



THE SPIDER SUBFAMILY AMAUROBIOIDINAE (ARANEAE, ANYPHAENIDAE): A PHYLOGENETIC REVISION AT THE GENERIC LEVEL

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THE SPIDER SUBFAMILY
AMAUROBIOIDINAE (ARANEAE,
ANYPHAENIDAE): A PHYLOGENETIC
REVISION AT THE GENERIC LEVEL

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ABSTRACT

A cladistic phylogenetic analysis at generic level of the subfamily Amaurobioidinae is presented. The analysis is based on a dataset of 93 representative species scored for one behavioral and 199 morphological characters. Tree searches were made under equal and implied weights according to homoplasy, and the results were compared in terms of sensitivity to jackknife resampling. Mildest weighting functions produced trees more robust to resampling, and those results were selected as the working phylogenetic hypotheses. Groups of weak support as identified by jackknifing and Bremer indices are in general those that vary in resolution with different character-weighting schemes.

Seven outgroup representatives were included (*Malenella nana* Ramírez, from Malenellinae, and six Anyphaeninae species). In this analysis Anyphaeninae, previously identified as sister group of Amaurobioidinae, is paraphyletic, but forcing its monophyly does not alter the groupings within Amaurobioidinae. The monophyly of the genera is in general well supported, but some particularly conflicting groups are discussed. In contrast, the relationships among genera are in general problematic.

Amaurobioidinae is diagnosed by a pronounced indentation at the base of male palpal tegulum, and by a particular male copulatory bulb conformation, with a paramedian apophysis. The subfamily is classified in two tribes (Gayennini and Amaurobioidini); the genus *Josa* Keyserling, probably sister group to Gayennini, is not assigned to either tribe.

The tribe Amaurobioidini is mainly diagnosed by an apical loop of the sperm duct in the male copulatory bulb. It includes 10 genera: *Amaurobioides* O.P.-Cambridge is restricted to seashores of southern continents. *Clubiona chilensis* Nicolet, transferred to *Amaurobioides*, is the first true record of the genus for South America. The male of *Axyracrus elegans* Simon, three species of *Aysenia* Tullgren, and three of *Coptoprepes* Simon are newly described. Four new genera are proposed in Amaurobioidini: *Gamakia*, *Selknamia* (described for one new species each), *Aysenoides* (for three new species), and *Negayan* (type species *Gayenna tridentata* Simon, including also *Axyracrus coccineus* Mello-Leitão, *Clubiona paduana* Karsch, *Gayenna excepta* Tullgren, *Gayenna exigua* Mello-Leitão, and *Tomopisthes lebruni* Simon). The previously revised genera *Acanthoceto* Mello-Leitão and *Ferrieria* Tullgren are also included in the tribe. The basal branch and most intergeneric branches of the tribe have low support values. *Amaurobioides* and *Negayan*, however, are relatively well supported.

The tribe Gayennini is well defined by a homogeneous conformation of male and female genitalia, with a distinctive secondary conductor and spherical spermathecae. It includes 11 genera: *Gayenna* Nicolet includes only *G. americana* Nicolet from Chile and adjacent Argentina. *Arachosia* O.P.-Cambridge comprises many species previously assigned to *Oxysoma*. *Abuzaida striata* Keyserling, *Anyphaena oblonga* Keyserling, *Gayenna proseni* Mello-Leitão, *Gayenna duplovittata* Mello-Leitão, *Gayenna bonneti* Mello-Leitão, *Oxysoma dubium* Berland, *Oxysoma bifasciatum* Mello-Leitão, *Oxysoma cubana* Banks, *Oxysoma polytrichium* Mello-Leitão, *Phidyle bergi* Simon, and *Samuza praesignis* Keyserling are transferred to *Arachosia*. The males of *Arachosia bergi* (Simon), *A. honesta* Keyserling, and *Arachosia praesignis* (Keyserling) are newly described. *Arachosia* is easily recognized by the thick setae on the anterior lateral spinnerets, and it has good support values. A very diverse group of species here assigned to the genus *Sanogasta* Mello-Leitão is paraphyletic in terms of *Arachosia*. It includes many of the species formerly placed in *Gayenna* Nicolet. *Anyphaena maculatipes* Keyserling, *Clubiona maculosa* Nicolet, *Gayenna paucilineata* Mello-Leitão, *Gayenna alticola* Simon, *Gayenna bonariensis* Mello-Leitão, *Gayenna rufithorax* Tullgren, *Gayenna x-signata* Keyserling, *Gayenna approximata* Tullgren, *Samuza minuta* Keyserling, and *Tomopisthes backhauseni* Simon are transferred to *Sanogasta*. The female of *Sanogasta alticola* (Simon), the males of *S. x-signata* (Keyserling) and *S. approximata* (Tullgren), and four species are newly described. The males of *Monapia carolina* Ramírez and *Monapia angusta* (Mello-Leitão) are newly described. A new species of *Oxysoma* Nicolet from southern Brazil is described, and *Gayenna saccata* Tullgren is transferred to *Oxysoma*. *Phidyle* Simon is removed from the synonymy of *Oxysoma* Nicolet; the male of its only species *Phidyle punctipes* (Nicolet) is newly described. The genus *Philisca* Simon is redefined to include *Liparotoma* Simon. *Clubiona tripunctata* Nicolet and *Clubiona gayi* Nicolet are also transferred to *Philisca*. The male of *Philisca hahni* Simon and two species are newly described. The genus is reasonably supported, except for one basal species of questionable placement. *Anyphaena punctata* Keyser-

ling, *Gayenna fuscotaeniata* Keyserling, *Gayenna tripunctata* Mello-Leitão, *Gayenna reticulata* Mello-Leitão, *Gayenna taperae* Mello-Leitão, *Oxysoma quinquenotatum* Simon, *Oxysoma unipunctatum* Simon, *Oxysoma novum* Mello-Leitão, *Oxysoma lineatum* Tullgren, and *Tomopisthes frenatus* Mello-Leitão are transferred to *Tasata*. The males of *Tasata parcepunctata* Simon, *T. variolosa* Mello-Leitão, and three species are newly described. *Tasata albofasciata* Mello-Leitão is transferred to *Tupirinna* Bonaldo, in the Corinnidae. *Tomopisthes* Simon includes only three species from Chile and adjacent Argentina. *Clubiona horrenda* Nicolet and *Clubiona pusilla* Nicolet are transferred to *Tomopisthes*. The male of *Tomopisthes pusillus* (Nicolet) is newly described. Two new genera are proposed in Gayennini: *Araiya* (*Gayenna pallida* Tullgren, type species and *Gayenna coccinea* Simon) and *Gayennoides* (for two new Chilean species).

The genus *Josa* Keyserling, distinguished by a femoral apophysis on the male palp, is extremely diverse in Andean cloud forests and tropical America. It is one of the better supported groups of the analysis. *Anyphaena keyserlingi* L. Koch, *Gayenna andesiana* Berland, *Gayenna simoni* Berland, *Gayennella riveti* Berland, *Haptisus nigrifrons* Simon, *Haptisus analis* Simon, *Haptisus maurus* Simon, *Olbophthalmus lojensis* Berland, *Olbus personatus* Simon, *Olbus gounellei* Simon, *Tetromma luteum* Keyserling, and *Tomopisthes chazaliae* Simon are transferred to *Josa*. The male of *Josa riveti* (Berland) and one species are newly described.

The following names are newly synonymized: *Cluilius* Simon, with *Amaurobioides* O.P.-Cambridge; *Schiapellia* Mello-Leitão, with *Axyracrus* Simon; *Schiapellia gerschmanni* Mello-Leitão and *Amaurobioides boydi* Forster, with *Axyracrus elegans* Simon; *Tomopisthes magellanicus* Simon and *Gayenna strigosa* Tullgren, with *Clubiona* (now *Negayan*) *paduana* Karsch; *Tetromma* Keyserling (preoccupied), *Haptisus* Simon, *Olbophthalmus* Simon, and *Gayennella* Berland, with *Josa* Keyserling; *Anyphaena pilosa* Keyserling and *Gayenna riveti* Berland, with *Tetromma* (now *Josa*) *luteum* Keyserling; *Pelayo insignis* Banks, with *Haptisus* (now *Josa*) *nigrifrons* Simon; *Samuza* Keyserling, *Abuzaida* Keyserling, and *Gayennina* Gertsch, with *Arachosia* O.P.-Cambridge; *Tomopisthes tripunctatus* Mello-Leitão, with *Samuza* (now *Arachosia*) *praesignis* Keyserling; *Oxysoma ramboi* Mello-Leitão, with *Arachosia honesta* Keyserling; *Sanogasta intermedia* Mello-Leitão, with *Anyphaena* (now *Sanogasta*) *maculatipes* Keyserling; *Gayenna monticola* Chamberlin, with *Gayenna alticola* Simon; *Clubiona sternalis* Nicolet, *Anyphaena ignota* Keyserling, *Gayenna affinis* Tullgren, *Gayenna dubia* Tullgren, *Tomopisthes conspersus* Simon, *Tomopisthes modestus* Simon, *Tomopisthes taeniatus* Simon, *Gayenna skottsbergi* Berland, and *Tomopisthes injucundus* Simon, with *Clubiona* (now *Sanogasta*) *maculosa* Nicolet; *Tomopisthes kraepelini* Simon, with *Gayenna approximata* Tullgren; *Liparotoma* Simon, with *Philisca* Simon; *Philisca navarinensis* Tullgren, with *Philisca hahni* Simon; *Heteromma* Karsch (preoccupied), with *Tomopisthes* Simon; *Tomopisthes immanis* Simon, *Heteromma fuegiana* Karsch, *Philisca sica* Strand, and *Nonianus argentinus* Mello-Leitão, with *Clubiona* (now *Tomopisthes*) *horrenda* Nicolet; *Gayenna chilensis* Tullgren, with *Clubiona* (now *Tomopisthes*) *pusilla* Nicolet; *Gayenna stellata* Simon, with *Gayenna* (now *Araiya*) *coccinea* Simon; *Oxysoma punctipes* Nicolet, *Oxysoma aurata* Nicolet, *Oxysoma longipes* Nicolet, *Oxysoma lineata* Nicolet, and *Aporatea valdiviensis* Simon, with *Oxysoma punctatum* Nicolet.

The following names, previously listed in Anyphaenidae, are considered nomina dubia: *Anyphaena pampa* Holmberg, *Clubiona albiventris* Nicolet, *Clubiona citrina* Nicolet, *Clubiona gemella* Nicolet, *Clubiona gibbosa* Nicolet, *Clubiona lepida* Nicolet, *Clubiona limbata* Nicolet, *Clubiona lineata* Nicolet, *Clubiona nigricans* Nicolet, *Clubiona nubes* Nicolet, *Clubiona pulchella* Nicolet, *Clubiona puella* Nicolet, *Clubiona versicolor* Nicolet, *Oxysoma auratum* Nicolet, *Oxysoma delfini* Simon, and *Tomopisthes aethiops* Simon.

INTRODUCTION

The Anyphaenidae is a homogeneous family of small to medium-sized, wandering hunter spiders. The group is relatively uniform and well defined, both morphologically and geographically. They have characteristic claw tufts composed of flattened setae, and a

particularly well-developed tracheal system, externally evident by the wide, advanced tracheal spiracle. Most diversity of the family occurs in the New World, especially South America, with 29 endemic genera out of 54.

The extended tracheal system of *Anyphaena* Sundevall motivated Bertkau (1878) to

erect the family Anyphaenidae. In subsequent years, anyphaenids were considered either a separate family or members of the families Clubionidae and the old Drassidae (today mostly Gnaphosidae), depending on the inclination of the authors to cherish or decry characters from internal anatomy (see Platnick, 1974; Brescovit, 1997; Ramírez, 1995a). However, the group in itself, beyond its hierarchic position, was never disputed.

A small cladistic analysis of the family (Ramírez, 1995a) resulted in a classification of Anyphaenidae in three subfamilies. The most basal group, Malenellinae, includes only the Chilean *Malenella nana* Ramírez. The Anyphaeninae was revised at the generic level by Brescovit (1997), and it is probably the sister group of Amaurobioioidinae. These last two subfamilies mostly correspond to the main divisions in traditional keys to genera (e.g., Simon, 1897a). The monophyly of Anyphaeninae is not well documented, but Amaurobioioidinae may be easily recognized by a very characteristic male copulatory palp, with a deep basal indentation in the tegulum, occupied by a membranous area (Platnick, 1977; Ramírez, 1995a).

Most species of Amaurobioioidinae were described in *Gayenna* Nicolet, *Tomopisthes* Simon, *Oxysoma* Nicolet, or *Tasata* Simon. These four genera were ambiguously defined in the classic literature (see Tullgren, 1901; Ramírez and Kochalka, 1993; Ramírez, 1995b), being mostly diagnosed by details in the position of the eyes. As shown here, these characters are among the most homoplasious of all the analysis. A nomenclatorial twist in the early history of the group further complicates this unfortunate fact. The most popular genera of Amaurobioioidinae seemed to be *Gayenna* and *Oxysoma*, in the sense that specialists were inclined to describe new species in those genera. Both genera were proposed by Nicolet (1849) for two species of remarkable appearance and morphology, common in temperate forests of Chile. Nicolet's descriptions are of little use for identification, but the illustrations are good enough to distinguish these two species. This work by Nicolet is included in the "Historia Física y Política de Chile", compiled by Claudio Gay in Spanish, but printed in Paris. The collection of spiders studied by Nicolet

was deposited in the Museum National d'Histoire Naturelle in Paris, where Eugène Simon worked. Most of Nicolet's types, however, were thought to be lost, until about half of them were found mixed with general collections (Ramírez, 1989). It seems that Simon (1889, 1904) only examined a few of those types. That, together with the fact that the library of the museum in Paris apparently lacked the atlas with the illustrations from Nicolet, may explain how things unfolded. In 1897 Simon described two monotypic genera, *Aporatea* and *Mezenia* (Simon, 1987a), precisely for the same species for which Nicolet created *Oxysoma* and *Gayenna*, while ascribing Nicolet names to very different spiders. Simon placed in *Oxysoma* those amaurobioioidines with a markedly procurved posterior eye row (here *Arachosia* and *Tasata*), but he left *Gayenna* loosely defined by characters also attributed to other genera (notably *Tomopisthes*; see Tullgren, 1901; Ramírez and Kochalka, 1993). Subsequent authors followed the characterization of *Gayenna* and *Oxysoma* given by Simon, often using *Gayenna* as a dump group for species that lacked the specific characters of better defined genera.

Modern revisionary works in Amaurobioioidinae cover only a few genera. Forster (1970) revised *Amaurobioioides* Hewitt, and Ramírez (1993, 1995b, 1997, 1999) presented cladistic revisions of *Liparotoma* (here part of *Philisca*), *Monapia*, *Acanthoceto*, and *Ferrieria*. The relationships among genera were preliminary studied for the closer relatives of *Monapia* and *Acanthoceto* (Ramírez, 1995b, 1997, 1999). Kochalka (1980) revised *Josa* Keyserling in an unpublished Master's thesis, which also includes considerations of the systematics of Amaurobioioidinae, most of them already discussed in my previous papers.

The 22 genera of Amaurobioioidinae that result from this revision include about 140 known species. In addition, the collections that I examined hold a similar number of undescribed species. The aim of this contribution is to produce a phylogenetic classification of the subfamily, settling the limits of the genera. Besides the representatives selected for the cladistic analysis, I assign revised generic placement to other species that

I examined in the preliminary stages of this work. As explained in Cladistic Analysis, these species fit well in the genera as defined here.

MATERIALS AND METHODS

Specimens examined for this study are deposited in the following institutions:

AMNH	American Museum of Natural History, New York, Norman Platnick
BMNH	The Natural History Museum, London, Janet Beccaloni
BPBM	Bishop Museum, Honolulu, David Preston
CAS	California Academy of Sciences, San Francisco, Charles Griswold
IBNP	Inventario Biológico Nacional de Paraguay, Asunción, John Kochalka
IBSP	Instituto Butantan, São Paulo, Antonio Brescovit
IML	Fundación Miguel Lillo, Tucumán, Pablo Goloboff
IRSN	Institut Royal des Sciences Naturelles de Belgique, Brussels, Léon Baert
MACN-Ar	Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Buenos Aires, Cristina Scioscia
MBUV	Museo de Biología, Universidad Central de Venezuela, Caracas, R. Candia
MCN	Fundação Zoobotânica do Rio Grande do Sul, Erica Buckup
MCTP	Museu de Ciências e Tecnologia, Pontifícia Universidade Católica do Rio Grande do Sul, Arno Lise
MCZ	Museum of Comparative Zoology, Cambridge, Massachusetts, Herbert Levi
MHNP	Muséum National d'Histoire Naturelle, Paris, Christine Rollard
MHNS	Museo Nacional de Historia Natural, Santiago, Ariel Camousseight
MLP	Museo de La Plata, Luis Pereira
MMLS	Museo Municipal de Ciencias Naturales Lorenzo Scaglia, Mar del Plata, Juan Farina
MNRJ	Museo Nacional, Universidade Federal do Rio de Janeiro, Adriano Kury
MZUSP	Museu de Zoologia, Universidade de São Paulo, Ricardo Pinto da Rocha
NRS	Naturhistoriska Riksmuseet, Stockholm, Torbjörn Kronestedt

SMF	Senkenberg Museum, Frankfurt, Manfred Grasshoff
UC	Universidad de Concepción, Viviane Jerez
UCB	University of California, Berkley, Elizabeth Arias
UNESP	Instituto de Biociências, Universidade de São Paulo, Isabela Rinaldi
UPBS	University of Plymouth, UK, Department of Biological Sciences, Peter Smithers
USNM	National Museum of Natural History, Smithsonian Institution, Washington, D.C., Jonathan Coddington
ZMB	Museum für Naturkunde, Institut für Systematische Zoologie, Berlin, Jason Dunlop
ZMH	Zoologisches Museum, Hamburg, Hieronymus Dastych
ZMK	Zoologisk Museum, Copenhagen, Nikolaj Scharff

The lists of material examined (other than the types) include over 6400 specimens. Localities are listed mostly as they appear in the labels, but were checked with maps and gazetteers. Distances and measures from labels are transcribed without conversion to the metric system. Annotations on the original labels are included (e.g., “under stones”, Malaise trap), but not taxonomic identifications.

FORMAT OF DESCRIPTIONS

Measurements are in millimeters, taken with an ocular micrometer on a Leitz stereomicroscope. Measurements are given with two decimals, but accuracy between 1% and 2% is as follows: ± 0.017 mm (for measurements < 1.67 mm), 0.033 mm (1.70–3.33 mm), 0.133 (> 3.33 mm). Carapace length is the maximum in dorsal view, not including chelicerae; total length is without chelicerae or spinnerets. Tibiae are measured between condyla, metatarsi from basal condyle to dorsal apical end. Measurements of total length, abdomen dimensions, and position of tracheal spiracle vary with physiological condition or preservation artifacts and are only intended to give an idea of the size and aspect of the specimen. Other measurements are difficult to take and may have considerable error: the distance between tracheal spiracle and spinnerets is measured up to the posterior margin of abdominal cuticle (because spin-

nerets are telescopable) and is quite inaccurate for small specimens with few setae. Length of female tarsal palp is problematic if telescoped into the tibia. Some types were examined without access to an ocular micrometer, and thus measurements are lacking for some species known only from the types.

Spine (macroseta) pattern is described in standard format, with slight intuitive modifications (ap = apical, bas = basal, d = dorsal, p = prolateral, r = retrolateral, v = ventral). In case a spine is not paired, it is indicated whether it is placed on a particular side: p 2-d1-1 means four spines on the prolateral side (two basals, one median dorsally displaced, and one apical on the median line). In case a segment bears only basal or apical spines, notation is abbreviated: 2ap is equivalent to 0-0-2, 1bas to 1-0-0, and p1ap to 0-0-p1. Only surfaces bearing spines are listed. Occasionally (mostly on femora) two spines are not strictly paired but are close to each other; these are associated in parentheses: 0-d1-(1-d1) would be equivalent to 0-0-0-0-d1-0-0-0-1-d1. If bristles (thin, reduced macrosetae) occur in place of spines, it is indicated: 1-1 bristles (two bristles in a median line) or 1-(1 bristle) (one spine and one bristle). When referring to individual spines, other positions of the generalized pattern (for instance, in characters 129-199) are replaced by "x": v x-p1-x is the ventral median prolateral spine, regardless of whether the specimen bears v 2-2-2 or v 0-p1-2. Spine positions are approximate, with reference to a generalized pattern, and the notation is not strictly literal: v 2ap spines are close to the apical margin on tibia, but not so close on the metatarsus. In many cases notations like p d1-x-x and d p1-x-x may be equally appropriate, and they were arbitrarily (but consistently) settled according to the generalized pattern.

ABBREVIATIONS USED IN TEXT AND TABLES

AB	accessory bulb
ALE	anterior lateral eye
ALS	anterior lateral spinneret
AME	anterior median eye
APmf	anterior pouch on median field
C1	primary conductor
C2	secondary conductor
C2p	prolateral portion of C2

C2r	retrolateral portion of C2
CD	copulatory duct
CO	copulatory opening
E	embolus
FD	fertilization duct
LL	lateral lobe
LT	lateral trachea
MA	median apophysis
MT	median trachea
PLE	posterior lateral eye
PMA	paramedian apophysis
PME	posterior median eye
PMS	posterior median spinneret
RTA	retrolateral tibial apophysis
SCG	index of supported/contradicted groupings
SD	sperm duct

All drawings were made with a camera lucida on a Leitz stereo or compound microscope. Spermathecae were cleared in clove oil and are illustrated with a compound microscope. The tracheal system was examined after digestion in KOH 10-20% in a double boiler. Spinnerets were critical-point dried for the scanning electron microscope; all other structures were air dried. Primordia of epigyne were dissected from penultimate females close to ecdysis from regular collections. Spermathecae were prepared for scanning after digestion with contact lens cleaner overnight (Sierwald, 1990).

CLADISTIC ANALYSIS

REPRESENTATIVES

In this analysis, terminals are exemplar species, instead of hypothetical constructs or *bauplans*. A first step for terminal selection was the examination of all available type specimens and the larger collections of Amaurobioidinae over the world. From all these specimens I made a preliminary list of species, with at least a few sketches and notes for each one. These files comprise about three times as many species as included here, a number far beyond the scope of this paper. I decided then to base the analysis on representative species. More than one representative is included for each genus (except monotypic ones) and for groups of species that seemed reasonable candidates to deserve genus rank. For the sake of nomenclatorial stability, type species of genera are also included, when available. Because the main purpose of this study is to settle the limits

and relationships of genera, I also included species bearing particularly conflicting combinations of characters. In turn, no further species was added if a very similar one had been included, or if it seemed evident that such species would not imply a problematic generic assignment. Finally, I included all species treated in previous cladistic analyses (genera *Monapia*, *Acanthoceto*, *Liparotoma*), because they do not add complications to the project, and it seemed interesting to test those previous hypotheses. Taxon sampling was increased after some preliminary analysis, but still some problems are not adequately resolved (e.g., the limits of *Sanogasta*). These weak points of the analysis are noted and will be addressed in the future.

OUTGROUPS

The monophyly of Anyphaenidae is reasonably well founded, and the grouping of Anyphaeninae plus Amaurobioidinae is very well supported and has never been disputed (Ramírez, 1995a). This is so even though the closest relatives of Anyphaenidae are not yet determined, as is true for most dionychnan families (Coddington and Levi, 1991), because anyphaenids are quite uniform in some characters not commonly found on other spiders (the details of the claw tufts and the tracheal system). *Malenella nana* was used to root the analysis. The Anyphaeninae, recently revised at the generic level by Brescovit (1997), includes 33 genera whose relationships are practically unknown. The monophyly of Anyphaeninae is at best weakly supported. I included six representative species, selected by having characters potentially conflicting with the monophyly and internal resolution of Amaurobioidinae. That is, they share conditions that are diagnostic for genera or groups of genera within Amaurobioidinae. This selection biases the analysis against monophyly of Anyphaeninae, and hence solutions with Anyphaeninae constrained to be monophyletic were also explored. Admittedly, some statements of homology among amaurobioidines and anyphaenines are questionable (e.g., those of male palpal conductors—see the taxonomic section Anyphaeninae for details).

CHARACTERS

Of the 200 characters listed below, 189 are informative for phylogeny. Most characters are from male (59) and female (28) sexual structures and from spines (71). The general somatic morphology, coloration, and spinnerets are coded in 38 characters. The tracheal system is coded in three characters that are considered logically related. Only one character of sexual behavior is included. Table 3 lists character statistics, and figure 4 shows the average fit that the character systems had after the analysis.

CODING

Multistate characters are considered additive when the states were interpreted as internested homologies; this is not intended to express assumptions on the evolution of characters, but merely reflects degrees of similarity (Lipscomb, 1992; Goloboff, 1997a). Morphoclines were interpreted as internested homologies. Because some authors have criticized this approach as an unjustified assumption, additional analyses were made with all characters set as nonadditive. These analyses produced identical trees (but only one of the two trees for concavity $K = 6$; see also note under character 11).

Weight for each character is a function of the homoplasy it implies on the tree. However, there is an amount of a priori homoplasy, as determined by intraspecific variability (e.g., *Negayan tridentata* may have two or three teeth on the cheliceral retromargen, and the scoring [12] adds one internal step to character 20). Those cells of the matrix were coded as polymorphisms (letters a–j in the datamatrix), and the appropriate internal steps were added manually with command `ccode =` of Pee-Wee. Polymorphic entries were also used to express ambiguous homology, because of intermediate conditions (e.g., the intermediate shapes of the paramedian apophysis of some Gaynennini, character 68). These entries do not count for internal steps. The complete data matrix is listed in table 1.

CHARACTER DESCRIPTION AND OPTIMIZATIONS

Except as noted, states are (0) *absent*, (1) *present*, and “synapomorphy” represent a

TABLE 1
Data Matrix

Terminals that have more than one state are coded: a = [01]; b = [012]; c = [02]; d = [12]; e = [15]; f = [23]; g = [24]; h = [2345]; i = [34]; j = [36]

	1111111111	2222222222	3333333333	4444444444	5555555555	6666666666	7777777777	8888888888	9999999999
	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789
<i>Malenella nana</i>	0001000000	0100001000	3a0a000001	1000000000	00100100??	0000000000	0?002?0?0?	??0?0a00?0	0?00?0?0?0
<i>Anypaena accentuata</i>	1a00000010	0100010000	3000000000	0010000011	1010000101	0000000001	0?000000??	?????30002	000?0?0?0?
<i>Wuflila argentina</i>	00010000a0	0100000000	3002000000	0010000011	100?001100	0000a?000?	0?000000??	?????100?0	?????010?00
<i>Xirwana hisuta</i>	0000000010	0100021000	3a01000000	0011000011	101000?101	000?001000	0?0?0000??	?????0?001	0000100000
<i>Ayscha prospera</i>	1a00000010	0200021000	3a02000000	0011000011	1010011100	0000?0?0?0	0?000000??	?????0?0?0	?????01013??
<i>Italaman santamaria</i>	0000000010	0100021000	3101000000	0011000011	101a000101	000??0?000	0?0?2?0?0?	?????0?0?0	?????000?00
<i>Otoniela adisi</i>	1000000010	0100021100	3a02000000	0011000011	10100a?101	000??0?0??	0?00000???	?????0?0?0	?????001???
<i>Ganakia hirsuta</i>	1000000010	0100011100	3000000000	001100000?	?01?000101	00010?0000	1000010110	0000020001	0?00100000
<i>Josa nigrifrons</i>	1100000011	0010020100	1100000000	001100000?	?10?000101	00000?0000	11000000??	?0?0?10002	?0?0?100000
<i>Josa calilegua</i>	1000000011	0010132100	2101000000	001110000?	?10?000101	00000?0000	11000001a0	0000110002	?0?0?1011310
<i>Josa personata</i>	1000000011	0010130?0?	1100?00000	001110?00?	?????0?0??	?????0?0??	?????0?0??	?????0?0??	?????1?0?0?
<i>Josa riveti</i>	1000000010	0000011100	1100000000	001100000?	?10?000101	00000?0000	1100000100	0000110002	?0?0?100000
<i>Josa lutea</i>	1000000010	0000011?0?	1100?00000	001100?00?	?????0?0??	?????0?0??	?????0?0??	?????0?0??	?????1?0?0?
<i>Ferrieria echinata</i>	1?00000010	0110021000	3000000000	001100000?	?011000101	00010?0000	10001a011?	0000020001	0000100000
<i>Acanthoceto pichi</i>	1100000010	0010011000	3000000000	001100100?	?011000101	00010?0001	10000001a?	0000020001	000?000000
<i>Acanthoceto cinereus</i>	1000000010	0010010000	3000000000	0011001000	0011100101	00010?0000	100000010?	0000020001	000?000000
<i>Acanthoceto marina</i>	1000000010	0010010000	1100000000	001100100?	?011100101	00010?0000	100000010?	0000020001	000?000000
<i>Acanthoceto ladornida</i>	1000000010	0010010000	2100000000	001100100?	?011100101	00010?0000	100000010?	0000020001	000?000000
<i>Acanthoceto riogrande</i>	1100000010	0100021000	1100000000	001100100?	?011100101	00000?0000	1000110111	0000030010	?????0?0?0
<i>Acanthoceto acupicta</i>	1000000010	0100021011	1100000000	00110010aa	0011100101	00000?0000	1000110111	0000030010	?????0?0?0
<i>Acanthoceto</i>	1000000010	0100021011	1100000000	00110010a?	?011100101	00000?0000	1000110111	0000030010	?????0?0?0
<i>Selknamia minima</i>	1000000010	0200011100	2000000000	001100000?	?01a000111	00010?0000	1000000111	0000030110	?????0?0?0
<i>Negayan paduana</i>	1000000010	0100010100	1100000000	0011000000	0012000111	10010?0100	10001001??	0000030000	?????0?0?0
<i>Negayan tridentata</i>	1000000010	0000010100	d000000000	001100000?	?01200011?	10010?0000	1010100111	0000030100	?????0?0?0
<i>Negayan coecinea</i>	1000000010	0000010100	3001000000	001100000?	?01200011?	10010?0000	10102?0111	0001030100	?????0?0?0
<i>Coptoprepes valdiviensis</i>	1000000010	0000020000	3000000000	001100000?	?011000111	10010?0001	1000000100	0?00020001	000?0?0000
<i>Coptoprepes campanensis</i>	1000000010	0000010000	3000000000	001100000?	?00?000101	10010?0001	10000000?0	????0020001	0?0?000000
<i>Coptoprepes flavopilosus</i>	0000000010	0000020000	3002000000	0010000000	0010000101	10010?0001	1000000100	0?01020002	0000100000
<i>Coptoprepes nahuelbuta</i>	1000000010	0000020000	3002000000	001100000?	?010000101	10010?0001	1000000?0?	????1020002	0000?00000
<i>Amaurobioidea marina</i>	1000000110	1110010100	2100000000	0011010000	0011000101	10010?0100	1000000111	0000020001	000?00?000

TABLE 1
(Continued)

	1111111111	2222222222	3333333333	4444444444	5555555555	6666666666	7777777777	8888888888	9999999999
	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789
<i>Amaurobioides africana</i>	1000000110	1100010100	2100000000	0011010000?	?011000101	00010?0100	10000000111	00000200001	000?1??00 0?0?101100
<i>Axyracrus elegans</i>	110000a010	1210010100	1100000000	0011000000	00110000101	00010?0000	1000100110	00000200?0	?????????? ?0?101500
<i>Aysenia elongata</i>	1?00001110	1010011???	21?0?P1010	001??P0?0?	???????????	???????????	???????????	???????????	???????????
<i>Aysenia segestrioides</i>	1000001110	1110010100	1100001000	0011000000?	?011000010	00010?0001	10000000110	00000200001	000?000000 0?0?111000
<i>Aysenia araucana</i>	1000001110	1110010100	f100001000	0011000000?	?011000010	00010?0001	10000000110	00000200001	000?000000 0?0?111000
<i>Aysenia cylindrica</i>	1?00001110	111?011100	2100001000	001??0000?	?011000101	00010?0000	100000001a0	00000200001	000?000000 0?0?101000
<i>Aysenoides parvus</i>	110000a011	1210011100	1100001000	0011000000?	?011000011	00010?0000	10000000110	0?00020010	?????????? ?0?101400
<i>Aysenoides terricola</i>	1?00001010	1110011100	2100001000	0011000000?	?011000010	00011?0000	1000010111	0000021001	0000100000 0?0?101400
<i>Aysenoides colecole</i>	1100001011	1210010000	2100001000	0011000000?	?011000010	00011?0000	1000010111	0?00021001	0000100000 0?0?101400
<i>Gayenna americana</i>	1100000011	0001030000	1100000000	0011000000	000?000100	0000010000	10010101g?	0000010002	1000200000 0000101600
<i>Gayenmoides molles</i>	1000000011	0100011000	1100000000	0011000000?	?00?000100	0010010000	100001014?	0000010002	0000200000 0002101600
<i>Gayenmoides losvilos</i>	1000000010	0200011000	2000000000	0011000000?	?00?000100	0010010000	100001014?	0000010002	0000200000 0002101600
<i>Arachosia praeviguis</i>	1000000010	0a01030100	1100000000	001110001a?	?00?000100	00000?0000	100001013?	110000?001	0000200000 000?101600
<i>Arachosia honesta</i>	1100000010	0001130100	d100000000	0011100011?	?00?000100	00000?0000	100001013?	11000?001	0100200000 000?101600
<i>Arachosia bergi</i>	1100000010	0101011100	1100000000	001110001aa	000?000100	00000?0000	100001013?	110001?001	0100200000 0000101600
<i>Sanogasta peluence</i>	1000000010	0100010000	1100000000	0011000000?	?00?000100	0000010000	100001013?	1100000001	0000100000 000?101600
<i>Sanogasta approximata</i>	1000000010	0100011100	1100000000	0011000000	000?000100	100?010000	100001013?	1100000001	0001100000 000?101600
<i>Sanogasta maculosa</i>	1000000010	0100011100	1100000000	0011000000	000?000100	0000010000	100001013?	11000?0002	0000200000 000?101600
<i>Sanogasta maculatipes</i>	1000000010	0100010100	1100000000	0011000000	000?000100	0000000000	100010013?	1200000002	0000200000 000?101600
<i>Sanogasta alitcola</i>	1000000010	0100010100	1100000000	0011000000?	?00?000100	0000000000	100010013?	1200000002	0000200000 000?101600
<i>Sanogasta mandibularis</i>	1000000010	0100010a00	2101000000	0011000000?	?00?000100	0000000000	100010013?	1200000002	0000200000 000?101600
<i>Sanogasta puma</i>	000000a000	0100010100	1100000000	0010000000	000?000100	0000010000	100001013?	1100000002	0000200000 000?101600
<i>Sanogasta tenuis</i>	000000a000	0100030100	11000000100	0010000000?	?00?000100	0000010000	100001013?	1100000002	0000200000 000?101600
<i>Sanogasta x-signata</i>	1000000010	0100010100	1101000000	0011000000?	?00?000100	0000010000	100?01013?	1100000002	?01200000 000?101600
<i>Sanogasta minuta</i>	1000000010	0100011100	1100000000	0011000000?	?00?000100	0000010000	100001013?	11000?0002	0000200000 000?101600
<i>Sanogasta backhauseni</i>	1000000010	0100021100	1100000000	0011000000?	?00?000100	0000010000	100001013?	1100000002	0000200000 000?101600
<i>Tomopisthes varius</i>	1000000010	0100011000	1100000000	0011000000	000?000100	0000001000	100101014?	0000010002	1c00100011 0002101600
<i>Tomopisthes horrendus</i>	1000000010	0100110000	1100000000	0011100000	000?000100	000000?000	100101014?	0000010002	1001100011 0000101600
<i>Tomopisthes pusillus</i>	1000000011	0200001000	1100000000	0011000000	000?000100	000000?000	10010101g?	0000010002	1c01100011 0000101600
<i>Phitsca puconensis</i>	1000000011	0100001100	1100000000	0011000000?	?00?000100	000000?000	100101114?	0000010002	1001100000 0002101600
<i>Phitsca ornata</i>	1a00000010	01000031000	2?10110000	0010000000?	?00?000100	000000?000	100001112?	0000010002	10001000a0 0101101600

TABLE 1
(Continued)

	1111111111	2222222222	3333333333	4444444444	5555555555	6666666666	7777777777	8888888888	9999999999
	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789	0123456789
<i>Philisca huapi</i>	1100000010	0200021000	2110100000	0011000000	?00?000100	000000?000	1001011112?	0000010002	100?100000
<i>Philisca habni</i>	1a00000010	0100011000	2a00000000	0011000000	?00?000100	0000001000	1000011112?	0000010002	1011100010
<i>Philisca tripunctata</i>	1100000010	0100021000	0000000000	0011000000	000?000100	0000000000	1000010112?	0000000002	1c10100010
<i>Philisca amoenum</i>	1100000010	0100021000	aa00000000	0111000000	?00?000100	0000101000	100?011112?	0000010002	1c11100001a
<i>Philisca hyadesi</i>	1000000010	0100021000	1a00000000	0111000000	?00?000100	0000101000	100?011112?	0000010002	1c110000000
<i>Philisca doili</i>	1000000010	0100021?00	11?0?00000	011100?000	?????0???	?????0???	?????0???	?????0???	?????0???
<i>Araiyá coccinea</i>	1010000010	0100011000	1100000010	0011000000	?00?000100	0000001000	100001011g?	0000010002	0001100011
<i>Araiyá pallida</i>	1010000010	0100011000	1100000010	0011000000	?00?000100	0000001000	1000010114?	0000010002	0001100011
<i>Oxysona saccatum</i>	1000000010	0100011100	1100000000	0011000000	?00?000100	0000001000	1000010112?	0000010002	0201101010
<i>Oxysona longiventre</i>	1100a00010	0100011000	1100000000	0011000000	?00?000100	0100001000	1000010114?	0000010002	02?1100010
<i>Oxysona itambezinho</i>	110011a010	1101001000	1100000000	??11000000	?00?000100	0010001000	100001011i?	0010000002	02?1101010
<i>Oxysona punctatum</i>	11001a0010	1100001100	1100000000	0011000000	000?000100	000000?000	100010101i?	0010000002	12?11000010
<i>Tasata chilensis</i>	1100100010	0100001000	1100000000	0011000000	?00?000100	0000001000	100001011g?	0000000002	02111000010
<i>Tasata taini</i>	1000000010	1100001000	2a01000000	0011000000	?00?000100	0000001010	1000010112?	0000010002	021110000a0
<i>Tasata unipunctata</i>	10001a0010	0101000000	1100000000	0011000000	?00?000100	0000001010	100001011g?	0000010002	021110000a0
<i>Tasata parcepunctata</i>	1000100010	0101001000	2001000000	0011000000	000?000100	0000001020	1000010112?	0?00010002	02111100010
<i>Tasata variolosa</i>	1000100010	0101000000	3101000000	0011000000	000?000100	0000001020	1000010112?	0000010002	02111100010
<i>Tasata centralis</i>	1000100010	0100001000	3000000000	0011000000	?00?000100	0000001020	1000011114?	0000010002	12?1110000
<i>Phidyle punctipes</i>	1000000010	0100011000	1100000000	0011000000	?00?000100	0000011000	100001011g?	0000010002	??0?110000
<i>Monapia vitata</i>	1a00000010	0100011100	1100000000	0011000000	?00?000100	0010001000	100001011g?	0000010002	0?0?010110
<i>Monapia tandil</i>	1000000010	0100011100	1100000000	001100?000	?00?000100	0010001000	100001011g?	0000010002	0?0?010110
<i>Monapia alupuran</i>	1000000010	0100021100	1100000000	0011000000	?00?000101	0000001000	100a010113?	0000000002	0?0?010100
<i>Monapia ferro</i>	1100000010	0100011100	1100000000	0010000000	?00?000100	000000?000	100?01011f?	0000010002	0?0?110110
<i>Monapia carolina</i>	1100000010	0100011100	1100000000	0010000000	?00?000100	00?0000000	100?01011f?	0000010002	0?0?110100
<i>Monapia charrua</i>	10001a010	1000011100	1100000000	0010000000	?00?000100	000000?000	100?010113?	0000000002	0?0?010100
<i>Monapia guetoana</i>	100011a010	1100011100	1100000100	0010000000	?00?000100	0000001000	100?010113?	0000000002	020?010100
<i>Monapia angusta</i>	1000110010	1000011100	1100000100	0010000000	?00?000100	0001001000	100?010113?	0000000002	0?00010000
<i>Monapia dilatocollis</i>	1000000010	0200021100	1100000000	0011000000	?00?000101	1000001000	100?010113?	0000000002	0c0?110100
<i>Monapia silvatica</i>	1000000010	0200011100	1100000000	0010000000	?00?000101	0000001000	110?010112?	0000000002	0c0?110100
<i>Monapia pichinahuel</i>	1000000010	0200011100	1100000000	0010000000	?00?000101	0000001000	110?010113?	0000000002	0c0?110100
<i>Monapia lutea</i>	1000000010	0200011000	1100000000	0010000000	?00?000101	0000001000	1100010113?	0?00000002	000?110100
<i>Monapia huaria</i>	1000000010	0200011000	1100000000	0010000000	?00?000101	0000001000	1100010113?	0?00000002	000?110100

TABLE 1
(Continued)

<i>Amaurobioidea africana</i>	0000???	000000000	0100000?	0001110101	0000a0a111	1110100000	aa1a111aa2	0a11a1011	0101011110	a0a1101111
<i>Axyracrus elegans</i>	00000???	000000000	010000010	0001110101	aa10000101	111aa0aa0	aa1a111aa0	0a11a1a11	0aa1a11111	aa1aa1a1a1
<i>Aysenia elongata</i>	00000???	000001000	0100100?	0001111121	0000000a01	000010000?	?????0002	1000000000	0101010101	1000000000
<i>Aysenia segestratoides</i>	00000???	000000010	01000001?	0001111101	00a0000101	a110a00000	0000011000	0010001011	0101011111	00a1001001
<i>Aysenia araucana</i>	00000???	000000010	0100010?	0001111101	aa1a000101	a110100000	a0a0111aa0	0011001111	0101011111	a0a1101111
<i>Aysenia cylindrica</i>	0000???	000000000	010000000	0001111101	0010000101	1110100000	000aa110a0	00a1001010	0a01a1a111	111110a10aa
<i>Aysenoides parvus</i>	00000???	000000100	010100000	0001111101	00a000a1a1	1110a00000	aa1a111000	1a110a1111	01a1a1a1a1a	10a11010a1
<i>Aysenoides terricola</i>	00000???	000000100	010100000	0001111101	11a0000101	1100a00000	00aaa11aa0	0011011011	0101a11111	00a1aa1001
<i>Aysenoides colecole</i>	00000???	000000100	0101000?	0001111101	00a00001a1	1110a0a000	00aaa11000	1a110a1111	0a01a11111	00a1101011
<i>Gayemata americana</i>	0000100000	0000001000	010100000	0001110101	001100a111	111a1a1a10	aa1a111aa0	011a1a1a11	11aa011111	aa1a11a111
<i>Gayemoides molles</i>	0000100?	0000001000	011100000	0001110101	0000000111	1110a00010	101a111110	0111111111	1101111111	1111111111
<i>Gayemoides tosvidos</i>	0000110000	0000001000	010100000	0001110101	0000000a11	1110000010	101a111110	0111111111	1101111111	1111111111
<i>Arachostia praeisignis</i>	0100101100	0000011000	011100000	0001110101	00aaa01111	111aa0aa0	1011111aa0	0111111111	110111111a	1111111111
<i>Arachostia honesta</i>	0100101100	0000011000	011100000	0001110101	00aaa01111	111aa0aa0	1111111aa0	0111111111	1111111111	1111111111
<i>Arachostia bergi</i>	0100101?	0000011000	011100000	0001110101	00aaa01111	111aa00010	1a11111aa0	0111111111	11a1111111	1111111111
<i>Sanogasta peluence</i>	0000100000	0000011000	0101000?	0001110111	0000000a11	11a0a00010	1011111aa0	0111111111	1101111111	1111111111
<i>Sanogasta approximata</i>	1100110000	0000011000	010100000	0001110101	aaa0001111	11a0a00010	1111111110	0111111111	1111111111	1111111111
<i>Sanogasta maculosa</i>	0100210000	0000a11000	010100000	0001110101	00a000a111	1100a00010	1a1a111a00	0111111111	11a1111111	1111111111
<i>Sanogasta maculatipes</i>	0100200000	0000011000	010100000	0001110101	000000a111	1110a00010	1a11111a00	0111111111	11a1111111	1111111111
<i>Sanogasta alticola</i>	0100200000	0000011000	010100000	0001110101	000000a111	1110a00010	1a11111100	0111111111	1101111111	1111111111
<i>Sanogasta mandibularis</i>	0100200000	0000011000	010100000	0001110101	000000a111	1110100010	1a111111a0	0111111111	1101111111	1111111111
<i>Sanogasta puma</i>	01001100?	0000111000	010100000	0001110101	00a0001111	1100a00001	1011111aa0	0011011111	0101111111	a011111111
<i>Sanogasta tenuis</i>	00001100?	0000111000	010100000	0001110101	00a0000101	1100a00001	1010111002	01aa011001	0101111110	00110111a1
<i>Sanogasta x-signata</i>	0110?1?1??	?1?1111000	010100000	0001110111	0000000111	1a00000010	a010111aa0	0111111111	11011111a1	1111111111
<i>Sanogasta minuta</i>	0100?1??	0100111000	010100000	0001110101	000000a111	1100000010	1a1a111a00	0111111111	1101111111	1111111111
<i>Sanogasta backhauseni</i>	0100110000	010?111000	010100000	0001110101	00aa00a1a1	111aa00010	1a11111110	0111111111	11a1111111	1111111111
<i>Tomopisthes varius</i>	0000112000	0000011000	011100000	0001110101	000000a111	1110100010	1011111110	0111111111	1101111111	1111111111
<i>Tomopisthes horrendus</i>	0001112000	0000001000	010100000	0001110101	0011001111	1110100010	1111111110	0111111111	1111111111	1111111111
<i>Tomopisthes pusillus</i>	0000112100	0000001000	010100000	0001110101	000000aa11	1110100010	1a1a111aa0	0111111111	11a1a11111	a1111111111
<i>Philisca puconensis</i>	0000100000	0000001000	0111000?	0001110101	00a000a111	1110100010	a1111111a0	0111111111	11a1111111	1111111111

gain (transformation 0 → 1). To make reading easier, after definition of each character and states, a synopsis of its evolution is given, as optimized on the preferred trees of figure 3.

Color and Body Pattern

0. Body pattern: (0) *absent, color uniform; (1) present, with contrasting patches, spots or dots*. Color uniform is a synapomorphy (reversion) of *Sanogasta puma* and *S. tenuis*, both being pale brown. *Coptoprepes* species have a weakly contrasting pattern; only *C. flavopilosus* is uniformly dark brown (fig. 35A). *Malenella nana* is uniformly pale green (see character 3). In previous contributions (Ramírez, 1995b, 1999), a pattern of dark small dots on a pale background appeared as a synapomorphy of *Monapia*, *Tasata*, and *Oxysoma*. With a wider selection of representatives, there are many intermediate or ambiguous conditions, and the character is not used here (but see characters 4 and 5).
1. Ventral longitudinal dark stripe on abdomen. It may be dark and homogeneous, or formed by aligned spots. It appears independently many times.
2. Red lateral bands on carapace. A synapomorphy of *Araiya*.
3. Color green. A potential synapomorphy of *Wulfila* and *Malenella nana*; appears as a plesiomorphy in this analysis.
4. Anterior dorsal dark dot on abdomen (fig. 125). Potential synapomorphy of some *Tasata*, *Oxysoma*, and *Monapia* species, arises independently in all three genera.
5. Two pairs of dark dots on the anterior half of abdomen. Similar distribution as character 3, ariable in *Oxysoma punctatum* and *Tasata unipunctata*.

Carapace

6. Carapace very narrow: (0) *normal, female carapace width/length > 0.65; (1) narrow, width/length < 0.55* (figs. 22A, 88A). Estimated from the male for a few species with unknown females. Because measurements were taken from one specimen only, statistical analysis of continuous characters derived from measurements is impossible. Only a clear gap across all terminals was considered as the limit between states (fig. 1A), and any intermediate group is coded as ambiguous.

A potential synapomorphy of *Aysenia*, but ambiguous at node 117 because *Axyracrus* and *Aysenoides parvus* are intermediate and were coded [01].

7. Carapace and chelicerae *Amaurobioides*-like. In this genus and *Aysenia* the carapace is wide in front, the chelicerae are very strong, and the ocular area is relatively small. It appears as a convergence in the optimal trees; however, in *Axyracrus* and *Aysenoides* the carapace is intermediate between the generalized shape and that of *Amaurobioides*.
8. Thoracic groove. Absent in *Malenella*, shallow in *Wulfila argentina* (coded [01]), absent in clade 126.

Eyes

9. Ocular area black. Appears independently in several groups.
10. Ocular area protruded (fig. 22A). Synapomorphy of clade 118, but also of clades 141, 152, and of *Tasata taim*.
11. Anterior eye row: (0) *procurved; (1) straight; (2) recurved*. States are ordered. Very homoplasious. Characters 11–16 are perhaps the most traditional characters of spider systematics. They are continuously variable, with boundaries between states arbitrarily defined. A small variation in the position of AME can change the row from recurved to straight or procurved, while a wide change to the other side will still be considered recurved. Eye rows are seen from standard views (anterior, dorsal), which may not be comparable when the shape of the cephalic area varies. The ambiguity of definition is reflected in their high levels of homoplasy. Eliminating these characters only affects local resolution in clades 95 and 128, involving groups with tiny support.
12. Posterior eye row: (0) *procurved or straight; (1) recurved*. Synapomorphy of clade 119, with reversals in clade 100 and *Amaurobioides africana*; ambiguous at nodes 95 and 96 of *Josa*.
13. Posterior eye row strongly procurved (fig. 129A, B). Traditionally considered synapomorphy of *Arachosia* (what Simon referred as *Oxysoma*), appears also in some *Tasata*, in *Gayenna americana*, and in *Oxysoma itambezinho*.
14. Separation between lateral eyes: (0) *up to one diameter; (1) more than one diameter*. Appears independently in *Arachosia*

bergi, *Tomopisthes horrendus*, and clade 93 of *Josa*.

15. Ratio AME/ALE: (0) AME minute; (1) AME < ALE; (2) AME = ALE; (3) AME > ALE. States are ordered. Extremely homoplasious.
16. Ratio PME/PLE: (0) PME < PLE; (1) PME = PLE; (2) PME > PLE. States are ordered. Very homoplasious. State 2 is an autapomorphy of *Josa calilegua*.

Chelicerae and Endites

17. Male chelicerae: (0) strong, as in female or larger; (1) smaller than in female. Appears and reverts in several groups.
18. Male retromarginal distal tooth: (0) similar to the basal; (1) much larger than the basal (Ramírez, 1997: figs. 50, 56). Synapomorphy of clade 99.
19. Male distal pro- and retromarginal teeth: (0) separate; (1) contiguous, on a common protuberance (Ramírez, 1997: figs. 50, 56). Synapomorphy of clade 99, absent in *Acanthoceto riogrande* (contra Ramírez, 1997).
20. Number of retromarginal teeth: (0) one; (1) two (fig. 12A); (2) three; (3) four or more (fig. 11B, C). States are unordered, because the homology among individual teeth is unclear (apical, basal, or intermediate teeth might be added or lost). Very homoplasious. Having two teeth is a synapomorphy of Gayennini and *Josa*, with subsequent reversals in several groups, also variable within Amaurobioi-dini. See character 23.
21. Size of retromarginal teeth: (0) small denticles; (1) regular teeth. Quite homoplasious, ambiguous in *Malenella* and some Anyphaeninae, because they have both regular and small teeth. State 1 arises independently in clades 118 and 176, and there are several other convergences and reversals.
22. Male median promarginal tooth: (0) unmodified, slightly larger than the laterals; (1) thick, elevated (fig. 96B). Synapomorphy of clade 132 of *Philisca*.
23. Number of promarginal teeth: (0) three; (1) four; (2) five or more. States are unordered for the same reason as character 20. The general number is three. Two gains of promarginal teeth are associated with a gain of one or more retromarginals, two other gains are not; all other changes are ambiguously optimized.
24. Male chelicerae modified (fig. 97D). Sim-

ilar to those of Dictynninae males, it is a synapomorphy of a group of *Philisca* species, here represented by clade 132.

25. Male endites modified (fig. 96B). In this analysis the protuberances at the external sides of the endites are an autapomorphy of *Philisca ornata*, also present in other related species.

Female Legs and Palp

26. Leg III orientation: (0) backward; (1) forward (fig. 24A). Synapomorphy of *Aysenia* and *Aysenoides*. The habits of these spiders are almost unknown; the body shape and position of third legs suggest that they might live in narrow tubes.
27. Leg III much shorter than IV: (0) unmodified, female tibia + metatarsus III equal or longer to tibia IV; (1) shorter than 80% of tibia IV (fig. 1B). Estimated from the male for the few species with unknown females. Synapomorphy of clade 151, convergent in *Sanogasta tenuis*. All three species live on grasses and have similar cryptic habits.
28. Tibia I sinuous: (0) straight (fig. 112C); (1) slightly sinuous (fig. 112A, B). Synapomorphy of *Araiya* (with a convergence in *Aysenia elongata*, fig. 22B). In other genera only males have a sinuous tibia I.
29. Patch of blunt hairs on palp. Autapomorphy of *Malenella nana* (fig. 10E, F).
30. Thick female palp. Autapomorphy of *Malenella nana* (Ramírez, 1995a; this paper, compare figs. 10F and 12C).
31. Palpal claw blunt, compressed. Synapomorphy of clade 134 (Ramírez, 1993: fig. 4; this paper, fig. 101).

Claw tufts and Scopulae

32. Orientation of claw tuft setae: (0) flat sides up and down, the generalized condition in *Dionycha* (Platnick and Lau, 1975; this paper, fig. 10C, D); (1) ridged sides directed outward (fig. 13B, C, G). A synapomorphy of Anyphaeninae plus Amaurobioi-dinae (Ramírez, 1995a). Each claw tuft seta has a vertical widened surface, with the petiolus extending in an external rib (fig. 13G). Some dionychans like *Lygromma* (Prodidomidae) or *Scotinella* (Liocranidae) have superficially similar setae (Platnick and Lau, 1975).
33. Scopulae on anterior tibiae: (0) absent; (1) present. Independently lost in several groups.
34. Scopulae on posterior tibiae. Synapomor-

phy of *Arachosia*, with convergences in clade 93 of *Josa*, and in *Tomopisthes horrendus*.

Abdomen

35. PMS with many aciniform gland spigots (fig. 15C). Synapomorphy of *Amaurobioides*, probably used to build waterproof retreats.
36. Male abdomen projecting over anal tubercle (Ramírez, 1997: fig. 16). Synapomorphy of *Acanthoceto*.
37. Thick setae on ALS base (fig. 61D–F) of males, females and immatures. Synapomorphy of *Arachosia*. The males of *P. huapi*, and at least the adult males and females of other undescribed *Philisca* species also have similar setae on ALS.

Tracheae

38. Tracheal spiracle position: (0) closer to spinnerets, or midway to epigastric furrow; (1) closer to epigastric furrow. A potential synapomorphy of Anyphaeninae (Ramírez, 1995a, but here nonmonophyletic), with convergences in some *Arachosia* and *Acanthoceto acupicta*. Because the next two characters are most probably a consequence of the advancement of the tracheal spiracle, the weight of these three characters is 1, with all others being 3; equal weights produce the same results, including the nonmonophyly of Anyphaeninae.
39. Length of lateral tracheae: (0) short; (1) long. Same as preceding.
40. Position of first bifurcation of median tracheae: (0) separate from lateral tracheae; (1) contiguous. Potential synapomorphy of Anyphaeninae, see character 38.

Male Palp

41. Femoral apophysis (fig. 60E). Synapomorphy of *Josa*.
42. Retrolateral tibial apophysis (RTA): (0) absent; (1) present. The RTA is primitive for Anyphaenidae, but is independently lost in *Wulfila argentina* (where a basal apophysis is present instead, see character 46), *Josa* + Gayennini, and *Coptoprepes campanensis*; *Gamakia hirsuta* has a tiny relict of RTA (fig. 46).
43. Shape of RTA: (0) thick or spatulate; (1) thin, narrow, spine-shaped (fig. 18C); (2) Negayan type, elongate and distally hooked (fig. 50C). State 2 is a synapo-

omorphy of *Negayan*; node 119 and descendants optimize state 1, node 108 optimizes state 0, all other Amaurobioidinae [01]. The relict of RTA of *Gamakia hirsuta* (fig. 46) is coded uncertain; if coded 1, only the assignments of clades 106, 120, and 121 change from [01] to 1.

44. RTA extremely thin (Ramírez, 1997: fig. 9). Synapomorphy of clade 101 of *Acanthoceto*.
45. Retrolateral or dorsal apophysis, additional to the RTA. Only in *Malenella nana* and *Aysha prospera*. *Otoniela* is coded ambiguous because it has a low ridge. *Xiruana hirsuta* has only one RTA, but *X. gracilipes* has two; if *Xiruana* is coded as present, it becomes sister to *Aysha*, a more reasonable placement according to Brescovit (1997). The optimizations for the basal node of Amaurobioidinae do not change much with that alternative resolution (but see character 79).
46. Basal retrolateral tibial apophysis. A potential synapomorphy of some Anyphaeninae, unclear in *Xiruana* and *Otoniela*.
47. Cymbial conductor (figs. 34A, 61). Synapomorphy of Anyphaeninae plus Amaurobioidinae (Coddington, 1990; Ramírez, 1995a).
48. Cymbial conductor subapical: (0) apical (figs. 34A, 61); (1) subapical (fig. 53B). Synapomorphy of clade 106, with convergence in *Aysenoides parvus* and *Coptoprepes valdiviensis*.
49. Cymbial conductor width: (0) narrow (fig. 61); (1) wide (fig. 34A). The narrow condition is a synapomorphy of Gayennini, convergent in some Anyphaenines. There is a reversal to wide in clade 158 of *Monapia* (Ramírez, 1995b: figs. 41, 55, 62, 68, 74).
50. Retrolateral apical notch on cymbium. The notch is usually fitted to the median apophysis (fig. 42A, B), even also to the secondary conductor (fig. 38A). Convergent in *Coptoprepes*, *Negayan*, and *Amaurobioides maritima*. *Sanogasta approximata* and *Monapia dilaticollis* have similar notches, but they are not clearly associated with the median apophysis.
51. Apical patch of thick, bent setae on cymbium (fig. 119B, C; Gerschman and Schiapelli, 1970: fig. 23). In this analysis an autapomorphy of *Oxysoma longiventre*, present also in some closely related, undescribed species.
52. Retrolateral basal notch on cymbium (figs. 66D, 118E). Appears convergently

in *Gayennoides*, clade 149 of *Monapia*, and *Oxysoma itambezinho*.

Copulatory Bulb

53. Apical loop of the sperm duct (SD), dorsal to secondary conductor (figs. 21H, 26C). Synapomorphy of Amaurobioidini, with a reversal in *Acanthoceto acupicta* group (clade 100), and a convergence in *Monapia angusta*. *Sanogasta approximata* and several Anyphaeninae have a weak curve, coded as uncertain.
54. Loop of the SD dorsal to median apophysis. Appears convergently in clade 114 of *Aysenoides* (fig. 26C) (they have both loops, see preceding character) and in clade 134 of *Philisca* (fig. 102A).
55. Apical dorsal margin of tegulum extended over the secondary conductor (figs. 82A, 84D). Synapomorphy of clade 174, reverts in clade 167 of *Sanogasta*, probably masked by the hypertrophy of secondary conductor (fig. 78B). Convergent in *Phidyle punctipes*. The bulbs of Amaurobioidini, *Josa*, and several Anyphaeninae are very different; hence, the character is scored as missing.
56. Ventral loop of the sperm duct reaching the apical margin of tegulum. Quite notorious in *Tasata* and close relatives (figs. 128A, 137C), but ambiguous in many other species. Synapomorphy of clade 165, with a few reversals, and probable convergences in Anyphaeninae (here in *Xiruana hirsuta*).
57. Sperm duct suddenly narrowed before reaching the embolus (figs. 18G, 50D). Convergent in *Amaurobioides* and *Negayan paduana*.
58. Spiral loop of the sperm duct, before reaching the embolus: (0) *absent* (fig. 121); (1) *present, slightly coiled* (fig. 129E); (2) *well coiled in spiral* (fig. 128D). States are ordered. Synapomorphy of clades 147 (state 1) and 145 (state 2) of *Tasata*.
59. Tegulum displaced basally (figs. 25B, 36F). Caused by the hypertrophy of the distal sclerites, it is a synapomorphy of *Coptoprepes*, also of clade 112 of *Aysenia* (but the male of *Aysenia elongata* is still unknown).
60. Basal notch on tegulum. Synapomorphy of Amaurobioidinae (Platnick, 1977; Ramírez, 1995a).
61. Basal notch of tegulum displaced laterally (fig. 58A). Convergence of *Josa* and clade 156 of *Monapia*.
62. Ventral cusp on tegulum (fig. 47A). Synapomorphy of clade 104 of *Negayan*.
63. Triangular sclerotized area from the sperm duct to the base of median apophysis (fig. 107E). Extremely homoplasious, present in *Tomopisthes*, but variable in *Philisca*. In several *Monapia* all the area is sclerotized (coded uncertain), variable in *Monapia alupuran*.
64. Median apophysis (MA): (0) *present*; (1) *reduced*; (2) *absent*. States are ordered. Reduced independently in *Ferrieria*, *Acanthoceto acupicta* group, *Negayan*, *Axyracrus*, and *Sanogasta maculatipes* group. Totally absent in *Negayan coccinea*, *Malenella*, and the anyphaenine *Italaman santamaria*.
65. Shape of MA: (0) *relatively thick* (fig. 18H); (1) *slender and elongate* (fig. 66E). The slender MA is a synapomorphy of Gayennini, with convergence in several Amaurobioidini. Only *Gamakia* and some *Aysenoides* have similar S-shaped MA.
66. MA with thin branches (fig. 93A–C). Synapomorphy of *Philisca*, lost in *P. tripunctata*; convergent in *Tasata centralis*, with very short splinters (fig. 133).
67. Paramedian apophysis (PMA; see Morphological Remarks): (0) *absent*; (1) *present*. Absent in *Malenella* and Anyphaenines, but coded uncertain in *Otoniela adisi*. This species has a palpal sclerite (the “ventral tegular projection”, Brescovit, 1997), which might be homologous to either PMA or the primary conductor (C1). In *Josa* the PMA is fused to the tegulum (character 74); *Josa nigrifrons* and *Coptoprepes campanensis* have no traces of PMA.
68. Shape of PMA: (0) *one short cusp* (figs. 42C, 37A); (1) *two or more short cusps* (figs. 26C, D, 52A); (2) *thick, simple, and elongate, type Philisca* (fig. 98A); (3) *slender, type Monapia or Sanogasta* (fig. 82A); (4) *bifid* (fig. 107D, E). States are unordered; coding details within Gayennini sacrificed the presumed homology of their conspicuous, projecting PMA. State 1 is a synapomorphy of clade 121 with subsequent reversal in some *Acanthoceto*. State 2 appears in *Philisca* except *P. pucconensis* and some *Tasata*, and state 3 appears in *Sanogasta* (including *Arachosia*) and *Monapia*. State 4 seems to be the primitive condition for Gayennini. Sev-

- eral Gayennini have intermediate shapes and were coded as polymorphic.
69. One cusp of the PMA on the primary conductor (fig. 26). The cusp is clearly visible in some amaurobioidines, but is dubious in others; scored missing in Gayennini, which has reduced C1.
 70. PMA slender, associated with MA (figs. 82A, 84D). Synapomorphy of clade 172.
 71. Membranous area in the base of PMA, as seen in the unexpanded bulb: (0) *absent*; (1) *present* (fig. 85A); (2) *completely surrounding the base of PMA* (fig. 81B, D, F). This is a part of the distal hematodocha, which is visible in the unexpanded bulb; the main inflatable portion is mostly folded between PMA and tegulum. States are ordered. Synapomorphy of clades 172 (state 1) and 167 (state 2).
 72. PMA *Oxysoma* type. Forming a hollow under the tegulum, with a cusp close to the base, and an elongate, recurved tip (fig. 116B). Synapomorphy of clade 141.
 73. Globose lobe on C1, at the origin of PMA (fig. 47C). Convergence of *Negayan coccinea* with clade 108 of *Coptoprepes*.
 74. PMA fused to tegulum (fig. 56A, B). Present in *Josa*, but the PMA is missing in *J. nigrifrons*.
 75. Primary conductor (C1; see Morphological Remarks): (0) *absent*; (1) *present, without canal* (fig. 93B); (2) *with a canal where the embolus fits* (fig. 44B); (3) *massive, with canal* (fig. 47D). States are ordered. Potential homologs of C1 occur in many dionychans, *Malenella* (a hyaline conductor, but not a separate sclerite), *Wulfila* (the “ventral tegular projection”, Brescovit, 1997), and *Otoniela* (see character 67); *Anyphaena accentuata* (fig. 11A) has a potential homolog of the C1 quite similar to the massive conductor found in some Amaurobioidinae (state 3; “median apophysis” of Huber, 1995; “ventral tegular projection” of Brescovit, 1997), including a shallow canal. In this analysis with restricted outgroups, the C1 is ambiguous [01] through outgroup internal nodes and is present without canal at base of Amaurobioidinae, *Josa*, and *Gayennini*. The canal (state 2) arises at the base of Amaurobioidini; the C1 becomes massive (state 3) at clades 100 and 106 (and in *Anyphaena accentuata*). *Josa* has a C1 fused to the tegulum (fig. 60B), but otherwise is similar in shape and position to that of Amaurobioidini. In *Gayennini* the C1 is small, not associated with the embolus, and is even lost independently in several groups; it optimizes as a regain in *Arachosia bergi*, but the putative C1 is quite different, being fused to the PMA.
 76. Translucent vertical lamina on C1 (figs. 27C, 28C). Synapomorphy of clade 114.
 77. Prolateral process on C1, crossing the canal (figs. 47C, 52B). A potential synapomorphy of *Selknamia minima* and some *Negayan*.
 78. Apex of C1 displaced close to the median apophysis (Ramírez, 1997: fig. 44; this paper, figs. 32B, 33D). Convergent to state 1 in clade 100, *Selknamia* and in *Ayzenoides parvus*. All these species have small bulbs, with crowded apical sclerites. The morphology in *Axyracrus elegans* is quite different, and is coded as missing.
 79. Secondary conductor (C2; see Morphological Remarks). (0) *absent*; (1) *fused to anterior dorsal margin of tegulum*; (2) *free*. States are unordered. Among anyphaenid outgroups, potential homologs of the C2 occur in Anyphaeninae. As discussed by Brescovit (1997), the “anyphaenine conductor” is a good candidate, here present in *Xiruana*. In *Anyphaena accentuata*, the prolateral tegular projection (Brescovit, 1997: fig. 4) is also a putative homolog of a free C2, according to its apical position, arising close to the anterior dorsal margin of tegulum (fig. 11A). The “prolateral tegular projection” of *Wulfila argentina* (Brescovit, 1997: fig. 19) arises between the base of the embolus and the (presumably) primary conductor, and may be a tegular or embolar apophysis instead of a C2. With this outgroup selection, a fused C2 arises in clade 178. If Anyphaeninae is constrained to be monophyletic, the assignment of the basal node of Amaurobioidinae is [012] instead of 1. According to Brescovit, *Xiruana*, *Aysha*, and several other genera without putative homologs of secondary conductor form a monophyletic group with *Xiruana*, and hence their conductors should have appeared independently. If *Xiruana* is forced to be sister to *Aysha* (see character 45), the optimization of C2 becomes ambiguous and thus compatible with Brescovit’s interpretation. The optimization on most parsimonious trees implies multiple separations and losses of C2. Among the Amaurobioidini, the C2 is free only in some *Coptoprepes* (clade 108) and is independently lost several times; it

- becomes free also in node 176, fused at node 172, and separate again at node 169! The C2 of *Josa* is different and could not be scored for several of the following details.
80. Wide membranous area separating C2 from tegulum: (0) *membranous area narrow retrolaterally, just a suture, or C2 fused to tegulum* (fig. 78B); (1) *wide* (figs. 105A, 93D). A potential synapomorphy of *Tomopisthes* and *Philisca*, also present in *Gayenna americana*, *Oxysoma punctatum*, and *Tasata centralis*.
 81. Prolateral process on C2: (0) *absent*; (1) *elongate, rounded lobe*, *Arachosia* type (fig. 70); (2) *flattened lobe, directed basally*, *Tasata* type (figs. 116C, 126D). States are unordered. State 1 is a synapomorphy of clade 124 of *Arachosia*. State 2 is a synapomorphy of clade 163. In most *Monapia* and *Philisca* the morphology is confusing, but definitely not of the *Arachosia* type (scored [02]).
 82. Dentate prolateral ridge or lobe on C2 (figs. 102B, 126D). Appears convergently in *Tasata* and clade 136 of *Philisca*.
 83. Apex of C2 (the piece where the canal ends): (0) *apical* (fig. 82A); (1) *median or basal, the C2 extended as anterior border* (fig. 84E). Synapomorphy of clade 165, with several reversals; convergent in *Sanogasta approximata* and *S. x-signata*; confusing in several Gayennini with modified C2.
 84. Canal on C2: (0) *absent*; (1) *present, short*; (2) *deep, long, arising under the PMA*, *Gayenna* type (fig. 82B). The canal appears at node 178 (with same provisions as character 79) and is lost several times in both tribes. State 2 is a synapomorphy of clade 174, being subsequently lost in *Sanogasta pehuenche* and *S. approximata*.
 85. C2 divided by a membranous area: (0) *undivided*; (1) *totally divided by a membranous area, retrolateral to the canal* (Ramírez, 1995b: fig. 40; this paper, figs. 133A, 135D). Convergent in clades 161 and 145.
 86. C2 with membranous area prolateral to the canal. Similar to preceding, but at the other side of the canal (figs. 118H, 124E). A potential synapomorphy of *Oxysoma saccatum* and *O. itambezinho*.
 87. Membranous lobe on C2. Synapomorphy of *Monapia*, it is an outgrowth of the unsclerotized area dividing the C2 (Ramírez, 1995b: fig. 40); lost in *M. angusta*.
 88. Denticles on prolateral portion of C2. Extremely homoplasious in clade 165, with many independent gains and losses. Weakly sclerotized areas of the bulb seem especially susceptible to develop such sculptures.
 89. Teeth on C2 apex, regularly disposed, pointing backward (fig. 111A, C). A potential synapomorphy of *Araiya* and *Tomopisthes* (with somewhat similar disposition in *Philisca amoena*, coded ambiguous).
 90. Denticles on retrolateral portion of C2 (fig. 116E). Convergent in *Oxysoma* and clade 157 of *Monapia*, lost in *M. pichinahuel*.
 91. Base of C2r: (0) *thick*; (1) *wide, thin, translucent* (Ramírez, 1995b: figs. 25, 63). Synapomorphy of clade 159 of *Monapia*, lost in *M. carolina* and clade 155; also present in some *Philisca*, with ambiguous optimizations.
 92. C2 *Josa* type (figs. 56B, 60B). Hypertrophied and complex, a clear synapomorphy for the genus.
 93. Shape of the relictual C1 in Gayennini: (0) *conical* (figs. 63C, 105C); (1) *acute* (Ramírez, 1999: figs. 27, 39); (2) *thin, rounded* (fig. 126B). States are unordered, only scored in Gayennini. Very homoplasious, it optimizes state 2 in most internal nodes.
 94. Articulation of embolus: (0) *fixed, fused to tegulum*; (1) *movable, membranous in part*. In this analysis the embolus became movable at node 179; I think that the embolus of *Aysha* is articulate (contra Brescovit, 1997).
 95. Embolus very long. Arises independently in *Wulfila argentina*, *Josa*, *Negayan*, *Coptoprepes campanensis*, and clades 111 or 112 of *Aysenia* and 96 of *Monapia*.
 96. Basal process on embolus. For the anyphaenines, I scored this character present for both the “apophysis of embolic process” and the “basal process of embolus” as distinguished by Brescovit (1997). It optimizes as present at clade 180, and is lost in *Xiruana* and *Selknamia*. In the Gayennini the shape of the process is homogeneous, but it becomes very small and of dubious homology in *Monapia*, where it optimizes as three independent regains.
 97. Shape of basal process of embolus: (0) *flattened* (fig. 44B); (1) *thin, hyaline* (fig. 33B, C); (2) *membranous, expansible* (*Acanthoceto acupicta* group, fig. 33E);

- (3) *complex* (fig. 54B); (4) *spinelike* (*Ay-senoides*, fig. 26B); (5) *thick, conical* (*Negayan*, fig. 50D); (6) *Gayennini type*, an extension of a narrow sclerotized stripe, partly bordered by a membranous area which may confer variable shape (figs. 93F, 116C). States are unordered. Because of the outgroup selection, the primitive state is determined by that of *Aysha* and *Josa* (complex, state 3). In Amaurobioidini the ancestral state is 0. All Gayennini have state 6 or absent. *Axyracrus* was coded [36] because the complex process arises from a membranous area similar to that of Gayennini. State 1 is a synapomorphy of clade 103 (parallel in *Amaurobiooides africana*), changing to state 2 in the *Acanthoceto acupicta* group.
98. Base of embolus flattened: (0) *unmodified, approximately cylindrical*; (1) *flattened* (Ramírez, 1995b: fig. 62). Synapomorphy of clade 156 of *Monapia*, convergent (not very similar, though) in *M. angusta*, *Josa*, and *Xiruana*.
99. Base of embolus with anterior longitudinal projecting ridge (fig. 99F). Totally homoplasious, appears independently in some *Philisca* and *Phidyle*.

Epigyne

100. Epigastrium partially sclerotized (fig. 59C). Arises independently four times in species of *Josa*, *Sanogasta*, *Tasata*, and *Wulfila*, which have dark sclerotized cuticle around the epigynum, instead of soft, clear cuticle.
101. Insertions of epigastric muscles at sides of epigyne: (0) *superficial*; (1) *depressed* (fig. 69B). Synapomorphy of clade 171, reverts in *Sanogasta tenuis*.
102. Epigyne projecting posteriorly. Convergent in *Josa nigrifrons* and *Sanogasta x-signata*, also occurs in species of both genera not included here.
103. Semicircular ridges anterior to epigyne. All convergences in species of *Tomopisthes*, *Tasata*, *Oxysoma*, and *Araiya*.
104. Anterior pouch on median field (APmf): (0) *absent*; (1) *opening forward* (fig. 94E); (2) *opening backward* (fig. 80). States are unordered. Anyphaeninae has a wide diversity of pouches; here, *Anyphaena accentuata* has state 2. State 1 is a synapomorphy of Gayennini, state 2 of clade 168. Coded uncertain for a few Amaurobioidini with irregular folding on median field.
105. Position of APmf: (0) *advanced*; (1) *close to epigastric furrow*. Quite homoplasious, some interferences with next character. For *Sanogasta*, the optimal reconstruction implies that the pouch moved close to epigastrium in node 170, then advanced again at node 167 (see preceding character).
106. Shape of APmf: (0) *opening approximately circular*; (1) *opening transverse* (fig. 69); (2) *pouch widely distended* (fig. 107F, G). States are unordered. State 1 is convergent in *Monapia* and *Arachosia*, state 2 in *Tomopisthes*, *Tasata*, *Philisca amoena*, and *Araiya coccinea*.
107. Lumen of APmf: (0) *simple*; (1) *double*. A double cavity appears independently in *Arachosia* and clade 142 and is ambiguous through several nodes of *Monapia*.
108. Median depression on epigyne: (0) *absent*; (1) *present*; (2) *vestigial*. States are unordered. States 1 and 2 are synapomorphies of groups in *Monapia* (see discussion in Ramírez, 1995b); among the outgroups, state 1 is present in *Malenella* and *Anyphaena accentuata*.
109. Pouch on median depression (not the APmf). Synapomorphy of clade 153, reverts in *Monapia angusta* (Ramírez, 1999).
110. Lateral lobes (LL): (0) *separate*; (1) *contiguous*; (2) *fused with suture*; (3) *fused without suture*. States are ordered. Synapomorphy of some clades in *Philisca* and *Monapia* (Ramírez, 1993, 1995b). State 2 appears convergently in *Oxysoma punctatum*.
111. Posterior notch between LL. The LL are close together over the epigastric fold, limiting notch. Appears independently in *Josa* and clade 128 of *Sanogasta* (figs. 56H, 84A).
112. Posterior depressions on LL. Appear independently in some *Josa* (fig. 55A), *Ferrieria* (Ramírez, 1997: fig. 67), and clade 104 of *Negayan* (shallow in *N. tridentata*).
113. LL projecting posteriorly. Arises independently in *Josa*, clade 104, and *Sanogasta x-signata*.

Spermathecae and Ducts

114. Fusion of proximal copulatory ducts (CD): (0) *separate*; (1) *fused walls*; (2) *totally fused, with common lumen*. States are ordered. States 1 and 2 are synapomorphy of clades 155 and 156 of *Monapia*.

- pia*, respectively (Ramírez, 1995b); state 1 is also a synapomorphy of clade 129 of *Sanogasta*.
115. Copulatory openings on epigastric furrow. Convergent in several groups.
 116. CD slender. Often associated with the spherical spermathecae (character 124), appears convergently in Gayennini, *Selknamia*, and *Aysenoides*. Through outgroups, appears at clade 181 to revert in 178.
 117. CD coiled along longitudinal axes. Present in *Josa*, *Ferrieria*, *Acanthoceto pichi* (ambiguous at nodes 102 and 103), *Negayan*, and clade 111 of *Aysenia*. Because most entelegyne families have representatives with similarly coiled ducts, the convergences here are not surprising. However, those of *Negayan*, *Ferrieria*, *Acanthoceto pichi*, and *Aysenia araucana* are remarkably similar, yet mostly homoplasious.
 118. CD extremely coiled. Convergence in *Aysenia segestrioides* and clade 95 of *Josa* (figs. 23E and 57F, respectively).
 119. Lumen of proximal CD: (0) *thin*; (1) *ample*. Synapomorphy of clade 156 of *Monapia*, convergent in *Xiruana*. In this anyphaenine genus, the epigyne is extremely modified, folded on itself, with the copulatory openings at the end of an invagination, resembling those of some *Monapia*. In *Xiruana*, the median, sclerotized, elevated plate is in fact the lateral lobes fused to each other (personal obs.).
 120. Walls of proximal CD thin, flexible. Synapomorphy of clade 155 of *Monapia*, convergent in *Xiruana*.
 121. CD trajectory *Oxysoma* type (figs. 120E, 123B). Synapomorphy of *Oxysoma* (see diagnosis).
 122. Accessory bulbs (AB; see Morphological Remarks). Present in most Anyphaenidae (and entelegynes), absent in *Malenella*, *Wulfila argentina*, and *Otoniela*.
 123. Duct of the AB: (0) *short* (fig. 80E); (1) *long* (fig. 73B). Highly homoplasious, perhaps because of the somewhat dubious limits between states. In Amaurobioidini the duct is short.
 124. Spermathecae shape: (0) *irregular*; (1) *approximately spherical*. Synapomorphy of Gayennini and also of *Aysenoides*, convergent in *Selknamia* and the anyphaenine *Otoniela*.
 125. Spermathecae contiguous: (0) *separate*; (1) *contiguous*. Synapomorphy of *Negayan* and potential synapomorphy of *Coprepes* (ambiguous because of anyphaenine outgroups), also convergent in *Aysenia elongata*.
 126. Fertilization duct (FD) coiled along with the CD (fig. 57F). Potential synapomorphy of some *Josa*.
 127. FD distant from epigastric furrow (fig. 23E). Very homoplasious.
- ### Sexual Behavior
128. Copulatory plug. Among close outgroups, only seen in *Malenella*. Absent in *Anyphaena accentuata* (Huber, 1995), to my knowledge not reported for any other anyphaenine. Synapomorphy of *Monapia* (with reversal at clade 155), also convergent in *Axyracrus elegans* and *Gamakia hirsuta*.
- ### Spines
129. Spines on chelicerae. A thick spine on anterior face of paturon (Ramírez, 1999; fig. 14) is a synapomorphy of clade 151, convergent in *Oxysoma itambezinho*.
 130. Female palpal femur with a line of ventral spines. Synapomorphy of clade 152, also present in *Aysa prospera* (weak spines) and *Wulfila argentina*.
 131. A series of prolateral-ventral spines on femur I. Synapomorphy of clade 151.
- ### Tibia I
132. Supplementary ventral spines on tibia I: (0) *2-2-2 or less*; (1) *2-2-2-2 or more*. Synapomorphy of clade 153, also present in *Otoniela*. *Ferrieria* has v 2-2-2 (contra Ramírez, 1999), plus p and r 0-v1, resembling v 2-2-2-2.
 133. v p1-x-x.
 134. v r1-x-x.
 135. v x-p1-x.
 136. v x-p1-x displaced prolaterally (fig. 24E). Synapomorphy of *Aysenia* plus *Aysenoides*.
 137. v x-r1-x.
 138. v xap: (0) *2ap*; (1) *p1ap*; (2) *0ap*. States are ordered because individual spines are homologous; merged into one character because the r1ap is never present alone.
- ### Metatarsus I
139. v 2bas.
 140. v x-p1-x.
 141. v x-r1-x.
 142. p 1-x.

143. r 1-x.
144. d p1-x.
145. d 2ap.

Tibia II

146. v p1-x-x.
147. v r1-x-x.
148. v x-p1-x. Coded ambiguous in *Monapia guenoana*, because they have v r1-r1-r1-2-0, and the homology of individual spines is unclear.
149. v x-r1-x.
150. v plap.
151. v rlap.
152. p x-1.

Metatarsus II

153. p d1-x-x.
154. p x-1-x.
155. d p1-x.
156. d plap.
157. d rlap.

Patella III

158. r d1.

Tibia III

159. Prolateral spines on tibiae III and IV displaced ventrally. Synapomorphy of clade 126.
160. v p1-x-x.
161. v r1-x-x.
162. v x-p1-x.
163. v x-r1-x.
164. v x-x-p1.
165. v x-x-r1.

Metatarsus III

166. v 2-x-x.
167. v x-p1-x.
168. v x-r1-x.
169. v ap: (0) 2; (1) p1; (2) 1; (3) 0. States are unordered, because the unpaired median spine (state 2) is not homologous with either of the laterals. Legs III and IV vary coordinately, and thus only one character is scored. One median spine is present in early immatures of at least *Tomopisthes horrendus*.
170. Preening comb on metatarsi III and IV. In some cases poorly defined, only a group of thick setae (fig. 40). Some genera (e.g., *Oxysoma*) have a bunch of hairs in that position.
171. p d1-x-x.

172. p x-1-x.
173. p x-x-1.
174. r d1-x-x.
175. r x-1-x.
176. r x-x-1.
177. d x-p1-x.
178. d x-x-p1.
179. d x-x-r1.

Patella IV

180. r d1.

Tibia IV

181. v p1-x-x.
182. v r1-x-x.
183. v x-p1-x.
184. v x-r1-x.
185. v x-x-p1.
186. v x-x-r1.

Metatarsus IV

187. v p1-x-x.
188. v r1-x-x.
189. v x-p1-x.
190. v x-r1-x.
191. p d1-x-x.
192. p x-1-x.
193. p x-x-1.
194. r d1-x-x.
195. r x-1-x.
196. r x-x-1.
197. d x-p1-x.
198. d x-x-p1.
199. d x-x-r1.

CHARACTERS NOT INCLUDED

Several characters considered in preliminary data matrices were excluded from the analysis, and are discussed below. Some may be informative for less inclusive analyses.

Posterior slope of carapace, steep or attenuate (Ramírez, 1997: character 21). Posterior slope beginning close behind the fovea (Ramírez, 1999: character 2). Posterior notch in carapace (Ramírez, 1993: character 2). Many intermediate conditions exist in this dataset.

Carapace globose in males. Seemingly correlated with the small chelicerae, already scored in character 17.

Sternum very narrow. Abdomen elongate. At least in some groups (e.g., *Aysenia* and close relatives), both characters are seemingly correlated with the elongate body in general (scored in character 6).

Proportions of male palpal tibia (length/width) are very variable and are somewhat phylogenetically conservative. Measures of these dimensions are coarsely approximate (e.g., the anterior limit of the tibia is poorly defined in the presence of an apophysis) and of dubious homology, since the general shape of the tibia is variable as well.

Wide diastema between copulatory bulb and tarsus (fig. 98A). Many intermediate conditions.

Retrolateral basal lamina on cymbium (figs. 34B, 42B). Many intermediate conditions.

Basal tegular notch short or deep (fig. 91A vs. 83B). Many intermediate conditions and interactions with other characters (e.g., character 59).

Median epigynal field elevated (Ramírez, 1997: character 42). Many intermediate conditions exist in this dataset.

Ducts of the accessory bulbs, converging or diverging. Many intermediate conditions exist, and there are ambiguities if the ducts are short (character 123).

Preference for habitats close to water (Ramírez, 1997: character 43). It is not convincing that the several conditions are homologs (e.g., at stony seashores or grasses on wetlands).

Preference for living on grasses, under stones, etc. Several details of habitat seemed dependent on biogeography (e.g., in Chilean temperate forests there are no grasslands, and there are no superficial rocks through most of the Pampas).

EVALUATION OF CLADISTIC HYPOTHESIS

This dataset was analyzed with parsimony under equal weights with the program NONA, and under implied weights with Pee-Wee (Goloboff, 1994). A congruence-based test was made to select between these methods of analysis and among different strengths of the weighting function.

TREE SEARCHES

For a dataset of this size, only heuristic solutions are available. However, because the same optimal trees were hit many times using different search strategies and under different conditions, they are almost certainly

the exhaustive optimal sets. For instance, the parsimony ratchet (Nixon, 1999) found the two optimal trees in Pee-Wee (concavity $K = 6$) in 100 of 100 runs of tree bisection-reconnection (TBR) multiratchet (*nixwts*12 100*).

CHARACTER WEIGHTING

A proposed refinement of parsimony is character weighting according to homoplasy. The best known and more widely used ways to perform this are successive weighting (Farris, 1969) and implied weights (Goloboff, 1993, 1995a). The aim of these procedures is to reach a classification that better explains those characters with a better fit to the cladistic hypothesis, at the expense of the more homoplasious ones. In successive weighting, a first run is made with all weights equal, and the weights are calculated from the set of most parsimonious trees, using a homoplasy index (e.g., consistency index, or rescaled consistency index; Farris, 1989). The data are then analyzed made under these weights, and the process is repeated until a stable result is reached. As noted by Goloboff (1993), successive weighting may produce inconsistent trees, which are not optimal under the weights they imply. Calculating the weights from a set of trees is also problematic, because the characters will have different homoplasy values on different trees (best scores are typically used). In this dataset, successive weighting with the consistency index starting with only one of the most parsimonious trees under equal weights produces at least five different results, each from a different starting tree. Successive weighting is not an optimality criterion; hence, there is no way to select among these different results. Because the general idea of successive weighting is the same as in implied weights, and the problems of the former method may interact in complex ways with the resampling procedures used below to compare methods, only implied weighting and equal weights will be considered here.

Implied weighting as implemented in Pee-Wee assigns higher weight to those characters with less homoplasy, and the sum of weights over all characters is maximized during tree searches. Each tree is evaluated ac-

cording the homoplasy it implies. The value to be maximized is $Fit = \sum(fit_i)$, where $fit_i = K/(K + H_i)$, H_i is the homoplasy of character i in the tree under evaluation, and K is a constant that defines the concavity of the function. The function decreases as H grows, so the more extra steps, the lower the weight. The concave shape means that the decrease in weight from 0 to 1 extra step is greater than from 1 to 2, and so on. The effect is that trees will be preferred that save steps in less homoplasious characters, at the expense of allocating some extra homoplasy in the more homoplasious ones. In Pee-Wee, K may be an integer between 1 and 6; the lower the K , the steeper the descent of the weight function. Compared to equal weights, implied weighting (as well as any fractional weighting strategy) typically produces a more resolved consensus. Trees from $K = 6$ are usually more similar to those from equal weights, but those from $K = 1$ are more different, often with bizarre clades. One might be inclined, on philosophical grounds, to a classification that better reflects the more reliable characters, but still a decision has to be made as to how strongly to weight against homoplasy.

There have been several approaches to decide among different weighting strategies in cladistic analyses, all based on some measure of congruence. Congruence may be measured comparing tree topologies or comparing how the dataset adjusts to trees (“taxonomic congruence” and “character congruence”, respectively; e.g., Wheeler, 1995). Measures based on character congruence express a more direct relationship between trees and datasets, because they are based on the same measures that are used to evaluate trees (e.g., the length of the characters optimized over the tree). A well-known index of this kind is the incongruence length difference (e.g., Farris et al., 1995). Comparing character congruence indices when they come from different ways of measuring the fit of a character to a tree may have its caveats; however, this approach has not yet been adequately studied. For the problem addressed here, the indices proposed so far are not comparable, because the weights are not a linear function of homoplasy. For example, the rescaled fit (Goloboff, 1994; analogous to the

retention index) grows for greater values of K when calculated for random trees.

I used topological measures in experiments in line with those of Penny and Hendy (1985), and especially those of Goloboff (1997a). The idea of my experiments is to estimate the *predictive power* of the weighting procedures. An algorithm is deemed more predictive if it produces trees that better explain data not yet examined; that is, if it is superior in finding the correct tree without part of the data. Because the correct tree and all the future data are unknown, we can only rely on some kind of estimation. Here an estimation of predictivity was obtained by measuring how well an algorithm can retrieve the results from the complete dataset, based on the partial evidence of datasets where a portion of the characters was eliminated. A more efficient algorithm will be able to recover more groups, even without part of the data. This strategy has two properties that deserve mention. First, it does not rely on fixed partitions of the dataset, for example, systems of characters. Over a long series of replications, it is possible to estimate if the variation in the indices may be attributed to the random generation of resampled datasets. Second, the reference against which the results are compared is the optimal set of trees for the total evidence.

Some indices were constructed for these comparisons. Let T be the number of groups in the consensus from the complete dataset. J is the number of groups in the consensus from the pseudoreplicate (jackknifed) dataset. The value J_T is the number of groups in common between the consensus from pseudoreplicate and the consensus of the complete datasets (that is, the ‘correct’ clades recovered in the pseudoreplicate). J_T varies between 0 and T . Because T will be different for each concavity in general, J_T alone (or divided by a constant value, as in the fork index; see Swofford, 1991) would favor weighting strategies producing a more resolved consensus from the complete dataset, irrespective of the accuracy. Fractional weighting is well known for producing fewer trees and a more resolved consensus. A normalized value between 0 and 1 is obtained as $PC = J_T/T$, which is the proportion of correct groups recovered by the pseudoreplicate.

Greater resolution may also produce higher J values, thus increasing J_T . It is interesting to quantify an error $E = J - J_T$, the number of incorrect groups in the consensus from the pseudoreplicate. E can take values between 0 and J , and thus it can be normalized as $PE = (J - J_T)/J$, the proportion of wrong groups from the jackknifed dataset (similar to the error rate of Goloboff and Farris, 2001).

It may be interesting to examine whether these indices based on consensus are biasing the analysis in some direction, for example, against methods that produce more ambiguous, but perhaps robust, results. Equal weights for this dataset (and also in general) produce many more trees for both complete and pseudoreplicate datasets than do any of the fractional weightings examined. The individual trees of complete and jackknifed datasets may agree or conflict in ways that are not detected by comparing just their consensus. Hence, the same results were analyzed calculating $max J_T$, the maximum number of groups in common between pairs of trees of the jackknifed and complete datasets. Because these trees are mostly resolved, no normalization or measure of error is necessary.

One hundred jackknifed pseudoreplicate datasets were generated with probability of elimination of 0.36 (approximately e^{-1} , the probability used for jackknifing to give values comparable to those of bootstrapping; Farris et al., 1996). The pseudoreplicate datasets were analyzed under the six available values of the constant of concavity in Pee-Wee ($K = 1$ to 6) and equal weights (in NONA), with the commands *hold 30 hold/1 nixwts*15 3 find** (three series of 15 runs of TBR parsimony ratchet each, keeping one shorter tree each run, then TBR swapping up to a maximum of 30 trees). In preliminary runs these commands sufficed to find the optimal trees in most of the replicates, collapsing the appropriate groups in the consensus. Optimal trees for the complete dataset were hit many thousands of times in aggressive searches, and are deemed exhaustive. Searches under equal weights produce at least many thousands of trees. Only 21 of these trees were sufficient to produce the same consensus. For the pairwise comparisons of trees, this set of 21 trees was extended to 50. All

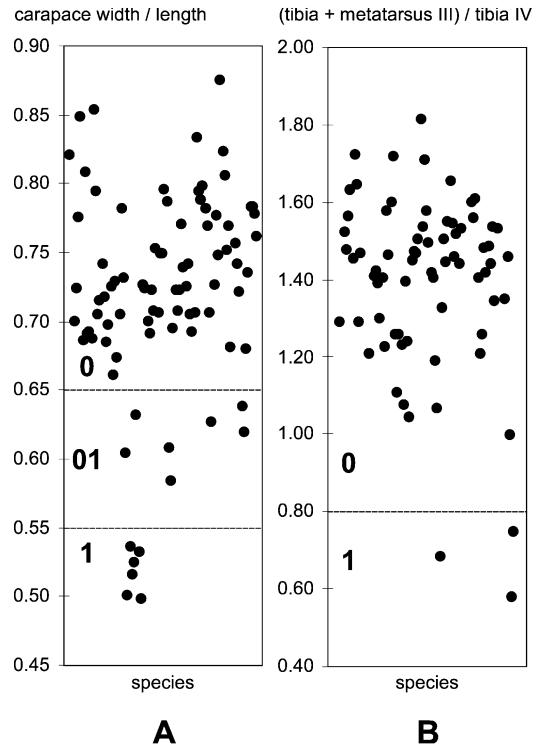


Fig. 1. Continuous characters: each point is a terminal in the analysis, dashed lines are the limits between states. **A.** Character 6, an intermediate group of terminals has ambiguous scoring. **B.** Character 27.

these calculations were made with simple macro files in Pee-Wee.

The results are shown in figure 2 and table 2. The number of correct groups is larger for the weighting concavities $K = 4$ to 6, both if analyzed as a proportion of the groups in the consensus (fig. 2A) or between pairs of trees (fig. 2C). The proportion of wrong groups in the consensus from the pseudoreplicate datasets is smaller for the concavities $K = 3$ to 6. All these point out to a better performance of the mildest weighting functions. The low performance of equal weights in recovering correct groups is somewhat compensated through conservative results, but the error rate is still greater. The two virtues of accuracy and robustness seem to be absent with stronger concavities ($K = 1$ or 2), which produce well-resolved but inaccurate trees. The results presented here are based on the two optimal trees for $K = 6$

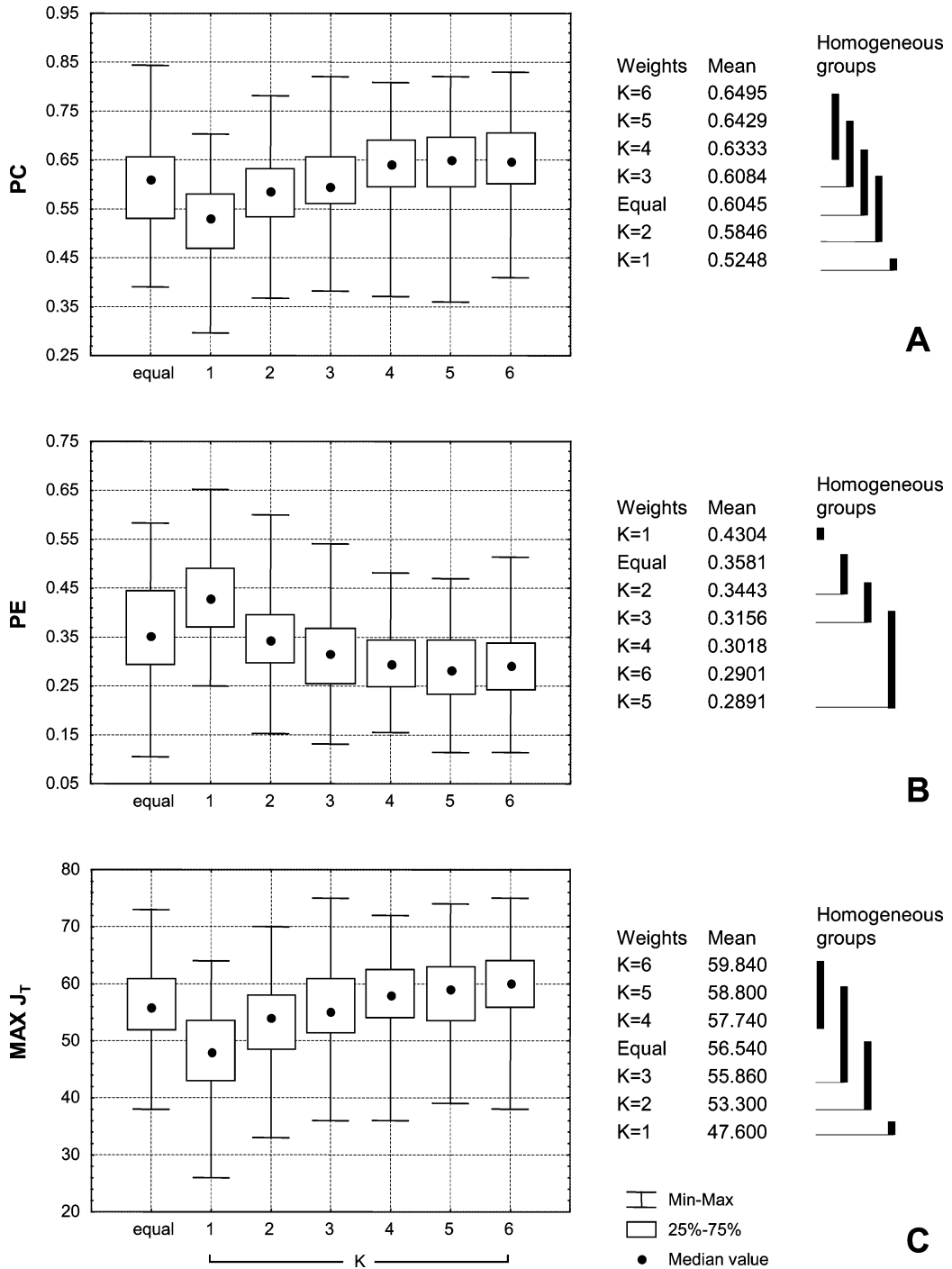


Fig. 2. Sensitivity analysis for the calibration of implied weighting concavities. Homogeneous groups of means from multiple pairwise a posteriori comparisons in a Kruskal-Wallis ANOVA ($\alpha = 0.05$). **A.** Proportion of correct groups shared by consensus from pseudoreplicate and complete dataset. **B.** Proportion of wrong groups in the consensus from pseudoreplicate. **C.** Maximum number of groups shared by individual pseudoreplicate trees with individual optimal trees.

TABLE 2

Summary Mean Values \pm SD for Sensitivity Analysis, Over 100 Jackknifed Pseudoreplicates

E = error, number of incorrect groups in the consensus from pseudoreplicate; J = number of groups in the consensus from pseudoreplicate; J trees = number of trees for the jackknifed pseudoreplicates; J_T = number of groups common to consensus from complete dataset and jackknifed pseudoreplicate; $\max J_T$ = same as J_T , but best value between pairs of trees; PC = proportion of correct groups recovered by the pseudoreplicate; PE = proportion of wrong groups from the jackknifed pseudoreplicate; T = number of groups in consensus from complete dataset; T trees = number of trees for the complete dataset.

Weights	T	T trees	J trees	J	J_T	$\max J_T$	PC	E	PE
Equal	64	+1000	33.79 \pm 9.48	61.65 \pm 11.14	38.69 \pm 5.69	56.54 \pm 7.41	0.605 \pm 0.089	7.62 \pm 3.895	0.358 \pm 0.114
$K = 1$	81	10	26.95 \pm 13.55	74.77 \pm 5.01	42.51 \pm 6.47	47.60 \pm 7.45	0.525 \pm 0.080	3.76 \pm 2.016	0.430 \pm 0.085
$K = 2$	87	2	18.53 \pm 13.90	77.68 \pm 5.41	50.86 \pm 7.30	53.30 \pm 7.71	0.585 \pm 0.084	3.89 \pm 2.174	0.344 \pm 0.089
$K = 3$	89	1	15.07 \pm 13.99	79.21 \pm 4.88	54.15 \pm 6.80	55.86 \pm 7.05	0.608 \pm 0.076	3.90 \pm 2.158	0.302 \pm 0.073
$K = 4$	89	1	11.72 \pm 12.75	80.64 \pm 4.30	56.36 \pm 6.92	57.74 \pm 6.94	0.633 \pm 0.078	3.46 \pm 2.042	0.289 \pm 0.080
$K = 5$	89	1	10.50 \pm 11.53	80.44 \pm 4.87	57.22 \pm 7.44	58.80 \pm 7.12	0.643 \pm 0.084	3.48 \pm 2.263	0.289 \pm 0.080
$K = 6$	89	2	10.14 \pm 11.52	80.43 \pm 4.52	57.16 \pm 7.58	59.84 \pm 7.39	0.650 \pm 0.086	3.78 \pm 2.236	0.290 \pm 0.080

(strict consensus in fig. 3, character indices in fig. 4 and table 3). One of these trees (with *Josa personata* sister of clade 93) is also the one optimal with $K = 5$ and 4, and it is also the only one optimal under $K = 6$ if the *Fit* is calculated with floating point precision in X-Pee-Wee (Goloboff, 1997b; both trees differ only by ≈ 0.04 units of fit). With $K = 3$, *Coptoprepes* is paraphyletic (clade 107 sister of 121). Under $K = 2$, major rearrangements are produced in the Amaurobioidini, and with $K = 1$, also in Gayennini. Searches under equal weights produce a much less resolved consensus (fig. 5), with most groups as in the jackknife majority rule consensus.

In this estimation process, predictivity is somewhat equated with stability, and that is why it uses a procedure often applied to estimate clade support (jackknifing). Some authors have used the sum of jackknifing or bootstrap proportions as a measure of the accuracy of weighting strategies (e.g., Penny and Hendy, 1986; Källersjö et al., 1999). The approach used here is slightly different, besides the attention paid to the problem of resolution. First, the reference set of trees for counting agreement or disagreement of groups is calculated from the complete dataset. Spurious groups produced in the majority-rule consensus from the pseudoreplicate datasets are counted against, not in favor of a method. Second, all groups are counted, even if their frequency is below 50%. Counting only those groups that would appear in the majority consensus produces results more

in favor of mild weighting functions (results not shown), but the interpretation is less clear, because jackknifing is used to generate pseudoreplicate datasets, but also as a measure of support to decide which groups of the pseudoreplicate trees are to be counted. That seems like overuse of jackknifing.

LISTS OF SYNAPOMORPHIES

Following the description of each group, a table summarizes its synapomorphies and those of the clades included. Only unambiguous synapomorphies are listed (e.g., $0 \rightarrow 1$, but not $01 \rightarrow 1$; $01 \rightarrow 2$, but not $01 \rightarrow 12$; option *ambiguous*- of Pee-Wee). Diagnosing polytomies (and groups close to polytomies) has its drawbacks (Maddison, 1989; Goloboff, 1994). For the diagnosis of groups, the six most parsimonious dichotomous trees for concavities $K = 4$ to 6 (two resolutions of clade 95, three of clade 167) were considered. The synapomorphies common to all six trees are reported in the first place; those of only some resolutions are listed separately (calculated by command *apo/*).

INDICES OF SUPPORT

Three indices for support of individual groups were explored in this analysis. The Bremer support (Bremer, 1988, 1994; Källersjö et al., 1992) was calculated heuristically searching trees suboptimal by 1.8, 2.2, 2.6, . . . , 4.0, and then 5, 6, 7, . . . , 17 units of fit. In each search the optimal trees were

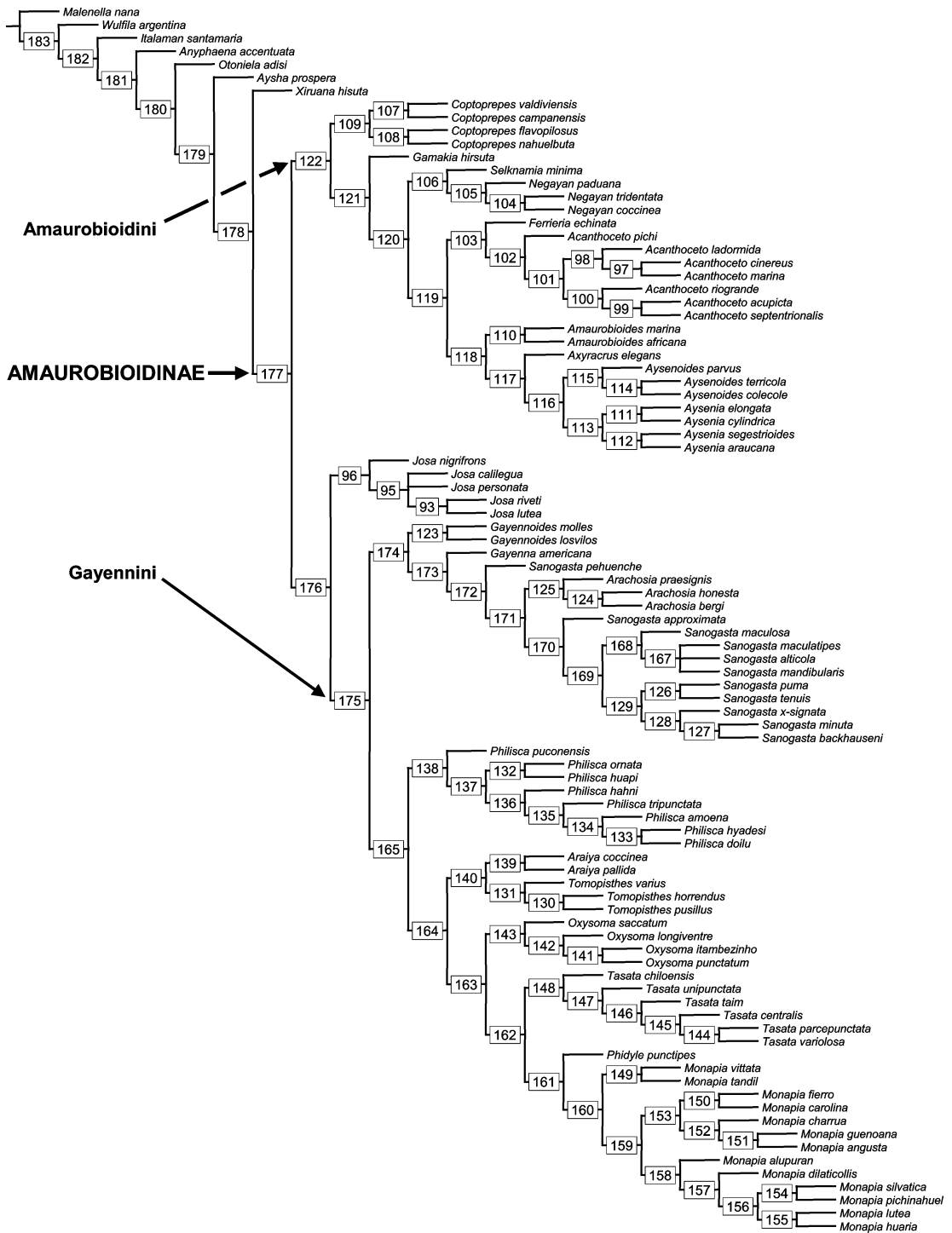


Fig. 3. Strict consensus of two trees from Pee-Wee (constant of concavity $K = 4-6$). Clades are numbered as used through text and tables. Under $K = 6$, tree statistics are: $Fit = 3568.6$; rescaled $Fit = 0.48$; consistency index for informative characters = 0.22; retention index = 0.65 (CI and RI without internal steps); length = 2968, 2959. (Weight for all characters = 3, except 38-40 = 1.)

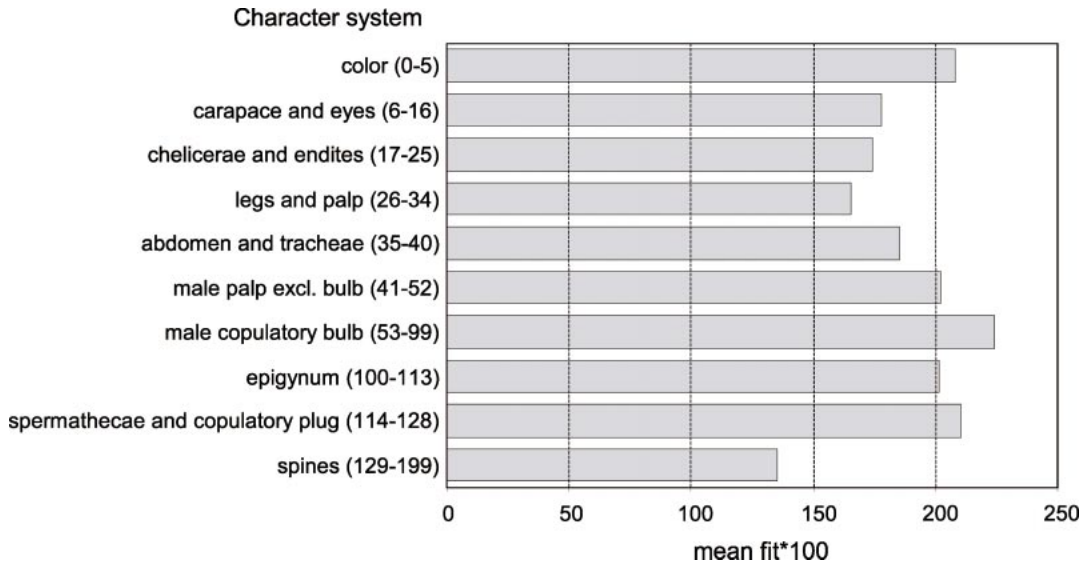


Fig. 4. Mean $fit*100$ in Pee-Wee, for character systems (character numbers in parentheses). Constant of concavity $K = 6$.

TBR swapped until 4000 trees were found. Lower values of Bremer support for all these searches are reported in figure 6. TBR swapping trees suboptimal by 1.8 produced only 1767 trees without overflow of tree space, hence the values of $BS \leq 1.8$ are most probably exact.

Jackknifing frequencies were calculated with 1000 pseudoreplicate datasets, eliminating characters with $p = 0.36$ (Farris et al., 1996). Each pseudoreplicate was analyzed with three runs of TBR parsimony ratchet (Nixon, 1999) with 25 iterations each, saving only one tree for each iteration (with the default of 20% of characters reweighted; commands *h/1 nixwts*25 3*). This search is very aggressive for a dataset this size, and will most likely obtain the shortest trees (a pilot test of 15 replicates with *h/2 nixwts*50 8* produced the same scores). For each pseudoreplicate, the strict consensus was saved to a file and submitted to the program FQ (for majority-rule consensus, distributed P. Goloboff). The majority rule-consensus from the jackknifed pseudoreplicate datasets is presented in figure 7.

The simple majority-rule consensus from the jackknifing is perhaps too conservative a measure of support. A more refined way to analyze frequencies of jackknifed groups is

the SCG Index (“supported/contradicted groupings; Goloboff et al., in prep.). $SCG = S - C$, where S is the proportion of the pseudoreplicate datasets that produce the group and C is the proportion that contains the most frequent incompatible group. Compared to the jackknifing index, this one has the advantage of preserving groups with low frequencies when they are mostly undisputed. Because the resampling algorithm is the same, it suffers from the same bias as the jackknifing. In this analysis, the SCG Index (fig. 6) was calculated from the same tree file from 1000 pseudoreplicate datasets as the jackknifing index.

As expected, all three measures are mostly correlated (fig. 8). However, some noticeable conflicts exist among the resampling measures and the Bremer support (fig. 8A, B). Several groups with low to very low Bremer support have moderate to very high SCG or jackknifing frequencies (e.g., clades 93, 95, 98, 150, 154; fig. 8). They have in common support by only one to a few very homoplastic synapomorphies, but their placement in the tree is nevertheless undisputed (similarly as in Goloboff and Farris, 2001: S30). For instance, the three unambiguous synapomorphies for clade 93 (*Josa lutea* + *J. riveti*) are extremely homoplastic, which is re-

flected in a very low Bremer support (BS = 0.2). These two species are extremely similar, they are nested in one of the better supported groups (the genus *Josa*), and there are no many conflicting characters suggesting alternative relationships within the genus.

The resampling indices of support examined here seem more appropriate than does the Bremer support to express robustness or stability of groups. This is so because they are sensitive both to the absolute evidence in favor of groups and to the conflicting characters favoring other resolutions. These indices are not free of bias, though. In the specific case of unequal character weighting, the support for groups is heterogeneously distributed among characters, thus biasing the resampling. This effect is patent when unsupported (or plainly contradicted) groups appear as supported. In this analysis, there are two equally parsimonious resolutions in *Josa*, A = (*Josa personata* + *J. calilegua*) and B = (*J. personata* (*J. riveti* + *J. lutea*)). Resolution A appears as supported in the jackknifing analyses (figs. 6 and 7; the support is low, though). This is so because comparing both trees, tree A has better fit for two characters (difference in fit = 2.5 + 3.2), while tree B has the same difference distributed over five characters (2.5 + 0.2 + 2.5 + 0.3 + 0.2), making it more probable that a jackknifed pseudoreplicate will have resolution A rather than B. Resampling with $p = 0.36$, $pA \approx 0.504$, and $pB \approx 0.418$, then $pSCG = pA - pB \approx 0.09\%$. Spurious groups are easily detected, but the same bias is surely affecting values for supported groups in an undetected way. Bootstrap frequencies have a comparable bias with unequal weights, but in the opposite direction (Goloboff et al., in prep.). Jackknifing is preferred here over bootstrapping, because in the first the frequency of a group is not influenced by characters irrelevant to that group (Farris et al., 1996). The support metrics used here should be interpreted only as approximate measures of stability of clades.

WEIGHTING FUNCTIONS AND SUPPORT

Part of the problem of settling among alternative weighting functions may be subsumed under the estimation of support for

groups. It is not surprising that the clades that have different resolutions under different weighting functions are also those with low support. Support indices are constructed looking at the effect that small alterations in the dataset have on the groups (resampling methods), or the effect that alterations in the groups have on the optimality measures (Bremer support). Looking at the sensitivity of groups to small changes in the way that the data are analyzed is yet another way of evaluating the stability of groups (Wheeler, 1995). The search for the best methods of analysis is legitimate, but the arguments and strategies used so far to compare methods are not totally convincing and will no doubt be debated for a long time. The fact that the better supported clades are robust to changes in the weighting functions may help circumvent part of the problem from a practical point of view.

DISCUSSION

Some critical considerations about the groups proposed here can be derived rather directly from the approximate measures of support obtained in the cladistic analysis. Additional points can be made taking into account the way in which characters and species were selected and processed for this monograph. These will be by force subjective, but of the most value for orienting future research.

The monophyly of Amaurobioidinae is mostly undisputed and will most probably remain undisturbed should additional outgroups be included. The peculiar conformation of the male copulatory bulb, especially of the basal tegular notch, is unparalleled in any other eteleyne known so far. Similarly, all members of the tribe Gayennini proposed here have a very conservative pattern of male and female genitalia. Even though some homologies of details of the male copulatory bulb might be disputed, alternative homology relations would still have the Gayennini as a very homogeneous, most probably monophyletic group, sharing many character states (although perhaps differently defined).

Most genera in Gayennini are reasonably well supported, but others deserve comment. The paraphyly of *Sanogasta* (which has *Ar-*

TABLE 3
Character Statistics

Char. = character (+ = states ordered; u = parsimony uninformative); Int. = internal, fit = fit*100 ($K = 6$). Consistency index and retention index (CI and RI) are calculated without internal steps from intraspecific variability. fit*100 has a maximum of 300 for characters with a weight of 3, and 100 with a weight of 1 (only characters 38–40, because of nonindependence).

Char.	Steps	Extra steps	Int. steps	fit	CI	RI	Char.	Steps	Extra steps	Int. steps	fit	CI	RI
0	4	3		200	0.25	0.50	50	5	4		180	0.20	0.56
1	12	11	4	85	0.08	0.35	u51	1	0		0	1.00	0.00
2	1	0		300	1.00	1.00	52	3	2		225	0.33	0.50
3	1	0		300	1.00	1.00	53	3	2		225	0.33	0.91
4	4	3	2	163	0.25	0.63	54	2	1		257	0.50	0.67
5	2	1	2	200	0.50	0.67	55	3	2		225	0.33	0.82
6	1	0		300	1.00	1.00	56	4	3		200	0.25	0.88
7	2	1		257	0.50	0.80	57	2	1		257	0.50	0.50
8	2	1		257	0.50	0.50	+58	2	0		300	1.00	1.00
9	8	7		138	0.13	0.13	59	4	3		200	0.25	0.57
10	4	3		200	0.25	0.80	60	1	0		300	1.00	1.00
+11	19	17		78	0.11	0.45	61	2	1		257	0.50	0.83
12	5	4		180	0.20	0.75	62	1	0		300	1.00	1.00
13	5	4		180	0.20	0.43	63	5	4	1	163	0.20	0.33
14	3	2		225	0.33	0.33	+64	10	8		128	0.20	0.43
+15	28	25		58	0.11	0.42	65	5	4		180	0.20	0.86
+16	20	18		75	0.10	0.44	66	3	2		225	0.33	0.67
17	11	10	1	105	0.09	0.76	67	3	2		225	0.33	0.71
18	1	0		300	1.00	1.00	68	10	6	1	138	0.40	0.88
19	1	0		300	1.00	1.00	69	3	2		225	0.33	0.78
20	20	17	4	66	0.15	0.48	70	1	0		300	1.00	1.00
21	10	9	4	94	0.10	0.44	+71	2	0		300	1.00	1.00
22	1	0		300	1.00	1.00	72	1	0		300	1.00	1.00
23	12	10	1	105	0.17	0.17	73	2	1		257	0.50	0.50
24	1	0		300	1.00	1.00	74	1	0		300	1.00	1.00
u25	1	0		0	1.00	0.00	+75	15	12		100	0.20	0.79
26	1	0		300	1.00	1.00	76	1	0		300	1.00	1.00
27	2	1		257	0.50	0.50	77	2	1		257	0.50	0.50
28	2	1		257	0.50	0.50	78	3	2		225	0.33	0.50
u29	1	0		0	1.00	0.00	79	10	8		128	0.20	0.76
u30	1	0		0	1.00	0.00	80	5	4		180	0.20	0.67
31	1	0		300	1.00	1.00	81	3	1		257	0.67	0.91
u32	1	0		0	1.00	0.00	82	2	1		257	0.50	0.88
33	7	6		150	0.14	0.60	83	7	6		150	0.14	0.67
34	3	2		225	0.33	0.60	84	12	10		112	0.17	0.68
35	1	0		300	1.00	1.00	85	2	1		257	0.50	0.94
36	1	0		300	1.00	1.00	86	2	1		257	0.50	0.00
37	1	0		300	1.00	1.00	87	2	1		257	0.50	0.91
+38	3	2	2	60	0.33	0.67	88	7	6		150	0.14	0.65
39	2	1	2	66	0.50	0.80	89	1	0		300	1.00	1.00
40	2	1		85	0.50	0.80	90	3	2		225	0.33	0.67
41	1	0		300	1.00	1.00	91	5	4		180	0.20	0.60
42	3	2		225	0.33	0.93	92	1	0		300	1.00	1.00
43	3	1		257	0.67	0.88	93	9	7		138	0.22	0.42
44	1	0		300	1.00	1.00	94	1	0		300	1.00	1.00
45	2	1		257	0.50	0.00	95	6	5		163	0.17	0.64
46	2	1		257	0.50	0.00	96	7	6		150	0.14	0.70
u47	1	0		0	1.00	0.00	97	8	2		225	0.75	0.91
48	3	2		225	0.33	0.60	98	4	3		200	0.25	0.63
49	4	3		200	0.25	0.92	99	4	3		200	0.25	0.00

TABLE 3

Character Statistics (*Continued*)

Char. = character (+ = states ordered; u = parsimony uninformative); Int. = internal, fit = fit*100 ($K = 6$). Consistency index and retention index (CI and RI) are calculated without internal steps from intraspecific variability. fit*100 has a maximum of 300 for characters with a weight of 3, and 100 with a weight of 1 (only characters 38–40, because of nonindependence).

Char.	Steps	Extra steps	Int. steps	fit	CI	RI	Char.	Steps	Extra steps	Int. steps	fit	CI	RI
100	4	3		200	0.25	0.00	150	7	6	5	105	0.14	0.45
101	2	1		257	0.50	0.91	151	7	6	4	112	0.14	0.57
102	4	3		200	0.25	0.00	152	11	10	6	81	0.09	0.50
103	5	4		180	0.20	0.00	153	8	7	1	78	0.13	0.00
104	3	1		257	0.67	0.97	154	7	6	18	60	0.14	0.45
105	7	6		150	0.14	0.67	155	4	3	1	180	0.25	0.88
106	6	4		180	0.33	0.83	156	5	4	5	120	0.20	0.86
107	6	5		163	0.17	0.50	157	4	3	6	120	0.25	0.88
108	5	3		200	0.40	0.70	158	14	13	3	81	0.07	0.63
109	2	1		257	0.50	0.50	159	1	0		300	1.00	1.00
+110	14	11	2	94	0.21	0.48	160	6	5	13	75	0.17	0.58
111	2	1		257	0.50	0.86	161	14	13	24	41	0.07	0.13
112	3	2		225	0.33	0.60	162	2	1	4	163	0.50	0.67
113	4	3		200	0.25	0.63	163	12	11	25	42	0.08	0.48
+114	3	1		257	0.67	0.89	164	3	2	4	150	0.33	0.60
115	8	7		138	0.13	0.74	165	2	1	2	200	0.50	0.75
116	5	4		180	0.20	0.87	166	2	1		257	0.50	0.00
117	5	4		180	0.20	0.64	167	20	19	25	36	0.05	0.37
118	2	1		257	0.50	0.75	168	16	15	19	45	0.06	0.25
119	2	1		257	0.50	0.75	169	18	15		85	0.17	0.25
120	2	1		257	0.50	0.50	170	8	7		138	0.13	0.30
121	1	0		300	1.00	1.00	171	14	13	12	58	0.07	0.54
122	2	1		257	0.50	0.50	172	3	2	4	150	0.33	0.00
123	12	11		105	0.08	0.63	173	3	2	3	163	0.33	0.00
124	4	3		200	0.25	0.91	174	14	13	7	69	0.07	0.57
125	5	4		180	0.20	0.60	175	6	5	3	128	0.17	0.38
126	2	1		257	0.50	0.67	u176	1	0	2	0	1.00	0.00
127	7	6		150	0.14	0.25	177	12	11	2	94	0.08	0.27
128	5	4		180	0.20	0.64	178	2	1		257	0.50	0.00
129	2	1		257	0.50	0.50	179	1	0		300	1.00	1.00
130	3	2		225	0.33	0.50	180	9	8	2	112	0.11	0.72
131	1	0		300	1.00	1.00	181	3	2	6	128	0.33	0.00
132	2	1		257	0.50	0.80	182	14	13	21	45	0.07	0.19
133	2	1	3	180	0.50	0.80	183	2	1	1	225	0.50	0.50
134	4	3	2	163	0.25	0.63	184	7	6	14	69	0.14	0.57
135	1	0		300	1.00	1.00	185	2	1	2	200	0.50	0.00
136	1	0		300	1.00	1.00	186	2	1	1	225	0.50	0.00
137	2	1	2	200	0.50	0.80	u187	1	0	1	0	1.00	0.00
+138	21	19	5	60	0.10	0.53	188	3	2	2	180	0.33	0.00
139	3	2		225	0.33	0.00	189	5	4	5	120	0.20	0.43
140	7	6	4	112	0.14	0.33	190	14	13	17	50	0.07	0.35
141	7	6	3	120	0.14	0.33	191	11	10	1	69	0.09	0.52
142	8	7	14	66	0.13	0.76	192	3	2	6	128	0.33	0.50
143	7	6	7	94	0.14	0.78	u193	1	0	1	0	1.00	0.00
144	4	3	4	138	0.25	0.83	194	6	5	1	85	0.17	0.38
145	4	3	3	150	0.25	0.88	195	2	1	4	163	0.50	0.80
146	10	9	11	69	0.10	0.63	u196	1	0	1	0	1.00	0.00
147	3	2	4	150	0.33	0.71	197	9	8	1	120	0.11	0.43
148	7	6	3	120	0.14	0.57	198	4	3	5	128	0.25	0.00
149	2	1	1	225	0.50	0.75	u199	1	0	1	0	1.00	0.00

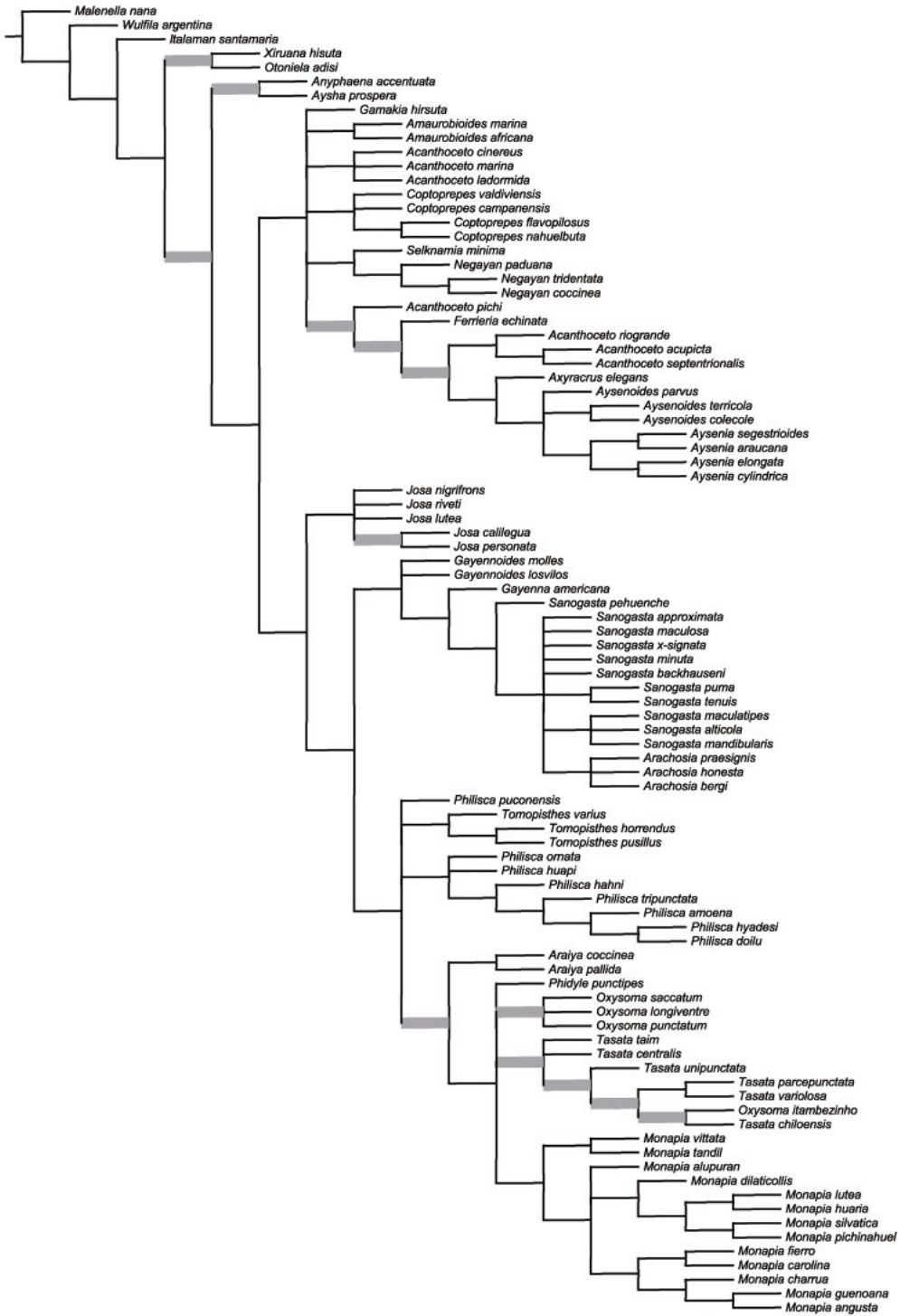


Fig. 5. Strict consensus of shorter trees under equal weights (length = 2881). Clades in gray are different from the preferred tree of figure 3. (Weight for all characters = 3, except 38–40 = 1.)

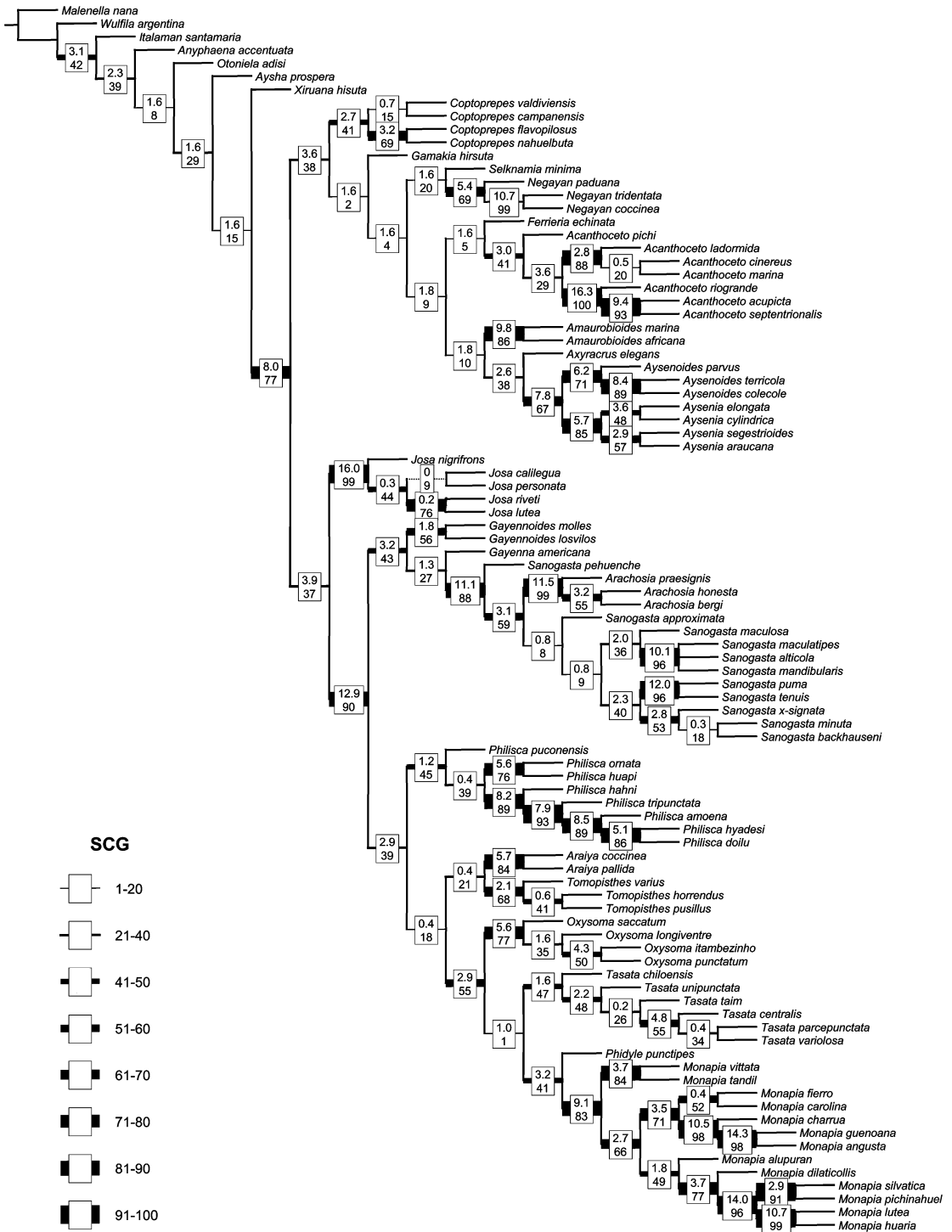


Fig. 6. Support for groups expressed as Bremer support in terms of fit (top) and SCG (bottom). Bremer support values ≤ 1.8 are exact. SCG based on 1000 pseudoreplicates.

