 each side, 2 parallel backwards spines with tuberculate base. Posterior margin with 15 tubercles. Free tergite I with 1 central tubercle with 1 large each side and 4-6 laterad tubercles; II with 4 central with 1 larger each side, 4 laterad; III with 5 central with 1 large each side, 3 laterad. Anal plate with 1 median and 1 posterior row of tubercles.

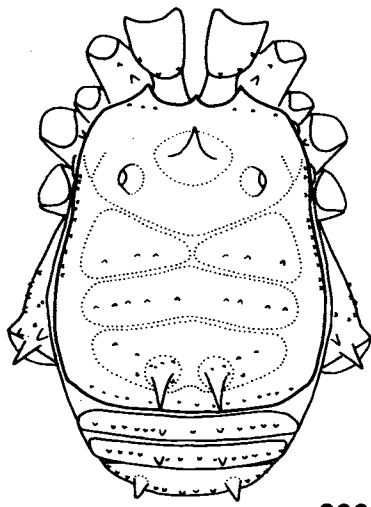
Chelicera: Swollen. Segment I with 3 tubercles; II with 1 wide median, 2 small distal; III with 1 wide basal, 1 wide median, 2 small distal. With interchelar space.

Pedipalpus (Fig. 204): Coxa with 1 large ventroapical tubercle, 2 dorsal (basal larger). Trochanter with 2 ventral tubercles, 1 dorsal. Femur slightly curved, with 5 ventral tubercles (basal slightly larger), 2 prolateral. Patella swollen at distal half. Tibia: ectal Ilii, mesal Ilii, with 1 ventral row of tubercles, tuberculate dorsally. Tarsus: ectal Iiii, mesal Ilii, with 2 ventral rows of tubercles.

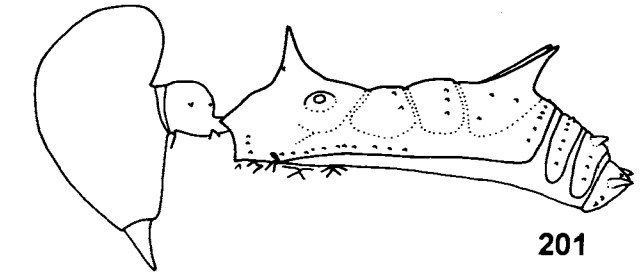
Legs (Figs. 206-207): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 large dorsoapical tubercle, 1 subapical smaller. Trochanter I with 3 ventral tubercles, 1 prolateral; II with 4 ventral, 2 retrolateral, 3 dorsal; III with 7 ventral, 2 lateral posterior, 5 dorsal; IV with 8 ventral, 4 prolateral, 1 retrolateral apical large, 8 dorsal (central larger). Femora I-IV curved; III-IV with 2 small dorsal tubercles, with 2 ventral rows increasing size apicad. 1 retrolateral row. Patella IV with 4 ventroapical tubercles (2 each side), 3 dorsoapical, several small dorsal. Tibia IV with 2 ventral backwards tubercles. Scopula dense with thin hairs. Tarsal segmentation: 6, 11, 6, 7.

Penis (Figs. 499-500): Ventral plate with 1 intermediary and 3 basal pairs of setae.

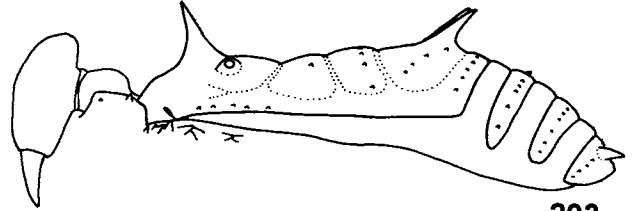
Colour: Brown. Femur and tibia IV darker. Dorsal scute and free tergites with black spots (denser on posterior margin). Chelicera and medioanterior part of cephalothorax black reticulate. Pedipalpus yellowish.



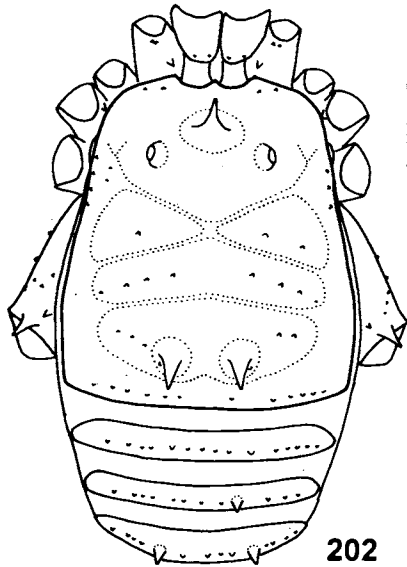
200



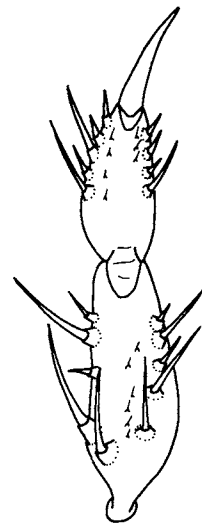
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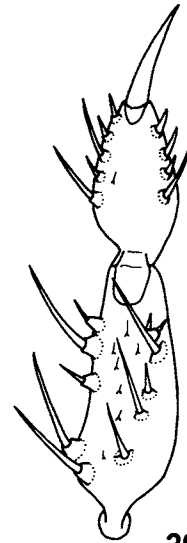
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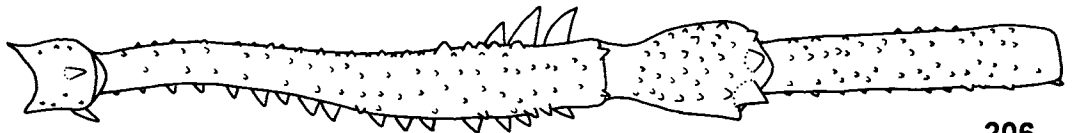
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207

Figs. 200-207. *Stygnus gertschi* (Roewer), comb.n. Male (holotype): 200, habitus, dorsal view; 201, lateral view; 204, left pedipalpus, tibia and tarsus; 206, trochanter, femur, patella and tibia of the right IV leg, dorsal; 207, same, ventral. Female (allotype): 202, habitus, dorsal view; 203, lateral view; 205, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Female redescription (allotype; Figs. 202-203, 205):

Measurements: DSL 4.08; CL 1.80; DSW 3.60; CW 2.84; ID 1.48; chelicera: II 2.12; III 1.04; pedipalpus 6.64; leg I 9.36; II 16.72; III 13.12; IV 17.82.

Anterior margin with 2 tubercles. Lateral margins with tubercles between coxae III-IV. Area I with 1-2 tubercles each side; II with 4 each side; III with 2-3 each side, base of spine with 1 tubercle. Posterior margin with 12 tubercles. Free tergite I with 4 central with 1 large each side and 4-5 laterad tubercles; II with 12 (1 large); III with 4 central with 1 large each side, 4 laterad. Chelicera: segment I with 2 tubercles; II with 1 wide median, 3 small distal; III with 3 small.

Type locality: Monterredondo, Cauca, Colombia (03°13'N - 76°12'W).

Distribution (Fig. 600): Recorded only from type locality.

*Stygnus grasshoffi*, sp.n.

(Figs. 208-212, 501-502, 601)

*Stygnellus ferrugineus*; Roewer, 1931: 150 (mis.)

*Chelistygnus bellicosus*; Roewer, 1943: 60 (mis.)

Diagnosis: The males of this species differ from those of other *Stygnus* by the combination of following characteristics: femur IV with two ventral rows of tubercles on distal 1/3, lack of large prolateral tubercles, 3 dorsoapical tubercles; tibia IV rectangular, with 2 ventral rows of tubercles (Figs. 211-212).

Etymology: In honor of Dr. Manfred Grasshoff, curator of Arachnida collection of SMFD.

Type material: ♂ holotype, Venezuela, Distrito Federal, near Caracas, (CR-291, SMFD).

Type locality: near Caracas, Distrito Federal, Venezuela (10°30'N - 66°55'W).

Male description (holotype):

Measurements: DSL 4.64; CL 2.00; DSW 4.60; CW 3.40; ID 1.72; chelicera: II 3.92; III 1.92; pedipalpus 6.60; leg I 11.48; II 19.93; III 15.18; IV 20.08.

Dorsum (Figs. 208-209): Anterior margin with 6-7 tubercles each side. Cephalothorax with 1 median upwards spine with tuberculate base; 3 tubercles behind spine. Eye mounds smooth. Lateral margins with tubercles from coxa II to posterior

margin. Area I with 7 tubercles each side; II with 21 (2 pairs larger); III with 6 each side, 1 medioanterior, spines slightly divergent and backwards, 1 tubercle between spines. Posterior margin with 2 central tubercles with 1 larger each side and 4-5 laterad. Free tergite I with 3 central with 1 larger each side, 7-8 laterad; II with 3 central with 1 larger each side, 5-7 laterad; III 4 central with 1 larger each side, 3-4 laterad. Anal plate tuberculate.

Venter: Coxa I with 9 anterior tubercles, 1 median row of 6 large tubercles, 1 posterior row of 6, 4 apical; II with 7 anterior, 8 median, 9 posterior, 4 apical; III with 5 apical; III-IV irregularly tuberculate. Genital operculum, stigmatic area and anal plate irregularly tuberculate. Posterior margin and free sternites with 1 row of tubercles, larger laterally.

Chelicera: Swollen. Segment I with 8-9 tubercles; II with 4 small; III with 1 wide basal and 1 wide median, 3 small distal. With interchelar space.

Pedipalpus (Fig. 210): Coxa with 1 large ventral and 1 dorsal tubercles. Trochanter with 2 ventral and 1 dorsal tubercles. Femur slightly curved, with 9 ventral, 10 prolateral and small dorsal tubercles. Patella swollen at distal 1/5, small-tuberculate. Tibia: ectal IIIi, mesal IIIi, compressed, tuberculate ventral and dorsally. Tarsus: ectal liii, mesal lili, 2 ventral rows of tubercles.

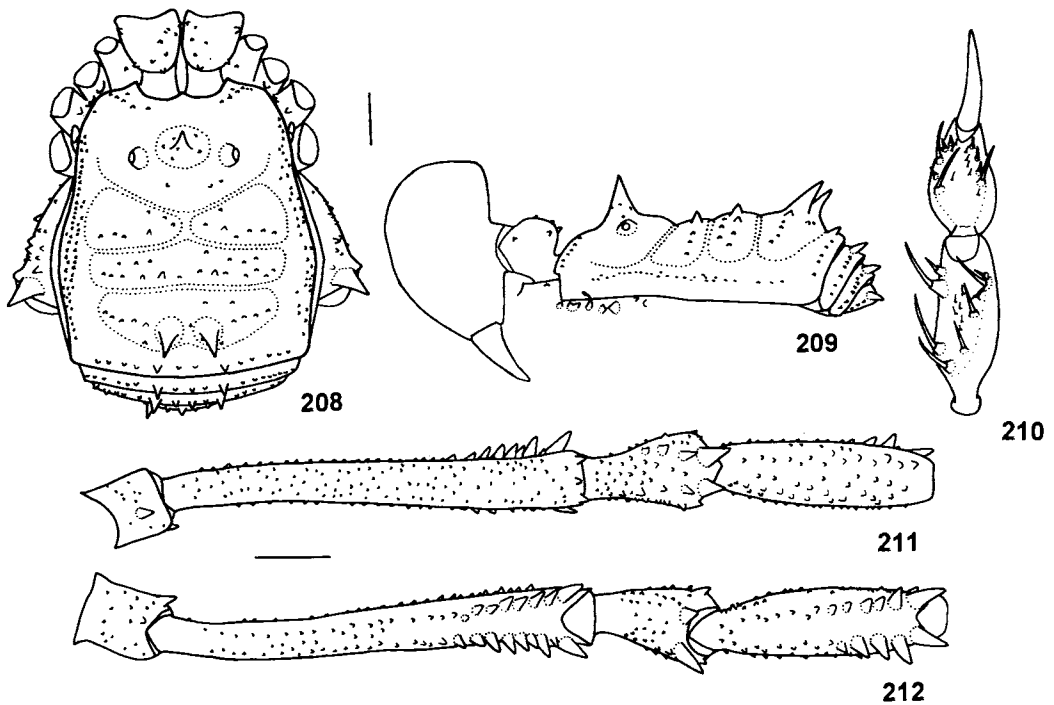
Legs (Figs. 211-212): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior; III with 1 anterior, 1 posterior; IV tuberculate, 1 dorsoapical larger tubercle. Trochanter I with 5 ventral and 2 retrolateral tubercles; II with 6 ventral, 1 prolateral, 1 retrolateral, 1 large dorsal; III with 12 ventral, 1 dorsal; IV with 10 ventral, 4 retrolateral (apical larger), 1 large and 14 small dorsal. Femora I-IV with 3 dorsoapical tubercles; II-IV with 2 ventral rows (III-IV larger at distal 1/3). Patellae III-IV with 2 large ventral tubercles (apical larger), 2 dorsoapical large. Tibia III-IV with 2 ventral rows of tubercles, larger at distal 1/3. Tarsal segmentation: 6, 11, 6, 7.

Penis (Figs. 501-502): Ventral plate with 1 intermediary and 4 basal pairs of setae.

Colour: Brown. Lateral margins, free tergites and leg IV dark-brown. Chelicera black reticulate.

Female unknown.

Distribution (Fig. 601): Recorded only from type locality.



Figs. 208-212. *Stygnus grasshoffi*, sp.n. Male (holotype). 208, habitus, dorsal view; 209, lateral view; 210, left pedipalpus, tibia and tarsus; 211, trochanter, femur, patella and tibia of the right IV leg, dorsal; 212, same, ventral. Scale bars: 1 mm.

***Stygnus heliae*, sp.n.**

(Figs. 213-220, 503-504, 600)

**Diagnosis:** The males of *S. heliae* differs from those of other *Stygnus* species by the combination of following characteristics: trochanter IV with large dorsal and large retrolateral apical tubercles; femur IV swollen at distal 1/3, with 1 retrolateral row of tubercles at distal 1/3, with 2 ventral rows of tubercles contiguous at distal 1/3.

**Etymology:** In honor of Helia E. M. Soares, a famous Brazilian opiliologist.

**Type material:** ♂ holotype "Brazil, Pará, Santarém Alter do Chão, 15.X.1984, W. E. Magnusson leg.". Paratypes: same data as holotype, 1 ♀, INPA; 1 ♂, MZSP-14254.

**Male description (holotype):**

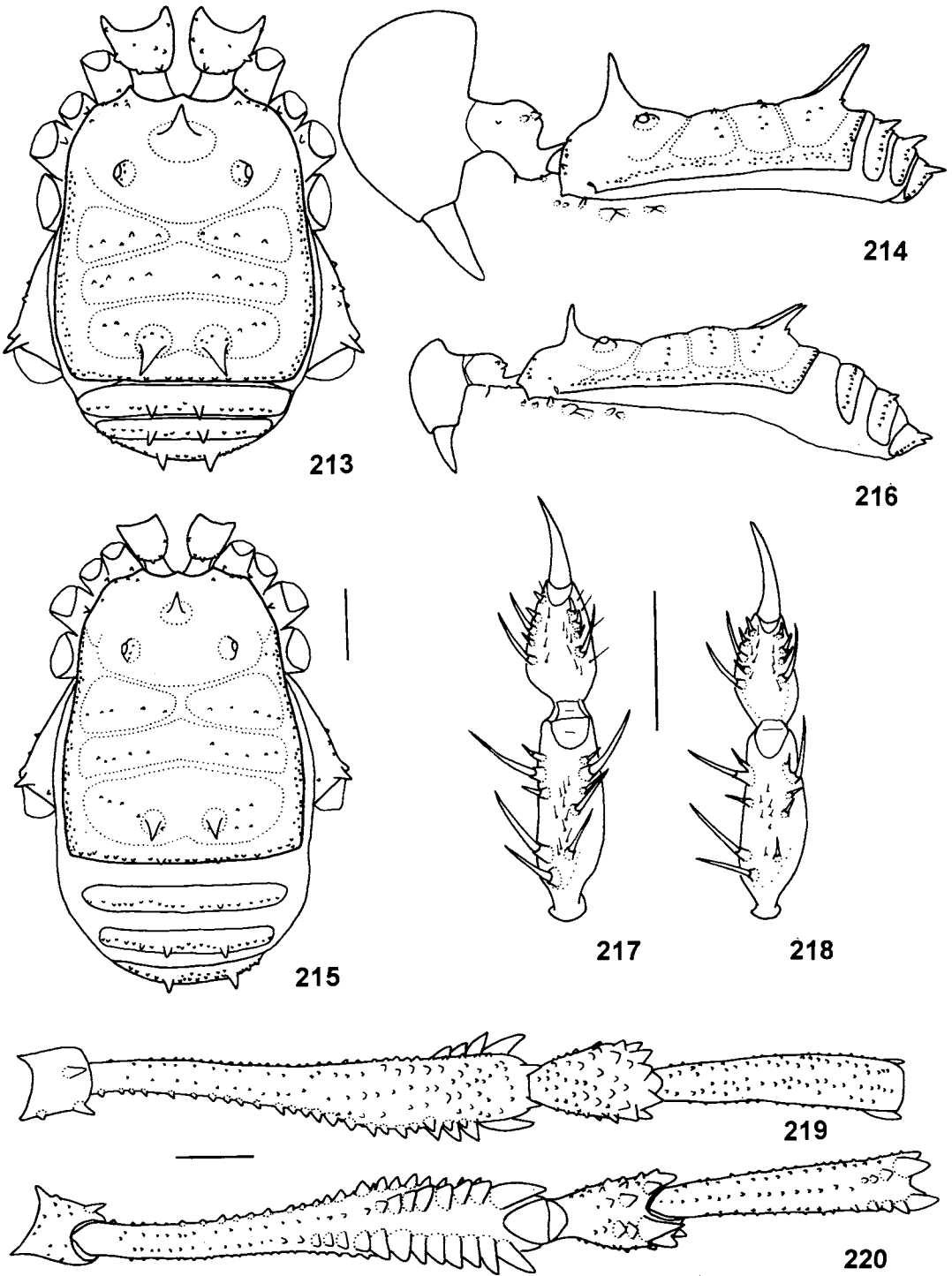
**Measurements:** DSL 4.12; CL 1.68; DSW 3.92; CW 3.40; ID 1.76; chelicera: II 4.20; III 2.04; pedipalpus 7.04; leg I 11.76; II 20.94; III 14.92; IV 20.13.

**Dorsum (Figs. 213-214):** Anterior margin with 4-5 tubercles (2 large). Cephalothorax with 1

large forwards spine. Eye mounds with 3 small tubercles. Lateral margins with 1 irregular row of tubercles from coxa II to posterior margin. Area I with 4-5 tubercles each side; II with 10; III with 3 on each side, 2 slightly divergent backwards spines with base with 4 tubercles. Posterior margin with 1 row of 21 tubercles, pair behind spines larger. Free tergite I with 3 small central with 1 larger each side and 3-7 laterad tubercles; II with 3 central with 1 larger each side, 6 laterad; III with 4 central with 1 larger each side, 4 laterad. Anal plate with tubercles on median and posterior margin.

**Venter:** Coxa I with 6 tubercles, 6-8 median, 5 posterior, 3 apical; II with 5 anterior, 7-9 median, 9 posterior, 3 apical; III with 9 anterior, 8 median, 7 posterior; IV irregularly tuberculate. Stigmatic area with tubercles irregularly disposed on posterior margin. Free sternites with 1 row of tubercles. Anal plate with 1 irregular row of 10 tubercles at middle and 19 near posterior margin.

**Chelicera:** Swollen. Segment I with 9 tubercles; II with 1 wide median and 4 small distal teeth; III with 1 wide basal, 1 wide median and 3 small distal teeth. With interchelar space.



Figs. 213-220. *Stygnus heliae*, sp.n. Male (holotype): 213, habitus, dorsal view; 214, lateral view; 217, left pedipalpus, tibia and tarsus; 219, trochanter, femur, patella and tibia of the right IV leg, dorsal; 220, same, ventral. Female (paratype): 215, habitus, dorsal view; 216, lateral view; 218, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Pedipalpus (Fig. 217): Coxa with 1 large ventral and 2 small dorsobasal tubercles. Trochanter with 1 small and 1 large ventral tubercles, 2 dorsal. Femur curved, with 1 row of 8 ventral tubercles, 3 prolateral apical, minute-tuberculate dorsally. Patella swollen at distal half, small-tuberculate dorsally. Tibia: ectal IIIIi, mesal IIIIi, compressed, tuberculate ventral and dorsally. Tarsus: ectal IIIIi, mesal IiIii, 2 ventral rows of tubercles.

Legs (Figs. 219-220): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 large dorsoapical tubercle. Trochanter I with 3 ventral tubercles; II with 6 ventral, 1 retrolateral basal, 1 large and 1 small dorsoapical; III with 6 ventral, 2 retrolateral, 1 large dorsal; IV with 5 ventral, 2 retrolateral, 1 large dorsal. Femora I-IV curved; II-IV with 2 dorsoapical tubercles similar in size; III with 2 ventral rows of tubercles; IV swollen at distal 1/3, with 2 ventral rows of tubercles contiguous at distal 1/3 (anterior larger), 1 row retrolateral and 1 prolateral at distal 1/3. Patella IV very tuberculate, with 2 dorsoapical tubercles larger than others, 2 prolateral, 2 retrolateral, 2 ventral rows of tubercles. Tibia IV swollen at distal half, 2 ventral rows of tubercles, apical 3 times larger than anterior. Metatarsus I-IV with light transverse spots segment; III-IV with 2 ventral rows of wide hairs. Tarsal segmentation: 6, 13-14, 6, 7.

Penis (Figs. 503-504): Ventral plate with 2 intermediary and 4 basal pairs of setae.

Colour: Brown. Chelicera and medioanterior part of cephalothorax black reticulate. Leg IV dark-brown. Pedipalpus and dorsum with black spots.

Female description (paratype; Figs. 215-216, 218):

Measurements: DSL 4.00; CL 1.48; DSW 4.12; CW 3.00; ID 1.48; chelicera: II 2.24; III 1.16; pedipalpus 11.84; leg I 8.32; II 17.92; III 13.32; IV 13.86.

Area I with 5 tubercles; III with 4 lateral, 1 at base of spine. Pedipalpus: femur with small dorsal tubercles. Tibia: ectal IIIIi, mesal IIIIi; tarsus ectal IIIIi, mesal IiIii. Leg IV not swollen distally, tubercles smaller than male. Patella IV with 1 small ventral tubercle. Tibia IV with apical tubercles slightly larger. Tarsal segmentation: 6, 12, 6, 7.

Type locality: Alter do Chão, Santarém, Pará, Brazil (02°31'S - 54°57'W).

Distribution (Fig. 600): Recorded only from type locality.

*Stygnus klugi* (Goodnight & Goodnight), comb. n.  
(Figs. 221-228, 505-506, 601)

*Parajanellus klugi* Goodnight & Goodnight, 1943: 13 fig. 40, 41. (Male holotype, male and female paratypes, "Río Alto Marañon [Marañon] between Rios Cenipa and Nieva, Peru, sept 15, 1924, Klug *leg.*, male, holotype" AMNH, holotype dissected, examined).

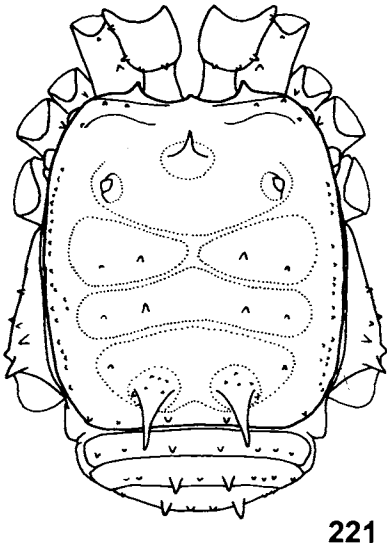
Diagnosis: The males of this species differ from those of other *Stygnus* by the combination of following characteristics: areas I-III less tuberculate (2 each side), coxa IV less tuberculate (Fig. 221); femur IV with one row of tubercle on length 3/4 (Fig. 227); tibia IV with 2 large ventroapical tubercles (Figs. 228).

Male redescription (holotype):

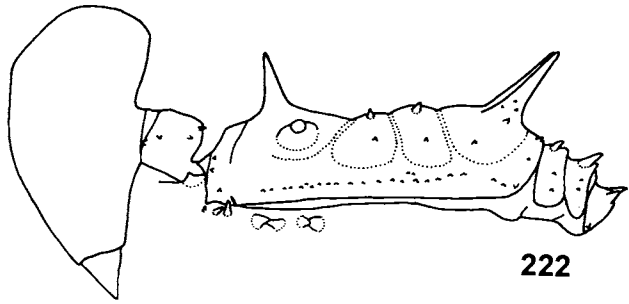
Measurements: DSL 4.16; CL 1.88; DSW 3.72; CW 3.40; ID 1.88; chelicera: II 3.64; III 2.00; pedipalpus 8.88; leg I 12.14; II 23.71; III 18.81; IV 24.25.

Dorsum (Figs. 221-222): Anterior margin with 2 tubercles each side. Cephalothorax with 1 large central spine, 1 tubercle near odoriferous gland. Lateral margins with 1 row of small tubercles from anterior of coxa III to apex of coxa IV. Areas I-III with 2 pairs of large tubercles; III with 1 pair of large divergent and backwards spine with small-tuberculate base. Posterior margin with 2 large central and 1-2 laterad tubercles. Free tergite I with 2 large central, 2-3 laterad; II with 1 central with 1 large each side, 2-4 laterad; III with 2 central with 1 large each side, 1-2 laterad. Anal plate with 3 median tubercles and 1 row on posterior margin.

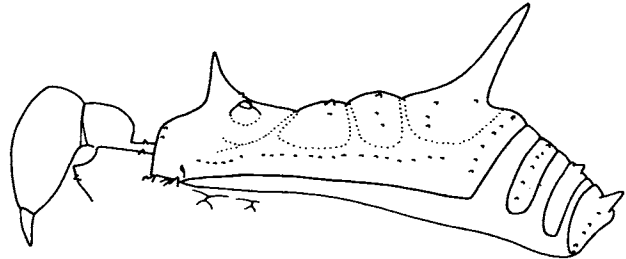
Venter: Coxa I with 1 median row of 5 large, 5 posterior and 2 apical tubercles; II with 1 median row of 7, 3 anterior, 7 posterior, 3 apical; IV irregularly tuberculate. Stigmatic area small-tuberculate. Posterior margin and free sternites with 1 row of tubercles. Anal plate with 1 row at middle and 1 near posterior margin.



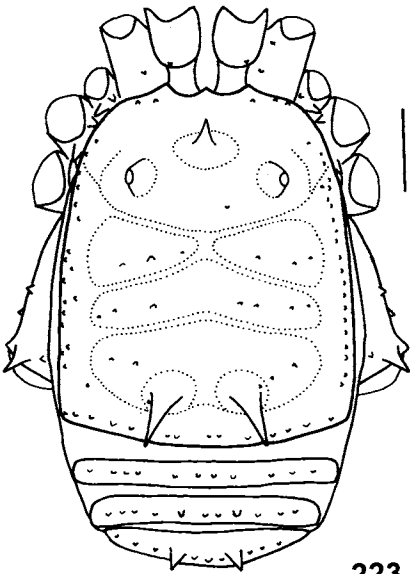
221



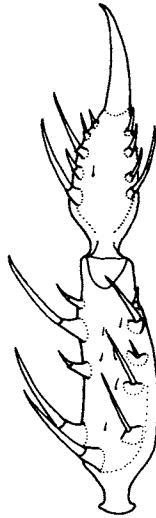
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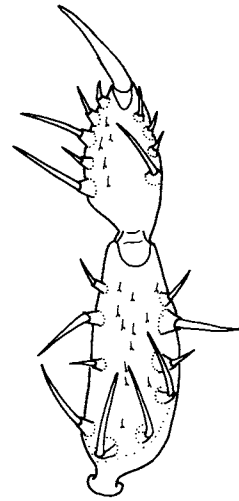
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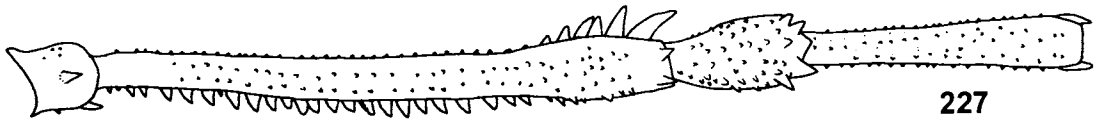
223



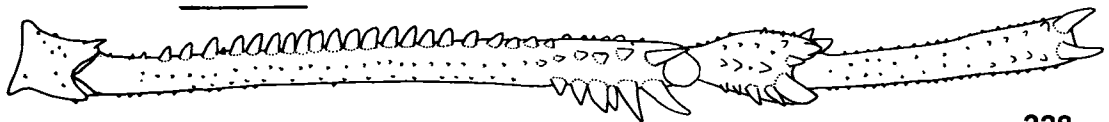
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Figs. 221-228. *Stygnus khugi* (Goodnight & Goodnight), comb.n. Male (holotype): 221, habitus, dorsal view; 222, lateral view; 225, tibia and tarsus of left pedipalpus; 227, femur, patella and tibia of the right IV leg, dorsal; 228, same, ventral. Female (MUSM-230): 223, habitus, dorsal view; 224, lateral view; 226, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Chelicera: Swollen. Segment I with 4 tubercles; II-III with 1 large median and 3 small distal teeth.

Pedipalpus (Fig. 225): Coxa, dorsally, with 1 anterior tubercle and 1 eminence with 1 posterior tubercle, 1 large ventral tubercle. Trochanter with 1 dorsomedian tubercle; 1 ventromedian and 1 basal. Femur slightly curved, with 1 ventral row of 5 tubercles. Patella swollen distally. Tibia: ectal IIII, mesal IIII, small-tuberculate ventral and dorsally. Tarsus: ectal IIII, mesal IIII.

Legs (Figs. 227-228): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 large dorsoapical tubercle. Trochanter I with 3 large ventral tubercles; II with 1 dorsal tubercle larger, 2 retrolateral, several ventral; III with 1 dorsal tubercle, 2 lateral, 1 basal distal; IV with 1 large and several small dorsal, 1 small basal retrolateral, 1 larger distal retrolateral, several small ventral tubercles. Femur III straight, with 2 small dorsoapical and 2 large ventroapical tubercles; IV straight, slightly swollen apically, with 2 dorsoapical tubercles, 1 row retrolateral to near apex, 2 ventral rows (posterior larger) of tubercles larger at swollen part. Patella IV with 2 large dorsal tubercles, 2 retrolateral, 1 prolateral, 2 ventral rows (anterior larger). Tibia IV swollen at distal 1/3, with 2 large ventroapical backwards tubercles (posterior larger). Tarsal segmentation: 6, 12, 6, 7.

Penis (Figs. 505-506): Ventral plate with 2 intermediary and 3 basal pairs of setae.

Colour: Dorsal scute brown with black spots. Free tergites darker. Cephalothorax, chelicera and lateral margins black reticulate.

Female redescription (MUSM-230), (Figs. 223-224, 226):

Measurements: DSL 4.00; CL 1.72; DSW 3.64; CW 3.12; ID 1.80; chelicera: II 1.96; III 1.14; pedipalpus 8.04; leg I 11.96; II 28.13; III 19.49; IV 24.40.

Anterior margin with 2-3 tubercles each side. Area I with 3 tubercles each side; II with 7; III with 2 each side. Lateral margins with 1 irregular row of tubercles from coxa II to posterior margin. Posterior margin with 13 tubercles. Free tergite I with 11 tubercles; II with 2 central with 1 larger each side, 4 laterad; II with 3 central with 1

larger each side, 3-4 laterad. Anal plate with 5 tubercles median and 1 row at posterior margin. Femur IV with 4 tubercles on prolateral part. Patella IV with 1 dorsoapical tubercle. Tarsal segmentation: 6, 10-11, 6, 7.

Bionomics: The male (MUSM-238) and a female (MUSM-230) were collected on *Astrocarium* sp. (Palmaceae); those from Pachitea (SMNK) on epiphyte.

Type locality: río Marañon, between Cenipa and Nieva rivers, Amazonas, Peru.

Distribution (Fig. 601): Peru (Loreto, Amazonas and Huanuco).

Material examined: Peru. Loreto: P. V. Boca of Samirina, 04°39'S - 74°21'W, 100 m, 11.VIII.1988, D. Silva leg., 1 ♀ (MUSM-146); Jenaro Herrera, 04°55'S - 73°45'W, 100 m, 23.VIII.1988, D. Silva leg., on palm *Astrocarium*, 1 ♀ (MUSM-230); same data, 1 ♂ (MUSM-238); same data, 24.VIII.1988, 1 ♂ (MUSM); Huanuco: Dantas-la-Molina, S.W. of Puerto Inca 270 m, 18.V-1.VI.1987, D. Silva leg., 1 ♂ (MUSM-37); Panguana (río Yuyapichis, Pachitea, 9°37'S, 74°56'W), 260 m, on epiphyte, primary forest, Verhaagh leg., 1 ♂ (SMNK).

### *Stygnus lesserti* (Roewer), comb n.

(Figs. 229-231)

*Stygnellomma lesserti* Roewer, 1943: 61 figs. 72, 72a, 72b. (Female holotype, "Rio Negro, [Amazonas, Brazil], typus, coll. Rwr # 5853" SMFD, examined).

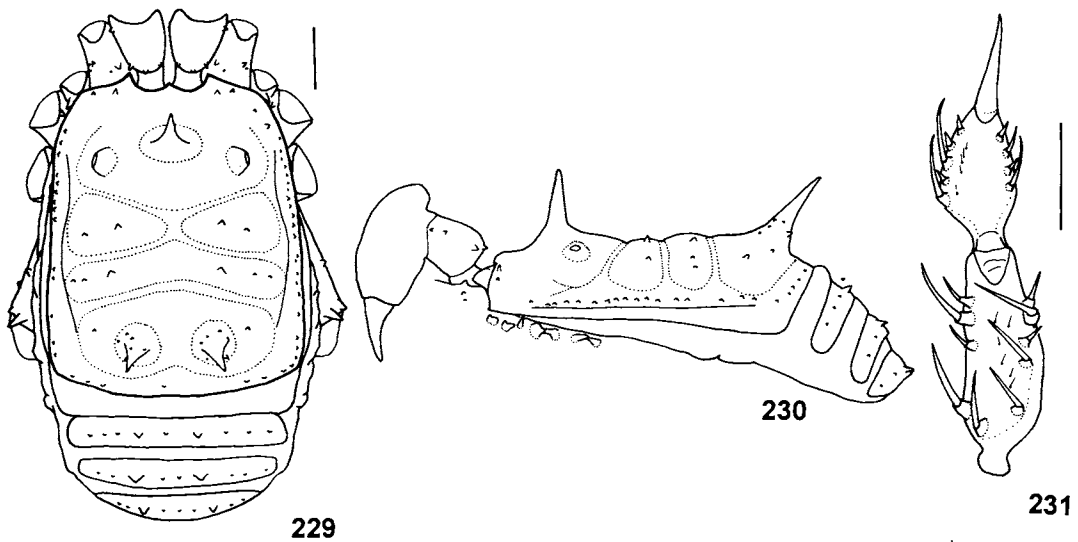
Diagnosis: The females of this species are similar to those of *S. klugi* and *S. simonis*, they differ from those in having spines of area III tuberculate.

Female redescription (holotype):

Measurements: DSL 5.25; CL 2.32; DSW 4.32; CW 3.64; ID 2.24; chelicera: II 2.76; III 1.36; pedipalpus 10.24; leg I 15.10; II 29.18; III 21.12; IV 27.80.

Dorsum (Figs. 229-230): Anterior margin with 2 tubercles each side. Cephalothorax with 1 wide median upwards spine. Lateral margins with 1 row of tubercles from coxa II to posterior margin. Area I with 2 tubercles each side (central pair larger); II with 3-4 each side (central pair larger);





Figs. 229-231. *Stygnus lesserti* (Roewer), comb.n. Female (holotype): 229, habitus, dorsal view; 230, lateral view; 231, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

III with 1 tubercle each side, 2 wide divergent backwards spines with tuberculate base. Posterior margin with 1 row of small tubercles. Free tergite I-III with 1 pair of tubercles larger and several small. Anal plate irregularly tuberculate.

Venter: Coxa I with 3 anterior tubercles, 5 large median, 5 posterior, 2 apical; II with 5 anterior, 5 large median, 3 posterior, 2 apical; III with 4 anterior, 6 large median, 3 apical; IV irregularly tuberculate. Stigmatic area irregularly tuberculate, with 1 row of tubercles on posterior margin. Free sternites with 1 row of tubercles. Anal plate with 1 row of tubercles at middle and 1 posterior row.

Chelicera: Segment I with 4 tubercles; II with 1 wide basal and 5 distal slightly smaller; III with 1 wide basal and 4 distal slightly smaller.

Pedipalpus (Fig. 231): Coxa with 1 ventral tubercle, 2 dorsal. Trochanter with 3 ventral (2 larger) and 1 large dorsal. Femur with 6 ventral tubercles. Patella swollen at distal 1/3. Tibia: ectal IiIi, mesal IIIiIi, minute-tuberculate. Tarsus: ectal Iiii, mesal IiIii, 1 ventral row of minute tubercles.

Legs. Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with I of III; III with 1 posterior fused apically with I of IV; IV tuberculate (1 large dorsoapical). Trochanter I with 3 ventral tubercles; II with 4 ventral, 2 retrolateral, 2 large dorsal; III with 2 large and several small

ventral, 2 retrolateral, 1 dorsal larger; IV with 3 large and several small ventral, 1 retrolateral, 1 dorsal larger. Femora III-IV with 2 dorsoapical tubercles similar in size; IV with 2 ventral rows, larger apicad. Patella IV with 1 ventral and 2 dorsoapical larger tubercles. Tibia IV with 2 apical (posterior larger). Tarsal segmentation: 7, 13, 6, 7.

Colour: Brownish. Maybe due to preservation in alcohol.

Male unknown.

Type locality: Rio Negro, Amazonas, Brazil.

Distribution: Recorded only from type locality.

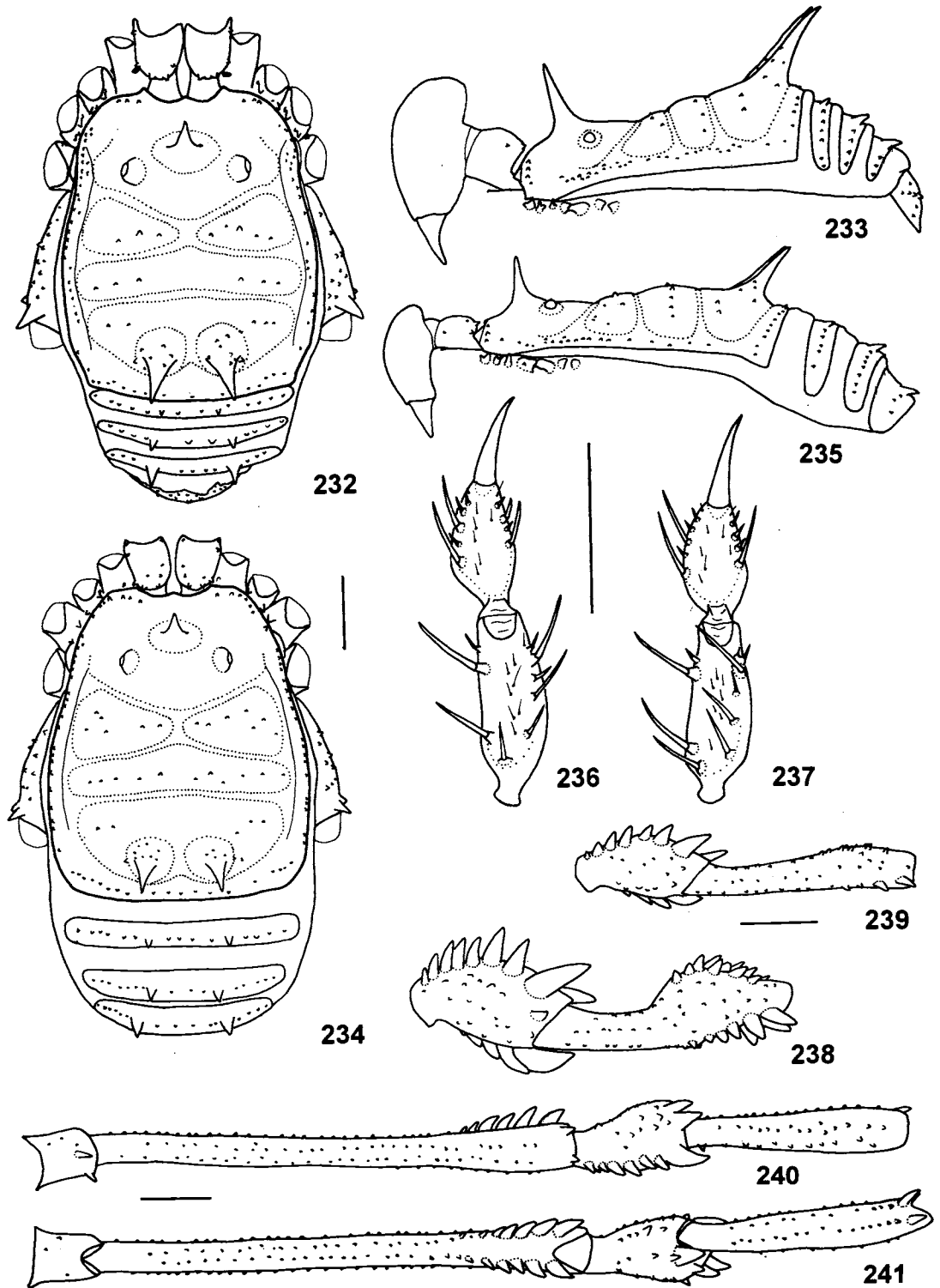
***Stygnus luteus* (Mello-Leitão), comb. n.**

(Figs. 232-241, 507-508, 562, 572-573, 586, 594, 600)

*Stygnus armatus*; Roewer, 1913b: 427, fig. 168 (mis); 1923: 572, fig. 717 (mis).

*Diplostygnus luteus* Mello-Leitão, 1931: 144, fig. 13; 1935: 112 (cit.); Soares 1945: 387 (cat.). (Male holotype "Pará, [Brazil], May leg., typo" MNRJ-11377, dissected, examined).

*Diplostygnus leonardosi* Mello-Leitão, 1939a: 356 fig. 10; Soares, 1945: 387 (cat.). (Female holotype "Xingú, [Pará, Brazil], H. Leonardos leg., 477" MNRJ, examined). *Syn.n.*



Figs. 232-241. *Stygnus luteus* (Mello-Leitão), comb.n. Male (MNRJ): 232, habitus, dorsal view; 233, lateral view; 236, left pedipalpus, tibia and tarsus; 238, patela and tibia IV right, lateral view; 239, same (intraspecific variation); 240, trochanter, femur, patella and tibia of the right IV leg, dorsal; 241, same, ventral. Female (MNRJ): 235, habitus, dorsal view; 236, lateral view; 237, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

*Diplostygnus tibialis* Mello-Leitão, 1941a: 442 (6 males and 4 females syntypes "Aruá, [Belém, Pará, Brazil], Leitão de Carv<sup>o</sup> [Carvalho] leg" MNRJ, 1 male dissected, examined). *Syn.n.*

*Stygnophareus novaisi* H. Soares, 1970: 334, fig. 20 (Female holotype "Rio Paru of Leste, Pará, [Brazil], J.C. Carvalho, F. Novais leg., VII-8-52", MNRJ, examined). *Syn.n.*

**Diagnosis:** The males of this species differ from those of all other *Stygnus* in having one dorsal row of large tubercles on patella IV and tibia IV clavate or semi-clavate (Figs. 238-239).

**Male redescription (MNRJ, Barra do Tapirapé):**

Measurements: DSL 4.12; CL 1.68; DSW 3.44; CW 3.04; ID 1.56; chelicera: II 1.72; III 1.20; pedipalpus 6.64; leg I 11.64; II 23.90; III 17.01; IV 22.20.

**Dorsum (Figs. 232-233):** Anterior margin with tubercles each side. Cephalothorax with 1 large median forwards spine. Lateral margins with tubercles from coxa II to posterior margin. Area I with 3-4 tubercles each side; II with 3 each side; III with 2 large spines, divergent, backwards, with base tuberculate, with 2-3 tubercles each side. Posterior margin with 1 row of 15 tubercles. Free tergite I with 2 central with 1 larger each side, 6 laterad; II with 3 central with 1 larger each side, 4 laterad; III with 4 central, 1 larger each side, 3 laterad. Anal plate irregularly tuberculate, 1 posterior row.

**Venter:** Coxa I with 5 anterior tubercles, 7 median (3 central large), 3 apical; II with 8 anterior, 8 median, 7 posterior, 4 apical; III-IV irregularly tuberculate; III with 3 apical. Stigmatic area irregularly tuberculate, posterior margin with 1 row. Free sternites with 1 row of tubercles. Anal plate irregularly tuberculate, 1 row on posterior margin.

**Chelicera:** Segment I with 5 tubercles; II with 1 wide central teeth, 5 small distal; III with 1 wide basal, 1 wide central, 3 smaller distal.

**Pedipalpus (Fig. 236, 562):** Coxa I with 1 large ventral tubercle, 1 dorsal. Trochanter with 2 large ventral and 1 large dorsal tubercles. Femur swollen distally, 4 ventral tubercles. Patella swollen at distal 1/3, small-tuberculate. Tibia: ectal IIiI, mesal IIIi, 1 ventral row of tubercles, small-tuberculate dorsally. Tarsus: ectal IIIi, mesal IIiIi.

**Legs (Figs. 238-241, 594):** Coxa I with 2 bifid tubercles; II with 1 anterior (Fig. 586), 1

posterior fused apically with 1 of III; III with 1 posterior; IV small-tuberculate, 1 anterior, 1 dorsoapical larger. Trochanter I with 3 ventral tubercles; II with 3 ventral, 1 retrolateral, 2 dorsal; III with 4 ventral, 1 retrolateral, 1 dorsal; IV with 6 ventral, 1 larger retrolateral, 1 large dorsal. Femur III with 2 ventral rows slightly larger apically; IV with 1 retrolateral row in almost all extension, 2 ventral rows of wide and large tubercles on distal 1/3 (external larger), with 2 dorsoapical tubercles. Patella IV with 1 dorsoapical row of large tubercles, 1 large apical posterior tubercle, 1 large anterior, 2 lateral smaller, 2 ventral rows, 1 large apically. Tibia IV swollen at distal half, 2 ventral rows ending in 2 large apical. Tarsal segmentation: 6, 10, 6, 7.

**Penis (Figs. 507-508, 572-573):** Ventral plate with 2 intermediary and 3 basal pairs of setae. Glans with 1 small process in front of dorsal process.

**Colour:** Brown. Median part of anterior margin towards spine and chelicera black reticulate. Spines II, lateral and posterior margins, apex of femur IV and patella-tibia IV dark-brown. Legs, dorsal scute and pedipalpus with small black spots.

**Female redescription (MNRJ, Barra do Tapirapé; Figs. 234-235, 237):**

Measurements: DSL 4.12; CL 1.56; DSW 3.68; CW 2.84; ID 1.44; chelicera: II 2.04; III 1.04; pedipalpus 6.36; leg I 10.68; II 21.07; III 14.96; IV 20.64.

**Anterior margin with 3-4 tubercles.** Area I with 6-7 small tubercles each side. Area I with 4 tubercles each side; II with 11 small. Chelicera segment I with 1 prolateral tubercle, 1 retrolateral, 6 posterior. Tarsal segmentation: 6, 13, 6, 7.

**Intraspecific variation (Figs. 238-239):** The size and density of tubercles of patella-tibia IV show variation among specimens from same locality and those collected at same date. The tibia IV shows variation on thickness, in some specimens (Fig. 238) it is swollen at distal half and in others (Fig. 239) slightly swollen, maybe the latter is a preadult stage.

**Bionomics:** The specimens were collected under rotten logs, on epiphytes, *babaçu* and *inajá* palms.

**Type locality:** Pará, Brazil.

**Distribution (Fig. 600):** Brazil (Amapá,

Amazonas, Pará, Mato Grosso).

Material examined: Brazil, *Amapá*: Macapá (Serra de Maceió), III.1985, 3 ♂ & 5 ♀ (MNRJ); Mazagão (rio Irixaxá), II.1961, J. C. M. Carvalho *leg.*, 1 ♂ (MNRJ); *Pará*: Gorotire, 11.I.1980, O. Ushôa *leg.*, 2 ♂ & 3 ♀ (MPEG); Belém (Santa Maria do Acará), 24.VII.1991, R. Pinto-da-Rocha *leg.*, under rotten logs, 2 ♂, 2 ♀ & 1 immature (MZSP-14247); same data (Embrapa, Centro de Pesquisa do Trópico Úmido), X.1981, H. Cunha *leg.*, 1 ♂ (MNRJ-6063); same data, Durval & X. Moraes *leg.*, 2 ♀ (HSPC); same data, J. Jim *et al. leg.*, 10.I.1983, 1 ♂ (MZSP-14224); (Instituto Agrônômico), XI.1952, 2 ♀ (IBUT); ("arredores"), Travassos & Pires *leg.*, III.1958, 1 ♀ & 1 ♂ (HSPC); Canindé (rio Gurupi), 7-15.IV.1963, B. Malkin *leg.*, 1 ♂ (AMNH); same data, 3-11.VI.1963, B. Malkin *leg.*, 2 ♀ & 2 ♂ (MZSP); same data, 2-4.XII.1964, B. Malkin *leg.*, 1 ♀ (AMNH); same data, 26.IV.1963, B. Malkin *leg.*, 1 ♂ & 2 ♀ (AMNH); (Aldeia Aracu, igarapé Gurupi-Una, 50 km E of Canindé), 2-30.V.1963, B. Malkin *leg.*, 1 ♂ & 4 ♀ (AMNH); Tucuruí (Canoal), 28.III.1984, A. G. Bandeira & M. F. Torres *leg.*, 2 ♂ (MPEG); same data, (Canoal, rio Arapari), 9.III.1984, W. L. Overal *et al. leg.*, on *babaçu* palm, 1 ♂ (MPEG); same data, 13.III.1984, W. L. Overal *leg.*, on *inajá* palm, 1 ♀ & 1 ♂ (MPEG); same data, 16.III.1984, W. L. Overal *leg.*, 1 ♂ (MPEG); Cocal, 12.III.1984, W. L. Overal *leg.*, on *babaçu*, 1 ♂ (MPEG); Bagagem (rio Tocantins), 20.VI.1984, W. L. Overal *leg.*, 1 ♂ (MPEG); (Igarapé da Saúde), 9.VI.1984, H. A. Neto *leg.*, on epiphyte, 1 ♂ (MPEG); Jacundá (2 km S rio Tocantins, margem direita), 12.V.1984, W. L. Overal *et al. leg.*, on *inajá* palm, 2 ♂ & 1 ♀ (MPEG); Pacajá (rio Arapari), on *inajá* palm, 16.III.1984, W. L. Overal *et al. leg.*, 1 ♂ (MPEG); Jacareacanga, XII.1968, M. Alvarenga *leg.*, 1 ♂, 4 ♀ & 4 immatures (AMNH); *Mato Grosso*: Porto Velho (rio Tapirapé), 18.XII.1962, B. Malkin *leg.*, 2 ♀ (AMNH); Santa Terezinha (Barra do Tapirapé), 1 ♂ (MNRJ); same data, 29.XII.1965-16.I.1966, B. Malkin *leg.*, 1 ♂ (AMNH); same data, Leitão de Carvalho *leg.*, under rotten logs, 2 ♂ & 8 ♀ (MNRJ); same data, B. Malkin *leg.*, 29.XII.1965-16.I.1966, 1 ♀ (MZSP); same data, 7.I.1967, 1 ♂ & 12 ♀ (MNRJ-6238); Xingu, J. A. Neves *leg.*, VI.1953, 1 ♂ (HSPC-648).

*Stygnus marthae*, sp.n.

(Figs. 242-249, 509-510, 600)

Diagnosis: This species differs from other *Stygnus* in having areas I-III, lateral and posterior margin much and small-tuberculate (Figs. 242, 244), male tibia IV rectangular (Fig. 248-249).

Etymology: In honor of the collector of the specimens, Maria Martha Argel de Oliveira.

Type material: ♂ holotype, Brazil, Rondônia, Costa Marques (rio Guaporé), 14.XII.1989, M. M. Argel-de-Oliveira *leg.*, under termite nests (MHNC-6711). Paratypes: 2 ♂ & 1 ♀, same data as holotype (MHNC-6708); 1 ♂ & 1 immature, same data, 7.XII.1989 (MZSP-14257); same data, 1 ♀ (MHNC-6711).

Male description (holotype):

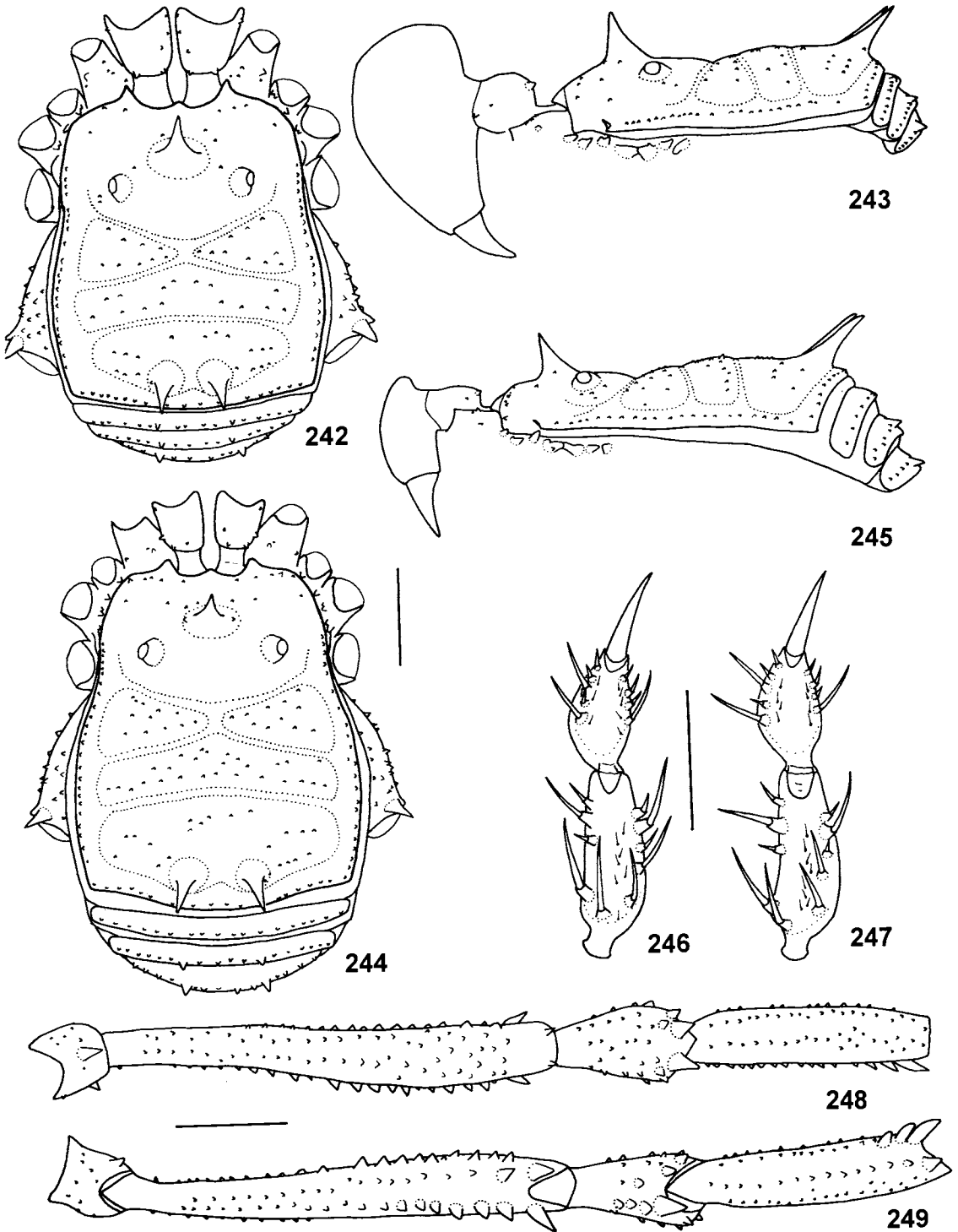
Measurements: DSL 2.84; CL 1.12; DSW 2.76; CW 2.40; ID 1.36; chelicera: II 2.64; III 1.44; pedipalpus 5.78; leg I 9.08; II 15.02; III 10.92; IV 14.82.