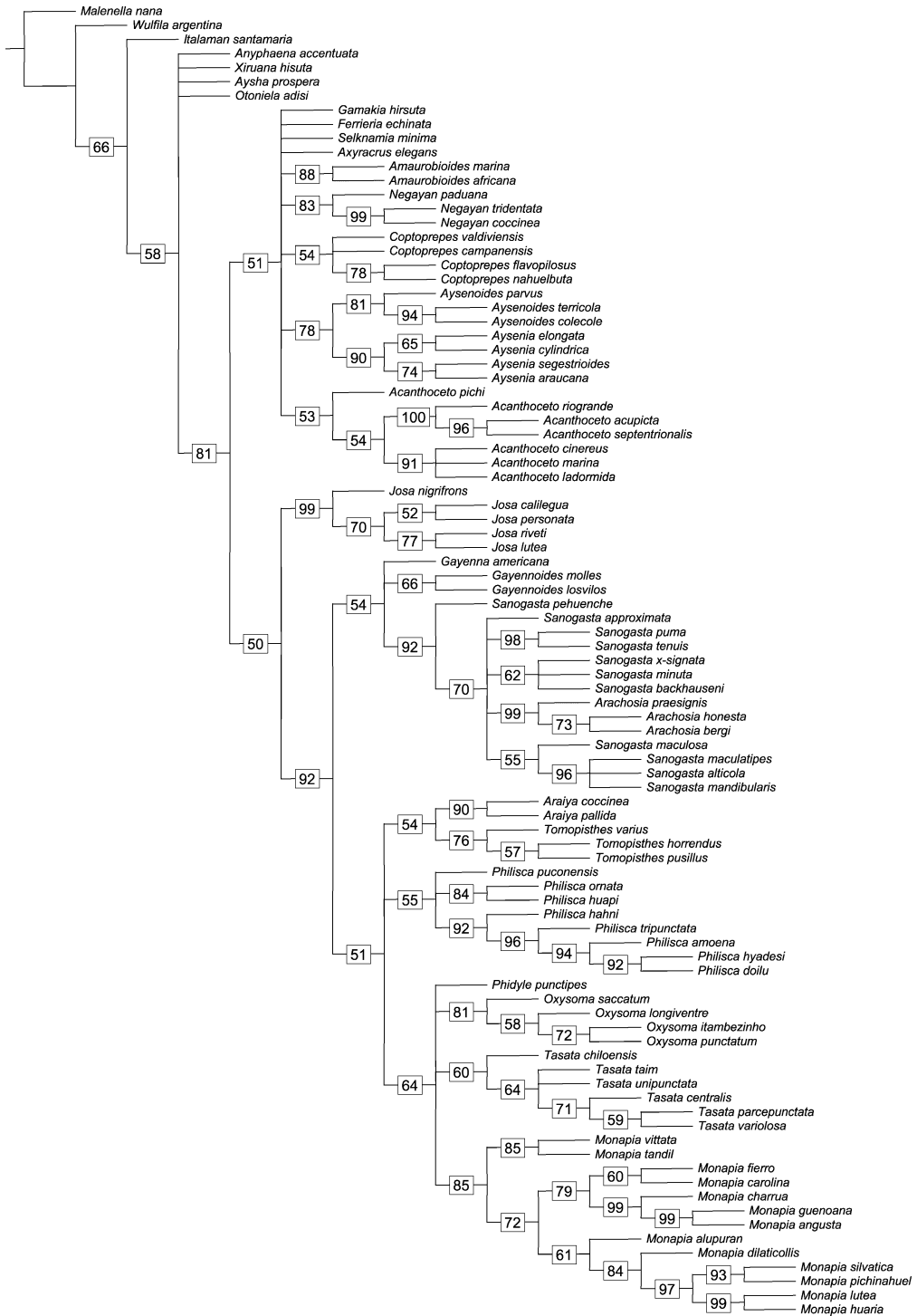
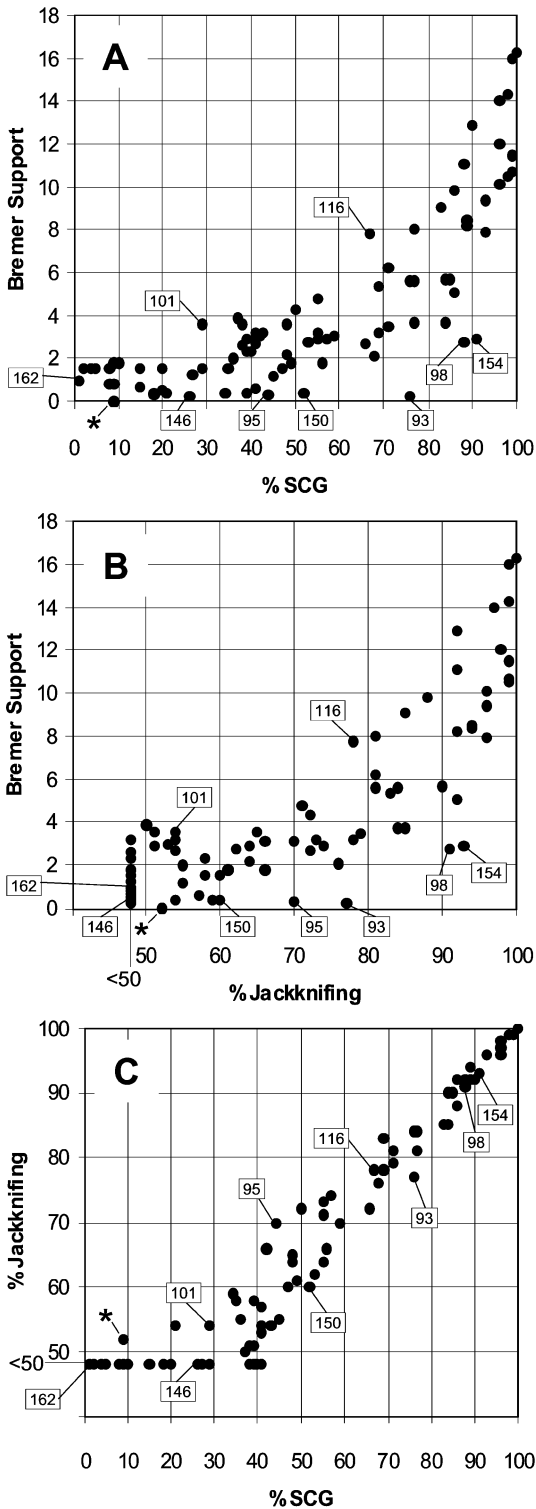


Fig. 7. Support for groups expressed as jackknifing frequencies. Based in 1000 pseudoreplicates.



achosia as an internal clade) may need several additional representatives to be solved. *Arachosia* is no doubt a monophyletic group, but some species not included are similar enough to *A. praesignis* to be potential candidates for basal clades in the genus. It may be expected that the basal resolution of *Arachosia* species will affect their relationships with groups of *Sanogasta*. The placement of *Sanogasta approximata* is not well supported; analysis of the several other species not included here may help elucidate problems in clade 172. Stability in this group may hopefully suffice to raise the support for clade 173 and *Gayennoides*. The intraspecific variation in *Arachosia bergi*, *Sanogasta maculosa*, and clade 167 will most likely have only local effects.

Philisca is a well-defined group, except for *P. puconensis*, which might be related to *Tomopisthes* instead. There are several species not included here (with a remarkable diversity in the Chilean Pacific Juan Fernández Islands), all of them with either the male modified chelicerae (as in clade 132) or the reduced leg spination of clade 135. *Araiya* and *Tomopisthes* are here represented by all known members. Their sister group relationship is weakly supported. Clade 163 is mostly supported by the spinose anterior metatarsi of females, a set of homoplasious characters. Clades 162 and 161 have weak support, mainly because their basal species are problematic: *Oxysoma saccatum* shares many characters with *Monapia*, *Tasata chilensis* with *Oxysoma*, and *Phidyle punctipes* may conceivably be a *Tasata* instead. Of these, *Phidyle* is monotypic, all species of *Monapia* are included, and some undescribed Chilean species of *Oxysoma* are very closely related to *O. longiventre* (if not intraspecific variants). Additional representatives that may help resolve this clade may be found in *Tasata* and in the undescribed females of *Oxysoma itambezinho* and *Monapia tandil*.

←

Fig. 8. A–C. Scatterplots of measures of support for groups. Each point corresponds to a group: some are labeled as in figure 3. One unsupported group (*Josa personata* + *J. calilegua*) is marked with an asterisk (*).

The genus *Josa* is undisputedly monophyletic, as concluded by Kochalka (1980). It is very likely that further knowledge of the many species of the genus will challenge the relationships among species obtained here, but it is unlikely that the support for the genus could be considerably eroded. The Amaurobioidini is more problematic, as shown by the low support values for the tribe and several of its internal clades, mainly on the branches among genera. *Negayan* and *Amaurobioides* are very homogeneous, and it is not likely that additional representatives would improve or challenge their monophyly. There are several species of *Aysenia* and *Aysenoides* not included here, some with noticeable differences in the male copulatory bulb. Superficial examination of their morphology suggested that they are clearly assignable to either of these genera, but the analysis under equal weights splits clade 118 in two. It is conceivable that additional species of both genera may help stabilize the group. Perhaps more promising would be the inclusion of more *Coptoprepes* species, a genus that is also paraphyletic under equal weights, because of its basal position in the tribe and the quite variable male copulatory bulb and tibial apophysis. The remaining genera are either monotypic or all their species were included, except a probably undescribed species close to *Acanthoceto pichi*, which would most likely have only a local effect on the trees.

The results of previous analyses are tested with this one, including a wider range of representatives and characters. My analyses of *Liparotoma* (here subsumed into *Philisca*), *Monapia*, and *Acanthoceto* (Ramírez, 1993, 1995b, 1997, 1999) had the same outcome in the relationships among species, except for the further resolution obtained here in the placement of *Monapia alupuran*. In the revision of *Acanthoceto*, however, the outgroups belonging to Amaurobioidini had quite different relationships, because of the limited sampling of terminals and characters. Some of the groupings proposed by Kochalka (1980) in his unpublished work are confirmed here. His *Gayenna-Oxysoma* group is in fact Gayennini, supported by the conformation of epigyne and spermathecae as stated by him (characters 104, 116, 124, but also

others). His *Amaurobioides* group (*Amaurobioides*, *Axyracrus*, and *Aysenia*) is also corroborated, with the addition of *Aysenoides*, but is supported by different characters. Kochalka diagnosed the group by the pointed retrolateral tibial apophysis in the male palp (character 43, state 1), a character that is more broadly distributed and ambiguously optimized. Kochalka gave some importance to the coiling of the female copulatory duct on a longitudinal axis (characters 117, 118). This condition is shown here to be very homoplasious.

TAXONOMY

ANYPHAENIDAE BERTKAU

Anyphaenidae Bertkau, 1878: 358, 379 (type genus *Anyphaena* Sundevall, 1833). Petrunkevitch, 1939: 187. Mello-Leitão, 1947: 289–292. Lehtinen, 1967: 384. Forster, 1970: 12–15, 18. Platnick, 1974: 205–211. Platnick and Lau, 1975: 4–6. Ramírez, 1995a: 373.

DIAGNOSIS: Spiders with two tarsal claws. Claw tuft formed by 2–8 rows of spatulate setae (figs. 10D, 13G). Nonadhesive side of spatulate setae with thick, aligned microvilli; adhesive side facing inward or obliquely to ventral/inward. Tracheal system well developed, in characteristic pattern (Ramírez, 1995a: figs. 1–11), tracheal spiracle moderately to widely separate from spinnerets. Posterior spinnerets without cylindrical gland spigots.

DESCRIPTION: Recently redescribed in Ramírez (1995a).

COMPOSITION: Three subfamilies: Malenellinae, Anyphaeninae, and Amaurobioidinae. The limits and relationships among the subfamilies are discussed in Ramírez (1995a), but see comments under Anyphaeninae.

MALENELLINAE RAMÍREZ

Malenellinae Ramírez, 1995a: 376 (type genus *Malenella* Ramírez, 1995), 1997: 178.

DIAGNOSIS: Resembles some Anyphaeninae in having minute AME and pale green color, but distinguished by having the tracheal spiracle closer to spinnerets. Females and immatures are also distinguished by having a thickened palpal tarsus with an apical dorsal patch of blunt setae (fig. 10E, F), and



Fig. 9. Female Malenellinae and Anyphaeninae. **A.** *Malenella nana* Ramírez (Concepción, Cerro Caracol, photo MJR 137). **B.** *Otoniela adisi* Brescovit (Buenos Aires, Atucha, photo MJR 342). **C.** *Xiruana hirsuta* (Mello-Leitão, 1938) (Entre Ríos, El Palmar, photo MJR 276).

males by the copulatory bulb with a short, thick embolus, without median apophysis.

DESCRIPTION: See Ramírez (1995a).

DISTRIBUTION AND COMPOSITION: Only *Malenella nana* Ramírez from southern Chile.

MALENELLA NANA RAMÍREZ

Figures 9A, 10

Malenella nana Ramírez, 1995a: 376.

NEW RECORDS: **Región Metropolitana (Santiago): Santiago:** Bucalemi, San Antonio, 23–24.X.1994, L. Peña (AMNH). **Región IX (Araucanía): Malleco:** 16.5 km NE Pucón, 12.I.1951, Ross and Michelbacher, 1 ♀ (CAS). **Cautín:** Flor del Lago Ranch, Villarrica, Polo Field, 39°12.300'S, 72°08.367'W, 282 m, canopy fogging GT *Nothofagus obliqua* roble, 13.XII.2001, Arias et al., 1 ♀ (UCB). **Región X (Los Lagos): Chiloé:** Isla de Chiloé: El Pozuelo, 1.5 km NE Butalcura, 2.II.2001, T. Cekalovic, 1 ♀ (AMNH).

ANYPHAENINAE BERTKAU

Table 4, Figure 9B, C

Anyphaenidae Bertkau, 1878: 358 (type genus *Anyphaena* Sundevall, 1833).

Anyphaeninae Bertkau, 1878: 379. Reviewed at generic level by Brescovit, 1997.

DIAGNOSIS: Tracheal spiracle advanced, at midpoint or closer to epigastrium than to spinnerets. Tegulum without basal notch.

NOTE: In this analysis Anyphaeninae is

paraphyletic in terms of Amaurobioidinae, but see comments below.

DESCRIPTION: Recently redescribed by Brescovit (1997).

DISTRIBUTION AND COMPOSITION: Thirty-three genera, mostly from the New World. *Anyphaena* Sundevall has representatives in Palearctic and Oriental regions; *Australaena* Berland is known only from Polynesia.

Six representative species of Anyphaeninae are included as outgroups. They were selected for having putatively homologous conditions of important characters diagnostic of higher groups of Amaurobioidinae. Species of *Xiruana* Brescovit have a structure (“conductor of Anyphaeninae”, Brescovit, 1997) very similar to the secondary conductor found in amaurobioidines. The prolateral and retrolateral tegular projections in *Anyphaena accentuata* (Walckenaer) (Brescovit, 1997: figs. 3, 4) were both tentatively homologized with the secondary conductor. Species of *Wulfila* O.P.-Cambridge and *Anyphaena accentuata* have a putative homolog of a primary conductor (named “ventral tegular projection” by Brescovit, 1997). In *A. accentuata*, this structure has a shallow canal where the embolus fits, favoring homology with a conductor (fig. 11A). Species of *Aysha* Keyserling have a complex process at the embolar base comparable to that of *Josa*. *Italaman santamaria* Brescovit has an acute retrolateral tibial apophysis similar to that found in *Amaurobioides* and close relatives. Several conditions present in *Malenella nana*

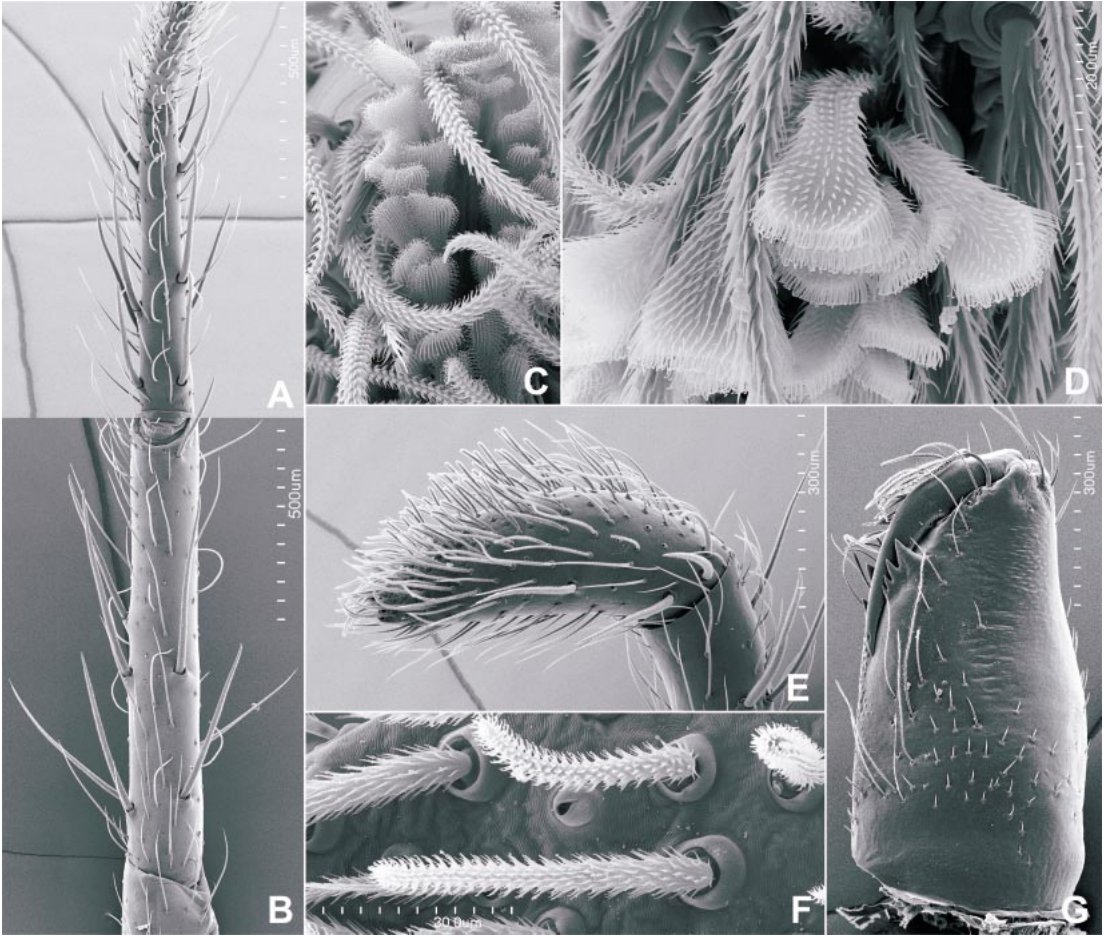


Fig. 10. *Malenella nana* Ramrez, female (Concepcin, Cerro Caracol). **A.** Left metatarsus I, ventral. **B.** Left tibia I, ventral. **C.** Claw tuft I, distal-ventral view. **D.** Same, dorsal view. **E.** Right palp, prolateral. **F.** Same, tarsal organ and blunt setae. **G.** Left chelicera, posterior view.

are also found in *Wulfila* (green color, minute AME, absence of accessory bulbs in the spermathecae), *Italaman* (simple male copulatory bulb), and *Otoniela* Brescovit (many anterior leg spines, absence of accessory bulbs). This selection of representative outgroup characters is clearly insufficient for a sound hypothesis of relationships among anyphaenines. Because only a few characters specific for that subfamily are here included, and because the rather unusual *Malenella* was used as outer outgroup, it is clear that a more complete analysis is needed to appropriately assess anyphaenine relationships. In this dataset, only three correlated characters would support the monophyly of Anyphaen-

inae (the advanced tracheal spiracle and associated modifications of the tracheal system, characters 38–40). The effect of the suspicious resolution of Anyphaeninae over the relationships among amaurobioidines, however, is limited: if Anyphaeninae is constrained to be monophyletic, all groups in Amaurobioidinae are the same in the optimal trees, except for the collapsing of clade 95 of *Josa*. Character optimizations at the basal node of Amaurobioidinae are the same except for characters 15 (state 1 instead of 2), 79 ([012] instead of 1), 123 ([01] instead of 1), 125 (0 instead of [01]), 138 ([01] instead of 0), and 163 ([01] instead of 1).

Brescovit (1997) suggested a monophylet-

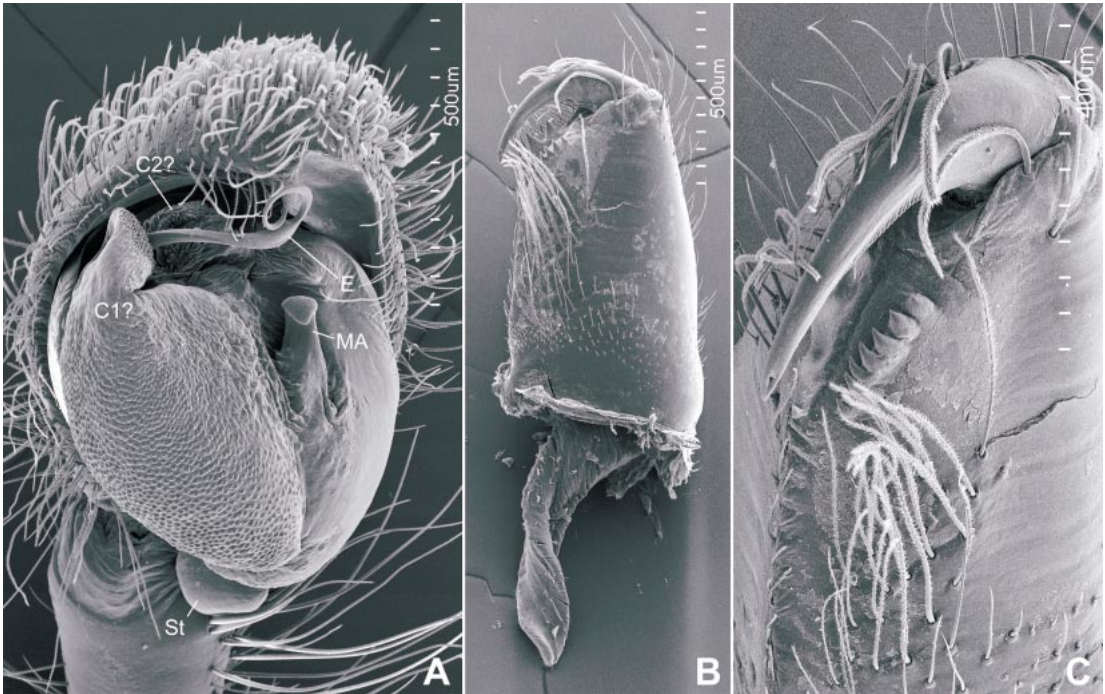


Fig. 11. *Anyphaena accentuata* Sundevall. **A.** Left male palp, ventral-apical view (Poland, Kazimierz Dolny). **B.** Left female chelicera, posterior view (Poland, Warsaw). **C.** Same, detail. (C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; St = subtegulum.)

ic group of nine genera including *Aysha*, united by having a process on the male embolar base. I cannot test his hypothesis here, not only because of my modest selection of representatives and specific characters for Anyphaeninae, but because there is not yet a coherent scheme of homologies for the many details of embolar morphology, embracing both anyphaenines and amaurobioidines.

AMAUROBIOIDINAE HICKMAN

Table 5

Amaurobioididae Hickman, 1949: 31 (type genus *Amaurobioides* O.P.-Cambridge, 1883). Forster, 1970: 165. Synonymized with Anyphaenidae by Platnick, 1974: 211.

Amaurobioidinae: Lehtinen, 1967: 211, 316, 320–321. Kochalka, 1980: 65. Ramírez, 1995a: 381.

NOTE: Simon (1897a: 99–100, 104, 1903a: 1032, 1903c: 29) used informal names for some Amaurobioidinae that might be confused with family-level names (*Tomopisthini*, *Oxysomini*, *Oxysomate*), which clearly re-

ferred to the members of each genus, and are not available at familylevel (ICZN, 1999: 11[f]2).

DIAGNOSIS: Distinguished from Anyphaeninae by the male tegulum with a deep notch occupied by the median hematodocha, visible in ventral view as a membranous area at base of the copulatory bulb. Most species have the tracheal spiracle closer to the spinnerets than to the epigastrium.

DESCRIPTION: Body size small (2.50) to medium (22.00). Chelicerae (fig. 12A) with three teeth on promargin (exceptionally four or five), two to seven teeth on retromargin (exceptionally one). Labial apex rounded or slightly notched. Male palp with only one tibial apophysis in retrolateral apical position, or lacking apophysis. Tip of cymbium with ventral canal devoid of setae, often associated with embolus (cymbial conductor). Subtegulum prolateral, visible in unexpanded palp. Tegulum with deep basal notch occupied by median hematodocha. Sperm reser-

TABLE 4
Synapomorphies of Outgroup Clades

<p>Clade 178 C2 (79): absent → fused CD slender (116): present → absent spine metatarsus II, d p1ap (156): present → absent</p> <p>Clade 179 articulation of embolus (94): fixed → movable</p> <p>Clade 180 basal process on embolus (96): absent → present spermathecae contiguous (125): absent → present</p> <p>Clade 181 body pattern (0): absent → present CD slender (116): absent → present spine patella III, r d1 (158): absent → present spine tibia III, v x-x-p1 (164): absent → present spine tibia III, v x-x-r1 (165): absent → present spine patella IV, r d1 (180): absent → present</p> <p>Clade 182 color green (3): present → absent ratio AME/ALE (15): AME minute → AME < ALE, or AME = ALE accessory bulbs (122): absent → present spine metatarsus I, v x-p1-x (140): present → absent spine metatarsus I, v x-r1-x (141): present → absent spine tibia III, v x-r1-x (163): absent → present</p> <p>Clade 183 (changes rooted in <i>Malenella nana</i>) blunt hairs on palp (29): present → absent female palp thick (30): present → absent claw tuft setae (32): horizontal → vertical tracheal spiracle (38): closer to spinnerets → closer to epigastrium lateral tracheae (39): short → long first bifurcation MT (40): separate from LT → contiguous to LT additional RTA (45): present → absent cymbial conductor (47): absent → present median depression on epigynum (108): present → absent copulatory plug (128): present → absent spines metatarsus I, d 2ap (145): present → absent spine tibia III, v p1-x-x (160): absent → present spine metatarsus III, v 2-x-x (166): absent → present spine metatarsus III, p d1-x-x (171): absent → present spine metatarsus III, r d1-x-x (174): absent → present spine tibia IV, v p1-x-x (181): absent → present spine tibia IV, v x-p1-x (183): absent → present spine metatarsus IV, v p1-x-x (187): absent → present spine metatarsus IV, v r1-x-x (188): absent → present spine metatarsus IV, p d1-x-x (191): absent → present spine metatarsus IV, r d1-x-x (194): absent → present</p> <p><i>Anyphaena accentuata</i> ratio PME/PLE (16): PME = PLE → PME < PLE tegulum displaced basally (59): absent → present</p>	<p><i>Anyphaena accentuata</i> (Continued) C1 (75): absent, or present → massive C2 (79): absent → free APmf (104): absent → backward median depression on epigynum (108): absent → present ducts AB (123): short → long spine metatarsus I, d p1-x (144): absent → present spines metatarsus II, d 2ap (145): absent → present spine metatarsus II, p d1-x-x (153): absent → present spine metatarsus II, d p1-x (155): absent → present spine tibia IV, v r1-x-x (182): absent → present</p> <p><i>Wulfilia argentina</i> ratio PME/PLE (16): PME = PLE → PME < PLE RTA (42): present → absent basal RTA (46): absent → present embolus very long (95): normal → very long epigastrium sclerotized (100): normal → sclerotized epigynum projecting posteriorly (102): absent → present CO on epigastric furrow (115): absent → present FD advanced (127): absent → present ventral spines on palp (130): absent → present spine metatarsus II, p d1-x-x (153): absent → present spine tibia IV, v x-x-p1 (185): present → absent spine tibia IV, v x-x-r1 (186): present → present</p> <p><i>Xiruana hirsuta</i> body pattern (0): present → absent anterior ventral loop SD (56): absent → present basal process on embolus (96): present → absent embolar base (98): cylindrical → flattened lateral lobes (110): separate, or contiguous → fused without suture lumen of proximal CD (119): thin → ample proximal CD thin walls (120): absent → present</p> <p><i>Ayscha prospera</i> anterior eye row (11): straight → recurved additional RTA (45): absent → present basal RTA (46): absent → present cymbial conductor wide (49): wide → narrow epigynum projecting posteriorly (102): absent → present LL projecting (113): absent → present ventral spines on palp (130): absent → present spines metatarsus I, v 2bas (139): present → absent spines metatarsus I, d 2ap (145): absent → present spine tibia III, v r1-x-x (161): absent → present preening comb (170): absent → present spine tibia IV, v r1-x-x (182): absent → present</p> <p><i>Italaman santamaria</i> size retromarginal teeth (21): small denticles → regular epigynal semicircular ridges (103): absent → present spine metatarsus I, p 1-x (142): present → absent spine tibia II, v p1-x-x (146): present → absent spine tibia II, v x-p1-x (148): present → absent</p>
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TABLE 4
(Continued)

<i>Italaman santamaria</i> (Continued)
spine tibia II, p x-1 (152): present → absent
spine metatarsus II, d p1ap (156): present → absent
spine tibia III, v r1-x-x (161): absent → present
<i>Otoniela adisi</i>
male chelicerae (17): strong → smaller
lateral lobes (110): separate, or contiguous → fused without suture
accessory bulbs (122): present → absent
spermathecae shape (124): absent → present
pairs spines tibia I, v (132): 2-2-2 or less → 2-2-2-2 or more
spine metatarsus I, v x-p1-x (140): absent → present
spine metatarsus I, v x-r1-x (141): absent → present
spine tibia III, v x-r1-x (163): present → absent

voir in subtegulum, sperm duct running to tegulum through apical margin of bulb (clockwise, left palp ventral view), then parallel through retrolateral border of cymbium, then bordering tegular notch and entering into embolar base. Embolus articulated prolaterally to tegulum. Embolar base usually with one process of diverse shape; terminal portion of embolus filiform or moderately thick, usually fitting into canal on conductor (primary or secondary) and into cymbial conductor. Apical portion of tegulum housing distal hematodocha, where rest of sclerites are inserted. Median apophysis retrolateral, usually articulated on weakly sclerotized area, commonly hook-shaped, sometimes bifid, reduced, even absent in some species. Paramedian apophysis arising from sclerotized plate on distal hematodocha, between median apophysis and retrolateral ventral border of tegulum, with one to several sclerotized cusps. Primary conductor arising between embolus and prolateral ventral border of tegulum (relictual in Gayennini), often with canal where embolus fits. Secondary conductor arising distally, associated with apical dorsal tegular stripe where sperm duct runs. Epigyne with paired lateral lobes and median field, copulatory openings usually associated with furrows between median field

TABLE 5

Synapomorphies of Amaurobioidinae and Clade 176

Amaurobioidinae (clade 177)
tracheal spiracle (38): closer to epigastrium → closer to spinnerets
lateral tracheae (39): long → short
first bifurcation MT (40): contiguous to LT → separate from LT
basal tegular notch (60): absent → present
PMA (67): absent → present
<i>Josa</i> + Gayennini (clade 176)
number retromarginal teeth (20): four or more → two
size retromarginal teeth (21): small denticles → regular
RTA (42): present → absent
C2 (79): fused → free

and lateral lobes. Copulatory duct weakly sclerotized from opening to joint with duct of accessory bulb; from that point duct well sclerotized, coming into spermatheca. “Dicitynoid” pore conspicuous, close to union of copulatory duct with spermatheca and fertilization duct. Tracheal spiracle variable from close to spinnerets to midpoint between spinnerets and epigastrium (except in some *Archosia* and *Acanthoceto*, slightly closer to epigastrium). Length of lateral tracheae variable according to spiracle position, reaching spinnerets. Trichobothriae in one row on metatarsi, two rows on tarsi (fig. 13A). Anterior lateral spinnerets with two major ampullate gland spigots (figs. 15B, 16B, 17B, 117B), or one plus nubbin (Ramírez, 1995a: fig. 39), and several unmodified piriform gland spigots. Posterior median spinnerets with two minor ampullate gland spigots (figs. 16C, D, 17C) and several aciniform gland spigots. One PMS minor ampullate detected in *Amaurobioides* (fig. 15C, contra Ramírez, 1995a), but it is so similar to aciniforms that second one may have been overlooked. Posterior lateral spinnerets only with aciniform gland spigots (figs. 15D, 16E, 17D). Gland spigots not sexually dimorphic, cylindrical gland spigots absent.

DISTRIBUTION: Mainly South America, but *Josa* extending also to Central America, *Archosia* to Central and North America, and the coastal genus *Amaurobioides* in the seashores of Chile, South Africa, Australia, Tasmania, and New Zealand.

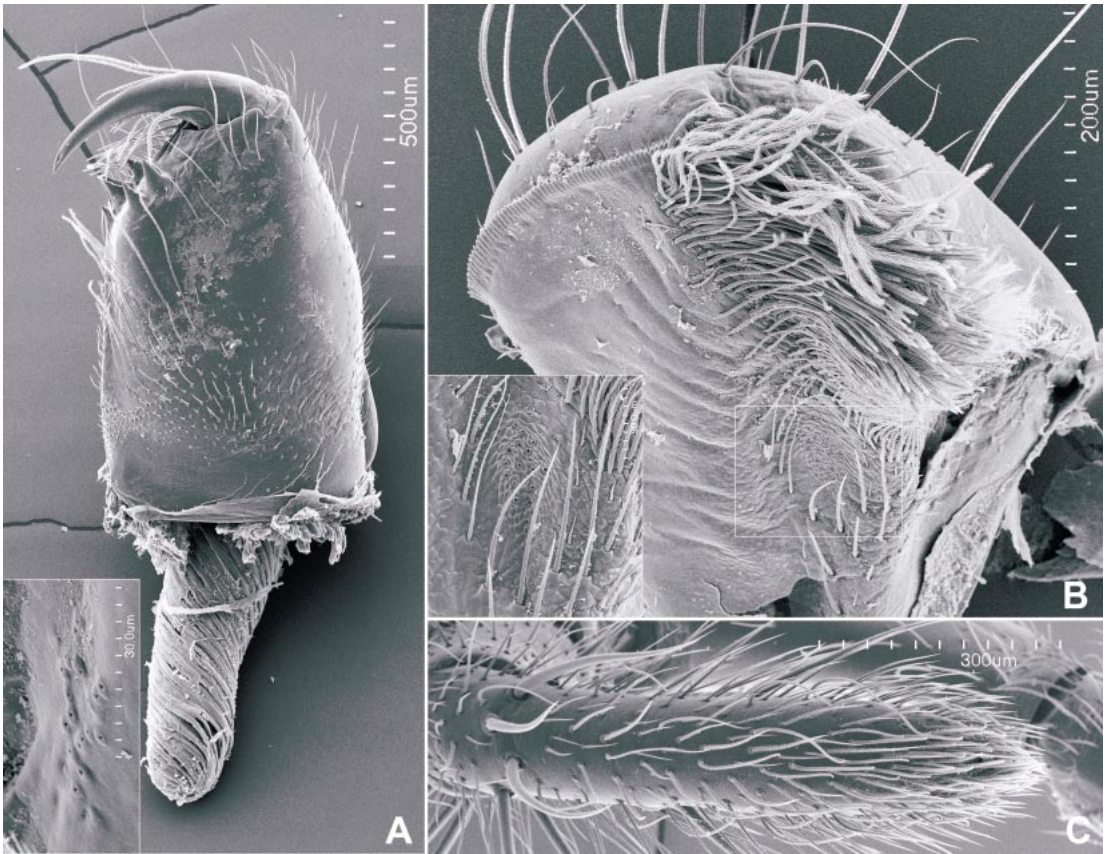


Fig. 12. *Gayenna americana* Nicolet, left mouthparts (Talca, Alto de Vilches). **A.** Chelicera, posterior view, inset to cheliceral gland. **B.** Maxilla, inset to sieve plate. **C.** Palpal tarsus.

COMPOSITION: Twenty-two genera grouped in two tribes, Amaurobioidini and Gayennini, here defined, plus the genus *Josa*, sister group of Gayennini, for which I declined to erect a tribe.

TYPES NOT EXAMINED: The following species have been assigned to various amaurobioidine genera, but their placement cannot be clarified without examination of the types: *Anyphaena trivittata* Bertkau, 1880; *Anyphaena furcata* Keyserling, 1880; and *Anyphaena vittata* Keyserling, 1881.

NOMINA DUBIA: The types of the following Chilean species have not been found in MHNP, and the original descriptions are very ambiguous: *Clubiona lineata* Nicolet, 1849; *Clubiona limbata* Nicolet, 1849; *Clubiona nubes* Nicolet, 1849; and *Clubiona versicolor* Nicolet, 1849.

MORPHOLOGICAL REMARKS

MALE COPULATORY BULB

The copulatory bulb is united to the cymbial alveolus by the basal hematodocha and a triangular petiole. Because neither the subtegulum nor the tegulum forms a complete ring, the three hematodochae (basal, median, and distal) are continuous (fig. 33E). The subtegulum is compact, partially visible in prolateral view in the unexpanded bulb (figs. 83A, 129E), but mostly distally in Amaurobioidini (fig. 47B). Part of the median hematodocha is visible in ventral view in the unexpanded palp, occupying a basal notch on the tegulum, which is the most conspicuous synapomorphy of Amaurobioidinae. The anterior part of the bulb is occupied by the distal hematodocha, from where the conductors,

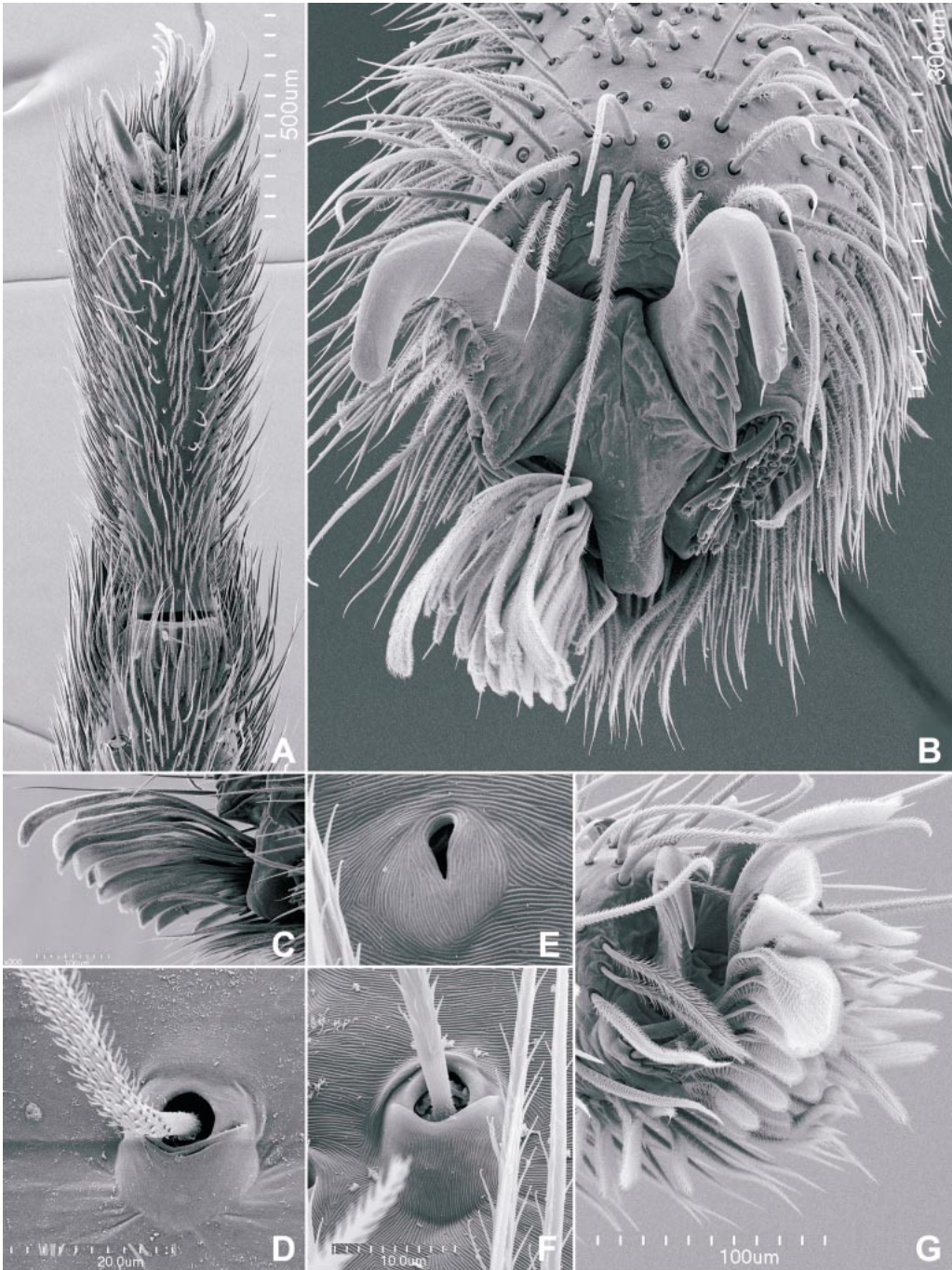


Fig. 13. Female left tarsus IV, setae and sensilla. **A–D.** *Amaurobioides africana* Hewitt, retrolateral claw tuft shaved (South Africa, Western Cape, Kommetjie). **A.** Tarsus, dorsal view. **B.** Same, distal view. **C.** Same, retrolateral view. **D.** Same, trichobothria. **E–G.** *Gayenna americana* Nicolet (Talca, Alto de Vilches). **E.** Tarsal organ. **F.** Trichobothria. **G.** Claw tuft.

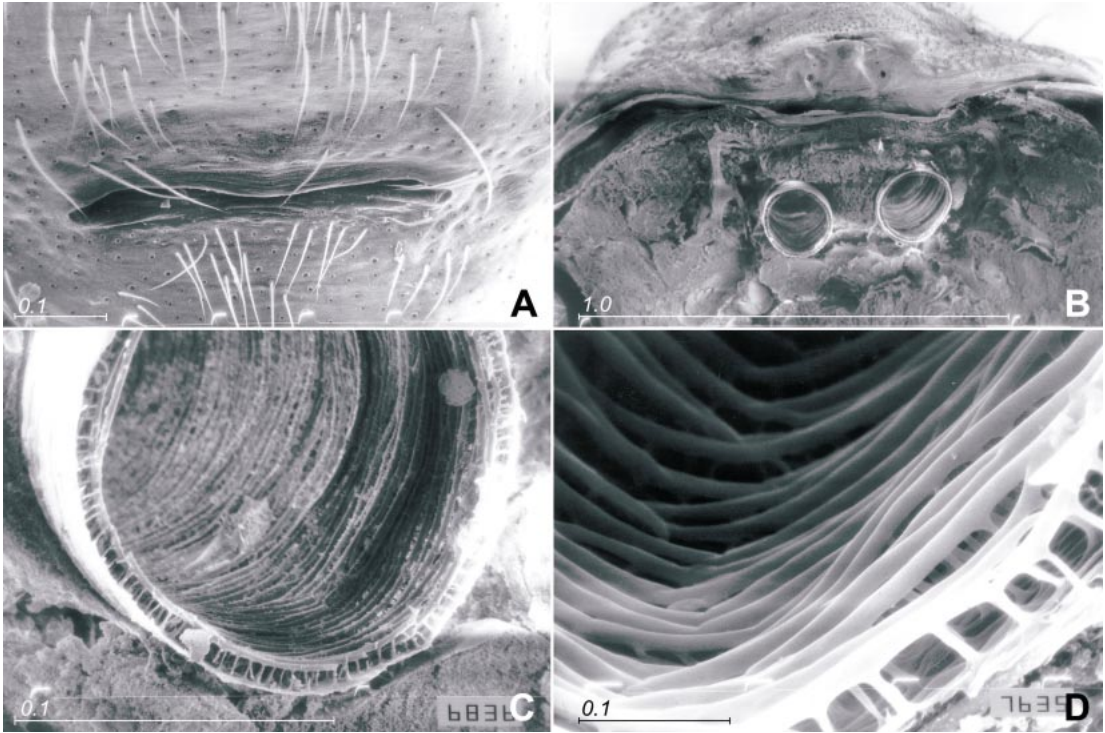


Fig. 14. Details of posterior respiratory system. **A.** *Oxysoma punctatum* Nicolet, female tracheal spiracle (Llanquihue, Alerce Andino). **B.** *Sanogasta maculosa* (Nicolet), penultimate female abdomen sectioned through epigastric fold, showing median tracheae (Chubut, Ñorquinco). **C, D.** Same, detail of median tracheae.

the median apophysis, and the paramedian apophysis arise.

CONDUCTORS

The homology of the extremely diverse structures accompanying the embolus of en-telegyne spiders is a contentious field. Here I tried to establish the homology of the structures across the subfamily, with variable success. I call the primary conductor (C1) a structure arising between the base of the embolus and the prolateral margin of the tegulum. The C1 is most evident in Amaurobioi-dini, often bearing a long canal where the embolus fits. The apical portion of C1, where the canal ends, usually forms a heavily sclerotized, partially coiled beak (e.g., fig. 50D). The apical portion of C1 may look like a separate sclerite if the basal portion is protruding as well (fig. 33B). In the Gayennini, there is a small sclerite mostly hidden by the other structures arising from the distal he-

matodocha (figs. 63C, 105C), connected by a sclerotized stripe to the articulation between the embolus and prolateral margin of tegulum, which is a presumed homolog of the C1. In *Josa* the basal portion of the C1 is fused with the tegulum; the apical portion is no longer identifiable (fig. 60A, B).

I call the secondary conductor (C2) a sclerite also associated with the embolus, arising from the apical-dorsal region of the distal hematodocha. It is closely related, often fused, to a sclerotized stripe of the tegulum where the sperm duct runs. In Amaurobioi-dini, the main structure leading the embolus is the C1, and the C2 is small, with a poorly defined canal (fig. 26A). In Gayennini this situation is reversed, and the C2 is a conspicuous structure. In *Josa*, the C2 is hypertrophied and very complex (figs. 56B, 60B).

PARAMEDIAN APOPHYSIS

Hidden behind the retrolateral margin of the tegulum there is a tightly folded section

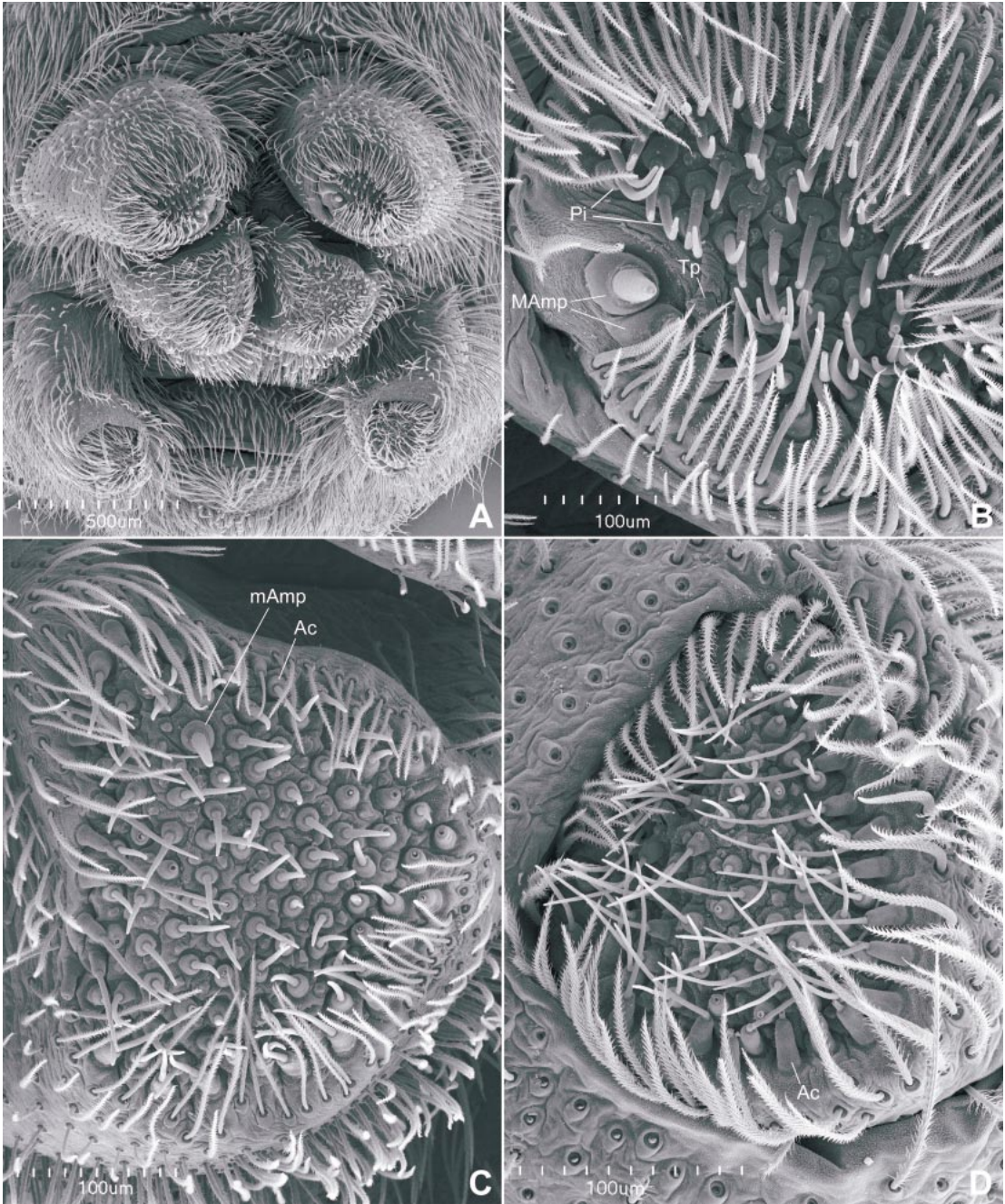


Fig. 15. *Amaurobioides africana* Hewitt, female spinnerets (South Africa, Western Cape, Kommetjie). **A.** Spinnerets. **B.** Left anterior lateral spinneret. **C.** Left posterior median spinneret. **D.** Left posterior lateral spinneret. (Ac = aciniform gland spigot; mAmp = minor ampullate gland spigot; MAmp = major ampullate gland spigot; Pi = piriform gland spigots; Tp = tartipore.)

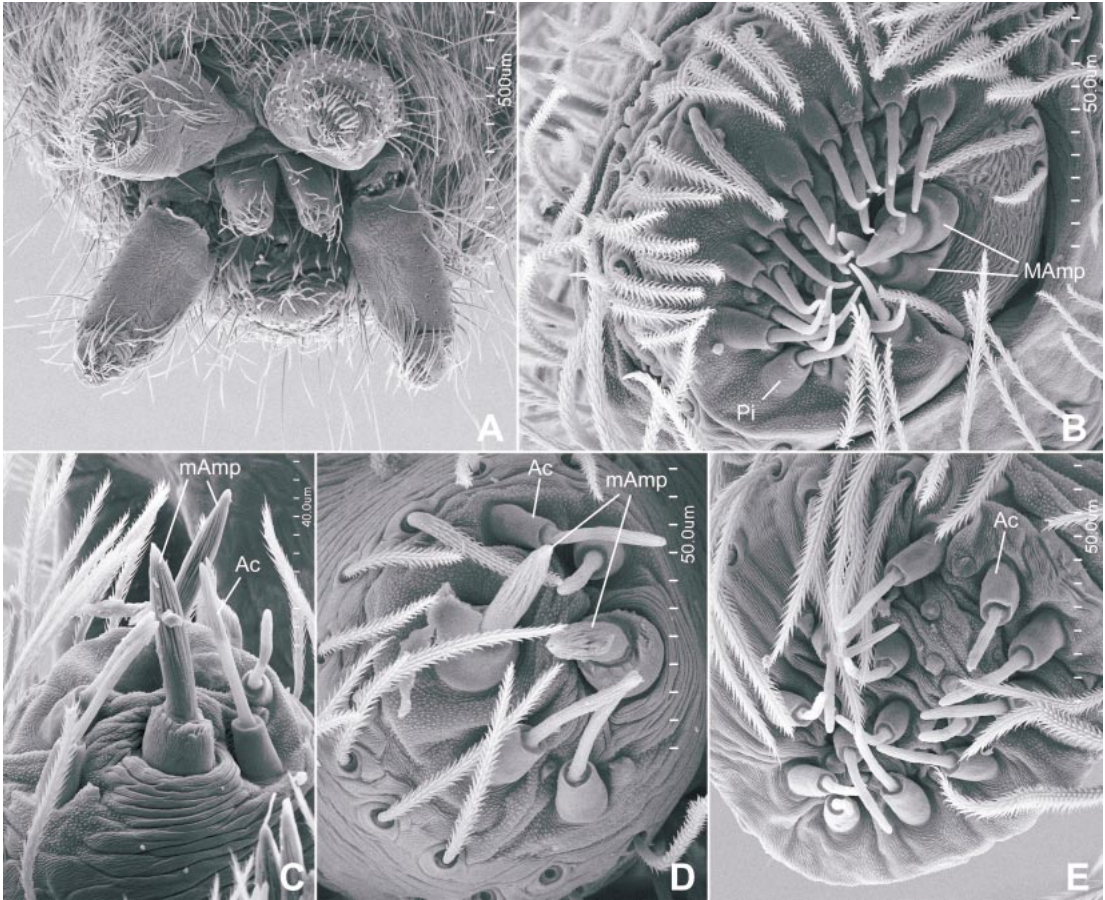


Fig. 16. *Gayenna americana* Nicolet, female spinnerets (Talca, Alto de Vilches). **A.** Spinnerets. **B.** Right anterior lateral spinneret. **C.** Right posterior median spinneret. **D.** Same, internal view. **E.** Right posterior lateral spinneret. (Ac = aciniform gland spigot; mAmp = minor ampullate gland spigot; Mamp = major ampullate gland spigot; Pi = piriform gland spigot.)

of the distal hematodocha, which becomes inflated during expansion (fig. 50D; see also character 71). A sclerotized plate attached to this section of hematodocha is called the paramedian apophysis (PMA), which, in Amaurobioidini, is distally articulated to the C1 (fig. 50D). The PMA may have one (in Gayennini) to several cusps (in Amaurobioidini). The PMA is also connected, often more or less fused, with the median apophysis. A protruding PMA appears in Gayennini (see character 68), together with the anterior pouch on the median epigynal field (APmf, character 104). Because the shape of the PMA seems also to be somewhat correlated with the shape of the APmf (e.g., fig.

124D, H), it is possible that the PMA fits into the APmf during copulation, at least in some species.

MEDIAN APOPHYSIS

The median apophysis (MA) is much more conservative than are the conductors. In most Amaurobioidinae the MA is very simple, small, and hooked, at some extent articulated or fused with the plate of the PMA. Species of *Coptoprepes* have a larger, complex MA. Davies (1998) doubted the homology of the MA in *Amaurobioides*, because it is not articulated, but is firmly fused to a complex of paramedian apophysis and part of the con-

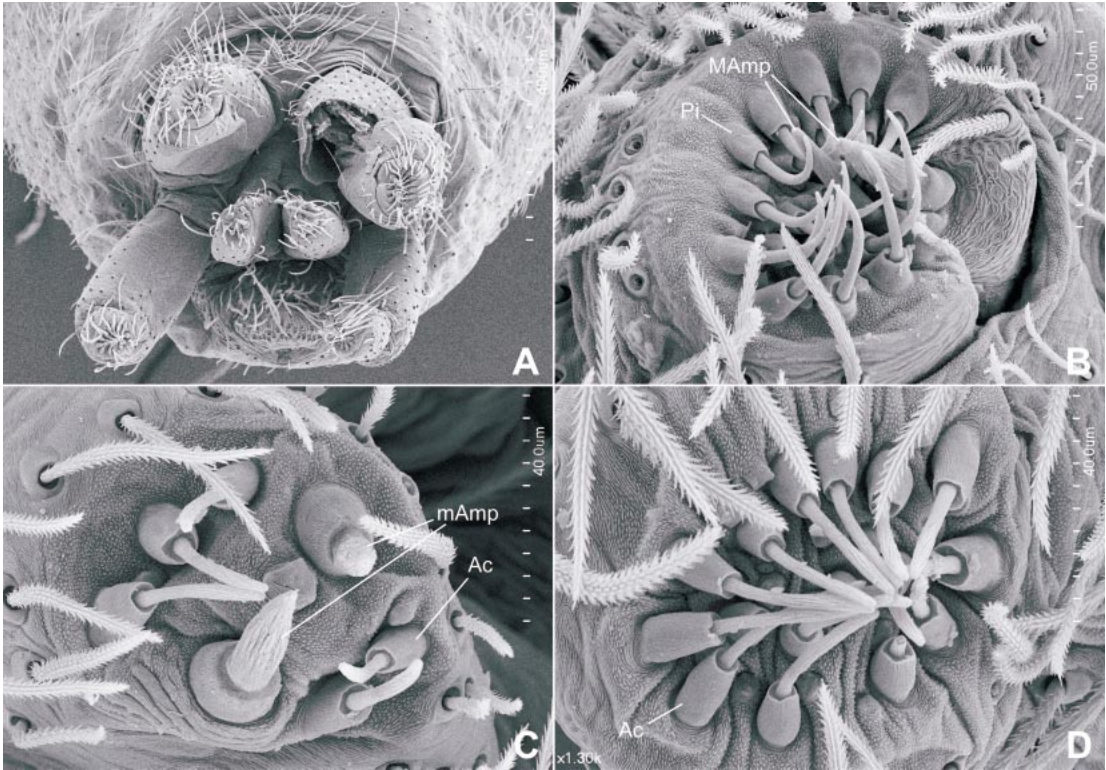


Fig. 17. *Gayenna americana* Nicolet, male spinnerets (Llanquihue, Alerce Andino). **A.** Spinnerets. **B.** Right anterior lateral spinneret. **C.** Right posterior median spinneret. **D.** Right posterior lateral spinneret. (Ac = aciniform gland spigot; mAm = minor ampullate gland spigot; MAm = major ampullate gland spigot; Pi = piriform gland spigot.)

ductor. However, when close relatives of *Amaurobiooides* are examined (*Axyracrus*, *Aysenia*, *Aysenoides*), it is clear that the distal hematodocha where C1, PMA, and AM are placed underwent variable degrees of sclerotization. Because the morphology of the area is otherwise conservative, the homology of the MA seems clear. The homology of the MA as identified in *Josa* is somewhat more problematic, because the entire distal region of the bulb is extremely modified. The MA becomes reduced independently in several clades (character 64), but in these cases the general morphology of the area is similar to that of close relatives.

EMBOLUS

Coddington (1990) noted that the embolus of *Amaurobiooides* runs counterclockwise,

differing from most entelegynes. Other Amaurobiooidini, and to a lesser degree to a Gayennini, also have that embolar course. The change from clockwise to counterclockwise involved only minor modifications of the copulatory bulb, compared to a more generalized conformation. The region of the basal articulation of the embolus has an acute to straight angle, thus changing the course, while the basal part of the sperm duct runs clockwise, as in other entelegynes. Amaurobiooidines with a less pronounced angle (e.g., *Selknamia*, figs. 52, 53A, B) are ambiguous as to the curvature, while in others the curvature looks different from prolateral and ventral views (e.g., *Negayan*, figs. 47D, 50A, B). In Anyphaeninae there is great variability in embolus morphology, and sometimes it is not clear in what direction a contorted embolus is running.

ALTERNATIVE INTERPRETATIONS OF MALE PALP STRUCTURES

The identification of C1, C2, and cusps of PMA is disputable. The system of homologies adopted here is what seemed more congruent after detailed study of the anatomy and informal examination of alternative codings during the construction of the dataset. Those alternative codings did not produce very different results from those shown here, though. This is because alternative homologies have a coordinated effect on groups of terminals with similar morphology. The C1 in Gayennini, as interpreted here, is a small piece, compared to the structure found in Amaurobioidini. An alternative coding might consider this small piece the second cusp of the PMA (which is lacking in Gayennini, compared with most Amaurobioidini). The C2 of Gayennini might be considered a C1 (or conversely, the apical portion of C1 in some Amaurobioidini, a C2), because in *Negayan* and *Selknamia* the apical portion of C1 is similar to the C2 of Gayennini. This coding was used in preliminary datasets, but was later abandoned, because the homologies would be supported by intermediate morphologies that were not intermediate in phylogeny! Settling these problems of unclear homologies may involve the use of alternative codings, keeping those homologies (and the corresponding trees) that imply most parsimonious results (Rieppel, 1996; Wheeler, 1996).

SPERMATHECAE AND ASSOCIATED DUCTS

There is some disagreement on the terminology for these structures. I mostly followed Sierwald (1989), with modifications. The main difference is interpretation of the copulatory duct. In Sierwald's view, this duct runs from the copulatory opening to the connection with a duct from the "head of spermatheca", here accessory bulb (AB) after Carico and Holt (1964). The segment from that point to the "base of spermatheca" (here spermatheca) is considered by Sierwald as part of the spermatheca itself, the "peduncle of spermatheca", uniting the head and base. This terminology seems adequate for Lyco-soidea (Griswold, 1993; Diana Silva, personal commun.), but not so much for Amauro-

bioidinae, at least in functional terms. In Amaurobioidinae, the accessory bulb joins the copulatory duct relatively close to the copulatory opening, and from this point to the origin of the fertilization duct there runs a tube that evidently functions as a duct rather than as a reservoir. In fact, the male embolus runs through that segment (Ramírez and Kochalka, 1993: fig. 4), and I could not find much justification for considering it part of the spermatheca (a name that indicates storage function). Comparative anatomy does not help much to settle the question, because the evolutionary transformations that lead to the entelegyne female genitalia are not well understood. I am inclined to accept the homology of the accessory bulb with one of the paired receptacles, as found in most Mygalomorphae and many Haplogynae. In this case, the fertilization ducts are homologous to the ducts leading to one pair of receptacles, the entelegyne copulatory openings are homologous to the duct leading to the second pair of receptacles, and the "peduncles" are invaginations of the body wall connecting the two receptacles of each side (see Sierwald, 1989).

The development in *Tomopisthes horrendus* is in agreement with this hypothesis (fig. 106). The accessory bulb arises anteriorly on a cuticular fold separating the median field from the lateral lobes, the primordium of the copulatory opening leads to the primordium of the accessory bulb, and both primordia are connected by a deep folding corresponding to the copulatory duct. For the sake of descriptive power, I refer as "spermatheca" to the ample chamber immediately connected to the fertilization duct, "copulatory duct" to the tube running from the copulatory opening to spermatheca, and "accessory bulb" to the blind sac bearing conspicuous pores, connected to the copulatory duct by a tube of variable length. The accessory bulb was recently referred to as "seminal receptacle" (Brescovit, 1997) and "diverticulum" (Huber, 1995). Bonaldo (2000) called it "secondary spermatheca" on account of its function as a sperm reservoir in Corinninae.

LEG SPINES

Goloboff (1995b) used several characters from patterns of spines in Nemesiidae. Bos-

selaers and Jocqué (2002) used both patterns and individual spines in an analysis of some Corinnidae and Liocranidae. They found those characters informative, with similar levels of homoplasy as for other somatic ones. Here many of the leg spines were coded as independent characters, homologized according to their position. This is possible since the spination in Anyphaenidae follows a rather conservative pattern.

In most genera the spines on leg I are similarly distributed to those on leg II. Legs III and IV are also similar in spines, which are more numerous than on forelegs. Through the four pairs of legs, most spine positions are conserved, because they are serially homologous. A common pattern is:

Legs **I** and **II**, femur d 1-1-1, p 0-1-(1-d1), r d1ap; tibia v 2-2-2; metatarsus v 2bas. **III**, femur d 1-1-1, p and r 0-d1-d1; patella r d1; tibia v 2-2-2, p and r d1-1, d r1bas; metatarsus v 2-2-2, p and r d1-1-1, d 0-p1-2. **IV**, femur d 1-1-1, p 0-d1-d1, r d1ap; patella, tibia, and metatarsus = III.

In some groups the anterior legs are almost as spinose as the posterior legs. A common pattern of this type is:

Leg I and II, femur d 1-1-1, p and r 0-d1-(1-d1); tibia v 2-2-2, p and r d1-1, d r1-0-1-0; metatarsus v 2bas, p and r d1-1-1, d 0-p1-2. **III**, femur = I; patella r d1; tibia = I; metatarsus = I, but v 2-2-2. **IV**, femur d 1-1-1, p 0-d1-d1, r d1ap; patella, tibia, and metatarsus = III.

Most spine patterns vary between these two examples. In the spinose pattern, spines on anterior and posterior legs differ mostly by the ventrals on metatarsi. There are only a few species with more than two ventral spines on metatarsus I or II, they are not especially spinose on other surfaces, and these spines are not usually sexually dimorphic. Some species have more than three pairs of ventral spines on tibiae I and II, conferring a raptorial appearance (e.g., some *Monapia*).

Males are often more spinose than are females. The additional male spines appear after the last ecdysis. Spines of penultimates of both sexes are similar to those of the female. In some rare specimens (but commonly in *Sanogasta backhauseni*) there are supernumerary spines, for example, two or three spines where one is expected. Such an anomaly is often asymmetrical.

Bristles (similar to spines but thinner and

shorter) seem to be homologous to spines, because some specimens have a bristle where a spine is normally found. Frequent positions for replacement of spines by bristles are the prolaterals and retrolaterals on femora, and the v p1-x-x of tibia II. In species with spinose males, it is common that the male has a spine where the female has a bristle; common positions are the dorsals of tibiae (r1-0-1-0) and patellae (1-0-1).

Inter- and intrasexual variabilities in spines were coded without distinction as polymorphisms in the data matrix, with internal steps added accordingly. It is expected that variability is underestimated in species known from a few exemplars, and more drastically if the males are unknown. To estimate the effect of variations in the internal steps for the spine characters, several replications were examined with the internal steps for the spine characters assigned randomly between 0 and 29. These produced virtually the same trees, except for some clades of little support, suggesting that underestimation of variability in spines is not decisive in this analysis.

TRIBE AMAUROBIOIDINI HICKMAN

Table 6

Amaurobioididae Hickman, 1949: 31 (type genus *Amaurobioides* O.P.-Cambridge, 1883).

DIAGNOSIS: Distinguished from Gayennini and *Josa* by the male copulatory bulb with an apical dorsal loop on the sperm duct, visible in apical view (figs. 21H, 26C, white arrow; absent in *Acanthoceto acupicta* group, see character 53), and by the well-developed primary conductor with canal where the embolus fits (fig. 47).

DESCRIPTION: Chelicerae commonly with three or more teeth on retromargin, sometimes only two. Male palp with one retrolateral tibial apophysis (reduced in *Gamakia*, absent in *Coptoprepes campanensis*). Cymbial conductor wide. Sperm duct with loop on apical side of copulatory bulb. Primary conductor with canal where embolus fits; basal portion often weakly sclerotized, close to base of embolus; apical portion, where canal ends, sclerotized, of varied shape, sometimes diverging from basal portion (fig. 33B). Secondary conductor generally small, partially or totally fused to apical tegular

TABLE 6
Synapomorphies of Amaurobioidini
and Internal Clades

Amaurobioidini (clade 122)
apical loop SD (53): absent → present
C1 (75): present → with canal
shape embolar process (97): complex → flattened

Clade 103
male chelicerae (17): smaller → strong
shape embolar process (97): flattened → thin hyaline

Clade 106
cymbial conductor terminal (48): terminal → subterminal
C1 (75): with canal → massive
C2 (79): fused → absent

Clade 116
leg III orientation (26): backward → forward
spine tibia I, v x-p1-x displaced prolaterally (136):
absent → present

Clade 117
PMA cusp on C1 (69): present → absent
spine metatarsus I, p 1-x (142): absent → present
spine tibia II, v x-p1-x (148): present → absent

Clade 118
ocular area protruded (10): absent → present
size retromarginal teeth (21): small denticles → regular

Clade 119
posterior eye row (12): procurved or straight → recurved
spine metatarsus III, p d1-x-x (171): present → absent
spine metatarsus III, r d1-x-x (174): present → absent
spine tibia IV, v x-r1-x (184): present → absent

Clade 120
PMA cusp on C1 (69): absent → present
spine patella III, r d1 (158): present → absent
spine patella IV, r d1 (180): present → absent

Clade 121
ratio AME/ALE (15): AME = ALE → AME < ALE
male chelicerae (17): strong → smaller
shape of PMA (68): one short cusp → two or more cusps

stripe where basal part of sperm duct runs, well developed only in some *Coptoprepes*. Paramedian apophysis not projecting, usually with two conical cusps. Epigyne without anterior pouch, lateral lobes separated from each other. Spermathecae usually of irregular shape, but spherical in *Selknamia* and *Aysenoides*.

DISTRIBUTION: South America, except the coastal genus *Amaurobioides*, which occur in the sea-shores of Chile, South Africa, Aus-

TABLE 7
Synapomorphies of *Amaurobioides*
and Representatives

Amaurobioides (clade 110)
carapace *Amaurobioides*-like (7): absent → present
PMS with many spigots (35): few → many
SD suddenly narrowed (57): absent → present

A. maritima
cymbial retrolateral apical notch (50): absent → present
canal on C2 (84): present → absent
spine metatarsus II, p d1-x-x (153): absent → present
spine tibia IV, v x-r1-x (184): absent → present

A. africana
posterior eye row (12): recurved → procurved or straight
shape embolar process (97): flattened → thin hyaline
spines metatarsi III and IV, v ap (169): 2 → 1
spine metatarsus IV, v x-p1-x (189): present → absent

tralia, Tasmania, and New Zealand, and *Sanogasta maculatipes*, probably introduced in Eastern Island.

COMPOSITION: Ten genera, four of them newly proposed here: *Acanthoceto* Mello-Leitão, *Amaurobioides* O.P.-Cambridge, *Axyracrus* Simon, *Aysenia* Tullgren, *Aysenoides*, n. gen., *Coptoprepes* Simon, *Ferrieria* Tullgren, *Gamakia*, n. gen., *Negayan*, n. gen., and *Selknamia*, n. gen.

AMAUROBIOIDES O.P.-CAMBRIDGE

Table 7

Amaurobioides O.P.-Cambridge, 1883: 356 (type species by monotypy *Amaurobioides maritima* O.P.-Cambridge, 1883). Simon, 1897a: 89, 1903a: 1034. Hogg, 1909: 163. Hewitt, 1917: 704. Hickman, 1949: 31, 1951: 1. Forster, 1955: 184. Lehtinen, 1967: 211 (removed from synonymy of *Uliodon* L. Koch, 1873). Coddington, 1990: 10. Ramírez, 1995a: 366, 1997: 178. Davies, 1998: 212.

Cluilius Simon, 1889: 220 (type species by monotypy *Clubiona chilensis* Nicolet, 1849; see Simon, 1904: 100, and Synonymy in *Philisca*). NEW SYNONYMY.

SYNONYMY: The type species of *Cluilius* is here considered a typical *Amaurobioides*. See also Synonymy in *Philisca*.

DIAGNOSIS: Distinguished from other genera of Anyphaenidae by having many aciniform gland spigots on posterior median spinnerets (Ramírez, 1995a: fig. 43).

DESCRIPTION: Redescribed by Forster (1970).

MORPHOLOGICAL REMARKS: The posterior median spinnerets densely covered by spigots might have a correlation with their aquatic habitats, because the retreat silk is much denser than that of other Anyphaenidae. In support of this association, the PMS are similarly enlarged and covered by many aciniform gland spigots in the European aquatic spider *Argyroneta aquatica* (Clerck) and in species of the intertidal spider genus *Desis*, from Pacific and South African coasts (Lehtinen, 1967). Forster (1970) reported three processes on the male palpal conductor of *Amaurobioides maritima*. One of them is here interpreted as the tip of the primary conductor, bearing the canal, the other two as cusps of the paramedian apophysis. Davies (1998) suggested that the structure that is here identified as secondary conductor may be a primary conductor (C1) instead, because in *Amaurobioides isolata* Hirst it is a well-defined sclerite, entirely bordered by a membranous area; however, the same is true for the structure here identified as C1.

DISTRIBUTION: Shores of Austral regions: one species from Chile, one from South Africa, all others from Australia, New Zealand, and Tasmania.

COMPOSITION: In addition to the three species detailed below: *A. isolata* Hirst, 1993, *A. litoralis* Hickman, 1949, *A. major* Forster, 1970, *A. minor* Forster, 1970, *A. pallida* Forster, 1970, *A. picuna* Forster, 1970, *A. piscator* Hogg, 1909, *A. pleta* Forster, 1970, and *A. pohara* Forster, 1970.

Amaurobioides maritima O.P.-Cambridge

Figure 18A–D

A. maritima O.P.-Cambridge, 1883: 356 (male holotype from New Zealand, Otago, Allday Bay, in BMNH, not examined).

A. maritimus: Forster, 1970: 168. Ramírez, 1995a: 28.

DESCRIPTION AND DIAGNOSIS: See Forster (1970). Additional data are provided below.

FEMALE (Otago): Total length 15.45. Carapace length 5.45, width 4.26, wider on legs II–III. Leg III, length of tibia 2.50, metatarsus 2.67; leg IV, length of tibia 3.23. Sternum length 3.50, width 2.07. Abdomen length

10.00, width 6.25, spiracle–epigastrium 4.40, spiracle–spinnerets 1.10. Spines: leg **I**, femur d 1–1–1, p d1ap; tibia v 2–2–2; metatarsus v 2bas. **II**, femur = I; tibia v r1–2–2 or 2–2–2, p 1–1; metatarsus v 2-(p1-r1)-0 or 2-r1-0, p 1–0. **III**, femur d 1–1–1, p and r 0-d1-d1; tibia v 0–2–2, p and r 1-0-1-0; metatarsus v 2–2–2, p d1–1–1, r 0–1–1, d 2ap. **IV**, femur d 1–1–1, p and r d1ap; tibia v p1–2–2 (plus r1 supernumerary), r d1ap or 0-d1-d1; metatarsus v 2-p1–2 or 2-p1-r1, p and r 0–1–1, d 2ap. Epigyne: lateral lobes separate, anterior margin elevated. Median field slightly sclerotized. Copulatory ducts irregular, contorted before reaching spermathecae, ducts of accessory bulbs long, thick, diverging (fig. 18A).

MALE (Otago): Spines as in female, except: leg **I**, femur d 1–1–1, p 0-d1-d1, r d1ap; tibia v 2-2-2-2 or 6 spines on each side, irregularly paired, p 1–2–1, r 1–0–1; metatarsus v 2bas, p d1–1–0, r 1, d p1. **II**, femur = I; tibia v 2–2–2, p and r 1–1–1; metatarsus v 2-r1-0, p d1–1–0, r 1. **III**, tibia v 2–2–2, p and r 1-d1–1. **IV**, femur = I; tibia = III, but p 0-d1–1 or 1ap; metatarsus v 2–2–2, p 0–1–1, r d1–1–1. Palp (fig. 18B–D): tibia short, width/length 0.85, RTA very long, sharp, slightly concave ventrally. Cymbium with retrolateral notch where median apophysis fits, and short basal projection, opposing tibia. Sperm duct thick, suddenly narrowed in front of tegular notch. Embolus with basal process flat, well developed. Median apophysis small, thin, apical. Paramedian apophysis with three separate cusps, apical cusp concave, placed under median apophysis, median cusp conical, heavily sclerotized, ventral cusp flattened, weakly sclerotized. Primary conductor well developed, with conspicuous canal. Secondary conductor compressed, partly fused to anterior dorsal margin of tegulum.

VARIABILITY: Spines, according to Forster (1970). Female: **II**, tibia p 0–1; metatarsus v 2bas. **III**, tibia p 1–1–1; metatarsus d plap. **IV**, tibia v p1-p1–2, p 0; metatarsus r 0–1–1. Male: **I**, tibia v 2–2–2, p and r 1–1–1; metatarsus v 2–2–0, p 1–1–0. **II**, metatarsus v 2–2–0, p and r 1–1–0. **III**, metatarsus r d1–1–1, d 0-p1–2. **IV**, tibia p 0–1–1, r 1–1–1.

MATERIAL EXAMINED: NEW ZEALAND: Otago, St. Clair Beach, on cliff face,

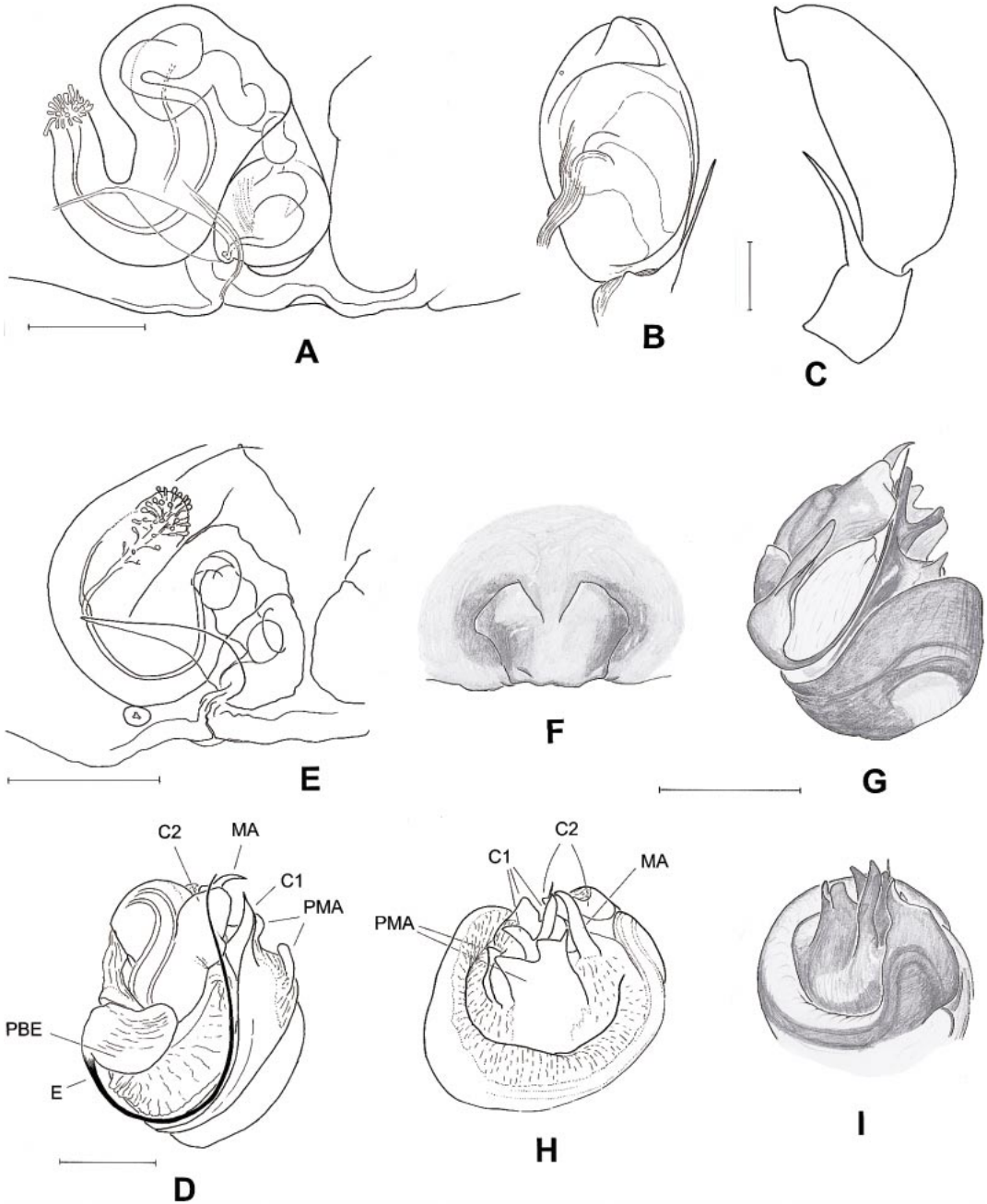


Fig. 18. *Amaurobioides* spp. **A–D.** *A. maritima* O.P.-Cambridge (New Zealand, Otago). **A.** Cleared epigyne, dorsal view. **B.** Male palp, cymbium and petiolus, bulb dissected, ventral view. **C.** Same, retrolateral view. **D.** Male copulatory bulb, ventral-prolateral view. **E–I.** *A. africana* Hewitt (Namibia, Luderitzbucht). **E.** Cleared epigyne, dorsal view. **F.** Epigyne, ventral view. **G.** Male copulatory bulb, ventral view. **H.** Same, retrolateral-apical view. **I.** Same, apical-dorsal view. Scale bars = A, E, 0.2 mm; B–D, F–I, 0.5 mm. (C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis.)

28.IV.1979, J. Carico, 1♂ 1♀ (MACN-Ar, identified by R. Forster).

Amaurobiooides africana Hewitt

Figures 13A–D, 15, 18E–I

Amaurobiooides africanus Hewitt, 1917: 704 (female holotype from South Africa, East London, in BMNH, examined). Lehtinen, 1967: 212. Forster, 1970: 176 (removed from synonymy of *A. maritima* O.P.-Cambridge). Lopez, 1974: 902.

DIAGNOSIS: Distinguished from other *Amaurobiooides* by the wide, sclerotized portion of paramedian apophysis with three separate cusps (fig. 18G–I), and by the shape of the elevated margins of epigyne (fig. 18F).

FEMALE (Namibia): Total length 14.00. Carapace length 4.92, width 3.60, wider on leg II. Length of tibia/metatarsus: I, 2.83/2.50; II, 2.67/2.10; III, 2.37/2.10; IV, 2.60/2.33. Palpal tarsus length 1.50. Chelicerae very strong, with three teeth on retromargin. Sternum length 2.83, width 1.77. Spines, all short: leg I, femur d 1–1–1, p d1ap; tibia v 2–2–2; metatarsus v 2-r1–0. II, femur = I; tibia v r1–2–2, p 0–1; metatarsus v 2-r1–0, p 1. III, femur = I; tibia v p1–p1–2, p 1-d1–1 or 0–1, r d1–1; metatarsus v 2–0–1, p and r 0–1–1, d 2ap. IV, femur d 1–1–1 or d 1–0–1; tibia v p1–p1–2, p 0, r d1–1; metatarsus v 2–0–1 or 2-r1–1, p and r 0–1–1, d 2ap. Abdomen length 9.44, width 5.32. Spiracle–epigastrium 5.19, spiracle–spinnerets 1.07. Epigyne (fig. 18E, F): lateral lobes separate, depressed on anterior margin, prolonged in V-shaped marks on elevated median field. Copulatory ducts irregular, contorted before reaching spermathecae, ducts of accessory bulbs long, thick, converging; some of their gland ducts discharging before expansion of bulb.

MALE (Namibia): Total length 8.25. Carapace length 3.60, width 2.67. Length of tibia/metatarsus: I, 2.97/2.83; II, 2.93/2.73; III, 2.47/2.23; IV, 2.50/2.30. Chelicerae smaller than those of female, teeth evenly spaced. Spines as in female, except: leg I, tibia p 1–0–1. II, tibia v 2–2–2, p 1-d1–1; metatarsus v 2–2–0. III, tibia v 2–2–2, p and r 1-d1–1; metatarsus v 2-r1–1 or 2–2–1, p and r d1–1–1. IV, femur d 1–1–1, p d1ap; metatarsus v 2-r1–1, p and r d1–1–1. Palp: tibia short,

width/length 1.07, RTA long, sharp, forming subtle angle at base. Cymbium with weak apical notch where median apophysis fits, and short, rounded basal projection opposing tibia. Copulatory bulb (fig. 18G–I): sperm duct thick, suddenly narrowed in front of tegular notch. Embolus with basal process flat, thin, striated longitudinally. Median apophysis long, apical. Paramedian apophysis with flattened portion close to median apophysis, wide, sclerotized, bearing three separate cusps, and weakly sclerotized portion close to primary conductor, projecting as flattened, triangular cusp. Primary conductor with open canal, bifurcating in elongate tips; canal ending on dorsal tip. Secondary conductor compressed, partly fused to anterior dorsal margin of tegulum, its membranous apex with vaguely defined canal.

NATURAL HISTORY: Lamoral (1968) made a detailed ecological and physiological study, comparing *A. africana* with the sympatrid and also intertidal *Desis formidabilis* (Desidae). He found that *A. maritima* builds retreats using mollusc shells, or only silk, in rock crevices, which endure daily periods of immersion as the tides rise. They resist long periods of immersion, taking oxygen from the water through an air film retained by hydrophobic hairs. They resist at least 12 hours of immersion after the air film has disappeared. The spiders are nocturnal and seem to prey mostly on isopod and amphipod crustaceans. The rhythm of silk nest building remained coordinated with the tides up to a week in the laboratory.

DISTRIBUTION: South Africa.

OTHER MATERIAL EXAMINED: **NAMIBIA:** Luderitzbucht, intertidal rocks (26°35'S, 15°10'E), 8–10.X.1984, C. Griswold and T. Meikle Griswold, 1♂ 3♀ 2 immatures (CAS). **SOUTH AFRICAN REPUBLIC:** **Western Cape:** Cape Peninsula (34°08'S, 18°20'E), intertidal rocks, 1966, B. Lamoral, 1♂ 1♀ (CAS); Cape of Good Hope, in rock crevices though white silken tubes, upper edge of average high tide, 6.II.1991, V. and B. Roth, 2♀ (CAS); Kommetjie, 34°09'S, 18°20'E, 30 air km S of Cape Town, intertidal zone, under rocks, 13.III.2001, L. Preadini, D. Ubick, 3♀ 3♀ penultimates, 1♀ (CAS); 3 mi S Port Nolloth, 1 m, 5.I.1967, E.S. Ross and K. Lorenzen, 1♀ (CAS).

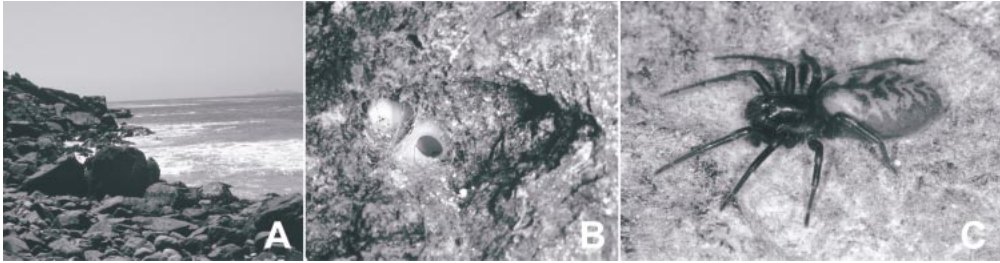


Fig. 19. *Amaurobioides chilensis* (Nicolet), Elqui, Cruz Grande. **A.** Habitat. **B.** Female retreat. **C.** Female. (Photos MJR 1324–1326.)

Amaurobioides chilensis (Nicolet),
new combination

Figures 19, 20

Clubiona chilensis Nicolet, 1849: 419 (female presumably holotype from Chile, no specific locality, in MHNP 4231, examined).

Cluilus chilensis: Simon, 1889: 220.

Philisca chilensis: Simon, 1897a: 86, 1904: 48.

Amaurobioides cf. *boydi*: Ramírez, 1995a: 366 (misidentification).

NOTE: The specimens examined in Ramírez (1995a), misidentified as *Amaurobioides* cf. *boydi* (here synonymized with *Axyracrus elegans*), are provisionally identified here as *A. chilensis*. The species was not included in the cladistic analysis, because the females are almost identical to those of *A. maritima*, and the males are unknown. There are some differences in the spermathecae between the type of *A. chilensis* and the specimens I collected in Chile, and it is possible that more than one species is involved. Opell (American Arachnological Society Annual Meeting, Keene, 2001) reported problems in species delimitation for New Zealand *Amaurobioides*.

DIAGNOSIS: Very similar to *A. maritima*, distinguished by the less curved epigynal lateral lobes (fig. 20B).

FEMALE (holotype, fig. 20A, spines from Cruz Grande MACN-Ar 9848): Total length ca. 8.68 (abdomen deteriorated). Carapace length 3.48, width 2.22, wider at leg II. Length of tibia/metatarsus: I, 1.75/1.70; II, 1.70/1.62; III, 1.30/1.40; IV, 1.65/1.65. Chelicerae strong, with three teeth on retromargin. Sternum length 1.91, width 1.11. Spines (six females): femora I–IV d 1–1–1, p d1ap or p 0. Leg I tibia v 2–2–2; metatarsus v 2bas. II, tibia v 2–2–2, p 0–1; metatarsus v

2bas, p 1–0. III, tibia v 0-p1–2 or p1–2–2, p 1-d1–1 or d1–1 or 0–1, r d1–1 or 0–1; metatarsus v 2–0–1 or 2-p1–1, p d1–1–1 or 0-d1–1, r 0-d1–1, d 0-p1–2. IV, tibia v p1-p1–2, r d1–1 or 0; metatarsus v p1-p1–1 or 2-p1–1, p 0-d1–1 or lap, r d1–0–1 or lap, d r1ap. Abdomen badly preserved, spiracle–epigastrium 2.77, spiracle–spinnerets 0.43. Color: type with abdomen totally faded. Fresh specimens are very similar to those of *A. maritima* (Forster, 1970: fig. 463). Epigyne (fig. 20B, C): lateral lobes separate, elevated at anterior margin. Median field weakly sclerotized. Copulatory ducts irregular, contorted before reaching spermathecae, ducts of accessory bulbs short, thick, diverging.

MALE: Unknown.

NATURAL HISTORY: Collected from retreats made of white, very dense silk in rock crevices at the seashore in the spray zone (fig. 19).

DISTRIBUTION: The type lacks a precise locality. Collected in two widely separate localities at Chilean seashore, probably with a much more extensive distribution.

OTHER MATERIAL EXAMINED: **CHILE: Región IV: Elqui:** coast 6 km S Cruz Grande, 11.XI.1993, 29°29'S, 71°19'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 8 immatures (MACN-Ar), 6 immatures 2nd stage (MACN-Ar), 1 ♀ (MACN-Ar 9848), 2 ♀ (MACN-Ar 9849, photos MJR 1324–1326), 1 ♀ (MHNS), 2 ♀ (AMNH); same, 9 km S Cruz Grande, 5 immatures (MACN-Ar). **Choapa:** 12 km S Los Vilos, Rt. 5, km 213, elev. 5 m, 33°00'S, 71°31'W, 13.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 immature (MACN-Ar). **Región X: Llanquihue:** 30 km E Puerto Montt, 41°36'S,

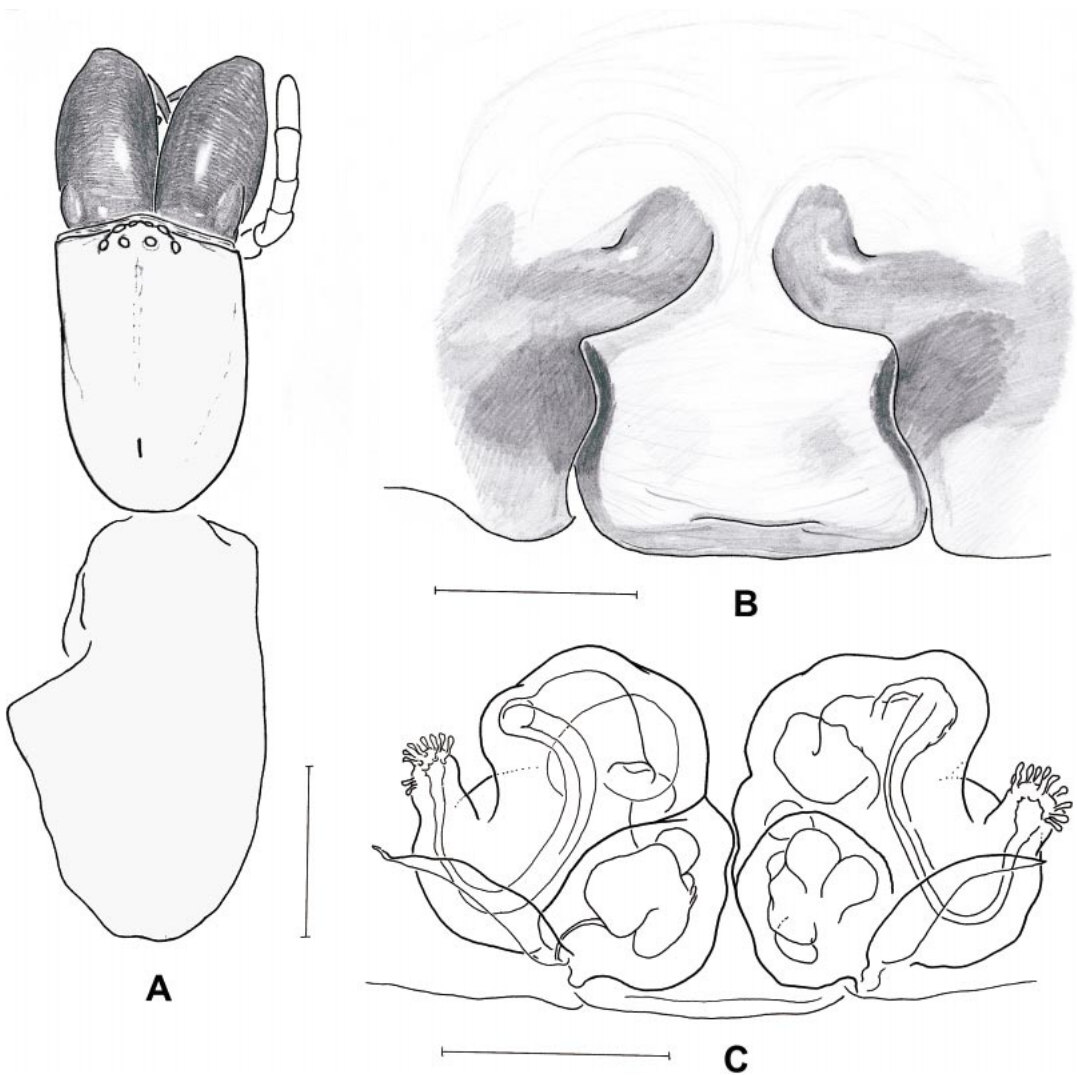


Fig. 20. *Amaurobioides chilensis* (Nicolet). **A.** Female (holotype). **B.** Epigyne, ventral view (holotype). **C.** Cleared epigyne, dorsal view (Elqui, Cruz Grande). Scale bars = A, 2 mm; B, C, 0.2 mm.

TABLE 8
Autapomorphies of *Axyracrus elegans*

number retromarginal teeth (20): three → two
MA (64): present → reduced
C2 (79): fused → absent
shape embolar process (97): flattened → complex, or Gayennini type
copulatory plug (128): absent → present

72°42'W, N. Platnick, K. Catley, M. Ramírez,
T. Allen, 1 ♀ (AMNH).

AXYRACRUS SIMON

Table 8

Axyracrus Simon, 1884: 140 (type species by original designation *Axyracrus elegans* Simon, 1884), 1887: E23, 1897a: 90, 96–98. Keyserling, 1891: 83. Ramírez, 1995a: 381, 1997: 178.

Schiapellia Mello-Leitão, 1938: 115 (type species by original designation *Schiapellia gerschmanni* Mello-Leitão, 1938). NEW SYNONYMY.

SYNONYMY: The type species of *Schiapellia* is here considered a junior synonym of *Axyracrus elegans*.

DIAGNOSIS: Resembles *Amaurobioides* and *Aysenia* in having a recurved posterior eye row, distinguished by the complex embolar process, reduced median apophysis, reduced basal portion of the primary conductor (without canal), and by the epigynal median field slightly elevated, frequently with copulatory plugs.

DESCRIPTION: Carapace wide in front, posterior eye row recurved, ocular area projecting (fig. 21A). Chelicerae strong, slightly smaller in males, with three teeth on pro-marginal, two on retromarginal. Spines on anterior legs unmodified. Male palpal tibia slightly longer than wide, RTA long, pointed (fig. 21D, E). Tegulum with sort basal notch (fig. 21F). Sperm duct with pronounced loop on anterior dorsal margin (fig. 21H). Embolus not associated with canal on primary conductor, with complex basal process. Median apophysis reduced. Basal portion of primary conductor reduced to weakly sclerotized lobe, without canal. Apical portion thick, heavily sclerotized, with wide, shallow canal. Paramedian apophysis with two blunt, heavily sclerotized cusps (fig. 21G). Secondary conductor absent. Epigyne (fig. 21B, C) with median field slightly elevated, weakly sclerotized. Lateral lobes curved, narrow, widely separated. Copulatory openings often obstructed by copulatory plugs, occasionally entire median field covered by massive plug. Spermathecae elongate, copulatory ducts irregular, not coiled. Accessory bulbs voluminous.

COMPOSITION: Only the type species.

Axyracrus elegans Simon

Figure 21

Axyracrus elegans Simon, 1884: 140 (several females, presumed syntypes, from Chile, Cabo de Hornos, Horn, in MHNP, examined), 1887: E23, 1897a: 98. Ramírez, 1995a: 366.

Schiapellia gerschmanni Mello Leitão, 1938: 116 (female holotype from Argentina, Isla de los Estados, in MACN-Ar 35425, examined). NEW SYNONYMY.

Amaurobioides boydi Forster, 1970: 175 (female holotype from Chile, Magallanes, Isla Navarino, Pto. Williams, 30 m, 14.I.1964, J.C. Boyd no. 128 F coll., BPBM 10678, right appendages mounted on separate slide, examined). NEW SYNONYMY.

SYNONYMY: The presumed female syntypes are not labeled as types, but correspond well with the description and collection data. They were compared with the holotype of *Schiapellia gerschmanni* and *Amaurobioides boydi*, and with numerous specimens collected in the same area; no relevant differences were found. The epigyne of the holotype of *A. boydi* is lost, but the figures provided by Forster (1970) are enough for the identification.

DIAGNOSIS: See generic diagnosis.

FEMALE (Bahía San Antonio MACN-Ar 9807): Total length 6.25. Carapace length 2.93, width 1.77, wider on leg II. Length of tibia/metatarsus: I, 1.43/1.27; II, 1.33/1.23; III, 0.99/1.02; IV, 1.60/1.40. Palpal tarsus length 0.69. Chelicerae strong, with two teeth on retromarginal, basal one largest. Sternum length 1.40, width 0.90. Spines: leg I, femur d 1-1-1, p d1ap; tibia v 2-2-2; metatarsus v 2bas. II, femur = I; tibia v r1-2-2, p 0 or 0-1. Metatarsus = I. III, femur d 1-1-1, p and r d1ap; tibia v 0-p1-2, p 0-1, r d1-1; metatarsus v 2-0-2, p and r 0-d1-1, d 2ap or 0-p1-2. IV, femur d 1-1-1, r d1ap; tibia v p1-p1-2, r d1-1; metatarsus v 2-p1-2, p 1ap or 0-d1-1, r 1ap, d r1ap or 2ap. Abdomen length 3.60, width 1.90, spiracle-epigastrium 1.87, spiracle-spinnerets 0.18. Color: brown with dark brown pattern (fig. 21A); ocular area much darker, legs I and II darker from tibia to tarsus; sternum, endites, and labium dark brown, venter brown. Epigyne: see generic description.

MALE (Bahía San Antonio MACN-Ar 9807): Total length 5.45. Carapace length 2.67, width 1.70. Length of tibia/metatarsus: I, 2.20/1.93; II, 2.03/1.83; III, 1.47/1.50; IV, 1.97/1.83. Chelicerae smaller than those of female, vertical. Sternum length 1.37, width 0.80. Spines: leg I, femur d 1-1-1, p d1ap, r d1; tibia v 2-2-2, p 1-d1-1, r 0-1; metatarsus v 2-2-0, p d1-d1-d1, r d1. II, femur = I or p 0-d1-d1. Tibia and metatarsus = I. III, femur d 1-1-1, p and r 0-d1-d1; tibia v 2-2-2 or p1-2-2, p and r 1-d1-1-0; metatar-

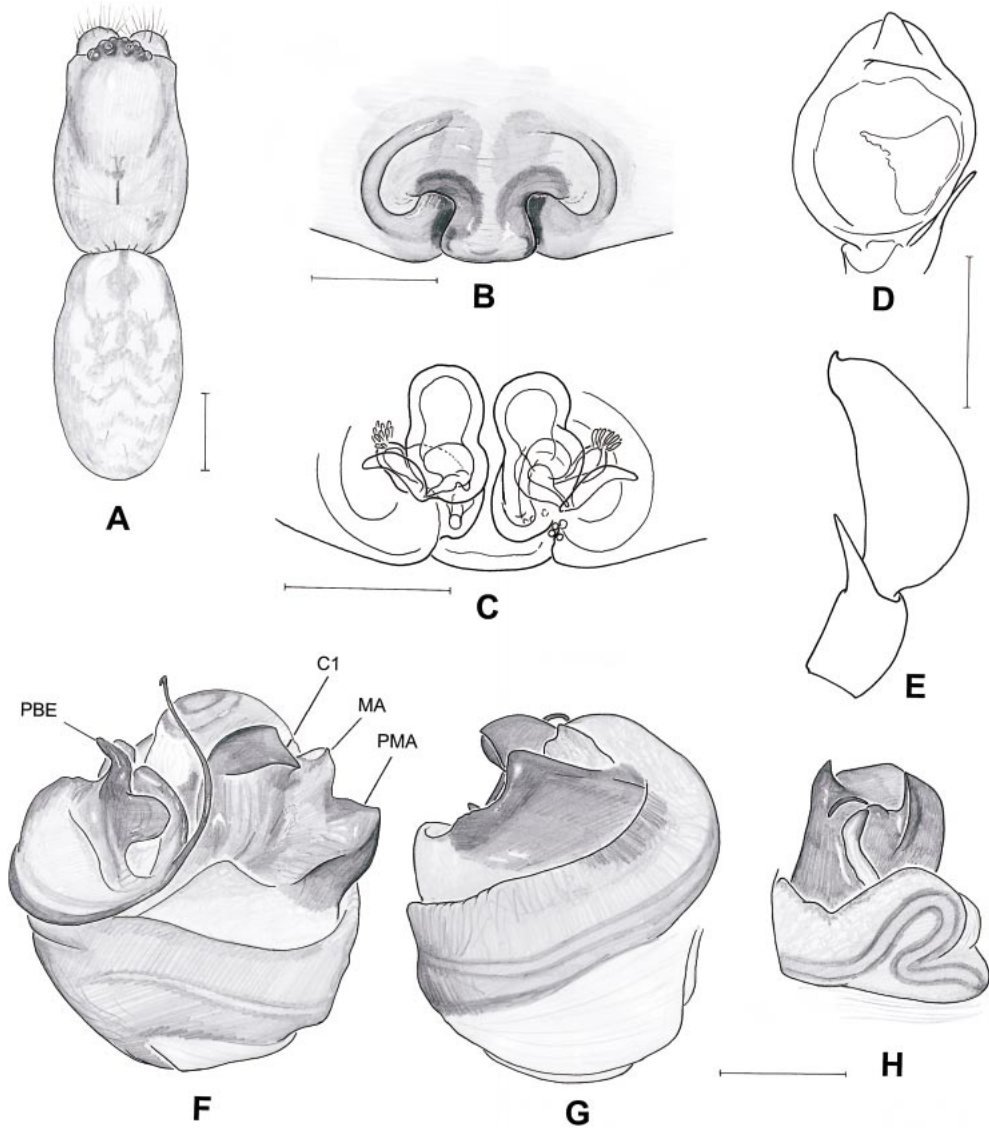


Fig. 21. *Axyracrus elegans* Simon (Tierra del Fuego, male from Bahía Buen Suceso, female from San Antonio). **A.** Female. **B.** Epiginum, ventral view. **C.** Cleared epigyne, dorsal view. **D.** Male palpal cymbium, ventral view. **E.** Same, retrolateral view. **F.** Male copulatory bulb, ventral-apical view. **G.** Same, retrolateral view. **H.** Same, apical-dorsal view. Scale bars = A, 1 mm; B, C, F–H, 0.2 mm; D, E, 0.5 mm. (C1 = primary conductor; MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis.)

sus v 2–2–2, p d1–d1–1, r 0–d1–1, d 0–p1–2. **IV**, femur d 1–1–1, p and r d1ap or p 0; tibia v 2–2–2, p 1–0–1–0, r 1–d1–1–0; metatarsus v 2–2–2, p 0–d1–1, r d1–0–1, d 0–p1–2. Abdomen length 2.67, width 1.50, spiracle–epigastrium 1.50, spiracle–spinnerets 0.15. Color as in female but more heavily contrasting,

anterior legs much darker from tibia to tarsus. Palp: see generic description.

VARIABILITY: The female holotype of *Amaurobioides boydi* has an additional, small apical tooth on the left cheliceral promargin, retromargin; spines also differ by: tibia II, v r1–r1–2; metatarsus III, IV, v 2–0–

2. These differences are interpreted as anomalies and not included in the dataset.

NATURAL HISTORY: According to the labels, many specimens were collected under stones or logs at seashore.

DISTRIBUTION: Tierra del Fuego and Magallanes.

OTHER MATERIAL EXAMINED: ARGENTINA: Tierra del Fuego: Bahía Aguirre, 13.II.1949, S. Núñez, 1♂ (MACN-Ar 2804); Bahía Buen Suceso, 16–31.I.1986, E. Maury, 1♂ 1♀ 1 immature (MACN-Ar 9806); Península Hardy, Isla Hoste, Bahía Orange, 2–3.I.1963, P.J. Darlington, 1♂ 2♀ (MCZ); Isla de los Estados, I–II.1935, J.A. Dagerre and A. Carcelles, 1♀ (MACN-Ar); XII.1967, A. Bachmann, 1♀ 2 immatures (MACN-Ar); Bahía Crosby, 18.X.1941, 6♀ 1 immature (MACN-Ar); Bahía San Antonio, 6–13.II.1982, J.C. Chébez, 1♂ 1♀ (MACN-Ar 9807); Puerto Perry, I.1982, J.C. Chébez, 1♀ (MACN-Ar); Puerto San Juan, en troncos podridos, A. Carcelles, I.1934, 2♀ (MACN-Ar 35425); Ushuaia, 25.II.1959, J. Vellard, 1 immature (MACN-Ar); 22.II.1959, J. Vellard, 1♀ (MACN-Ar). **CHILE: Región XII (Magallanes y Antártica): Magallanes:** Guarello, loc. 92, 18.XII.1978, S. Jacquemard, 1♀ 4 immatures (IRSN IG 25934), loc. 91, 1♀ (IRSN IG 25934); Isla Alacalufes, loc. 98, 20.XII.1978, S. Jacquemard, 1♂ (IRSN IG 25934); Isla Hermit, 13–14.III.1961, B. Malkin, 4♀ 4 immatures (CAS); Isla Hermit, St. Martin's Cove, 13–14.III.1961, B. Malkin, 4♀ 4 immatures (AMNH); Isla Hoste, Bahía Orange, 2–3.I.1963, P.J. Darlington, 1♂ 2♀ (MCZ); María Virginia, J. Vellard, 2♀ 1 immature (MACN-Ar); Rusffin, 9.III.1957, J. Vellard, 2 immatures (MACN-Ar); 9.II.1959, J. Vellard, 1♀ (MACN-Ar). **No Locality:** (presumably from Chile) 1♂ (IRSN IG 23934).

AYSENIA TULLGREN

Table 9

Aysenia Tullgren, 1902: 54 (type species by monotypy *Aysenia elongata* Tullgren, 1902). Simon, 1903a: 1031. Ramírez, 1995a: 381 (transferred from Clubionidae), 1997: 178.

DIAGNOSIS: Resembles *Aysenoides* in having an elongate body, a recurved posterior eye row, and the third leg directed forward,

TABLE 9

Synapomorphies of *Aysenia* and Internal Clades

Aysenia (clade 113)

carapace *Amaurobioides*-like (7): absent → present
canal on C2 (84): present → absent
spine tibia III, v x-p1-x (162): present → absent
spine metatarsus III, r x-1-x (175): present → absent

Clade 111

spine metatarsus III, d x-x-r1 (179): present → absent

Clade 112

tegulum displaced basally (59): absent → present
embolus very long (95): normal → very long
CD coiled (117): absent → present

A. elongata

anterior eye row (11): straight → procurved
tibia I sinuous (28): absent → present
CO on epigastric furrow (115): absent → present
spermathecae contiguous (125): absent → present
spines tibia I, v ap (138): 2ap → 0ap
spine metatarsus I, p 1-x (142): present → absent
spine tibia II, v x-x-p1 (150): present → absent
spine tibia II, v x-x-r1 (151): present → absent
spine tibia II, p x-1 (152): present → absent
spine metatarsus III, v 2-x-x (166): present → absent
spines metatarsi III and IV, v ap (169): 2 → 1
preening comb (170): absent → present
spine metatarsus III, p x-x-1 (173): present → absent
spine metatarsus III, r x-x-1 (176): present → absent
spine metatarsus III, d x-x-p1 (178): present → absent
spine metatarsus IV, v r1-x-x (188): present → absent
spine metatarsus IV, p x-1-x (192): present → absent
spine metatarsus IV, p x-x-1 (193): present → absent
spine metatarsus IV, r x-x-1 (196): present → absent

A. cylindrica

spine metatarsus IV, p d1-x-x (191): absent → present

A. araucana

FD coiled (126): absent → present
spine metatarsus IV, d x-p1-x (197): absent → present

A. segestrioides

number retromarginal teeth (20): three → two
CD extremely coiled (118): absent → present
FD advanced (127): absent → present
spine tibia III, v x-x-p1 (164): present → absent
spine metatarsus III, p x-x-1 (173): present → absent

but can be distinguished by having the carapace wider in front (fig. 22A; as in *Amaurobioides*), irregular spermathecae (instead of spherical), and an unmodified, flattened embolar process (instead of spinelike).

DESCRIPTION: Carapace very narrow, wider

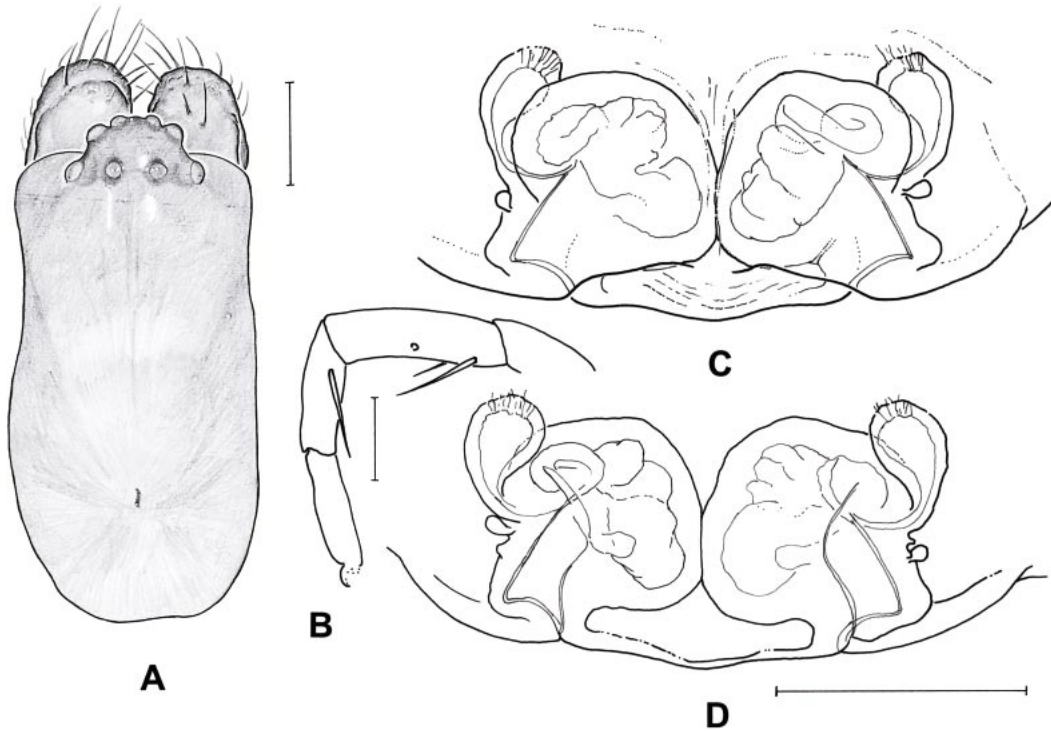


Fig. 22. *Aysenia elongata* Tullgren, female lectotype. **A.** Carapace. **B.** Right leg I, prolateral view. **C.** Cleared epigyne, ventral view. **D.** Same, dorsal view. Scale bars = A, B, 0.2 mm; C, D, 0.1 mm.

anteriorly, posterior eye row recurved, ocular area projecting (fig. 22A). Chelicerae strong, with three teeth on promargin, 2–4 regular teeth on retromargin. Legs generally short, leg III directed forward (figs. 23F, 24A). Tibia I with ventral x-pl-x spine displaced prolaterally (fig. 24E). Male palp with long, pointed RTA. Copulatory bulb variable in size, median apophysis unmodified, paramedian apophysis with two cusps. Primary conductor well developed, with canal. Secondary conductor small, fused to anterior margin of tegulum, without canal. Embolus short, with basal process flattened (figs. 23B, 24B). Epigyne with median field not elevated, copulatory ducts contorted or coiled, spermathecae with irregular lumen (figs. 22D, 23E).

NATURAL HISTORY: Almost nothing is known of the behavior and habitat of these spiders, and most species are rare in collections. The elongate body and the anteriorly oriented third legs suggest that they may live in tubes. Some immatures similar to *A. cy-*

lindrica were collected by beating vegetation in Malleco, Contulmo.

DISTRIBUTION: Southern forests of Chile and Argentina.

COMPOSITION: *A. elongata* Tullgren, three species here newly described, and several still undescribed species.

Aysenia elongata Tullgren

Figure 22

Aysenia elongata Tullgren, 1902: 54 (female lectotype and female paralectotype [only a carapace, broken] here designated, from Chile, Río Aisén Valley, in NRS, examined). Simon, 1903a: 1031. Merian, 1913: 12. Ramírez, 1995a: 366.

DIAGNOSIS: Distinguished from other *Aysenia* species by having large female accessory bulbs.

FEMALE (lectotype): Total length 2.67. Carapace length 1.00, width 0.50, slightly wider on leg III (fig. 22A). Length of tibia/metatarsus: I, 0.42/0.32; II, 0.35/0.28; III, 0.23/

0.18; IV, 0.37/0.25. Palpal tarsus length 0.20. Chelicerae strong, with thick anterior bristles, three contiguous teeth on retromargin, promargin not seen, three very small teeth according to Tullgren (1902). Sternum length 0.57, width 0.33. Spines (those on femora and legs III–IV hardly visible, tentative): femora all d 1–1–1. Leg I, tibia v 2–2–0 (x-p1-x displaced prolaterally, fig. 22B); metatarsus v 2bas. II, tibia r1-r1–0 or r1; metatarsus v r1-r1–0, p 1. III, tibia apparently 0 (all scored as missing entries); metatarsus v 1ap and apical group of thick setae. IV, tibia v p1-p1-p1; metatarsus v p1–2-comb (preening comb not in a definite line). Abdomen length 1.61, width 0.55, spiracle close to spinnerets. Color: types badly faded. Abdomen described by Tullgren (1902: 57): “The color seems to have been greenish-yellow on the back with two longitudinal reticulated brown-violet bands confluent at the hind-end. On the sides there are longitudinally arranged scattered short stripes of the same color. The venter is one-colored light yellow-brown.” Epigyne (fig. 22C, D): lateral lobes separate, median field and copulatory openings in epigastric fold, all weakly sclerotized. Spermathecae irregular, contiguous, copulatory ducts contorted. Accessory bulbs voluminous.

MALE: Unknown.

MORPHOLOGICAL REMARKS: The course of the copulatory ducts, although not clearly discernible, suggests some coiling on oblique axes.

OTHER MATERIAL EXAMINED: None.

Aysenia segestrioides, new species

Figure 23

TYPE: Male holotype from Chile, Región X, Valdivia province, Las Lajas, W La Unión, ca. 40°46'S, 73°42'W, 19–20.XI.1990, L. Peña, deposited in AMNH.

ETYMOLOGY: The specific name refers to the striking similarity with segestriid spiders, because of the elongate body and the third leg directed forward.

DIAGNOSIS: Easily distinguished by having a huge primary conductor occupying most of the male copulatory bulb, and greatly coiled female copulatory ducts.

FEMALE (Valdivia, AMNH): Total length

8.10. Carapace elevated, cephalic area flat; length 2.93, width 1.57, wider behind chelicerae. Length of tibia/metatarsus: I, 0.90/0.79; II, 0.67/0.77; III, 0.62/0.66; IV, 1.02/0.99. Palpal tarsus length 0.69. Chelicerae very strong, with two teeth on retromargin, fang short, thick (fig. 23G). Sternum length 1.27, width 0.73. Spines: femora I–IV d 1–1–1. Leg I, tibia v r1-r1–2, p v1–1–0 (these are the ventrals displaced); metatarsus v 2–0. II, tibia v r1-r1-r1, p 0-d1; metatarsus v 2bas, p 1. III, tibia v r1ap, p and r d1; metatarsus v 2–0–2, p 0-d1–1, r 1ap, d 2ap. IV, tibia v p1-p1–2; metatarsus v 2-p1–2, p and r 1ap, d r1ap. Scopulae on tarsi I and II, and metatarsus II, denser on prolateral faces. Leg III oriented forward (fig. 23F). Femora I–III narrow, IV very strong. Abdomen length 5.30, width 2.33, spiracle–epigastrium 3.13, spiracle–spinnerets 0.30. Color: carapace dark brown, ocular area almost black. Legs brown, I and II darker. Sternum uniform brown, endites and labium dark brown. Abdomen grayish brown with cream pattern, venter grayish uniform. Epigyne (fig. 23D, E): lateral lobes well sclerotized, separate, elevated above median field. Copulatory ducts very long, coiled.

MALE (holotype): Total length 5.00. Carapace length 2.40, width 1.37 (fig. 23A). Length of tibia/metatarsus: I, 1.05/1.00; II, 1.05/0.97; III, 0.73/0.82; IV, 1.05/1.00. Chelicerae smaller than those of female. Sternum length 1.08, width 0.68. Spines as in female, except: leg I, tibia v r1-r1–2 or r1-r1-p1, p d1-0-d1-0; metatarsus v 2–2–0, p 0–1-d1, d p1. II, tibia v r1-r1–2; metatarsus v 2bas, p 0–1-d1. III, tibia p d1 or d1-d1–0. IV, metatarsus p 0–1–1. Abdomen length 2.60, width 1.30, spiracle–epigastrium 1.20, spiracle–spinnerets 0.23. Color as in female. Palp (fig. 23B, C): tibia short, width/length 0.93, RTA sharp, long. Cymbial conductor wide. Copulatory bulb extremely modified, distal region occupying ventral face, primary conductor covering tegulum. Sperm duct with two conspicuous loops at anterior dorsal margin, one at base of secondary conductor. Embolus very long, thin, basal process rounded. Median apophysis apical, hooked, tip pointing basally and retrolaterally. Primary conductor huge, crescent-shaped, projecting at both ends; canal area covered by

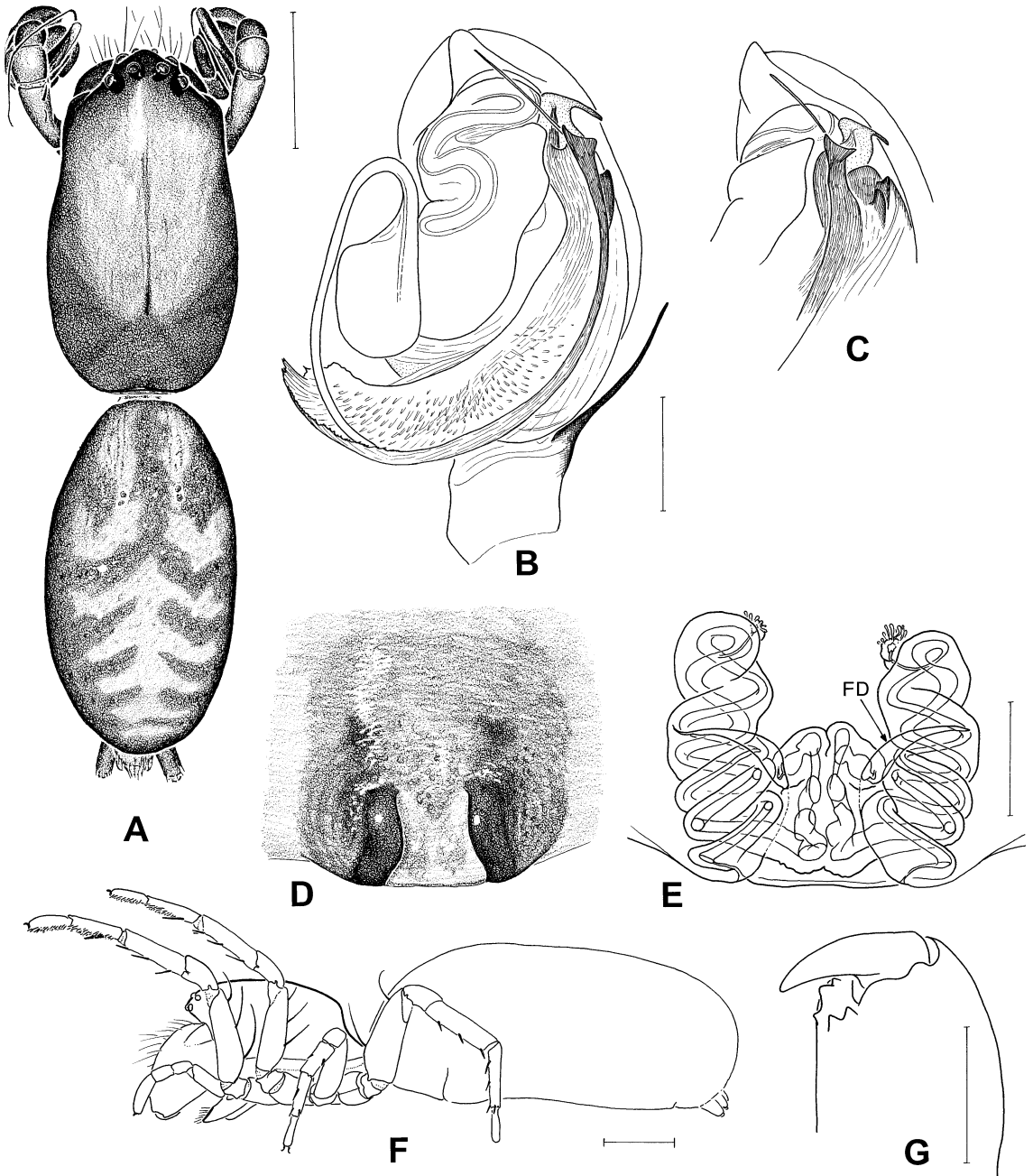


Fig. 23. *Aysenia segestrioides*, n. sp., male holotype, female from Valdivia (AMNH). **A**. Male. **B**. Male palp, ventral view. **C**. Same, detail retrolateral-ventral. **D**. Epigyne, ventral view. **E**. Cleared epigyne, dorsal view. **F**. Female. **G**. Female chelicera, ventral view. Scale bars = A, F, 1 mm; B–E, 0.2 mm; G, 0.5 mm. (FD = fertilization duct.)

thin projections. Secondary conductor flattened, partly fused to anterior margin of tegulum, without canal. Paramedian apophysis with three cusps, two heavily sclerotized, close to median apophysis, third one less sclerotized, flattened, close to primary conductor.

NATURAL HISTORY: Unknown. The prolateral displacement of both ventral spines on first tibiae, and of scopulae of first and second legs, suggest further adaptations for living in tubes.

DISTRIBUTION: Known only from Valdivia province.

OTHER MATERIAL EXAMINED: CHILE: Región X (Los Lagos): Valdivia: Valdivia, no date, collection E. Simon, 1♂ (MHNP 18235); Valdivia, 12.X.1976, E. Kraemer, 1♀ (AMNH).

Aysenia cylindrica, new species

Figure 24

TYPE: Male holotype from Chile, Región X, Valdivia province, Rincón de Piedra, south of Valdivia, 23–26.II.1979, L. Peña, deposited in AMNH, and female paratype from Valdivia, 1983, deposited in MHNS 837.

ETYMOLOGY: The specific name refers to the thin, elongate body.

DIAGNOSIS: Resembles *A. araucana* in body shape and genitalia, but can be distinguished by having relatively short, not coiled, female copulatory ducts and a shorter embolus.

FEMALE (paratype): Total length 4.75. Carapace length 1.43, width 0.75, wider on leg II. Length of tibia/metatarsus: I, 0.63/0.52; II, 0.59/0.51; III, 0.33/0.38; IV, 0.66/0.47. Palpal tarsus length 0.28. Chelicerae (fig. 24D) very strong, with three teeth on retromargin, basal one larger; fang short, thick. Sternum length 0.73, width 0.47. Spines: femora I–IV d 1–1–1. Leg I, tibia v 2–2–2 (the x-p1-x displaced to prolateral, fig. 24E), p d1-0-1-0; metatarsus v 2-r1 (the basal pair advanced), p 1. II, tibia v r1-r1–2, p 0-d1; metatarsus = I. III, tibia v rlap; metatarsus v 0-r1-0-2 or 0-r1-r1–2, p and r lap, d plap. IV, tibia v p1-p1–2; metatarsus v 2–2–2, p and r lap, d plap. Femora I–III narrow, IV strong. Abdomen length 2.80, width 0.47, spiracle–epi-

gastrium 2.00, spiracle–spinnerets 0.24. Color: carapace pale brown, with bright cuticle, cephalic area darker. Legs, femora brownish violet with grayish longitudinal stripes; patella and tarsus I grayish, II pale gray, III cream; leg IV, patella and tarsus cream, tibia brownish violet, distally cream. Abdomen brownish violet, dark, with three whitish dorsal spots, covered by white hairs, two patches of white hairs on posterior end. Leg coxae pale, sternum, labium, endites, and venter dark. Epigyne (fig. 24F, G): lateral lobes widely separated, slightly elevated above median field. Copulatory ducts not coiled.

MALE (holotype, fig. 24A): Total length 4.00. Carapace length 1.47, width 0.87, wider at leg II. Length of tibia/metatarsus: I, 0.96/0.74; II, 0.72/0.68; III, 0.44/0.51; IV, 0.77/0.61. Chelicerae slightly smaller than those of female. Sternum length 0.77, width 0.49. Spines as in female, except: leg II, metatarsus v 2–2. III, tibia v 2ap, p d1bas or 0, metatarsus p 0-d1–1. IV, tibia v 0-p1-p1 or 0-(p1-r1)-p1, r d1-d1-d1; metatarsus p 0-d1–1. Abdomen length 2.17, width 0.73, spiracle–epigastrium 1.30, spiracle–spinnerets 0.10. Color (fig. 24A) as in female. Palp (fig. 24B, C): tibia short, width/length 0.93, RTA sharp, long. Cymbium relatively small, globose, cymbial conductor wide. Tegulum basal. Embolus with basal process flat, short, wide. Median apophysis apical, hook-shaped. Primary conductor heavily sclerotized, with sharp apex. Secondary conductor with short apical tip. Paramedian apophysis heavily sclerotized, forming longitudinal shallow ridge.

VARIABILITY: Female spines: III, tibia v 0-r1-r1; metatarsus v 2-r1–2 or 2–0–2, p 0-d1–1. IV, tibia v p1-(p1-r1)-2, r 0-d1; metatarsus r d1–0–1, d rlap. Some specimens with anterior abdominal spot tenuous, divided longitudinally, or absent.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Known only from a few localities in Valdivia and Río Negro provinces.

OTHER MATERIAL EXAMINED: ARGENTINA: Río Negro: San Carlos de Bariloche, Colonia Suiza, 800 m, 19.IX.1981, Nielsen and Karsholt, 1 immature (ZMK). **CHILE: Región X (Los Lagos): Valdivia:** Valdivia, 1983, E. Kraemer, 2♀ 1 immature (MHNS 837), 1♀ (MHNS 799), XI–XII.1982.

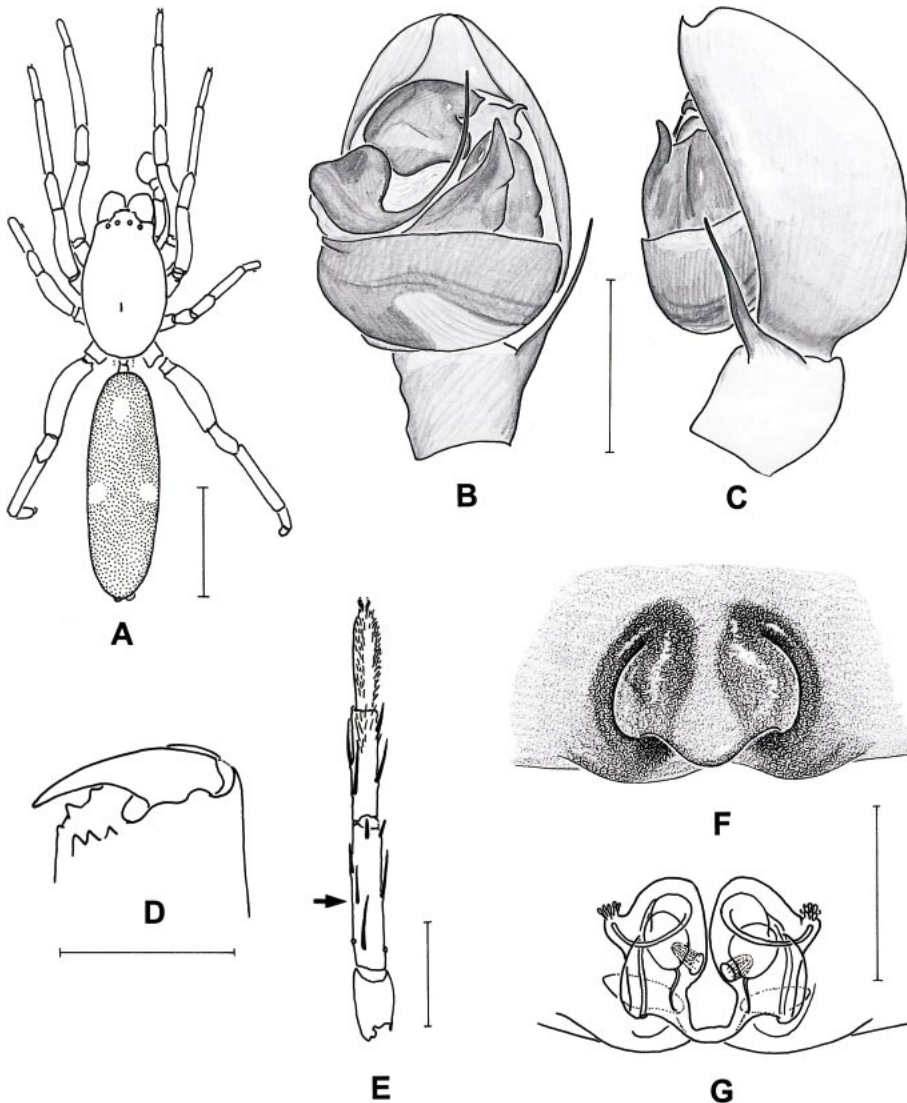


Fig. 24. *Aysenia cylindrica*, n. sp. **A.** Male (holotype). **B.** Same, palp, ventral view. **C.** Same, retrolateral view. **D.** Same, chelicera, ventral view. **E.** Female left leg I, ventral-prolateral view: arrow points to spine v x-p1-x displaced prolaterally (paratype). **F.** Same, epigyne, ventral view. **G.** Same, cleared. Scale bars = A, 1 mm; B–D, F, G, 0.2 mm; E, 0.5 mm.

***Aysenia araucana*, new species**

Figure 25

Aysenia sp.: Ramírez, 1995a: 366.

TYPES: Male holotype and female paratype from Chile, Región VIII, Biobío province, El Manzano, nr. Contulmo, ca. 38°01'S, 73°20'W, 3–5.III.1986, L. Peña, deposited in AMNH.

ETYMOLOGY: The specific name refers to the region where this species lives.

DIAGNOSIS: Resembles *A. segestrioides* and *A. cylindrical* in body shape and genitalia, but can be distinguished by having the embolus intermediate in length, and by the moderately coiled female copulatory ducts.