Dorsum (Figs. 242-243): Anterior margin with 4 tubercles each side. Cephalothorax with 1 median spine forwards, tuberculate around base. Lateral margins with tubercles of coxa II to almost posterior margin. Area I with 3-4 tubercles near anterior margin and 5-7 near posterior; II with 15 tubercles; III with 2 spines slightly divergent and backwards, with 4 anterior tubercles, 2 rows parallel each side with 3 tubercles each. Posterior margin with 20 tubercles. Free tergite I with 1 central pair large, and 6 laterad tubercles; II with 8-10 laterad; III with 1 pair larger, 4-5 laterad. Anal plate irregularly tuberculate with 1 row on posterior margin.

Venter: Coxa I with 7 anterior tubercles, 6 median larger, 7 posterior, 4 apical; II with 8 anterior, 9 median, 10 posterior, 4 apical; III with 6 anterior, 7 median, 5 apical; IV irregularly tuberculate. Stigmatic area irregularly tuberculate. Free sternites and posterior margin of stigmatic area with 1 row of tubercles. Anal plate with 1 median row and 1 row on posterior margin.

Chelicera: Swollen. Segment I with 7 tubercles; II with 1 wide median and 3 distal teeth; III with 1 wide basal, 1 wide median, 2 teeth. With interchelar space.

Pedipalpus (Fig. 246): Coxa with 1 large ventral tubercle, 5-6 dorsal smaller. Trochanter with 2 large ventral tubercles, 1 large dorsal. Fe-



Figs. 242-249. *Stygnus marthae*, sp.n. Male (holotype): 242, habitus, dorsal view; 243, lateral view; 246, left pedipalpus, tibia and tarsus; 248, trochanter, femur, patella and tibia of the right IV leg, dorsal; 249, ventral. Female (paratype): 244, habitus, dorsal view; 245, lateral view; 247, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

mur curved, with 7 ventral tubercles. Patella swollen at distal 1/3. Tibia: ectal IIIi, mesal IIIi, tuberculate dorsally and ventrally. Tarsus: ectal IIIi, mesal IIiii, 2 ventral rows of tubercles.

Legs (Figs. 248-249): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior; IV with 1 tuberculate, 1 anterior, 1 large dorsoapical tubercle. Trochanter I with 3 ventral tubercles, 1 dorsal, 2 retrolateral; II with 5 ventral, 2 dorsal (1 larger), 2 retrolateral; III with 3 ventral, several dorsal (1 larger), 2 retrolateral; IV with several dorsal (1 larger), 2 retrolateral (apical larger). Femora III-IV curved, with 1 retrolateral row of tubercles in almost all extension, 2 ventral rows on distal 1/3 (anterior larger). Patella IV with 1 large ventral tubercle, 2 prolateral, 2 large dorsoapical, 1 retrolateral. Tibia IV with 2 ventral rows of tubercles (apical larger). Tarsal segmentation: 6, 10, 6, 7.

Penis (Figs. 509-510): Ventral plate with 2 intermediary and 3 basal pairs of setae.

Colour: Brown with small black spots on dorsum. Chelicerae and medioanterior region towards spine black reticulate. Leg IV dark-brown.

Female description (MHNC-6708) (Figs. 244-245, 247):

Measurements: DSL 3.20; CL 1.32; DSW 2.88; CW 2.16; ID 1.32; chelicera: II 3.12; III 2.00; pedipalpus 5.66; leg I 8.06; II 15.00; III 10.86; IV 14.54.

Anterior margin with 5 tubercles each side. Cephalothorax and areas I-III with more tubercles than male; III with 2 rows each side, anterior row with 4 and posterior with 2-5. Free tergite I with tubercles similar in size. Segment I of chelicera with 3 tubercles. Pedipalpal coxa with 3 dorsal tubercles (1 larger).

Bionomics: The type material was collected under termite nests on decayed tree in the forest between the county and river (M.M. Argel de Oliveira, pers. comm.).

Type locality: Rio Guaporé, Costa Marques, Rondônia, Brazil.

Distribution (Fig. 600): Recorded only from type locality.

*Stygnus mediocris* (Roewer), comb. n.

(Figs. 250-257, 511-512, 599)

*Lojanellus mediocris* Roewer, 1931: 151 fig. 21. (Female holotype, "Ecuador, Loja, typus, coll. Rwr # 1461" SMFD, examined).

Diagnosis: The males of this species differ from those of other *Stygnus* in having one prolateral row of tubercles on femur IV, tibia IV rectangular with 2 enlarged ventroapical tubercles (Figs. 256-257), penis with one pair of intermediary setae (Fig. 512).

Male description (MACN):

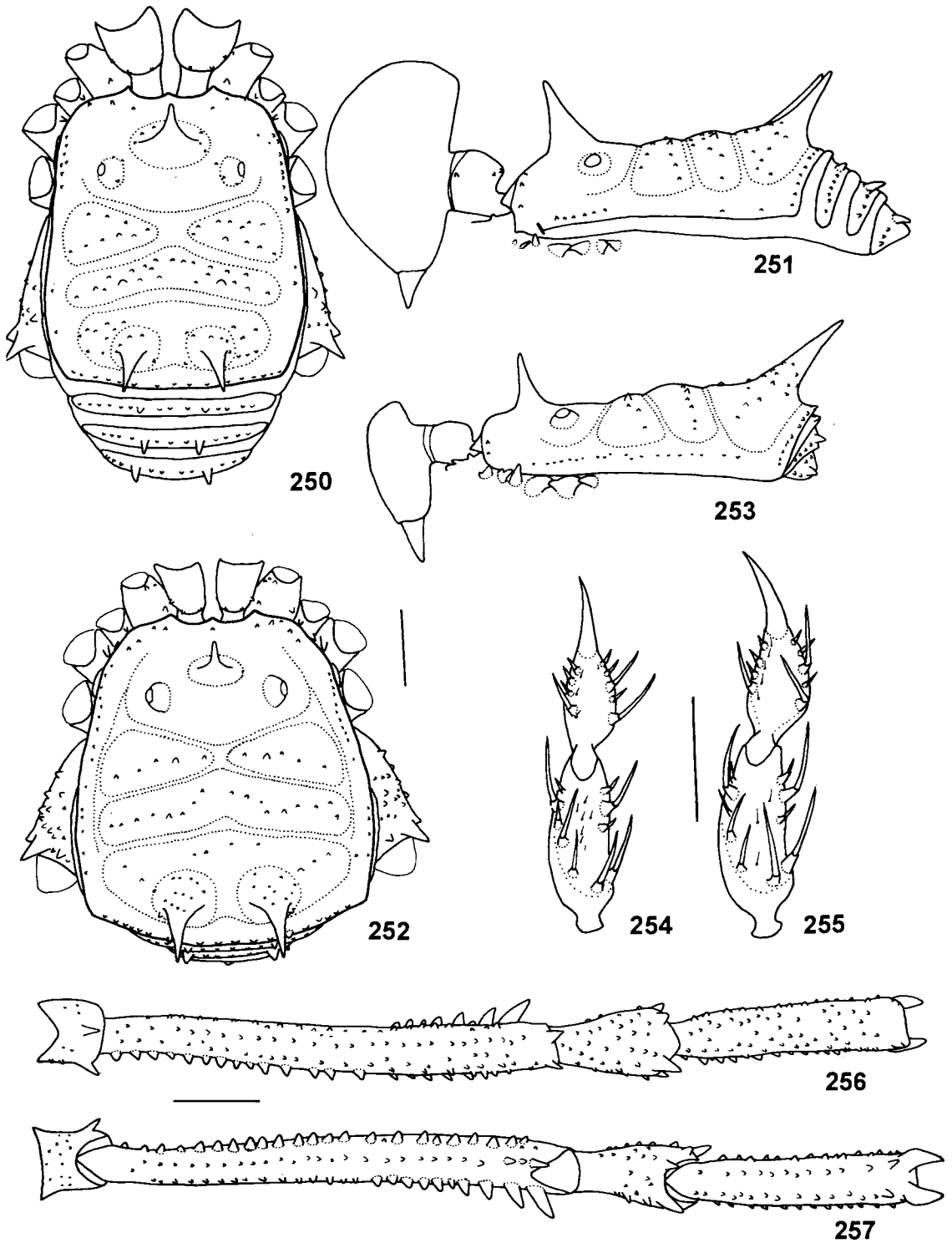
Measurements: DSL 3.72; CL 1.60; DSW 3.32; CW 2.80; ID 1.64; chelicera: II 3.20; III 1.60; pedipalpus 6.46; leg I 9.76; II 16.80; III 13.08; IV 17.14.

Dorsum (Figs. 250-251): Anterior margin with 3 tubercles each side. Cephalothorax with tubercles around spine and eyes. Lateral margins with 1 row of small tubercles on cephalothorax and 2 near area II-III. Area I-III small-tuberculate; I-II with 1 pair of large tubercles; III with 1 pair of large backwards spines, slightly divergent. Posterior margin with 16 tubercles. Free tergite I with 3 central with 1 larger each side and 5-7 laterad tubercles; II with 3 central with 1 larger, 4-6 laterad; III with 4 central with 1 each side, 4 laterad. Anal plate with 1 median row and 1 on posterior margin.

Venter: Coxa I with 3 rows of tubercles, central larger, 3 apical; II with 3 rows, several sparse, 3 apical; III with 2 rows, 3 apical; IV irregularly tuberculate. Stigmatic area with 1 posterior row and several tubercles sparse. Free sternites with 1 row of tubercles. Anal plate tuberculate at middle.

Chelicera: Swollen. Segment I with 4 tubercles; II with 1 wide central and 3 small distal teeth; III with 1 wide basal, 1 wide central, 3 distal.

Pedipalpus (Fig. 254): Coxa with 1 large ventral and 2 dorsal tubercles. Trochanter with 2 ventral, 1 dorsal. Femur slightly curved, swollen at apex, with 1 tubercle ventrobasal, 1 row of small dorsal tubercles. Patella swollen at distal 1/3. Tibia: ectal IIIi, mesal IIIi, small-tuberculate ventrally. Tarsus: ectal IIIi, mesal IIIi, small-tuberculate ventrally.



Figs. 250-257. *Stygnus mediocris* (Roewer), comb.n.. Male (MACN): 250, habitus, dorsal view; 251, lateral view; 254, right pedipalpus, tibia and tarsus; 256, trochanter, femur, patella and tibia of the right IV leg, dorsal; 257, same, ventral. Female (holotype): 252, habitus, dorsal view; 253, lateral view; 255, right pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Legs (Figs. 256-257): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 fused apically with 1 of IV; IV tuberculate, 1 dorsoapical larger. Trochanter I with 3 ventral tubercles; II with 6 ventral, 1 retrolateral, 2 large and several small dorsal; III with 7 ventral, 1 retrolateral, 1 large and several small dorsal tubercles; IV with 1 ventral, 1 large retrolateral, 1 large and several small dorsal. Femora I-IV slightly curved; III-IV with 2 apical tubercles (posterior larger), 2 ventral rows at distal 1/3; IV with 1 lateral row in all extension. Patella IV with 1 ventral, 1 prolateral, 2 retrolateral, 2 dorsoapical. Tibia IV with 2 wide ventroapical tubercles. Tarsal segmentation: 6, 10-11, 6, 7. First and second articles of tarsus I swollen.

Penis (Figs. 511-512): Ventral plate with 1 intermediary and 3 basal pairs of setae.

Colour: Dark-brown with several black spots. Cephalothorax near spine and chelicera black reticulate. Pedipalpus yellowish.

Female redescription (holotype; Figs. 252-253, 255):

Measurements: DSL 4.00; CL 1.60; DSW 3.68; CW 3.04; ID 1.56; chelicera: II 2.08; III 1.04; pedipalpus 6.92; leg I 9.40; II 17.56; III 14.36; IV 18.57.

Anterior margin with 2-3 tubercles each side. Lateral margins with tubercles in all extension. Areas I-II less tuberculate than male, tuberculate near median line. Pedipalpal coxa with 1 dorsal distal and 2 basal tubercles. Coxa I with 2 bifid tubercles; III with 1 enlarged tubercle fused with 1 of II and 1 of IV. Tarsal segmentation: 6, 10, 6, 7.

Type locality: Loja, Loja, Ecuador (04°00'S - 79°13'W).

Distribution (Fig. 599): Ecuador (Loja, Napo).

Material examined: Ecuador. *Napo*: Limoncocha, 7.IV.1984, A. Roig-Alsina *leg.*, 1 ♂, 1 ♀ & 2 immatures (MACN); same data, 1 ♂ & 1 ♀ (MZSP).

*Stygnus multispinosus* (Piza), comb. n.

(Figs. 258-265, 513-514, 570-571, 601)

*Metastygnellus multispinosus* Piza 1938: 145 fig. 4n; Soares, 1943: 206 (dist.); 1946: 525 (cat.); Paschoal & Barros, 1983: 79 (cit.). (Female

lectotype and 3 females paralectotypes, by present designation, "[Brazil], E. [Estado], Goyaz [Goiás], Inhuma[s], Worontzow *leg.*, 1937", MZLQ-A0032, examined).

Diagnosis: This species differs from other *Stygnus* in having spines of area III smaller than that of cephalothorax (Fig. 259), pedipalpal tibia with ilili ectal (Fig. 262), male femur IV slightly sinuous, male tibia IV rectangular Figs. 264-265).

Male description (Brasília, HSPC):

Measurements: DSL 3.52; CL 1.68; DSW 3.16; CW 2.72; ID 1.36; chelicera: II 2.56; III 1.16; pedipalpus 5.52; leg I 9.04; II 14.68; III 11.08; IV 14.72.

Dorsum (Figs. 258-259): Anterior margin with 5-6 tubercles. Cephalothorax with 1 large forwards spine. Lateral margins with tubercles from coxa II to posterior margin. Area I with 2 tubercles each side (central pair larger); II with 3 each side (central pair larger); III tuberculate each side, 2 large slightly divergent backwards spines. Posterior margin with 15 tubercles, 1 pair behind spines larger. Free tergite I with 2 central with 1 larger each side and 5 laterad tubercles; II with 3 central with 1 larger each side, 4-5 laterad; III with 2 central with 1 larger each side, 3-4 laterad. Anal plate irregularly tuberculate, 1 posterior row.

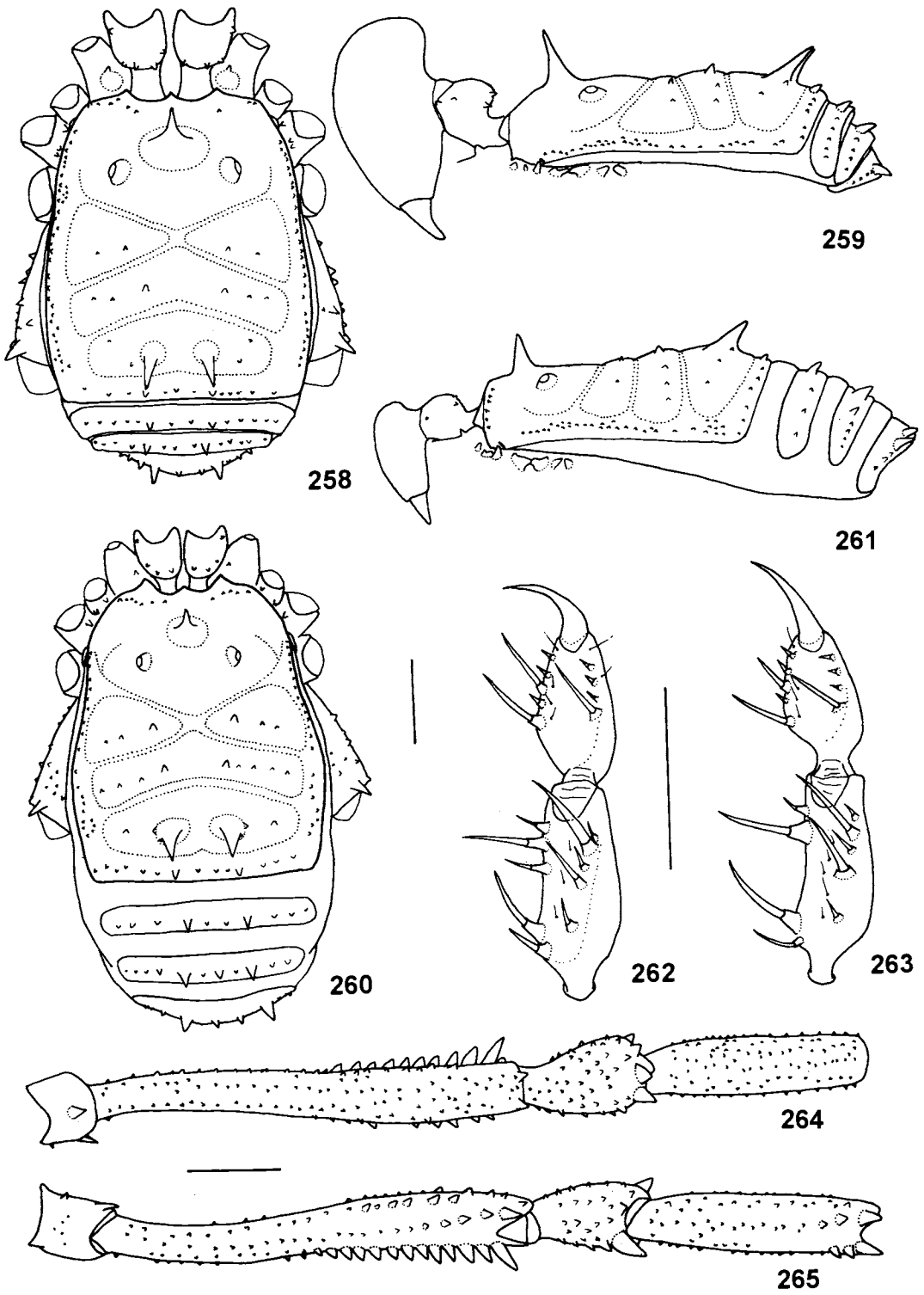
Venter: Coxa I with 6 anterior tubercles, 5 large median, 4 posterior, 3 apical; II with 6 anterior, 9 large median, 7 posterior, 4 apical; III-IV and stigmatic area irregularly tuberculate; III with 4 apical tubercles. Posterior margin of stigmatic area and free sternites with 1 row of tubercles. Anal plate irregularly tuberculate, 1 posterior row.

Chelicera: Swollen. Segment I with 5 tubercles; II with 3 small distal; III with 1 wide basal, 1 median, 3 small distal teeth.

Pedipalpus (Fig. 262): Coxa with 1 ventral and 1 wide dorsal tubercles. Trochanter with 2 ventral and 1 dorsal tubercles. Femur slightly swollen distally, 1 ventral row of tubercles. Patella swollen at distal half, small-tuberculate. Tibia: ectal ilili, mesal ilili, small-tuberculate dorsally. Tarsus: ectal liii, mesal liii.

Legs (Figs. 264-265): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior; IV tuberculate, 1 anterior and 1 dorsoapical large tubercles. Trochanter I with 4 ventral tubercles (3 larger); II with





Figs. 258-265. *Stygnus multispinosus* (Piza), comb.n. Male (HSCP): 41, habitus, dorsal view; 42, lateral view; 45, left pedipalpus, tibia and tarsus; 47, trochanter, femur, patella and tibia of the right IV leg, dorsal; 48, same, ventral. Female (HSCP): 43, habitus, dorsal view; 44, lateral view; 46, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

5 ventral, 2 retrolateral, 2 dorsal; III with 4 ventral, 2 retrolateral, 1 dorsal; IV with 1 retrolateral larger and 1 smaller, 1 large dorsal. Femora III-IV with 2 ventral rows of tubercles (anterior larger); IV swollen at distal 1/3, 1 posterior row on distal half, 2 dorsoapical, anterior larger. Patella III-IV with 1 ventroapical tubercle; IV with 2 dorsoapical, 1 prolateral, 2 retrolateral. Tibia IV cylindrical, apex with 2 larger tubercles ventral. Tarsal segmentation: 6, 12-13, 6, 7. First segment of tarsus I swollen.

Penis (Figs. 513-514, 570-571): Ventral plate with 2 intermediary and 3 ventral pairs of setae.

Colour: Brown. Anterior and median region of cephalothorax and spine black reticulate. Lateral of cephalothorax, posterior margin and free tergites with black spots. Patellae III-IV and femur IV dark-brown.

Female redescription (HSPC; Figs. 260-261, 263):

Measurements: DSL 3.40; CL 1.52; DSW 3.04; CW 2.40; ID 1.16; chelicera: II 1.52; III 0.80; pedipalpus 4.92; leg I 8.20; II 13.36; III 10.80; IV 14.64.

Anterior margin with 5-7 tubercles. Lateral margins with tubercles from coxa III to posterior margin. Area I with 3 tubercles each side (central pair larger); II with 4-5 tubercles each side. Pedipalpal: coxa with 1 small dorsal tubercle; tibia ectal IIIlii, mesal iiii; tarsus ectal liii, mesal liii. Coxa I with 2 dorsal tubercles (posterior bifid). Femur IV with 2 ventral rows of tubercles on distal 1/3. Patella IV with 2 dorsoapical tubercles. Segment I of chelicera with 3 tubercles. Tarsal segmentation . 6, 10-11, 6, 7.

Bionomics: Several specimens from different localities were collected under termite nests of *Conitermes* sp. (Brasília), *Armitermes* sp. (Conceição do Araguaia) and of *Syntermes* sp. (Chapada dos Guimarães).

Type locality: Inhumas, Goiás, Brazil (16°22'S - 49°30'W).

Distribution (Fig. 601): Brazil (Mato Grosso, Mato Grosso do Sul, Goiás, Distrito Federal and São Paulo).

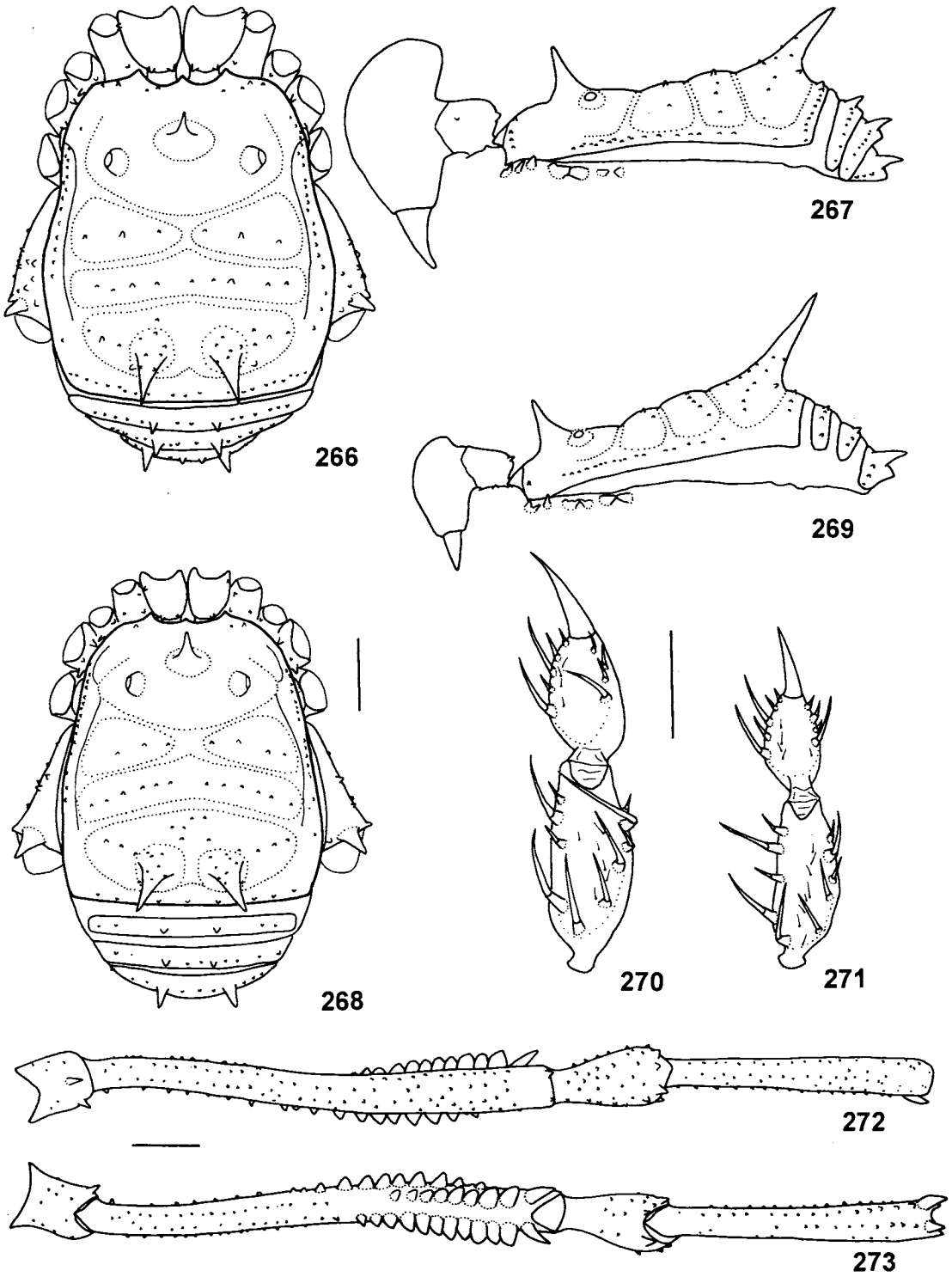
Material examined: Brazil, *Pará*: Conceição do Araguaia (Campo dos Caiapós), 11-12.VII.1979, W. Lourenço leg., under termite *Armitermes* nests, 2 ♂ & 2 ♀ (IBUT); *Mato Grosso*: Camacua,

& VI.1967, 1 ♂ (IBUT); Santa Terezinha (Barra do Tapirapé), Leitão de Carvalho leg., 2 ♂ (MNRJ); 17 km NNE of Alto Araguaia, 3.X.1989, W. A. Caldwell leg., 1 ♂ & 1 ♀ (MZSP-11.349); Santo Antonio do Leverger, 12 km S Cuiabá, 16.II.1985, W. L. Overal leg., cerradão, 2 ♂ & 1 ♀ (MPEG); Cuiabá (Boa Esperança), 20.VII.1988, A. Lucia, 1 ♀ (UFMT); Chapada dos Guimarães, under termite nest of *Syntermes* sp., 1 ♂ & 1 ♀ (UFMT); (Casa de Pedra), 30.I.1991, Lucas, Bertani & Silva Jr. leg., 30.I.1991, 2 ♂ & 2 ♀ (IBUT); Utiariti, 9.VIII.1961, K. Lenko leg., 1 ♀ (MZSP-14286); *Goiás*: Goiânia (Jardim Bela Vista), 25.VIII.1990, A. Barcelos leg., 1 ♂ & 1 ♀ (MHNC-6818); same data (Jardim Botânico), 18.VI.1990, B. B. Santos leg., 2 ♂ (MHNC-6817); Corumbá, VI.1942, Lane, 1 ♂ & 2 ♀ (MZSP); Barra do Garças, VI.1994, G. Skuk & J. M. Martins leg., 4 ♂ & 1 ♀ (MZSP-14314); Aragarças, H. Sick leg., 1 ♂ (MZSP-1804); Niquelândia (UHE Serra da Mesa, near Rio Bagagem, 14°01'S - 48°18'W), 24-29.IX.1995, G. Skuk leg., 2 ♂ (MZSP); same data, 24.IX-6.X.1995, Silvestri, Dietz & Brandão leg., 6 ♂ & 13 ♀ (MZSP); Colinas do Sul (Campinaçu, 14°01'S - 48°12'W), Silvestri, Dietz & Campaner leg., 2 ♂, 5 ♀ & 4 immatures (MZSP); *Distrito Federal*: Brasília, H. S. Lopes, XII.1961, under termite nests, 2 ♂ & 6 ♀ (MZSP-14252); same data, W. Lourenço leg., under termite nests of *Conitermes* sp., 8 ♂ & 20 ♀ (HSPC); same data, 1 ♂ & 1 ♀ (AMNH); same data, 1 ♂ & 1 ♀ (CASC); same data, 1 ♂ & 1 ♀ (UZMD); (Faz. Água Limpa-UNB), 17.VII.1987, R. L. Baptista leg., 3 ♂ & 1 ♀ (MNRJ-6130); Brasilândia (estrada de Jaguatinga), 12.VII.1976, W. R. Lourenço & U. Caramaschi leg., under termite nests, 14 ♂ & 15 ♀ (HSPC); *Mato Grosso do Sul*: Aquidauana, 9.IV.1992, A. F. Béda leg., under termite nest, 1 ♂, 1 ♀ & 1 immature (MZSP-14220); *São Paulo*: Urubupungá, Ilha Solteira, 1.II.1965, A. Mantovan leg., 2 ♂ & 1 ♀ (HSPC-647).

*Stygnus pectinipes* (Roewer), comb. n.

(Figs. 266-273, 515-516, 568-569, 599)

*Stygnellops pectinipes* Roewer, 1943: 62 fig. 74, 74a. (Male lectotype, 2 males and 4 females paralectotypes, by present designation "Guiana [Surinam], Paramaribo, typus, 2 males, 2 females, coll. Rwr n° 7477", "Guiana [Surinam],



Figs. 266-273. *Stygnus pectinipes* (Roewer), comb.n. Male (holotype): 266, habitus, dorsal view; 267, lateral view; 270, left pedipalpus, tibia and tarsus; 272, trochanter, femur, patella and tibia of the right IV leg, dorsal; 273, same, ventral. Female (SMFD-7477): 268, habitus, dorsal view; 269, lateral view; 271, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

1 female, cotype, coll. Rwr # 8691", "Guiana [Surinam], cotype, 1 male, 1 female, #8692", SMFD, lectotype dissected, examined).

Diagnosis: The males of this species resembles those of *S. heliae* in having ventral contiguous tubercles on femur IV (Fig. 273) and differ by the eye mounds tuberculate (a characteristic present also in *Sickesia* and *Phareus*) and by enlarged apical femur IV (Figs. 272-273).

#### Male redescription (holotype):

Measurements: DSL 4.80; CL 2.24; DSW 4.24; CW 3.72; ID 2.08; chelicera: II 2.88; III 1.44; pedipalpus 8.68; leg I 14.03; II 25.62; III 19.14; IV 25.50.

Dorsum (Figs. 266-267): Anterior margin with 4 tubercles each side. Cephalothorax with 1 central forwards spine. Lateral margins with 1 row of tubercles from anterior coxa II to posterior margin. Area I with 3 tubercles each side; II with 9, 2 larger; III with 2 spines slightly divergent, backwards, irregularly tuberculate. Posterior margin with 1 row of 22 tubercles. Free tergite I with 3 central with 1 larger each side and 7-10 laterad tubercles; II with 4 central with 1 larger each side, 5-7 laterad; III with 4 central with 1 larger each side, 5 laterad. Anal plate with 1 row of tubercles on posterior margin and 2 median rows.

Venter: Coxa I with 4 apical tubercles, 1 central row of 5 larger and several sparse; II-IV irregularly tuberculate; II with 4 apical; III with 3 apical. Stigmatic area with 1 row of tubercles on posterior margin. Free sternites with 1 row of tubercles. Anal plate with tubercles on median and posterior regions.

Chelicera: Swollen. Segment I with 3 tubercles; II-III with 1 wide tubercle and 4 small.

Pedipalpus (Fig. 270): Coxa with 1 ventral tubercle, 2 dorsal. Trochanter with 3 ventral (central larger), 1 dorsal. Femur swollen apically, with 1 ventral row of tubercles, small dorsal tubercles. Patella small-tuberculate, swollen at distal 1/3. Tibia: ectal IIIi, mesal IIIi, tuberculate ventral and dorsally. Tarsus: ectal IIIi, mesal IIIi, 1 ventral row of tubercles.

Legs (Figs. 272-273): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior; IV tuberculate, 1 anterior and 1 dorsoapical larger. Trochanter I with 3 ventral tubercles; II with 4 ventral, 1 retrolateral,

2 dorsal; III with 5 ventral, 1 dorsal, 2 prolateral, 1 retrolateral; IV with several small ventral, 1 large dorsal, 2 retrolateral. Femora I-III straight, IV curved; III-IV with 2 ventral rows of tubercles (row of IV with tubercles wide and contiguous, ventroapical tubercle thinner), 2 apical, with 2 dorsoapical tubercles (anterior larger). Patella IV with 1 ventrodiscal tubercle, 3 large dorsodiscal. Tibiae III-IV with 2 ventral rows of tubercles, 2 apical larger. Tarsal segmentation: 7, 13, 6, 7.

Penis (Figs. 515-516, 568-569): Ventral plate with 2 intermediary and 3 ventral pairs of setae.

Colour: Brownish with small black spots. Medioanterior region and spine of cephalothorax, chelicera and pedipalpus black reticulate. Tibiae III-IV and ventral tubercles of femur IV (except apical) dark-brown.

#### Female redescription (SMFD-7477; Figs. 268-269, 271):

Measurements: DSL 3.56; CL 1.40; DSW 3.68; CW 2.84; ID 1.52; chelicera: II 1.92; III 1.04; pedipalpus 7.52; leg I 11.28; II 22.44; III 16.19; IV 20.92.

Anterior margin with 1-2 tubercles. Area I with 3-4 tubercles; II with 12. Posterior margin with 8 tubercles. Free tergites with less tubercles than male. Pedipalpal coxa with 3 dorsal tubercles. Coxa III with 1 posterior tubercle fused with 1 of IV. Tarsal segmentation: 7, 15, 6, 7.

Intraspecific variation: The male (SMFD-8642) has area I with 2 tubercles and III with 6, tubercles of free tergite I smaller and those of femur IV thinner and not contiguous as the holotype.

Type locality: Paramaribo, Surinam (05°52'N - 55°14'W).

Distribution (Fig. 599): Surinam and Brazil (Roraima, Amazonas).

Material examined: Brazil. *Roraima*: (Estação Ecológica de Maracá, Ilha de Maracá, rio Uraricoera), 25.VII.1987, A. A. Lisc *leg.*, 1 ♂ & 2 ♀ (MCNZ-984); same data, 7.XII.1987, 2 ♀ (MCNZ-1006); same data, 17.III.1987, 1 ♂ (MCNZ-991); same data, 26.III.1987, 1 ♂ & 1 ♀ (MCNZ-988); same data, 10.XII.1987, 2 ♂ (MCNZ-1009); same data, M. E. L. Souza, 25.IX.1987, 1 ♂ (MCNZ-987); Foz do Rio Branco (lower rio Meucajai, south of Boa Vista), V.1962,

E. Dente *leg.*, 1 ♂ (MZSP-14279); *Amazonas*: "Alto Solimões", near Benjamin Constant, A. A. Lise *leg.*, 20.XII.1979, 2 ♀ (MCNZ-637); Manaus (Reserva Ducke), 18.I.1993, 1 ♂ (SMNK); same data, 31.V.1993, 1 ♀ (MZSP-14275); same data, 16.IX.1991, 1 ♀ (INPA); same data, 16.III.1991, 1 ♂ (SMNK); same data, 4.XII.1987, E. H. Backup *leg.*, 1 ♂ & 2 ♀ (MCNZ-1004); same data, A. D. Brescovit *leg.*, 15-23.VIII.1991, 6 ♀ (MCNZ-1106); same data, 2 ♂ & 4 ♀ (MZSP-14274); same data, 3 ♀ (MCNZ-1094); same data, 1 ♂ (MCNZ-1107); same data, 2 immatures (MCNZ-1105); same data, 20.VIII.1993, 1 immature (MCNZ-1100); (Iago Janauari, 3°20'S, 60°17'W), 16.V.1988, J. Adis *et al. leg.*, 3 ♀ (SMNK).

***Stygnus peruvianus* (Roewer), comb. n.**

(Figs. 274-281, 517-518, 599)

*Lojanellus peruvianus* Roewer, 1957: 83. (Male holotype and 2 females paratypes, "Peru, río Aguaytia, zufluß des río Ucayali, unter faulem Baumstämmen 300 m, 31.VII.1955, W. Weyrauch *leg.*, male (typus), coll. Rwr n° 11423" SMFD, dissected, examined).

Diagnosis: The males of this species resemble those of *S. simplex* in having long and parallel spines on area III (Fig. 274), femur and tibia IV not swollen and differ by the presence on femur IV of a retrolateral row of tubercles (Figs. 280-281).

**Male redescription (holotype):**

Measurements: DSL 3.36; CL 1.56; DSW 2.92; CW 2.72; ID 1.64; chelicera: II 2.38; III 1.26; pedipalpus 7.40; leg I 10.20; II 19.42; III 14.40; IV 16.56.

Dorsum (Figs. 274, 275): Anterior margin with 1-3 tubercles each side. Cephalothorax tuberculate, 1 low median forwards spine. Lateral margins with 1 row of tubercles from coxa II to posterior margin. Area I with 1 tubercle larger and 4 smaller each side; II with 2 anterior and 1 irregular row of 10; III with 3-4 lateral tubercles, 2 slightly divergent backwards spines with base tuberculate. Posterior margin with 6 minute tubercles. Free tergite I minute-tuberculate; II with 2 central, 2 larger each side. Anal plate with 7 tubercles near anterior margin and 5 on posterior margin.

Venter: Coxa I with 3-4 anterior, 5 median large, 3 posterior, 3 apical tubercles; II with 1 median row with 7 small, 3 apical; III-IV irregularly tuberculate. Stigmatic area with several small sparse tubercles, posterior margin with 1 row of small tubercles. Free sternites with 1 row of small tubercles.

Chelicera: Swollen. Segment I with 3 tubercles; II with 1 median larger and 1 small distal teeth; III with 1 basal larger, 1 central and several small distal teeth.

Pedipalpus (Fig. 278): Coxa with 1 large ventral tubercle and 1 dorsal. Trochanter with 2 large and 1 small ventral, 1 dorsal. Femur straight with 6 ventral tubercles, slightly swollen at apex. Patella swollen at distal 1/3. Tibia: ectal Ilili, mesal Ilili, small-tuberculate ventral and dorsally. Tarsus: ectal liiii, mesal lilii, small-tuberculate ventrally.

Legs (Figs. 280-281): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate (1 large dorsoapical). Trochanter I with 3 ventral and 1 posterior tubercles; II with 5 ventral, 2 posterior, 2 large dorsal; III with 6 ventral, 1 posterior, 1 larger dorsal; IV with 1 posterior and 1 larger dorsal. Femur III straight, 2 ventral rows of small tubercles; IV straight, 1 ventral row at distal 1/3, 1 posterior row of small tubercles, 2 small dorsal. Patella IV with 1 ventroapical tubercle larger, 1 retrolateral, 3 dorsoapical. Tibia IV with 2 small apical tubercles. Tarsal segmentation: 6, 11, 6, 7, First and second articles of tarsus I swollen.

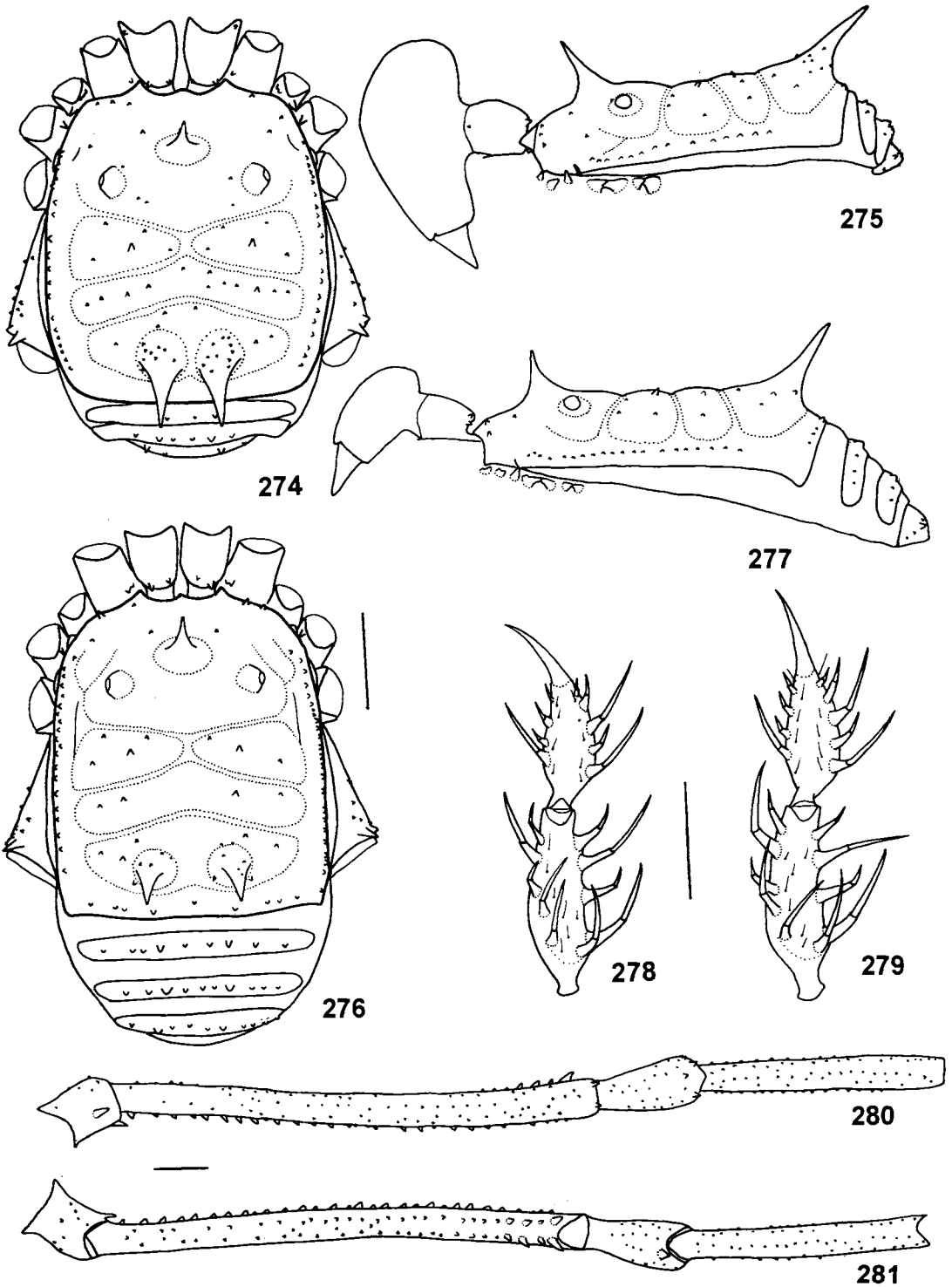
Penis (Figs. 517-518): Ventral plate with 1 intermediary and 3 basal pairs of setae. Glans with a process in front of dorsal process.

Colour: Brown with small black spots. Median and anterior parts of cephalothorax, spine, chelicera and patellae III-IV black reticulate. Pedipalpus and legs I-III yellowish with small black spots.

**Female redescription (SMFD-11423; Figs. 276-277, 279):**

Measurements: DSL 3.64; CL 1.48; DSW 2.84; CW 2.56; ID 1.40; chelicera: II 1.80; III 0.92; pedipalpus 7.48; leg I 10.40; II 19.92; III 14.64; IV 21.29.

Anterior margin with 2 tubercles each side. Areas I-III with lesser tubercles than male. Posterior margin with larger tubercles than male. Free



Figs. 274-281. *Stygnus peruvianus* (Roewer), comb.n.. Male (holotype): 274, habitus, dorsal view; 275, lateral view; 278, right pedipalpus, tibia and tarsus; 280, trochanter, femur, patella and tibia of the right IV leg, dorsal; 281, same, ventral. Female (SMFD-11423): 276, habitus, dorsal view; 277, lateral view; 279, right pedipalpus, tibia and tarsus. Scale bars: 1 mm.

tergite I with 9 tubercles; II-III with 10. Chelicera: segment II with 5 teeth small on distal half; II with 1 central and 5 small distal. Tarsal segmentation: 6, 12, 6, 7.

**Bionomics:** The type material was collected in forest under fallen log (Roewer, 1957).

**Type locality:** rio San Alejandro, Ucayali, Peru (08°19'S - 75°19'W) cited in original description. However, the label of holotype says rio Aguaytia as type locality.

**Distribution (Fig. 599):** Peru (Ucayali).

*Stygnus polyacanthus* (Mello-Leitão), comb. n.  
(Figs. 282-289, 519-520, 601)

*Stygnellus [sic] polyacanthus* Mello-Leitão, 1923: 178, 196 (key). (Holotype male, "*Acanthostygnus polyacanthus* (M. L.), Campina Grande, [Paraíba, Brazil], [T. Leitão leg.], n° 443 and n° 845 [the right number is 839, according to the original description]", MNRJ, dissected, examined).

*Stygnellus ferrugineus*, Roewer, 1931: 150 (mis., dist.).  
*Acrostygnus polyacanthus*; Roewer, 1931: 153 (rdesc.); Mello-Leitão, 1932: 424 (rdesc.), fig. 281; Soares, 1945: 386 (cat.).

*Metastygnellus longimanus* Mello-Leitão, 1928: 13; Roewer, 1931: 152 (rdesc.); Mello-Leitão, 1932: 425 (rdesc.); Soares, 1945: 387 (cat.). (Female holotype, "Typo, Tapera, [Moreno, Recife, Pernambuco, Brazil], D. Bento, # 1441, Pernambuco, Pesqueira", MNRJ, examined).  
*Syn.n.*

*Metastygnellus nasutus* Mello-Leitão, 1944a: 16, fig. 5. (Male holotype, "Barreiras, Baía [Bahia, Brazil], 18/3/42, typus", MNRJ, dissected, examined). *Syn.n.*

**Diagnosis:** This species differs from others *Stygnus* in having tibia IV oval, lateral margin and coxa IV much tuberculate, spines of area III parallels.

**Note:** The male from Serra Comunati (Pernambuco, Brazil), cited erroneously by Roewer (1931: 150) as *Stygnellus ferrugineus* from *S. Communicati* (Venezuela) is in fact an *Acrostygnus polyacanthus*.

**Male redescription (holotype):**

**Measurements:** DSL 5.08; CL 2.92; DSW 4.56, CW 3.60, ID 1.80, chelicera: II 4.24, III 2.24;

pedipalpus 6.60; leg I 12.32; II 22.14; III 15.92; IV 21.38.

**Dorsum (Figs. 282-283):** Anterior margin with 4-5 lateral tubercles. Cephalothorax with 1 large central spine and small tubercles behind eyes. Lateral margins with 1 row of tubercles from coxa I to apex of area III. Area I with 7-9 tubercles each side; II with several tubercles irregularly disposed, central pair larger; III with 2 straight backwards spines, 1 lateromedian row of 4 tubercles, 2 behind spines. Posterior margin with 2 central with 1 larger each side and 4-6 laterad tubercles. Free tergite I with 1 central with 1 larger each side, 6-7 laterad; II with 2 central with 1 larger each side, 3 laterad; III with 4 central with 1 larger each side, 3 laterad. Anal plate tuberculate.

**Venter:** Coxa I with 1 row of 6 tubercles, 3 apical, 10 irregularly disposed; II with 2 apical; III-IV stigmatic area and free sternites tuberculate.

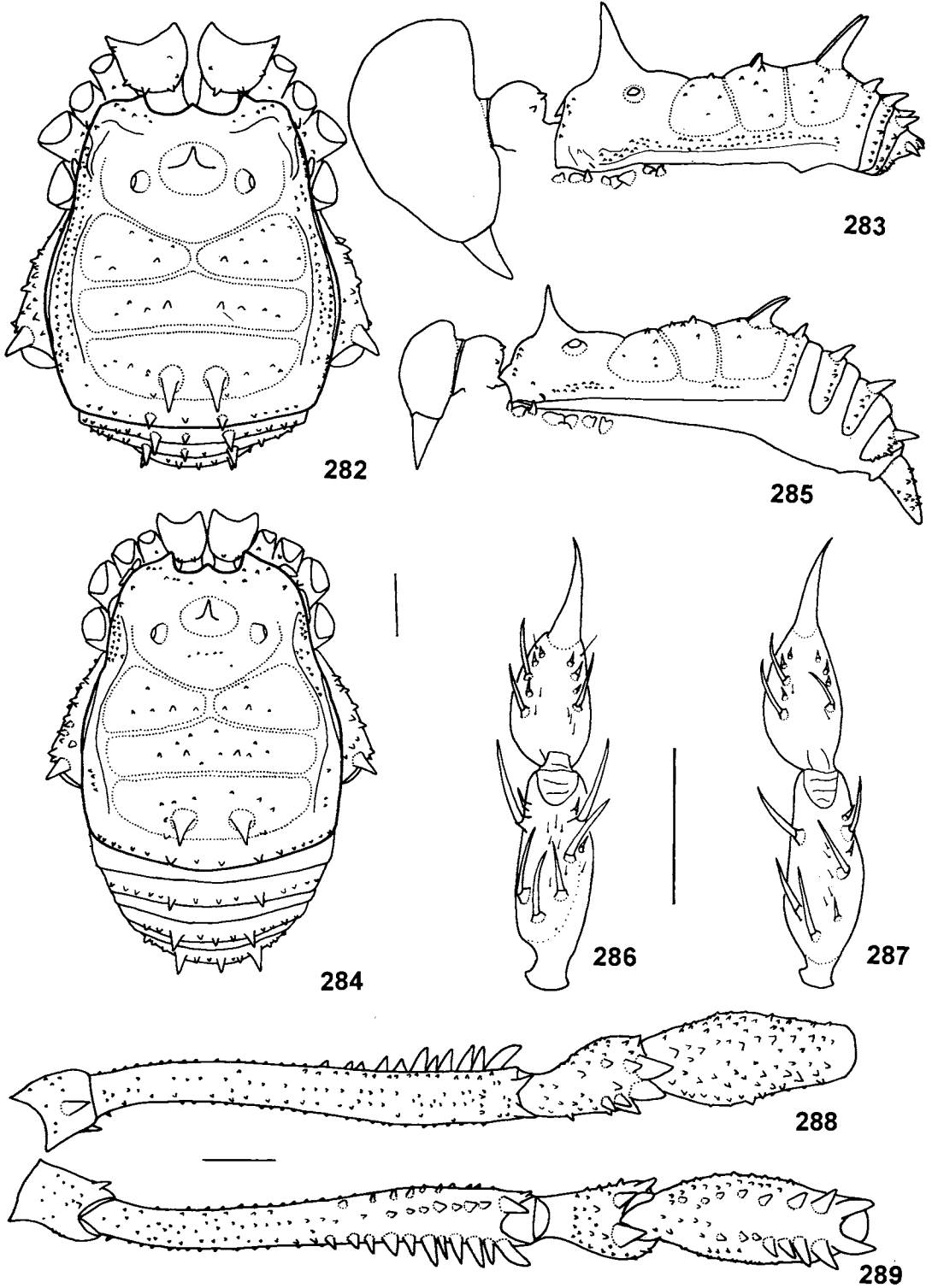
**Chelicera:** Swollen. Segment I with 5 tubercles; II with 5 small distal teeth, III with 2 large, 2 small.

**Pedipalpus (Fig. 286):** Coxa with 1 dorsal tubercle, 1 ventral. Trochanter with 1 dorsal tubercle, 2 ventral. Femur slightly curved, 1 ventral row of 9 tubercles and 1 dorsal row of 7. Patella swollen at apex. Tibia ectal IIIi, mesal IIIi, flattened prolaterally. Tarsus: ectal Iiii, mesal Iiii.

**Legs (Figs. 288-289):** Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior; IV tuberculate, 1 anterior and 1 dorsoapical large. Trochanter I with 4 ventral tubercles; II with 1 dorsal, 5 ventral; III with 1 dorsal, 7 ventral, 1 retrolateral; IV with 1 large dorsal, 12 ventral, 1 large retrolateral apical. Femur I slightly curved, II straight, III-IV curved; II, III with 3 dorsoapical tubercles; III with 2 rows of large tubercles at distal 1/3. Patella III with 2 dorsoapical tubercles larger; IV with small to large tubercles, 2 dorsal tubercles, 2 ventroapical large. Tibia III with 2 ventral tubercles; IV swollen at apex, 2 rows increasing size on distal half (anterior larger), 2 dorsal tubercles. Tarsal segmentation: 6, 11, 6, 7.

**Penis (Figs. 519-520):** Ventral plate with 2 intermediary pairs of setae. Glans with 1 small process in front of dorsal process.

**Colour:** Brownish. Margins of dorsal scute, free tergites and leg IV darker. Chelicera slightly black reticulate.



Figs. 282-289. *Stygnus polyacanthus* (Mello-Leitão), comb.n.. Male (holotype): 282, vista dorsal; 283, lateral view; 285, left pedipalpus, tibia and tarsus; 288, trochanter, femur, patella and tibia of the right IV leg; dorsal; 289, same, ventral. Female (MZSP): 284, habitus, dorsal view; 285, lateral view; 287, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.



Female description (Sumé, HSPC; Figs. 284-285, 287):

Measurements: DSL 4.52; CL 1.92; DSW 4.16; CW 3.00; ID 1.44; chelicera: II 2.16, III 1.24; pedipalpus 6.33; leg I 10.87; II 19.16; III 14.45; IV 19.81.

Legs I-IV with tubercles smaller than male. Tibia IV less globose than male. Tarsal segmentation: 6, 11-13, 6, 8. Pedipalpus (Fig. 287): tibia ectal IIIi, mesal IIIi, tarsus ectal IIIi, mesal IIIi.

Bionomics: The specimens from Monteiro (Paraíba) were collected under termite nests.

Type locality: Campina Grande, Paraíba, Brazil (07°13'S - 35°53'W).

Distribution (Fig. 601): Brazil (Paraíba, Pernambuco and Bahia).

Material examined: Brazil. *Paraíba*: Teixeira (Serra do Teixeira), S. Cariri *leg.*, 24.VII.1978, 1 ♀ (HSPC); Monteiro, Fazenda Matarina (under termite nests), 9.VIII.1978, P. F. Lins-Duarte *leg.*, 1 ♂ & 3 ♀ (MZSP); Sumé, 8.VIII.1978, P. F. Lins-Duarte *leg.*, 2 ♀, 1 ♂ & 2 immatures (MZSP-14245); *Pernambuco*: Águas Belas, Serra Comunati, E. Gounelle *leg.*, 1♂ (MNHN-17196); Lapa (Bom Jesus da Lapa?), Bailey *leg.*, 1 ♂, labelled by Mello-Leitão as "Metastygneilus bahiensis" ("in schedulae") (MNRJ).

*Stygnus simonis* Sørensen, comb. n.

(Figs. 290-292, 600)

*Stygnus simonis* Sørensen, 1932: 285. (Female holotype, "Stygnus simplex W. S., Texas [Pebas, Loreto, Peru], Will. Sørensen, 13.11.89, # 169", decolored, damaged with several segments lost, UZMD, examined).

*Henriksia simonis*; Mello-Leitão, 1933: 103.

Diagnosis: The females of this species are similar to those of *S. klugi* and *S. simonis* and they differ from these species in having spines of areas III not tuberculate, segment I of chelicera and pedipalpus coxa with 1 tubercle each.

Female redescription (holotype):

Measurements: DSL 4.24; CL 1.52; DSW 3.76; CW 3.04; ID 1.76; chelicera: II 2.14; III 0.88.

Dorsum (Figs. 290-291): Anterior margin with 1 small tubercle each side. Cephalothorax with 1 central upwards spine. Eye mounds smooth. Lateral margins with 1 row of tubercles from coxa II to almost posterior margin. Area I-II with 2 tubercles each side; III with 1 each side, with 2 large and parallel spines, backwards. Posterior margin with 2 larger tubercles behind spines of area III, 1 each side, 1 almost at middle. Free tergite I with 2 central with 1 larger each side and 3 laterad tubercles; II with 3 central with 1 larger each side, 5 laterad, III with 3 central with 1 large each side, 3 laterad. Anal plate with 2 irregular rows of tubercles, 1 row on posterior margin.

Venter: Coxa I with 2 anterior tubercles, 1 median row of 5 large, 1 posterior row of 4, 3 apical; II with 3 anterior, 1 median row of 8, 3 posterior, 3 apical; III irregularly tuberculate; IV with 3 oblique rows near stigmatic area. Posterior margin and free sternites with 1 row of small tubercles. Anal plate with tubercles irregularly disposed, 1 row on posterior margin.

Chelicera: Segment I with 1 tubercle; II with 1 basal basal small, 1 wide, 2 distal smaller; III with 1 small basal, 3 wide, 1 small distal.

Pedipalpus (Fig. 292): Coxa with 1 ventral tubercle, 1 large dorsal. Trochanter with 2 large ventral and 1 large dorsal tubercles. Femur with 1 ventrobasal tubercle. Patella swollen at distal 1/4. Tibia: ectal IIIi, mesal IIIi, 1 ventral row of tubercles. Tarsus: ectal IIIi, mesal IIIi, 2 ventral rows.