FEMALE (paratype): Carapace length 2.27, width 1.17, wider at chelicerae bases and at

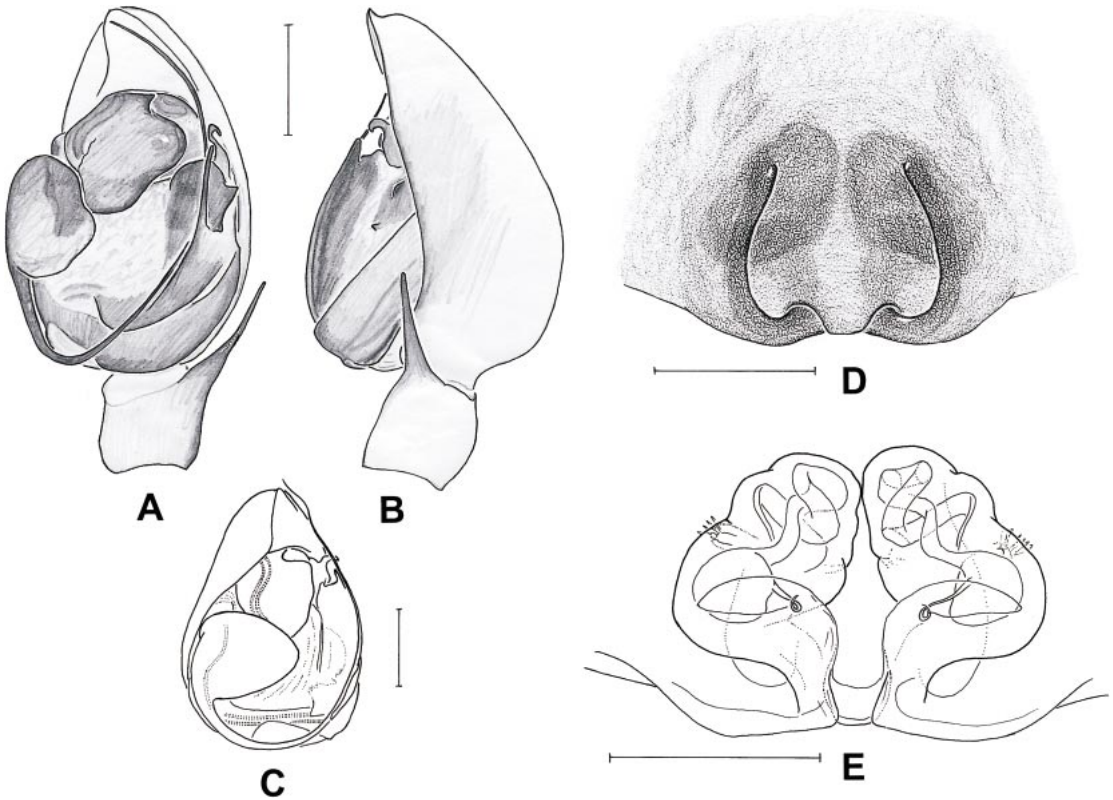


Fig. 25. *Aysenia araucana*, n. sp. **A.** Male palp, ventral view (holotype). **B.** Same, retrolateral view. **C.** Same, prolateral-ventral view. **D.** Epigyne, ventral view (paratype). **E.** Same, cleared, dorsal view. Scale bars = 0.2 mm.

leg III. Length of tibia/metatarsus: I, 1.00/0.93; II, 0.93/0.83; III, 0.53/0.70; IV, 1.00/0.80. Palpal tarsus length 0.53. Chelicerae very strong, with 3–4 teeth on retromargin, increasing in size to basal. Sternum length 1.03, width 0.72. Spines: leg **I**, femur d 1–1–1, p d1ap; tibia v 2–2–2 (the x-p1-x slightly displaced to prolateral), p 1-d1-1-0; metatarsus v 2-r1-0 (the basal pair advanced), p 1-0. **II**, femur = I; tibia v r1-r1-2, p d1-1; metatarsus = I. **III**, femur d 1–1–1, p and r d1ap; tibia v 0-p1-2, p d1-0, d r1bas; metatarsus v 2-0-2, p 0-d1-1, r 1ap, d 0-p1-2. **IV**, femur d 1–1–1; tibia v p1-p1-2, r d1-1; metatarsus v 2–2–2, p 0-d1-1 or 1ap, r d1-0-1, d 0-p1-2. Leg III oriented forward. Femora I–III narrow, IV strong. Color: dark brown, cephalic area paler, ocular area almost black. Legs dark brown, patellae and dorsum of tibiae, metatarsi, and tarsi III–IV pale gray. Abdomen digested behind epigas-

trium, tracheae exposed. Epigyne (fig. 25D, E): lateral lobes slightly elevated, arched, copulatory ducts moderately coiled.

MALE (holotype): Total length ca. 4.25. Carapace length 1.73, width 1.07. Length of tibia/metatarsus: I, 1.27/1.20; II, 1.10/1.07; III, 0.60/0.83; IV, 1.10/0.90. Chelicerae slightly smaller than those of female, with three teeth on retromargin. Sternum length 0.88, width 0.64. Spines as in female, except: leg **I**, tibia r 1-0-1-0; metatarsus v 2–2–0, r 1. **II**, metatarsus v 2–2–0 or 2–2–1, p 0-1-0-1, r 1. **III**, tibia v 2ap, p d1-1-0. Abdomen (deformed) length ca. 2.50, spiracle–epigastrium 1.40, spiracle–spinnerets 0.27. Color as in female, except legs I and II pale gray from tibiae. Abdomen brownish violet, with whitish dorsal spots, two anteriors, two medians larger, two posteriors covered by whitish hairs. Sternum, labium, and endites dark. Palp (fig. 25A, B): tibia short, width/length

1.08, RTA sharp, long. Cymbial conductor large, triangular. Copulatory bulb greatly modified, distal region occupying ventral face. Tegulum basal. Sperm duct with two conspicuous loops at dorsal anterior margin. Embolus very long, basal process flat, rounded. Median apophysis apical, hook-shaped. Primary conductor with narrow apex. Secondary conductor with short apical tip. Paramedian apophysis with two heavily sclerotized cusps, close to median apophysis.

VARIABILITY: The female from Valdivia has the lateral lobes of epigyne more arched.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Only known from a few localities, in Cordillera Nahuelbuta and X Region.

OTHER MATERIAL EXAMINED: **CHILE: Región IX (Araucanía): Cautín:** Coicoicura, 5.XII.1992, T. Cekalovic, 1 ♀ (AMNH). **Región X (Los Lagos): Valdivia:** Valdivia, E. Krahmer, XI–XII.1982, E. Krahmer, 1 ♀ 1 immature (MHNS 685). **Osorno:** Pucatrihue, 4.III.2001, T. Cekalovic, 1 ♂ (AMNH).

AYSENOIDES, NEW GENUS

Table 10

TYPE SPECIES: *Aysenoides terricola*, new species.

ETYMOLOGY: The generic name is a derivation of the close relative *Aysenia*, proposed to me by John Kochalka (IBNP). Gender is masculine.

DIAGNOSIS: Resembles *Aysenia* in having an elongate body, recurved posterior eye row, and the third legs directed forward, but distinguished by having spherical spermathecae (fig. 28F) and a spinelike embolar process (fig. 26B).

DESCRIPTION: Carapace very narrow, posterior eye row recurved, ocular area projecting (fig. 27A). Chelicerae strong, with three teeth on promargin and 2–3 regular teeth on retromargin. Leg III directed forward. Tibia I with ventral x-p1-x spine displaced prolaterally. Male palp with RTA long, pointed, cymbium relatively small. Median apophysis slender, paramedian with two cusps (fig. 26C, D). Primary conductor well developed, with canal (fig. 26A). Secondary conductor fused to tegulum, small, forming wide inconspicuous canal, or absent. Embolus short,

TABLE 10

Synapomorphies of *Aysenoides* and Internal Clades

Aysenoides (clade 115)

shape embolar process (97): flattened → spinelike
CD slender (116): absent → present
spermathecae shape (124): absent → present

Clade 114

SD loop on MA (54): absent → present
shape of MA (65): thick → slender
PMA cusp on C1 (69): absent → present
translucent lamina on C1 (76): absent → present

A. parvus

number retromarginal teeth (20): three → two
cymbial conductor terminal (48): terminal → subterminal
apex C1 close to MA (78): absent → present
C2 (79): fused → absent

A. terricola

spine metatarsus I, v x-p1-x (140): absent → present
spine metatarsus I, v x-r1-x (141): absent → present
spine tibia II, p x-1 (152): present → absent

A. colecole

male chelicerae (17): smaller → strong

with basal process thin, pointed (fig. 26B). Epigyne with median field not elevated, copulatory ducts short, spermathecae spherical.

NATURAL HISTORY: Little is known of the behavior and habitat of these spiders, and most species are rare in collections. As in *Aysenia*, they may live in some kind of tubes.

DISTRIBUTION: Southern forests of Chile and Argentina.

COMPOSITION: Three species here newly described, and at least three undescribed.

Aysenoides terricola, new species

Figure 27

TYPES: Male holotype and female paratype from Chile, Región V, Valparaíso province, Cuesta Cavilolén, ca. 31°46'S, 71°19'W, in soil crevices, 6.XI.1988, P. Goloboff, E. Maury, C. Szumik, deposited in MACN-Ar 9808.

ETYMOLOGY: The specific name refers to the habitat where the types were collected.

DIAGNOSIS: Resembles *A. colecole* in body shape and genitalia, but can be distinguished by having curved elevations on the epigyne anterior of the spermathecae, and by a longer

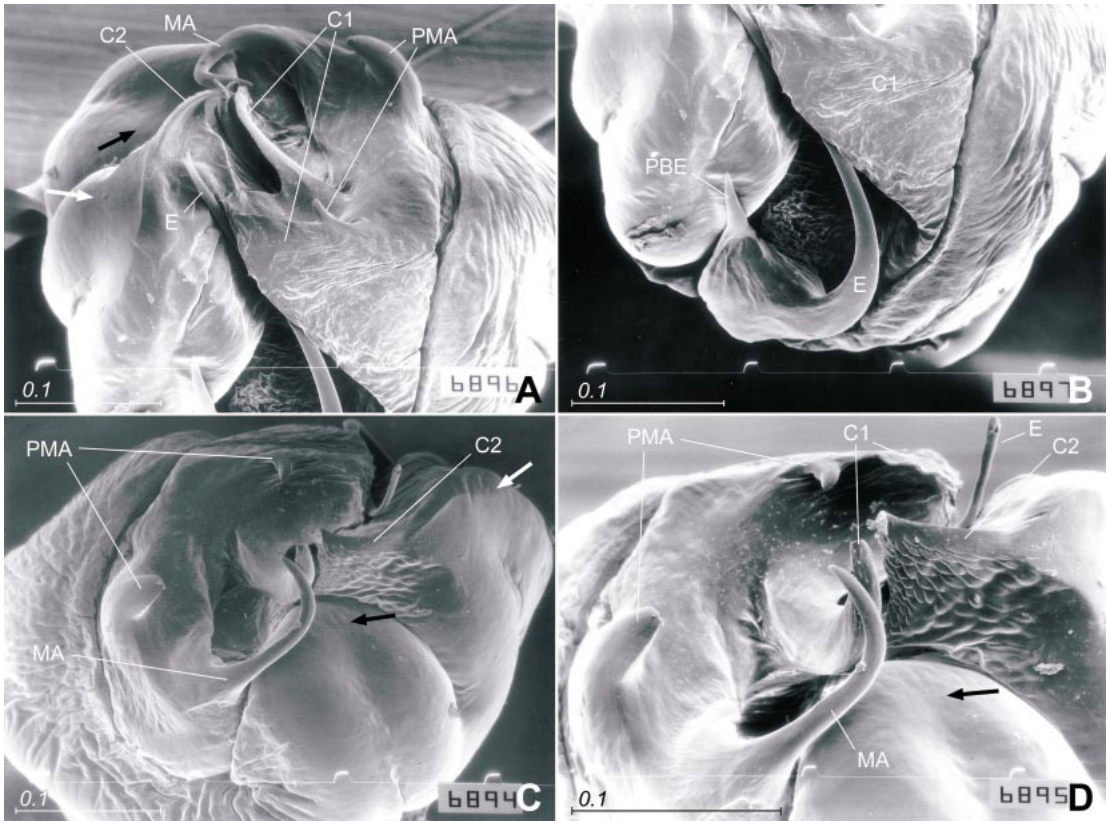


Fig. 26. *Aysenoides colecole*, n. sp., male copulatory bulb (Chiloé, MACN-Ar 9810). **A, B.** Prolateral view. **C, D.** Apical view. (White arrows point to loop of sperm duct dorsal to secondary conductor, black arrows to loop dorsal to median apophysis. C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis.)

cusps of the paramedian apophysis on the primary conductor.

FEMALE (paratype, fig. 27A): Total length 4.55. Carapace length 2.03, width 1.08, wider on leg II. Length of tibia/metatarsus: I, 1.02/0.91; II, 0.87/0.81; III, 0.58/0.66; IV, 1.00/0.77. Palpal tarsus length 0.41. Chelicerae with three teeth on retromargin, basal one largest. Sternum length 1.06, width 0.64. Spines: leg **I**, femur d 1-1-1, p d1ap; tibia v 2-2-0-2 (the x-p1-x displaced prolaterally); metatarsus v 2-2-0 (the x-p1-x displaced prolaterally). **II**, femur = I; tibia v 2-2-0-2, p 0-1; metatarsus v 2-r1-0. **III**, femur = I; tibia v r1ap or 0-p1-r1, p and r d1-1; metatarsus v 2-0-2 or r1-0-2, p and r 0-d1-1, d 2ap. **IV**, femur d 1-1-1; tibia v p1-p1-2; metatarsus v 2-p1-2, p and r 1ap, d r1ap. Leg

III directed forward. Femora I-III narrow, IV strong. Abdomen (slightly bowed ventrally) length 2.50, width 1.07. Color: carapace grayish, legs pale gray with brownish violet spots, I and II darker. Leg coxae pale, endites, labium, and sternum dark. Abdomen brownish violet with yellow dorsal pattern, venter brownish violet uniform. Epigyne (fig. 27D, E): lateral lobes anteriorly curved, widely separate, closer posteriorly, limiting T-shaped median field. Limit between lateral lobes and median field unclear close to copulatory openings. Spermathecae spherical, copulatory ducts heavily sclerotized.

MALE (holotype): Total length 4.00. Carapace length 1.87, width 1.07. Length of tibia/metatarsus: I, 1.63/1.47; II, 1.13/1.17; III, 0.73/0.87; IV, 1.23/1.03. Chelicerae smaller

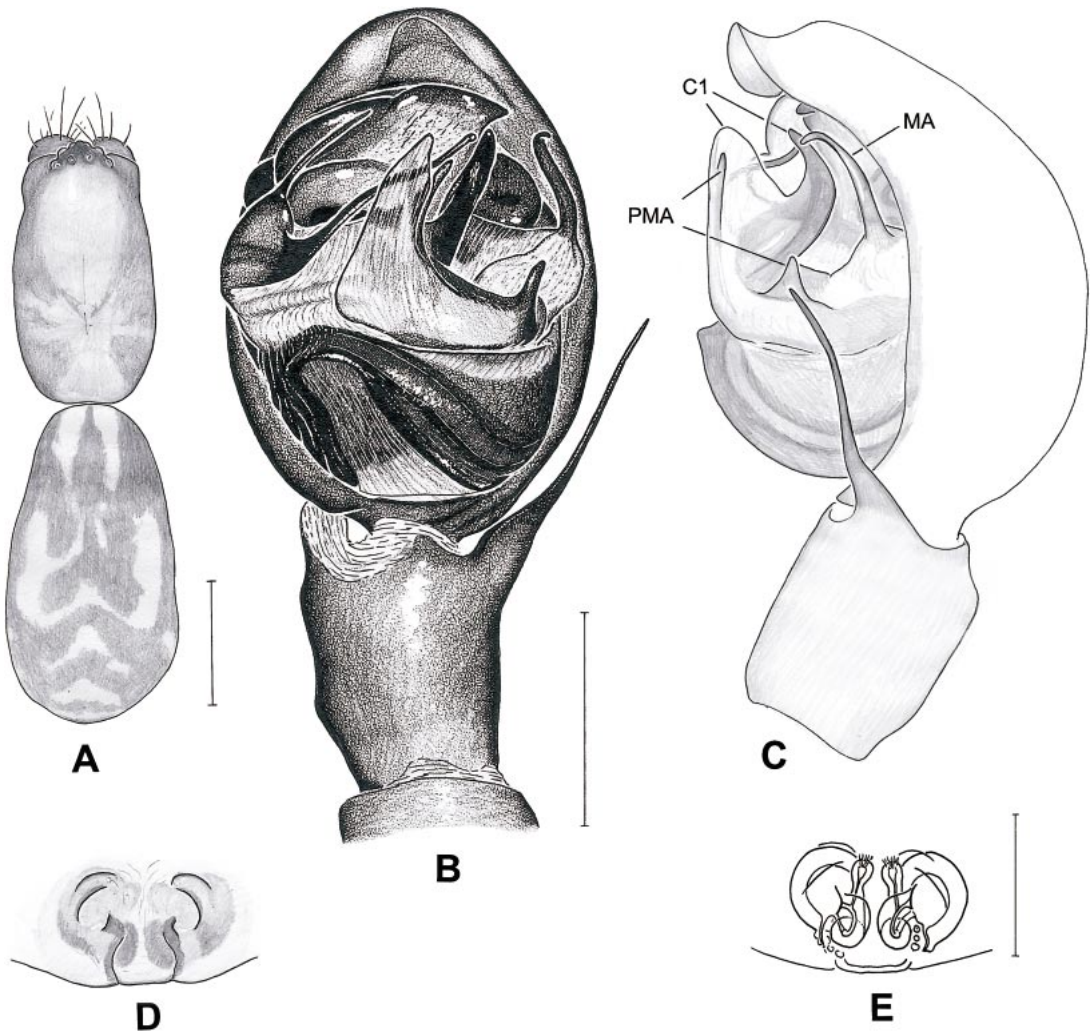


Fig. 27. *Aysenoides terricola*, n. sp., holotype and paratype **A**. Female, dorsal view. **B**. Male palp, ventral view. **C**. Same, retrolateral view. **D**. Epigyne, ventral view. **E**. Same, cleared. Scale bars = A, 1 mm; B–E, 0.2 mm. (C1 = primary conductor; MA = median apophysis; PMA = paramedian apophysis.)

than those of female. Sternum length 0.98, width 0.64. Spines as in female, except: leg **I**, tibia v 2–2–2, p 1–0–1–0. **II**, tibia p 1–d1–1–0; metatarsus v 2–2–0, p d1. **III**, tibia v 0–p1–r1; metatarsus v 2–2–2 or 2–r1–2. **IV**, femur r d1ap; tibia v p1–2–2 or p1–p1–2, r 1–d1–1–0; metatarsus p 0–d1–1, r d1–d1–1. Abdomen length 2.13, width 0.97, spiracle–epigastrium 1.10, spiracle–spinnerets 0.11. Color as in female. Palp (fig. 27B, C): tibia width/length 0.58, RTA long, sharp. Cymbium relatively small, globose, cymbial con-

ductor wide. Tegulum basal. Sperm duct with two conspicuous loops at dorsal anterior margin, one at base of secondary conductor. Embolus with basal process long, narrow. Median apophysis retrolateral, long, sinuous. Primary conductor with basal portion hyaline, without canal, not fitted to embolus; apical portion long, heavily sclerotized, with long canal, connected to basal portion by thin translucent vertical lamina. Secondary conductor triangular, with acute apex and membranous ventral area. Paramedian apophysis

apparently with two cusps, one retrolateral, triangular, flat, another ventral, on primary conductor, long, narrow.

VARIABILITY: Male spines: III, tibia v 0–2–2.

NATURAL HISTORY: The types were collected in crevices on dry soil, in a steep ravine (Pablo Goloboff, personal commun.).

DISTRIBUTION: Central Chile, in Elqui and Valparaíso provinces.

OTHER MATERIAL EXAMINED: **CHILE: Región IV (Coquimbo): Elqui:** 20 km N La Serena (Rt. 5 km 491), 120 m, 7.X.1992, N. Platnick, P. Goloboff, K. Catley, 1♂ (AMNH). **Región V (Valparaíso): Valparaíso:** Same data as types, 3 immatures (MACN-Ar); Viña del Mar, I.1979, A. Tobar, 1♂ 3♀ 4 immatures (AMNH).

Aysenoides colecole, new species

Figures 26, 28, 35B

TYPES: Male holotype (in MHNS) and one male paratype (in MACN-Ar 9809) from Chile, Región X, Chiloé province, Isla de Chiloé, Arroyo Cole Cole, 25 km N Cucao, ca. 200 m, ca. 42°30'S, 54°11'W, 8–11.II.1991, M. Ramírez.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Resembles *A. terricola* in body shape and genitalia, but can be distinguished by having two epigynal pouches with their openings directed forward, and by a shorter cusp of the paramedian apophysis on the primary conductor.

FEMALE (Antillanca, fig. 28D): Total length 5.30. Carapace length 1.87, width 0.93, wider at leg II. Length of tibia/metatarsus: I, 0.88/0.81; II, 0.74/0.69; III, 0.43/0.51; IV, 0.90/0.69. Palpal tarsus length 0.39. Chelicerae with 3 strong teeth on retromargin, basal one larger. Sternum length 0.97, width 0.58. Spines: leg I, femur d 1–1–1, p d1ap; tibia v 2–2–2 (the x-p1-x slightly displaced laterally); metatarsus v 2bas. II, femur = I; tibia v r1-r1–2, p 0–1; metatarsus = I. III, femur d d1-d1-d1, p and r d1ap; tibia v r1ap, p d1–1 or 0–1, r 0–1; metatarsus v r1–0–2, p 0-d1–1, r 1ap, d 0-p1–2. IV, femur d 1–1–1; tibia v 0-p1–2, r 0–1; metatarsus v 2-p1–2, p 1ap, r d1–0–1, d 2ap. Leg III directed forward. Femora II and III narrow, IV very

strong. Abdomen length 3.40, width 1.27, spiracle–epigastrium 2.10, spiracle–spinnerets 0.16. Color: carapace and legs grayish, posterior legs paler. Abdomen yellow with grayish stripes; dorsum with median stripe on anterior half, two lateral ones; epigastrium grayish, venter with median stripe from epigyne to spinnerets. Dark arch-shaped mark surrounding spinnerets ventrally and laterally. Epigyne (fig. 28E, F): median field sclerotized, longitudinal median ridge close to lateral pouches. Limit between lateral lobes and median field unclear anterior to copulatory openings. Two lateral pouches with openings directed forward, apparently formed by elevated margins of lateral lobes. Spermathecae spherical, accessory bulbs voluminous, contiguous.

MALE (holotype): Total length 5.45. Carapace length 2.13, width 1.15. Length of tibia/metatarsus: I, 2.00/1.80; II, 1.30/1.23; III, 0.64/0.82; IV, 1.27/1.13. Chelicerae slightly narrower than those of female, with more evenly spaced teeth. Sternum length 1.09, width 0.61. Spines as in female, except: leg I, p 1-d1-1-0; metatarsus p d1–0 or 0-d1-0-1. II, tibia p 1-d1-1-0, v r1–2–2; metatarsus p d1-d1-0-d1. III, femur r 0-d1-d1; tibia v 0-r1–2 or 0-p1–2, r 1-d1-1-0; metatarsus v 2–0–2, p d1-d1–1, r 0-d1–1. IV, femur r d1ap or 0; tibia v p1–2–2, r 1-d1-1-0. Abdomen length 3.27, width 0.93, spiracle–epigastrium 1.97, spiracle–spinnerets 0.13. Color as in female, with abdominal stripes darker, except median stripe, diffuse. Palp (figs. 26, 28A–C): tibia width/length 0.77, RTA very long, thin. Cymbium relatively small, globose, cymbial conductor wide. Tegulum basal. Sperm duct with two conspicuous loops at dorsal anterior margin, one at base of secondary conductor. Embolus with basal process long, narrow (fig. 26B). Median apophysis retrolateral, long, sinuous. Primary conductor with basal portion hyaline, without canal, not fitted to embolus (fig. 26A); apical portion long, heavily sclerotized, with long canal, connected to basal portion by thin translucent vertical lamina. Secondary conductor triangular, pointed, with ventral membranous area and dorsal patch of denticles (fig. 26C, D). Paramedian apophysis apparently with two cusps, one retrolateral, coni-

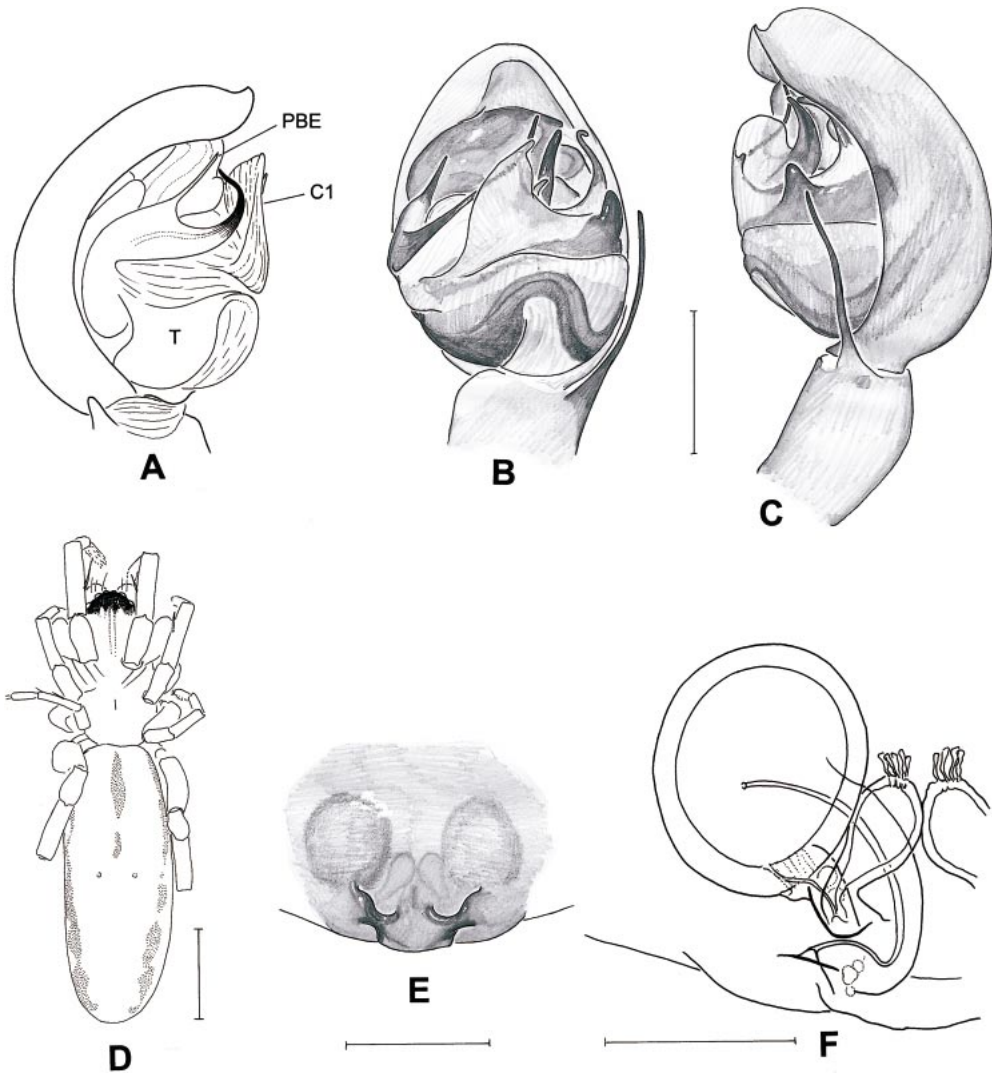


Fig. 28. *Aysenooides colecole*, n. sp. **A.** Male palp, prolateral view (holotype). **B.** Same, ventral view. **C.** Same, retrolateral view. **D.** Female (Osorno, Antillanca). **E.** Same, epigyne, ventral view. **F.** Same, cleared. Scale bars = D, 1 mm; all others, 0.2 mm. (C1 = primary conductor; PBE = process on base of embolus; T = tegulum.)

cal, curved, heavily sclerotized, another ventral, on primary conductor, narrow, small.

VARIABILITY: Male spines: III, tibia v r1ap, p and r d1-1, or 1-d1-1-0. IV, tibia v p1-(p1-r1)-2, r d1-1; metatarsus p 0-1-1.

NATURAL HISTORY: The types were collected by beating the endemic "colihue" bamboos (*Chusquea* spp.).

DISTRIBUTION: Forests in southern Chile, from Cautín to Chiloé. At the type locality I failed to find them close to sea level.

OTHER MATERIAL EXAMINED: **CHILE: Región IX (Araucanía): Cautín:** Chacamo, NW Nueva Imperial, W Temuco, 16-24.II.1981, L.E. Peña, 1♂ (AMNH). **Región X (Los Lagos): Valdivia:** Valdivia, 1984, E. Kraemer, 1♀ (MHNS 849). **Osorno:** Puyehue Natl. Park: Antillanca rd, 470-720 m, valdivian rainforest, screen-sweeping at dusk, 18-24.XII.1982, A. Newton and M. Thayer, 1♀ (AMNH). **Chiloé:** Isla de Chiloé: Same data as holotype, 2♂ 2 immatures

(MACN-Ar 9811), 1♂ (MACN-Ar 9810 photos MJR 512–513).

Aysenoides parvus, new species

Figures 29, 30

TYPES: Male holotype and female paratype from Chile, Región IX, Malleco province, Monumento Natural Contulmo, ca. 38°01'S, 73°11'W, 11.XII.1984–13.II.1985, FIT, 350 m, S. and J. Peck, deposited in AMNH. One male paratype from Argentina, Chubut province, Los Alerces Natl. Park, Río Arrayanes, II.1986, M. Ramírez, deposited in MACN-Ar 9812.

ETYMOLOGY: The specific name refers to the small size.

DIAGNOSIS: Easily distinguished from other *Aysenoides* by having a relatively small cymbium and copulatory bulb, with the distal sclerites crowded behind the anterior margin of the cymbium, and a flat epigyne without ridges.

FEMALE (paratype): Total length 4.80. Carapace length 1.90, width 1.20, wider on legs II–III. Length of tibia/metatarsus: I, 1.10/0.88; II, 0.94/0.81; III, 0.86/0.63; IV, 1.07/0.92. Palpal tarsus length 0.48. Chelicerae with two teeth on retromargin. Sternum length 1.00, width 0.68. Spines: leg I, femur d 1–1–1, p d1ap; tibia v 2–2–2 (the x-p1-x slightly displaced prolaterally); metatarsus v 2bas. II, femur = I; tibia v r1-r1–2, p 0–1; metatarsus = I. III, femur = I; tibia v 0-p1-r1, p d1–1, r 0–1; metatarsus v 2–0–2 and some distal thick setae, p and r 0-d1–1, d 0-p1–2. IV, femur d 1–1–1; tibia v p1-p1–2, r 0–1; metatarsus v r1-r1–2, p 1ap, r d1–0–1, d r1ap. Spines on tibiae and metatarsi I and II long, thick. Leg III directed forward. Abdomen length 2.87, width 1.50, spiracle–epigastrium 1.70, spiracle–spinnerets 0.10. Color: carapace and legs grayish, posterior legs paler. Abdomen pale gray with dorsal pattern grayish violet, venter grayish violet uniform. Epigyne (figs. 29A, 30C–E) flat, lateral lobes separate, median field narrow, slightly rugose, weakly sclerotized. Copulatory ducts short, spermathecae spherical.

MALE (holotype): Total length 3.99. Carapace length 1.83, width 1.17. Length of tibia/metatarsus: I, 1.50/1.27; II, 1.27/1.10; III, 0.78/0.88; IV, 1.23/1.10. Chelicerae slightly

narrower than those of female. Sternum length 0.96, width 0.68. Spines as in female (but weaker), except: leg I, tibia p d1–1. II, tibia v r1–2–2, p d1–1; metatarsus p d1–0. III, tibia v p1–2–2 or p1-p1–2, p and r d1–1. IV, tibia r d1–1; metatarsus p 0-d1–1, d 2ap. Abdomen (slightly bowed) length 2.07, spiracle–epigastrium 1.11, spiracle–spinnerets 0.13. Color as in female, but abdominal pattern more heavily contrasting. Palp (figs. 29B–D, 30A, B): tibia width/length 0.70, RTA long, narrow. Cymbium relatively small, globose, cymbial conductor wide. Sperm duct with pronounced loop at dorsal anterior margin, secondary conductor absent. Embolus with basal process acute but greatly reduced (fig. 29D). Other apical sclerites crowded at bulb apex, small, difficult to observe. Median apophysis apical, triangular, hyaline. Primary conductor with basal portion short, with canal; apical portion curved, conical, without canal. Paramedian apophysis apparently with two flattened triangular cusps.

VARIABILITY: Female, spines: III, tibia v 0-p1–2, p1–2–2, r1–2–2, or 0-(p1-r1)-2; metatarsus r 1ap. IV tibia v p1-p1–2. Males, III, tibia v 2–2–2; metatarsus v 2-p1–2, p d1–1–1. IV, tibia v 2-p1–2 or 2–2–2; metatarsus v 2–2–2.

NATURAL HISTORY: Mostly unknown, but some specimens were collected by beating foliage. The paratype from Los Alerces was collected on the bark of a *Nothofagus* sp. tree, at 1.7 m high. They may otherwise live on the ground, because most specimens were collected in pitfall traps.

DISTRIBUTION: Forests in southern Chile, from Ñuble to Aisén, and adjacent humid mountain passes in Argentina.

OTHER MATERIAL EXAMINED: CHILE: Región VIII (Biobío): Ñuble: 60 km SE Chillán, Termas Road, beech forest, FIT, 1300 m, 7.XII.1984–19.II.1985, S. and J. Peck, 1♂ 1 immature (AMNH); 72 km SE Chillán, Trancas, nr. Termas, FIT, 1700 m, *Nothofagus* forest, 6.XII.1984–19.II.1985, S. and J. Peck, 2♂ (AMNH). **Región IX (Araucanía): Malleco:** 17 km W Angol, 800 m, FIT, mixed *Nothofagus*, 8.XII.1984–16.II.1985, S. and J. Peck, 2♂ (AMNH); 40 km W Angol, Nahuelbuta Natl. Park, FITS, 1200–1500 m, *Nothofagus/Araucaria* forest,

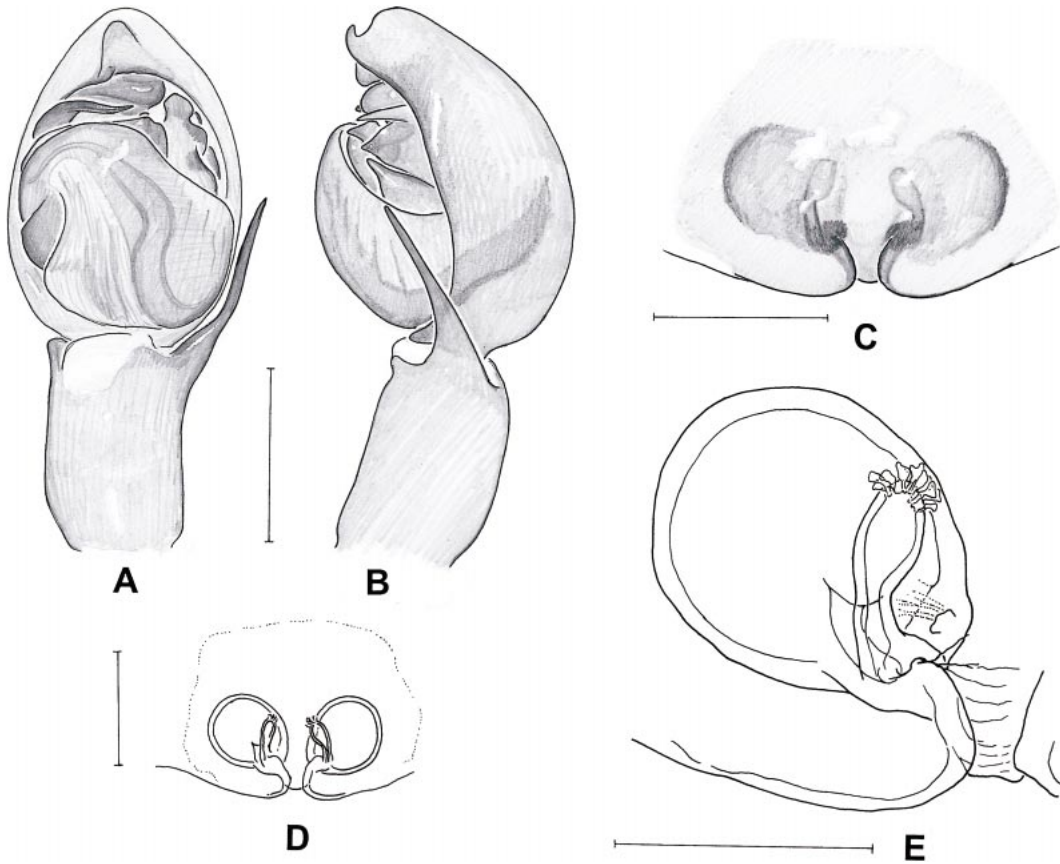


Fig. 29. *Aysenoides parvus*, n. sp. **A.** Male palp, ventral view (holotype). **B.** Same, retrolateral view. **C.** Epigyne, ventral view (paratype). **D.** Same, cleared. **E.** Same, detail. Scale bars = A–C, 0.2 mm; D, 0.1 mm; E, 0.05 mm.

9.XII.1984–17.II.1985, S. and J. Peck, 6♂ 1♀ (AMNH); Monumento Natural Contulmo, same data as types, 1♂ 1♀ (AMNH), 19–21.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1♀ (MACN-Ar). **Cautín:** Monte Verde, Cavañue, 31.I.1993, L. Peña, 1♀ (AMNH); 15 km NE Villarrica, Flor del Lago, 500 m log spraying, 10.II.1985, S. and J. Peck, 2♂ (AMNH); 300 m, 2 FITS, *Nothofagus* forest, 14.XII.1984–10.II.1985, S. and J. Peck, 5♂ 4♀ (AMNH). **Región X (Los Lagos): Osorno:** 36 km W La Unión, 600 m, 25–28.III.1987, L. Peña, 1♀ (AMNH); Puyehue Natl. Park, 7.7 km NE Termas de Puyehue, 200 m, site 664, window trap, 19–25.XII.1982, A. Newton and M. Thayer, 1♀ (AMNH). **Llanquihue:** Lago Chapo, 13.5

km E Correntoso, site 656, window trap, 310 m, valdivian rainforest, 16–27.XII.1982, A. Newton and M. Thayer, 1♀ (AMNH); 34 km E Puerto Montt, 300 m, FIT, 2nd growth *Nothofagus*, 24.XII.1984–2.II.1985, S. and J. Peck, 4♂ 1♀ (AMNH). **Chiloé:** Isla de Chiloé: Lago Tepuhueco, 33 km SW Chonchi, 25 m, 42°49'S, 73°55'W, 26.XI.1994, no. 163, beating vegetation, 1♀, no. 167, fogging fungusy logs, 1 immature, R. Leschen and C. Carlton, 1♀ (AMNH). **Palena:** 4 km NW Chaitén, 30.I.1985, S. and J. Peck, 1♂ (AMNH); 37 km SE Chaitén, 28.XII.1984–30.I.1985, S. and J. Peck, 6♂ (AMNH). **Región XI (Ibáñez del Campo): Aisén:** 15 km S La Junta, FIT, 100 m, *Nothofagus* forest, 30.XII.1984–29.I.1985, S. and J. Peck, 1♂ 1♀ (AMNH).

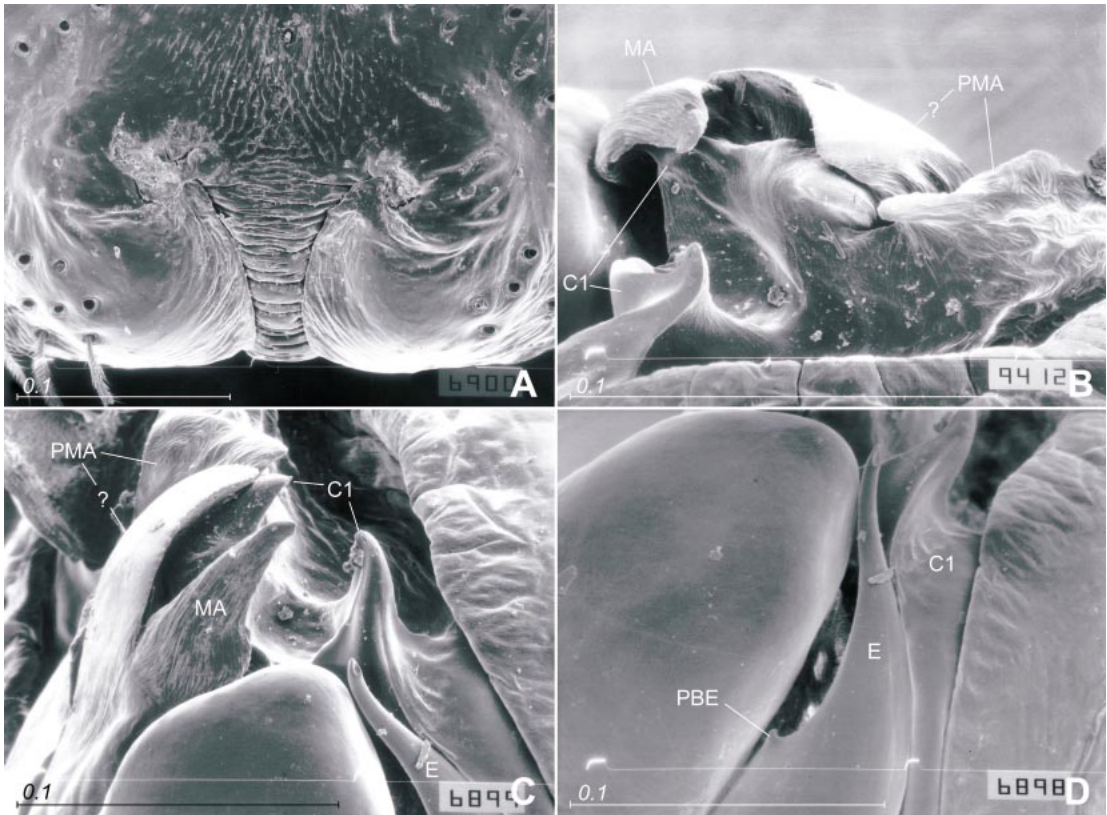


Fig. 30. *Aysenoides parvus*, n. sp. (Cautín, Flor del Lago). **A.** Epigyne, ventral view. **B.** Male copulatory bulb, ventral-apical view. **C.** Same, dorsal-apical view. **D.** Same, prolateral view. (C1 = primary conductor; E = embolus; MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis.)

ACANTHOCETO MELLO-LEITÃO

Table 11

Acanthoceto Mello-Leitão, 1944: 352 (type species by original designation *Acanthoceto adalae* Mello-Leitão, 1944). Ramírez, 1995a: 381, 1997: 186. Revised by Ramírez, 1997.

DIAGNOSIS: Distinguished from other Amaurobioidinae by the male abdomen with a terminal projection over the anal tubercle (Ramírez, 1997: fig. 16).

DESCRIPTION: Redescribed by Ramírez (1997). See below for additional data and re-interpretation of male palpal sclerites, principally the re-interpretation of the conductors.

DISTRIBUTION: South America.

COMPOSITION: Seven species, all included here and in Ramírez (1997), and perhaps an additional, undescribed one, very close to *A. pichi*.

Acanthoceto pichi Ramírez

Figure 33B

A. pichi Ramírez, 1997: 181.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1997). Additional data are provided below.

FEMALE: Spines: leg **I**, femur d 1-1-1, p 2ap; tibia v 2-2-p1 or 2-2-2, p 0 or 0-1; metatarsus v 2-0. **II**, femur d 1-1-1, p d1ap; tibia v r1-2-p1, r1-2-2 or 2-2-2, p d1-1; metatarsus v 2-0, p 1. **III**, femur d 1-1-1, p and r d1ap; patella r d1; tibia v p1-p1-2, p and r d1-1, d r1bas; metatarsus v 2-0-2, p d1-1-1 or 0-1-1, r d1-1-1, d p1-2. **IV**, femur d 1-1-1, r d1ap; patella r d1; tibia = **III**; metatarsus v 2-0-2 or 2-p1-2, p and r d1-1-1, d p1-2.

MALE: Spines as in female but: **III**, tibia v p1-2-2; metatarsus v 2-0-2 or 2-p1-2. **IV**,

TABLE 11
Synapomorphies of *Acanthoceto* and Internal Clades

<i>Acanthoceto</i> (clade 102) male abdomen projecting (36): absent → present canal on C2 (84): present → absent	Clade 100 (Continued) spine tibia I, v r1-x-x (134): present → absent spine tibia II, v p1-x-x (146): present → absent
Clade 97 spine metatarsus III, p d1-x-x (171): absent → present spine metatarsus III, r d1-x-x (174): absent → present	Clade 101 size retromarginal teeth (21): small denticles → regular RTA extremely thin (44): absent → present
Clade 98 ratio PME/PLE (16): PME = PLE → PME < PLE shape of PMA (68): two or more cusps → one short cusp spines tibia I, v ap (138): 2ap → 0ap spine tibia II, v x-x-p1 (150): present → absent spine tibia II, v x-x-r1 (151): present → absent spine metatarsus III, v x-p1-x (167): absent → present spine metatarsus III, v x-r1-x (168): absent → present spines metatarsi III and IV, v ap (169): 2 → 1 spine metatarsus IV, v x-r1-x (190): absent → present	<i>A. pichi</i> dark ventral stripe (1): absent → present tegulum displaced basally (59): absent → present spine patella III, r d1 (158): absent → present spine metatarsus III, r d1-x-x (174): absent → present spine patella IV, r d1 (180): absent → present
Clade 99 male retromarginal distal tooth (18): small → large male distal teeth (19): separate → contiguous spine tibia II, v r1-x-x (147): present → absent spine metatarsus III, d x-p1-x (177): present → absent	<i>A. cinerea</i> size retromarginal teeth (21): regular → small denticles spine tibia III, v r1-x-x (161): absent → present
Clade 100 posterior eye row (12): recurved → procurved or straight ratio AME/ALE (15): AME < ALE → AME = ALE apical loop SD (53): present → absent MA (64): present → reduced shape of MA (65): thick → slender C1 (75): with canal → massive apex C1 close to MA (78): absent → present C2 (79): fused → absent shape embolar process (97): thin hyaline → membranous expansible spine tibia I, v p1-x-x (133): present → absent	<i>A. marina</i> spine metatarsus I, v x-p1-x (140): absent → present spine metatarsus I, v x-r1-x (141): absent → present spine patella IV, r d1 (180): absent → present
	<i>A. ladornida</i> number retromarginal teeth (20): two, or four or more → three spine tibia II, p x-1 (152): present → absent spine metatarsus II, p x-1-x (154): present → absent spine patella III, r d1 (158): absent → present
	<i>A. riogrande</i> dark ventral stripe (1): absent → present spine metatarsus I, v x-p1-x (140): absent → present spine metatarsus I, v x-r1-x (141): absent → present
	<i>A. acupicta</i> spine tibia II, p x-1 (152): present → absent spine metatarsus IV, d x-p1-x (197): present → absent
	<i>A. septentrionalis</i> spine metatarsus IV, r d1-x-x (194): present → absent

tibia v p1-p1-2 or 2-2-2. Palp: tibia short, width/length 0.89, RTA sharp, short, sinuous. Cymbial conductor wide. Tegulum small, restricted to bulb base. Embolus long, basal process well developed into translucent blade. Median apophysis apical, hyaline, not articulated, with flattened, blunt tip. Paramedian apophysis heavily sclerotized, with conical cusp (but see note below). Median and paramedian apophyses arising from wide, heavily sclerotized sclerite. Primary conductor with basal portion translucent, elongate, with canal where embolus fits; apical portion conspicuous, sclerotized, with long canal, arising from median part of basal portion. Membranous areas that should separate primary conductor, median and para-

median apophysis, all quite sclerotized. Short, pointed cusp arises from basal part of sperm duct, close to apex of embolar process, may be relict of secondary conductor (fig. 33B).

NOTE: Several males, including some examined in Ramírez (1997), have two cusps on PMA, instead of one. They probably belong to a separate species, but I have not yet associated this with corresponding variability in females. As both forms share all the autapomorphies of *A. pichi*, I leave this problem unresolved (and scored the species as being polymorphic for character 68).

NEW RECORDS: **ARGENTINA: Neuquén:** Lanín Natl. Park: Lago Lolog, 4 km N San Martín de los Andes, FIT, *Nothofagus* forest,

ca. 950 m, Gentili property, 25.XI–1.XII.1989, S.A. Marshall, 1 ♀ (AMNH); 8 km N San Martín de los Andes, 1000 m, Malaise trap, 16–22.XI.1997, C. and M. Vardy, 1 ♂ (BMNH/MACN-Ar). **Río Negro:** El Bolsón, 28.X.1961, A. Kóvacs, 1 ♂ (AMNH). **CHILE: Región VIII (Biobío): Ñuble:** Las Trancas, E Chillán, 29–30.XI.1990, L. Peña, 1 ♂ 1 ♀ (AMNH), 1200 m, 24–27.XI.1994, L. Peña, 1 ♀ (AMNH). **Región IX (Araucanía): Malleco:** Cordillera Nahuelbuta, 18–20.XII.1993, L. Peña, 1 ♀ (AMNH). **Región X (Los Lagos): Osorno:** Puyehue Natl. Park: Aguas Calientes, 480 m, 40°44'S, 72°18'W, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♀ (AMNH); Los Derrumbes road, Aguas Calientes, 480 m, 40°44'S, 72°18'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♀ (AMNH). **Chiloé:** Isla de Chiloé: Butalcura, 21.II.1997, T. Cekalovic, 2 ♀ (AMNH), Coico, 8.II.1994, T. Cekalovic, 2 ♀ (AMNH), Piroquina, 16.II.1995, T. Cekalovic, 1 ♀ (AMNH), intersection road to Piroquina, 22.II.1991, T. Cekalovic, 1 ♀ (AMNH), Puente Trainel, 9.II.1993, T. Cekalovic, 1 ♀ (AMNH), no date, Skottsberg, 1 ♀ (NRS).

ACANTHOCETO CINEREA GROUP

DESCRIPTION AND DIAGNOSIS: See Ramírez (1997). Additional data are provided below.

MALE: Palp: tibia long, width/length about 0.45, RTA sharp, short, very thin, cymbium relatively small. Tegulum small, restricted to base of bulb. Embolus with basal process flattened, translucent (fig. 33C). Paramedian apophysis conical, heavily sclerotized. Median apophysis small, apical, hook-shaped, with rounded, weakly sclerotized flat extension close to its base (fig. 32A). Primary conductor with weakly sclerotized basal portion; apical portion long, thin, with long, relatively wide canal, arising from median part of basal portion (canal, restricted to apical portion, was overlooked in Ramírez, 1997). Secondary conductor wide, fused to anterior dorsal margin of tegulum.

DISTRIBUTION: Southern forests of Chile and Argentina.

COMPOSITION: Three very similar species listed below. They have almost identical genitalia, but can be distinguished by the spines

on the anterior legs and by the cheliceral teeth.

Acanthoceto cinerea (Tullgren)

Figures 32A, 33C

Gayenna cinerea Tullgren, 1901: 244.

A. cinereus: Ramírez, 1997: 153.

A. cinerea: Platnick, 1997: 684 (emendation of *A. cinereus*).

DESCRIPTION AND DIAGNOSIS: See Ramírez (1997). Additional data are provided below.

Spines, male and female (those on femora weak in some specimens): leg **I**, femur d 1–1–1, p (1-d1)ap; tibia v 2–2–0; metatarsus v 2bas. **II**, femur d 1–1–1, p 0–1–(1-d1), 0-d1-d1 or d1ap; tibia v 2–2–0, p 0–1; metatarsus v 2bas, p 1–0. **III**, femur d 1–1–1, p and r 0-d1-d1; tibia v 2–2–2, p 1-d1-1-0, r d1–1; metatarsus v 2–2–1 (slightly p) and an apical group of thick setae, p and r d1–1–1, d 0–(p1-r1)-2 or 0-p1–2. **IV**, femur d 1–1–1, p 0-d1-d1, r d1ap; tibia v 2–2–2, p and r 1-d1-1-0; metatarsus = III.

NEW RECORDS: **CHILE: ARGENTINA: Tierra del Fuego:** road to Glaciar Le Martial, XII.1989, A. González, 1 ♂ 2 ♀ 2 immatures (MLP). **Región X (Los Lagos): Osorno:** 500 m, 26.I.1969, L. Peña, 1 ♀ (MCZ). **Chiloé:** Isla de Chiloé: Lago Huillico, 9.II.1981, T. Cekalovic, 6 immatures (AMNH), Vilupulli, TC-99, 7.II.1981, or Piroquina, TC-101, 10.II.1981, T. Cekalovic, 1 ♀ (AMNH). Specimen misidentified as *A. marina* by Ramírez (1997): **CHILE: Región VIII: Concepción:** Hualqui, 18.XII.1988, R. Vergara, 1 ♀ (AMNH).

Acanthoceto ladormida Ramírez

A. ladormida Ramírez, 1997: 185.

NEW RECORDS: **CHILE: Región IV (Coquimbo): Elqui:** 9 km S Cruz Grande, beach, 5 m, 11.XI.1993, 29°29'S, 71°19'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 immature (AMNH).

NOTE: The apparently disjunct distribution in the central littoral and Cuesta La Dormida is similar to that of *Gayennoides molles*.

Acanthoceto marina Ramírez

Figure 31B

A. marinus Ramírez, 1997: 184 (incorrect gender, here emended).

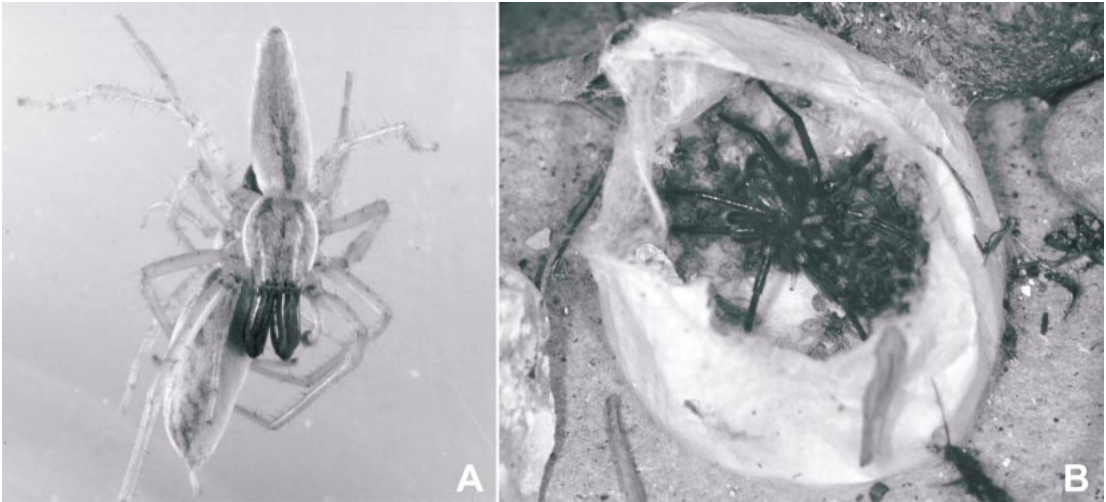


Fig. 31. **A.** *Acanthoceto acupicta* (Nicolet), couple in copula (Buenos Aires, Hudson, photo MJR 247). **B.** *Acanthoceto marina* Ramírez, female with recently emerged spiderlings (Chiloé, Chepu, photo MJR 484).

DESCRIPTION AND DIAGNOSIS: See Ramírez (1997). Additional data are provided below.

Spines, male and female (those on femora weak in some specimens): leg **I**, femur d 1-1-1, p (1-d1)ap; tibia v 2-2-0; metatarsus v 2-2-0. **II**, femur d 1-1-1, p (1-d1)ap or d1ap; tibia v 2-2-0, p 0-1; metatarsus v 2-2-0, p 1-0. **III**, femur d 1-1-1, p and r d1ap; patella r d1 or 0; tibia v p1-2-2 or p1-p1-2, p 1-d1-1-0, r d1-1, d r1bas; metatarsus v 2-2-1 (slightly p) and an apical group of thick setae, p and r d1-1-1, d 0-(p1-r1)-2 or 0-p1-2. **IV** = **III**; patella r d1; tibia v 2-2-2 or p1-2-2, p and r 1-d1-1-0, d r1bas; metatarsus = **III**.

NEW RECORDS: CHILE: Región VIII (Biobío): Concepción: Lirquen, 5.VII.1992, T. Cekalovic, 4♂ 1♀ 4 immatures (AMNH).

ACANTHOCETO ACUPICTA GROUP

DESCRIPTION AND DIAGNOSIS: See Ramírez (1997). Additional data are provided below.

MALE: Palp: tibia long, width/length 0.35-0.60, RTA extremely thin, oblique. Cymbium relatively small. Tegulum small, restricted to basal part of bulb. Embolus with basal process weakly sclerotized, thick, concave, inflated on artificial expansion (fig. 33E). Paramedian apophysis forming concave sclerotized plate, with arch of several

conical cusps in variable number, up to seven, most ventral on primary conductor. Median apophysis small. Primary conductor with basal portion massive, with conspicuous canal; apical portion ("secondary conductor" in Ramírez [1997]) small, without canal, contiguous to median apophysis (figs. 32B, 33D). Sperm duct lacking loop on anterior dorsal margin (wrongly interpreted as present in Ramírez, 1997; apical part of bulb extremely modified).

DISTRIBUTION: South America.

COMPOSITION: Two species listed below, and *Acanthoceto septentrionalis* (Berland). They have mostly identical genitalia, but can be distinguished by the spines on the anterior legs and by the cheliceral teeth.

Acanthoceto acupicta (Nicolet)

Figures 31A, 32B, 33D, E

Clubiona acupicta Nicolet, 1849: 420 (female holotype from Chile, San Carlos, in MHNP 4223, not reexamined; probably from Ñuble province, San Carlos, 25 km NE Chillán).

A. acupictus: Ramírez, 1997: 186 (incorrect gender, here emended).

DESCRIPTION AND DIAGNOSIS: See Ramírez (1997). Additional data are provided below.

Spines: female: leg **I**, femur d 1-1-1, p 2ap; tibia v 0-p1-p1, 0-2-p1 or 0-p1-2 (rare-

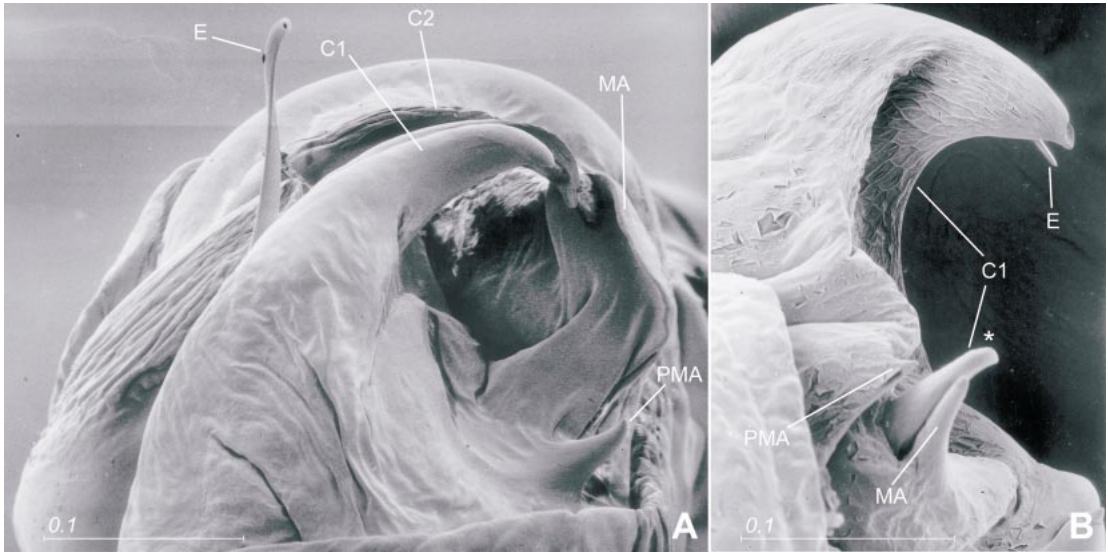


Fig. 32. *Acanthoceto* spp., male copulatory bulb, detail apical, ventral view. **A.** *A. cinerea* (Tullgren). **B.** *A. acupicta* (Nicolet). (C1 = primary conductor, * = apical portion of C1 contiguous to MA; C2 = secondary conductor; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

ly 0–2–2), short; metatarsus v 2bas. **II**, femur d 1–1–1, p and r d1ap or r 0; tibia v p1ap, 2ap or 0-r1–2; metatarsus v 2bas, p 1–0. **III**, femur d 1–1–1, p and r d1ap; tibia v 0-p1–2, r 0–1 or d1–1; metatarsus v 2–0–2, p 0–1–1 or lap, r 0–1–1, d 2ap. **IV**, femur d 1–1–1, r d1ap; tibia v p1-p1–2, r d1–1; metatarsus v 2-p1–2 or 2–2–2, p 0–1–1, r d1–1–1, d 2ap. Male: spines as in female, except: **I**, femur p d1ap.

NEW RECORDS: **ARGENTINA: Entre Ríos:** Arroyo Brazo Largo, V.1939, Castillo, 1 immature (MACN-Ar); Rosario (?), illegible, 1♂ (ZMK). **Buenos Aires:** San Pedro, 2.XI.1991, M. Ramírez, 1♂ (MACN-Ar).

TABLE 12

Autapomorphies of *Ferrieria echinata*

ratio AME/ALE (15): AME < ALE → AME = ALE
MA (64): present → reduced
depressions on LL (112): absent → present
spine metatarsus I, v x-p1-x (140): absent → present
spine metatarsus I, v x-r1-x (141): absent → present
spine metatarsus II, d p1ap (156): absent → present
spines metatarsi III and IV, v ap (169): 2 → 0
preening comb (170): absent → present
spine metatarsus IV, v r1-x-x (188): present → absent
spine metatarsus IV, r x-1-x (195): present → absent

CHILE: Región VIII (Biobío): Concepción: Fundo El Manzano, 23.XI.1990, T. Cekalovic, 1♀ (AMNH); 7.XII.1996, T. Cekalovic, 1♂ (AMNH).

Acanthoceto riogrande Ramírez

A. riogrande Ramírez, 1997: 189.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1997). Additional data are provided below.

Spines: Female: leg **I**, femur d 1–1–1, p d1ap; tibia v 2–2–2 long; metatarsus v 2bas. **II**, femur = I; tibia v r1-r1–2, p 0–1; metatarsus v 2bas, p 1–0. **III**, femur d 1–1–1, p and r d1ap; tibia v 0-p1–2, r d1–1; metatarsus v 2–0–2, p and r 0–1–1, d 0-p1–2. **IV**, femur d 1–1–1, r d1ap; tibia v p1–2–2, p 0–1 or 0, r d1–1; metatarsus v 2-p1–2, p 0–1–1, r d1–1–1, d 0-p1–2.

FERRIERIA TULLGREN

Table 12

Ferrieria Tullgren, 1901: 247 (type species by monotypy *Ferrieria echinata* Tullgren, 1901).

Ramírez, 1995a: 381. Ramírez, 1997: 190 (revision of the genus).

Terupis Simon, 1904: 103 (type species by monotypy *Terupis bicolor* Simon, 1904). First synonymized by Ramírez, 1997: 190.

DIAGNOSIS: The single known species resembles some *Aysenia* and *Acanthoceto* in its small size and recurved posterior eye row, but it can be distinguished by the combination of large spines on the anterior legs, a short, acute RTA, and copulatory ducts coiled along a longitudinal axis. Immatures are very similar to those of *Acanthoceto pichi* Ramírez, but are distinguished by having larger spines on the anterior legs.

DESCRIPTION: Redescribed by Ramírez (1997). Palp (figs. 33A, 34): tibia short, as long as wide, RTA very short, acute. Cymbium with wide conductor, conspicuous translucent lamina opposed to RTA. Tegulum large, with rectangular basal notch. Sperm duct loops at base of secondary conductor, at anterior ventral margin of tegulum, just before entering embolus, and at embolar base. Embolus with basal process well developed, laminar. Paramedian apophysis well sclerotized, formed by two irregular protuberances, one approximately conic. Median apophysis small, slender, connected to primary conductor by sclerotized stripe. Primary conductor with wide canal where embolus fits. Secondary conductor small, with canal, apex acute. Epigyne with separate lateral lobes, bearing depressions at posterior margins. Copulatory openings close to epigastric furrow; copulatory ducts coiled along longitudinal axes, spermathecae separate from each other.

COMPOSITION: Only the type species.

Ferrieria echinata Tullgren

Figures 33A, 34, 35C

Ferrieria echinata Tullgren, 1901: 247. Redescribed by Ramírez, 1997: 191.

Terupis bicolor Simon, 1904: 103. Synonymized by Ramírez, 1997: 191.

DIAGNOSIS AND DESCRIPTION: See Ramírez (1997). Additional data are provided below.

VARIABILITY: Female spines: III, tibia v 0-p1-r1. IV, tibia r 1ap; metatarsus v p1-0-comb, p 1ap. Male spines: III, tibia v 0-p1-r1.

DISTRIBUTION: Southern forests of Chile and Argentina.

NEW RECORDS: **Argentina: Neuquén:** Puerto Blest, 7–20.I.2000, L. Lopardo and A. Quaglino, 6 immatures (MACN-Ar). **Chile: Región VII (Maule): Talca:** Alto de Vilch-

es, elev. 1180 m, 35°36'S, 71°04'W, 14–15.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH). **Región VIII (Biobío): Concepción:** Hualpén, 7.VI.1996, T. Cekalovic, 1♀ (AMNH). **Malleco:** Monumento Natural Contulmo, 19–21.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1 immature (MACN-Ar). **Ar-aucó:** 10 km N Curanilahue, 21.XI.1992, T. Cekalovic, 2♀ (AMNH); Los Morongos, E Los Niches, 600 m, 17–20.XI.1994, L. Peña, 1♂ (AMNH). **Biobío:** W Ralco, Santa Bárbara, 400 m, 22–23.XI.1994, L. Peña, 1♂ (AMNH). **Región X (Los Lagos): Valdivia:** Las Lajas, W La Unión, 13–15.I.1991, L. Peña, 1♂ (AMNH), 19–20.XI.1990, L. Peña, 1♀ (AMNH); 37 km SE Panguipulli, 39°45'S, 72°20'W, 300 m, beating vegetation, 14.XI.1994, R. Leschen and C. Carlton no. 097, 1♀ (AMNH); Parque Oncol: intersection Tepual trail with Rio Cruces, 8.I.2001, T. Cekalovic, 1♂ 1♀ (AMNH), Quitaqui trail, 19.I.2001, T. Cekalovic, 1♂ 1♀ (AMNH), Punucapa trail, TC 642, 15.I.2001, T. Cekalovic (AMNH). **Osorno:** Puyehue Natl. Park: Aguas Calientes, 700 m, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ 1♀ (AMNH), 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1♂ 1♀ 12 immatures (MACN-Ar), 1♂ 1♀ (MHNS). **Llanquihue:** Alerce Andino Natl. Park, elev. 100 m, 41°35'S, 72°41'S, 23.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♂ 1♀ 1 immature (AMNH).

COPTOPREPES SIMON

Table 13

Coptoprepes Simon, 1884: 130, 136 (type species by monotypy *Coptoprepes flavopilosus* Simon, 1884), 1887: E24, 1897a: 93, 96, 102. Ramírez, 1995a: 369, 1997: 178.

DIAGNOSIS: Distinguished from other Amaurobioioidinae by the combination of a greatly developed, often bifid median apophysis, and by the apical cymbial notch, retro-lateral to the cymbial conductor, where the median apophysis fits (fig. 42A, B).

DESCRIPTION: Color generally dark, with pattern diffuse or absent. Carapace narrowed in front, posterior eye row procurved, ocular area not projecting. Chelicerae relatively

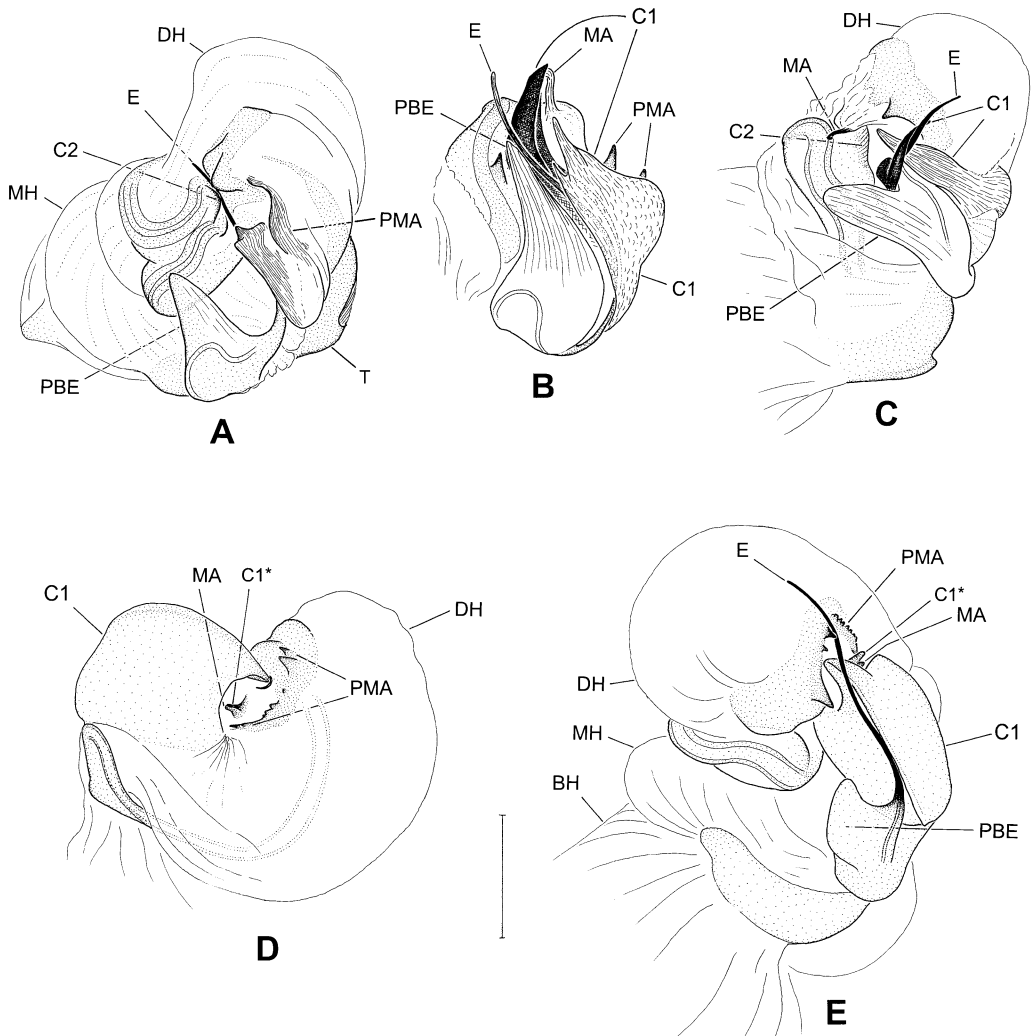


Fig. 33. Expanded male copulatory bulbs of *Ferrieria echinata* Tullgren and *Acanthoceto* spp. **A.** *F. echinata* (Osorno, Puyehue, 13–17.XII.1998). **B.** *A. pichi* Ramírez (Neuquén, Laguna Piré). **C.** *A. cinerea* (Tullgren) (Chubut, Bahía Rosales). **D.** *A. acupicta* (Nicolet), retrolateral view (Buenos Aires, Capital, IX.1990). **E.** Same, prolateral view. Scale bar = 0.2 mm. (BH = basal hematodocha; C1 = primary conductor; C1* = apical portion of C1 contiguous to MA; C2 = secondary conductor; DH = distal hematodocha; E = embolus; MA = median apophysis; MH = median hematodocha; PBE = process on base of embolus; PMA = paramedian apophysis; T = tegulum.)

small, unmodified, slightly smaller in males, three to five teeth on promargin, a series of small teeth (four to seven) on retromargin. Anterior legs with few spines, lacking prolateral spines on tibia II. Male palpal tibia short, RTA variable, even absent. Cymbium large, with retrolateral apical notch, contiguous to cymbial conductor, where median apophysis fits. Tegulum displaced basally,

median apophysis large, apical, often bifid. Primary conductor with long canal. Secondary conductor of variable shape, separate or fused to anterior dorsal margin of tegulum. Paramedian apophysis small or absent. Embolus long, basal process flattened. Epigyne flattened, displaced posteriorly, copulatory openings in or very close to epigastric fold. Copulatory ducts long in species with long

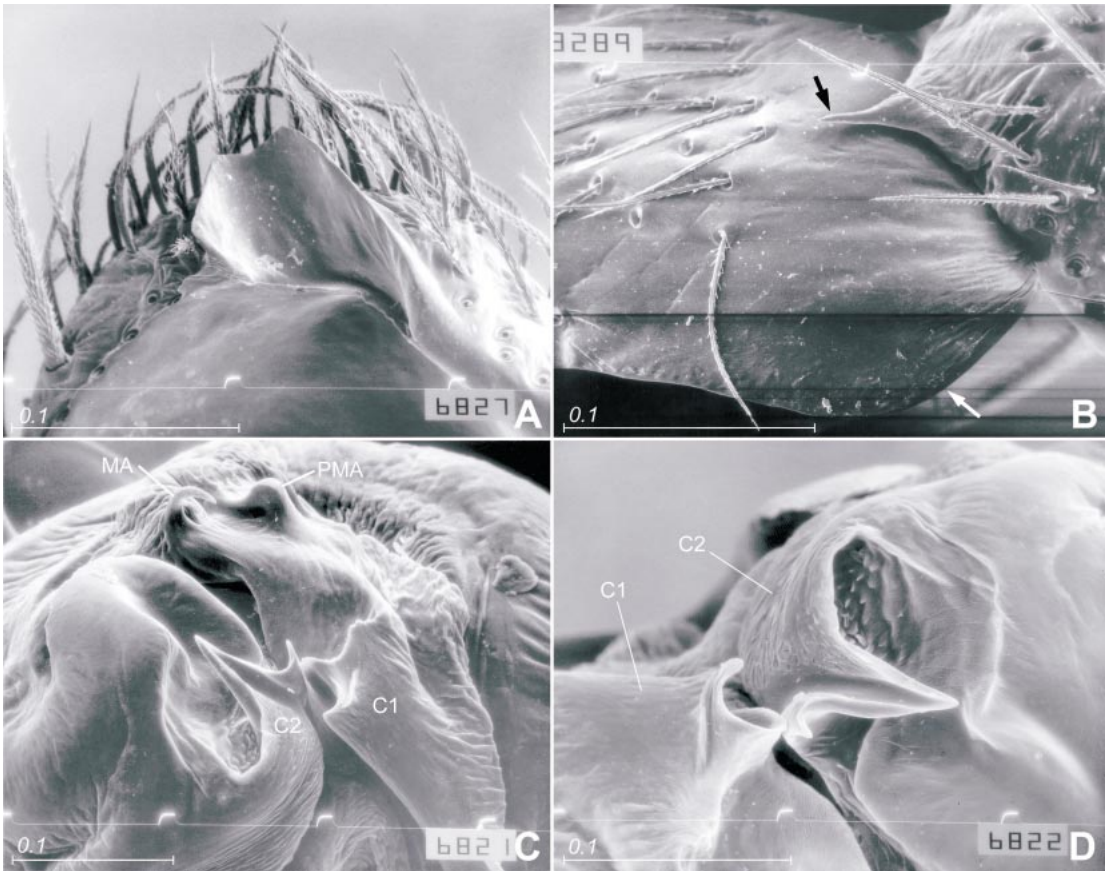


Fig. 34. *Ferrieria echinata* Tullgren, male palp (Chiloé, Cole Cole). **A.** Cymbial conductor, ventral view. **B.** Retrolateral tibial apophysis (RTA) and base of cymbium, retrolateral view: white arrow points to widened posterior margin of alveolus, black arrow to RTA. **C.** Male copulatory bulb, ventral-apical view. **D.** Same, apical view. (C1 = primary conductor; C2 = secondary conductor; MA = median apophysis; PMA = paramedian apophysis.)

embolus, with tortuous course, not coiled along any axis; fertilization duct generally separated from posterior epigynal margin.

DISTRIBUTION: Southern forests of Chile and Argentina.

COMPOSITION: *C. flavopilosus* Simon, three species newly described below, and at least five undescribed species.

Coptoprepes flavopilosus Simon

Figures 35A, 36, 37

Coptoprepes flavopilosus Simon, 1884: 137 (male holotype from Chile, Cabo de Hornos, in MHNP 6672, examined), 1887: E25, 1897a: 97, 102 (*fulvipilosus*, lapsus), 1902: 29. Tullgren, 1901: 245, 260. Merian, 1913: 12. Ramírez, 1995a: 366, 369.

NOTE: In the same vial as the holotype there is a female, but Simon only described the male. He reported that the male palpal tibia lacks any apophysis. The RTA is slightly translucent and may have been overlooked.

DIAGNOSIS: Females are easily distinguished from those of other *Coptoprepes* by the lateral curved ridges on the epigyne; males resemble those of *C. nahuelbuta* by having a curved tibial apophysis, concave dorsally, but can be distinguished by the much smaller secondary conductor.

FEMALE (Ushuaia, Castellanos and Gómez, MACN-Ar 9822): Total length 5.35. Carapace length 2.23, width 1.50, wider on legs II–III. Length of tibia/metatarsus: I, 1.03/

TABLE 13

Synapomorphies of *Coptoprepes* and Internal Clades*Coptoprepes* (clade 109)

- anterior eye row (11): straight → procurved
 ratio PME/PLE (16): PME = PLE → PME < PLE
 cymbial retrolateral apical notch (50): absent → present
 tegulum displaced basally (59): absent → present
 CO on epigastric furrow (115): absent → present
 spine tibia II, p x-1 (152): present → absent
 spines metatarsi III and IV, v ap (169): 2 → 0
 preening comb (170): absent → present

Clade 107

- canal on C2 (84): present → absent

Clade 108

- number promarginal teeth (23): three → five or more
 globose lobe on C1 (73): absent → present
 C2 (79): fused → free

C. flavopilosus

- body pattern (0): present → absent
 scopulae anterior tibiae (33): present → absent
 spine tibia I, v r1-x-x (134): present → absent
 spine metatarsus III, v x-r1-x (168): absent → present

C. nahuelbuta

- no autapomorphies!

C. valdiviensis

- cymbial conductor terminal (48): terminal → subterminal

C. campanensis

- ratio AME/ALE (15): AME = ALE → AME < ALE
 RTA (42): present → absent
 PMA (67): present → absent
 embolus very long (95): normal → very long
 spines tibia I, v ap (138): p1ap → 0ap
 spines metatarsi III and IV, v ap (169): 0 → 1

0.63; II, 0.94/1.00; III, 0.97/1.08; IV, 1.30/1.63. Palpal tarsus length 0.64. Chelicerae with 5 teeth on promargin and 5 or 6 denticles on retromargin. Sternum length 1.17, width 0.93. Spines: leg **I**, femur d 1-1-1, p 2ap; tibia v r1-2-0 or 0-2-0; metatarsus v 2bas. **II**, femur d 1-1-1, p d1ap; tibia v 0-r1-p1; metatarsus v 2bas. **III**, femur d 1-1-1, p and r d1ap; patella r 1; tibia v p1-p1-2, p 1-d1-1-0, r d1-1, d r1bas; metatarsus v 2-2-comb, p and r d1-1-1, d 0-p1-2. **IV**, femur d 1-1-1, p and r d1ap; patella r 1; tibia v p1-2-2, p and r 1-d1-1-0, d r1bas; metatarsus = III, but d 0-2-2. Dorsal, long, thin, erect bristles on patellae (d 1-0-1) and tibiae

(d r1-0-1). Abdomen length 3.17, width 1.70, spiracle-epigastrium 1.50, spiracle-spinnerets 0.22. Color: grayish uniform, darker dorsally (fig. 35A). Epigyne (fig. 36D, E): lateral lobes separate, slightly projecting above epigastric fold. Copulatory ducts irregular. Spermathecae fused to each other.

MALE (Punta Remolino, MACN-Ar 9821): Total length 4.40. Carapace length 2.20, width 1.50 (fig. 36A, B). Length of tibia/metatarsus: **I**, 1.33/1.27; **II**, 1.17/1.17; **III**, 0.96/1.23; **IV**, 1.40/1.70. Chelicerae slightly smaller than those of female, with 6 denticles on retromargin (fig. 36C). Sternum length 1.17, width 0.83. Spines as in female, except: leg **I**, tibia v 0-2-2. **II**, tibia v r1-r1-2, p 0-1. **III**, tibia p and r 1-d1-1-0. **IV**, tibia v 2-2-2. Abdomen length 2.33, width 1.30, spiracle-epigastrium 1.20, spiracle-spinnerets 0.20. Color as in female. Palp (figs. 36F, G, 37): femur short, laterally compressed. Tibia very short, width/length 1.33, RTA flattened, tip concave dorsally. Cymbium relatively large, with apical retrolateral notch where median apophysis fits, cymbial conductor wide. Tegulum basal. Sperm duct with loop at dorsal anterior margin, close to base of secondary conductor (fig. 37B). Embolus with basal process ample, flattened, rounded. Median apophysis apical, wide, with apical projection long, curved. Primary conductor hyaline, tip simple. Secondary conductor well developed, apex acute, partially separate from tegulum by ventral membranous area. Paramedian apophysis with one triangular cusp, flattened, close to base of median apophysis; rounded, ventral protuberance, may also be part of paramedian apophysis.

VARIABILITY: Female spines: **I**, tibia v p1-2-p1. **II**, tibia v 0-r1-2. **III**, tibia v p1-2-2.

NATURAL HISTORY: This species constructs retreats under logs in very humid localities.

DISTRIBUTION: Forests in southern Argentina and Chile, from Osorno to Tierra del Fuego.

OTHER MATERIAL EXAMINED: **ARGENTINA: Chubut:** Los Alerces Natl. Park: Río Arrayanes, II.1985, M. Ramírez, 2♀ (MACN-Ar). **Santa Cruz:** Ventisquero Moreno, 18-24.I.1971, J. Vellard, 1♀ (MACN-Ar). **Tierra del Fuego:** Bahía Buen Suceso, 16-31.I.1986, E. Maury, 1 immature (MACN-Ar); Cabo de Hornos, same vial as

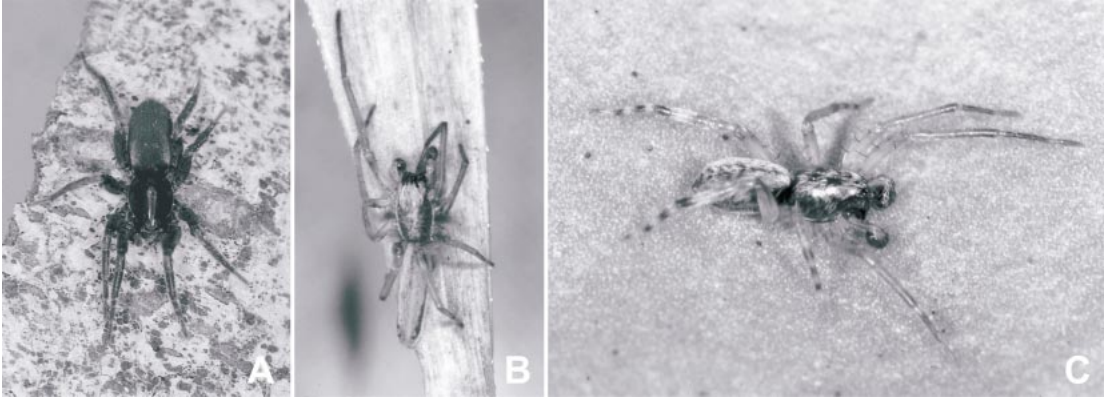


Fig. 35. **A.** *Coptoprepes flavopilosus* Simon, female (Osorno, Puyehue, photo MJR 53). **B.** *Aysenoides colecole*, n. sp., male (Chiloé, Cole Cole, photo MJR 513). **C.** *Ferrieria echinata* Tullgren, male (Chiloé, Cucao, photo MJR 534).

holotype, 1 ♀ (MHNP); Isla de los Estados, Arroyo Goffre, 20.X.1971, Menéndez, 1 ♀ (MACN-Ar); Laguna Negra, XII.1989, A. González, 1 immature (MLP); Punta Remolino 24, 24.II.1959, J. Vellard, 1 ♂ (MACN-Ar 9821); Ushuaia, 1–14.XII.1932, Castellanos and Gómez, 1 ♀ (MACN-Ar 9822); Río Pipo, XII.1989, A. González, 1 ♀ (MLP); Ushuaia, no date, J. Vellard, 1 ♀ (MACN-Ar); Valle Carbajal, 17.II.1961, B. Malkin, 1 ♀ (AMNH). **CHILE: Región X (Los Lagos): Osorno:** Puyehue Natl. Park, Los Derrumbes, 18.I.1989, M. Ramírez, 1 ♀ (MACN-Ar, photo MJR 53), Los Mallines, 40°46'0"S, 72°17'00"W, 700 m, bog, pitfall 514T1, 2.XII.2000–2.I.2001, 1 ♀, 12.XII.2000–2.I.2001, pitfall 514T1, 1 ♂ 2 ♀, J. Miller, I. Agnarsson, Alvarez, J. Coddington, G. Hormiga, (USNM), Antillanca, 40°46'30"S, 72°11'30"W, 1050–1350 m, alpine meadow, 2.XII.2000, J. Miller, I. Agnarsson, Alvarez, J. Coddington, G. Hormiga, pitfall 57T1, 1 ♀, pitfall 511T1, 1 ♂, pitfall 512T2, 1 ♀ (USNM); Antillanca road, 40°46'30"S, 72°12'00"W, 1150 m, *Nothofagus pumilio* forest, 24.XII.2000, J. Miller, I. Agnarsson, Alvarez, J. Coddington, G. Hormiga, pitfall 511T1, 1 ♂ (USNM). **Llanquihue:** Lago Chapo, 13.5 km E Correntoso, site 656, window trap, 310 m, valdivian rainforest, 16–27.XII.1982, A. Newton and M Thayer, 1 ♂ (AMNH); 35 km W Río Negro, 240 m, disturbed forest, 24.I.1986, N. Platnick and T. Schuh, 1 ♀ 1 immature (AMNH). **Chiloé:**

Arroyo Cole Cole, 25 km N Cucao, 8–11.II.1991, M. Ramírez, 1 ♀ (MACN-Ar). **Región XI (Ibáñez del Campo): Aisén:** Laguna San Rafael, II.1957, N. Codoceo, 2 ♀ (MACN-Ar); Río Simpson Natl. Park, N margin, 17.II.1991, M. Ramírez, 4 ♀ 2 immatures (MACN-Ar); 85–89 km S Puerto Puyuguapi, 220–270 m, burned forest, 19.I.1986, N. Platnick, P. Goloboff, T. Schuh, 1 ♀ (AMNH); 102 km S Puerto Puyuguapi, 220 m, wet forest, 19.I.1986, N. Platnick, P. Goloboff, T. Schuh, 4 ♀ (MACN-Ar). **Región XII (Magallanes y Antártica): Última Esperanza:** Torres del Paine Natl. Park: near Refugio Chileno, 50°56'45"S, 72°55'0"W, 400–600 m, 8–9.XII.2000, J. Miller, I. Agnarsson, 1 ♂, 1 ♀, 2 ♀ (USNM); near Refugio Pudeto, 51°3'45"S, 72°58'45"W, 100 m, 7.XII.2000, pitfall in scrub, J. Miller, I. Agnarsson, 1 ♂, pitfall 51T1, 1 ♂ (USNM); Laguna Parrillar Natl. Res., 53°24'15"S, 71°15'45"W, 1–10.XII.2000, 350 m, J. Miller, I. Agnarsson, forest Berlese, 1 ♀, dry grass near Chorio Hermoso, pitfall 55T2, 1 ♀, scrub in bog, pitfall 54T1, 1 ♀, scrub in bog, pitfall 54T2, 4 ♀ 2 immatures, Chorio Hermoso, flood plain, 55T1, 2 ♀ (USNM). **Magallanes:** Cabo de Hornos, 1844–84, P. Hahn, 1 ♀ (MHNP); Camerón, 14–17.XI.1960, L. Peña, 2 ♀ (MCZ); Estancia La Vicuña, SE Camerón, 1–6.XII.1960, L. Peña, 1 ♀ (MCZ); Isla Nueva, 4.II.1896, O. Nordenskjöld, 2 ♀ (NRS); Isla Picton (1896, O. Nordenskjöld), 1 ♀ (NRS); Puerto Bridges,

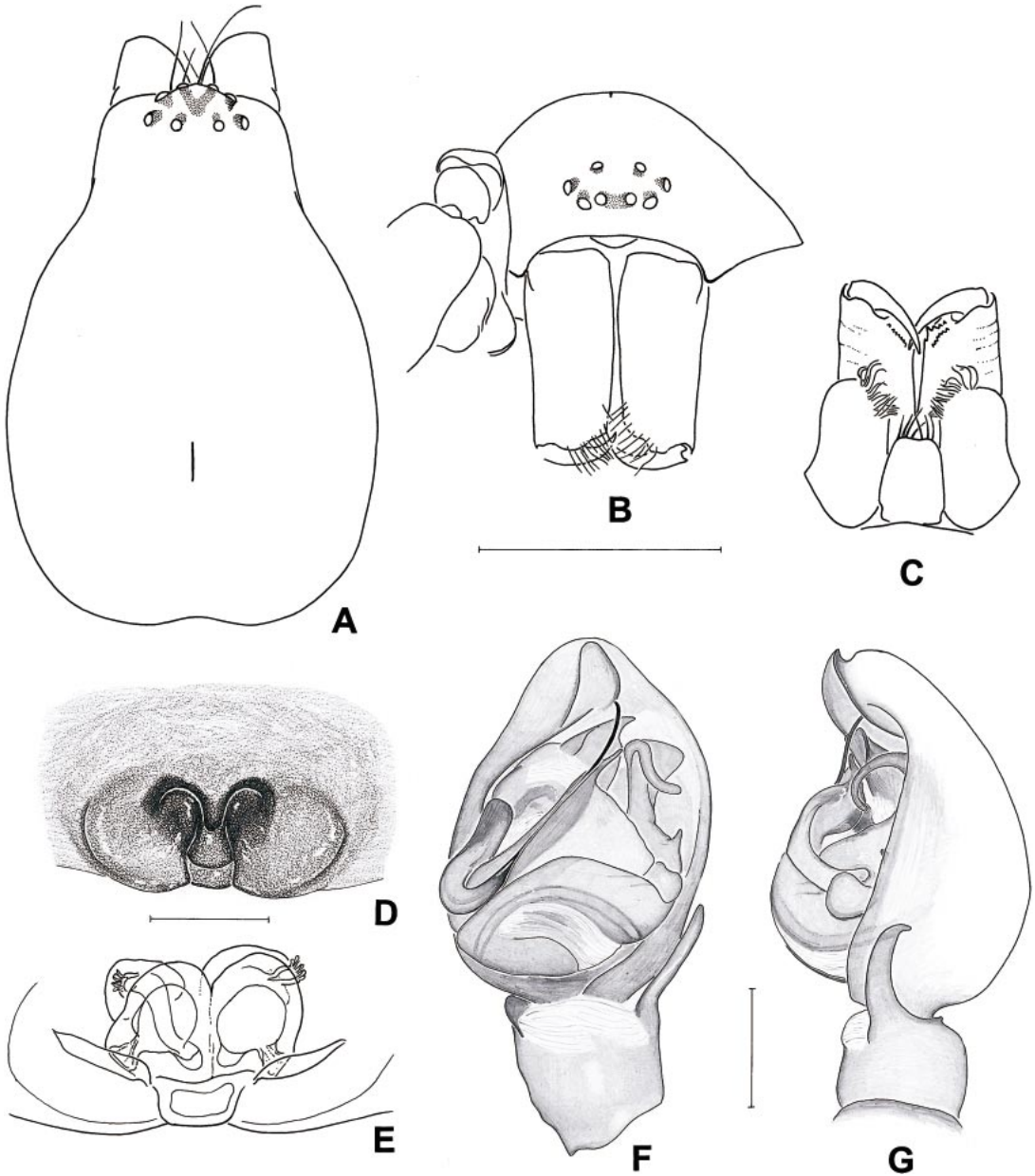


Fig. 36. *Coptoprepes flavopilosus* Simon. **A.** Male carapace (holotype). **B.** Same, anterior view. **C.** Same, mouth parts, ventral view. **D.** Epigyne, ventral view (Aisén, Puerto Puyuguapi). **E.** Same, cleared, dorsal view. **F.** Male palp, ventral view (Llanquihue, Lago Chapo). **G.** Same, retrolateral view. Scale bars = A-C, 1 mm; D-G, 0.2 mm.

9.I.1893, Michelsen, 3 ♀ (ZMH); Puerto Toro, Isla Navarino, 19.XII.1992, Michelsen, 1 immature (ZMH); Río Rubens, 1956, J. Vellard, 1 ♂ 2 ♀ (MACN-Ar); Rubens, 13.XII.1960, L. Peña, 1 ♀ (MCZ); Rusffin,

SE Cameron, 17-20.XI.1960, L. Peña, 1 ♀ (MCZ); Tres Vientos, Puerto Arturo, 53°34'S, 73°23'W, 25-28.XI.1960, L. Peña, 1 ♀ (MCZ). *Mistaken Locality:* Argentina, La Pampa, Santa Rosa, V.1962, Aravena, 1 ♀

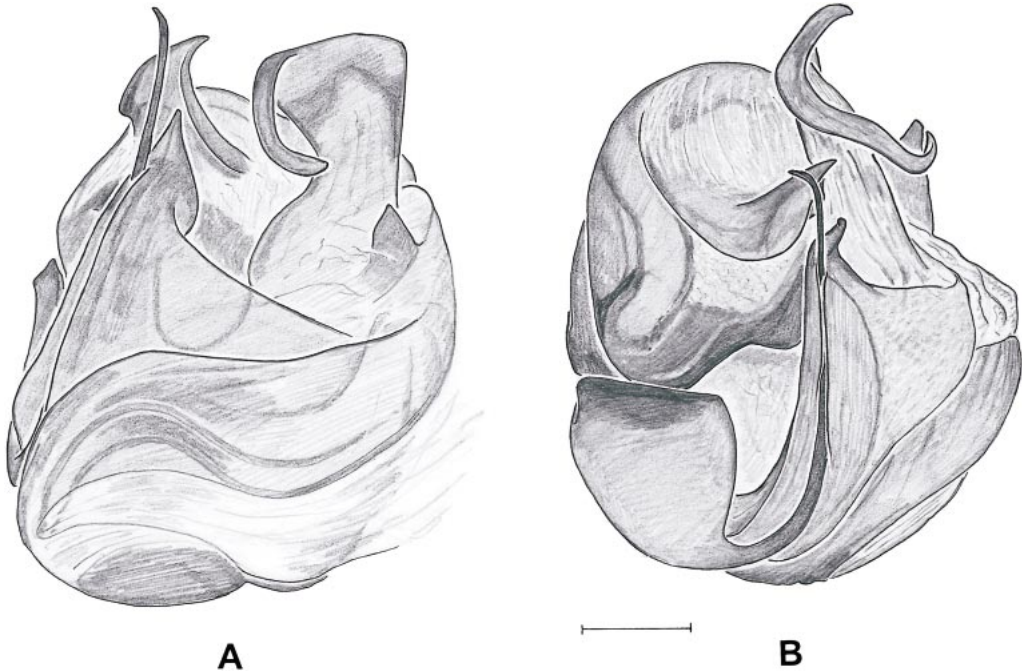


Fig. 37. *Coptoprepes flavopilosus* Simon, male holotype. **A.** Copulatory bulb, ventral-retrolateral view. **B.** same, prolateral-apical view. Scale bar = 0.1 mm.

(MACN-Ar), a tentative transcription made by M.E. Galiano of an illegible label, is here considered inaccurate.

***Coptoprepes nahuelbuta*, new species**

Figure 38

TYPES: Female holotype and male paratype from Chile, Región IX, Malleco province, Nahuelbuta Natl. Park, FITS, 1200–1500 m, *Nothofagus/Araucaria* forest, ca. 38°S, 73°W, 9.XII.1984–17.II.1985, S. and J. Peck, deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition, referring to the area where this species lives.

DIAGNOSIS: Distinguished from other *Coptoprepes* by having a projecting secondary conductor, articulated and heavily sclerotized, and an epigynal median field hidden in the epigastric furrow.

FEMALE (holotype): Total length 5.30. Carapace length 2.03, width 1.43, wider on leg II. Length of tibia/metatarsus: I, 0.92/0.84; II, 0.83/0.80; III, 0.72/0.89; IV, 1.10/1.07. Palpal tarsus length 0.57. Chelicerae with five teeth on promargin, seven denticles on retro-

margin. Sternum length 1.08, width 0.87. Metatarsi III and IV with preening comb. Spines: leg **I**, femur d 1–1–1, p 2ap; tibia v 2–2–0; metatarsus v 2bas. **II**, femur d 1–1–1, p dlap; tibia v r1-r1–2; metatarsus = I. **III**, femur d 1–1–1, p 0-d1-d1 or dlap, r dlap or 0; patella r 1; tibia v p1-p1–2, p 1-d1-1-0, r d1–1, d r1bas; metatarsus v 2–0-comb, p and r d1–1–1, d 0-p1–2. **IV**, femur d 1–1–1, p and r dlap; patella r 1; tibia v p1–2–2, p and r 1-d1-1-0, d r1bas; metatarsus v 2–2-comb, p and r d1–1–1, d 0–2–2. Dorsal bristles as in *C. flavopilosus*. Abdomen (with cuticle partially detached) length 3.55. Color: holotype quite faded; other specimens with carapace, legs, sternum, mouthparts brown, abdomen dark grayish, dorsum paler, cardiac area dark. Epigyne (fig. 38F–H) displaced posteriorly, in ventral view only visible as elevation of epigastrium. Lateral lobes separate in posterior view. Copulatory ducts contorted, asymmetrical, spermathecae contiguous, lumen small.

MALE (paratype): Total length 4.12. Carapace length 1.90, width 1.37. Length of tibia/metatarsus: I, 1.23/1.09; II, 1.04/0.99; III,

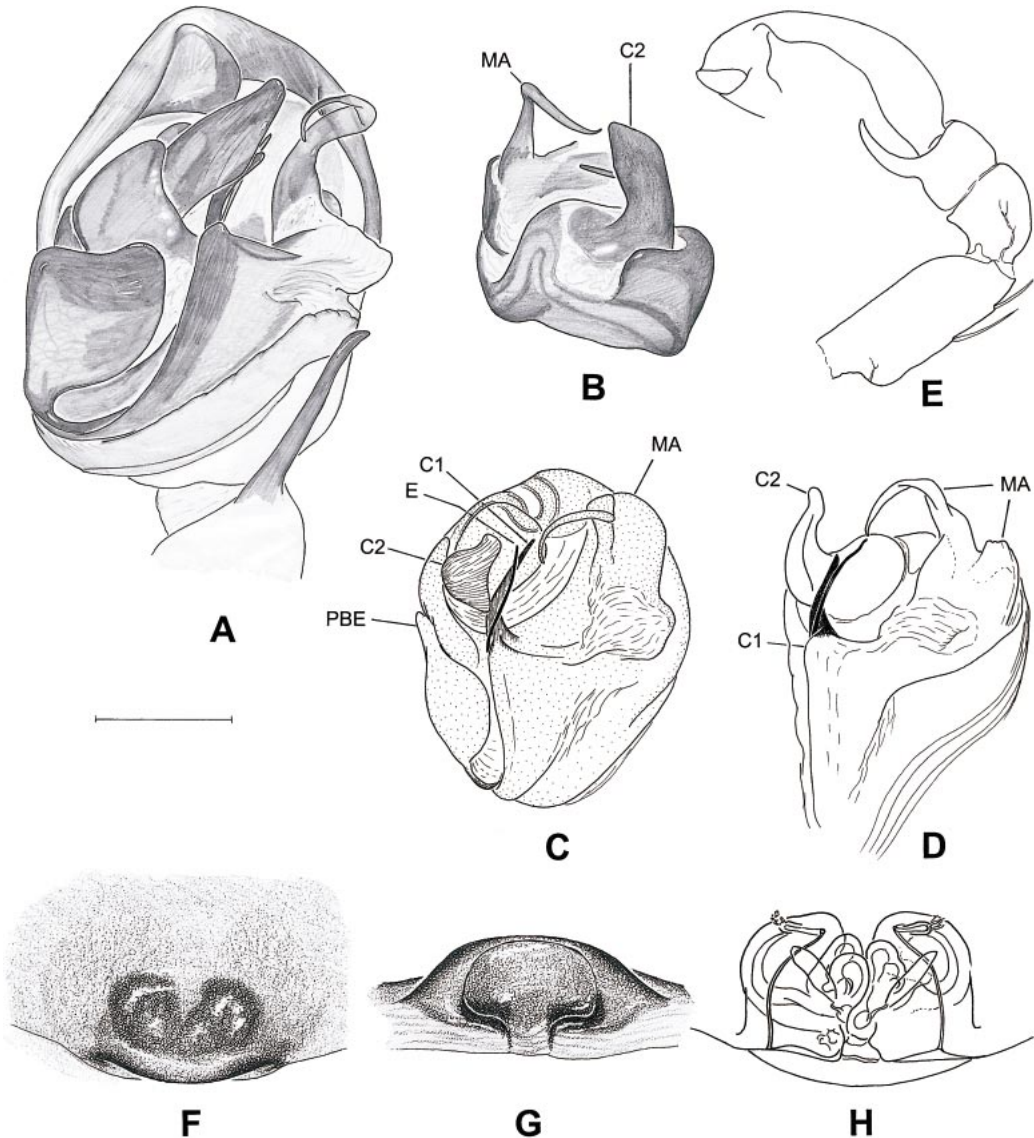


Fig. 38. *Coptoprepes nahuelbuta*, n. sp. **A.** Male palp, ventral view (paratype). **B.** Same, copulatory bulb, apical view. **C.** Same, ventral-apical view. **D.** Same, retrolateral view. **E.** Same, palp, retrolateral view. **F.** Epigyne, ventral view (holotype). **G.** Same, posterior view. **H.** Same, dorsal view, cleared. Scale bar = E, 0.4 mm; H, 0.15 mm, all other, 0.2 mm. (C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; PBE = process on base of embolus.)

0.81/1.00; IV, 1.17/1.47. Chelicerae smaller than those of female. Sternum length 1.06, width 0.78. Spines as in female, except: leg **I**, tibia v 2–2–2. **II**, tibia p 0–1. Abdomen (badly preserved) length ca. 2.00. Color as in female. Palp (fig. 38A–D): femur short; tibia very short, width/length 1.39, RTA

long, flattened, distally bent dorsally. Cymbium relatively large, with deep apical retrolateral notch where median apophysis and secondary conductor fit; cymbial conductor wide. Tegulum basal. Sperm duct with pronounced loop at dorsal anterior margin, between secondary conductor and median

apophysis. Embolus with basal process ample, flattened, rounded. Median apophysis apical, sinuous, forming right angle, apex very thin. Primary conductor with deep canal, apical portion projecting as straight, heavily sclerotized prong, where canal ends. Secondary conductor conspicuous, heavily sclerotized, almost totally surrounded by membranous area (fig. 38B). Paramedian apophysis absent, or represented only by a longitudinal ridge close to base of median apophysis; rounded, ventral protuberance, may also be part of paramedian apophysis.

VARIABILITY: Females spines: I, tibia v 2-2-p1 or 2-2-2. II, tibia v r1-r1-p1. IV, metatarsus d 0-p1-2.

NATURAL HISTORY: Unknown. All specimens were collected in pitfall traps or in leaf litter.

DISTRIBUTION: Forests in southern Chile, in Malleco and Aisén provinces, probably also in intermediate localities.

OTHER MATERIAL EXAMINED: **CHILE:** **Región IX (Araucanía): Malleco:** Same data as types, 2♂ 3♀ (AMNH); 17 km W Angol, 800 m, FIT, mixed *Nothofagus*, 8.XII.1984-16.II.1985, S. and J. Peck, 1♂ (AMNH); Monumento Natural Contulmo, 11.XII.1984-13.II.1985, S. and J. Peck, 1♂ 1♀ (AMNH); Nahuelbuta Natl. Park, 1250 m, 19.XI.1981, N. Platnick and T. Schuh, mossy forest litter, *Nothofagus*, *Araucaria*, 1♀ (AMNH). **Región XI (Ibáñez del Campo): Aisén:** 102 km S Puerto Puyuguapi, 220-270 m, burned forest, 19.I.1986, N. Platnick, P. Goloboff, T. Schuh, 2♀ (AMNH).

Coptoprepes campanensis, new species

Figures 39-41

TYPES: Male holotype from Chile, Región V, Quillota province, Palmas de Ocoa, La Campana Natl. Park, unburned site, 23.VIII.1985, pitfall 1, R. Calderón; female paratype from the same locality, trap 5, 22.VI.1984, R. Calderón, deposited in AMNH.

ETYMOLOGY: The specific name refers to the type locality, where this species seems to be very common.

DIAGNOSIS: Distinguished from other *Coptoprepes* by having a huge embolus and pri-

mary conductor, and long, contorted female copulatory ducts.

FEMALE (paratype): Total length 3.17. Carapace length 1.40, width 1.02, wider between legs II and III. Length of tibia/metatarsus: I, 0.72/0.61; II, 0.66/0.59; III, 0.57/0.63; IV, 0.98/1.07. Palpal tarsus length 0.41. Chelicerae with three teeth on promargin, four on retromargin. Sternum length 0.81, width 0.61. Spines: leg I, femur d 1-1-1, p d1ap; tibia v 2-2-0; metatarsus v 2bas. II = I. III, femur d 1-1-1, p and r d1ap; patella r 1; tibia v p1-p1-2, p 1-d1-1-0, r d1-1, d r1bas; metatarsus v 2-0-1 (and apical preening comb, fig. 40), p and r d1-1-1, d 0-p1-2. IV, femur = III; tibia v p1-2-2, p and r 1-d1-1-0, d r1bas; metatarsus v 2-2-1, p and r d1-1-1, d 0-p1-2. Abdomen length 1.87, width 1.07, spiracle-epigastrium 1.00, spiracle-spinnerets 0.16. Color: grayish, spotted in dark brown. Sternum and mouthparts dark brown, leg coxae paler. Abdomen with dark dorsum, darker on cardiac area, with three pairs of paler spots covered by whitish hairs, spots in two posterior pairs closer to each other. Venter grayish, slightly paler than dorsum. Epigyne (fig. 41C, D) partially displaced posteriorly, lateral lobes widely separate, copulatory openings near epigastric fold. Copulatory ducts long, convoluted, fused with those of opposite side though in part of their length. Spermathecae contiguous, lumen small, fertilization ducts separate from posterior border.

MALE (holotype): Total length 3.00. Carapace length 1.43, width 0.97. Length of tibia/metatarsus: I, 1.11/1.01; II, 0.96/0.93; III, 0.73/0.90; IV, 1.11/1.37. Chelicerae slightly narrower than those of female. Sternum length 0.83, width 0.67. Spines as in female, except: leg I, tibia v 2-2-2. II, tibia v r1-r1-2. IV, patella r 1. Abdomen length 1.60, width 0.91, spiracle-epigastrium 0.80, spiracle-spinnerets 0.18. Color as in female, but darker carapace, with paler central strip. Palp (figs. 39, 41A, B): femur short; tibia short, as wide as long, RTA absent. Cymbium relatively large, flattened, with deep apical retrolateral notch where median apophysis and secondary conductor fit; cymbial conductor wide. Tegulum basal. Sperm duct with pronounced loop at base of secondary conductor. Embolus with basal process ample, flat-

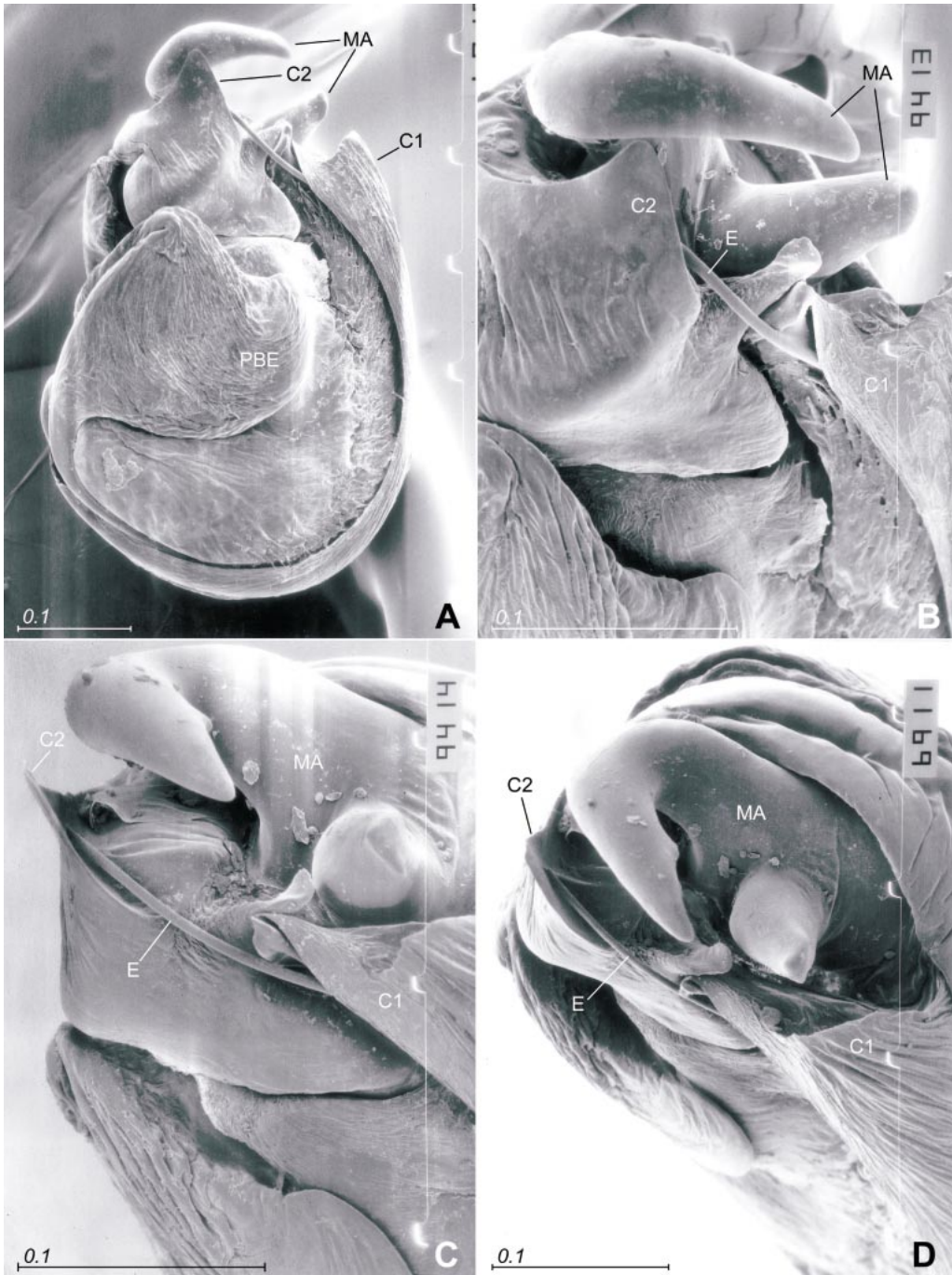


Fig. 39. *Coptoprepes campanensis*, n. sp., male copulatory bulb (Quillota, Palmas de Ocoa). **A.** Ventral view. **B.** Ventral-apical view. **C, D.** Apical-prolateral view. (C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; PBE = process on base of embolus.)

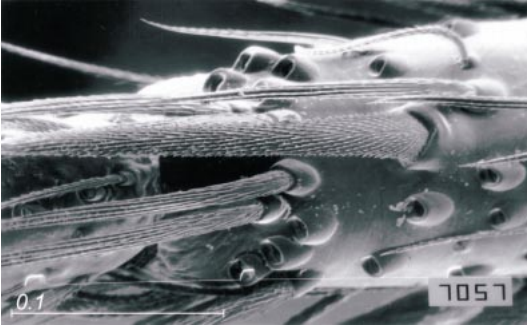


Fig. 40. *Coptoprepes campanensis*, n. sp., female left metatarsus III, ventral view, showing apical unpaired spine and irregular preening comb (Quillota, Palmas de Ocoa).

tened, rounded. Median apophysis apical, large, heavily sclerotized, bifid, apical projection forming right angle (fig. 39B–D). Primary conductor huge, canal deep (fig. 39A–C), tip simple. Secondary conductor triangular (fig. 39B). Additional projection of tegulum near tip of primary conductor. Paramedian apophysis absent.

NATURAL HISTORY: Unknown. Most specimens were collected in pitfall traps.

DISTRIBUTION: Relict forests in central Chile.

OTHER MATERIAL EXAMINED: **CHILE: Región IV (Coquimbo): Elqui:** 34 km SE La Serena, 29°58'S, 70°57'W, 300 m, riparian litter, 23.X.1994, R. Leschen, C. Carlton no. 002, 1♂ (AMNH). **Limarí:** Many vials from type locality and Fray Jorge Natl. Park, pitfall traps, R. Caldera (AMNH). **Región V (Valparaíso): Petorca:** Cuesta El Melón, 520 m, chaparral, 10.I.1985, N. Platnick and O. Francke, 3♀ (AMNH); Los Molles, Rt. 5, km 188, elev. 10 m, 9.XI.1993, 32°14'S, 71°30'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♀ (AMNH). **Valparaíso:** Quintero, 9.III.19??, 1♀ (MACN-Ar). **Región Metropolitana (Santiago): Santiago:** Batuco, 1964, 3♀ 1 immature (MHNS); Quebrada La Plata, fundo La Rinconada de Maipú, 8.X.1958–10.V.1960, W. Noodt, many specimens (MHNS); Valle del Río Mapocho between El Arrayán and Farellones (Barber traps), 15.X.1958–8.VI.1960, W. Noodt, many specimens (MHNS). **Cordillera:** Río Clarillo Natl. Res., 940 m, 26.XI.1993, 33°44'S, 70°28'W, N. Platnick, K. Catley, M.

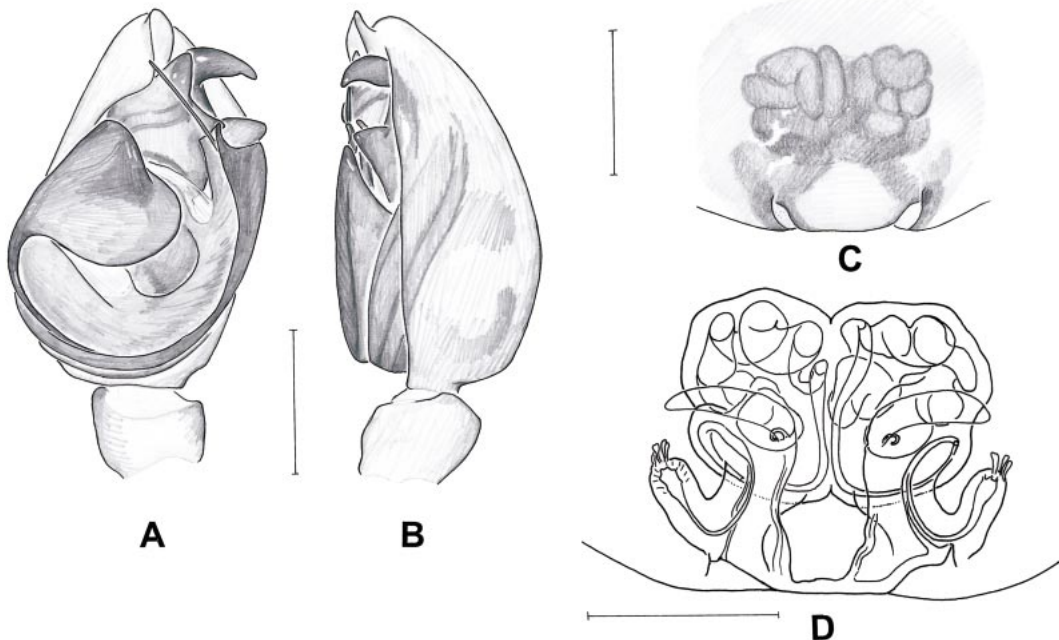


Fig. 41. *Coptoprepes campanensis*, n. sp. **A.** Male palp, ventral view (holotype). **B.** Same, retrolateral view. **C.** Epigyne, ventral view (paratype). **D.** Same, cleared, dorsal view. Scale bars = 0.2 mm.

Ramírez, T. Allen, 1 ♀ (AMNH); Río Clarillo, flight intersection trap, 3.XI–7.XII.1989, S.A. Marshall, 1 ♀ (AMNH).

Coptoprepes valdiviensis, new species

Figure 42

TYPES: Male holotype from Chile, Región X, Llanquihue province, Lago Chapo, 13.5 km E Correntoso, carrion trap (squid), site 656, 310 m, valdivian rain forest, ca. 41°33'S, 71°57'W, 16.27.XII.1982, A. Newton and M Thayer; female paratype with same data, window trap, deposited in AMNH.

ETYMOLOGY: The specific name refers to the valdivian forest where this species lives.

DIAGNOSIS: Distinguished from other *Coptoprepes* by having a sharp and slender tibial apophysis and a rectangular median epigynal field.

FEMALE (paratype): Total length 4.66. Carapace length 1.77, width 1.17, wider at leg III. Length of tibia/metatarsus: I, 1.07/0.82; II, 0.89/0.81; III, 0.74/0.90; IV, 1.17/1.37. Palpal tarsus length 0.59. Chelicerae with three teeth on promargin, four on retromargin. Sternum length 1.17, width 0.75. Spines: leg I, femur d 1–1–1, p 2ap; tibia v 2–2–p1; metatarsus v 2bas. II, femur d 1–1–1, p d1ap; tibia v r1–r1–p1; metatarsus = I. III, femur d 1–1–1, p 0–d1–d1, r d1ap; patella r 1; tibia v p1–p1–2, p 1–d1–1–0, r d1–1, d r1bas; metatarsus v 2–0–comb, p and r d1–1–1, d 0–p1–2. IV, femur d 1–1–1, p and r d1ap; patella r 1; tibia v p1–2–2, p and r 1–d1–1–0, d r1bas; metatarsus = III, but v 2–2–comb. Dorsal bristles as in *C. flavopilosus*, but tibiae d 1ap. Abdomen length 2.83, width 1.60, spiracle–epigastrium 2.25, spiracle–spinnerets 0.17. Color: grayish, abdomen slightly darker on cardiac area and several chevrons extending to spinnerets. Epigyne (fig. 42D, E) partially displaced posteriorly, lateral lobes separate, copulatory openings close to epigastric fold. Spermathecae contiguous, lumen small, copulatory ducts fused with those of opposite side though in part of their length.

MALE (holotype): Total length 4.12. Carapace length 1.90, width 1.27. Length of tibia/metatarsus: I, 1.33/1.10; II, 1.02/0.93; III, 0.86/1.00; IV, 1.23/1.47. Chelicerae slightly narrower than those of female. Sternum

length 1.00, width 0.81. Spines as in female, except: leg I, tibia v 2–2–2. II, tibia p 0–1. Abdomen length 2.13, width 1.17, spiracle–epigastrium 0.37, spiracle–spinnerets 0.16. Color as in female. Palp (fig. 42A–C): femur short, flattened. Tibia short, width/length 1.06, RTA sharp, slender. Cymbium relatively large, with apical retrolateral notch where median apophysis fits; retrolateral margin basally extended into thin lamina; cymbial conductor wide. Tegulum basal/retrolateral. Sperm duct with pronounced loop at dorsal anterior margin, close to secondary conductor (fig. 42C). Embolus with basal process ample, flattened, rounded. Median apophysis apical, well developed, bifid, long, narrow projection forming straight angle, another projection long, thick, directed apically. Primary conductor with canal. Secondary conductor triangular with acute apex, with ventral membranous area, fused to anterior dorsal margin of tegulum. Paramedian apophysis reduced to sclerotized piece at base of median apophysis, slightly elevated in rounded mound.

VARIABILITY: Male spines: III, tibia v p1–2–2, p and r 1–d1–1–0.

NATURAL HISTORY: Unknown. Several specimens were collected in leaf litter.

DISTRIBUTION: Forests of southern Chile and Argentina, in Valdivia, Cautín, Osorno and Neuquén provinces, plus one isolated record in Ultima Esperanza province, Magallanes.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Neuquén:** Lanín Natl. Park: Lago Lolog, nr. San Martín de los Andes, pans nr. stream, ca. 900 m, 23–30.XI.1989, S. Marshall 1 ♂ (AMNH); Lago Lolog, 4 km N San Martín de los Andes, FIT, *Nothofagus* forest, ca. 950 m, Gentili property, 23.XI–1.XII.1989, S.A. Marshall, 1 ♂ (AMNH); San Martín de los Andes, Gentili Cabin, pans and FIT along streambed, 18–21.XI.1989, S. Marshall, 1 ♂ (AMNH), forest and meadow, 18–21.XI.1989, S.A. Marshall, 1 ♂ 1 ♀ (AMNH); 4 km N San Martín de los Andes, FIT, *Nothofagus* forest, ca. 950 m, Gentili property, 25.XI–1.XII.1989, S.A. Marshall, 1 ♂ (AMNH); Villa La Angostura, pans nr. Laguna Verge, 26–28.XI.1989, S.A. Marshall, 1 ♀ (AMNH). **CHILE:** **Región IX (Araucanía):** **Cautín:** Volcán Villarrica, 1250 m, site 653, window trap, *Nothofagus domb.*

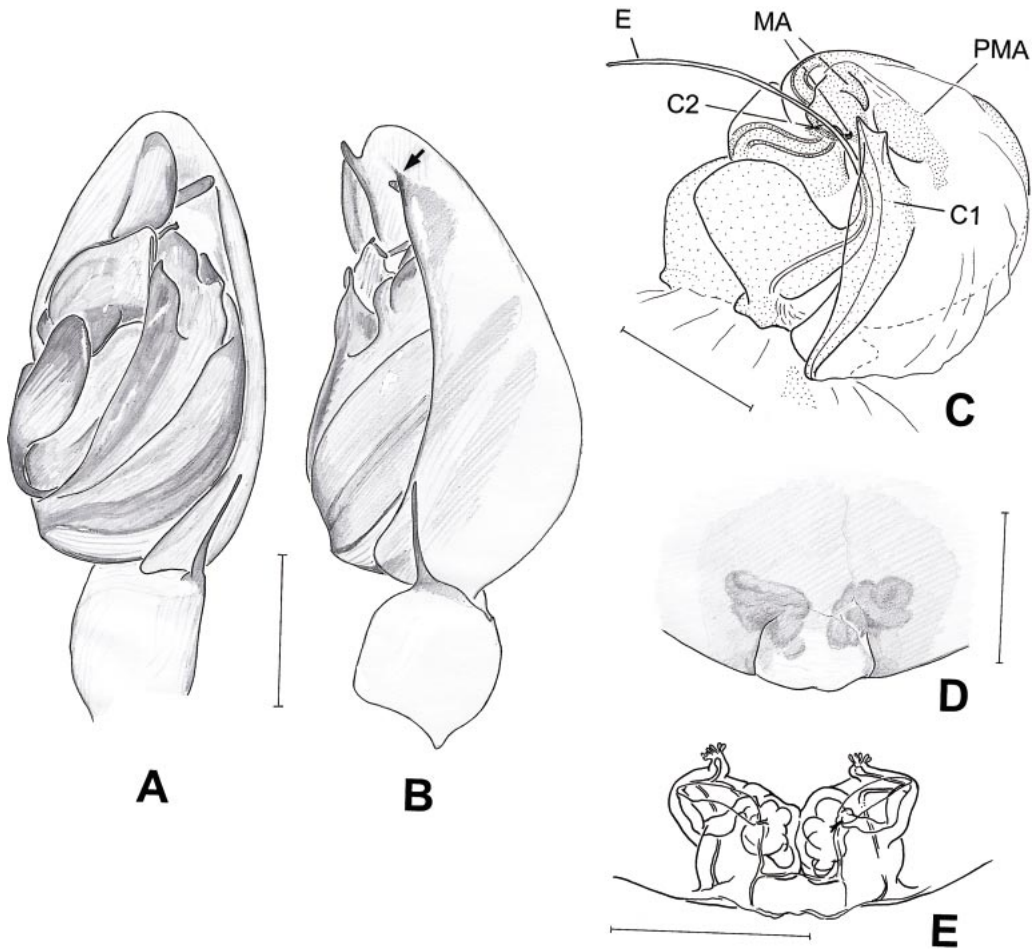


Fig. 42. *Coptoprepes valdiviensis*, n. sp. **A.** Male palp, ventral view (holotype). **B.** Same, retrolateral view: arrow points to retrolateral apical notch on cymbium fitting MA. **C.** Male copulatory bulb, expanded (Llanquihue, NE Puerto Montt). **D.** Epigyne, ventral view (paratype). **E.** Same, cleared, dorsal view. Scale bars = 0.2 mm. (C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

pumilio forest with *Chusquea*, 15–29.XII.1982, A. Newton and M. Thayer, 1 ♀ (AMNH); site 654, *Nothofagus domb.-pumilio* forest with *Drimys*, A. Newton and M. Thayer, 1 ♀ (AMNH). **Región X (Los Lagos): Osorno:** Puyehue Natl. Park: Antillanca rd, 965 m, trap site 658, window trap, *Nothofagus pumilio* forest, 18–25.XII.1982, A. Newton and M. Thayer, 1 ♂ (AMNH); 40°46'30"S, 72°12'00"W, 1000 m, 12.XII.2000–2.I.2001, *Nothofagus pumilio* forest, J. Miller, I. Agnarsson, Alvarez, J. Coddington, G. Hormiga, 2 ♂ 2 ♀ (USNM). **Llanquihue:** 10–14 km E Correntoso, 305

m, disturbed forest, 3.II.1985, N. Platnick and O. Francke, 1 ♂ 2 immatures (AMNH); NE Puerto Montt, 22–28.XII.1985, L. Peña, 1 ♂ (AMNH). **Región XII (Magallanes y Antártica): Última Esperanza:** Torres del Paine Natl. Park: near Refugio Pudeto, 51°3'45"S, 72°58'45"W, 100 m, 7.XII.2000, pitfall in scrub, J. Miller, I. Agnarsson, 1 ♀ (USNM).

GAMAKIA, NEW GENUS

Table 14

TYPE SPECIES: *Gamakia hirsuta*, new species.

TABLE 14
Autapomorphies of *Gamakia hirsuta*

shape of MA (65): thick → slender
copulatory plug (128): absent → present

ETYMOLOGY: *Gamakia* is the supreme being of the Septentrional Tehuelches. Gender is feminine.

DIAGNOSIS: The single known species can be distinguished from other Amaurobioidini by having a relatively long male palpal tibia with relictual apophysis, the chelicerae and palpal femora covered with thick, long setae, and the epigyne with a double depression anterior of copulatory openings, which are filled by a copulatory plug in mated females.

DESCRIPTION: Carapace narrowed in front, posterior eye row slightly procurved, ocular area not projecting. Chelicerae unmodified, slightly smaller in males, with three teeth on promargin, a series of six or seven small denticles on retromargin; males have long, thick setae on anterior face of chelicerae. Anterior legs with unmodified spines, more spinose in males. Male palp (figs. 44B–D, 45C–E, 46) with relatively long tibia, wider distally, RTA reduced to small dorsal/retrolateral peak (fig. 46), femur with long, thick setae on ventral/retrolateral face (fig. 45D). Cymbium relatively small. Copulatory bulb: median apophysis long, slender, sinuous. Primary conductor short, with canal. Secondary conductor long, with marked canal, fused to api-

cal dorsal margin of tegulum, additional projection prolateral to secondary conductor. Paramedian apophysis well developed, with multiple cusps (fig. 44C). Embolus with simple, flattened basal process. Membranous area between paramedian apophysis and tegulum lined with thin projections (fig. 44C, D). Epigyne (figs. 44A, 45A, B) with two hemispheric depressions anterior to copulatory openings, filled by copulatory plug in mated females. Spermathecae irregular, copulatory ducts not coiled.

COMPOSITION: Only the type species.

Gamakia hirsuta, new species

Figures 43–46

TYPES: Male holotype and female paratype from Chile, Región V (Valparaíso), Petorca province, Los Molles, Rt. 5, km 188, elev. 10 m, 9.XI.1993, 32°14'S, 71°30'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, deposited in AMNH.

ETYMOLOGY: The specific name refers to the thick hairs on chelicerae and male palp.

DIAGNOSIS: See generic diagnosis.

FEMALE (paratype): Total length 4.92. Carapace length 2.10, width 1.47, wider on legs II–III. Length of tibia/metatarsus: I, 1.20/1.00; II, 1.13/0.83; III, 0.90/1.05; IV, 1.28/1.28. Palpal tarsus length 0.52. Chelicerae with 6 teeth on retromargin, slightly decreasing in size to basal. Sternum length 1.05, width 0.80. Spines: leg I, femur d 1–1–1, p d2 ap, r d1ap; tibia v 2–2–2 or 2–2–p1, p d1–

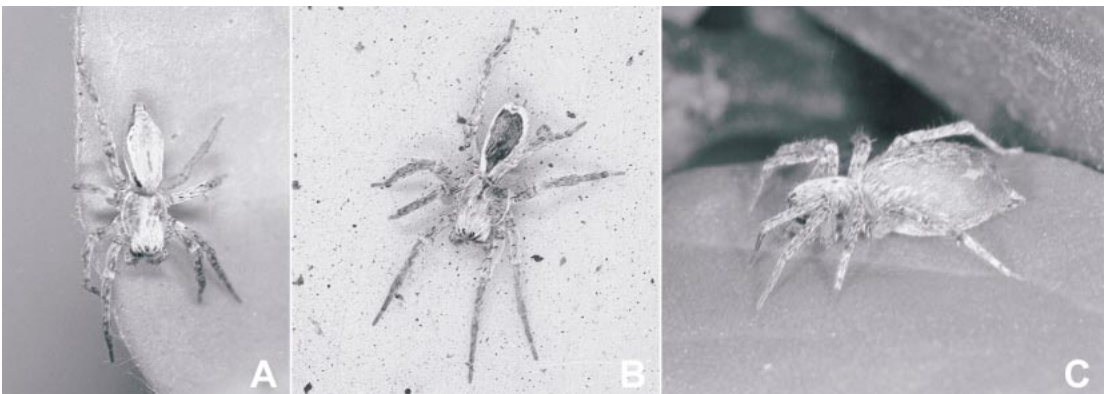


Fig. 43. Female *Gamakia hirsuta*, n. sp. **A.** Malleco, Fundo María Ester (photo MJR 122). **B.** Malleco, Contulmo (photo MJR 92). **C.** Concepción, Hualpén (photo MJR 69).