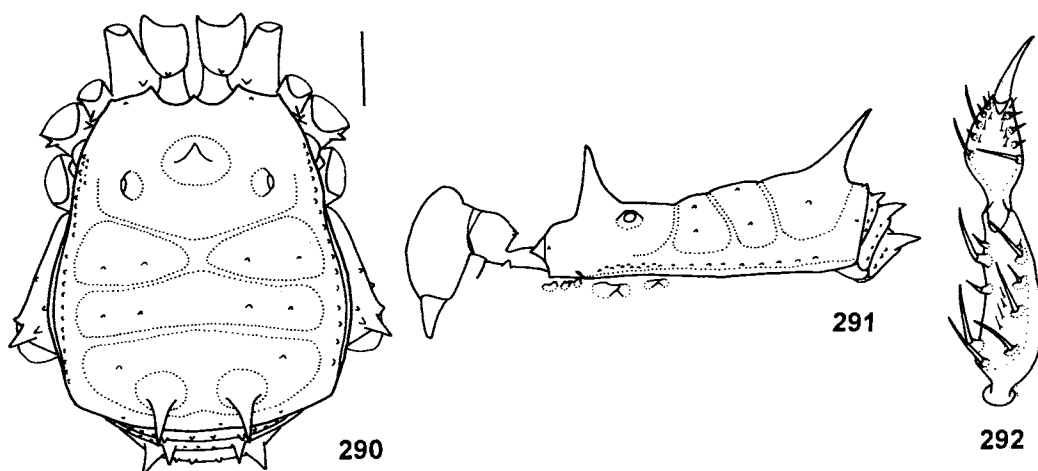
Legs. Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 larger dorsoapical tubercle. Trochanter IV with 1 retrolateral and 1 dorsal large tubercles. Femur IV with 2 ventral rows of tubercles, 2 apical larger pairs, 2 dorsal of similar size. Patella IV smooth ventrally, 2 dorsoapical tubercles. Tarsal segmentation: 7, 14, ?, 7.

Colour: The holotype is decolored.

Male unknown.

Type locality: Pebas, Loreto, Peru (03°10'S - 71°50'W). According to original description and original label the type locality would be Texas, U.S.A. However, the right locality is Pebas, Peru (see note on *Eutimesius simoni*).

Distribution (Fig. 601): Recorded only from type locality.



Figs. 290-292. *Stygnus simonis* (Sorensen), comb.n. Female (holotype): 290, habitus, dorsal view; 291, lateral view; 292, left pedipalpus, tibia and tarsus. Scale bar, 1 mm.

***Stygnus simplex* (Roewer), comb. n.**

(Figs. 293-297, 521-522, 600)

*Parastygnellus simplex* Roewer, 1913b: 437, fig. 172; 1923: 575 (rdesc.), fig. 721. (Holotype male, "Ecuador, Ros [Santa Rosa, río Napo], 1 male, type, n° 835", SMFD, examined).

**Diagnosis:** The males of this species resemble those of *S. peruvianus* in having long and parallel spines on area III (Fig. 293), femur and tibia IV not swollen and differ by the lack on retrolateral row of tubercles on femur IV (Figs. 296-297)

**Redescription male (holotype):**

**Measurements:** DSL 3.00; CL 1.32; DSW 2.56; CW 2.16; ID 1.24; chelicera: II 1.40, III 0.80; pedipalpus 5.68; leg I 7.38; II 15.80; III 12.36; IV 16.66.

**Dorsum (Figs. 293-294):** Anterior margin with 4 lateral tubercles. Cephalothorax with 3 lateral tubercles, 1 large central spine. Lateral margins with 1 row of tubercles from coxa II to posterior margin. Areas I-III irregularly tuberculate; III with 2 divergent slightly backwards spines. Posterior margin with 6 tubercles. Free tergite I with 12 tubercles; II with 9 (2 larger); III with 6 (2 larger). Anal plate tuberculate.

**Venter:** Coxa I with 1 median row of 4 large tubercles, 3 apical, 4 anterior, 4 posterior; II with 1 median row of 8, 3 apical, 6 anterior, 8 posterior; III with 1 median row of 6 tubercles, 5 ante-

rior, 12 posterior. Coxa IV, stigmatic area, anal plate ventral and free sternites tuberculate.

**Chelicera:** Swollen. Segment I with 1-2 tubercles; II-III with 4 teeth.

**Pedipalpus (Fig. 295):** Trochanter with 2 ventral tubercles, 1 large dorsal. Femur straight with 1 row of 4 tubercles on basal half. Patella smooth and swollen at apex. Tibia and tarsus with small dorsal tubercles. Tibia: ectal IIIli, mesal IIIli. Tarsus: ectal Iiii, mesal Iiii.

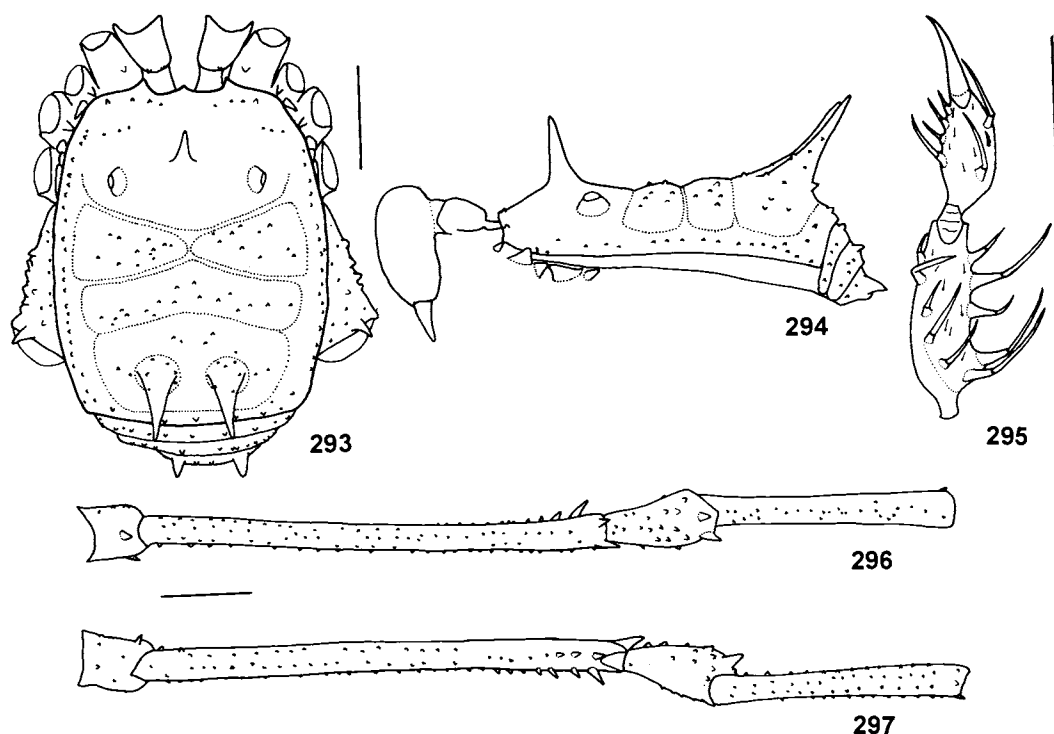
**Legs (Figs. 296-297):** Coxa I with 1 tubercle; II with 1 large and 1 wide anterior tubercles, 1 towards III; III with 1 posterior; IV tuberculate, 1 dorsoapical larger tubercle. Femora I-IV straight, with 2 apical tubercles; IV with 1 ventral row of tubercles increasing size apicad. Patella IV with 2 large dorsoapical tubercles. Tarsal segmentation: 6, 9, 7, 7. Tarsal process short.

**Penis (Figs. 16, 17):** Truncus cylindrical and thin, slightly swollen apicad. Ventral plate piriform with 3 basal, 3 distal and 1 intermediary pairs of setae. Glans large with 1 short process in front of dorsal process.

**Colour:** Brownish. Anterior, lateral and posterior margins and free tergites dark-brown.

**Type locality:** Santa Rosa, Napo, Ecuador (00°58'S - 77° 28'W).

**Distribution (Fig. 600):** Recorded from Ecuador (Napo) and Peru (Loreto).



Figs. 293-297. *Stygnus simplex* (Roewer), comb.n.. Male (holotype): 293, habitus, dorsal view; 294, lateral view; 295, right pedipalpus, tibia and tarsus; 296, trochanter, femur, patella and tibia of the right IV leg, dorsal; 297, same, ventral. Scale bars: 1 mm.

Material examined: Peru. Loreto: Colonia Calleria, Río Calleria, 15 km of Ucayali, 10.VIII-16.XI.1961, B. Malkin leg., 1 ♀ & 1 ♂ (AMNH).

*Stygnus tocaninensis*, sp.n.  
(Figs. 298-305, 523-524, 566-567, 601)

Diagnosis: The males of this species differs from those of all other *Stygnus* in having on wide spine on cephalothorax (Fig. 299), femur IV with two ventral rows of large tubercles (Fig. 305), one enlarged dorsoapical tubercles on patela IV, tibia IV semiclavate (Fig. 304).

Etymology: In reference to the Tocantins River, where the type material where collected.

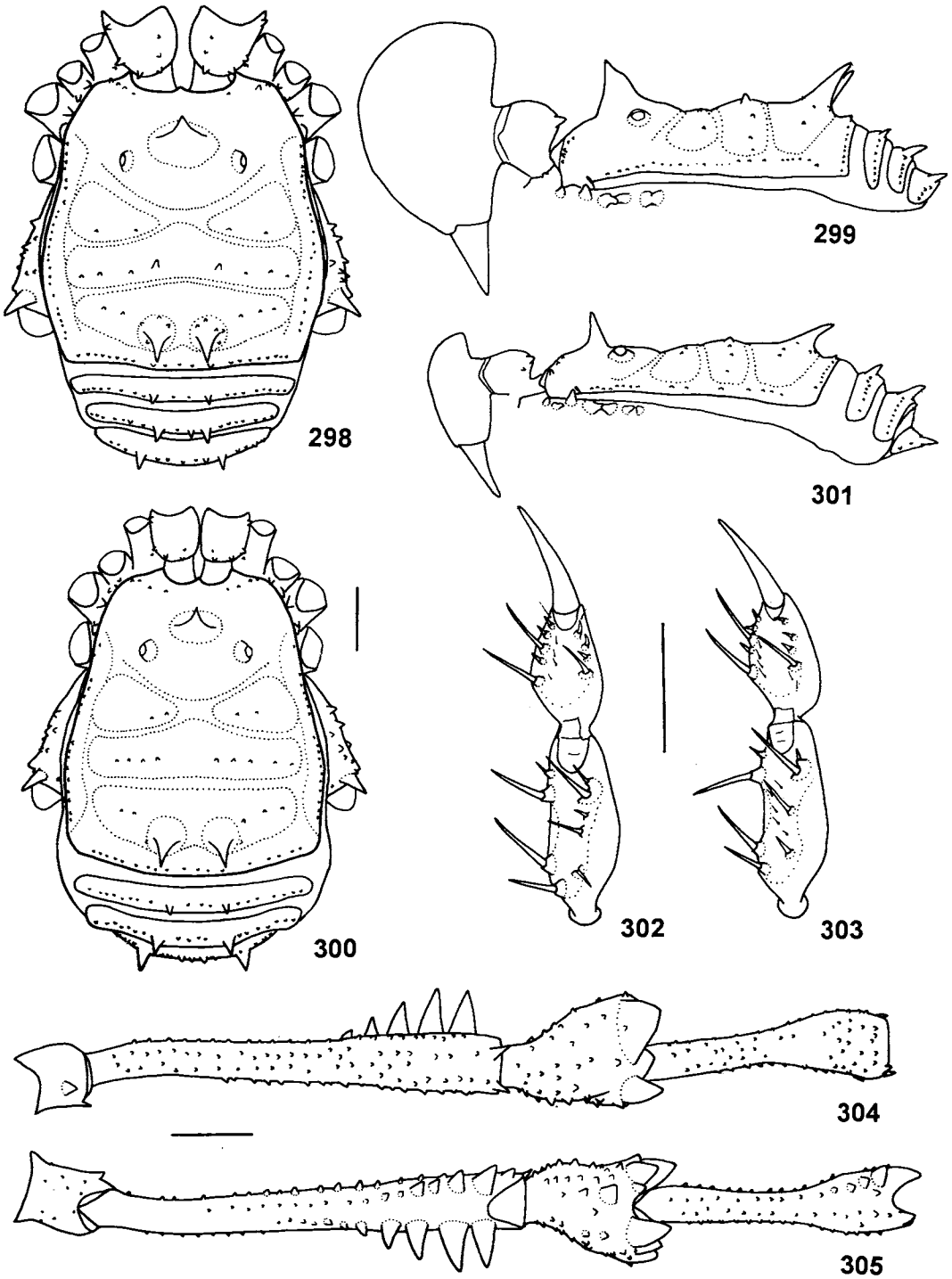
Type material: ♂ holotype, "Brazil, Pará, Ilha Tocantins, VII.1984" IBUT. Paratypes: same data, 4 ♂ & 2 ♀ IBUT; same data, 2 ♂ & 1 ♀ MZSP-14255; (Chiqueirão, camp), IV.1984, 2 ♂ & 1 ♀ IBUT; same data, VIII.1984, 2 ♂ IBUT.

Male description (holotype):

Measurements: DSL 4.32; CL 1.84; DSW 4.12; CW 3.00; ID 1.48; chelicera: II 4.04; III 2.24; pedipalpus 7.18; leg I 11.94; II 20.95; III 14.72; IV 19.20.

Dorsum (Figs. 298-299): Anterior margin with 3-5 tubercles each side. Cephalothorax with 1 central forwards spine, with wide base. Lateral margins with tubercles from coxa III to IV. Area I with 2 small tubercles each side; II with 4 each side (central pair larger); III with 2-3 lateral, 2 parallel backwards spines, with tuberculate base. Posterior margin with 3 central with 1 larger each side and 8 laterad tubercles. Free tergite I with 2 central with 1 larger each side, 8 laterad; II with 2 central with 1 larger each side, 7 laterad; III with 5 central with 1 larger each side, 4 laterad. Anal plate irregularly tuberculate, with 1 row on posterior margin.

Venter: Coxa I with 7 anterior tubercles, 1 row of 6 median, 5 posterior, 3 apical; II with 8 anterior, 7 median, 8 posterior, 4 apical; III-IV



Figs. 298-305. *Stygnus tocantinensis*, sp.n.. Male (holotype): 298, habitus, dorsal view; 299, lateral view; 302, left pedipalpus, tibia and tarsus; 304, trochanter, femur, patella and tibia of the right IV leg, dorsal; 305, same, ventral. Female (paratype): 300, habitus, dorsal view; 301, lateral view; 303, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

irregularly tuberculate; III and genital operculum wrinkle. Posterior margin and free sternites with 1 row of tubercles. Anal plate with tubercles irregularly disposed at middle, 1 row near posterior margin.

Chelicera: Swollen. Segment I with 6 tubercles; II with 1 wide median, 4 small distal; III with 1 wide basal, 1 wide median, 2 small distal. With interchelar space.

Pedipalpus (Fig. 302): Coxa with 1 large ventral tubercle, 1 dorsal. Trochanter with 2 ventral tubercles, 1 large dorsal. Femur with 9 small ventral tubercles, minute-tuberculate dorsally. Patella swollen at distal half. Tibia: ectal iiiIi, mesal IIIi, compressed, tuberculate ventrally. Tarsus: ectal Iiii, mesal IiIii, tuberculate ventrally.

Legs (Figs. 304-305): Coxa I with 1 tubercle; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 anterior, 1 large dorsoapical tubercle. Trochanter I with 3 ventral tubercles, 1 retrolateral; II with 4 ventral, 2 retrolateral, 1 large dorsal; III with 5 ventral, 3 retrolateral, 1 dorsal; IV with 7 ventral, 1 large retrolateral apical, 1 large dorsal. Femora III-IV with 2 ventral rows of tubercles on distal half, 2 dorsoapical, III with tubercles similar in size, IV anterior larger; IV with 1 retrolateral row. Patella IV with 1 large ventroapical tubercle, 2 apical ventral smaller, 2 apical prolateral, 2 retrolateral, 2 dorsoapical (anterior larger). Tibia IV swollen at distal 1/3, 2 ventral rows of tubercles (2 apical larger). Tarsal segmentation: 6, 12-13, 6, 7.

Penis (Figs. 523-524, 566-567): Ventral plate with 2 intermediary and 3 basal pairs of setae.

Colour: Dark-brown. Chelicera and anterior margin to spine of cephalothorax black reticulate. Margins of areas darker. Pedipalpus and legs with black spots. Areas I-III with light spots. Spines of area III black.

Female description (paratype; Figs. 300-301, 303):

Measurements: DSL 4.00; CL 1.48; DSW 4.12; CW 3.00; ID 1.48; chelicera: II 2.24; III 1.16; pedipalpus 6.78; leg I 11.00; II 20.34; III 14.58; IV 19.82.

Anterior margin with 4 tubercles each side. Tubercles and spines of dorsal scute and legs smaller than male. Base of spine of cephalothorax

narrower than male. Area I with 2 central tubercles; II with 9 tubercles (central pair slightly larger than others); spines of III with smooth base. Posterior margin with 18 tubercles. Free tergite I with 3 central with 1 larger each side and 7-8 laterad tubercles; II with 4 central with 1 larger each side, 7 laterad; III with 6 central with 1 larger each side, 4 laterad. Coxa III with 1 posterior and IV with 1 anterior tubercles. Femora III-IV with 2 ventral rows of small tubercles. Patella IV with 2 dorsoapical tubercles. Tibia IV smooth. Tarsal segmentation: 6, 12-11, 6, 7.

Type locality: Ilha Tocantins, Pará, Brazil (04°25'S - 49°32'W).

Distribution (Fig. 601): Recorded only from type locality.

*Stygnus weyrauchi* (Roewer), comb. n.

(Figs. 306-310, 525-526, 599)

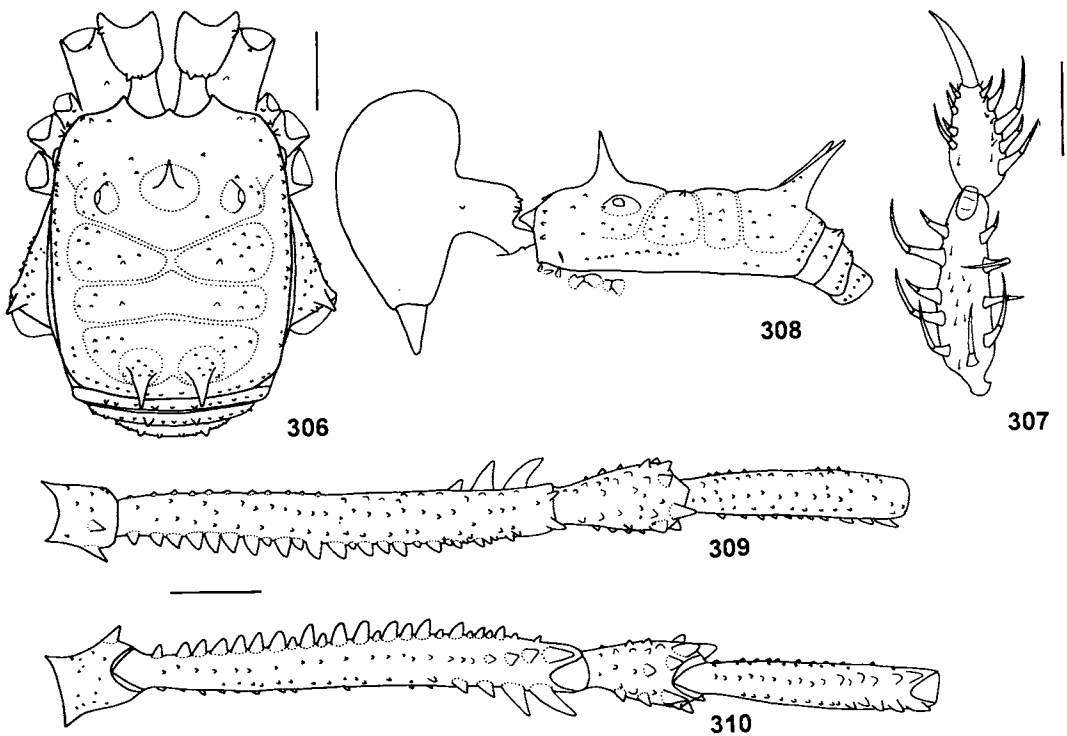
*Lojanellus weyrauchi* Roewer, 1963: 69. (Male holotype, "Peru. O-Hang der östl. Anden. Varisca bei Oxapampa, im Ucayali-Becken, 1500m, 12.IX.1960, auf faulenden Baumstämmen der Viehweide, Weyrauch leg., CR-13967, 1 male, holotype", SMFD, dissected, examined).

Diagnosis: This species differs from other *Stygnus* in having the following combinations of characteristics: no scopula; pedipalpal sockets long (Fig. 307); femur IV with one prolateral row and two ventral (on distal 1/3) rows of large tubercles (Figs. 309-310); coxa IV much tuberculate; base of spines of area III tuberculate; penis with two intermediary pairs of setae (Fig. 526).

Male redescription (holotype):

Measurements: DSL 3.72; CL 1.76; DSW 3.12; CW 2.96; ID 1.76; chelicera: II 3.64; III 1.92; pedipalpus 9.26; leg I 11.78; II 17.78; III 13.80; IV 18.41.

Dorsum (Figs. 306-308): Anterior margin with 2-3 tubercles. Cephalothorax with 1 spine slightly forwards, with tubercles irregularly disposed. Lateral margins with 1 row of tubercles from apex of coxa II to apex of area I, 2 tubercles near area III. Area I with 9 tubercles each side (1 pair larger); II with 4 each side (central pair



Figs. 306-310. *Stygnus weyrauchi* (Roewer), comb.n. Male (holotype): 306, habitus, dorsal view; 308, lateral view; 307, right pedipalpus, tibia and tarsus; 309, trochanter, femur, patella and tibia of the right IV leg, dorsal; 310, same, ventral. Scale bars: 1 mm.

larger); III with 5 each side, 2 slightly divergent backwards spines, with tuberculate base. Posterior margin with 1 row of 16 tubercles. Free tergite I with 2 central with 1 larger each side, 3-5 laterad; II with 3 central with 1 larger each side, 4-5 laterad; III with 3 central with 1 larger each side, 2 laterad. Anal plate with 1 median row of tubercles, 1 posterior.

Venter: Coxa I with 3 anterior tubercles, 5 large median, 3 posterior, 3 apical; II with 5 anterior, 6 median, 5 posterior, 3 apical; III irregularly tuberculate, 4 apical. Posterior margin of stigmatic area, free sternites with 1 row of tubercles. Anal plate with 1 posterior row.

Chelicera: Segment I with 3 tubercles; II-III with 1 wide basal, 1 median wide, 4 small distal. With interchelar space.

Pedipalpus (Fig. 307): Coxa with 1 large ventral tubercle, 1 dorsal. Trochanter with 2 large and 1 small ventral, 1 dorsal large. Femur slightly curved, slightly swollen apically, 5 ventral tubercles. Patella swollen at distal 1/3, small-tuberculate. Tibia: ectal IIII, mesal IIII, tuberculate

dorsally, sockets large, small-tuberculate ventrally. Tarsus: ectal IIII, mesal IIII, sockets large.

Legs (Figs. 309-310): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 large dorsoapical tubercle. Trochanter I with 3 large and 2 small ventral, small dorsal; II with 1 large and 4 small ventral, 2 retrolateral, 1 subapical larger and small dorsal; III with 5 ventral, 2 prolateral (1 larger), 1 subapical dorsal larger; IV with 10 ventral, 1 retrolateral large and several small dorsal. Femur III with 2 large ventral pairs near apex; IV slightly curved, 2 ventral rows near apex, 1 retrolateral row from base near apex, 2 dorsoapical (posterior larger); Patella IV wide-tuberculate, 2 ventroapical (1 anterior larger), 3 prolateral, 3 retrolateral (1 larger), 1 dorsal. Tibia IV with 2 ventral rows at distal 1/3. Tarsal segmentation: 6, 11, 6, 7. First article of tarsus I slightly swollen.

Penis (Figs. 525-526): Ventral plate with 2 intermediary and 3 basal pairs of setae.

Colour: Brownish. Black reticulate from

anterior of cephalothorax to spine. Dorsal scute, pedipalpus and legs with small black spots. Trochanter-tibia IV dark-brown.

Female unknown.

Bionomics: The holotype was collected under fallen logs on pasture (Roewer, 1963).

Type locality: Varisca near Oxapampa, Pasco, Peru.

Distribution (Fig. 599): Recorded only from type locality.

### *Auranus* Mello-Leitão

*Auranus* Mello-Leitão: 1941a: 441; Pinto-da-Rocha, 1995b: 196. (Gender masculine).

Diagnosis: Dorsal scute rectangular. Cephalothorax tuberculate. Eye mounds smooth. Area I divided by a median groove; III with 2 spines. Tubercles of free tergite III similar in size. Pedipalpal femur large; basal sockets apex of tibia normal. Without tarsal process and scopula. Penis large and cylindrical, ventral plate with 2-3 distal and 4 basal pairs of setae; glans without dorsal process.

Type species: *Auranus parvus* Mello-Leitão: 1941a, by original designation.

### *Auranus hoeferscovitorum*, sp.n.

(Figs. 311-316, 527-528, 602)

Diagnosis: Differs from the other species of genus by having dorsal scute and free tergites with enlarged tubercles, instead of medium-sized tubercles as in *A. parvus*.

Etymology: In honor of the arachnologists who collected the type material, Hubert Höfer and Antonio Domingos Brescovit.

Type material: ♂ holotype & ♀ paratype "Brazil, AM [Amazonas], Manaus, Reserva Ducke, 20.VIII.1991, A. Brescovit, MCNZ-1099"; ♀ paratype "RD [= Reserva Ducke], 21.VIII.1991", H. Höfer leg., SMNK.

Male description (holotype):

Measurements: DSL 1.62; CL 0.72; DSW 1.10; CW 1.10; ID 0.68; chelicera: II 1.22; III 0.44; pedipalpus 4.34; leg I 5.84; II 8.94; III 7.18; IV 9.12.

Dorsum (Figs. 311-312): Anterior margin with 1 small median eminence minute-tuberculate. Cephalothorax with 3 central tubercles and 1 larger each side. Lateral margins with tubercles from coxa II to posterior margin. Area I with 1 enlarged tubercle each side; II with 1-2 enlarged each side; III with 1-2 enlarged each side, 2 long backwards spines. Posterior margin with 1 row of 13 tubercles (4 central enlarged). Free tergite I-II with 6 and III with 5 enlarged tubercles. Anal plate with 2 central tubercles.

Venter: Coxa I with 3 anterior tubercles, 1 median row of 4-5, 2-3 posterior, 2 apical; II with 1 median row of 6, 4 posterior; III with 1 median row of 6, 3 apical; IV with 2 anterior, 1 oblique row of 5-6, 2-3 posterior, 3 apical. Posterior margin, free sternites and posterior margin of anal plate with 1 row of tubercles.

Chelicera: Swollen. Segment I smooth; II with 1 wide median tubercle, 4 small distal; III with 1 wide basal, 1 wide median, 4 small distal. With interchelar space.

Pedipalpus (Fig. 315): Coxa with 1 ventral tubercle, 2 wide dorsal. Trochanter with 2 ventral tubercles, 1 dorsal. Femur straight, with 1 small basal tubercle. Patella swollen at distal 1/5. Tibia: ectal IIili, mesal IIili. Tarsus: ectal IIilii, mesal IIilii.

Legs: Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate. Trochanter I with 3 ventral tubercles; II with 3 ventral, 1 retrolateral, 2 dorsal; III with 3 ventral, 2 retrolateral, 1 dorsal; IV with 3 ventral, 2 prolateral, 2 retrolateral, 1 large dorsal. Femora I-IV straight, with 2 dorsoapical tubercles of sizes similar. Tarsal segmentation: 8, 12, 6, 7.

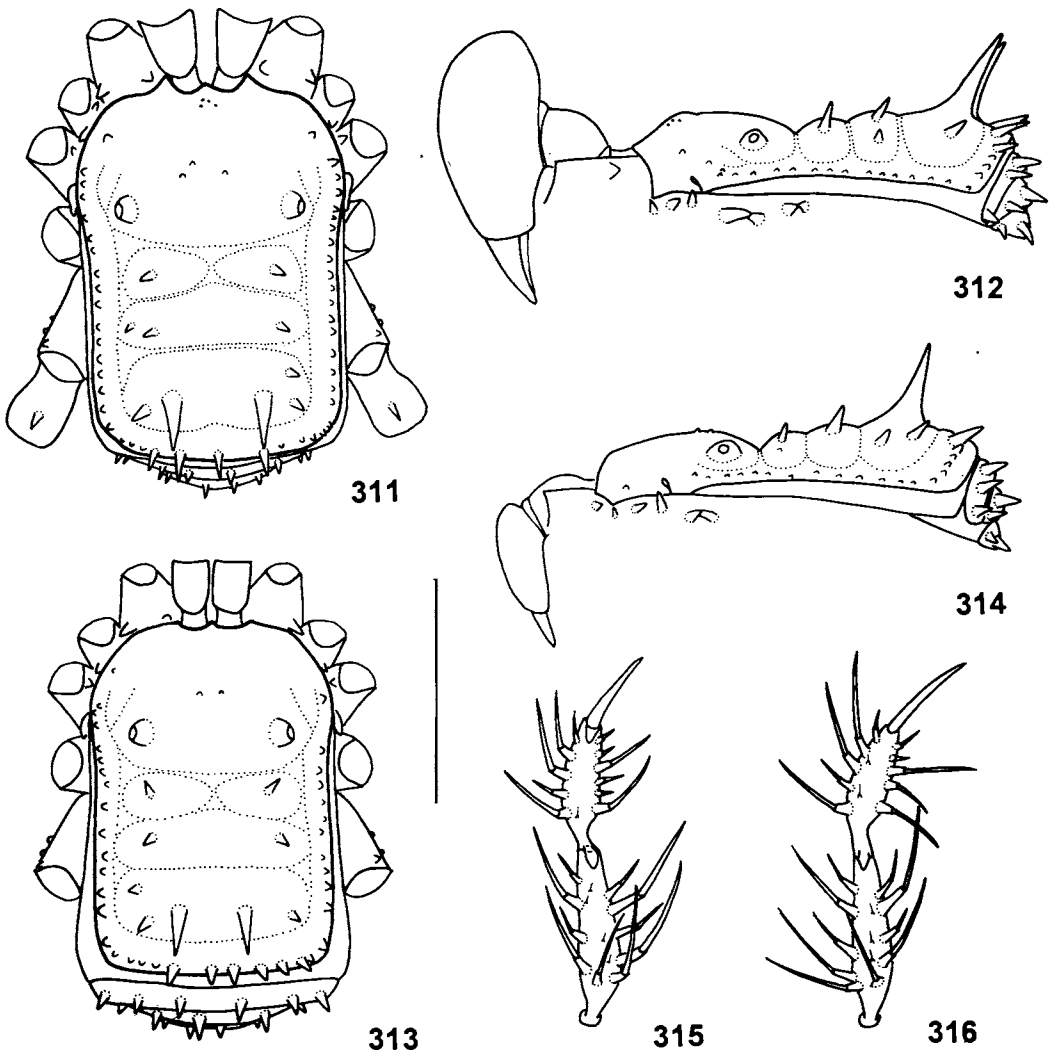
Penis (Figs. 527-528): Ventral plate with lateral margins straight, 2 distal and 4 basal pairs of setae. Stylus with small spine-like.

Colour: Brownish. Margin of dorsal scute, spines of area III and enlarged tubercles darker.

Female description (paratype; Figs. 313-314, 316):

Measurements: DSL 1.48; CL 0.62; DSW 1.04; CW 1.02; ID 0.64; chelicera: II 0.72; III 0.30; pedipalpus 4.20; leg I 5.68; II 8.08; III 6.48; IV 8.60.

Anterior margin without median eminence. Area I with 1 tubercle; III with 1-2. Posterior margin with 11 tubercles (6 large central). Pedipalpal tarsus: ectal IIilii, mesal IIilii. Tarsal segmentation: 7, 9-10, 6, 6.



Figs. 311-316. *Auranus hoeferscovitorum*, sp.n. Male (holotype): 311, habitus, dorsal view; 312, lateral view; 315, left pedipalpus, tibia and tarsus. Female (paratype): 313, habitus, dorsal view; 314, lateral view; 316, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Type locality: Reserva Ducke, Manaus, Amazonas, Brazil (02°55'S - 59°59'W).

Distribution (Fig. 602): Recorded only from type locality.

*Auranus parvus* Mello-Leitão  
(Figs. 317-324, 529-530, 589, 593, 601)

*Auranus parvus* Mello-Leitão, 1941a: 441; Soares, 1945: 386 (cat.). (Female holotype, "Aruá [Aurá]: Pará, [Brazil], Leitão de Carv. [Carvalho] leg., *Aruasus parvus*, typus", MNRJ, examined).

*Stygnidius inflatus*; Friebe & Adis, 1983: 103, figs. 1-2 (bion.; mis.); Adis, 1992: 40 (bion., mis.).

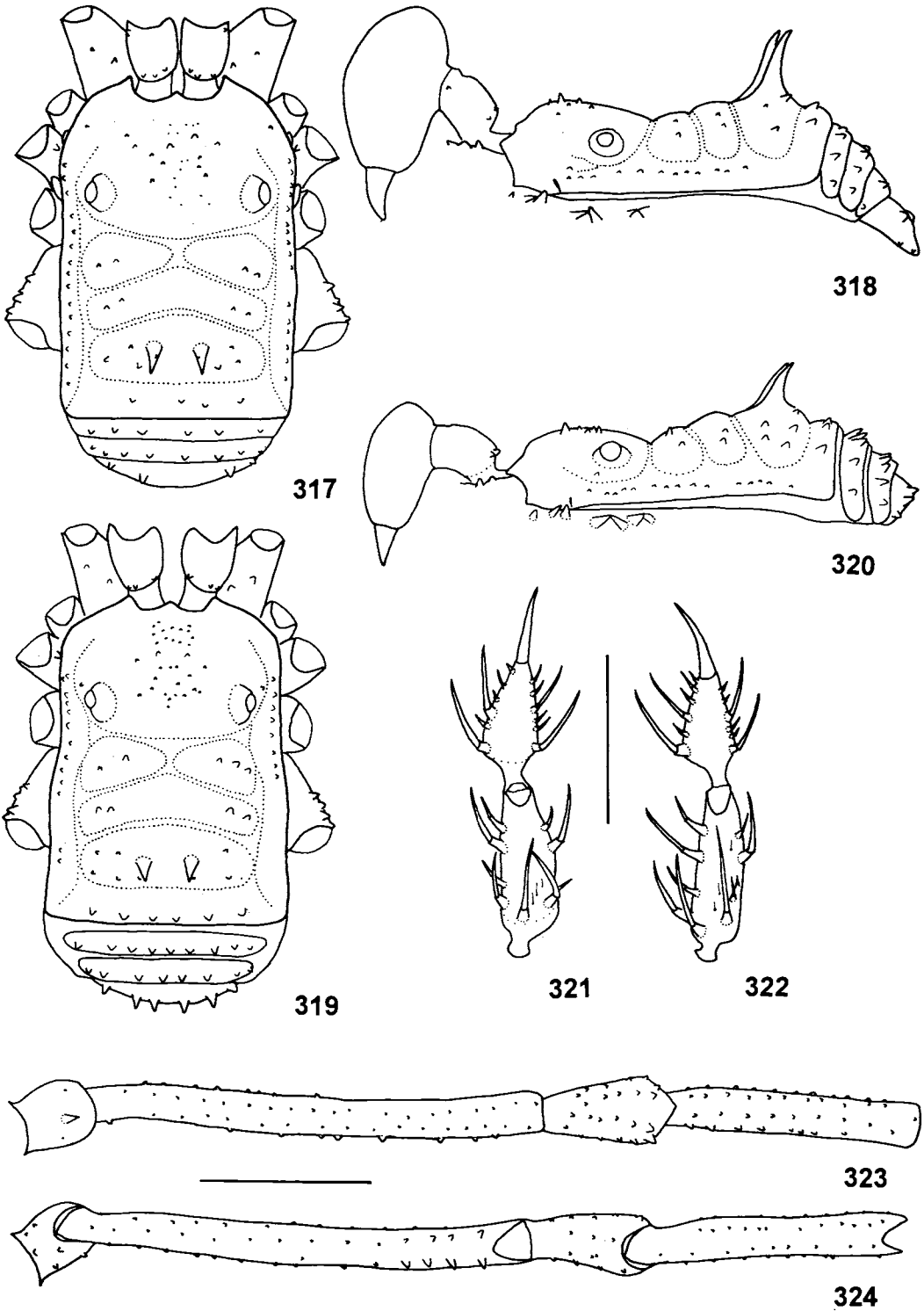
Diagnosis: See *A. hoeferscovitorum*, sp.n..

Male description (INPA, Tarumã Mirim):

Measurements: DSL 1.88; CL 0.84; DSW 1.22; CW 1.18; ID 1.00; chelicera: II 1.38; III 0.62; pedipalpus 4.68; leg I 6.26; II 9.46; III 7.00; IV 9.24.

Dorsum (Figs. 317-318): Anterior margin smooth. Cephalothorax with tubercles of several sizes irregularly disposed on central part. Lateral margins with tubercles from coxa I to posterior margin. Area I-II with 2 tubercles each side; III with 3 lateral tubercles, 2 parallel backwards





Figs. 317-324. *Auranus parvus* Mello-Leitão. Male (INPA): 317, habitus, dorsal view; 318, lateral view; 321, left pedipalpus, tibia and tarsus; 323, trochanter, femur, patella and tibia of the right IV leg, dorsal; 324, same, ventral. Female (holotype): 319, habitus, dorsal view; 320, lateral view; 322, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

spines, slightly curved. Posterior margin with 4 tubercles. Free tergite I with 6 tubercles; II with 8; III with 4 (central pair larger). Anal plate with 2 median large, 7 on posterior margin.

Venter: Coxae I-III with 3 apical tubercles; I with 3 anterior, 5 large median, 3 posterior; II-IV irregularly tuberculate. Stigmatic area irregularly tuberculate. Free sternites with 1 row of tubercles. Anal plate with 1 median row of 7 tubercles and 1 row of 4 on posterior margin.

Chelicera: Swollen. Segment I with 4 tubercles; II with 1 wide median, 3 small distal; III with 1 wide basal, 1 wide median, 3 small distal.

Pedipalpus (Fig. 321): Coxa with 1 large ventral tubercle, 2 dorsal. Trochanter with 2 ventral tubercles, 1 dorsal. Femur with 1 ventral row of 6 small tubercles. Patella swollen at distal half. Tibia: ectal Iiii, mesal Iiili. Tarsus: ectal IiiIii, mesal Iiiii.

Legs (Figs. 323-324, 593): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 dorsoapical larger. Trochanter I with 1 retrolateral tubercle, 3 ventral; II with 3 ventral, 1 large dorsal, 2 retrolateral; III with 4 ventral, 3 retrolateral; IV with 5 ventral, 1 large and 2 small dorsal, 2 retrolateral. Femora III-IV curved, with 2 ventral rows of tubercles, larger on distal 1/3, 1 retrolateral row. Patella IV tuberculate, 3 dorsoapical larger. Tarsal segmentation: 6, 10-11, 6, 7.

Penis (Figs. 529-530): Truncus swollen distally. Ventral plate with 3 distal and 3 basal pairs of setae curved apically.

Colour: Dark-brown with small black spots on dorsal scute.

Female redescription (holotype; Figs. 319-320, 322):

Measurements: DSL 1.80; CL 0.76; DSW 1.46; CW 1.40; ID 0.96; chelicera: II 1.12; III 0.48; pedipalpus 4.60; leg I 5.58; II 10.30; III 6.50; IV 8.64.

Area I with 2-3 tubercles each side; III with 3-4 each side, 1 behind each spine. Posterior margin with 6 tubercles. Free tergite I with 9 tubercles; II with 8; III with 6. Pedipalpus: tibia: ectal IiiiI, mesal Iiili; tarsus: ectal IiiIii, mesal Iiiii. Tubercles of legs I-IV slightly smaller than male. Tarsal segmentation: 6, 9, 6, 7. Brown with small black spots; black reticulate on anterior region of cephalothorax and chelicera.

Bionomics: Friebe & Adis (1983), studied *A. parvus* (named erroneously as *Stygnidius inflatus*) in *igapó* forest of Tarumã Mirim river, near Negro river in Manaus county. The opilionids live on trunks and canopy during the rainy season when the floor is under water. During the dry season (October) the adults go down by the trunk and the new generation arises. The adults die in January/February and the new generation is in pre-adult phase in April. At middle of May begin the flood and the opilionids climb the trunks. During the flooding time the harvestmen hide under bark during the day, at night they go out to search food. The copulation occurs at the end of flooding time on trunks or canopy. The eggs are put on small trunks crevices while the water is lowering. A synopsis of the knowledge of the biology of the invertebrates of the amazonian inundation forests was published by Adis (1992).

Type locality: Igarapé Aurá, Belém, Pará, Brazil (01°27'S - 48°25'W). The original label presents Aruá as type locality however, according to P. E. Vanzolini (pers.comm.), the collector, A. Leitão de Carvalho, worked only on Igarapé Aurá.

Distribution (Fig. 601): Brazil: Pará and Amazonas.

Material examined: Brazil. *Pará*: Belém (Ilha do Mosqueiro), 20.VI.1974, R. T. Schuh *leg.*, soil litter, primary forest, 1 ♂ (AMNH); *Amazonas*: Manaus (Reserva Ducke), A. D. Brescovit *leg.*, 20.VIII.1991, 1 ♀ (MCNZ-1097); 23.III.1992, H. Höfer & T. Gasnier *leg.*, 1 ♂ (SMNK); (rio Janauari, 3°20'S, 60°17'W), 16.VI.1988, J. Adis *et al.*, 13 ♂ & 11 ♀ (SMNK); *idem*, 16.V.1988, J. Adis *leg.*, 3 ♂ (INPA); *idem*, 31.V.1988, J. Adis *et al. leg.*, 1 ♀ (SMNK); *idem*, 1.VII.1987, J. Adis *et al. leg.*, 5 ♂ & 1 ♀ (MZSP-14273); same data, 1 ♂ & 2 ♀ (INPA); (rio Tarumã Mirim, *igapó*), 24.XII.1976, J. Adis *leg.*, 1 ♂ & 3 ♀ (INPA); *idem* 10.III.1977, 1 ♀ (INPA); *idem*, 10.XI.1976, 2 ♂ & 1 ♀ (INPA); 24 km ENE of Manaus, 20.VIII.1962, W. L. Brown *leg.*, 1 ♀ (MCZC).

### *Verrucastygnus*, gen.n.

Etymology: Masculine gender. In reference to the large number of tubercles on the dorsal scute and the name of type genus of Stygnidae.

Diagnosis: Dorsal scute rectangular.

Cephalothorax tuberculate. Eye mounds smooth. Area I divided by a median groove; III with 2 spines. Tubercles of free tergite III similar in size. Pedipalpal femur large; basal sockets apex of tibia bifid. Tarsal process reduced to a setae, without scopula. Penis: ventral plate with 3 large and cylindrical distal and 4 basal pairs of setae; glans with dorsal process.

Type species: *Stenostygnoides caliginosus* Pinto-da-Rocha, 1990, by present designation.

***Verrucastynus caliginosus*** (Pinto-da-Rocha),  
comb.n.

(Figs. 325-332, 531-532, 602)

*Stenostygnoides caliginosus* Pinto-da-Rocha, 1990: 122, figs. 1-5; Trajano & Moreira, 1991: (dist.); Pinto-da-Rocha, 1995a: 83 (dist.). (Male holotype, female allotype, "Brasil, Pará, Medicilândia, Caverna do Limoeiro, 17.X.1988, E. Trajano leg., macho holótipo, MZSP-10562, fêmea alótipo MZSP-10563, 1 macho e 1 fêmea parátipos MHNC-6464"; 4 females paratypes "Brasil, Pará, Altamira, Caverna Pedra da Cachoeira, 21.X.1988, E. Trajano leg., MHNC-6465, HSPC-891", holotype dissected, examined).

Male redescription (holotype):

Measurements: DSL 3.00; CL 1.20; DSW 2.12; CW 2.,24; pedipalpus 8.60; leg I 13.20; II 23.83; III 14.67; IV 19.46.

Dorsum (Figs. 325-326): Anterior margin with 1 row of small tubercles each side. Cephalothorax densely covered by tubercles. Lateral margins with tubercles irregularly disposed. Areas I-IV much tuberculate; III with 2 spines parallel backwards. Posterior margin with 2 irregular rows of tubercles. Free tergites I-II with 1 row of tubercles; III with 2 rows. Anal plate with several tubercles.

Venter: Coxa I with 3 rows of tubercles (central larger); II-III with 3 rows; IV irregularly tuberculate. Free sternites with 1 row of tubercles. Anal plate with few tubercles.

Chelicera: Swollen. Segment I with 4 tubercles; II with 1 wide median; III with 1 wide basal and 1 median, 3 small distal. Without interchelar space.

Pedipalpus (Fig. 329): Coxa with 5 dorso-

lateral tubercles. Trochanter with 2 ventral. Femur straight, with 1 ventrobasal tubercle. Patella swollen at apex. Tibia: ectal IIIli, mesal IIIli. Tarsus: ectal IIIlii, mesal IIIli.

Legs (Figs. 331-332): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV small-tuberculate. Trochanter I with 3 ventral, 2 retrolateral, 1 dorsal; II with 3 ventral, 2 retrolateral, 2 dorsal; III with 5 ventral, 3 retrolateral, 4 dorsal; IV with 11 ventral, 3 retrolateral, 5 dorsal. Femora I-IV straight, with 2 ventral rows of tubercles; II-III with 2 apical tubercles; IV swollen apicad, 3 dorsoapical tubercles (lateral larger). Tarsal segmentation: 7, 17-18, 6, 7.

Penis (Figs. 531-532): Ventral plate with lateral margins parallel, distal margin slightly concave.

Colour: Dorsal scute dark-brown with small black sparse spots. Lateral margins and spines of area III black. Chelicera and pedipalpus yellowish reticulate.

Female redescription (allotype; Figs. 327-328, 330):

Measurements: DSL 2.88; CL 1.16; DSW 1.92; CW 2.12; pedipalpus 8.60; leg I 12.60; II 23.64; III 14.59; IV 20.11.

Cephalothorax with less tubercles than male. Femur IV with 2 dorsoapical tubercles. Tubercles of legs smaller than male. Tarsal segmentation: 7, 15-17, 6, 7. Colour lighter than male.

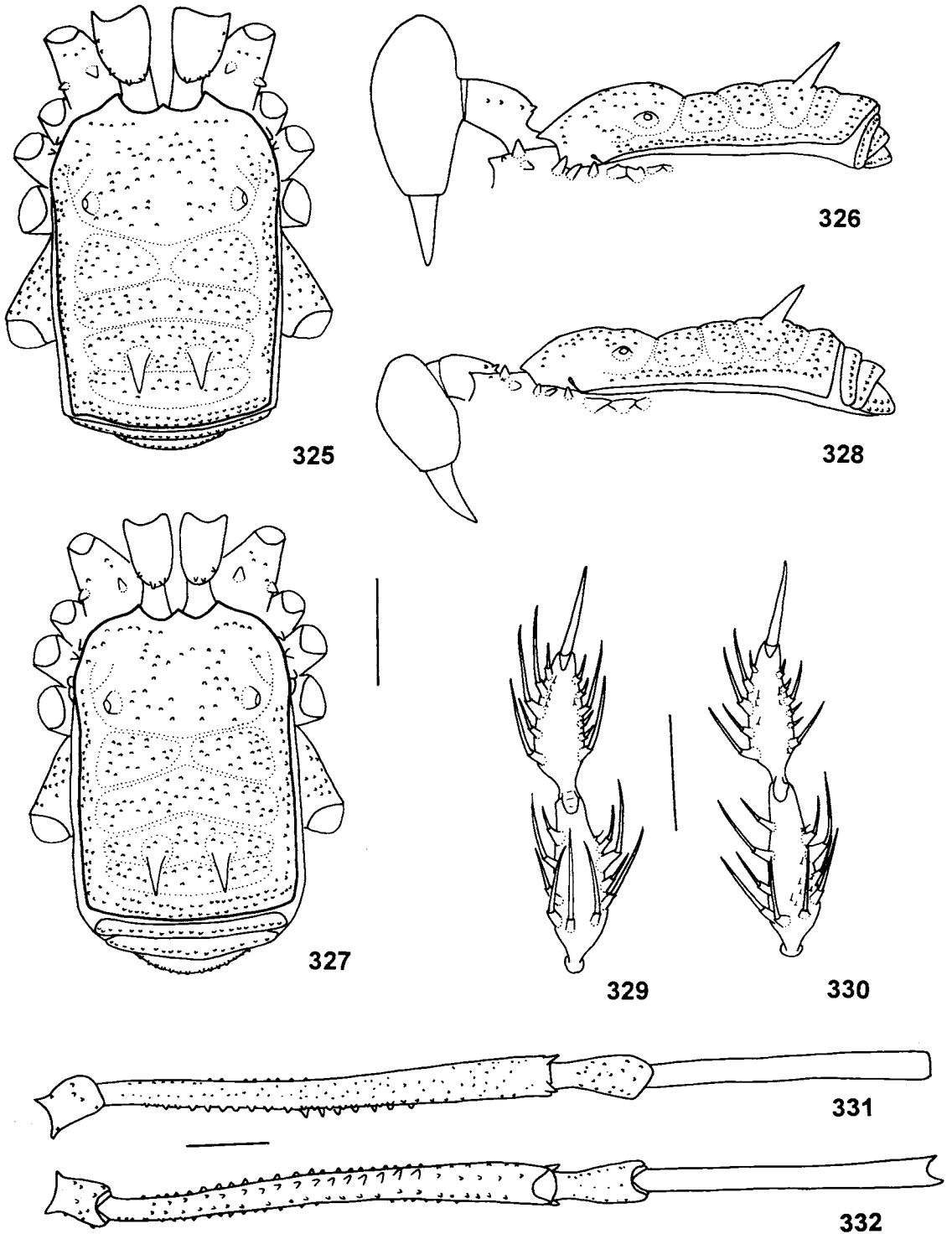
Bionomics: Collected in aphotic region in caves. The adults were distributed by all cave and immatures were not observed. Probable is a troglophile, a cavernicolous facultative species which is able to complete its life cycle within a cave but may also occur in ecologically suitable habitats outside caves (Holsinger & Culver, 1988).

Type locality: Caverna do Limoeiro, Medicilândia, Pará, Brazil (03°32'20"S - 52°47'07"W).

Distribution (Fig. 602): Recorded in two sandstone caves in Altamira and Medicilândia counties, Pará, Brazil.

***Stenostygnoides*** Roewer

*Stenostygnoides* Roewer, 1913a: 155, 158; 1923, 458; Mello-Leitão, 1926: 347; Roewer, 1929:



Figs. 325-332. *Verrucastygmus caliginosus* (Pinto-da-Rocha), comb.n.. Male (holotype): 325, habitus, dorsal view; 326, lateral view; 329, left pedipalpus, tibia and tarsus; 331, trochanter, femur, patella and tibia of the right IV leg, dorsal; 332, same, ventral. Female (allotype): 327, habitus, dorsal view; 328, lateral view; 330, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

280; Mello-Leitão: 1932: 417; 1949: 321. (Gender masculine).

*Stenophareus* Roewer, 1943: 35; Mello-Leitão, 1949: 321 (syn. of *Stenostygnoides*). (Type species: *Stenophareus gracilis* Roewer, 1943, by monotypy).

*Stenopharellus* Roewer, 1947: 34; Mello-Leitão, 1949: 321 (syn. of *Stenostygnoides*). (Type species: *Stenophareus gracilis* Roewer, 1943, by original designation).

Diagnosis: Dorsal scute rectangular. Cephalothorax tuberculate. Eye mounds smooth. Area I divided by a median groove; III with 2 spines. Tubercles of free tergite III similar in size. Pedipalpal femur large; basal sockets apex of tibia bifid. Tarsal process reduced, without scopula. Penis large and cylindrical; ventral plate with 4 distal and 4 basal pairs of setae; glans with dorsal process.

Type species: *Stenostygnoides cosmetitarsus* Roewer, 1913a, by monotypy.

***Stenostygnoides cosmetitarsus* Roewer**

(Figs. 333-340, 533-534, 602)

*Stenostygnoides cosmetitarsus* Roewer, 1913a: 159, fig. 70; 1923: 459, figs. 577a-b (rdesc.). (Male holotype, "Surinam, CR, n° 838, type", SMFD, dissected, examined).

*Stenophareus gracilis* Roewer, 1943: 35 fig. 35-35a. (Female holotype, "Guiana [Surinam], Paramaribo, CR, # 8687, typus", SMFD, examined). *Syn.n.*

*Stenopharellus gracilis*; Roewer, 1947: 23.

*Stenostygnoides gracilis*; Mello-Leitão: 1949: 32.

Male redescription (holotype):

Measurements: DSL 3.32; CL 1.36; DSW 2.40; CW 2.32; ID 1.64; chelicera: II 3.16; III 1.08; pedipalpus 8.52; leg I 12.40; II 20.65; III 14.68; IV 18.95.

Dorsum (Figs. 333-334): Anterior margin smooth. Cephalothorax with small tubercles concentrate on medioanterior region. Lateral margins with 1 row of wide tubercles from apex of coxa II to posterior margin. Area I with 1 tubercle each side; II with 2 each side; III with 1 each side, with 2 large spines, parallel and slightly backwards, IV with 2 tubercles. Posterior margin with 1 row of wide tubercles. Free tergite I with 13 tubercles; II

with 12; III with 8. Anal plate with wide median tubercles, 2 rows of tubercles on posterior margin.

Venter: Coxa I with 17-18 tubercles; II with 4 anterior, 1 median row of 8, 3 apical; III-IV irregularly tuberculate. Posterior margin and free sternites with 1 row of tubercles. Anal plate with several tubercles irregularly disposed.

Chelicera: Swollen. Segment I with 3 tubercles; II with 4 median small; III with 1 wide basal, 1 wide median, 2 small distal. With interchelar space.

Pedipalpus (Fig. 337): Coxa with 1 ventral tubercle, 1 wide dorsoanterior, 1 wide dorsoanterior. Trochanter with 2 ventral tubercles, 1 small dorsal. Femur straight, with 1 ventrobasal tubercle. Patella swollen at distal 1/5. Tibia: ectal IiIi, mesal IiIi, 1 row of ventral tubercles. Tarsus: ectal IiIiIi, mesal IiIi, 2 ventral rows of tubercles.

Legs (Figs. 339-340): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV small-tuberculate. Trochanter I with 4 ventral tubercles, 2 retrolateral; II with 6 ventral, 2 prolateral, 2 retrolateral, 1 dorsal larger; III with 5 ventral, 2 prolateral, 4 retrolateral, 5 dorsal; IV with 6 ventral, 3 prolateral, 5 retrolateral, 4 dorsal. Femora I-IV straight; II-IV with 2 dorsoapical tubercles (anterior larger on II; posterior larger on III-IV); III-IV with 2 ventral rows of small tubercles. Patellae III-IV with 2 dorsoapical tubercles, larger on IV. First and second articles of tarsus I swollen. Tarsal segmentation: 7, 14, 6, 7.

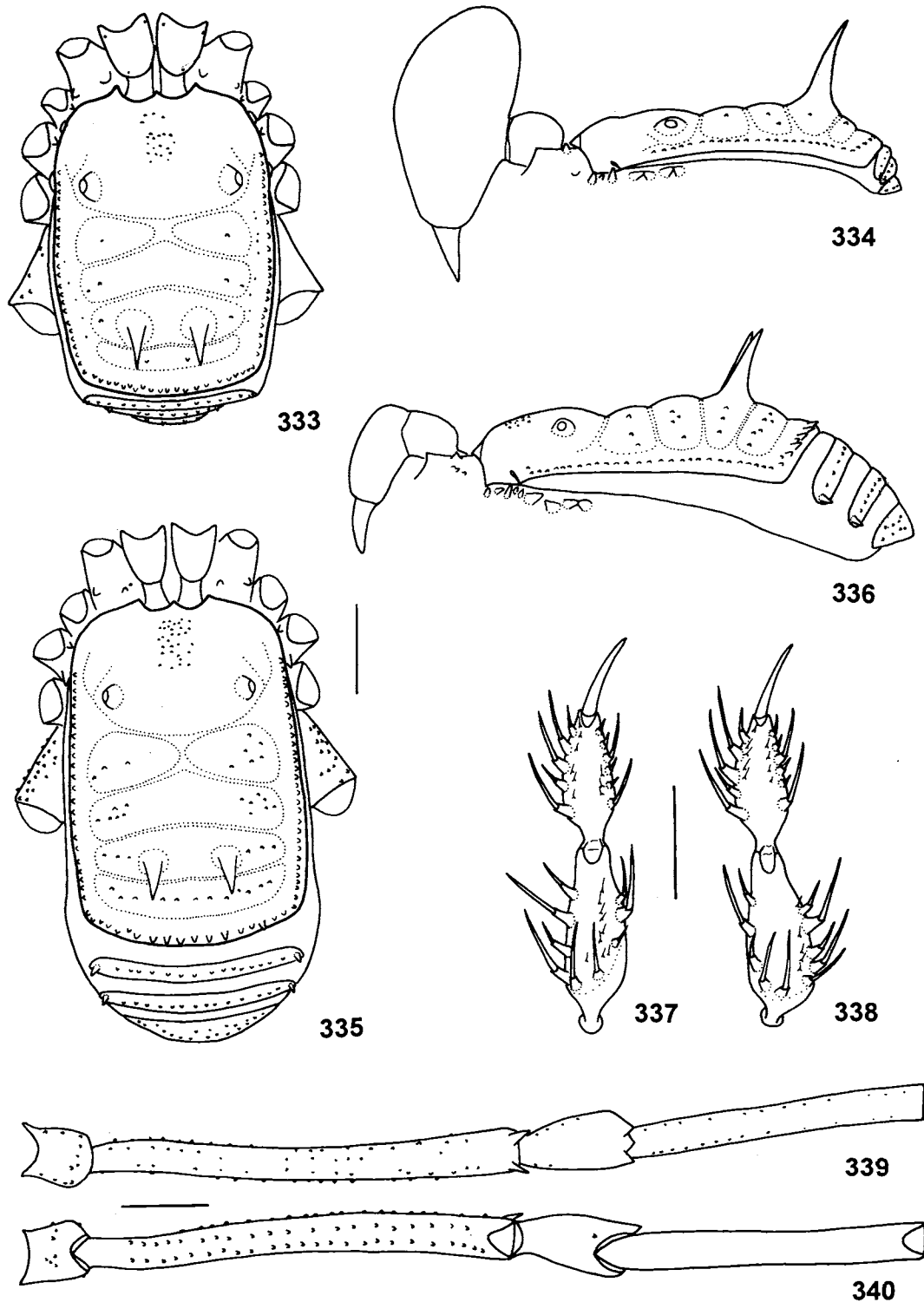
Penis (Figs. 533-534): Lateral and distal margins concave.