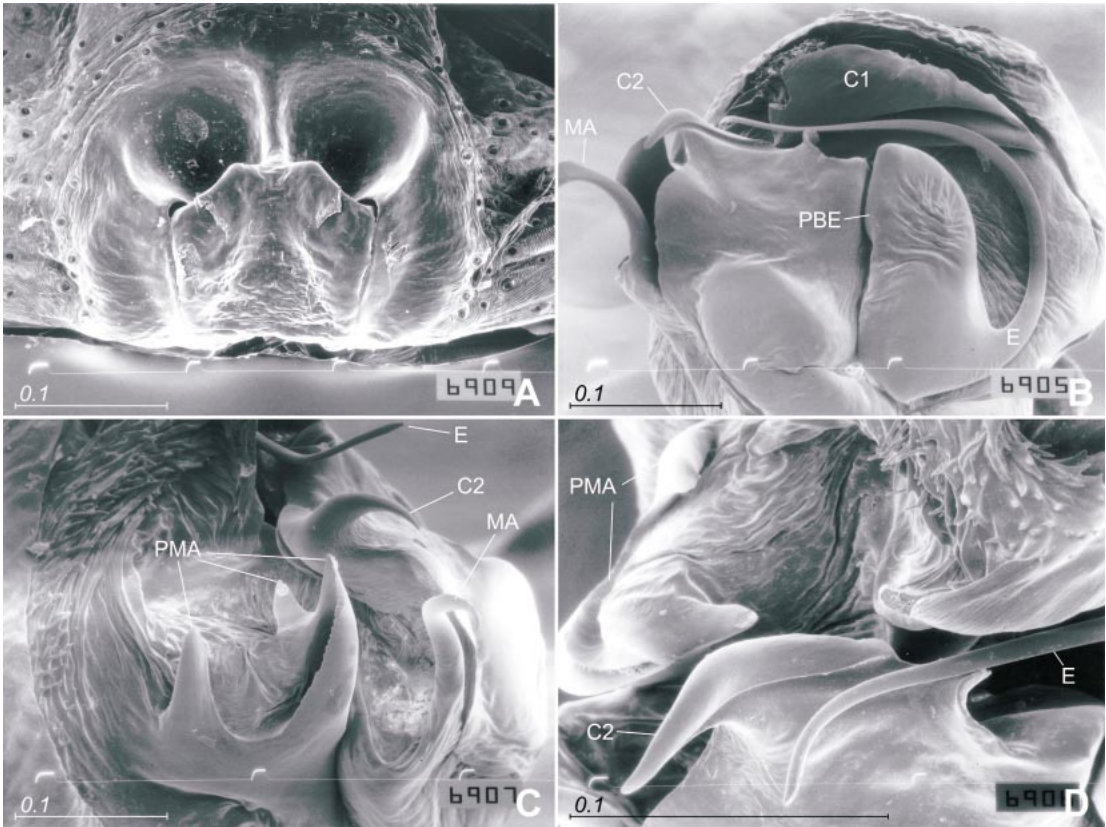


Fig. 44. *Gamakia hirsuta*, n. sp. (Valparaíso, Central coast). **A.** Epigyne, ventral view. **B.** Male copulatory bulb, prolateral-apical view. **C.** Same, retrolateral view. **D.** Same, prolateral-apical view. (C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis.)

I; metatarsus v 2bas, p d1 or 0. **II**, femur d 1-1-1, p 0-d1-d2 or d2ap, r 0-d1-d1; tibia v 2-2-2, p d1-1, r 0-1; metatarsus p v 2bas, 0-d1-0-1, r d1-0. **III**, femur d 1-1-1, p and r 0-d1-d1; patella r d1; tibia v p1-p1-2, p and r 1-d1-1-0, d r1bas; metatarsus v 2-p1-2, p and r d1-d1-1, d 0-p1-2. **IV**, femur d 1-1-1, p 0-d1-d1, r d1ap; patella r d1; tibia = III or v p1-2-2; metatarsus = III or v 2-2-2. Abdomen length 3.00, width 1.90, spiracle-epigastrum 1.67, spiracle-spinnerets 0.22. Color: carapace gray, ocular area darker, eyes bordered black. Legs, femora pale gray with darker spots, darker from patella to tarsus. Sternum gray, darker on margins. Endites brown, labium dark brown. Abdomen cream with gray pattern, venter with irregular gray spots. Epigyne: see generic description.

MALE (holotype): Total length 4.79. Carapace length 2.27, width 1.50. Length of tibia/metatarsus: I, 1.87/1.69; II, 1.70/1.60; III, 1.57/1.48; IV, 1.67/2.03. Chelicerae long, narrow, and vertical, anterior face with short, thick hairs; promargin with 7 teeth grouped at base, forming short, sinuous line, basals slightly smaller; fang long, sinuous. Endites with external angle prominent. Sternum length 1.10, width 0.87. Spines as in female, except: leg **I**, femur r 0-d1-d1; tibia v 2-2-2, p and r 1-d1-1-0; metatarsus v 2-0-2-0, p and r d1-0, d 2ap. **II**, femur p and r 0-d1-2; tibia = I; metatarsus = I, but p d1-d1-0-0. **III**, tibia v p1-2-2; metatarsus v 2-0-2. **IV**, femur r 0-d1-d1; tibia v 2-2-2; metatarsus v 2-2-2. Abdomen length 2.50, width 1.43, spiracle-epigastrum 1.37, spiracle-spinner-

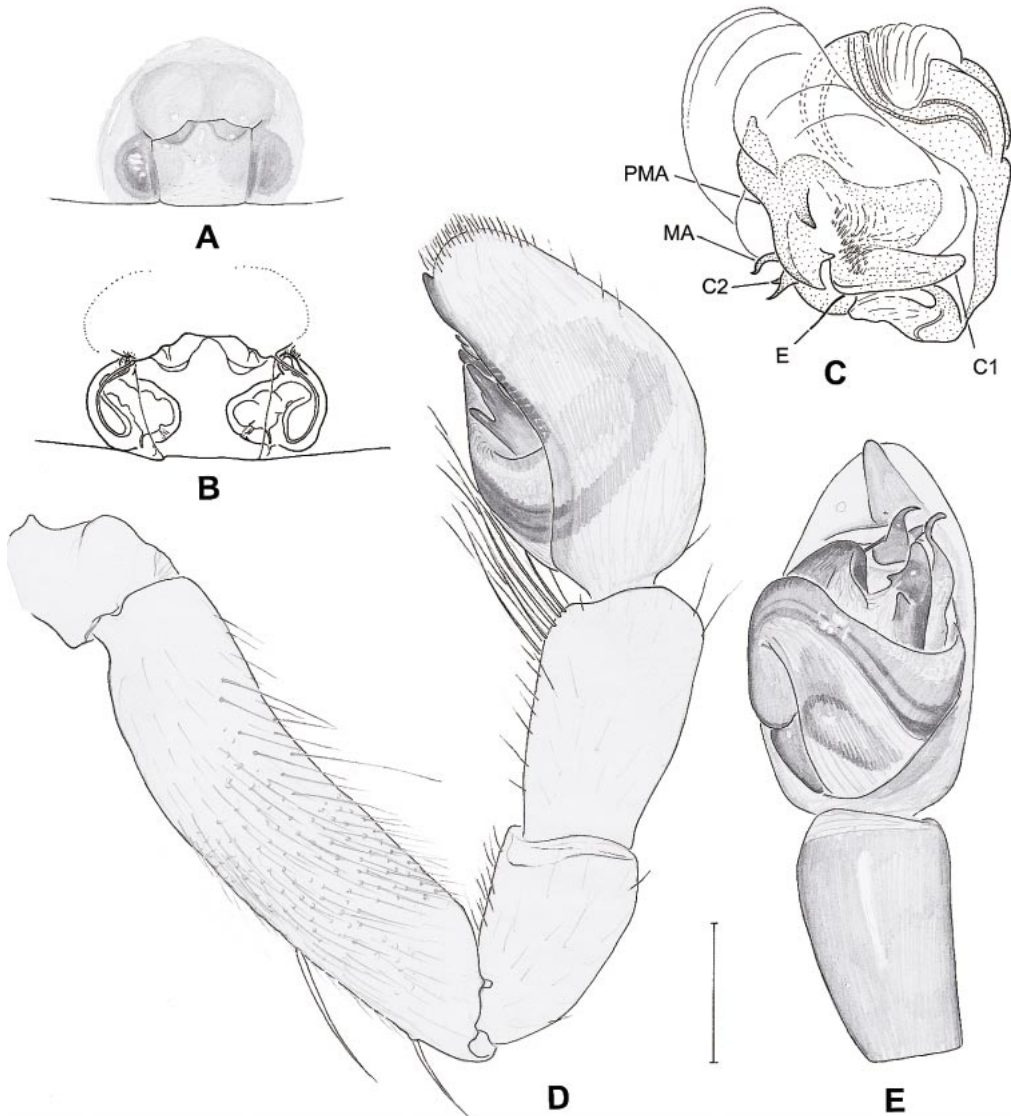


Fig. 45. *Gamakia hirsuta*, n. sp. **A.** Epigyne, ventral view (Valparaíso, Central coast). **B.** Same, cleared. **C.** Male copulatory bulb, expanded, apical view (Concepción, Cerro Caracol). **D.** Male palp, retrolateral view (Valparaíso, Central coast). **E.** Same, ventral view. Scale bar = B, 0.15 mm; all others, 0.2 mm. (C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

ets 0.25. Color as in female but darker in general, abdomen with denser pattern. Palp: see generic description.

VARIABILITY: The abdominal pattern is extremely variable (fig. 43), as is the length of the male chelicerae, which vary from similar to much larger than those of female. Spines:

tibia III, IV, v p1-p1-2. Metatarsus III, v 2-0-2.

NATURAL HISTORY: This species builds retreats on foliage of forest and chaparrals.

DISTRIBUTION: Southern and central Chile, from Elqui to Chiloé provinces.

OTHER MATERIAL EXAMINED: **CHILE:** Re-

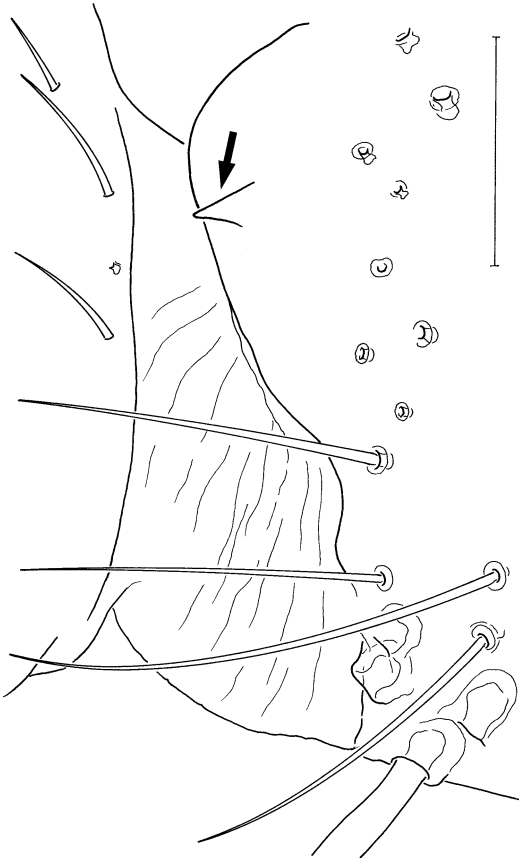


Fig. 46. *Gamakia hirsuta*, n. sp., detail of male palpal tibia, in retrolateral view: arrow points to relict of retrolateral tibial apophysis. Scale bar = 0.05 mm.

gión IV (Coquimbo): Elqui: 9 km S Cruz Grande, beach, 5 m, 11.XI.1993, 29°29'S, 71°19'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ 3 immatures (AMNH); 34 km SE La Serena, 29°58'S, 70°57'W, 300 m, riparian litter, 23.X.1994, R. Leschen, C. Carlton no. 002, 1♀ (AMNH). **Choapa:** El Bato (chacra en montaña), E Illapel, 10.X.1985, L. Peña, 4♀ (AMNH); 22 mi N Los Vilos, 13.XII.1950, E.I. Schlinger, 2♀ (CAS); Ñangué, 10 km N Los Vilos, Rt. 5, km 236, elev. 40 m, 31°50'S, 71°31'W, 13.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♀ (AMNH), 1♀ (MACN-Ar); Hacienda Illapel, 900–1800 m, 5.XI.1954, L.E. Peña, 1♀ (IG 20275 IRSN); Pichidangui, 32°08'S, 71°32'W, 12.VIII.1966, E. Schlinger, 3♂ (CAS). **Región V (Valparaíso): Petorca:**

Same data as types, 1♀ (AMNH), 1♀ (MACN-Ar); E La Ligua, relict forest, 27.IX.1980, L. Peña, 1♀ (AMNH); Zapallar, 27.XI.1950, Ross and Michelbacher, 4♀ (CAS). **Quillota:** Cuesta El Melón, nr. La Calera, 15.XI.1985, L. Peña, 1♂ 1♀ (AMNH); Cuesta La Dormida, N Tiltil, 800–1300 m, 13–18.XI.1982, L. Peña, 1♀ (AMNH); La Campana Natl. Park, 29.XII.1973, J. Solervicens, 1♂ (UC). **Valparaíso:** 10 mi N Concón, 16.XII.1950, Ross and Michelbacher, 1♂ 2♀ (CAS); Central coast (no specific locality), 31.X.1982, no collector, 11♂ 9♀ (AMNH); Tunquén, S Quintay, X.1982, M. Pino, 2♀ (MHNS 619); Valparaíso, 15.VIII.1961, J. Kothmann, 1♀ (AMNH). **San Felipe de Aconcagua:** Cachagua, 14.II.1980, L. Peña, 2♀ (AMNH); SW Catapilco, 30.IX.1964, L. Peña, 1♂ (MCZ); Los Hornos, 20 km E Huaquén, 2–4.XII.1986, L. Peña, 1♀ (AMNH); Pullalli, coastal town, 16.XII.1980, L. Peña, 1♂ 4♀ (AMNH). **San Antonio:** Quebrada de Córdoba, 1–4.XI.1985, L. Peña, 1♂ 4♀ 1 immature (AMNH), 15–20.II.1979, L. Peña, 2♀ (AMNH); 5 km E El Tabo, 6.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ 1 immature (AMNH). **Región Metropolitana (Santiago): Santiago:** Bucalemi, San Antonio, 23–24.X.1994, L. Peña, 2♂ 2♀ (AMNH); Pirque, 20.XI.1982, L. Peña, 1♀ (AMNH); Quilicura, VIII.1979, L. Peña, 2♂ 11♀ (AMNH); Pilay, 800 m, 23–25.XI.1981, L.E. Peña, 1♀ (AMNH). **Región VII (Maule): Curicó:** Las Tablas, E Curicó, II.1985, L. Peña, 11♀ 28 immatures (AMNH); Los Queñes (Ladera Sur), 27.IV.1980, J. Soler, R. Calderón, 2♀ (UC). **Talca:** Alto de Vilches, 18.25.X.1964, L. Peña, 1♂ (MCZ), 17–24.X.1964, L. Peña, 1♀ (MCZ). Gil de Vilches, 7–8.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH). **Cauquenes:** Los Ruiles Natl. Park, 25.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♂ 3 immatures (AMNH); Tregualemu, 300–500 m, 10.XII.1953, L. Peña, 2♀ (IRSN IG 19.736); 500 m, 7.XI.1993, L. Peña, 2♂ 1♀ (AMNH); 520 m, 6–7.XI.1993, L. Peña and A. Ugarte, 2♂ (AMNH); 4–5.XI.1995, L. Peña, 1♀ (AMNH). **Linares:** Bullileo, Parral, 5–8.XII.1990, L. Peña, 2♂ 5♀ (AMNH); Fundo Malcho, Andes in Parral, 11–20.XI.1964, L. Peña, 5♂ 10♀ 3 immatures (MCZ). **Re-**

gión VIII (Biobío): Ñuble: Cobquecura, 8–9.XI.1993, L. Peña, 1♀ (AMNH), 12–14.II.1959, L. Peña, 1♀ 1 immature (IRSN IG 19.736). **Concepción:** road Chome-Ramuntcho, 8.XI.1996, T. Cekalovic, 4♂ (AMNH); Cerro Caracol, Concepción, elev. 200 m, 36°51'S, 73°02'W, 17.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH); Escuadrón, 10.IV.1988, 1♂ 1♀, elev. 5 m, 36°57'S, 73°09'W, 18.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♂ 1 immature (AMNH); Escuadrón, 10.IV.1988, 2♀ 1 immature, 3.IX.1988, 1♀, T. Cekalovic (AMNH); Estero Nonguén, 10.II.1996, T. Cekalovic, 1♀ (AMNH); 7.XI.1992, 2♀, Fundo El Manzano, 8.XI.1992, 1♂ 1♀, 12.X.1996, 1♀, 23.IX.1996, 1♂ 2♀, T. Cekalovic (AMNH); Fundo El Venado, 6.I.1996, T. Cekalovic, 1♀ (AMNH); Hualpén, 3.IV.1988, 1♀, 7.VI.1996, 4♀ 3 immatures, T. Cekalovic (AMNH), 11.I.1989, M. Ramírez, 4♀ (MACN-Ar, photos MJR 68–70); Hualqui, 4.XI.1989, T. Cekalovic, 1♀ (AMNH); Las Escaleras, 18.XI.1989, 2♂, 24.XI.1989, 1♀, 6.I.1991, 1♀, T. Cekalovic (AMNH); Pataqual, 29.XI.1993, T. Cekalovic, TC-369, 1♂ 1♀ (AMNH); Periquillo, 22.XI.1992, 2♂ 2♀, 7.X.1994, 1♂, 6.XI.1994, 1♀, 8.XII.1994, 3♀, 4.I.1997, 1♀, 22.III.1997, 1♀, T. Cekalovic (AMNH); Laguna Chica de San Pedro, 5.XII.1994, T. Cekalovic, 1♀ (AMNH); Tomé, 8.X.1983, 1♂, 1.I.1992, 1♀, 10.I.1992, 1♀, T. Cekalovic (AMNH). **Biobío:** Caledonia, E Mulchen, 700–900 m, 6.15.II.1981, L. E. Peña, 1♀ (AMNH); Los Morongos, E Los Niches, 600 m, 17–20.XI.1994, L. Peña, 3♂ 2♀ 1 immature (AMNH); W Ralco, Santa Bárbara, 400 m, 22–23.XI.1994, L. Peña, 2♀ (AMNH). **Región IX (Araucanía): Malleco:** 18 km W Angol, 13.II.1991, M. Ramírez, N. Platnick, P. Goloboff, 2♀ (AMNH); Fundo María Esther, 15 km W de Victoria, 14.I.1989, M. Ramírez, 1♀ 2 immatures (MACN-Ar, photo MJR 121, 122); Monumento Natural Contulmo, 12.I.1989, M. Ramírez, 4♀ (MACN-Ar, photo MJR 92); 340 m, 38°01'S, 73°11'W, 18.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♂ (AMNH). **Cautín:** Cerro Ñielol, Temuco, I.1989, M. Ramírez, 2♀ (MACN-Ar); Chacamo, NW Nueva Imperial, W Temuco, 16–24.II.1981, L.E. Peña, 1♀

(AMNH); 15–30 km S Cherquenco, 26.II.1989, L. Peña, 1♀ (AMNH); Pucón at Lago Villarrica, 39°16'S, 71°58'W, 14.XII.1988, V. and B. Roth, 1♂ (CAS); Fundo La Selva, W Temuco, NW Nueva Imperial, 700 m, 9–12.XII.1981, L.E. Peña, 1♂ (AMNH); Villarrica, 250 m, crest of river gorge, 3–4.III.1965, H. Levi, 1 immature (MCZ); 14 km N Villarrica, elev. 250 m, 39°10'S, 72°12'W, 20.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH), 30 km NE Villarrica, 1–30.I.1965, L. Peña, 3♂ 4♀ 1 immature (MCZ); NE Villarrica, 16–31.XII.1964, L. Peña, 2♀ 1 immature (MCZ). **Región X (Los Lagos): Valdivia:** Nancul, Fundo “El Lingue”, 8.II.1993, T. Cekalovic, 2♀ (AMNH); Valdivia, 1984, E. Krahmer, 1♀ (MHNS 848). **Osorno:** Fundo Campolindo, Casablanca, 9.XII.1971, R. Calderón, 2♀ (UC); Puyehue Natl. Park: Aguas Calientes, 480 m, 40°44'S, 72°18'W, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH, photo MJR 1416), Pucatrihue, I–III.1968, L. Peña, 1♂ (MCZ); Río Bueno, no. 13, L. Peña, 5♀ (IRSN IG 19.736). **Chiloé:** Arroyo Cole Cole, 25 km N Cúcao, 8–11.II.1991, M. Ramírez, 1♀ (MACN-Ar); Chepu, 21.II.1997, T. Cekalovic, 1♀ (AMNH). *Mistaken Locality:* Prov. Santiago, Malleco, XI.1979, L.E. Peña, 8♂ 8♀ (AMNH) (see Ramírez, 1995b: 83).

NEGAYAN, NEW GENUS

Table 15

“*Gayenna strigosa* group”: Ramírez, 1997: 179.

TYPE SPECIES: *Gayenna tridentata* Simon, 1886.

ETYMOLOGY: The generic name is an anagram of *Gayenna*; gender is feminine.

DIAGNOSIS: Easily distinguished from all other Amaurobioidinae by the characteristic shape of the retrolateral tibial apophysis, which is long, thick, and sinuous at the tip (fig. 48F, G). The female genitalia resemble those of *Ferrieria echinata* and *Acanthoceto pichi* in having coiled copulatory ducts (fig. 49C–F).

DESCRIPTION: Carapace narrowed in front, posterior eye row straight, ocular area not projecting. Chelicerae unmodified, slightly smaller in males, three teeth on promargin,

TABLE 15

Synapomorphies of *Negayan* and Internal Clades*Negayan* (clade 105)

- ratio PME/PLE (16): PME = PLE → PME < PLE
 shape RTA (43): thick or spatulate, or spine shaped →
Negayan type
 cymbial retrolateral apical notch (50): absent → present
 MA (64): present → reduced
 embolus very long (95): normal → very long
 CD coiled (117): absent → present
 spermathecae contiguous (125): absent → present

Clade 104

- anterior eye row (11): straight → procurved
 ventral cusp on tegulum (62): absent → present
 depressions on LL (112): absent → present
 LL projecting (113): absent → present
 spine tibia II, v x-x-p1 (150): present → absent
 spine tibia II, v x-x-r1 (151): present → absent
 spine patella IV, r d1 (180): absent → present

N. paduana

- size retromarginal teeth (21): small denticles → regular
 SD suddenly narrowed (57): absent → present
 spine metatarsus III, v x-r1-x (168): absent → present
 spine tibia IV, v r1-x-x (182): absent → present

N. tridentata

- spine patella III, r d1 (158): absent → present

N. coccinea

- number promarginal teeth (23): three → four
 MA (64): reduced → absent
 globose lobe on C1 (73): absent → present
 spines metatarsi III and IV, v ap (169): 2 → 0
 spine metatarsus IV, v x-r1-x (190): present → absent

two or three teeth, or series of small denticles, on retromargin. Anterior legs with unmodified spines. Male palp with RTA long, thick, distally sinuous. Cymbium short, wide, cymbial conductor small, with elevated borders. Shallow notch prolateral to cymbial conductor fits tip of primary conductor. Tegulum with extended anterior ventral border, in the same plane with primary conductor. Median apophysis reduced, triangular or absent. Primary conductor well developed, basal portion massive, with long canal where embolus fits (fig. 47D); apical portion heavily sclerotized, thick, curved, canal ending in acute tip (fig. 47A, B). Secondary conductor absent. Paramedian apophysis heavily sclerotized (fig. 47C). Embolus long, basal process simple, flattened (fig. 47D). Epigyne:

median field elevated in some species, copulatory openings close to epigastric furrow. Copulatory ducts coiled 360°. Spermathecae contiguous.

NATURAL HISTORY: Most species live on the ground, under stones, or in leaf litter. Some species are common under stones at beaches in lakes, or at the sides of mountain streams.

DISTRIBUTION: Most species from Argentina and Chile, in a wide variety of habitats and climates. Northern limit of distribution seems to be in Peru.

COMPOSITION: In addition to the species detailed below: *Gayenna excepta* Tullgren, 1901 (female holotype in NRS, examined, new combination), *Gayenna exigua* Mello-Leitão, 1940 (male holotype in MLP 14404, examined, new combination), *Tomopisthes lebruni* Simon, 1886 (two females syntypes in MHNP 7733, examined, new combination). Also several undescribed species. The genus is being revised by L. Lopardo (in prep.).

Negayan tridentata (Simon),
 new combination

Figure 48

Gayenna tridentata Simon, 1886: 570 (female lectotype and one immature paralectotype here designated, from Argentina, Santa Cruz, in MHNP 2189, examined), 1897a: 91 (*tridens*, lapsus).

DIAGNOSIS: Distinguished from other *Negayan* by having the posterior borders of epigynal lateral lobes relatively close to each other, converging over the median field; males resemble those of *N. coccinea* in having a bifid conductor, but the tibial apophysis is more sinuous at the tip. Both sexes commonly have three teeth on the cheliceral retromargin.

FEMALE (Lago Roca, MACN-Ar 9820): Total length 4.12. Carapace length 1.65, width 1.15, wider on leg III. AME smaller than ALE (fig. 48C). Length of tibia/metatarsus: I, 0.83/0.70; II, 0.77/0.67; III, 0.70/0.80; IV, 1.08/1.27. Palpal tarsus length 0.43. Chelicerae with two teeth on retromargin (variable, fig. 48B). Sternum length 0.92, width 0.72. Spines (quite strong): leg I, femur d 1-1-1, p 2ap; tibia v 2-2-0; metatar-

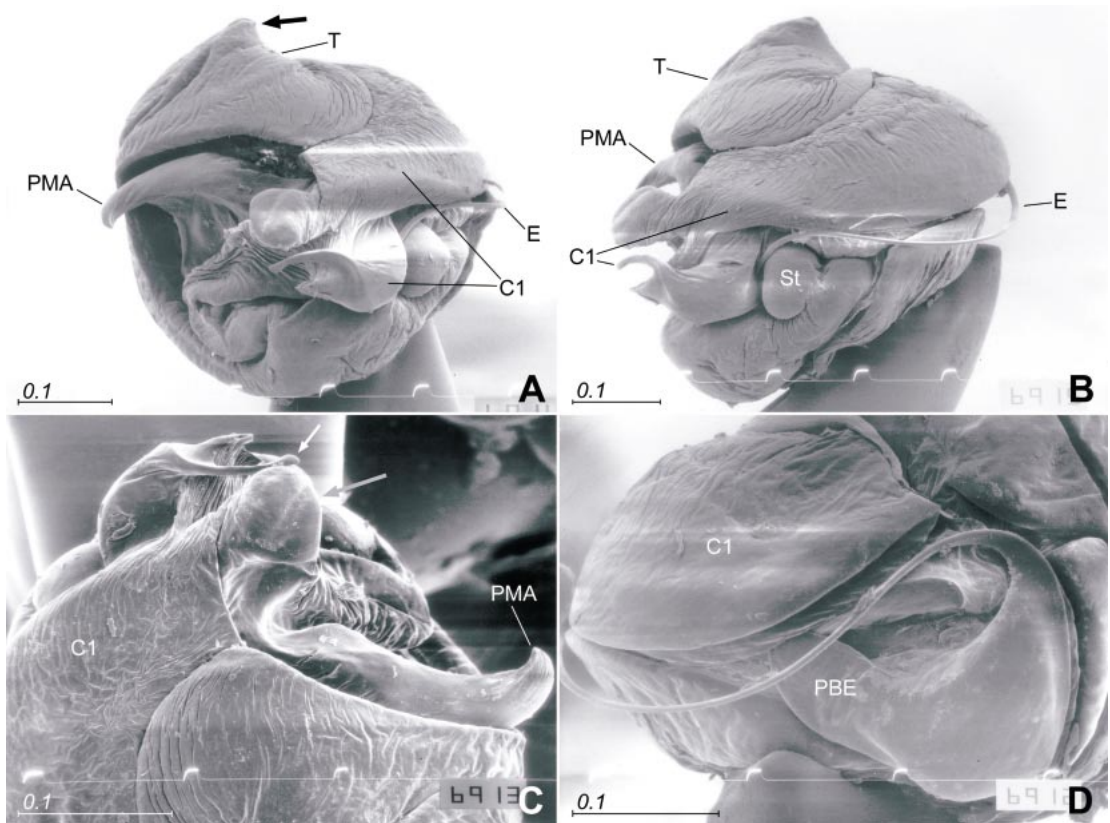


Fig. 47. *Negayan coccinea* (Mello-Leitão), male copulatory bulb (Córdoba, Cabana). **A.** Apical view: arrow points to conical protuberance on tegulum. **B.** Prolateral-apical view. **C.** Ventral view: white arrow points to prolateral process on C1, gray arrow to globose lobe on primary conductor. **D.** Prolateral-basal view. (C1 = primary conductor; E = embolus; PBE = process on base of embolus; PMA = paramedian apophysis; St = subtegulum; T = tegulum.)

sus v 2bas. **II**, femur d 1-1-1, p d1 ap, r 0 or d1ap; tibia v 2-2-0 or 2-2-p1, p 0-1; metatarsus v 2bas, p 1-0. **III**, femur d 1-1-1, p and r d1ap; patella r d1; tibia v p1-p1-2, p 1-d1-1-0, r d1-1, d r1bas; metatarsus v 2-0-2, p and r d1-1-1, d 0-p1-2. **IV**, femur = **III**; patella r d1; tibia v p1-2-2, p and r 1-d1-1-0, d r1bas; metatarsus = **III**, but v 2-2-2. Dorsal, long, thin, erect bristles on patellae (d 1-0-1) and tibiae (d r1-0-1). Abdomen length 2.30, width 1.33, spiracle-epigastrium 1.12, spiracle-spinnerets 0.17. Color: carapace pale brown with two longitudinal brown bands (fig. 48A). Sternum pale with lateral brown bands. Abdomen pale with dorsal brown pattern, three ventral lines of specks. Epigyne (fig. 48D, E): lateral lobes slightly projecting over epigastric fur-

row, projections concave, close to each other. Copulatory ducts coiled about 360°, spermathecae with contorted lumen.

MALE (Lago Roca, MACN-Ar 9820): Total length 3.59. Carapace length 1.67, width 1.30, relatively wider than in female, but narrowed anteriorly. Length of tibia/metatarsus: I, 1.18/1.02; II, 1.03/0.95; III, 0.90/0.97; IV, 1.30/1.48. Chelicerae slightly smaller than those of female, with three teeth on retromargin, apical one smaller. Sternum length 0.97, width 0.77. Spines as in female, except: leg **I**, tibia v 2-2-2, p 0-1. **II**, tibia = **I**. **III**, tibia v p1-2-2, p and r 1-d1-1-0. Abdomen length 2.03, width 1.17, spiracle-epigastrium 1.12, spiracle-spinnerets 0.50. Color as in female. Palp (fig. 48F-H): RTA with narrow, sinuous tip. Median apophysis triangular, hy-

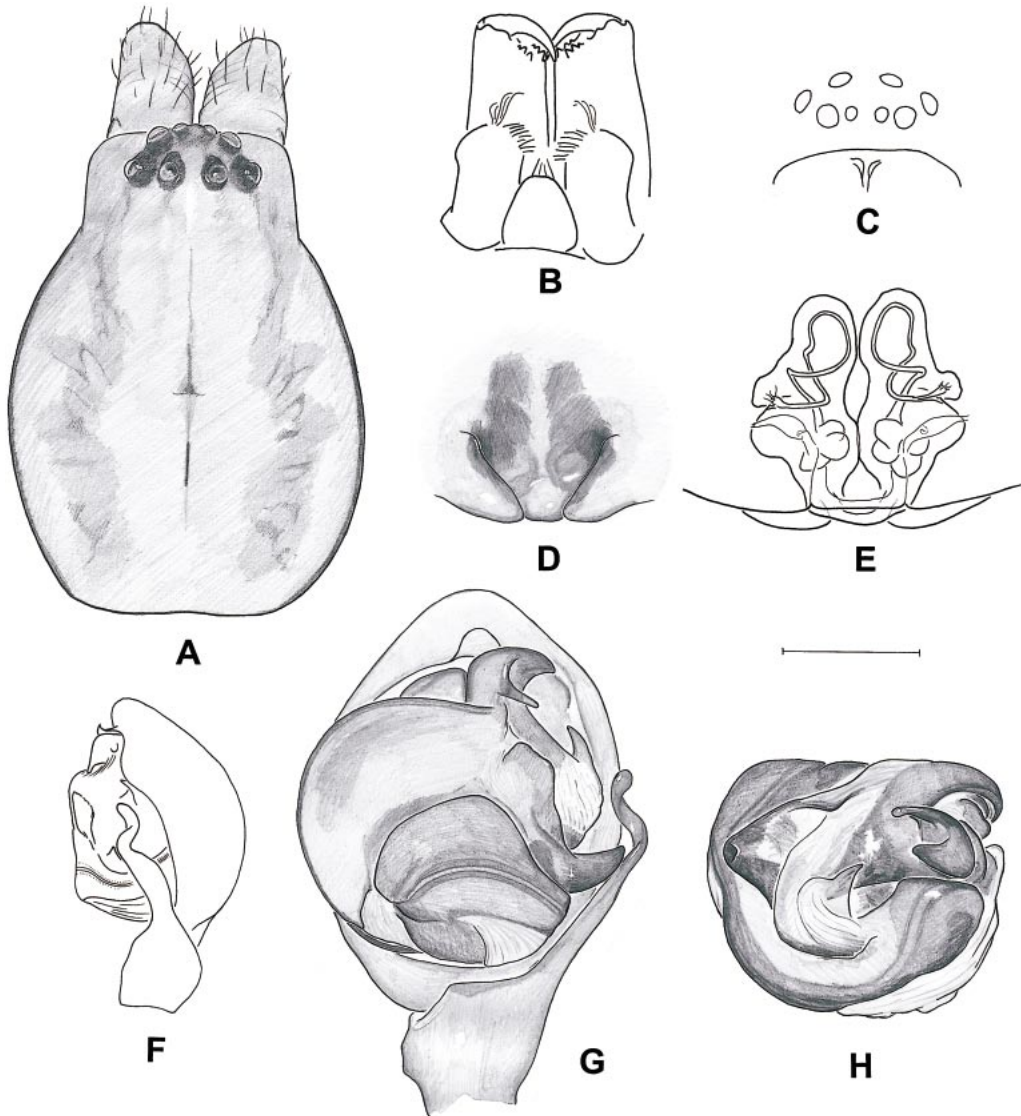


Fig. 48. *Negayan tridentata* (Simon). **A.** Carapace (lectotype). **B.** Same, mouth parts, ventral view. **C.** Same, eyes, anterior view. **D.** Epigyne, ventral view (Santa Cruz, Lago Roca, MACN-Ar 9820). **E.** Same, cleared, dorsal view. **F.** Male palp, retrolateral view (Chubut, Cholila). **G.** Same, ventral view. **H.** Same, copulatory bulb, apical-retrolateral view. Scale bar = A–C, 0.5 mm; D, G, H, 0.2 mm; E, 0.15 mm; F, 0.34 mm.

aline. Apical portion of primary conductor bifid, with thick curved tip where canal ends, and ventral prolateral elongate projection (fig. 48H). Paramedian apophysis with two triangular, flattened cusps, retrolateral cusp longer, curved, heavily sclerotized, ventral cusp close to base of primary conductor, weakly sclerotized.

VARIABILITY: Two or most commonly three teeth on cheliceral retromargin.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Patagonian forests in Argentina, from Río Negro to Tierra del Fuego provinces. Probably also in Chile.

OTHER MATERIAL EXAMINED: **ARGENTINA:** Río Negro: San Carlos de Bariloche,

IV.62, Havrylenko, 1 ♀ (MACN-Ar); Caviahue, 12–15.II.1968, E. Maury and N. Müller, 1 ♀ (MACN-Ar); Lago Pellegrini, 853, 16.II.1972, L. Herman, 2 ♀ (AMNH). **Chubut:** Cholila, 25.VIII.1962, A. Kovács, 3 ♂ 8 ♀ (AMNH); Epuynén, 5.VIII.1966, A. Kovács, 2 ♂ 1 ♀ (AMNH); Esquel, road to La Hoya, 42°54'S, 71°19'W, 16.XI.1988, V.D. Roth, 3 ♀ (CAS). **Santa Cruz:** Los Glaciares Natl. Park, II.1975, E. Fernández, 1 ♂ 1 immature (MACN-Ar). **Tierra del Fuego:** Lago Roca, *Nothofagus antarctica* forest, 27.I.1971, J. Vellard, 2 ♂ 3 ♀ 4 immatures (MACN-Ar 9820).

Negayan paduana (Karsch),
new combination

Figure 49, 50

Clubiona paduana Karsch, 1880: 379 (female holotype from Chile, Punta Arenas, Magallanes, Exp. Gazelle, in ZMB 2622, examined).

Tomopisthes magellanicus Simon, 1887: E32 (female holotype from Chile, Punta Arenas, in MHNP 6685, examined), 1895: 168, 1896a: 142, 1897a: 91, 1902: 32. NEW SYNONYMY.

Gayenna strigosa Tullgren, 1901: 237, 259 (male lectotype Chile, Magallanes, Gente Grande, and several females paralectotypes, plus one female *Sanogasta maculosa*, and one immature cf. Amaurobiidae, paralectotypes designated by Platnick, 1977: 196, in NRS, examined). Schiapelli and Gerschman, 1974: 91. Ramírez, 1997: 178. NEW SYNONYMY.

Tomopisthes strigosus: Simon, 1902: 34.

Philisca colulata Hogg, 1911: 42 (female holotype from Islas Malvinas, in BMNH, not examined). Synonymized with *G. strigosa* by Platnick, 1977: 196.

Gayenna magellanica: Merian, 1913: 13.

SYNONYMY: The holotypes or lectotypes of the species here synonymized were compared, together with extensive collections from the same areas; no relevant differences were found.

DIAGNOSIS: Distinguished from other species of *Negayan* by having the posterior elevations of epigynal lateral lobes just below the median field (fig. 49C), and by lacking a bifurcate primary conductor, or a ventral cusp on tegulum, at the end of the tegular notch. Both sexes commonly have two teeth on the cheliceral retromargin.

FEMALE (holotype): Total length 6.92. Carapace length 3.17, width 2.17, wider on legs

II–III. Length of tibia/metatarsus: I, 1.60/1.45; II, 1.55/1.37; III, 1.37/1.53; IV, 2.04/2.47. Chelicerae with two teeth on retromargin. Spines: leg I, femur d 1–1–1, p 2ap; tibia v 2–2–2; metatarsus v 2bas. II, femur d 1–1–1, p dlap; tibia v p1–2–2; metatarsus v 2bas, p 1–0. III, femur d 1–1–1, p 0-d1-d1, r dlap; patella 0; tibia v p1–2–2, p 1-d1-1-0, r d1–1, d r1bas; metatarsus v 2–2-(2+thick setae), p and r d1–1–1, d 0–2–2. IV, femur d 1–1–1, p and r dlap; patella 0; tibia v 2–2–2, p and r 1-d1-1-0, d r1bas; metatarsus = III. Abdomen length 4.10, width 2.25. Spiracle–epigastrium ca. 1.90, spiracle–spinnerets ca. 0.60. Color: holotype faded. Female from Magallanes, Estancia Gazy Harbour (AMNH): carapace brown, darker toward ocular area, margins dark. Legs brown, with some dark spots, more distinct on legs III and IV. Endites, labium, and sternum dark brown. Abdomen cream with dark dorsal pattern brownish violet, venter cream, with large violet patch anterior of tracheal spiracle, prolonged to epigastric furrow in three lines of dots; epigastrium dark between pulmonary plates and epigyne. Epigyne (fig. 49C–F): median field wide, elevated, lateral lobes elevated posteriorly.

MALE (Magallanes, Estancia Gazy Harbour): Total length 5.05. Carapace length 2.67, width 1.70. Length of tibia/metatarsus: I, 1.87/1.77; II, 1.80/1.70; III, 1.07/1.63; IV, 1.97/2.33. Chelicerae slightly smaller than those of female. Sternum length 1.47, width 1.00. Spines as in female, except: leg I, femur r d1; tibia p 1-d1-1-0, r 1-0-1-0; metatarsus p 1. II, femur r 0-d1-d1; tibia and metatarsus = I. III, femur r 0-d1-d1; tibia v 2–2–2, p and r 1-d1-1-0; metatarsus d 0-p1–2. IV, femur p 0-d1-d1. Abdomen length 2.67, width 1.40, spiracle–epigastrium 1.28, spiracle–spinnerets 0.25. Color as in female. Palp (fig. 50): RTA with apical constriction. Median apophysis hyaline, hook-shaped. Sperm duct wide, suddenly narrowed before reaching embolar base (fig. 50D). Apical portion of primary conductor with only one apical cusp, longitudinally striated, where canal ends. Paramedian apophysis with two cusps, retrolateral cusp heavily sclerotized, short, curved, ventral cusp close to base of primary conductor, rounded, flat, weakly sclerotized.

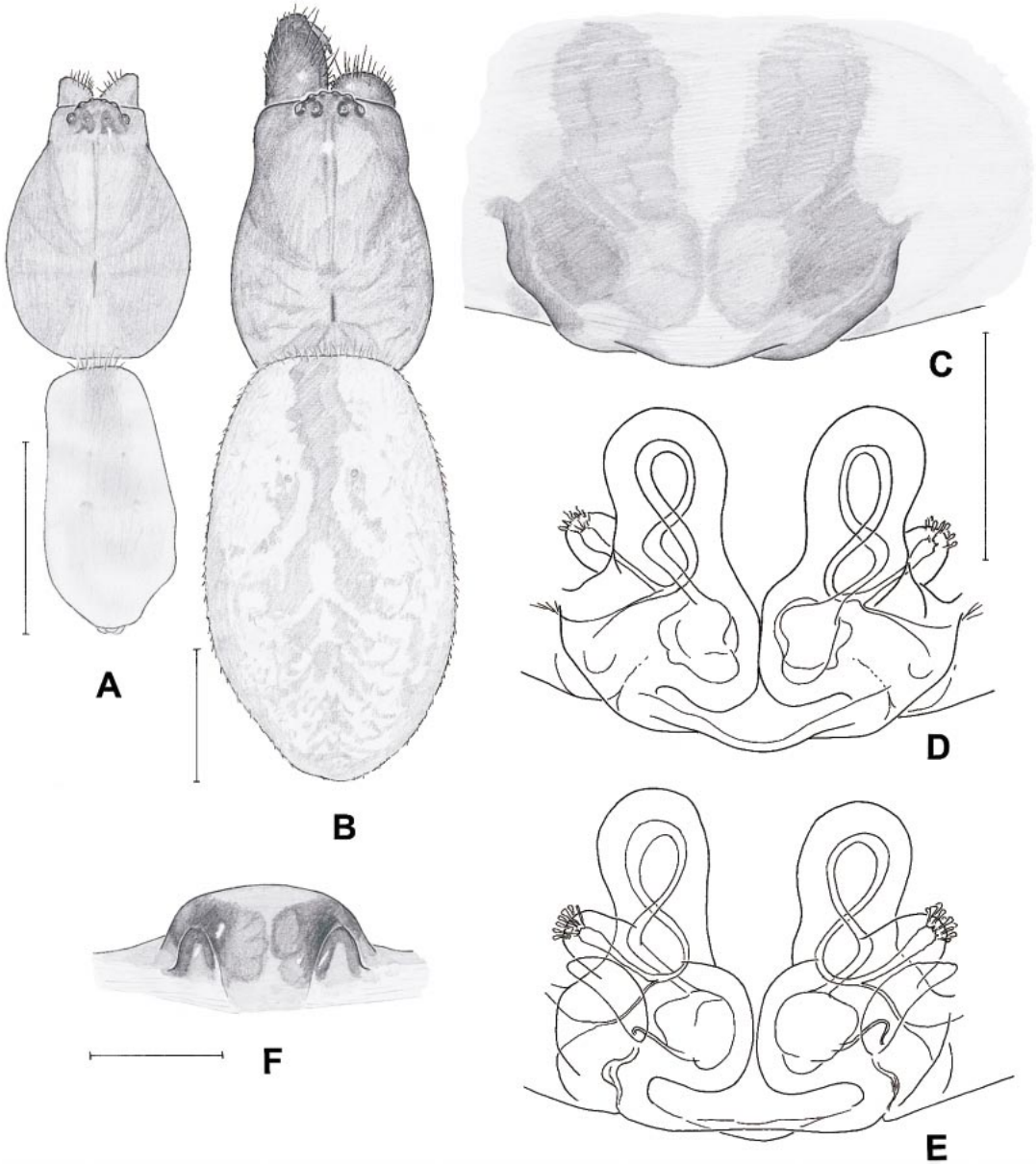


Fig. 49. *Negayan paduana* (Karsch). **A.** Male (lectotype of *Gayenna strigosa*). **B.** Female (holotype of *Tomopishtes magellanicus*). **C.** Epigyne, ventral view (paralectotype of *G. strigosa*). **D.** Same, cleared. **E.** Same, dorsal view. **F.** Epigyne, posterior view (Estancia Gazy Harbor, Magallanes). Scale bars = A, B, 2 mm; C–F, 0.2 mm.

DISTRIBUTION: Argentina and Chile, from Neuquén and Aisén provinces, respectively, to Tierra del Fuego and Islas Malvinas.

NATURAL HISTORY: This species builds retreats under stones or barks of fallen logs, in areas of rigorous climate.

VARIABILITY: The ocular area is relatively narrower in larger specimens (as in fig. 49B). The abdominal pattern is quite variable, from almost uniform dark to slightly contrasting (fig. 49A, B). Some males have only one tooth on cheliceral retromargin. Female

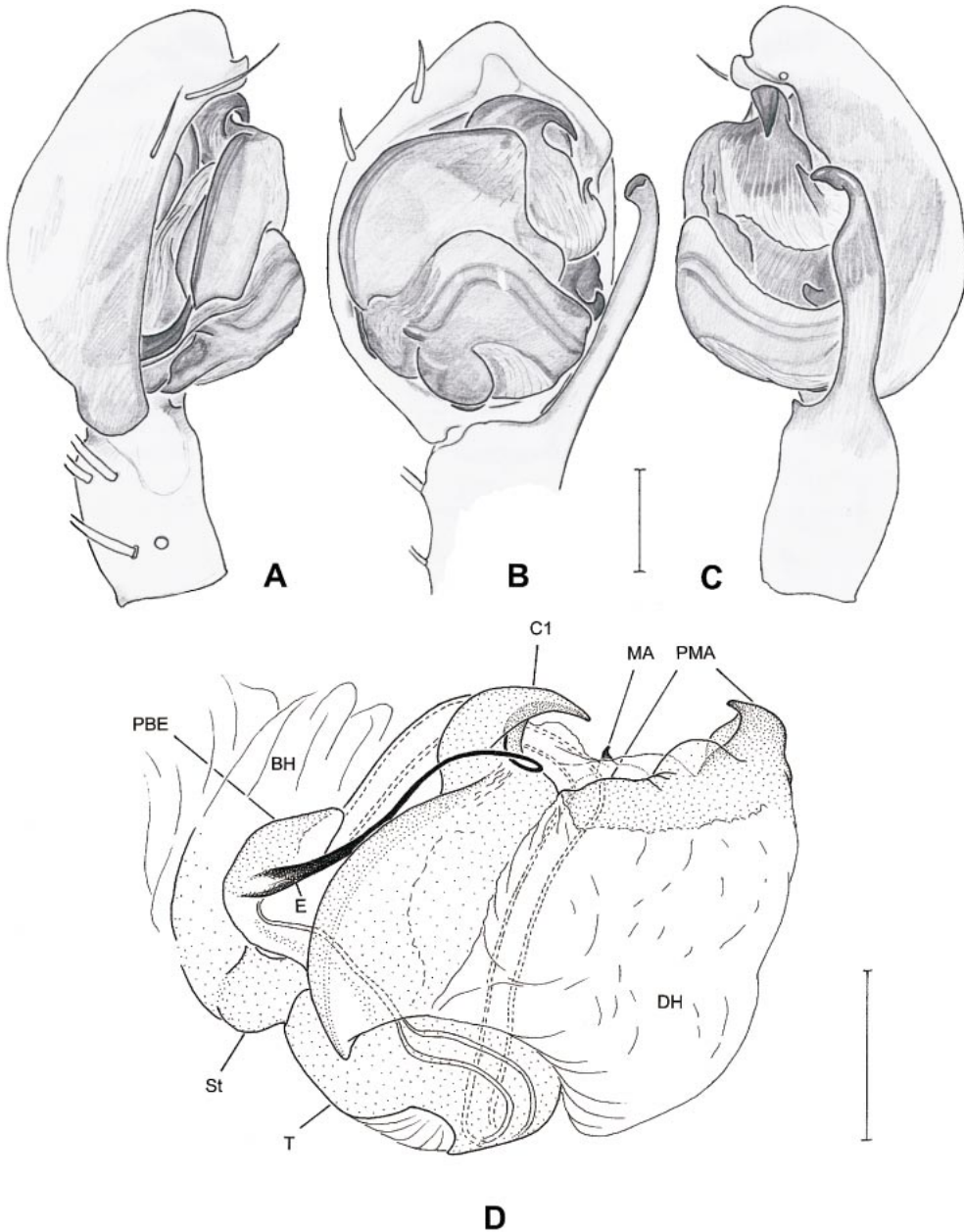


Fig. 50. *Negayan paduana* (Karsch), male palp. **A.** Prolateral view (lectotype of *Gayenna strigosa*). **B.** Same, ventral view. **C.** Same, retrolateral view. **D.** Copulatory bulb, expanded (no data, MACN-Ar). Scale bars = 0.2 mm. (BH = basal hematodocha; C1 = primary conductor; DH = distal hematodocha; E = embolus; MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis; St = subtegulum; T = tegulum.)

spines: I, tibia I v 2–2–0; metatarsus p 0. III, tibia v 2–2–2, r 1-d1-1-0; metatarsus d 0-p1–2.

OTHER MATERIAL EXAMINED: **ARGENTINA:** Neuquén: San Martín de los Andes, Cerro Chapelco, 1700 m, II.1961, M.E. Galiano, 1♂ (MACN-Ar). **Río Negro:** El Bolsón, Cerro Piltriquitrón, 3–4.II.1985, II.1986, M. Ramírez, 1♀ (MACN-Ar). **Chubut:** La Hoya, 800–1350 m, 24.II.1979, Misión Científica Danesa, 2♂ 1 immature (ZMK). **Santa Cruz:** Calafate, II.1963, E. Maury, 1♂ 1♀ (MACN-Ar); 30 km S Caleta Olivia, 6.V.1974, M. Rumboll, 1♀ (MACN-Ar); 35 km S Caleta Olivia, 6.V.1974, M. Rumboll, 1♀ (MACN-Ar); Lago Belgrano, 14.II.1973, M. Rumboll, 1♀ (MACN-Ar); Lago Argentino, “estepa”, nr. Calafate, 15–30.I.1971, Vellard, 1♀ 2 immatures (MACN-Ar); Lago Argentino, III.1900, Excursión Silvestri, 2♀ (MACN-Ar); Lago Cóndor, Río Turbio, 28.I.1976, M. Rumboll, 1♀ (MACN-Ar); Lago Frías, no date, E. Maury, 1♀ (MACN-Ar); Puerto Bandera, II.1963, Margheritis and Rizzo, 1♂ (MACN-Ar); Puerto Coyle, 10 m, 26.XI.1966, M. Irwin and E. Schlinger, 1♂ (CAS); Río Gallegos, Cerro Aymond, 26.III.1949, Núñez and Partridge, 1♀ (MACN-Ar); San Julián, XI.1973, M. Rumboll, 1♀ (MACN-Ar); Ventisquero Moreno, 18–24.I.1971, J. Vellard, 1♂ 2♀ (MACN-Ar). **Tierra del Fuego:** No specific locality, “lote 39”, M.P. Gómez, 1933, 1♀ (MACN-Ar 32052); Estancia Viamonte, Auricosta, 2 m, 23.I.1979, Misión Científica Danesa, 1♀ (ZMK); Lapataia, II.1963, E. Maury, 1♂ 2♀ (MACN-Ar); Río Grande, 26–31.X.1973, M. Rumboll, 1♀ (MACN-Ar); Ushuaia, 8.II.1961, B. Malkin, 8♂ 18♀ 1 immature (AMNH); 8–26.II.1961, B. Malkin, 7♂ 12♀ (AMNH); Río Pipo, XII.1989, A. González, 1♀ (MLP); Valle Carbajal, 17.II.1961, B. Malkin, 1♀ (AMNH). **Islas Malvinas:** All specimens reported by Schiapelli and Gerschman (1974: 91), except 2♀ from Puerto Stanley, belong to other *Negayan* species not included here. **CHILE: Región XI (Ibáñez del Campo): Aisén:** Balmaceda, 17–22.I.1961, L. Peña, 1♀ (IRSN IG 23.077). **Región XII (Magallanes y Antártica): Ultima Esperanza:** Torres del Paine Natl. Park, 150 m, 10.II.1985, N. Platnick and O. Francke, 1♀ (AMNH), near Refugio

Chileno, 50°56'45"S, 72°55'0"W, 400–600 m, 8–9.XII.2000, J. Miller, I. Agnarsson, 1♀ (USNM); Puerto Natales, Seno Ultima Esperanza, 51°41'45"S, 72°31'30"W, 50 m, 7.XII.2000, pasture, shoreline, J. Miller, I. Agnarsson, 2♀ (USNM). **Magallanes:** Cabo Negro, 29.I.1976, T. Cekalovic, 1♀ (AMNH); Estancia La Vicuña, 1956, J. Vellard, 1♀ (MACN-Ar); Cañadón Bombalot, 29.I.1976, T. Cekalovic, 3♀ (AMNH); El Sombrero, 1956, J. Vellard, 1♂ 1♀ 1 immature (MACN-Ar); Espora, 52°29'S, 69°28'W, 29.XI.1966, M. Irwin and E. Schlinger, 1♀ (CAS); Estancia Gazy Harbour, 10.II.1990, T. Cekalovic, 8♂ 5♀ 1 immature (AMNH); Estancia Virgen de Lourdes (Sector Dinamarquero), 6.II.1990, 2♂ 6♀, 8.II.1990, 2♂ 5♀, T. Cekalovic (AMNH); Estancia Virgen de Lourdes, Gazy Harbour, 23.III.1991, T. Cekalovic, 1♀ 1 immature (AMNH); Gallegos Chico, 8.II.1990, T. Cekalovic, 2♂ 2♀ (AMNH), 10.II.1990, S. Cekalovic, 6♂ 2♀ 4 immatures (AMNH); Gobernador Philippi, 29.I.1976, T. Cekalovic, 2♀ (AMNH); Isla Riesco, Posomby, 31.I.1976, T. Cekalovic, 1♂ 4♀ (AMNH); Isla Riesco, Vaquería, 31.I.1976, T. Cekalovic, 2♂ 2♀ 2 immatures (AMNH); Laguna Amarga, 21.IV.1962, T. Cekalovic, 1♀ (AMNH); Laguna Figueroa, 18, 28.I.1976, T. Cekalovic, 1♀ (AMNH); Manantiales, 1956, J. Vellard, 3♂ 1♀ (MACN-Ar); Península Brunswick, Barranco Amarillo, 27.I.1976, T. Cekalovic, 1♀ (AMNH); Península Brunswick, Tres Brazos, 9.III.1961, T. Cekalovic, 1♀ (UC), 28.II.1981, T. Cekalovic, 1♀ (AMNH); Río Chico, Estancia Brazo Norte (Cueva Fall), 12.II.1972, V. Pérez, 1♀ (UC); Río Verde, 31.I.1976, T. Cekalovic, 1♀ (AMNH), 29.VIII.1976, T. Cekalovic, 3♀ (MCZ), 3♀ (AMNH); 15.2 km NE San Gregorio (dunes), 5 m, 36°17'S, 71°49'W, 27.XI.1966, E. Schlinger and M. Irwin, 3♂ (CAS); Silla del Diablo, 28.I.1976, T. Cekalovic, Tres Vientos, Puerto Arturo, 53°34'S, 73°23'W, 25–28.XI.1960, L. Peña, 1♀ (MCZ), 1♀ (AMNH); Aserradero Yendegaia, no. 5, 14.II.1957, J. Vellard, 1♂ 7♀ 6 immatures (MACN-Ar).

Negayan coccinea (Mello-Leitão),
new combination

Figures 47, 51

Axyracrus coccineus Mello-Leitão, 1943b: 115
(female holotype from Argentina, Córdoba

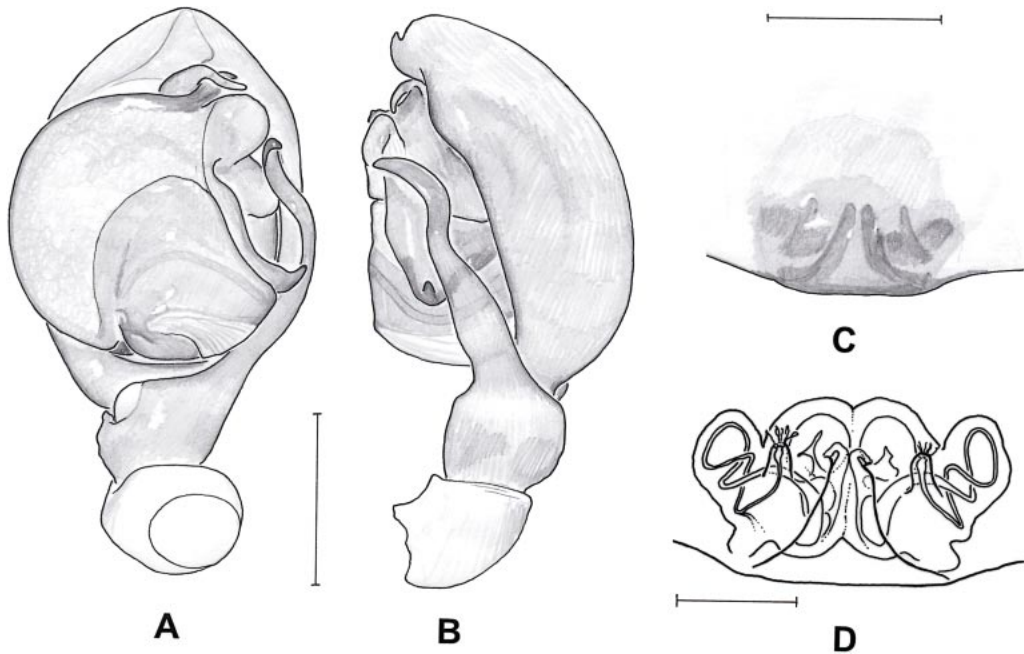


Fig. 51. *Negayan coccinea* (Mello-Leitão). **A.** Male palp, ventral view (Córdoba, Cabana). **B.** Same, retrolateral view. **C.** Epigyne, ventral view. **D.** Same, cleared. Scale bars = A–C, 0.2 mm; D, 0.1 mm.

province, Bajo Grande, I.1940, M. Birabén, in MLP 15800, examined).

DIAGNOSIS: Distinguished from other *Negayan* by the small size, the absence of median apophysis, and by having the copulatory openings in the epigastric furrow. Males resemble those of *N. tridentata* in the bifid conductor, but the tibial apophysis is less sinuous at the tip.

FEMALE (Cabana): Total length 3.13. Carapace length 1.27, width 0.92, wider on legs II–III. Length of tibia/metatarsus: I, 0.73/0.60; II, 0.65/0.57; III, 0.57/0.60; IV, 0.90/1.02. Palpal tarsus length 0.37. Chelicerae with four teeth on promargin, four on retromargin, basal one slightly larger. Sternum length 0.70, width 0.58. Spines (those of tibiae and metatarsi I, II relatively long, thick): leg **I**, femur d 1–1–1, p d1ap; tibia v 2–2–0; metatarsus v 2bas. **II**, femur = I; tibia v 2–2–0, p 0–1; metatarsus v 2bas, p 0–1. **III**, femur d 1–1–1, p and r d1ap; patella r 0; tibia v p1–p1–2, p and r d1–1, d r1bas; metatarsus v 2–0–comb, p and r d1–d1–1 or 0–d1–1, d 0–p1–2. **IV**, femur = III; patella r d1; tibia = III, but v p1–2–2; metatarsus = III, but v

2–p1–comb. Abdomen length 1.93, width 1.20, spiracle–epigastrium 0.93, spiracle–spinnerets 0.13. Color: carapace pale brown with dark brown band at each side, margins almost black. Legs pale brown with dark brown spots. Chelicerae with basal two-thirds dark, basal pale patch, endites and labium dark, sternum with central pale patch. Abdomen dorsally brownish violet, with small pale dots, two pale anterior patches, some chevrons at posterior end, fusing on pale spot above spinnerets. Venter with dark rectangle anterior of spiracle, prolonged to epigastric furrow in median band plus some asymmetrical spots; epigastrium dark between pulmonary plates and epigyne. Epigyne (fig. 51C, D): median field triangular, slightly elevated, copulatory ducts complex, difficult to observe, colied along oblique axes; copulatory openings not seen.

MALE (Cabana): Total length 2.67. Carapace length 1.20, width 0.88. Length of tibia/metatarsus: I, 0.80/0.68; II, 0.72/0.67; III, 0.58/0.67; IV, 0.95/1.07. Chelicerae smaller than those of female, with five teeth on retromargin. Sternum length 0.68, width 0.58.

Spines as in female. Abdomen length 1.50, width 0.80, spiracle–epigastrum 0.63, spiracle–spinnerets 0.13. Color as in female, but wider dark bands on carapace, median pale band narrowing between eyes and thoracic groove. Anterior pale patches on abdomen extending in lateral oblique lines of pale dots. Palp (figs. 47, 51A, B): RTA with flattened tip, only slightly widened. Tegulum with ventral conical protuberance at end of tegular notch (fig. 47A). Median apophysis absent. Apical portion of primary conductor bifid, with thick tip where canal ends, and ventral/prolateral elongate projection (fig. 47C). Paramedian apophysis with two cusps connected by ridge, retrolateral cusp longer, curved, heavily sclerotized, ventral cusp close to base of primary conductor, weakly sclerotized. Base of primary conductor projecting anteriorly in globose lobe, weakly sclerotized, close to secondary conductor (fig. 47C).

NATURAL HISTORY: The specimens from La Cumbre were collected in leaf litter in a mesophytic forest.

DISTRIBUTION: Central Argentina.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Córdoba:** Cabana, VII.1950, M. Birabén, 6♂ 13♀ 21 immatures (MLP); Calamuchita, II.1959, J.M. Viana, 1♀ (MACN-Ar); La Cumbre, 8.XI.1990, M. Ramírez, 3♀ 1 immature (MACN-Ar). **Entre Ríos:** Arroyo Gualeacán and Ruta Nac. 14, nr. Gualeguaychú, 13.XI.1982, P. Goloboff, 1♂ (MACN-Ar). **Buenos Aires:** Atucha, 27.VI.1991, M. Ramírez, 1♂ (MACN-Ar); Ciudad de Buenos Aires, 17.V.1981, M. Ramírez, 1♂ 1♀ 1 immature (MACN-Ar), 1.VIII.1981, F. Miranda, M. Ramírez, 1♂ (MACN-Ar); Lima, 19.IX.1981, P. Goloboff, M. Ramírez, 1♂ (MACN-Ar); Tigre, 19.VIII.1951, J.M. Viana, 1♂ (MACN-Ar). **La Pampa:** Lihuel Calel Natl. Park, XI.1975, A. Toth and E. Maury, 1♀ (MACN-Ar).

SELKNAMIA, NEW GENUS

Table 16

TYPE SPECIES: *Selknamia minima*, new species.

ETYMOLOGY: The generic name refers to the Selk'nam, the now extinct inhabitants of

TABLE 16

Autapomorphies of *Selknamia minima*

anterior eye row (11): straight → recurved
apex C1 close to MA (78): absent → present
basal process on embolus (96): present → absent
CO on epigastric furrow (115): absent → present
CD slender (116): absent → present
spermathecae shape (124): absent → present
FD advanced (127): absent → present
spines metatarsi III and IV, v ap (169): 2 → 0

Tierra del Fuego and Magallanes. Gender is feminine.

DIAGNOSIS: The single known species of the genus is distinguished from other Amaurobioidini by having an elongate, relatively thick tibial apophysis, and by the combination of spherical spermathecae and copulatory openings on the epigastric furrow.

DESCRIPTION: Carapace narrowed in front, posterior eye row straight, ocular area not projecting. Chelicerae unmodified, slightly smaller in males, with three teeth on retro-margin, growing larger to basal. Anterior leg spines unmodified. Male palp (figs. 52, 53A, B) with elongate tibia, RTA long, straight, thick. Cymbium very small, cymbial conductor subterminal. Copulatory bulb small. Tegulum with anterior margin at same level with primary conductor. Median apophysis simple, close to apical portion of primary conductor. Primary conductor with basal portion well developed, massive, with canal where embolus fits; apical portion with two tips, heavily sclerotized, retrolateral tip bearing canal, prolateral tip flattened, triangular. Secondary conductor absent. Paramedian apophysis not well developed, with two shallow cusps. Embolus without basal process. Epigyne (fig. 53C–F) slightly projecting posteriorly, copulatory openings in the epigastric furrow. Spermathecae spherical, copulatory ducts short.

COMPOSITION: Only the type species.

Selknamia minima, new species

Figures 52, 53

TYPES: Female holotype from Argentina, Tierra del Fuego province, Bahía Lapataia, ca. 54°52'W 68°32'S, II.1963, E. Maury, deposited in MACN-Ar 9850; male paratype

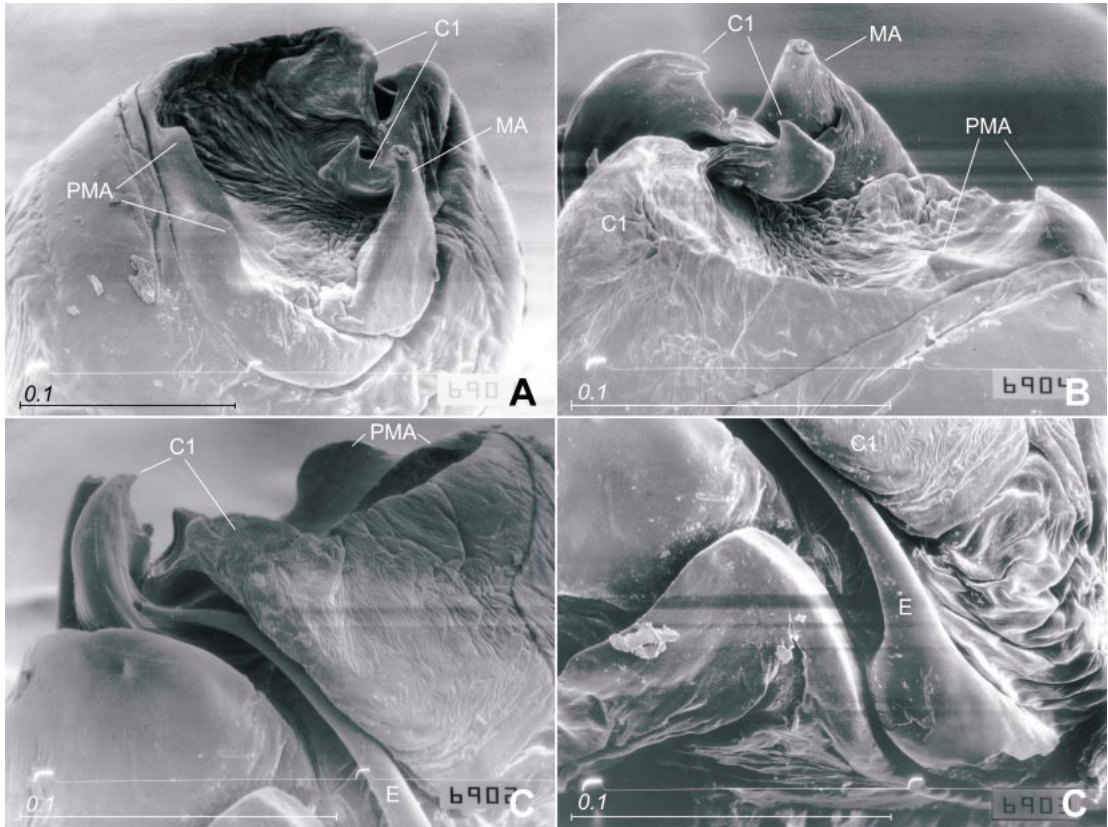


Fig. 52. *Selknamia minima*, n. sp., male copulatory bulb (same data as paratype). **A.** Retrolateral view (median apophysis with tip broken). **B.** Ventral view. **C., D.** Prolateral view. (C1 = primary conductor; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

from Tierra del Fuego, Ushuaia, dung traps in *Sphagnum*, lakeside bog, 20 pans, ca. 54°48'S, 68°18'W, 12–14.II.1982, S. Marshall, deposited in AMNH.

ETYMOLOGY: The specific name refers to the small body size.

DIAGNOSIS: See generic diagnosis.

FEMALE (holotype): Total length 4.83. Carapace length 2.23, width 1.60, wider on legs II–III. Length of tibia/metatarsus: I, 1.12/0.92; II, 1.00/0.87; III, 0.83/1.00; IV, 1.30/1.53. Palpal tarsus length 0.40. Chelicerae with three teeth on retromargin, median one slightly smaller. Sternum length 1.13, width 0.98. Spines: leg I, femur d 1–1–1 thin bristles, p d1ap; tibia v 2–2–0; metatarsus v 2bas. II, femur d 1–1–1 or 1–1–0 thin bristles, p d1ap; tibia v 2–2–0, p 0–1 or d1–1; metatarsus = I. III, femur d 1–1–1, p d1ap or 0; patella 0; tibia v p1–2–2, p 1–d1–1–0, r

d1–1; metatarsus v 2–2–comb, p and r d1–1–1, d 0–p1–2. IV, femur d 1–1–1, r d1ap or 0; patella 0; tibia v p1–2–2, p and r 1–d1–1–0; metatarsus = III. Abdomen length 2.80, width 1.45, spiracle–epigastrium 1.08, spiracle–spinnerets 0.12. Color: grayish brown almost uniform. Abdomen with two paler bands at sides of cardiac area, diffusing posteriorly. Epigyne: see generic description.

MALE (paratype): Total length 3.17. Carapace slightly narrower in front than that of female, length 1.37, width 0.95. Length of tibia/metatarsus: I, 0.82/0.67; II, 0.68/0.62; III, 0.55/0.67; IV, apparently regenerated. Chelicerae slightly narrower than those of female. Sternum length 0.75, width 0.63. Spines as in female, except: leg II, femur d 1–1–1 bristles; tibia p 0–1; metatarsus p 0–1. III, femur p 0; tibia p d1–1, v p1–p1–2; metatarsus v 2–2–comb or 2–p1–comb. IV,

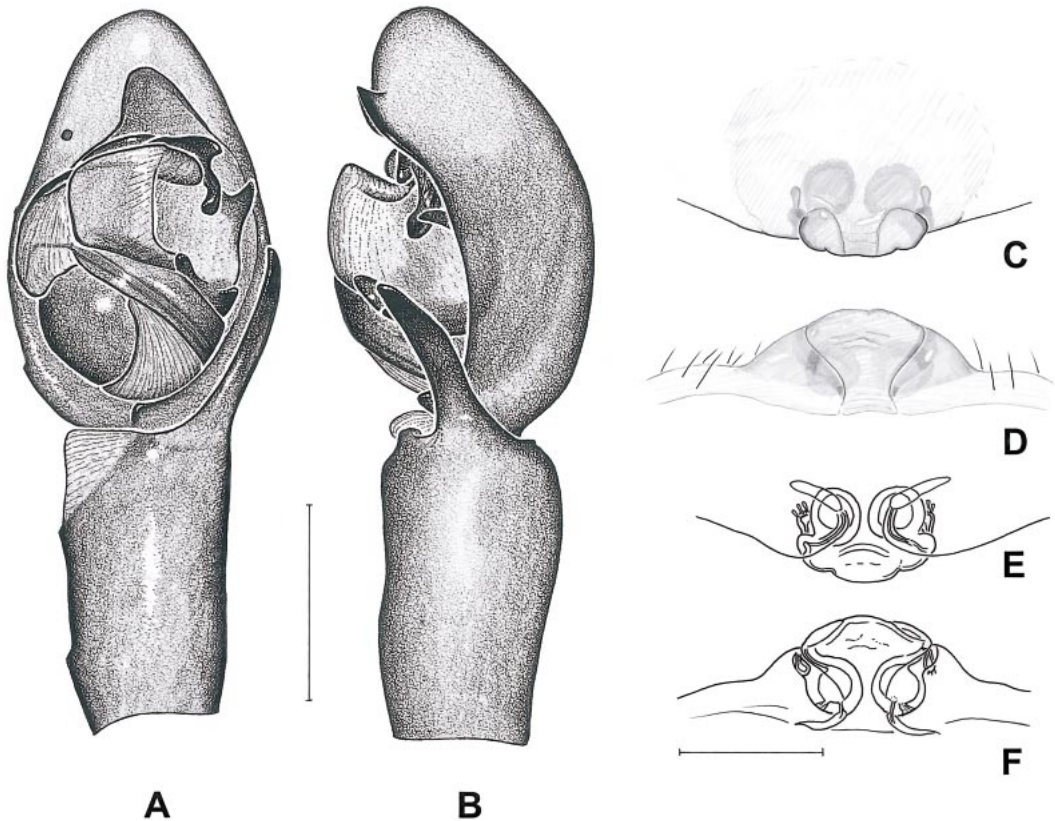


Fig. 53. *Selknamia minima*, n. sp. **A.** Male palp, ventral view (Llanquihue, Huelmo). **B.** Same, retrolateral view. **C.** Epigyne, ventral view (Tierra del Fuego, Bahía Buen Suceso). **D.** Same, posterior view. **E.** Cleared epigyne, dorsal view. **F.** Same, posterior view. Scale bars = 0.2 mm.

badly developed, apparently regenerated, with reduced spination. Abdomen length 1.60, width 0.90, spiracle–epigastrium 0.82, spiracle–spinnerets 0.27. Color: carapace grayish brown, legs paler. Sternum and mouthparts brown, darker than coxae. Abdomen grayish brown, dorsum yellow, dark grayish on cardiac area and several dark diffuse chevrons up to posterior end. Palp: see generic description.

VARIABILITY: Some males with RTA slightly narrower and sharper. Female, spines: III, tibia p d1–1. IV, tibia r d1–1.

NATURAL HISTORY: Ground dwellers. Several specimens were collected under stones or logs near the seashore.

DISTRIBUTION: Chile, from Osorno to Magallanes, and Argentina, in Tierra del Fuego.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Tierra del Fuego:** Bahía Buen Suceso,

13.X.1971, Menéndez, 1 ♀ 3 immatures (MACN-Ar); shore at Canal de Beagle, I.1933, Castellanos and Gómez, 1 immature (MACN-Ar); road to Glaciar Le Martial, on moss *Polytrichum strictum*, XII.1989, A. González, 2 ♀ 1 immature (MLP); Isla de los Estados, Puerto Flinders, 7.X.1971, Menéndez, 1 ♀ (MACN-Ar); Ushuaia, dung traps in *Sphagnum*, 2 ♀, dry bog, pans, 2 ♂ 1 ♀ 1 immature, lakeside bog, 20 pans, 1 ♂, 1 ♀, 1 immature, 12–14.II.1982, S. Marshall (AMNH). **CHILE: Región X (Los Lagos): Osorno:** Puyehue Natl. Park: Antillanca rd., 965 m, trap site 658, Berlese, leaf and log litter, 18–25.XII.1982, A. Newton and M. Thayer, 1 ♀ (AMNH). **Llanquihue:** Huelmo, superior level of beach, 30.XII.1986, J. Kochalka, 1 ♂ 1 ♀ (IBNP). **Región XII (Magallanes y Antártica): Última Esperanza:** Laguna Parrillar Natl. Res., 53°24'15"S,

71°15'45"W, 1–10.XII.2000, 350 m, J. Miller, I. Agnarsson, 1♂, pitfall, 3♀, pitfall 55T3, bog, Berlese in moss, 1♀, 1♀, 1♀, 2♀, pitfall 54T3, *Sphagnum*, 1♂ 1♀, pitfall 55T3, *Sphagnum*, 2♀, pitfall 55T4, scrub, grass in bog, 3♀, pitfall 55T6, forest, 2♀, bog, moss, 2♀, grass near Churio Hermoso, pitfall 55T2, 3♀, moss near Churio Hermoso, 2♀, pitfall 55T3, 2♀ (USNM). **Magallanes:** Isla Lennox, Lennox Cave, 5.II.1896, O. Norden-skjöld, 1♀ (NRS).

JOSA KEYSERLING

Table 17

Tetromma Keyserling, 1878: 608 (type species by monotypy *Tetromma lutea* Keyserling, 1878; preoccupied by Déjean, 1834). NEW SYNONYMY.
Josa Keyserling, 1891: 83 (type species *Anyphaena pilosa* Keyserling, 1880; earliest available name for *Tetromma* Keyserling, preoccupied). Simon, 1897a: 104. Brescovit, 1993: 129. Ramírez, 1995a: 381, 1997: 178.
Pelayo O.P.-Cambridge, 1896: 194 (type species by monotypy *Pelayo laetus* O.P.-Cambridge, 1896); Simon, 1903a: 1032. F.O.P.-Cambridge, 1900: 94, 107. Synonymized by Brescovit, 1993: 129.
Haptisus Simon, 1897a: 100 (type species by original designation *Anyphaena nicoleti* Simon, 1897). NEW SYNONYMY.
Olbophthalmus Simon, 1904: 98 (type species *Olbus personatus* Simon, 1897, designated by Petrunkevitch, 1928: 173). Ramírez, 1995a: 381, 1997: 178. NEW SYNONYMY.
Gayennella Berland, 1913: 102 (type species by monotypy *Gayennella riveti* Berland, 1913). NEW SYNONYMY.

SYNONYMY: The type species of *Tetromma*, *Olbophthalmus*, and *Gayennella* are here considered typical members of *Josa*. *Anyphaena pilosa* and *A. nicoleti* are here considered junior synonyms of *Josa lutea*.

NOTE: Simon (1880) described the genus *Olbus* for the poorly preserved type specimen of *Olios sparassoides* Nicolet, a corinid (Ramírez et al., 2001). However, his subsequent description of *Olbus* (Simon, 1897a), and the specimens identified by him all correspond to *Josa* species with a distinctly recurved posterior eye row. Simon only later (1904) examined fresh specimens of *O. sparassoides*, when he clarified the point, and proposed the genus *Olbophthalmus* in Anyphaenidae.

TABLE 17

Synapomorphies of *Josa* and Internal Clades Common to the Six Dichotomic Trees, and Synapomorphies of Some Resolutions

Josa (clade 96)

anterior eye row (11): straight → procurved
 male chelicerae (17): strong → smaller
 palp femoral apophysis (41): absent → present
 basal tegular notch displaced prolaterally (61): absent → present

C2 *Josa* type (92): absent → present
 embolus very long (95): normal → very long
 embolar base (98): cylindrical → flattened
 notch between LL (111): absent → present
 LL projecting (113): absent → present
 CO on epigastric furrow (115): absent → present
 CD coiled (117): absent → present

In some trees

ocular area black (9): absent → present
 posterior eye row (12): procurved or straight → recurved

Clade 93

ratio AME/ALE (15): AME = ALE, or AME > ALE → AME < ALE

In some trees

ocular area black (9): present → absent
 posterior eye row (12): recurved → procurved or straight

Clade 94

In some trees

nonmonophyletic!
 depressions on LL (112): absent → present
 FD coiled (126): absent → present

Clade 95

CD extremely coiled (118): absent → present
 spine tibia III, v r1-x-x (161): absent → present
 spine tibia IV, v r1-x-x (182): absent → present

J. nigrifrons

dark ventral stripe (1): absent → present
 ratio PME/PLE (16): PME = PLE → PME < PLE
 PMA (67): present → absent
 epigastrium sclerotized (100): normal → sclerotized
 epigynum projecting posteriorly (102): absent → present
 FD advanced (127): absent → present
 spine metatarsus III, r d1-x-x (174): present → absent

J. calilegua

ratio PME/PLE (16): PME = PLE → PME > PLE
 number retromarginal teeth (20): two → three
 number promarginal teeth (23): three → four
 spine patella III, r d1 (158): present → absent

J. personata

ratio PME/PLE (16): PME = PLE → PME < PLE
 spine metatarsus III, p d1-x-x (171): present → absent
 spine metatarsus III, r d1-x-x (174): present → absent
 spine metatarsus III, d x-pl-x (177): present → absent
 spine metatarsus IV, v x-pl-x (189): present → absent

In some trees

spine metatarsus II, p x-1-x (154): present → absent

J. riveti

spine metatarsus III, v x-pl-x (167): absent → present
 spine metatarsus III, v x-r1-x (168): absent → present

J. lutea

no autapomorphies!

DIAGNOSIS: Easily recognized from other Amaurobioidinae by having a ventral apical palpal femoral apophysis (fig. 60E). Females have copulatory ducts coiled along longitudinal axes, and the epigynal median field at the same level or lower than the posteriorly projecting lateral lobes.

DESCRIPTION: Carapace narrowed in front, posterior eye row variable, ocular area not projecting. Chelicerae unmodified, slightly smaller in males, with three teeth on promargin, two on retromargin, occasionally four promarginal, three retromarginal. Anterior legs with unmodified spines, more spinose in males. Male palp with ventral apical femoral apophysis, hook-shaped; tibia short, RTA absent. Cymbium large. Tegulum placed basally and prolaterally in cymbium, median apophysis wide, apical, bifid. Anterior dorsal margin of tegulum with dorsal lobe, sperm duct without anterior dorsal loop. Primary conductor fused to tegulum, without canal. Secondary conductor extremely modified, semicircular, not associated with embolus when unexpanded (fig. 54A, B). Paramedian apophysis with shallow cusps, fused to tegulum. Embolus long, hidden between cymbium and bulb, with complex basal process (fig. 54B). Epigyne variable, median field mostly visible in posterior view (fig. 54C, D), copulatory openings in epigastric furrow. Lateral lobes with posterior depressions, slightly projecting posteriorly, limiting commonly narrow notch. Copulatory ducts long, coiled along longitudinal axes.

DISTRIBUTION: South and Central America, with most species occurring in Andean cloud forests and paramos.

COMPOSITION: The genus is extremely diverse, with most species being still undescribed and undersampled in collections. The morphology of the male copulatory bulb is remarkably constant within several clusters of species, making identification problematic. In addition to the species detailed below: *Anyphaena keyserlingi* L. Koch, 1866 (several males, females, and immatures syntypes, from Colombia: Santa Fe de Bogotá, in BMNH, examined, new combination), *Josa bryantae* (Caporiacco, 1955), *Josa laeta* (O.P.-Cambridge, 1896), *Olbophthalmus lojensis* Berland, 1913 (new combination, see Note under *Josa personata*), *Gayenna an-*

desiana Berland, 1913 (male and female syntypes in MHNP, examined, new combination), *Gayenna simoni* Berland, 1913 (male and female syntypes in MHNP, examined, new combination), *Haptisus analis* Simon, 1897 (male and female syntypes in MHNP 11265, examined, new combination), *Haptisus maurus* Simon, 1897 (penultimate female holotype in MHNP 17554, examined, new combination), *Olbus gounellei* Simon, 1897 (male and female syntypes should be in MHNP 8166, not found, examined by Kochalka [1980], new combination), *Tomopisthes chazaliae* Simon, 1897, new combination (three females syntypes in MHNP 18296, B.1811, examined by Kochalka [1980], belonging to two different species of *Josa*; the types were not found in subsequent years; the very superficial description [Simon, 1897c] and the type locality [Colombia, Sierra Nevada de Santa Marta] are compatible with the genus).

NOMEN DUBIUM: *Clubiona nigricans* Nicolet, 1849 (male and female syntypes from Chile, Valdivia, presumably in MHNP, not found; transferred to *Haptisus* by Simon, 1897a: 100). The reference to the elongate abdomen (Nicolet, 1849: 447) suggests that this species might actually belong to *Acanthoceto*, *Aysenia*, or *Aysenoides*.

Josa lutea (Keyserling),
new combination

Figure 55

Anyphaena citrina: L. Koch, 1866: 194, 199 (many specimens from Colombia, Santa Fe de Bogotá, in BMNH, examined, misidentification).

Tetromma luteum Keyserling, 1878: 608 (female holotype from Nueva Granada [Colombia], in BMNH, examined by John Murphy, in litt.).

Anyphaena pilosa Keyserling, 1880: 327 (male and female syntypes, from Nueva Granada [Colombia], in BMNH, examined). NEW SYNONYMY.

Josa pilosa: Keyserling, 1891: 83. Simon, 1897a: 104.

Anyphaena nicoleti Simon, 1897a: 92 (name for the specimens misidentified by L. Koch, 1866 as “*Anyphaena citrina* Nicol.?”).

Haptisus nicoleti: Simon, 1897a: 92, 95, 100. Berland, 1913: 104.

Gayenna riveti Berland, 1913: 100 (female holotype from Ecuador, Borma, 1905, in MHNP, examined). NEW SYNONYMY.

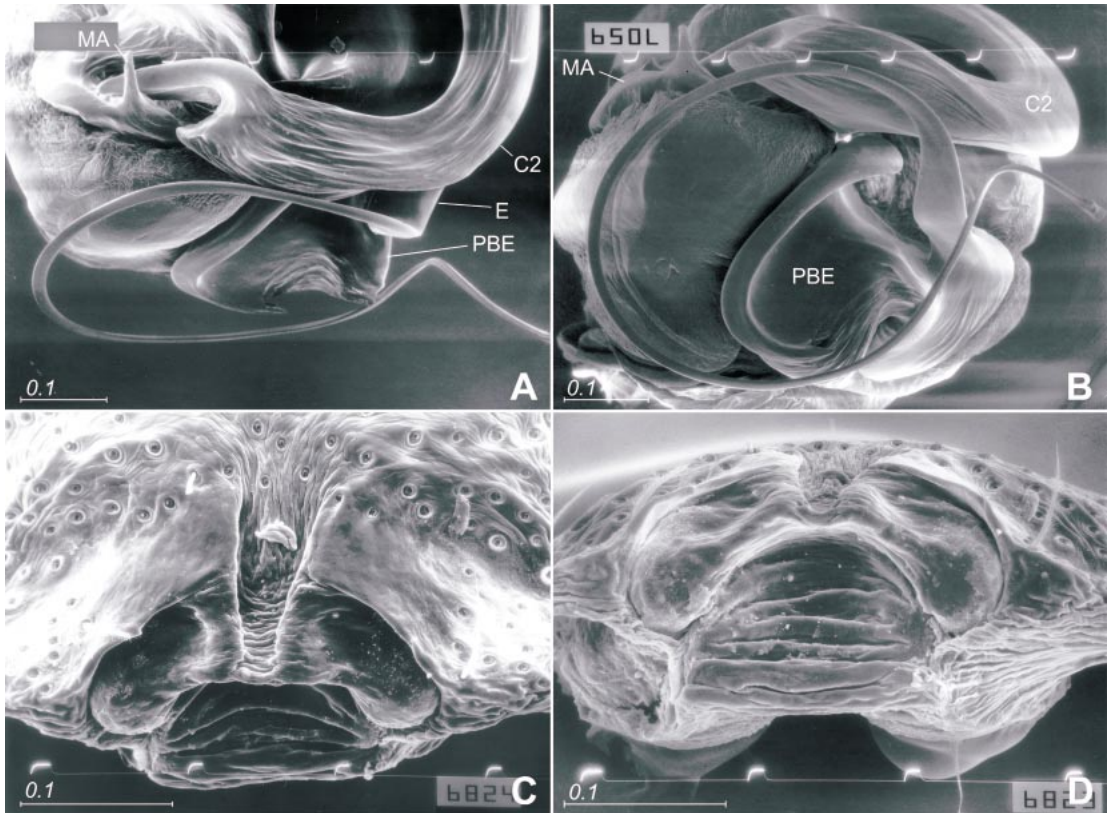


Fig. 54. *Josa calilegua*, n. sp. (Jujuy, Calilegua). **A.** Male copulatory bulb, ventral-apical view. **B.** Same, apical view. **C.** Epigyne, ventral view. **D.** Same, posterior view. (C2 = secondary conductor; E = embolus; MA = median apophysis; PBE = process on base of embolus.)

Tetromma lutea: Bonnet, 1959: 4364 (emendation of *T. luteum* Keyserling).

SYNONYMY: The description by L. Koch (1866) is headed “*Anyphaena citrina* Nicol.?” with a reference to *Clubiona citrina* Nicolet (1849: 433). This is not the description of a new species (Bonnet, 1957: 2098; contra Roewer, 1954: 540). *Clubiona citrina* Nicolet (see Nomen Dubium under *Monapia*) was transferred by Simon (1897a: 92) to *Gayenna*. Simon gave the name *Anyphaena nicoleti* (1897a: 92) to the species that L. Koch identified as “*Anyphaena citrina* Nicol.?” and seven lines below named the same species as *Haptisus nicoleti*. Hence, the types of *Anyphaena nicoleti* Simon, 1897 are the specimens identified by L. Koch (1866) as “*Anyphaena citrina* Nicol.?” (Bogotá, BMNH). I have seen drawings of the holotype of *Tetromma luteum* (thanks to John

Murphy and Norman Platnick, in litt.). It is a teratological female, with only three eyes (both AME and left ALE). The epigyne is normal, allowing acceptable identification. The holotype of *Gayenna riveti* Berland also does not show differences in the epigyne.

DIAGNOSIS: Very similar to *J. riveti* in the epigyne, distinguished by the sinuous posterior borders of epigynal lateral lobes.

FEMALE (Bogotá, MHNP 3510): Total length 10.08. Carapace length 3.50, width 2.83, wider on legs II–III. Length of tibia/metatarsus: I, 2.25/2.75; II, 2.20/2.05; III, 1.80/1.90; IV, 2.15/2.32. Chelicerae unmodified, with two teeth on retromargin (fig. 55D). Spines: leg I, femur d 1–1–1, p 0–d1–(1–d1) or 0–d1–d1; tibia v 2–2–2; metatarsus v 2bas. II, femur = I; tibia v 2–2–2, p 0–1; metatarsus v 2bas, d p1bas. III, femur d 1–1–1, p and r 0–d1–d1; patella rd1; tibia v 2–

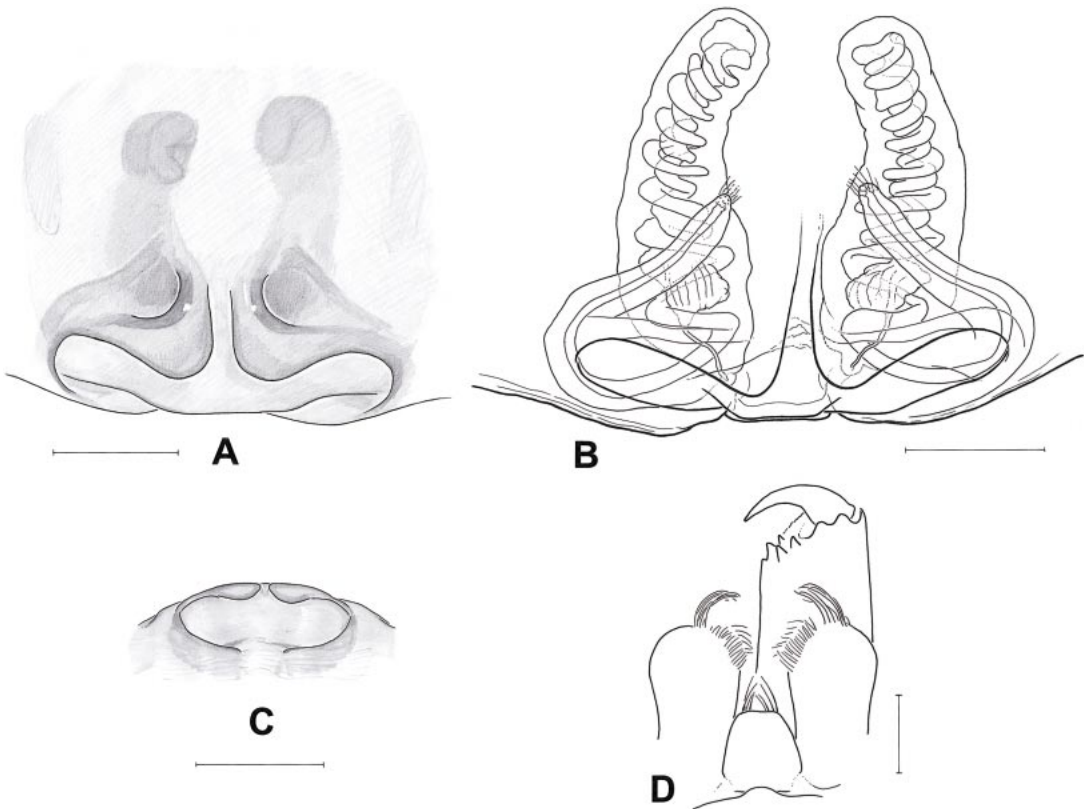


Fig. 55. *Josa lutea* (Keyserling), female. **A.** Epigyne, ventral view (Colombia, Bogotá, MNHP 3510). **B.** Cleared epigyne, ventral view (Mt. Tungurahua or Baños [?], AMNH). **C.** Same, epigyne, posterior view. **D.** Mouth parts, ventral view (MHNP 3510). Scale bars = A, B, 0.2 mm; C, D, 0.5 mm.

2-2 or p1-2-2, p and r 1-d1-1-0; metatarsus v 2-0-2, p and r 1-d1-1, d 0-p1-2. **IV**, femur d 1-1-1, p 0-d1-d1, r d1ap; patella r d1; tibia = III; metatarsus v 2-2-2, p and r 1-d1-1, d 0-p1-2. Abdomen length 6.58, width 4.67, spiracle-epigastrium 2.86, spiracle-spinnerets 1.35. Color: carapace grayish with dark median longitudinal band, slightly darker on cephalic area, ocular area dark gray, clypeus with white hairs. Legs gray with dorsal dark longitudinal stripes as: I and II, tibiae d 3-1-1 short; metatarsi d 1-1, basal long. III, IV tibiae d p2-r2-r1 short; metatarsi = I. Abdomen yellowish with grayish dorsal pattern, venter with grayish median longitudinal band. Epigyne (fig. 55A-C): median field wide, oval in posterior view. Lateral lobes approaching each other, limiting narrow notch between two rounded projections, each with anterior depression. Copulatory

ducts long, coiled. Ducts of accessory bulbs long, converging.

MALE: Unknown.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Known only from Bogotá and probably from Tungurahua, Ecuador.

OTHER MATERIAL EXAMINED: **COLOMBIA:** Bogotá, no date, no collector, 1♀ (MHNP 3510). **ECUADOR: Tungurahua:** (two labels) Mt. Tungurahua or Baños (?), 1850 or 3800 m (?), 6.I.1938 or 1.XI.1937 (?), W.M. Clarke-Macintyre, 1♀ (AMNH).

Josa riveti (Berland),
new combination

Figure 56

Gayennella riveti Berland, 1913: 100 (female immature holotype from Ecuador, Borma, El Peñado, G. Rivet, 1905, in MHNP, examined).

NOTE: Berland (1913: 102) described an immature female, and he seemed clear in that the specimen from El Pelado was the holotype (“Je crée un genre nouveau pour une araignée de El Pelado”). He mentioned also one female and an immature male from Yana-Urcu (in MHNP, examined). Both vials in MHNP are labeled “Type du genre et de l’espèce”. The present knowledge of the genus does not permit the identification of immatures, so I provisionally distinguished the species based on the female from Yana-Urcu.

DIAGNOSIS: Very similar to *J. lutea* in the epigyne, distinguished by the slightly curved, almost straight posterior borders of the epigynal lateral lobes. Males can be distinguished from similar *Josa* species by the small apical bifurcation of the conductor.

FEMALE (Zumbahua, MACN-Ar 9813): Total length 12.40. Carapace length 5.05, width 3.46, wider between legs II and III. Length of tibia/metatarsus: I, 2.73/2.27; II, 2.73/2.27; III, 2.27/2.53; IV, 3.30/3.78. Palpal tarsus length 1.63. Chelicerae with two teeth on retromargin (fig. 56F). Sternum (fig. 56G) length 2.50, width 1.83. Spines: leg I, femur d 1-1-1, p 2ap; tibia v 0-2-2 or p1-2-2 or 2-2-2; metatarsus v 2bas. II, femur d 1-1-1, p d1ap; tibia v r1-2-2 or 2-2-2, p 0 or 0-1; metatarsus v 2bas. III, femur d 1-1-1, p and r 0-d1-d1 or p d1-d1-d1; patella d d1; tibia v 2-2-2 (the r1bas smaller), p and r 1-d1-1-0, d r1bas; metatarsus v 2-2-2, p and r d1-1-1, d 0-2-2. IV, femur d 1-1-1, p 0-d1-d1, r d1ap; patella r d1; tibia and metatarsus = III. Dorsal long, thin, erect bristles on patellae (d 1-0-1) and tibiae (d r1-0-1). Abdomen length 7.95, width 4.50, spiracle-epigastrium 3.60, spiracle-spinnerets 1.83. Color (from several specimens): carapace grayish with darker sides, legs grayish, coxae pale, sternum grayish, paler at center, mouthparts dark. Abdomen with pattern of grayish spots on paler background, dorsal pattern variable, often with anterior dark bands on cardiac area, one anterior band at each side, several chevrons extending to spinnerets; venter variable from pale to dark, may have diffuse median longitudinal dark band. Epigyne (fig. 56H-J): median field wide, sclerotized, trapezoidal in posterior view, ventral angles rounded. Lateral lobes close to each other, forming narrow notch be-

tween posterior projections, shallow depression anterior to each projection of lateral lobes. Copulatory ducts very long, coiled. Ducts of accessory bulbs long, converging.

MALE (Zumbahua, MACN-Ar 9813): Total length 8.40. Carapace length 3.99, width 2.87. Length of tibia/metatarsus: I, 2.57/2.13; II, 2.50/2.07; III, 2.07/2.17; IV, 2.83/3.17. Chelicerae narrower than those of female. Sternum length 2.00, width 1.47. Spines as in female, except: leg I, femur r 0 or d1 or 0-d1-d1; tibia v 2-2-2, p 1-d1-1-0, r 1-0-1-0 or 1-0; metatarsus p 0 or d1. II, femur p 0-d1-d1 or 0-d1-2, r d1 or 0-d1-d1; tibia v 2-2-2, p 1-d1-1-0, r 1-0-1-0; metatarsus p = I. Abdomen length 4.66, width 2.28, spiracle-epigastrium 1.63, spiracle-spinnerets 0.94. Color as in female, often darker, more heavily contrasting. Copulatory bulb (fig. 56A-E): median apophysis wide, with two tips, apical tip with ventral canal. Secondary conductor bifid just at apex. Paramedian apophysis heavily sclerotized, with one rounded cusp with sharp border, fused to tegulum and primary conductor. Embolus very long, apex describing complete loop between bulb and cymbium.

VARIABILITY: Female spines: III, IV, metatarsus d 0-p1-2. Males from Volcán Chiles have slightly different MA (compare fig. 56D and E).

NATURAL HISTORY: Unknown. Some specimens were collected under rocks in high-altitude grasslands.

DISTRIBUTION: Highlands of Ecuador and Bolivia.

OTHER MATERIAL EXAMINED: **ECUADOR:** **Carchi:** Volcán Chiles, 0°47'40"N, 77°57'00"W, above Naranjal, páramo grassland, 4050 m, sample 286 (pitfall), 10.VIII.1997, N. Atkins, 1♀ (UPBS); sample 285, 1♂ 1♀; sample 284, 0°47'15"N, 77°56'45"W, 2♂. **Cotopaxi:** 5 km E Zumbahua, W Latacunga, ca. 3500 m, 18.IV.1982, A. Roig, 3♀ 2♂ 2 immatures (MACN-Ar 9813); Lacatunga to Quevedo, 3600 m, 15.VIII.1965, L. Peña, 1♂ (MCZ). **Pichincha:** 10 km E Pifo, 30.VII.1978, A. Roig, 1♂ 4♀ 1 immature (MACN-Ar); 15 km E Pifo, grassland with cattle, under stones, 3.V.1982, A. Roig, 2♂ 7♀ 4 immatures (MACN-Ar); 22 km E Pifo, 3.V.1982, under stones, A. Roig, 5♀ 1 immature

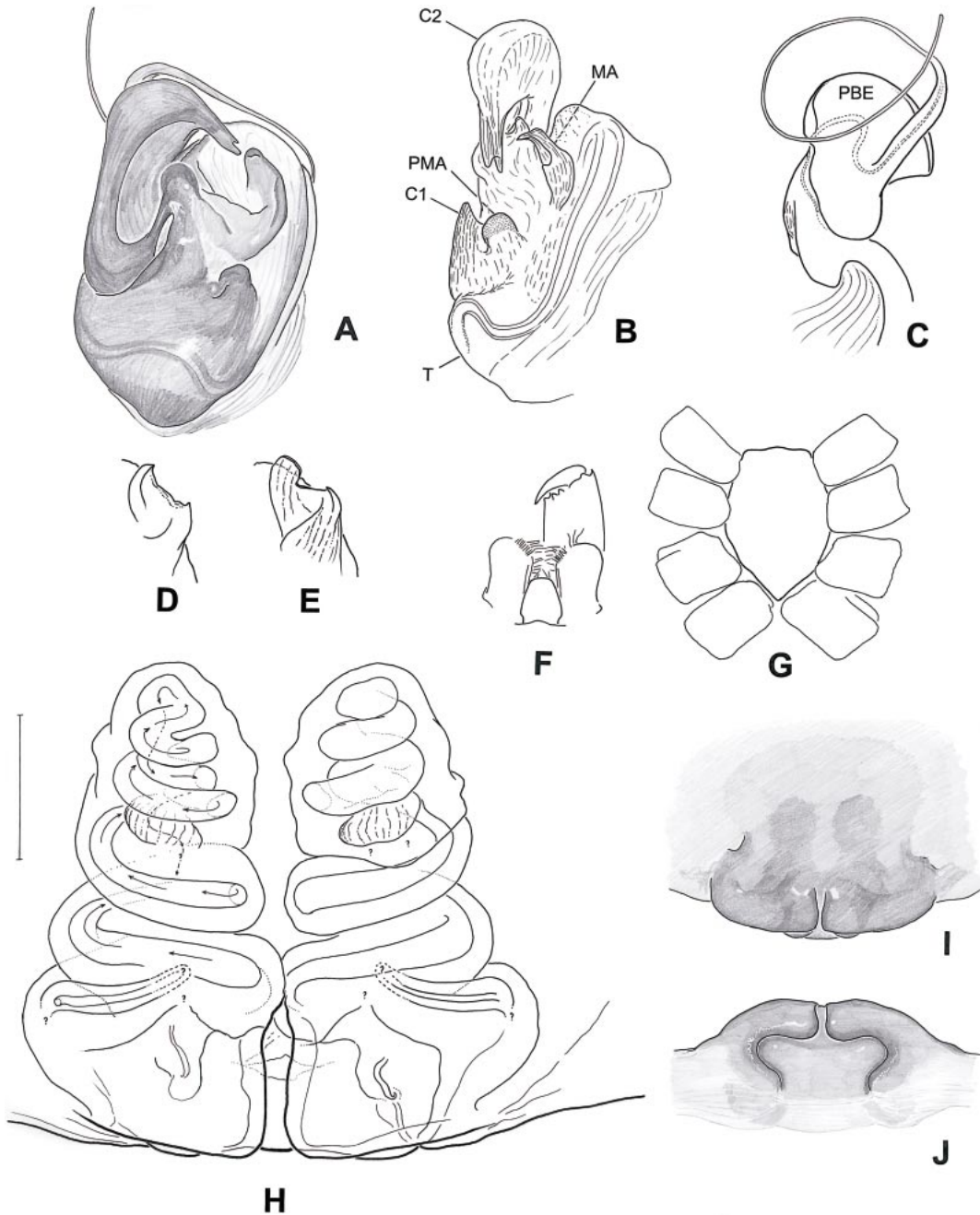


Fig. 56. *Josa riveti* (Berland). **A.** Male copulatory bulb, retrolateral-ventral view (Cotopaxi, Zumbahua, MACN-Ar 9813). **B.** Same, partially expanded, retrolateral view. **C.** Same, embolus. **D.** Same, median apophysis, ventral-basal view. **E.** Median apophysis, ventral-basal view (Carchi, Volcán Chiles). **F.** Female mouth parts, ventral view (syntype). **G.** Same, sternum and coxae. **H.** Cleared epigyne, ventral view (MACN-Ar 9813). **I.** Same, epigyne, ventral view. **J.** Same, posterior view. Scale bars = A–E, J, 0.5 mm; F, G, 2.42 mm; H, 0.18 mm; I, J, 0.6 mm. (C1 = primary conductor; C2 = secondary conductor; MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis; T = tegulum.)

(MACN-Ar). **BOLIVIA: La Paz:** Botijlaca, 3600 m, 2.XI.1984, L.E. Peña, 1 ♀ (AMNH).

Josa personata (Simon),
new combination

Figure 57

Olbus personatus Simon, 1896b: 506 (female holotype from Ecuador Meridional, Amazula, Gaujon coll., in MHNP 9776, examined), 1897a: 93, 102.

Olbophthalmus personatus: Petrunkevitch, 1928: 173. Simon, 1904: 98.

NOTE: *Olbophthalmus lojensis* Berland (1913: 104; one female and one male without palps syntypes, from Ecuador, Loja, 2200 m, in MHNP, examined) may be a junior synonym. Because I have seen other very similar species represented only by small samples, a synonymy is postponed until more conclusive evidence is available.

DIAGNOSIS: Resembles *J. calilegua* in having a pale body and recurved posterior eye row, but distinguished by having two teeth on the cheliceral retromargin and simple ridges on the epigynal lateral lobes.

FEMALE (holotype): Total length 4.73. Carapace length 2.38, width 2.02, wider between legs II and III. Posterior eye row recurved, AME larger than ALE (fig. 57A, B). Length of tibia/metatarsus: I, 2.08/1.63; II, 2.06/1.83; III, 1.45/1.45; IV, 1.78/1.70. Chelicerae with two teeth on retromargin. Sternum length 1.48, width 1.20. Spines: leg I, femur d 1-1-1, p 0-2-d1; tibia v 2-2-0; metatarsus v 2bas. II, femur d 1-1-1, p 0-d1-d1; tibia and metatarsus = I. III, femur d 1-1-1, p 0-d1-d1, r d1ap; patella 0; tibia v 2-2-2, r d1-1 or d1-0, d r1bas; metatarsus v 2-0-2, p and r d1-1, d 0-2. IV, femur d 1-1-1, p d1ap; patella 0; tibia v 2-2-2, p d1(small)-1, r 1-d1-0, d r1bas; metatarsus v 2-0-2, p and r d1-1-0-1, d 1-2. Abdomen length 2.35, width 1.18, spiracle-epigastrium 1.35, spiracle-spinnerets 0.60. Color in alcohol: carapace and abdomen yellow, eyes bordered black. Chelicerae with anterior face dark gray, sternum and mouthparts yellow. Legs yellow with dorsal longitudinal lines dark gray: patellae, d 2bas, short; tibiae, d p2bas extending up to one-third or one-fourth of tibial length, d r2bas extending up to one-half of tibial length, d 2bas short, d 1, and d

r1. Metatarsi III, IV with apical bundle of white hairs on each side. Epigyne (fig. 57C-F) weakly sclerotized, spermathecae visible through cuticle; two posterior depressions, oriented forward. Lateral lobes separate, limiting shallow notch at posterior border of epigyne. Median field wide, oval in posterior view. Copulatory ducts very long, coiled. Ducts of accessory bulbs long, converging. Lumen of spermatheca elongate, coiled along with coils of copulatory duct. Fertilization ducts long, also coiled.

MALE: Unknown.

VARIABILITY: Spines: I, femur p 0-1-d1-1 or 0-1-d1-0. III, tibia p 0-1, r 0-1; metatarsus p and r d1-1-0-1, d p1-2.

NATURAL HISTORY: Unknown.

OTHER MATERIAL EXAMINED: **ECUADOR: Loja:** Malacatos, 1900 m, 21-22.VIII.1977, L. Peña, 1 ♀ (AMNH).

Josa calilegua, new species

Figures 54, 58

TYPES: Female holotype and male paratype from Argentina, Jujuy province, Calilegua Natl. Park, 11.3 km from Park entrance, ca. 23°30'S, 64°50'W, 23-24.IX.1995, M. Ramírez, P. Goloboff, C. Szumik, deposited in MACN-Ar 9814.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Resembles *J. personata* in having a pale body and recurved posterior eye row, but distinguished by having three teeth on the cheliceral retromargin and four on the promargin, lacking lateral depressions anterior of the epigynal lateral lobes, and the characteristic shape of the apex of conductor.

FEMALE (holotype): Total length 6.25. Posterior eye row recurved. Carapace length 2.80, width 2.17, wider between legs II and III. Length of tibia/metatarsus: I, 1.70/1.57; II, 1.67/1.50; III, 1.50/1.47; IV, 1.90/2.03. Palpal tarsus length 0.90. Chelicerae unmodified, with four teeth on promargin, three on retromargin. Sternum length 1.87, width 1.10. Spines (all tibiae d r1-0-1 bristles): leg I, femur d 1-1-1, p 0-d1-1-1, r 0-d1-d1; tibia v 2-2-2; metatarsus v 2bas. II, femur d 1-1-1, p and r 0-d1-d1; tibia = I (the v p1bas thinner; one additional spine close to the x-r1-x on left leg); metatarsus v 2bas. III, fe-

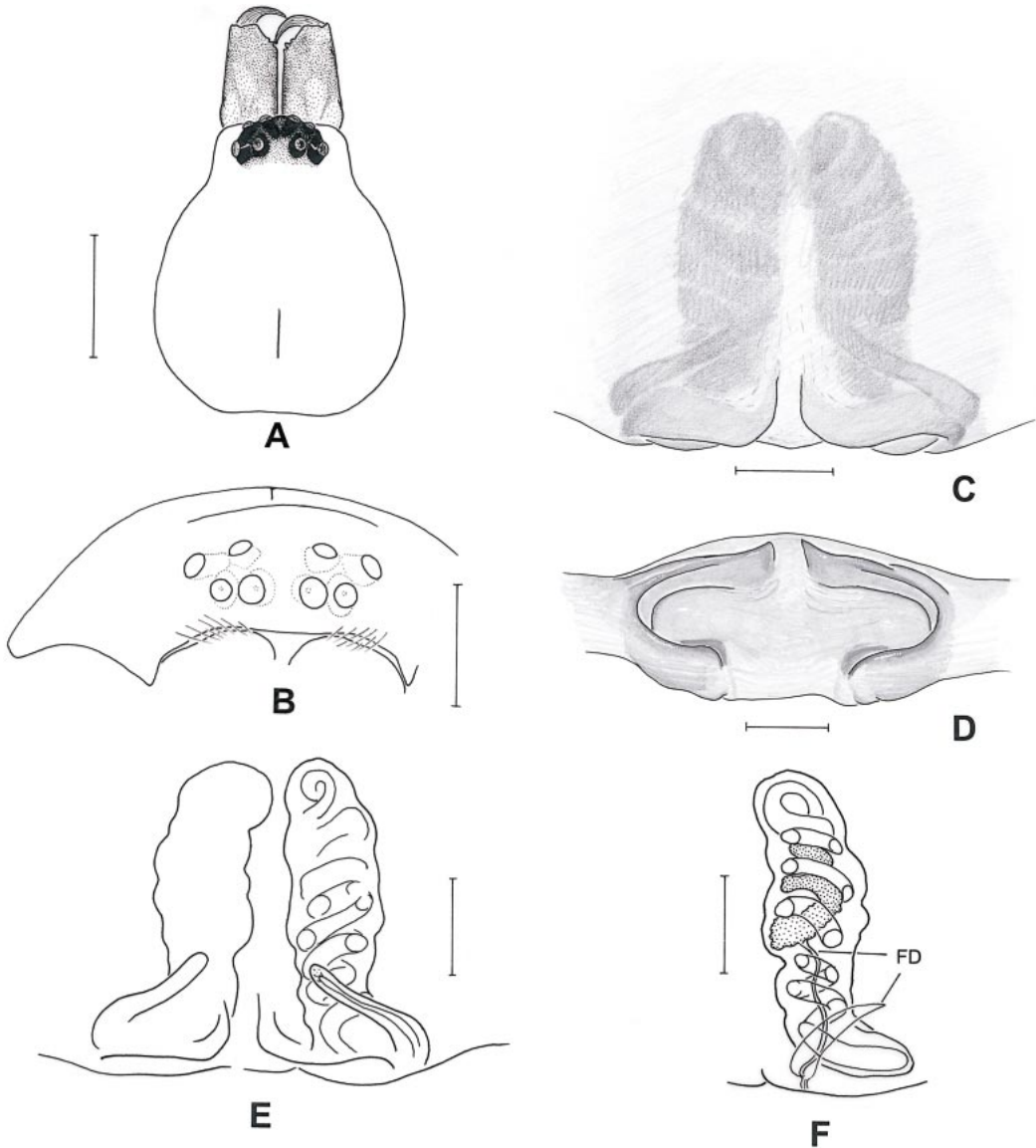


Fig. 57. *Josa personata* (Simon). **A.** Carapace (holotype). **B.** Same, anterior view. **C.** Epigyne, ventral view (holotype). **D.** Epigyne, posterior view (Loja, Malacatos). **E.** Cleared epigyne, ventral view (holotype). **F.** Same, cleared, right side, dorsal view. Scale bars = A, 1 mm; B, 0.5 mm; C–F, 0.1 mm. (FD = fertilization duct.)

mur = II; tibia v 2–2–2, p 1-d1-1-0 or d1-1, r 1-d1-1-0; metatarsus v 2–0–2, p and r d1-1-0-1, d 0-p1–2. **IV**, femur d 1–1–1, p 0-d1-d1, r d1ap; tibia = III; metatarsus v 2-p1–2, p and r d1-1-0-1-0, d p1–2. Color: yellowish white, legs darkening distally, abdomen with white guanine reticulum, less dense along median lines of dorsum and venter. Oc-

ular area black, many white hairs on clypeus, margin of carapace, dorsum of coxae, and sides of abdomen. Epigyne (figs. 54C, D, 58C, D): median field wide, oval in posterior view, lateral lobes with oblique posterior borders, projecting over median field, limiting rectangular notch. Copulatory ducts long, coiled, ducts of accessory bulb long, con-

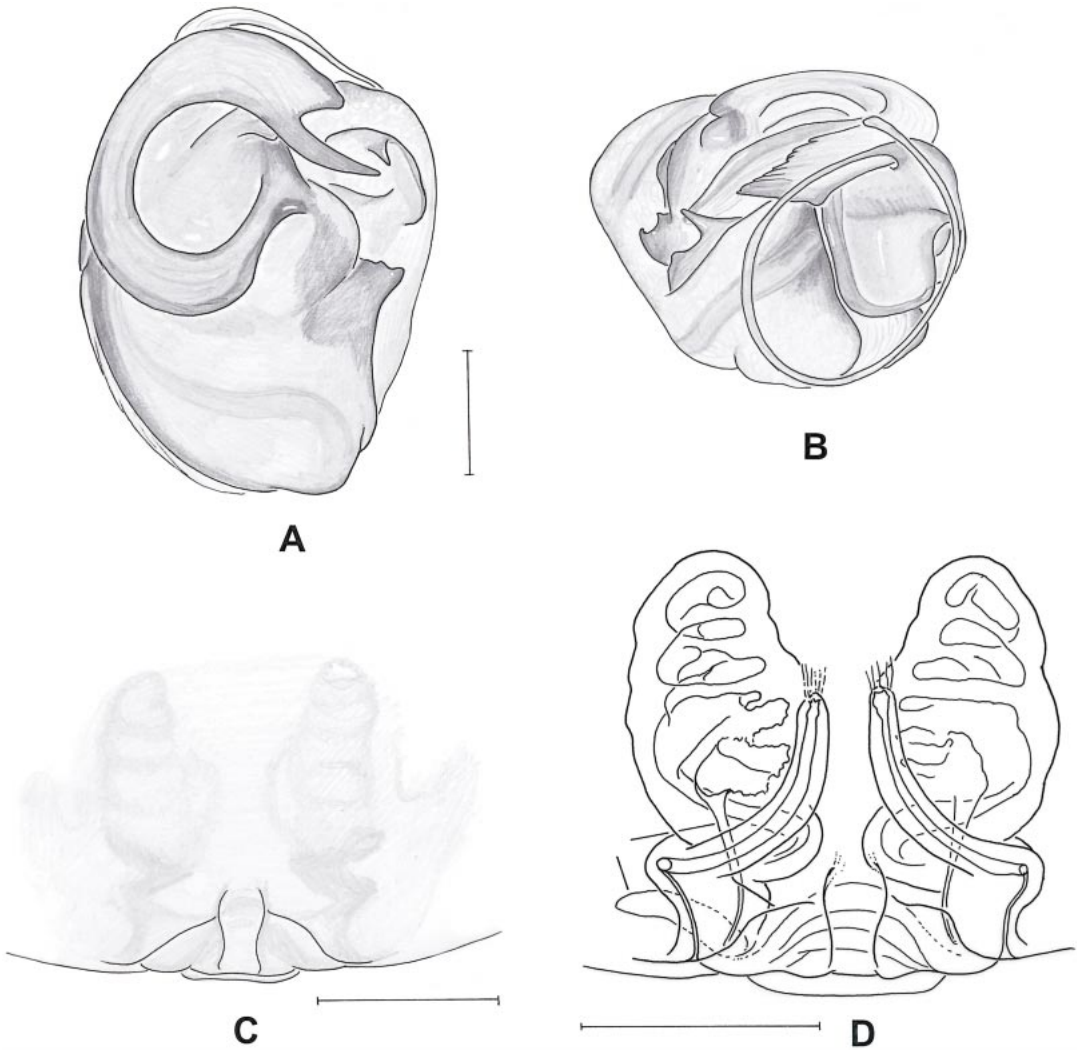


Fig. 58. *Josa calilegua*, n. sp. **A**. Male copulatory bulb, ventral view (paratype). **B**. Same, apical view. **C**. Epigyne, ventral view (holotype). **D**. Same, cleared. Scale bars = 0.2 mm.

verging. Lumen of spermatheca irregular, partially coiled along with coils of copulatory ducts. Fertilization ducts long.

MALE (paratype): Total length 4.90. Carapace length 2.37, width 1.93. Length of tibia/metatarsus: I, 1.93/1.77; II, 1.90/1.83; III, 1.53/1.53; IV, 1.77/2.00. Chelicerae small, vertical. Sternum length 1.30, width 0.93. Spines as in female, except: leg **I**, tibia v 2-2-2, p and r 1-d1-1-0, d r1-0-1; metatarsus v 2-2-0, p and r d1. **II**, tibia and metatarsus = I. **III**, tibia = I. **IV**, tibia = I. Abdomen reduced by starving, length 2.50, width 1.10,

spiracle-epigastrium 0.83, spiracle-spinnerets 0.57. Color as in female, but with small brownish violet spot above anal tubercle. Copulatory bulb (figs. 54A, B, 58A, B): median apophysis wide, apical tip narrow, basal tip represented only by ridge. Secondary conductor bifid apically, one tip blunt, another long, acute. Paramedian apophysis sclerotized, with short, bifid cusp, fused to tegulum, partially separated from conductor base by small membranous area. Embolus very long, apex describing complete loop between bulb and cymbium.

NATURAL HISTORY: Most specimens were collected by beating foliage.

DISTRIBUTION: Moderate altitude rainforests in Argentina, Tucumán and Jujuy provinces.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Jujuy:** Same data as types, 2♂ 4♀ 2 immatures (MACN-Ar). **Tucumán:** Horco Molle, II.1965, A. Bachmann, 1♀ (MACN-Ar); Cerro San Javier, 11.II.1951, Ross, 1♀ (CAS).

Josa nigrifrons (Simon),
new combination

Figures 59, 60

Haptisus nigrifrons Simon, 1896b: 505 (male lectotype and 4 females paralectotypes here designated, from Venezuela, Aragua, Colonia To-var, in MHNP, examined), 1897a: 92, 100.

Pelayo insignis Banks, 1909a: 199 (female lectotype and male immature paralectotype here designated, from Costa Rica, Volcán Poás, Alajuela, J.F. Tristán coll., in MCZ, examined).

NEW SYNONYMY.

Josa insignis: Brescovit, 1993: 129.

SYNONYMY: The paralectotypes of *Haptisus nigrifrons* were compared with the lectotype of *Pelayo insignis* and with numerous specimens from the same area; no relevant differences were found.

DIAGNOSIS: Easily distinguished from other *Josa* by the extreme development of the secondary conductor and by the female epigyne projecting posteriorly, with anterior lateral sclerotizations.

FEMALE (paralectotype): Total length 5.27. Carapace length 2.24, width 1.62, wider between legs II and III. Anterior eye row procurved, AME slightly smaller than ALE, posterior eye row slightly recurved. Length of tibia/metatarsus: I, 1.10/0.98; II, 1.08/0.98; III, 0.88/0.92; IV, 1.22/1.28. Chelicerae with two teeth on retromargin. Spines: leg I, femur d 1-1-1, p 2ap; tibia v 2-2-2; metatarsus v 2bas. **II**, femur d 1-1-1, p 2ap, r d1ap; tibia v r1-r1-2; metatarsus v 2bas. **III**, femur d 1-1-1, p 0-d1-d1, r d1ap; patella r d1; tibia v p1-p1-2, p 1-d1-1-0, r d1-1, d r1-1 (bristles); metatarsus v 2-0-2, p d1-1-1, r 0-1-1, d 0-p1-2. **IV**, femur d 1-1-1, p and r d1ap; patella r d1; tibia v p1-2-2, p and r 1-d1-1-0, d r1-1 (bristles); metatarsus v 2-0-2, p and r d1-1-1, d 0-p1-r1. Abdo-

men length 3.06, width 1.78, spiracle-epigastrium 1.04, spiracle-spinnerets 0.69. Color: pale yellow, carapace with pale brown diffuse lateral bands, ocular area black, clypeus with white hairs. Chelicerae dark gray and black, sternum pale, labium dark brown. Abomen with dark brownish violet dorsal pattern (fig. 59A), and three posterior black marks, epigastrium with reddish spots at sides of epigyne, venter with brownish violet band from epigastrium to spinnerets. Epigyne (fig. 59C-G) projecting posteriorly, epigastrium sclerotized in two patches lateral and anterior of epigyne. Epigynal posterior border formed by projecting lateral lobes, each with depressed area and notch in between. Median field and copulatory openings hidden in epigastric fold, visible only after dissection. Median field flattened, sclerotized, with two lobes directed backward (fig. 59E-G). Copulatory ducts coiled, most anterior loop with ample lumen (probably functioning as reservoir), lumen of spermathecae tortuous, ducts of accessory bulbs long, slender, converging.

MALE (lectotype): Total length 4.73. Carapace length 2.28, width 1.84. Length of tibia/metatarsus: I, 1.55/1.35; II, 1.48/1.32; III, 1.12/1.10; IV, 1.50/1.55. Chelicerae slightly narrower than those of female. Spines as in female, except: leg I, femur p d1ap or 2ap, r 0-d1-d1; tibia p and r 1-d1-1-0; metatarsus v 2-2-0. **II**, femur p and r 0-d1-d1; tibia p and r 1-d1-1-0, v r1-2-2; metatarsus v 2-2-0, p d1, r d1 or 0. **III**, femur = II; tibia v p1-2-2, r 1-d1-1-0, d r1-0-1; metatarsus d 0-2-2. **IV**, femur = II; tibia = III; metatarsus v 2-p1-2, d 0-2-2. Abdomen length 2.45, width 1.43, spiracle-epigastrium 0.86, spiracle-spinnerets 0.61. Color: similar to female, lateral band on carapace sharper, band on venter narrower, extending anterior of spiracle to spinnerets. Palp (fig. 60): median apophysis large, concave. Secondary conductor very complex, one acute tip bearing canal, other tip bifid, much more developed, plus additional cusp on base. Paramedian apophysis absent, apparently reduced to shallow ridge parallel to tegular margin. Embolus very long, apex describing complete loop between bulb and cymbium.

VARIABILITY: Genitalia quite variable. Some females with lobes of epigynal median

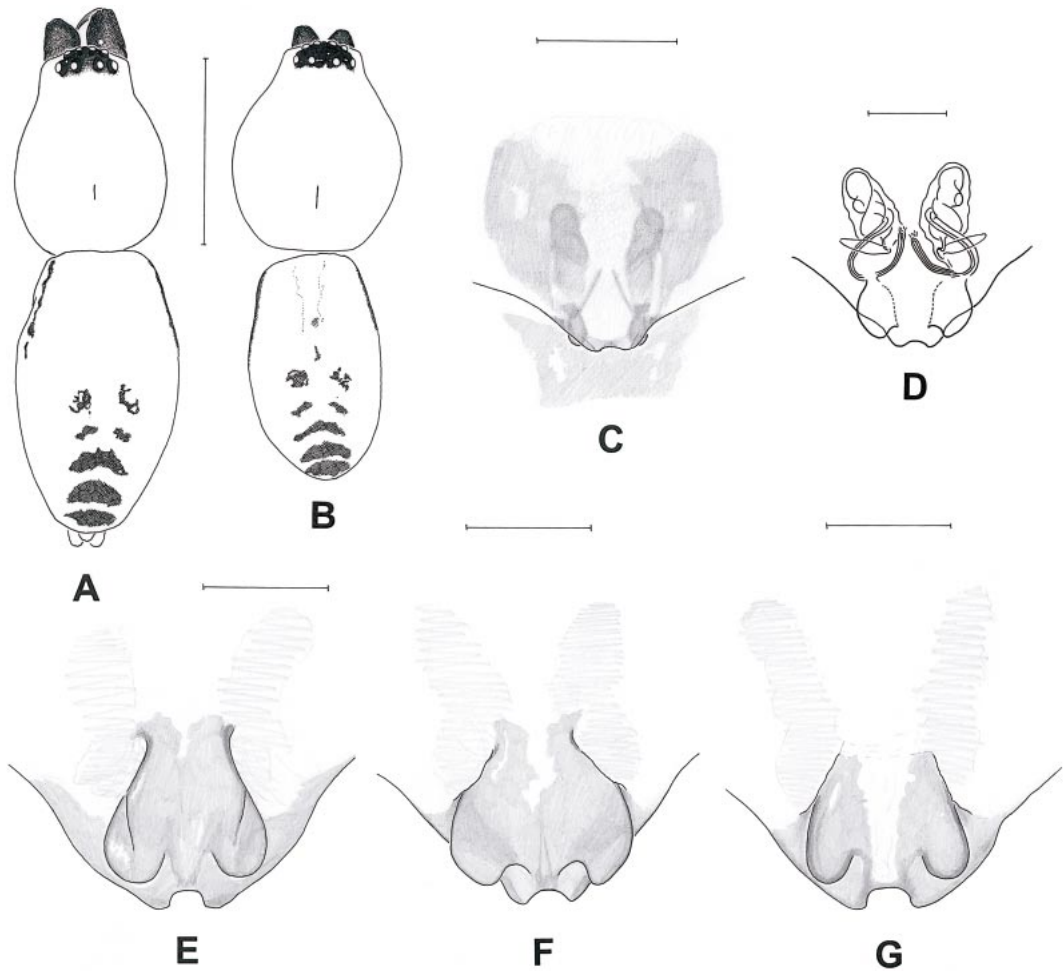


Fig. 59. *Josa nigrifrons* (Simon). **A.** Female (paralectotype). **B.** Male (lectotype). **C.** Epigyne, ventral view (paralectotype). **D.** Cleared epigyne, dorsal view (La Paz, Unduavi to Coroico). **E–G.** Epigyne, dorsal view. **E.** Loja, Malacatos. **F.** Unduavi to Coroico. **G.** Panamá, El Volcán. Scale bars = A, B, 2 mm; C, 0.5 mm; D–G, 0.2 mm.

field hardly visible in ventral view (fig. 59E, G). Males with secondary conductor also variable in details. Some specimens with longitudinal black lines on legs, from patella to metatarsus, similar to those of *J. personata*. Abdomen may have short dorsal band, anterior of chevrons. Abdominal ventral band varying in length and width. Female spines: III, tibia v p1–2–2; metatarsus p and r d1–1–1, d 0–2–2. IV, metatarsus v 2–2–2, p and r d1–1–1, d 0–2–2. Male spines: III, IV, metatarsus = female.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Andean rainforests from Costa Rica to Bolivia.

OTHER MATERIAL EXAMINED: **PANAMA:** El Volcán, 12.VIII.1950, A.M. Chickering, 3♂ 5♀ 3 immatures (MCZ); 9–14.VIII.1950, A.M. Chickering, 14 immatures, 9♀ 8♂ 1 immature (MCZ), 10.VIII.1950, A.M. Chickering, 1♀ (MCZ). **ECUADOR: Loja:** Malacatos, 1900 m, 21–22.VIII.1977, L. Peña, 1♂ 3♀ 9 immatures (AMNH). **Prov. Tungurahua:** Baños, 2200 m, 29.IV.1939, W. Clarke-Macynre, 1♂ (MCZ); Tungurahua, 2600 m, 6.V.1939, W.M. Clarke-Macynre,

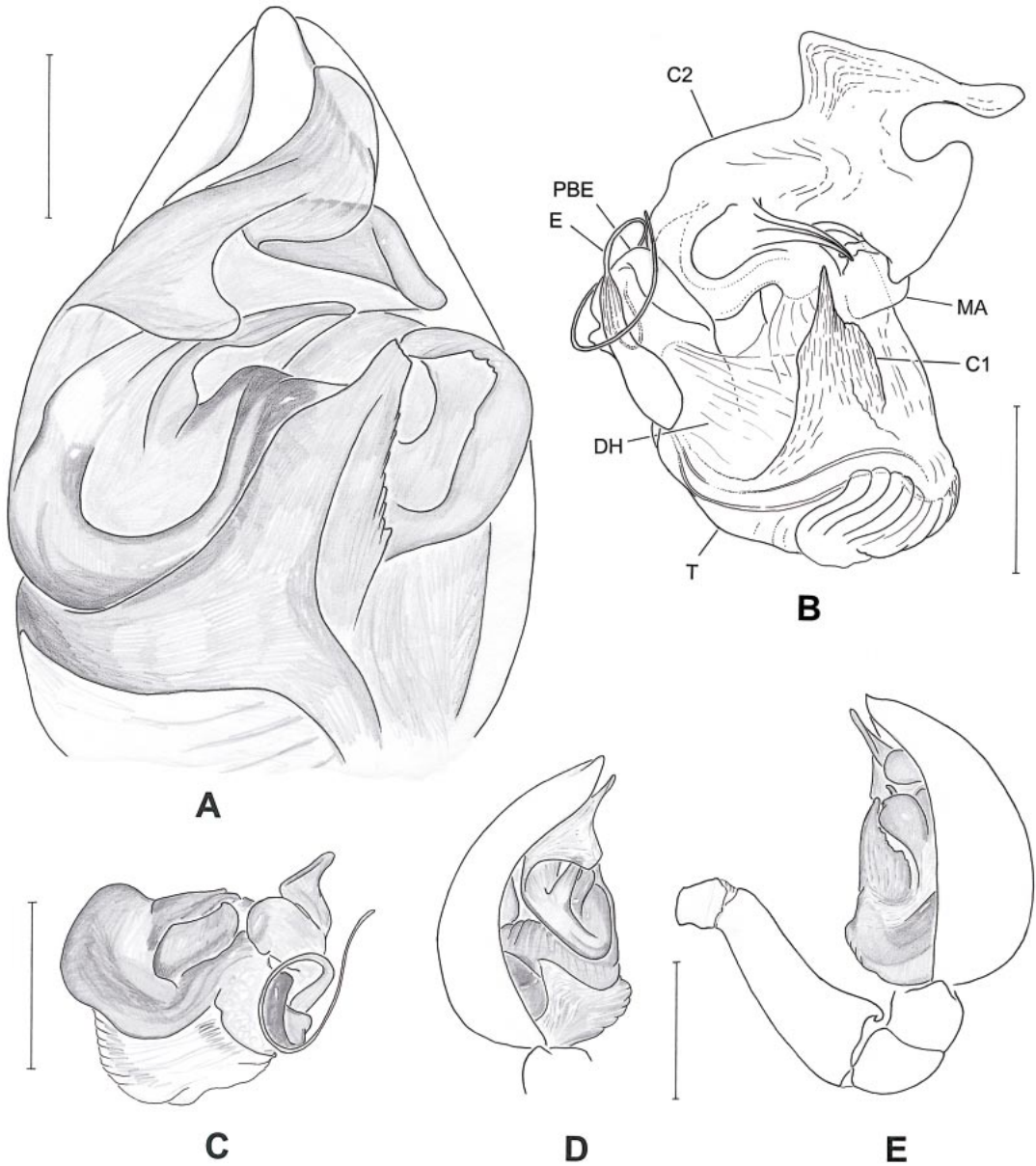


Fig. 60. *Josa nigrifrons* (Simon), male palp. **A**. Ventral view (lectotype). **B**. Copulatory bulb, expanded (Panamá, El Volcán, 12.VIII.1950). **C**. Copulatory bulb, apical view (Loja, Malacatos). **D**. Palp, proximal view (lectotype). **E**. Same, retrolateral view. Scale bars = A, 0.2 mm; B–E, 0.5 mm. (C1 = primary conductor; C2 = secondary conductor; DH = distal hematodocha; E = embolus; MA = median apophysis; PBE = process on base of embolus; T = tegulum.)