Colour: Dark-brown. Margins of dorsal scute and legs II-IV darker. Areas I-IV with small black spots. Medioanterior region of cephalothorax and chelicera black reticulate.

Female redescription (holotype of *S. gracilis*; Figs. 335-336, 338):

Measurements: DSL 3.56; CL 1.44; DSW 2.36; CW 2.12; ID 1.52; chelicera: II 1.60; III 1.00; pedipalpus 8.84; leg I 11.84; II 19.32; III 14.08; IV 17.98.

Area I with 4-6 tubercles each side; II with 6 each side; III with 3 each side; IV with 12. Posterior margin with 19 tubercles. Free tergite with tubercles larger than male; I with 17; II with 16.



Figs. 333-340. *Stenostygnoidea cosmettarsus* Roewer. Male (holotype): 333, habitus, dorsal view; 334, lateral view; 337, left pedipalpus, tibia and tarsus; 339, trochanter, femur, patella and tibia of the right IV leg, dorsal; 340, same, ventral. Female (holotype of *S. gracilis*): 335, habitus, dorsal view; 336, lateral view; 338, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Type locality: Surinam.

Distribution (Fig. 602): Recorded from Surinam.

*Pickeliana* Mello-Leitão, revalidated

*Pickeliana* Mello-Leitão: 1932: 427; 1935: 112; Pinto-da-Rocha, 1995b: 196. (Gender feminine). *Protimesius* (part); H. Soares, 1978: 75.

Diagnosis: Dorsal scute rectangular. Anterior margin smooth. Cephalothorax with tubercles. Eye mounds smooth. Area I divided by a median groove; III with 2 spines. Tubercles of free tergite III similar in size. Pedipalpal femur and patella elongate, longer than dorsal scute; basal sockets apex of tibia normal. Tarsal process reduced, without scopula. Penis: ventral plate with 3 pairs (large and wide) and 2-3 basal (bifid) pairs of setae; glans with dorsal process.

Type species: *Pickeliana pickeli* Mello-Leitão, 1932, by monotypy and tautonymy.

*Pickeliana capito* (Soares & Soares), comb.n.  
(Figs. 341-348, 535-536, 602)

*Protimesius capito* Soares & Soares, 1974: 611, figs. 52-60; H. Soares, 1978: 75 (cit.). (Male holotype and female paratype, "[Fazenda Pedra Branca, Itajibá, Bahia, Brazil], holotipus male, paratypus female, n° 488, Soares det. 1973", male paratype "[same data as holotype], n° 491", male paratype "[same data as holotype], n° 490", HSPC, male dissected, examined).

Diagnosis: Area III with 2 parallel spines (instead of divergent in *P. pickeli*) and femur IV without ventral row of tubercles (present in *P. pickeli*).

Male redescription (holotype):

Measurements: DSL 2.76; CL 1.12; DSW 2.06; CW 2.00; ID 1.56; chelicera: II 2.48; III 1.12; pedipalpus 7.92; leg I 10.78; II 19.29; III 13.80; IV 18.27.

Dorsum (Figs. 341-342): Cephalothorax small-tuberculate on medioanterior part, 2 large near coxae I-II. Eye mounds tuberculate. Lateral margins with tubercles from coxa III to posterior margin. Area I with 2 tubercles each side; II with

3 each side; III with 2 tubercles on each side, 2 parallel slightly backwards spines. Posterior margin with 10 tubercles. Free tergite I with 11 tubercles; II with 9; III with 8. Anal plate with 3 median tubercles and 2 on posterior margin.

Venter: Coxa I with 1 median irregular row of 8 tubercles, 2 apical; II with 6 median, 4 posterior, 3 apical; III with 3 anterior, 1 median row of 8, 1 posterior irregular row of 6; IV irregularly tuberculate. Free sternites with tubercles sparse and with 1 posterior row of tubercles.

Chelicera: Swollen. Segment I with 3 tubercles; II with 1 wide basal and 4 small distal teeth; III with 1 wide basal, 1 wide median, 3 small distal. Without interchelar space.

Pedipalpus (Fig. 345): Coxa with 3 ventral tubercles, 1 prolateral, 1 retrolateral wide, 2 central. Trochanter with 2 ventral, 1 dorsal. Femur straight, with 1 tubercle ventrobasal. Patella swollen at distal 1/5. Tibia: ectal IIIli, mesal IIIli, sockets large, 2 ventral rows of tubercles. Tarsus ectal ilili, mesal IIIli, 1 ventral row of tubercles, several sparse.

Legs (Figs. 347-348): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate. Trochanter I with 4 ventral tubercles; II with 4 ventral, 2 retrolateral, 1 dorsal; III with 5 ventral, 2 prolateral, 2 retrolateral, 3 dorsal; IV with 5 ventral, 1 prolateral, 1 retrolateral, 2 dorsal. Femora I-III tuberculate; III-IV with 2 dorsoapical tubercles (posterior larger); IV with tubercles on basal region. Patellae III-IV with 2 dorsoapical tubercles. Tibia IV smooth. Tarsal segmentation: 7, 16, 6, 7.

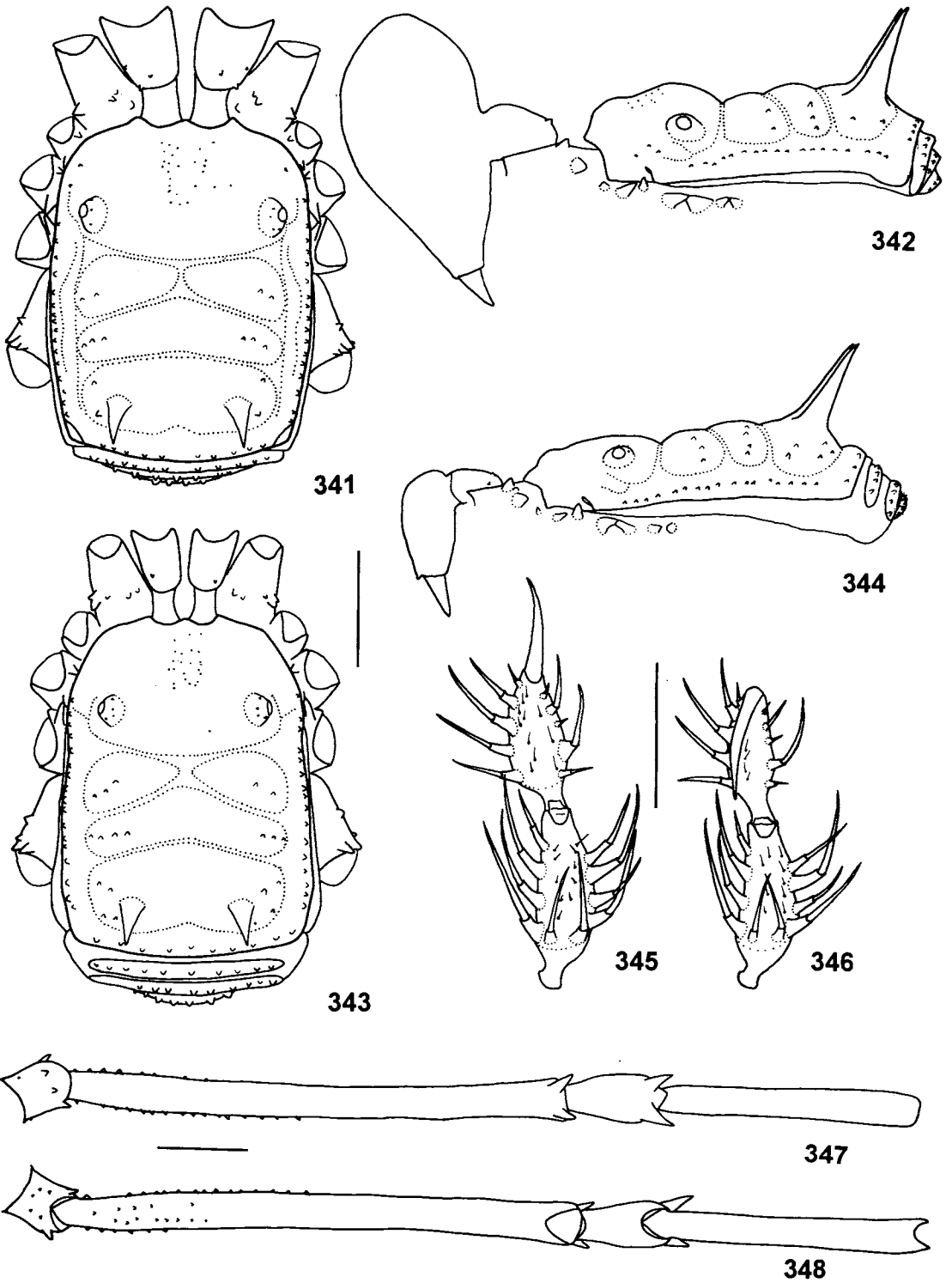
Penis (Figs. 535-536): Ventral plate with 2 laterobasal and 1 intermediary pairs of setae.

Colour: Brown. Chelicera and anterior half of cephalothorax black reticulate. Cephalothorax with wide black and light spots. Margins of dorsal scute and free tergites dark-brown. Legs with black spots.

Female redescription (paratype; Figs. 343-344, 346):

Measurements: DSL 2.54; CL 0.96; DSW 2.12; CW 1.96; ID 1.28; chelicera: II 1.20; III 0.68; pedipalpus 7.08; leg I 10.38; II 20.60; III 14.00; IV 19.64.

Area I with 2-3 tubercles; II with 3-4; III with 2 each prolateral, 2 retrolateral. Posterior



Figs. 341-348. *Pickeliana capito* (Soares & Soares), comb.n.. Male (holotype): 341, habitus, dorsal view; 342, lateral view; 345, left pedipalpus, tibia and tarsus; 347, trochanter, femur, patella and tibia of the right IV leg, dorsal; 348, same, ventral. Female (paratype): 343, habitus, dorsal view; 344, lateral view; 346, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.



margin with 9 tubercles. Free tergite I with 10 tubercles; II and III with 9. Patella IV with 1 retrolateral tubercle. Pedipalpus: coxa with 2 central tubercles, 3 retrolateral; trochanter with 3 ventral; tibia ectal IIIi, mesal IIIi; tarsus ectal ilii, mesal IIIi. Coxa IV with 1 dorsoapical tubercle, 2 lateral. Tarsal segmentation: 6, 15-16, 6, 7.

**Bionomics:** According to Soares & Soares (1974) the type material was collected under decayed log, among leaves and on humid soil.

**Type locality:** Fazenda Pedra Branca, Itajibá, Bahia, Brazil (14°17'S - 39°51'W).

**Distribution (Fig. 602):** Brazil (south Bahia).

**Material examined:** Brazil. *Bahia:* Itajibá (Fazenda Pedra Branca), J. Jim *leg.*, 23.I.1972, 3 ♀ (HSPC-487); *idem.*, 13.I.1972 12 ♂ & 23 ♀ (HSPC-489); *idem.*, 21-23.I.1975, 4 ♂ & 8 ♀ (HSPC-610); *idem.*, 5.I.1970, 9 ♂ & 7 ♀ (HSPC-491) *idem.*, 26.XII.1969, 1♂ (MZSP-14249); *idem.*, J. Jim & U. Caramaschi *leg.*, 23.I.1975, 16 ♂ & 33 ♀ (HSPC-609); Ilhéus (km 26 da rodovia Ilhéus-Itabuna), Perachi *leg.*, 14.VII.1970, 2 ♂ & 1 immature (HSPC-625); (Pirataquicé), 1 ♂ & 3 ♀ (MNRJ); (Ilha do Barbosa) 1 ♂ & 3 ♀ (MNRJ); (Faz. Almada), 1 ♂ & 4 ♀ (MNRJ); (Repartimento) 2 ♂ & 5 ♀ (MNRJ).

***Pickeliana pickeli* Mello-Leitão, comb.n.**

(Figs. 349-356, 537-538, 602)

*Pickeliana pickeli* Mello-Leitão, 1932: 427; Soares, 1945: 387 (cat.); Roewer, 1943: 61 (cit.). (Male lectotype, 1 male and 2 females paralectotypes, by present designation, "typus, Tapera [Moreno, Recife, Pernambuco, Brazil], D. O. Bento [Pickel *leg.*]", MNRJ, examined). *Protimesius gracilis*; Mello-Leitão, 1923: 179 (mis.). *Protimesius pickeli*; H. Soares, 1978: 75, figs. 11-15. (lect).

**Diagnosis:** See *P. capito*.

**Male redescription (MNRJ):**

**Measurements:** DSL 2.64; CL 1.12; DSW 2.20; CW 2.16; ID 1.56; chelicera: II 2.68; III 1.08; pedipalpus 7.28; leg I 9.88; II 18.52; III 12.88; IV 17.19.

**Dorsum (Figs. 349-350):** Cephalothorax small-tuberculate on central region. Eye mounds

with 3-4 tubercles. Lateral margins with tubercles from coxa II to posterior margin. Area I with 2-4 tubercles; II with 2-3 tubercles; III with 4-5 tubercles each side, 2 large backwards divergent spines, base with 1 tubercle. Posterior margin with 8 tubercles. Free tergite I with 6 small tubercles; II with 6; III with 4. Anal plate with 2 median tubercles.

**Venter:** Free tergite I with 1 row of 6 median tubercles, 3 apical, wrinkled near sternum; II with 10 anterior, 1 row of 5 posterior, 1 posterior, 4 apical; III with 1 row of 7, 2 anterior, 5 posterior; IV irregularly tuberculate. Stigmatic area with 3 anterior tubercles, 1 posterior row. Free sternites with 1 row of tubercles. Anal plate with 5 median tubercles irregularly disposed.

**Chelicera:** Swollen. Segment I with 4 tubercles; II with 4 small distal; III with 1 wide basal, 1 wide median, 3 small distal. With interchelar space.

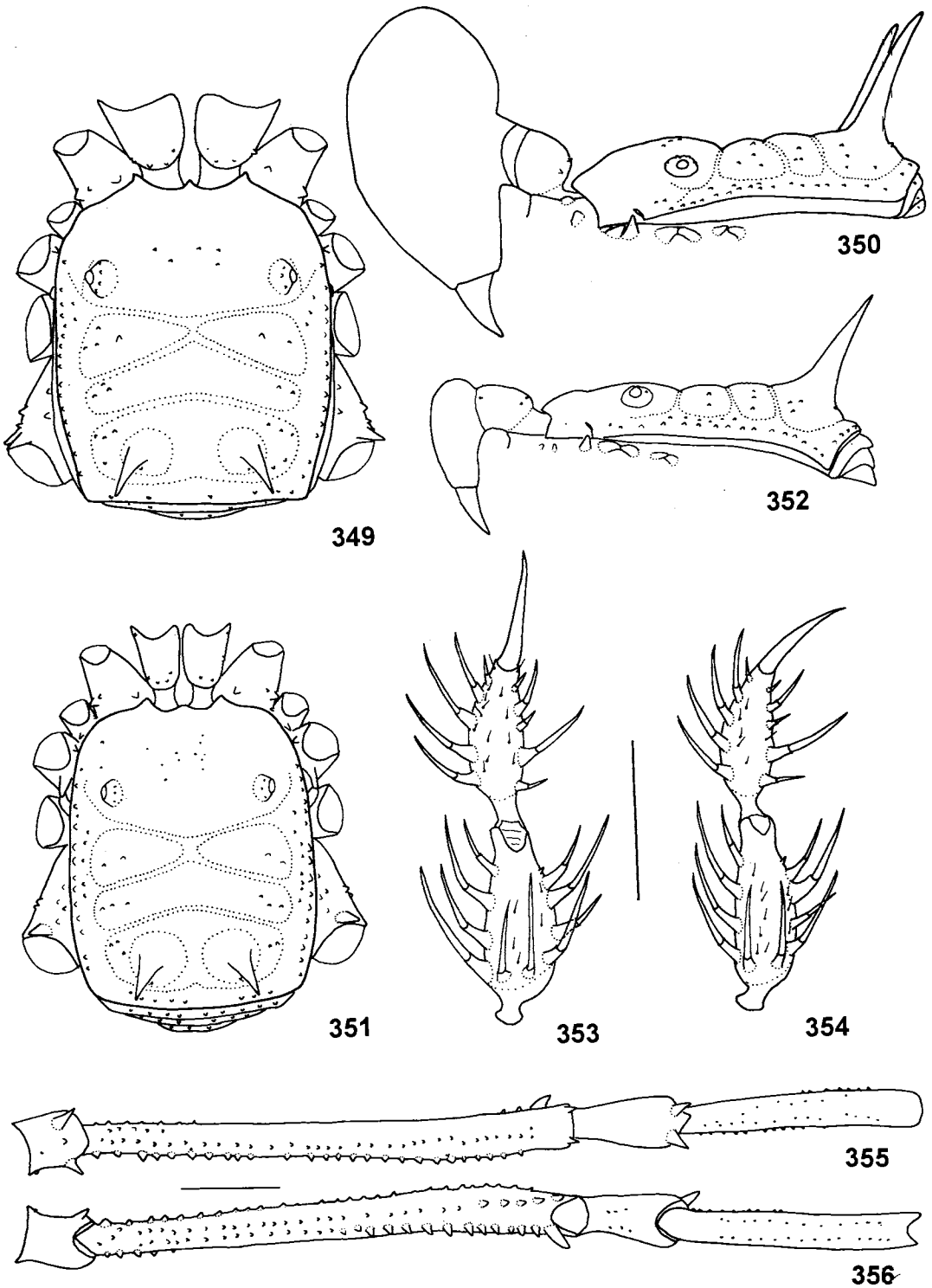
**Pedipalpus (Fig. 353):** Coxa with 3 ventral tubercles, 2 dorsal (1 wide), 1 wide retrolateral. Trochanter with 2 ventral tubercles, 1 dorsal. Femur with 1 small ventrobasal tubercle. Patella swollen at distal 1/5. Tibia: ectal IIi, mesal IIIi, tuberculate ventral and dorsally. Tarsus: ectal ilii, mesal IIIi, 2 ventral rows of tubercles.

**Legs (Figs. 355-356):** Coxa I with 1 tubercle; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate, 1 large dorsoapical tubercle. Trochanter II with 3 ventral tubercles, 2 retrolateral, 1 dorsal; III with 3 ventral, 1 dorsal; IV with 5 ventral, 1 small basal retrolateral, 1 retrolateral apical larger, 1 dorsal larger and 1 small. Femora I-IV with 2 dorsoapical tubercles similar in size; I with 1 row of ventral tubercles; II-IV with 2 ventral rows (on IV tubercle ventroapical 3 times larger than anterior). Patella IV with 2 dorsoapical tubercles similar in size. Tarsal segmentation: 7, 12, 6, 7.

**Penis (Figs. 537-538):** Ventral plate with 1 intermediary and 3 basal pairs of setae.

**Colour:** Brown. Chelicera and anterior half of cephalothorax black reticulate. Cephalothorax with wide light and black spots. Margins of dorsal scute and free tergites dark-brown. Legs with black spots.

**Female redescription (MNRJ; Figs. 351-352, 354):**



Figs. 349-356. *Pickeliana pickeli* (Mello-Leitão), comb.n.. Male (MNRJ): 349, habitus, dorsal view; 350, lateral view; 353, left pedipalpus, tibia and tarsus; 355, trochanter, femur, patella and tibia of the right IV leg, dorsal; 356, same, ventral. Female (MNRJ): 351, habitus, dorsal view; 352, lateral view; 354, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Measurements: DSL 2.36; CL 0.96; DSW 1.92; CW 1.84; ID 1.32; chelicera: II 1.32; III 0.72; pedipalpus 6.60; leg I 9.18; II 19.17; III 12.70; IV 17.79.

Lateral margins with 1 internal row of tubercles, smaller than external, from groove I to III. Area I with 2 tubercles; II with 3; III with 2-3 lateral. Posterior margin with 8 tubercles. Free tergites I-III with tubercles larger than male; I with 9; II with 7; III with 6. Pedipalpus: tibia ectal IIIi, mesal IIIi, 2 ventral rows of tubercles; tarsus ectal IIIi, mesal IIIi, 1 ventral row. Coxa I with 2 small dorsal tubercles; IV with 4 near dorsal scute, 2 lateral. Patella IV with 2 apical tubercles (posterior larger). Tarsal segmentation: 7, 15, 6, 7.

Bionomics: The specimens from Açude da Prata (Recife) were collected between palm leaves decayed on ground, those from Tapera under decayed leaves, according to labels.

Type locality: Tapera, Moreno, Pernambuco, Brazil (07°58'S - 36°11'W).

Distribution (Fig. 602): Brazil (Pernambuco).

Material examined: Brazil. *Pernambuco*: Moreno (Tapera), idem, P. Bento Pickel *leg.*, 1 ♂ (MNRJ-1442); (Tapera, Bonança), R. Baptista & A. Chaves *leg.*, II.1989, under decayed leaves, 1 ♂ & 1 ♀ (MNRJ-6435); Recife (Açude da Prata), A. Lemos-de-Castro *leg.*, 14.IX.1976, 1 ♂ & 1 immature (MZSP-14277); (Dois Irmãos), A. Lemos-de-Castro *leg.*, 14.IX.1976, between palm leaves decayed on ground, 1 ♂, 1 ♀ & 2 immatures (MNRJ).

### *Protimesius* Roewer

*Protimesius* Roewer, 1913b: 439; 1923: 574; Mello-Leitão, 1926: 366; Roewer, 1931: 151, 179; Mello-Leitão, 1932: 421; 1935: 112; H. Soares, 1978: 75. (Gender masculine).

*Obidosus* Roewer, 1931: 150, 154; Mello-Leitão, 1932: 426; 1935: 112 (Type species: *Obidosus amplichelis* Roewer, 1931, by monotypy). *Syn.n.*

*Fonteboatus* Roewer, 1931: 150, 156; Mello-Leitão, 1932: 427; 1935: 112; H. Soares, 1978: 75 (syn. *Protimesius*), (Type species: *Fonteboatus coxalis* Roewer, 1931).

*Ideostygnus* Sorensen, 1932: 288; Mello-Leitão,

1935: 112; Soares & Soares, 1978: 81 (Type species: *Ideostygnus laevis* Sorensen, 1932, by monotypy). *Syn.n.*

*Misetropius* H. Soares, 1979: 71 (Type species: *Misetropius mendopticus* H. Soares, 1979, by original designation). *Syn.n.*

Synonymic note: *Ideostygnus*, *Obidosus* and *Misetropius* are here considered as synonymous of *Protimesius* based in the presence of scopula and a well developed tarsal process. The scopula was not observed by the authors who proposed *Obidosus* and *Misetropius* and was an important character to erected the subfamily Ideostygninae, which is here synonymized under Stygninae.

Diagnosis: Dorsal scute rectangular. Cephalothorax tuberculate, 1 eminence medioanterior. Eye mounds smooth. Area I divided by a median groove; III with 2 spines. Tubercles of free tergite III similar in size. Pedipalpal femur and patella elongate (longer than dorsal scute); basal sockets apex of tibia bifid. With tarsal process, scopula with thinner hairs. Penis: large and cylindrical, ventral plate with 3 distal and 3-12 basal pairs of setae; glans with dorsal process.

Type species: *Protimesius gracilis* Roewer, 1913b, by monotypy.

### Key to males of *Protimesius*:

1. Cephalothorax with 1 wide medioanterior eminence, with small and large tubercles.....2  
Cephalothorax without medioanterior eminence.....6
- 2(1). Tibia IV unarined, femur IV with 1 prolateral and 1 posterior row of tubercles (Figs. 408-409).....*P. mendopticus*  
Tibia IV with 2 ventroapical tubercles, femur IV without lateral rows of tubercles.....3
- 3(2). Femur IV less than twice longer than dorsal scute length, tibia IV with dorsal tubercles and wide and large ventral ones (Figs. 376-377).....*P. evelineae*  
Femur IV more than twice longer than dorsal scute, tibia IV without wide and large tubercles.....4
- 4(3). Cephalothorax eminence with wide tubercles, tibia IV with 2 ventroapical tubercles.....5  
Cephalothorax eminence small-tuberculate,

- tibia IV with 1 ventroanterior row of tubercles and 1 ventroapical (Figs. 365-366).....*P. amplichelis*
- 5(4). Anterior margin with 4-5 tubercles each side, pedipalpal coxa with dorsal tubercles, tibia IV with 2 ventroapical normal tubercles (Figs. 419-420).....*P. trocaraincola*
- Anterior margin with 1 tubercle each side, pedipalpal coxa with dorsal tubercles, tibia IV with 1 apical ventral bifid and 1 normal tubercles (Figs. 360-361).....*P. albilineatus*
- 6(1). Pedipalpal tibia and femur with dorsal and ventral tubercles, respectively, patella and tibia IV tuberculate.....*P. gracilis*
- Pedipalpal tibia and femur without tubercles, patella-tibia IV smooth.....7
- 7(6). Femur IV with dorsal tubercles and 1 ventroanterior row of large tubercles (Figs. 392-393).....*P. laevis*
- Femur IV smooth (Figs. 400-401).....*P. longipalpis*

***Protimesius albilineatus* (Roewer), comb.n.**

(Figs. 357-361, 539-540, 603)

*Obidosus albilineatus* Roewer, 1957: 82, fig. 18. (Male holotype, "Peru: río San Alejandro, Zufluß des Río Aguaytia, der in den Ucayali fließt, 300 m, im wald unter faulen Baumstumpf, W. Weyrauch leg., 31.VIII.1955, typus" SMFD-11422, dissected, examined).

Diagnosis: The males of this species resemble *P. amplichelis*, *P. evelineae* and *P. trocaraincola* in having one large anterior eminence on cephalothorax and two ventroapical tubercles on tibia IV. They differ from those of *P. laevis* in having no large dorsal tubercle on tibia IV; from those of *P. trocaraincola* by lack of tubercles on areas I-III and presence of dorsal tubercles on patella IV; from those of *P. amplichelis* by the eminence tuberculate on cephalothorax.

Male redescription (holotype):

Measurements: DSL 4.44; CL 2.12; DSW 4.00; CW 3.84; ID 2.64; chelicera: II 5.17; III 2.08; pedipalpus 18.62; leg I 21.65; II 42.11; III 29.85; IV 37.63.

Dorsum (Figs. 357-358): Anterior margin with 3-4 tubercles each side. Cephalothorax with

1 enlarged anterior eminence with 4 wide and several small tubercles. Eye mounds smooth. Region between eye mounds small-tuberculate. Lateral margins with tubercles from coxa I to III. Area I with 1 tubercle each side; II smooth; III with 2 divergent and upwards spines. Lateral margins with tubercles from coxa I to III. Posterior margin and free tergites I-III minute-tuberculate. Anal plate small-tuberculate.

Venter: Coxa I with 2 anterior tubercles, 4-5 large median, 3 apical; II with 2 anterior, 9 median, 4 apical, 1 eminence near sternum; III with 9 median, 3 apical and several small posterior; IV with 4 oblique rows. Genital operculum, stigmatic area and anal plate irregularly tuberculate. Posterior margin with 3 rows of small tubercles and free sternites with 1 row.

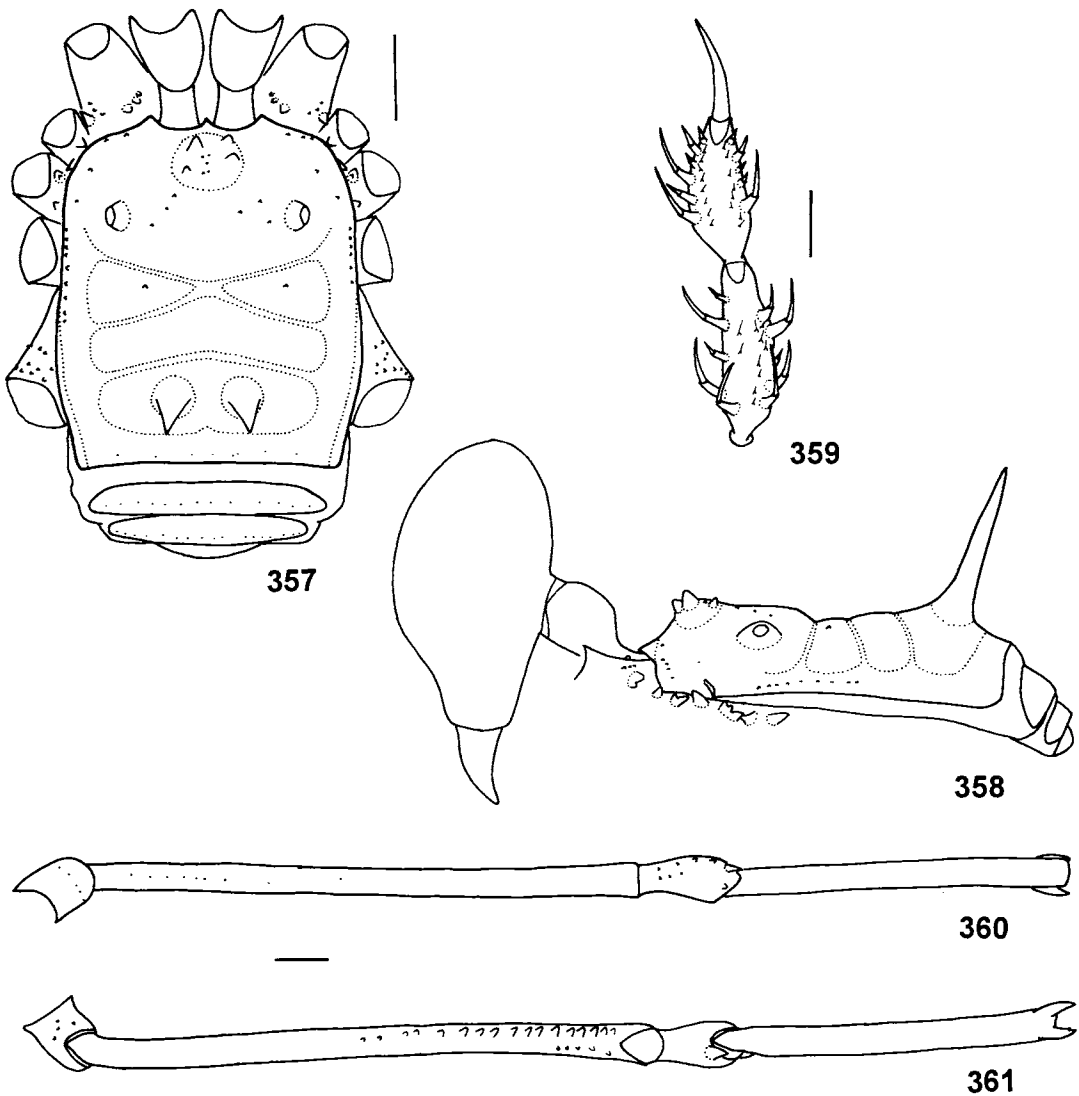
Chelicera: Swollen. Segment I smooth; II with 3 teeth; III with 2 wide and 2 median apical.

Pedipalpus (Fig. 359): Coxa with 5 dorsobasal tubercles, 1 wide prolateral; 3 large and 2 small ventral. Trochanter with 3 ventral (median larger). Femur straight with 4 ventral tubercles. Patella swollen at distal 1/5. Tibia ectal Ilii, mesal Ilii, 1 ventral row and some sparse tubercles. Tarsus ectal liiii, mesal Iliiii, 2 ventral rows.

Legs (Figs. 360-361): Coxa I with 2 tubercles (posterior bifid); II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV tuberculate. Trochantera I-IV small-tuberculate dorsally; I with 3 large ventral (basal larger); II with 5 ventral (basal larger); III with 6 ventral (basal larger); IV with 4 ventral (basal larger) and several minute. Femur IV with 1 ventral posterior row of tubercles on distal half, 1 anterior row of tubercles smaller apical; without dorsoapical tubercles. Patella IV with 1 large curved ventroapical tubercle; 2 apical tubercles and several small dorsal. Tibia IV with 2 enlarged backwards apical tubercle, 1 row of small tubercles. Tarsal segmentation: 8-9, 14, 7, 8.

Penis (Figs. 539-540): Ventral plate with concave lateral margins, distal margin straight, with 2 intermediary (near base) and 4 basal pairs of setae.

Colour: Brown. Legs and margins of areas I-III with small black spots. Spines of area II and tibia IV dark-brown. Pedipalpal tibia and tarsus and chelicera black reticulate. Membrane between posterior margin and free tergite I white.



Figs. 357-361. *Protimesius albilineatus* (Roewer), comb.n. Male (holotype): 357, habitus, dorsal view; 358, lateral view; 359, left pedipalpus, tibia and tarsus; 360, trochanter, femur, patella and tibia of the right IV leg, dorsal; 361, same, ventral. Scale bars: 1 mm.

Female unknown.

Bionomics: According to the label the holotype was collected under decayed logs in the forest.

Type locality: río San Alejandro, Ucayali, Peru ( $08^{\circ}19'S - 75^{\circ}19'W$ ).

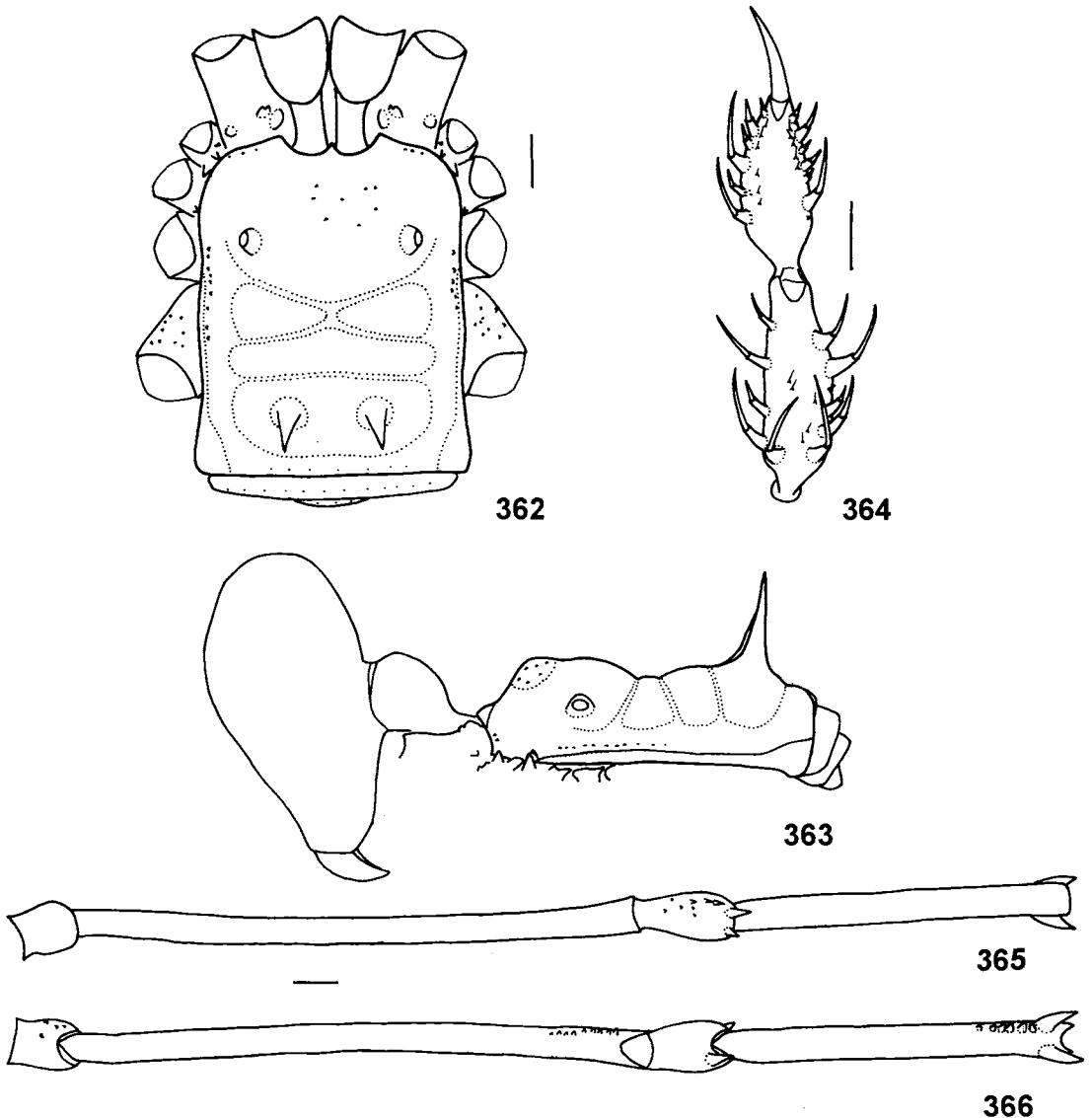
Distribution (Fig. 603): Ecuador (Napo), Peru (Madre de Dios, Ucayali), Brazil (Amazonas).

Material examined: Ecuador. *Napo*: Coca (Auca Central), XII.1988, L. Betancourt *leg.*, 1 ♂ (QACZ); Peru. *Madre de Dios*: Zona Reservada Pakitza ( $11^{\circ}58'S - 71^{\circ}18'W$ ), 28.VI.1988, P.

Lozada *leg.*, 1 ♂ (MUSM-160); Brazil. *Amazonas*: Alto Solimões, near Benjamin Constant, 20.XII.1979, A. Lise, 1 ♂ (MCNZ-636).

*Protimesius amplichelis* (Roewer), comb.n.  
(Figs. 362-366, 603)

*Obidosus amplichelis* Roewer, 1931: 154, fig. 22; Mello-Leitão, 1932: 426 (rdesc.). (Male holotype, "[Brazil], Amazonas: Obidos, typus,



Figs. 362-366. *Protumesius amplichelis* (Roewer), comb.n. Male (holotype): 362, habitus, dorsal view; 363, lateral view; 364, left pedipalpus, tibia and tarsus; 365, trochanter, femur, patella and tibia of the right IV leg, dorsal; 366, same, ventral. Scale bars: 1 mm.

n<sup>o</sup> 1463", the holotype was pinned, dehydrating the internal tissues, but now it is conserved in alcohol, SMFD, dissected, examined).

**Diagnosis:** This species resembles *P. amplichelis*, *P. evelinae* and *P. trocaraincola*. It differs from these species by the combination of following characters: anterior eminence small-tuberculate, areas I-III without tubercles, large tubercles on femur and tibia IV lacking.

**Male redescription (holotype):**

Measurements: DSL 5.75; CL 2.83; DSW

4.58; CW 4.50; ID 3.08; chelicera: II 6.92; III 2.58; pedipalpus 22.58; leg I 29.11; II 54.84; III 39.83; IV 48.92.

**Dorsum (Figs. 362-363):** Anterior margin with 3-4 small tubercles each side. Cephalothorax with 1 low median eminence small-tuberculate. Eye mounds smooth. Lateral margins with tubercles from middle coxa II to middle coxa IV. Area I-II smooth; III with 2 large upwards slightly divergent spines. Posterior margin, free tergites I-III and anal plate minute-tuberculate.

**Venter:** Coxa I with 3 anterior tubercles, I

median row of 5-6 large, 3 apical; II with 1 row of 7-8 median, 5 posterior, 3 apical, 1 large near each maxilla; III-IV tuberculate. Posterior margin and free sternites with 1 row of minute tubercles. Anal plate tuberculate.

Chelicera: Swollen. Segment I smooth; II with 2 wide basal, 1 wide median and 2 apical smaller teeth; III with 1 wide basal, 1 wide median and 3 apical smaller. Without interchelar space.

Pedipalpus (Fig. 364): Coxa with 4 ventral tubercles, 3 dorsal (2 wide basal, 1 bifid). Trochanter with 3 ventral tubercles (1 large), 1 small dorsal. Femur with 4-6 small ventral tubercles. Patella swollen at distal 1/5. Tibia: ectal IIIli, mesal IIIli, tuberculate ventrally. Tarsus: ectal IIIiii, mesal IIIiii, 2 ventral rows.

Legs (Figs. 365-366): Coxa I with 3 tubercles; II with 1 anterior, 1 posterior; III with 1 enlarged; IV tuberculate, 1 anterior 1 large dorsoapical tubercle. Trochantera I-II with 3 wide ventral tubercles; III smooth; IV with 1 dorsoapical large and 4 small. Femur IV with 9 apical posterior, without dorsal tubercles. Patella IV with 1 large ventral tubercle, 2 large dorsal and 1 row of 4 (apical larger) and , with several small. Tibia IV with 1 small row of tubercles ventroapical, 2 enlarged backwards ventroapical. Tarsal segmentation: 9, 21, 8, 9.

Colour: Dark-brown. Chelicera black reticulate.

Female unknown.

Type locality: Óbidos, Amazonas, Brazil (01°55'S - 55°31'W).

Distribution (Fig. 603): Recorded only from type locality.

***Protimesius coxalis* (Roewer)**

(Figs. 367-369, 603)

*Fonteboatus coxalis* Roewer, 1931: 157, fig. 24; Mello-Leitão, 1932: 429 (429 (rdesc.)). (Female holotype, "[Brazil], Amazonas, São Paulo de Olivença [Olivença], typus, CR-1460" SMFD, examined).

*Protimesius coxalis*; H. Soares, 1978: 75.

Diagnosis: This species is separated from other *Protimesius* by the medium-size tubercles on lateral and posterior margins, areas i-III and free tergites, presence of enlarged dorsoapical tubercle on coxa IV.

Female redescription (holotype):

Measurements: DSL 3.08; CL 1.12; DSW 2.40; CW 2.16; ID 1.52; chelicera II 1.56; III 0.80; pedipalpus 7.28; leg I 9.24; II 17.44; III 12.36; IV 17.07.

Dorsum (Figs. 367-368): Anterior margin and eye mounds smooth. Cephalothorax with 1 central tubercle, tuberculate near eye mounds. Lateral margins with 1 row of wide tubercles from coxa II to posterior margin. Area I with 2 tubercles each side; II with 1-2 each side; III with 2 each side, 2 large divergent slightly backwards spines. Posterior margin with 8 tubercles. Free tergite I with 8 tubercles; II with 9; III with 8. Anal plate with 2 wide median, smaller tubercles on posterior margin.

Venter: Coxa I with 2 anterior tubercles, 1 median row of 6, 3 apical; II with 1 median row of 8, 4 posterior, 3 apical; III-IV irregularly tuberculate (III with 3 and IV with 5 apical). Posterior margin and free sternites with 1 row of minute tubercles. Anal plate minute-tuberculate on median and posterior region.

Chelicera: Segment I with 4 tubercles; II-III with 5 small teeth.

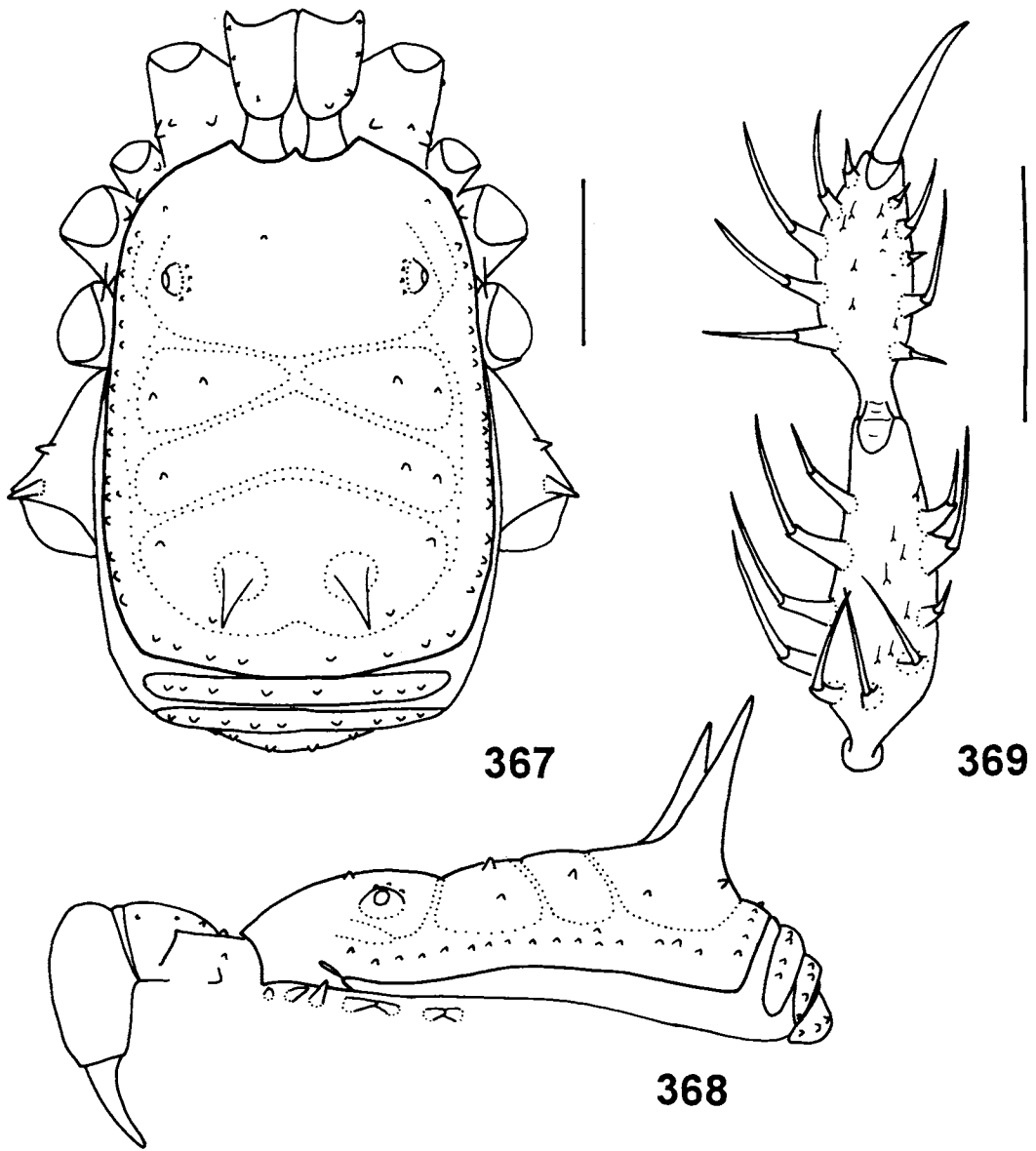
Pedipalpus (Fig. 369): Coxa with 3 ventral tubercles, 3 dorsal. Trochanter with 3 ventral (1 larger), 1 dorsal. Femur straight, 1 ventral of 8 minute tubercles. Patella swollen at distal 1/5. Tibia: ectal IIIli, mesal IIIli, tuberculate ventrally. Tarsus: ectal IIIlii, mesal IIIli, tuberculate ventrally.

Legs: Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV with 1 lateral and 1 large dorsoapical tubercles. Trochanter I with 4 ventral tubercles, 1 dorsal; II with 4 ventral, 1 dorsal, 2 retrolateral; III with 4 ventral, 2 prolateral, 1 retrolateral, 1 dorsal; IV with 9 ventral, 2 prolateral, 1 retrolateral, 6 dorsal (1 larger). Femora I-IV straight, with 2 dorsoapical tubercles, I-II anterior larger, III-IV similar in size; IV with 2 ventral rows of small tubercles, 1 retrolateral row. Patella IV with 2 dorsoapical tubercles. Scopula short, claws subparallel, tarsal process large. Tarsal segmentation: 7, 15, 6, 7.

Colour: Brown. Chelicera black reticulate.

Male unknown.

Type locality: São Paulo de Olivença, Amazonas, Brazil (03°27'S - 68°48'W).



Figs. 367-369. *Protimesius coxalis* (Roewer). Female (holotype): 367, habitus, dorsal view; 368, lateral view; 369, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Distribution (Fig. 603): Recorded only from type locality.

*Protimesius evelineae* (Soares & Soares), comb.n.  
(Figs. 370-377, 541-542, 604)

*Ideostygnus evelineae* Soares & Soares, 1978: 83  
figs. 1-15. (Male lectotype, 16 males and 20 females paralectotypes, by present designation, "2

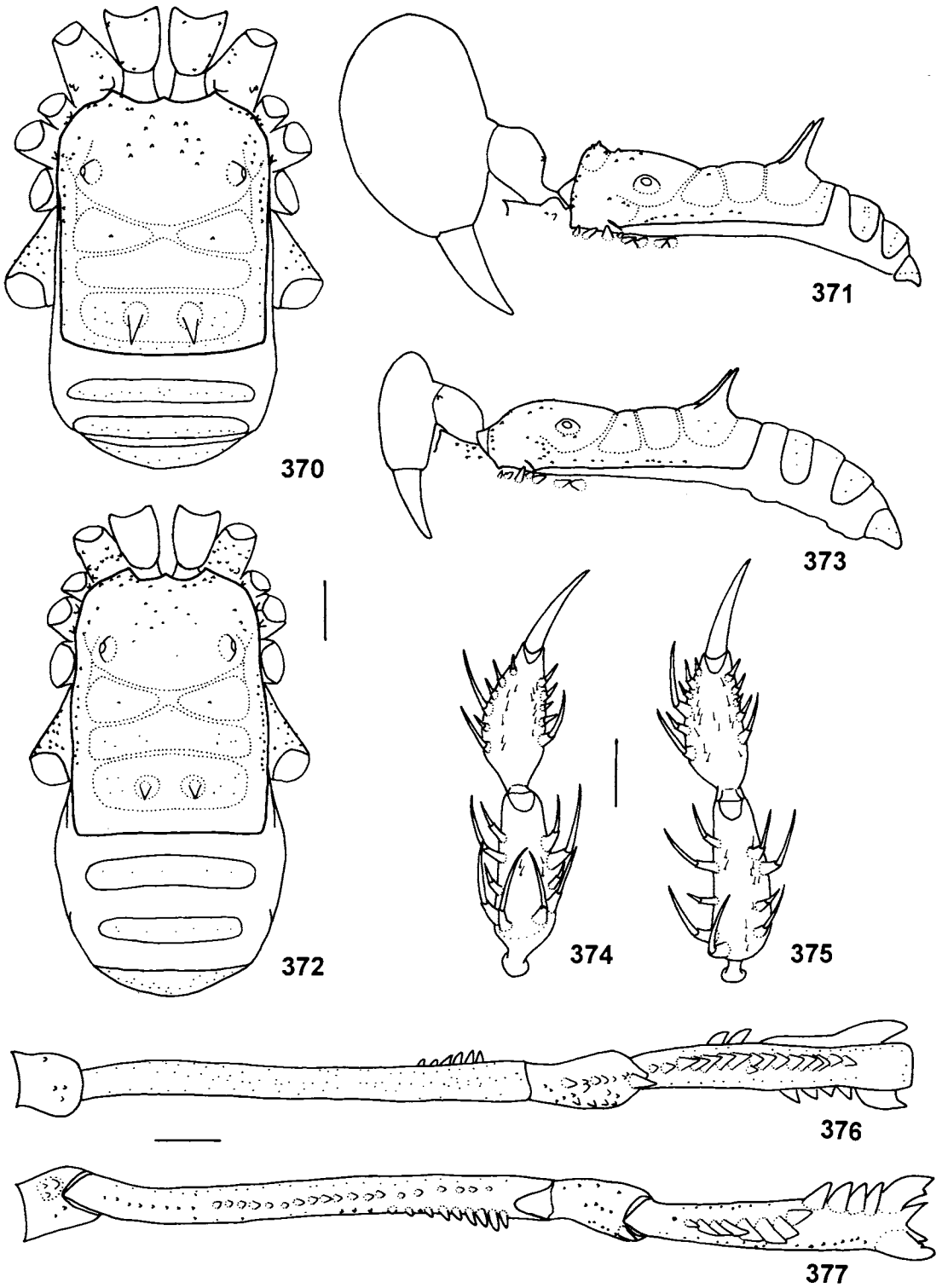
males holotypi [sic], 2 females paratipi, Belém, Pará [Brazil], col. 1950", HSPC-597, lectotype; HSPC-598, paralectotypes, examined).

Diagnosis: This species is separated from all other *Protimesius* by the presence of large ventral and dorsal rows of tubercles on tibia IV.

Male redescription (lectotype):

Measurements: DSL 5.33; CL 2.50; DSW





Figs. 370-377. *Protimesius evelinae* (Soares & Soares). Male (holotype): 370, habitus, dorsal view; 371, lateral view; 374, left pedipalpus, tibia and tarsus; 376, trochanter, femur, patella and tibia of the right IV leg, dorsal; 377, same, ventral. Female (HSCP-597): 372, habitus, dorsal view; 373, lateral view; 375, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

3.75; CW 3.83; ID 2.75; chelicera: II 5.92; III 2.75; pedipalpus 15.09; leg I 17.47; II 28.09; III 22.80; IV 29.96.

Dorsum (Figs. 370-371): Anterior margin with 4-5 tubercles each side. Cephalothorax with 1 wide anterior eminence with 4 tubercles, 8 behind eminence. Eye mounds smooth. Lateral margins with 1 row of small tubercles from middle of coxa II to beginning of IV, followed by several smaller to posterior margin. Area I with 1 tubercle each side; II smooth; III with 2 large spines slightly divergent and slightly backwards, minute tubercles irregularly disposed. Posterior margin and free tergites I-III with 1 row of minute tubercles. Anal plate with 1 anterior and 1 posterior rows of minute tubercles.

Venter: Coxa I with 3 anterior tubercles, 1 median row of 8, 3 posterior, 2 apical; II with 3 anterior, 1 median row of 8 on distal 1/3, 7 small posterior, 3 apical; III with 1 median row of 9 small, 6 posterior; IV irregularly tuberculate, larger tubercles near apex. Anal plate with 1 anterior and 1 posterior rows of minute tubercles.

Chelicera: Swollen. Segment I with 7 tubercles; II with 1 wide median and 3 small distal; III with 2 wide, 2 small distal. Without interchelar space.

Pedipalpus (Fig. 374): Coxa with 1 row of 5 large ventral tubercles, 1 subapical ventral, 1 dorsal wide, 3 retrolateral, 2 prolateral. Trochanter with 4 ventral, 1 dorsal large. Femur slightly curved, 1 ventrobasal large tubercle. Patella swollen at distal 1/5. Tibia: ectal IIIli, mesal IIili, tuberculate ventrally. Tarsus: ectal liii, mesal liiiii, 2 irregular rows ventral of tubercles.

Legs (Figs. 376-377): Coxa I with 2 tubercles; II with 1 anterior, 1 median, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV small-tuberculate. Trochanter I with 4 ventral tubercles; II with 5 ventral; III with 4 ventral; IV with 5 ventral (prolateral larger), 3 dorsoapical. Femur III with 1 ventral row of small tubercles from middle to apex; IV with ventral posterior row from base to near apex (larger medially), 1 ventral anterior row at distal 1/3 (penultimate tubercle larger), without dorsoapical tubercles. Patella IV with 1 median irregular row dorsal (apical twice sized anterior), several retrolateral, 1 ventral large apical. Tibia IV with 1 row dorsal of large contiguous tubercles (larger at distal 1/3), 1 ventral row, anterior, increasing size of 8 tubercles to middle, 1

retrolateral row of 4 large, 2 wide bifid ventral. Tarsal segmentation: 7-8, 16-18, 6, 7.

Penis (Figs. 541-542): Ventral plate with lateral and distal margin concave, 2 intermediary and 4 basal pairs of setae.

Colour: Brown. Margins of dorsal scute and spines darker. According to the collector, F. Straube (pers. comm.) the living specimens from Imperatriz were reddish.

Female redescription (paralectotype, HSPC-597; Figs. 372-373, 375):

Measurements: DSL 4.58; CL 2.08; DSW 4.17; CW 3.67; ID 2.42; chelicera: II 3.08; III 1.67; pedipalpus 14.07; leg I 16.02; II 27.54; III 21.66; IV 27.71.

Cephalothorax without anterior eminence. Lateral margins with tubercles from middle of coxa II to apex of IV. Area II with 2 straight spines. Pedipalpal: coxa with 1 wide anterior tubercle and several irregularly disposed; tibia ectal liii, mesal IIIli, 1 row of ventral tubercles. Each chelae with 4 small tubercles. Femur IV small-tuberculate ventrally. Patella IV with 1 dorsoapical tubercle. Tarsal segmentation: 7, 18, 6, 7.

Bionomics: The specimens from Imperatriz were collected on crevices of temporary stream bank in "Tropical Perenifolia Estacional de Terra Firme" forest (F. Straube pers. comm.).

Type locality: Belém, Pará, Brazil (01°27'S - 48°29'W).

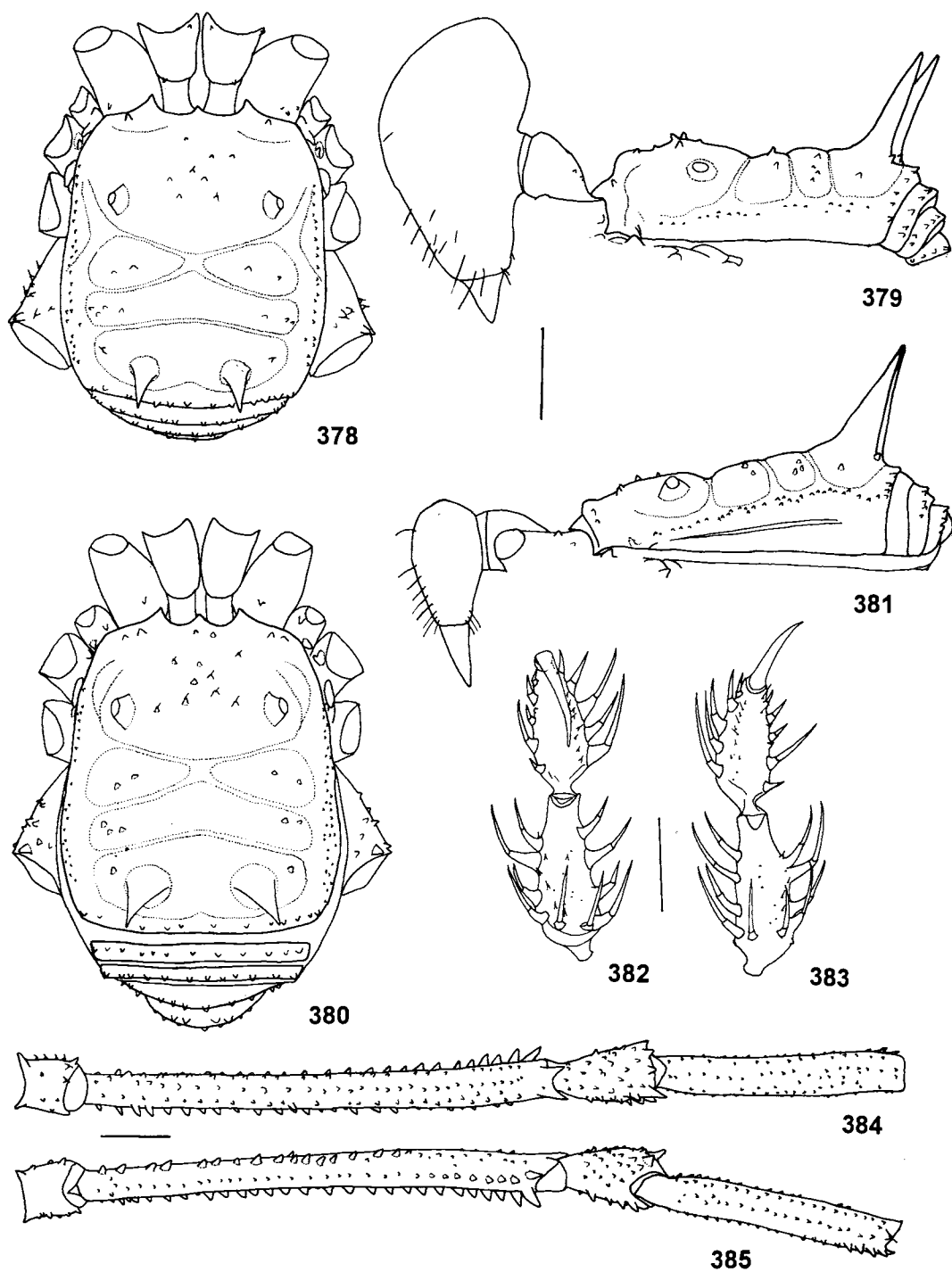
Distribution (Fig. 604): Brazil (Pará, Maranhão, Paraíba).

Material examined: Brazil. *Pará*: Belém, 15 ♂ & 18 ♀ (HSPC-445); without specific locality, 1 ♀ (HSPC); *Maranhão*: Imperatriz (Ribeirãozinho, Igarapé Paciência), 8.VIII.1989, F. Straube & M. R. Bornschein leg., 8 ♂ & 9 ♀ (MHNC); same data, 1 ♂ & 1 ♀ (AMNH); same data, 1 ♂ & 1 ♀ (UZMD); same data, 1 ♂ & 1 ♀ (MZSP-14282); *Paraíba*: Conde, P. F. L. Duarte leg., 7.IX.1979, 18 ♂ & 10 ♀ (HSPC); idem, 4 ♂ & 4 ♀ (HSPC-737).

***Protimesius gracilis* Roewer**

(Figs. 378-385, 543-544, 602)

*Protimesius gracilis* Roewer, 1913b: 439, fig. 173; 1923: 576, fig. 722 (rdesc.); 1931: 151 (cit.);



Figs. 378-385. *Protimesius gracilis* Roewer. Male (lectotype): 378, habitus, dorsal view; 379, lateral view; 382, left pedipalpus, tibia and tarsus; 384, trochanter, femur, patella and tibia of the right IV leg, dorsal; 385, same, ventral. Female (paralectotype): 380, habitus, dorsal view; 381, lateral view; 383, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Mello-Leitão, 1932: 421 (rdesc.), fig. 278; Soares, 1945: 387 (cat.); Soares, 1946: 526 (cat.); H. Soares, 1978: 75 (cit.). (Male lectotype and female paralectotype, by present designation, "Guyane [French Guyana], Contesté franco-brésilien, F. Geay leg., 1899, type", MNHN, dissected; male paralectotype, "Guyane franç [French Guiana], Bas Oyapock [Territorio Interior de Inini], F. Geay leg., 1900, MNHN-234, cotype", dissected, examined).

Note: The specimen mentioned by Mello-Leitão (1923) as *Protimesius gracilis* is in fact, *Pickeliana pickeli*.

Diagnosis: This species differs from other *Protimesius* by the leg IV well-tuberculate and femur IV with 2 large dorsoapical tubercles.

#### Male redescription (lectotype):

Measurements: DSL 3.24; CL 1.60; DSW 3.04; CW 3.00; ID 1.44; chelicera: II 3.36, III 1.56; pedipalpus 10.24; leg I 13.00; II 27.31; III 18.70; IV ?.

Dorsum (Figs. 378-379): Anterior margin with 1 tubercle near each pedipalpal coxa. Cephalothorax with 3 anterior and 5 central tubercles. Lateral margins with 1 irregular row of tubercles from coxa II to near posterior margin. Area I with 2 tubercles each side; II with 3-4 tubercles; III with 1 tubercle each side, 2 straight and slightly backwards spines with 1 tubercle on base. Posterior margin with 1 row of 12 tubercles. Free tergite I with 1 row of 13 tubercles, II with 9, III with 8. Anal plate tuberculate.

Venter: Coxa I with 3 rows (median row of with 4 large tubercles, others smaller); II-IV, stigmatic area, free sternites and anal plate tuberculate.

Chelicera: Swollen. Segment I with 3 tubercles; II with 1 wide and 3 small teeth; III with 2 wide and 2 small teeth.

Pedipalpus (Fig. 382): Coxa with 3 dorsal and 2 large ventral tubercles. Trochanter with 2 dorsal and 4 ventral tubercles. Femur slightly curved basally, tuberculate ventral and dorsally (large). Patella-tibia tuberculate dorsally, patella swollen distal 1/3. Tibia: ectal IIII, mesal IIII, 1 ventral row of tubercles some sparse, large-tuberculate dorsally. Tarsus: ectal IIII, mesal IIII, 1 ventral row of tubercles, small-tuberculate dorsally.

Legs (Figs. 384-385): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically

with 1 of III; III with 1 enlarged fused with 1 of II and with 1 of IV; IV tuberculate. Trochanter I with 1 dorso-apical, 1 retrolateral, 2 large and 4 small ventral tubercles; II with 2 large dorsal, 8 ventral; III with 4 dorsal, 2 retrolateral, 8 ventral; IV with 9 dorsal, 13 ventral. Femur I-IV straight; II and III with 1 prolateral row of tubercles increasing in size apicad; IV with 1 ventral anterior row of tubercles and 1 posterior small (both in all femur, increasing in size apicad), 1 retrolateral row decreasing in size apicad, 2 dorsoapical. Patella IV with acute tubercles, 3 large dorsoapical, 1 prolateral and 1 retrolateral tubercle. Tibia IV with 2 ventral rows of tubercles. Tarsal segmentation: 7, 15, 6, 7.

Penis (Figs. 543-544): Ventral plate with lateral margins parallel and distal margin straight, with 2 basal and 1 intermediary pairs of setae.

Colour (lectotype and paralectotype): Coxae and dorsal scute dark-brown with small black spots. Spines of area III black. Chelicera and pedipalpal trochanter, patella and tarsus do black reticulate, others appendages segments lighter.

#### Female redescription (paralectotype; Figs. 380-381, 383):

Measurements: DSL 3.24, CL 1.60, DSW 3.04, CW 3.00; ID 1.76; chelicera: II 1.96, III 0.96; pedipalpus 10.52; leg I 12.17; II 26.82; III 21.55; IV 29.39.

Anterior margin of cephalothorax with 2 central and 2 tubercles each side. Cephalothorax with 9 tubercles. Area II with 2-3 tubercles lateral. Free tergites I-II with 12 tubercles; III with 10. Chelicera: segment I with 2-3 tubercles; II with 8 teeth; III with 6. Pedipalpus: tibia ectal IIII, mesal IIII, 1 ventral row of tubercles; tarsus: ectal IIII, mesal IIII, 1 ventral row of tubercles. Tarsal segmentation: 7, 15, 6, 7.

Bionomics: The males from Serra do Navio were collected in a dark place into a hollow log fallen.

Type locality: Between Oyapock and Calçoene rivers (= Contesté Franco-brésilien, old litigious region), Amapá, Brazil.

Distribution (Fig. 602): French Guiana and Brazil (Amapá).

Material examined: Brazil. Amapá: Serra do Navio, V.1992, G. Skuk leg., 2 ♂ (MZSP-14280); Vila Nova, near Gaivotá, 12.V.1992, G. Skuk leg., 1 ♀ (MZSP-14285).

*Protimesius laevis* (Sorensen), comb.n.

(Figs. 386-393, 545-546, 563, 576-577, 584, 588, 595, 603)

*Ideostygnus laevis* Sorensen, 1932: 289; Soares & Soares, 1978: 82, 90 figs. 16-29 (rdesc.). (Male lectotype, 2 males and 2 females paralectotypes, by present designation, "in termite nests, Brazil, Pará, A. Goeldi", UZMD-90.056a, almost all legs lost, examined).

*Pickeliana laevis*; Mello-Leitão, 1935: 112.

Diagnosis: This species differs from other *Protimesius* in having trochanter IV with one large dorsal tubercle, femur IV with one dorsal row of tubercles and one ventrolateral row of large tubercles (Figs. 292-293).

## Male redescription (HSPC-599):

Measurements: DSL 4.88; CL 2.48; DSW 4.00; CW 4.00; ID 3.12; chelicera: II 5.83; III 2.67; pedipalpus 17.25; leg I 20.31; II 37.10; III 27.45; IV 34.84.

Dorsum (Figs. 386-387): Anterior margin with 5 small tubercles each side. Cephalothorax with I anterior wide eminence tuberculate (several size). Lateral margins with tubercles from apex of coxa II to area III. Areas I-III minute-tuberculate; III with 2 large upwards parallel spines. Posterior margin with 2 irregular rows of minute-tubercles. Free tergites I-III and anal plate minute-tuberculate.

Venter: Coxa I with 4 anterior tubercles, 1 median row with 3 large and 3 small, 3 posterior, 2 apical; II with 1 median row with 9, 6 posterior, 2 apical; III with 5 anterior, 1 median row of 7, 1 posterior row of 6, 3 apical; IV irregularly tuberculate. Tracheal stigma as in figure 588. Anal plate minute-tuberculate.

Chelicera: Swollen. Segment I with 1 large ventral tubercle; II with 1 basal wide and 3 small distal; III with 1 wide basal, 1 wide median and 2 small distal. Without interchelal space.

Pedipalpus (Fig. 390, 563, 584): Coxa with 7 ventral tubercles, 1 prolateral, 3 retrolateral (1 wide). Trochanter with 3 ventral tubercles (1 large), 1 dorsal. Femur with 7 ventral tubercles. Patella swollen at apical 1/5. Tibia: ectal IIIli, mesal IIIli, small-tuberculate at ventral half. Tarsus: ectal IIIli, mesal IIIli, 2 ventral rows of small tubercles.

Legs (Figs. 392-393, 595): Coxa I with 2 tubercles; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 enlarged fused

with 1 of II and with 1 of IV; IV minute-tuberculate. Trochanter I with 3 ventral tubercles (basal large); II with 4 ventral (basal large); III with 5; IV with 1 ventroapical wide and 5 small, 1 large backwards dorsal. Femora I and IV slightly curved; IV wide medially, 1 retrolateral row of large tubercles (larger medially), 1 ventroanterior row of small tubercles, 1 dorsal row of tubercles (larger basally), without dorsoapical tubercles. Patella IV with 1 large ventroapical tubercle, 1 dorsoapical small. Tarsal segmentation: 7, 17-19, 6, 7.

Penis (Figs. 545-546, 576-577): Ventral plate with concave lateral margins and distal straight, with 2 intermediary and 12 basal pairs of setae. Dorsal process reduced.

Colour: Brownish. Chelicera black reticulate. Median region of cephalothorax with black reticulate wider than on chelicera:

Female redescription (HSPC-599; Figs. 388-389, 391):

Measurements: DSL 5.17; CL 2.25; DSW 4.08; CW 3.67; ID 2.67; chelicera: II 3.32; III 1.92; pedipalpus 17.92; leg I 20.60; II 37.30; III 28.05; IV 36.20.

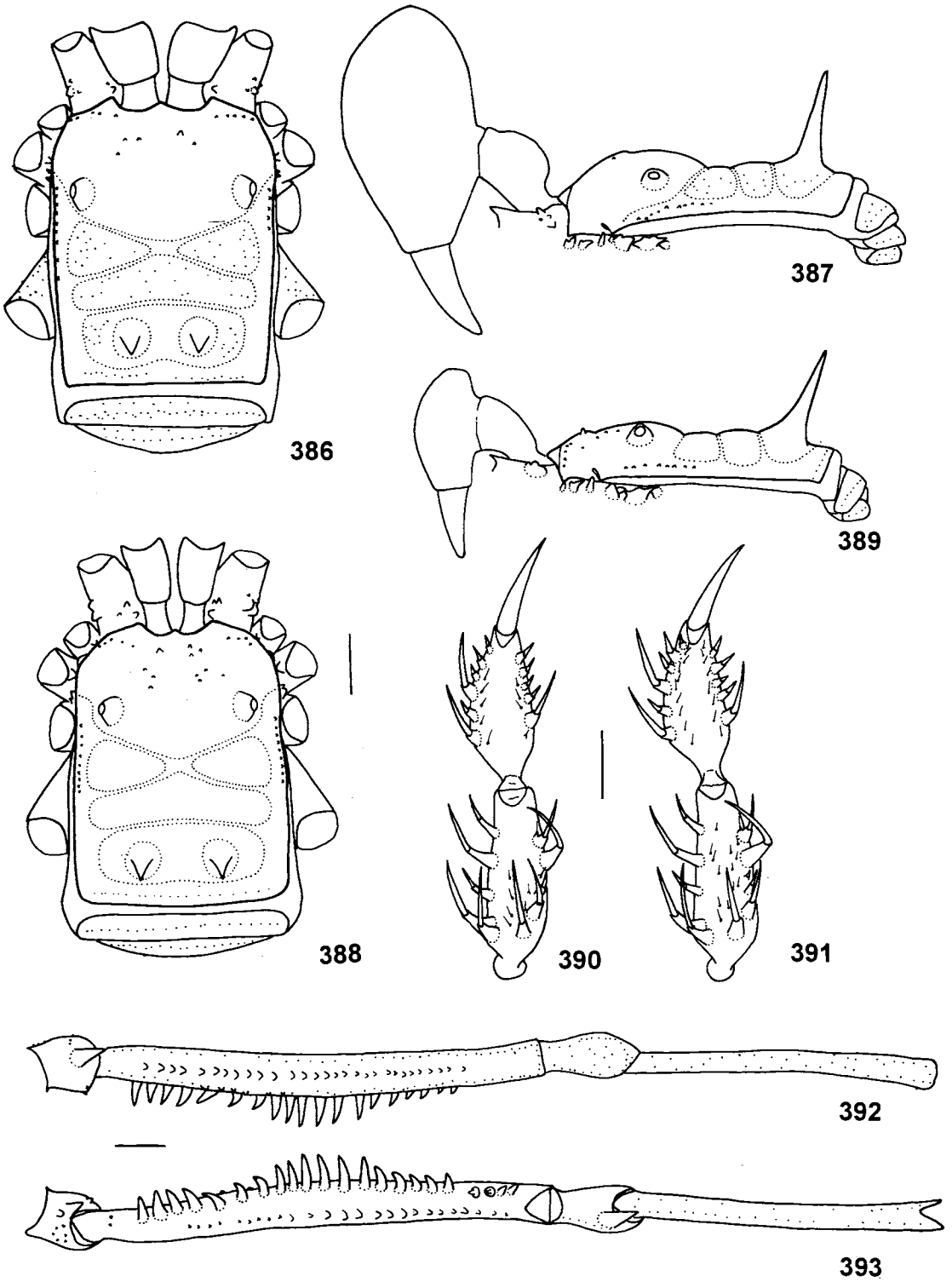
Dorsal scute with few minute tubercles. Eminence of cephalothorax smaller than male, with 2 large tubercles. Lateral margins with tubercles from coxa III to apex of area I. Posterior margin with 1 row of tubercles. Pedipalpal coxa with 7 ventral tubercles, 1 dorsobasal, 3 retrolateral. Tubercles of trochanter-femur IV smaller than male. Patella with 1 large ventroapical, without dorsal tubercles. Chelicera: segment II with 1 median wide and 3 small teeth; III with 1 wide basal, 3 small. Tarsal segmentation: 7, 19-20, 6, 7.

Bionomic data: The type material was collected in termite nests (Sorensen, 1932). The specimens from Jacundá were collected in leaves of *inajá* palms.

Type locality: Pará, Brazil.

Distribution (Fig. 603): Brazil (Pará, Mato Grosso).

Material examined: Brazil. *Pará*: Belém, 1970, 1 ♂ & 2 ♀ (HSPC-599); Ananindeua (Semnário Pio X), night collecting with Petromax, R. F. Silva, 23.XI.1975, 1 ♂, preadult (MPEG); Canindé (Aldeia Aracu, Igarapé Gurupi-Una, rio



Figs. 386-393. *Protimesius laevis* (Sorensen). Male (HSPC-599): 386, habitus, dorsal view; 387, lateral view; 390, left pedipalpus, tibia and tarsus; 392, trochanter, femur, patella and tibia of the right IV leg, dorsal; 393, same, ventral. Female (HSPC-599): 388, habitus, dorsal view; 389, lateral view; 391, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Gurupi, 50 km E of Canindé), 2-30.V.1963, B. Malkin *leg.*, 1 ♂ (AMNH); Jacundá (2 km S, rio Tocantins, right bank), in *inajá* palm, W. L. Overal *et al. leg.*, 16.V.1984, 2 ♂ & 5 ♀ (MPEG); (Bagaginha), in leaves of *inajá* palm, F. F. Ramos *leg.*, 10.VI.1984, 2 ♂ (MPEG); *Mato Grosso*: Chapada dos Guimarães (Fazenda São José, 4 km from Chapada dos Guimarães), 26.II.1983, forest, 1 ♂ & 1 ♀ (HSPC-804).

***Protimesius longipalpis* (Roewer)**

(Figs.394-401, 547-548, 604)

*Pickeliana longipalpis* Roewer, 1943: 61, fig. 73-73a; Höfer & Beck, 1995: 399, fig. 8 (cit.). (Female holotype, "Manaos [Manaus, Amazonas, Brazil], typus, CR-5854" SMFD, examined).

*Protimesius longipalpis*; H. Soares, 1978: 75.

*Protimesius gracilis*: Mello-Leitão, 1923: 179 (mis.).

Diagnosis: This species differs from other *Protimesius* in having leg IV smooth.

Male description (holotype):

Measurements: DSL 5.67; CL 2.58; DSW 3.92; CW 3.67; ID 2.75; chelicera: II 5.08; III 2.17; pedipalpus 23.15; leg I 25.52; II 45.35; III 35.84; IV 47.79.

Dorsum (Figs. 394-395): Anterior margin and eye mounds smooth. Middle of cephalothorax and between eye mounds with minute tubercles. Lateral margins with tubercles from apex of coxa II to middle of coxa III. Area I-III minute-tuberculate; III with 2 large divergent slightly backwards spines. Posterior margin, free tergites I-III and posterior margin of anal plate minute-tuberculate.

Venter: Coxa I with 1 median row of 8 tubercles; 3 apical; II with 1 median row of 7; III-IV with 3 apical, several small irregularly disposed. Posterior margin and free sternites with 1 row of small tubercles. Anal plate with 1 row of small tubercles in almost all extension.

Chelicera: Swollen. Segment I with 1 tubercle; II with 1 wide median; III with 1 wide basal, 1 wide median, 3 small distal. With interchelar space.

Pedipalpus (Fig. 398): Coxa with 6-7 ventral tubercles, 11-12 dorsal. Trochanter with 4 ventral tubercles (median larger), 1 dorsal. Femur straight, with 1 row of 8 small ventral tubercles.

Patella swollen at apex. Tibia: ectal IIili, mesal IIili, tuberculate ventrally. Tarsus: ectal Iiiiii, mesal Iiiiii, with 2 rows of ventral tubercles.

Legs (Figs. 400-401): Trochanter I with 3 ventral tubercles; II with 4 ventral (3 large); III with 6 ventral (2 large); IV with 9 ventral (2 large). Femora I-IV straight. Femora-tibiae I-IV minute-tuberculate. Tarsal segmentation: 9, 17, 8, 9.

Penis (Figs. 547-548): Ventral plate with lateral margins parallel and distal margin straight, with 4 basal and without intermediary pairs of setae.

Colour: Brown. Legs I-III, pedipalpal patella-tarsus and tibia-tarsus IV yellowish.

Female redescription (Figs. 396-397, 399):

Measurements: DSL 5.08; CL 2.25; DSW 4.00; CW 3.42; ID 2.33; chelicera: II 3.25; III 1.83; pedipalpus 22.75; leg I 28.16; II 54.84; III 34.99; IV 41.20.

Lateral margins with tubercles from coxa III to middle of IV. Chelicera: segment II with 1 wide basal tubercle, 1 wide median and 2 small posterior; III with 2 small basal, 1 wide median, 2 small posterior. Pedipalpus: coxa with 2-3 dorsobasal tubercles; tarsus ectal IIiII (IIili), mesal IIili. Tarsal segmentation: 9, 22, 7-8, 9.

Female unknown.

Bionomics: Collected at night on *acajá* (= mahogany).

Type locality: Brazil, Amazonas, Manaus (03°08'S - 60°01'W).

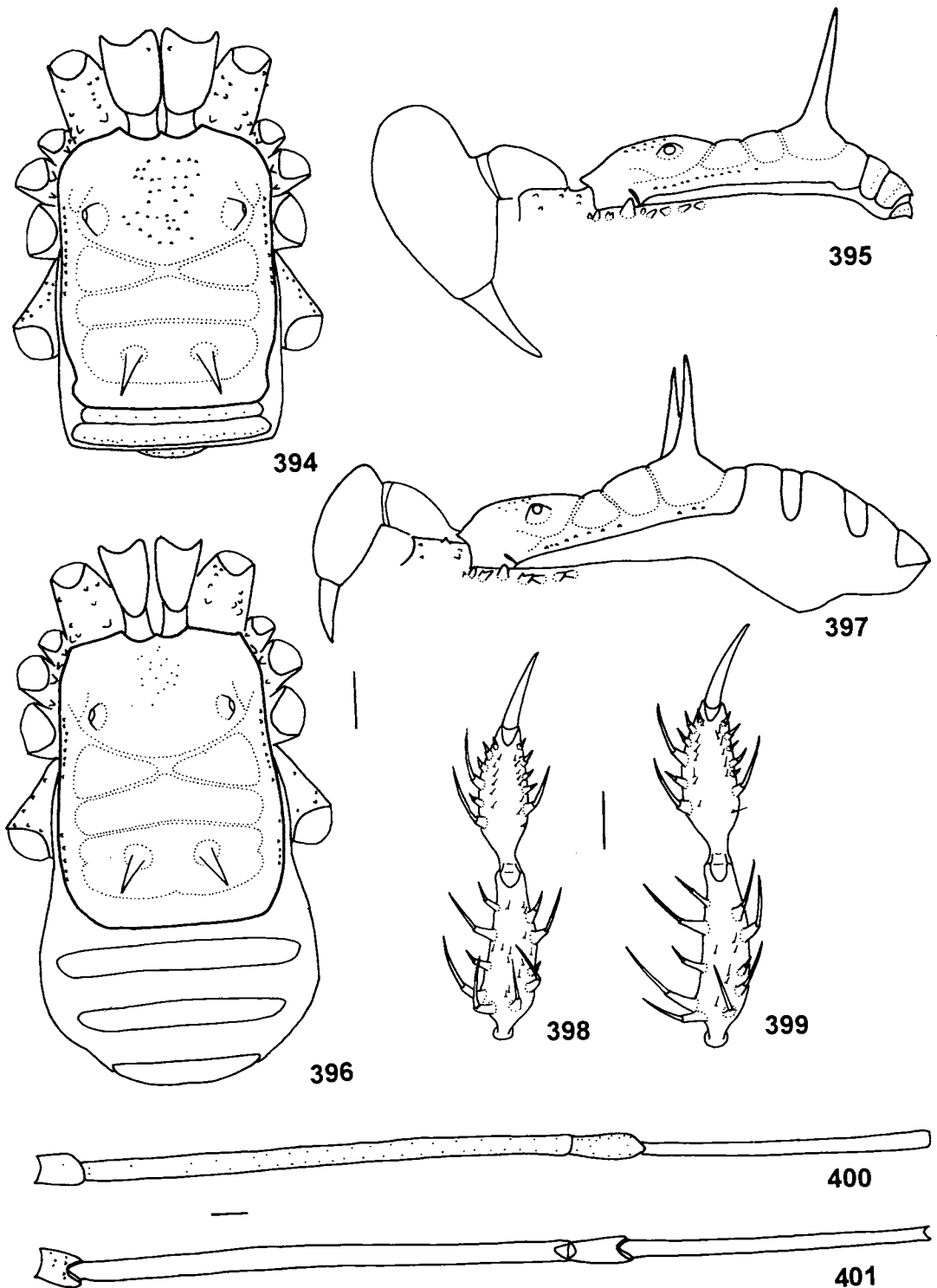
Distribution (Fig. 604): Recorded only from Manaus (Amazonas, Brazil).

Material examined: Brazil, *Amazonas*: Manaus, 1902, E. Garbe *leg.*, 1 ♀ (MZSP-1637); idem (Reserva Ducke), 10.I.1987, W. Roth *leg.*, 1 ♂ (MNRJ-6226); idem, 31.V.1993, collected in *acajá* at night, 1 ♀ (SMNK); idem, 12.VII.1987, H. Höfer *leg.*, in trunks at night, 1 ♂ (INPA); same locality, 17.I.1994, 2 ♂ (MZSP); same data, 2 ♂ (SMNK); same data, 10.XI.1976, 1 ♀ (INPA); same data, 28.XII.1993, 1 ♂ (SMNK); same data, 1.III.1994, 2 immatures (SMNK); (Usina Hidrelétrica de Balbina), 1 ♂ (IBUT).

***Protimesius mendopticus* (H. Soares), comb.n.**

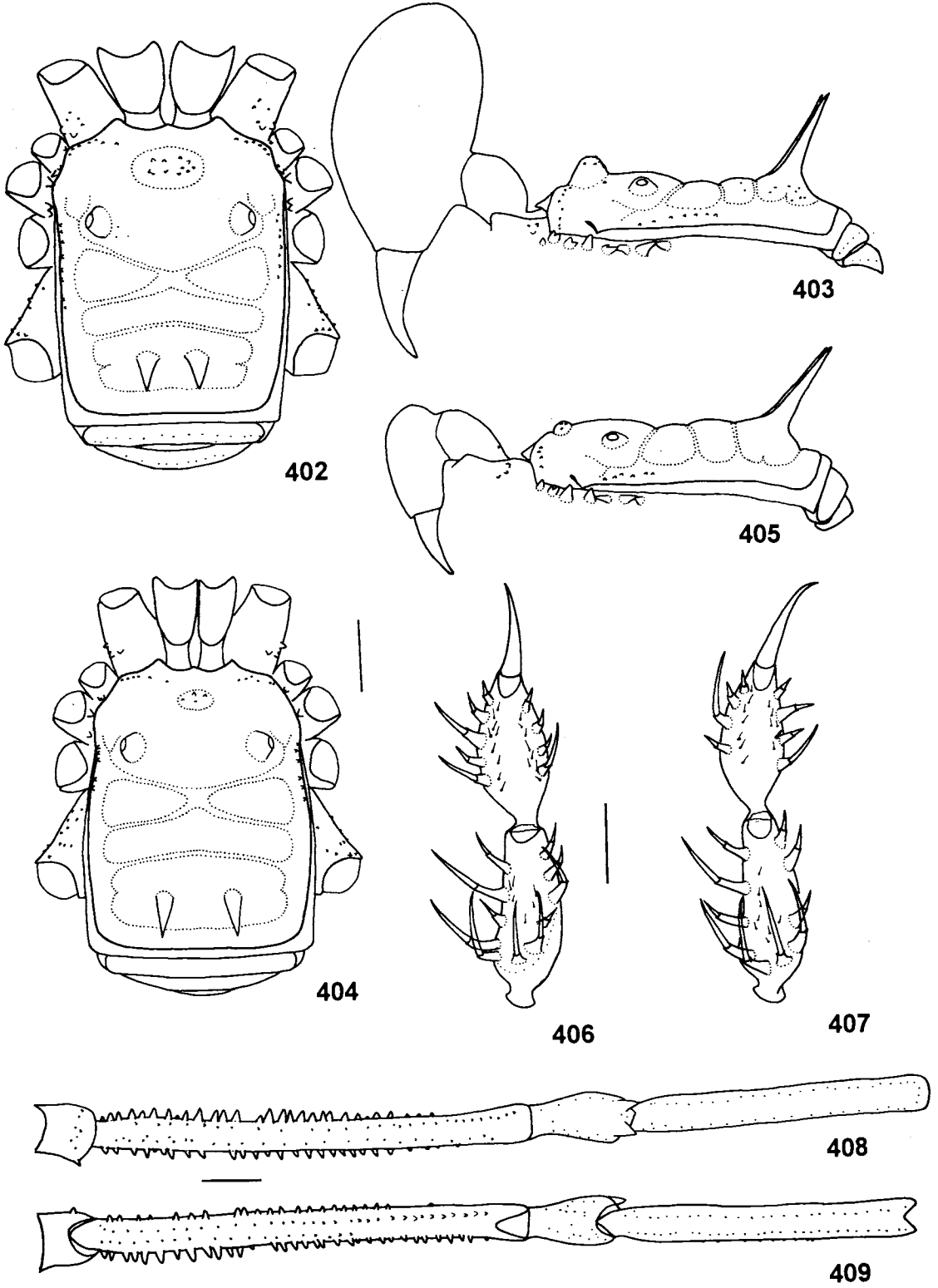
(Figs. 402-409, 549-550, 602)

*Misetropius mendopticus* H. Soares, 1978: 71, figs.



Figs. 394-401. *Protimesius longipalpis* (Roewer). Male (DZRJ-226): 394, habitus, dorsal view; 395, lateral view; 398, left pedipalpus, tibia and tarsus; 400, trochanter, femur, patella and tibia of the right IV leg, dorsal; 401, same, ventral. Female: 396, habitus, dorsal view; 397, lateral view; 399, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.





Figs. 402-409. *Protimesius mendopticus* (H. Soares). Male (holotype): 402, habitus, dorsal view; 403, lateral view; 406, left pedipalpus, tibia and tarsus; 408, trochanter, femur, patella and tibia of the right IV leg, dorsal; 409, same, ventral. Female (paratype): 404, habitus, dorsal view; 405, lateral view; 407, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

1-9. (Male holotype and female paratype, "[Brazil], Bahia, km 19 from Prado, B. F. Amaral F<sup>o</sup> leg., 31.I.1976, HSPC-639", HSPC, male dissected, female examined).

Diagnosis: The males of this species resembles those of *P. albilineatus*, *P. amplichelis*, *P. evelineae* and *P. trocaraincola* and differ from these species by large lateral tubercles on femur IV, patella IV with two dorso apical tubercles and without large ventral tubercles (Figs. 408-409).

Male redescription (holotype):

Measurements: DSL 4.08; CL 1.84; DSW 3.20; CW 3.16; ID 2.32; chelicera: II 4.24; III 1.68; pedipalpus 12.68; leg I 15.28; II 28.50; III 21.52; IV 28.05.

Dorsum (Figs. 402-403): Anterior margin with 6-7 tubercles each side. Cephalothorax with 1 large anterior eminence tuberculate. Lateral margins with tubercles from apex of coxa II to begin of area II. Area I-III smooth; III with 2 large slightly divergent spines, 1 cavity each side. Free tergites I-III minute-tuberculate.

Venter: Coxa I with 1 anterior tubercle, 1 row of 5 large tubercles, several small posterior, 3 apical; II with 1 row of 9 large, 4 apical; III with 4 apical, 1 median row of 7, some sparse tubercles; IV irregularly tuberculate. Anal plate minute-tuberculate.

Chelicera: Swollen. Segment I smooth; II with 2 wide median teeth, 1 small distal; III with 1 wide basal, 1 wide median and 2 distal. Without interchelar space.

Pedipalpus (Fig. 406): Coxa with 3 large median tubercles, 1 dorsal larger and several small. Trochanter with 3 ventral, 1 dorsal. Femur swollen near apex, with 1 ventral larger tubercle. Patella swollen at apex. Tibia: ectal IIIlii, mesal IIIli, tuberculate ventrally. Tarsus: ectal Iiii, mesal IIiii, 2 ventral rows of tubercles.

Legs (Figs. 408-409): Coxa I with 2 dorsal tubercles bifid; II with 1 anterior, 1 median, 1 posterior; III with 1 anterior, 1 posterior; IV small-tuberculate. Trochanter I with 3 ventral tubercles; II with 4 ventral, 1 retrolateral; III with 5 ventral; IV with 3 ventral, 5 dorsal, 1 retrolateral. Femur IV with 2 lateral rows of tubercles from base to distal 1/4, 2 ventral rows on distal half (anterior larger). Patella IV with 2 large dorsoapical tubercles. Tarsal segmentation: 8, 14-17, 6, 7.

Penis (Figs. 408-409): Ventral plate with lateral margins convergent and distal straight, 1 intermediary and 4 basal pairs of setae.

Colour: Brown with black spots. Leg IV darker, chelicera black reticulate.

Female redescription (paratype; Figs. 549-550):

Measurements: DSL 3.84; CL 1.68; DSW 3.16; CW 2.96; ID 2.04; chelicera: II 2.16; III 1.32; pedipalpus 12.28; leg I 15.36; II 29.54; III 21.50; IV 28.92.

Eminence of cephalothorax lower than male. Lateral margins with tubercles only near coxa III. Pedipalpal coxa with 4 large ventral tubercles. Legs I-IV smooth. Coxa I with 1 tubercle dorsal normal and 1 bifid; II with posterior tubercle fused apically with 1 of III; III with 1 tubercle fused apically with 1 of IV. Tarsal segmentation: 7, 16, 6, 6-7.

Type locality: Brazil, Bahia, Prado (17°21'S - 39°13'W).

Distribution (Fig. 602): Recorded only from type locality.

### *Protimesius palpalis* (Roewer)

(Figs. 410-412, 603)

*Fonteboatus palpalis* Roewer, 1931: 156, fig. 23; Mello-Leitão, 1932: 428 (rdesc.). (Female holotype, "[Brazil], Amazonas, Fonteboa, typus, CR-1459", examined).

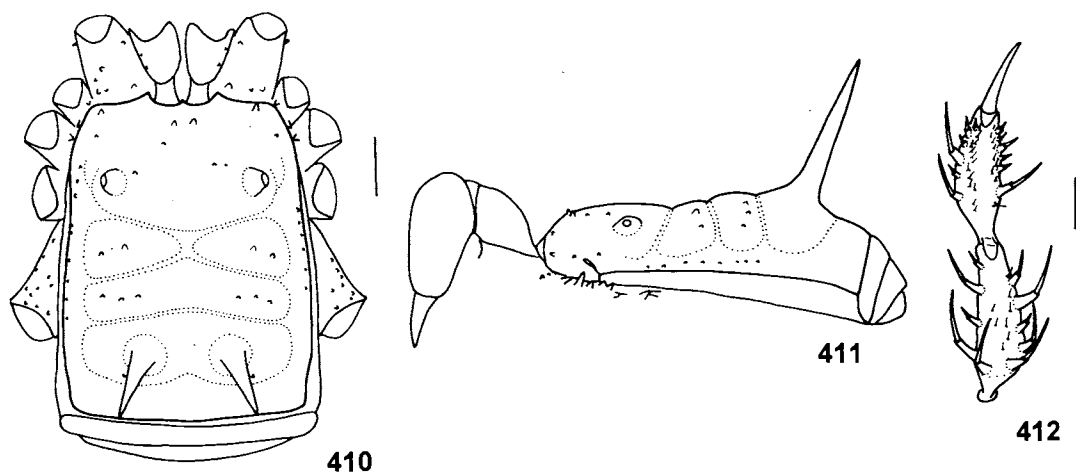
*Protimesius palpalis*; H. Soares, 1978: 75.

Diagnosis: This species differ from other *Protimesius* by the combination of following characteristics: anterior margin with one tubercle each side (Fig. 410); area I with 2, II with 3 lateral tubercles; spines of area III very long and divergent.

Female redescription (holotype):

Measurements: DSL 5.50; CL 2.17; DSW 4.08; CW 3.58; ID 2.42; chelicera: II 2.92; III 1.50; pedipalpus 21.51; leg I 26.33; II 45.76; III 36.42; IV 48.71.

Dorsum (Figs. 410-411): Anterior margin with 1 tubercle on each side. Cephalothorax tuberculate, 1 small anterior eminence with 2 large tubercles. Eye mounds smooth. Lateral margins minute-tuberculate. Area I with 2 tubercles each side (central larger); II with 3 each side; III with 2 spines divergent and backwards, with 1 tubercle behind each spine. Posterior margin and free tergites I-III minute-tuberculate. Anal plate tuberculate.



Figs. 410-412. *Protimesius palpatis* (Roewer). Female (holotype): 410, habitus, dorsal view; 411, lateral view; 412, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

Venter: Coxa I with 1 median row of 6 tubercles, 3 apical, 2 subapical; II with 1 median row of 8-10, 4 posterior, 5 apical; III with 1 median row with 8, 8 posterior, 4 apical; IV with 4 apical, irregularly tuberculate. Posterior margin and free sternites with 1 row of minute tubercles. Anal plate with minute tubercles at middle and on posterior margin.

Chelicera: Segment I with 2 tubercles; II with 2 wide median and 2 small distal; III with 3 wide median and 1 small distal.

Pedipalpus (Fig. 412): Coxa with 5-6 ventral tubercles. Trochanter with 2 ventral tubercles. Femur straight, 1 row of 9 tubercles. Patella swollen at distal 1/6. Tibia: ectal Ilii, mesal Ilii, tuberculate ventrally. Tarsus: ectal Iliii, mesal Iliiii, 2 rows of ventral tubercles.

Legs: Coxa I with 3 tubercles (2 bifid); II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 fused apically with 1 of IV; IV small-tuberculate. Trochantera I-II with 3 ventral tubercles; III with 2 ventral; IV with 3 small prolateral and 3 small retrolateral. Femora I-IV straight, 2 ventrobasal tubercles, without dorsoapical tubercles. Tarsal segmentation: 7, 15, 6, 7.

Colour: Brown. Margins and free tergites darker. Chelicera black reticulate.

Male unknown.

Type locality: Fonteboa, Amazonas, Brazil (02°32'S - 66°01'W).

Distribution (Fig. 603): Recorded only from type locality.

***Protimesius trocaraincola*, sp.n.**

(Figs. 413-420, 551-552, 602)

Diagnosis: The males of this species differ from other *Protimesius* with anterior eminence on cephalothorax, *P. albilineatus*, *P. amplichelis*, *P. evelineae* and *P. mendopticus* by the combination of following characters: eminence with large tubercles; area I with 2 and II with 1 tubercles (Fig. 413); patella IV with one ventral and one dorsal large tubercles; tibia IV with two large ventroapical tubercles (Figs. 419-420).

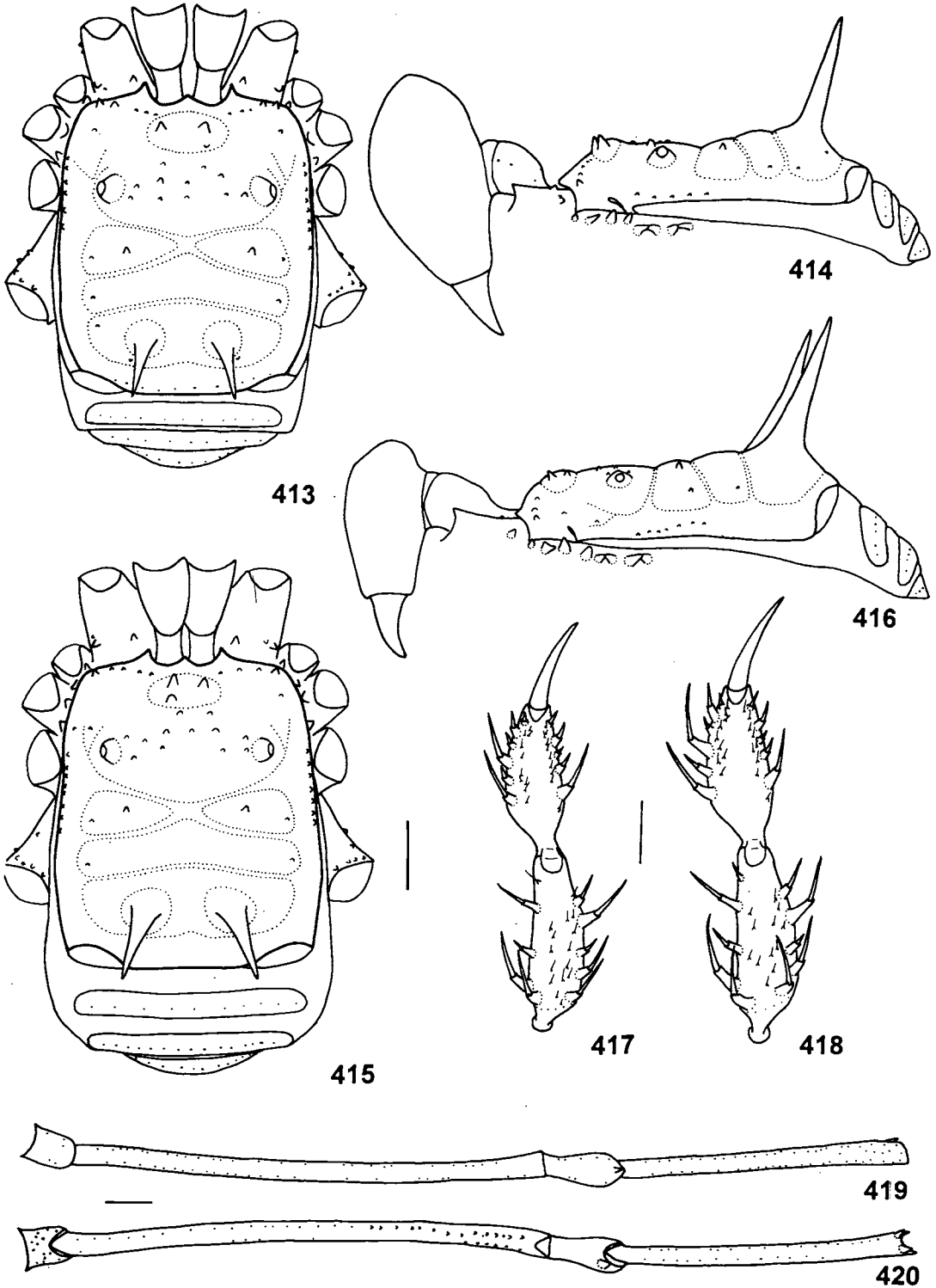
Etymology. The specific name is a noun in reference to indian village *Trocara* of the *Assurini* people that is placed near type locality.

Type material: ♂ holotype and ♀ paratype "Brazil, PA, Anajá[s], under log, 8.XII.1982, W. L. Overal, MPEG"; Paratypes: 1 ♂ & 1 ♀, same data as holotype "09.XII.1982", MZSP-14256; 1 ♀ "Fazenda Morelândia, 11.XI.1980, R.B.Neto", MPEG; 3 ♀ "Belém (Utinga), 2.XI.1966, P. Waldir", MPEG; 1 ♀ "margem dir. Tocantins camp., Bagagem, Tucuruí, em palmeira inajá, 10.VI.1984, R.F.Ramos", MPEG.

Male description (holotype):

Measurements: DSL 4.48; CL 2.28; DSW 4.00; CW 3.80; ID 2.64; chelicera: II 4.24; III 1.68; pedipalpus 18.42; leg I 22.33; II 40.89; III 31.80; IV 40.62.

Dorsum (Figs. 413-414): Anterior margin with 2 large tubercles each side and 3 central smaller. Eye mounds smooth. Cephalothorax with



Figs. 413-420. *Protimesius trocaraincola*, sp.n.. Male (holotype): 413, habitus, dorsal view; 414, lateral view; 417, left pedipalpus, tibia and tarsus; 419, trochanter, femur, patella and tibia of the right IV leg, dorsal; 420, same, ventral. Female (paratype): 415, habitus, dorsal view; 416, lateral view; 418, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

1 tubercle each side, with 1 anterior eminence with 3 tubercles (2 large), several tubercles between eyes. Lateral margins with tubercles between the apex of coxa II to middle of area II. Area I with 2 tubercles each side (central larger); II with 1 each side; III with 0-1 each side, 1 tubercle behind each spine, 2 large slightly backwards divergent spines. Posterior margin and free tergites I-III with 1 row of minute tubercles. Anal plate with tubercles irregularly disposed.

Venter: Coxa I with 1 median row of 5-6 tubercles, 2 apical; II with 1 median row of 8, 4-5 posterior, 3 apical; III with 1 median row of 9-10, 5-6 posterior; IV irregularly tuberculate, 5 apical. Posterior margin and free sternites with 1 row of minute tubercles. Anal plate irregularly tuberculate.

Chelicera: Swollen. Segment I smooth; II-III with 1 wide basal tubercle, 1 wide median. Without interchelar space.

Pedipalpus (Fig. 417): Coxa with 5 ventral tubercles, 2-3 dorsal. Trochanter with 3 ventral tubercles, 1 dorsal. Femur straight, with 6 ventral tubercles. Patella swollen apicad. Tibia: ectal IIII, mesal IIII, tuberculate ventrally. Tarsus: ectal IIII, mesal IIII, 2 ventral rows.

Legs (Figs. 419-420): Coxa I with 2 tubercles; II with 1 anterior, 1 median, 1 posterior fused apically with 1 of III; III with 1 fused apically with 1 of IV; IV small-tuberculate. Trochanter I with 3 ventral tubercles; II with 5 ventral, 10 posterior; III with 5 ventral, 2 retrolateral; IV with 10 ventral, 2 prolateral. Femora I-III straight; IV curved, with 1 ventroapical posterior row of tubercles. Patella IV with 1 dorsoapical posterior tubercle, 1 ventral anterior. Tibia IV with 2 ventroapical tubercles. Tarsal segmentation: 7 (2), 13 (3-4), 6, 7.

Penis (Figs. 551-552): Ventral plate with lateral and distal margins concave, 4 basal and without intermediary pairs of setae.

Colour: Dark-brown. Chelicerae slightly black reticulate. Margins of dorsal scute and legs III-IV darker. Patella IV black reticulate. With 2 yellowish spots on lateral and on posterior margin.

Female description (paratype; Figs. 415-416, 418):

Measurements: DSL 4.75; CL 2.08; DSW 4.25; CW 3.75; ID 2.67; chelicera II 3.58; III 1.67; pedipalpus 20.08; leg I 22.07; II 40.81; III 31.42; IV 40.95.

Area III without tubercles. Chelicera: seg-

ment II with 3 wide basal tubercles; III with 4 wide basal. Femur IV smooth. Patella IV without ventroapical tubercle. Tibia IV smooth. Tarsal segmentation: 7-8, 19, 6, 7.

Bionomics: Collected under logs and on *inajá* palm.

Type locality: Anajás, Pará, Brazil (00°59'S - 49°57'W).

Distribution (Fig. 602): Brazil (Pará).

Stygyninae not included in the cladistic analysis.

### *Actinostygnoides* Goodnight & Goodnight

*Actinostygnoides* Goodnight & Goodnight, 1942a: 9. (Gender masculine).

Diagnosis: Dorsal scute narrower at grooves I and III. Cephalothorax small-tuberculate. Eye mounds smooth. Area I divided by a median groove; III with 2 spines. Tubercles of free tergites similar in size. Pedipalpal femur large; basal sockets apex of tibia normal. Without tarsal process and scopula.

Type species: *Actinostygnoides carus* Goodnight & Goodnight, 1942a, by original designation.

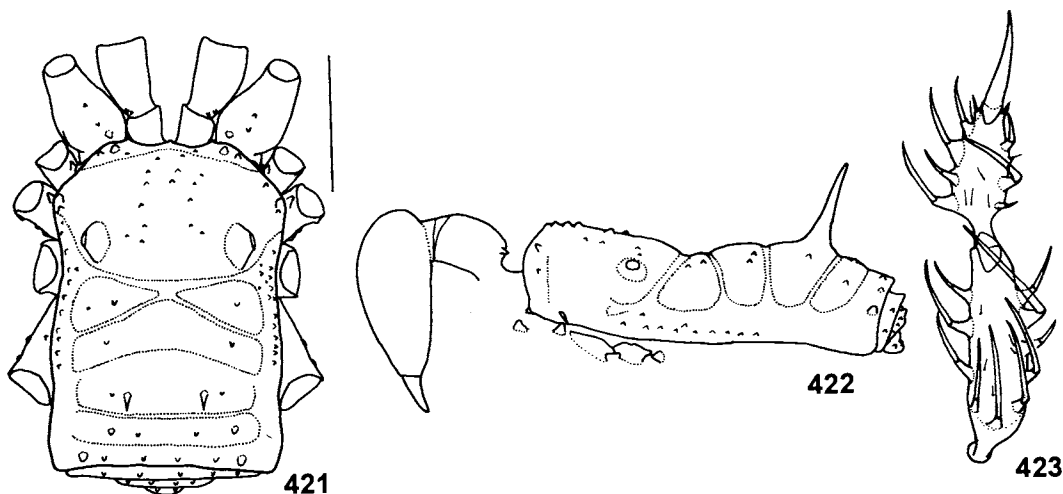
*Actinostygnoides carus* Goodnight & Goodnight (Figs. 421-423, 604)

*Actinostygnoides carus* Goodnight & Goodnight, 1942a: 9, fig. 21. (Female holotype, "Kamakusa, British Guiana, nov., 7, 1922, H. Lang & La Varre leg., female holotype", AMNH, examined).

Female redescription (holotype):

Measurements: DSL 2.24, CL 1.00, DSW 1.68, CW 1.60, ID 1.14, chelicera: II 1.44, III 0.76; pedipalpus 6.02; leg I 8.50; II 9.62; III 8.78; IV 11.12.

Dorsum (Figs. 421-422): Anterior margin with 2 tubercles near pedipalpal coxa. Cephalothorax with median tubercles near odoriferous gland. Lateral margins with 1 row of tubercles from coxa II to apex of area II. Area I with 1-2 tubercles; II with 2 tubercles; III with 2 tubercles



Figs. 421-423. *Actinostygnoides carus* Goodnight & Goodnight. Female (holotype): 421, habitus, dorsal view; 422, lateral view; 423, left pedipalpus, tibia and tarsus. Scale bar, 1 mm.

each side, 2 straight and parallel spines; IV with 4 tubercles. Posterior margin with 6 tubercles. Free tergite I with 5 tubercles; II with 8; III with 4. Anal plate small-tuberculate.

Venter: Coxa I with 1 row of 5 large tubercles, 3 apical, 3 irregularly disposed; II with 1 row of 6, 2 apical; III with 9 irregularly disposed, 2 apical; IV small-tuberculate. Stigmatic area, free sternites and anal plate small-tuberculate.

Chelicera: Segment I with 2 tubercles; II-III with 4 tubercles.

Pedipalpus (Fig. 423): Coxa with 3 dorsal tubercles, 1 large ventral and central. Trochanter with 1 dorsal, 2 ventral. Femur smooth. Patella swollen at distal 1/3. Tibia: ectal IIIi, mesal IIIiIi. Tarsus: ectal IiIIIi, mesal IiIIi, depressed.

Legs: Coxa I with 1 tubercle; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 enlarged fused with 1 of II and with 1 of IV; IV small-tuberculate. Trochanter I with 2 dorsal tubercles, 3 ventral, 1 retrolateral; II with 2 dorsal, 2 ventral, 1 retrolateral; III with 3 dorsal, 2 ventral, 2 retrolateral; IV with 4 dorsal, 4 ventral, 1 retrolateral. Femora I-IV straight, small-tuberculate. Tarsal segmentation: 7, 12, 6, 7.

Colour: Brown. Coxa, margins of areas, lateral and posterior margins, free tergites and spines darker. Chelicera black reticulate.

Male unknown.

Type locality: Kamakusa, Mazaruni-Potaro, Guyana (05°57'N - 59°54'W).

Distribution (Fig. 604): Recorded only from type locality.

### *Kaapora*, gen.n.

Etymology: Masculine noun from the Brazilian indigenous (Tupi) mythology, the Kaapora, a forest being which roams the forest mounted on a peccari.

Diagnosis: Dorsal scute narrowed at groove I-II and wider on posterior margin. Cephalothorax smooth. Eye mounds smooth. Area I not divided by a median groove; III smooth. Tubercles of free tergite III similar in size. Pedipalpal femur large. With tarsal process, without scopula.

Note: This genus resembles those of the Biantidae by the shape of dorsal scute. It is necessary to study the male genitalia to know the correct placement of the *Kaapora minutissimus*. The biantids were only recently recorded in the South America (Gonzalez-Sponga, 1992; Pinto-da-Rocha, 1995b).

Type species: *Nanophareus minutissimus* Roewer, 1943, by present designation.

***Kaapora minutissimus*** (Roewer), comb.n.

(Fig. 559)

*Nanophareus minutissimus* Roewer, 1943: 36, fig. 36. (Male and 11 females syntypes, "Pernambuco, [Brazil]", SMFD, M. Grasshoff did not find the types but they are not lost, not examined).

Male redescription (according to original description):

Dorsum (Figs. 559): Anterior margin, cephalothorax, lateral and posterior margins and free tergites I-III smooth. Areas I-IV smooth.

Venter: Coxae I-IV irregularly tuberculate. Free sternites with 1 row of tubercles.

Pedipalpus: Coxa with 1 wide dorsal tubercle. Trochanter, femur and patella smooth. Tibia and tarsus with 5 setae each side.

Femora I-IV sigmoid and with rows of tubercles. Tarsal segmentation: 5, 6, 6, 6.

Colour: Rusty yellow.

Type locality: Pernambuco, Brazil.

Distribution: Recorded only from type locality.

***Iguarassua*** Roewer

*Iguarassua* Roewer, 1943: 62. (Gender feminine).

Diagnosis: Dorsal scute narrower at groove I-II and wider at posterior margin. Cephalothorax small-tuberculate. Area I divided by a median groove; III with 2 wide tubercles. Eye mounds smooth. Pedipalpal femur large; basal sockets apex of tibia normal. Tubercles of free tergites similar in size. Without tarsal process.