TABLE 18

Synapomorphies of Gayennini and Internal Clades

Gayennini (clade 175)
ratio AME/ALE (15): AME = ALE → AME < ALE
cymbial conductor wide (49): wide → narrow
shape of MA (65): thick → slender
shape of PMA (68): one short cusp → bifid
shape embolar process (97): complex → Gayennini type
APmf (104): absent → forward
CD slender (116): absent → present
spermathecae shape (124): absent → present
Clade 140
teeth on apex C2 (89): absent → present
Clade 161
C2 divided (85): absent → present
Clade 162
basal process on embolus (96): present → absent
Clade 163
prolateral process on C2 (81): absent → <i>Tasata</i> type
spine metatarsus I, d p1-x (144): absent → present
spines metatarsus I, d 2ap (145): absent → present
spine metatarsus II, d p1ap (156): absent → present
spine metatarsus II, d r1ap (157): absent → present
Clade 164
denticles C2p (88): absent → present
Clade 165
anterior ventral loop SD (56): absent → present
apex C2 (83): apical → median or basal
Clade 173
ratio PME/PLE (16): PME = PLE → PME < PLE
shape relic C1 (93): thin, rounded → conical
Clade 174
apical margin tegulum extended (55): absent → present
canal on C2 (84): present → <i>Gayenna</i> type

1♂ (AMNH). **BOLIVIA: La Paz:** La Paz, Unduavi to Coroico, yungas, 2500–3200 m, 18–22.XI.1984, L. Peña, 1♀ (AMNH).

TRIBE GAYENNINI, NEW RANK

Table 18

TYPE GENUS: *Gayenna* Nicolet, 1849.

NOTE: Gayennini is equivalent to the “*Gayenna-Oxysoma* group” of Kochalka (1980: 36) and Ramírez (1995b: 72).

DIAGNOSIS: Distinguished from Amaurobioidini and *Josa* by having an anterior epigynal pouch, spherical spermathecae well differentiated from the relatively slender cop-

ulatory ducts, and a primary conductor being vestigial or absent.

DESCRIPTION: Posterior eye row procurved or straight. Chelicerae usually with two teeth on retromargin. Male palp without RTA. Cymbial conductor narrow (fig. 61). Primary conductor reduced to small sclerite, hidden between distal sclerites or absent. Secondary conductor well developed, canal of variable shape (absent in some groups). Median apophysis slender, tip hooked. Paramedian apophysis with distinct, elongate cusp. Embolus with short, simple basal process, formed by extension of narrow sclerotized stripe, partially bordered by membranous areas. Epigyne with anterior pouch on median field, lateral lobes usually separate but contiguous or fused to each other in some groups. Spermathecae spherical, outline and lumen well differentiated from those of copulatory ducts.

DISTRIBUTION: Mainly South America, but *Arachosia* extending also to Central and North America. *Sanogasta maculatipes* probably introduced to Eastern Island.

COMPOSITION: Eleven genera, two of them newly proposed here: *Arachosia* O.P.-Cambridge, *Araiya*, n. gen., *Gayenna* Nicolet, *Gayennoides*, n. gen., *Monapia* Simon, *Oxysoma* Nicolet, *Phidyle* Simon (here removed from the synonymy of *Oxysoma*), *Philisca* Simon, *Sanogasta* Mello-Leitão, *Tasata* Simon, and *Tomopisthes* Simon.

NOMINA DUBIA: The following species belong to Gayennini, but cannot be assigned with certainty to a genus: *Clubiona albiventris* Nicolet, 1849 (immature presumably holotype in MHNP 4225, examined); *Clubiona gibbosa* Nicolet, 1849 (two immature syntypes in MHNP 4233, examined); *Clubiona lepida* Nicolet, 1849 (small immature presumably holotype in MHNP 4228, examined); *Clubiona puella* Nicolet, 1849 (immature presumably holotype in MHNP 4229, examined); *Clubiona pulchella* Nicolet, 1849 (two immatures syntypes in MHNP 4236, examined).

GAYENNA NICOLET

Table 19

Gayenna Nicolet, 1849: 450 (type species by monotypy *Gayenna americana* Nicolet, 1849). Simon, 1884 and 1887: E24, E26, 1897a: 91,

TABLE 19
Autapomorphies of *Gayenna americana*

dark ventral stripe (1): absent → present
ocular area black (9): absent → present
anterior eye row (11): straight → procurved
posterior eye row strongly procurved (13): absent → present
ratio AME/ALE (15): AME < ALE → AME ≥ ALE
sclerotized triangle to MA (63): absent → present
wide membrane separating C2 (80): absent → present
spine metatarsus I, p 1-x (142): absent → present
spine metatarsus I, r 1-x (143): absent → present
spine metatarsus II, d p1ap (156): absent → present

94, 96, 98–99. Keyserling, 1891: 83, 137. F.O.P.-Cambridge, 1900: 94, 107. Tullgren, 1901: 230, 1902: 58. Banks, 1905: 307, 1907: 723 (*Gavenna lapsus*). Merian, 1913: 76. Mello-Leitão, 1925: 456. Kochalka, 1980: 98–100. Ramírez, 1995a: 1, 1997: 177. Ramírez and Kochalka, 1993: 164.

Mezenia Simon, 1897a: 92, 96, 98, 101. Tullgren, 1902: 67. Bonnet, 1957: 2828.

Mezenina Strand, 1932: 141 (new name for *Mezenia* Simon, 1897, preoccupied by Stuckenberg, 1895). Synonymized by Ramírez and Kochalka, 1993: 164.

DIAGNOSIS: The single known species is easily distinguished from all other Amaurobioidinae by having a characteristic abdominal pattern (fig. 62A) and by the anterior median eyes being much larger than the lateral ones.

DESCRIPTION: See Ramírez and Kochalka (1993: 164). Additional data: posterior eye row procurved. Chelicerae with three teeth on promargin, two on retromargin. Male palp with short tibia. Copulatory bulb (fig. 63): embolus with basal process flattened, associated with distal membranous area. Paramedian apophysis thick, apex bifid, with retrolateral, short, curved cusp, small pointed prolateral cusp. Secondary conductor striated transversely-obliquely, well separated from anterior margin of tegulum by membranous area; retrolateral portion with basal prong; tip of prolateral portion elongate, acute; canal deep. Primary conductor thick, blunt, heavily sclerotized. Epigyne with lateral lobes close to each other, median field very narrow, separated from lateral lobes by shallow sutures. Lateral lobes elevated at sides of median pouch. Copulatory ducts long.

COMPOSITION: Only the type species.

TYPES NOT EXAMINED: *Gayenna brasiliensis* Roewer, 1951 (replacement name for *Gayenna alticola* Mello-Leitão, 1926, perhaps in MNRJ, not found). *Gayenna chrysophylla* Mello-Leitão, 1926 (male and female syntypes not examined, perhaps in MNRJ, not found): a schematic illustration of the epigyne (Mello-Leitão, 1926: fig. 4) suggests that it may belong in *Sanogasta* or *Arachosia*. *Gayenna ignava* Banks, 1898 (type originally in CAS, lost, C. Griswold, personal commun.; most probably Anyphaeninae) and *Gayenna orizaba* Banks, 1898 (same as *G. ignava*).

Gayenna americana Nicolet

Figures 12, 13E–G, 16, 17, 62, 63, 68A–C

Gayenna americana Nicolet, 1849: 450. Ramírez and Kochalka, 1993: 164. Ramírez, 1995a: 366, 1997: 177.

Mezenia dorsalis Simon, 1897a: 101, 1904: 103; Tullgren, 1902: 103; Merian, 1913: 13.

Mezenina dorsalis: Strand, 1932:141.

DIAGNOSIS: See generic diagnosis.

DESCRIPTION: See Ramírez and Kochalka (1993: 164) and generic description.

VARIABILITY: Female spines: IV, tibia v p1-p1-2 or p1-2-2; metatarsus v 2-p1-2 or 2-2-2, p d1-1-1 or 0-d1-1, r d1-1-1. Male spines: III, tibia v p1-2-2.

DISTRIBUTION: Forests in southern Argentina and Chile.

NEW RECORDS: **ARGENTINA:** Neuquén: Puerto Blest, 7–20.I.2000, L. Lopardo and A. Quaglino, 15 immatures (MACN-Ar). **CHILE:** **Región IV (Coquimbo): Choapa:** Los Vilos, Cariloleu, 11.X.1994, L. Peña, 1♂ (AMNH). **Región VII (Maule): Talca:** Alto de Vilches, 17–24.X.1964, L. Peña, 3♂ 3 immatures (MCZ); elev. 1180 m, 35°36'S, 71°04'W, 14–15.XI.1993, N. Platnick, K. Cately, M. Ramírez, T. Allen, 5♂ 2♀ (AMNH), 3♂ (MACN-Ar), 2♂ (MHNS); Parque Gil de Vilches, 7–8.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH). **Cauquenes:** Tregualemu, 520 m, 6–7.XI.1993, L. Peña and A. Ugarte, 1♀ (AMNH). **Linares:** Bulileo, Parral, 5–8.XII.1990, L. Peña, 1♂ (AMNH); Fundo Malcho, Andes en Parral, 11–20.XI.1964, L. Peña, 7♂ 5♀ 3 immatures (MCZ), 10–11.XI.1993, L. Peña, 1♂

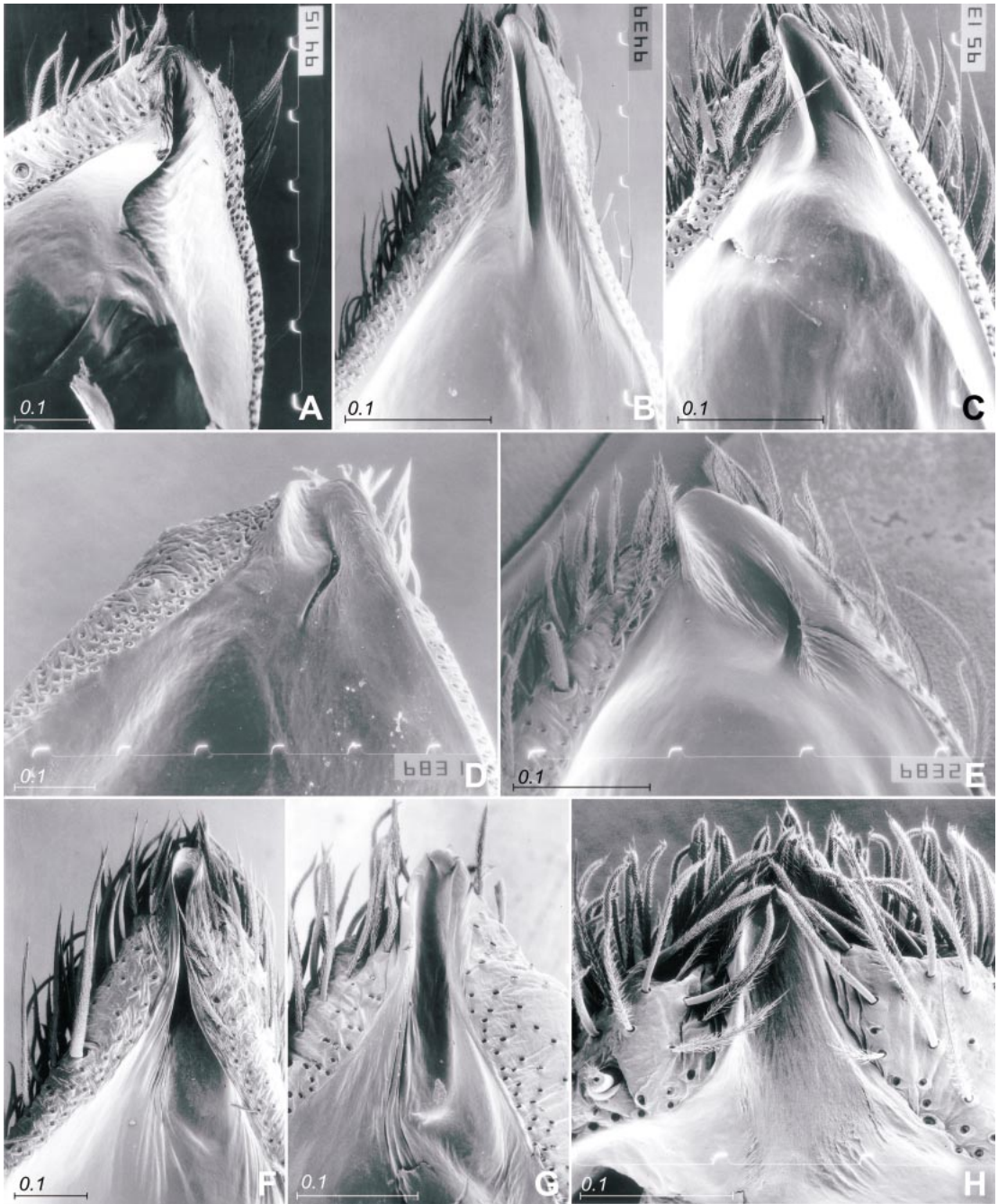


Fig. 61. Tip of cymbium of Gayennini, showing cymbial conductor, ventral view. **A.** *Arachosia praesignis* (Keyserling) (Buenos Aires, Hudson). **B.** *Sanogasta maculatipes* (Keyserling) (Buenos Aires, Atucha). **C.** *Sanogasta maculosa* (Nicolet) (Chubut, Lago Futalaufquen). **D.** *Sanogasta backhauseni* (Simon) (Santa Cruz, Calafate). **E.** *Sanogasta x-signata* (Keyserling) (Santa Fe, Las Gamas). **F.** *Oxysoma punctatum* Nicolet (Llanquihue, Alerce Andino). **G.** *Tasata parcepunctata* Simon (Buenos Aires, Martín García). **H.** *Philisca huapi*, n. sp. (Neuquén, Ortiz Basualdo).



Fig. 62. *Gayenna americana* (Nicolet). **A.** Male (Osorno, Puyehue, photo MJR 1415). **B.** Female retreat (Chiloé, Chepu, photo MJR 463).

(AMNH). **Región VIII (Biobío): Ñuble:** Las Trancas, 1–10.XII.65, L. Peña, 4♂ 1 immature (MCZ); Punta El Zorro, 20.XII.1992, T. Cekalovic, 1♂ (AMNH). **Concepción:** Cerro Caracol, Concepción, elev. 200 m, 36°51'S, 73°02'W, 17.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH); Estero Nonguén, 10.II.1996, 1♂, 5.X.1996, 1♂ 1♀, T. Cekalovic (AMNH); Fundo El Manzano, 7.XI.1992, 2♂ 2♀, 8.XI.1992, 1♂, T. Cekalovic (AMNH); Periquillo, 22.XI.1992, 1♂ 2♀ 2 immatures, 7.X.1994, 1♀, 6.XI.1994, 1♀, T. Cekalovic (AMNH). **Biobío:** Alto Caledonia, 42 km SE Mulchen, 14.II.1992, M.

Ramírez, N. Platnick, P. Goloboff, 1♀ (MACN-Ar). **Arauco:** 2 km S Cruce Camino Colicó Norte, 20.X.1996, T. Cekalovic, 1♂ (AMNH); 10 km N Curanilahue, 21.XI.1992, T. Cekalovic, 1♀ (AMNH); Isla Mocha, Quebrada La Hacienda, Sendero Travesía, 3.5 km faro Torrecillas, 16.I.1995, T. and S. Cekalovic, 1♀ (AMNH). **Región IX: Mallico:** Monumento Natural Contulmo, 12.I.1989, M. Ramírez, 5#h, 1♂ (MACN-Ar, photo MJR 42, 43 R2), 19–21.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1♀ (MHNS); Pata de Gallina, S of Contulmo, 5.I.2001, T. Cekalovic, 1♀ (AMNH). **Cautín:** Monte Verde, Cavahue, 31.I.1993, L. Peña, 1♀ (AMNH); Conguillio Natl. Park, 23.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH); 14 km N Villarrica, elev. 250 m, 39°10'S, 72°12'W, 20.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH). **Región X (Los Lagos): Valdivia:** Las Lajas, W La Unión, 19–20.XI.1990, L. Peña, 2♂ 1♀ (AMNH); Parque Oncol, road intersection from Renoval Canelos to Los Tepuales, 12.II.2001, T. Cekalovic, 1♀ (AMNH). **Osorno:** Puyehue Natl. Park, 10.III.1965, H. Levi, 3 immatures (MCZ); Termas de Puyehue, 14.III.1965, H. Levi, 4 immatures (MCZ); 12 km SE Aguas Calientes, P. N. Puyehue, elev. 700 m, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ 1♀ (AMNH), 3♂ (MACN-Ar); Derrumbes road, Aguas Calientes, P. N. Puyehue, elev. 480 m, 40°44'S, 72°18'W, 22.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (MHNS, photo MJR 1415); Aguas Calientes, 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 4♂ 4♀ 9 immatures (MACN-Ar), 2♂ 3♀ (MHNS); Bosque del Volcán Osorno, 6 km N Ensenada, 250 m, 17.III.1965, H. Levi, 2 immatures (MCZ, photographed). **Llanquihue:** Chamisa, 13.XII.1968, L. Peña, 1♀ (MCZ); Correntoso, XII.1968, L. Peña, 1♀ (MCZ); El Pangal, Correntoso, 15.XII.1958, L. Peña, 1♀ (MCZ); Alerce Andino Natl. Park, elev. 100 m, 41°35'S, 72°41'W, 23.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH), 1♂ (MACN-Ar). **Chiloé:** Isla de Chiloé, Chepu, 21.II.1992, M. Ramírez, P. Goloboff, N. Platnick, 3♀ (MACN-Ar), Puente La Caldera,

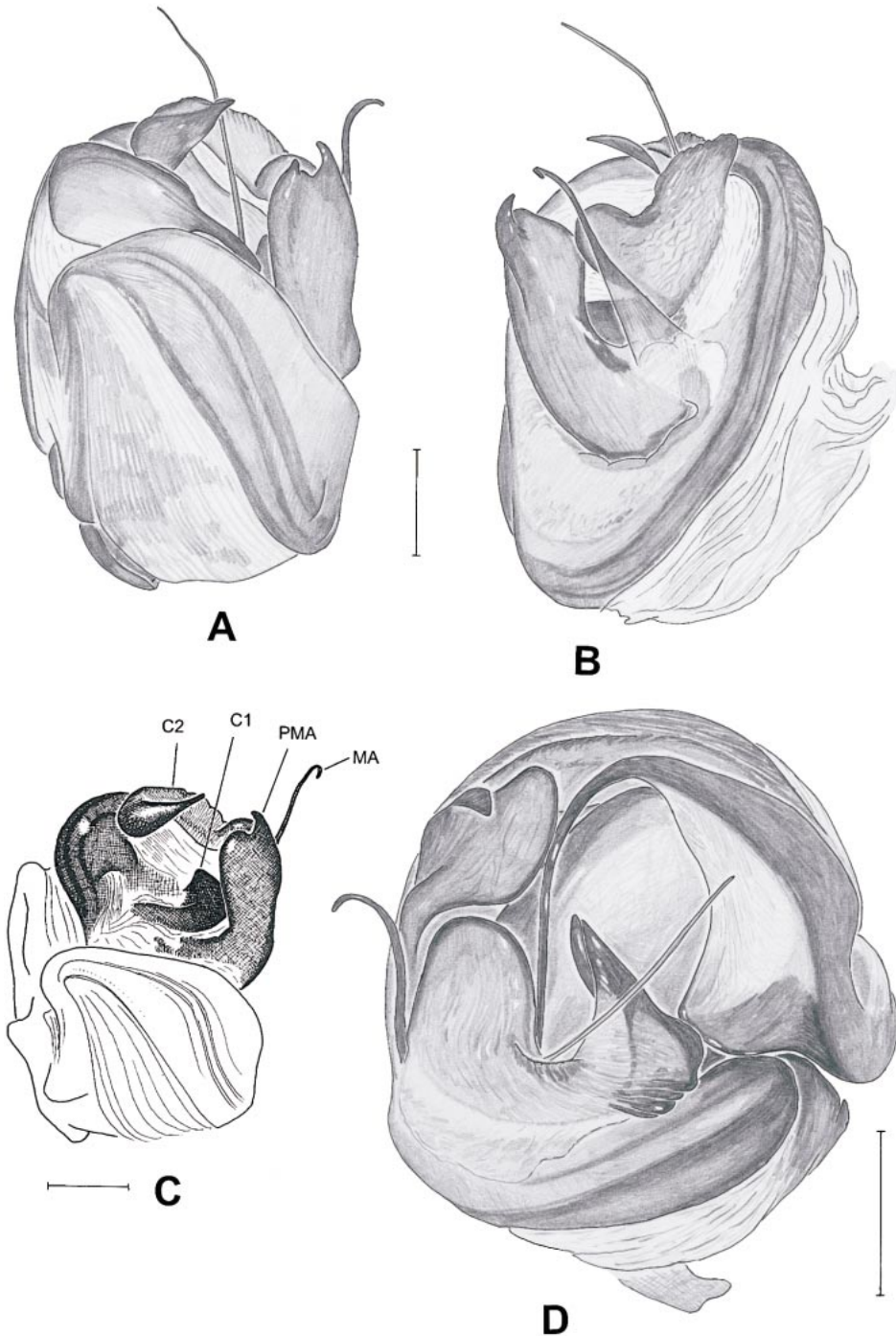


Fig. 63. *Gayenna americana* (Nicolet), male copulatory bulb. **A**. Ventral view (Osorno, Antillanca). **B**. Same, retrolateral view. **C**. Ventral view, partially expanded, embolus removed (Neuquén, Pucará, II.1974). **D**. Apical view (Malleco, Contulmo, 12.I.1989). Scale bars = 0.2 mm. (C1 = primary conductor; C2 = secondary conductor; MA = median apophysis; PMA = paramedian apophysis.)

TABLE 20

Synapomorphies of *Gayennoides* and Terminals*Gayennoides* (clade 123)

cymbial retrolateral basal notch (52): absent → present

G. molles

ocular area black (9): absent → present

G. losvilos

anterior eye row (11): straight → recurved

number retromarginal teeth (20): two → three

size retromarginal teeth (21): regular → small denticles

Position of APmf (105): advanced → close

6.II.1994, T. Cekalovic, 1 ♀ (AMNH); Isla Quinchao, Quetro, 19.II.1997, T. Cekalovic, 1 ♀ (AMNH).

***GAYENNOIDES*, NEW GENUS**

Table 20

TYPE SPECIES: *Gayennoides molles*, new species.

ETYMOLOGY: The generic name is a derivative of the close relative *Gayenna*; gender is masculine.

DIAGNOSIS: Males of *Gayennoides* resemble those of *Gayenna*, *Sanogasta*, and *Arachosia* in having a long, deep canal on the secondary conductor, arising under the paramedian apophysis, but the genus can be distinguished by having a basal notch on the retrolateral margin of cymbium (figs. 65E, 66D).

DESCRIPTION: Carapace narrowed in front, posterior eye row slightly procurved, ocular area not projecting. Chelicerae unmodified, slightly longer in males, with three teeth on promargin, two or three on retromargin. Anterior leg spines unmodified. Male palp with elongate tibia. Cymbium with basal notch on retrolateral margin. Anterior margin of tegulum compressed over secondary conductor. Embolus with basal process flattened, separated by ample ventral membranous area. Paramedian apophysis complex, heavily sclerotized, with one retrolateral cusp, additional prolateral cusp or ridges. Secondary conductor large, striated transversely-obliquely, not fused to anterior margin of tegulum; retrolateral portion with basal prong, apex of prolateral portion prominent, acute; canal very deep, arising under paramedian

apophysis. Primary conductor superficial. Epigyne with lateral lobes separate, median field elevated, with ample anterior pouch. Copulatory ducts heavily sclerotized, relatively thick.

DISTRIBUTION: Central Chile.

COMPOSITION: Two species newly described below.

***Gayennoides molles*, new species**

Figures 64B, 65

TYPES: Female holotype and male paratype from Chile, Región V, Petorca province, Los Molles, 2 m, under succulent rock cover along coast, ca. 32°14'S, 71°30'W, 9.I.1985, N. Platnick, O. Francke, deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Similar to *G. losvilos*, but distinguished by having only two teeth on the cheliceral retromargin, and a larger, rectangular epigynal median field.

FEMALE (holotype): Total length 10.65. Carapace length 4.05, width 2.93, wider on legs II–III. Length of tibia/metatarsus: I, 2.80/2.40; II, 2.63/2.33; III, 2.10/2.27; IV, 2.97/3.46. Palpal tarsus length 1.25. Chelicerae unmodified, with two teeth on retromargin. Sternum length 2.10, width 1.60. Spines: leg I, femur d 1–1–1, p 2ap; tibia v 2–2–2; metatarsus v 2bas. II, femur d 1–1–1, p 0-d1-d1; tibia v r1–2–2, p 0–1; metatarsus v 2bas. III, femur d 1–1–1, p and r 0-d1-d1; patella r 1; tibia v p1-p1–2, p 1-d1-1-0, r d1–1, d r1bas; metatarsus v 2–2–2, p and r d1–1–1, d 0-p1–2. IV, femur d 1–1–1, p 0-d1-d1, r d1ap; patella r 1; tibia v p1–2–2, p and r 1-d1-1-0, d r1bas; metatarsus = III. Abdomen length 5.72, width 3.05, spiracle–epigastrium 2.57, spiracle–spinnerets 0.77. Color (fig. 65A): carapace reddish brown, with lateral dark stripes. Chelicerae reddish brown. Legs pale grayish, with very dark dots at dorsal and lateral spine bases, some spots on patellae and tibiae. Sternum grayish, with tenuous dark spots in front of coxae I–III, median dark spot. Abdomen yellow with dark spots, anterior half of cardiac area gray, two large spots at insertions of posterior dorsoventral muscles, several median spots extending extending to anal tubercle. Venter

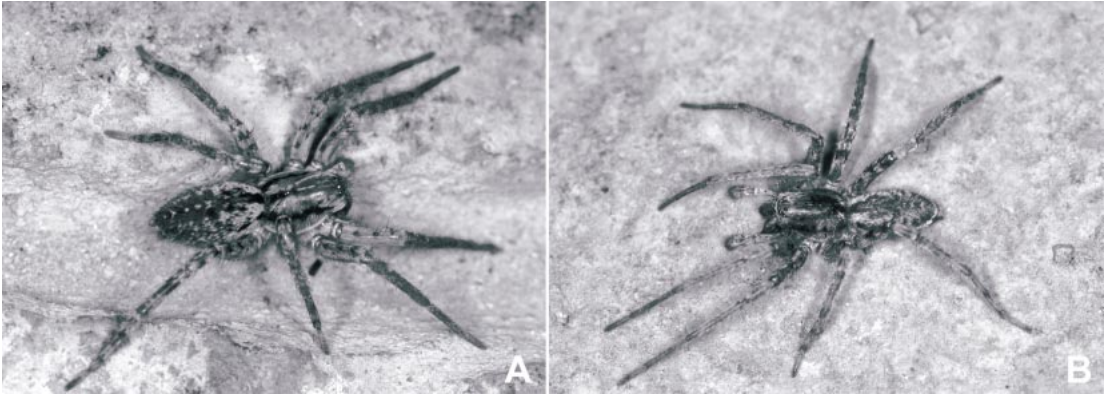


Fig. 64. *Gayennoides* spp. **A.** *G. losvilos*, sp. n., female (Elqui, Cruz Grande, photo MJR 1330). **B.** *G. molles*, sp. n., male (Petorca, Los Molles, photo MJR 1331).

pale with a few dark dots. Epigyne (fig. 65F, G): median field rectangular. Copulatory ducts joining at posterior margin.

MALE (paratype): Total length 7.60. Carapace length 3.75, width 2.80. Length of tibia/metatarsus: I, 3.85/3.35; II, 3.13/2.90; III, 2.30/2.50; IV, 3.17/3.53. Sternum length 2.00, width 1.57. Chelicerae longer than those of female, median promarginal tooth quite larger, closer to apical tooth. Spines as in female, except: leg **II**, metatarsus p 1–0. **III**, tibia v p1–2–2 or p1–p1–2. Abdomen length 4.40, width 2.00, spiracle–epigastrium 1.57, spiracle–spinnerets 0.60. Color as in female (fig. 64B). Palp (fig. 65B–E): tibia long, width/length 0.55, cymbium with conspicuous notch at retrolateral basal margin. Copulatory bulb: paramedian apophysis with blunt cusp, two ridges at sides.

NATURAL HISTORY: Many specimens collected under the Crassulaceae lining stones near seashore.

DISTRIBUTION: Chilean coast, from Antofagasta to Quillota provinces. Also collected in two noncoastal localities, Cuesta La Dormida and Cuesta El Melón, in Region V. This apparently disjunct distribution is similar to that of *Acanthoceto ladormida*.

OTHER MATERIAL EXAMINED: **CHILE: Región II (Antofagasta): Antofagasta:** Caleta Hueso, W of Taltal, 28.I.1941, Junius Bird, 1♀ 1 immature (AMNH); 4 km N Paposo, 20–50 m, 11.X.1992, N. Platnick, P. Goloboff, K. Catley, 9♀ 2 immatures (AMNH); Cerro Moreno, 900 m, 18.IV.1992, H. Lar-

rain, 1♀ (AMNH); 6 km E Paposo, 480 m, 12.X.1992, N. Platnick, P. Goloboff, K. Catley, 2♂ 13♀ (AMNH), 520 m, 25°01'S, 70°27'W, N. Platnick, K. Catley, R. Calderón, R.T. Allen, 1♀ (AMNH); Paposo, 54 km N Taltal, II.1957, W. Toodt, 1♀ (MHNS 532); Cerro Moreno, 900 m, 8.IV.1992, H. Larrain, 1♀ (AMNH); Taltal, La Quinta (bajo piedras), 5–7.X.1983, M. Elgueta, 1♀ (MHNS 766). **Región III (Atacama): Chañaral:** N Chañaral, 10.X.1992, L. Peña, 2♂ 1 immature (AMNH); Isla de Chañaral, ca. 4 km from coast, 30.X.1980, L. Peña, 1♂ (AMNH); Pan de Azúcar, 10–12.X.1992, L. Peña, 1♀ (AMNH), 12.X.1992, L. Peña, 2♂ 1♀ 1 immature (AMNH). **Copiapó:** Copiapó, 6.V.1964, G. Mann F, 1♀ (MHNS); Puerto Viejo, 15–16.X.1992, L. Peña, 1♂ 2♀ 4 immatures (AMNH), 17.IV.1980, L. Peña, 1♀ (AMNH); Puerto Viejo, S La Caldera, 15–16.X.1992, L. Peña, 3♂ 1♀ 2 immatures (AMNH); E of Puerto Viejo, 9–10.X.1980, L. Peña, 1♀ 2 immatures (AMNH). **Región IV (Coquimbo): Elqui:** Choros Bajos, 21.X.1992, L. Peña, 1♀ (AMNH); 6 km S Cruz Grande, 20 m, 7.X.1992, N. Platnick, P. Goloboff, K. Catley, 7♀ (AMNH); 6.X.1992, N. Platnick, P. Goloboff, K. Catley, 5♀ (AMNH); 9 km S Cruz Grande, beach, 5 m, 11.XI.1993, 29°29'S, 71°19'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ 1 immature (AMNH), 1♂ 1 immature (MACN-Ar); 16 km S Cruz Grande, 140 m, 7.X.1992, N. Platnick, P. Goloboff, K. Catley, 3♀ (AMNH); Puerto Pichidangui, Isla

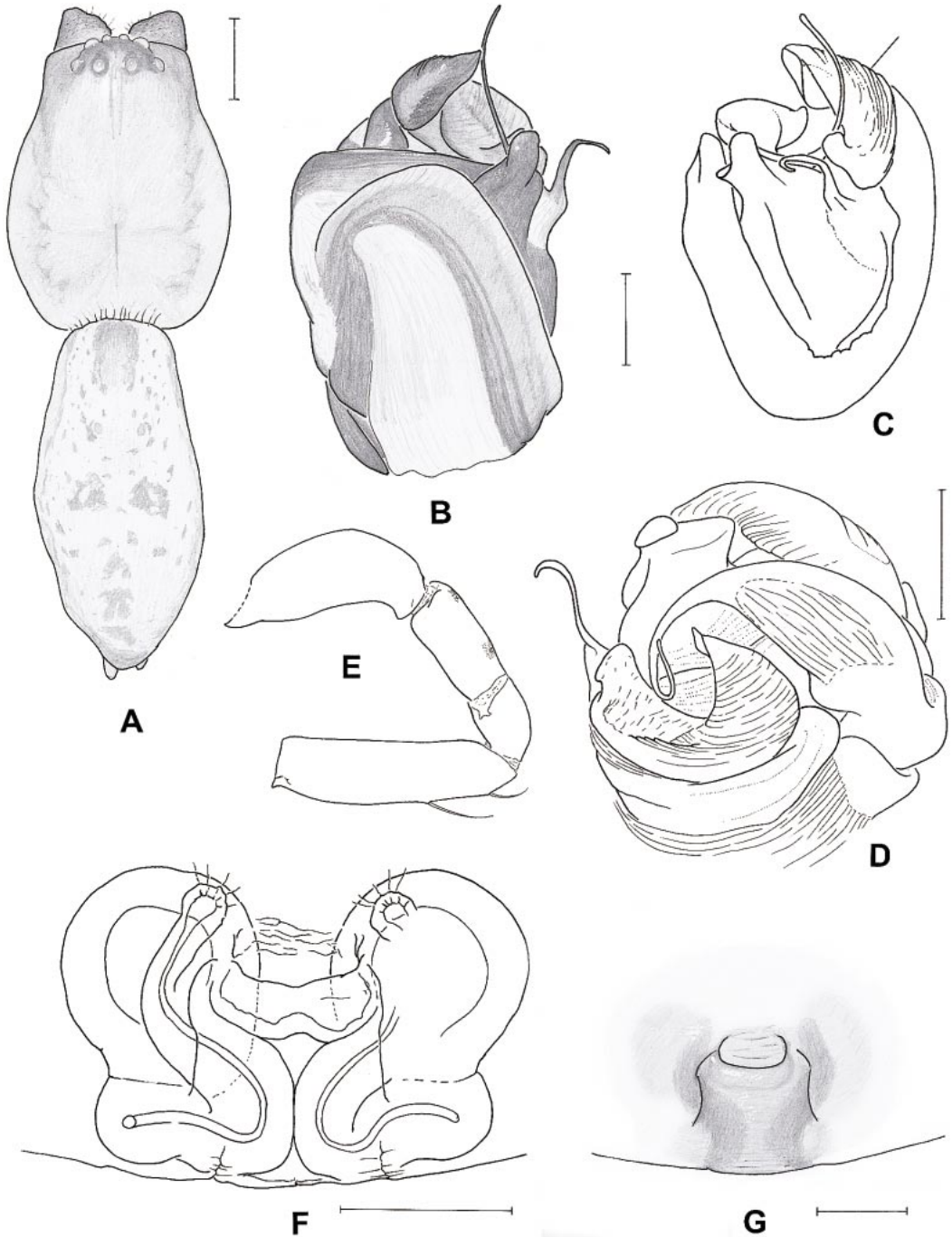


Fig. 65. *Gayennoides molles*, n. sp., female holotype, male paratype. **A**. Male. **B**. Male copulatory bulb, ventral view. **C**. Same, retrolateral view. **D**. Same, apical view. **E**. Male palp, retrolateral view. **F**. Cleared epigyne, ventral view. **G**. Epigyne, ventral view. Scale bars = A, 1 mm; B–G, 0.2 mm.

de los Locos, 19.VII.1961, R. Donoso, A.F. Archer, 1♀ (AMNH); La Serena, 150 m, coastal scrub matorral, 4.XI.1981, N. Platnick, T. Schuh, 1♀ (AMNH); 19 km N La Serena, 150 m, coastal scrub matorral, 1.XI.1980, N. Platnick, T. Schuh, 1♀ (AMNH). **Limarí:** Fray Jorge Natl. Park, 400 m, 3.X.1992, N. Platnick, P. Goloboff, K. Catley, 1♀ (AMNH); Termas de Socos, 300 m, 2.X.1992, N. Platnick, P. Goloboff, K. Catley, 1♀ (AMNH). **Choapa:** Huentelauquén, coastal town, 27.XII.1980, L. Peña, 1♂ 1♀ (AMNH), 3.X.1990, L. Peña, 1♀ (AMNH); 20 km N La Serena (Rt. 5 km 491), 120 m, 7.X.1992, N. Platnick, P. Goloboff, K. Catley, 2♂ 4♀ (AMNH); Los Vilos, 25.IX.1966, E.I. Schlinger, 1♂ (CAS); 5 km N Los Vilos, 3 m, under succulent rock cover along cove, 5.I.1985, N. Platnick, O. Francke, 3♀ 5 immatures (AMNH); 19 km N Los Vilos, Rt. 5, km 244, 5 m, 9.XI.1993, 31°45'S, 71°31'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ 1♀ (AMNH); Isla de Los Locos, Pichidangui, 29.IV.1961, R. Donoso, 1♀ 1 immature (AMNH). **Coquimbo:** Caleta Oscuro, 31°26'S, 71°37'W, 23.IX.1966, E.I. Schlinger, 1♂ 8♀ 1 immature (CAS), 2.X.1983, E. Maury, 3♀ (MACN-Ar); 5 km S Coquimbo, 30 m, coastal scrub matorral, 31.X.1981, N. Platnick, T. Schuh, 1♂ 1 immature (AMNH); Corral de Julio, Quebrada La Madera, 3.X.1972, N. Figueroa, 1♀ (UC); La Herradura, 80 m, 3.X.1992, N. Platnick, P. Goloboff, K. Catley, 1♀ (AMNH). **Región V (Valparaíso): Petorca:** Los Molles, 3.VII.1975, R. Pérez, 1♂ (UC); Los Molles, Rt. 5, km 188, elev. 10 m, 9.XI.1993, 32°14'S, 71°30'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ 2♀ (AMNH), 2♂ 1♀ 1 immature (MACN-Ar), 1♂ 1♀ (MHNS, photos MJR 1331–1332), 2 m, under succulent rock cover along coast, 9.I.1985, N. Platnick, O. Francke, 5♀ 10 immatures (AMNH); 13 km S Los Molles, 32°12'S, 71°27'W, beach dunes, 22.IX.1966, E.I. Schlinger, 4♀ 2 immatures, 1♀ (CAS); Quebrada del Chivato, 1 km S Los Molles, 10 m, 2.X.1992, N. Platnick, P. Goloboff, K. Catley, 5♀ 3 immatures (AMNH), 30.X.1988, P. Goloboff, E. Maury, C. Szumik, 1♀ 2 immatures (MACN-Ar); Quebrada Huaquén, Pichicuy, 10 m, 2.X.1992, N. Platnick, P. Go-

loboff, K. Catley, 1♂ 4♀ (AMNH); Cuesta El Melón, 430 m, 8.XI.1993, 32°37'S, 71°14'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH). **Quillota:** Cuesta La Dormida (east side), 33°04'S, 71°02'W, 750–1000 m, 20.IX.1966, E.I. Schlinger, 1♂ 2♀ (CAS). *No Locality:* Loc. 280 (presumably from Chile), L. Peña, 1♀ (IRSN IG 19736).

Gayennoides losvilos, new species

Figures 64A, 66

TYPES: Female holotype from Chile, Región IV, Choapa province, 5 km N Los Vilos, 3 m, under succulent rock cover along cove, ca. 31°55'S, 71°31'W, 5.I.1985, N. Platnick, O. Francke, deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Similar to *G. molles*, but distinguished by having three teeth on the cheliceral retromargin, the male palpal cymbium with a marked retrolateral notch, and a small, procurved epigynal median field.

FEMALE (holotype): Total length 13.30. Carapace length 5.72, width 4.00, wider on legs II–III. Length of tibia/metatarsus: I, 3.72/3.13; II, 3.46/3.00; III, 2.77/2.90; IV, 3.86/4.40. Palpal tarsus length 1.67. Chelicerae unmodified, with three teeth on retromargin. Sternum length 2.93, width 2.07. Spines: leg I, femur d 1–1–1, p 2ap; tibia v p1–2–2; metatarsus v 2bas. II, femur d 1–1–1, p 0-d1-d1, r d1; tibia v r1–2–2, p 0–1; metatarsus v 2bas. III, femur d 1–1–1, p and r 0-d1-d1; patella r 1; tibia v p1–2–2, p 1-d1-1-0, r d1–1, d r1bas; metatarsus v 2–2–2, p and r d1–1–1, d 0-p1–2. IV, femur d 1–1–1, p 0-d1-d1, r d1ap; patella r 1; tibia v p1–2–2, p and r 1-d1-1-0, d r1bas; metatarsus = III. Abdomen length 7.70, width 4.40, spiracle–epigastrium 3.70, spiracle–spinnerets 1.45. Color (fig. 64A): carapace brown, reddish to cephalic area, with lateral diffuse dark bands. Chelicerae reddish brown. Legs pale grayish with dark dots at dorsal and lateral spine bases, some spots on patellae and tibiae. Sternum grayish, slightly darker on margins. Abdomen pale gray with dark spots, anterior third of cardiac area gray, posterior third pale, rest of dorsum with diffuse pattern of dark spots. Venter pale with small spots, more concentrated on median stripe. Epigyne

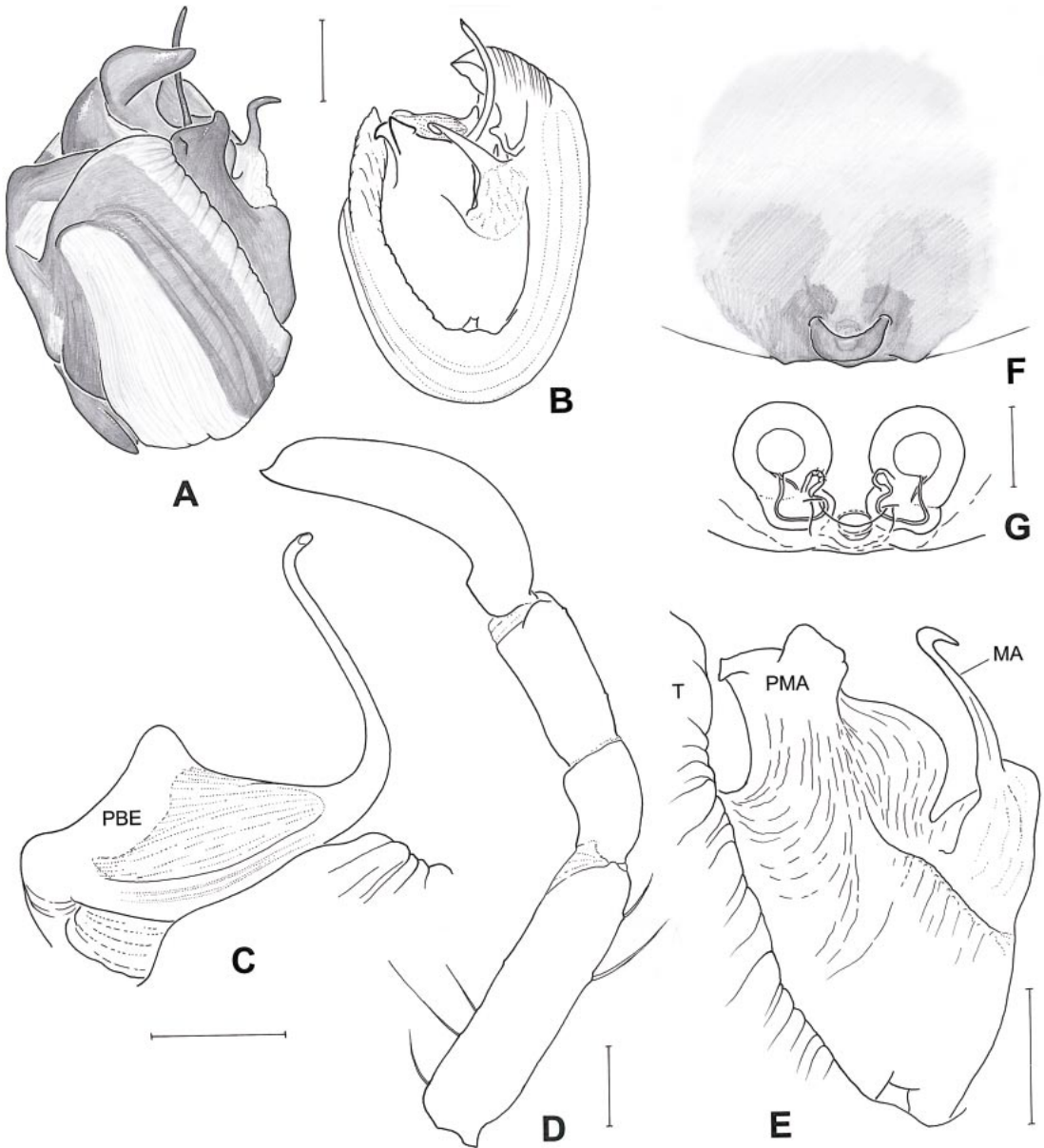


Fig. 66. *Gayennoides losvilos*, n. sp., male from Carrizal Bajo, Huasco, female holotype. **A.** Male copulatory bulb, ventral view. **B.** Same, retrolateral view. **C.** Detail of embolus, ventral-apical view. **D.** Male palp, retrolateral view. **E.** Median and paramedian apophyses, retrolateral view. **F.** Epigyne, ventral view. **G.** Same, cleared. Scale bars = A, B, F, G, 0.25 mm; C, E, 0.2 mm; D, 0.5 mm. (MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis; T = tegulum.)

(fig. 66F, G): median field elevated, small, short, with ample anterior pouch of hemispheric lumen; two diverging ridges anterior of and at sides of anterior pouch. Copulatory ducts short.

MALE (Carrizal Bajo, not type): Total length 11.15. Carapace length 4.50, width 3.50. Length of tibia/metatarsus: I, 4.52/4.00; II, 3.86/3.30; III, 2.83/3.00; IV, regenerated. Chelicerae longer than those of female, me-

dian promarginal tooth quite larger, closer to apical tooth. Sternum length 2.87, width 1.83. Spines as in female, except: leg **II**, femur p 0-p1-2; tibia v 0-2-2. **III**, tibia v p1-p1-2 or p1-2-2. **IV**, right absent, left regenerated, with abnormal spines. Abdomen length 6.12, width 3.33, spiracle-epigastrium 2.90, spiracle-spinnerets 1.07. Color as in female. Palp (fig. 66A-E): tibia long, width/length 0.48, cymbium with conspicuous notch at retrolateral basal margin, slightly advanced compared to that of *G. molles*. Copulatory bulb: embolus with basal process conspicuous (fig. 66C). Paramedian apophysis with retrolateral cusp squared, prolateral cusp with ventral peak. Primary conductor low, triangular.

NATURAL HISTORY: Collected near seashore, under the Crassulaceae lining stones.

DISTRIBUTION: Known only from seashore of Chile, in Huasco, Choapa, and Elqui provinces.

OTHER MATERIAL EXAMINED: CHILE: Región III (Atacama): Huasco: N of Carrizal Bajo, 22.X.1980, L. Peña, 1♂ (AMNH). **Región IV (Coquimbo): Elqui:** 6 km S Cruz Grande, 20 m, beach, 5 m, 11.XI.1993, 29°29'S, 71°19'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH, photos MJR 1329-1330); 5 km N Los Vilos, 3 m, under succulent rock cover along cove, 5.I.1985, N. Platnick, O. Francke, 3♀ 1 immature (AMNH); 20 km N La Serena (Rt. 5 km 491), 120 m, 7.X.1992, N. Platnick, P. Goloboff, K. Catley, 2♀ (AMNH).

ARACHOSIA O.P.-CAMBRIDGE

Table 21

Arachosia O.P.-Cambridge, 1882: 425 (type species by monotypy *Arachosia anyphaenoides* O.P.-Cambridge, 1882). Keyserling, 1891: 83, 126. Simon, 1897a: 92, 94, 96, 98, 100. F.O.P.-Cambridge, 1900: 93. Mello-Leitão, 1922: 22. Ramírez, 1995a: 381, 1997: 178.

Samuza Keyserling, 1891: 83, 134 (type species *Samuza praesignis* Keyserling, 1891, designated by Petrunkevitch, 1928: 174). **NEW SYNONYMY.**

Abuzaida Keyserling, 1891: 83, 132 (type species *Abuzaida striata* Keyserling, 1891, designated by Simon, 1897a: 104). **NEW SYNONYMY.**

Eusamuza Mello-Leitão, 1915: 144 (type species by original designation *Samuza praesignis* Keyserling, 1891).

TABLE 21
**Synapomorphies of *Arachosia*
and Internal Clades**

Arachosia (clade 125)

posterior eye row strongly procurved (13): absent → present
scopulae posterior tibiae (34): absent → present
thick setae on ALS (37): absent → present
shape APmf (106): normal → transverse
lumen of APmf (107): simple → double
ducts AB (123): short → long

Clade 124

dark ventral stripe (1): absent → present
prolateral process on C2 (81): absent → *Arachosia* type

A. praesignis

no autapomorphies!

A. honesta

anterior eye row (11): straight → procurved
separation lateral eyes (14): up to one diameter → more than one diameter

A. bergi

ratio PME/PLE (16): PME < PLE → PME = PLE

Gayennina Gertsch, 1935: 21 (type species by monotypy *Gayennina britcheri* Gertsch, 1935). **NEW SYNONYMY.**

SYNONYMY: The type species of *Samuza* and *Abuzaida* are here considered typical members of *Arachosia*. *Gayennina britcheri* is a junior synonym of *Oxysoma cubana*, also transferred to *Arachosia* here. *Arachosia* corresponds well with the idea that previous authors had of *Oxysoma* (Simon, 1897a; Mello-Leitão, 1922; Barnes, 1953; Platnick, 1974).

NOTE: Mello-Leitão (1915) seemed to have committed a lapsus by creating the genus *Eusamuza* for *Samuza praesignis* Keyserling.

DIAGNOSIS: Easily distinguished from other Amaurobioidinae by having thick, erect setae on the anterior lateral spinneret bases (compare fig. 68A-F) and a tracheal spiracle relatively advanced. Only some *Philisca* have similar setae on the spinnerets, but they have a normal, deep anterior epigynal pouch (fig. 94E) instead of the transverse, more superficial pouch found in *Arachosia* (fig. 75C, D).

DESCRIPTION: Generally with flattened

body, partially covered by whitish hairs (fig. 67). Legs well scopulate, even on posterior tibiae. Carapace narrowed in front, posterior eye row strongly procurved. Males with smaller chelicerae, carapace narrower in front, wider behind, legs more spinose. Chelicerae with three teeth on promargin, generally two, occasionally three, on retromargin. Tracheal spiracle around midpoint between spinnerets and epigastric furrow, may be slightly advanced from midpoint, mostly in males. Base of anterior lateral spinnerets with thick erect setae. Male palp with short tibia, large cymbium. Embolus thin, basal process flattened, weakly sclerotized, associated membranous area folded. Paramedian apophysis simple, with small tip close to median apophysis (fig. 70). Secondary conductor large, fused to anterior dorsal margin of tegulum, with deep canal arising at base of paramedian apophysis. Primary conductor absent or reduced. Epigyne with anterior pouch transverse, M- or inverted U-shaped (fig. 69), with shallow or double lumen. Median field weakly sclerotized behind anterior pouch. Insertions of epigastric muscles depressed. Copulatory openings in deep depressions, close to epigastric furrow. Copulatory ducts long, slender, ducts of accessory bulbs long.

NOTE: Mello-Leitão (1922: 18–19) noted the thick, erect setae on the anterior lateral spinnerets of *Oxysoma polytrichium*, but believed these to be a diagnostic character of this species only, hence its name.

DISTRIBUTION: South and Central America, and Southwestern U.S.

COMPOSITION: In addition to the species detailed below: *Anyphaena oblonga* Keyserling, 1878 (female holotype from Mexico, Veracruz, in BMNH 1890.7.1.617, examined, new combination; see also Note under *Arachosia cubana*), *Arachosia albiventris* Mello-Leitão, 1922 (7 females and 8 immatures, probably syntypes, of two different *Arachosia* species, in MNRJ 674, examined), *Arachosia arachosia* Mello-Leitão, 1922 (male probably holotype, in MNRJ 675, should be 390, examined), *Arachosia freiburgensis* Keyserling, 1891 (male holotype in BMNH 1890.7.1.406, examined), *Arachosia mezenioides* Mello-Leitão, 1922 (two females, probably syntypes, in MNRJ 677,

should be 41, examined), *Arachosia minensis* (Mello-Leitão, 1926), *Arachosia puta* O.P.-Cambridge, 1892 (female holotype in BMNH 1901.3.3.325, examined), *Gayenna bonneti* Mello-Leitão, 1947 (female holotype in MNRJ, examined, new combination), *Gayenna duplovittata* Mello-Leitão, 1942 (male immature holotype in MLP 15580, examined, new combination), *Gayenna proseni* Mello-Leitão, 1944 (female probably holotype in MLP 15115, and female probably paratype in MNJR, examined, new combination), *Oxysoma bifasciatum* Mello-Leitão, 1922 (male holotype in MNRJ 662, examined, new combination), *Oxysoma dubium* Berland, 1913 (three penultimate syntypes [one male, two females], in MHNP, examined, new combination), *Oxysoma polytrichium* Mello-Leitão, 1922 (penultimate female holotype, pharate, in MZUSP 541 ex 721, examined, new combination). Many probable undescribed species similar to *A. bergi* or *A. cubana*, some may be intraspecific variants instead.

TYPE NOT EXAMINED: *Arachosia sulfurea* Mello-Leitão, 1922 (presumably in MNRJ, not found).

Arachosia anyphaenoides O.P.-Cambridge

Arachosia anyphaenoides O.P.-Cambridge, 1882: 426 (female holotype from Brazil, Amazonas, Prof. Trail coll., probably in BMNH, not found). Simon, 1897a: 101. Mello-Leitão, 1922: 22.

NOTE: I could not examine the type, but from the illustrations in the original description it is clear that this species is closely related to (and perhaps a senior synonym of) *A. honesta* Keyserling.

Arachosia praesignis (Keyserling), new combination

Figures 61A, 67A, 69B, 71, 72

Samuza praesignis Keyserling, 1891: 135 (female holotype from Brazil, state of Rio Grande do Sul, no specific locality, V. Ihering coll., in BMNH, examined).

Gayenna praesignis: Petrunkevitch, 1911: 485. Mello-Leitão, 1925: 457. Di Caporiacco, 1948: 678.

Eusamuza praesignis Mello-Leitão, 1915: 144 (see Note under *Arachosia*).

Tomopisthes tripunctatus Mello-Leitão, 1945: 265



Fig. 67. **A.** *Arachosia praesignis* (Keyserling), female (Buenos Aires, Capital, photo MJR 354). **B.** *Arachosia bergi* (Simon), male from Hudson (photo MJR 257).

(female holotype from Argentina, Corrientes province, Manantiales, no date, Apóstol, MLP 16595, examined). **NEW SYNONYMY.**

SYNONYMY: The holotypes of the species synonymized were compared; no relevant differences were found.

DIAGNOSIS: Distinguished from other *Arachosia* by the absence of a proateral projection on the male secondary conductor (fig. 71A), the narrow anterior epigynal pouch, and the characteristic course of the female copulatory ducts (fig. 71C).

FEMALE (holotype): Total length 6.65. Carapace length 2.67, width 2.00. Chelicerae with two teeth on retromargin. Length of tibia/metatarsus: I, 1.30/1.17; II, 1.28/1.18; III, 1.07/1.08; IV, 1.52/1.67. Spines: leg I, femur d 1-1-1, p 0-d1-(1d1), r 0-d1-d1; tibia v 2-2-2, d r1-1 bristles; metatarsus v 2bas. II, femur = I; tibia v 2-2-2, p 0-1, d r1-1 bristles; metatarsus = I. III, femur = I or p (2-

d1)ap; patella r d1; tibia v p1-2-2, p 1-d1-1, r d1-1, d r1-1; metatarsus v 2-0-2, p and r d1-d1-1, d 0-p1-2. IV, femur d 1-1-1, p (1-d1)ap, r d1ap; patella r d1; tibia v p1-2-2, p and r 1-d1-1, d r1-1; metatarsus v 2-2-2 or 2-r1-2, p and r d1-d1-1, d 0-p1-2. Abdomen length 4.12, width 2.43. Spiracle-epigastrium 1.50, spiracle-spinnerets 1.27. Color: type faded, anterior part of dorsal abdominal stripe remains. In fresh specimens (fig. 67A), pattern similar to that of male, but paler: lateral stripes on carapace narrow, on abdomen discontinuous; venter pale. Entire abdomen with white guanine reticulum. Legs yellow with brownish violet dots. Epigyne (figs. 69B, 71C): anterior pouch transverse, inverted U-shaped, with double lumen. Copulatory ducts long, thin, ducts of accessory bulbs long, parallel.

MALE (Pelotas): Total length 2.70. Carapace wide, globose, with thoracic groove de-

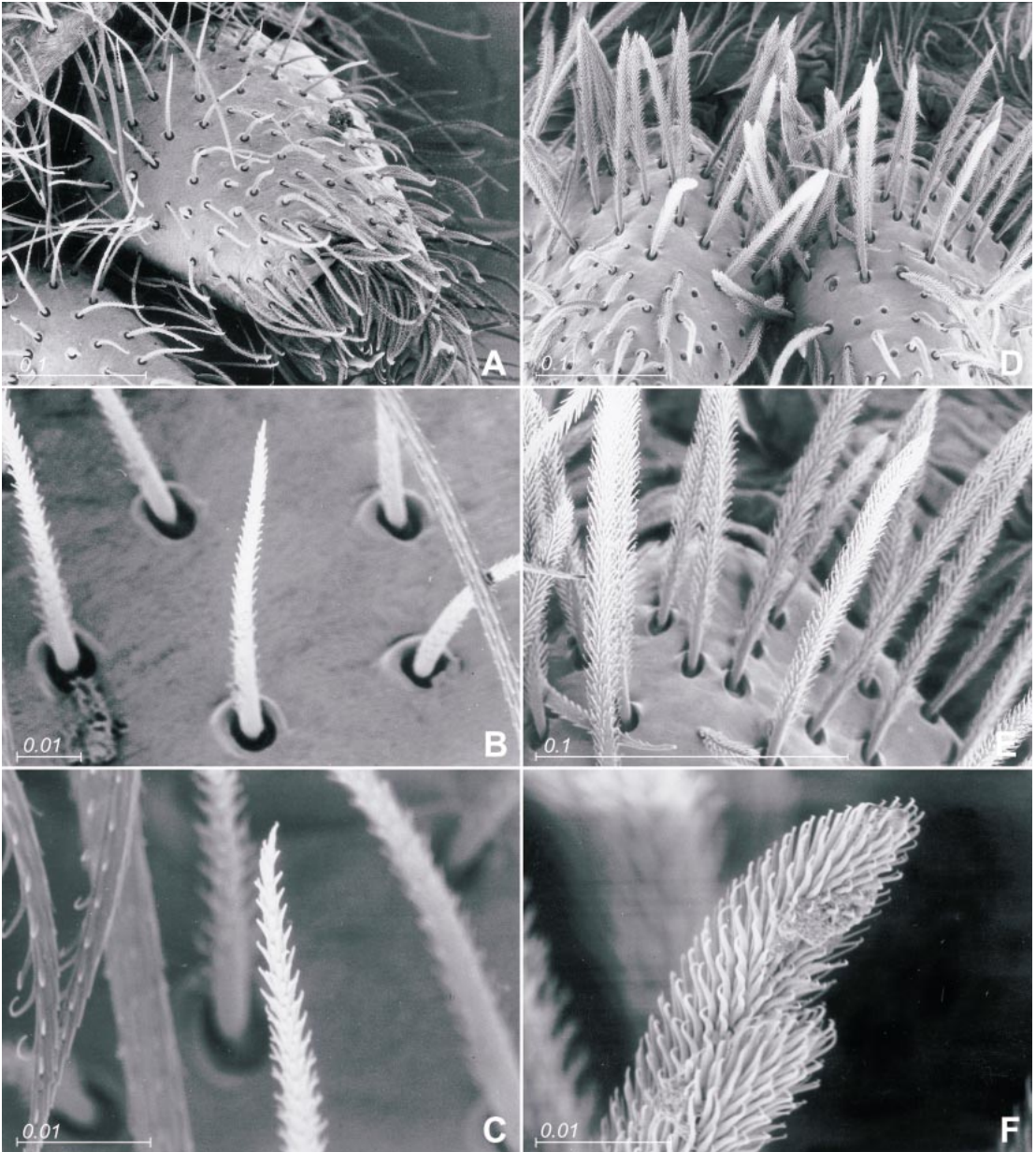


Fig. 68. Setae on ventral face of female anterior lateral spinnerets. **A–C.** *Gayenna americana* Nicolet (Malleco, Contulmo). **D–F.** *Arachosia bergi* (Simon) (Buenos Aires, Hudson, 13.XI.1988).

pressed, length 2.80, width 2.33. Length of tibia/metatarsus: I, 2.17/1.93; II, 2.03/1.83; III, 1.60/1.47; IV, 2.03/2.13. Chelicerae small, narrow. Sternum length 1.38, width 1.08. Spines as in female, except: leg I, tibia p and r 1-d1-1-0, d r1-0-1-0; metatarsus p and r (d1-1)bas, d 0-p1-0-2. **II** = I. **III**, tibia

= I, but v p1-2-2; metatarsus v 2-2-2. **IV**, femur = I; tibia and metatarsus = III. Abdomen length 3.00, width 1.73, spiracle-epigastrium 1.27, spiracle-spinnerets 0.77. Color: carapace brown with three dark brown longitudinal stripes, one median, one on each margin, ocular area black, with median lon-

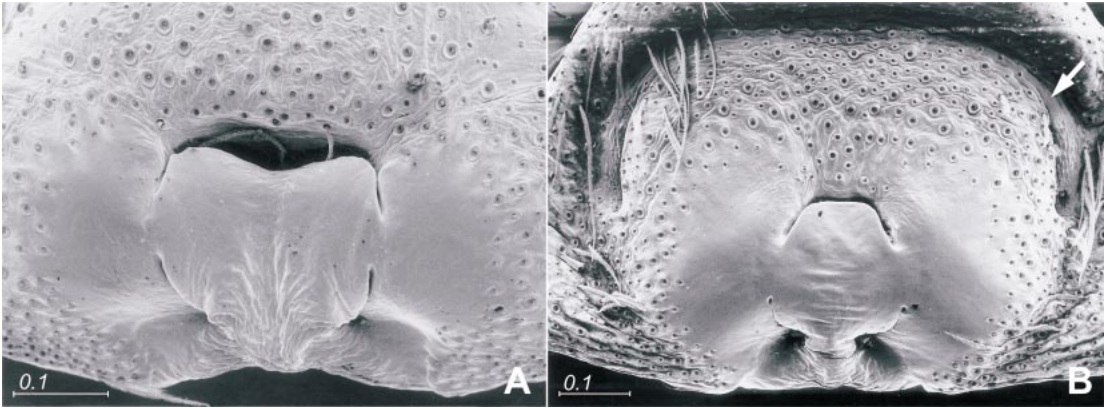


Fig. 69. *Arachosia* spp., epigyne. **A.** *A. bergi* (Simon) (Buenos Aires, Hudson, 13.XI.1988). **B.** *A. praesignis*: arrow points to insertions of epigastric muscles (Keyserling) (Buenos Aires, Necochea).

gitudinal brown spot. Clipeum with two dark stripes diverging toward chelicerae, and white triangle in between. Legs grayish with dark brown longitudinal lines, spots. Chelicerae with anterior internal dark spot, extending up to two-thirds of their length. Coxae, endites, and sternum yellow, labium brown. Abdomen yellow, with brownish violet pat-

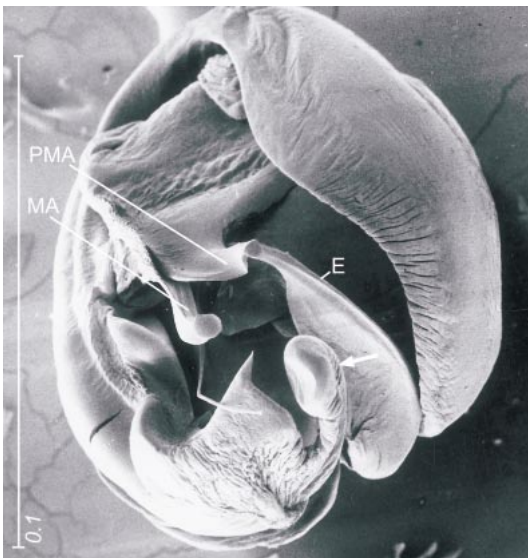


Fig. 70. *Arachosia bergi* (Simon), male copulatory bulb, apical view: arrow points to pro-lateral process on secondary conductor (Buenos Aires, Hudson, 13.XI.1988). (E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

tern on sides, cardiac area, dorsoventral muscle insertions, plus several chevrons on posterior half, ending in spot above anal tubercle. Venter pale, with diffuse dark band from spiracle to spinnerets. Palp (figs. 71A, B, 72): tibia short, as long as wide, cymbium globose. Embolus thin, basal process flattened, weakly sclerotized, associated membranous area extended, folded. Paramedian apophysis simple, straight, parallel to median apophysis. Primary conductor absent. Secondary conductor large, striated obliquely, fused to anterior margin of tegulum; canal conspicuous, arising at base of paramedian apophysis.

VARIABILITY: Males can be much darker than females, with entire dorsal and ventral median abdominal bands, and the sternum with dark margins. One specimen from Buenos Aires is completely brownish violet, with two small white spots at sides of the ocular area, white endites, and yellow pulmonary plates. Spines: tibiae III, IV, v 2–2–2.

NATURAL HISTORY: This species builds retreats on foliage, occasionally also under bark.

DISTRIBUTION: Southeastern Brazil and northeastern Argentina (in Misiones, Chaco, Corrientes, Entre Ríos, and Buenos Aires provinces).

OTHER MATERIAL EXAMINED: **BRASIL:** **Rio de Janeiro:** Nova Iguaçu, no date, Blanc, 4♀ (MNRJ). **Rio Grande do Sul:** Cachoeira do Sul, Alto dos Casemiros, 26.IX.1992, R. Buss, 1♀ 1 immature (MCTP

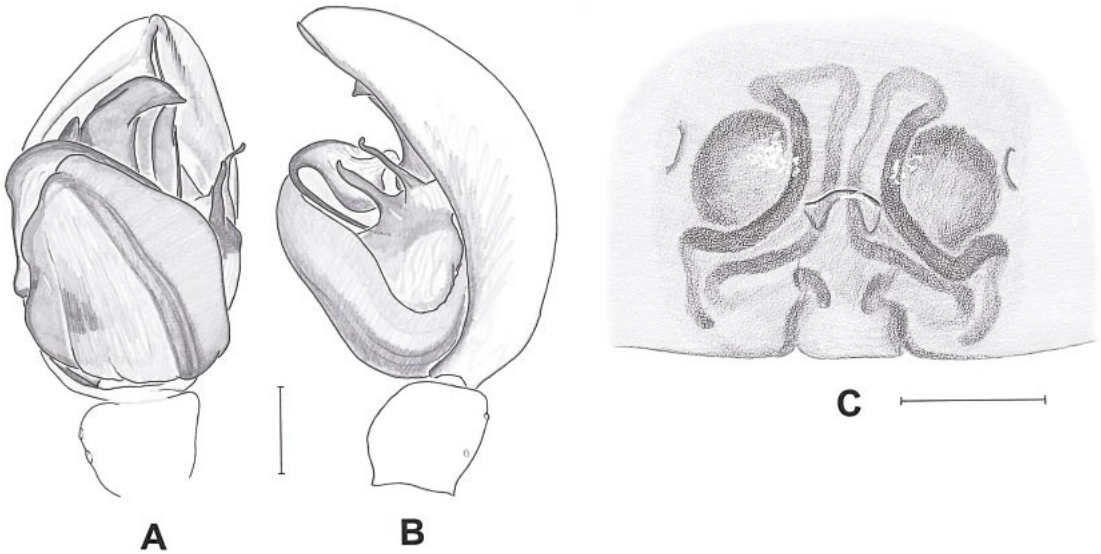


Fig. 71. *Arachosia praesignis* (Keyserling). **A.** Male palp, ventral view (Entre Ríos, El Palmar). **B.** Same, retrolateral view. **C.** Epigyne, ventral view (holotype). Scale bars = A, B, 0.25 mm; C, 0.2 mm.

3369); Cachoeira do Sul, Cordilheira, 27.VIII.1992, 2♂ (MCTP 3366), 27.X.1992, 1♀ penultimate (MCTP 3358), 1♂ 1♀ (MCTP 3364), R.G. Buss; Erval Grande, I.1994, A. Braul, 1♀ (MCTP 4484); Pelotas, XII.1960, C. Biezanko, 3♂ 3♀ 1 immature (AMNH); no specific locality or date, B.

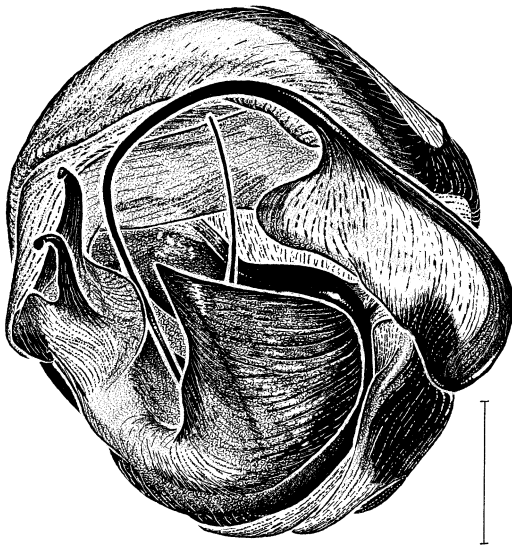


Fig. 72. *Arachosia praesignis* (Keyserling), male copulatory bulb, apical view (Buenos Aires, Hudson, 12.IX.1984). Scale bar = 0.2 mm.

Rambo, 1♂ 12 immatures (MNRJ 41661). **ARGENTINA: Misiones:** Loreto, no date, A.A. Ogloblin, 1♂ (MACN-Ar); Iguazú Natl. Park, Cataratas, XI.1989, M. Ramírez, 1♂ 1♀ (MACN-Ar); Puerto Rico, XII.1943, J.M. Viana, 1 immature (MACN-Ar); Refugio Piñalito, XI.1954, R. Schiapelli and M.E. Galiano, 1♀ (MACN-Ar); Río Uruguay, km 30, W. Partridge, 1♂ (MACN-Ar); Ruta Nac. 11 and Arroyo Garuhapé, VII.1980, P. Goloboff, 1♀ (MACN-Ar); San Ignacio, I.IX.1963, M.E. Galiano, 1 immature (MACN-Ar); San Javier, XII.1948, M. Birabén, 2♂ 3♀ (MLP); Santa María, IX.1956, J.M. Viana, 2♀ (MACN-Ar); XII.1947, J.M. Viana, 2♂ (MACN-Ar 2554). **Chaco:** Resistencia, X.1943, Freiberg, 1♀ (MACN-Ar). **Catamarca:** Estancia El Chorro, 20–31.I.1953, W. Partridge and Núñez, 1♀ (MACN-Ar), 1–15.II.1953, W. Partridge and Núñez, 1♀ (MACN-Ar). **Corrientes:** Paso de la Patria, 29.VIII.1963, M.E. Galiano, 1♀ (MACN-Ar); Santiago Alcorta, VI.1943, M. Birabén, 1♀ (MACN-Ar). **Entre Ríos:** Concordia, no date, Hayward, 1♀ (MACN-Ar); El Palmar Natl. Park, 14.X.1984, M. Ramírez, 2♂ 1♀ penultimate (MACN-Ar); Villaguay, XI.1988, M.E. Galiano, 1♀ (MACN-Ar); no specific locality, 1942, Haedo, 1♀ (MACN-Ar). **Buenos Aires:** Atucha,

27.VII.1985, P. Goloboff, M. Ramírez, 1♂ 1 immature (MACN-Ar); Boulogne, X.1938, A. Prosen, 1♀ (MLP); Capital Federal, Ciudad de Buenos Aires, IV.1940, F. Monrós, 1♀ (MACN-Ar); X.1940, H. Gavio, 1 immature (MACN-Ar); I.1952, G. Casal, 4♀ (MACN-Ar), 1.IV.1983, E. Maury, 1♀ (MACN-Ar), 19.IX.1990, M. Ramírez, 1♀ (MACN-Ar, photo MJR 353–357), 15.VIII.1998, M. Ramírez, 1♂ (MACN-Ar); winter 1979, P. Goloboff, 1♀ (MACN-Ar); Caseros, X.1947, no collector, 1♀ (MACN-Ar 196); Castelli, X.1960, J.M. Viana, 1♀ penultimate (MACN-Ar); Delta, Arroyo Carancho, 30.XII.1951, A. Bachmann, 1♀ (MACN-Ar); Delta del Paraná, 20.XI.1940, J.B. Daguerre, De Carlo, 1♀ (MACN-Ar 32904); VII.1940, F. Monrós, 1♀ (MACN-Ar); Delta, Paraná de Las Palmas, III.1942, H. Hepper, 1 immature (MACN-Ar); Escobar, V.1938, A. Prosen, 1♂ (MLP); Estación San Alfonso, Pieres, II.1973, Bejarano, 1♀ (MACN-Ar); Florencio Varela, F.C.S., XII.1939, F. Monrós, 1♂ 1♀ 1 immature (MACN-Ar); Hudson, 2.X.1984, M. Ramírez, 1♂ (MACN-Ar); Ing. Maschwitz, XI.1941, A. Prosen, 1♀ (MLP); Isla Martín García, I.1938, J.M. Viana, 1♀ (MACN-Ar 326); IV.1938, J.M. Viana, 1 immature (MACN-Ar 404), 1940, J.M. Viana, 1♀ (MACN-Ar); 25.V.1990, M. Ramírez, 8 immatures (MACN-Ar); La Plata, 22.XII.1978, P. Goloboff, 1♂ (MACN-Ar); no date, Birabén, 1♀ (MACN-Ar); Los Talas, XII.1985, Scioscia, 1♂ (MACN-Ar); Mar del Plata, 4.XI.1988, J. Farina, 2♀ 1 immature (MMLS); Necochea, V.1975, Balech, 1♀ (MACN-Ar); Reserva Otamendi, 10.VI.1997, M. Ramírez, L. Compagnucci, C. Grismado, F. Uehara, 1♂ penultimate (MACN-Ar); Paraná de Las Palmas, 17.IX.1963, M.E. Galiano, 1♂ (MACN-Ar), A. Bachmann, 1 immature (MACN-Ar); Punta Lara, Ensenada, III.1943, A. Moreno, 1♀ (MLP), 19.III.1943, 4♀ (MLP), 1.I.1947, W. Partridge, 1♂ (MACN-Ar), 16.XI.1947, no collector, 2♀ (MACN-Ar 198); III.1961, M.E. Galiano, 1♀ (MACN-Ar); 28.VII.1979, P. Goloboff, 1♀ (MACN-Ar); 28.XI.1985, M.E. Galiano, C. Scioscia, 1♂ (MACN-Ar), 18.IX.1986, M. Ramírez, 1♀ penultimate (MACN-Ar); San Fernando, no date, J.B. Daguerre, 1♀ 1 immature (MACN-Ar); San

Isidro, Punta Chica, 5.XI.1941, A. Prosen, 2♀ (MLP); Sierra de la Ventana, Cerro Negro, 12.IV.1974, Cesari, 1 immature (MACN-Ar); Tandil, 1939, S. Holmberg, 2♀ (MACN-Ar 2614); Tigre, I.1938, J.M. Viana, 1♀ (MACN-Ar 301).

Arachosia striata (Keyserling),
new combination

Figure 73

Abuzaida striata Keyserling, 1891: 133 (female lectotype here designated from Brazil, state of Rio de Janeiro, Nova Friburgo, in BMNH, examined; the immature paralectotype mentioned by Keyserling was not found). Simon, 1897a: 104.

Gayenna striata: Mello-Leitão, 1925: 457.

DIAGNOSIS: Resembles *A. bergi* in having the epigynal median field relatively small and short, but can be distinguished by having the shorter copulatory ducts.

FEMALE (lectotype): Total length 5.30. Carapace length 2.17, width 1.60. Length of tibia/metatarsus: I, 1.12/0.97; II, 1.17/1.00; III, 1.05/1.05; IV, 1.37/1.63. Chelicerae with three teeth on retromargin. Spines: leg I, femur d 1–1–1, p 0–d1–2, r 0–d1–d1; tibia v 2–2–2; metatarsus v 2bas. II = I, III, femur = I; patella r d1; tibia v p1–2–2, p 1–d1–1, r d1–1, d r1–1; metatarsus v 2–0–2, d 0–p1–2, p and r d1–1–1. IV, femur = I; patella r d1; tibia = III; metatarsus v 2–p1–2, d 0–p1–2, p and r d1–1–1. Abdomen length 2.83, width 1.67. Spiracle–epigastrium 1.10, spiracle–spinnerets 0.80. Color (lectotype faded; from MCTP 0481): yellowish brown, with median dorsal brown band on carapace and abdomen, ocular area darker. Chelicerae brown, with darker anterior distal area. Sternum with three dark patches in front of coxae I–III. Legs yellow with brown dots, mostly on femora and tibiae. Abdomen with brown ventral longitudinal band, brown dots on sides. Epigyne (fig. 73): anterior pouch transverse, shallow. Copulatory ducts relatively short, ducts of accessory bulbs long, arched.

MALE: Unknown.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Only known from the type locality.

OTHER MATERIAL EXAMINED: **BRASIL:** **Rio Grande do Sul:** Barracão, 20.I.1989, F. Franco, 1♀ (MCTP 0481).

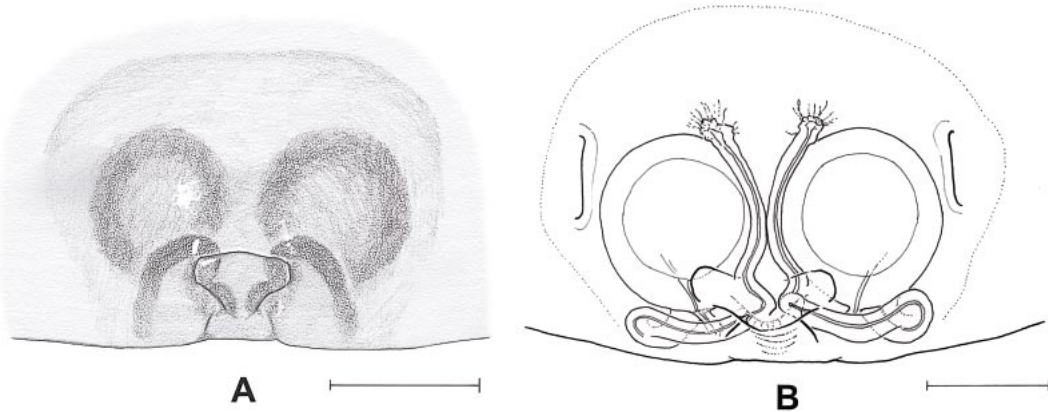


Fig. 73. *Arachosia striata* (Keyserling). **A.** Epigyne, ventral view (holotype). **B.** Same, cleared (Rio Grande do Sul, Barracão). Scale bars = 0.2 mm.

RELATIONSHIPS: This species was not included in the analysis, because males are unknown, and for the remaining characters it is practically identical to the other representatives of the genus. The relatively short copulatory ducts (not scored in this analysis) suggest a basal position relative to other *Arachosia*.

Arachosia honesta Keyserling

Figure 74

Arachosia honesta Keyserling, 1891: 127 (female holotype from Brazil, state of Rio Grande do Sul, no specific locality, in BMNH, examined). Mello-Leitão, 1922: 22.

Oxysoma ramboi Mello-Leitão, 1943c: 238 (female presumably type, from Brazil, Rio Grande do Sul, B. Rambo coll., in MNRJ 42237, examined). **NEW SYNONYMY.**

SYNONYMY: According to the original description, the holotype of *Oxysoma ramboi* should be 41379. In any case, the illustration of the epigyne (Mello-Leitão, 1943c: fig. 64) allows reliable identification. No relevant differences were found between the presumed type of *Oxysoma ramboi* and the holotype of *Arachosia honesta*.

DIAGNOSIS: Distinguished from other *Arachosia* by having a large, triangular epigynal median field and a characteristic course of the copulatory ducts. Males have genitalia very similar to that of *A. bergi*, but differ by having the AME larger than the ALE, and a larger paramedian apophysis. Also distinguished from *A. praesignis* by having a pro-

lateral projection on the secondary conductor.

FEMALE (MNRJ 42237): Total length 8.25. Carapace length 3.23, width 2.57. Chelicerae with three teeth on retromargin (fig. 74E). Length of tibia/metatarsus: I, 1.83/1.57; II, 1.86/1.63; III, 1.63/1.60; IV, 2.30/2.43. Palpal tarsus length 1.03. Sternum length 1.67, width 1.27. Spines: leg I, femur d 1-1-1, p 0-p1-2, r 0-p1-p1; tibia v 2-2-2; metatarsus v 2bas. II, femur = I; tibia v 2-2-2, p 1-0-1-0; metatarsus v 2 bas, p 1 or 0. III, femur = I; patella r d1; tibia v 2-2-2, p and r 1-d1-1, d r1-1-0; metatarsus v 2-0-2 (right 2-0-1), p and r d1-1-0-1, d p1-2. IV, femur = I; patella r d1; tibia = III; metatarsus v 2-2-2, p and r d1-1-0-1, d p1-2. Abdomen length 4.92, width 2.79. Spiracle-epigastrium 1.33, spiracle-spinnerets 1.73. Color (slightly faded): pale brown, carapace and abdomen with dorsal median dark band, margins of carapace with dark line. Sternum with margins dark. Femora with dark dots. Some specimens darker, with dark brown areas at sides of abdomen, median dark band from spiracle (or epigastrium) to spinnerets. Epigyne (fig. 74F): median field hourglass-shaped, anterior half larger, wider; anterior pouch wide, transverse, forming cavities at lateral ends. Epigastric muscle insertions deeply depressed. Copulatory ducts long, thin, ducts of accessory bulbs long, parallel.

MALE (Iguazú, MACN-Ar 9823): Total length 6.90. Carapace globose, thoracic groove on depressed area, length 3.27, width

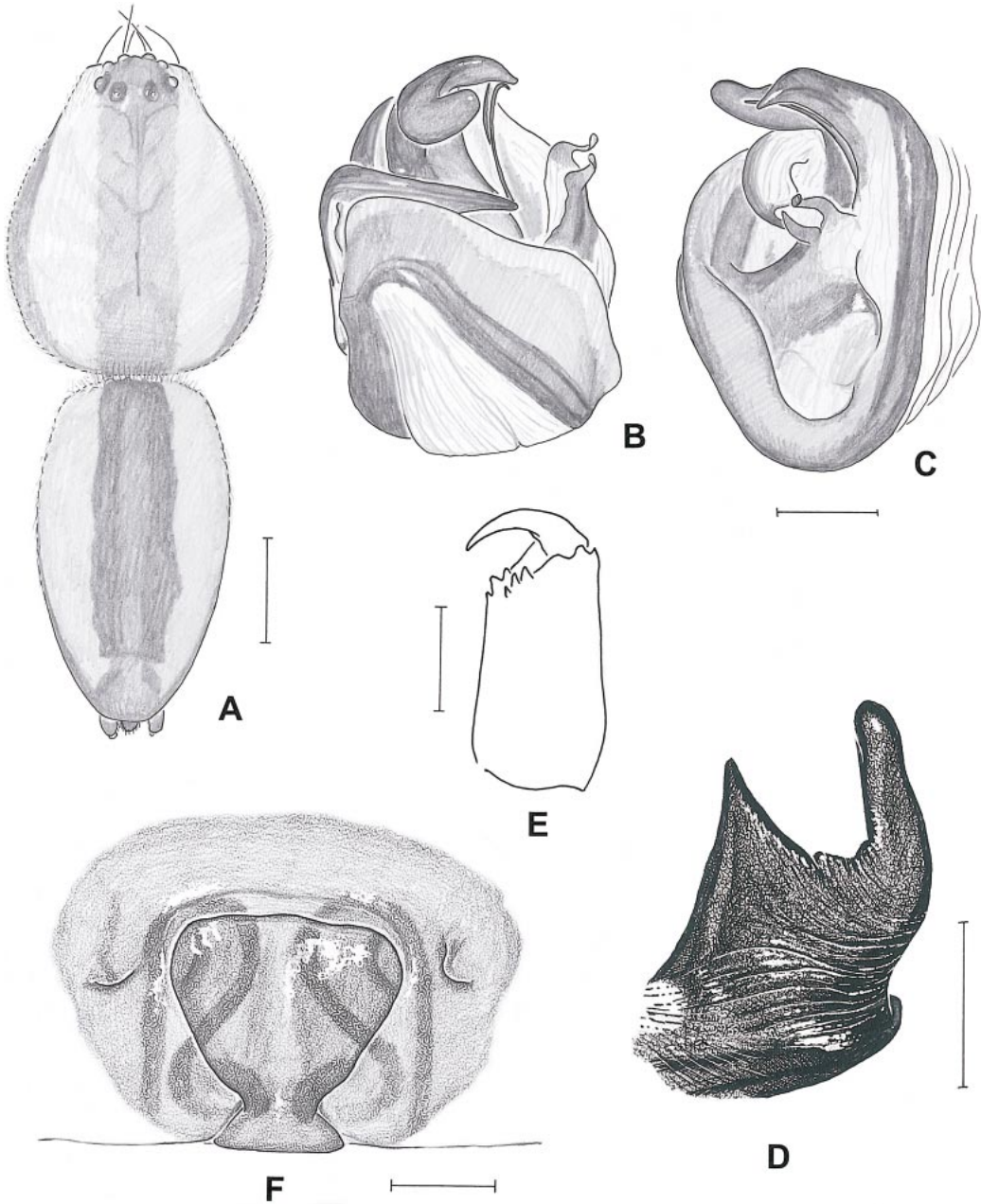


Fig. 74. *Arachosia honesta* Keyserling, male from Iguazú, Misiones (MACN-Ar 9823), female presumably type of *Oxysona ramboi* Mello-Leitão (MNRJ 42237). **A.** Male. **B.** Male copulatory bulb, ventral view. **C.** Same, retrolateral view. **D.** Detail of secondary conductor, apical view. **E.** Female chelicerae, ventral view. **F.** Epigyne, ventral view. Scale bars = A, 1 mm; B, C, F, 0.25 mm; D, 0.2 mm; E, 0.5 mm.

2.70. Length of tibia/metatarsus: I, 2.30/2.07; II, 2.30/2.03; III, missing; IV, 2.43/2.60. Chelicerae slightly narrower than those of female. Sternum length 1.63, width 1.27. Spines as in female, except: leg I, femur d 1-1-1, p 0-d1-2, r 0-d1-d1; patella r d1, d 1-0-1; tibia v 2-2-2, p and r 1-d1-1-0, d r1-0-1-0; metatarsus v 2bas, p and r d1-1-0, d 0-p1-2. **II**, femur = I or r 0-d1-2; patella, tibia and metatarsus = I. **III** absent. **IV**, femur, patella, and tibia = I; metatarsus v 2-2-2, p and r d1-1-1, d 0-p1-2. Abdomen length 3.59, width 2.13, spiracle-epigastrium 0.87, spiracle-spinnerets 1.33. Color: carapace brown with dark brown stripes (fig. 74A). Legs grayish, almost totally covered by brownish violet pattern. Abdomen brownish violet, dorsum yellow with median band brownish violet. Palps pale gray from femur to tibia, endites, labium, and sternum brownish violet, sternum with median cream patch. Chelicerae dark, with oblique dark band and pale apical internal area. Palp (fig. 74B-D): tibia short, width/length 0.88, cymbium globose. Embolus thin, basal process flattened, weakly sclerotized, associated membranous area ample, folded. Median apophysis short. Paramedian apophysis very short, apex close to tip of median apophysis. Secondary conductor large, striated obliquely, fused to anterior margin of tegulum, with conspicuous canal, arising at base of paramedian apophysis; prolateral portion with conspicuous finger-shaped apophysis (fig. 74D). Primary conductor absent.

VARIABILITY: May have three or two teeth on cheliceral retromargin (only one female from São Paulo MZUSP 10167 with four). Some males with longer median and paramedian apophysis, prolateral projection on conductor.

NATURAL HISTORY: This species builds retreats on foliage.

DISTRIBUTION: South and southeastern Brazil, states of Rio de Janeiro, São Paulo, and Rio Grande do Sul (probably also in Paraná and Santa Catarina), Mato Grosso, and north-eastern Argentina, in Misiones province.

OTHER MATERIAL EXAMINED: BRASIL: Mato Grosso: Utiariti, VII.1961, Lenko, 1 ♀ (MZUSP DZ3551). **São Paulo:** Cocaia, 25.XII.1949, H. Urban, 1 ♀ (MZUSP 10167); Pirassununga, Baguaçu, 28.V.1949, O. Schu-

bart, 1 ♀ 2 immatures (MZUSP 7094); Pirassununga, Emas, 2.X.1948, O. Schubart, 2 ♀ (MZUSP DZ7594), 15.II.1949, O. Schubart, 1 ♀ 2 ♂ (MZUSP DZ7595); Onda Verde, Fazenda São João, I.1946, E. Leme, 1 ♀ (MZUSP 14053). **Rio Grande do Sul:** Pinhal, 40 X Ar, I.1949, A. Maller, 1 ♂ (AMNH). **ARGENTINA: Misiones:** Iguazú Natl. Park, XI.1948, M. Birabén, 1 ♀ (MACN-Ar), X.1985, P. Goloboff, 1 ♀ (MACN-Ar), Cataratas, 30.VIII.1986, M. Ramírez, 1 ♂ (MACN-Ar 9823). *Mistaken Locality:* Río Negro, El Bolsón, 1965-1966, A. Kovács, 1 ♂ (AMNH), probably from Argentina, Misiones province (see Platnick and Ewing, 1995: 7).

Arachosia bergi (Simon),
new combination

Figures 67B, 68D-F, 69A, 70, 75

Phidyle bergi Simon, 1880: 345 (four males and three females probably syntypes, labeled "mission B. Aires, Paraguay", in MHNP 4013, examined).

Oxysona bergi: Simon, 1897a: 100. Berland, 1913: 103.

NOTE: According to the original publication (Simon, 1880: 346), the type series comes from "territorio des Missions (coll. E. Simon, reçu du Dr C. Berg)" and should include at least one adult male and one penultimate female ("epigyne non développée"), which disagrees with the three vials found in MHNP (4013 referred before; 22736 from La Plata, Silvestri coll., one male; 21201 from Buenos Aires, one female, and one female of *A. cf. cubana*). The identity of the types is hence problematic. I decided to identify provisionally as syntypes the sample in MHNP 4013, which better agree with the type locality as was published. It is not clear, however, that the forms identified here as *A. bergi* are different from *A. cubana*, because there are many specimens with variants of epigynal shapes, including intermediates. Wide variability is also found in specimens from a single locality. Variability in the male copulatory bulb seems to be even more problematic. Only those specimens most similar to figure 75 are listed below.

DIAGNOSIS: Provisionally distinguished from the very similar *A. cubana* by having a

narrower epigynal median field, and thinner, shorter paramedian apophysis. *A. striata* is similar in having a similarly shaped median epigynal field but differs by the course of copulatory ducts.

FEMALE (MHNP 4013): Carapace length 3.60, width 2.83. Ocular diameters: AME 0.13, ALE 0.19, PME 0.15, PLE 0.15. Chelicerae with two teeth on retromargin. Length of tibia/metatarsus: I, 2.37/2.07; II, 2.17/1.97; III, 1.80/1.77; IV, 3.00/3.00. Spines: leg I, femur d 1-1-1, p 2ap, r 0-d1-d1 or d1; tibia v 2-2-2, p 1-d1-1; metatarsus v 2bas. II, femur d 1-1-1, p d2ap, r 0-d1-d1; tibia = I; metatarsus = I. III, femur = II; patella r d1; tibia v p1-2-2 or 2-2-2, p and r 1-d1-1, d r1-(1 bristle); metatarsus v 2-0-2, p and r d1-1-0-1, d 0-p1-2. IV, femur d 1-1-1, p 0-d1-d2 or d2ap, r d1ap; patella r d1; tibia = III; metatarsus v 2-2-2 p and r p1-1-0-1, d 0-p1-2. Metatarsus III with scopula. Abdomen length 6.40, width 2.43. Anterior spinnerets with thick setae. Spiracle-epigastrium 2.07, spiracle-spinnerets 2.40. Color as in male. Epigyne (figs. 69A, 75C, D): anterior pouch transverse, wide, M-shaped. Copulatory ducts long, ducts of accessory bulbs long, sinuous.

MALE (MHNP 4013): Carapace length 3.80, width 2.97. Ocular diameters: AME 0.14, ALE 0.19, PME 0.15, PLE 0.15. Chelicerae slightly smaller than those of female. Length of tibia/metatarsus: I, 3.17/3.10; II, 2.83/2.77; III, 2.27/2.10; IV, 3.33/3.40. Spines as in female, except: leg I, femur r 0-d1-d1; tibia d r1-1; metatarsus p and r d1-1-0-0, d p1-0. II, tibia and metatarsus = I. III, patella d 1-0-1; tibia = I. IV, femur p d2ap; patella d 1-0-1; tibia = I. Metatarsus III with scopula. Abdomen length 5.00, width 1.50. Anterior spinnerets with thick setae. Spiracle-epigastrium 1.50, spiracle-spinnerets 1.87. Color (fig. 67B): pale brown, legs darkening distally, with small darker spots. Dorsal darker band diffuse on carapace, fading on abdomen. Three small brown spots between median band and margins of carapace. Abdomen with dark posterior dots, venter and sternum pale. Palp (figs. 75A, B, 70): tibia short, width/length 0.81, cymbium globose. Embolus thin, basal process flattened, weakly sclerotized, associated membranous area ample, folded. Paramedian

apophysis very short, base flattened, close to median apophysis. Primary conductor triangular, flattened, arising from same sclerotized piece as paramedian apophysis. Secondary conductor large, fused to anterior margin of tegulum, with conspicuous canal arising close to base of paramedian apophysis; pro-lateral portion with conspicuous finger-shaped apophysis.

VARIABILITY: Some females have only faint sutures between median field and lateral lobes, and shallow anterior pouch. The dorsal band may be solid or double. The posterior half of abdomen may become gradually brown uniform. Some specimens from São Paulo, Botucatu, have median band weakly marked. The venter may have a diffuse band.

NATURAL HISTORY: Very common in grasslands and periodically flooded areas. Females make retreats on "serrucheta" (*Eryngium* spp.), the large pampa grass ("cortadera", *Cortaderia selloana*), or between the leaf bases of regular grasses. Occasionally they try to escape collection by diving into the water accumulated between *Eryngium* leaves. They are exasperatingly fast.

DISTRIBUTION: Southeastern Brazil (states of São Paulo and Rio Grande do Sul, probably also in Paraná and Santa Catarina), Uruguay, and Northeastern Argentina, extending up to Buenos Aires province. Sympatric with *Arachosia cubana* (or similar forms).

OTHER MATERIAL EXAMINED: BRASIL: São Paulo: Botucatu, Distrito Vitoriana, Fazenda Goldfarm C., 5.XI.1987b, I. Rinaldi and L. Forti, 1 ♀ (UNESP); Botucatu, Usina São Manoel, 10.XII.1986, 1 ♂, 4.VIII.1987b, 1 ♂, 5.XI.1987b, 1 ♂, 6.XI.1986b, 2 ♂ 1 ♀, I. Rinaldi and L. Forti (UNESP); Botucatu, Fazenda Nossa Senhora da Conceição, "parte aérea de *Saccharum officinarum*", 23.IX.1998, L.I. Rinaldi, B. Mendez do P, 1 ♂ 1 ♀ (UNESP); Botucatu, Sítio Novelli, 9.IX.1987b, 1 ♂, 8.VI.1988b, 2 ♀, I. Rinaldi and L. Forti (UNESP); Botucatu, 23.IX.1998, I. Rinaldi, 1 ♂ 1 ♀ (UNESP). **Rio Grande do Sul:** Pelotas, 27.III.1956, C. Biezanko, 1 ♀ (AMNH). **URUGUAY: Departamento Rocha:** Laguna de Castillos, 19.V.1993, M. Ramírez and F. Pérez-Miles, 1 ♀ (MACN-Ar). **ARGENTINA: Formosa:** Pilcomayo Natl. Park, Laguna Blanca, XI.1990, M. Ramírez, 1 ♀ (MACN-Ar);

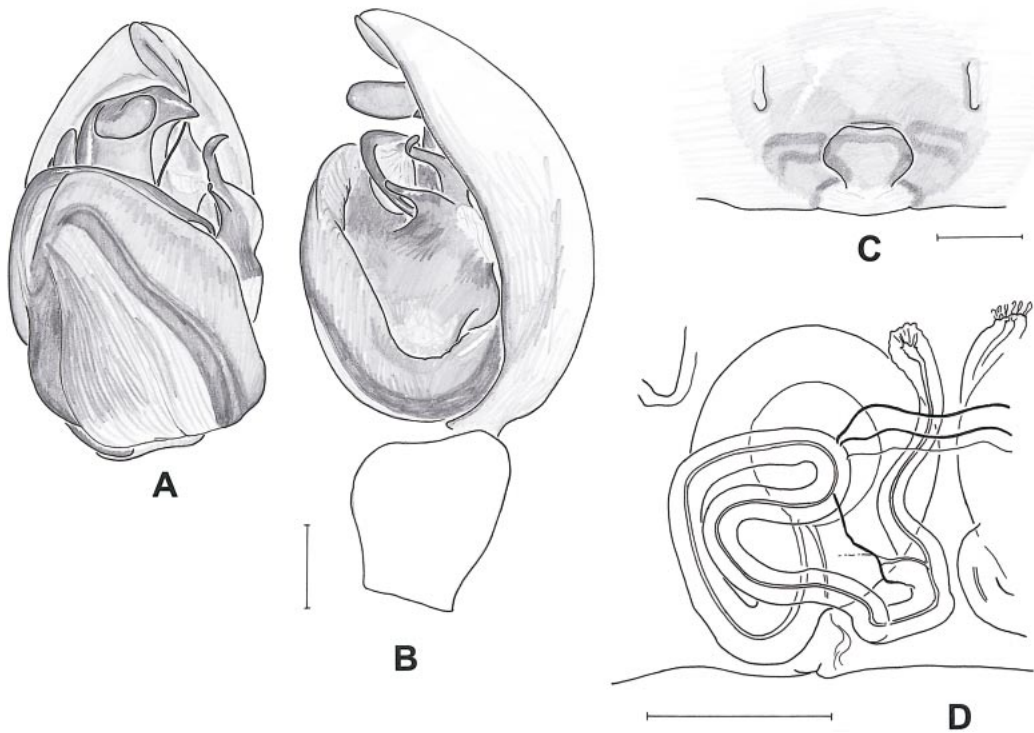


Fig. 75. *Arachosia bergi* (Simon). **A.** Male palp, ventral view (Buenos Aires, Atucha, IV.1982). **B.** Same, retrolateral view. **C.** Epigyne, ventral view (probably syntype, MHNP 4013). **D.** Same, cleared. Scale bars = A–C, 0.25 mm; D, 0.2 mm.

Puerto Pilcomayo, V.1943, Fourcade (?), 1 ♀ (MLP). **Corrientes:** Arroyo Mandisoví Grande and Ruta Nac. 14, 15.VII.1985, M. Ramírez, 2 ♂ (MACN-Ar). **Tucumán:** ruta 307, 10 km NW El Indio, 24.XI.1994, M. Ramírez and P. Goloboff, 1 ♀ (MACN-Ar). **Entre Ríos:** Arroyo Brazo Largo, 16.XI.1979, P. Goloboff, 1 ♂ (MACN-Ar). **Buenos Aires:** Allen, VIII.1945, Cuccioli, 1 ♀ (MACN-Ar); Atucha, IV.1982, P. Goloboff, M. Ramírez, 1 ♂ (MACN-Ar); 23.VI.1985, P. Goloboff and M. Ramírez, 2 ♂ (MACN-Ar), 15.IX.1990, M. Ramírez, 1 ♀ (MACN-Ar); Delta, no date, no collector, 1 ♀ (MACN-Ar 36228); Delta, Abra Vieja, V.1944, F. Monrós, 3 ♀ (MACN-Ar); Delta, Arroyo Carancho, on *Eryngium pandanifolium*, 30.XII.1951, A. Bachmann, 1 ♂ (MACN-Ar); Delta, Arroyo Carreras, VIII.1941, F. Monrós, 6 ♂ 5 ♀ (MACN-Ar 908); Delta, Canal Arias, VI.1941, F. Mon-

rós, 1 ♂ (MACN-Ar); Paraná de Las Palmas, 19.XII.1963, A. Bachmann, 1 ♀ (MACN-Ar); Delta, Río Esperita, X.19?? (illegible), F. Monrós, 1 ♀ (MACN-Ar); Delta, Río Luján, 9.VI.1941, F. Monrós, 1 ♂ (MACN-Ar); Delta, Tigre, Río Luján and Arroyo Guayracá, VI.1982, M. Ramírez, 1 ♂ 1 ♀ (MACN-Ar); Dique Luján, VI.1938, F. Monrós, 1 ♂ (MACN-Ar); Escobar, 23.VII.1984, M. Ramírez, 1 ♀ (MACN-Ar); Estancia El Toneleiro, Pdo. Gral. Lavalle, cerca canal 2, 15–21.XII.1951, J. Cranwell, 1 ♀ (MACN-Ar); Hudson, VIII.1982, P. Goloboff, M. Ramírez, 1 ♂ 1 ♀ (MACN-Ar); IV.1984, M. Ramírez, 1 ♂ (MACN-Ar); 2.IX.1984, M. Ramírez, 1 ♀ (MACN-Ar), 13.XI.1988, M. Ramírez, 1 ♂ (MACN-Ar, photos MJR 257, 258), 1 ♀ (MACN-Ar, photos MJR 259, 260), 1 ♀ (MACN-Ar); Isla Talavera, Las Palmas, FCGM, 2.XI.1980, P. Goloboff, A. Zanetic, 1 ♀ (MACN-Ar); Magdalena, no date, P. Go-

loboff, M. Ramírez, 1 ♀ (MACN-Ar), 20.V.1989, M. Ramírez, 1 ♀ (MACN-Ar, photo MJR 287); Otamendi, 5.IX.1980, A. Zanetic, P. Goloboff, 1 ♀ (MACN-Ar); Reserva Otamendi, 10.VI.1997, M. Ramírez, L. Compagnucci, C. Grismado, F. Uehara, 1 ♂ (MACN-Ar); Paraná de Las Palmas, 7.IV.1963, M.E. Galiano, 1 ♀ (MACN-Ar), Punta Lara, Ensenada, 2.VIII.1931, J.B. Da-guerre, 1 ♂ (MACN-Ar 27594); 4.XII.1981, F. Miranda, M. Ramírez, 5 ♀ (MACN-Ar); 6.III.1982, F. Miranda, M. Ramírez, 1 ♂ 1 ♀ (MACN-Ar); Río Luján, estación F.C.G.M., marsh with "espadaña", 5.X.1993, M. Ramírez and A. Pérez, 1 ♀ (MACN-Ar); San Isidro, VI.1962, A. Martínez, 1 ♀ (MACN-Ar); San Pedro, 2.XI.1991, M. Ramírez, 2 ♀ (MACN-Ar); Tigre, IX.1945, J.M. Viana, 1 ♂ (MACN-Ar); VI.1955, J.M. Viana, 1 ♀ (MACN-Ar).

Arachosia cubana (Banks),
new combination

Oxysoma cubana Banks, 1909b: 157 (male holotype from Cuba, La Habana, in MCZ, examined). Bryant, 1940: 435. Kaston, 1948: 405. Buchkovich, 1995: 13. Platnick, 1974: 260. *Oxysoma cubanum*: Platnick, 1993: 596 (emendation of *O. cubana* Banks).

Gayennina britcheri Gertsch, 1935: 21 (female holotype from Woods Hole, Massachusetts, in AMNH, examined). Kaston, 1948: 405. Synonymized by Barnes, 1953: 18.

NOTE: The North American specimens in AMNH are very similar to *Arachosia bergi* as provisionally identified here, differing by the wide, V-shaped epigynal median field, and by the larger paramedian apophysis and prolateral projection on the secondary conductor (Platnick, 1974: figs. 105–109). However, there are many intermediate or slightly different forms, some of them sympatric. In South America, specimens similar to the Cuban and North American forms were found in Venezuela, Ecuador, and Peru, and in Argentina, from Salta and Tucumán provinces, to Neuquén and the coast of Chubut. *Anyphaena oblonga* Keyserling, 1878 has an epigyne very similar to that of North American *Oxysoma cubana*, and hence that name may turn out to be a senior synonym.

DESCRIPTION: See Platnick (1974).

SANOGASTA MELLO-LEITÃO

Table 22

Sanogasta Mello-Leitão, 1941a: 177 (type species by original designation *Sanogasta intermedia* Mello-Leitão, 1941). Transferred from the Corinnidae by Ramírez, 1995a: 381, 1997: 178.

NOTE: *Sanogasta* corresponds broadly with the concept that Simon and Tullgren had of *Gayenna* and *Tomopisthes* (Ramírez and Kochalka, 1993). In this analysis *Sanogasta* is paraphyletic in terms of *Arachosia*, because of the placement of *S. pehuenche*. Because there are many additional species of *Sanogasta* and *Arachosia* not included here, it seems premature to create a new genus only for *S. pehuenche*, which is instead provisionally placed in *Sanogasta*.

DIAGNOSIS: *Sanogasta* resembles *Arachosia* in having a slender paramedian apophysis associated with the median apophysis (figs. 78C, 82A), but it can be distinguished by lacking thick setae on the anterior lateral spinnerets.

DESCRIPTION: Carapace narrowed in front, posterior eye row slightly procurved or straight. Chelicerae with three teeth on pro-marginal (except *S. x-signata*, with four), two on retromarginal. Males usually with smaller chelicerae, carapace narrower in front and wider behind. Tracheal spiracle closer to spinnerets than to epigastrium. Male copulatory organ with thin embolus bearing small, acute basal process. Median apophysis small, slender, associated with paramedian, very short in *S. maculatipes* and closest relatives (clade 167). Paramedian apophysis with membranous area dividing part or all of its base, tip slender. Primary conductor absent. Secondary conductor not fused to anterior dorsal margin of tegulum, with deep, long canal arising at base of paramedian apophysis (except *S. pehuenche* and *S. approximata*, with canal reduced and secondary conductor fused to tegulum); retrolateral portion with basal prong of variable shape. Epigyne with insertions of epigastric muscles depressed (except *S. pehuenche*, *S. x-signata*, and *S. tenuis*). Copulatory openings in deep depressions on epigastric fold, ducts of accessory bulbs very short.

DISTRIBUTION: South America.

COMPOSITION: In addition to the species de-

TABLE 22
Synapomorphies of *Sanogasta* and Internal Clades

<p>Clade 172 (<i>Sanogasta</i> paraphyletic + <i>Arachosia</i>) shape of PMA (68): bifid → slender PMA sleneder associated to MA (70): absent → present membranous area on PMA (71): absent → present C1 (75): present → absent C2 (79): free → fused CO on epigastric furrow (115): absent → present</p> <p>Clade 126 body pattern (0): present → absent thoracic groove (8): present → absent scopulae anterior tibiae (33): present → absent spine patella III, r d1 (158): present → absent spines tibia III and IV displaced ventrally (159): absent → present spine metatarsus III, r d1-x-x (174): present → absent spine patella IV, r d1 (180): present → absent spine metatarsus IV, p d1-x-x (191): present → absent</p> <p>Clade 127 ratio PME/PLE (16): PME < PLE → PME = PLE</p> <p>Clade 128 notch between LL (111): absent → present</p> <p>Clade 129 fusion CD (114): separate → walls fused</p> <p>Clade 167 apical margin tegulum extended (55): present → absent MA (64): present → reduced shape of MA (65): slender → thick membranous area on PMA (71): present → surrounding all the base Position of APmf (105): close → advanced</p> <p>Clade 168 APmf (104): forward → backward</p> <p>Clade 169 C2 (79): fused → free</p> <p>Clade 170 Position of APmf (105): advanced → close</p> <p>Clade 171 male chelicerae (17): strong → smaller insertions of epigastric muscles (101): superficial → depressed</p> <p><i>S. pehuenche</i> canal on C2 (84): <i>Gayenna</i> type → present spines tibia I, v ap (138): 2ap → p1ap</p>	<p><i>S. approximata</i> ratio PME/PLE (16): PME < PLE → PME = PLE cymbial retrolateral apical notch (50): absent → present apex C2 (83): apical → median or basal canal on C2 (84): <i>Gayenna</i> type → present epigastrium sclerotized (100): normal → sclerotized spine tibia III, v r1-x-x (161): absent → present spine tibia IV, v r1-x-x (182): absent → present</p> <p><i>S. maculosa</i> ratio PME/PLE (16): PME < PLE → PME = PLE</p> <p><i>S. maculatipes</i> no autapomorphies!</p> <p><i>S. alticola</i> no autapomorphies!</p> <p><i>S. mandibularis</i> number retromarginal teeth (20): two → three number promarginal teeth (23): three → four</p> <p><i>S. puma</i> spine metatarsus III, p d1-x-x (171): present → absent</p> <p><i>S. tenuis</i> ratio AME/ALE (15): AME < ALE → AME ≥ ALE leg III very short (27): normal → III very short insertions of epigastric muscles (101): depressed → superficial spine tibia II, v x-p1-x (148): present → absent spine tibia III, v x-r1-x (163): present → absent spines metatarsi III and IV, v ap (169): 2 → 1 spine metatarsus III, d x-p1-x (177): present → absent spine metatarsus III, d x-x-p1 (178): present → absent spine metatarsus IV, v x-p1-x (189): present → absent spine metatarsus IV, r d1-x-x (194): present → absent</p> <p><i>S. x-signata</i> number promarginal teeth (23): three → four apex C2 (83): apical → median or basal epigynum projecting posteriorly (102): absent → present lumen of APmf (107): simple → double LL projecting (113): absent → present spines tibia I, v ap (138): 2ap → p1ap spine tibia III, v x-r1-x (163): present → absent</p> <p><i>S. minuta</i> no autapomorphies!</p> <p><i>S. backhauseni</i> ratio AME/ALE (15): AME < ALE → AME = ALE spine tibia II, p x-1 (152): absent → present spine metatarsus III, v x-r1-x (168): absent → present</p>
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tailed below: *Gayenna bonariensis* Mello-Leitão, 1940 (female holotype in MLP 14400, examined, new combination); *Gayenna paucilineata* Mello-Leitão, 1945 (male immature holotype in MLP 16.590, examined, new combination); *Gayenna rufithorax* Tullgren, 1902 (male holotype in NRS, examined, new combination). Several probable undescribed species very similar to *S. maculosa*, *S. maculatipes*, *S. minuta*, and *S. backhauseni*, some of which may be intra-specific variants instead.

NOMINA DUBIA: *Anyphaena pampa*, Holmberg 1881: 145 (female holotype from Argentina, Buenos Aires province, near Sierra de La Ventana, lost). The body pattern and the simple sketch of the epigyne illustrated by Holmberg (1881: fig. 7a, b) are reminiscent of *Monapia fierro* or *M. carolina*, but the three pairs of ventral spines on tibia I differ from the four to six pairs found in those species. *Clubiona gemella* Nicolet, 1849 (several immatures syntypes from Chile, no specific locality, in MHNP 4238, examined, similar to *Sanogasta maculosa*).

Sanogasta maculatipes (Keyserling),
new combination

Figures 61B, 76A, 77E, 78A, B, D, E, 79A, 80A–C, 81D, E

Anyphaena maculatipes Keyserling, 1878: 603 (female holotype from Uruguay, in BMNH, examined; also an immature *Josa* in the same vial, see Note below).

Anyphaena argentina Holmberg, 1881: 141 (no type designated, described from two females and one immature female from Buenos Aires, Sierra de la Ventana and Rio Colorado, all lost). Synonymized by Mello-Leitão, 1933: 55.

Gayenna maculatipes: Keyserling, 1891: 141. F.O.P.–Cambridge, 1899: 18. Tullgren, 1905: 44. Mello-Leitão, 1925: 456. Berland, 1934: 168.

Gayenna argentina: Simon, 1897a: 91.

Sanogasta intermedia Mello-Leitão, 1941a: 177 (female holotype from Argentina, La Rioja province, Sañogasta, II.1939, M. Birabén, in MLP 14948, examined; a female without locality, in collection Birabén, labeled “*Sanogasta intermedia*/Tipi” in MLP, examined, may be a paratype). Ramírez, 1995a: 366. NEW SYNONYMY.

SYNONYMY: The holotypes of the species here synonymized were compared; no relevant differences were found.

NOTES: The immature specimen of *Josa* sp. along with the type of *A. maculatipes* most probably come from another locality, because there are no records of similar *Josa* species from Uruguay or nearby localities. The limits between *S. maculatipes* and *S. alticola* are problematic and are only provisionally accounted here. I have seen several intermediate forms of male and female genitalia, as well as diverging forms, differing slightly from both species as limited here. The problem of intermediates is less acute for *S. mandibularis*, but should be also considered in a future revision.

DIAGNOSIS: Provisionally distinguished from the very similar *S. alticola* by having a less advanced epigynal anterior pouch. Typical males also have a shorter paramedian apophysis.

FEEMALE (Montevideo, Arroyo Carrasco): Total length 6.00. Carapace length 2.30, width 1.73, wider on legs II–III. Length of tibia/metatarsus: I, 1.50/1.33; II, 1.50/1.33; III, 1.23/1.33; IV, 1.70/1.97. Palpal tarsus length 0.73. Chelicerae with two teeth on retromargin. Sternum length 1.20, width 0.97. Spines: leg I, femur d 1–1–1, 2ap; tibia v 2–2–2; metatarsus v 2bas. II, femur d 1–1–1, p d1ap; tibia v r1–2–2 or 2–2–2, p 0–1; metatarsus v 2bas, p 1–0. III, femur d 1–1–1, p and r d1ap; patella r d1; tibia v p1–2–2, p 1–0–1–0 or 0–d1–1–0, r d1–1 or 0–1, d r1–0–(1 bristle)–0; metatarsus v 2–p1–2 or 2–0–2, p and r d1–1–1, d 0–p1–2. IV, femur, patella = III; tibia v p1–2–2, p and r 1–d1–1–0, d r1–0–(1 bristle)–0; metatarsus v 2–2–2, p and r d1–1–1, d 0–p1–2. Abdomen length 3.15, width 1.60, spiracle–epigastrium 1.03, spiracle–spinnerets 0.77. Color: pale grayish, with grayish brown dorsal pattern. Sternum with gray spot in front of coxae I–III, small posterior spot. Epigyne (figs. 78D, E, 80A–C): opening of anterior pouch facing backward.

MALE (Montevideo, Arroyo Carrasco): Total length 5.30. Carapace length 2.40, width 1.83. Length of tibia/metatarsus: I, 2.67/2.60; II, 2.50/2.67; III, 1.83/1.87; IV, 2.27/2.63. Chelicerae slightly smaller than those of female. Sternum length 1.30, width 1.10. Spines as in female, except: leg I, tibia p 1–0–1–0 or 0. II, femur p 0–d1–d1; tibia v 2–2–2, p 1–0–1–0. III, femur p 0–d1–d1; tibia v 2–

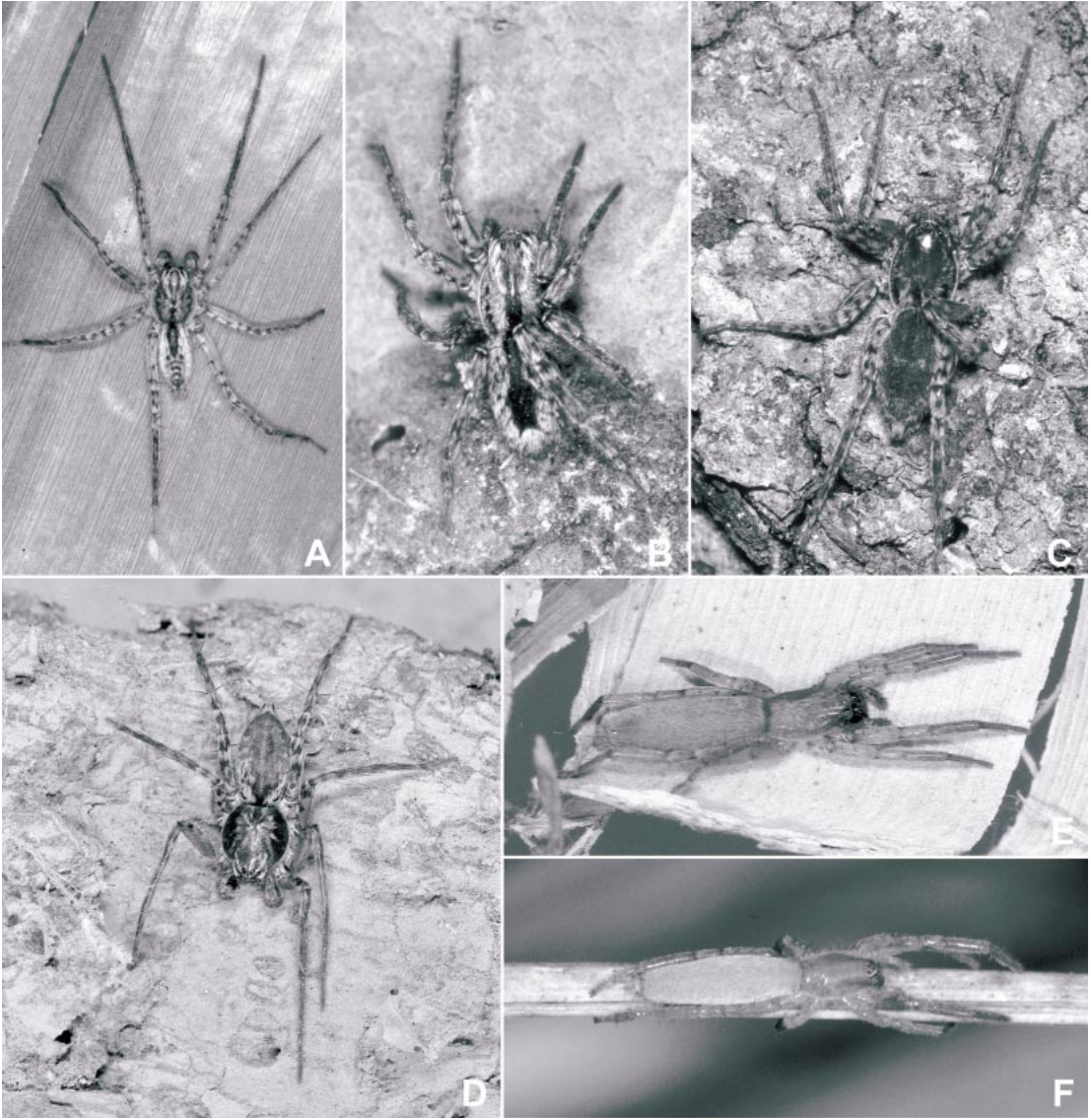


Fig. 76. *Sanogasta* spp. **A.** *S. maculatipes* (Keyserling), male (Buenos Aires, Hudson, photo MJR 263). **B–D.** *Sanogasta maculosa* (Nicolet). **B.** Female (Choapa, Pichidangui, photo MJR 1256). **C.** Female (Talca, Vilches, photo MJR 770). **D.** Male (Talca, Vilches, photo MJR 7). **E.** *Sanogasta puma*, sp. n., female (Entre Ríos, Rosario del Tala, photo MJR 62). **F.** *Sanogasta tenuis*, sp. n., female holotype (photo MJR 1246).

2–2, p and r 1-d1-1-0; metatarsus v 2–0–2. **IV**, tibia = III. Abdomen length 3.00, width 1.90, spiracle–epigastrium 1.03, spiracle–spinnerets 0.83. Color as in female (figs. 76A, 77E). Palp (figs. 78A, B, 81D, E): tibia width/length 0.56, cymbium relatively large. Embolus thin, basal process small, acute (fig.

78A). Median apophysis vestigial, short. Paramedian apophysis long, thin, base membranous. Secondary conductor large, not fused to anterior margin of tegulum (fig. 78B), with conspicuous canal arising at base of paramedian apophysis; retrolateral portion with basal triangular prong. Anterior margin

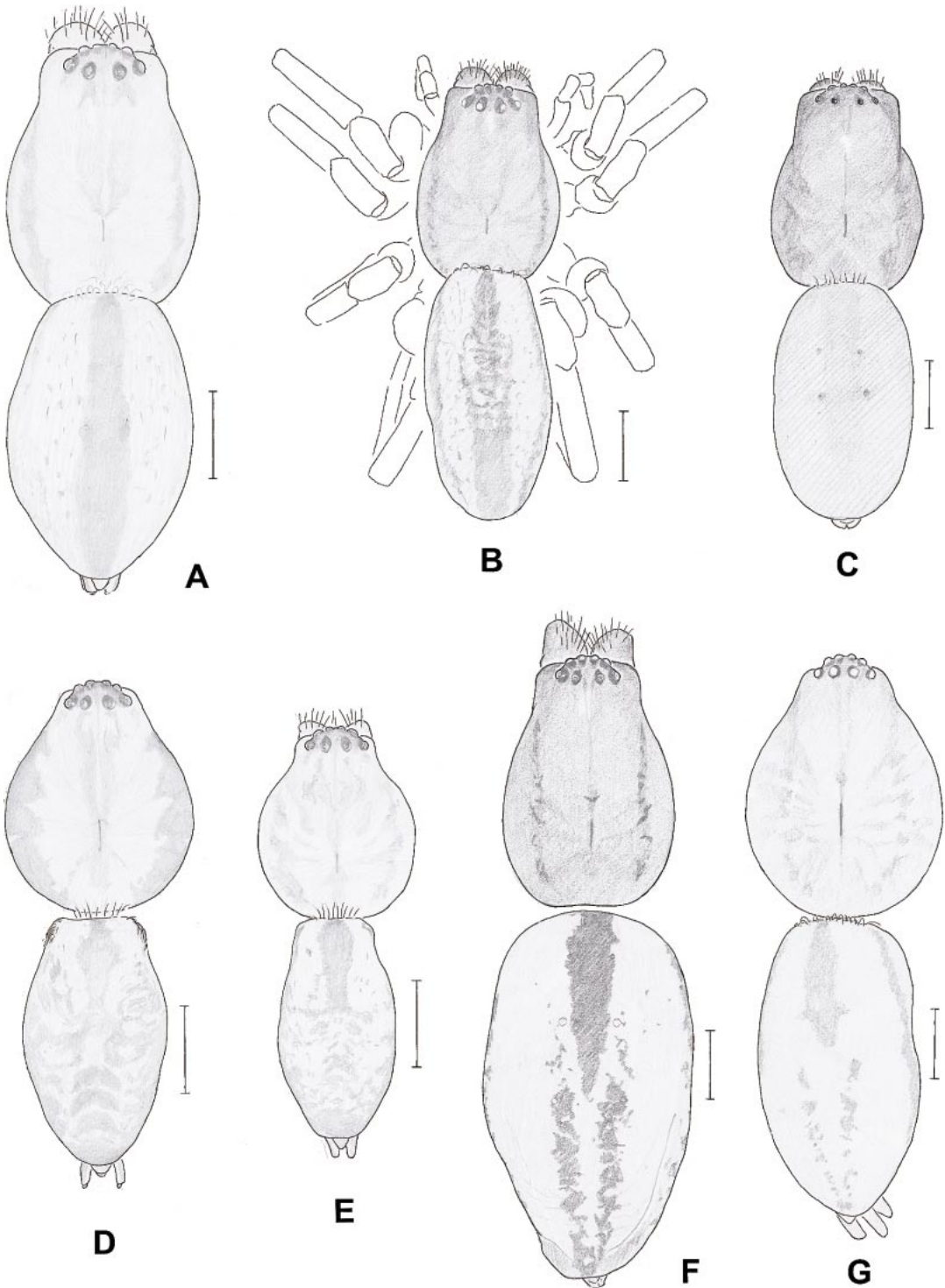


Fig. 77. *Sanogasta* spp. **A–D.** *Sanogasta maculosa* (Nicolet). **A.** Female (Tierra del Fuego, Nueva Herber-ton). **B.** Holotype of *Tomopisthes taeniatus*. **C.** Lectotype of *Tomopisthes injucundus*. **D.** Male (Lago Futalaufquen, II.1985). **E.** *Sanogasta maculatipes* (Keyserling), male (Castillos, Arroyo Sarandí del Consejo). **F, G.** *Sanogasta backhauseni* (Simon). **F.** Female holotype. **G.** Male allotype. Scale bars = 1 mm.

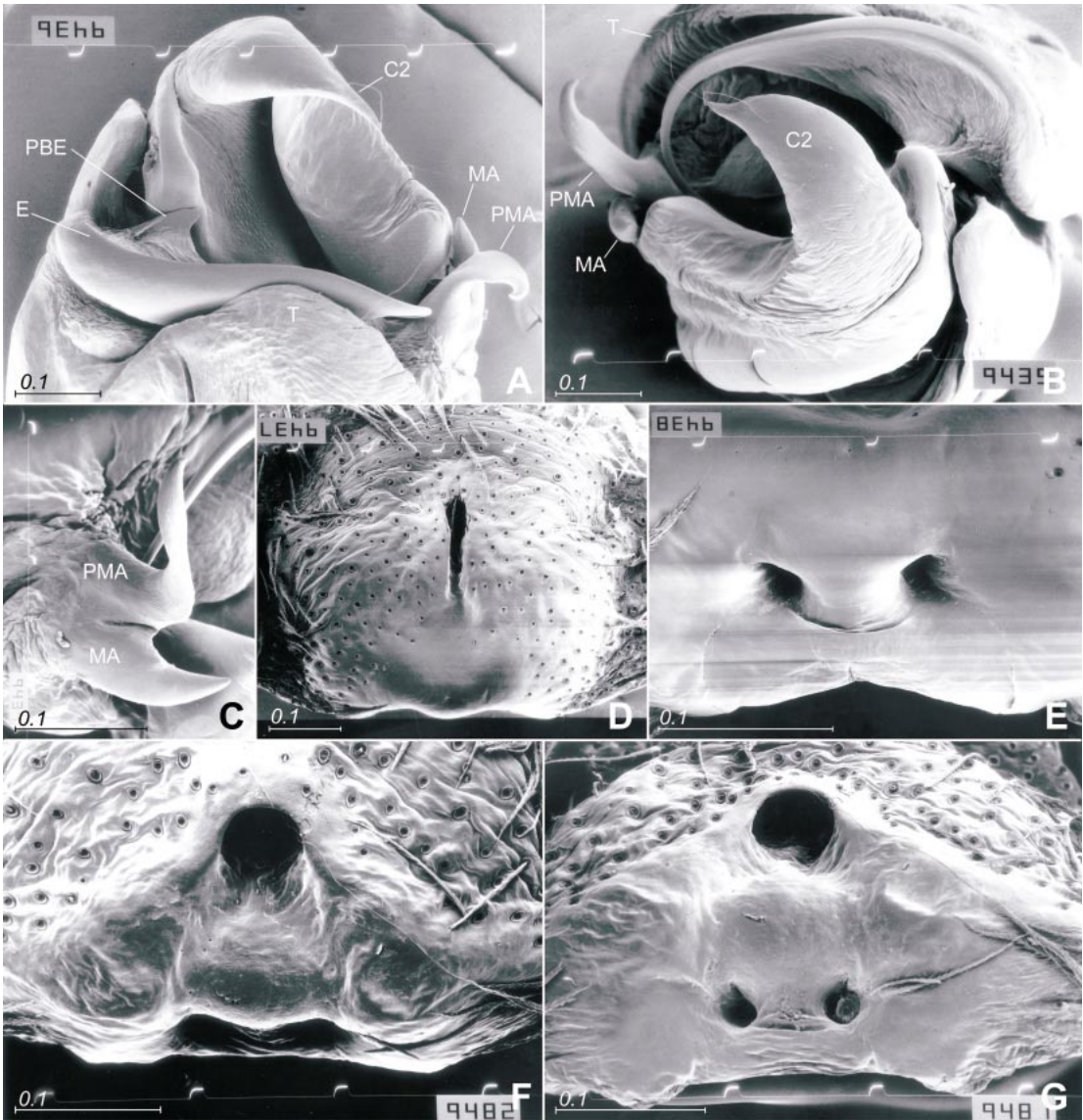


Fig. 78. *Sanogasta* spp. **A, B.** *S. maculatipes* (Keyserling), male copulatory bulb (Buenos Aires, Atucha). **A.** Ventral view. **B.** Apical view. **C.** *S. mandibularis*, n. sp., median and paramedian apophyses, retrolateral view. **D, E.** *S. maculatipes*, epigyne (Buenos Aires, Punta Lara). **D.** Ventral view. **E.** Copulatory openings in posterior view. **F, G.** *S. mandibularis*, n. sp., epigyne. **F.** Ventral view. **G.** Posterior view. (C2 = secondary conductor; E = embolus; MA = median apophysis; PMA = paramedian apophysis; T = tegulum.)

of tegulum compressed over base of secondary conductor.

DEVELOPMENT: The development of the epigyne is similar to that of other Amaurobioidinae (see *Tomopisthes horrendus*). The

primordium in penultimate females (fig. 79A) has traces of anterior pouch, of depressions of copulatory openings, and (presumably) of spermathecae.

NATURAL HISTORY: This species builds re-

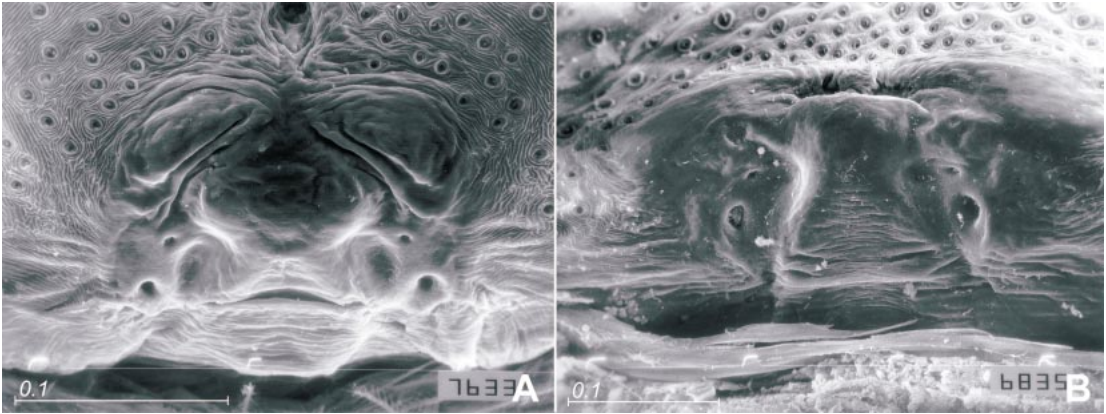


Fig. 79. Primordium of epigyne of penultimate females, *Sanogasta* spp. **A.** *S. maculatipes* (Keyserling), ventral-posterior view. **B.** *S. maculosa* (Nicolet), posterior view (Chubut, Norquínco).

treats on foliage, grasses, and occasionally on “serruchetas” (*Eryngium* spp.) and under bark.

DISTRIBUTION: Peru, northern Chile, Bolivia, southern Brazil, Uruguay, and Argentina. Also found in Eastern Island (Baert et al., 1997), where it was most probably introduced by human activity.

VARIABILITY: Specimens with four teeth on cheliceral promargin, or three on retromargin, are extremely rare. Most females lack the prolateral spine on metatarsus II.