Type species: *Iguarassua schubarti* Roewer, 1943, by monotypy.

***Iguarassua schubarti*** Roewer

(Figs. 424-426, 564, 604)

*Iguarassua schubarti* Roewer, 1943: 62, fig. 75-75a. (Lectotype female and 5 paralectotypes females, by present designation, "Pernambuco, Nova Brizb., Iguarassua [Iguaraçu, Brazil], typus, 6 and , Schubart leg., CR-6204" SMFD, examined).

Female redescription (lectotype):

Measurements: DSL 0.94; CL 0.46; DSW 0.76; CW 0.66; ID 0.48; chelicera: II 0.52; III 0.24; pedipalpus 1.74; leg I 1.98; II 2.52; III 2.07; IV 2.60.

Dorsum (Figs. 424-425): Margins of dorsal scute and eye mounds smooth. Area I smooth; II-III with 2 wide tubercles. Free tergite I with 4 tubercles; II with 5; III with 8. Anal plate with tubercles at middle and on posterior margin.

Venter: Coxae I-II with 1 median row of 5 tubercles; III-IV irregularly tuberculate. Posterior margin and free sternites with 1 row of tubercles. Anal plate smooth.

Chelicera: Segment I with 1 large dorsoposterior tubercle.

Pedipalpus (Fig. 426, 564): Coxa with 1 large ventral tubercle, 1 large dorsal, 1 wide retrolateral. Trochanter with 2 ventral. Femur slightly curved, with 6 ventral tubercles. Patella swollen at distal 1/3. Tibia: ectal IIIi, mesal IIIi. Tarsus: ectal ili, mesal IIIi.

Legs: Trochanter I with 2 ventral tubercles, 1 large dorsal; II with 1 large dorsal; III with 3 ventral, 1 large retrolateral, 1 dorsal; IV with 3 dorsal. Femora I and IV curved; II-III straight; III-IV with 2 ventral rows of tubercles. Claws smooth, subparallel, scopula dense, tarsal process reduced to 1 wide hair, last article of tarsi III-IV globous and similar to anterior. Tarsal segmentation: 6, 7, 6, 7.

Colour: Brownish, margins of dorsal scute darker.

Male unknown.

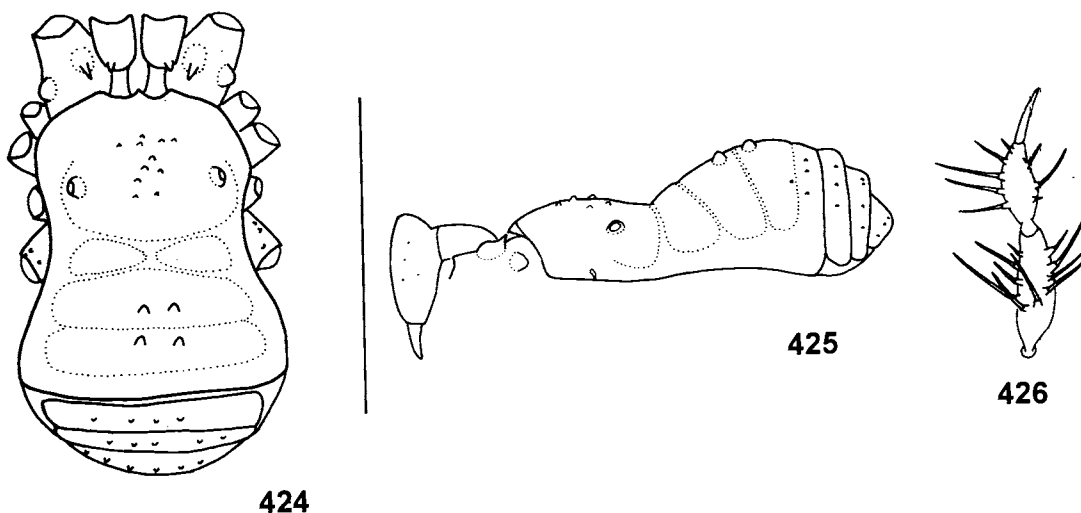
Type locality: Brazil, Pernambuco, Iguaraçu (07°50'S - 34°54'W).

Distribution (Fig. 604): Recorded only from type locality.

***Metaphareus*** Roewer

*Metaphareus* Roewer, 1912: 149; 1913b: 429; 1923: 572; Mello-Leitão, 1926: 366; 1932: 421. (Gender masculine).

Diagnosis: Dorsal scute with lateral margins convex. Cephalothorax with 1 enlarged median eminence. Area I divided by a median groove; III with 2 spines. Eye mounds small-tuberculate or smooth. Tubercles of free tergites similar in size. With tarsal process. Pedipalpal femur



Figs. 424-426. *Iguarassua schubarti* Roewer. Female (SMFD-6204): 424, habitus, dorsal view; 425, lateral view; 426, left pedipalpus, tibia and tarsus. Scale bar, 1 mm.

large; basal sockets apex of tibia normal. Male genitalia unknown.

Type species: *Metaphareus albimanus* Roewer, 1912, by monotypy.

***Metaphareus albimanus* Roewer**

(Figs. 558, 604)

*Metaphareus albimanus* Roewer, 1912: 149, fig. 9; 1913b: 430, fig. 169 (rdesc.). (Holotype from Aguacatal (Tolima, Colombia) probably lost, J. Gruber, pers. comm., not examined).

*Metaphareus albimanus*; Roewer, 1923: 572, fig. 718 (rdesc.).

Diagnosis: The female of *M. albimanus* (male unknown) is similar to the male of *M. punctatus* mainly by the presence of an eminence on cefalotorax, pedipalpal femur tuberculate ventrally, low number of tubercles on dorsal scute areas. Maybe these species are synonymous.

Female redescription (according to Roewer's redescriptions):

Legs length: I, 13.5; II, 23; III, 18.5; IV, 22.

Dorsum (Figs. 558): Dorsal scute uniformly rounded. Anterior margin with 1 median eminence. Cephalothorax with tubercles ir-

regularly disposed; with 1 anterior eminence tuberculate. Eye mounds small-tuberculate. Lateral margins with 1 row of tubercles. Area I with 2 tubercles each side; II with 4 each side; III with 2 tubercles each side, 2 large spines. Posterior margin and free tergites I-III with 1 row of tubercles. Anal plate with 1 row of tubercles.

Venter: Free sternites irregularly covered by tubercles. Anal plate smooth.

Chelicera: Segment I tuberculate.

Pedipalpus: Coxa smooth dorsally. Femur tuberculate ventrally. Patella swollen at distal half. Tibia with 4 mesal, 5 ectal (IiIii). Tarsus with 6 mesal (IiiIii), 6 ectal (IiiIii).

Legs: Coxa IV, trochantera I-IV and femora I-IV densely tuberculate. Femur IV with 1 small dorsoapical tubercle. Tibia IV with 2 rows of tubercles. Tarsal segmentation: 7, 14, 6, 7.

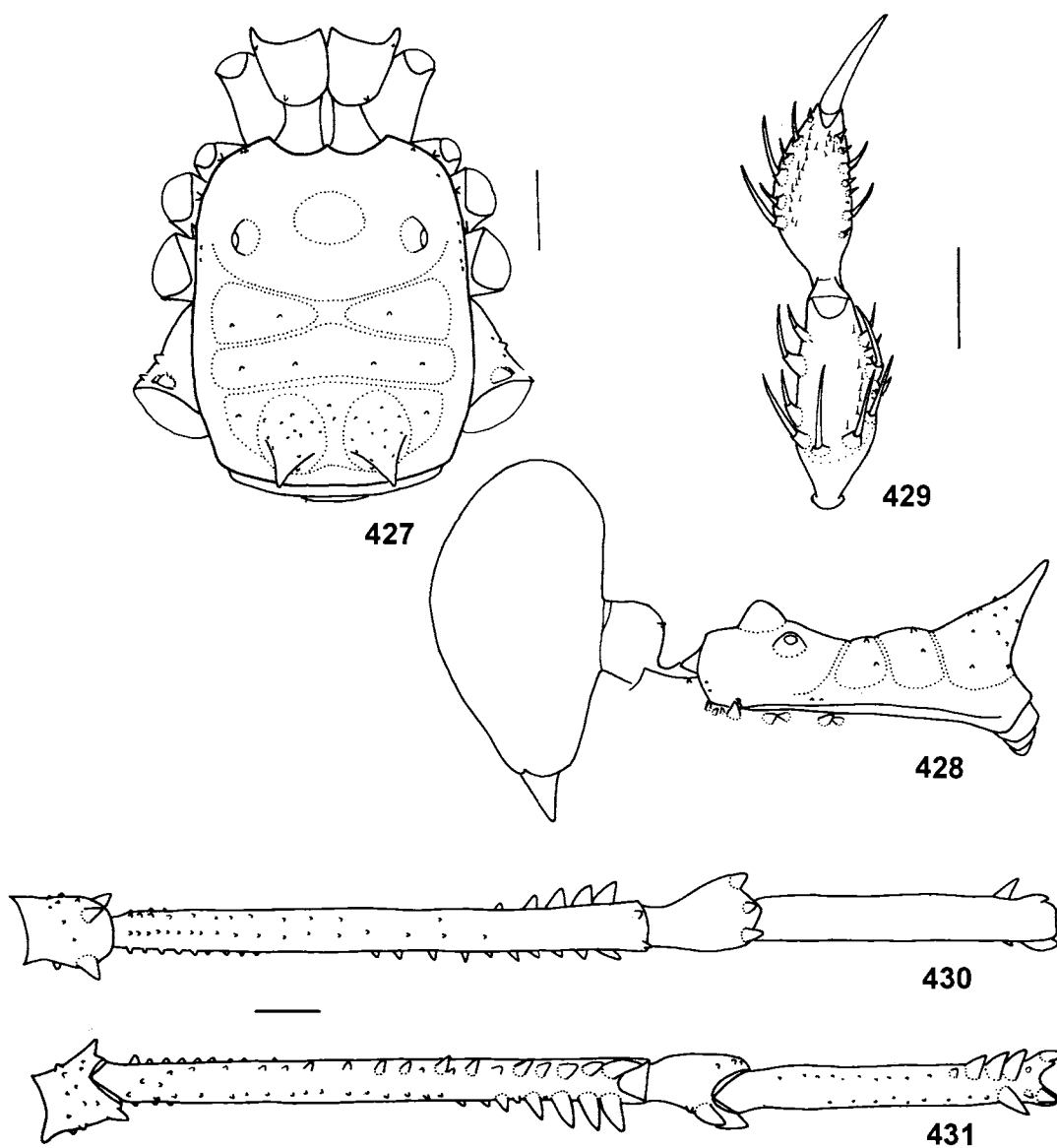
Colour: Dorsal scute and appendages black except pedipalpal tibia and tarsus that are yellowish. Tubercles of areas I-II and free sternites surrounded by white spot.

Male unknown.

Type locality: Aguacatal, Tolima, Colombia (05°06'N - 75°08'W).

Distribution (Fig. 604): Recorded only from type locality.





Figs. 427-431. *Metaphareus punctatus* Roewer. Male (holotype): 427, habitus, dorsal view; 428, lateral view; 429, left pedipalpus, tibia and tarsus; 430, trochanter, femur, patella and tibia of the right IV leg, dorsal; 431, same, ventral. Scale bars: 1 mm.

***Metaphareus punctatus* Roewer**

(Figs. 427-431, 604)

*Metaphareus punctatus* Roewer, 1913b: 432, fig. 170; 1923: 573 fig. 719 (rdesc.); Caporiacco, 1951: 42 (cit.). (Male holotype, "type, Venezuela, Merida, # 832", very damaged, some legs lost, dried, SMFD, examined).

Diagnosis: See *M. albimanus*.

**Male redescription (holotype):**

Measurements: DSL 4.58; CL 2.17; DSW 3.58; CW 3.42; ID 2.25; chelicera: II 4.92; III 2.17.

Dorsum (Figs. 427-428): Anterior margin with 1 tubercle on each side. Cephalothorax with 1 median eminence small-tuberculate. Eye mounds smooth. Lateral margins with 2-4 tubercles between coxae II and III. Area I with 1-2 tubercles each side; II with 4; III with 1 tubercle each side,

2 divergent backwards spines, with base wide and tuberculate. Posterior margin, free tergites and anal plate smooth.

Venter: Coxa I with 1 median row of 4 tubercles, with 3 apical; II with 1 median row of 9 tubercles, 2 apical; III with 1 median row of 6 tubercles, 2 apical; IV with tubercles sparse. Stigmatic area with 1 transverse deep depression between stigmatae. Posterior margin and free sternites with 1 row of small tubercles. Anal plate with 1 median and 1 posterior rows of small tubercles.

Chelicera: Segment I with 2 tubercles; II with 1 basal and 1 wide median, 3 apical small teeth; III with 2 large basal, 1 wide median, 3 small distal.

Pedipalpus (Fig. 429): Coxa with 6-8 ventral tubercles, 2 dorsal. Trochanter with 3 ventral tubercles, 1 dorsal. Femur slightly curved, 7 ventral. Patella swollen at distal half. Tibia: ectal IIIlii, mesal IIIli. Tarsus: ectal iiiiilii, mesal IliIli.

Legs (Figs. 430-431): Coxa I with 2 tubercles; II with 2 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV with 1 lateral and 1 dorsoapical tubercles. Trochanter IV with 1 large dorsoapical tubercle, 1 retrolateral apical, 2 prolateral basal, 1 lateroposterior basal. Femur IV straight, with 2 small dorsoapical tubercles (posterior larger), 2 ventral rows of tubercles (posterior large at distal half). Patella IV with 1 dorsoapical, 1 prolateral apical, 1 retrolateral apical, 1 large ventral. Tibia IV with 2 ventroapical tubercles backwards, 1 sub-apical ventral anterior, 4 large ventroposterior sub-apical. Tarsal segmentation (according to Roewer, 1913b): 7, 13, 6, 7.

Colour: Yellowish, with black rings surrounding tubercles of areas I-III. Posterior margin with 2 black spots.

Female unknown.

Type locality: Mérida, Mérida, Venezuela (08°36'N - 71°08'W).

Distribution (Fig. 604): Recorded only from type locality.

#### *Niceforoiellus* Mello-Leitão

*Niceforoiellus* Mello-Leitão: 1941b: 171. (Gender masculine).

Diagnosis: Cephalothorax with 1 bifid median eminence. Eye mounds tuberculate. Area I divided by a median groove; III with 2 spines. Male genitalia unknown.

Type species: *Niceforoiellus assimilis* Mello-Leitão: 1941b, by original designation.

#### *Niceforoiellus assimilis* Mello-Leitão

(Fig. 557, 604)

*Niceforoiellus assimilis* Mello-Leitão, 1941b: 171, fig. 6. (Male holotype, Cúcuta, Santander, Colombia, without indication of repository, probably lost, not examined).

Male redescription (according to original description):

Dorsum (Figs. 557): Anterior margin with 2 tubercles each side (at Mello-Leitão's figure are 3 tubercles). Cephalothorax with tubercles sparse. Eye mounds densely tuberculate. Lateral margins with 1 row of tubercles. Area I with 2 tubercles each side; II invading area I, 1 row of tubercles; III small-tuberculate, 2 large spines with tuberculate base. Posterior margin with 1 row of tubercles. Free tergites I-III with 1 row of tubercles (1 pair larger).

Venter: Coxae I-IV much tuberculate. Free sternites and anal plate smooth.

Chelicera: Swollen, segment I smooth.

Pedipalpus: Femur with 1 ventral row of tubercles. Patella swollen apically. Tibia and tarsus with 5 spines each side.

Legs: Tarsal segmentation: 7, 10, 6, 7.

Colour: Uniform dark-brown.

Female unknown.

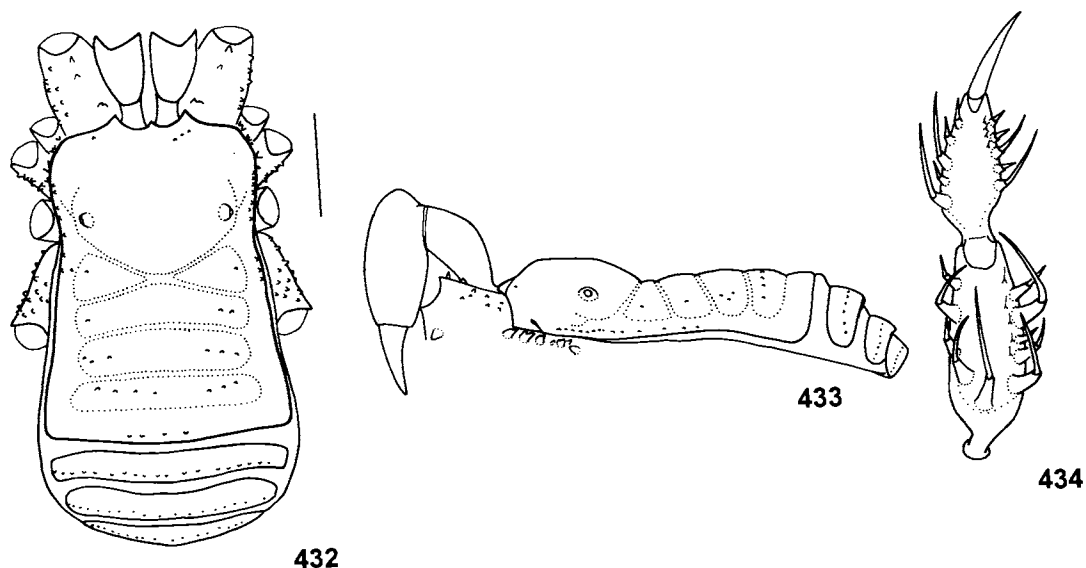
Type locality: Cúcuta, north of Santander, Colombia (07°54'N - 72°31'W).

Distribution (Fig. 604): Recorded only from type locality.

#### *Paraphareus* Goodnight & Goodnight

*Paraphareus* Goodnight & Goodnight, 1943: 11. (Gender masculine)

Diagnosis: Dorsal scute narrower at grooves I-II and wider at posterior margin. Cephalothorax and eye mounds smooth. Area I divided by a me-



Figs. 432-434. *Paraphareus tatei* Goodnight & Goodnight. Female (holotype). 432, habitus, dorsal view; 433, lateral view; 434, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

dian groove; III smooth. Tubercles of free tergite III similar in size. Pedipalpal femur large; basal sockets apex of tibia normal. With tarsal process, without scopula.

Type species: *Paraphareus tatei* Goodnight & Goodnight, 1943, by original designation.

***Paraphareus tatei* Goodnight & Goodnight**

(Figs. 432-434, 604)

*Paraphareus tatei* Goodnight & Goodnight, 1943: 11, fig. 36-37; Caporiacco, 1951: 43 (cit.). (Female holotype "Brazil, Rondon Camp, Mt. Roraima, november, 1927, G. H. H. Tate leg.", AMNH, examined).

Female redescription (holotype):

Measurements: DSL 3.40; CL 1.52; DSW 2.28; CW 2.16; ID 1.52; chelicera: II 2.16; III 1.12; pedipalpus 8.82; leg I 9.00; II 12.80; III 11.16; IV 13.56.

Dorsum (Figs. 432-433): Anterior margin small-tuberculate. Lateral margins with tubercles from coxa II to groove II. Area I with 1 tubercle each side; II with 1-2 tubercles each side; III with 3 tubercles each side; IV with 7 tubercles. Posterior margin with 4 small tubercles. Free tergites I-III with 1 row of tubercles. Anal plate with 1 row

of median tubercles and 1 posterior.

Venter: Coxa I with 5 anterior tubercles, 1 median row of 4 tubercles, 2 apical; II with 6 anterior, 1 median row of 6, 2 posterior, 2 apical; III with 8 anterior, 5 median, 9 posterior; IV with 5 oblique rows of tubercles. Posterior margin and free sternites with 1 row of tubercles.

Chelicera: Segment I large, smooth; II tuberculate, finger with 5 teeth; III with 4.

Pedipalpus (Fig. 434): Coxa with 1 large median ventral tubercle, 8 retrolateral, 1 wide prolateral, 2 dorsal near apex. Trochanter with 3 ventral (1 large), 1 dorsal. Femur straight, 1 ventral row of 8 small tubercles. Patella swollen at distal 1/5. Tibia: ectal liili, mesal Iiili, tuberculate ventrally. Tarsus: ectal liiiii, mesal Iiili, tuberculate ventrally.

Legs: I-IV smooth. Coxa I with 2 tubercles, posterior bifid, II with 3 tubercles; III with 1 anterior tubercle. Femur III straight; IV slightly curved. Tarsal segmentation: 7, 19, 6, 7.

Colour: Brownish with small black spots on dorsal scute and legs.

Male unknown.

Type locality: Rondon Camp, Roraima Summit, Roraima, Brazil (05°12'N - 60°44'W).

Distribution (Fig. 604): Recorded only from type locality.

***Planophareus* Goodnight & Goodnight**

*Planophareus* Goodnight & Goodnight, 1943: 12.  
(Gender masculine).

Diagnosis: Dorsal scute narrower at grooves I-II and wider on posterior margin. Cephalothorax with wide anterior tubercles. Eye mounds smooth. Area I divided by a median groove; III smooth. Tubercles of free tergite III similar in size. Pedipalpal femur large; basal sockets apex of tibia normal. Without tarsal process and scopula. Male unknown.

Type species: *Planophareus pallidus* Goodnight & Goodnight, 1943, by original designation.

***Planophareus pallidus* Goodnight & Goodnight**  
(Figs. 435-437, 604)

*Planophareus pallidus* Goodnight & Goodnight, 1943: 12, figs. 30-31; Mello-Leitão, 1949: 34 (cit.). (Female holotype, female paratype, "Rondon Camp, MT Roraima, Brazil, november, 1927, G. H. H. Tate leg.", AMNH, examined).

## Female redescription (holotype):

Measurements: DSL 1.90; CL 0.90; DSW 1.44; CW 1.16; ID 0.92; chelicera: II 1.26; III 0.56; pedipalpus 3.72; leg I 4.16; II 5.50; III 4.80; IV 5.16.

Dorsum (Figs. 435-436): Anterior margin smooth. Cephalothorax with 1 tubercle near coxae I-II, 1 enlarged anterior eminence small-tuberculate. Lateral margins smooth. Dorsal scute narrower at groove I. Eye mounds smooth. Areas I-IV smooth. Tegument with small cavities in all dorsum. Posterior margin and free tergites I-III with 1 row of minute tubercles. Anal plate small-tuberculate.

Venter: Coxa I with 1 anterior row and 2 median with 5 tubercles each, with 2 large apical; II with 1 anterior row of 7, 1 posterior row of 5 and 2 apical; III with 1 anterior row of 6; IV with 8 posterior. Anal plate and stigmatic area small-tuberculate. Free sternites with 1 row of small tubercles.

Chelicera: Segment I with 2 tubercles; II with 3 wide and 1 small; III with 3 wide.

Pedipalpus (Fig. 437): Coxa with 2 ventral tubercles (basal larger), 4 wide dorsal. Trochanter with 3 ventral (basal larger), 1 basal retrolateral, 2 dorsal. Femur straight, wide, with 5 ventral tu-

bercles and 6 dorsal. Patella swollen at distal half. Tibia convex dorsally, ectal IIII, mesal IIIII. Tarsus: ectal IIIII, mesal IIIII.

Legs: Coxa II with 2 tubercles; III with 1. Trochanter I with 4 ventral tubercles; II with 1 ventral, 2 retrolateral, 1 dorsal; III with 2 ventral, 2 retrolateral, 1 dorsal; IV with 4 ventral, 1 small dorsal. Femora III-IV curved. Tarsal segmentation 6, 8-9, 6, 7.

Colour: Uniform brownish.

Male unknown.

Type locality: Rondon camp, Monte Roraima, Roraima, Brazil (5°12'N - 60°44'W).

Distribution (Fig. 604): Recorded only from type locality.

***Stenophareus* Goodnight & Goodnight**

*Stenophareus* Goodnight & Goodnight, 1943: 12; Mello-Leitão: 1949: 34. (*non Stenophareus* Roewer, 1943). (Gender masculine).

Diagnosis: Dorsal scute wider between grooves I-II. Cephalothorax and eye mounds smooth. Area I divided by a median groove; III with 2 spines. Tubercles of free tergite III similar in size. Pedipalpal femur large; basal sockets apex of tibia normal. With tarsal process, without scopula. Male unknown.

Type species: *Stenophareus roraimus* Goodnight & Goodnight, 1943, by original designation.

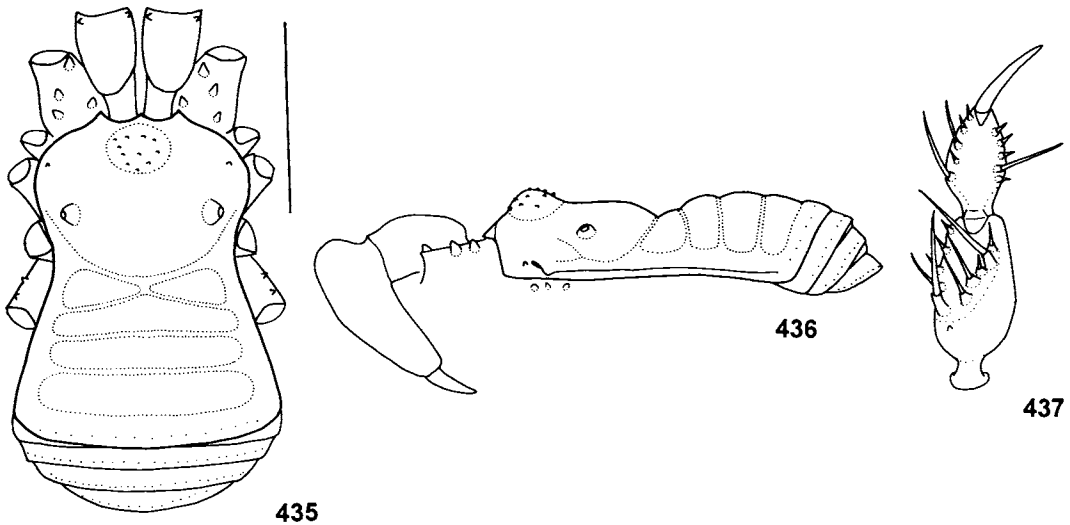
***Stenophareus roraimus* Goodnight & Goodnight**  
(Figs. 438-440, 604)

*Stenophareus roraimus* Goodnight & Goodnight, 1943: 123 fig. 38-39; Caporiacco, 1951: 43 (cit.). (Female holotype "Summit Mt. Roraima, Brazil, November, 1927, G. H. H. Tate leg., male, AC 29780", AMNH, examined).

## Female redescription (holotype):

Measurements: DSL 3.00; CL 1.28; DSW 2.16; CW 1.72; ID 1.04; chelicera: II 1.44; III 0.76; pedipalpus 4.24; leg I 5.42; II 9.62; III 7.08; IV 9.52.

Dorsum (Figs. 438-439): Anterior margin smooth. Lateral margins with tubercles between coxae III-IV. Area I with 0-2 tubercles each side;



Figs. 435-437. *Planophareus pallidus* Goodnight & Goodnight. Female (holotype): 435, habitus, dorsal view; 436, lateral view; 437, left pedipalpus, tibia and tarsus. Scale bar, 1 mm.

II with 2; III with 2 slightly divergent spines, backwards. Area IV, posterior margin, free tergites and anal plate smooth.

Venter: Coxa I with 1 median row of 7 tubercles, 3 apical; II with 1 median row of 7; III smooth. Coxa IV, stigmatic area, posterior margin and free sternites minute-tuberculate.

Chelicera: Segment I with 2 tubercles; II with 5 small; III with 1 basal 3 small distal.

Pedipalpus (Fig. 440): Coxa with 1 ventral tubercle, 2 dorsal. Trochanter with 2 ventral tubercles, 1 dorsal. Femur straight, 1 ventrobasal tubercle. Patella swollen at distal half. Tibia: ectal *iiiii*, mesal *iiiii*, first and second sockets, tuberculate ventrally. Tarsus: ectal *iiiii*, mesal *iiiii*.

Legs: Coxa I with 2 tubercles (posterior bifid); II with 1 anterior, 1 median, 1 posterior fused apically with 1 of III; III with 1 posterior fused apically with 1 of IV; IV small-tuberculate, 1 dorsoapical tubercle. Trochanter I with 6 ventral and 3 dorsal; II with 18 ventral, 4 dorsal (1 large); III with 6 ventral; IV with 7 ventral. Femur I slightly curved; II-III straight, with 2 large dorsoapical tubercles; III with 4 ventral tubercles external; IV with 2 ventral rows of tubercles (posterior larger) in all extension. Tarsal segmentation: 6, 16, 6, 7.

Colour: Brown. Chelicera black reticulate. Grooves I-V yellowish. Median anterior region of

cephalothorax black reticulate. Region behind cephalothorax with wide black spots. Areas I-IV darker than margins.

Intraspecific variation: The paratype shows 1-2 tubercles on area I; 3 on II; 2 on IV (larger than holotype).

Male unknown.

Type locality: Summit of Monte Roraima, Roraima, Brazil (5°12'N - 60°44'W).

Distribution (Fig. 604): Recorded only from type locality.

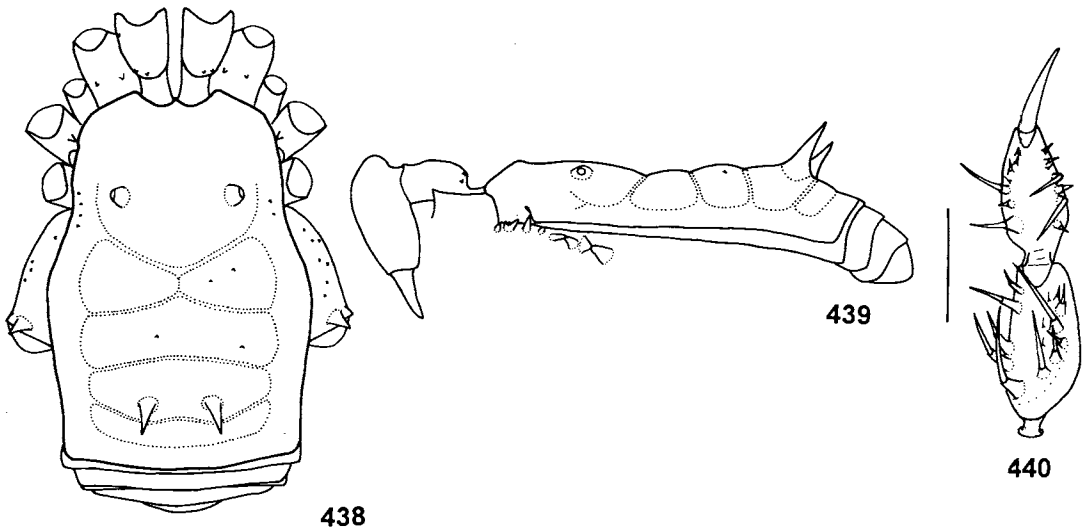
#### INCERTAE SEDIS

#### *Gaibulus* Roewer

*Gaibulus* Roewer, 1943: 63. (Gender masculine).

Diagnosis: Cephalothorax minute-tuberculate. Area I divided by a median groove; III with 2 spines. Pedipalpal femur large; basal sockets apex of tibia normal. With tarsal process; claws opposite and smooth; scopula with hairs of spatulate apex. See comments on relationships of *Gaibulus schubarti* on "Phylogenetic analysis" section.

Type species: *Gaibulus schubarti* Roewer, 1943, by monotypy.



Figs. 438-440. *Stenophareus roramus* Goodnight & Goodnight. Female (holotype): 438, habitus, dorsal view; 439, lateral view; 440, left pedipalpus, tibia and tarsus. Scale bar, 1 mm.

***Gaibulus schubarti* Roewer**

(Figs. 441-448, 553-554, 565, 604)

*Gaibulus schubarti* Roewer, 1943: 63, fig. 76-a. (Male lectotype, 8 females paralectotypes, by present designation, "Pernambuco [Gaibu, Brazil], Schubart leg., 2 typus, CR-6203, 7 cotypus, CR-6900" SMFD, lectotype dissected, examined).

**Male redescription (lectotype):**

Measurements: DSL 1.52; CL 0.66; DSW 1.02; CW 1.00; ID 0.82; chelicera: II 1.20; III 0.42; pedipalpus 3.66; leg I 4.02; II 5.90; III 4.54; IV 5.32.

Dorsal (Figs. 441-442): Anterior margin with tubercles on median region. Cephalothorax with 2 lateral tubercles and several on central region. Eye mounds with 3 tubercles. Lateral margins with 1-2 tubercles. Areas I-III with 1 large tubercle each side; III with 2 slightly backwards spines, parallel. Posterior margin with 2 tubercles. Free tergite I with 5 tubercles; II with 6; III with 2 central with 1 larger each side, 1 laterad. Anal plate with 2 median central tubercles and several on posterior margin.

Ventral: Coxa I with 1 median row with 4 tubercles, 1 posterior row of 5, 2 apical; II with 1 median row of 7, 5 posterior, 3 apical; III with 1 median row of 5, 4 apical; IV with 3 oblique rows of tubercles. Posterior margin and free sternites

with 1 row of tubercles. Anal plate with 6 median tubercles and several on posterior margin.

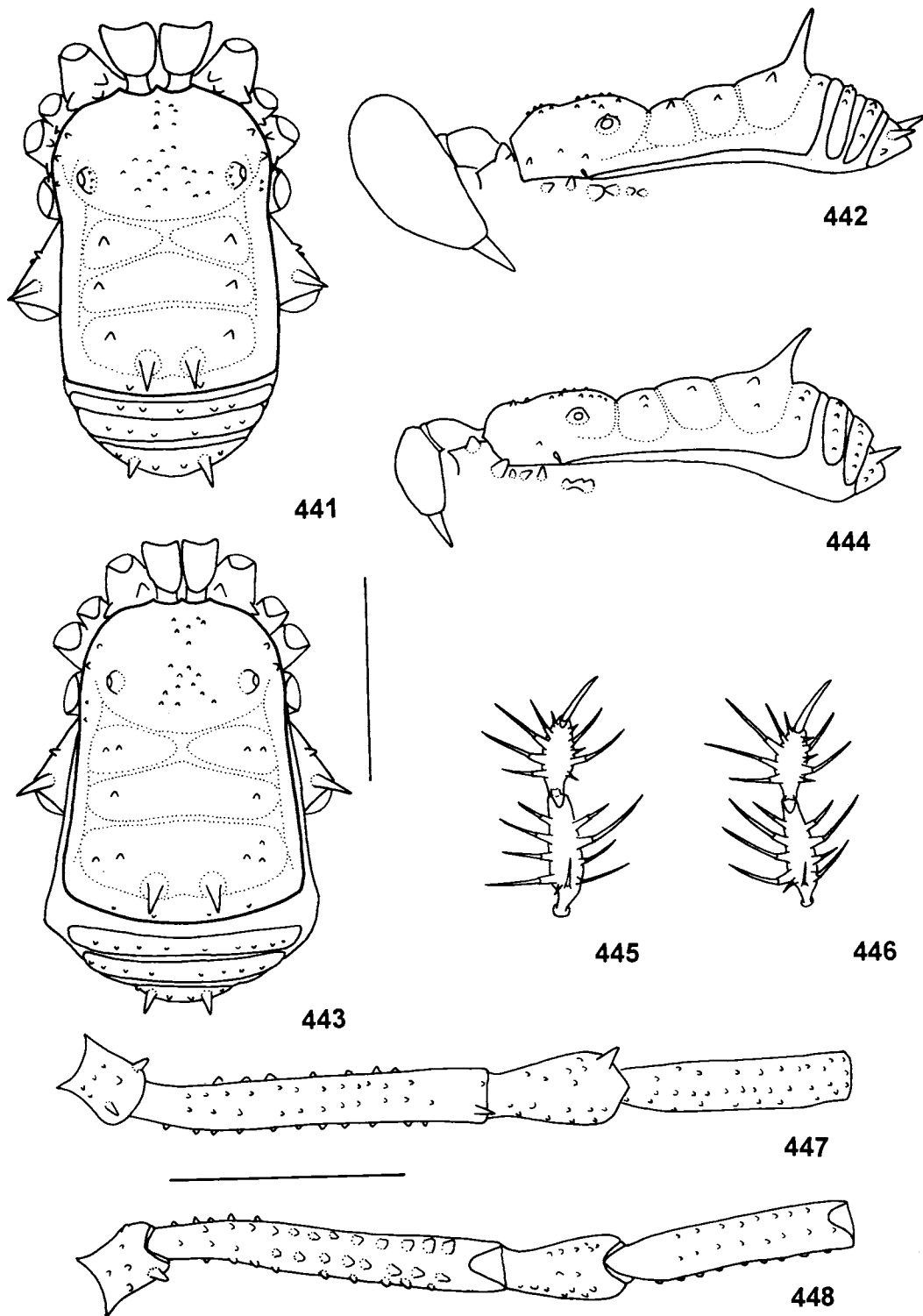
Chelicera: Swollen. Segment I smooth; II with 4 small distal teeth; III with 1 wide basal, 5 small distal. Without interchelar space.

Pedipalpus (Fig. 445, 565): Coxa with 3 ventral tubercles, 3 wide dorsal. Trochanter with 1 ventral tubercle, 1 dorsal. Femur straight, with 1 ventrobasal tubercle. Patella swollen at 1/3 anterior and apicad. Tibia: ectal iIli, mesal iIIIi. Tarsus: ectal iIli, mesal iIIIi.

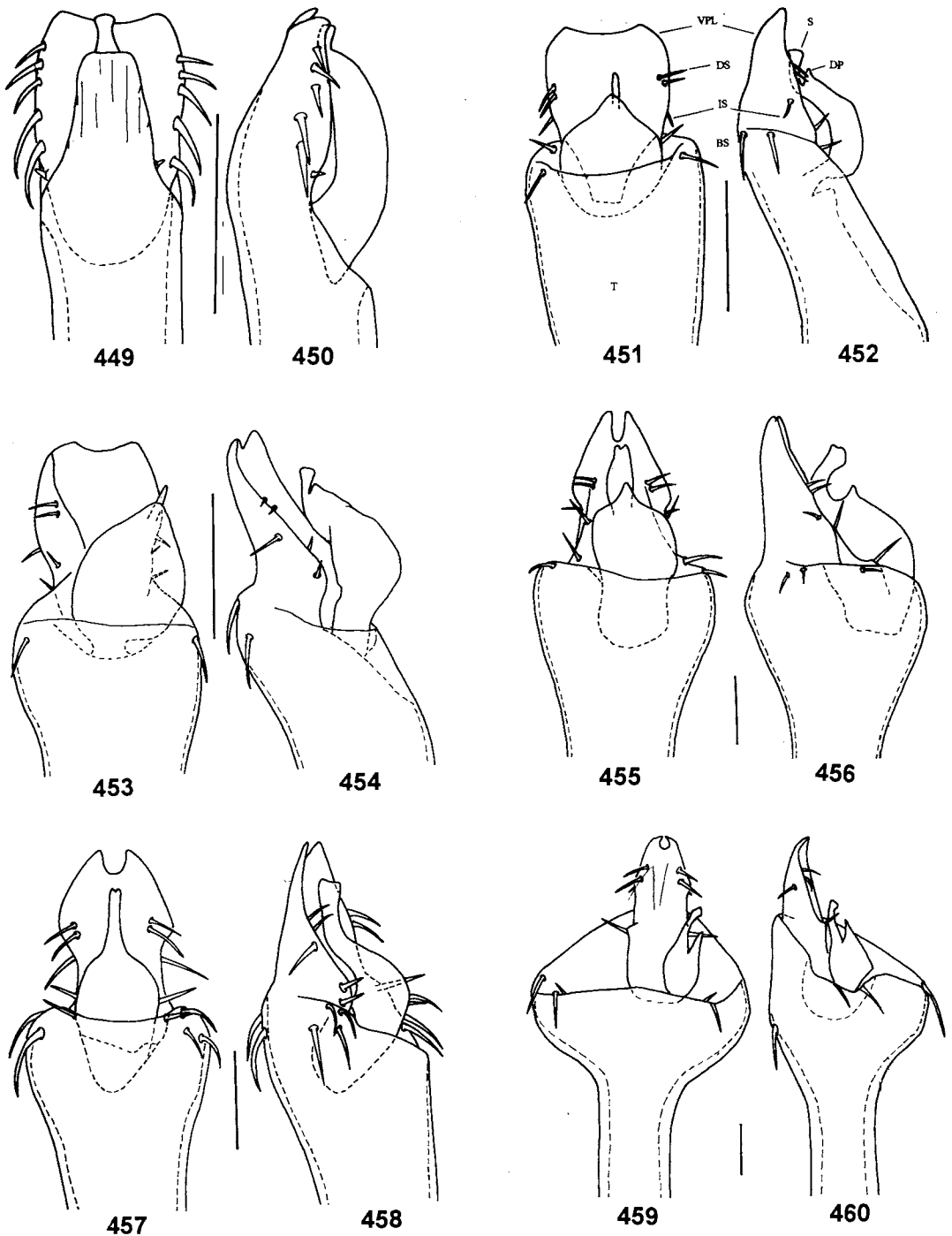
Legs (Figs. 447-448): Coxa I with 1 tubercle; II with 1 anterior, 1 posterior fused apically with 1 of III; III with 1 posterior; IV with 1 anterior, 2 lateral, large and acute dorsoapical tubercle. Trochanter I with 1 retrolateral tubercle, 3 ventral, 1 dorsal; II with 2 retrolateral, 3 ventral, 1 dorsal larger; III with 2 prolateral, 3 ventral, 2 retrolateral (apical larger), 1 dorsal; IV with 1 prolateral, 1 retrolateral larger, 5 ventral, 2 dorsal large. Femora I and IV slightly curved; II-III straight; I-IV with 1 large dorsoapical tubercle, with 2 ventral rows of tubercles; III-IV with 1 prolateral row and 1 retrolateral row, 2 ventral. Patella IV with 1 dorsoapical anterior tubercle. Tarsal segmentation: 6, 9, 6, 6.

Penis (Figs. 553-554): Ventral plate with lateral and distal margins concave, 3 distal and 3 basal pairs of setae. With dorsal process.

Colour: Brownish.

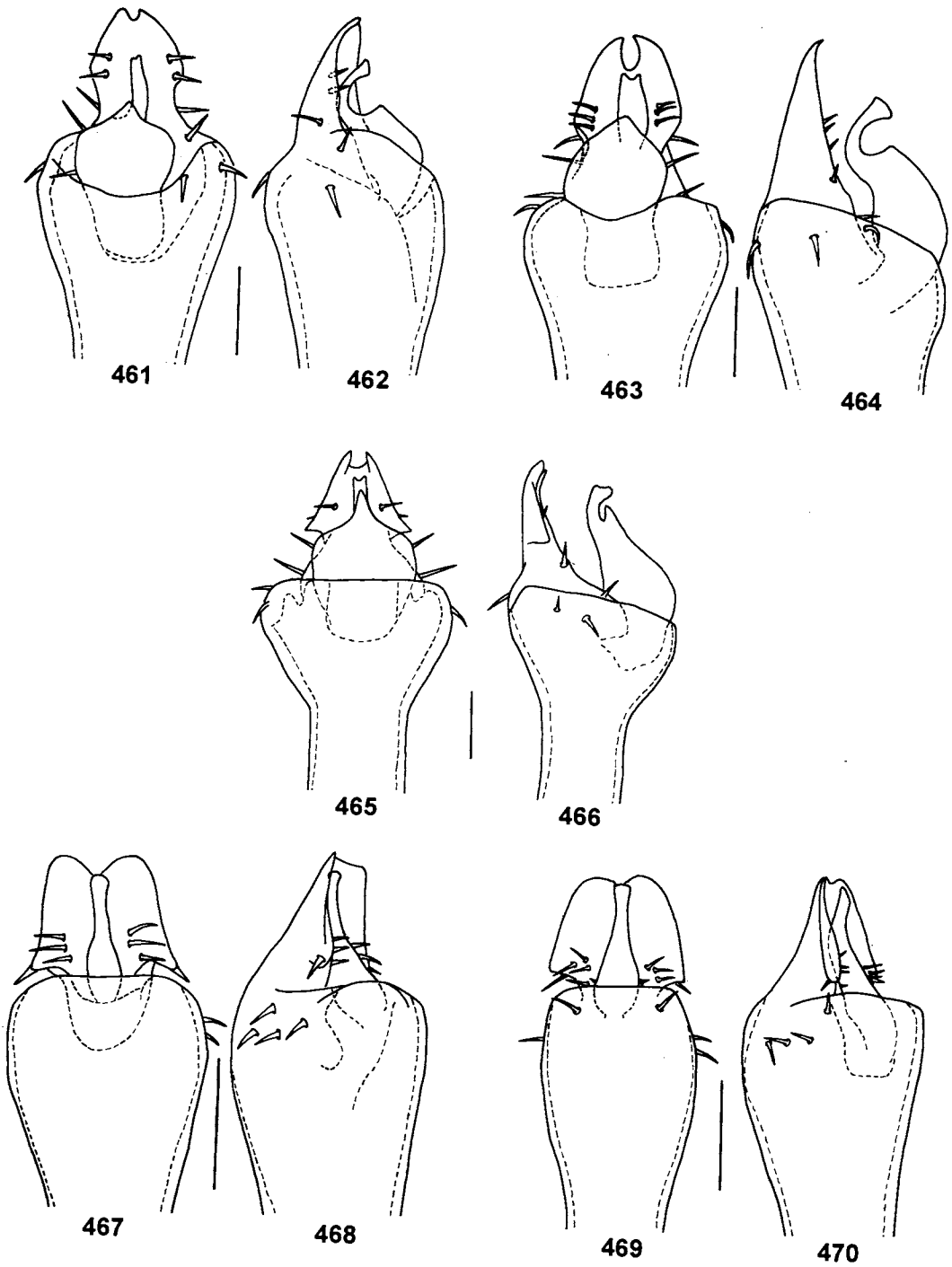


Figs. 441-448. *Gaibulus schubarti* Roewer. Male (lectotype): 441, habitus, dorsal view; 442, lateral view; 445, left pedipalpus, tibia and tarsus; 447, trochanter, femur, patella and tibia of the right IV leg, dorsal 448, same, ventral. Female (paralectotype): 443, habitus, dorsal view; 444, lateral view; 446, left pedipalpus, tibia and tarsus. Scale bars: 1 mm.

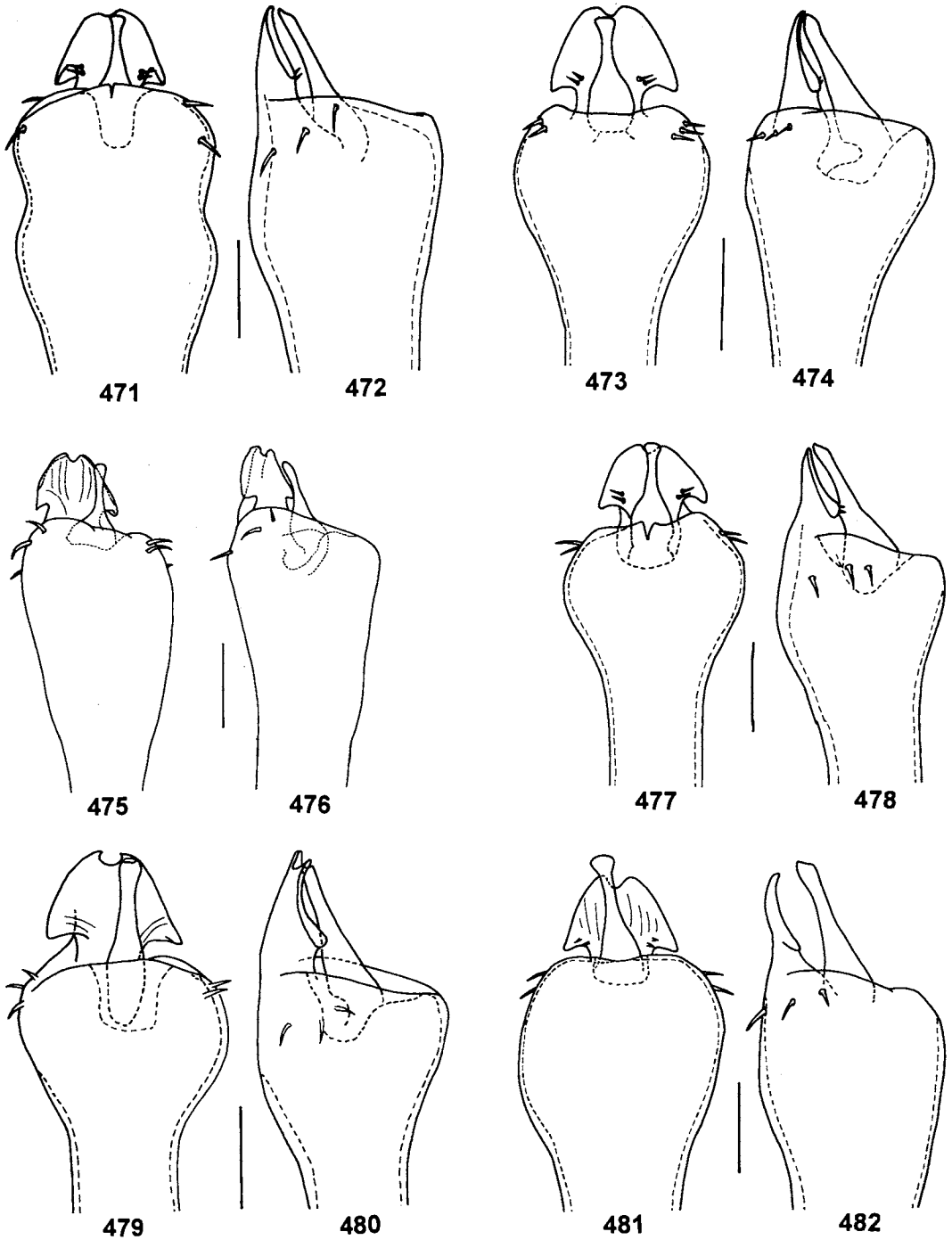


Figs. 449-460. Distal part of penis of *Nomoclastes*, *Stygnidius*, *Innoxius*, gen.n., *Yapacana*, gen.n., *Minax*, gen.n.. *N. quasimodo*, sp.n.: 449, habitus, dorsal view; 450, lateral view. *S. guerinii*: 451, habitus, dorsal view; 452, lateral view. *S. inflatus*: 453, habitus, dorsal view; 454, lateral view. *I. magnus*, comb.n.: 455, habitus, dorsal view; 456, lateral view. *Y. tibialis*, gen.n.. sp.n.: 457, habitus, dorsal view; 458, lateral view. *M. tetraspinosus*, gen.n. sp.n.: 459, habitus, dorsal view; 460, lateral view. Scale bar, 0,1 mm. Abbreviations: BS= basal setae; DP= dorsal process; DS= distal setae IS= intermediary seta; S= stylus; T= truncus; VPL= ventral plate.

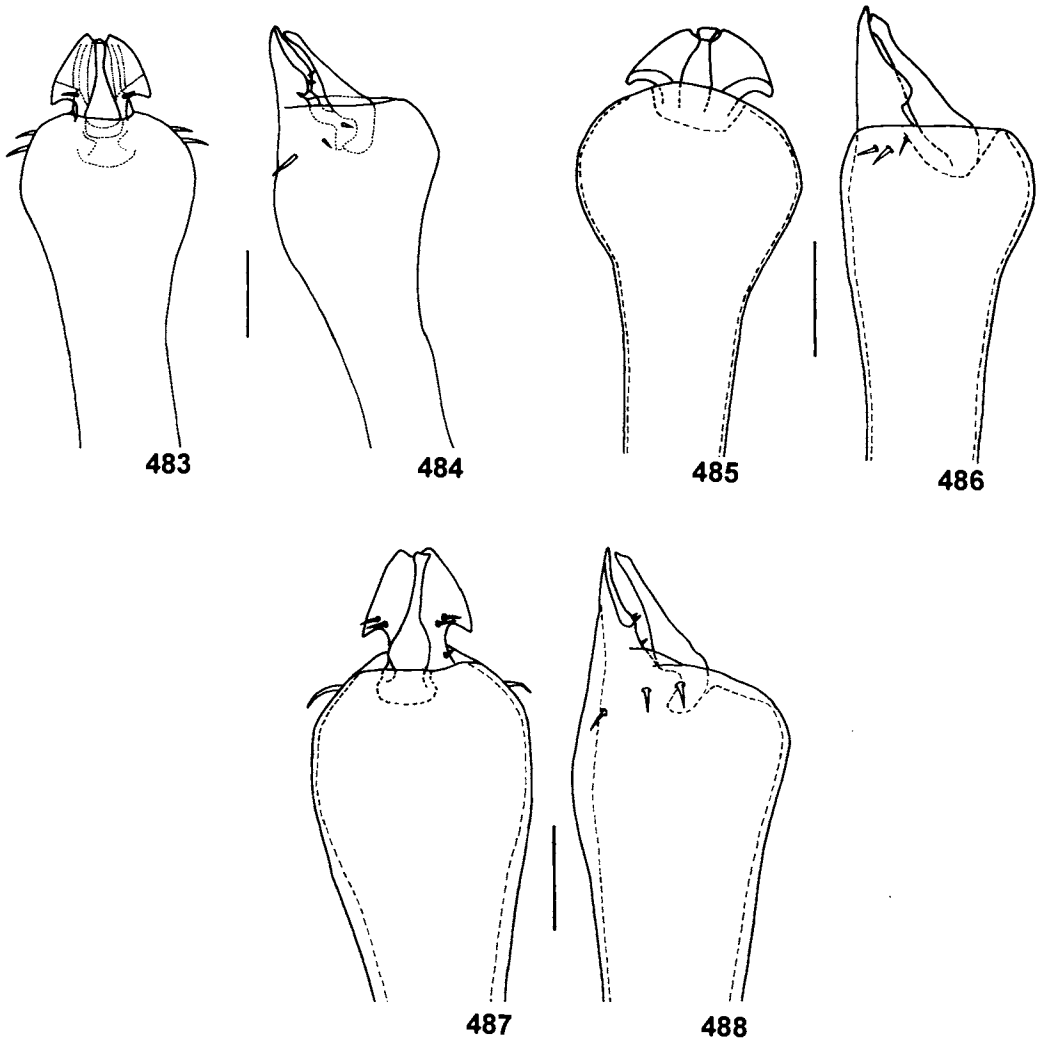




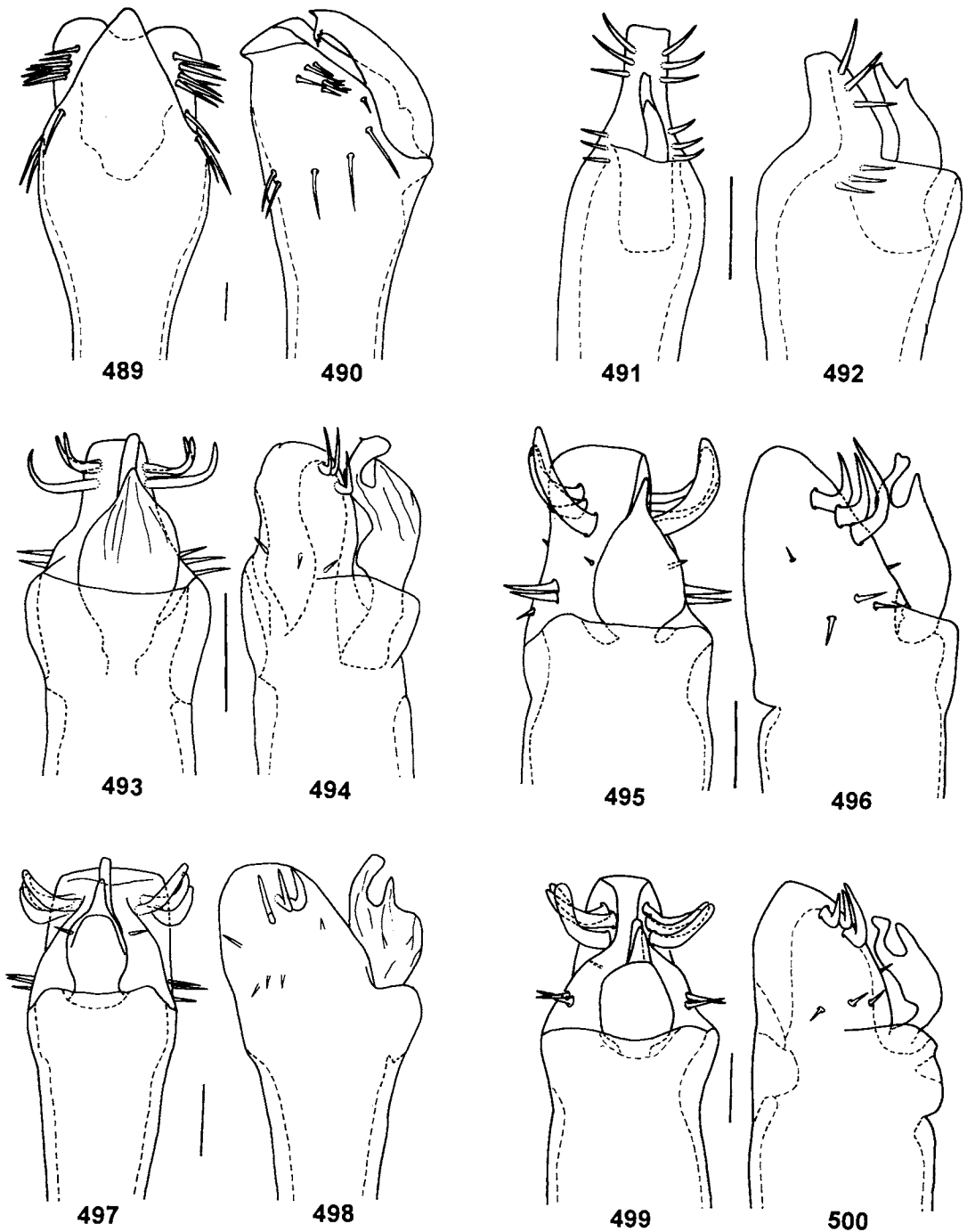
Figs. 461-470. Distal part of penis of *Eutimesius* and *Stenostygnellus*. *E. ornatus*, comb.n.: 461, habitus, dorsal view; 462, lateral view. *E. albicinctus*, comb.n.: 463, habitus, dorsal view; 464, lateral view. *E. simoni*: 465, habitus, dorsal view; 466, lateral view. *S. flavolimbatus*: 467, habitus, dorsal view; 468, lateral view. *S. macrochelis*: 469, habitus, dorsal view; 470, lateral view. Scale bar, 0,1 mm.



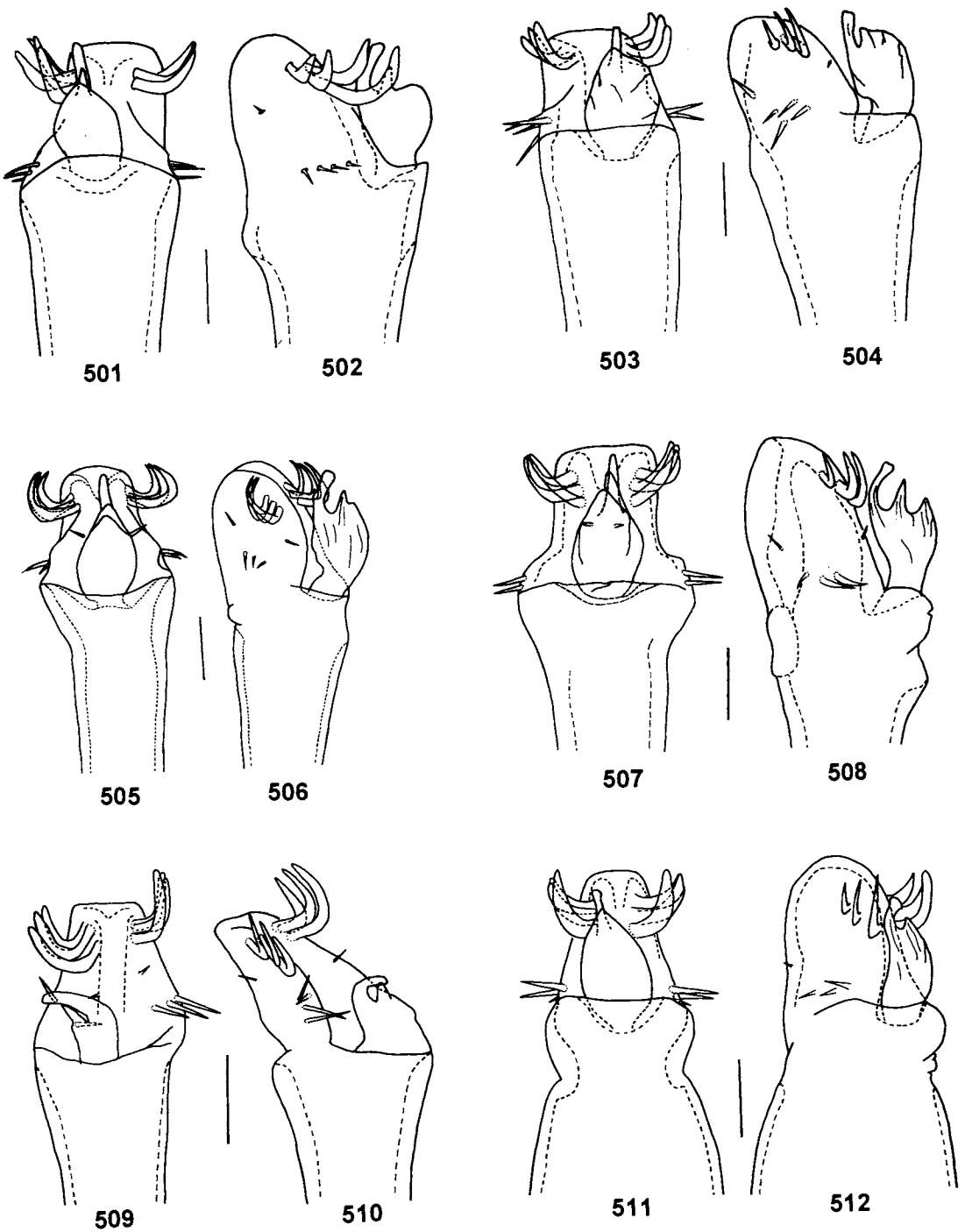
Figs. 471-482. Distal part of penis of *Stygnoplus*: *S. antiguanus*, comb.n.: 471, habitus, dorsal view; 472, lateral view. *S. sp.n.1*: 473, habitus, dorsal view; 474, lateral view. *S. clavotibialis*, comb.n.: 475, habitus, dorsal view; 476, lateral view. *S. dominicanus*, comb.n.: 477, habitus, dorsal view; 478, lateral view. *S. flavitarsis*, comb.n.: 479, habitus, dorsal view; 480, lateral view. *S. granulatus*: 481, habitus, dorsal view; 482, lateral view. Scale bar, 0,1 mm.



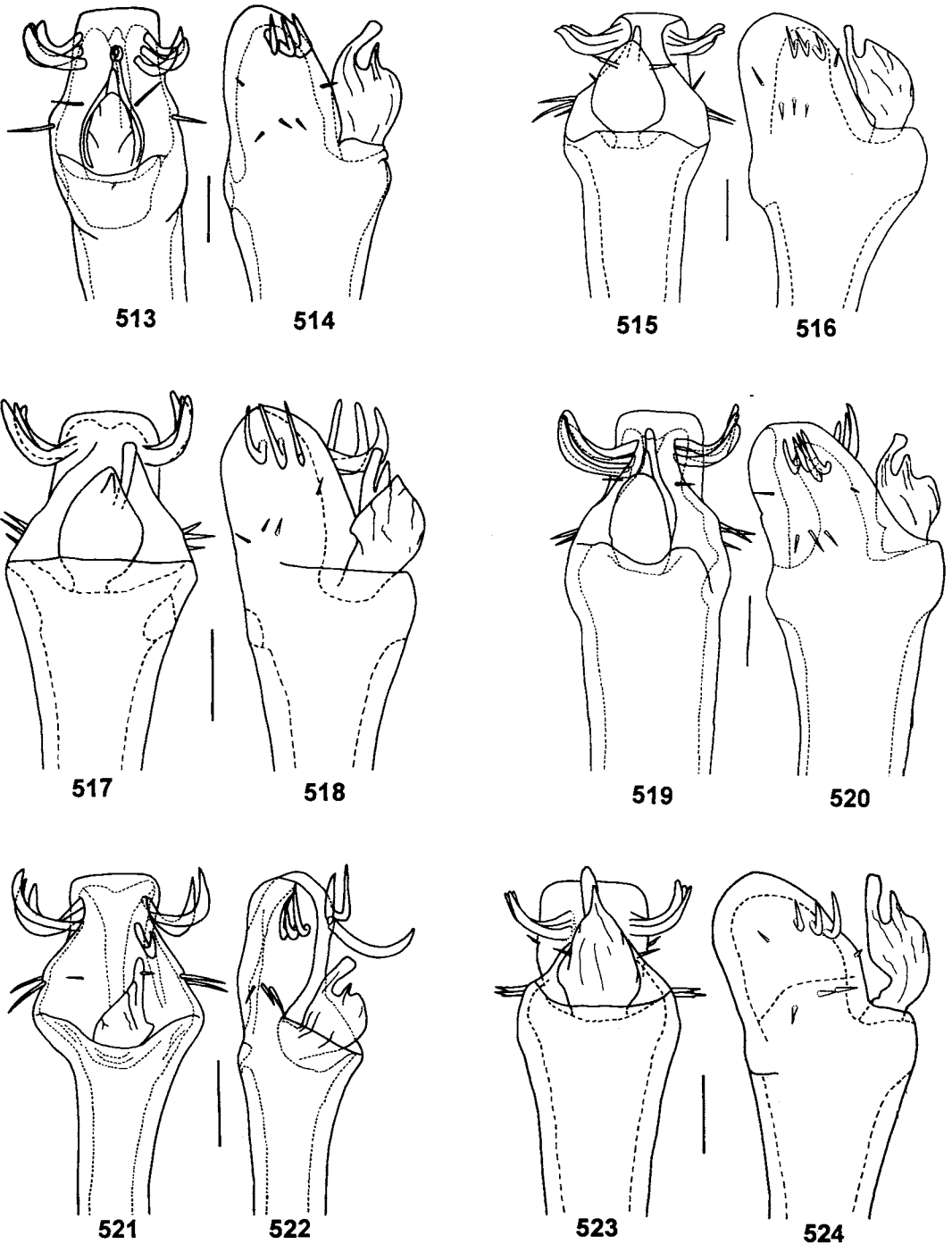
Figs. 483-488. Distal part of penis of *Stygnoplus*. *S. longipalpis*, comb.n.: 483, habitus, dorsal view; 484, lateral view. *S. meinerti*: 485, habitus, dorsal view; 486, lateral view. *S. trilineatus*, sp.n.: 487, habitus, dorsal view; 488, lateral view. Scale bar, 0,1 mm.



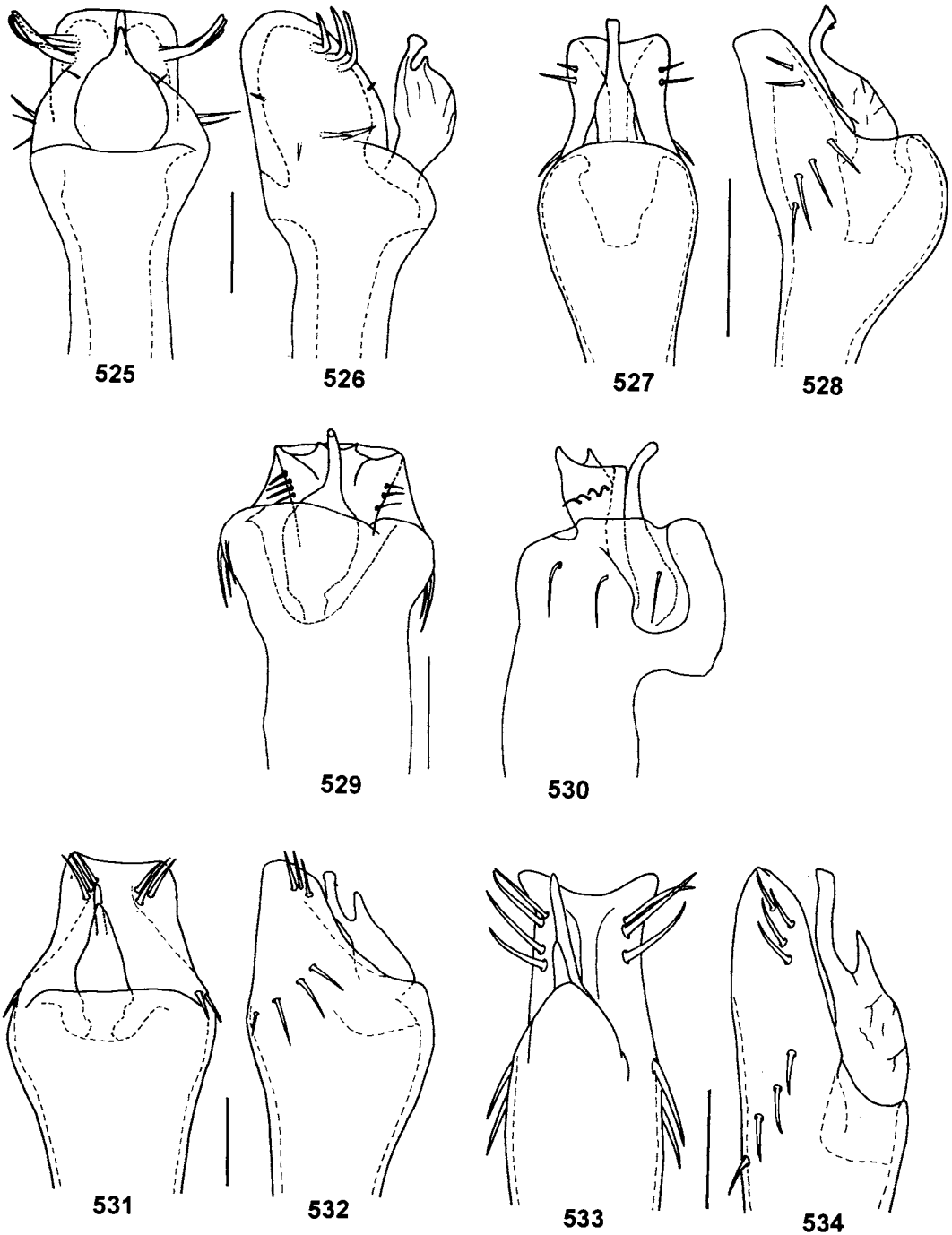
Figs. 489-500. Distal part of penis of *Phareus*, *Sicknessia* and *Stygnus*. *P. raptator*: 489, habitus, dorsal view; 490, lateral view. *Sicknessia helmuti* (modificado de H. Soares, 1979): 491, habitus, dorsal view; 492, lateral view. *Sicknessia usta*, comb.n.: 493, habitus, dorsal view; 494, lateral view. *Stygnus aggerum*, comb.n.: 495, habitus, dorsal view; 496, lateral view. *Stygnus brevispinis*, sp.n.: 497, habitus, dorsal view; 498, lateral view. *Stygnus gertschi*, comb.n.: 499, habitus, dorsal view; 500, lateral view. Scale bar, 0,1 mm.



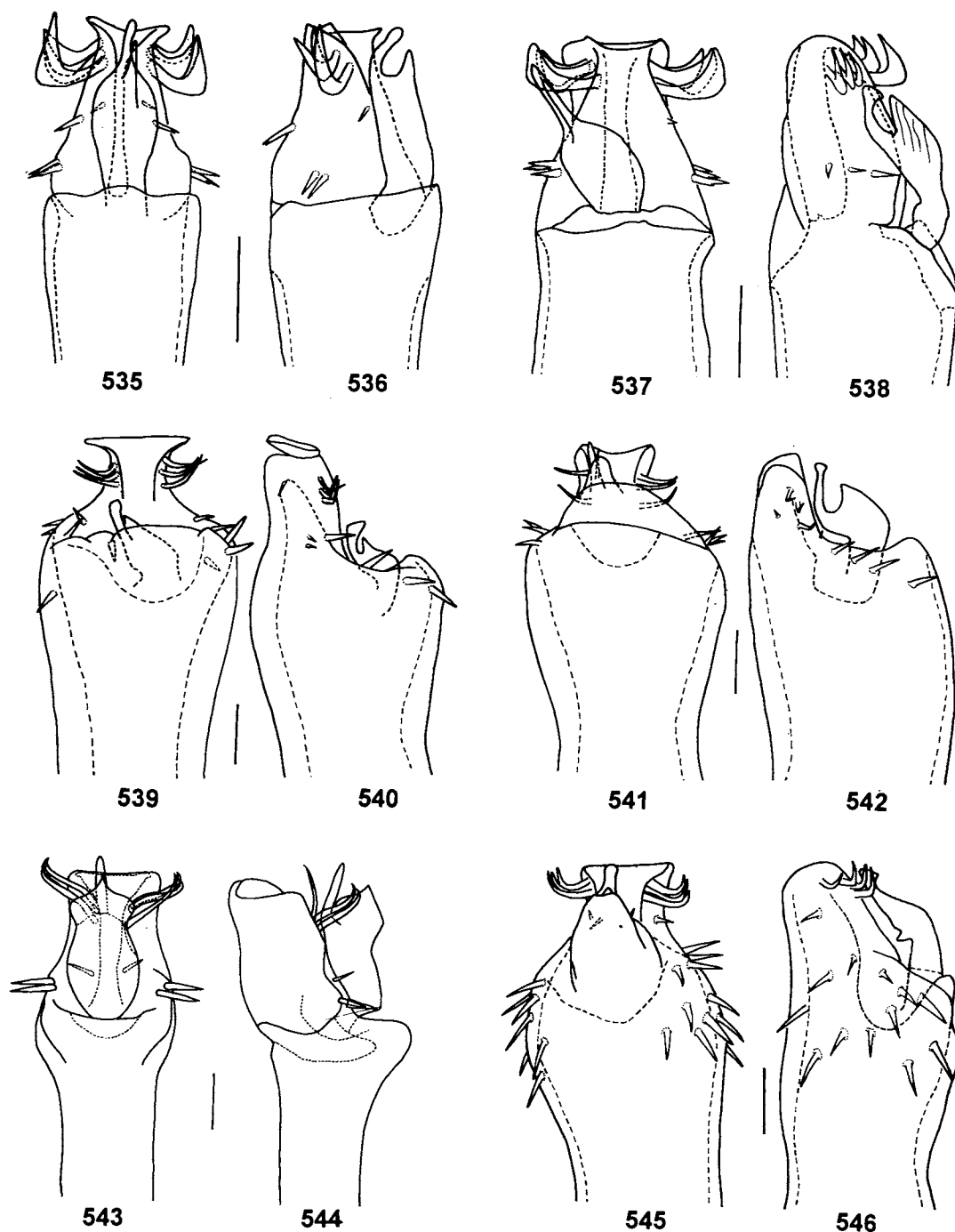
Figs. 501-512. Distal part of penis of *Stygnus*. *S. grasshoffi*, sp.n.: 501, habitus, dorsal view; 502, lateral view. *S. heliae*, sp.n.: 503, habitus, dorsal view; 504, lateral view. *S. klugi*, comb.n., 505, habitus, dorsal view; 506, lateral view. *S. luteus*, comb.n.: 507, habitus, dorsal view; 508, lateral view. *S. marthae*, sp.n.: 509, habitus, dorsal view; 510, lateral view. *S. mediocris*, comb.n.: 511, habitus, dorsal view; 512, lateral view. Scale bar, 0,1 mm.



Figs. 513-524. Distal part of penis of *Stygnus*. *S. multispinosus*, comb.n.: 513, habitus, dorsal view; 514, lateral view. *S. pectinipes*, comb.n.: 515, habitus, dorsal view; 516, lateral view. *S. peruvianus*, comb.n.: 517, habitus, dorsal view; 518, lateral view. *S. polyacanthus*, comb.n.: 519, habitus, dorsal view; 520, lateral view. *S. simplex*, comb.n.: 521, habitus, dorsal view; 522, lateral view. *S. tocantinensis*, sp.n.: 523, habitus, dorsal view; 524, lateral view. Scale bar, 0,1 mm.

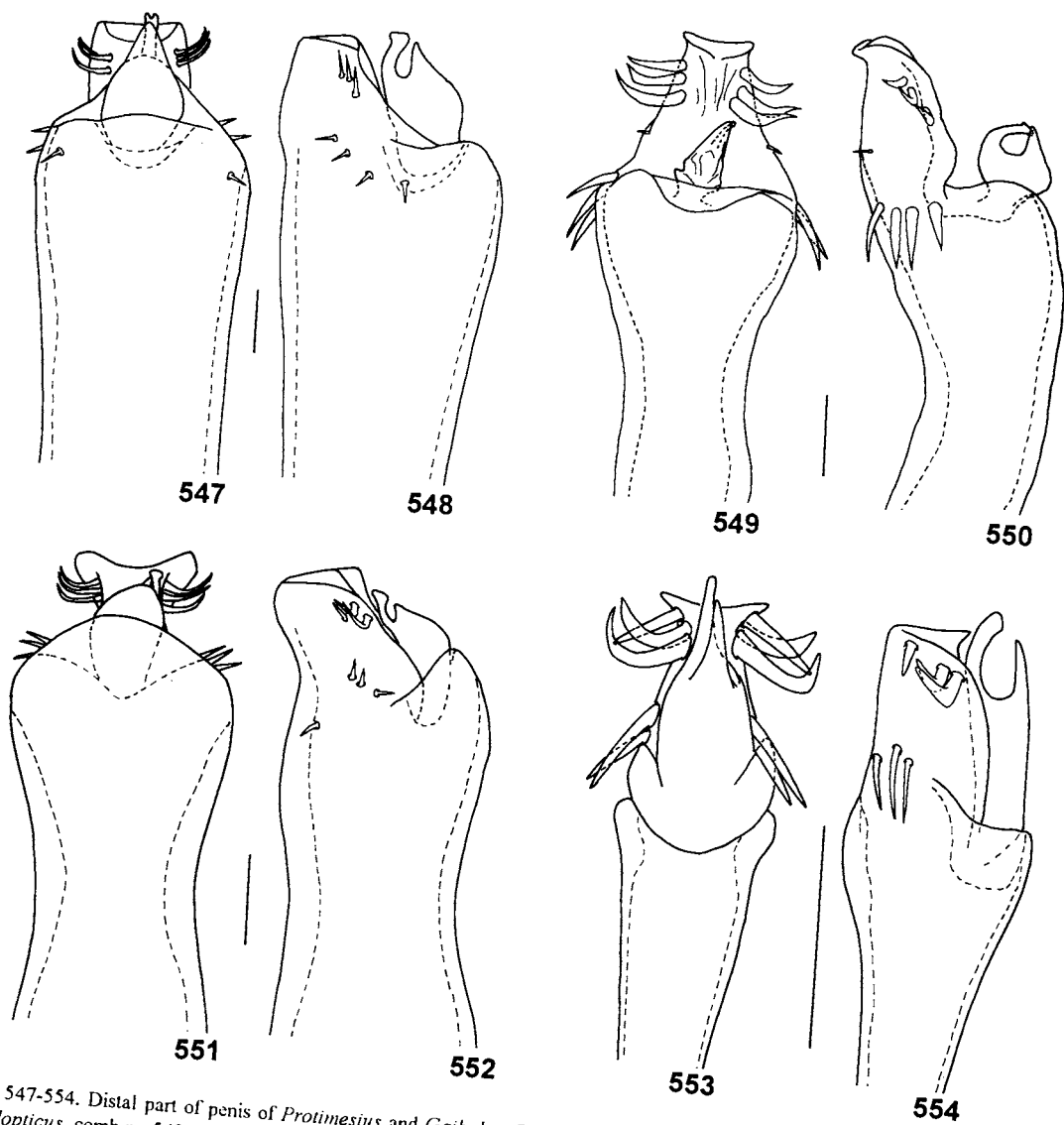


Figs. 525-534. Distal part of penis of *Stygnus*, *Auramus*, *Verrucastygnus* and *Stenostygnoides*. *S. weyrauchi*, comb.n.: 525, habitus, dorsal view; 526, lateral view. *A. hoeferscovitorum*, sp.n.: 527, habitus, dorsal view; 528, lateral view. *A. parvus*: 529, habitus, dorsal view; 530, lateral view. *Verrucastygnus caliginosus*: 531, dorsal view; 532 lateral view. *S. cosmetitarsus*: 533, habitus, dorsal view; 534, lateral view. Scale bar, 0,1 mm.

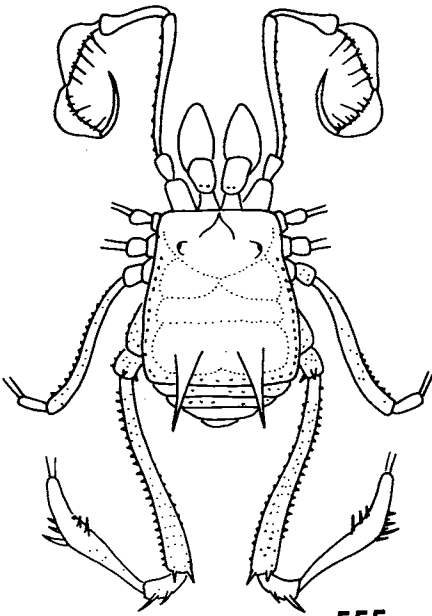


Figs. 535-546. Distal part of penis of *Pickeliana* and *Protimesius*. *Pickeliana capito*, comb.n.: 535, habitus, dorsal view; 536, lateral view. *Pickeliana pickeli*, comb.n.: 537, habitus, dorsal view; 538, lateral view. *Protimesius albilineatus*, comb.n.: 539, habitus, dorsal view; 540, lateral view. *Protimesius evelineae*, comb.n.: 541, habitus, dorsal view; 542, lateral view. *Protimesius gracilis*: 543, habitus, dorsal view; 544, lateral view. *Protimesius laevis*, comb.n.: 545, habitus, dorsal view; 546, lateral view. Scale bar, 0,1 mm.

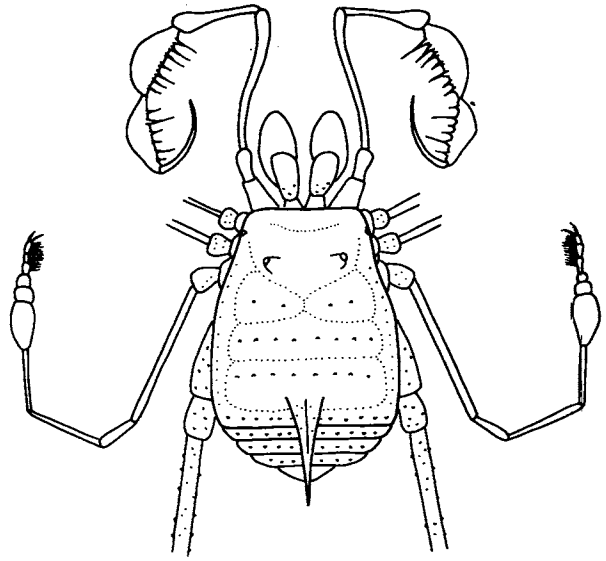




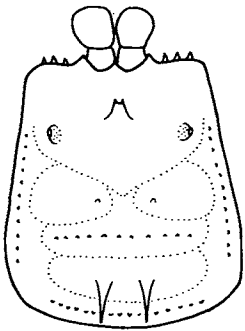
Figs. 547-554. Distal part of penis of *Protimesius* and *Gaibulus*. *P. longipalpis*: 547, habitus, dorsal view; 548, lateral view. *P. mendopticus*, comb.n.: 549, habitus, dorsal view; 550, lateral view. *P. trocaraincola*, sp.n.: 551, habitus, dorsal view; 552, lateral view. *Gaibulus schubarti*: 553, habitus, dorsal view; 554, lateral view. Scale bar, 0,1 mm.



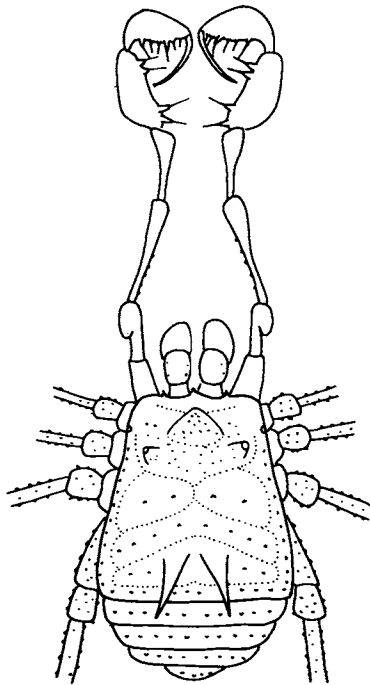
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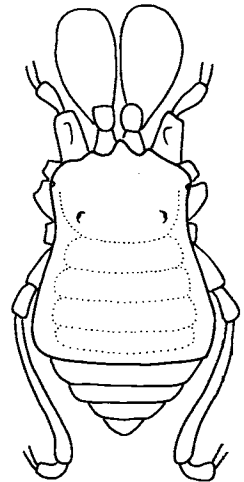
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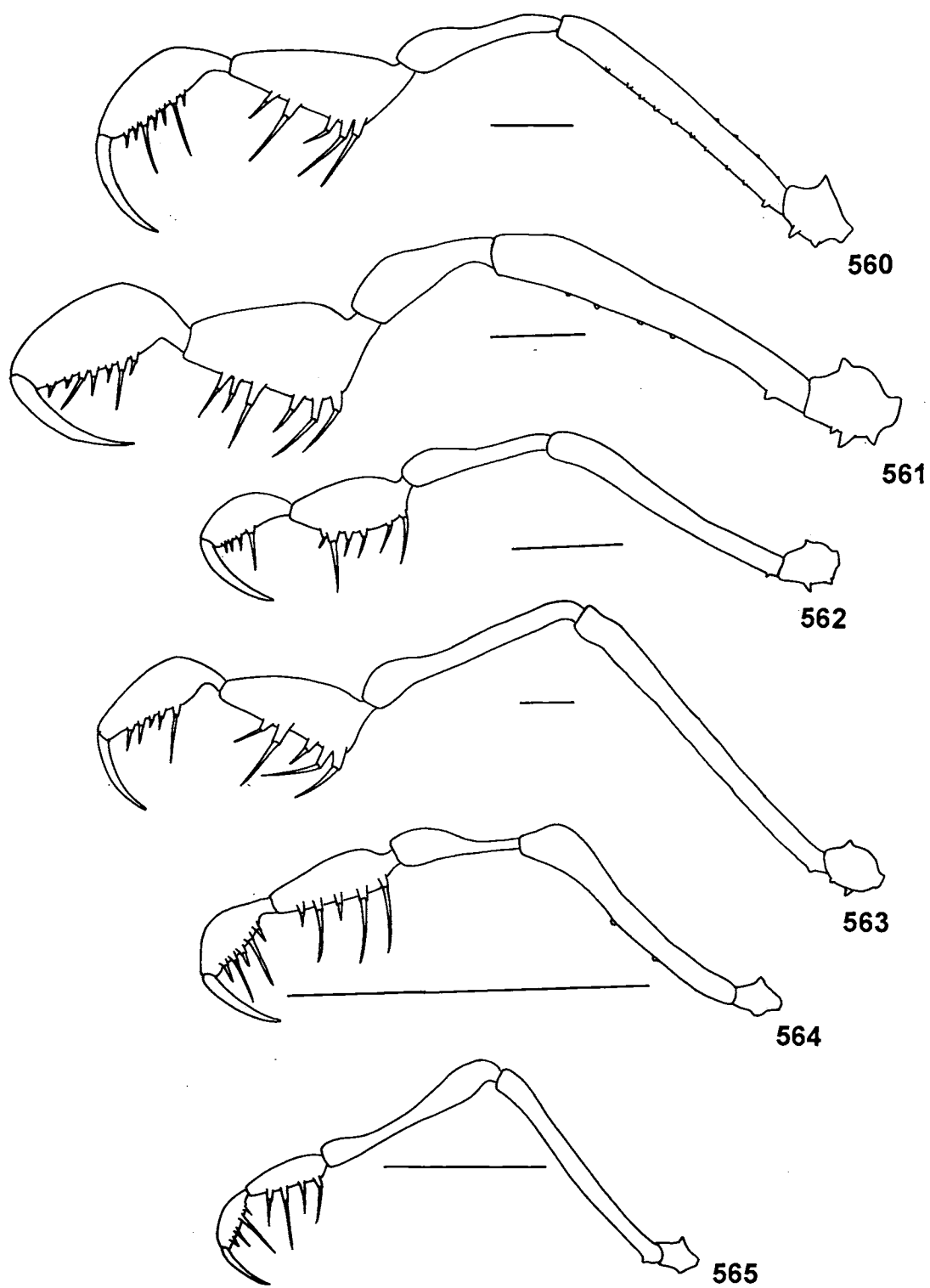


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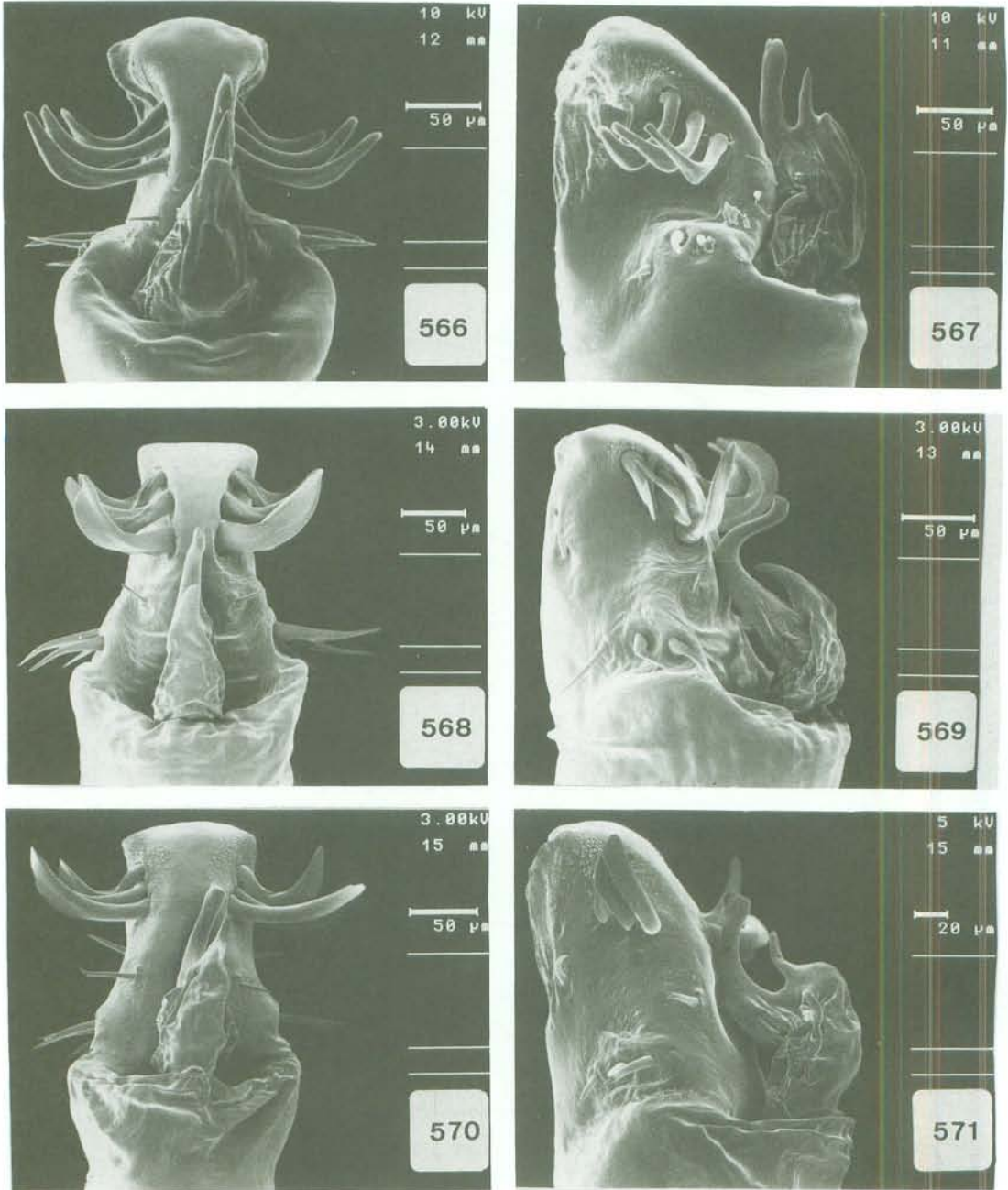


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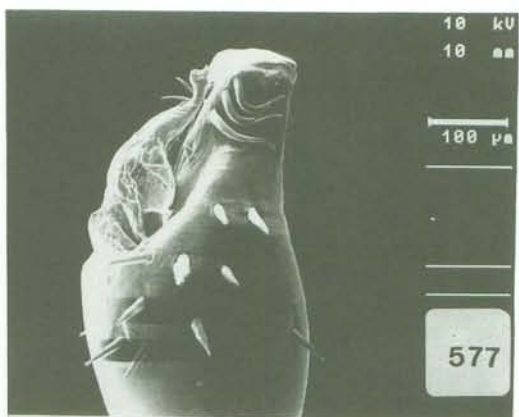
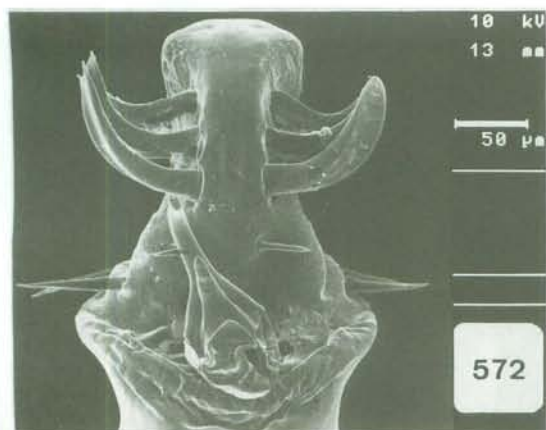
Figs. 555-559. Habitus, dorsal view of non examined species of Stygnidae. 555, *Stygnoplus triacathus* (Kollar). 556, *Timesius vesicularis* (Gervais). 557, *Niceforoieilus assimilis*. Mello-Leitão. 558, *Metaphareus albimanus*. 559, *Kaapora minutissimus* (Roewer), comb.n. Figs. 555, 556 and 558 after Roewer 1913; 559 after Roewer, 1943; 557 after Mello-Leitão, 1941b.



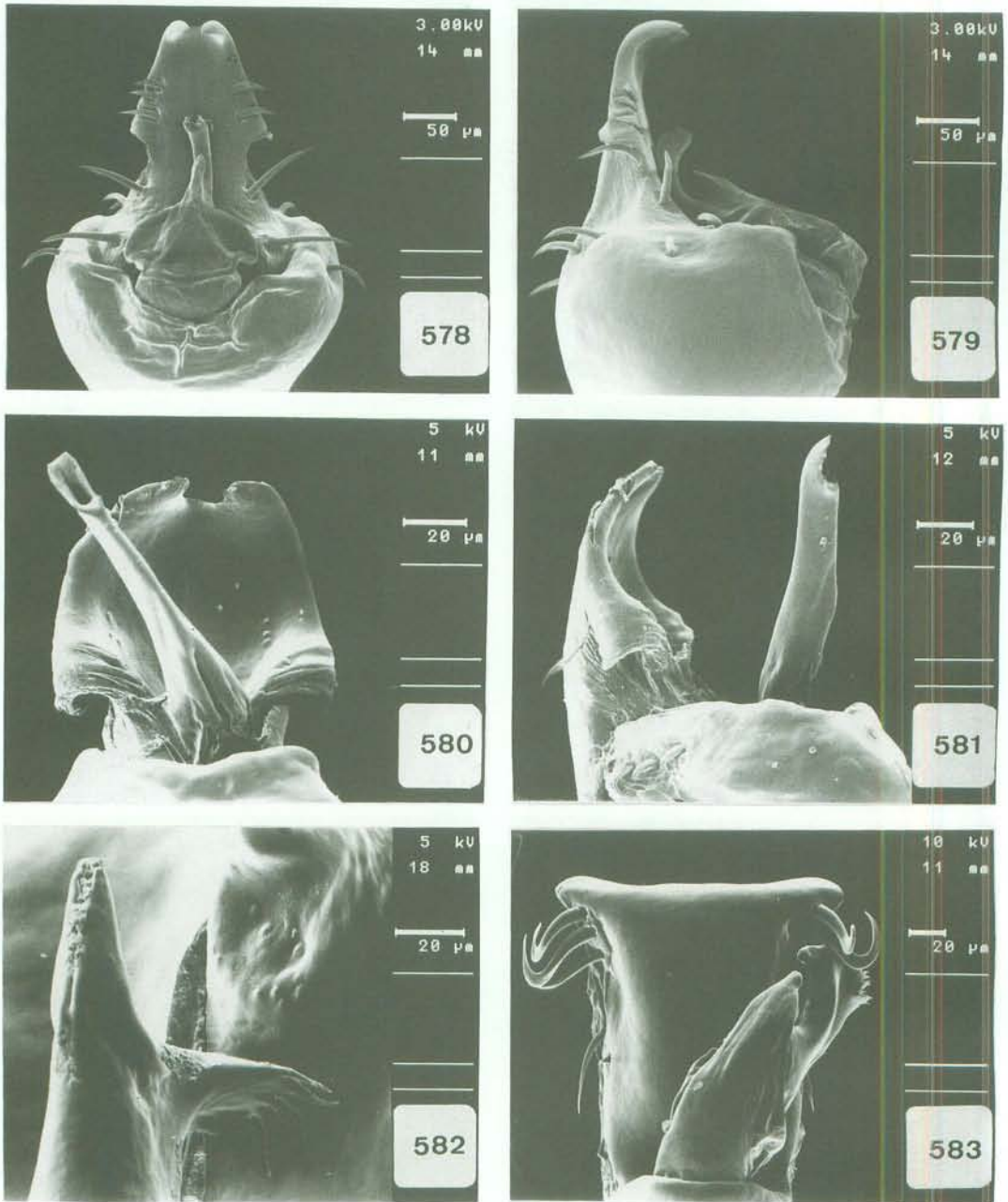
Figs. 560-565. Left pedipalpus of some species of the Stygnidae. 560, *Stygnoplus granulatus*. 561, *Stenostygnellus macrochelis*. 562, *Sygnus luteus*, comb.n. 563, *Protimesius laevis*, comb.n. 564, *Iguarassua schubarti*. 565, *Gaibulus schubarti*. Scale bars: 1 mm.



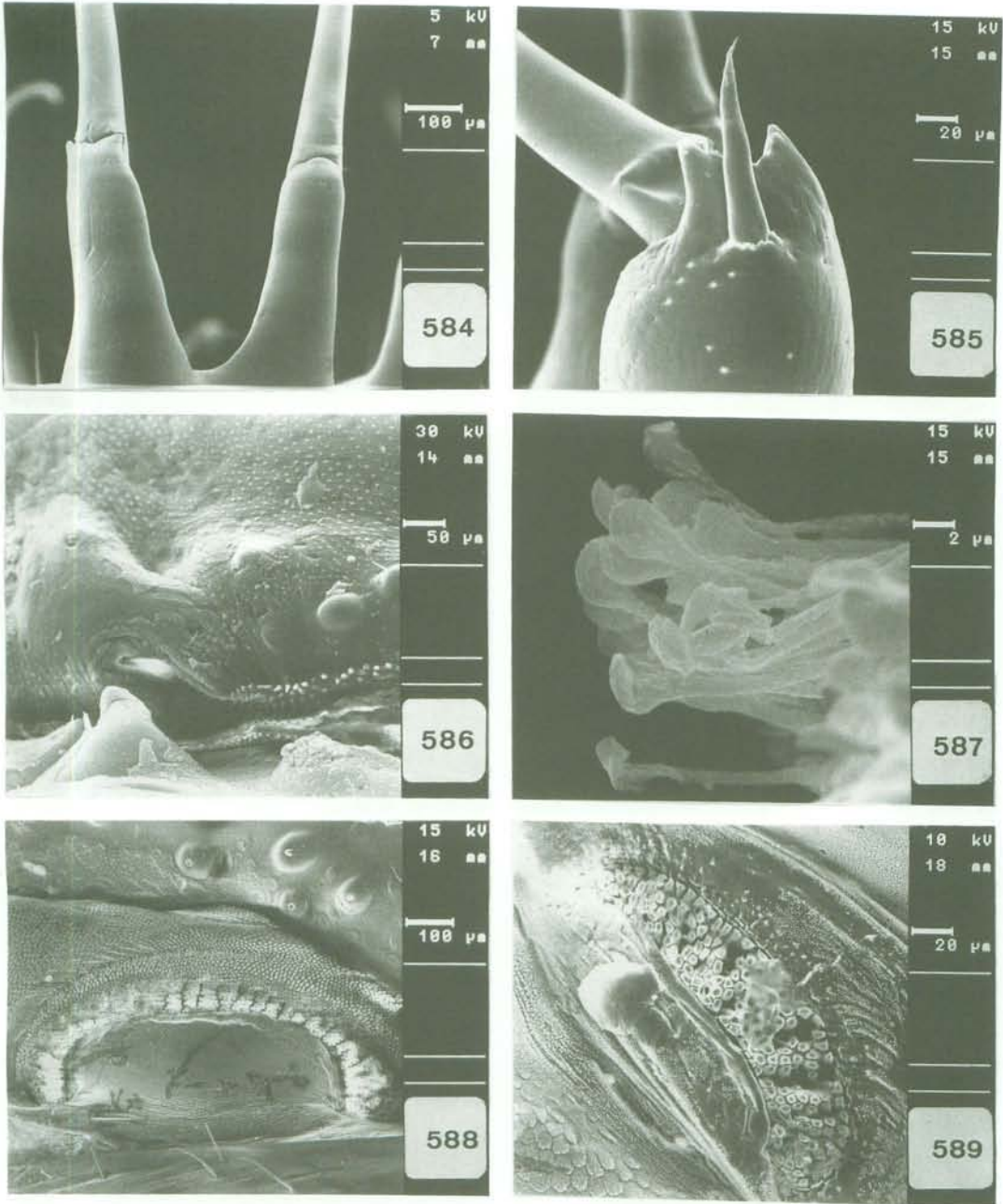
Figs. 566-571. Scanning micrographs of the distal part of penis of some species of *Stygmus*. 566, *S. tocantinensis*, sp.n., dorsal view; 567, lateral view. *S. pectinipes*, comb.n.: 568, dorsal view; 569, lateral view. *S. multispinosus*, comb.n.: 570, dorsal view; 571, lateral view.



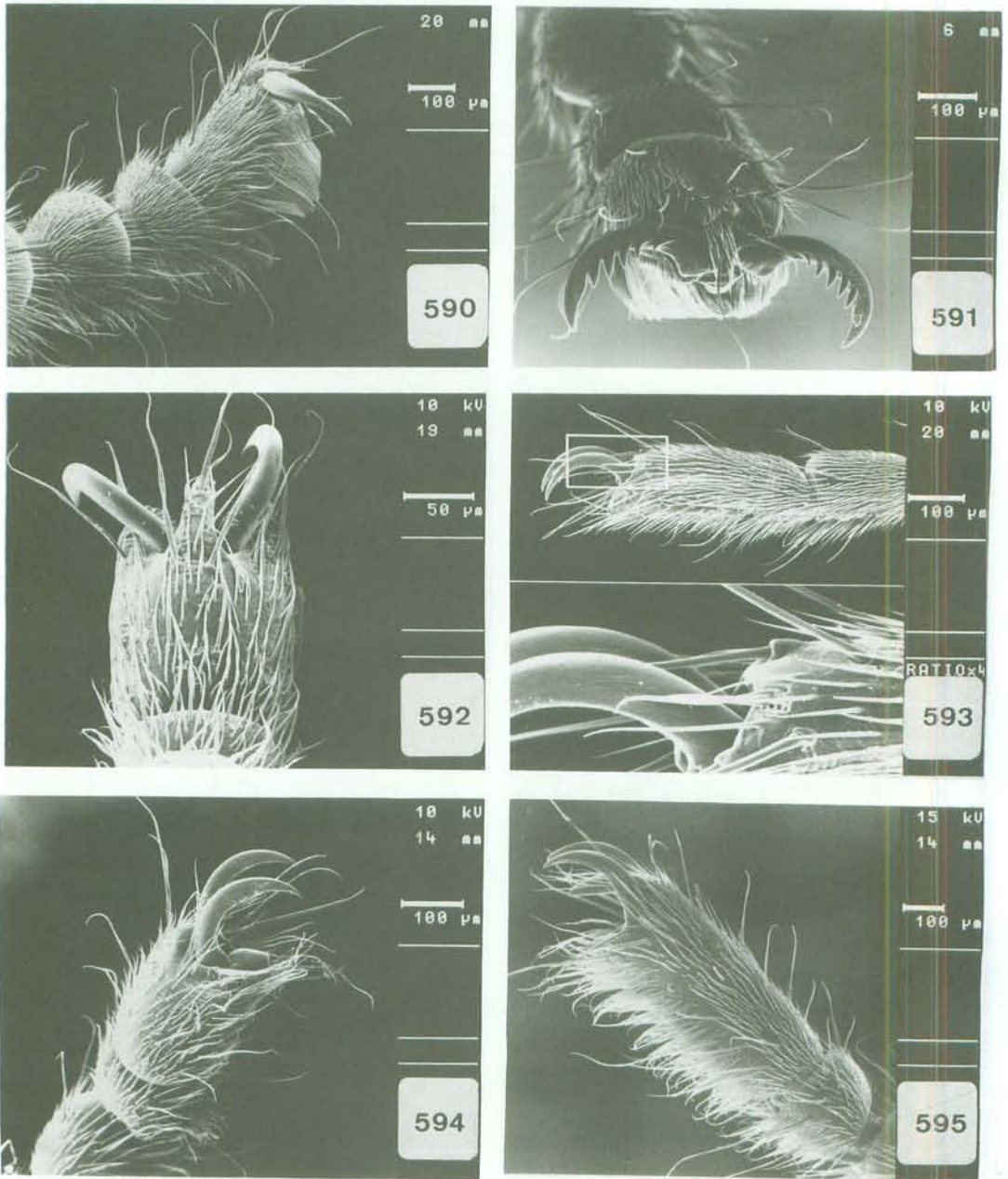
Figs. 572-577. Scanning micrographs of the distal part of penis of some species of the Stygnidae. *Stygnus luteus*, comb.n.: 572, dorsal view; 573, lateral view. *Sicknessia usta*, comb.n.: 574, dorsal view; 575, lateral view. *Protimesius laevis*, comb.n.: 576, dorsal view; 577, lateral view.



Figs. 578-583. Scanning micrographs of penis of some species of the Stygnidae and the Cosmetidae. *Eutimesius simoni*: 578, dorsal view; 579, lateral view. *Stygnoplus biguttatus*, sp.n.: 580, dorsal view; 581, lateral view. *Phareus raptator*: 582, glans apex. *Paecilaemula* sp. (Cosmetidae): 583, dorsal view.



Figs. 584-589. Scanning micrographs of some species of the Stygnidae. 584, anterior sockets apex of the pedipalpal tibia of the *Protimesius laevis*. 585, anterior sockets apex of the pedipalpal tibia of the *Stygnopus* sp.n.1. 586, odoriferous gland of the *Stygnus luteus*, comb.n.. 587, scopula hairs of the *Nomoclastes quasimodo*, sp.n.. 588, tracheal stigma of the *Protimesius laevis*, comb.n.. 589, tracheal stigma of the *Auranus parvus*.



Figs. 590-595. Scanning micrographs of distitarsus IV of some species of the Stygnidae. *Stygnoplus biguttatus*, sp.n.: 590, lateral view; 591, frontal view. *Nomoclastes quasimodo*, sp.n.: 592, habitus, dorsal view. *Auranus parvus*: 593, lateral view. *Stygnus luteus*, comb.n.: 594, lateral view. *Protimesius laevis*, comb.n.: 595, lateral view.



Female redescription (paralectotype; Figs. 443-444, 446):

Measurements: DSL 1.62; CL 0.66; DSW 1.12; CW 1.00; ID 0.68; chelicera: II 0.66; III 0.30; pedipalpus 3.68; leg I 3.64; II 5.68; III 4.38; IV 5.30.

Area I with 2 tubercles; III with 2-3. Posterior margin with 4 tubercles. Lateral margins with 0-2 tubercles. Free tergite I with 9 tubercles; II with 8. Pedipalpal coxa with 2 dorsal tubercles. Coxa I with 2 dorsal tubercles.

Type locality: Gaibu, Pernambuco, Brazil (08°19'S - 34°51'W).

Distribution (Fig. 604): Recorded only from type locality.

## 5. GEOGRAPHICAL DISTRIBUTION

The Stygnidae are poorly represented in collections. More than half of the species are known only by the types and most records of geographic distributions are restricted to the type localities. A few localities were sampled, for example, in Northern Brazil, the records are almost all on banks of the Amazonas river. In Colombia the number of species of Stygnidae known only from type localities is the highest in South America (eight species of the 11 described).

The species of the *Stygnus* show the largest distribution in the family (Figs. 599-601). They are distributed only in South America, above the Tropic of Capricorn, occupying almost all the area in which the Stygnidae species occur. The three better sampled species of Stygnidae (in number of localities) are: *S. luteus* (Central-Northern Brazil), *S. multispinosus* (Central Brazil) and *S. polyacanthus* (Northeast Brazil). The species of *Protimesius* occur (Figs. 602-604) in North Brazil, Peru and Ecuador. *P. evelinae* (Fig. 604) shows a disjunct distribution, occurring in Northeast Brazil (Paraíba) and Northern Brazil (rio Tocantins and Belém). *Pickeliana* spp. were recorded in Southern Bahia and Pernambuco (Fig. 602).

The Heterostygninae (Figs. 596-598) occur in North South America and Lesser Antilles, on which some species seem to be endemic of the island on which they were recorded: Antigua (*Stygnoplus antiguanus*), Dominica (*Stygnoplus dominicanus*) and Guadalupe (*Stygnoplus*

*flavitaris*). The species of *Stygnidius* (Fig. 596) occur in Venezuela, Surinam and French Guiana, *Eutimesius* spp. (Fig. 597) are distributed by Western South America and *Stygnoplus* (Figs. 597-598) in the Lesser Antilles and Northernmost South America. Almost all other monotypic genera of the Heterostygninae were recorded only from type localities. *Timesius* from Colombia and *Minax*, *Innoxius* and *Yapacana* from Venezuela. The species that has more records of distribution and the only one occurring in Brasil, Ecuador and Peru in this subfamily is *E. simoni*, which also occurs in Colombia (Fig. 597).

The two species of Nomoclastinae were recorded only in Colombia. *N. taedifer* had not the type locality specified (only the type is known) and *Nomoclastes quasimodo* is known only from the type series.

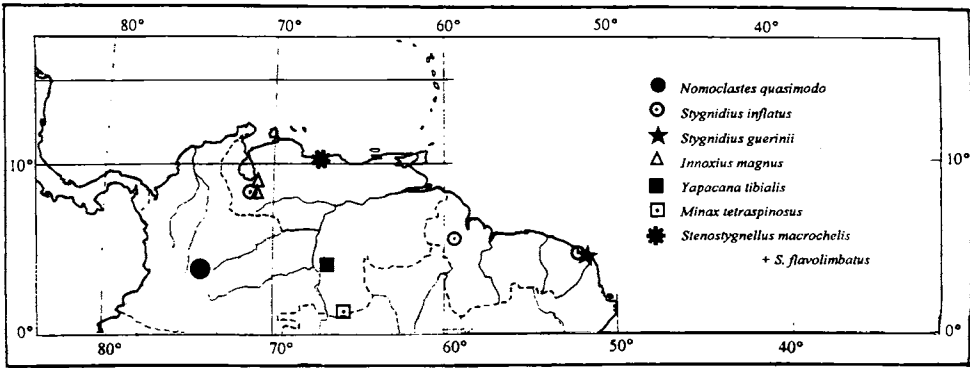
## 6. PHYLOGENETIC ANALYSIS

The list of the characters used in the phylogenetic analysis of the family Stygnidae (CI= consistence index; RI= retention index; L= character steps on tree; AUT= autapomorphy) follows below. The matrix with the distribution of the characters by node is in the table I and the synapomorphies of each group of taxa are listed in the table II. The multistate characters are unordered (except numbers 18, 20 and 50 which are ordered).