OTHER MATERIAL EXAMINED: **PERU:** **Apurimac:** 37 km S Andahuaylas, 6.III.1951, Ross and Michelbacher, 1♂ 4♀ (CAS); 47 km N Andahuaylas, 7.III.1951, Ross and Michelbacher, 2♀ (CAS). **Arequipa:** 100 km NE Arequipa, 4500 m, 14.X.1983, E. Maury, 4♀ (MACN-Ar), A. Roig, 1♀ (MACN-Ar); 150 km W Arequipa, 14.X.1983, A. Roig, 7♀ (MACN-Ar); 170 km NE Arequipa, 4300 m, 15.X.1983, E. Maury, 4♀ (MACN-Ar); San Ignacio, Cailloma, 1.IX.1939, K. Schmidt, 1♂ 1♀ (AMNH). **Puno:** 15 km W Mañazo, 4100 m, 15.X.1983, A. Roig, 1♀ (MACN-Ar). **Localities Not Found:** Masocruz, 3800 m, 17.XII.1955, L. Peña, 6♀ (IRSN IG 20275); Perú, no specific locality, L. Peña, 2♀ (IG 20651). **BOLIVIA:** **Cochabamba:** Colomi, 21.X.1983, E. Maury, 1♀ (MACN-Ar); E of Cumbre Pass, Coroico Road, 17.VII.1960, B. Malkin, 1♀ (AMNH); road to Illimani, 3700–4000 m, 25.XII.1975, L. Peña (AMNH); Tunari, nr. 1 and 2, lake,

4100–4200 m, 10.X.1953, Forster and Schlinger, 3♀ (AMNH). **La Paz:** carretera La Paz-Sorata, 1400 m, 25.IV.1972, Bordon, 1♀ (MACN-Ar); La Cumbre, 4800 m, 20.IX.1988, V. and B. Roth, 1♀ (CAS); La Paz, suelo, 4550 m, VIII.1993, A. Brescovit, 3♀ (MACN-Ar, thanks to A. Brescovit); 65 km NE La Paz, Altiplano, nr. Juana de Potosí Mt., 14,500 ft, under flat rock, 10.II.1959, R. Walsh, 2♀ (AMNH); Tiahuanaco, 10–13.VI.1960, B. Malkin, 2♀ (AMNH). **Locality Not Found:** Chacaltaya, 4700 m, from small field, 24–25.IV.1954, Forster and Schlinger, 1♀ (AMNH). **BRASIL:** **Santa Catarina:** Curitibaanos, Est. Campos Novos, 12.V.1967, P. Biasi, 1♀ (MZUSP 7032). **Rio Grande do Sul:** Santa Vitória do Palmar, Estação Ecológica do Taim, 12.IX.1991, A. Lise, 1♂ 1♀ (MCTP 0993). **URUGUAY:** **Departamento Minas:** Lavalleja, Cerro Penitente, under stones, 10.XII.1967, P.R. San Martín, 1♀ (MCZ). **Departamento Rocha:** Arroyo Sarandí del Consejo, ruta 9 km 251, 18.V.1993, M. Ramírez and F. Pérez Miles, 2♂ (MACN-Ar); Laguna de Castillos, 19.V.1993, M. Ramírez and F. Pérez Miles, 1♀ (MACN-Ar). **Departamento Maldonado:** Punta Ballenas, 29–30.VIII.1980, P. Goloboff, 1♀ (MACN-Ar). **Departamento Montevideo:** Montevideo, calle Durazno y Acevedo, VI.1964, R. Capocasale and L. Bruno, 1♂ 1♀ (CAS); Montevideo, Arroyo Carrasco, 20.VIII.1961, R. Capocasale and L. Bruno, 1♂ 6♀ (CAS); Montevideo, no

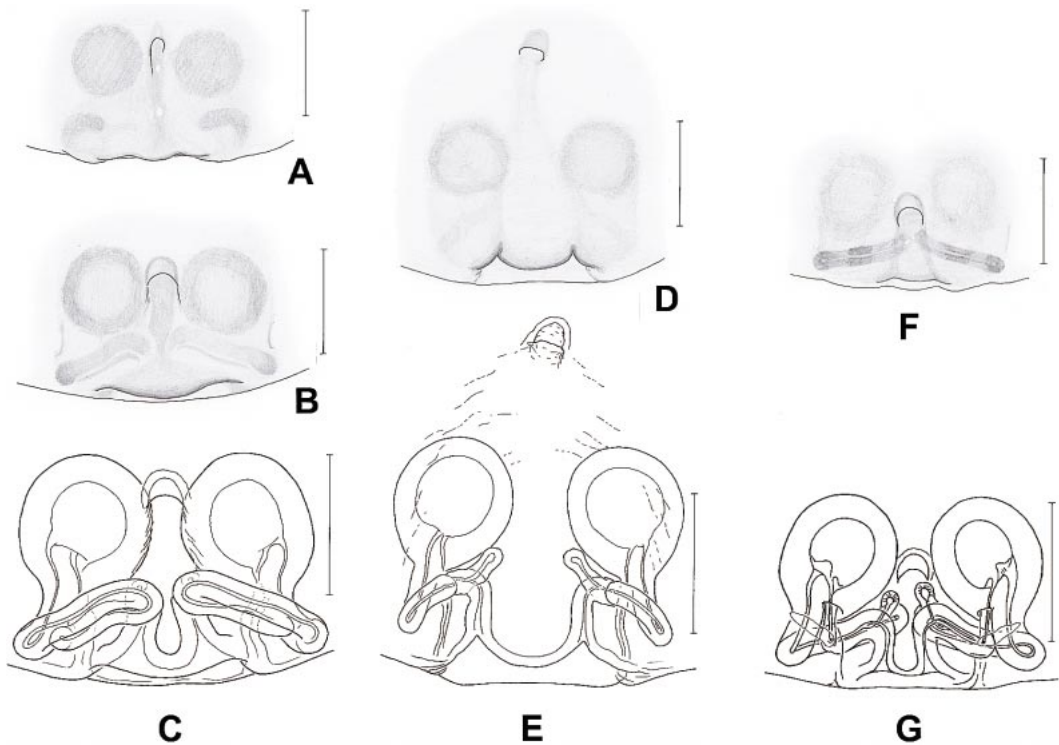


Fig. 80. Epigyne and spermathecae of *Sanogasta* spp. **A–C.** *Sanogasta maculatipes* (Keyserling). **A.** Ventral view (Buenos Aires, San Isidro). **B.** Ventral view (Uruguay, Castillos). **C.** Same, cleared. **D, E.** *S. alticola* (Simon). **D.** Ventral view (Bolivia, La Paz). **E.** Same, cleared. **F, G.** *S. mandibularis*, n. sp. (paratype). **F.** Ventral view. **G.** Cleared, dorsal view. Scale bars = 0.2 mm.

date, no collector, 1 ♀ (MNRJ 14129). **AR-GENTINA: Jujuy:** Cachinoca, I.1966, E. Maury, 2 ♀ (MACN-Ar 1034); Humahuaca, 20–21.I.1985, E. Maury, 1 ♂ (MACN-Ar); Fraile Pintado, X.1967, E. Maury, 2 ♀ (MACN-Ar 6033); Laguna de Yala, I.1966, E. Maury, 1 ♀ (MACN-Ar); Mina El Aguilar, Tres Cruces, 16.I.1942, M. Birabén and Scott, 1 ♀ (MLP); Tilcara, II.1981, P. Goloboff, 1 ♂ (MACN-Ar). **Salta:** Iruya, 29.XI.1981, E. Maury, 1 ♀ (MACN-Ar); Laguna Brealito, 15 km W Seclantás, 29.I.1981, E. Maury, 1 ♀ (MACN-Ar); Rosario de la Frontera, X.1986, O. Donado, 1 ♂ (MACN-Ar); San Bernardo, San Lorenzo, 25–31.V.1933, J.B. Daguerre, 3 ♀ (MACN-Ar). **Misiones:** Fracrán, 23.XI.1948, M. Birabén, 1 ♀ (MLP); Santa María, XII.1947, J.M. Viana, 1 ♂ (MACN-Ar). **Tucumán:** ruta 40 km 999, Quilmes, 9.I.1995, P.A. Goloboff, 1 ♂ (IML). **Catamarca:** Capital, VII.1949, J.M.

Viana, 4 ♀ (MACN-Ar 2943); I.1946, Schaeffer, 2 ♀ (MLP); El Rodeo, I.1957, M.E. Galiano, 1 ♀ (MACN-Ar), 11.XII.1951, 1 ♀ (MLP); Est. Grande, II.1946, M. Vignalli, 1 ♀ (MLP); Quebrada La Cébila, 21.X.1963, M.E. Galiano, 1 ♂ (MACN-Ar); Santa María, 18.XII.1994, C. Grismado, 1 ♂ 1 ♀ (MACN-Ar). **La Rioja:** Ascha, Aminogasta, 1947, Cáceres Freyre, 1 ♀ (MACN-Ar); B. Famatina, Chilecito, II.1953, M.E. Galiano, 1 ♀ (MACN-Ar). **Santiago del Estero:** Capital, 4.VI.1963, Havrylenko, 1 ♀ (MACN-Ar); Colonia Dora, VIII.1940, 1 ♀ (MACN-Ar 1769). **Córdoba:** Argüello, XII.1945, J.A. de Carlo, 1 ♂ (MACN-Ar 1947), 1 ♀ (MACN-Ar 1948); Calamuchita, Sierras Grandes, X.1970, J.M. Viana, 1 ♀ (MACN-Ar); Cosquín, 31.X.1898, "No. frasco 4513", no collector, 1 ♂ (MACN-Ar); Departamento San Javier, II.1943, H. Gario and R. Maniglia, 1 ♀ (MACN-Ar); La Falda, un-

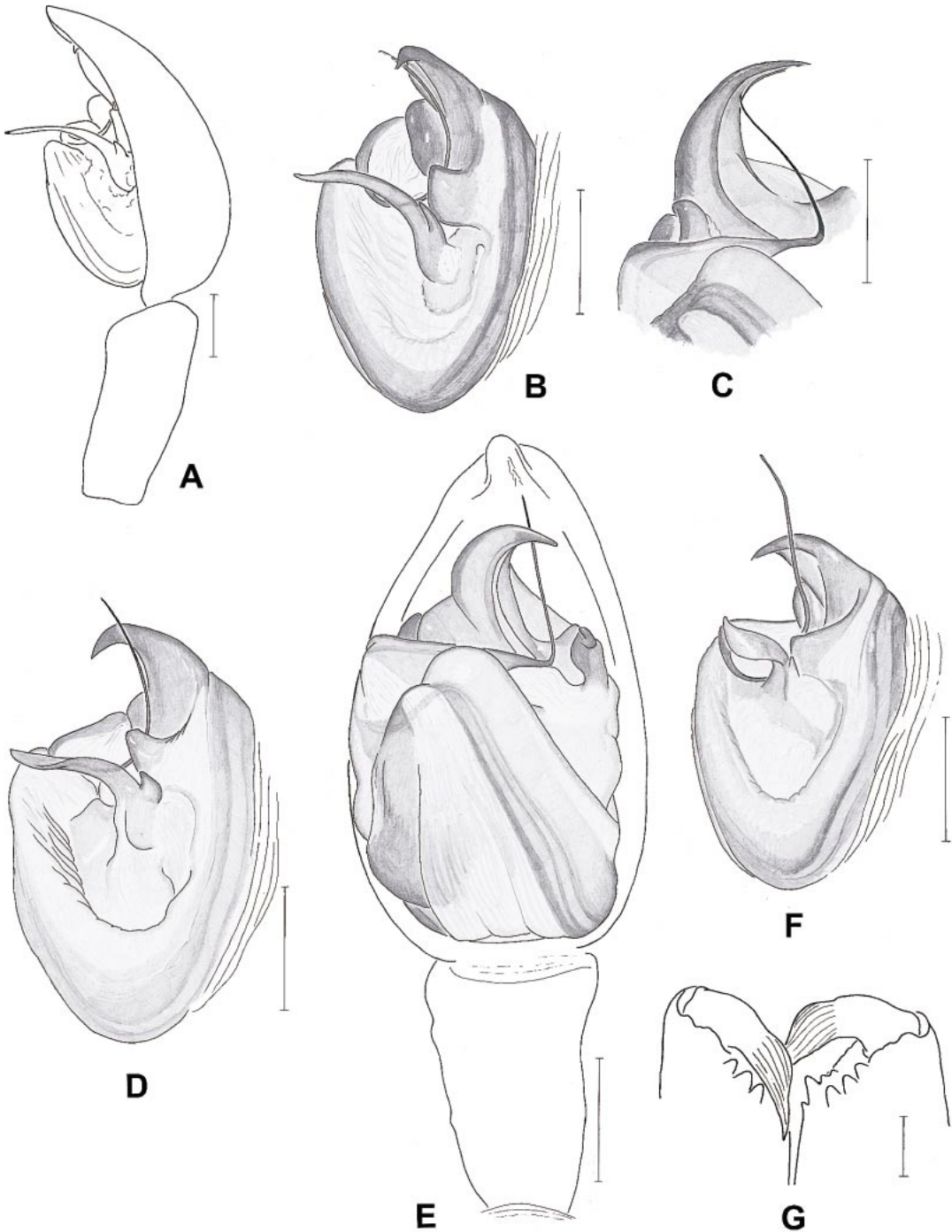


Fig. 81. **A–C.** *Sanogasta alticola* (Simon). **A.** Male palp, retrolateral view (La Paz). **B.** Copulatory bulb, retrolateral view (Perú, Cuzco). **C.** Secondary conductor and embolus, ventral view (Bolivia, La Paz). **D, E.** *Sanogasta maculatipes* (Keyserling) (Castillos, Arroyo Sarandí del Consejo). **D.** Copulatory bulb, retrolateral view. **E.** Ventral view of palp. **F, G.** *Sanogasta mandibularis*, n. sp. **F.** Copulatory bulb, retrolateral view (Buenos Aires, San Pedro). **G.** Chelicerae, ventral view (paratype). Scale bars = 0.2 mm.

der stones, 23.VIII.1922, A. Frers, 1♂ (MACN-Ar). **San Juan:** Paso Agua Negra, ca. 3500 m, 1–2.I.1982, A. Roig, 2♂ 2♀ (MACN-Ar). **San Luis:** Carolina, IX.1970, J.M. Viana and Williner, 1♂ 2♀ (MACN-Ar); Cacheuta, X.1965, E. Maury, 1♀ (MACN-Ar); Papagallos, 9.XI.1982, E. Maury, 1♂ 1♀ (MACN-Ar). **Santa Fe:** Colonia Macias, Departamento Garay, XI.1942, J.M. Viana, 1♀ (MACN-Ar 1400); El Toba, X.1967, M.E. Galiano, 1♀ (MACN-Ar). **Entre Ríos:** El Palmar Natl. Park, XI.1988, M.E. Galiano, 1♀ (MACN-Ar); Ibicucito, 1938, F. Castillo, 3♀ (MACN-Ar); Rosario del Tala, 20.XI.1988, M. Ramírez, 1♀ (MACN-Ar). **Buenos Aires:** Atucha, 27.VII.1985, P. Goloboff, M. Ramírez, 3♂ (MACN-Ar), 10.V.1987, M. Ramírez, 1♂ (MACN-Ar); 8.IX.1989, M. Ramírez, 1♀ (MACN-Ar); Bahía Blanca, II.1942, S. Monrós, 1♀ (MACN-Ar 1173); Boulogne, X.1938, A. Prosen, 2♂ 13♀ (MLP); many specimens from around Buenos Aires city, in MACN-Ar; Capilla del Señor, 23.I.1942, A. Prosen, 1♀ (MLP); Castelli, X.1960, J.M. Viana, 1♂ 1♀ (MACN-Ar 5155); Chascomús, 16.XII.1984, M. Ramírez and C. Scioscia, 3♂ 7♀ (MACN-Ar), 19.X.1947, N91a, no collector, 2♂ 2♀, 2♀ penultimates (MACN-Ar); Escobar, 1938, A. Prosen, 2♂ 5♀ (MLP); Estancia El Tanelero, Pdo. Gral. Lavalle, cerca canal 2, 15–21.XII.1951, J. Cranwell, 1♀ (MACN-Ar); Ing. Maschwitz, XI.1941, A. Prosen, 1♀ (MLP); Isla Martín García, 25.V.1990, M. Ramírez, 1♂ 1♀ (MACN-Ar); La Plata, 1942, 1♂ 5♀ (MLP); 15 km W Lobería, 4.IX.1972, 1♂ (MACN-Ar); Los Médanos, energía, 8.IV.65, J.M. Gallardo and E. Maury, 5♂ 1♀ (MACN-Ar); Magdalena, 13–14.VIII.1983, P. Goloboff and M. Ramírez, 1♀ (MACN-Ar); Mar del Plata, 20.II.1985, M. Ramírez, 1♀ (MACN-Ar); Paraná de Las Palmas, 17.IX.1963, M.E. Galiano, 1♂ (MACN-Ar); Punta Lara, Ensenada, 28.XI.1985, M.E. Galiano, C. Scioscia, 3♀ (MACN-Ar); III.1943, A. Moreno, 3♂ 4♀ (MLP), 15.XII.1943, 2♀ (MLP); Quequén, II.1960, M. Birabén, 2♀ (MACN-Ar); San Isidro, Punta Chica, 5.XI.1941, A. Prosen, 4♀ (MLP); Sierra de la Ventana, Prov. Park E. Tornquist, Cerro Negro, 12.IV.1974, Cesari, 7♂ 4♀ (MACN-Ar), 18–20.IX.1982, M. Ramírez, 3♂ 1♀ (MACN-

Ar); Tandil, excursion J.M. Viana, 2♀ (MACN-Ar). **Neuquén:** Laguna Blanca Natl. Park, I.1975, E. Maury, 1♀ (MACN-Ar); Piedra Pintada, II.1941, R. Maldonado, 1♀ (MLP); Río Limay, Arroyito (12), 16.XII.1978, Misión Científica Danesa, 1♀ (ZMK); San Martín de los Andes, 3–6.I.1964, no collector, 1♀ (MACN-Ar); Senillosa, I–II.1973, O. de Ferrariis, 1♀ (MACN-Ar). **Río Negro:** San Carlos de Bariloche, II.1954, M.E. Galiano, 1♀ (MACN-Ar), 1♂ (MACN-Ar 5413); Coronel Gómez, IV.1948, A. Ibarra Grasso, 1♂ (MACN-Ar); Gral. Roca, I.1962, A. Bachmann, 1♂ (MACN-Ar); X.1963, A. Bachmann, 1♀ (MACN-Ar). **Chubut:** El Hoyo, I.I.1962, A. Kovács, 1♀ (AMNH); Epuén, 42°15'S, 71°23'W, A. Kovács, 1♂ 1♀ (AMNH); Languineo, Estancia Manantiales, 6–10.XI.1985, L. Peña, 1♀ (AMNH); Los Cipreses, XI.1982, M. Ramírez, 1♀ (MACN-Ar); Lago Puelo Natl. Park, 10.XI.1969, A. Kovács, 1♂ (AMNH); Viedma, 16.II.1948, M. Birabén, 2♂ 3♀ (MLP). **Santa Cruz:** Calafate, II.1963, E. Maury, 1♀ (MACN-Ar); Los Cerros, Tres Lagos, IV.1949, Waring, 1♀, 1♂ 2♀ (MLP); 9.III.1948, M. Birabén, 5♂ 2♀ (MLP). **CHILE: Región I (Tarapacá): Tarapacá:** Chaquiña, 3700–4000 m, L. Peña, 10♀ (IRSN IG19736). **Región II (Antofagasta): El Loa:** Calama, Río Loa, La Cascada, 10.I.1984, G. Arriagada, 1♀ (MHNS 910); Calama, Vegas del Río Loa, Fundo Soto, 10.VIII.1972, no collector, 4♂ 12♀ (UC); Cautín, N San Pedro de Atacama, 3300 m, 23–31.VIII.1982, L. Peña, 2♀ (AMNH); San Pedro de Atacama, 23.VIII–6.IX.1982, L. Peña, 3♀ (AMNH). **EASTER ISLAND:** Specimens reported by Baert et al. (1997) were identified by myself from drawings (Pekka Lehtinen, in litt.).

NOTE: F.O.P.-Cambridge recorded this species from the Juan Fernández Islands (1♂, 1♀ immature, Dr. Plate coll., not seen), indicating that he could not find any difference with the type of *Gayenna maculatipes*, except that the specimens from the Juan Fernández are larger. This identification is not very reliable, though. The type of *G. maculatipes* is a female, and in those islands *S. maculosa* is commonly found, a species very similar to *S. maculatipes*, which is larger on

the Juan Fernández Islands than on the mainland.

Sanogasta alticola (Simon),
new combination

Figures 80D, E, 81A–C

Gayenna alticola Simon, 1896c: 400 (female lectotype from Bolivia, La Paz, Garlepp coll., and male paralectotype [*Meriola cetiformis*, misidentification], designated by Platnick and Ewing, 1995: 15; in MHNP 17942, examined), 1897a: 91, 99.

Gayenna monticola Chamberlin, 1916: 267 (female holotype from Peru, Cuzco, 11,500 ft, July 1911, Yale Peruvian Expedition, under stones, in MCZ 256, examined). NEW SYNONYMY.

NOTE: The distinction between this species and *S. maculatipes* is problematic (see note under *S. maculatipes*).

DIAGNOSIS: Provisionally distinguished from the very similar *S. maculatipes* by having the epigynal anterior pouch more advanced (fig. 80D). Typical males also have a longer paramedian apophysis (fig. 81B).

FEMALE (lectotype): Total length 6.30. Carapace length 2.52, width 1.78, wider on legs II–III. Length of tibia/metatarsus: I, 1.49/1.34; II, 1.49/1.32; III, 1.25/1.30; IV, 1.62/2.18. Chelicerae unmodified, with two teeth on retromargin. Spines: leg I, femur d 1–1–1, p 2ap; tibia v 2–2–p1 (most females with v 2–2–2); metatarsus v 2bas. II, femur d 1–1–1, p d1ap; tibia v r1–2–2, p 0–1; metatarsus v 2bas, p 1–0. III, femur d 1–1–1, p 0–d1–d1, r d1ap; patella rd1; tibia v p1–2–2, p 1–d1–1–0, r d1–1, d r1bas; metatarsus v 2–p1–2, p and r d1–1–1, d 0–p1–2. IV, femur d 1–1–1, p and r d1ap; patella dr1; tibia v p1–2–2, p and r 1–d1–1–0, d r1bas; metatarsus v 2–2–2, p and r d1–1–1, d 0–p1–2. Abdomen length 4.00, width 1.10. Color: pale grayish with gray pattern, as in *S. maculatipes*. Epigyne (fig. 80D, E): very similar to that of *S. maculatipes*, anterior pouch more advanced.

MALE (La Paz, III–IV.1959): Total length 6.12. Carapace length 2.53, width 2.00. Length of tibia/metatarsus: I, 2.60/2.63; II, 2.30/2.30; III, 1.73/1.90; IV, 2.23/2.50. Chelicerae slightly smaller than those of female. Sternum length 1.43, width 1.10. Spines as in female, except: leg I, tibia p 1–0–1–0; metatarsus p 1–0. II, femur r 0; tibia = I or p 1–d1–1–0. III, tibia p and r 1–d1–1–0; meta-

tarsus v 2–p1–2. IV, tibia = III. Abdomen length 3.30, width 2.00, spiracle–epigastrium 1.37, spiracle–spinnerets 0.83. Color as in female. Palp (fig. 81A–C): very similar to that of *S. maculatipes*, often with longer paramedian apophysis. Tibia long, width/length 0.42, cymbium large. Secondary conductor partially fused to anterior margin of tegulum; retrolateral portion with basal rounded projection.

VARIABILITY: Some females lack the pro-lateral spine on metatarsus II. Spines: metatarsus III, v 2–2–2. Male, spines: III, tibia v 2–2–2.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Puna highlands in Peru, Bolivia, and Argentina.

OTHER MATERIAL EXAMINED: **PERU: Cuzco:** Cuzco, VIII, no date, Wunderlich, 3♂ 2♀ (AMNH), 7–8.VI.1964, B. Malkin, 2♀ (AMNH); Urubamba, under stone, I. 1965, F. Carrasco, 1♀ (MCZ). **Huancavelica:** Huancavelica, 10.VIII.19??, 1♀ (sitio 30, IRSN IG 25518); nr. Niñobamba, 3500 m, 2♀ (sitio 36, IRSN IG 25518). **Puno:** 20 mi N Desaguadero, 27.II.1951, 1♀, 28.II.1951, 1♂, Ross and Michelbacher (CAS). Perú, no specific locality, 42, 1♀ (IRSN IG 25518). **BOLIVIA: Cochabamba:** 30 mi N Potosí, 22.II.1951, Ross and Michelbacher, 1♂ 1♀ (CAS). **La Paz:** Apacheta, Cuyu-Cuyu, E Ti-huanaco, 4100 m, L. Peña, 2♀ (AMNH); Huatajata nr. Lake Titicaca, 6.I.1954, Schlinger and Forster, 1♀ (AMNH); hill beyond Huatajata, Lake Titicaca area, 10–15.I.1954, Forster and Schlinger, 1♀ (AMNH); La Paz, III–IV.1959, R. Walsh, 2♂ 1♀ (AMNH); house and garden, IV.1959, R. Walsh, 1♂ (AMNH); La Paz, Avenida Sport Club, 4.I.1959, A. Nadler, 2♀ (AMNH). *Locality Not Found:* Songo Valley, Cuticucho, 3800 m, 30.I.1954, Forster and Schlinger, 1♂ (AMNH). **ARGENTINA: Jujuy:** Abra Pampa, III.1966, E. Maury, 5♀ 1 immature (MACN-Ar); Laguna de Yala, X.1967, E. Maury, 1♀ (MACN-Ar); 30.XI.1981, E. Maury, 1♀ (MACN-Ar); V.1983, P. Goloboff, 1♀ (MACN-Ar). **Tucumán:** Tafí del Valle, 28–30.XII.1994, P. Goloboff, 1♂ 1♀ (MACN-Ar); 27.X.1947, Gobbach, 2♀ (MLP). **La Rioja:** Alto Carrizal, II.1956, M.E. Galiano, 11♀ (MACN-Ar).

Sanogasta mandibularis, new species

Figures 78C, F, G, 80F, G, 81F, G

TYPES: Female holotype 9824 from Argentina, Buenos Aires province, Los Talas, reared in captivity, born from female paratype 9826, ca. 34°51'S, 57°55'W, XII.1985, C. Scioscia; male paratype 9825 from Buenos Aires, Partido de Ensenada, Punta Lara, 26.II.1967, M.E. Galiano, deposited in MACN-Ar.

ETYMOLOGY: The specific name refers to the relatively large chelicerae.

DIAGNOSIS: Resembles *S. maculatipes* and *S. alticola* in having very similar genitalia, but typical specimens can be distinguished by having three teeth on the cheliceral retro-marginal and four on the promarginal. Specimens usually have a larger epigynal anterior pouch, situated close to the epigastric furrow, and strong male chelicerae (see Note under *S. maculatipes*).

FEMALE (holotype): Total length 6.00. Carapace length 2.23, width 1.67, wider on legs II–III. Length of tibia/metatarsus: I, 1.37/1.30; II, 1.33/1.27; III, 1.07/1.17; IV, 1.50/1.83. Palpal tarsus length 0.72. Chelicerae strong, with four teeth on promarginal, three on retromarginal, apical one slightly smaller. Sternum length 1.17, width 0.92. Spines: leg I, femur d 1–1–1, p (1-d1)ap; tibia v 2–2–2; metatarsus v 2bas. II, femur d 1–1–1, p d1ap; tibia v r1–2–2, p 0–1; metatarsus v 2bas, p 1–0. III, femur d 1–1–1, p and r d1ap; patella r d1; tibia v p1–p1–2, p and r d1–1, d r1bas; metatarsus v 2–p1–2, p and r d1–1–1, d 0–p1–2. IV, femur = III; patella r d1; tibia v p1–2–2, p 1–d1–1–0, r d1–1, d r1bas; metatarsus v 2–2–2, p and r d1–1–1, d 0–p1–2. All tibiae with d r1–0–1–0 bristles, except III and IV, where basal bristles replaced by spines. Abdomen length 3.70, width 2.33, spiracle–epigastrium 1.40, spiracle–spinnerets 1.00. Color: yellowish cream with grayish spots. Sternum and venter pale. Epigyne (figs. 78F, G, 80F, G): similar to that of *S. maculatipes*, anterior pouch larger, closer to epigastric furrow.

MALE (paratype): Total length 5.54. Carapace length 2.67, width 1.97. Length of tibia/metatarsus: I, 3.37/3.37; II, 2.67/2.70; III, 1.70/1.90; IV, 2.23/2.73. Chelicerae (fig. 81G) strong, longer than those of female,

with four teeth on promarginal, three on retromarginal; middle part of fang thickened. Spines as in female, except: leg II, femur p and r d1ap; tibia v r1–2–2 or 2–2–2 (the p1bas very small), p 0–1 or 0. III, tibia v p1–2–2; metatarsus v 2–p1–2 or 2–2–2. IV, tibia = III. Sternum length 2.67, width 2.33. Abdomen length 2.80, width 1.90, spiracle–epigastrium 0.93, spiracle–spinnerets 0.87. Color as in female, with some diffuse dots in median line on venter. Palp (fig. 81F): very similar to that of *S. maculatipes*. Tibia width/length 0.76. Median apophysis vestigial, conical, paramedian wide, sinuous. Secondary conductor not fused to anterior margin of tegulum, retrolateral portion with basal rounded projection.

VARIABILITY: A female from Punta Lara has three teeth on promarginal, two on retromarginal.

NATURAL HISTORY: Unknown. All specimens were collected on or close to flooded areas.

DISTRIBUTION: Northeastern Argentina and Paraguay.

OTHER MATERIAL EXAMINED: PARAGUAY: Central: Asunción, 11.VI.1988, V. and B. Roth, 1 vial (number of specimens not recorded) (CAS). **ARGENTINA: Formosa:** Capital, IV.1958, Ogueta, 1 ♀ (MACN-Ar). **Corrientes:** Apipé, XII.1945, W. Hanke, 1 ♀ 1 immature (MACN-Ar 1765); Santiago Alcorta, VI.1943, M. Birabén, 1 ♀ (MACN-Ar). **Santa Fe:** Alejandra, II.1964, M.E. Galiano, 1 ♂ 1 ♀ (MACN-Ar). **Entre Ríos:** Gualeguaychú, IV.1943, F. Monrós, 1 ♂ (MACN-Ar); El Palmar Natl. Park, IV.1981, P. Goloboff, 1 ♂ (MACN-Ar); Salto Grande, III.1964, M.E. Galiano, 1 ♀ (MACN-Ar). **Buenos Aires:** Capital Federal, Bañados de Palermo, 31.V.1916, A.G. Frers, 1 ♂ (MACN-Ar); Saavedra, XII.1935, Castillo, 1 ♀ (MACN-Ar); Glew, no date, Carpintero, 1 ♀ (MACN-Ar); Isla Maciel, I.1948, Partridge, 3 ♀ (MACN-Ar); Isla Martín García, II.1933, J.B. Daguerre, Pérez-Moreau, 1 ♂ 2 ♀ 1 immature (MACN-Ar 34338), IV.1938, J.M. Viana, 1 ♀ (MACN-Ar 421); Punta Lara, Ensenada, III.1943, A. Moreno, 1 ♂ (MLP), 18.IX.1985, M. Ramírez, 1 ♀ (MACN-Ar); San Pedro, 2.XI.1991, M. Ramírez, 1 ♂ 1 ♀ (MACN-Ar); San Isidro, Reserva Ribera Norte, 16.II.1999, M. Pandolfi,

1♂ (MACN-Ar), 12.VIII.1999, M. Pandolfi,
1♀ (MACN-Ar).

Sanogasta maculosa (Nicolet),
new combination

Figures 14B–D, 61C, 76B–D, 77A–D, 79B, 82, 83

Clubiona maculosa Nicolet, 1849: 423 (female lectotype and three immature paralectotypes here designated, from Chile, in MHNP 4234, examined). Simon, 1864: 132.

Clubiona sternalis Nicolet, 1849: 424 (female lectotype and three immature paralectotypes here designated, from Chile, in MHNP 4237, examined). Simon, 1864: 132, 1887: E4. NEW SYNONYMY.

Gayenna stellata: Simon, 1884: 131 (only male paralectotype, from Chile, Cabo de Hornos, in MHNP, examined).

Tomopisthes taeniatus Simon, 1886: 571 (female holotype from Argentina, Santa Cruz province, Patagonia, in MHNP 7729, examined), 1897a: 91, 1902: 31, 1903b: 312, 1903d: 6, 1905b: 12. NEW SYNONYMY.

Gayenna maculosa: Simon, 1887: E4. Mello-Leitão, 1936: 119.

Anyphaena ignota Keyserling, 1891 (male holotype from “Possessions Bay, Straits of Magellan”, in MCZ, examined). NEW SYNONYMY.

Gayenna affinis Tullgren, 1901: 241, 259 (male lectotype, two male and one female paralectotypes from Chile, Punta Arenas, 27.XI.1895, O. Nordenskjöld coll., female paralectotype from Puerto Herberton, 14.II.1896, here designated, in NRS, examined), 1902: 59. NEW SYNONYMY.

Gayenna dubia Tullgren, 1901: 243 (female lectotype from Chile, Punta Arenas, 29.XI.1895, and two females paralectotypes, from Ultima Esperanza, 2.IV.1896, O. Nordenskjöld coll., here designated, in NRS, examined). NEW SYNONYMY.

Tomopisthes conspersus Simon, 1902: 33 (female holotype from Chile, Punta Arenas, in MHNP 21816, examined). NEW SYNONYMY.

Gayenna conspersa: Merian, 1913: 13.

Tomopisthes injucundus Simon, 1902: 33 (female lectotype, three female and one male paralectotypes here designated, from Tierra del Fuego, MHNP 21782, examined; the male paralectotype belongs to a different, presumably undescribed *Sanogasta* species), 1903b: 312. NEW SYNONYMY.

Tomopisthes modestus Simon, 1902: 35 (female holotype from Chile, Punta Arenas, IX.1892, Michaelson coll., in MHNP, examined). NEW SYNONYMY.

Gayenna modesta: Merian, 1913: 13.

Gayenna skottsbergi Berland, 1924: 434 (male

and female syntypes and 19 female paratypes from the Juan Fernández Islands, Mas a Tierra, in NRS, examined). NEW SYNONYMY.

Monapia andina: Gerschman and Schiapelli, 1970: 131 (misidentification, male allotype subsequently designated, in MACN-Ar 6269, examined).

SYNONYMY: The primary types of all species synonymized were compared, together with extensive samples from the same areas. The slight differences in epigyne (see Variability below) were not found to be correlated with any differences in the male palp, which is remarkably uniform. The specimens from the Juan Fernández Islands (and some from Central Chile as well) are larger, but their genitalia are otherwise indistinguishable from those of other specimens of typical size. There are many intermediate forms in epigyne conformation and body size; these differences are here regarded as intraspecific variability.

NOTE: There are many vials in NRS identified by Tullgren as *Gayenna affinis*. I considered syntypes only those whose locality is listed in the original description.

DIAGNOSIS: Typical specimens can be distinguished by having the epigynal anterior pouch close to the epigastric furrow, with the opening facing backward; some specimens have a small pit in place of the pouch. Males are recognized by the shape of the paramedian apophysis, with a thin, curved apex.

FEMALE (spines from paralectotype of *Gayenna affinis*, other data from Chubut, Lago Menéndez): Total length 7.45. Carapace length 2.73, width 1.93, wider on legs II–III. Length of tibia/metatarsus: I, 1.52/1.20; II, 1.32/1.20; III, 1.13/1.25; IV, 1.55/0.95. Palpal tarsus length 0.82. Chelicerae unmodified, with two teeth on retromargin. Sternum length 1.52, width 1.07. Spines: leg I, femur d 1–1–1, p (1-d1)ap, r d1ap; tibia v 2–2–2; metatarsus v 2bas. II, femur d 1–1–1, p 0-d1-(1-d1), r 0-d1-d1; tibia v r1–2–2; metatarsus v 2bas. III, femur d 1–1–1, p and r 0-d1-d1; patella r d1; tibia v p1–p1–2, p and r 1-d1-1-0 or r 1-d1-1-0, d r1bas; metatarsus v 2–0–2, p and r d1-1-0-1, d 0-p1–2. IV, femur d 1–1–1, p 0-d1-d1, r d1ap; patella r d1; tibia v p1–2–2, p and r 1-d1-1-0, d r1bas; metatarsus v 2–2–2, p and r d1-1-0-1, d 0-p1–2. Abdomen length 4.52, width 2.83, spi-

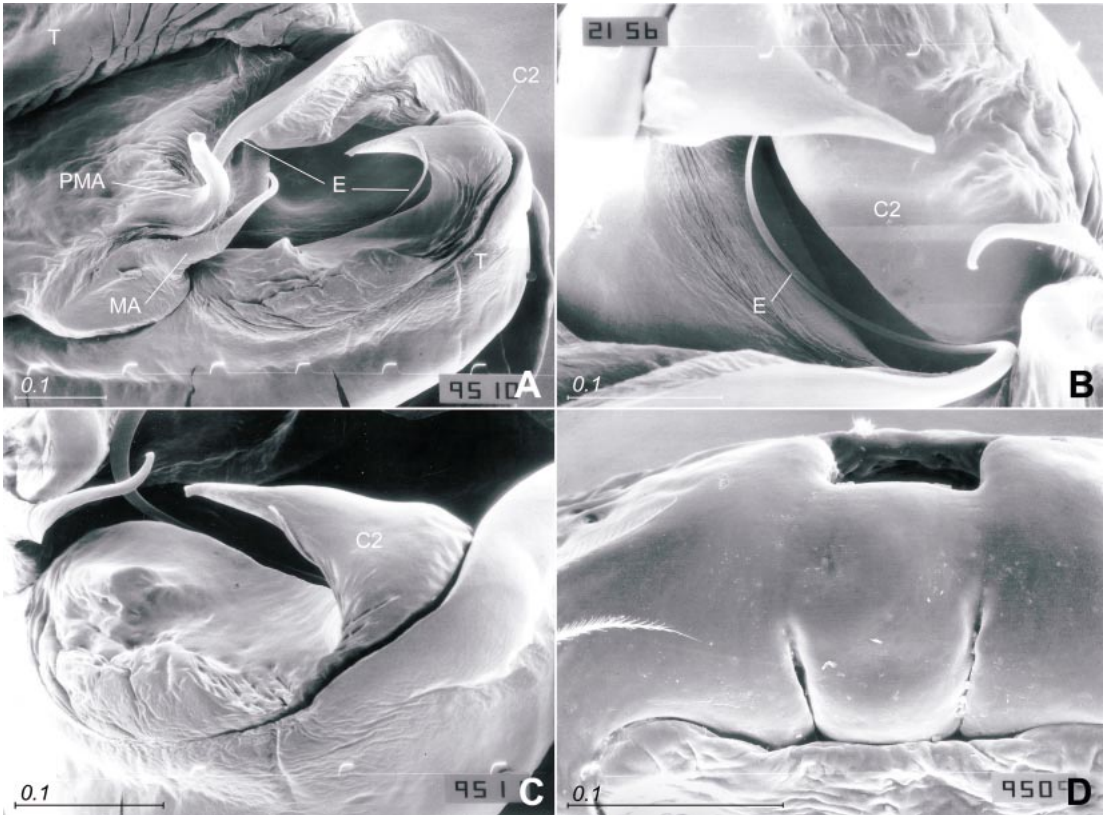


Fig. 82. *Sanogasta maculosa* (Nicolet). **A.** Male copulatory bulb, retrolateral view. **B.** Same, ventral view. **C.** Same, apical view (Chubut, Lago Futalaufquen). **D.** Epigyne, posterior view (Chubut, Lago Verde). (C2 = secondary conductor; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

racle–epigastrium 2.30, spiracle–spinnerets 0.83. Color (cf. figs. 76B, 77B): carapace grayish, margins dark. Legs pale gray with grayish spots, coxae pale. Endites and labium grayish, sternum pale with darker sides. Abdomen grayish, darker to posterior end, dorsal pattern on cream background, cardiac area dark, venter pale with small dark dots, forming median band. Epigyne (figs. 82D, 83D–K): anterior pouch small, close to epigastric furrow, opening facing backward. Copulatory openings in deep depressions, in epigastric furrow, hidden by membrane (fig. 82D). Ducts of accessory bulbs short, ventral.

MALE (spines from lectotype of *Gayenna affinis*, other data from Chubut, Río Arrayanes): Total length 6.12. Carapace length 2.77, width 2.20, relatively wider and more round-

ed than that of female. Length of tibia/meta-tarsus: I, 2.30/2.17; II, 2.20/2.10; III, 1.77/1.83; IV, 2.17/2.60. Chelicerae quite smaller than those of female. Sternum length 1.40, width 1.08. Spines as in female, except: leg **I**, femur r 0-d1-d1; tibia p and r 1-d1-1-0; metatarsus p d1-1-0-0, r 1. **II**, femur p and r 0-d1-d1; tibia and metatarsus = I. **III**, tibia v 2–2–2. **IV**, femur r d d1ap or 0-d1-d1; tibia = III. Abdomen length 3.45, width 1.97, spiracle–epigastrium 1.53, spiracle–spinnerets 0.77. Color (cf. fig. 76D): as in female, but carapace with long dark patches on median band, plus four radial lines from thoracic groove to palps and hindlegs. Sternum with small dark spots in front of coxae I–III. Palp (figs. 82A–C, 83A–C): tibia short, width/length 0.92, cymbium relatively large. Embolus thin, basal process small, acute. Me-

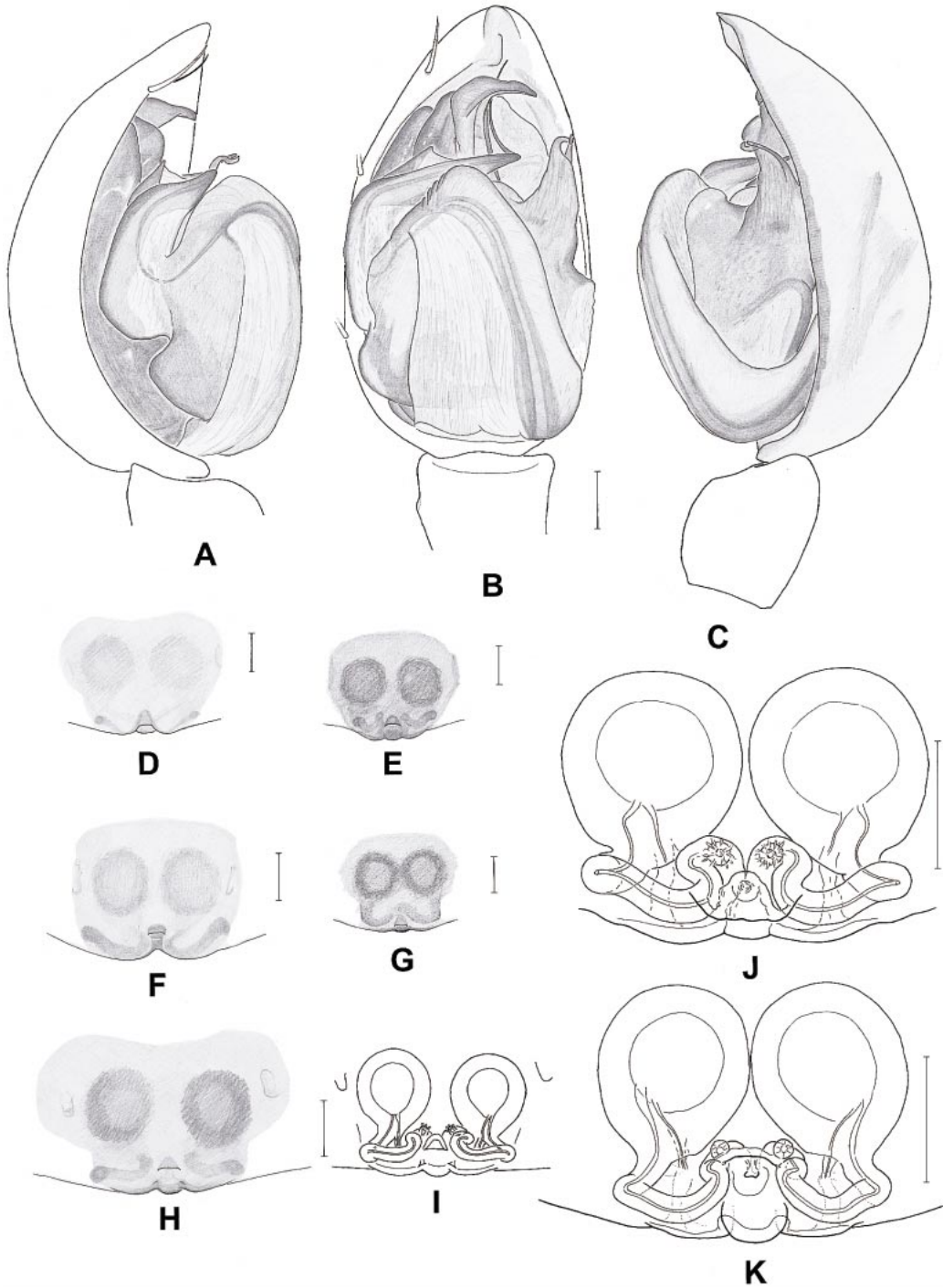


Fig. 83. *Sanogasta maculosa* (Nicolet). **A.** Male palp, prolateral view (syntype of *Gayenna skottsbergi*). **B.** Same, ventral view. **C.** Same, retrolateral view. **D.** Epigyne, ventral view (lectotype of *Clubiona maculosa*). **E.** Epigyne, ventral view (holotype of *Tomopisthes taeniatus*). **F.** Id. (Cautín, Fundo la Selva). **G.** Id. (lectotype *Tomopisthes injucundus*). **H.** Id. (lectotype of *Gayenna dubia*). **I.** Same, cleared. **J.** Id. (Chubut, Epuyén). **K.** Id. (Chubut, El Hoyo). Scale bars = 0.2 mm.

dian apophysis very thin, closely associated with paramedian (fig. 82A). Apex of paramedian apophysis short, thin, sinuous. Primary conductor apparently absent, only low mound in that place. Secondary conductor not fused to anterior margin of tegulum, canal conspicuous, arising at base of paramedian apophysis (fig. 82B); retrolateral portion with internal conical projection, and external ridge. Anterior margin of tegulum compressed over base of secondary conductor.

VARIABILITY: Size is also very variable: the specimens from the Juan Fernández Islands are especially large. Body color and pattern is very variable (figs. 76B–D, 77A–D). Female spines: femur I = II. Male spines: metatarsi I, p 1–0, r 0; II, r 0; III; v 2-p1–2. Epigyne quite variable in details, some extreme forms illustrated in figure 83D–I.

NATURAL HISTORY: This species builds retreats on foliage, under bark, and occasionally under stones.

DISTRIBUTION: All austral forests of Chile and Argentina, including semiarid and littoral areas. In Chile, from Parinacota Province, in Argentina from Neuquén, to Tierra del Fuego.

OTHER MATERIAL EXAMINED: **ARGENTINA: Neuquén:** Collón Curá, 750 m, 19.IX.1981, Nielsen and Karsholt, 3♀ (ZMK); Estancia San Ramón, Rincón Chico, Río Limay, X–XII.1962, 3♂ 7♀ 1♀ penultimate, I.1962, 2♀, 1♀, Junín de los Andes, II.1968, E. Maury and N. Müller, 1♀ 1♀ penultimate (MACN-Ar); Lanín Natl. Park: Lago Hermoso, 15.I.1985, M. Ramírez, 1♀, 1♀ (MACN-Ar); Lago Moquehue, 10.I.1985, E. Maury, 3♀ (MACN-Ar); Lago Lácar, X.1955, A. Giai, 3♀, 1♂, 1♀ (MACN-Ar); 5 km E Hua Hum, 640 m, 5.XI.1981, 1♀, 16.XI.1981, 1♂, Nielsen and Karsholt (ZMK); Pucará, 5–16.II.1956, A. Ogloblin and Sra., 2♀ (MLP), 1.II.1971, Schajovskoy, 1♀ (MACN-Ar); XI.1971, L. Yinoff, 1♂ (MACN-Ar); XII.1973, S. Schajovskoy, 1♀ (MACN-Ar); 750 m, 25.XI.1978, 1♂, 1♂, 1♂, 750 m, 1.XII.1978, 1♂, 750 m, 3.XII.1978, 1♂, Misión Científica Danesa (ZMK); Lago Lolog, Gentili Cabin, above town, pan and FIT, forest and meadow, 18–21.XI.1989, S. Marshall, 1♂ 1♀ (AMNH); Lago Lolog, nr. San Martín de los Andes, pans nr. stream, ca. 900 m, 23–

30.XI.1989, S. Marshall, 3♂ 3♀ (AMNH); dung trap, 1♀ (AMNH); fit nr. pond, 23.XI–1.XII.1989, S. Marshall, 3♂ 4♀ (AMNH); Lago Lolog, 4 km N San Martín de los Andes, FIT, *Nothofagus* forest, ca. 950 m, Gentili property, 23.XI–1.XII.1989, S.A. Marshall, 6♂ 3♀ (AMNH); 8 km N San Martín de los Andes, 1000 m, Malaise trap, 16–22.XI.1997, C. and M. Vardy, 6♂ 10♀ (BMNH/MACN-Ar); Lago Tromen, Rodeo Grande, 900 m, 30.XI.1978, Misión Científica Danesa, 2♂ (ZMK); mouth of Río Blanco in Lago Huechulafquen, 6.I.1985, under bark, M.J. Ramírez, 3♀ (MACN-Ar); San Martín de los Andes, 40°10'S, 71°21'W, 20–21.XI.1988, V. and B. Roth, 1♂ (CAS), 1000 m, XI–XII.1985, Gentili, 32♂ 19♀ (MACN-Ar); 640 m, 2.XI.1981, 1♀, 5♂, Nielsen and Karsholt (ZMK); San Martín de los Andes, Cerro Chapelco, 1400–1600 m, 2–19.XII.1981, 3♂ 3♀, 12–23.XII.1981, 16♂, 1♀, 17♂, Nielsen and Karsholt (ZMK); I.1961, M. Galiano, 1♀ (MACN-Ar 5294); Quillén, I.1986, Duprés, 1♀ (MACN-Ar); Termas de Epulafquen, 9.I.1986, M. Ramírez, 1♂ (MACN-Ar); Nahuel Huapi Natl. Park: Isla Victoria, IV.1945, Havrylenko, 1♂ 2♀ (MLP); XII.1959, I. de Orfila, 1♀ penultimate (MACN-Ar); 41°S, 71°W, 1.V.1965, A. Kovács, 2♀ (AMNH); Isla Victoria, 28.III.1961, A. Kovács, 1♂ 1♀ (AMNH). **Río Negro:** San Carlos de Bariloche, II.1954, M.E. Galiano, 2♂ 8♀ (MACN-Ar), 18.VIII.1961, A. Kovács, 2♀ (AMNH), 1964, Monrós, 1♀ 3 immatures (MACN-Ar); 11 km W San Carlos de Bariloche, Cerro Otto, 14.I.1972, L. Herman, 1♀ (AMNH); Colonia Suiza, 800 m, 19.IX.1981, 5♀, 10.X.1981, 1♀, 8♂ 1♀, 1–7.XI.1981, 4♂, 1♂, 12–20.XI.1981, 2♂, 7.XII.1981, 1♂, 21–22.XII.1981, 1♂, Nielsen and Karsholt (ZMK); 810 m, 22.XI.1978, Misión Científica Danesa, 1♀ (ZMK); Pampa del Toro, 900 m, 9–10.XI.1981, 1♂, 1♂, 900 m, 22–23.XI.1981, 5♂, Nielsen and Karsholt (ZMK); El Bolsón, 24.XI.1962, M. Birabén, 6♀, 1♂ (MACN-Ar); II.1963, Birabén, 2♀ (MACN-Ar); X.1963, Birabén, 1♀ (MACN-Ar), 15.I.1961, 1♀, 13.III.1961, 3♀, 4.IX.1961, 1♀, 27.IX.1961, 1♀, 10.X.1961, 1♀, 28.X.1961, 1♀, 28.X.1961, 1♀, 7.X.1962, 1♀, 31.X.1966, 1♂, no date, 2♀, A. Kovács (AMNH); 24.XI.1962, 1♂ 2♀,

25.II.1963, 1 ♀, M. Birabén (MLP); Paso Flores, 3.X.1965, A. Kovács, 1 ♀ (AMNH); Río Azul, 15.X.1961, 1 ♀, A. Kovács (AMNH); Ñorquinco, 11.X.1961, 1 ♂, 27.VIII.1962, 1 ♀, 5 ♀ 3 ♂, 20.VI.1966, 1 ♀, 3.VII.1966, 1 ♂ 2 ♀, A. Kovács (AMNH); Nahuel Huapi Natl. Park: 880 m, 11.I.1986, N. Platnick, P. Goloboff and R. Schuh, 1 ♀ (AMNH). **Chubut:** Cushamen, 14.IX.1966, A. Kovács, 2 ♀, 1 ♂ (AMNH); Cholila, 25.VIII.1962, A. Kovács, 1 ♂ 1 ♀ (AMNH); El Hoyo, 30.IX.1961, 1 ♀, 2.X.1962, 3 ♂ 4 ♀, 26.V.62, 7 ♀, VII.1962, 1 ♀, VIII.1962, 3 ♀, A. Kovács (AMNH); El Maitén, IX.1961, A. Kovács, 1 ♀ (MLP); 20.VI.1962, 1 ♂, 13.IX.1962, 1 ♀, A. Kovács (AMNH); Epu-yén, 2.VII.1962, 1 ♀, 12.VI.1962, 17 ♀, 2.VIII.1962, 4 ♂, 18.XI.1962, 42°15'S, 71°23'W, 2 ♂, 1 ♂ 1 ♀, 5.VIII.1966, 1 ♀, A. Kovács (AMNH), 18.XI.1962, M. Birabén, 1 ♂ 1 ♀ (MLP); Esquel, road to La Hoya, 42°54'S, 71°19'W, 16.XI.1988, V.D. Roth, 6 ♀ (CAS); 17 km E Esquel, on Rt. 40, muddy shore of pond with scattered vegetation, 22.I.1986, R. Schuh and N. Platnick, 1 ♀ (AMNH); 35 km E Esquel, 720 m, 18.IX.1966, E. Schlinger and M. Irwin, 1 ♀ (CAS); Poto Cahuel, 8.X.1966, A. Kovács, 1 ♀ (AMNH); Languineo, Estancia Manantiales, 6–10.XI.1985, L. Peña, 1 ♀ (AMNH); Los Cipreses, XI.1982, M. Ramírez, 2 ♂, 1 ♀, 1 ♂ (MACN-Ar); Lago Puelo Natl. Park, 220 m, 18.XI.1978, Misión Científica Danesa, 1 ♂ (ZMK); 250 m, 22–23.X.1981, Nielsen and Karsholt, 1 ♂ (ZMK); Los Alerces Natl. Park: Lago Escondido, 19.XI.1981, A. Kovács, 3 ♀ (AMNH); Lago Futalaufquen, II.1985, 1 ♂ 6 ♀ 4 ♀ penultimates, II.1986, 2 ♂ 3 ♀, 9.II.1986, 3 ♀ M. Ramírez (MACN-Ar); I.1990, M. Ramírez, 1 ♀ (MACN-Ar); Lago Menéndez, I.1990, M. Ramírez, 1 ♀ (MACN-Ar); Lago Verde, II.1986, 1 ♂, I.1990, 1 ♀, Río Arrayanes, I.1990, 1 ♂, W margin, II.1986, 3 ♀, M. Ramírez (MACN-Ar); Río Turbio, 11.VI.1961, 4 ♀, no date, 1 ♀, A. Kovács (AMNH); I.1976, M. Rumboll, 1 ♀ (MACN-Ar); 19.5 km W Shaman, 650 m, 19.XI.1966, E. Schlinger and M. Irwin, 1 ♂ (CAS); Tecka, Corcovado, 750 m, 17.II.1979, Misión Científica Danesa, 1 ♀ (ZMK). **Santa Cruz:** Calafate, II.1963, E. Maury, 1 ♀, 1 ♂ (MACN-Ar); Estancia Cóndor, Río Gallegos, 28.IV.1974, M. Rumboll,

1 ♀ (MACN-Ar); Lago Argentino, III.1900, Excursión Silvestri, 1 ♂ (MACN-Ar); Lago Belgrano, 15.II.1973, 1 ♀, 21.II.1973, M. Rumboll, 2 ♀ (MACN-Ar); Lago Frías, no date, E. Maury, 1 ♀ (MACN-Ar); Lago Musters, SW margin, 20.I.1977, E. Maury and Patrick, 1 ♀ (MACN-Ar); Lago San Martín, X.1939, S. Radone, 1 ♀ (MACN-Ar 599); Los Cerros, Tres Lagos, IV.1949, Waring, 2 ♂ 3 ♀, 4 ♂ 4 ♀, 9 ♂ 9 ♀, 2 ♂ 2 ♀ (MLP); Morro Chico, Río Turbio, 28.I.1976, M. Rumboll, 2 ♀ (MACN-Ar); Los Glaciares Natl. Park, 11.II.1973, M. Rumboll, 1 ♂ (MACN-Ar), 18.I.1980, P. Goloboff, 1 ♂ 5 ♀, 1 ♀ (MACN-Ar); Los Glaciares Natl. Park, Estancia La Oriental, 14.II.1973, M. Rumboll, 1 ♀ (MACN-Ar); Los Glaciares Natl. Park, Península Magallanes, in front of Glaciar Moreno, II.1977, D. Pepe and M. Rumboll, 1 ♀, 1 ♂ (MACN-Ar); Puerto Coyle, 10 m, 26.XI.1966, M. Irwin and E. Schlinger, 1 ♀ (CAS); Puerto Deseado, on house wall, IV.1963, Pujals, 1 ♂ (MACN-Ar); II.1961, Pallares and Zapata, 2 ♂ (MACN-Ar); X.1964, Pallares, 1 ♀ (MACN-Ar); II.1966, Pallares, 1 ♀ (MACN-Ar); XII.1971, A. Gosztanyi, 1 ♀ (MACN-Ar); Río Seco and Ruta 3, X.1973, M. Rumboll, 1 ♂ (MACN-Ar); San Julián, XI.1973, M. Rumboll, 1 ♀ (MACN-Ar); Ventisquero Moreno, 18–24.I.1971, J. Vellard, 2 ♀ (MACN-Ar). **Tierra del Fuego:** Bahía Thetis, hanging from roof, no date, Gosztanyi, 1 ♀ (MACN-Ar); Estancia Herberton, 25.I.1979, Misión Científica Danesa, 1 ♀ (ZMK); Lago Fagnano, Kaiken, 100 m, 18–19.I.1979, 1 ♀, 1 ♂, 21.I.1979, 1 ♀, Laguna Negra, XII.1989, A. González, 1 ♀ (MLP); Nueva Herberton, 16.II.1965, M. Birabén, 4 ♀ (MLP); Río Ewan, I.1975, M. Rumboll, 1 ♀ (MACN-Ar); Río Grande, XI.1973, M. Rumboll, 1 ♀ (MACN-Ar); Ushuaia, 1–14.XII.1932, Castellanos and Gomez, 1 ♂ 2 ♀ (MACN-Ar); I.1960, A. Bachmann, 1 ♀ (MACN-Ar); 8–26.II.1961, B. Malkin, 1 ♀, 1 ♀ (AMNH); XII.1989, A. González, 1 ♀ (MLP); Monte Olivia, XII.1989, A. González, 1 ♀, 1 ♀, 2 ♀ (MLP); Nueva Herberton, 16.II.1965, M. Birabén, 4 ♀ (MLP); Río Ewan and Ruta 3, I.1975, M. Rumboll, 1 ♀ (MACN-Ar 6802); Ushuaia, II.1951, J. Boero, 1 ♂ (MLP); Ushuaia, no date, A. del Pino, 2 ♀ (MACN-Ar 29952). **CHILE: Región I (Tarapacá):**

Parinacota: Parinacota, 2 km S Zapahuira, 3400 m, 18°20'S, 69°34'W, 3400 m, 3.II.1994, N. Platnick, K. Catley, R. Calderón, R. Allen, 1♂ 1♀ penultimate (AMNH). **Región III (Atacama): Huasco:** El Tránsito to Pinte, 1100–1600 m, 25–27.X.1980, L. Peña, 1♀ (AMNH); Huasco beach, elev. 5 m, 8.X.1992, N. Platnick, P. Goloboff, K. Catley, 1♀ (AMNH). **Región IV (Coquimbo):** 8.X.1992, N. Platnick, P. Goloboff, K. Catley, 1♂ (AMNH). **Elqui:** Choros Bajos, 21.X.1992, L. Peña (AMNH); 200 m, 11.XI.1993, 29°33'S, 71°19'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH), 16 km S Cruz Grande, 140 m, 7.X.1992, N. Platnick, P. Goloboff, K. Catley, 3♀ (AMNH); Diaguitas, 18.XI.1963, Gleisner, 1♂ (UC); El Pangue, 20 km S Vicuña, elev. 1500 m, 4.X.1992, N. Platnick, P. Goloboff, K. Catley, 3♀ (AMNH); La Serena, III.1947, L.E. Peña, 1♀ (IG 19736 IRSN); 79 km N La Serena, Rt. 5, km 553, elev. 300 m, 15.X.1992, N. Platnick, P. Goloboff, K. Catley, 3♀, 1♀ (AMNH); Quilacán, 16 km E La Serena, 2.X.1961, R. Wagenknecht, 1♂ (AMNH); 10 mi W Vicuña, “larva ex Puya Castamidae moth”, 3.XII.1950, no collector, 1♀ (CAS). **Limarí:** 100–500 m, 21.X.1966, E. Schlinger, M. Irwin, 1♂ (CAS); Fray Jorge, Pachingo, 30°27'S, 71°32'W, 29.XII.1966, E. Schlinger and M. Irwin, 1♂ (CAS). **Choapa:** El Bato (farm in mountains), E Illapel, 10.X.1985, L. Peña, 2♀ (AMNH); Céspedes, Illapel, 1100 m, 13–14.X.1990, L. Peña, 3♂ 1♀ (AMNH); Ñagué, 10 km N Los Vilos, Rt. 5, km 236, elev. 40 m, 31°50'S, 71°31'W, 13.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH), Hacienda Illapel, 600–900 m, 31°36'S, 71°07'W, 19.X.1966, M. Irwin, E. Schlinger and L. Peña, 2♀, 1♂ (CAS); 2 km S Pichidangui, Rt. 5, km 193, elev. 40 m, 32°10'S, 71°31'W, 9.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH), 1♀ (MACN-Ar, photos MJR 1274–1277); Quebrada Los Vilos, 6.XI.1988, P. Goloboff and E. Maury, 1♀ (MACN-Ar). **Región V (Valparaíso): Petorca:** Quebrada Huaquén, Pichicuy, 6–7.I.1984, P. Goloboff, 1♀ (MACN-Ar); Cuesta El Melón (Metropolitana), 10–12.X.1986, L. Peña, 1♂ (AMNH); 430 m, 8.XI.1993, 32°37'S, 71°14'W, N. Platnick, K. Catley, M. Ramírez, T. Allen,

1♀ 1♀ (AMNH). **Quillota:** Cuesta El Melón, nr. La Calera, 15.XI.1985, L. Peña, 1♀ (AMNH); Cuesta La Dormida, N Tiltil, 800–1300 m, 13–18.XI.1982, L. Peña, 1♂ 2♀ (AMNH); 610 m, under rocks, 11.I.1985, N. Platnick and O. Francke, 1♀ (AMNH); Palmas de Ocoa, La Campana Natl. Park, unburned site, 23.VIII.1985, pitfall 1, R. Calderón G., 1♀ (AMNH); Quillota, I.1979, A. Tobar, 1♀ (AMNH). **Valparaíso:** Archipiélago Juan Fernández, Mas a Fuera (Isla Alejandro Selkirk): 30.I.1935, no collector, 1♀ (AMNH); XII.1965, O. Solbrig, 1♀ (MCZ), 19.I–21.II.1955, G. Kuschel, 2♀ (MLP); Plano de Chosa, 800–1000 m, 29.III.1962, 1♀, 1♂ 1♀, Quebrada Casa, 13–31.III.1962, 1♂ 4♀, 1♀, Quebrada Pangal, Monte Oscuro, 100 m, 9.III.1962, 1♀, Quebrada Vaca, 22.III.1962, 1♂ 3♀, B. Malkin (AMNH). Mas a Tierra (Isla Robinson Crusoe): El Camote, 600–650 m, 25.IV.1962, 1♀, 1♀, 600 m, 19.IV.1962, 1♀, Galpón, Valle Villagra, 23–24.IV.1962, 4♀, Portezuelo, 500 m, 7.IV.1962, 1♂, Portezuelo trail, 7.IV.1962, 1♀, Quebrada Damajuana, 5.IV.1962, 1♀, Valle Anson, Plazoleta del Yunque, 200–250 m, camote side, 1–28.IV.1962, 1♂ 6♀, 1♂ 9♀, Valle Villagra, Portezuelo trail, 400–450 m, 19.IV.1962, 1♀, B. Malkin (AMNH), wet areas near Plazoleta, pans, 24–28.I.1992, S. Marshall, 1♀ (AMNH); Plazoleta, Malaise trap, 24–29.I.1992, S. Marshall, 1♀ (AMNH); Plazoleta El Yunque, 26.I.1992, 2♀, 28.I.1992, 1♀, S. and C. Marshall (AMNH); pans in wet area, 23–29.I.1992, S. Marshall, 4♀ (AMNH); pans nr. Plazoleta campsite, 23–29.I.1992, S. Marshall, 4♀ (AMNH); slopes of El Yunque, fern covered, pan traps, 28.I.1992, S. and C. Marshall, 1♂ (AMNH). Cerro Alegre, 12.IV.1971, Lineros, (UC); Cerro Las Vizcachas, 1800–2200 m, 1–12.XII.1982, L. Peña, 2♂ 5♀ (AMNH); 35 km SE Lago Peñuelas, 350 m, mauco Quintero, II.1979, A. Tobar, 1♀ (AMNH); thorn forest, mesquite flower sweep, 4.XII.1984, S. and J. Peck, 1♀ (AMNH); Río Marga Marga, Los Perales, 33°09'S, 71°19'W, 330 m, 13.X.1966, E. Schlinger, M. Irwin, 1♂ (CAS); Valparaíso, II.1954, E. Reed, 1♀, 1♂ (AMNH); XII.1968, H. Sielfeld, 1♀ (UC); Viña del Mar, VIII.1978, A. Tobar, 1♀ (AMNH). **San Felipe de Aconcagua:** Guardia Vieja, 4.II.1951, Ross and Michelbacher,

2♀ (AMNH); Jahuel (120), no date, L. Peña, 1♀ (IRSN IG 19736); Llay-Llay, 4.II.1951, Ross and Michelbacher, 1♀ (CAS); Los Andes, 30.IX.1983, E. Maury, 1♀ (MACN-Ar). **Región Metropolitana (Santiago): Santiago:** Aculeo, Cerro San Cristóbal, nr. Santaiga City, 500–800 m, 30.XI.1982, L. Peña, 4♀; Aculeo, Las Canchas, 8–11.XII.1983, L. Irrazaval, 1♀, 1♀ (AMNH); Baños de Morales, 3.XI.1995, no collector, 10♀ (AMNH); El Canelo, XII.1958, M. Toro, 1♀ (MACN-Ar); 800–1000 m, 1980, L. Peña, 1♀ (AMNH); El Convento, 18.IX.1966, 33°48'S, 71°43'W, L. Peña, 1♀ (CAS); El Portezuelo, nr. Colina, 500 m, IX–X.1983, L. Peña, 2♂ 1♀ (AMNH); 16 km N La Colina, 30.IX.1992, P. Goloboff, 1♂ (AMNH); Lo Cañas, 29.XI.1982, L.E. Peña, 1♂ (AMNH); 2 km E Embalse El Yeso, 2800 m, 1.III.1974, no collector, 3♀ (UC); Melipilla, La Viluma, 13–14.V.1980, L. Peña, 2♂ (AMNH); flat road before Cuesta Barriga, lado E, 25.I.1971, R. Calderón, 1♀ (UC); Melipilla, San Manuel, 13–14.V.1980, L. Peña, 1♂ (AMNH); Pirque, 30.XI.1982, 1♂, 20.XI.1982, 1♀, L. Peña (AMNH); Quebrada La Plata, near Maipú, 510 m, 33°30'S, 70°55'W, Malaise, 26.I.1966, 1♂, 3–4.X.1966, 1♀, M. Irwin (CAS); Rapel, Estación Hidrobiológica, IV.1977, 1♂ (MHNS 670); Valle del Río Mapocho between El Arrayán and Farellones (Barber traps), 15.X.1958–8.VI.1960, W. Noodt, 1♀, 1♀, 1♂ (MHNS). **Cordillera:** Río Clarillo Natl. Res., 940 m, 26.XI.1993, 33°44'S, 70°28'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH). **Región VII (Maule): Curicó:** Las Tablas, E Curicó, II.1985, L. Peña, 3♀ (AMNH); Río Teno, 25–28.XI.1981, L.E. Peña, 5♂ 1♀ (AMNH). **Talca:** Alto de Vilches, 17–24.X.1964, L. Peña, 1♀ (MCZ), 1.XI.1971, R. Calderón, 1♀, 2♀ (UC); Gil de Vilches, 7.I.1989, M. Ramírez, 1♂, 1♀ (MACN-Ar, photos MJR 5–7), 1200 m, 7–8.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (MACN-Ar, photos MJR 768–771); 5 km W Laguna del Maule, 27.XI.1970, R. Calderón, 1♀ (UC); 10 km Laguna del Maule, 22.XII.1970, R. Calderón, 2♀, 1♀ (UC). **Cauquenes:** 25 km ESE Cauquenes, 25.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 3♀ (AMNH). **Linares:** Linares, I.1947, L.E. Peña, 2♀ (IRSN IG

19736); hotel room, 18.I.1985, N. Platnick and O. Francke, 1♂ (AMNH); 16.5 km E Linares, 8.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH). **Región VIII (Biobío): Ñuble:** Atacalco, just SW Recinto, Chillán area, 17.III.1983, L. Peña, 1♀ (AMNH); Chillán, 31.XII.1975, 2♀, 2.I.1976, 17♂ 18♀, G. Moreno, 2♀ (AMNH), 6♂ 3♀ (MCZ); Chillán, Cuesta de Quilmo, 13.XI.1976, G. Moreno, 3♀ (AMNH); Cobquecura, 8–9.XI.1993, L. Peña, 2♀ (AMNH); Las Cabras, Cordillera de Chillán, 8–15.II.1958, L. Peña, 1♀ (IRSN IG 19736); Las Trancas, 1–10.XII.1965, L. Peña, 1♀, 3♂ (MCZ); E Chillán, 29–30.XI.1990, L. Peña, 1♀ (AMNH); Las Trancas, E Recinto, 1100 m, II.1987, L. Peña, 16♀ (AMNH); Los Lleuques, 5–20.XII.1985, L. Umaña (AMNH); 4 km E road to Pinto, 4.I.1976, B. Moreno, 1♂ 1♀ (AMNH); 1000 m, 1–3.X.1983, L. Peña, 1♀ (AMNH); 40 km E San Carlos, 24.XII.1950, Ross and Michelbacher, 1♂ (CAS). **Concepción:** Bajada Chivilingo, 15.XI.1992, T. Cekalovic, 1♀ (AMNH); Caleta Chome, 10.I.1997, T. Cekalovic, 2♀ (AMNH); Estero Nonguén, 11.XI.1996, 2♀, 2♀, 13.I.1997, 1♀, T. Cekalovic (AMNH); Fundo El Manzano, 7.XII.1996, T. Cekalovic, 1♀ (AMNH); Fundo El Venado, 6.I.1996, T. Cekalovic, 1♀ (AMNH); Hualqui, 11.VIII.1996, T. Cekalovic, 1♀ (AMNH); Laguna San Pedro, 23.XI.1994, T. Cekalovic, 1♀ (AMNH); Laraquete, 8.XII.1988, T. Cekalovic, 1♀ (AMNH); Lomas Colorada, 24.XI.1996, T. Cekalovic, 2♀, 1♂ (AMNH); Penco, 23.III.1980, T. Cekalovic, 1♀ (AMNH); Periquillo, 3.XI.1996, 4♀, 21.XII.1996, 1♀, 29.XII.2000, 2♀, 10♀, T. Cekalovic (AMNH). **Arauco:** 2 km S 5 km N Curanilahue, 20.X.1996, T. Cekalovic, 1♀ (AMNH); Cruce Camino Colicó Norte, 20.X.1996, T. Cekalovic, 1♀ (AMNH). **Biobío:** 2.5 km E El Abanico, 760–975 m, scrubby mountainside, under rocks, 20–21.XI.1981, N. Platnick and R. Schuh, 2♀ (AMNH); Caledonia, E Mulchen, 700–900 m, 6–15.II.1981, L. Peña, 1♀ (AMNH); Guallali, Lag. El Barco, 1200 m, 21–28.II.1981, L. Peña, 3♀ (AMNH); W Ralco, Santa Bárbara, 400 m, 22–23.XI.1994, L. Peña, 2♀ (AMNH); 5 km W Tucapel, 28.XII.1950, Ross and Michelbacher, 4♀

(CAS). **Región IX (Araucanía): Malleco:** 40 km W Angol, Nahuelbuta Natl. Park, FITS, 1200–1500 m, *Nothofagus/Araucaria* forest, 9.XII.1984–17.II.1985, S. and J. Peck, 1♂ (AMNH); Cordillera de Las Raíces, 1600–1800 m, 13–18.II.1980, L. Peña, 1♂ 1♀ 3♀ penultimates (AMNH); El Manzano (Arauco/Malleco), Cordillera Nahuelbuta, 3–5.III.1986, L. Peña, 1♀ (AMNH); Estero Huemul, tributary of Lago Gualletué, nr. Marimeneuco, 11.XII.1963, G. Edwards, 1♂ 1♀ (AMNH); Lago Gualletué, nr. Marimenuco, 10.XII.1963, G.F. Edmunds, 1♂ (AMNH); Malalcahuello, 9–15.XII.1985, L. Peña, 7♂, 2♀, 2♀, 3♂ (AMNH); Nahuelbuta Natl. Park, 1200 m, 23.I.1951, Ross and Michelbacher, 2♀, 1♀ (CAS), 1200–1400 m, mixed forest with *Araucaria*, 26.I.1985, N. Platnick and O. Franck, 1♀ (AMNH), 1300 m, 1–6.II.1979, L. Peña, 1♀, 1♀ (AMNH); 4350 m, 38°01'S, 73°13'W, 24.I.1967, M. Irwin, 1♀ (CAS); Cordillera Nahuelbuta, 15–20.XII.1993, L. Peña, 1♀ (AMNH), 18–20.XII.1993, L. Peña, 1♀, 1♀ (AMNH); Tolhuaca, 15–23.III.1986, L. Peña, 2♀ (AMNH); Tolhuaca, Laguna Malleco, 4.III.1978, T. Cekalovic, 5♀ (AMNH). **Cautín:** Estero Molco, 24.II.1988, T. Cekalovic 1♀ (AMNH); Volcán Villarrica, FIT in “tundra”, 8.XI–3.XII.1989, S. Marshall, 1♀ (AMNH); Volcán Villarrica, FIT nr. edge of old lava flow, 10.XI–3.XII.1989, S. Marshall, 2♂ (AMNH); Pucón, 15.XI–2.XII.1980, Malaise trap in peninsula, S.A. Marshall, 1♂, 1♂ (AMNH); Pucón, lake-shore FIT, 15.XI–2.XII.1989, 1♂, FIT nr. lake, 8–13.XI.1989, 1♂, S.A. Marshall (AMNH); Fundo La Selva, W Temuco, NW Nueva Imperial, 700 m, 9–12.XII.1981, L.E. Peña, 2♀ (AMNH); Villarrica, 1–30.I.1965, L. Peña, 3♀ (MCZ); NE Villarrica, 16–31.XII.1964, L. Peña, 1♂ 1♀ (MCZ); Volcán Llaima, 16.I.1972, R. Ladrón de Guevara, 1♀ (UC). **Región X (Los Lagos): Valdivia:** Corral, dead inside retreat, 17.I.1989, M. Ramírez, 1♀ (MACN-Ar); Las Trancas, 1200 m, 24–27.XI.1994, L. Peña, 1♀, 2♂ 3♀ (AMNH); Peulla, Río Nahuilán, 24 km SE Corral, 16.I.1989, M. Ramírez and E. Maury, 1♀ (MACN-Ar); Santo Domingo, en *Blechnum magellanicum*, 26.X.1984, D. Jackson, 1♀ (MHNS 886); Valdivia, 20 m, 23.IX.1981, Nielsen and Karsholt, 1♂

(ZMK); XI–XII.1982, E. Krahmer, 1♀ (MHNS 700); 30 km S Valdivia, Ross and Michelbacher, 1♀ (CAS). **Osorno:** 2 km E Puente Río Golgol, 14.II.1992, T. Cekalovic, 2♀ (AMNH); Puyehue Natl. Park: Aguas Calientes, 500 m, 2–5.V.1988, L. Peña, 1♀ (AMNH); 600 m, 12–20.II.1979, L.E. Peña, 1♀ (AMNH); Antillanca rd., 470–720 m, valdivian rainforest, screen-sweeping at dusk, 965 m, trap site 658, window trap, *Nothofagus pumilio* forest, 18–24.XII.1982, A. Newton and M. Thayer, 1♂ (AMNH), 18–25.XII.1982, A. Newton and M. Thayer, 1♂ (AMNH); 40°46'30"S, 72°11'30"W, 1050–1350 m, alpine meadow, pitfall 59T1, 30.XII.2000, J. Miller, I. Agnarsson, Alvarez, J. Coddington, G. Hormiga, (USNM); Los Derrumbes road, Aguas Calientes, 480 m, 40°44'S, 72°18'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH); 10 km E Puyehue, 24.I.1951, Ross and Michelbacher, 1♀ (CAS); Volcán Casablanca, 1130–1180 m, site 665, pan traps above tree line, valdivian rainforest, 20–25.XII.1982, A. Newton and M. Thayer, 1♂ (AMNH); Termas de Puyehue, 260 m, logs, stones, 12.III.1965, H. Levi, 1♀ (MCZ); Osorno, X.1977, 1♀, 1♀, XII.1978, 1♀, A. Tobar (AMNH); II.1967, L. Peña, 1♀ (MCZ); Pucatrihue, II.1967, L. Peña, 1♀ (MCZ). **Llanquihue:** Los Muermos, S. Chile, forest, 19.I.1951, Ross and Michelbacher, 1♀ (CAS); nr. Petrohué, 200 m, vegetation, 21.III.1965, H. Levi, 1♀ (MCZ); 5 km S Puerto Montt, 17.III.1991, T. Cekalovic, 1♀ (AMNH); Puerto Montt, Río Blanco, 24.XI.1995, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH); 24–29.I.1983, G. Arriagada, 1♀ (MHNS 718). **Chiloé:** Isla de Chiloé: no date, Skottsberg, 1♂ (NRS); 15 km S Chepu, beach of round stones, over upper tide line, 3.II.1991, M. Ramírez, 1♀ (MACN-Ar); Pid-Pid, 10–12.III.1987, L. Peña, 3♀ (AMNH); Isla Lemuy, Ichuac, 20.II.1996, T. Cekalovic, 1♀ (AMNH). **Palena:** Chaitén, XII.1985, L. Peña, 1♀ (AMNH). **Región XI (Ibáñez del Campo): Aisén:** Balmaceda, 17–22.I.1961, L. Peña, 9♀ (IRSN IG 23077); Murta, Lago General Carrera, 29–30.I.1990, L. Peña, 1♀ (AMNH); Río Simpson Natl. Park, N margin, 17.II.1991, M. Ramírez, 2♀ (MACN-Ar); 20 km E Puerto Aisen, 26.I.1961, L. Peña, 1♀ (IRSN IG 23077); Río Cisnes, 1–

28.II.1961, L. Peña, 1 ♀ (IRSN IG 23077); Río Ibáñez, 27–28.I.1990, L. Peña, 2 ♀ (AMNH). **Región XII (Magallanes y Antártica): Última Esperanza:** Torres del Paine Natl. Park: Lago Sarmiento de Gamboa, 51°2'0"S, 72°46'15"W, 100 m, steppe, 6–9.XII.2000, J. Miller, I. Agnarsson, 1 ♀ (USNM), same, ground, 3 ♀ (USNM), near Refugio Chileno, 50°56'45"S, 72°55'0"W, 400–600 m, 8–9.XII.2000, J. Miller, I. Agnarsson, 4 ♀, 1 ♀, 1 ♀, 2 ♀ (USNM), Laguna Larga, 51°1'30"S, 72°52'45"W, 300 m, under rocks in steppe, 7.XII.2000, J. Miller, I. Agnarsson, 6 ♀, 2 ♀ (USNM). **Magallanes:** Cañadón Bombalot, 29.I.1976, T. Cekalovic, 1 ♀ (AMNH); Estancia Gazy Harbour, 10.II.1990, T. Cekalovic, 2 ♂ 2 ♀ (AMNH); Estancia La Vicuña, 1956, 1 ♀, 1 ♀, 2 ♀, 2 ♀, no. 14, 4.III.1957, 1 ♀, no. 17, 15.II.1959, 1 ♀, no. 17, monte seco, 400 m, 15.II.1959, 4 ♀, J. Vellard (MACN-Ar); Estancia La Vicuña, SE Camerón, 1–6.XII.1960, L. Peña, 4 ♀ (MCZ); 35 km SW Camerón, *Nothofagus* assoc., 2.XII.1966, E. Schlinger and M. Irwin, 2 ♀ (CAS); Estancia Virgen de Lourdes (Sector Dinamarquero), 6.II.1990, 1 ♀, 8.II.1990, 3 ♀, T. Cekalovic (AMNH); Isla Dawson, Puerto Harry, 8.VIII.1976, T. Cekalovic, 1 ♀ (AMNH); Isla Grande, NW Tierra del Fuego, 12–15.XI.1961, L. Peña, 1 ♀ (MCZ); Isla Navarino, 16.III.1961, B. Malkin, 1 ♀ (AMNH); Laguna Amarga, 14–21.XII.1960, L. Peña, 1 ♀, 2 ♀, 3 ♀ (MCZ); 21.IV.1962, T. Cekalovic, 1 ♂ (AMNH); 4 km W Laguna Amarga, 8.XII.1966, E. Schlinger and M. Irwin, 10 ♀, 2 ♀, 1 ♀, 3 ♀ 3 ♀ (CAS); Magallanes, XI.1960, T. Cekalovic, 1 ♀ (MACN-Ar); Torres del Paine Natl. Park, 150 m, scrub, 10.II.1985, N. Platnick and O. Francke, 2 ♀ (AMNH); Península Brunswick, Barranco Amarillo, 27.I.1976, T. Cekalovic, 2 ♀ (AMNH); Puerto Hambre, 25.III.1991, T. Cekalovic, 2 ♀ (AMNH); Punta Arenas, 17.IX.1963, 1 ♀, (La Turba), 27.VIII.1976, 1 ♀, T. Cekalovic (AMNH), Punta Arenas, Quinta Pittet, 29.II.1969, T. Cekalovic, 1 ♀ (AMNH); 102.2 km NNW Punta Arenas, 430 m, *Nothofagus* assoc., 6.XII.1966, E. Schlinger and M. Irwin, 2 ♀, 3 ♀, 1 ♀ (CAS); Punta El Monte, 27.I.1976, T. Cekalovic, 1 ♀ (MCZ); Cerro Castillo Natl. Res., 500–600 m, dry forest, 7.II.1985, N.I. Platnick and O.F. Francke, 1 ♀ (AMNH);

Cerro Castillo, Natales, 13.XII.1960, L. Peña, 2 ♀, 1 ♂ 6 ♀ (MCZ); Río Chico, 1956, 3 ♀, 1 ♀, 17.II.1956, 2 ♀, J. Vellard (MACN-Ar); Laguna Parrillar Natl. Res., 53°24'15"S, 71°15'45"W, beating, 1–10.XII.2000, 350 m, J. Miller, I. Agnarsson, 1 ♂ 3 ♀ (USNM); Río San Juan, 25.I.1976, T. Cekalovic, 1 ♀ (AMNH); Rubens, 22.III.1948, M. Birabén, 4 ♀ (MLP), 13.XII.1960, L. Peña, 2 ♀, 1 ♂ 8 ♀ (MCZ); Rusffin, no. 11, III.1957, J. Vellard, 1 ♀, 1 ♀, 3 ♀ (MACN-Ar); Rusffin, SE Cameron, 17–20.XI.1960, L. Peña, 9 ♂ 39 ♀ (MCZ); Tres Vientos, Puerto Arturo, 53°34'S, 73°23'W, 25–28.XI.1960, L. Peña, 1 ♂ (MCZ); Aserradero Yendegaia, no. 2, 12.II.1957, 10 ♀, 1 ♂ 5 ♀, no. 3, 13.II.1957, 1 ♀, J. Vellard (MACN-Ar). *Mistaken Locality:* Santiago Prov., Malleco, XI.1979, L. Peña, 4 ♂, 1 ♀, 1 ♀, 1 ♀ (AMNH) (see Ramírez, 1995b: 83).

Sanogasta backhauseni (Simon),
new combination

Figures 61D, 77F, G, 84C, D, 85A–E

Tomopisthes backhauseni Simon, 1895: 168, 172 (female holotype from Tierra del Fuego, in MHNP 16093, examined; male allotype from Tierra del Fuego, not paratype, designated subsequently by Simon, 1896a, but in the same vial 16093, examined), 1896a: 142, 144, 1897a: 91, 1902: 32.

Gayenna trilineata Tullgren, 1901: 240, 259 (four syntypes from Tierra del Fuego: one female from Porvenir, 23.XII.1895, one male from Cordillera 54°S, I.1896, two females from Páramo, 10.I.1897, in NRS, examined). Synonymized by Simon, 1902: 32.

Tomopisthes backhauseni patagonicus Simon, 1905b: 12 (female holotype from Argentina, Santa Cruz, Silvestri coll., in MHNP 12689, examined). I did not attempt to review the status of subspecies in this contribution.

DIAGNOSIS: Resembles *S. minuta* in genitalia, but distinguished by having three dorsal longitudinal stripes on the abdomen, and by lacking a narrow epigynal posterior notch between the lateral lobes.

FEMALE (holotype, measurements of specimen from Los Glaciares Natl. Park): Total length 6.90. Carapace length 3.07, width 2.17, wider on legs II–III. Length of tibia/metatarsus: I, 1.70/1.53; II, 1.70/1.57; III, 1.63/1.73; IV, 2.33/2.73. Palpal tarsus length 0.92. Chelicerae with two teeth on retromar-

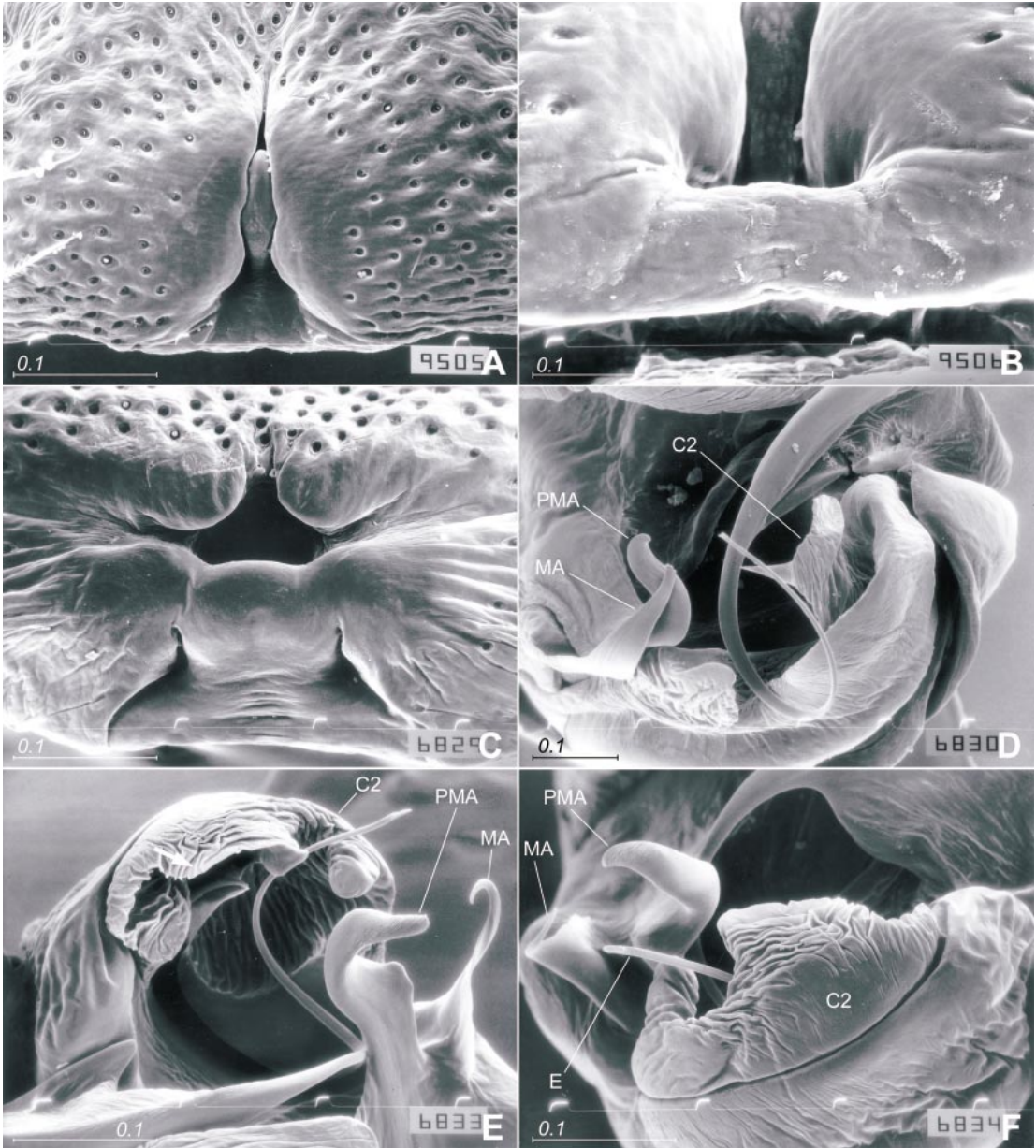
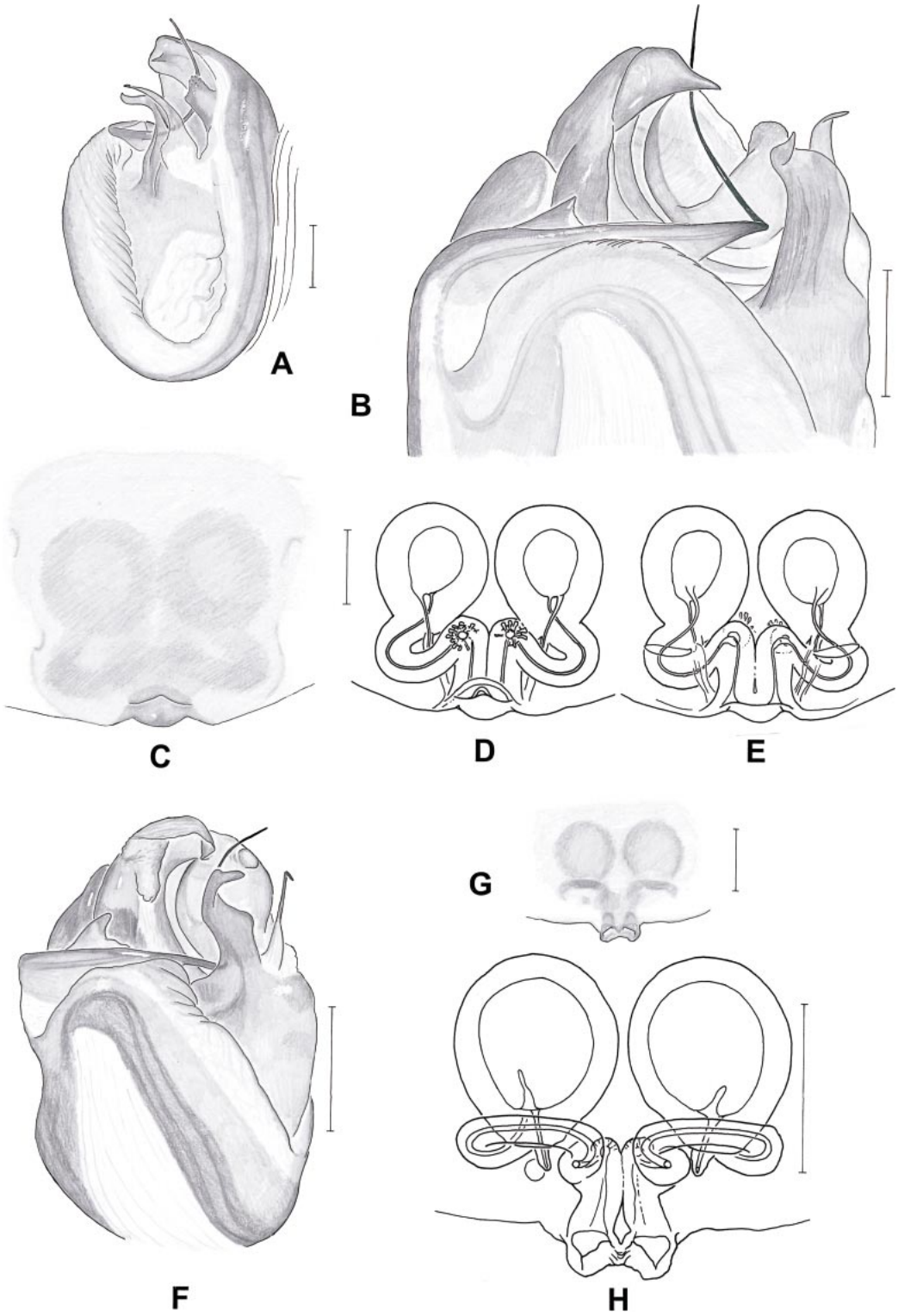


Fig. 84. *Sanogasta* spp. **A, B.** *S. minuta* (Keyserling) (Córdoba, Huerta Grande). **A.** Epigyne, ventral view. **B.** Same, detail in posterior view. **C, D.** *S. backhauseni* (Simon) (Santa Cruz, Calafate). **C.** Epigyne, posterior-ventral view. **D.** Male copulatory bulb, apical-ventral view. **E, F.** *S. x-signata* (Keyserling), male copulatory bulb (Buenos Aires, Atucha, 27.VII.1985). **E.** Ventral view: arrow points to extended border of C2. **F.** Apical view. (C2 = secondary conductor; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)



gin. Sternum length 1.60, width 1.20. Spines: leg **I**, femur d 1-1-1, p 0-d1-2, r 0-d1-d1; tibia v 2-2-2, p 0-1; metatarsus v 2bas. **II**, femur = I; tibia v r1-r1-2, p 0-1 or 1-0-1-0; metatarsus = I. **III**, femur = I; patella r d1; tibia v p1-2-2, p and r 1-d1-1-d1, d r1bas; metatarsus v 2-2-2, p and r d1-1-1, d 0-p1-2. **IV**, femur d 1-1-1, p 0-d1-d1, r d1ap; patella r d1; tibia = III; metatarsus = III or d 2ap. Abdomen length 4.25, width 2.25, spiracle-epigastrium 1.57, spiracle-spinnerets 1.00. Color: pale gray with darker pattern. Legs with small dots at bases of lateral and dorsal spines. Femora with ventral longitudinal dark spot. Patellae with dark spots p and r 1-0-1-0. Sternum, labium, and endites pale. Abdomen with dark cardiac area, continued in two dark stripes (fig. 77F), venter with three longitudinal bands from epigastrium to tracheal spiracle. Epigyne and spermathecae (figs. 84C, 85C-E) very similar to those of *S. minuta*, anterior pouch very close to epigastric furrow, hidden between lateral lobes.

MALE (allotype, measurements of specimen from Calafate): Total length 6.65. Carapace length 2.97, width 2.33. Length of tibia/metatarsus: **I**, 2.33/2.13; **II**, 2.20/2.10; **III**, 2.00/1.10; **IV**, 2.67/3.13. Chelicerae smaller than those of female. Sternum length 1.53, width 1.20. Spines as in female, except: leg **I**, femur p 2ap; tibia p and r 1-d1-1-0; metatarsus p d1-1-0. r 1. **II**, femur p 0-d1-2 or 0-d1-d1; tibia v 2-2-2 (the p1bas smaller), p 1-d1-1-d1 or 1-d1-0-1, r 1-d1-1-0; metatarsus p and r d1-1-0. **IV**, femur = II; tibia p and r 1-d1-1-d1. Abdomen length 3.85, width 2.25, spiracle-epigastrium 1.17, spiracle-spinnerets 1.13. Color similar to female (fig. 77G). Palp (figs. 61D, 84D, 85A, B): tibia short, width/length 0.87, cymbium relatively large. Copulatory bulb very similar to that of *S. minuta*.

VARIABILITY: Several specimens have supernumerary spines (e.g., a pair where only

one is expected). Females spines: **II**, tibia v r1-2-2. **III**, **IV**, tibia v 2-2-2, p and r 1-d1-1-0. Specimens from the seashore in Chubut and Buenos Aires provinces are pale yellow, almost lacking any pattern. A male from Ñorquinco, Río Negro province, has a dark abdomen with pale venter. Some females have epigynal lateral lobes not fused, limiting deep notch with parallel borders, similar to *S. minuta*.

NATURAL HISTORY: Unknown.

DISTRIBUTION: In Argentina, Neuquén, Río Negro, and Chubut provinces, seashore of Buenos Aires. In Uruguay only known from Montevideo, in Chile only from Magallanes.

OTHER MATERIAL EXAMINED: URUGUAY: Departamento Montevideo: Canelones, Marindia, 8.IV.1976, F. Costa, R. Capocasale, 1♂ (CAS). **ARGENTINA: Buenos Aires:** Carmen de Patagones, no date, excursion J.B. Daguerre and Carcelles, 1♂ (MACN-Ar 36829), 1♀ (MACN-Ar); Mar del Tuyú, costa atlántica (walking over sand beach), 2.V.1981, M. Ramírez, 1♀ (MACN-Ar); Quequén, no date, J.B. Daguerre, 1♀ (MACN-Ar); San Blas, Patagones, Carcelles, 1♂ 1 immature (MACN-Ar 36833); Sierra de la Ventana, 22.XI.1972, E. Maury, 1♀ (MACN-Ar). **Neuquén:** Laguna Blanca Natl. Park, N26, 30.IV.1964, no collector, 1♀ (MACN-Ar); Piedra del Aguila, V.1972, Gentili, 2♂ (MACN-Ar). **Río Negro:** San Carlos de Bariloche, II.1954, M.E. Galiano, 1♀ (MACN-Ar 5412), Ñorquinco, 11.X.1961, 1♀, 11.V.1962, 1♂ 8♀, 27.VIII.1962, 1♀ 2 immatures, 3.VII.1966, 3♂ 6♀, VIII.1962, 1♀, A. Kovács (AMNH). **Chubut:** El Maitén, 20.VI.1962, A. Kovács, 1♂ 4♀ (AMNH); Leleque, 71°06'W, 42°28'W, 12.II.1965, A. Kovács, 1♀ (AMNH); Puerto Madryn, V.1975, M. Rumboll, 1♂ 1♀ (MACN-Ar 6852); Península de Valdez, Puerto Pirámides, 11.V.1970, M. Rumboll, 1♀ (MACN-Ar); II.1980, P. Goloboff, 1♂ (MACN-Ar); 42°34'S, 64°17'W,

←

Fig. 85. **A-E.** *Sanogasta backhauseni* (Simon). **A.** Male copulatory bulb, retrolateral view (Neuquén, Piedra del Aguila). **B.** Same, detail, ventral view. **C.** Epigyne, ventral view (syntype of *Gayenna trilineata* Tullgren). **D.** Same, cleared. **E.** Same, dorsal view. **F-H.** *Sanogasta x-signata* (Keyserling). **F.** Male copulatory bulb, ventral view (Buenos Aires, Atucha, 10.V.1987). **G.** Epigyne, ventral view (Atucha, 27.VIII.1985). **H.** Same, cleared. Scale bars = 0.2 mm.

12.XI.1988, V. and B. Roth, 1♂ (CAS); Río Turbio, 28.V.1976, M. Rumboll, 1♀ (MACN-Ar). **Santa Cruz:** Calafate, 23.I.1980, P.A. Goloboff, 1♂ 2♀ (MACN-Ar); Lago Argentino, Estancia La Cristina, 200 m, 17.III.1953, A. Willink, 1♂ (MACN-Ar); Las Cruces, Tres Lagos, 9.III.1948, M. Birabén, 2♀ (MLP); Los Glaciares Natl. Park: 2.II.1973, M. Rumboll, 1♀ (MACN-Ar); Los Glaciares Natl. Park, Estancia La Oriental, 840 m, Y. p. tr., 14–17.II.1998, C. and M. Vardy, 1♀ (BMNH/MACN-Ar). **Tierra del Fuego:** Río Grande, 21.I.1960, A. Bachmann, 1♂ (MACN-Ar); 3.II.1965, 1♀ (MLP). **CHILE: Región XII (Magallanes y Antártica): Magallanes:** Estancia Virgen de Lourdes (Sector Dinamarquero), 6.II.1990, S. Cekalovic, 2♀ (AMNH); Isla Riesco, Potosmy, 31.I.1976, T. Cekalovic, 1♂ (AMNH); Magallanes, no specific locality, II.1957, 1♂ (MHNS 50).

Sanogasta x-signata (Keyserling),
new combination

Figures 61E, 84E, F, 85F–H

Gayenna x-signata Keyserling, 1891: 138 (two females syntypes from Brazil, state of Rio Grande do Sul, no specific locality, should be in BMNH, not found). Mello-Leitão, 1925: 457.

Sanogasta sp.: Ramírez, 1995a: 361.

Samuza sp.: Ramírez, 1995a: 382 (lapsus).

IDENTIFICATION: The illustration of the epigyne by Keyserling (1891) is sufficient to identify this distinctive species.

DIAGNOSIS: Easily distinguished from other *Sanogasta* by having the epigynal posterior margin projecting over the epigastric furrow, and by the complex-shaped paramedian apophysis and the secondary conductor.

FEMALE (Atucha, 27.VII.1985): Total length 4.10. Carapace length 1.70, width 1.18, wider on legs II–III. Length of tibia/metatarsus: I, 0.75/0.65; II, 0.75/0.65; III, 0.50/0.72; IV, 0.92/1.13. Palpal tarsus length 0.47. Chelicerae unmodified, with two teeth on retromargin. Sternum length 0.92, width 0.70. Spines: leg I, femur d 1–1–1, p d1ap; tibia v 2–2–p1; metatarsus v 2bas. II, femur = I; tibia v r1–2–p1; metatarsus v 2bas. III, femur d 1–1–1, p and r d1ap; patella r 1; tibia v p1–p1–2, p 1–d1–1–0, r d1–1, d r1bas; metatarsus v 2–0–2 and an apical group of thick

setae, p and r d1–1–1, d p1–2. IV, femur = III; patella r 1; tibia v p1–2–2, p 1–d1–1–0, r d1–1, d r1bas; metatarsus v 2–p1–2 and an apical group of thick setae, p and r d1–1–1, d p1–2. Abdomen length 2.43, width 1.50, spiracle–epigastrium 0.92, spiracle–spinnerets 0.42. Color: carapace and legs pale gray with darker pattern. Abdomen cream with dorsal gray pattern, venter with a few dark dots, recurved transverse mark anterior of tracheal spiracle. Epigyne (fig. 85G, H): posterior margin projecting over epigastric furrow, with two contiguous pouches where copulatory openings lie. Insertions of epigastric muscles superficial. Copulatory ducts arising contiguously. Ducts of accessory bulbs very short, ventral.

MALE (Atucha, 10.V.1987): Total length 4.15. Carapace globose, length 2.00, width 1.60. Length of tibia/metatarsus: I, 1.52/1.35; II, 1.47/1.37; III, 1.18/1.28; IV, 1.50/1.80. Chelicerae small, vertical. Sternum length 1.02, width 0.80. Spines as in female, except: leg I, femur p 2ap; tibia v 2–2–2. II, tibia v r1–2–2. III, tibia v 0–p1–2 or p1–p1–2. IV, metatarsus v 2–2–2. Abdomen length 2.17, width 1.33, spiracle–epigastrium 0.80, spiracle–spinnerets 0.47. Color: similar to female, mark anterior of spiracle diffuse. Palp (figs. 61E, 84E, F, 85F): tibia short, width/length 0.80, cymbium relatively large. Apical hematochoa rugose, prolonged between margin of tegulum and paramedian apophysis. Embolus thin, basal process triangular. Median apophysis thin, wide at base, narrow at apex. Tip of paramedian apophysis long, sinuous. Secondary conductor wide, thin, not fused to anterior margin of tegulum (fig. 84F); canal conspicuous, arising at base of paramedian apophysis; anterior border projecting, thin; retrolateral portion with rugose external projection, internal, conical projection. Anterior margin of tegulum compressed over base of secondary conductor.

VARIABILITY: Female spines: III, metatarsus v 2–2–2.

NATURAL HISTORY: This species builds retreats under bark or on dry leaves, and has also been collected on epiphytic bromeliads of the genus *Tillandsia*.

DISTRIBUTION: Southwestern Brazil, Uruguay, and Argentina, from Buenos Aires to the north; one isolated southern record from

Argentina, Río Negro, suggest a wider distribution.

OTHER MATERIAL EXAMINED: **BRASIL:** **São Paulo:** São José do Barreiro, Serra da Bocaína, 1960 m, XI.1968, M. Alvarenga 1 ♀ (AMNH). **Río Grande do Sul:** Cachoeira do Sul, Capanézinho, 12.V.1993, R.G. Buss, 1 ♀ (MCTP 3613); Cachoeira do Sul, Cordilheira, 14.X.1992, 1 ♂ (MCTP 3266), 12.X.1993, 1 ♀ (MCTP 4276), R.G. Buss; Cachoeira do Sul, Porteira Sete, 13.XI.1993, R.G. Buss, 1 ♂ (MCTP 4217); Pelotas (após a ponte), 9.V.1967, Biasi, 1 ♀ (MZUSP 14087); Pelotas, V.1964, C. Biezanko, 3 ♀ (AMNH); Quaraí, 24–28.V.1991, A. Lise, 2 ♀ (MCTP 0456). **URUGUAY: Departamento Río Negro:** Arroyo Negro, 15 km S Paysandú, 3.I.1963, R.G. Van Gelder, 1 ♀ (AMNH). **ARGENTINA: Salta:** El Alisal, 45 km W Salta, 1950 m, cañadón húmedo, Malaise-FIT trap, 1–29.XII.1987, S. and J. Peck, 1 ♀ (AMNH); El Rey Natl. Park, 880 m, Río Los Puertos, *Prosopis* forest, Malaise-FIT traps 87–145, 6–16.XII.1987, S. and J. Peck, 1 ♀ (AMNH). **Jujuy:** Las Capillas, XI.1956, Fritz, 1 ♂ (MACN-Ar). **Corrientes:** Paso de los Libres, II.1971, Bejarano, 1 ♀ (MACN-Ar). **Catamarca:** Estancia El Chorro, 1–15.II.1953, Partridge, Rodríguez, 1 ♀ (MACN-Ar). **Córdoba:** Alta Gracia, 3er paredón, XI.1985, Galiano, 1 ♀ (MACN-Ar); Calamuchita, III.1954, J.M. Viana, 1 ♀ (MACN-Ar); III–IV.1958, J.M. Viana, 1 ♀ (MACN-Ar); II.1959, J.M. Viana, 1 ♂ (MACN-Ar); Horco Molle, 6–13.XI.1966, M.E. Galiano 1 ♀ (MACN-Ar); La Cumbre, 8.XI.1991, M. Ramírez, 1 ♀ 4 immatures (MACN-Ar); Lago San Rafael, 20.XI.1983, M. Galiano, 1 ♀ (MACN-Ar). **Santa Fe:** Las Gamas, 20 km W Vera, 27–30.X.1994, M. Ramírez and J. Faivovich, 2 ♂ 1 ♀ (MACN-Ar). **Entre Ríos:** Río Gualeguaychú and Ruta Nac. 14, 10.XII.1982, M. Ramírez and P. Goloboff, 1 ♂ (MACN-Ar); Rosario del Tala, Ruta Prov. 38 and Río Gualeguay, 11.I.1988, P. Goloboff, C. Szumik, 1 ♀ (MACN-Ar); Salto Grande, IV.1977, J.M. Viana, 1 ♀ (MACN-Ar); no specific locality, 1942, Haedo, 1 ♀ (MACN-Ar). **Buenos Aires:** Atucha, on *Tillandsia* sp., 27.VII.1985, P. Goloboff, M. Ramírez, 4 ♀ (MACN-Ar); 10.V.1987, M. Ramírez, 1 ♂ 1 ♀ (MACN-Ar); Isla Martín García, 25.V.1990, M. Ramírez,

2 ♂ 2 ♀ (MACN-Ar); Ciudad de Buenos Aires, 27.XII.1983, M. Ramírez, 1 ♀ (MACN-Ar); La Plata, 22.XII.1978, P. Goloboff, 1 ♂ (MACN-Ar); San Antonio de Areco, IV.1982, M. Ramírez, 1 ♂ (MACN-Ar); Punta Lara, Ensenada, V.1954, J.M. Viana, 1 ♀ (MACN-Ar); Santa Teresita, II.1984, M. Ramírez, 1 ♀ (MACN-Ar); Tandil, IV.1963, Ogueta, 1 ♂ (MACN-Ar); Tigre, I.1938, J.M. Viana, 2 ♀ (MACN-Ar); Tigre, VI.1955, J.M. Viana, 13 ♂ 6 ♀ (MACN-Ar); Zelaya, 22.IX.1968, H. Hepper, 1 ♂ (MACN-Ar). **Río Negro:** El Bolsón, Cerro Piltriquitrón, 3–4.II.1985, M. Ramírez, 1 ♀ (MACN-Ar).

Sanogasta minuta (Keyserling),
new combination

Figures 84A, B, 86A–D

Samuza minuta Keyserling, 1891: 139 (syntypes in two vials: two females, one male, and one immature male, and five females, two males, and four immatures, from Brazil, state of Rio Grande do Sul, no specific locality, in BMNH, examined).

Gayenna minuta: Petrunkevitch, 1911: 485. Mello-Leitão, 1925: 456.

DIAGNOSIS: Resembles *S. backhauseni* in genitalia, but distinguished by having almost contiguous epigynal lateral lobes, limiting narrow notch. Males are smaller, their abdomen lacks the three definite dorsal longitudinal stripes.

FEMALE (Huerta Grande): Total length 6.65. Carapace length 2.63, width 1.90, wider on legs II–III. Length of tibia/metatarsus: I, 1.33/1.15; II, 1.27/1.17; III, 1.10/1.20; IV, 1.53/2.17. Palpal tarsus length 0.77. Chelicerae with two teeth on retromargin. Sternum length 2.67, width 1.93. Spines: leg I, femur d 1–1–1, p 2ap; tibia v 2–2–2; metatarsus v 2bas. II, femur = I; tibia v r1–2–2; metatarsus v 2 bas. III, femur d 1–1–1, p and r dlap; patella r 1; tibia v p1–p1–2, p 1–d1–1–0, r d1–1, d r1bas; metatarsus v 2–0–2, p and r d1–1–0–1, d 0–p1–2. IV, femur = III; patella r 1; tibia v p1–2–2, p 1–1, r 1–d1–1–0, d r1bas; metatarsus v 2–2–2, p and r d1–1–1, d 0–p1–2. Abdomen length 4.00, width 2.60, spiracle–epigastrium 1.77, spiracle–spinnerets 0.83. Color: pale grayish with dark pattern. Sternum pale. Venter with line of small dots anterior of tracheal spiracle. Epigyne (figs. 84A, B, 86C, D): anterior pouch small, very

close to epigastric furrow, reduced between lateral lobes. Copulatory ducts arising contiguously. Ducts of accessory bulbs very short, ventral.

MALE (Huerta Grande): Total length 5.70. Carapace length 2.80, width 2.07. Length of tibia/metatarsus: I, 1.70/1.43; II, 1.60/1.37; III, 1.35/1.52; IV, 1.83/2.07. Chelicerae slightly smaller than those of female. Sternum length 1.32, width 0.98. Spines as in female, except: leg **I**, tibia p 1-0-1-0. **II**, tibia = I. **III**, femur p 0-d1-2, r 0-d1-d1; tibia v 2-2-2, p and r 1-d1-1-0; metatarsus v 2-p1-2. **IV**, femur p 0-d1-2; tibia p and r 1-d1-1-0. Abdomen length 2.90, width 1.40, spiracle-epigastrium 1.00, spiracle-spinnerets 0.50. Color as in female, but darker cardiac area. Palp (fig. 86A, B): tibia short, width/length 0.93, cymbium relatively large. Embolus thin, basal process small, triangular. Median apophysis very thin, closely associated with paramedian. Apex of paramedian short, sinuous. Secondary conductor not fused to anterior margin of tegulum, canal conspicuous, arising at base of paramedian apophysis; retrolateral portion with external rectangular rugose projection. Anterior margin of tegulum compressed over base of secondary conductor.

VARIABILITY: Female spines: III, tibia v p1-2-2; metatarsus v 2-p1-2.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Southwestern Brazil and central Argentina. Probably also in north-eastern Argentina and Uruguay.

OTHER MATERIAL EXAMINED: **BRASIL:**

Rio de Janeiro: Petrópolis, no date, Mello-Leitão, 1♂ 3♀ (MNRJ 671). **São Paulo:** Botucatu, Rubião Júnior, 15.VII.1964, V.C. Jesus, A. Montover, 1♀ (MZUSP 14064), 24.V.1978, M. Carneiro, 1♀ (MZUSP 14.051); São Paulo, Jabaquara, 20.VI.1943, A. Zoppei, 1♀ (MZUSP 9845); Monte Alegre do Sul, Amparo, Fazenda de Santa Maria, 18-19.XII.1942, B.A.M. Soares, 1♀ (MZUSP 14077); São Bernardo, Repressa Nova, 12.X.1041, F. Leme, 3♂ 6♀ 2 immatures (MZUSP 14075); Santo André, 19.XI.1941, J. Domingo, 1♀ (MZUSP 14055). **Paraná:** Guarapuava, ponte do Rio Coutinho, 28.IV.1967, P. Biasi, 1♀ (MZUSP 7035). **Rio Grande do Sul:** Capão Novo, Capão da Canoa, 17-18.IV.1993, A. Lise, 2♀

(MCTP 3135). **ARGENTINA: Catamarca:** Ruta 4 km 9-24, road to El Rodeo, IX.1981, A. González, 1♀ (MACN-Ar). **Córdoba:** Calamuchita, XI.1941, J. Viana, 1♀ (MACN-Ar); Calamuchita, "El Sauce", XII.1941, 6♀ (MACN-Ar 1890); Huerta Grande, II.1943, 1♂ 6♀ (MACN-Ar). **San Luis:** Merlo, XI.1985, M.E. Galiano, Miranda, 3♀ (MACN-Ar); Papagallos, 9.XI.1982, E. Maury, 1♀ (MACN-Ar); Villa Elena, X.71, J. Viana, 1♀ with embolus inserted (MACN-Ar). **La Pampa:** Lihuel Calel Natl. Park, XI.1969, E. Maury, 1♀ (MACN-Ar). **Buenos Aires:** La Plata, 1942, 1♂ (MLP); Rosas, F.C.G.R., 1♀ (MACN-Ar); Sierra de la Ventana, Pque. Prov. E. Tornquist, 18-20.IX.1982, M. Ramírez, 1♀ (MACN-Ar); Tandil, III.1963, Ogueta, 1♀ (MACN-Ar); IV.1963, Ogueta, 2♀ (MACN-Ar); V.1967, E. Maury, 1♀ (MACN-Ar); Tandil, La Cascada, 16.V.1973, C. Cesari, 1♀ (MACN-Ar).

Sanogasta puma, new species

Figures 76E, 86E-H, 87

TYPES: Female holotype and male paratype from Argentina, Buenos Aires province, Isla Talavera, 2 km E Zárate, ca. 34°06'S, 59°02'W, 3.XI.1996, M. Ramírez, deposited in MACN-Ar 9815.

ETYMOLOGY: The specific name is a noun in apposition taken from the felid *Puma concolor*, referring to the uniformly grayish brown color of the body.

DIAGNOSIS: Resembles *S. tenuis* in having an elongate body without pattern, but can be distinguished by having ovate, voluminous spermathecae, with pointed anterior ends, and a relatively large secondary conductor.

FEMALE (holotype): Total length 6.12. Carapace flattened, without thoracic groove, length 2.47, width 1.50, wider at leg II. Length of tibia/metatarsus: I, 1.35/1.13; II, 1.18/0.98; III, 0.83/0.82; IV, 1.55/1.22. Palpal tarsus length 0.60. Chelicerae unmodified, with two teeth on retromargin. Sternum length 1.57, width 0.82. Spines: leg **I**, femur d 1-1-1, p 0-d1-2, r d1ap; tibia v 2-2-2; metatarsus v 2bas. **II** = I. **III**, femur d 1-1-1, p and r 0-d1-d1; tibia v p1-2-2, p v1-v1 + 0-1-0 bristle, r d1-1, d r1-0-1 bristles; metatarsus v 2-0-2, p 1-1, r 1-1, d 0-(p1 bristle)-2. **IV**, femur d 1-1-1, p and r d1ap;

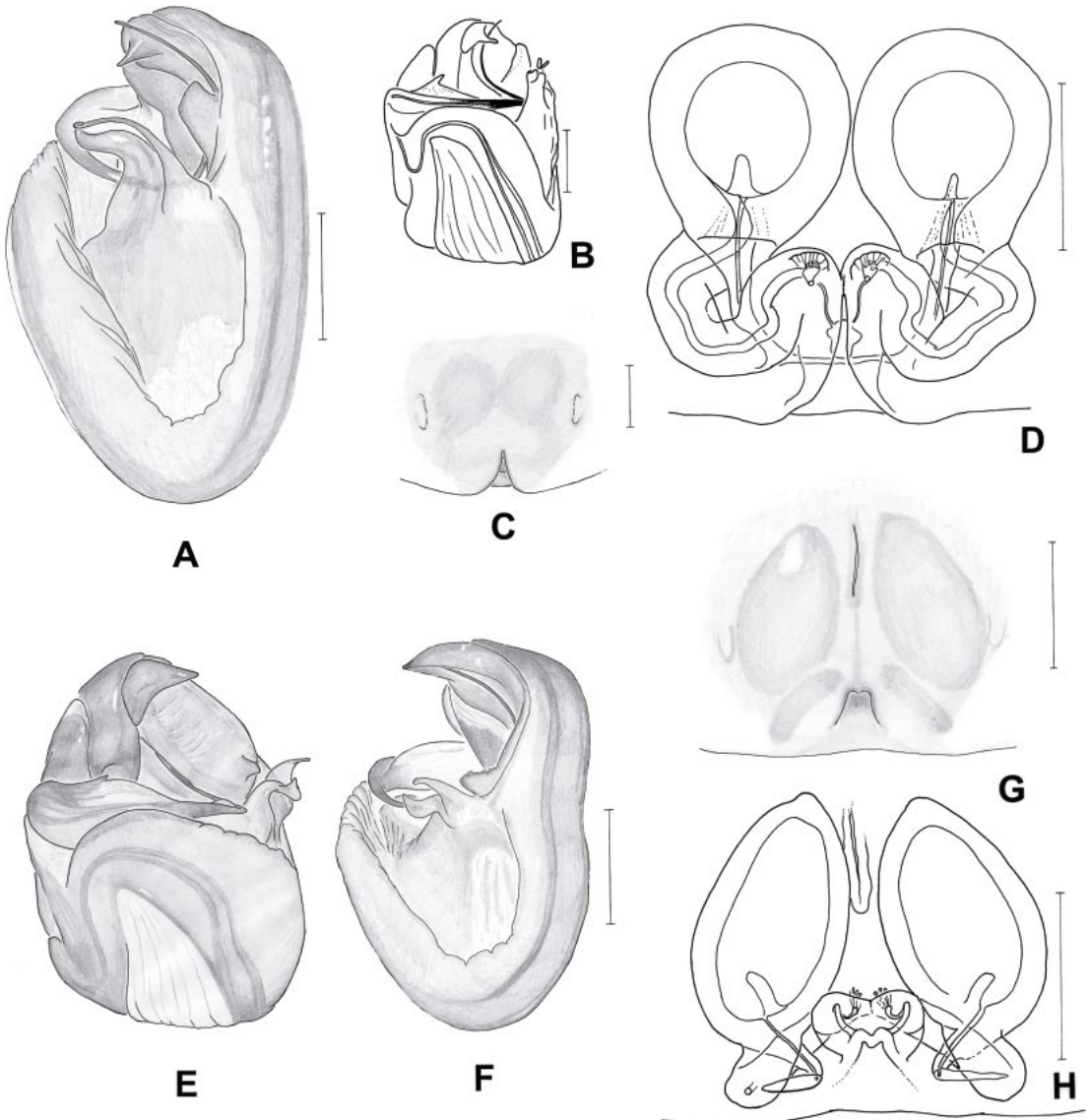


Fig. 86. **A–D.** *Sanogasta minuta* (Keyserling) (Córdoba, Huerta Grande). **A.** Male copulatory bulb, retrolateral view. **B.** Same, ventral view. **C.** Epigyne, ventral view. **D.** Same, cleared. **E–H.** *Sanogasta puma*, n. sp. **E.** Male copulatory bulb, ventral view (Buenos Aires, Punta Lara). **F.** Same, retrolateral view. **G.** Epigyne, ventral view (holotype). **H.** Same, cleared. Scale bars = 0.2 mm.

tibia v p1–2–2, p v1–v1–0 + 0–1–0 bristle, r 1–d1–1, d r1–0–1 bristles; metatarsus v 2–2–2 or 2–p1–2, p 0–v1–0–v1, r d1–1–1, d 0–(p1 bristle)–0–2 (the p1ap is a bristle). Pro-lateral spines on tibiae III and IV ventrally displaced. Abdomen length 3.65, width 1.47, spiracle–epigastrium 1.90, spiracle–spinnerets 0.73. Color: grayish brown uniform (fig.

76E), paler on venter, abdomen darkening posteriorly, membranous base of anterior spinnerets dark. Epigyne (figs. 86G, H, 87): anterior pouch advanced, longitudinal, without definite cavity. Copulatory ducts arising contiguously. Ducts of accessory bulbs very short, ventral. Spermathecae ovate, anteriorly acute.

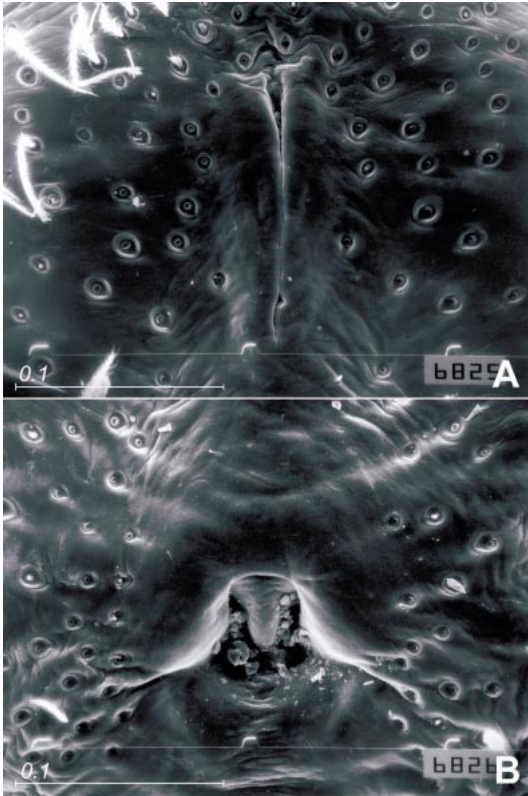


Fig. 87. *Sanogasta puma*, n. sp., epigyne, ventral view (Buenos Aires, Paraná de Las Palmas). **A.** Anterior pouch. **B.** Copulatory openings.

MALE (paratype): Total length 5.45. Carapace with thoracic groove scarcely marked, length 2.43, width 1.60. Length of tibia/metatarsus: I, 1.73/1.40; II, 1.35/1.13; III, 0.98/0.95; IV, 1.70/1.37. Chelicerae small, vertical. Sternum length 1.47, width 0.78. Spines as in female, except: leg **I**, tibia p 1-d1-1-0, r 1-0-d1-0, d r1-0-1 bristles; metatarsus p d1. **II**, tibia p 1-d1-1-0, r 1-0-d1-0, d r1-0-1 bristles; metatarsus p d1. **III**, tibia, r 1-d1-0-1-0; metatarsus v 2-p1-2. Abdomen length 2.93, width 1.33, spiracle-epigastrium 1.50, spiracle-spinnerets 0.58. Color as in female. Palp (fig. 86E, F): tibia short, width/length 1.39, cymbium relatively large. Embolus thin, basal process small, triangular. Median apophysis very thin, short, closely associated with paramedian. Apex of paramedian apophysis short, sinuous, translucent. Secondary conductor not fused to anterior margin of tegulum; canal conspicuous, aris-

ing at base of paramedian apophysis; retro-lateral portion with basal, conical projection. Anterior margin of tegulum compressed over base of secondary conductor.

NATURAL HISTORY: This species lives in the bases of large grasses, mainly pampa grasses ("cortadera", *Cortaderia selloana*), in periodically flooded areas. The elongate, flattened body with uniform color and the way the spider aligns the legs with the grass leaves make a strikingly cryptic effect.

DISTRIBUTION: Southeastern Brazil, Uruguay, and northeastern Argentina.

OTHER MATERIAL EXAMINED: **BRASIL:** **São Paulo:** Botucatu, Fazenda Nossa Senhora da Conceição, "parte aérea de *Saccharum officinarum*", 4.II.1999, L.I. Rinaldi, B. Mendez, 1♂ (UNESP), 20.IV.1999, 1♀ (UNESP); Botucatu, Usina São Manoel, 2.III.1988, I. Rinaldi and L. Forti, 1♀ (UNESP), 29.IX.1986, 1♂ (UNESP). **URUGUAY:** **Departamento Rocha:** Arroyo Sarandí del Consejo, ruta 9 km 251, 18.V.1993, M. Ramírez and F. Pérez Miles, 1♂ (MACN-Ar). **ARGENTINA:** **Santa Fe:** El Toba, 4.IV.1968, M. Galiano, 1♀ (MACN-Ar). **Entre Ríos:** Rosario del Tala, XI.1988, M. Ramírez, 1♀ (MACN-Ar, photos MJR 62, 63, 269). **Buenos Aires:** Same data as types, 1♂ 4♀ 1 immature; Delta, estación experimental INTA, 3.II.1983, M. Carbajal and M. Ramírez, 1♂ (MACN-Ar); Delta, Paraná de Las Palmas, 17.VII.1964, M. Galiano, 2♀ (MACN-Ar); Dique Luján, 26.IX.1982, P. Goloboff and M. Ramírez, 1♂ (MACN-Ar); Mar del Tuyú, costa atlántica, 2.V.1981, M. Ramírez, 1♀ 1 immature (MACN-Ar); Reserva Otamendi, 10.VI.1997, M. Ramírez, L. Compagnucci, C. Grismado, F. Uehara, 1 immature (MACN-Ar); Punta Lara, Ensenada, 10.X.1984, M. Galiano, C. Scioscia and P. Goloboff, 1♂ (MACN-Ar), 11.X.1985, F. Miranda and M. Ramírez, 1♂ (MACN-Ar); Río Luján, estación FCGM, marsh with "espadaña", 5.X.1993, M. Ramírez and A. Pérez, 2♂ (MACN-Ar); Zelaya, VII.1938, J.B. Daguerre, 2♀ (MACN-Ar).

Sanogasta tenuis, new species

Figures 76F, 88

TYPES: Female holotype and male paratype from Argentina, Buenos Aires province, Río

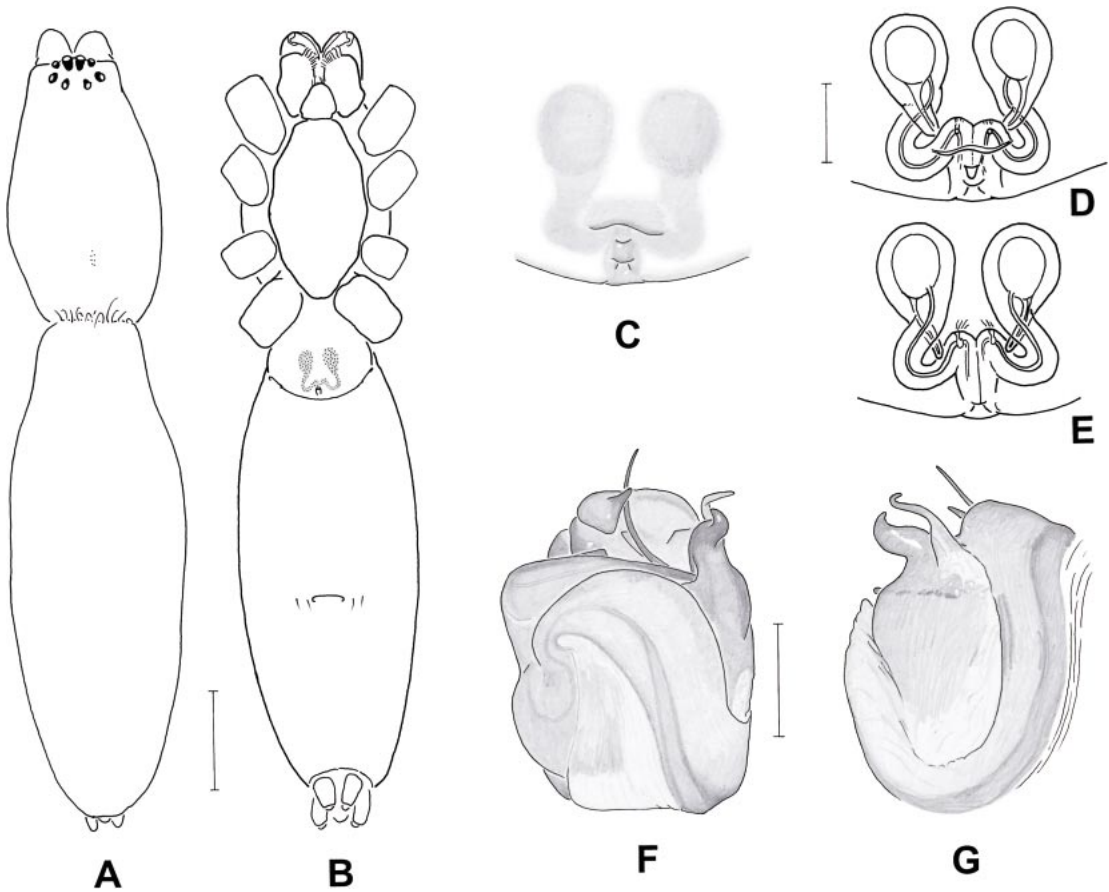


Fig. 88. *Sanogasta tenuis*, n. sp., holotype and paratype. **A.** Female, dorsal view. **B.** Ventral view. **C.** Epigyne, ventral view. **D.** Same, cleared. **E.** Same, dorsal. **F.** Copulatory bulb, ventral view. **G.** Same, retrolateral view. Scale bars = A, B, 0.5 mm; C–G, 0.1 mm.

Luján, estación Ferrocarril General Mitre, grassland, ca. 34°17'S, 58°54'W, photos MJR 1242–1254, 5.X.1993, M. Ramírez and A. Pérez, deposited in MACN-Ar 9816.

ETYMOLOGY: The specific name refers to the slender body.

DIAGNOSIS: Resembles *S. puma* in having an elongate body without pattern (fig. 88A, B), but can be distinguished by having small, spherical spermathecae and a relatively small secondary conductor.

FEMALE (holotype): Total length 4.12. Carapace without thoracic groove, flattened, elongate, length 1.37, width 0.80, wider on legs II–III. AME larger than ALE, with ocular cones visible through cuticle, black. Length of tibia/metatarsus: I, 0.78/0.55; II,

0.53/0.38; III, 0.33/0.32; IV, 0.95/0.60. Palpal tarsus length 0.32. Chelicerae unmodified, with two teeth on retromargin. Sternum length 0.95, width 0.52. Spines (all tibiae with d r1–0–1 bristles): leg **I**, femur d 1–1–1, p 2ap, r d1ap; tibia v 2–2–2; metatarsus v 2bas (0–2–0–0). **II**, femur d 1–1–1, p d1ap, r 0–d1–d1; tibia v r1–r1–2; metatarsus = I. **III**, femur d 1–1–1, p and r 0–d1–d1; tibia v p1–p1–2, p v1–v1 + 0–1–0 bristle, r d1, d r1–0–1 bristles; metatarsus v 2–0–1, p 0–1, r 0–d1–1, d r1ap. **IV**, femur d 1–1–1, p and r d1ap; tibia v p1–2–2, p v1–v1–0 bristles + 0–1–0 bristle, r 0–d1–1 bristles, d r1–0–1 bristles; metatarsus v 2–0–1, p d1–1, r 0–d1–0–d1 bristles, d 0–p1–0–2 bristles. Prolateral spines on tibiae III and IV ventrally dis-

placed. Abdomen length 2.70, width 1.27, spiracle–epigastrium 1.08, spiracle–spinnerets 0.83. Color: uniform pale grayish brown. Epigyne (fig. 88C–E): anterior pouch small, close to epigastric furrow, with transverse elevation limiting depressed area anterior of pouch. Insertions of epigastric muscles superficial. Copulatory ducts arising contiguously. Ducts of accessory bulbs very short, ventral.

MALE (paratype): Total length 2.90. Carapace without thoracic groove, length 1.22, width 0.72. AME projecting above clypeus. Length of tibia/metatarsus: I, 0.85/0.63; II, 0.53/0.42; III, 0.33/0.32; IV, 0.82/0.57. Chelicerae narrow, vertical. Sternum length 0.82, width 0.45. Spines as in female, except: leg I, tibia p 1-d1-1-0, r 1-0-v1-0; metatarsus p d1. II, tibia p 1-d1-1-0; metatarsus p d1. III, tibia, r 0-d1-1-0; metatarsus p and r 0-d1-0-1. IV, metatarsus p and r d1-1, d r1-0-r1. Abdomen length 1.62, width 0.60, spiracle–epigastrium 0.70, spiracle–spinnerets 0.93. Color as in female. Palp (fig. 88F, G): tibia short, width/length 1.20, cymbium relatively large. Embolus thin, basal process small, triangular. Median apophysis very thin, closely associated with paramedian. Apex of paramedian apophysis short, sinuous. Secondary conductor not fused to anterior margin of tegulum; canal well defined, arising slightly distal to base of paramedian apophysis; retrolateral portion with rounded basal projection, external margin forming elevated, thin ridge. Anterior margin of tegulum pronounced, compressed over base of secondary conductor.

NATURAL HISTORY: This species lives in the bases of grasses. The spider places its legs in a line with the body on grass leaves, and is extremely cryptic.

DISTRIBUTION: Collected in São Paulo, Buenos Aires, and Córdoba, probably widely distributed through grasslands in central and northeastern Argentina, southeastern Brazil, and Uruguay.

OTHER MATERIAL EXAMINED: BRASIL: São Paulo: Botucatu, Usina São Manoel, 11.II.1987, I. Rinaldi and L. Forti, 1♀ (UNESP). **ARGENTINA: Buenos Aires:** Same data as types, 5♀ 3 immatures, 30.X.1990, M. Ramírez, 1♀ 4 immatures (MACN-Ar), 14.IX.1991, M. Ramírez, 1 im-

mature (MACN-Ar); no specific locality, J.B. Daguerre, 1♀ (MACN-Ar 31344). **Córdoba:** Pampa de Achala, 15 km W El Cónдор, 31.VII.1999, M. Ramírez and L. Lopardo, 1♀ (MACN-Ar).

Sanogasta approximata (Tullgren),
new combination

Figures 89–91

Gayenna approximata Tullgren, 1901: 233, 259 (two females syntypes from Tierra del Fuego, Tweedie, Sierra del Toro, 19.III.1899, E. Nordenskjöld, and Río Azopardo, 1.III.1896, O. Nordenskjöld, in NRS, examined).

Tomopisthes kraepelini Simon, 1902: 31 (female holotype from Chile, Punta Arenas, in MHNP 20723, examined). **NEW SYNONYMY.**

Gayenna kraepelini: Merian, 1913: 13.

SYNONYMY: The types of the species synonymized were examined, together with specimens from the same area; no relevant differences were found.

DIAGNOSIS: Distinguished from other *Sanogasta* by having two pairs of ventral spines on metatarsi II, a conspicuous embolar process, and triangular sclerotized areas at the epigastric muscle insertions, flanking the epigyne.

FEMALE (lectotype, measurements of specimen from Los Glaciares Natl. Park): Total length 11.50. Carapace length 5.45, width 4.00, wider on legs II–III. Length of tibia/metatarsus: I, 3.72/3.72; II, 3.59/3.72; III, 3.00/4.00; IV, 3.86/5.72. Palpal tarsus length 1.90. Chelicerae unmodified, with two teeth on retromargin. Sternum length 3.13, width 2.17. Spines: leg I, femur d 1-1-1, p 0-d1-2, r 0-d1-d1; tibia v 2-2-2 or 2-2-p1; metatarsus v 2-2-0. II, femur = I; tibia v 2-2-p1 or 2-2-2 (the r1ap very small), p 0-1; metatarsus v 2-2-0 (the x-r1-x more apical). III, femur d 1-1-1, p and r 0-d1-d1; patella r d1; tibia v 2-2-2, p and r v1-d1-1-0, d r1-0-1-0; metatarsus v 2-2-2, p and r d1-1-0-1, d 0-p1-2. IV, femur d 1-1-1, p 0-d1-d1, r d1ap; patella r d1; tibia and metatarsus = III. Abdomen length 6.38, width 3.19, spiracle–epigastrium 2.70, spiracle–spinnerets 1.60. Color: grayish, with darker pattern (fig. 89), sternum grayish, slightly darker at margins. Venter pale. Epigyne (figs. 90, 91D, E): anterior pouch close to epigastric furrow. Insertions of epigastric muscles very deep, as-



Fig. 89. *Sanogasta approximata* (Tullgren), female (Neuquén, Nahuel Huapi, photo MJR 51).

sociated with triangular sclerotized areas. Median field with pair of shallow depressions on epigastric furrow. Copulatory ducts short, thick. Ducts of accessory bulbs very short, oriented forward.

MALE (Los Glaciares Natl. Park): Total length 10.00. Carapace length 4.80, width 3.72. Length of tibia/metatarsus: I, 4.39/4.79; II, 4.12/4.39; III, 3.23/4.26; IV, 4.12/6.25. Chelicerae slightly smaller than those of female. Sternum length 2.67, width 1.93. Spines as in female, except: leg **I**, tibia v 2-2-2, p and r 1-d1-1-0; metatarsus v 2-2-0 (both r advanced), p and r 1. **II**, femur = I; tibia = I; metatarsus p d1-1-0, r 1. **IV**, femur = III. Abdomen length 5.30, width 2.50, spiracle-epigastrium 2.10, spiracle-spinnerets 1.30. Color as in female. Sternum and coxae clothed with short hairs, some of them thicker. Palp (fig. 91A-C): tibia short, width/length 0.70, cymbium relatively large. Tegular notch short (fig. 91A). Embolus short, not associated with canal on conductor, basal process conspicuous, heavily sclerotized. Median apophysis short, hook-shaped. Apex

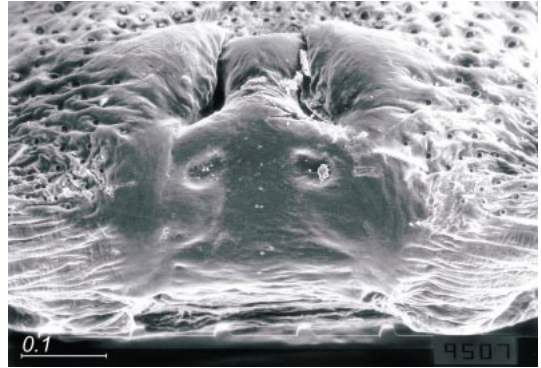


Fig. 90. *Sanogasta approximata* (Tullgren), epigyne, posterior-ventral view.

of paramedian apophysis short. Secondary conductor partially fused to anterior margin of tegulum, wide, thin; canal vestigial, ending in low peak; prolateral portion with flattened, rounded projection pointing distally; retrolateral portion concave, with elevated ridge at external margin, small basal internal projection. Anterior margin of tegulum compressed over base of secondary conductor.

VARIABILITY: The median ventral spines on metatarsus II (x-2-x) arise gradually in immatures, being absent in younger instars. Most females have metatarsus I, v 2bas, some v 2-p1-0, occasionally v 2-2-0 (as in lectotype). Some penultimate males also have v 2-2-0 on metatarsus I.

NATURAL HISTORY: This species builds retreats under stones at shores of lakes or streams, often sharing a stone with conspecifics, or with *Acanthoceto cinerea* group species.

DISTRIBUTION: Forests in southern Argentina (from Neuquén province) and Chile (from Malleco province) to Tierra del Fuego. One isolated record from Santiago (CAS).

OTHER MATERIAL EXAMINED: ARGENTINA: Neuquén: San Martín de los Andes, 3-6.I.1964, no collector, 2♀ (MACN-Ar); Nahuel Huapi Natl. Park: Lago Nahuel Huapi, Península Quetrihué, II.1986, M. Ramírez, 2♀ (MACN-Ar), "arrayan" forest, beach of stones, 24.II.1996, M. Ramírez, 1♂ 2♀ (MACN-Ar); Lago Nahuel Huapi, lado este, I.1989, M. Ramírez and E. Maury, 2♀ 3 immatures (MACN-Ar, photos MJR 50-51). **Río Negro:** San Carlos de Bariloche,

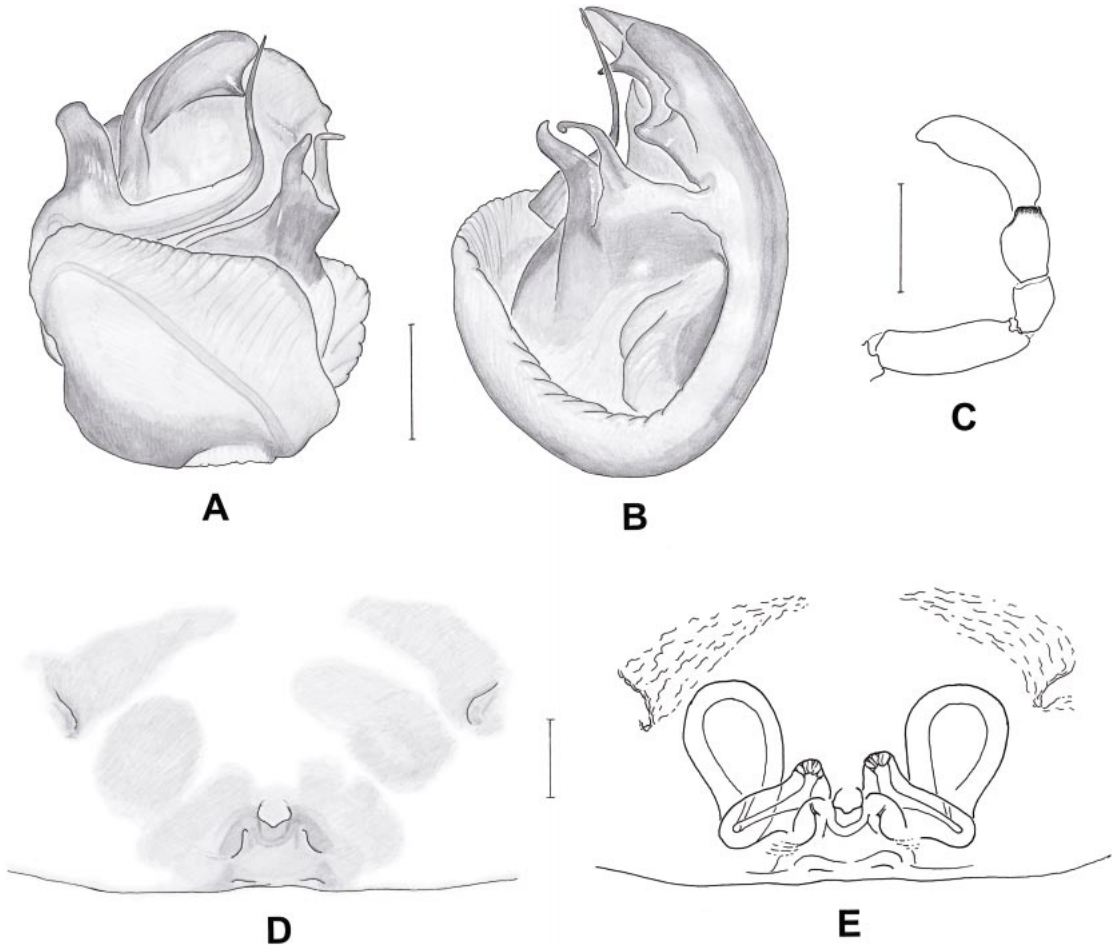


Fig. 91. *Sanogasta approximata* (Tullgren). **A.** Male copulatory bulb, ventral view (Chubut, Futalaufquen). **B.** Same, retrolateral. **C.** Male palp, retrolateral view. **D.** Epigyne, ventral view (syntype). **E.** Same, cleared. Scale bars = A, B, 0.3 mm; C, 1 mm; D, E, 0.2 mm.

II.1954, M.E. Galiano, 8♀ 5 immatures (MACN-Ar 5412), III.1947, A. Giai, 1♂ 4 immatures (MACN-Ar 2225), 1♂ 3 immatures (MACN-Ar 2219), 1♀ (MACN-Ar 2221); El Bolsón, 71°35'S, 41°59'W, 2.III.1964, A. Kóvacs, 1♀ (AMNH); Los Reppollos, 5.III.1962, A. Kovács, 1♀ (AMNH); Río Azul, V.1962, A. Kovács, 4♀ (AMNH). **Chubut:** Esquel, road to La Hoya, 42°54'S, 71°19'W, 16.XI.1988, V.D. Roth, 8♀ (CAS); Los Alerces Natl. Park: Lago Futalaufquen, I.1990, M.J. Ramírez, 9♀ (MACN-Ar); II.1986, M. Ramírez, 1♂ 4♀ 1 immature (MACN-Ar), 18.I.1977, E. Maury, B. Detricet, 1♀ (MACN-Ar); Lago Futalaufquen, Bahía Rosales, 7.II.1986, M. Ramírez, 7♀

1♂ 1 immature (MACN-Ar); Lago Verde, II.1985, M. Ramírez, 1♂ 1♀ 6 immatures (MACN-Ar). **Santa Cruz:** Lago Frías, no date, E. Maury, 1♀ 2 immatures (MACN-Ar); Los Glaciares Natl. Park, II.1977, no collector, 1♂ 1♀ (MACN-Ar), 18.I.1980, P. Goloboff, 1♂ 3♀ (MACN-Ar); Valle Eléctrico, 10–15.II.1949, N.S. Gianollina, 1♂ (MACN-Ar 2691). **CHILE: Región Metropolitana (Santiago): Santiago:** Cañón del Maipo, 28.XII.1966, L. Campos, 2♂ (CAS). **Región IX (Araucanía): Malleco:** Tolhuaca, 15.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 2♀ (AMNH). **Región X (Los Lagos): Osorno:** E Entre Lagos, orilla del Lago Puyehue, 150 m, 24.XI.1981, N. Platnick and

T. Schuh, 2♂ (AMNH); Puyehue Natl. Park: Los Derrumbes, 18.I.1989, M. Ramírez, 2♀ (MACN-Ar); Aguas Calientes, 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1♂ 1♀ (MACN-Ar). **Chiloé:** Isla de Chiloé: no date, Skottsberg, 1♀ (NRS); Lago Huillincos, 9.II.1981, T. Cekalovic, 1♀ 28 immatures (AMNH). **Región XI (Ibáñez del Campo): Aisén:** Balmaceda (“Río Negro”, lapsus?), 27.I.1957, M. Cadoceo, 12♀ 2♂ 1 immature (MACN-Ar), 28.III.1957, M. Cadoceo, 4♀ 28 immatures (MACN-Ar); Murta, Lago General Carrera, 29.30.I.1990, L. Peña, 1♀ (AMNH); Puerto Aisén, II.1957, M. Cadoceo, 14♀ 6♂ 1 immature (MACN-Ar). **Región XII (Magallanes y Antártica): Magallanes:** Magallanes, III.1959, no collector, 2♀ (MACN-Ar), no date, T. Cekalovic, 6♀ (UC); 30 km Natales, road to Magallanes, 21.III.1948, M. Birabén, 2♀ (MLP); Península Brunswick, Tres Brazos, 28.II.1971, T. Cekalovic, 9♀ 2 immatures (AMNH); Punta Arenas, 17.IX.1963, 3♀, 18.IX.1963, 1♀, T. Cekalovic (AMNH), Río Rubens, ca. 52°S, 30.XI–3.XII.1962, P. Darlington, 1♀ (MCZ).

Sanogasta pehuenche, new species

Figure 92

TYPES: Male holotype and female paratype from Argentina, Neuquén province, Lanín Natl. Park, Lago Curruhé Chico, ca. 39°54'S, 71°21'W, 15–16.I.1983, E. Maury, deposited in MACN-Ar 9817.

ETYMOLOGY: The specific name refers to the pehuenches, who live in the land of pehuenes (*Araucaria araucana*), where this species is found.

DIAGNOSIS: Resembles *S. approximata* in having short, thick copulatory ducts, but can be distinguished by having the epigynal anterior pouch with longer borders, no sclerotized areas flanking the epigyne, and a paramedian apophysis forming a short hook.

FEMALE (paratype): Total length 7.60. Carapace length 3.72, width 2.57, wider on legs II–III. Length of tibia/metatarsus: I, 2.10/1.87 (left smaller, regenerated); II, 2.00/1.90; III, 1.63/1.83; IV, 2.30/2.70. Palpal tarsus length 1.00. Chelicerae unmodified, with two teeth on retromargin. Sternum length 1.87, width 1.40. Spines: leg I, femur d 1–1–1, p

2ap; tibia v 2–2-p1; metatarsus v 2bas. **II**, femur d 1–1–1, p 0-d1–2, r d1; tibia v r1–2–2 or 0–2–2, p 0–1; metatarsus = I. **III**, femur d 1–1–1, p and r 0-d1-d1; patella r 1; tibia v p1–2–2, p and r d1–1, d r1bas; metatarsus v 2–0–2, p and r d1–1–1, d 0-p1–2. **IV**, femur d 1–1–1, p 0-d1-d1, r d1ap; patella r 1; tibia v p1–2–2, p and r 1-d1-0-1, d r1bas; metatarsus v 2–2–2, p and r d1–1–1, d 0-p1–2. Abdomen length 4.39, width 2.23, spiracle–epigastrium 1.70, spiracle–spinnerets 0.63. Color: carapace grayish, with dark dorsal pattern. Legs pale grayish with dark spots. Endites brown, labium dark brown. Sternum with dark brown spots at margins, center pale. Abdomen with dense, dark dorsal pattern, venter pale, with median band of small spots, a few dots at sides. Epigyne (fig. 92C, D): anterior pouch close to epigastric furrow. Insertions of epigastric muscles superficial. Copulatory ducts short, thick. Ducts of accessory bulbs very short, oriented forward.

MALE (holotype): Total length 6.38. Carapace length 2.90, width 2.23. Length of tibia/metatarsus: I, 2.53/2.30; II, 2.67/2.23; III, 1.73/1.93; IV, 2.10/2.37. Chelicerae slightly narrower than those of female. Sternum length 3.07, width 2.33. Spines as in female, except: leg I, tibia v 2–2-r1 or 2–2–0. **II**, tibia p 0; metatarsus p d1–0. **III**, metatarsus v 2–2–2. Abdomen length 3.72, width 2.00, spiracle–epigastrium 1.60, spiracle–spinnerets 0.70. Color as in female, but dorsum of abdomen yellow with dark brownish pattern. Palp (fig. 92A, B): tibia long, width/length 0.55. Tegular notch short. Embolus short, not associated with canal on conductor, with basal process small, superficial. Apex of paramedian apophysis short, hook-shaped. Secondary conductor small, not fused to anterior margin of tegulum, with canal reduced; retrolateral portion concave, posteriorly elevated. Anterior margin of tegulum compressed over base of secondary conductor.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Known only from Neuquén and Concepción, probably with wider distribution.

OTHER MATERIAL EXAMINED: ARGENTINA: Neuquén: San Martín de los Andes, Cerro Chapelco, 1700 m, II.1961, M. Galiano, 1♀ (MACN-Ar); Lanín Natl. Park, same data as types, 2♀, 1♀ penultimate, 2 imma-

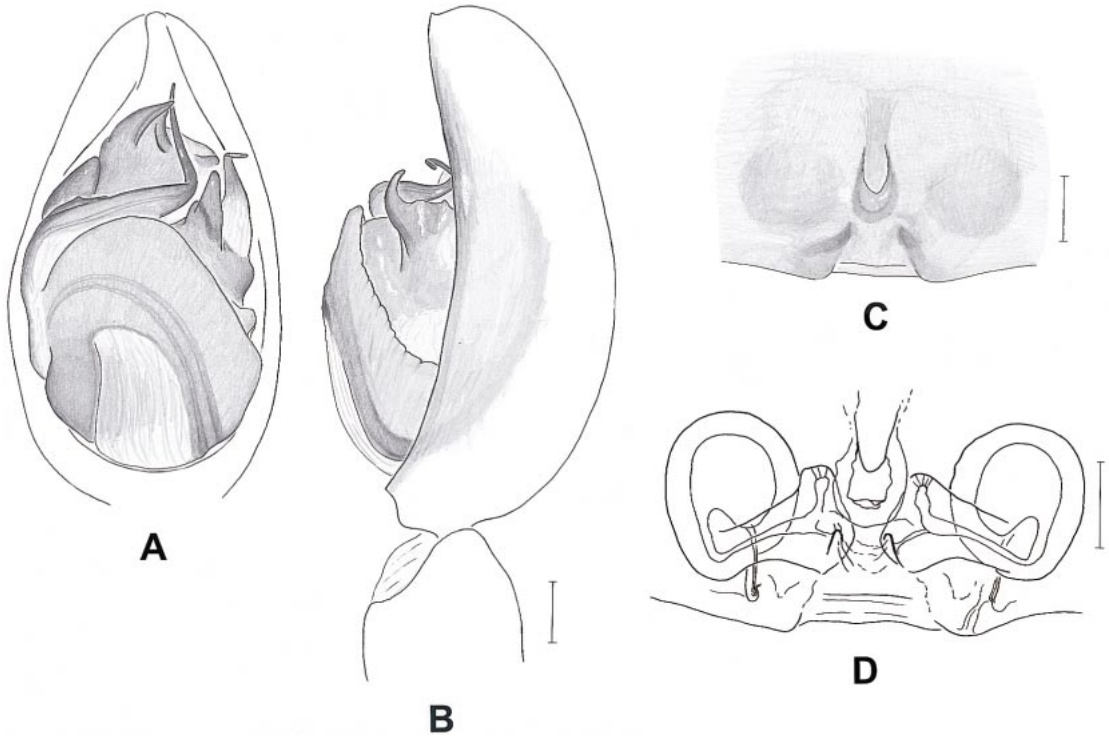


Fig. 92. *Sanogasta pehuenche*, n. sp. (holotype and paratype). **A.** Male palp, ventral view. **B.** Same, retrolateral view. **C.** Epigyne, ventral view. **D.** Same, cleared. Scale bars = 0.1 mm.

tures (MACN-Ar); Lago Moquehue, 10.I.1985, E. Maury, 2♀ 1 immature (MACN-Ar); Lago Quillén, II.1968, E. Maury, Müller 2♀ (MACN-Ar). **CHILE: Región VIII (Biobío): Concepción:** Hualqui, 18.XII.1988, R. Vergara, 1♀ (AMNH).

PHILISCA SIMON

Table 23

Philisca Simon, 1884: 129 (type species by monotypy *Philisca hahni* Simon, 1884), 1887: E21, 1897a: 77–78, 82, 84, 86, 1903a: 1031. Transferred from the Miturgidae by Ramírez, 1995a: 381.

Liparotoma Simon, 1884: 130, 137 (type species *Liparotoma hyadesi* Simon, 1884, subsequently designated by Simon, 1897a: 100). Ramírez, 1993: 196. Revised by Ramírez, 1993. NEW SYNONYMY.

SYNONYMY: Some years after the proposal of *Cluilius*, Simon (1904) considered it a section of *Philisca* (1904: 98). Unfortunately, Simon designated two type species for the genus *Cluilius*: “*Clubiona elegans* Nicolet”

and *Clubiona chilensis* Nicolet. *Clubiona elegans* is a nomen nudum that Simon made referring to some specimens labeled by Nicolet as “*C. elegans*” (Simon, 1903a: 1031). The type of *Clubiona chilensis* Nicolet is an *Amaurobioides*. I have not found any specimen labeled “*C. elegans*” or “*Cluilius chilensis*” in MHNP. Simon had not seen specimens of *Amaurobioides* (“a *Clubiona* differt, sec. Cambridge . . .” [Simon, 1897a: 89]; I have not found any *Amaurobioides* in Simon’s collection, except the type of *C. chilensis*). However, it seems evident that Simon would have been able to distinguish between *Amaurobioides* and *Philisca*, because the type of *Clubiona chilensis* Nicolet has a label (probably transcribed by Berland) “*Axyracrus chilensis* Nicolet, (sub *Clubiona*), Simon det.”. If this label is correct, at some point Simon thought that *C. chilensis* was not a *Philisca*, but an *Axyracrus*, a genus very similar to *Amaurobioides*.

In tune with the tradition, Mello-Leitão (1951) described a homonym *Cluilius chilensis*.

TABLE 23
Synapomorphies of *Philisca* and Internal Clades

<p><i>Philisca</i> (clade 138) MA thin branches (66): absent → present wide membrane separating C2 (80): absent → present</p>	<p>Clade 137 dark ventral stripe (1): absent → present shape of PMA (68): bifid → <i>Philisca</i> type</p>
<p>Clade 132 male median promarginal tooth elevate (22): absent → present male chelicerae modified (24): absent → present</p>	<p><i>P. puconensis</i> ocular area black (9): absent → present ratio AME/ALE (15): AME < ALE → AME minute male chelicerae (17): strong → smaller sclerotized triangle to MA (63): absent → present spine tibia III, v r1-x-x (161): absent → present</p>
<p>Clade 133 dark ventral stripe (1): present → absent lateral lobes (110): separate → fused with suture ducts AB (123): long → short spine tibia III, v x-p1-x (162): present → absent spine tibia IV, v x-p1-x (183): present → absent spine metatarsus IV, p d1-x-x (191): present → absent</p>	<p><i>P. ornata</i> ratio AME/ALE (15): AME = ALE → AME > ALE male endites modified (25): absent → present scopulae anterior tibiae (33): present → absent spine metatarsus III, v x-r1-x (168): absent → present spine metatarsus III, r x-1-x (175): present → absent</p>
<p>Clade 134 palpal claw blunt (31): absent → present SD loop on MA (54): absent → present spine metatarsus III, r d1-x-x (174): present → absent spine metatarsus III, d x-p1-x (177): present → absent spine metatarsus IV, v x-p1-x (189): present → absent spine metatarsus IV, p x-1-x (192): present → absent</p>	<p><i>P. huapi</i> anterior eye row (11): straight → recurved sclerotized triangle to MA (63): absent → present base embolus anterior ridge (99): absent → present</p>
<p>Clade 135 spine tibia I, v p1-x-x (133): present → absent spines tibia I, v ap (138): 2ap → 0ap spine tibia II, v x-p1-x (148): present → absent spine tibia II, v x-r1-x (149): present → absent spine tibia II, v x-x-p1 (150): present → absent spine tibia II, v x-x-r1 (151): present → absent spine patella III, r d1 (158): present → absent spine patella IV, r d1 (180): present → absent spine tibia IV, v x-r1-x (184): present → absent</p>	<p><i>P. hahni</i> base embolus anterior ridge (99): absent → present</p>
<p>Clade 136 dentate ridge on C2 (82): absent → present denticles C2p (88): absent → present spine tibia I, v x-p1-x (135): present → absent spine tibia II, p x-1 (152): present → absent</p>	<p><i>P. tripunctatum</i> size retromarginal teeth (21): regular → small denticles anterior ventral loop SD (56): present → absent MA thin branches (66): present → absent C1 (75): present → absent apex C2 (83): median or basal → apical spines metatarsus I, v 2bas (139): present → absent</p>
	<p><i>P. amoenum</i> shape relic C1 (93): thin, rounded → acute shape APmf (106): normal → distended</p>
	<p><i>P. hyadesi</i> no autapomorphies!</p>
	<p><i>P. doilu</i> lateral lobes (110): fused with suture → fused without suture spines metatarsus I, v 2bas (139): present → absent</p>

sis, which belongs to the genus *Philisca*, and I will retain the name *Philisca chilensis* until a revision of the genus is completed.

Liparotoma hyadesi, the type species of *Liparotoma*, is here considered a member of *Philisca*. The names *Philisca* and *Liparotoma* were published in the same paper (Simon, 1884). I decided to use the name *Phil-*

isca, where most species of this group were described. *Liparotoma* comprises four species of a derivative group, which may constitute a subgenus in the future.

NOTE: *Philisca puconensis* is provisionally included in *Philisca* by the thin branches of the median apophysis. In slightly suboptimal trees it jumps to the base of *Tomopisthes*.

DIAGNOSIS: Most species are distinguished from other Gayennini by having thin branches on the median apophysis. Similar branches are also found in *Tasata centralis*, but that species is easily distinguished by having five retrolateral cheliceral denticles, instead of the three ones in *Philisca*. *Philisca ornata* lacks those branches, but shares with other *Philisca* the modified male chelicerae. *P. tripunctata* also lacks branches, but shares with several *Philisca* a reduced spination of first and second tibiae and metatarsi.

DESCRIPTION: Carapace wide in front, chelicerae strong; males with chelicerae similar to or larger than those of females; three teeth on promargin, one to three on retromargin. Male palpal tibia relatively long, usually two or more times longer than wide. Cymbium relatively small, narrow. Embolus with tip relatively thick, not associated with secondary conductor. Median apophysis generally with one to several thin basal or medial branches. Paramedian apophysis simple, thick, elongate. Primary conductor present, simple. Secondary conductor with several projections, well separated from anterior margin of tegulum by membranous band wider on prolateral side; canal vestigial or absent. Epigyne with anterior pouch deep or widened, several species with median field heart-shaped.

DISTRIBUTION: Forests in southern Chile and Argentina.

COMPOSITION: In addition to the species detailed below: *Philisca accentifera* Simon, 1904 (female and immature syntypes in MHNP 22413, examined), *Philisca ingens* Berland, 1924 (female holotype in NRS 817, and female paratype in MHNP, examined), *Cluilius chilensis* Mello-Leitão, 1951 (male and female syntypes, in MNRJ, examined), *Clubiona gayi* Nicolet, 1849 (several males and females syntypes, in MHNP 4226, examined, new combination), and few bizarre undescribed species on the Juan Fernández Islands.

Philisca hahni Simon

Figures 93A, B, 94, 95, 96A

Philisca hahni Simon, 1884: 129 (female holotype from Chile, Cabo de Hornos, in MHNP 6679, examined), 1887: E21, 1897a: 78, 82, 86, 1902: 29.

Philisca navarinensis Tullgren, 1901: 228, 259 (female holotype from Chile, Magallanes, Puerto Toro, 8.II.1896, in NRS, examined). NEW SYNONYMY.

SYNONYMY: The holotypes of the species synonymized were examined; no relevant differences were found.

NOTE: The type of *Philisca navarinensis* is labeled "*Philisca toronensis*"; the corresponding file in NRS was corrected as "*navarinensis (toronensis)*".

DIAGNOSIS: Distinguished from other *Philisca* by having the epigynal median field rectangular, slightly elevated, with a deep anterior pouch, and the male paramedian apophysis elongate, thick, with rounded tip.

FEMALE (holotype, measurements of specimen from Pucón): Total length 9.05. Carapace (fig. 94B, C) length 4.00, width 2.77, wider on legs II–III. Length of tibia/metatarsus: I, 2.50/2.07; II, 2.30/2.00; III, 1.70/1.87; IV, 2.33/2.63. Palpal tarsus length 1.12. Chelicerae unmodified, with three teeth on retromargin, basal one larger (fig. 96A). Sternum length 1.93, width 1.53. Spines: leg I, femur d 1–1–1, p 2ap; tibia v p1–2–2; metatarsus v 2bas. II, femur = I; tibia v 0–2–2; metatarsus = I. III, femur d 1–1–1, p 0-d1-(1-d1), r d1ap; patella r d1; tibia v 0–2–2, p and r d1–1; metatarsus v 2-p1-p1 and group of apical hairs, p and r d1–1–1, d 0-p1–2. IV, femur d 1–1–1, p 0-d1-d1, r d1ap; patella r d1; tibia v p1–2–2, p d1–1, r 1-d1-0-1-0; metatarsus = III, but v 2–2-p1. Abdomen length 5.30, width 3.33, spiracle–epigastrium 3.03, spiracle–spinnerets 0.50. Color: carapace and legs brown. Sternum dark brown with pale center, endites and labium dark. Abdomen yellow, cardiac area violet, dorsum with brown spots, venter with some diffuse dark spots. Epigyne (fig. 94D, E): anterior pouch with deep cavity, median field rectangular, slightly elevated. Insertions of epigastric muscles superficial. Ducts of accessory bulbs short, converging.

MALE (Pucón): Total length 7.70. Carapace length 3.07, width 2.27. Length of tibia/metatarsus: I, 2.67/2.37; II, 2.40/2.20; III, 1.67/1.77; IV, 2.20/2.47. Chelicerae very long, fang long, thick; retromarginal teeth small, apical tooth separated from other two. Endites unmodified. Sternum length 1.55, width 1.23. Spines as in female, except: leg

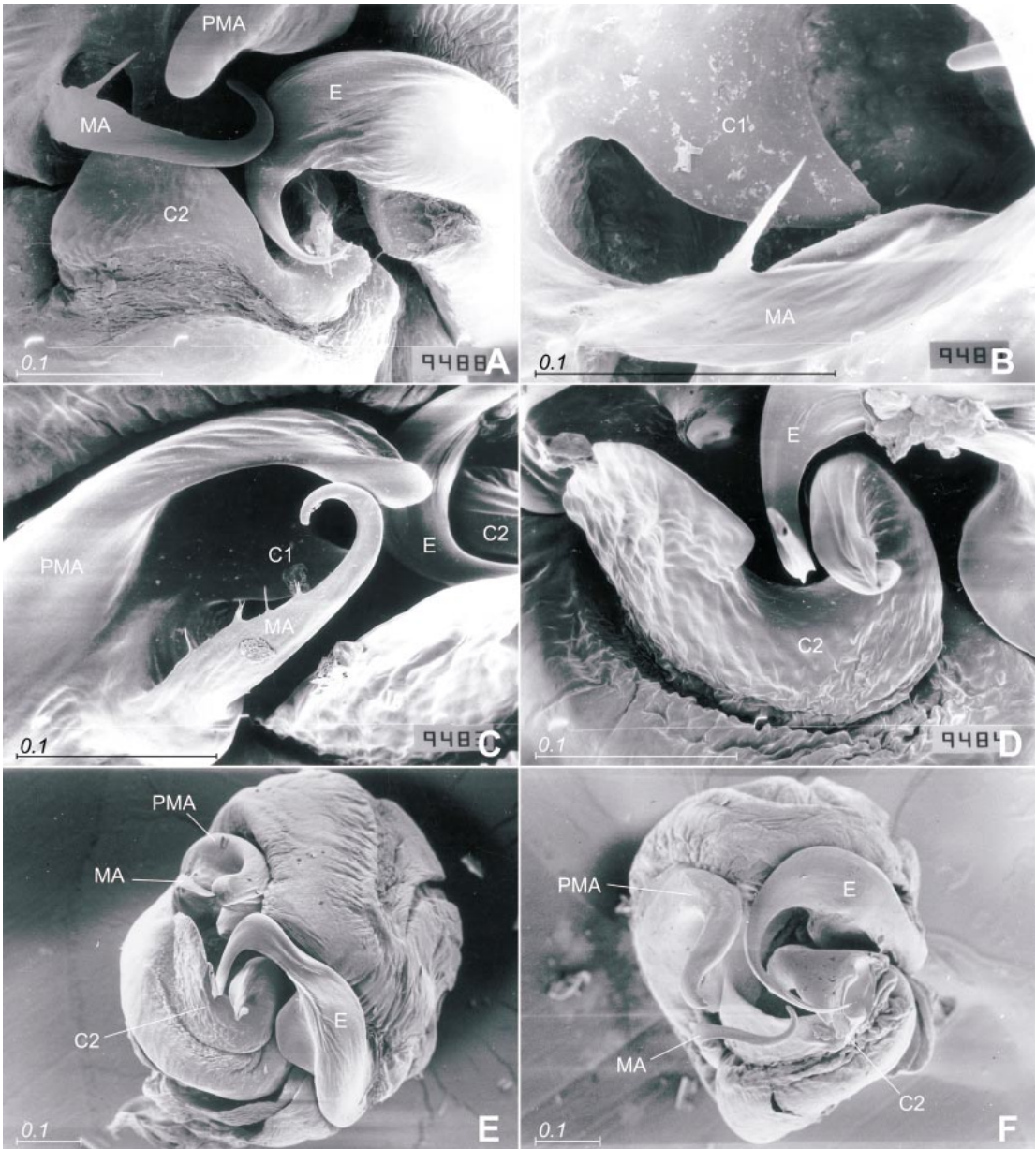


Fig. 93. *Philisca* spp., male copulatory bulbs. **A, B.** *P. hahni* Simon (Cautín, Pucón). **A.** Apical view. **B.** Detail of median apophysis and primary conductor, retrolateral view. **C–E.** *P. huapi*, n. sp. (Neuquén, Ortiz Basualdo). **C.** Retrolateral view. **D.** Secondary conductor, apical view. **E.** Apical view. **F.** *P. hyadesi* (Simon), apical view (Aisén: Ventisquero San Rafael). (C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

II, femur p d1ap. **III**, femur p 0-d1-(1-d1) or p 0-d1-d1; tibia v 0-2-2, 0-p1-2 or p1-2-2; metatarsus v 2-p1-p1, 2-r1-p1 or 2-0-p1. **IV**, metatarsus v 2-p1-p1 or 2-2-p1. Abdomen

length 2.75, width 1.70, spiracle-epigastrium 1.57, spiracle-spinnerets 0.28. Color (fig. 94A): as in female, but abdomen with more heavily contrasting pattern, dorsal pattern

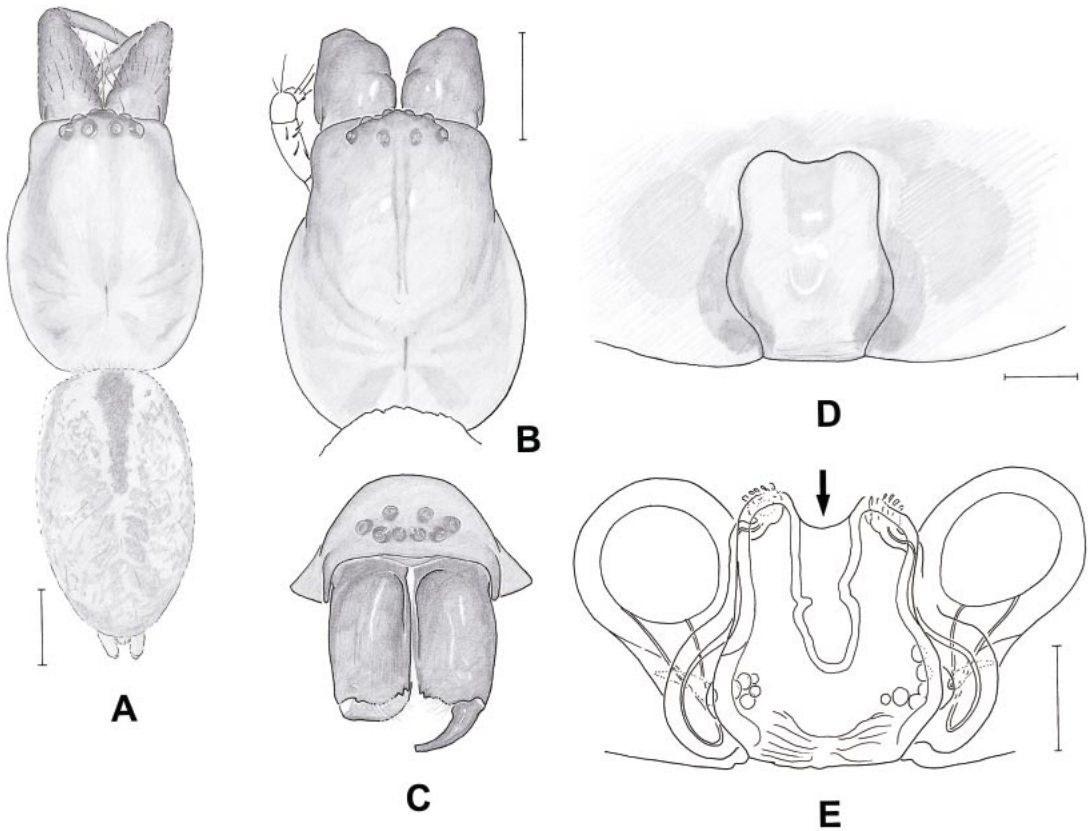


Fig. 94. *Philisca hahni* Simon. **A.** Male (Pucón, Cautín). **B.** Female carapace, dorsal view (holotype of *Philisca navarinensis*). **C.** Same, anterior view. **D.** Epigyne, ventral view (holotype). **E.** Same, cleared: arrow points to anterior pouch on median field. Scale bars = A–C, 1 mm; D, E, 0.1 mm.

and epigastrium violet (some specimens with a ventral band). Palp (figs. 93A, B, 95): tibia long, width/length 0.37, cymbium relatively small. Embolus very short, base globose, with longitudinal projecting ridge; basal process flattened, rounded. Median apophysis branched at base (fig. 93A, B). Paramedian apophysis wide, tip rounded. Primary conductor triangular, flattened, curved (fig. 93B). Secondary conductor small, canal vestigial, limited to tip, ending in small peak, on rounded projection directed backward; area basal to canal membranous; retrolateral portion wide, thin. Anterior dorsal margin of tégulum projecting as rounded lobe.

VARIABILITY: Spines: III, tibia v p1-p1-2 or 0-p1-2. IV, tibia v p1-2-2.

NATURAL HISTORY: Unknown. According to labels of specimens from Pucón collected

by S.A. Marshall, this species might live on stony beaches. Many specimens have regenerated legs.

DISTRIBUTION: Chile, from Cautín province to Cabo de Hornos.

OTHER MATERIAL EXAMINED: **CHILE: Región IX (Araucanía): Cautín:** Pucón, dung traps nr. lake, 9–16.XI.1989, 3♂, pan traps in drift, nr. lake, 5–8.XI.1989, 4♂, pan traps in lakeside debris, 8–13.XI.1989, 9♂ 1♀ 1♀ penultimate, lakeshore FIT, 15.XI–2.XII.1989, 5♂ 5♀, FIT nr. lake, 8–13.XI.1989, 6♂ 1♀, pan in lake wrack, 15.XI–2.XII.1989, 21♂ 3♀ 1♂, S.A. Marshall (AMNH). **Región X (Los Lagos): Chiloé:** Isla de Chiloé: Cucao, 12.XII.1985, E. Maury, 1♀ (MACN-Ar). **Región XII (Magallanes y Antártica): Magallanes:** Cabo Negro, 29.I.1976, T. Cekalovic, 1♀

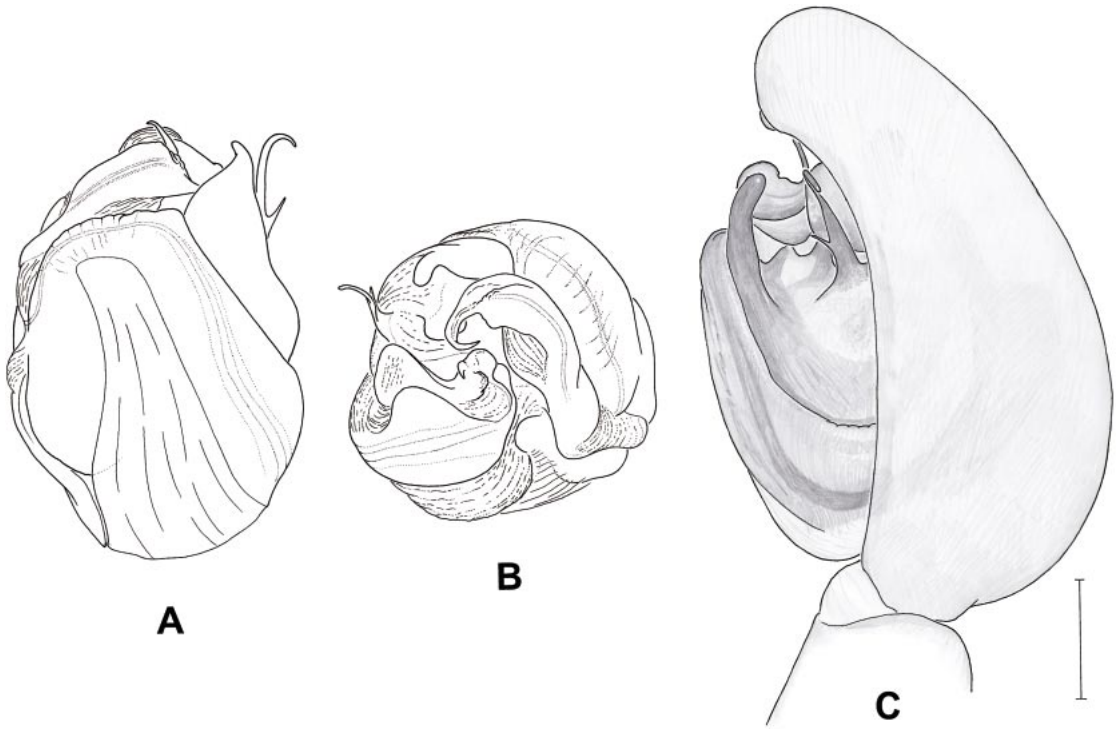


Fig. 95. *Philisca hahni* Simon, male palp and copulatory bulb. **A.** Ventral view. **B.** Apical view. **C.** Retrolateral view. Scale bar = 0.2 mm.

(AMNH); Isla Navarino, Puerto Toro, 19.XII.1992, Michelsen, 2♀ (ZMH 178).

Philisca ornata Berland

Figures 96B, 97, 98

Philisca ornata Berland, 1924: 435 (male and female syntypes, from the Juan Fernández Islands, Mas a Tierra, 28.XII.1916, K. Bäckström coll., in NRS, S.P.E. 188, and male paratype from Mas a Tierra, 1917, Bäckström [labeled "cotype"], in MHNP, examined).

DIAGNOSIS: Distinguished from other *Philisca* by having a large yellow body and a very long male palpal tibia; the epigynum is very similar to that of other Chilean species.

FEMALE (syntype, measurements of specimen from nr. Plazoleta): Total length 7.18. Carapace wide in front (fig. 97A, C), length 3.20, width 2.37, wider on legs II–III. Length of tibia/metatarsus: I, 2.33/2.13; II, 2.27/2.10; III, 1.57/1.77; IV, 2.20/2.53. Palpal tarsus length 0.92. Chelicerae strong, with three similar teeth on retromargin. Sternum length 1.55, width 1.18. Scopulae on legs I and II

not reaching tibiae. Spines (shorter on legs I and II): leg **I**, femur d 1–1–1, p (1-d1)ap; tibia v p1–2–2 or p1–2–p1; metatarsus v (p1–r1)bas. **II**, femur d 1–1–1, p d1ap; tibia v 0–2–2, p 0–1 or 0; metatarsus v (p1–r1)bas, p 1–0. **III**, femur d 1–1–1, p and r d1ap; patella r d1; tibia v 0–p1–2, p and r 1–1; metatarsus

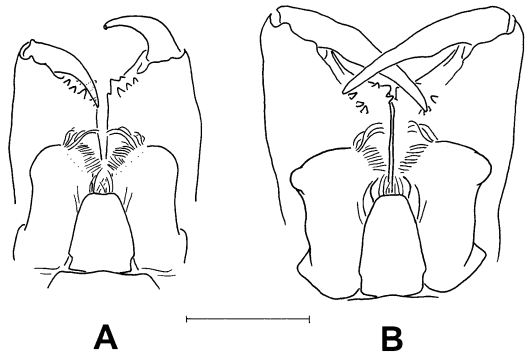


Fig. 96. Chelicerae, ventral view. **A.** *Philisca hahni* Simon, female (holotype of *Philisca navarinensis*). **B.** *Philisca ornata* Berland, male syntype. Scale bar = 1 mm.

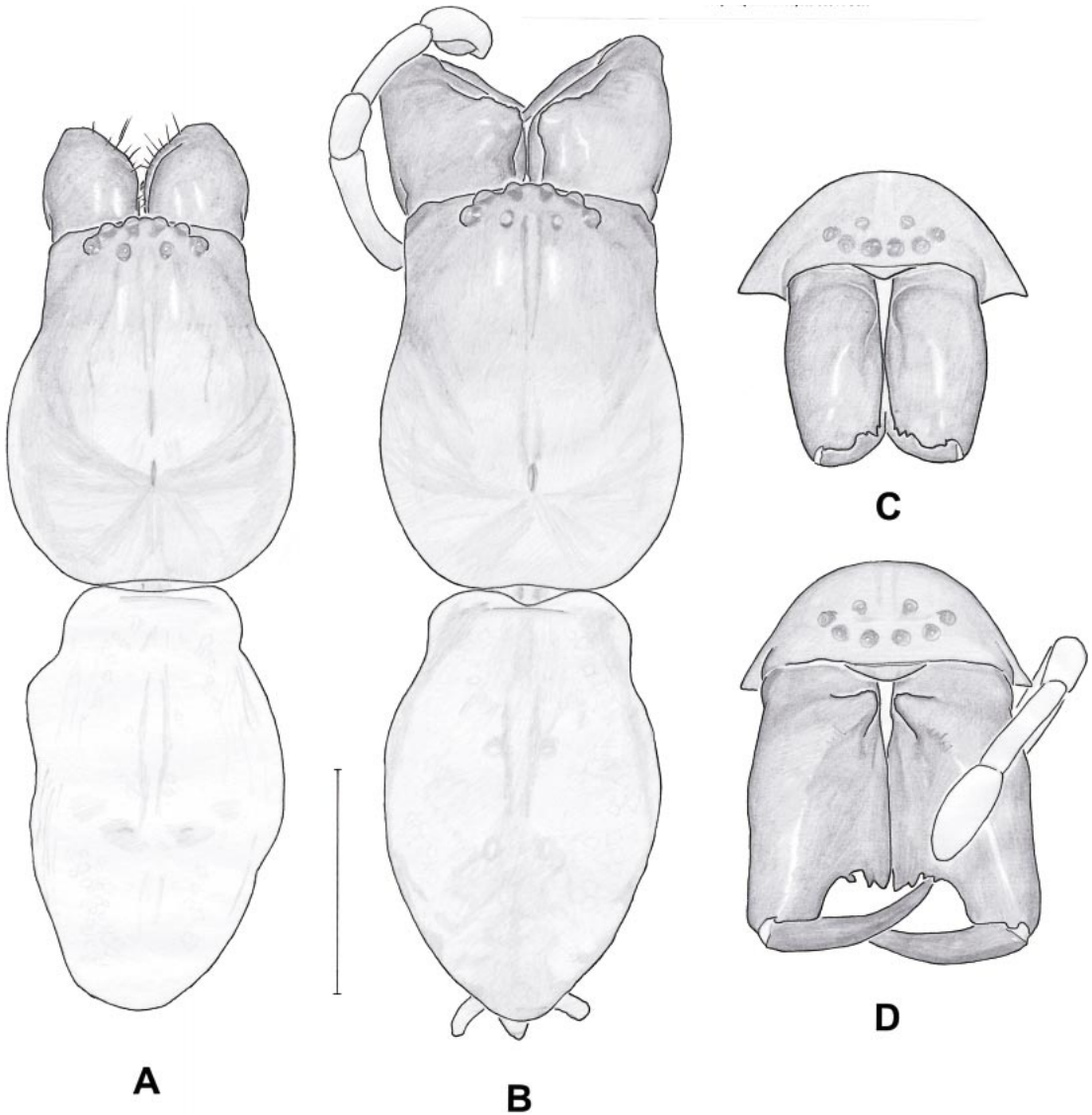


Fig. 97. *Philisca ornata* Berland, male and female syntypes. **A, C.** Female. **B, D.** Male. Scale bar = 2 mm.

v 2-2-2, p d1-1-1, r d1-0-1, d 0-p1-2. **IV**, femur, patella and tibia = III; metatarsus v 2-2-2, p and r d1-1-1, d 0-p1-2. Abdomen length 4.12, width 2.40, spiracle-epigastrium 1.90, spiracle-spinnerets 0.40. Color: yellow, cephalic area and chelicerae reddish brown. Sternum pale brown, center paler. Dorsum of abdomen with anterior lateral gray areas and three pairs of small gray spots at posterior half, closing posteriorly; some specimens with white guanine reticulum at sides. Epi-

gyne (fig. 98E, F) small, weakly sclerotized, translucent. Margins of lateral lobes arched, median field heart-shaped, anterior pouch in deep notch. Ducts of accessory bulbs long, with conspicuous gland ducts.

MALE (syntype, measurements of specimen from Valle Anson): Total length 8.65. Carapace very wide in front (fig. 97B, D), length 4.00, width 3.13. Legs very thin, especially the metatarsi. Length of tibia/metatarsus: I, 3.72/3.80; II, 3.60/3.60; III, 2.13/

2.83; IV, 3.10/3.33. Chelicerae (figs. 96B, 97D) very strong, with internal superior margins projecting, three teeth on promargin, on elevation, and three on retromargin, basals contiguous. Endites with two protuberances at each external angle, most external larger. Sternum length 2.00, width 1.57. Spines as in female, except: leg **I**, tibia v p1–2–2. **II**, femur p (1-d1)ap or d1ap; tibia v 0–2–2 or r1–2–2, p 0; metatarsus v (p1-r1)-p1–0. Abdomen length 4.50, width 2.12, spiracle–epigastrium 2.37, spiracle–spinnerets 0.73. Color: yellow, cephalic area, mouthparts, and chelicerae reddish brown. Sternum and coxa I orange. Legs yellow with gray patches, femora with one ventral apical patch, covering part of articulation membrane; patellae with one spot at each side; tibiae with several basal and pair of apical spots. Dorsum of abdomen with brownish violet pattern, venter with diffuse violet area, from epigastrium to tracheal spiracle. Palp (fig. 98A–D) with all segments long, thin, cymbium relatively small. Copulatory bulb small, central into cymbium, well separated from tibia. Tegular notch short. Embolus long, basal process flattened, rounded. Median apophysis long, quite straight, unbranched. Paramedian apophysis elongate, acute. Primary conductor wide, triangular, flattened. Secondary conductor with canal vestigial, limited to hook-shaped peak, on rounded projection directed backward; area basal to canal membranous; retrolateral portion wide, thin, elevated.

VARIABILITY: Female spines: I, tibia v 0–2-p1. Male spines: III, tibia v 0–2–2. IV, tibia v p1–2–2.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Known only from the Juan Fernández Islands, Mas a Tierra (now Isla Robinson Crusoe).

OTHER MATERIAL EXAMINED: CHILE: Valparaíso: Archipiélago Juan Fernández, Mas a Tierra (Isla Robinson Crusoe): Same data as syntypes, 2 immatures (NRS); Portezuelo trail, 7.IV.1962, 1♀ 2 immatures, Quebrada Damajuana, 5.IV.1962, 1♂, Valle Anson, Plazoleta del Yunque, 200–250 m, camote side, 1–28.IV.1962, 6♂ 18♀ 10 immatures, Valle Villagra, Portezuelo trail, 400–450 m, 19.IV.1962, 1♂, B. Malkin (AMNH); Galpón, Valle Villagra, 23–

24.IV.1962, 1♂, wet areas near Plazoleta, pans, 24–28.I.1992, S. Marshall, 1♀ (AMNH); Plazoleta, Malaise trap, 24–29.I.1992, S. Marshall, 1♂ (AMNH).

Philisca huapi, new species

Figures 61H, 93C–E, 99

TYPES: Male holotype from Argentina, Neuquén province, Nahuel Huapi Natl. Park, Puerto Blest, Laguna Los Cántaros, ca. 41°00'S, 71°50'W, 30.I.1985, M. Ramírez, 9818, and female paratype from Puerto Blest, trail to Lago Ortiz Basualdo, 1.1990, M. Ramírez, deposited in MACN-Ar.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Resembles *P. ornata* (and other species not included here) in having anteriorly modified male chelicerae, but can be distinguished by lacking the lateral projections on the male endites and by the long, straight ducts of the female accessory bulbs.

FEMALE (paratype): Total length 5.05. Carapace length 2.10, width 1.48, wider on legs II–III. Length of tibia/metatarsus: I, 1.17/1.00; II, 0.98/0.88; III, 0.80/0.90; IV, 1.18/1.33. Palpal tarsus length 0.58. Chelicerae unmodified, with three teeth on retromargin, basal one largest. Sternum length 1.17, width 0.88. Spines: leg **I**, femur d 1–1–1, p 2ap; tibia v 2–2–2; metatarsus v 2bas. **II**, femur d 1–1–1, p d1ap; tibia v r1–2–2, p 0–1; metatarsus v 2bas, p 1. **III**, femur d 1–1–1, p and r d1ap; patella r d1; tibia v 0-p1–2 or p1-p1–2, p and r d1–1–0, d r1bas; metatarsus v 2–0-p1 and apical group of hairs, p and r d1–1–1, d 0-p1–2. **IV**, femur = III; patella r d1; tibia v p1-p1–2, p and r d1–1, d r1bas; metatarsus v 2-p1-p1 and apical group of hairs, p and r d1–1–1, d 0-p1–2. Abdomen length 3.07, width 1.80, spiracle–epigastrium 1.70, spiracle–spinnerets 0.25. Color (fig. 99A): yellowish with grayish brown pattern. Legs with gray spots, patellae with spot on each side, tibiae with several basal spots and pair of apical spots. Margins of sternum and labium dark brown, endites brown. Abdomen yellow with white guanine reticulum, dorsum with park pattern, venter with median band dark brown from epigastrium to tracheal spiracle, two lateral lines of small spots. Anterior spinnerets different from those of males,

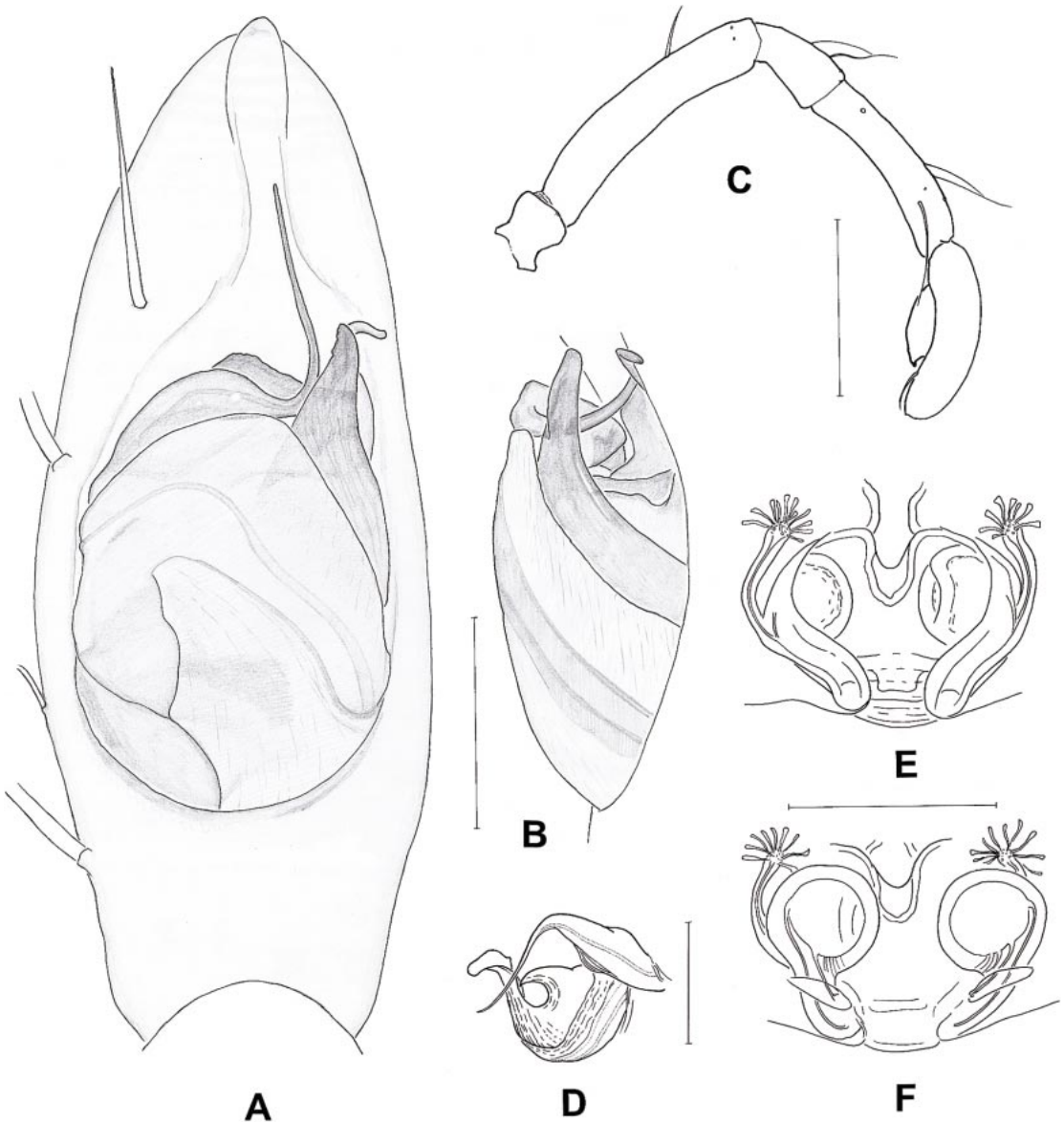


Fig. 98. *Philisca ornata* Berland. **A.** Male palp, ventral view (syntype). **B.** Same, detail retrolateral. **C.** Same, prolateral view. **D.** Copulatory bulb, detail apical-prolateral (Plazoleta El Yunque). **E.** Cleared epigyne, ventral view (syntype). **F.** Same, dorsal view. Scale bars = A, B, D-F, 0.2 mm; C, 1 mm.

slightly thickened at bases, without modified hairs. Epigyne weakly sclerotized, median field heart-shaped, ducts of accessory bulbs long, stright, slightly converging. Lateral lobes contiguous posteriorly (but slightly separate in some females, fig. 99D).

MALE (holotype): Total length 6.38. Carapace very wide in front, ocular area slightly

protruding, length 2.30, width 1.57. Length of tibia/metatarsus: I, 2.17/1.97; II, 1.77/1.63; III, 1.15/1.30; IV, 1.63/1.87. Chelicerae very strong (fig. 99C), with internal superior margins slightly protruding in ridges. Three teeth on promargin, median one very thick, on elevation, other two small; three teeth on retromargin, basal one largest. Endites un-

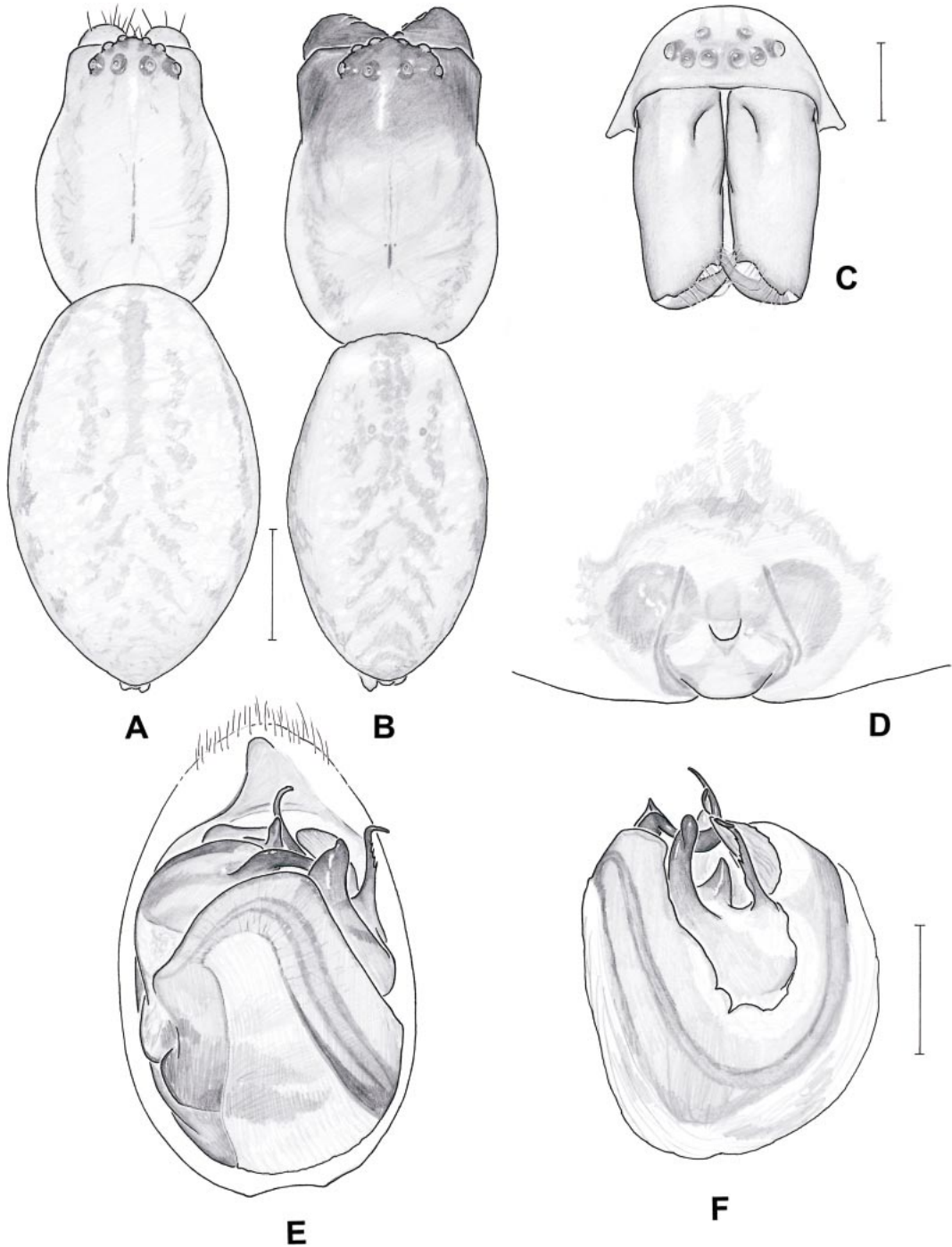


Fig. 99. *Philisca huapi*, n. sp. **A.** Female (Osorno, Aguas Calientes, 500 m). **B.** Male (same data). **C.** Male carapace, anterior view (holotype). **D.** Epigyne, ventral view (Aguas Calientes, 500 m). **E.** Male palp, ventral view (holotype). **F.** Male copulatory bulb, retrolateral view (Neuquén, Ortiz Basualdo). Scale bars = A, B, 1 mm; C, 0.5 mm; D–F, 0.2 mm.

modified. Sternum length 1.13, width 0.95. Spines as in female, except: leg **II**, tibia v 2–2–2. **III**, femur p 0-d1-d1 or 0-d1–2; tibia v p1–2–2. **IV**, tibia v p1–2–2. Abdomen length 2.77, width 1.53, spiracle–epigastrium 1.30, spiracle–spinnerets 0.25. Base of anterior spinnerets globose, covered by thick, short hairs. Color (fig. 99B): similar to female. Palp (figs. 61H, 93C–E, 99E, F): tibia long, width/length 0.47. Embolus short, flattened, base globose, with longitudinal flat projecting ridge; basal process flattened, rounded. Median apophysis with series of thin branches (fig. 93C). Triangular sclerotized stripe runs from sperm duct to base of median apophysis. Paramedian apophysis wide, curved at tip. Primary conductor triangular, slightly flattened. Secondary conductor small, canal vestigial, limited to tip, ending in longitudinally ridged peak, on rounded projection directed backward; area basal to canal membranous; retrolateral portion wide, thin, elevated.

VARIABILITY: The size of male chelicerae is variable. The lateral epigynal lobes may be separate or contiguous. Spines: metatarsi **III**, **IV**, v 2-p1-p1.

NATURAL HISTORY: This species makes retreats on foliage. Most specimens were collected on bamboos (*Chusquea* spp.), and they resemble *Gayenna americana*, also common on the same bamboos. Notably, *Platnickia elegans* (Nicolet) (Zodariidae), which lives exclusively on bamboos (personal obs.), has a similar appearance too.

DISTRIBUTION: Humid southern forest in Chile, from Malleco to Palena provinces; in Argentina only collected in Puerto Blest and Termas de Epulauquen, two humid Andean passes at the Chilean border.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Neuquén:** Lanín Natl. Park: Termas de Epulauquen, 9.I.1986, M. Ramírez, 1 ♂ (MACN-Ar); Nahuel Huapi Natl. Park: same data as holotype, 2 ♂ 1 ♀ 1 ♀ penultimate (MACN-Ar); same data as paratype, 26 ♂ 8 immatures (MACN-Ar), 1 ♂ (MACN-Ar). **CHILE:** **Región IX (Araucanía):** **Malleco:** Monumento Natural Contulmo, 11.XII.1984–13.II.1985, FIT, 350 m, S. and J. Peck, 4 ♂ 1 ♀ (AMNH), 19–21.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 3 ♀ 1 ♂ (MACN-Ar), 5 ♀

(MHNS). **Región X (Los Lagos): Osorno:** Puyehue Natl. Park: Aguas Calientes, 600 m, 12–20.II.1979, L.E. Peña, 1 ♂ (AMNH), 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1 ♂ 1 ♀ (MACN-Ar), 2 ♀ 1 ♂ (MHNS), 500 m, 2–5.V.1988, L. Peña, 1 ♂ 1 ♀ (AMNH); 4.1 km W Anticura, 270 m, trap site 663, window trap, valdivian rainforest, 19–25.XII.1982, A. Newton and M. Thayer, 1 ♂ (AMNH); 7.7 km NE Termas de Puyehue, 200 m, site 664, window trap, 19–25.XII.1982, A. Newton and M. Thayer, 1 ♂ (AMNH). **Chiloé:** Guabún, N Ancud, 13–15.I.1980, L. Peña, 1 ♀ (AMNH). **Palena:** Río Ventisquero, Lago Yelcho, 5–9.XII.1985, L. Peña, 1 ♂ (AMNH).

Philisca hyadesi (Simon),
new combination

Figures 93F, 101E, 102D, E

Liparotoma hyadesi Simon, 1884: 138. Ramírez, 1993: 201.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1993). Additional data are provided below.

FEMALE: Palpal claw modified (fig. 101E). Spines: leg **I**, femur d 1–1–1, p 2ap; metatarsus v 2bas short. **II** = I or femur p d1ap. **III**, femur d 1–1–1, p and r d1ap; tibia v 2ap, p 1, r d1–1; metatarsus v 2–0–r2 and bunch of apical hairs, p and r 0–1–1, d 2ap. **IV**, femur d 1–1–1, r d1ap; tibia v 2ap or p1–0–2, r d1–1; metatarsus v 2–0–r2 or p1–0–r2 and bunch of apical hairs, p 1ap, r 0–1–1, d 2ap.

MALE: Palp (figs. 93F, 102D, E): tibia long, width/length 0.37, cymbium relatively small. Embolus short, base thick, anterior margin longitudinally flattened, slightly projecting as ridge; basal process flattened, rounded. Median apophysis long, thin, with small branches at base. Paramedian apophysis long, sinuous. Sperm duct with apical/retrolateral loop, approaching base of median apophysis. Primary conductor well developed, wide, slightly flattened. Secondary conductor complex, canal completely absent, area corresponding to canal base membranous; prolateral portion with triangular and flattened projection, and thick, rounded projection directed backward; retrolateral portion thin, projecting as acute peak; additional

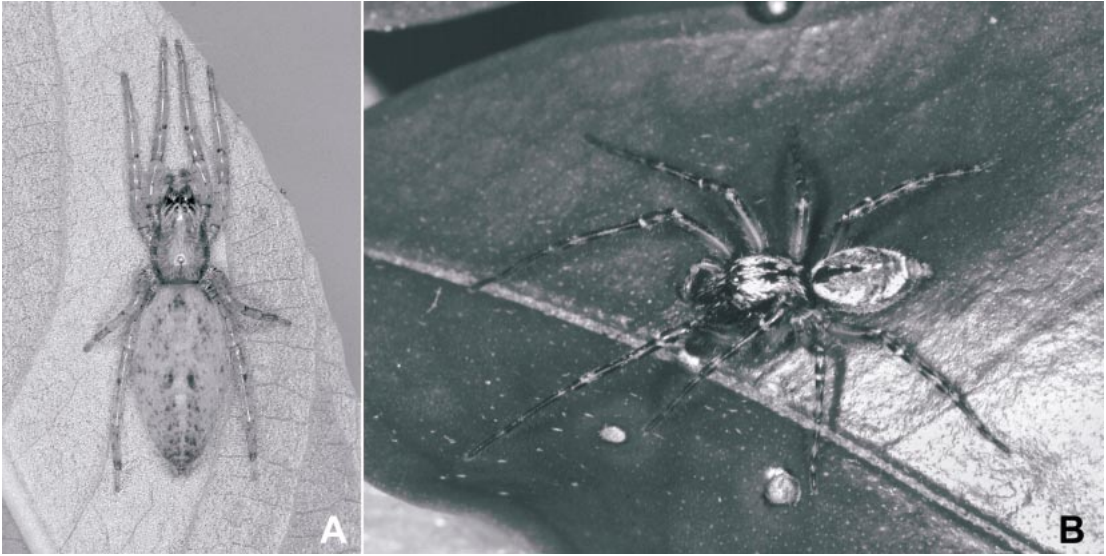


Fig. 100. *Philisca* spp. **A.** *P. tripunctata* (Nicolet), female (Malleco, Contulmo, photo MJR 124). **B.** *P. amoena* (Simon), male (Osorno, Puyehue, photo MJR 1418).

projection flat, triangular, between both portions.

DISTRIBUTION: Southern forests in Chile, from Cautín, and Argentina, from Neuquén, to Cabo de Hornos; two isolated records from Valparaíso (Quintay) and Petorca (Cuesta El Melón, Ramírez, 1993) might indicate an interesting relict, or a mislabeling (see also *Oxysoma punctatum*).

NEW RECORDS: **ARGENTINA:** **Neuquén:** Nahuel Huapi Natl. Park, Isla Victoria, IV.1945, Havrylenko, 1♂ (MLP); Península Quetrihué, 24.II.1986, M. Ramírez, 1♀ (MACN-Ar); Puerto Blest, 7–20.I.2000, L. Lopardo and A. Quaglino, 3♀ (MACN-Ar). **CHILE:** **Valparaíso:** 8 km SE Quintay, 33°12'S, 71°41'W, 150 m, 17.II.1967, E.I. Schlinger, 1♂ (CAS). **Región Metropolitana (Santiago):** **Santiago:** Bucalemi, San Antonio, 23–24.X.1994, L. Peña, 2♀ 1 immature (AMNH). **Región VIII (Biobío):** **Ñuble:** Las Trancas, 1–10.XII.1965, L. Peña, 2 immatures (MCZ). **Concepción:** Cerro Caracol, Concepción, 28.III.1994, T. Cekalovic, 1♀ (AMNH). **Cautín:** Monte Verde, Cavahue, 800 m, 30.I–2.II.1993, L. Peña, 1♂ (AMNH). **Biobío:** Los Morongos, E Los Niches, 600 m, 17–20.XI.1994, L. Peña, 1♀ (AMNH). **Región IX (Araucanía):** **Malleco:** Nahuelbuta Natl. Park, Pehuenco,

37°49'45"S, 73°0'30"W, 1100 m, 4–9.I.2001, forest with *Nothofagus antarctica*, Araucaria, and *Chusquea*, J. Miller, Alvarez, J. Coddington, G. Hormiga, 1♀ (USNM). **Región X (Los Lagos):** **Valdivia:** Neltume, II.1987, L. Peña, 2♀ (AMNH); Valdivia, XI–XII.1982, E. Krahmer, 2♀ 1 immature (MHNS 700). **Osorno:** Puyehue Natl. Park: 19 km E Termas de Puyehue, 40°40'S, 71°14'W, 450 m, fogging rotten branch, 30.XI.1994, R. Reschen and C. Carlton no. 188, 1 immature (AMNH). **Llanquihue:** Correntoso, XII.1969, L. Peña, 1♂ (MCZ); 8 mi W Puerto Varas, 18.I.1951, Ross and Michelbacher, 1♀ (CAS). **Chiloé:** Isla de Chiloé: 5 km SW Chonchi, 2.II.2001, T. Cekalovic, 1♀ (AMNH), Coihuin (Púlpito 1), 8.II.2001, T. Cekalovic, 1♀ (AMNH), Dalcahue, II.1967, 1♀ (MCZ); Isla Quinchao, Quetro, 19.II.1997, T. Cekalovic, 1♀ (AMNH). **Región XI (Ibáñez del Campo):** **Aisén:** Ventisquero San Rafael, III.1953, I. Bernasconi, 1♂ (MACN-Ar 3682).

Philisca amoena (Simon),
new combination

Figures 100B, 101A, B, 102A, B

Liparotoma amoenum Simon, 1884: 138. Ramírez, 1993: 202.

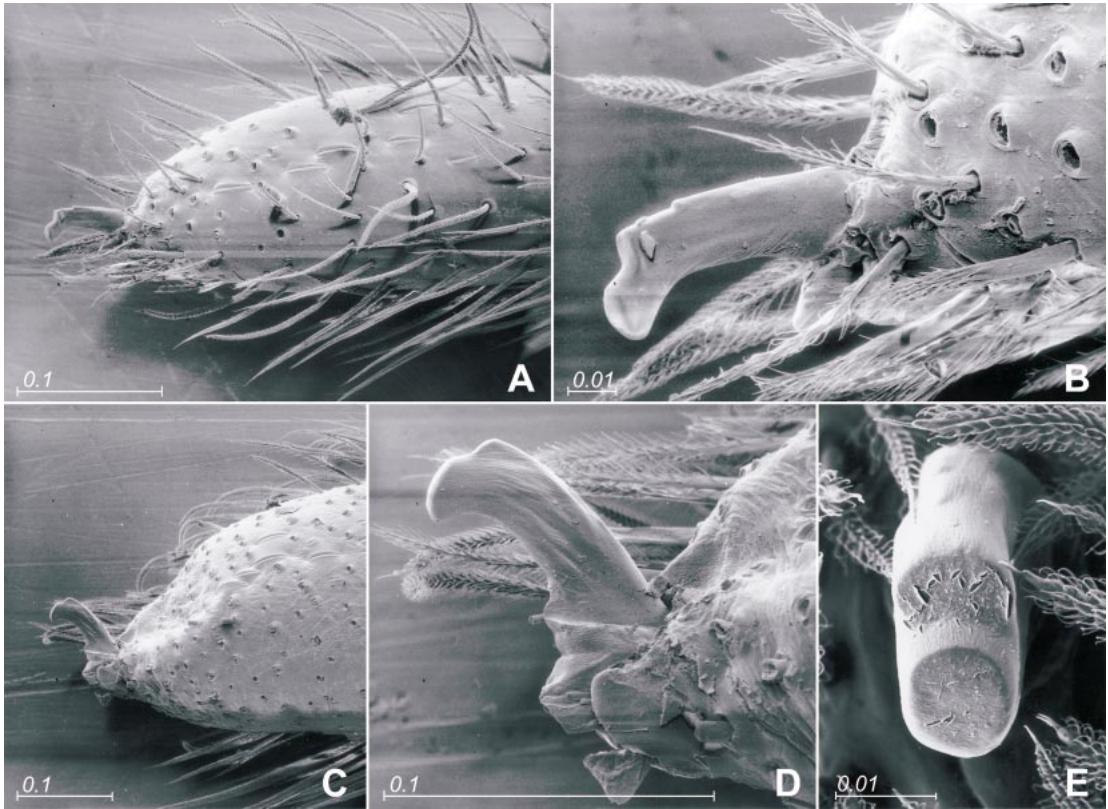


Fig. 101. Palpal claws of *Philisca* spp. **A, B.** *P. amoena* (Simon), female. **C, D.** *P. doilu* (Ramírez), immature. **E.** *P. hyadesi* (Simon), female, apical view.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1993). Additional data are provided below.

FEMALE: Palpal claw modified (fig. 101A, B). Spines: leg **I**, femur d 1-1-1, p d1ap; metatarsus v 2bas short. **II** = **I**. **III**, femur d 1-1-1, p and r d1ap; tibia v 0-p1-p1 or 0-p1-2, p 0-1, r d1-1; metatarsus v 2-0-r2 and an apical group of hairs, p and r 0-1-1, d 2ap. **IV**, femur d 1-1-1, r d1ap; tibia v p1-p1-2 or 0-p1-2, r d1-1; metatarsus v 2-0-r2 and apical group of hairs, p d1-0-1, r 0-1-1, d 2ap.

MALE (fig. 100B): Palp (fig. 102A, B): tibia long, width/length 0.48, cymbium relatively small. Embolus short, base thick, basal process shallow. Median apophysis long, thin, with basal branch. Paramedian apophysis long, straight. Sperm duct with conspicuous loop approaching base of median apophysis (fig. 102A). Primary conductor

small, thin, pointed. Secondary conductor complex, canal absent, area corresponding to canal base membranous; prolateral portion with triangular, flattened projection, covered at basal side by thick denticles pointing forward; this peak placed on projection as in *P. hyadesi*; retrolateral portion small, thin, translucent. Anterior margin of secondary conductor with two additional projections: one prolateral, rectangular, curved, with dentate border, other central, triangular.

NEW RECORDS: **ARGENTINA:** Neuquén: Puerto Blest, 7-20.I.2000, L. Lopardo and A. Quaglino, 1 immature (MACN-Ar). **CHILE:** **Región IX (Araucanía):** Cautín: Monte Verde, Cavahue, 31.I.1993, L. Peña, 2 immatures (AMNH). **Región X (Los Lagos):** Valdivia: Valdivia, XI-XII.1982, E. Kraemer, 1 ♂ (MHNS 700). **Osorno:** Puyehue Natl. Park: 700 m, 9.XII.1994, L. Peña, 1 ♀

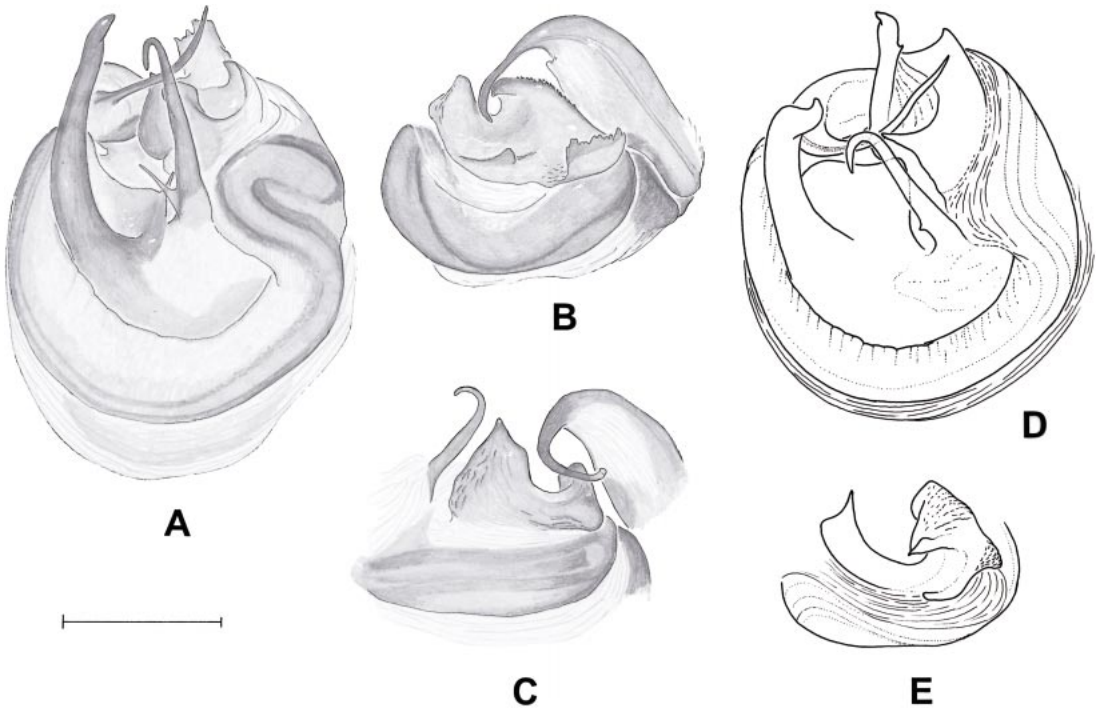


Fig. 102. Male copulatory bulbs of *Philisca* spp. **A, B.** *P. amoena* (Simon) (Osorno, Aguas Calientes). **A.** Retrolateral view. **B.** Apical view. **C.** *P. tripunctata* (Nicolet), apical view (Neuquén, Lago Tromen). **D, E.** *P. hyadesi* (Simon) (Chubut, Lago Verde). **D.** Retrolateral view. **E.** Apical view. Scale bar = 0.2 mm.

(AMNH); XI.1992, L. Peña, 1♂ (AMNH); Aguas Calientes, 450 m, 11.XII.1981, Nielsen and Karsholt, 1 immature (ZMK); elev. 480 m, 40°44'S, 72°18'W, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (MACN-Ar, photo MJR 1417–1418), 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 2♀ (MACN-Ar), 1♀ (MHNS). **Llanquihue:** Vicente Pérez Rosales Natl. Park, Cayutue, road to Calbutue, 19.II.1974, 2 immatures (UC). **Chiloé:** Chepu, 21.II.1992, M. Ramírez, P. Goloboff, N. Platnick, 2 immatures (MACN-Ar).

Philisca tripunctata (Nicolet),
new combination
Figures 100A, 102C

Clubiona tripunctata Nicolet, 1849: 138 (two females syntypes from Chile, no specific locality, in MHNP 4219, not reexamined).

Liparotoma pardalis Mello-Leitão, 1943a: 405 (holotype immature from Chile, Santiago, J.

Carbalho coll., in MNRJ, examined). Synonymized by Ramírez, 1993.

Liparotoma tripunctatum: Ramírez, 1993: 198.

SYNONYMY: In Ramírez (1993) the synonymy of *L. pardalis* was based on the description by Mello-Leitão (1943a); it is confirmed here after examination of the holotype.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1993). Additional data are provided below.

FEMALE (fig. 100A): Spines: leg **I**, femur d 1–1–1, p d1ap; metatarsus 0. **II** = **I**. **III**, femur d 1–1–1, p 0-d1-d1, r d1ap or 0-d1-d1; tibia v p1-p1-2 or 2-2-2, p 0-1 or d1-1, r d1-1; metatarsus v 2-p1-2 or 2-0-2, p d1-1-1 or 0-1-1, r d1-1-1, d 0-p1-2. **IV**, femur, d 1–1–1, r d1ap; tibia v p1-p1-2, r d1-1; metatarsus v 2-p1-2 or 2-2-2, p d1-1-1 or 0-1-1, r d1-1-1, 0-1-1 or d1-0-1, d 0-p1-2.

MALE: Palp (fig. 102C): tibia long, length/width 0.60. Embolus short, base short, thick,

basal process flattened, rounded. Paramedian apophysis elongate, sinuous. Triangular sclerotized stripe runs from sperm duct to base of median apophysis. Primary conductor vestigial, only sclerotized band remains. Secondary conductor without canal, basal area corresponding to canal membranous; prolateral portion with flattened, slightly pointed peak; retrolateral portion elevated, small, triangular.

NEW RECORDS: ARGENTINA: Neuquén: San Martín de los Andes, 40°10'S, 71°21'W, 20–21.XI.1988, V. and B. Roth, 1♀ (CAS). **Río Negro:** San Carlos de Bariloche, 9: Colonia Suiza, 800 m, 27.IX.1981, Nielsen and Karsholt, 1 immature (ZMK), 19.IX.1981, 1♀, 2 immatures (ZMK); 22.XI.1978, Misión Científica Danesa, 1 immature (ZMK); Lago Puelo Natl. Park, nr. intendencia, 205 m, Malaise trap, 31.XII–6.I.1998, C. and M. Vardy, 1♂ (BMNH/MACN-Ar). **Chubut:** Lago Menéndez, I.1990, M. Ramírez, 1♀ (MACN-Ar). **Tierra del Fuego:** Isla de los Estados, Bahía Crosby, 18.X.1941, no collector, 2 immatures (MACN-Ar). **CHILE: Región IV (Coquimbo): Choapa:** Los Vilos, Cariloleu, 11.X.1994, L. Peña, 1♀ (AMNH); Ñagué, 10 km N Los Vilos, Rt. 5, km 236, elev. 40 m, 31°50'S, 71°31'W, 13.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH). **Región V (Valparaíso): Petorca:** Los Molles, Rt. 5, km 188, elev. 10 m, 9.XI.1993, 32°14'S, 71°30'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH). **Quillota:** Cuesta La Dormida (east side), 33° 04'S, 71°02'W, 750–1000 m, 20.IX.1966, E.I. Schlinger, 1♀ (CAS). **Valparaíso:** Quintero, pitfalls in relict forest, 2.X.1968, R. Calderón G., 1♀ (AMNH); 4.IV.19??, R. Calderón, 1♂ (MACN-Ar). **Región Metropolitana (Santiago): Santiago:** Quebrada El Arbol, Aculeo, X.1969, L. Peña, 1♂ (MCZ). **Región VII (Maule): Talca:** Alto de Vilches, 17–24.X.1964, L. Peña, 2♂ 2 immatures (MCZ); 3 km E Gil de Vilches, 7.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH, photos MJR 745–747); Las Placetas, San Clemente, 800 m, 19–20.XI.1994, L. Peña, 1♀ (AMNH). **Linares:** Fundo Malcho, Andes in Parral, 11–20.XI.1964, L. Peña, 2♂ 1 immature (MCZ). **Región VIII (Biobío): Ñuble:** Las Trancas, 1–10.XII.1965, L. Peña,

1♂ 1♀ penultimate (AMNH); Las Trancas, 1200 m, 24–27.XI.1994, L. Peña, 1♀ (AMNH). **Concepción:** Curinam, 14.XII.1996, T. Cekalovic, 1♀ (AMNH); Escuadrón, 18.XI.1996, 1♂ 2♀, 18.XI.1996, 1♀ T. Cekalovic (AMNH); Fundo El Manzano, 7.XI.1992, 1♀, 8.XI.1992, 1♀, 22.X.1996, 1♀, 18.XI.1996, 1♀, 23.IX.1996, 4♀, 7.XII.1996, 3♀, T. Cekalovic (AMNH); Mitrihue, 29.XII.1996, T. Cekalovic, 2♀ (AMNH); Periquillo, 22.XI.1992, T. Cekalovic, 1♀ (AMNH). **Arauco:** 10 km N Curanilahue, 21.XI.1992, T. Cekalovic, 1♀ (AMNH). **Biobío:** N Ralco/Trapa-Trapa, 21–22.XI.1994, P. Peña, 1♀ (AMNH); W Ralco, Santa Bárbara, 400 m, 22–23.XI.1994, L. Peña, 2♀ (AMNH). **Región IX (Araucanía): Malleco:** Monumento Natural Contulmo, 19–21.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1♀ (MHNS). **Región IX (Araucanía): Cautín:** 30 km NE Villarrica, 1–30.I.1965, L. Peña, 1♂ (MCZ); NE Villarrica, 16–31.XII.1964, L. Peña, 1♀ (MCZ); Flor del Lago Ranch, Villarrica, Polo Field, 39°12.300'S, 72°08.367'W, 282 m, canopy fogging GT *Nothofagus obliqua* roble, 13.XII.2001, Arias et al., 1♀ 1 immature (UCB). **Región X (Los Lagos): Valdivia:** Huachocopihue, 7.III.1965, H. Levi, 2♂ 1♀ 1♂ penultimate. 1♀ penultimate (MCZ); Isla Teja, 6.III.1965, H. Levi, 1♂ (MCZ). **Osorno:** Puyehue Natl. Park: 26.I.1969, L. Peña, 1♂ (MCZ). **Llanquihue:** Alerce Andino Natl. Park, elev. 100 m, 41°35'S, 72°41'S, 23.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 immature (MACN-Ar). **Chiloé:** 5 km SW Chonchi, 19.II.1997, T. Cekalovic, 1♀ (AMNH). **Región XII (Magallanes y Antártica): Última Esperanza:** Cerro Castillo, Natales, 13.XII.1960, L. Peña, 1♀ (MCZ); Torres del Paine Natl. Park: near Refugio Chileno, 50°56'45'S, 72°55'0"W, 400–600 m, 8–9.XII.2000, J. Miller, I. Agnarsson, 1♀ (USNM). **Magallanes:** Cueva del Milodón, 28.I.1976, T. Cekalovic, 1♀ (UC); Gobernador Philippi, 29.I.1976, T. Cekalovic, 1♀ (AMNH); Isla Navarino, Puerto Williams, XII.1962–I.1963, P. Darlington, 1♂ penultimate (MCZ); Manantiales, 1956, J. Vellard, 1♀ (MACN-Ar); Otway, El Canelo, 18.III.1969, L. Peña, 2♀ (MCZ); Aserradero Río Bueno, 8.II.1959, 2 immatures,

10.II.1959, 1 ♀, 1 immature J. Vellard (MACN-Ar).

Philisca doilu (Ramírez),
new combination

Figure 101C, D

Liparotoma doilu Ramírez, 1993: 203.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1993). Additional data are provided below.

FEMALE: Palpal claw modified (fig. 101C, D). Spines: leg **I**, femur d 1-1-1, p 2ap; metatarsus v 2bas short. **II** = **I**. **III**, femur p and r d1ap; tibia v 2ap, p 1, r d1-1; metatarsus v 2-0-2, p and r 0-d1-1, d 2ap. **IV**, p d1ap; tibia v 2ap, r d1-1; metatarsus v 2-0-2, p 1ap, r 0-1-1, d 0-p1-2.

NEW RECORDS: **ARGENTINA: Neuquén:** Nahuel Huapi Natl. Park, Isla Victoria, IV.1945, Havrylenko, 1 immature (MLP).

Philisca puconensis, new species

Figure 103

NOTE: Provisionally included in the genus, see Note under *Philisca*.

TYPES: Male holotype from Chile, Región X, Cautín province, Pucón, ca. 39°16'S, 71°58'W, 15.XI-2.XII.1980, Malaise trap in peninsula, S.A. Marshall, deposited in AMNH.

ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: Resembles other *Philisca* species in having the branch of the median apophysis, but easily distinguished by having a bifid paramedian apophysis and a narrow epigynal median field.

FEMALE (Malalcahuello, not type): Total length 6.50. Carapace length 2.80, width 2.03, wider on legs II-III. Diameter AME one-third of ALE. Length of tibia/metatarsus: I, 1.65/1.33; II, 1.62/1.33; III, 1.27/1.25; IV, 1.73/1.83. Palpal tarsus length 0.75. Chelicerae unmodified, with two teeth on retromargin. Sternum length 1.50, width 1.08. Spines: leg **I**, femur d 1-1-1, p (1-d1)ap; tibia v 2-2-2; metatarsus v 2bas. **II**, femur = I; tibia v 2-2-2, p d1-1; metatarsus v 2bas, p 1-0. **III**, femur d 1-1-1, p and r 0-d1-d1; patella r 1; tibia v p1-2-2, p and r d1-1, d r1bas; metatarsus v 2-2-2, p and r d1-1-1, d 0-p1-2. **IV**, femur d 1-1-1, p and r d1ap; patella

r 1; tibia v p1-2-2 or 2-2-2, p and r d1-1 or 1-d1-0-1-0, d r1bas; metatarsus = III. Abdomen length 3.72, width 2.23, spiracle-epigastrium 1.77, spiracle-spinnerets 0.33. Color: carapace grayish, ocular area almost black, two lateral bands and margins dark. Legs grayish with many dark spots. Sternum with two lateral dark bands, made of spots in front of coxae. Abdomen yellow with dark spots, cardiac area dark, pair of dark spots behind median transverse line of dorsum, several diffuse chevrons on posterior third. Venter with a few dark spots, mostly anterior of tracheal spiracle. Epigyne (fig. 103D, E): lateral lobes close to each other, median field elongate. Opening of anterior pouch almost circular, lumen deep.

MALE (holotype, fig. 103A): Total length 5.05. Carapace relatively wider than that of female, length 2.67, width 2.03. Length of tibia/metatarsus: I, 2.73/2.33; II, 2.43/2.17; III, 1.73/1.73; IV, 2.13/2.30. Sternum length 1.33, width 1.05. Spines as in female, except: leg **I**, femur p 0-d1-(1-d1) or 0-d2-(1-d1), r 0-d1-d1 or d1ap; tibia p and r 1-d1-1; metatarsus p 1-0. **II**, femur p 1-1-(1-d1), r 0-d1-d1; tibia = **I**. **III**, tibia v 2-2-2, p and r 1-d1-0-1-0. **IV**, femur p and r 0-d1-d1 or 0-0-d1; tibia = **III**. Abdomen length 2.40, width 1.40, spiracle-epigastrium 1.13, spiracle-spinnerets 0.15. Color: similar to female, but abdomen with very dark dorsal stripe, irregular, wider and darker at center of posterior half, sides dark, venter with line of spots along median line. Palp (fig. 103B, C): tibia long, width/length 0.74. Cymbium with retrolateral margin curved at base. Basal process of embolus projecting as flattened ridge, separated by ample ventral membranous area. Rectangular sclerotized stripe runs from sperm duct to base of median apophysis. Relict of primary conductor well developed, concave, with rounded tip. Secondary conductor small, rugose; prolateral portion with rounded projection; canal vestigial, base membranous; retrolateral portion thin, rugose. Median apophysis with large, median branch (fig. 103C). Paramedian apophysis bifid, retrolateral tip bent dorsally, prolateral curved ventrally.

VARIABILITY: Female spines: **III**, metatarsus v 2-p1-2.

NATURAL HISTORY: Unknown.

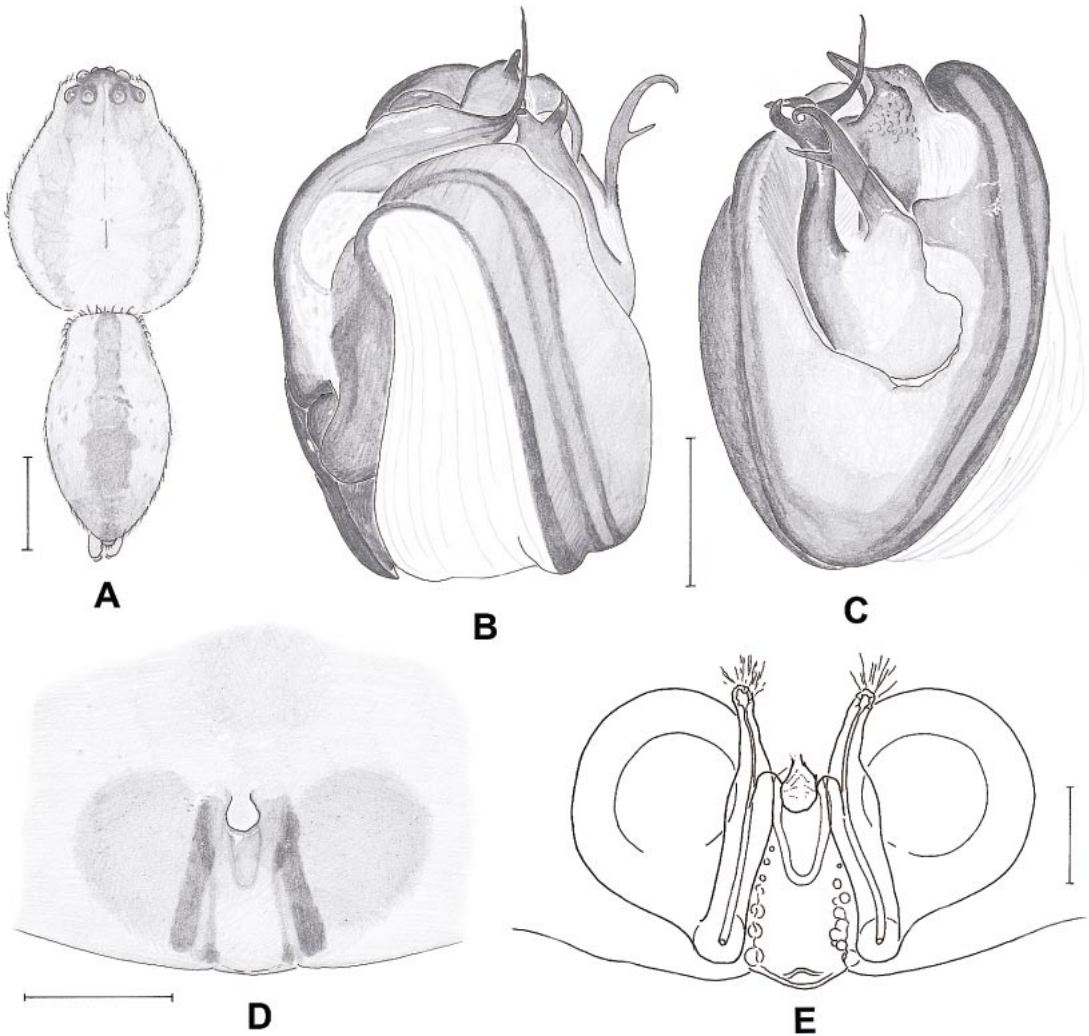


Fig. 103. *Philisca puconensis*, n. sp. (male holotype, female from Malleco, Malalcahuelo). **A.** Male. **B.** Male copulatory bulb, ventral view. **C.** Same, retrolateral view. **D.** Epigyne, ventral view. **E.** Same, cleared. Scale bars = A, 1 mm; B—D, 0.2 mm; E, 0.1 mm.

DISTRIBUTION: Known only from a few localities in Cautín, Malleco, Valdivia, and Neuquén provinces.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Neuquén:** Pucará, 15.XII.1965, A. Giai, 1♀ 1 immature (MACN-Ar). **CHILE:** **Región IX (Araucanía): Malleco:** Malalcahuelo, 9–15.XII.1985, L. Peña, 1♀ described above (AMNH). **Región X (Los Lagos): Valdivia:** Valdivia, XI–XII.1982, E. Krahmer, 1♀ (MHNS 700). *Mistaken Locality:* Prov. San-

tiago, Malleco, XI.1979, L.E. Peña, 1♂ (AMNH) (see Ramírez, 1995b: 83).

TOMOPISTHES SIMON

Table 24

Heteromma Karsch, 1880: 380 (type species by monotypy *Heteromma fueguiana* Karsch, 1880). **NEW SYNONYMY.**

Tomopisthes Simon, 1884: 130, 132 (type species *Tomopisthes immanis* Simon, 1884, subsequently designated by Simon, 1897a: 99), 1887:

TABLE 24

Synapomorphies of *Tomopisthes* and Internal Clades

Tomopisthes (clade 131)
 sclerotized triangle to MA (63): absent → present
 wide membrane separating C2 (80): absent → present
 spine metatarsus III, v x-r1-x (168): absent → present

Clade 130
 shape relic C1 (93): thin, rounded → conical
 ducts AB (123): long → short

T. varius
 apex C2 (83): median or basal → apical
 CO on epigastric furrow (115): absent → present

T. horrendus
 separation lateral eyes (14): up to one diameter → more than one diameter
 ratio PME/PLE (16): PME = PLE → PME < PLE
 scopulae posterior tibiae (34): absent → present
 epigynal semicircular ridges (103): absent → present

T. pusillus
 ocular area black (9): absent → present
 anterior eye row (11): straight → recurved
 ratio AME/ALE (15): AME < ALE → AME minute
 lumen of APmf (107): simple → double

E24, 28, 1897a: 90–99, 1903a: 1032. Ramírez, 1995a: 88, 1997: 178.

Gayenna: Tullgren, 1901: 240, 259. Merian, 1913: 12.

Heterommides Strand, 1912b: 16 (new name for *Heteromma* Karsch, 1880, preoccupied by Menge, 1856).

SYNONYMY: The type species of *Heteromma* Karsch is here considered a junior synonym of *Tomopisthes horrendus*.

DIAGNOSIS: Resembles *Araiya* in having regularly disposed teeth on the apex of the male secondary conductor, but can be distinguished by having a grayish or brown coloration and a wide membranous stripe separating the secondary conductor from the anterior margin of the tegulum, wider on prolateral side.

DESCRIPTION: Color dark, with grayish brown patches, quite cryptic on tree bark or lichens. Chelicerae with three teeth on promargin, two on retromargin. Male palpal tibia longer than wide. Embolus short, thick, not associated with secondary conductor. Paramedian apophysis complex, with two or more apical cusps. Primary conductor pre-

sent. Secondary conductor well separated from anterior margin of tegulum by membranous stripe, wider on retrolateral side. Apex of prolateral portion of secondary conductor with thick, regularly disposed denticles pointing backward. Triangular sclerotized area extends from sperm duct to base of median apophysis. Epigyne with lateral lobes separate, median field totally occupied by distended anterior pouch, its margin almost reaching epigastric furrow. Copulatory ducts running parallel to sutures between lateral lobes and median field.

DISTRIBUTION: Forest in southern Chile and Argentina.

COMPOSITION: Three species here included.

TYPES NOT EXAMINED: *Tomopisthes tullgreni* Simon, 1905.

NOMEN DUBIUM: *Tomopisthes aethiops* Simon, 1903 (female type presumably in MHNP, not found; six immatures in MHNP 21769, probably *Sanogasta*, are not types, because Simon [1903b: 312] referred to the epigyne).

Tomopisthes horrendus (Nicolet),
 new combination

Figures 104A, 105A, B, 106, 107

Clubiona horrenda Nicolet, 1849: 421 (two females syntypes from Chile, Llanquihue, in MHNP 4235, examined).

Amaurobius horrenda: Simon, 1864: 139.

Heteromma fuegiana Karsch, 1880: 380 (female immature holotype, from Chile, Punta Arenas, Exp. Gazelle, in ZMB, examined). **NEW SYNONYMY.**

Tomopisthes horrendus: Simon, 1887: E4, 1897a: 91, 1902: 30, 1904: 102.

Tomopisthes immanis Simon, 1884: 133 (two males and three females syntypes, from Chile, Cabo de Hornos, in MHNP 6669, examined), 1887: E28, 1897a: 91, 99, 1901: 21, 1902: 30, 1903d: 5, 1904: 102. Ramírez, 1995a: 368. **NEW SYNONYMY.**

Philisca sica Strand, 1908: 5 (female holotype from "W. Afrika, Ashanti", in SMF 4737, examined). **NEW SYNONYMY.**

Heterommides fuegianus Strand, 1912a: 346.

Gayenna horrenda: Merian, 1913: 13.

Nonianus argentinus Mello-Leitão, 1940: 42 (female holotype from Argentina, Neuquén province, San Martín de los Andes, III.1938, M. Birabén coll., in MLP 14350, examined). **NEW SYNONYMY.**

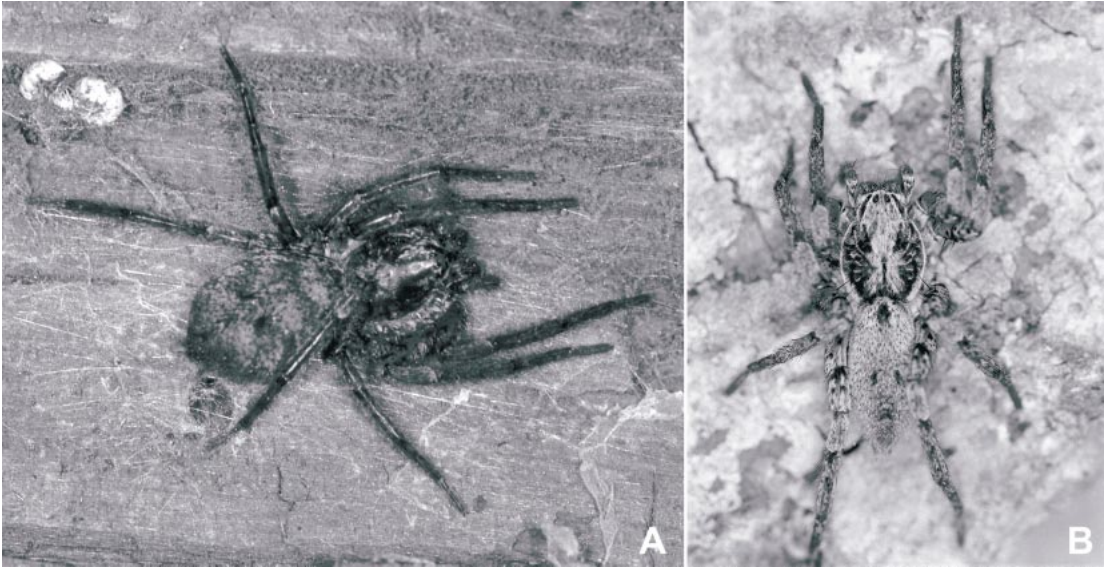


Fig. 104. Female *Tomopisthes* spp. **A.** *T. horrendus* (Nicolet) (Limarí, Fray Jorge, photo MJR 1298). **B.** *T. varius* Simon (Talca, Vilches, photo MJR 10).

SYNONYMY: The types of the species synonymized were examined, together with numerous specimens from the same areas; no relevant differences were found. The type locality of *Philisca sica* is most probably a mislabeling.

DIAGNOSIS: This is the largest anyphaenid species, ranging from 12 to 22 mm in total length; can be distinguished from other amaurobioidines by having a distally widened paramedian apophysis, of very characteristic shape, and epigynal median field with parallel margins. Immatures are very similar to those of *T. varius*, but can be distinguished by having one prolateral and one retrolateral spine on metatarsus I.

FEMALE (Ushuaia): Total length 18.00. Carapace length 8.11, width 6.25, wider on legs II–III. Length of tibia/metatarsus: I, 6.12/3.72; II, 6.00/5.05; III, 4.66/4.60; IV, 5.60/6.00. Palpal tarsus length 2.50. Chelicerae unmodified, with two teeth on retromargin. Sternum length 4.39, width 3.10. Spines: leg **I**, femur d 1–1–1, p (1-d1)ap, r 0-d1-d1; tibia v 2–2–2, p and r 0–1; metatarsus v 2bas, p and r 1–0. **II**, femur d 1–1–1, p 0-d1-(1-d1), r 0-d1-d1; tibia and metatarsus = I. **III**, femur d 1–1–1, p 0-d1-(1-d1), r 0-d1-d1; patella r d1; tibia v 2–2–2, p and r d1–1; metatarsus v 2–2–2, p and r d1–1–1, d 0–

p1–2. **IV**, femur d 1–1–1, p 0-d1-d1, r d1ap; patella r d1; tibia and metatarsus = III. Abdomen length 10.00, width 6.00, spiracle–epigastrium 4.90, spiracle–spinnerets 1.33. Color (fig. 104A): carapace and chelicerae reddish brown, legs pale brown with brown spots, metatarsi and tarsi reddish brown. Sternum and mouthparts reddish brown. Abdomen brown with pattern of cream dots. Epigyne (fig. 107F, G): copulatory openings close to anterior end of furrow separating lateral lobes and median field. Ducts of accessory bulbs short, connected very close to copulatory openings.

MALE (Ushuaia): Total length 16.90. Carapace length 8.65, width 6.00. Length of tibia/metatarsus: I, 9.58/7.85; II, 9.44/7.58; III, 6.65/6.38; IV, 7.58/8.11. Chelicerae very long, strong (fig. 107A); teeth thick, those of retromargin widely spaced, basal tooth in front of apical promarginal tooth; fang thick, long. Sternum length 4.39, width 3.19. Spines as in female. Abdomen length 8.00, width 4.66, spiracle–epigastrium 4.00, spiracle–spinnerets 0.60. Color as in female. Palp (figs. 105A, B, 107B–E): tibia long, width/length 0.35. Cymbium relatively narrow, retrolateral margin with slight basal notch. Anterior dorsal margin of tegulum projecting as prolateral conical prong. Em-

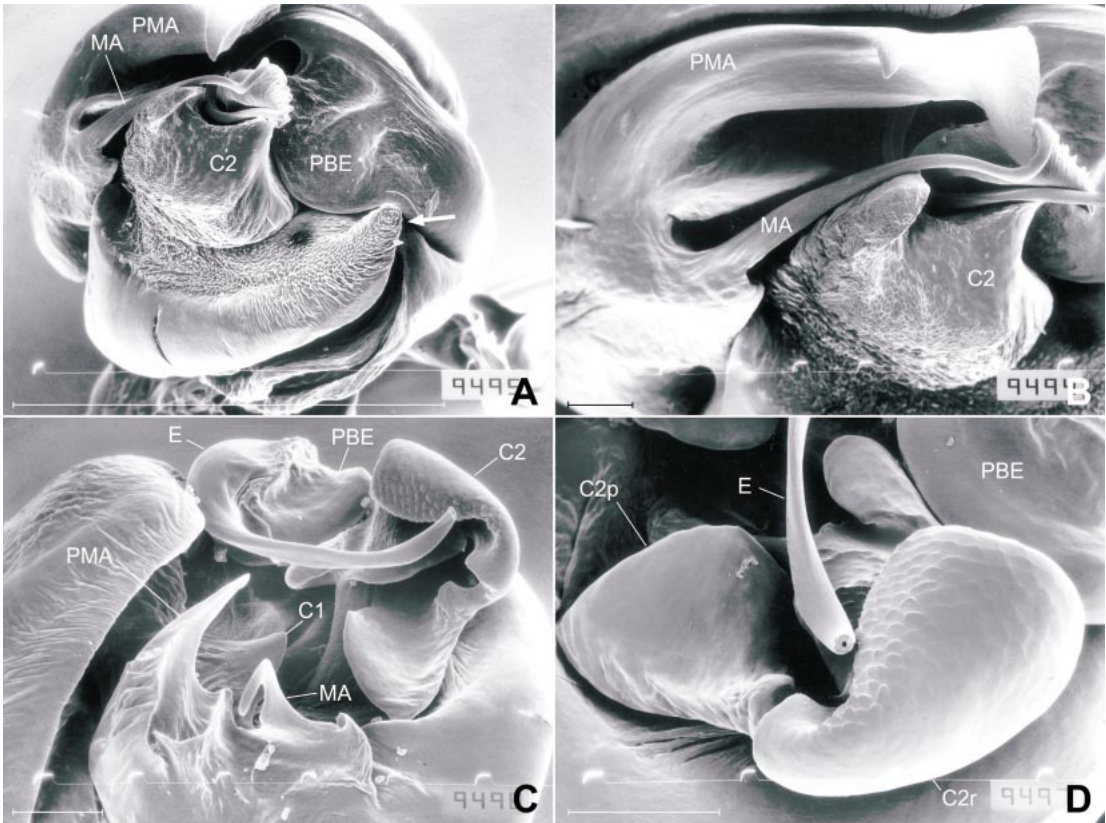


Fig. 105. *Tomopisthes* spp., male copulatory bulb. **A, B.** *T. horrendus* (Nicolet) (Neuquén, Pucará). **A.** Apical view: arrow points to projection on anterior dorsal margin of tegulum. **B.** Retrolateral view. **C, D.** *T. varius* Simon (Chubut, Los Alerces). **C.** Retrolateral view. **D.** Apical view. (C1 = primary conductor; C2 = secondary conductor; C2p = prolateral portion of C2; C2r = retrolateral portion of C2; E = embolus; MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis.)

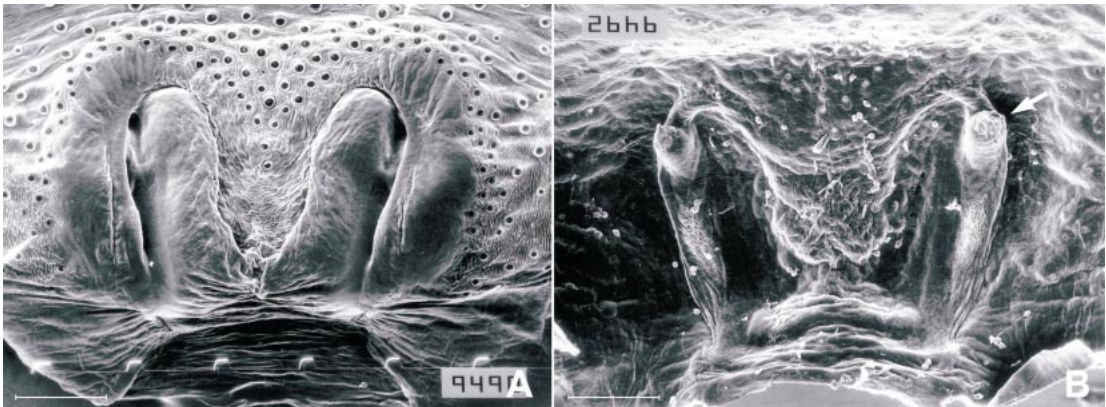


Fig. 106. *Tomopisthes horrendus* (Nicolet), primordium of epigyne, from exuvia of penultimate female (Santa Cruz, Ventisquero Moreno). **A.** Ventral view. **B.** Dorsal view: arrow points to primordium of accessory bulb.

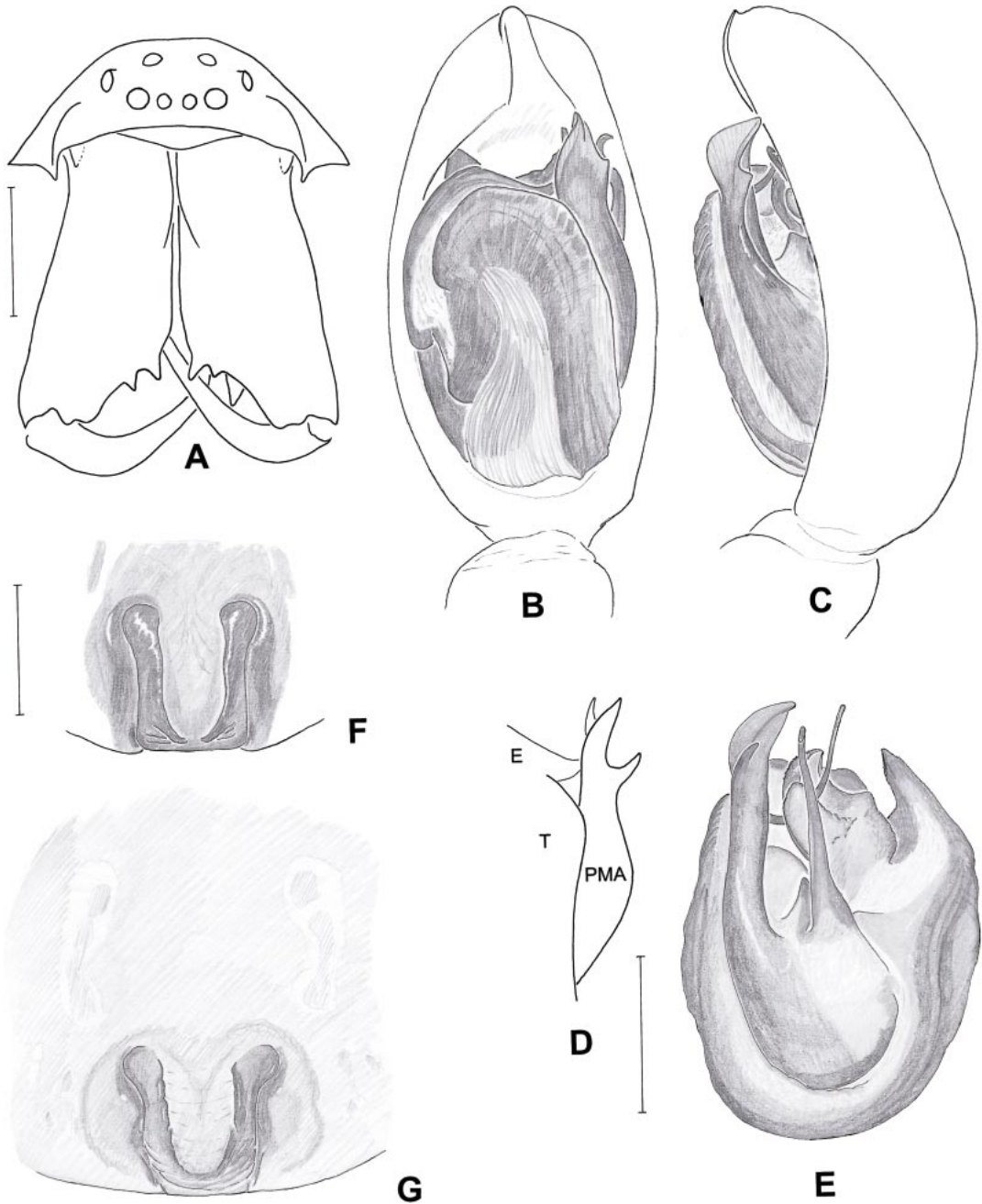


Fig. 107. *Tomopisthes horrendus* (Nicolet). **A.** Carapace, anterior view (syntype of *Tomopisthes immanis*). **B.** Male palp, ventral view (syntype of *Tomopisthes immanis*). **C.** Same, retrolateral view. **D.** Male paramedian apophysis (Valparaíso, La Retuca). **E.** Male copulatory bulb, retrolateral view (Neuquén, San Martín de los Andes). **F.** Epigyne, ventral view (syntype). **G.** Epigyne, ventral view (syntype of *Tomopisthes immanis*). Scale bars = A, 2 mm; B, C, F, G, 1 mm; D, E, 0.5 mm. (E = embolus; PMA = paramedian apophysis; T = tegulum.)

bolus with basal process lobate, separated by ample membranous ventral area. Median apophysis very long, pointing apically. Paramedian apophysis complex, with retrolateral cusp and fan-shaped tip. Primary conductor slightly wider than long, almost rectangular. Secondary conductor small (fig. 107E), rugose. Anterior dorsal margin of tegulum projecting, partially membranous (fig. 105A, arrow).

VARIABILITY: Total size (12–22 mm) and carapace length (6.5–10 mm in females) are very variable. Relative size of male chelicerae is also variable. The abdominal pattern may be contrasting or dark uniform. Male Spines: tibiae III, IV, r 1-d1-1-0. Epigyne (fig. 107F, G) and paramedian apophysis shape (fig. 107B, D) are slightly variable.

DEVELOPMENTAL REMARKS: Epigyne: The primordium of epigyne in penultimate females is smaller but very similar to the adult structure (fig. 106A). This similarity does not result from because of imprinting by the forming cuticle in the exuviae, because the sizes of adult and penultimate epigyna are very different. The primordium of copulatory opening is evident, leading directly to the primordium of accessory bulb, which bears some primary pores (fig. 106B). Behind the copulatory opening there are two deep furrows (the internal one might be a primordium of copulatory ducts) in an intermediate degree of invagination. Third instar (Neuquén, Quetrihué): This is the dispersing instar, the first with spines. Spines: leg **I**, femur d 1–1–1, p d1ap; patella d 1–0–1 bristles; tibia v 0–2–0 (plus v 2ap thin bristles), d r1–0–1 bristles; metatarsus v 2bas, p 1. **II**, femur = I; patella = I; tibia and metatarsus = I. **III**, femur d 1–1–1, p and r d1ap; patella r d1; tibia v 0-p1–0, p d1–1, r 0, d r1–0–1 bristles; metatarsus v 2–0–1, p 0-d1–1, r 0-d1–1 or 1ap, d 2ap. **IV**, femur = III; patella r d1; tibia v 0-p1–0, p and r d1–1, d r1–0–1 bristles; metatarsus v 2–0–1 or p1–0–1, p 1ap, r d1–0–1, d 2ap. Carapace, dorsal (from pedicel to eyes), 0-2-2-2-1 (last between AME). Tracheal system well developed, similar pattern as in adults.

NATURAL HISTORY: This species lives under bark or in crevices in rotten logs.

DISTRIBUTION: Temperate forests in Argentina and Chile, from Huasco to Cabo de Hor-

nos. The locality of the holotype of *Philisca sica* (“W. Afrika, Ashanti”) is most probably a mislabeling.