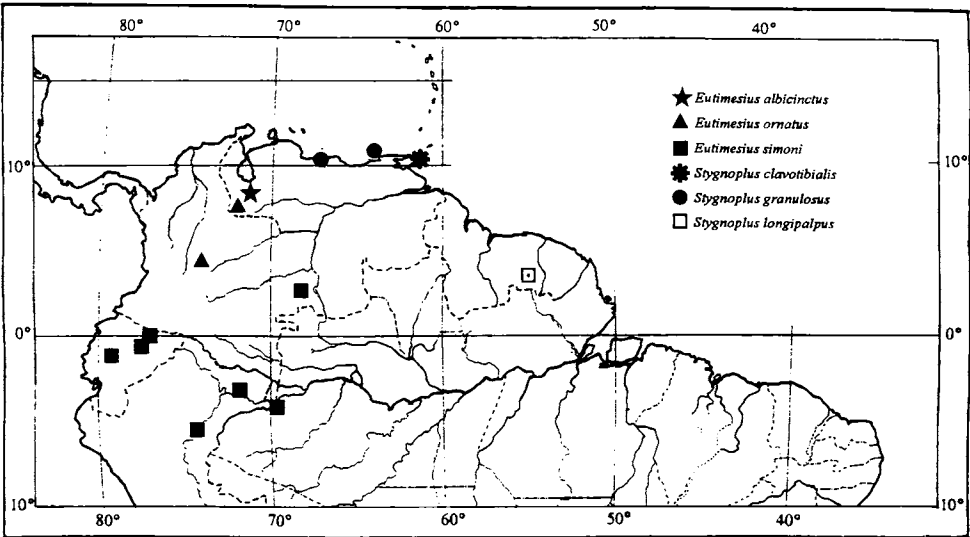
Dorsal scute:

- 01 - Dorsal scute outline (CI=0.83; RI=0.92; L=6):
- 0, Abdomen much wider than cephalothorax, region between grooves II and III wider.
  - 1, wider at groove II and at posterior margin (Figs. 1, 3, 7)
  - 2, lateral margins convex (Figs. 9, 33, 25, 57)
  - 3, rectangular, widening gradually from groove III to posterior margin (Figs. 41, 43)
  - 4, Dorsal scute slightly wider at groove III (Figs. 168, 176, 184, 192)
  - 5, rectangular (Fig. 160)

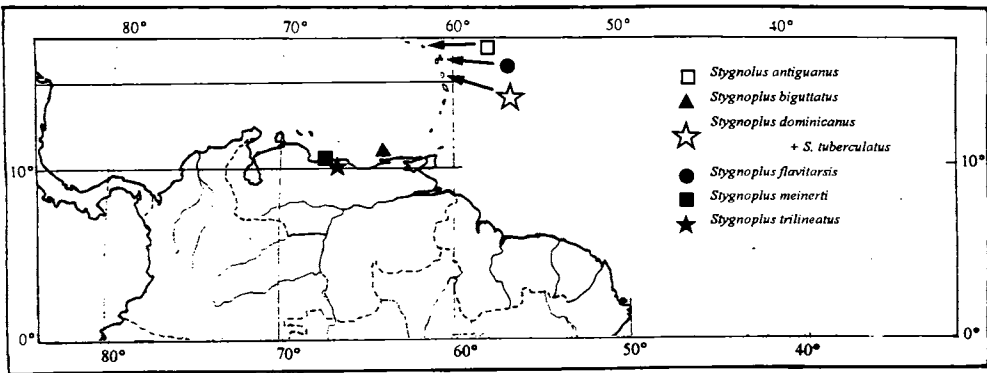
The state "1" is an autapomorphy of *Nomoclastes*; the "2" is a synapomorphy of *Eutimesius*, *Stenostygnellus* and *Stygnoplus* and occurs also in *Protimesius gracilis*; the "3" is an autapomorphy of the *Innoxius*; the "4" is a synapomorphy of *Sickesia* and *Stygnus*; the "5" is



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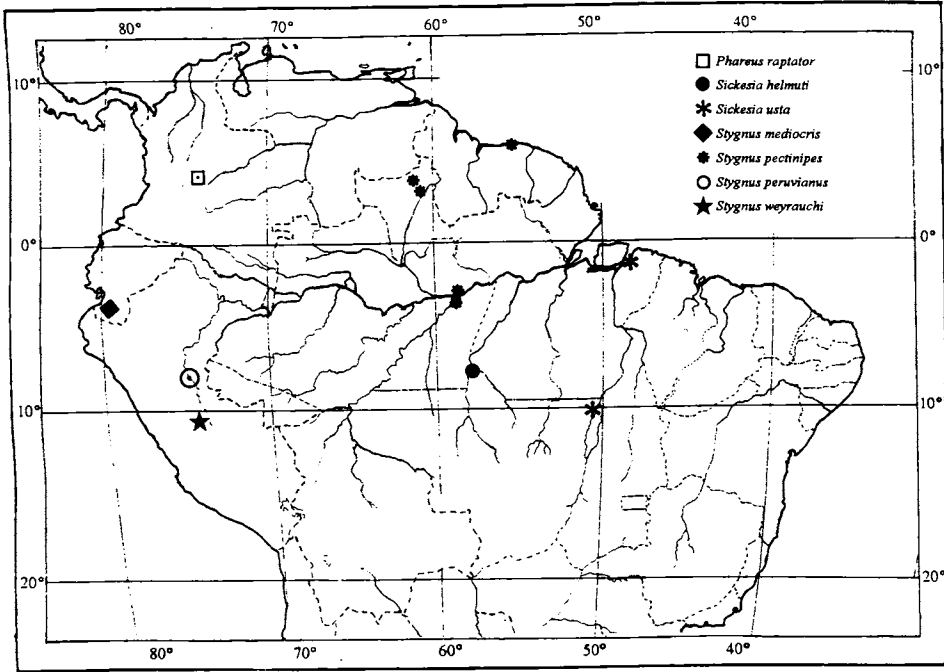


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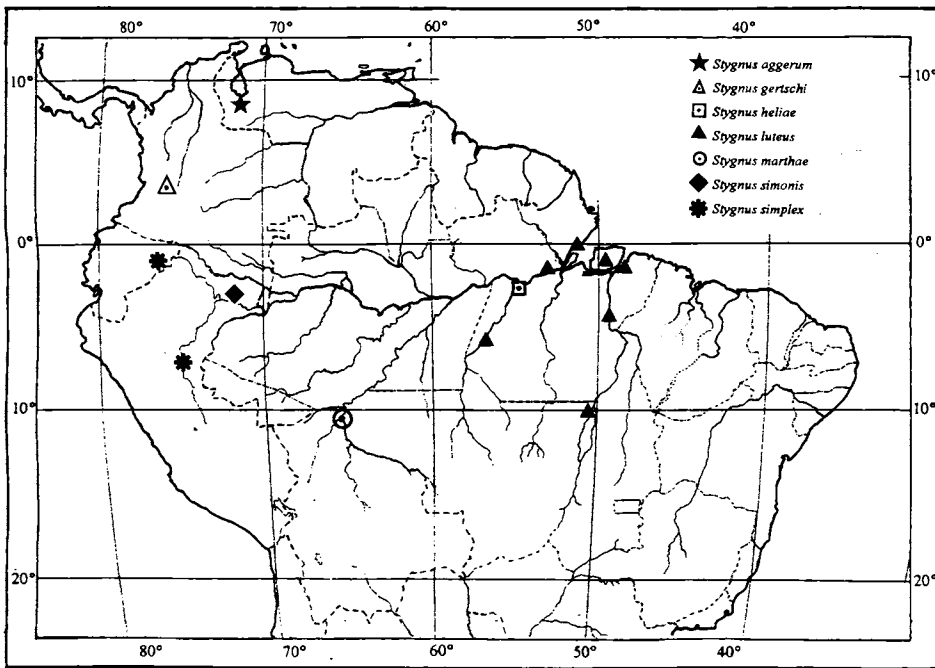


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Figs. 596-598. Geographic distribution records of species of the Stygnidae.

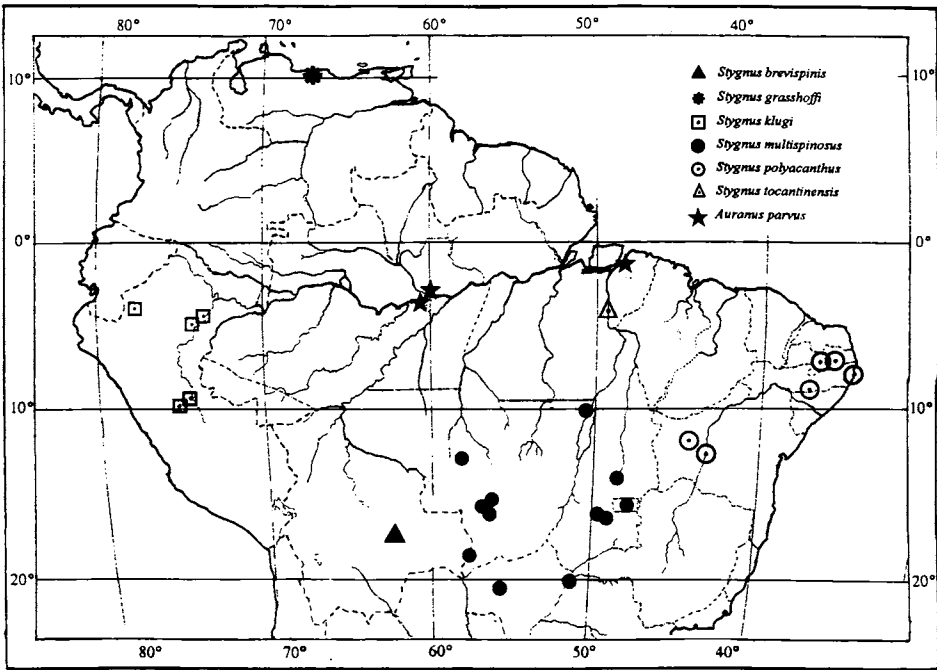


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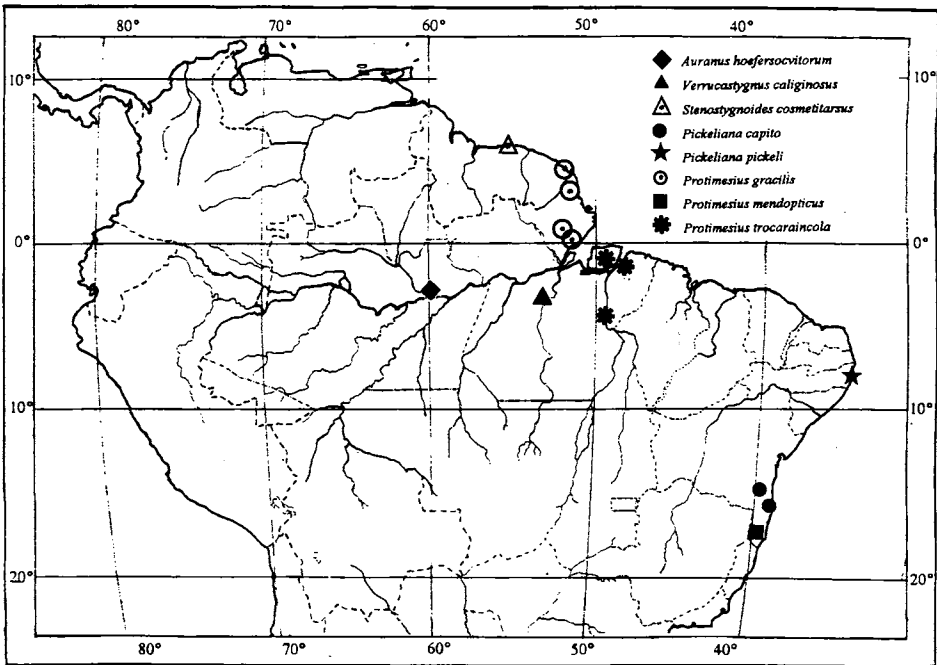


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Figs. 599-600. Geographic distribution records of species of the Stygnidae.

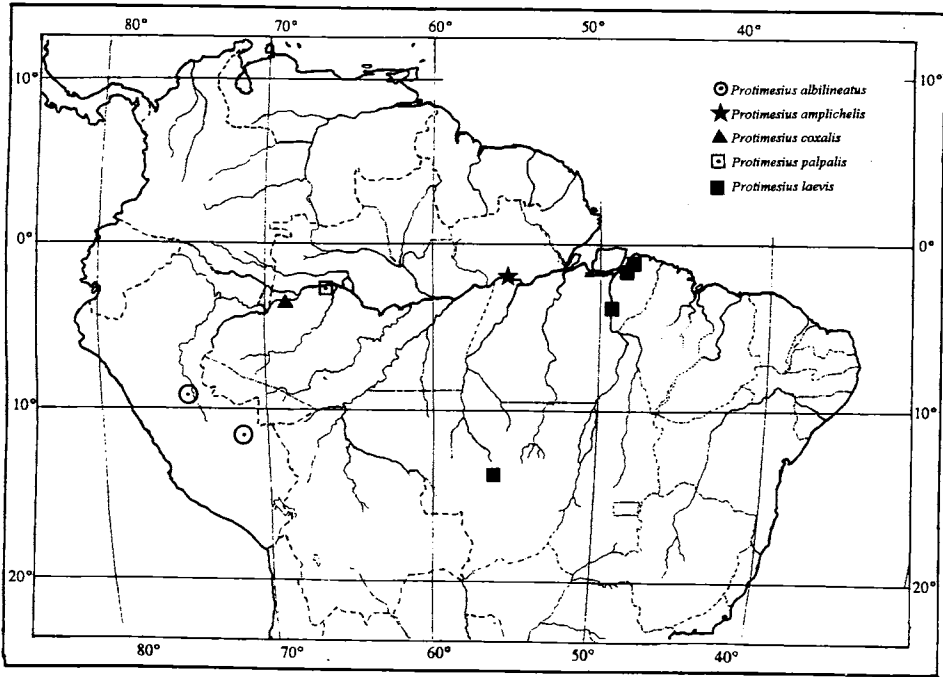


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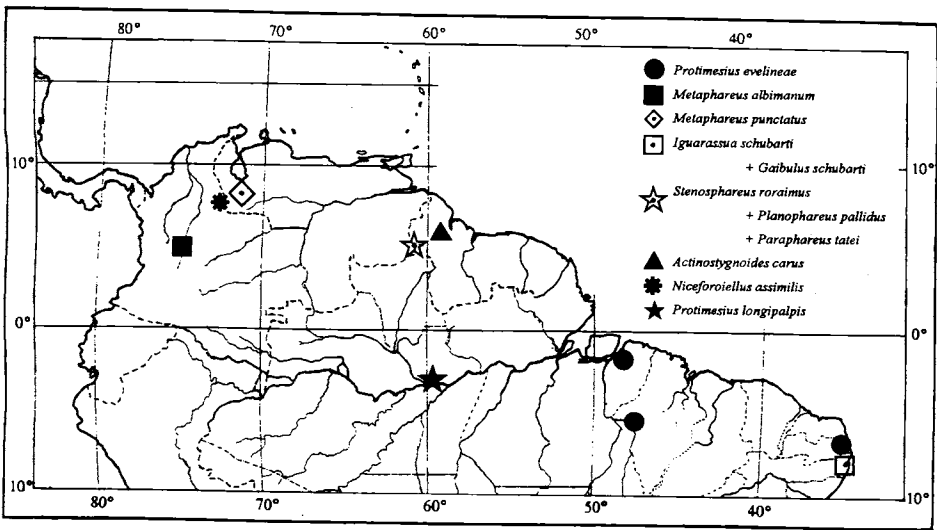


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Figs. 601-602. Geographic distribution records of species of the Stygnidae.



603



604

Fig. 603-604. Geographic distribution records of species of the Stygmidae

Table I. Data matrix of the 50 characters studied in the phylogenetic analysis of the family Stygnidae (Fig. 605). "0"= plesiomorphic state; "1-5"= apomorphic state; "-"= unobserved or polymorphic.

	1		11		21		31		41	
ancestor	00000	00000	00000	00000	00000	00000	00000	00000	00000	00000
<i>Nomoclastes quasimodo</i>	11000	00200	00011	00000	01100	00002	11100	01000	12002	00000
<i>Gaibulus schubarti</i>	51110	00000	00100	01102	00100	00002	11001	00000	20010	10000
<i>Stygnidius</i> spp.	51100	00000	00000	01101	00100	00002	11011	00001	12101	00100
<i>Minax tetraspinosus</i>	51100	00010	00000	01202	00001	10002	11001	00001	41201	00101
<i>Yapacana tibialis</i>	21100	00000	00000	01101	00110	11002	11011	01001	41201	00102
<i>Innoxius magnus</i>	31102	00200	00000	01101	00111	10002	11011	00001	41201	00101
<i>Eutimesius ornatus</i>	21104	11001	01000	01101	00111	10002	11011	00001	41201	00100
<i>Eutimesius simoni</i>	21104	01111	01000	01101	00101	10002	11011	00001	41201	00101
<i>Eutimesius albicinctus</i>	21104	01011	11000	01101	00001	10002	11011	00001	41201	00101
<i>Stenostygnellus flavolimbatus</i>	21103	00011	11000	11101	10111	10002	11011	01101	41301	00101
<i>Stenostygnellus macrochelis</i>	21103	00000	01000	11111	10101	10002	11011	01101	41301	00101
<i>Stygnoplus biggutatus</i>	21101	00011	01000	01101	10101	10002	11011	01101	4130-	00000
<i>Stygnoplus trilineatus</i>	21101	00000	11000	01101	10101	10002	11011	01101	41301	00000
<i>Stygnoplus meinerti</i>	21101	00000	00000	01111	10101	10102	11011	01101	41301	00000
<i>Stygnoplus longipalpus</i>	21101	00000	00000	01101	10011	10102	11011	01101	41301	00001
<i>Stygnoplus clavotibialis</i>	21101	00000	00000	01101	10111	11102	11011	01101	4130-	00000
<i>Stygnoplus</i> spp.	21101	00000	00000	01111	10111	11112	11011	01101	41301	00000
<i>Stygnoplus gramulosus</i>	21103	00000	00000	01111	10111	11122	11011	01101	41301	00000
<i>Phareus raptator</i>	51112	00000	00000	01111	00001	10000	00000	01010	33010	00002
<i>Stygnus</i> spp.	41101	00000	00100	01101	00101	10000	00000	00000	30010	11000
<i>Sickesia</i> spp.	41111	00000	00100	01101	00101	10000	000-0	00000	30010	01000
<i>Auranus parvus</i>	51100	00000	00000	01202	00101	00000	00000	11001	50000	00001
<i>Auranus hoeferscovitorum</i>	51100	00000	00000	01202	00100	00000	00000	11000	30000	00001
<i>Verrucastygnus caliginosus</i>	51100	00000	00000	01102	10000	00000	00000	10000	30010	00001
<i>Stenostygnoides cosmetitarsus</i>	51100	00000	00000	01202	10000	10000	00000	10000	22010	00001
<i>Pickeliana pickeli</i>	51110	00000	00000	01203	00100	10001	00000	10000	20010	11010
<i>Pickeliana capito</i>	51110	00000	00000	01203	00000	10001	00000	10000	20010	10010
<i>Protimesius evelineae</i>	51102	00000	00000	01203	10001	10001	00000	00000	22010	01002
<i>Protimesius laevis</i>	51100	00000	00000	01203	10101	00001	00000	00000	20010	01002
<i>Protimesius mendopticus</i>	51102	00000	00000	01203	10000	10001	00000	00000	50010	00001
<i>Protimesius albilineatus</i>	51102	00000	00000	01203	10001	00001	00000	00000	20010	01002
<i>Protimesius gracilis</i>	21100	00000	00000	01213	10001	10001	00000	00000	30010	01000
<i>Protimesius longipalpis</i>	51100	00000	00000	01203	10000	00001	00000	00000	30010	00001
<i>Protimesius trocaraincola</i>	51102	00000	00000	01203	10001	10001	00000	00000	22010	00001

a convergence in the monophyletic group formed by *Auranus*, *Verrucastygnus*, *Stenostygnoides*, *Pickeliana* and *Protimesius* (except *P. gracilis*), with *Gaibulus*, *Phareus*, *Stygnidius* and *Innoxius*.

02 - Eye mound (CI=1; AUT; L=1):

0, single

1, separate, divided in two small mounds

Synapomorphy of Stygnidae.

03 - Eye mounds (CI=1; RI=1; L=1):

0, located on carapace mid-line (Figs. 1, 3, 7)

1, placed near groove I (Figs. 9, 25, 149, 160, 221)

Synapomorphy of Stygninae plus Heterostygninae.

04 - Male eye mounds (CI=0.25; RI=0.25; L=4):  
0, smooth

1, tuberculate (Figs. 160, 168, 176, 421)

Occurs in *Gaibulus schubarti*, *Sickesia* spp., *Phareus raptator* and *Pickeliana* spp.. In the female of *G. schubarti*, *Sickesia* and *Phareus* are smooth but, in that of *Nomoclastes* spp. and *Pickeliana* spp. is tuberculate.

05 - Cephalothorax (CI=0.36; RI=0.56; L=11):

0, unarmed (Figs. 1, 33, 349)

1, with 1 spine (Figs. 149, 169, 185)

2, with 1 wide frontal eminence (Fig. 42)

3, with 1 wide median eminence with 1 apical spine (Figs. 74, 82, 129)

4, wide median eminence (Figs. 54, 57, 65)

The eminence is supposed to be homologous to the unique common eye mound unique present in the sister-group. In Cosmetidae and Gonyleptidae (Metasarcinae) it is depressed medially, or with 1 short rombous tubercle as in *Chavesincola inexpectabilis*. In the sister-group of Gonyleptidae + Cosmetidae + Stygnidae, Cranaidae, occur 2 long and divergent spines.

06 - Areas II-III (CI=1; AUT; L=1):

0, entire (Figs. 41, 33)

1, divided (Figs. 54, 57)

Synapomorphy for *Eutimesius ornatus* and *E. ephippiatus* (the latter species was not included in the cladogram because males are unknown).

07 - White spots on cephalothorax (CI=1; RI=1; L=1):

0, absent

1, present (Figs. 49, 54, 57, 65)

Synapomorphy for the species of *Eutimesius*.

08 - Area III (CI=0.66; RI=0; L=3):

0, with 2 separate spines (Figs. 9, 17, 33, 160, 168)

1, with 2 geminated spines (Figs. 65, 67)

2, without spines (Figs. 1, 3, 41)

In the sister-group is unarmed in *Cobania picea* (apomorphy of this species), with 1 rombous tubercle in *Chavesincola inexpectabilis*, with 2 contiguous spines in *Cosmetus variolosus*. In the other Cosmetidae, Gonyleptidae and Cranaidae usually 2 long spines widely separate occur (plesiomorphic state). In the ingroup, the derivate conditions occur in three not related species, in *Eutimesius simoni* (contiguous spines), and in *Nomoclastes quasimodo* and *Innoxius magnus* (lack of spines).

09 - White spots on lateral margins (CI=0.25; RI=0.25; L=4):

0, absent

1, present (Figs. 25, 49, 54)

White spots appear convergently in the group *Eutimesius simoni* plus *E. albicinctus* and in *Stygnoplus biguttatus* and in *Stenostygnellus flavolimbatus*.

10 - White spots on dorsal scute areas (CI=0.33; RI=0.50; L=3):

0, absent

1, present (Figs. 49, 54, 57, 73, 149)

11 - White spots on posterior margin (CI=0.33; RI=0; L=3):

0, absent

1, present (Figs. 73, 91)

It is a convergence between 3 species.

12 - White bands on free tergites (CI=0.50; RI=0.83; L=2):

0, absent

1, present (Figs. 50, 55, 74)

It is synapomorphy of *Eutimesius* spp., *Stenostygnellus* spp., *Stygnoplus biguttatus* and *S. trilineatus* that goes back to ancestral state in the remaining species of *Stygnoplus*.

13 - Free tergite III (CI=0.50; RI=0.50; L=2):

0, smooth or with tubercles of different size (Figs. 1, 9, 160, 357)

1, with 1 pair of tubercles longer than those of II-III (Figs. 168, 176, 184, 421)

Synapomorphy of *Sickesia* and *Stygnus*, convergent with *Gaibulus schubarti*. The other tergites and posterior margin can also have long tubercles. However, they are never longer than or as long as those of tergite III. This state is convergent in several species of Gonyleptidae Pachylinae and Gonyleptinae, groups that do not belong to the "early" lineages of the family (Kury, 1994b).

Venter:

14 - Male coxa IV, ventral (CI=1; AUT; L=1):

0, unarmed

1, with long apophysis (Fig. 2)

Occurs only in *Nomoclastes quasimodo* and could be an autapomorphy of this species.

Chelicera:

15 - Male segment II with 1 large retrolateral tubercle (CI=1; AUT; L=1):

0, absent

1, present (Fig. 2)

Occurs only in *Nomoclastes quasimodo* and could be an autapomorphy of this species.

16 - Male segment I with 1 enlarged retrolateral tubercle (CI=1; RI=1; L=1):

0, absent

1, present (Figs. 73, 81)

Autapomorphy of *Stenostygnellus*.

Pedipalpus:

17 - Coxa (CI=1; RI=1; L=1):

0, short, width and length similar in dorsal view (Figs. 1, 3, 7)

1, long, twice longer than wide, reaching the end of the segment I of the chelicera (Figs. 9, 160, 184, 317, 357)

Synapomorphy of Stygninae and Heterostygninae.

18 - Femur (Ordered; CI=0.50; RI=0.84; L=4):

0, short and thick

1, long and thin (relation dorsal scute length/pedipalpal femur length = 1.07-1.64)

2, very long and thin (relation = 0.87-1.03)

19 - Ventral face of femur (CI=0.20; RI=0.20; L=5):

0, smooth or with minute tubercles

1, with 1 row of wide tubercles (Figs. 560, 561)

The tubercles of *Stygnoplus clavotibialis* are a little wider than in the plesiomorphic state but not so wide as the derivate state. In the species of this genus both states occur. I preferred to consider this character state as plesiomorphic in *S. clavotibialis*.

20 - Patella (Ordered; CI=0.60; RI=0.91; L=5):

0, short

1, moderately long (relation dorsal scute length/pedipalpal patella length = 2.25-3.65)

2, long (relation 1.50-1.83)

3, very long (relation 1.12-1.4)

21 - Apex of tibial anterior sockets (CI=0.33; RI=0.87; L=3):

0, straight (Fig. 584)

1, bifid (Figs. 584, 585)

The synapomorphic condition arised twice, in *Stenostygnellus* + *Stygnoplus* and in *Verrucastygnus* + *Stenostygnoides* + *Protimesius*, and was lost in the species of *Pickeliana*.

22 - Tarsus (CI=1; AUT; L=1):

0, similar to tibia (Figs 560-565)

1, depressed (Fig. 2)

Synapomorphy of Nomoclastinae.

Legs:

23 - Trocanter IV with 1 large dorsal tubercle (CI=0.12; RI=0.46; L=8):

0, absent

1, present (Figs. 15, 47, 174, 355)

24 - Male femur IV dorsoapical tubercle (CI=0.25; RI=0.57; L=4):

0, absent or short (Figs. 15, 31, 174)

1, large, length similar or larger than femur base width (Figs. 47, 79, 139)

25 - Male patella IV with 1 large ventroapical anterior tubercle (CI=0.14; RI=0.45; L=7):

0, absent

1, present (Fig. 127)

26 - Male patella IV with 1 large dorsoapical posterior tubercle (CI=0.20; RI=0.55; L=5):

0, absent

1, present (Fig. 134)

27 - Male patella IV dorsally (CI=0.50; RI=0.66; L=2):

0, smooth

1, with large tubercles (Fig. 134)

28 - Male tibia IV (CI=1; RI=1; L=1):

0, normal

1, swollen at medianposterior part, slightly narrowed to apex (Fig. 110, 118, 134)

29 - Medianposterior tubercles of the male tibia IV (CI=1; AUT; L=2):

0, absent

1, backwards (Figs. 110, 118, 126)

2, contiguous (Fig. 134)

The state "1" occurs in several species of *Stygnoplus* and the state "2" is an autapomorphy of *S. granulosis*.

30 - Scopula (CI=0.66; RI=0.93; L=3):

0, absent (Figs. 593, 594)

1, with long hairs of thin apex (Fig. 595)

2, with long hairs of spatulate apex (Figs. 587)

The state "1" occurs in the species of



*Pickeliana* and *Protimesius* and the state "2" occurs in Nomoclastinae, *Gaibulus schubarti* and Heterostygninae. The spatulate apex of the hairs shared by Heterostygninae and Nomoclastinae is very similar to that of some species of Laniatores, not closely related to Stygnidae, studied by Rambla (1990): *Hinzuanus insulanus* and *Biantes parvulus* (Biantidae) and *Ibalonius bimaculatus* (Podoctidae).

31 - Distitarsi III-IV last article length (CI=0.50; RI=0.93; L=2):  
0, long (Figs. 593-595)  
1, short (Fig. 590)  
Occurs in Nomoclastinae, *Gaibulus schubarti* and Heterostygninae.

32 - Distitarsi III-IV last article (CI=0.50; RI=0.93; L=2);  
0, cylindrical (Figs. 593-595)  
1, wide slightly depressed (Figs. 590, 591)  
Homoplastic between Nomoclastinae, *Gaibulus schubarti* and Heterostygninae.

33 - Distitarsi III-IV last article apex (CI=1; AUT; L=1):  
0, straight  
1, bilobate (Fig. 592)  
Autapomorphy of *Nomoclastes*.

34 - Claws III-IV (CI=0.50; RI=0.92; L=2):  
0, smooth (Figs. 592-595)  
1, pectinate (Fig. 591)  
Synapomorphy of Heterostygninae, lost in *Minax tetraspinosus*. One species of Stygninae, *Sickesia helmuti*, convergently shares this feature.

35 - Claws III-IV (CI=0.50; RI=0.93; L=2):  
0, parallel or subparallel (Figs. 592-595)  
1, opposite (Fig. 590, 591)  
The opposite claws III-IV occurs in *G. schubarti* and in Heterostygninae.

36 - Tarsal process (CI=0.50; RI=0.80; L=2):  
0, well developed (Figs. 590-592, 594, 595)  
1, reduced to long hair with wide base (Fig. 593)  
The reduction of tarsal process, a character normally used to diagnose families of Gonyleptoidea, occurs in the species of *Auranus*, *Pickeliana*, *Verrucastygne* and *Stenostygnoides*.

Male genitalia:

37 - Dorsal process (CI=0.20; RI=0.69; L=5):  
0, present (Figs. 566-579, 583)

1, absent, lost secondarily (Figs. 580, 581)

Synapomorphy of the genera of Heterostygninae namely *Yapacana*, *Stygnoplus* plus *Stenostygnellus*, shared homoplastically in Nomoclastinae, *Auranus* spp. and *Phareus raptator* (Stygninae).

38 - Membranous part of the glans (CI=1; RI=1; L=1):  
0, at least half length of the glans (Figs. 566-579)  
1, restrict to basal region (Figs. 580, 581)

Synapomorphy of *Stenostygnellus* and *Stygnoplus*.

39 - Fan-like ventral process (CI=1; AUT; L=1):  
0, absent  
1, present (Fig. 582)

Autapomorphy of *Phareus raptator*. This feature is similar to the fan-like process present in some Gonyleptidae.

40 - Ventral plate (CI=0.50; RI=0.93; L=2):  
0, thick (Figs. 566-577)  
1, thin (Figs. 578-581)

Synapomorphy of Heterostygninae. One convergence occurs in the Stygninae *Auranus parvus*.

41 - Lateral margins of the ventral plate (CI=0.55; RI=0.73; L=9):

0, divergent (Fig. 583)

1, convex (Fig. 449)

2, concave (Fig. 576)

3, parallel (Fig. 574)

4, convergent and straight (Fig. 578)

5, convergent and curved (Fig. 549)

42 - Distal margin of ventral plate (CI=0.42; RI=0.76; L=7):

0, straight (Figs. 566, 568, 570)

1, with 1 U-shaped narrow cleft (Figs. 455, 457, 481)

2, concave (Figs. 449, 451, 453)

3, with 1 U-shaped wide cleft (Fig. 489)

43 - Basal part of ventral plate (CI=1; RI=1; L=3):  
0, indistinct (Fig. 449, 489, 493, 495)

- 1, slightly narrowed (Fig. 451)
- 2, narrowed and long (Fig. 578)
- 3, narrowed and short (Fig. 580)

44 - Distal setae of ventral plate (CI=0.33; RI=0.85; L=3):

- 0, shorter than ventral plate (Fig. 583)
- 1, longer than ventral plate (Fig. 566-577)

45 - Distal setae of ventral plate (CI=1; RI=1; L=2):

- 0, placed distally (Figs. 566-577)
- 1, placed centrally (Fig. 578, 580)
- 2, not distinct from others, with 1 row in almost all lateral (Fig. 449)

The state "1" is a synapomorphy of Heterostygninae, the state "2" is an autapomorphy of Nomoclastinae, maybe restricted to *Nomoclastes quasimodo*, the only species in the subfamily of which male is known.

46 - Shape of the distal setae of ventral plate (CI=0.33; RI=0.33; L=3):

- 0, thin and cylindrical (Figs. 574-577, 583)
- 1, wide and compressed (Figs. 566-573)

The derivate state is convergent in *Stygnus* spp., *Pickeliana* spp. and *Gaibulus schubarti*.

47 - Position of intermediary setae on ventral plate (CI=0.25; RI=0.50; L=4):

- 0, on lateral margin (Figs. 566-577, 583)
- 1, central (Figs. 578, 580)

48 - Ventral setae of ventral plate (CI=0.50; RI=0.87; L=2):

- 0, absent
- 1, present (Fig. 579)

The derivate state arose in the ground plan of Heterostygninae, *Stygnidius*, occurring also in *Innoxius*, *Minax*, *Yapacana*, *Eutimesius* and *Stenostygnellus* and it has been lost by *Stygnoplus*.

49 - Basal setae (CI=1; RI=1; L=1):

- 0, simple
- 1, bifid (Figs. 535, 537)

The bifid setae show two small edges apically, it is a synapomorphy for *Pickeliana* species.

50 - Truncus setae (Ordered; CI=0.18; RI=0.52; L=11):

- 0, 2-3 pairs

- 1, 4 pairs
- 2, 5 or more pairs

The family Stygnidae is monophyletic as hypothesized by Kury (1992a) and its sister-group is Cosmetidae + Gonyleptidae.

The three characters used by Kury (1992a) to hypothesize the monophyly of Stygnidae are the eye mound divided in two, the long pedipalpus and the thin ventral plate (called by him "lamina parva"). The eye mound is central in the sister group of Stygnidae and in Nomoclastinae, while placed near groove I in Stygninae + Heterostygninae. The elongate pedipalpus occurs in Stygninae + Heterostygninae, being longest in *Protimesius* + *Pickeliana*; in the first branch of the family (Nomoclastinae), the pedipalpus is short and thick, considered the plesiomorphic state. In consequence, the lengthening of pedipalpus can not be a synapomorphy of Stygnidae. The thin ventral plate, called "lamina parva", arose twice, independently, in *Auranus* and in Heterostygninae, while in other taxa of the family it is thick as in the sister-group Cosmetidae + Gonyleptidae and then, can not be considered a synapomorphy for Stygnidae either. A characteristic not mentioned by Kury (*op. cit.*) that is a synapomorphy (convergently shared by Prostygninae, Cranidae) for Stygnidae is the rectangular or almost rectangular shaped dorsal scute. In the *sister-groups* the dorsal scute is much wider at grooves II-III (Tricommatidae, Gonyleptidae, Cosmetidae) or slightly wider at grooves II-III (Cranidae); however, in Stygnidae the relation between abdomen width and cephalothorax width is nearly the same, but there are several states of the lateral margins shape (see character 1).

With the PC-program Hennig86, using mh\* and bb\* algorithms (Farris, 1988), eight equally parsimonious trees were obtained (length= 156; CI=0.46; RI=0.78) with 50 characters and 73 derivate states (Tabela I). I prefer to use and follow the strict consensus tree (length= 161; CI=0.45; RI=0.77) for classification goals, because this tree shows the groups that are monophyletic in all trees and the groups not monophyletic are collapsed in polytomies. The choice of a consensus tree obviously represents a conservative attitude. However, we must be careful with the interpretation of the evolution of the characters (Wiley *et*

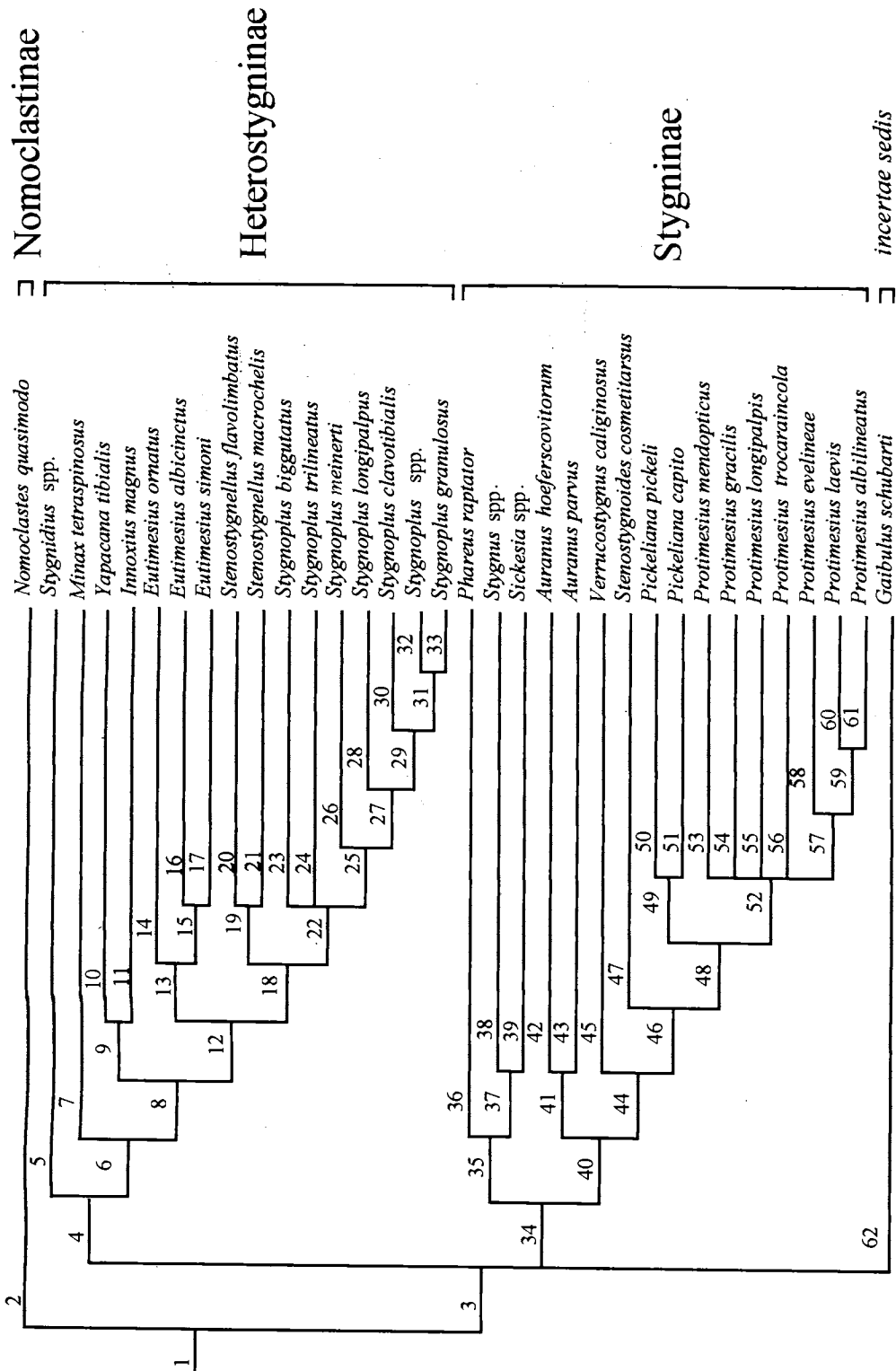


Fig. 605. Strict consensus cladogram of the family Stygnidae (length = 161; CI = 45; RI = 77) based on 8 equally parsimonious trees (length = 156; CI = 46; RI = 78). The list with the characters by node is in the table II.

Table II. List of characters by node/branch based on consensus cladogram to the family Stygnidae (see figure 605).

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<p>Node 01 - Stygnidae</p> <p>2(1). Eye mound separate in two.</p> <p>23(1). Trochanter IV with 1 large dorsal tubercle.</p> <p>30(2). With scopula of long hairs with spatulate apex.</p> <p>31(1). Distitarsi III-IV last article short.</p> <p>32(1). Distitarsi III-IV last article wide, slightly depressed.</p>	<p>Branch 05 - <i>Stygnidius</i> spp.</p> <p>34(1). Claws III-IV pectinate.</p> <p>41(1). Lateral margins of the ventral plate penis convex.</p> <p>42(2). Distal margin of ventral plate penis concave.</p> <p>43(1). Basal part of ventral plate penis slightly narrowed.</p>
<p>Branch 02 - Nomoclastinae</p> <p>1(1). Dorsal scute wider at groove II and at posterior margin.</p> <p>8(2). Area III without spines.</p> <p>14(1). Male coxa IV with 1 long ventral apophysis.</p> <p>15(1). Male chelicera segment II with 1 large retrolateral tubercle.</p> <p>22(1). Pedipalpal tarsus depressed.</p> <p>33(1). Distitarsi III-IV last article with apex bilobate.</p> <p>37(1). Dorsal process of the penis lost secondarily.</p> <p>41(1). Lateral margins of the ventral plate penis convex.</p> <p>42(2). Distal margin of ventral plate penis concave.</p> <p>45(2). Distal setae of ventral plate not distinct from other.</p>	<p>Node 06 - <i>Minax</i> + <i>Yapacana</i> + <i>Innoxius</i> + <i>Eutimesius</i> + <i>Stenostygnellus</i> + <i>Stygnoplus</i></p> <p>25(1). Male patella IV with 1 large ventroapical tubercle.</p> <p>26(1). Male patella IV with 1 large dorsoapical posterior tubercle.</p> <p>41(4). Lateral margins of the ventral plate penis convergent and straight.</p> <p>42(1). Distal margin of ventral plate penis with 1 U-shaped narrow cleft.</p> <p>43(2). Basal part of ventral plate penis narrowed and long.</p> <p>50(1). Truncus of the penis with 4 pairs of setae.</p>
<p>Node 03 - Heterostygninae + Stygninae + <i>Gaibulus schubarti</i></p> <p>1(5). Dorsal scute rectangular.</p> <p>3(1). Eye mounds placed near groove I.</p> <p>17(1). Pedipalpal coxa long.</p> <p>18(1). Pedipalpal femur long and thin.</p>	<p>Branch 07 - <i>Minax tetraspinosus</i></p> <p>9(1). Dorsal scute lateral margins with white spots.</p> <p>18(2). Pedipalpal femur very long and thin.</p> <p>20(2). Pedipalpal patella long.</p> <p>23(0). Trochanter IV without 1 large dorsal tubercle.</p> <p>34(0). Claws III-IV smooth.</p>
<p>Node 04 - Heterostygninae</p> <p>20(1). Pedipalpal patella moderately long.</p> <p>35(1). Claws III-IV opposite.</p> <p>40(1). Penis ventral plate thin.</p> <p>45(1). Distal setae of ventral plate placed centrally.</p> <p>48(1). With ventral setae on ventral plate penis.</p>	<p>Node 08 - <i>Yapacana</i> + <i>Innoxius</i> + <i>Eutimesius</i> + <i>Stenostygnellus</i> + <i>Stygnoplus</i>.</p> <p>1(2). Dorsal scute lateral margins convex.</p>
	<p>Node 09 - <i>Yapacana</i> + <i>Innoxius</i></p> <p>24(1). Male femur IV with 1 large dorsoapical tubercle.</p>
	<p>Branch 10 - <i>Yapacana tibialis</i></p> <p>25(0). Male patella IV without 1 large ventroapical tubercle.</p>

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Table II. (cont.)

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27(1). Male patella IV with large dorsal tubercles.	with bifid apex.
37(1). Dorsal process of the penis lost secondarily.	37(1). Dorsal process of the penis lost secondarily.
50(2). Truncus of the penis with 5 or more pairs of setae.	38(1). Membranous part of the glans penis restricted to basal region.
	43(3). Basal part of ventral plate penis narrowed and short.
Branch 11 - <i>Innoxius magnus</i>	
1(3). Dorsal scute rectangular, progressively wider from groove III to posterior margin.	Node 19 - <i>Stenostygnellus</i>
5(2). Cephalothorax with 1 wide frontal eminence.	5(3). Cephalothorax with 1 median eminence with 1 apical spine.
8(2). Area III without spines.	16(1). Male chelicera segment I with 1 enlarged retrolateral tubercle.
Node 12 - <i>Eutimesius</i> + <i>Stenostygnellus</i> + <i>Stygnoplus</i>	Branch 20 - <i>Stenostygnellus flavolimbatus</i>
12(1). Free tergites with white bands.	9(1). Dorsal scute lateral margins with white spots.
Node 13 - <i>Eutimesius</i>	10(1). Dorsal scute areas with white spots.
5(3). Cephalothorax with 1 wide median eminence.	11(1). Posterior margins of the dorsal scute with white spots.
7(1). Cephalothorax with white spots.	24(1). Male femur IV with 1 large dorsoapical tubercle.
10(1). Dorsal scute areas with white spots.	Branch 21 - <i>Stenostygnellus macrochelis</i>
Branch 14 - <i>Eutimesius ornatus</i>	19(1). Pedipalpal femur with 1 ventral row of wide tubercles.
6(1). Area II-III divided.	Node 22 - <i>Stygnoplus</i>
24(1). Male femur IV with 1 large dorsoapical tubercle.	5(1). Cephalothorax with 1 spine.
50(0). Truncus of the penis with 2-3 pairs of setae.	48(0). Without ventral setae on ventral plate penis.
Node 15 - <i>Eutimesius albicinctus</i> + <i>E. simoni</i>	50(0). Truncus of the penis with 2-3 pairs of setae.
9(1). Dorsal scute lateral margins with white spots.	Branch 23 - <i>Stygnoplus biggutatus</i>
Branch 16 - <i>Eutimesius albicinctus</i>	23(0). Trochanter IV without 1 large dorsal tubercle.
11(1). Posterior margin of the dorsal scute with white spots.	Branch 24 - <i>Stygnoplus trilineatus</i>
23(0). Trochanter IV without 1 large dorsal tubercle.	19(1). Pedipalpal femur with 1 ventral row of wide tubercles.
Branch 17 - <i>Eutimesius simoni</i>	Node 25 - <i>Stygnoplus meinerti</i> + <i>S. longipalpus</i> + <i>S. clavotibialis</i> + <i>S. spp.</i> + <i>S. granulosus</i>
8(1). Area III with 2 geminate spines.	12(0). Free tergites without white bands.
Node 18 - <i>Stenostygnellus</i> + <i>Stygnoplus</i>	28(1). Male tibia IV swollen at medianposterior part, slightly narrowed to apex.
21(1). Anterior sockets of the pedipalpal tibia	

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Table II. (cont.)

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Branch 26 - <i>Stygnoplus meinerti</i>	Node 35 - <i>Phareus + Stygnus + Sickesia</i>
9(1). Dorsal scute lateral margins with white spots.	20(1). Pedipalpal patella moderately long.
10(1). Dorsal scute areas with white spots.	25(1). Male patella IV with 1 large ventroapical tubercle.
Node 27 - <i>Stygnoplus longipalpus + S. clavotibialis + S. spp. + S. granulosis</i>	26(1). Male patella IV with 1 large dorsoapical posterior tubercle.
24(1). Male femur IV with 1 large dorsoapical tubercle.	Branch 36 - <i>Phareus raptator</i>
Branch 28 - <i>Stygnoplus longipalpus</i>	4(1). Male eye mounds tuberculate.
11(1). Posterior margins of the dorsal scute with white spots.	5(2). Cephalothorax with 1 wide frontal eminence.
50(1). Truncus of the penis with 4 pairs of setae.	19(1). Pedipalpal femur with 1 ventral row of wide tubercles.
Node 29 - <i>Stygnoplus clavotibialis + S. spp. + S. granulosis</i>	23(0). Trochanter IV without 1 large dorsal tubercle.
27(1). Male patella IV with large dorsal tubercles.	37(1). Dorsal process of the penis lost secondarily.
Branch 30 - <i>Stygnoplus clavotibialis</i>	39(1). Glans penis with fan-like ventral process.
Without autapomorphy.	42(3). Distal margin of ventral plate penis with 1 wide U-shaped cleft.
Node 31 - <i>Stygnoplus spp. + S. granulosis</i>	50(2). Truncus of the penis with 5 or more pairs of setae.
19(1). Pedipalpal femur with 1 ventral row of wide tubercles.	Node 37 - <i>Stygnus + Sickesia</i>
Branch 32 - <i>Stygnoplus spp. (= S. antiguianus, S. dominicanus and S. flavitarsis)</i>	1(4). Dorsal scute slightly wider at groove III.
29(1). Male tibia IV with medianposterior tubercles backwards.	5(1). Cephalothorax with 1 spine.
Branch 33 - <i>Stygnoplus granulosis</i>	13(1). Free tergite III with 1 pair of tubercles longer than those of II-III.
5(3). Cephalothorax with 1 median eminence with 1 apical spine.	47(1). Intermediary setae of ventral plate penis placed centrally.
29(2). Male tibia IV medianposterior with contiguous tubercles.	Branch 38 - <i>Stygnus spp.</i>
Node 34 - Stygninae	46(1). Distal setae of ventral plate penis wide and compressed.
30(0). Without scopula.	Branch 39 - <i>Sickesia spp.</i>
31(0). Distitarsi III-IV last article long.	4(1). Male eye mounds tuberculate.
32(0). Distitarsi III-IV last article cylindrical.	Node 40 - <i>Auranus + Verrucastygnus + Stenostygnoides + Pickeliana + Protimesius</i>
41(3). Lateral margins of the ventral plate penis parallel.	20(2). Pedipalpal patella long.
44(1). Distal setae of ventral plate penis longer than ventral plate.	36(1). Tarsal process reduced to a long hair.
	50(1). Truncus of the penis with 4 pairs of setae.
	Node 41 - <i>Auranus</i>
	18(2). Pedipalpal femur very long and thin.

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Table II. (cont.)

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37(1). Dorsal process of the penis lost secondarily.	and compressed.
44(0). Distal setae of ventral plate penis shorter than ventral plate.	49(1). Basal setae of ventral plate penis bifid.
	50(0). Truncus of the penis with 2-3 pairs of setae.
Branch 42 - <i>Auranus hoeferscovitorum</i> Without autapomorphy.	Branch 50 - <i>Pickeliana pickeli</i> 23(1). Trochanter IV with 1 large dorsal tubercle.
	47(1). Intermediary setae of ventral plate penis placed centrally.
Branch 43 - <i>Auranus parvus</i> 25(1). Male patella IV with 1 large ventroapical tubercle.	Branch 51 - <i>Pickeliana capito</i> Without autapomorphy.
40(1). Penis ventral plate thin.	
41(5). Lateral margins of the ventral plate penis convergent and curved.	Node 52 - <i>Protimesius</i> 36(0). Tarsal process well developed.
Node 44 - <i>Verrucastynus</i> + <i>Stenostygnoides</i> + <i>Pickeliana</i> + <i>Protimesius</i> 21(1). Anterior sockets of the pedipalpal tibia with bifid apex.	Branch 53 - <i>Protimesius mendopticus</i> 5(2). Cephalothorax with 1 wide frontal eminence.
23(0). Trochanter IV without 1 large dorsal tubercle.	41(5). Lateral margins of the ventral plate penis convergent and curved.
Branch 45 - <i>Verrucastynus caliginosus</i> Without autapomorphy.	Branch 54 - <i>Protimesius gracilis</i> 1(2). Dorsal scute lateral margins convex.
Node 46 - <i>Stenostygnoides</i> + <i>Pickeliana</i> + <i>Protimesius</i> 18(2). Pedipalpal femur very long and thin.	19(1). Pedipalpal femur with 1 ventral row of wide tubercles.
26(1). Male patella IV with 1 large dorsoapical posterior tubercle.	25(1). Male patella IV with 1 large ventroapical tubercle.
41(2). Lateral margins of the ventral plate penis concave.	41(3). Lateral margins of the ventral plate penis parallel.
Branch 47 - <i>Stenostygnoides cosmetitarsus</i> Without autapomorphy.	47(1). Intermediary setae of ventral plate penis placed centrally.
Node 48 - <i>Pickeliana</i> + <i>Protimesius</i> 20(3). Pedipalpal patella very long.	50(0). Truncus of the penis with 2-3 pairs of setae.
30(2). With scopula of long hairs with spatulate apex.	Branch 55 - <i>Protimesius longipalpis</i> 26(0). Male patella IV without 1 large dorsoapical posterior tubercle.
Node 49 - <i>Pickeliana</i> 4(1). Male eye mounds tuberculate.	41(3). Lateral margins of the ventral plate penis parallel.
21(0). Anterior sockets of the pedipalpal tibia with straight apex.	Branch 56 - <i>Protimesius trocaraincola</i> 5(2). Cephalothorax with 1 wide frontal eminence.
46(1). Distal setae of ventral plate penis wide	25(1). Male patella IV with 1 large ventroapical tubercle.

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Table II. (cont.)

Node 57 - <i>Protimesius evelineae</i> + <i>P. laevis</i> + <i>P. albicinctus</i>	dorsoapical posterior tubercle.
25(1). Male patella IV with 1 large ventroapical tubercle.	Branch 61 - <i>Protimesius albilineatus</i>
47(1). Intermediary setae of ventral plate penis placed centrally.	5(2). Cephalothorax with 1 wide frontal eminence.
50(2). Truncus of the penis with 5 or more pairs of setae.	26(0). Male patella IV without 1 large dorsoapical posterior tubercle.
Branch 58 - <i>Protimesius evelineae</i>	Branch 62 - <i>Incertae Sedis/Gaibulus schubarti</i>
5(2). Cephalothorax with 1 wide frontal eminence.	4(1). Male eye mounds tuberculate.
Node 59 - <i>Protimesius laevis</i> + <i>P. albilineatus</i>	13(1). Free tergite III with 1 pair of tubercles longer than those of II-III.
Without autapomorphy.	20(2). Pedipalpal patella long.
Branch 60 - <i>Protimesius laevis</i>	35(1). Claws III-IV opposite.
23(1). Trochanter IV with 1 large dorsal tubercle.	41(2). Lateral margins of the ventral plate penis concave.
26(0). Male patella IV without 1 large	44(1). Distal setae of ventral plate penis longer than ventral plate.
	46(1). Distal setae of ventral plate penis wide and compressed.

al. 1991); in the consensus tree obtained several states shows an incoherent distribution, as 30 (2), 31, 32 which were considered as synapomorphic in the family level. The characters 30(2), 31 and 32 are present in *Nomoclastes*, *Gaibulus schubarti* and Heterostygninae, and seem to be convergent instead of synapomorphic for Stygnidae, lost in Stygninae.

*Gaibulus schubarti* is the sister-group of Stygninae in 4 trees and the Heterostygninae in 4 trees. With part of Stygninae it shared the follow synapomorphies (lateral margins of ventral plate concave and ventral plate setae long and compressed), and with Heterostygninae (opposite claws; distitarsi III-IV short, wide and depressed; scopula with spatulate hairs). I preferred not to include this genus/species in any subfamily until its relations have been better studied. The establishment of a new subfamily makes no sense since the tricotomy that includes (see Fig. 605) by Heterostygninae, Stygninae and *Gaibulus schubarti* is a result of the consensus tree and it is not supported by any of the eight equally parsimonious trees.

The male genitalia of Heterostygninae shows an evident transformation series in several

characteristics throughout the evolution of the group. In the basal branch (*Stygnidius*) there is a dorsal process and the glans is more than half membranous, the ventral plate shows concave lateral and distal margins, is thin, has ventral setae and is slightly narrow at base. In the next branch (*Minax*, *Innoxius*, *Yapacana* and *Eutimesius*) the ventral plate base is narrower than in *Stygnidius* and very long, showing a spear-like shape, arise a distal U-shaped cleft and appears a further pair of truncus setae. In the two last and more derived genera (*Stenostygnellus* and *Stygnoplus*) occurs the loss of ventral setae, loss of dorsal process, the membranous part of stylus is restrict to the basal part, and the narrow base is shorter. In Stygninae, the evolution of the male genitalia structures is not easy to understand as in Heterostygninae due the high number of shapes. The lateral margins of ventral plate is parallel in the basal branch (*Phareus*, *Sickesia* and *Stygnus*), convergent or concave (*Auranus* spp.), and concave in *Verrucastygnus*, *Stenostygnoides*, *Pickeliana* and *Protimesius*. The setae are long in two monophyletic groups *Phareus* (*Sickesia* + *Stygnus*) and *Stenostygnoides* (*Pickeliana* + *Protimesius*).

Unfortunately, it was impossible to include



data from the species of the genera of Stygnidae which male or male genitalia are unknown, namely *Timesius vesicularis*, *Actinostygnoides carus*, *Kaapora minutissimus*, *Iguarassua schubarti*, *Metaphareus albimanus*, *M. punctatus*, *Niceforoiellus assimilis*, *Paraphareus tatei*, *Planophareus pallidus* and *Stenophareus roraimus*. The male provided 25 characters of which 14 are related with the genitalia. The program Hennig86 does not provide reliable results with so many missing data.

## ACKNOWLEDGMENTS

To my advisor Sérgio A. Vanin. To the curators who sent me the material studied, specially to M. Grasshoff. To the head of the Scanning Electron Microscopy, Alberto A.G.F.C. Ribeiro and his assistant Márcio V. Cruz that help me with the SEM methods. To Hubert Höfer for carrying along to Brazil most of the Roewer's types. To Antonio Carlos Marques, Erica H. Buckup, Francisca Carolina do Val, Maria Martha Argel de Oliveira, Mario de Pinna, Pedro Gnaschini Netto, Sérgio A. Vanin, Ubirajara R. Martins and specially to Sônia A. Casari for comments and revision of parts of the Portuguese and English version of the manuscript. To Adriano Brillhante Kury for discussions on opilionids systematics and valuable comments on different versions of the manuscript. Fellowship from FAPESP (# 91/4054-7).

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