OTHER MATERIAL EXAMINED: ARGENTINA: Neuquén: Estancia San Ramón, Rincón Chico, Río Limay, X–XII.1962, Havrylenko, 1♀ (MACN-Ar); Junín de los Andes, XI.1970, P. Carnotto, 1♀ (MACN-Ar); Lago Nompehuén, NW Aluminé, 12.I.1985, E. Maury and A. Toth, 1♀ penultimate (MACN-Ar); Lago Huechulafquen, Coloradas, 7.I.1985, M. Ramírez, 1♀ (MACN-Ar); Lago Moquehue, 10.I.1985, E. Maury, A. Toth, 1♀ (MACN-Ar); Lago Quillén, 14.I.1985, E. Maury, A. Toth, 1♂ 1♀ (MACN-Ar); Lago Lácar, X.1955, A. Gai, 1♀, 1♀ (MACN-Ar); I.1961, M.E. Galiano, 1♂ (MACN-Ar); Pucará, II.1958, J. Navas, 1♂, 1♀ (MACN-Ar); II.1963, S. Schajovskoy, 3♀ (MACN-Ar); IX.1969, 3♂ 1 immature, 1.II.1971, 1♂ 3♀, Schajovskoy (MACN-Ar); 4.II.1972, L. Herman, 1♀ penultimate (AMNH); X–XII.1972, S. Schak, 2♂ (MACN-Ar); VIII.1973, 1 immature, XII.1973, 2♂, S. Schajovskoy (MACN-Ar), 10.XI.1978, 1♀, 750 m, 1.XII.1978, 1♀, Misión Científica Danesa (ZMK); Lago Lolog, 4 km N San Martín de los Andes, FIT, *Nothofagus* forest, ca. 950 m, Gentili property, 23.XI–1.XII.1989, S.A. Marshall, 1♀ (AMNH); San Martín de los Andes, XI–XII.1985, Gentili, 3♂ (MACN-Ar); 40°10'S, 71°21'W, 20–21.XI.1988, V. and B. Roth, 2♀ (CAS); 40°10'S, 71°21'W, 13.XI.1990, L. Peña, 1♀ (AMNH); 640 m, 29.IX.1981, 1♀, 17–31.X.1981, 1♂, 26.XI.1981, 2♀, 2–19.XII.1981, 1 immature, Nielsen and Karsholt (ZMK); San Martín de los Andes, Cerro Chapelco, 1700 m, II.1961, M. Galiano, 1♀ (MACN-Ar 5290); 8 km N San Martín de los Andes, 1000 m, Malaise trap, 16–22.XI.1997, C. and M. Vardy, 1♂ (BMNH/MACN-Ar); Nahuel Huapi Natl. Park: Isla Victoria, XII.1959, I. de Orfila, 4♀ (MACN-Ar); Isla Victoria, marmosa, Havrylenko, 1♂ (MLP); Isla Victoria, Piedras Blancas, Lago Frías, 15.I.1940, P. Moreau Guonera, 1♀ 1 immature (MACN-Ar); Lago Nahuel Huapi, Península Quetrihué, 16–25.XII.1984, 1♂ (MACN-Ar); 23.I.1985, M. Ramírez, 1 immature (MACN-Ar); Lago Nahuel Huapi, 1.II.1904, J. Daguerre, 2♀ (MACN-Ar 34332); Brazo Huemul, I.1966, Martínez, 1♂

1 ♀ (MACN-Ar); Puerto Blest, 7–20.I.2000, L. Lopardo and A. Quaglino, 1 immature (MACN-Ar). **Río Negro:** San Carlos de Bariloche, 1944, F. Monrós, 1 ♀ (MACN-Ar 1696); III.1947, A. Gjai, 3 ♀ 1 immature (MACN-Ar), 1950, 1 ♂ (MACN-Ar 5507); II.1954, M.E. Galiano, 1 ♀ (MACN-Ar 5451), 1 ♀ (MACN-Ar), 16.I.1961, E. Maury, 1 ♀ (MACN-Ar); 21.IX.1962, A. Kovács, 1 ♂ (AMNH), 1969, N. Müller, 1 ♂ (MACN-Ar); Colonia Suiza, 11.XII.1978, Misión Científica Danesa, 1 ♀ (ZMK); 810 m, 9.XI.1978, Misión Científica Danesa, 1 ♂ (ZMK); Colonia Suiza, ruta 240 25 km from San Carlos de Bariloche, I.1982, M. Ramírez, 1 ♂, 2 ♀ (MACN-Ar); 800 m, 17.IX.1981, 3 immatures, 19.IX.1981, 2 ♀, 8 immatures, 27.IX.1981, 1 ♂ 1 immature, 5–7.I.1982, 1 immature, Nielsen and Karsholt (ZMK); El Bolsón, 25.II.1963, M. Birabén, 1 ♂ (MLP), XI.1957, A. Kóvacs, 1 immature (AMNH), under stones, 25.II.1961, 1 ♂, 8.VII.1961, 2 immatures, 10.VII.1961, 3 ♀ penultimates, 3 ♀ penultimates, 17.VIII.1961, 2 ♀ penultimates, 2 immatures, 25.IX.1962, 1 ♂, 15.IX.1966, 1 ♀, 4.XI.1966, 1 ♂, A. Kovács (AMNH); El Bolsón, Cerro Piltriquitrón, II.1986, M. Ramírez, 1 ♀ (MACN-Ar); Lago Fonck, 2.XII.1984, A. Macario, 1 ♂ (MACN-Ar); Lago Gutiérrez, 41°95'S, 71°24'W, 18.XI.1988, V. and B. Roth, 1 ♀ (CAS); Lago Mascaradi, I.1996, M. Calderón, 1 ♂ (MACN-Ar); Nahuel Huapi, 1960, Río Azul, 5.XII.1962, 1 ♂, 19.I.1966, 1 ♀, A. Kovács (AMNH). **Chubut:** El Hoyo, 2.X.1962, 3 immatures, VII.1962, 1 ♀ penultimate, VIII.1962, 1 ♀ 9 immatures, 15.IX.1962, 6 ♀ 9 immatures, A. Kovács (AMNH); El Maitén, 2.II.1966, A. Kovács, 1 ♂ (AMNH); Epuyén, 1.IX.1965, 1 ♀, 17.X.1966, 2 ♂ 2 ♀, A. Kovács (AMNH); Poto Cahuel, 8.X.1966, A. Kovács, 2 ♂ 5 ♀ (AMNH); Lago Fontana, I.1944, A. Riggi, 2 ♂ (MACN-Ar); Los Cipreses, XI.1982, M. Ramírez, 2 ♀ (MACN-Ar); Lago Futalaufquen, 4.I.1962, Coscarón, 1 ♀ (MACN-Ar); Lago Verde, II.1985, M. Ramírez, 1 ♀ (MACN-Ar); área Lago Verde, Lago Menéndez y Río Arrayanes, II.1895, M. Ramírez, 1 ♀ (MACN-Ar); Río Turbio, 11.VII.1961, 1 ♀ 1 ♀ penultimate 1 immature, A. Kovács (AMNH). **Santa Cruz:** Lago Argentino, II.1963; Lago Argentino, Península Magallanes, 250 m, 11.I.1979, Misión Cien-

tífica Danesa, 1 ♂ (ZMK); Margheritis, Rizzo, 2 ♀ (MACN-Ar); Lago Burmeister, 31.I.1971, J.M. Gallardo, 1 ♀ (MACN-Ar); Morro Chico, Río Turbio, 28.I.1976, M. Rumboll, 1 ♀ (MACN-Ar); Los Glaciares Natl. Park, II.1975, E. Fernández, 1 ♀, 1 immature (MACN-Ar), 18.I.1980, P. Goloboff, 1 immature (MACN-Ar); Los Glaciares Natl. Park, Península Magallanes, in front of Glaciar Moreno, II.1977, D. Pepe and M. Rumboll, 1 ♂, 1 ♀ (MACN-Ar); Ventisquero Moreno, 18–24.I.1971, J. Vellard, 6 ♂ 5 ♀ (MACN-Ar), 18.II.1971, J. Vellard, 1 ♂ 6 ♀ 10 immatures (MACN-Ar). **Tierra del Fuego:** no specific locality, Castellanos, Gómez, 1 immature (MACN-Ar 32059); no specific locality, R. Dalhene, 1 ♀ (MACN-Ar 5775); Bahía Aguirre, 4.II.1949, 1 ♂ (MACN-Ar 2817), 3 immatures, 16.II.1959, 1 ♂ 1 ♀ 1 immature (MACN-Ar 2816), S. Núñez; Bahía Buen Suceso, 16–31.I.1986, E. Maury, 1 ♂ 1 ♀ 1 immature (MACN-Ar), no date, J.B. Daguerre, 1 ♂ (MACN-Ar 36735); Bahía Tethys, under tree bark, beach, 19.XI.1969, 1 ♀, 22.XI.1969, 1 ♀, Gosztonyi (MACN-Ar); Canal de Beagle, I.1933, Castellanos and Gómez, 3 immatures (MACN-Ar 34340); Isla de los Estados, Bahía San Antonio, 6–13.II.1982, J.C. Chébez, 1 ♀ 1 immature (MACN-Ar); Isla de los Estados, Punta Roca, no date, J.A. Dagerre and A. Carcelles, 1 immature (MACN-Ar 35069); Isla de los Estados, Puerto Parry, *Nothofagus betuloides* forest, X.1981, J.C. Chébez, 5 ♀ (MACN-Ar); Estancia Herberton, 25.I.1979, Misión Científica Danesa, 1 ♂ (ZMK); Lago Fagnano, no. 25, *Nothofagus antartica* forest, 26.II.1959, 1 ♀ (MACN-Ar); no. 26, 27.II.1959, J. Vellard, 1 ♀ (MACN-Ar); II.1967, Williner, 1 ♂ (MACN-Ar); Kaiken, 100 m, 18–19.I.1979, Misión Científica Danesa, 1 ♂, 1 immature, 1 ♀ penultimate, (ZMK); Lago Roca, II.1967, Williner, 1 ♀ (MACN-Ar); 27.I.1971, J. Vellard, 1 ♂ 1 ♀ (MACN-Ar), 10.I.1972, E. Hernández, 3 ♂ (MACN-Ar); hanging by thread from edge of roof, 21.I.1998, C. and M. Vardy, 1 ♀ (BMNH/MACN-Ar); Lapataia, I.1948, J.M. Viana, 3 ♀ 4 immatures (MACN-Ar 2590); 20–23.II.1961, 1 ♂ (AMNH); II.1963, E. Maury, 4 ♀ 1 immature (MACN-Ar); 20 m, 27–28.I.1979, 1 ♀, 1.II.1979, 1 ♀, Misión Científica Danesa (ZMK); Puerto Aguirre, no

date, no collector, 1 ♀ (MACN-Ar); Ushuaia, 1–14.XII.1932, Castellanos and Gomez, 2 ♀ 4 immatures (MACN-Ar); 8–26.II.1961, B. Malkin, 2 ♂ 1 ♀ (AMNH); I.1967, Williner, 1 ♂ 3 ♀ 1 immature, 1 immature (MACN-Ar); XII.1967, A. Bachmann, 1 ♂ 1 ♀ (MACN-Ar); from Ushuaia to Lapataia, 28.I.1960, A. Bachmann, 1 ♂ (MACN-Ar); Ushuaia, no date, A. del Pino, 6 ♀ 2 immatures (MACN-Ar 29952). **CHILE: Región III (Atacama): Huasco:** Freirina, IX.1963, Instituto de Biología, 1 ♂ 1 ♀ (UC). **Región IV (Coquimbo): Elqui:** La Serena, I–II.1961, R. Wagenknecht, 1 ♀ (AMNH). **Limarí:** Bosque Talinay, 8.I.1985, N. Platnick and O. Francke, 1 ♂ 3 ♀ (AMNH); Bosque Talinay, 35 km S road to Fray Jorge, Panam km 353, 560 m, relict Valdivian fog forest, 6.II.1986, N. Platnick, T. Schuh, 3 ♀ (AMNH); Fray Jorge Natl. Park, 11.XII.1950, Ross and Michelbacher, 1 ♀ 5 immatures, (CAS); 21.X.1966, E. Schlinger, M. Irwin, 1 ♀ penultimate (CAS); 27.IX.1970, R. Calderón G., 2 ♀ (UC); 27.IX.1970, L. González, 1 ♀ (UC); 580 m, relict Valdivian forest, 5.I.1985, N. Platnick and O. Francke, 1 ♀ (AMNH); 560 m, relict Valdivian fog forest, under rocks, 8.II.1986, N. Platnick and R. Schuh, 1 immature (AMNH); 560 m, 3.X.1992, N. Platnick, P. Goloboff, K. Catley, 2 immatures (AMNH); elev. 580 m, 10.XI.1993, 30°40'S, 71°41'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2 ♀ (AMNH), 1 ♀ (MACN-Ar, photo MJR 1296–1298), Fray Jorge, Rancho, 10.XII.1950, Ross and Michelbacher, 3 ♀, 1 ♀, 2 immatures (CAS). **Choapa:** Los Vilos, 25.IX.1971, J. Solervicens, 1 ♀ (UC); south of Coquimbo province, VII.1960, L. Peña, 2 ♀ 2 immatures, 4 ♀ (IRSN IG 23077). **Coquimbo:** Corral de Julio, 5.VII.1975, H. Hernández, 1 ♀ (UC). **Región V (Valparaíso): Petorca:** E La Ligua, relict forest, 27.IX.1980, L. Peña, 1 ♂ 2 ♀ (AMNH); Talquén, 32°33'S, 71°14'W, X.1982, L. Peña, 2 ♀ (AMNH); Zapallar, 27.XI.1950, Ross and Michelbacher, 1 ♂ 1 ♀ 1 immature (CAS). **Quillota:** Cuesta La Dormida, N Tilttil, 800–1300 m, 13–18.XI.1982, L. Peña, 3 ♀ (AMNH). **Valparaíso:** Colliguay, nr. La Retuca, 5.XI.1963, G.F. Edmunds, 1 ♂ (AMNH); Quintero, 11–12.V.1961, A. Archer, 1 ♀ (AMNH); pitfalls in relict forest,

31.I.1968, 1 ♂, R. Calderón G. (AMNH); Quintero, 21 Barber VIII, 2.X.1968, 1 ♀ (UC). **San Felipe de Aconcagua:** 10 km E of Zapudo, 28.XI.1950, 1 ♂ (CAS); El Convento, 18.IX.1966, 33°48'S, 71°43'W, L. Peña, 2 ♀ 2 immatures, 6 ♀ 2 immatures (CAS). **Región Metropolitana (Santiago): Santiago:** Quebrada El Arbol, Aculeo, X.1969, L. Peña, 6 ♀ (MCZ). **Región VII (Maule): Talca:** Alto de Vilches, 31.X.1969, Rozen, L. Peña, 2 ♀, 1 ♀ (AMNH); Gil de Vilches, 1200 m, I.1984, P. Goloboff and E. Maury, 1 ♂ (MACN-Ar); 7.I.1989, M. Ramírez, 1 ♂, 1 ♂ (MACN-Ar). **Cauquenes:** Los Ruiles Natl. Park, IX.1985, F. Silya, 1 ♀ (MHNS). **Región VIII (Biobío): Ñuble:** Chillán, 31.XII.1975, G. Moreno, 1 ♀ (AMNH), Fundo El Sauce, San Fabián de Alicó, 8–24.I.1986, L. Peña, 1 ♀ (AMNH); Las Trancas, 15.VI.1990, C. Carrasco, 1 ♀ (UC); Las Trancas, 15–21.II.1976, G. Moreno, 1 ♀ (AMNH); 20–25.II.1980, L. Peña, 1 ♀ (AMNH), 11–17.I.1983, L. Peña, 1 ♀ (AMNH); II.1987, L. Peña, 1 ♀ (AMNH), 1200 m, 24–27.XI.1994, L. Peña, 1 ♂ (AMNH); Las Trancas, E Recinto, “Shangri la”, 19–30.I.1983, L. Peña, 1 ♀ (AMNH); 60 km SE Chillán, Termas road, beech forest, FIT, 1300 m, 7.XII.1984–19.II.1985, S. and J. Peck, 1 immature (ANMH); 72 km SE Chillán, Trancas, nr. Termas, FIT, 1700 m, *Nothofagus* forest, 6.XII.1984–19.II.1985, S. and J. Peck, 1 immature parasitized by a mermithid nematode (AMNH); 77 km SE Chillán, Termas road, 1260 m, 16–25.XI.1993, pitfalls, 36°55'S, 71°27'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♂ (AMNH). **Concepción:** Cerro Caracol, Concepción, elev. 200 m, 36°51'S, 73°02'W, 17.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♀ (AMNH); Escuadrón, 16.IV.1988, T. Cekalovic, 1 ♂ (AMNH); Hualpén, 75 m, moist forest, 22.I.1985, N. Platnick and O. Francke, 4 ♀ (AMNH); Lomas Colorada, 27.XI.1975, T. Cekalovic, 1 ♀ (AMNH). **Arauco:** Río Ibáñez, 27–28.I.1990, L. Peña, 1 ♀ (AMNH). **Biobío:** Caledonia, E Mulchen, 600 m, 18–20.II.1990, L. Peña, 1 ♀ (AMNH); Pemehue (158), L. Peña, 1 ♂ (IRSN IG 19736); W Ralco, Santa Bárbara, 400 m, 22–23.XI.1994, L. Peña, 1 ♀ (AMNH). **Región IX (Araucanía): Malleco:** Angol, 31.XII.1950, Ross

and Michelbacher, 1♂ (CAS); Angol, Cordillera Nahuelbuta, 14–24.II.1977, G. Moreno, 1♂ (AMNH); 18 km W Angol, Cordillera Nahuelbuta, 37°48'S, 72°43'W, 10.II.1967, E. Schlinger, 1♂ (CAS); 40 km W Curacautín, *Nothofagus/Araucaria* forest, 12.XII.1984–16.II.1985, S. and J. Peck, 1♂, 1♀ penultimate (AMNH); Malalcahuello, 22.IX.1968, M. Rancagliolo, 1 immature (UC); 14 km E Malalcahuello, 1570 m, site 649, window trap, *Nothofagus pumilio-Araucaria* forest, 13–31.XII.1982, A. Newton and M. Thayer, 1♀ (AMNH); Monumento Natural Contulmo, 19–21.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 2 immatures (MACN-Ar), Nahuelbuta Natl. Park, 1200 m, *Nothofagus-Araucaria* assoc., 9.XI.1966, M. Irwin and E. Schlinger, 1♀ 4 immatures (CAS), 1200–1500 m, 9.XII.1985, S. and J. Peck, FITS forest *Nothofagus-Araucaria*, 1♂ (AMNH), 1230 m, dry forest, 1.II.1986, N. Platnick and T. Schuh, 1♀ penultimate (AMNH); Pichinahué, Cordillera Nahuelbuta, 1200 m, 19.I.1988, L. Peña, 1♂ (AMNH); Cordillera Nahuelbuta, 1300–1400 m, 6–12.I.1982, L. Peña, 1♀ (AMNH). **Cautín:** Chacamó, NW Nueva Imperial, W Temuco, 16–24.II.1981, L. Peña, 1♂ (AMNH); 12.3 km N Loncoche, 280 m, 2.II.1967, I. Schlinger, 1♀ (CAS); Conguillio Natl. Park, 4–5.II.1980, A.E. Quezada, 1♀ (UC); Volcán Villarrica, FIT nr. edge of old lava flow, 10.XI–3.XII.1989, S. Marshall, 1♂ (AMNH); Pucón at Lago Villarrica, 39°16'S, 71°58'W, 14.XII.1988, V. and B. Roth, 1♀ (CAS); 10 mi NE Pucón, 12.I.1951, Ross and Michelbacher, 1♀ (CAS); Temuco, V.1956, Chávez, 1♀ (MACN-Ar); 15 km NE Villarrica, Flor del Lago, 300 m, 2 FITS, *Nothofagus* forest, 14.XII.1984–10.II.1985, S. and J. Peck, 1♂ (AMNH); Flor del Lago Ranch, Villarrica, Polo Field, 39°12.300'S, 72°08.367'W, 282 m, canopy fogging GT *Nothofagus obliqua* roble, 13.XII.2001, Arias et al., 2 immatures (UCB); Volcán Llaima, 8.X.1966, J.P. Valdenegro, 1♀ (UC). **Región X (Los Lagos):** **Valdivia:** Cudioco, 40°15'S, 73°09'W, 40 m, 10–11.XI.1966, M. Irwin and E. Schlinger, 1♀ (CAS); Isla Teja, farmland, 6.III.1965, H. Levi, 1 immature (MCZ); Las Lajas, W La Unión, 9–13.I.1990, L. Peña, 2♂ 3♀ (AMNH); Peulla, 200 m, 25.III.1965, H.

Levi, 1♀ (MCZ), 1 immature (MCZ, photographed); Valdivia (collection E. Simon) 1♂ 1♀ (MHNP), 1983, E. Kraemer, 1♂ (MHNS 807). **Osorno:** El Mirador, 45 km W La Unión, 900 m, 1–2.III.1987, L. Peña, 1♂ 1♀ (AMNH); 36 km W La Unión, 600 m, 25–28.III.1987, L. Peña, 1♀ (AMNH); Purránque, I–III.1955, E. Reed, 1♂ (AMNH); Puyehue Natl. Park: Aguas Calientes, XII.1981, L. Peña, 1♂ (AMNH); 425 m, Valdivian forest, 31.I.1985, N. Platnick and O. Francke, 1♂ (MACN-Ar); 600 m, Malaise, *Nothofagus* forest, 18.XII.1984–8.II.1985, S. and J. Peck, 2♂ (AMNH); 40°44'0"S, 72°18'45"W, 450 m, 12.XII.2000–2.I.2001, forest, J. Miller, I. Agnarsson, Alvarez, J. Coddington, G. Hormiga, 1♀ penultimate (USNM); La Picada 450 m, NW Volcán Osorno, 15–20.I.1980, L.E. Peña, 1♂ (AMNH); Osorno, X.1977, A. Tobar, 1♂ 1♀ penultimate (AMNH); Puyehue, 15–16.XI.1990, L. Peña, 1♀ (AMNH); 700 m, 9.XII.1994, L. Peña, 2 immatures (AMNH); Pucatrihue, 25–31.I.1978, L. Peña, 1♀ (AMNH), 1–10.II.1986, L. Peña, 1♂ (AMNH). **Llanquihue:** Concordia, Fundo Pedernales, 13.II.1994, T. Cekalovic, 1♀ (AMNH); N Correntoso, VI–VII.1989, L. Peña, 1♀ (AMNH); N Correntoso, NE Puerto Montt, VIII.IX.1989, L. Peña, 1 immature (AMNH); Petrohué, 41°08'S, 72°25'W, 100 m, 15.XI.1966, E.I. Schlinger and M.E. Irwin, 1 immature (CAS); Petrohué Norte, III.1974, J. Solervicens, 1♂ (UC). **Chiloé:** Arroyo Cole Cole, 25 km N Cucao, 8–11.II.1991, M. Ramírez, 1♂, 1♀ (MACN-Ar). **Palena:** Chaitén, XII.1985, L. Peña, 1♀ (AMNH); 37 km SE Chaitén, FIT, 60 m, riverside secondary forest, 28.XII.1984–30.I.1985, S. and J. Peck, 1♂ (AMNH). **Región XI (Ibáñez del Campo):** **Aisén:** Cochran, Río Backer, 180 m, 30.I.1990, L. Peña, 2♀ (AMNH); 25 km S Cochran, 1–3.II.1990, L. Peña, 1♂ (AMNH); Lago Polux, 11.II.1983, T. Cekalovic, 1♂ 2♀ (AMNH); Murta, Lago General Carrera, 29–30.I.1990, L. Peña, 1♀ (AMNH); Río Simpson Natl. Park, S margin, 17.II.1991, M. Ramírez, 1 immature (MACN-Ar, photo MJR 551), 1♀ (MACN-Ar); 22 km E Aisén, 300 m, wet forest, 5.II.1985, N. Platnick and O. Francke, 2♀ (AMNH); Puerto Aisén, 2.I.1957, M. Cadoceo, 2♂ (MACN-Ar); 24–

26.I.1962, L. Peña, 3♂ (IRSN IG23077); Puerto Ibáñez, 15.I.1882, L. Villavicencio, 1♀ (AMNH); Río Cisnes, 1–28.II.1961, L. Peña, 3♂, 2♂ 3♀ 1 immature, 1♂ 2 immatures (IRSN IG 23077); Río Cisnes Medio, Río Grande, 30.XII.1984–28.I.1985, 200 m, FIT, S. and J. Peck, 1♂ (AMNH); Río Simpson, 37 km W Cohiaique, 20 m, wet forest, 20.I.1986, N. Platnick, P. Goloboff, R. Schuh, 1♂ (AMNH). **Región XII (Magallanes y Antártica): Última Esperanza:** Río Pérez, Seno Skyring, 10.X.1952, R. Rodríguez González, 1♂ 1♀ (AMNH), 1♀ penultimate (AMNH); Torres del Paine Natl. Park: near Refugio Chileno, 50°56'45"S, 72°55'0"W, 400–600 m, 8–9.XII.2000, J. Miller, I. Agnarsson, 1♀ (USNM), same, steppe, under rock, 1♀. **Magallanes:** Camerón, 14–17.XI.1960, L. Peña, 4♀ 1 immature (MCZ); Cueva del Milodón, 28.I.1976, T. Cekalovic, 1♀ (AMNH); Isla Daly, I.1962, L. Peña, 4 immatures (IRSN IG 23077); Dos Lagunas, 28.I.1976, T. Cekalovic, 2♀ (AMNH); Estancia La Vicuña, 1956, 1♀ 1 immature, no. 13, 4.III.1957, 3♀, 4 immatures, no. 14, 4.III.1957, 2 immatures, no. 15, 4.III.1957, 1 immature, no. 17, 15.II.1959, 2♀, J. Vellard (MACN-Ar); Estancia La Vicuña, SE Camerón, 1–6.XII.1960, L. Peña, 1♀ (MCZ); 35 km SW Camerón, *Nothofagus* assoc., 2.XII.1966, E. Schlinger and M. Irwin, 2♀, 2♀ penultimates (CAS); Península Hardy, Isla Hoste, Bahía Orange, 9.III.1961, B. Malkin, 2 immatures, (AMNH); Isla Navarino, Puerto Toro, 8.II.1896, Svenska expeditionen till Magleansläderna, 2♀ 2 immatures (NRS), 16–17.III.1961, B. Malkin, 3♀ 3 immatures (AMNH), 19.XII.1992, Michelsen, 1♀ 2 immatures (ZMH 178); Isla Navarino, Puerto Williams, 22.VIII.1966, T. Cekalovic, 1♀ (UC), 14.VIII.1976, T. Cekalovic, 1♀, 1 immature (AMNH); XII.1962–I.1963, P. Darlington, 3♀ 2♀ penultimates (MCZ); Isla Picton, Svenska expeditionen till Magleansläderna, 1♀ (NRS); no. 14, María Virginia, J. Vellard, 1♀ (MACN-Ar); 30 km Natales, road to Magallanes, 21.III.1948, M. Birabén, 5♀, 1♀, 2 immatures (MLP); Monte Alto, 7.III.1960, T. Cekalovic, 1♀ (UC), 17.III.1971, T. Cekalovic, 1♀ (AMNH); 7–11.III.1969, L. Peña, 1♀, 4♀ (MCZ); Paine, 10.X.1952, R. Rodríguez González, 1♂ (AMNH); Torres del Paine Natl. Park, 150

m, scrub, 10.II.1985, N. Platnick and O. Francke, 2♀ (AMNH); Península Brunswick, Tres Brazos, 9.III.1961, T. Cekalovic, 1♀ (UC); Port Famine, 10.I.1977, T. Cekalovic, 2♂ (AMNH); Puerto Hambre, II.1956, J. Vellard, 1♀ (MACN-Ar); Punta Arenas, IX.1892, Michelsen, 1 immature (ZMH); (La Turba), 23.II.1960, T. Cekalovic, 1♂ (MACN-Ar); dry forest remnant, 10.II.1985, N. Platnick and O. Francke, 2♀ (AMNH); 102.2 km NNW Punta Arenas, 430 m, *Nothofagus* assoc., 6.XII.1966, E. Schlinger and M. Irwin, 1♀ 1 immature, 2♀ 1 immature (CAS); Punta Arenas, Puerto del Hambre, 500 m, 8.II.1979, Misión Científica Danesa, 1♂ (ZMK); Cerro Castillo Natl. Res., 500–600 m, dry forest, 7.II.1985, N.I. Platnick and O.F. Francke, 2♀ (AMNH); Aserradero Río Bueno, no. 13, J. Vellard, 1 immature (MACN-Ar); Río Chico, 1956, J. Vellard, 5 immatures (MACN-Ar); Río San Juan, 25.I.1976, T. Cekalovic, 1♀ (AMNH); Río Rubens, ca. 52°S, 30.XI–3.XII.1962, P. Darlington, 2♀ 5 immatures (MCZ); Río Santa María, 25.I.1976, T. Cekalovic, 1♂ (AMNH); 8.I.1977, T. Cekalovic, 1♀ (UC); Rubens, 22.III.1948, M. Birabén, 3 immatures (MLP), 10.X.1952, R. Rodríguez González, 1♂ (AMNH), 13.XII.1960, L. Peña, 1♀ (MCZ); Rusffin, no. 11, III.1957, 1♀, 3 immatures, 5 immatures, 1♀, no. 12, 1.III.1957, 2♀, Silla del Diablo, 28.I.1976, T. Cekalovic, 1♂ 1♀ (AMNH); Spanger, 27.IV.1899, E. Nordenskiöld, 1♀ (NRS); Chorrillo Tres Puentes, IV.1969, T. Cekalovic, 1♀ (MACN-Ar); Tres Vientos, Puerto Arturo, 53°34'S, 73°23'W, 25–28.XI.1960, L. Peña, 2♀ (MCZ); Aserradero Yendegaia, no. 1, 12.II.1957, 1♂ 1♀ 2 immatures, 3♀, no. 2, 12.II.1957, 1♂ 2♀, no. 3, 13.II.1957, 1♀, 2 immatures, no. 4, 14.II.1957, 4♀, no. 5, 14.II.1957, 2 immatures, 10♀ 5 immatures, 1♀, no. 6, 15.II.1957, 3♀, 1♂ 2♀ 1 immature, 18.II.1957, 5 immatures, J. Vellard (MACN-Ar). *No Specific Locality:* South Chile, 190708, Skottsberg, 1♂ (NRS). *Mistaken Locality:* Santiago Prov., Malleco, XI.1979, L. Peña, 1♂ 2♀ 1♀ penultimate (AMNH) (see Ramírez, 1995b: 83).

MORPHOLOGICAL REMARKS: Some details of the abdominal musculature, tracheae, and claw tufts were described in Ramírez (1995a).

Tomopisthes varius Simon

Figures 104B, 105C, D, 108

Tomopisthes varius Simon, 1884: 134 (male and female syntypes, from Chile, Cabo de Hornos, in MHNP 6670, examined), 1887: E30, 1897b: 107, 1902: 31, 1904: 102. Ramírez, 1995a: 368. *Gayenna varia*: Tullgren, 1901: 233, 259, 1902: 59.

DIAGNOSIS: Resembles *T. horrendus* in having a relatively large (but usually smaller) size, distinguished by having a simpler epigyne, with copulatory openings close to the epigastric furrow, and a short paramedian apophysis with several cusps. Immatures are distinguished from those of *T. horrendus* by lacking lateral spines on metatarsus I.

FEMALE (syntype, measurements of specimens from Quetrihué): Total length 11.30. Carapace length 5.05, width 3.65, wider on legs II–III. Length of tibia/metatarsus: I, 3.27/2.77; II, 3.17/2.77; III, 2.60/2.67; IV, 3.40/3.86. Palpal tarsus length 1.67. Chelicerae unmodified, with two teeth on retromargin. Sternum length 2.63, width 1.97. Spines: leg I, femur d 1–1–1, p 0–d1–(1–d1), r 0–d1–d1; tibia v 2–2–2; metatarsus v 2bas. II, femur = I; tibia v r1–2–2; metatarsus v 2bas, p d1–0. III, femur d 1–1–1, p and r 0–d1–d1; patella r d1; tibia v p1–2–2, p and r d1–1, d r1bas; metatarsus v 2–2–2, p and r d1–1–1, d 0–p1–2. IV, femur d 1–1–1, p 0–d1–d1, r d1ap; patella, tibia and metatarsus = III. Abdomen length 6.52, width 3.85, spiracle–epigastrium 2.67, spiracle–spinnerets 0.65. Color (figs. 104B, 108A): carapace grayish with dark spots, reddish to cephalic area. Legs pale grayish with dark spots. Sternum brown, darker on margins. Abdomen yellow with dark grayish pattern, venter paler, with small spots, mainly on median band. Epigyne (fig. 108E, F): median field ample in posterior view, weakly sclerotized, rugose. Copulatory ducts short. Ducts of accessory bulbs slightly converging.

MALE (syntype, measurements of specimens from Quetrihué): Total length 8.40. Carapace length 5.05, width 2.70. Length of tibia/metatarsus: I, 3.20/2.70; II, 2.80/2.50; III, 2.23/2.27; IV, 2.83/3.17. Chelicerae slightly longer and narrower than those of female, teeth on retromargin more separated, fang long, thick. Sternum length 1.90, width 1.50.

Spines as in female, except: leg II, tibia v 2–2–2. Abdomen length 4.80, width 2.40, spiracle–epigastrium 2.17, spiracle–spinnerets 0.60. Color as in female (fig. 108B). Palp (figs. 105C, D, 108C, D): tibia long, width/length 0.49. Cymbium relatively narrow. Embolus short, basal process lobate, thick, separated by ample, weakly sclerotized area (fig. 105C). Median apophysis short, relatively wide. Paramedian apophysis with complex base, flattened tip. Primary conductor small, triangular. Secondary conductor small, complex, quite modified.

MORPHOLOGICAL REMARKS: Tracheal system and claw tufts described in Ramírez (1995a).

VARIABILITY: Size is quite variable. Male Spines: tibiae III, IV v 2–2–2.

NATURAL HISTORY: A very opportunistic species that builds retreats on foliage, under bark, in crevices in rotten logs, and occasionally under stones or between flat stones in ravines.

DISTRIBUTION: Southern forests in Argentina and Chile, from the relict forest in Fray Jorge to Cabo de Hornos.

OTHER MATERIAL EXAMINED: **ARGENTINA: Neuquén:** Estancia San Ramón, Rincón Chico, Río Limay, X–XII.1962, Havrylenko, 1♂ (MACN-Ar); Lago Nompeluén, NW Aluminé, 12.I.1985, E. Maury and A. Toth, 2♀ 1 immature (MACN-Ar); Lago Aluminé, II.1974, E. Maury, 3♀ (MACN-Ar); Lago Carrhué Chico, 15–16.I.1983, E. Maury, 2♀ (MACN-Ar); Lanín Natl. Park: Lago Lácar, Pucará, I.1961, M.E. Galiano, 2♀ (MACN-Ar 5287); I–II.1971, S. Schajovskoy, 1♀ (MACN-Ar), 10.XI.1978, Misión Científica Danesa, 1♂ (ZMK); 650 m, 28–29.XI.1981, Nielsen and Karsholt, 4♂ (ZMK); San Martín de los Andes, 40°10'S, 71°21'W, 20–21.XI.1988, V. and B. Roth, 1♂, 1♀ (CAS); Nahuel Huapi Natl. Park: Isla Victoria, Piedras Blancas, 1964, Contreras, 1♂ (MACN-Ar); Isla Victoria, Playa del Toro, VI.1984, M. Ramírez, 1♀ (MACN-Ar); Río Frías superior, I.1990, M. Ramírez, 1♀ (MACN-Ar); Lago Nahuel Huapi, Península Quetrihué, 16–25.XII.1984, 1♂ (MACN-Ar); II.1986, M. Ramírez, 1♂ (MACN-Ar); 23.I.1985, M. Ramírez, 3♀ 1 immature (MACN-Ar); Península Quetrihué, “arrayan” forest, stony beach, 24.II.1996, M. Ramírez, 1♂ (MACN-

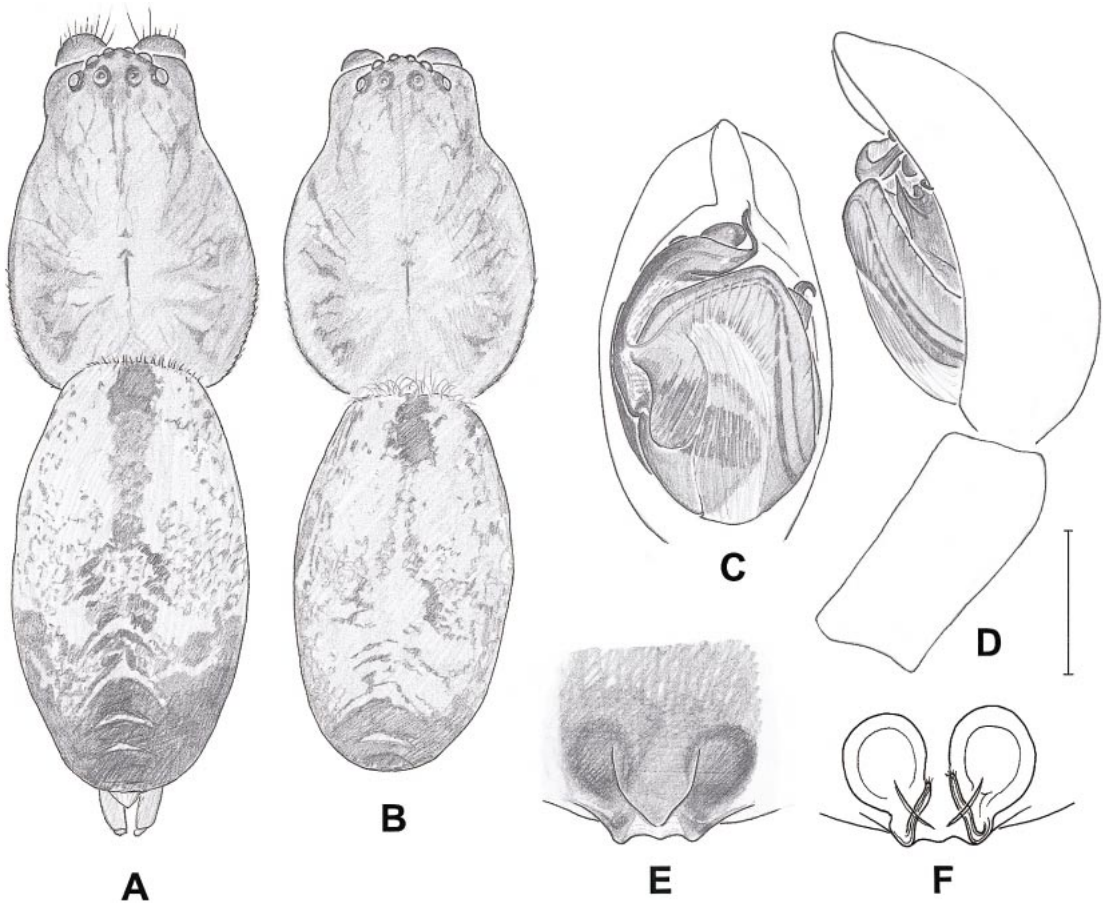


Fig. 108. *Tomopisthes varius* Simon (syntypes). **A.** Female. **B.** Male. **C.** Male palp, ventral view. **D.** Same, retrolateral. **E.** Epigyne, ventral view. **F.** Same, cleared. Scale bar = A, B, 2 mm; C-F, 1 mm.

Ar); Puerto Blest, II.1986, M. Ramírez, 1♂ (MACN-Ar); 770 m, 4.XII.1978, 2♀, 25–27.X.1981, 1♂ 1♀, Nielsen and Karsholt (ZMK), 10.I.1998, M. Ramírez, 1♂ (MACN-Ar); 7–20.I.2000, L. Lopardo and A. Quaglino, 9 immatures (MACN-Ar); Puerto Blest, Lago Ortiz Basualdo, I.1990, M. Ramírez, 2♀ (MACN-Ar); San Carlos de Bariloche, II.1954, M.E. Galiano, 2♀ (MACN-Ar), 1964, Monrós, 1♀ (MACN-Ar); San Carlos de Bariloche, Colonia Suiza, 810 m, 20.XI.1978, 1♀, 5.XII.1978, 1♀, Misión Científica Danesa (ZMK); Nahuel Huapi, 1950, Havrylenko, 2♀ (MACN-Ar 5507). **Chubut:** El Maitén, 29.VII.1961, A. Kovács, 2 immatures (AMNH); Los Cipreses, XI.1982, M. Ramírez, 2♀ penultimates 2 immatures (MACN-Ar); Los Alerces Natl.

Park, I.1982, P. Goloboff, 1♂ (MACN-Ar); Los Alerces Natl. Park: Lago Futalaufquen, I.1990, M.J. Ramírez, 1♀ 1 immature, 1♀ (MACN-Ar); Lago Menéndez, I.1990, M. Ramírez, 1♂ (MACN-Ar); Lago Verde, II.1985, M. Ramírez, 1♀, 1♀ 1 immature (MACN-Ar). **Santa Cruz:** Lago Frías, no date, E. Maury, 1♂ 1♀ (MACN-Ar); Los Glaciares Natl. Park, II.1977, no collector, 1♂ (MACN-Ar), 18.I.1980, P. Goloboff, 1♂ 1♀ 1 immature (MACN-Ar); no date, E.R. Fernández, 1♂ (MACN-Ar); Los Glaciares Natl. Park, Península Magallanes, in front of Glaciar Moreno, II.1977, D. Pepe and M. Rumboll, 1♂, 1♀ (MACN-Ar); Ventisquero Moreno, 18–24.I.1971, J. Vellard, 2♂ (MACN-Ar); 28.II.1971, J. Vellard, 1♂ (MACN-Ar). **Tierra del Fuego:** Lago Fag-

nano, XI.1984, 1 ♀ (MACN-Ar); Lago Roca, *Nothofagus antarctica* forest, II.1967, Williner, 1 ♀ (MACN-Ar); 27.I.1971, J. Vellard, 1 ♀ 1 immature (MACN-Ar); Lapataia, I.1948, J.M. Viana, 1 ♂ 1 ♀ (MACN-Ar); II.1963, E. Maury, 4 ♀, 1 ♂ (MACN-Ar); Río Grande, XI.1973, M. Rumboll, 1 ♀ (MACN-Ar); Ushuaia, Playa Larga, 13.XII.1967, M.E. Galiano, 1 ♀, 1 ♀ (MACN-Ar); Punta Remolino 24, 24.II.1959, J. Vellard, 1 ♂ 1 ♀ penultimate (MACN-Ar); Río Pipo, XII.1989, A. González, 1 ♀ (MLP); Aserradero Yendegaya, no. 1, 12.II.1957, 1 ♂ 1 ♀; no. 3, 13.II.1957, 1 ♀, no. 4, 14.II.1957, 1 ♂, no. 5, 14.II.1957, 1 ♀ 2 immatures, 1 ♀, no. 7, 16.II.1957, 1 ♀ 1 immature, no. 9, 17.II.1957, 2 ♀, J. Vellard (MACN-Ar). **CHILE: Región IV (Coquimbo):** Limarí: Fray Jorge Natl. Park, 21.X.1966, E. Schlinger, M. Irwin, 1 ♀ (CAS); pitfalls in relict Valdivian forest, 16.II.19??, 1 ♀, 17.IV.19??, 1 ♀, 19.IV.19??, 1 ♀, 19.VIII.19??, 1 ♀, 17.X.19??, 2 ♂ 1 ♀, R. Calderón G. (AMNH), 27.IX.1970, 1 ♂ 1 ♀ (UC); 580 m, relict valdivian forest, 5.I.1985, N. Platnick and O. Francke, 1 ♀ 1 immature (AMNH); 9.I.1984, A. Roig, 1 ♀ (MACN-Ar); 560 m, relict Valdivian fog forest, under rocks, 8.II.1986, N. Platnick and R. Schuh, 2 ♀ (AMNH); 560 m, 3.X.1992, N. Platnick, P. Goloboff, K. Catley, 1 ♂ 4 immatures (AMNH); elev. 580 m, 10.XI.1993, 30°40'S, 71°41'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♂ (AMNH); Fray Jorge, Rancho, 10.XII.1950, Ross and Michelbacher, 1 ♀ (CAS); Fray Jorge, forest, 11.XII.1950, Ross and Michelbacher, 1 ♀ 1 immature (CAS). **Choapa:** Los Vilos, 12.X.1986, L. Peña, 1 ♀ (AMNH); Quereo, Los Vilos, 6.XI.1988, P. Goloboff, E. Maury, and C. Szumik, 1 ♀ (MACN-Ar). **Región V (Valparaíso):** Los Vilos, 6.XI.1988, P. Goloboff, E. Maury, and C. Szumik, 1 ♀ (MACN-Ar). **Petorca:** Los Molles, Ovalle, 1600 m, 17.X.1994, L. Peña, 1 ♀ (AMNH); E La Ligua, relict forest, 27.IX.1980, L. Peña, 1 ♀ (AMNH). **Quillota:** Cuesta El Melón, nr. La Calera, 15.XI.1985, L. Peña, 2 ♀ 3 immatures (AMNH). **Valparaíso:** Quintero, pitfalls in relict forest, 12.VIII.1968, 3 ♂, 2.X.1968, 1 ♂, 3 ♂, R. Calderón G. (AMNH); 2.X.1968, 1 ♀ (UC); Quintero, Barber VII.I, 12.VIII.1968, 1 ♂, 1 ♂ (UC). **Región Metropolitana (Santiago):** **Santiago:** El Canelo, 950 m, 33°37'S,

71°35'W, M. Irwin and E. Schlinger, 5 ♀ (CAS); Pan de Azúcar, 2700 m, road to Cerro Tupungato, I.1984, A. Mann Z., 1 vial (number of specimens not recorded) (MHNS 867). **Región VII (Maule):** **Curicó:** Cajón del Río Claro, Cordillera Curicó, 9.X.1966, E. Schlinger, 2 ♀ (CAS); Las Tablas, E Curicó, II.1985, L. Peña, 3 ♀ (AMNH); Los Queñes I.1984, P. Goloboff, 1 ♀ 1 immature (MACN-Ar), 14.I.1984, P. Goloboff, 1 ♀ 1 immature (MACN-Ar). **Talca:** Gil de Vilches, 1200 m, I.1984, P. Goloboff and E. Maury, 3 ♀, 2 ♀ (MACN-Ar); 7.I.1989, M. Ramírez, 1 ♀ (MACN-Ar, photo MJR 10); 7–8.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1 ♀ (AMNH). **Cauquenes:** Tregualemu, 520 m, 6–7.XI.1993, L. Peña and A. Ugarte, 1 ♀ (AMNH). **Región VIII (Biobío):** **Nuble:** 60 km SE Chillán, Termas Róbod, beech forest, FIT, 1300 m, 7.XII.1984–19.II.1985, S. and J. Peck, 2 ♂ (AMNH); 22.7 km ESE Recinto, 1330 m, *Nothofagus* forest, site 646, window trap, 10.XII.1983, A. Newton and M. Thayer, 1 ♀ (AMNH). **Concepción:** Bosque de Ramuntcho, Cerro Caracol, Concepción, elev. 200 m, 36°51'S, 73°02'W, 17.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 vial (number of specimens not recorded) (AMNH); Lomas Colorada, 24.XI.1996, T. Cevalovic, 1 ♀ (AMNH); Periquillo, 8.XII.1994, T. Cevalovic 1 vial (number of specimens not recorded) (AMNH); San Pedro, 22.X.1974, T. Cevalovic 1 ♀ (UC); Tomé, 1.I.1992, T. Cevalovic, 1 ♀ (AMNH); Lenga, Teta Norte, 12.III.1979, M. Casanueva, 1 ♀ (UC). **Biobío:** W Ralco, Santa Bárbara, 400 m, 22–23.XI.1994, L. Peña, 1 ♀ (AMNH). **Región IX (Araucanía):** **Malleco:** 17 km W Angol, 800 m, FIT, mixed *Nothofagus*, 8.XII.1984–16.II.1985, S. and J. Peck, 9 ♂ 3 ♀, 2 ♂ 4 ♀ 9 immatures (AMNH); 40 km W Angol, Nahuelbuta Natl. Park, FITS, 1200–1500 m, *Nothofagus/Araucaria* forest, 9.XII.1984–17.II.1985, S. and J. Peck, 1 ♂ 1 ♀, 1 ♀ (AMNH); 20 km W Curacautín, 1000 m, FIT, 1000 m, *Nothofagus* forest, 12.XII.1984–16.II.1985, S. and J. Peck, 1 ♀, 1 ♀ (AMNH), 1500 m, Malaise, *Nothofagus-Araucaria* forest, 16.II.1985, S. and J. Peck, 3 ♀ (AMNH); 40 km W Curacautín, *Nothofagus/Araucaria*, 12.XII.1984–16.II.1985, S. and J. Peck, 1 ♀, 1 ♀ (AMNH); Fundo María Ester, 15 km W Victoria, 14.I.1989, M. Ra-

mírez, 1 ♀ (MACN-Ar); Malalcahuello, 9–15.XII.1985, L. Peña, 2 ♀ (AMNH); 6.5 km E Malalcahuello, 1080 m, trap site 651, widow trap, *Nothofagus dombeyi* with *Chusquea*, 13–31.XII.1982, A. Newton and M. Thayer, 2 ♀ (AMNH); Monumento Natural Contulmo, 12.I.1989, M. Ramírez, 5 ♀ (MACN-Ar); mixed evergreen forest, 11.XII.1984–13.II.1985, S. and J. Peck, 1 ♀, 3 ♂ (AMNH); Nahuelbuta Natl. Park, 1230 m, dry forest, 1.II.1986, N. Platnick and T. Schuh, 2 ♂ (AMNH); Tolhuaca, 15–23.III.1986, L. Peña, 1 ♂ 6 ♀ 6 immatures (AMNH), 15.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1 immature (MACN-Ar). **Cautín:** Bellavista, N shore Lago Villarrica, 310 m, site 655, window trap, valdivian rainforest, 15–30.XII.1982, A. Newton and M. Thayer, 1 ♂ (AMNH); undisturbed forest, 260 m, 30.I.1986, N. Platnick, T. Schuh, 1 ♀ (AMNH); 39°12'S, 72°08'W, 240 m, 20.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♂ (AMNH); Chacamó, NW Nueva Imperial, W Temuco, 16–24.II.1981, L. Peña, 1 ♀ (AMNH); Cuesta Lascarría, 23.IX.1968, H. Prats, 1 ♂ (UC); Lago Caburga, 39°08'S, 71°46'W, 10.XII.1988, V. and B. Roth, 2 ♀ (CAS); Conguillio Natl. Park, 23.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1 ♀ (AMNH); 10 km S Pucón, Volcán Villarrica Natl. Park, FIT, 900 m, *Nothofagus* grove on ash, 15.XII.1984–10.II.1985, S. and J. Peck, 1 ♂ (AMNH); 21 km NE Pucón, Lago Caburga, FIT, 600 m, mixed forest remnant, 15.XII.1984–10.II.1985, S. and J. Peck, 4 ♂ (AMNH); Pucón, FIT (toxic), hill-top beech (peninsula), 8–13.XI.1989, S.A. Marshall, 1 ♂ (AMNH); FIT, mature forest, 15.XI–1.XII.1989, S.A. Marshall, 3 ♂ (AMNH); 17 km E Pucón, 23.XI.1983, N. Platnick, T. Schuh, 2 ♀ (AMNH); Termas de Palguin, Salto Puma, 725 m, 39°22'S, 71°50'W, fogging fungusy logs, 24.XI.1994, R. Leschen and D. Carlton no. 157, 1 ♀ (AMNH); Tolten (coastal town), 27.II.1979, L. Peña, 1 ♀ 1 immature (AMNH); 14 km N Villarrica, elev. 250 m, 39°10'S, 72°12'W, 20.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♀ (AMNH); 15 km NE Villarrica, Flor del Lago, 300 m, 2 FITS, *Nothofagus* forest, 14.XII.1984–10.II.1985, S. and J. Peck, 6 ♂ (AMNH). **Región X (Los Lagos): Valdivia:** Las Lajas, W La Unión,

19–20.XI.1990, L. Peña, 1 ♂ 2 ♀ (AMNH); Peulla, 200 m, 25.III.1965, H. Levi, 1 immature (MCZ); I.1990, M. Ramírez, 3 ♀ (MACN-Ar); Puelón, NW Panguipulli, 10.I.1985, L.E. Peña, 1 ♀ (AMNH); Valdivia, 12.X.1976, E. Krahmer, 2 ♀ (AMNH), 1983, 1 ♀ (MHNS 822), 1 ♀ (MHNS 829), XI–XII.1982, 1 ♀ (MHNS 700), E. Krahmer; 30 km S Valdivia, 11.II.1981, T. Cekalovic, 1 ♀ (AMHN). **Osorno:** Maicolpué, 64 km W Osorno, 19.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1 ♀ (AMNH), 1 ♀ (MACN-Ar); Puyehue Natl. Park: Aguas Calientes, FIT, Derrumbes forest trail, 20.XII.1984–8.II.1985, S. and J. Peck, 4 ♂ 1 ♀ 2 immatures (AMNH), 18.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1 immature (MACN-Ar); 40°44'S, 72°19'W, 1440 m, 5–7.XII.1988, V. and B. Roth, 1 ♂ 2 ♀ (CAS), 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1 ♂ (MACN-Ar 15.XII.98/8, frame 20); 600 m, Malaise, *Nothofagus* forest, 18.XII.1984–8.II.1985, S. and J. Peck, 2 ♂ 1 ♀ (AMNH); Anticura, 19–29.X.1985, L. Peña, 1 ♂ 1 ♀ (AMNH); Anticura, 40°40'0"S, 72°10'30"W, 350 m, 13.XII.2000–2.I.2001, forest, J. Miller, Alvarez, J. Codrington, G. Hormiga, 1 ♂ (USNM); 4.1 km W Anticura, 270 m, trap site 663, window trap, valdivian rainforest, 19–25.XII.1982, A. Newton and M. Thayer, 3 ♂ (AMNH); Osorno, VIII.1977, A. Tobar, 1 ♂ (AMNH); 34.5 km E Osorno, 40°38'S, 71°42'W, 200 m, fogging fungusy log, 1.XII.1994, R. Leschen and C. Carlton no. 191, 1 immature (AMNH); 48.5 km W Osorno, 40°37'S, 73°45'W, 75 m, sifting leaf litter, 28.XI.1994, R. Leschen and C. Carlton no. 191, 1 ♀ (AMNH); Termas de Puyehue, 180 m, forest, 28.XI.1981, N. Platnick and R. Schuh, 1 ♂ 1 ♀ (AMNH); 460 m, litter from moss forest floor, 25.XI.1981, N. Platnick and R. Schuh, 1 ♂ 2 ♀ (AMNH); Puyehue, 700 m, 9.XII.1994, L. Peña, 1 ♂ 2 ♀ (AMNH); Pucatrihue, 25–31.I.1978, L. Peña, 1 ♀ (AMNH). **Llanquihue:** Caleta La Arena, on *Marcyospermum*, 30.I.1991, M. Ramírez, 1 immature (MACN-Ar); Correntoso, XII.1969, L. Peña, 1 ♀ (MCZ); N Correntoso, NE Puerto Montt, VIII.IX.1989, L. Peña, 3 ♂ 1 immature (AMNH); NW Shore, Lago Chapo, 250 m, 41°27'S, 72°30'W, 13.XI.1966, M. Irwin and E. Schlinger, 1 ♂ 1 ♀ 7 imma-

tures (CAS); 2–3 km NW Ensenada, 18.III.1965, H. Levi, 1 ♀ (MCZ); Los Muermos, S. Chile, forest, 19.I.1951, Ross and Michelbacher, 1 ♀ 7 immatures (CAS); Vicente Pérez Rosales Natl. Park, Salto Petrohué, mixed most forest, 150 m, FIT, 23.XII.1984–4.II.1985, S. and J. Peck, 1 ♂ (AMNH); Petrohué, 41°08'S, 72°25'W, 100 m, 15.XI.1966, E.I. Schlinger and M.E. Irwin, 1 ♀ (CAS); 8 mi W Puerto Varas, 18.I.1951, Ross and Michelbacher, 1 ♀ (CAS). **Chiloé:** Isla de Chiloé: Cucao, tepual, 12.II.1990, M. Ramírez, 2 ♀ (MACN-Ar); Chepu, 17 m, 29.XI.1981, N. Platnick and R. Schuh, 1 ♀ 1 immature (AMNH); 3.II.1991, M. Ramírez, 3 ♀ (MACN-Ar); 15 km S Chepu, 3.II.1991, M. Ramírez, 1 ♀ (MACN-Ar); Pid-Pid, 17.II.1997, T. Cekalovic, 1 ♀ (AMNH); “Port San Pedro, Chiloes, leg. Keyserling, unentwickeltes (imm.)”, 1 immature (MCZ); 5 km N Quellón, 105 m, modified forest, floor litter and moss, concentrate Berlese, 1.XII.1981, N. Platnick and R. Schuh, 1 ♀ (AMNH), 107 m, 1.XII.1981, N. Platnick and R. Schuh, 1 ♀ (AMNH); Terao, S Chonchi, 10–20.III.1988, L. Peña, 1 ♂ (AMNH). **Región XI (Ibáñez del Campo): Aisén:** Cochrane, Río Backer, 180 m, 30.I.1990, L. Peña, 1 ♂ (AMNH); Río Simpson Natl. Park, 33 km Puerto Aisen, selectively cut forest, 31.XII.1984–26.I.1985, S. and J. Peck, 1 ♂, 1 ♀ (AMNH); Puerto Aisén, 24–26.I.1962, L. Peña, 2 immatures (IRSN IG23077); Río Cisnes, 1–28.II.1961, L. Peña, 1 ♂ (IRSN IG23077); Río Cisnes Medio, Río Grande, 30.XII.1984–28.I.1985, 200 m, FIT, S. and J. Peck, 1 ♀ (AMNH); Valle del Río Aisen, I.1897, P. Dusen, 1 ♂ 3 ♀ 8 immatures (NRS). **Región XII (Magallanes y Antártica): Última Esperanza:** Río Pérez, Seno Skyring, 10.X.1952, R. Rodríguez González, 1 ♂ (AMNH); Última Esperanza, 3.IV.1896, 1 ♂ (NRS). **Magallanes:** Cameron, 14–17.XI.1960, L. Peña, 1 ♀ (MCZ); Cueva del Milodón, 28.I.1976, T. Cekalovic, 1 ♂ 3 ♀ (UC), 3 ♂ 4 ♀ (AMNH); Estancia Gazy Harbour, 10.II.1990, T. Cekalovic, 1 ♀ (AMNH); Isla Daly, I.1962, L. Peña, 1 ♀ 3 immatures (IRSN IG 23077); Isla Navarino, Puerto Toro, 1896, Svenska expeditionen till Magleansläderna, 1 ♀ (NRS); XI.1892, Delfin, 2 ♀ (ZMH 179); Isla Nueva, 4.II.1896, 1 ♀ 4 immatures (NRS); Torres del

Paine Natl. Park, 150 m, scrub, 10.II.1985, N. Platnick and O. Francke, 2 ♀ (AMNH); Península Brunswick, Barranco Amarillo, 27.I.1976, T. Cekalovic, 2 ♀ (AMNH); Port Famine, 10.I.1977, T. Cekalovic, 1 ♂ (AMNH); Puerto Bridges, 10.I.1893, Michelsen, 2 ♀ 1 immature (ZMH 165); Puerto Hambre, 25.III.1991, T. Cekalovic, 1 ♀ 2 immatures (AMNH); Punta Arenas, IX.1892, Michelsen, 1 ♂ 1 ♀ (ZMH 75); Punta Arenas (La Turba), 27.VIII.1976, T. Cekalovic, 1 ♀ (AMNH); Chorrillo Tres Puentes, 7.II.1971, T. Cekalovic, 1 ♀ (AMNH); no date, T. Cekalovic, 1 ♀ (MACN-Ar); Tres Vientos, Puerto Arturo, 53°34'S, 73°23'W, 25–28.XI.1960, L. Peña, 3 ♀, 8 ♀ (MCZ); Puerto Bulnes, 25.III.1991, T. Cekalovic, 1 ♀ (AMNH); Tweedie, Sierra del Toro, 19.III.1896, E. Nordenskjöld, Svenska expeditionen till Magleansläderna, 1 ♀ (NRS); Aserradero Yendegaia, no. 3, 13.II.1957, J. Vellard, 1 ♀ (MACN-Ar). *No Locality:* E67–2–12, 1 ♀ (CAS). *Locality Not Found:* Puerto Anchorena (presumably Argentina), 1.XI.1969, Contreras, 1 ♂ (MACN-Ar). *Mistaken Locality:* Santiago Prov., Malleco, XI.1979, L. Peña, 5 ♀ 1 immature (AMNH) (Ramírez, 1995b: 83).

Tomopisthes pusillus (Nicolet),
new combination

Figures 109, 110, 111A, 112C

Clubiona pusilla Nicolet, 1849: 426 (female lectotype and immature paralectotype here designated, from Chile, no specific locality, in MHNP 4123, examined). Simon, 1864: 132, 1887: E4.

Gayenna chilensis Tullgren, 1902: 63 (female lectotype and female paralectotype here designated, from Chile, Río Aisén Valley, I.1897, in NRS, examined). NEW SYNONYMY.

SYNONYMY: The types of the species synonymized were examined, together with numerous specimens; no relevant differences were found.

DIAGNOSIS: Easily distinguished from other *Tomopisthes* and *Gayenna* by the combination of ALE much larger than AME and by the ample epigynal anterior pouch with a cavity on each side; males can be distinguished also by the shape of the paramedian apophysis.

FEMALE (lectotype of *Gayenna chilensis*,



Fig. 109. *Tomopisthes pusillus* (Nicolet), female (Talca, Gil de Vilches, photo MJR 11).

measurements and color of specimen from Puerto Blest, Lago Ortiz Basualdo): Total length 6.10. Carapace length 2.80, width 2.07, wider on legs II–III. AME small, ALE large, anterior eye row slightly protruding (fig. 110A). Length of tibia/metatarsus: I, 1.60/1.35; II, 1.53/1.32; III, 1.25/1.30; IV, 1.65/1.87. Palpal tarsus length 0.85. Chelicerae with two teeth on retromargin. Sternum length 1.37, width 1.13. Spines: leg **I** (fig. 112C), femur d 1–1–1, p (1–d1)ap; tibia v p1–2–2 or 0–2–2, p 0–1 or 0; metatarsus v 2bas. **II**, femur d 1–1–1, p and r d1ap; tibia v 0–2–2, p d1–1; metatarsus v 2bas, p 1–0. **III**, femur d 1–1–1, p 0–d1–d1, r d1ap; patella r d1; tibia v p1–p1–2, p and r d1–1, d r1bas; metatarsus v 2–2–2 or 2–0–2, p and r d1–1–1, d 0–p1–2. **IV**, femur = III; patella r d1; tibia = III or v p1–2–2; metatarsus v 2–2–2 or 2–p1–2, p and r d1–1–1, d 0–p1–2. Abdomen length 3.33, width 1.75, spiracle–epigastrium 1.37, spiracle–spinnerets 0.60. Color (fig. 109): carapace grayish with dark spots, ocular area very dark. Legs pale grayish with dark spots. Sternum grayish, darker on margins. Abdomen yellow with contrasting dark grayish dorsal pattern, cardiac area dark, followed by two oblique dark spots; sides covered with small spots, venter pale, with small spots, mainly on wide median band. Epigyne (fig. 110D–F): anterior pouch wide, cavity on each side. Copulatory openings close to anterior end of furrow separat-

ing lateral lobe and median field. Ducts of accessory bulbs short, connected close to copulatory openings.

MALE (Puerto Blest, Lago Ortiz Basualdo): Total length 6.25. Carapace length 3.07, width 2.23. Length of tibia/metatarsus: I, 3.33/2.97; II, 2.73/2.47; III, 1.90/1.67; IV, 2.30/2.60. Chelicerae longer than those of female, fang long, thick. Sternum length 1.38, width 1.25. Spines as in female, except: leg **I**, tibia v 2–2–2, p d1–1 or 0–1, r d1–1. **II**, femur p and r 0–d1–d1; tibia v 2–2–2, p d1–1, r d1–1 or 0–1; metatarsus p and r 1–0. **III**, femur = II; tibia v 2–2–2; metatarsus v 2–2–2. **IV**, tibia and metatarsus = III. Abdomen length 3.05, width 1.85, spiracle–epigastrium 1.50, spiracle–spinnerets 0.27. Color as in female. Palp (figs. 110B, C, 111A): tibia width/length 0.86. Retrolateral margin of cymbium with slight basal notch. Embolus with basal process lobate, separated by ample ventral membranous area. Median apophysis long. Apex of paramedian apophysis complex, with two curved tips, one ventral, one dorsal. Primary conductor strong, heavily sclerotized, conical, slightly flattened. Canal zone of secondary conductor with membranous area, with some tiny denticles.

VARIABILITY: Female spines: I, tibia v 2–2–2.

NATURAL HISTORY: This species builds retreats on foliage. Some specimens were found on epiphytic lichens, where they are remarkably cryptic.

DISTRIBUTION: Southern forests in Argentina, from Chubut to Neuquén provinces, and Chile, from Talca to Aisén provinces.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Neuquén:** Lago Lolog, 6 km N San Martín de los Andes, Masner-Malaise (wet), clearing, *Nothofagus* (lenga), ca. 950 m, Gentili property, 23.XI–1.XII.1989, S.A. Marshall, 1♀ (AMNH); 40°10'S, 71°21'W, Puerto Blest, 770 m, 4.XII.1978, Misión Científica Danesa, 1♀ (ZMK); 7–20.I.2000, L. Lopardo and A. Quaglino, 1♂ 3 immatures (MACN-Ar); Puerto Blest, trail to Lago Ortiz Basualdo, I.1990, M. Ramírez, 1♂ 3♀ 2 immatures (MACN-Ar). **Chubut:** Los Alceres Natl. Park: Río Frías, II.1986, 1♀ (MACN-Ar). **CHILE: Región VII (Maule): Talca:** Alto de Vilches, elev. 1180 m, 35°36'S, 71°04'W, 14.15.XI.1993, N. Plat-

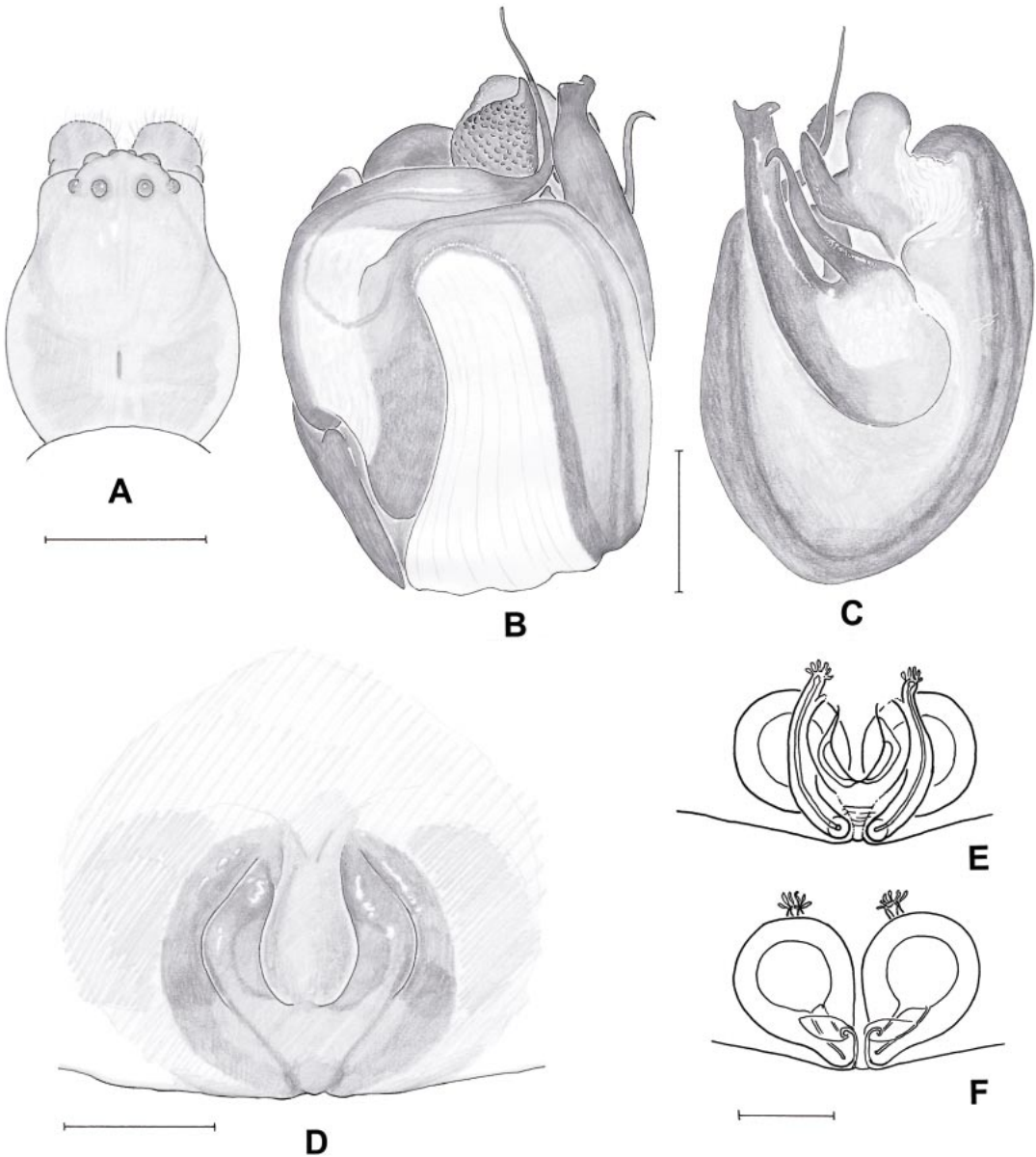


Fig. 110. *Tomopisthes pusillus* (Nicolet). **A, E, F.** Lectotype of *Gayenna chiliensis*. **A.** Female carapace. **B.** Male copulatory bulb, ventral view (Ñuble, SE Chillán). **C.** Same, retrolateral view. **D.** Epigyne, ventral view (lectotype). **E.** Cleared epigyne, ventral view. **F.** Same, dorsal view. Scale bars = A, 1 mm; B–F, 0.2 mm.

nick, K. Catley, M. Ramírez, T. Allen, 1 ♂ (AMNH); Gil de Vilches, 7.I.1989, M. Ramírez, 1 ♀ (MACN-Ar, photo MJR 11, 12). **Región VIII (Biobío):** Ñuble: Las Trancas, 1200 m, 24–27.XI.1994, L. Peña, 2 ♀ (AMNH); Las Trancas, E Recinto, 1100 m,

II.1987, L. Peña, 2 ♀ (AMNH); Las Trancas, El Purgatorio, 1400 m, no date, no collector, 1 ♀ (MCZ); 60 km SE Chillán, Termas Road, beech forest, FIT, 1300 m, 7.XII.1984–19.II.1985, S. and J. Peck, 1 ♂ (AMNH). **Ar-
auco:** Caramavida, 1–10.I.1954, L. Peña, 1 ♀

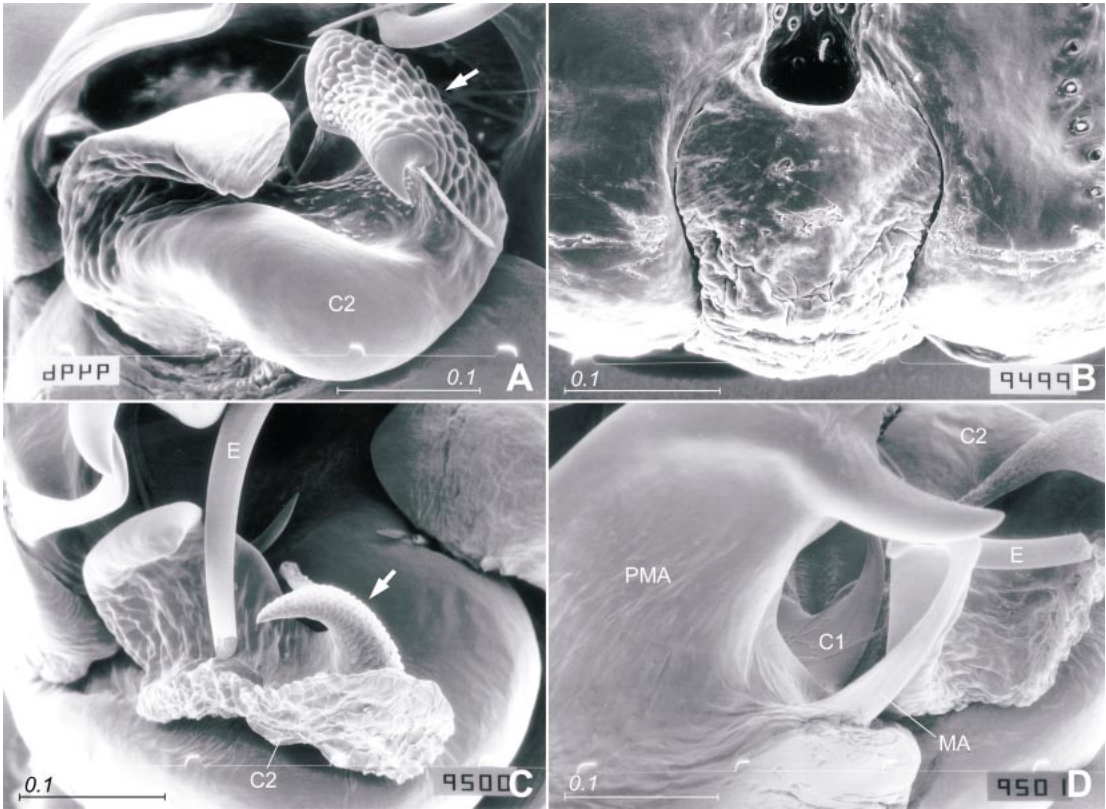


Fig. 111. **A.** *Tomopisthes pusillus* (Nicolet), right male copulatory bulb (inverted), detail of secondary conductor, apical view: arrow points to regularly disposed teeth (Neuquén, Ortiz Basualdo). **B–D.** *Araiya pallida* (Tullgren). **B.** Epigyne, ventral view (Chubut, Lago Verde). **C.** Male copulatory bulb, apical view (Neuquén, Quettrihué): arrow points to regularly disposed teeth. **D.** Same, retrolateral view. (C1 = primary conductor; C2 = secondary conductor; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

(IG 19736, IRSN). **Región IX (Araucanía): Malleco:** Cordillera de Las Raíces, 1600–1800 m, 13–18.II.1980, L. Peña, 1 ♀ (AMNH); 15 km W Victoria, 365 m, wet forest, 26.I.1985, N. Platnick and O. Francke, 1 ♀ (AMNH); Malalcahuello, 9–15.XII.1985, L. Peña, 5 ♀ (AMNH); Nahuelbuta Natl. Park, 1200 m, 23.I.1951, Ross and Michelbacher, 1 ♂ 2 ♀ (CAS), 1300 m, 1–6.II.1979, L. Peña, 1 ♀ (AMNH), 13.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1 ♀ (photo MJR 846–848), 3 ♀ penultimates (AMNH); Cordillera Nahuelbuta, I.1959, L. Peña, 1 ♀ 1 immature (IRSN 19736); Crest of Cordillera Nahuelbuta (W of Angol), 13.I.1951, Ross and Michelbacher, 1 ♀ (CAS). **Cautín:** 10 km S Pucón, Volcán Villarrica Natl. Park, FIT, 900 m, *Nothofagus* grove on ash,

15.XII.1984–10.II.85, S. and J. Peck, 1 ♀ (AMNH); 15 km NE Villarrica, Flor del Lago, 300 m, 2 FITS, *Nothofagus* forest, 14.XII.1984–10.II.1985, S. and J. Peck, 1 ♂ (AMNH); Flor del Lago Ranch, Villarrica, Polo Field, 39°12.300'S, 72°08.367'W, 282 m, canopy fogging GT *Nothofagus obliqua* roble, 13.XII.2001, Arias et al., 1 ♂ 3 ♀ 20 immatures (UCB), 1 ♀ (AMNH), 1 ♀ (MACN). **Región X (Los Lagos): Osorno:** La Pelada Chica, E El Mirador, W La Unión, 1–2.III.1987, L. Peña, 1 ♀ (AMNH); Puyehue Natl. Park: Aguas Calientes, 500 m, 2–5.V.1988, L. Peña, 1 ♀ (AMNH), 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1 ♀ 1 immature (MHNS); 600 m, Malaise, *Nothofagus* forest, 18.XII.1984–8.II.1985, S. and J. Peck, 2 ♀

TABLE 25
Synapomorphies of *Araiya* and Terminals

<i>Araiya</i> (clade 139)	
red bands on carapace (2):	absent → present
tibia I sinuous (28):	absent → present
shape relic C1 (93):	thin, rounded → acute
spine metatarsus IV, v x-p1-x (189):	present → absent
spine metatarsus IV, v x-r1-x (190):	present → absent
<i>A. coccinea</i>	
epigynal semicircular ridges (103):	absent → present
<i>A. pallida</i>	
spine metatarsus I, d p1-x (144):	absent → present

(AMNH); Anticura, 4.1 km E Anticura, 430 m, trap site 662, window trap, valdivian rainforest, 19–26.XII.1982, A. Newton and M. Thayer, 3 ♀ (AMNH); Antillanca rd., 470–720 m, valdivian rainforest, screen-sweeping at dusk, 18–24.XII.1982, A. Newton and M. Thayer, 1 ♀ (AMNH); La Picada 450 m, NW Volcán Osorno, 15–20.I.1980, L.E. Peña, 1 ♀ (AMNH); 10 km E Puyehue, 24.I.1951, Ross and Michelbacher, 1 ♀ (CAS); 20 km E Puyehue, 26.I.1951, Ross and Michelbacher, 2 ♀ (CAS). **Llanquihue:** Puerto Montt, Río Blanco, 24–19.I.1983, G. Arriagada, 2 immatures (MHNS 718). **Chiloé:** Isla de Chiloé: Chepu, TC 663, 31.I.2001, T. Cekalovic, 1 ♀ (AMNH); Huequetrumao, 27.XII.1981, L.E. Peña, 1 ♀ (AMNH). **Región XI (Ibáñez del Campo): Aisén:** Puerto Aisén, XI.1985, L. Peña, 1 ♀ (AMNH); Río Cisnes, 1–28.II.1961, L. Peña, 1 ♀ (IRSN IG23077). *Mistaken Locality:* Prov. Santiago, Malleco, XI.1979, L.E. Peña, 1 ♀ (AMNH) (see Ramírez, 1995b: 83).

ARAIYA, NEW GENUS

Table 25

TYPE SPECIES: *Gayenna pallida* Tullgren.

DIAGNOSIS: Resembles *Tomopisthes* in having regularly disposed teeth on the male secondary conductor, but can be distinguished by having reddish lateral bands on the carapace and sinuous anterior tibiae in both sexes.

ETYMOLOGY: The generic name is an arbitrary combination of letters; gender is feminine.

DESCRIPTION: Color bright, yellow or red,

with lateral reddish bands on carapace. Chelicerae unmodified, with three teeth on pro-marginal, two on retromarginal. Carapace slightly wider posteriorly in males. Legs I and II spinose, anterior tibiae sinuous in both sexes. Male palp with short tibia, width/length about 0.85. Embolus short, thick, not associated with canal on conductor, basal process thick, rounded. Paramedian apophysis elongate, heavily sclerotized. Secondary conductor not fused to anterior margin of tegulum, ending in curved beak, covered by regularly disposed denticles pointing backward; canal restricted to tip; retrolateral portion (displaced apically) concave, projecting. Primary conductor present, small. Epigyne with lateral lobes separate. Spermathecae heavily sclerotized, fused in part to copulatory ducts. Ducts of accessory bulbs long, slightly converging.

DISTRIBUTION: Forests in southern Chile and Argentina.

COMPOSITION: Two species here included.

Araiya pallida (Tullgren),
new combination

Figures 111B–D, 112A, 113

Gayenna pallida Tullgren, 1902: 64 (female holotype from Chile, Río Aisén Valley, I.1897, P. Dusén coll., in NRS, examined).

DIAGNOSIS: Distinguished from *A. coccinea* by having a narrow epigynal anterior pouch, and shorter, sinuous male paramedian apophysis.

FEMALE (holotype, measurements of specimen from Chaitén): Total length 5.85. Carapace length 2.43, width 1.90, wider on legs II–III. Length of tibia/metatarsus: I, 1.90/1.53; II, 1.63/1.37; III, 1.28/1.18; IV, 1.58/1.58. Palpal tarsus length 0.78. Chelicerae with two teeth on retromarginal. Sternum length 1.25, width 0.98. Spines: leg I (fig. 112A), femur d 1–1–1, p 0-0-1-d1r, r d1ap; tibia v 2–2–2, p 1-d1-0-1-0, r d1–1; metatarsus v 2bas, p and r 1–0, d p1. II, femur d 1–1–1, p and r d1ap; tibia v 2–2–2, p and r d1–1; metatarsus = I. III, femur = II; patella r d1; tibia v p1-p1–2, p and r 1–1, d r1-0-1-0; metatarsus v 2–0–2, p and r 1–1, d 0-p1–2. IV, femur = II; patella r d1; tibia and metatarsus = III. Abdomen length 3.46, width 2.39, spiracle–epigastrium 1.67, spiracle–

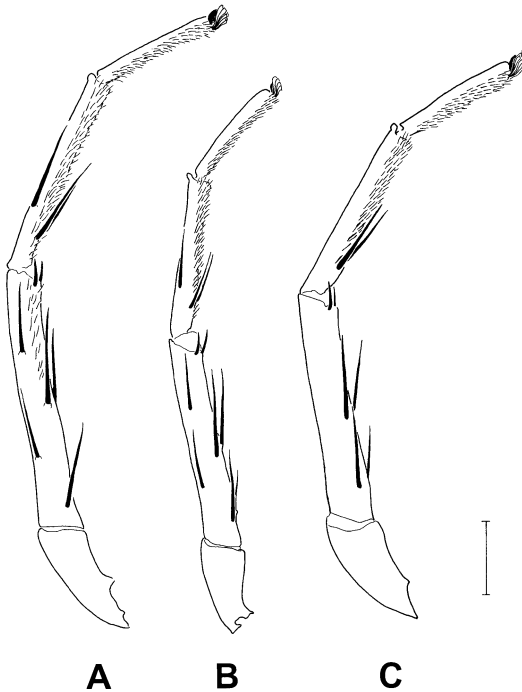


Fig. 112. Left female leg I, prolateral view. **A.** *Araiya pallida* (Tullgren) (Chaitén, Palena). **B.** *Araiya coccinea* (Simon) (Camerón, Magallanes). **C.** *Tomopisthes pusillus* (Nicolet) (Neuquén, Ortiz Basualdo). Scale bar = 0.5 mm.

spinnerets 0.43. Color: carapace yellow with reddish sides. Legs, sternum, mouthparts yellow. Abdomen yellow with underlying white guanine reticulum, dorsum with four red chevrons on posterior half. Venter pale. Epigyne (figs. 111B, 113F–H): anterior pouch with deep cavity, lateral lobes separate. Copulatory ducts short. Ducts of accessory bulbs slightly converging.

MALE (Chaitén, fig. 113A): Total length 4.65. Carapace length 2.17, width 1.77. Length of tibia/metatarsus: I, 3.17/2.53; II, 2.27/1.83; III, 1.57/1.47; IV, 1.83/1.83. Chelicerae unmodified, slightly smaller than those of female. Sternum length 1.08, width 0.92. Spines as in female, except: leg I, patella r d1, d 1–0–1; tibia p and r 1–d1–1–0, d r1–0–1–0. **II**, patella and tibia = I. **III**, patella = I; metatarsus r d1–1–0–1. **IV**, patella = I; metatarsus = III. Abdomen length 2.43, width 1.43, spiracle–epigastrium 1.23, spiracle–spinnerets 0.43. Color: carapace reddish brown, pattern as in *A. coccinea*. Legs

reddish brown, trochanters, coxae, and base of femora yellow. Sternum yellow with reddish spots in front of coxae. Abdomen yellow, with underlying patches of guanine reticulum, except on ventral band; dorsum with violet area covering anterior two thirds, lightening posteriorly, continued in several diffuse chevrons. Palp (figs. 111C, D, 113D, E): tibia width/length 0.83. Embolus short, thick, not associated with canal on secondary conductor, basal process thick, rounded. Paramedian apophysis sinuous in ventral view, with prolateral protuberance before tip. Primary conductor curved, triangular (fig. 111D). Anterior border of secondary conductor wide, projecting, rugose; retrolateral portion with basal rugose projection.

VARIABILITY: Males may have dorsum of abdomen dark violet at anterior half, becoming paler posteriorly, or yellow with red a pattern, sometimes a posterior violet area (fig. 113A–C). Females may have the abdomen totally yellow, or with diffuse reddish pattern, or a dark violet posterior dorsal patch fused to the chevrons. Spines: metatarsi III, IV, p and r d1–1–1 or 0–1–1.

NATURAL HISTORY: This species makes retreats on foliage.

DISTRIBUTION: Southern forest in Argentina, from Neuquén to Chubut provinces, and Chile, from Valdivia to Aisén provinces.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Neuquén:** Lago Nahuel Huapi, Península Quetrihué, 23.I.1985, M. Ramírez, 1♂ 1♀ (MACN-Ar); Lago Ortiz Basualdo, retreat on leaves of *Chusquea* sp., I.1990, M. Ramírez, 3♀ (MACN-Ar). **Río Negro:** San Carlos de Bariloche, Colonia Suiza, 810 m, 9.XI.1978, Misión Científica Danesa, 1♂ (ZMK). **Chubut:** Los Alerces Natl. Park: Lago Menéndez, I.1990, M. Ramírez, 1♀ (MACN-Ar); Lago Verde, II.1985, M. Ramírez, 1♀ (MACN-Ar); I.1990, M. Ramírez, 1♀ (MACN-Ar). **CHILE: Región X (Los Lagos): Valdivia:** Las Lajas, W La Unión, 13–15.I.1991, L. Peña, 1♀ (AMNH). **Osorno:** 10 km E Puyehue, 24.I.1951, Ross and Michelbacher, 1♀ (CAS); Pucatrihue, 25–31.I.1978, L. Peña, 1♀ (AMNH). **Llanquihue:** Correntoso, XII.1969, L. Peña, 2♀ (MCZ); Chamisa, 13.XII.1968, L. Peña, 1♀ (MCZ). **Chiloé:** Arroyo Cole Cole, 25 km N Cucao, 8–11.II.1991, M. Ramírez, 1♂

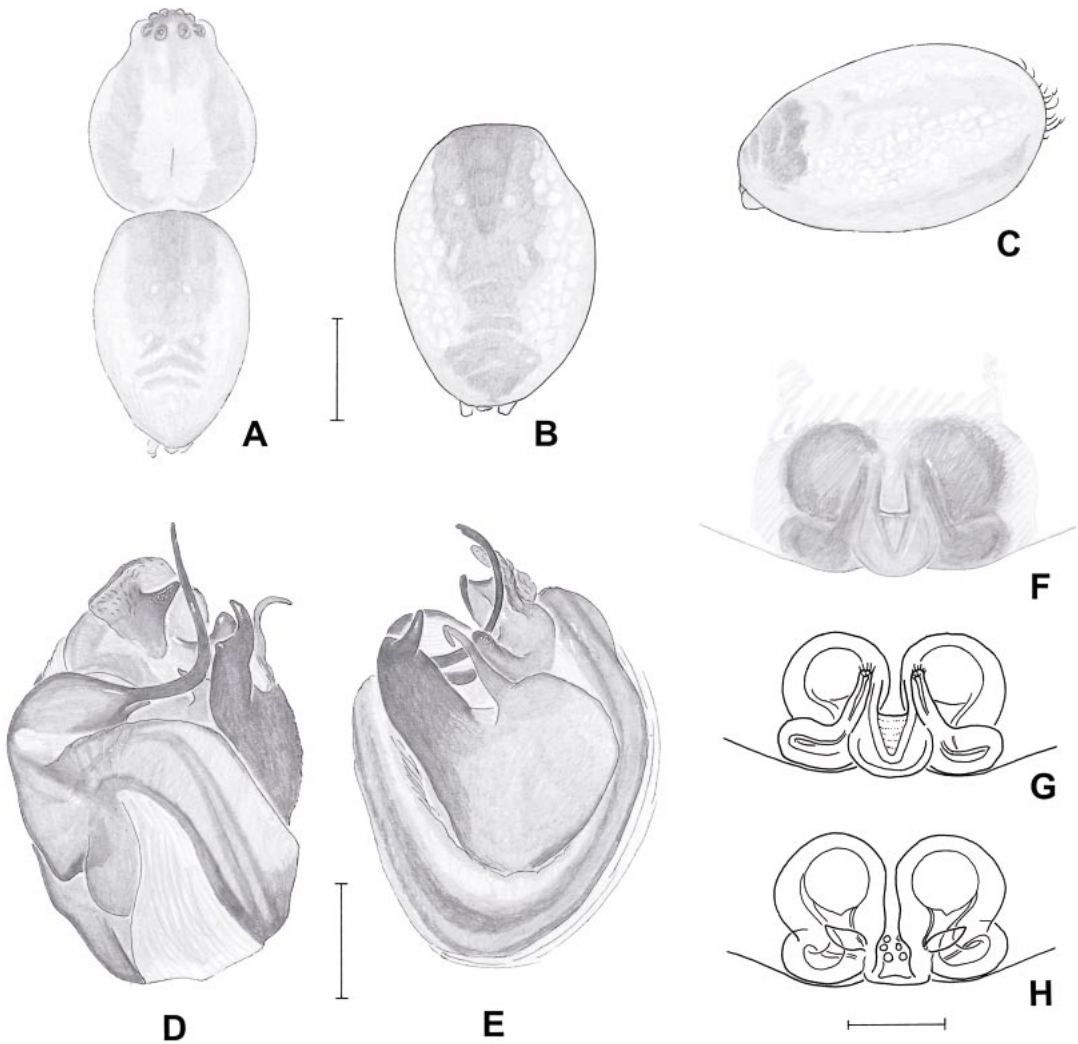


Fig. 113. *Araiya pallida* (Tullgren). **A.** Male (Chaitén, Palena). **B.** Male abdomen (Chiloó, Terao). **C.** Male abdomen (Neuquén, Ortiz Basualdo). **D.** Male copulatory bulb, ventral view (Chaitén, Palena). **E.** Same, retrolateral view. **F.** Epigyne, ventral view (holotype). **G.** Same, cleared. **H.** Same, dorsal view. Scale bars = A–C, 1 mm; D–H, 0.2 mm.

(MACN-Ar); Chepu, 30.I.1981, L. Peña, 1 ♀ (AMNH); Dalcahue, 3.IV.1968, L. Peña, 1 ♀ (MCZ); Dalcahue, NE Castro, 1.II.1981, L. Peña, 2 ♀ (AMNH); El Pozuelo, 1.5 km NE Butalcura, 2.II.2001, T. Cekalovic, 1 ♀ (AMNH); Huequetrumao, 27.XII.1981, L.E. Peña, 1 ♀ (AMNH); Lago Coluco, S Ancud, 26.I.1981, L. Peña, 1 ♀ (AMNH); Terao, S Chonchi, 18–21.I.1990, L. Peña, 1 ♂ (AMNH). **Palena:** Chaitén, XII.1985, L.E. Peña, 7 ♂ 8 ♀ (AMNH). **Región XI (Ibáñez**

del Campo): Aisén: Puerto Aisén, XI.1985, L. Peña, 1 ♀ penultimate (AMNH).

Araiya coccinea (Simon),
new combination

Figures 112B, 114

Gayenna coccinea Simon, 1884: 131 (female holotype from Chile, Cabo de Hornos, in MHNP 6673, examined), 1887: E26, 1897a: 91, 1902: 30.

Gayenna stellata Simon, 1884: 131 (female lecto-

type from Chile, Cabo de Hornos, and male paralectotype misidentified [see *Sanogasta maculosa*] here designated, in MHNP 6676, examined), 1887: E37, 1897a: 91, 94. NEW SYNONYMY.

SYNONYMY: The types of the species synonymized were examined, together with other specimens from the same area; no relevant differences were found. Both names appeared in the same publication and are equivalent in terms of stability; I decided synonymy according to page priority.

DIAGNOSIS: Distinguished from *A. pallida* by having a very wide epigynal anterior pouch, not delimiting a cavity, and a longer, narrower paramedian apophysis.

FEMALE (holotype, measurements of specimen from Ushuaia, Monte Olivia): Total length 4.65. Carapace length 2.03, width 1.62, wider on legs II–III. Length of tibia/metatarsus: I, 1.47/1.05; II, 1.38/1.17; III, 1.08/1.00; IV, 1.30/1.32. Palpal tarsus length 0.70. Chelicerae with two teeth on retromargin. Sternum length 1.05, width 0.90. Spines: leg I (fig. 112B), femur d 1–1–1, p 0–0–1–d1, r d1ap; tibia v 2–2–2, p 1–1 or 1–(1–d1), r 1–1; metatarsus v 2bas, p and r d1–0. II, femur d 1–1–1, p and r d1ap; tibia v 2–2–2, p and r 1–1; metatarsus v 2bas, p and r d1–0, d p1–0. III, femur = II; patella r d1; tibia v p1–p1–2, p and r d1–1, d r1–0–1–0; metatarsus v 2–0–2, p and r 0–1–0–1, d 0–p1–2. IV, femur = II; patella and tibia = III; metatarsus v 2–0–2, p 1–1, r d1–1–1, d 0–p1–2. Abdomen length 2.65, width 1.90, spiracle–epigastrium 1.05, spiracle–spinnerets 0.30. Color: carapace reddish, with yellow margins and yellow median band from thoracic groove to posterior margin. Legs, sternum, mouthparts yellow. Abdomen yellow with red pattern at sides, cardiac area, and several chevrons extending to anal tubercle. Venter yellow, with some reddish spots anterior of and at sides of tracheal spiracle. Epigyne (fig. 114E, F): anterior pouch very wide, without cavity, V-shaped, reaching posterior margin. Lateral lobes separate. Spermathecae heavily sclerotized, fused in part to copulatory ducts. Ducts of accessory bulbs long, slightly converging.

MALE (Isla de los Estados, MACN-Ar 9827, fig. 114A): Total length 5.05. Carapace length 2.47, width 2.03. Length of tibia/metatarsus: I, 3.72/2.93; II, 2.77/2.27; III,

1.85/1.37; IV, 2.17/2.17. Chelicerae unmodified, slightly smaller than those of female. Sternum length 1.20, width 0.98. Spines as in female, except: leg I, patella r d1, d 1ap; tibia p 1–1, r 1–d1–1–0, d r1–0–1–0. II, patella and tibia = I. III, patella = I; tibia v p1–2–2. IV, patella = I; tibia v p1–2–2; metatarsus r d1–1–1. Abdomen length 2.70, width 1.73, spiracle–epigastrium 1.05, spiracle–spinnerets 0.33. Color as in female but darker, with two whitish spots at sides of cardiac area. Palp (fig. 114B–D): tibia short, width/length 0.86. Embolus short, thick, not associated with canal of secondary conductor; basal process thick, rounded. Paramedian apophysis long, thin, directed apically. Primary conductor short, concave, heavily sclerotized. Secondary conductor rotated, retrolateral portion (as seen in other Gayennini) placed apical, concave, projecting, prolateral portion placed basal, both portions separated by membranous area.

VARIABILITY: The intensity of body color is quite variable. One male with dorsum violet uniform, another similar to the female. Female spines: III, tibia v 0–p1–2.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Southern forests in Chile, south of Malleco province; in Argentina only known from Tierra del Fuego.

OTHER MATERIAL EXAMINED: ARGENTINA: Tierra del Fuego: Bahía Aguirre, 12.II.1949, S. Núñez, 1♂ (MACN-Ar 2818); Isla de los Estados, XII.1970, A. Bachmann, 1♂ (MACN-Ar 9827); Lapataia, I.1943, J.M. Viana, 1♀ (MACN-Ar 2589); Ushuaia, Monte Olivia, XII.1989, A. González, 1♀ (MLP). **CHILE: Región IX (Araucanía): Malleco:** Cordillera Nahuelbuta, 1300–1400 m, 6–12.I.1982, L. Peña, 1♀ (AMNH); La Selva, W Temuco, NW Nueva Imperial, 700 m, 9–12.XII.1981, L.E. Peña, 1♀ penultimate (AMNH). **Región X (Los Lagos): Osorno:** La Picada 450 m, NW Volcán Osorno, 15–20.I.1980, L.E. Peña, 1♀ (AMNH). **Llanquihue:** Cruce a Maullín, 13.II.1993, T. Cekalovic, 1♀ (AMNH); Los Muermos, S. Chile, 19.I.1951, Ross, Michelbacher, 1♀ (CAS); 20.I.1951, 1♀ (CAS); Puerto Montt, Río Blanco, 24–19.I.1983, G. Arriagada, 2♀ (MHNS 718). **Chiloé:** Dalcahue, II.1967, L. Peña, 1♀ (MCZ); 3.IV.1967, L. Peña, 1♀ (MCZ); Puerto Carmen, W Quellón, 15–

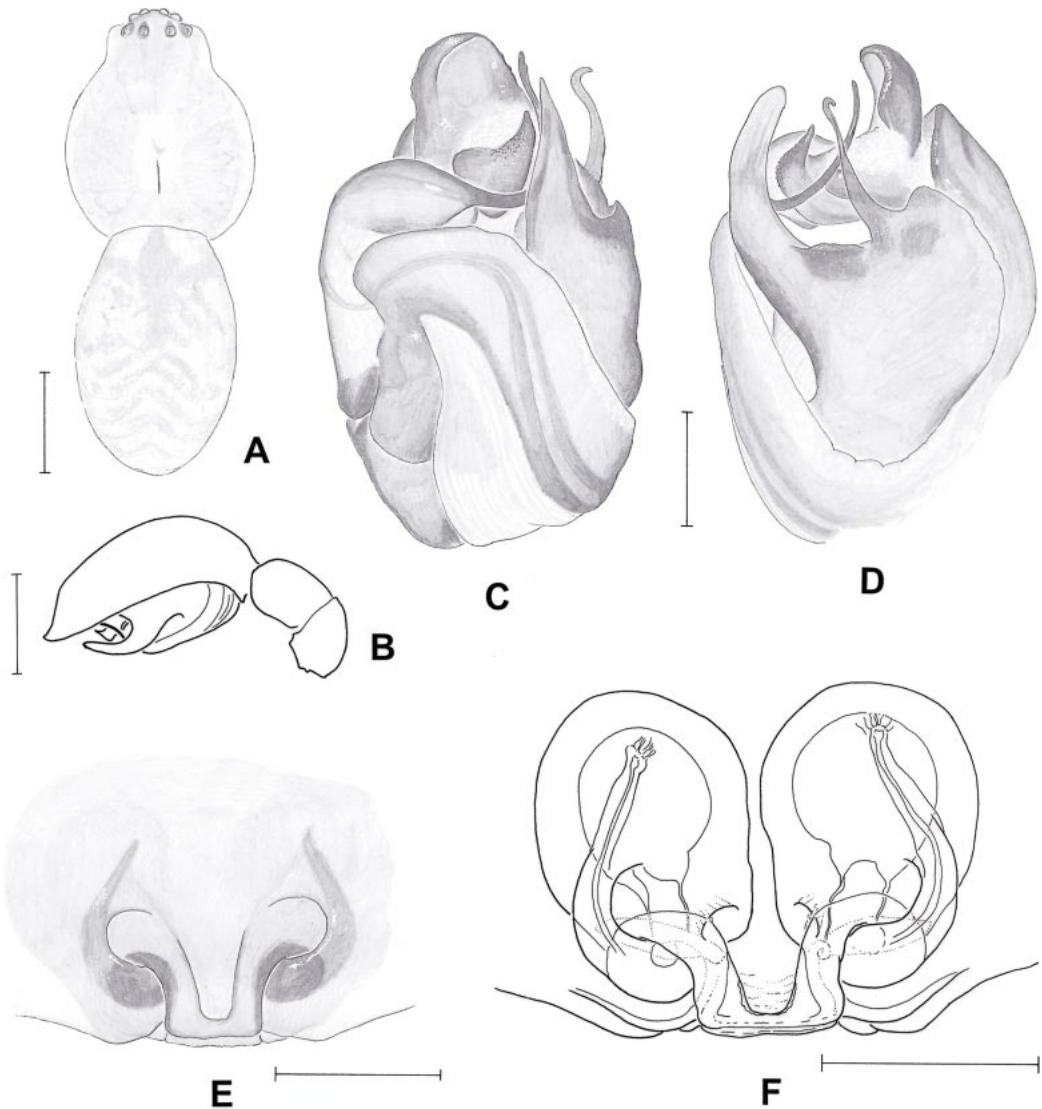


Fig. 114. *Araiya coccinea* (Simon). **A.** Male (Tierra del Fuego, Isla de los Estados). **B.** Same, palp, retrolateral view. **C.** Male copulatory bulb, ventral view (Tierra del Fuego, Bahía Aguirre). **D.** Same, retrolateral view. **E.** Epigyne, ventral view (Ushuaia, Monte Olivia). **F.** Same, cleared. Scale bars = A, 1 mm; B, 0.5 mm; C, D, 0.5 mm; E, F, 0.2 mm.

19.III.1981, L. Peña, 1 ♀ (AMNH). **Región XII (Magallanes y Antártica): Magallanes:** Camerón: 14–17.XI.1960, L. Peña, 1 ♀, 2 ♂ 3 ♀ penultimates (MCZ).

OXYSOMA NICOLET

Table 26

Oxysoma Nicolet, 1849: 511 (type species *Oxysoma punctatum* Nicolet, 1849, subsequently designated by Simon, 1897a: 100).

Aporatea Simon, 1897a: 199 (type species by original designation *Aporatea valdiviensis* Simon, 1897). Gerschman and Schiapelli, 1975: 184. Ramírez, 1995a: 381. Synonymized by Ramírez, 1995b: 88.

NOTE: The concept that Simon had of *Oxysoma* is approximately coincident with that of *Arachosia* and *Tasata* as proposed here, while he described true *Oxysoma* as *Aporatea* (see Introduction).

TABLE 26

Synapomorphies of *Oxysoma* and Internal Clades

Oxysoma (clade 143)
 denticles C2r (90): absent → present
 CD *Oxysoma* type (121): absent → present

Clade 141
 ocular area protruded (10): absent → present
 ratio AME/ALE (15): AME < ALE → AME minute
 PMA *Oxysoma* type (72): absent → present
 C1 (75): present → absent

Clade 142
 dark ventral stripe (1): absent → present
 lumen of APmf (107): simple → double

O. saccatum
 male chelicerae (17): strong → smaller
 C2 membranous area prolateral to canal (86): absent → present
 shape relic C1 (93): thin, rounded → conical
 epigynal semicircular ridges (103): absent → present
 ducts AB (123): long → short
 spine tibia III, v r1-x-x (161): absent → present
 spine metatarsus III, d x-p1-x (177): present → absent
 spine metatarsus IV, p d1-x-x (191): present → absent

O. longiventre
 bent thick setae on cymbium (51): absent → present
 Position of APmf (105): advanced → close

O. itamezinho
 posterior eye row strongly procurved (13): absent → present
 cymbial retrolateral basal notch (52): absent → present
 C2 membranous area prolateral to canal (86): absent → present
 spines on chelicerae (129): absent → present
 spine metatarsus III, r d1-x-x (174): present → absent

O. punctatum
 male chelicerae (17): strong → smaller
 sclerotized triangle to MA (63): absent → present
 wide membrane separating C2 (80): absent → present
 spine tibia III, v r1-x-x (161): absent → present
 spine metatarsus III, p x-1-x (172): present → absent
 spine metatarsus III, r x-1-x (175): present → absent

DIAGNOSIS: Resembles some *Tasata* in having a pale, elongate body and pattern of small dark dots, but can be distinguished by having a characteristic course in the copulatory ducts: they arise close to each other, then diverge backward, describing a curve in the epigastric fold, converging again near their connection with the spermathecae (figs. 118D, 120E, 123B).

DESCRIPTION: Color yellowish with dark small dots, sometimes with dark or white patches (fig. 115). Abdomen elongate (except *O. saccatum*). Chelicerae with three teeth on promargin, two on retromargin. Male palp with secondary conductor well developed, complex, not fused to anterior margin of tegulum; prolateral portion with rounded, flattened lobe directed backward, canal ending in sharp, curved tip (except in *O. itamezinho*, canal apparently ending on retrolateral portion). Epigyne with anterior pouch of variable shape; copulatory ducts with characteristic course (see Diagnosis).

DISTRIBUTION: Three species from southern forests in Argentina and Chile, one from *Araucaria* forest in Southeastern Brazil.

COMPOSITION: At least the four species here included. Some Chilean forms quite similar to *O. longiventre* may belong to a cluster of closely related species.

NOMINA DUBIA: *Oxysoma auratum* Nicolet, 1849 (type should be in MHNP, not found); *Oxysoma delfini* Simon, 1905 (immature female holotype presumably in MHNP, not found; see also Note under *Monapia dilaticollis*).

Oxysoma punctatum Nicolet

Figures 14A, 61F, 115A, B, 116A–C, 117, 118A–D, 119A

Oxysoma punctata Nicolet, 1849: 513 (25 immature syntypes from Chile, no specific locality, in MHNP 4120, 4122, 4124, 4125, examined).

Oxysoma punctipes Nicolet, 1849: 512 (female lectotype, two immatures and a specimen without abdomen paralectotypes here designated, from Chile, no specific locality, in MHNP, examined). NEW SYNONYMY.

Oxysoma aurata Nicolet, 1849: 513 (female lectotype, a female and two immature paralectotypes here designated, from Chile, no specific locality, in MHNP, examined). NEW SYNONYMY.

Oxysoma longipes Nicolet, 1849: 514 (female lectotype, three male and one immature paralectotypes here designated, from Chile, no specific locality, in MHNP, examined). NEW SYNONYMY.

Oxysoma lineata Nicolet, 1849: 515 (male lectotype and four immature paralectotypes here designated, from Chile, no specific locality, in MHNP, examined). NEW SYNONYMY.

Aporatea valdiviensis Simon, 1897a: 199 (female holotype from Chile, Valdivia, in MHNP 18248, examined). Tullgren, 1902: 56. Gersch-

man and Schiapelli, 1975: 184. Zapfe, 1951: 4.
NEW SYNONYMY.

Oxysoma lineatum (Nicolet, not Tullgren): Bonnet, 1958: 3269.

Oxysoma punctatum: Bonnet, 1958: 3269.

Oxysoma valdiviensis: Ramírez, 1995b: 88.

Oxysoma valdiviense: Platnick, 1997: 693 (emendation of *O. valdiviensis*).

SYNONYMY: The types of the species synonymized were examined, together with numerous specimens; no relevant differences were found. The synonymies here proposed would not surprise Nicolet, who stated (1849: 515): "En general, las Araneidas de este género son tan parecidas que es difícil el distinguirlas, y aun es probable que muchas sean sólo variedades unas de otras." (In general, the Araneids of this genus are so similar that they are difficult to distinguish, and it is even probable that many are only varieties of the others.)

DIAGNOSIS: This species resembles other *Oxysoma* and *Tasata* in having a pale, elongate body with pattern of small dark dots, but can be distinguished by having anterior epigynal ridges (fig. 118D), a narrow anterior pouch, a membranous area between epigyne and epigastric furrow, and a thin, C-shaped, curved paramedian apophysis (fig. 116B). Immatures differ from those of the similar and sympatric species *Tasata chiloensis* by having a longer abdomen.

FEMALE (Contulmo): Total length 9.30. Carapace flattened, thoracic groove not evident, in depressed area, length 3.17, width 2.30, wider on legs II–III. Length of tibia/metatarsus: I, 5.90/4.65; II, 4.26/3.50; III, 2.47/2.20; IV, 3.72/3.65. Palpal tarsus length 1.37. Chelicerae with two teeth on retromargin. Sternum length 1.73, width 1.23. Spines: leg I, femur d 1–1–1, p 0–d1–1–d1, r 0–d1–d1; tibia v 0–2–2–2, p and r 0–d1–1, d r1–1 (all basals displaced apically); metatarsus v 2bas, p and r d1bas, d 0–p1–0–2. **II = I. III**, femur = I; patella 0; tibia = I; metatarsus v 2–p1–0 and an apical group of hairs, p and r d1–0–1, d 0–p1–2. **IV**, femur d 1–1–1, p 0–d1–1–d1, r d1ap; patella 0; tibia = I; metatarsus v 2–2–0 and an apical group of hairs, p and r d1–1–1, d 0–p1–2. Abdomen length 6.65, width 2.26, spiracle–epigastrium 3.17, spiracle–spinnerets 1.83. Color (cf. fig. 115A, B): yellow with dark dots, grayish

spots. Venter yellow. Spinnerets as in figure 117B–D. Epigyne (fig. 117A, 118D): anterior pouch forming circular or oval opening, with margins prolonged anteriorly, parallel, close to each other; lumen double, small. Median field elongate, narrow. Lateral lobes fused behind median field, continued in unsclerotized area, wrinkled, forming posterior margin of epigyne. Anterior margin of epigyne with two arched ridges limiting depressed areas. Copulatory ducts long, sinuous, describing internal posterior ample loop, on epigastric fold.

MALE (Contulmo): Total length 9.18. Carapace relatively wider than that of female, length 3.17, width 2.43. Length of tibia/metatarsus: I, 7.05/6.30; II, 5.05/4.30; III, 2.97/2.50; IV, 4.26/4.12. Chelicerae slightly smaller than those of female. Sternum length 1.67, width 1.17. Spines as in female, except patellae I–IV, r d1, d 1–0–1. Abdomen length 5.60, width 1.75, spiracle–epigastrium 2.40, spiracle–spinnerets 1.73. Color: similar to female, but darker. Palp (figs. 61F, 116A–C, 118A–C): tibia long, width/length 0.47, cymbium relatively large, retrolateral margin with median thick protuberance (fig. 118C). Tegulum relatively narrow. Embolus long, thin, base closely fitted to secondary conductor, basal process very small (fig. 116C). Median apophysis very long, thin, sinuous. Base of paramedian apophysis large, heavily sclerotized, with globose protuberance, forming hollow under tegulum; tip thin, elongate, recurved. Triangular sclerotized area runs from sperm duct to base of median apophysis. Primary conductor absent. Secondary conductor well developed, complex, anterior margin wide, flattened, striate, separated from anterior margin of tegulum by membranous area, much wider on retrolateral side; retrolateral portion continued in thin, weakly sclerotized area, covered by thin denticles.

VARIABILITY: Dorsal abdominal pattern extremely variable (compare fig. 115A, B), may be white uniform, with a few small spots (usually the anterior dark dot remains), may have four dark spots in addition to anterior one, two parallel bands made of small dots, median dark stripe, large dark patch on anterior half plus two chevrons on posterior, and so on. Besides the dark dots, the legs may have some black spots. A few speci-

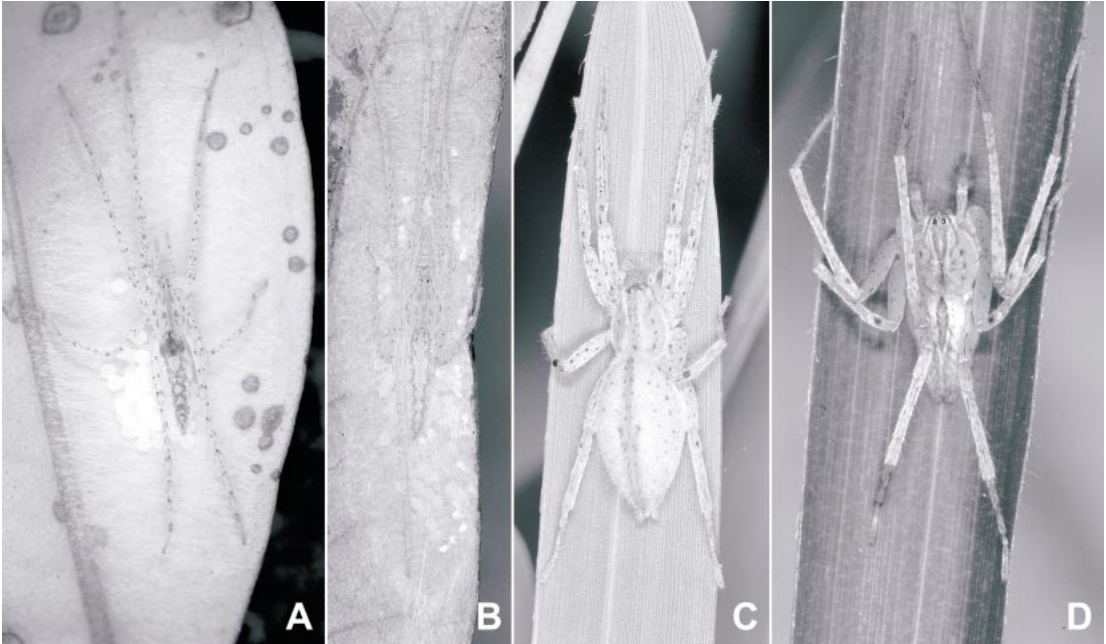


Fig. 115. *Oysoma* spp. **A, B.** *O. punctatum* Nicolet, female guarding eggsac. **A.** Osorno, Puyehue (photo by Gustavo Hormiga). **B.** Malleco, Contulmo (photo MJR 79). **C, D.** *O. longiventre* (Nicolet). **C.** Female from Ñuble, Recinto (photo MJR 32). **D.** Male from Malleco, Tolhuaca (photo MJR 926).

mens have a dark central patch on carapace. The size of the female abdomen varies widely according to their physiological state, those of ovigerous females are huge. Spines: metatarsus III, v 2bas.

NATURAL HISTORY: This species lives on foliage, preferably on “colihue” bamboos (*Chusquea* spp.), where they are quite cryptic. Females hide the eggsac with their own body (fig. 115A, B). Zapfe (1951) erroneously mentioned this species as an “ecological indicator” of bamboo leaf litter. Specimens were occasionally found in the extensive samples of leaf litter taken from localities where this species is common on foliage, obviously because the spiders jump from the foliage when severely disturbed.

DISTRIBUTION: Humid southern forests in Argentina, from Neuquén to Chubut, and Chile, from Curicó to Chiloé; an isolated record from Quintay, in Valparaíso, might indicate an interesting relict or a mislabeling (see also *Philisca hyadesi*).

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Neuquén:** Lanín Natl. Park: Hua Hum, I.1985, M. Ramírez, 1♂ (MACN-Ar); Lago

Lácar, 5 km E Hua Hum, 5.XI.1981, Nielsen and Karsholt, 1♀, 13 immatures (ZMK); Pucará, II.1961, M.E. Galiano, 3 immatures (MACN-Ar 5289), 1.II.1971, Schajovskoy, 4♂ (MACN-Ar 6445); XII.1973, S. Schajovskoy, 2♂ 3♀, 1♀ (MACN-Ar); II.1974, S. Schajovskoy, 1♂ (MACN-Ar 6813), 6 immatures (MACN-Ar), 1♂ (MACN-Ar 6814), 1♀ (MACN-Ar 6812); 750 m, 1.XII.1978, Misión Científica Danesa, 1♀ (ZMK); Nahuel Huapi Natl. Park: Puerto Blest, II.1986, M. Ramírez, 1♀ (MACN-Ar); 770 m, 22.XII.1981, Nielsen and Karsholt, 1♂ (ZMK); 22.XII.1978, Misión Científica Danesa, 1♀ penultimate (ZMK); 7–20.I.2000, L. Lopardo and A. Quaglino, 4 immatures (MACN-Ar); Lago Ortiz Basualdo, I.1990, M. Ramírez, 1♂ (MACN-Ar 9828). **Río Negro:** San Carlos de Bariloche, Colonia Suiza, 14.XII.1978, Misión Científica Danesa, 1♂ (ZMK); 810 m, 22.XI.1978, Misión Científica Danesa, 1 immature (ZMK). **Chubut:** Los Alerces Natl. Park: Lago Futalaufquen, I.1990, M.J. Ramírez, 1♀ 1 immature (MACN-Ar). **CHILE: Región V (Valparaíso): Valparaíso:** 80 km SE Quintay,

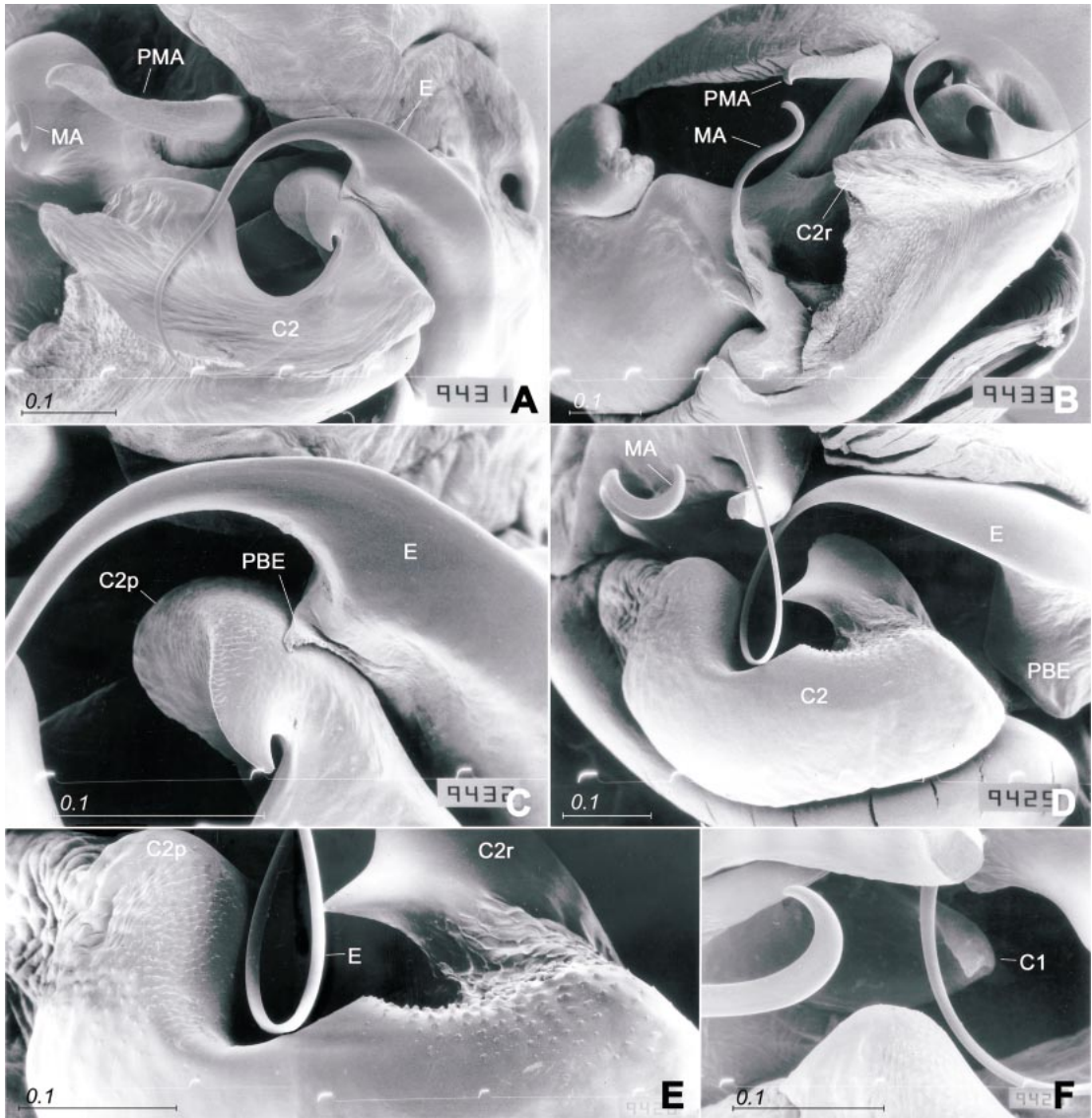


Fig. 116. *Oxysoma* spp., male copulatory bulb. **A–C.** *O. punctatum* Nicolet (Llanquihue, Alerce Andino). **A.** Apical view. **B.** Retrolateral-apical view. **C.** Detail, apical view. **D–F.** *O. longiventre* (Nicolet) (Neuquén, Lago Lácar). **D.** Apical view. **E.** Same, detail of secondary conductor. **F.** Apical-retrolateral view. (C1 = primary conductor; C2 = secondary conductor; C2p = prolatateral portion of C2; C2r = retrolateral portion of C2; E = embolus; MA = median apophysis; PBE = process on base of embolus; PMA = paramedian apophysis.)

33°12'S, 71°41'W, 150 m, 17.II.1967, E.I. Schlinger, 1 immature (CAS). **Región VII (Maule): Curicó:** Las Tablas, E Curicó, II.1985, L. Peña, 2♀ and many immatures (AMNH). **Talca:** Alto de Vilches, 17–24.X.1964, L. Peña, 2 immatures (MCZ); elev. 1180 m, 35°36'S, 71°04'W,

14.15.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♂, 1♂ 1♀ (AMNH); Gil de Vilches, 7.I.1989, M. Ramírez, 1♀ (MACN-Ar). **Cauquenes:** W Cauquenes, 350 m, 4.X.1983, 1♂ (AMNH); Reserva Nac. Los Ruiles, W Cauquenes, elev. 135 m, 35°50'S, 72°31'W, 15.XI.1993, N. Platnick,

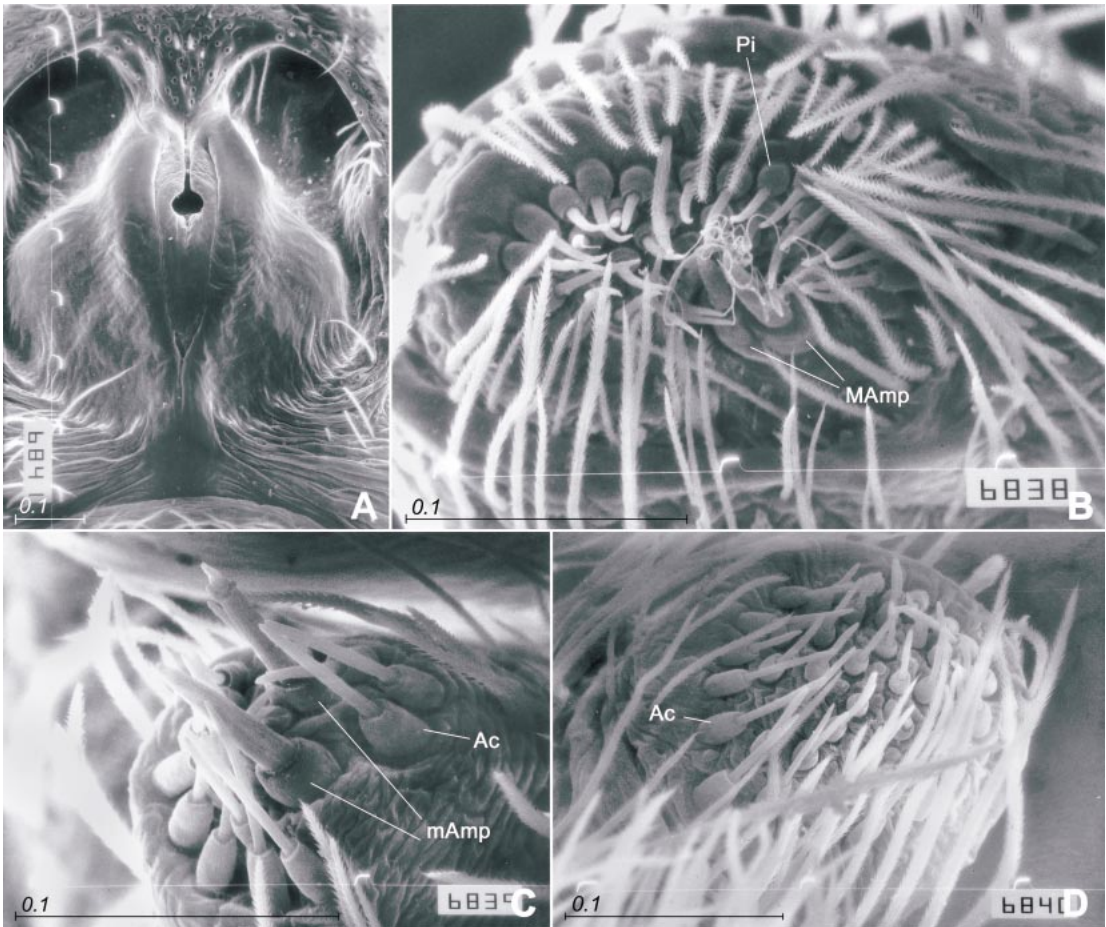
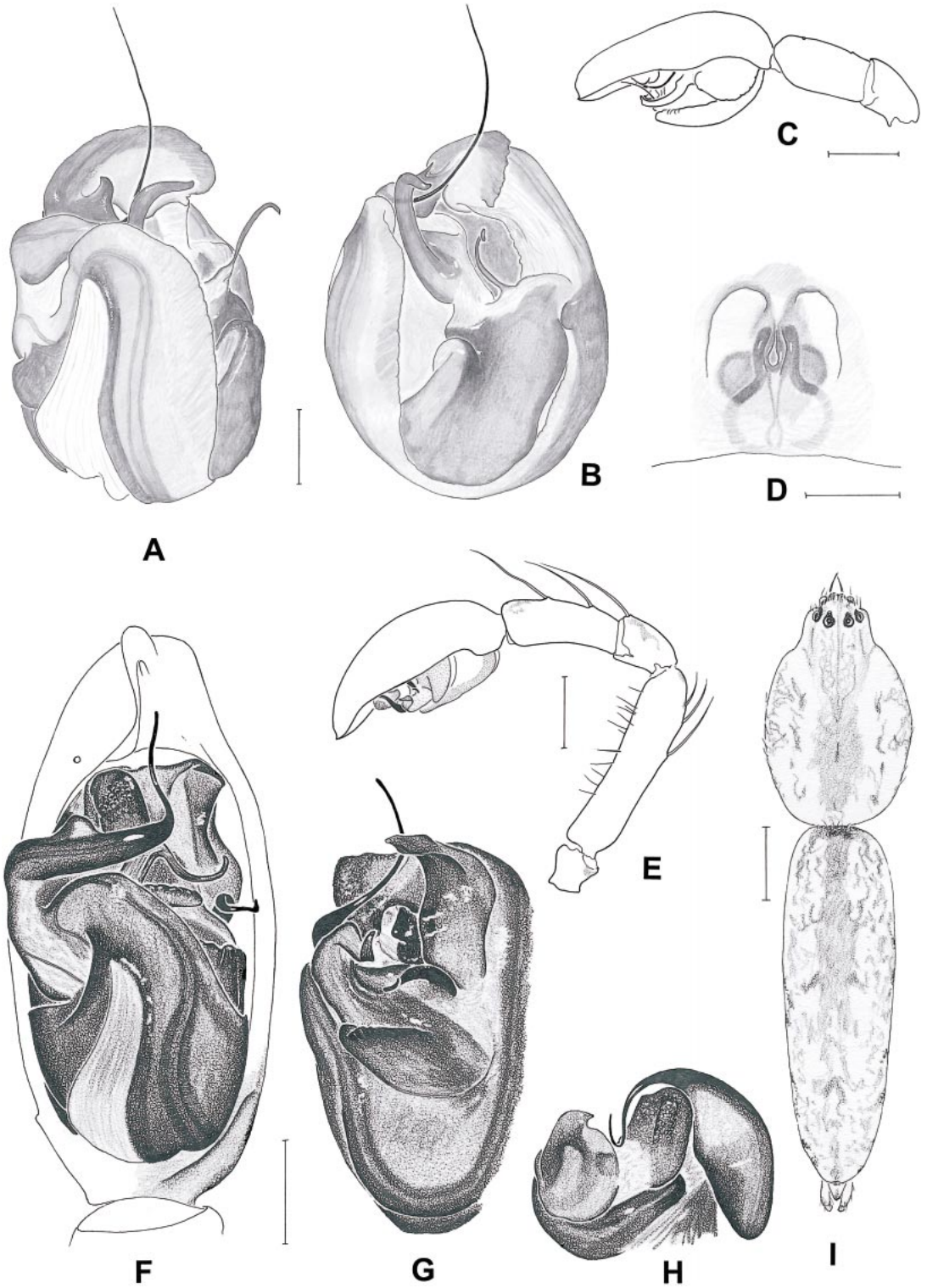


Fig. 117. *Oxsyoma punctatum* Nicolet, female (Llanquihue, Alerce Andino). **A.** Epigyne, ventral view. **B.** Right anterior lateral spinneret. **C.** Right posterior median spinneret. **D.** Left posterior lateral spinneret. (Ac = aciniform gland spigot; mAmp = minor ampullate gland spigot; MAmp = major ampullate gland spigot; Pi = piriform gland spigot.)

K. Catley, M. Ramírez, T. Allen, 1♂ 1♀ (AMNH); Tregualemu, 500 m, 7.XI.1993, L. Peña (AMNH); 50 m, 4–5.XI.1993, L. Peña, A. Ugarte, 2♂ 3 immatures (AMNH); 520 m, 6–7.XI.1993, L. Peña and A. Ugarte, 2♂ (AMNH). **Linares:** Fundo Malcho, Andes in Parral, 11–20.XI.1964, L. Peña, 4♀, 3 immatures (MCZ). **Región VIII (Biobío): Ñuble:** Punta El Zorro, 20.XII.1992, T. Cekalovic, 1♀ (AMNH). **Concepción:** Bosque de Ramuntcho, 14–16.X.1961, F. Jeldes and A. Archer, 1 immature (AMNH); 9.II.1992, Ramírez, Platnick, Goloboff, 1♀ (MACN-Ar), 1♀ (AMNH); road Chome-Ramuntcho, 8.XI.1996, T. Cekalovic, 1♂ (AMNH); Cerro

Caracol, Concepción, elev. 200 m, 36°51'S, 73°02'W, 17.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ 2♀ (AMNH); Estero Nonguén, 5.X.1996, T. Cekalovic, 1♀ (AMNH); Fundo El Manzano, 8.XI.1992, T. Cekalovic, 1♀ 1 immature (AMNH); Hualpén, 11.I.1989, M. Ramírez, 1♀, 2♀ (MACN-Ar, photographed); Patagual, 29.XI.1993, T. Cekalovic, TC-369, 1♀ (AMNH); Tomé, 8.X.1983, T. Cekalovic, 1♀ (AMNH). **Biobío:** El Manzano, nr. Contulmo, 15.XII.1985, L.E. Peña, 1♂ (AMNH); Caledonia, E Mulchen, 700 m, 10–15.II.1981, L.E. Peña, 1♀ 2 immatures (AMNH). **Región IX (Araucanía): Malle-**



co: 40 km W Angol, Nahuelbuta Natl. Park, FITS, 1200–1500 m, *Nothofagus/Araucaria* forest, 9.XII.1984–17.II.1985, S. and J. Peck, 1♂, 1♂ (AMNH); Monumento Natural Contulmo, 12.I.1989, M. Ramírez, 1♀ (MACN-Ar), 5♂ 9♀ (MACN-Ar 9829); mixed evergreen forest, 11.XII.1984–13.II.1985, S. and J. Peck, 1♂, 1♂ 1♀ (AMNH), 13.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH), 19–21.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 3♂ (MACN-Ar), 3♂ 1♀ (MHNS); Nahuelbuta Natl. Park, 1.II.1967, Ross and Michelbacher, 1 immature (CAS), 13.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH); Pata de Gallina, S Contulmo, 14.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH); 3 km W Victoria, FIT, 100 m, mixed *Nothofagus* forest, 13.XII.1984–12.II.1985, S. and J. Peck, 1♀ **Cautín:** Cerro Ñielol, Temuco, I.1989, M. Ramírez, 1♀ (MACN-Ar); Chacamo, NW Nueva Imperial, W Temuco, 16–24.II.1981, L.E. Peña, 1♀ and many immatures (AMNH); 15 km NE Villarrica, Flor del Lago, 300 m, 2 FITS, *Nothofagus* forest, 14.XII.1984–10.II.1985, S. and J. Peck, 1♂ (AMNH); 30 km NE Villarrica, 1–30.I.1965, L. Peña, 1♀ and many immatures (MCZ); NE Villarrica, 16–31.XII.1964, L. Peña, 3 immatures, 4 immatures (MCZ). **Región X (Los Lagos): Valdivia:** Puroolón, NW Panquipulli, 10.VI.1985, L.E. Peña, 2♀ 1 immature (AMNH); Valdivia, XI–XII.1982, E. Krahmer, 2♂ 1 immature (MHNS 697), 1983, E. Krahmer, 1♀ 2 immatures (MHNS 825); Valdivia, 6 km N of Niebla, 16.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ 1 immature (AMNH). **Osorno:** Maicolpué, 64 km W Osorno, 19.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1 immature (AMNH), Puyehue Natl. Park, Aguas Calientes, 480 m, 40°44'S, 72°18'W, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♂ (AMNH), 2♂ (MACN-Ar), 1♂ (MHNS);

40°44'S, 72°19'W, 1440 m, 5–7.XII.1988, V. and B. Roth, 1♀ (CAS), 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 2♂ 2♀ 6 immatures, 1♀, 1♂ 1♀ (MACN-Ar), 2♂ 3♀ (MHNS); 450 m, 11.XII.1981, Nielsen and Karsholt, 1♀ (ZMK); 600 m, 12–20.II.1979, L.E. Peña, 1♀ 1 immature, 1♂ (AMNH); 12 km SE Aguas Calientes, Puyehue Natl. Park, elev. 700 m, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♂ (AMNH), Anticura, 19–29.X.1985, L. Peña, 2♀ (AMNH), 1.XI.1982, 1♀ (MHNS 705); 350 m, 18.XII.1981, Nielsen and Karsholt, 1♂ (ZMK); 300 m, 7–8.III.1979, Misión Científica Danesa, 1♀, 1 immature (ZMK); 40°40'0"S, 72°10'30"W, 350 m, 13.XII.2000–2.I.2001, forest, J. Miller, Alvarez, J. Codrington, G. Hormiga, 1♂ (USNM); Anticura, Sendero El Indio, ca. 355 m, 31.xii.200, G. Hormiga, 1♀ with eggsac (fig. 115A, USNM); La Picada 450 m, NW Volcán Osorno, 15–20.I.1980, L.E. Peña, 1♀ 1 immature (AMNH); Laguna El Espejo, P. N. Puyehue, elev. 510 m, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH); 10 km E Puyehue, 24.I.1951, Ross and Michelbacher, 7 immatures (CAS); Termas de Puyehue, 240 m, 14.III.1965, H. Levi, 1 immature (MCZ); Puyehue, Pucatrihue, 26–28.III.1968, L. Peña, 10 immatures (MCZ); 8 mi E Río Bueno, 15.I.1951, Ross and Michelbacher, 1♀ (CAS). **Llanquihue:** Alerce Andino Natl. Park, elev. 100 m, 41°35'S, 72°41'S, 23.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ 1♀ (AMNH), 1♂ (MACN-Ar), 1♀ (MHNS); Correntoso, XII.1968, L. Peña, 1♀ (MCZ); 2–3 km NW Ensenada, 18.III.1965, H. Levi, 3 immatures (MCZ, photographed); Cayutué, 12.V.1971, R. Calderón, 3 immatures (UC); Parque Philippi, Puerto Varas, 2.III.1962, A.F. Archer and H. McMillin, 1♂ 1♀ (AMNH); Tenglo, Puerto Montt, 1.III.1962, A.F. Archer, 2♀ (AMNH). **Chiloé:** Isla de

←

Fig. 118. **A–D.** *Oxysoma punctatum* Nicolet. **A.** Male copulatory bulb, ventral view (Contulmo, Malleco). **B.** Same, retrolateral view. **C.** Male palp, retrolateral view (Ortiz Basualdo, Neuquén). **D.** Epigyne, ventral view (holotype of *Aporatea valdiviensis*). **E–I.** *Oxysoma itambezinho*, n. sp., male holotype. **E.** Palp, retrolateral view. **F.** Same, ventral view. **G.** Copulatory bulb, retrolateral view. **H.** Same, apical view. **I.** Body. Scale bars = A, B, F–H, 0.2 mm; C, E, 0.5 mm; D, 0.4 mm; I, 1 mm.

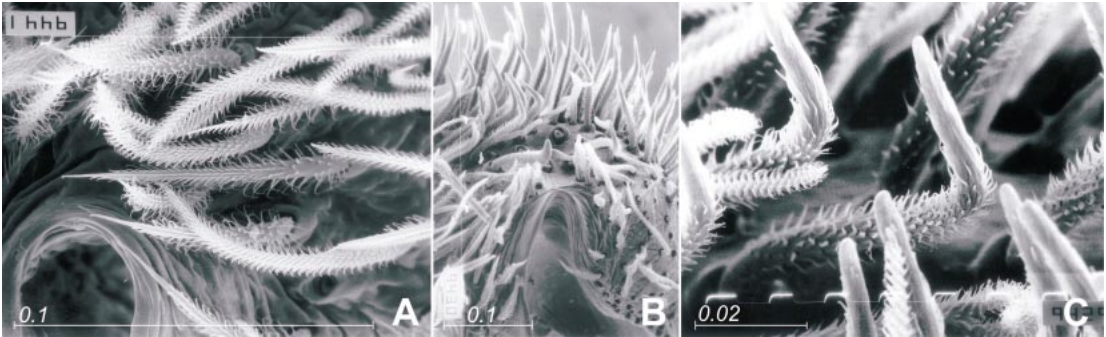


Fig. 119. Tip of male palpal cymbium, apical view. **A.** *Oxsosoma punctatum* Nicolet (Llanquihue, Alerce Andino). **B.** *Oxsosoma longiventre* (Nicolet) (Neuquén, Lago Lácar). **C.** Same, detail of modified setae.

Chiloé: Arroyo Cole Cole, 25 km N Cucao, 8–11.II.1991, M. Ramírez, 2♀ 2 immatures (MACN-Ar); 15 km S Chepu, 3.II.1991, M. Ramírez, 1♀ (MACN-Ar); Huequetrumao, 27.XII.1981, L.E. Peña, 1♂ (AMNH); Lago Tepuhueco, XII.1985, L. Peña, 1♂ (AMNH); Lago Tepuhueco, 33 km SW Chonchi, 25 m, 42°49'S, 73°55'W, 26.XI.1994, no. 163, beating vegetation, 1♀, no. 167, fogging fungusy logs, 1 immature, R. Leschen and C. Carlton, (AMNH). *Mistaken Locality*: Santiago Prov., Malleco, XI.1979, L. Peña, 2♂ 6♀ (AMNH) (see Ramírez, 1995b: 83).

Oxsosoma longiventre (Nicolet)

Figures 115C, D, 116D–F, 119B, C, 120, 121

Clubiona longiventris Nicolet, 1849: 430–431 (female holotype from Chile, Valdivia, in MHNP 4232, not reexamined).

Monapia vellardi Gerschman and Schiapelli, 1970: 132, 135, 140–141 (male holotype 6271 and female allotype 6272 from Chile, 26 km from Puerto Aisén, in MACN-Ar, examined). Synonymized by Ramírez, 1995b.

Oxsosoma longiventris: Ramírez, 1995b: 88.

Oxsosoma longiventre: Platnick, 1997: 697 (emendation of *O. longiventris*).

DIAGNOSIS: Distinguished by the shape of the epigynal anterior pouch, confined between the converging lateral lobes (fig. 110E), and by the characteristic shape of the paramedian apophysis (fig. 120D). The apical modified setae on the cymbium (compare fig. 119A–C) are shared with other Chilean undescribed species.

FEMALE (Hua Hum): Total length 8.11. Carapace length 3.30, width 2.33, wider on

legs II–III. Length of tibia/metatarsus: I, 2.87/2.27; II, 2.53/1.97; III, 1.80/1.53; IV, 2.37/2.43. Palpal tarsus length 1.10. Chelicerae with two teeth on retromargin. Sternum length 1.67, width 1.23. Spines: leg I, femur d 1–1–1, p (1-d1)ap, r d1ap; tibia v 2–2–2, p and r 1–1; metatarsus v 2bas, p and r 1–0, d 0-p1–2. II, femur d 1–1–1, p and r 0-d1-d1; tibia and metatarsus = I. III, femur = II; patella r d1; tibia v p1–2–2, p and r d1–1, d r1-0-1-0; metatarsus v 2–0–2 and an apical group of hairs, p and r d1–1–1 or 0-d1–1, d 0-p1–2. IV, femur d 1–1–1, p 0-d1-d1, r d1ap; patella r d1; tibia = III; metatarsus v 2–2–2, p and r d1–1–1, d 0-p1–2. Abdomen length 4.92, width 2.66, spiracle–epigastrium 2.27, spiracle–spinnerets 0.80. Color (fig. 115C): as in male, but very dark spots on anterior face of patellae I–III, on bases of dorsal spines of metatarsi I and II, and apical retrolateral corner of coxae. Abdomen with dorsal stripe and anterior dot less marked, ventral stripe narrower. Epigyne (fig. 120E): median field small, anterior pouch with margins prolonged, with double cavity, lateral lobes separate, copulatory ducts long, sinuous.

MALE (Lago Hermoso MACN-Ar 9797): Total length 8.25. Carapace wider than that of female, length 3.72, width 2.73. Length of tibia/metatarsus: I, 5.37/4.66; II, 4.40/3.60; III, 2.70/2.23; IV, 3.27/3.36. Chelicerae slightly smaller than those of female. Sternum length 1.83, width 1.33. Endites narrow, divergent. Spines as in female, except: leg III, metatarsus v 2–2–2 or 2-p1–2, p and r

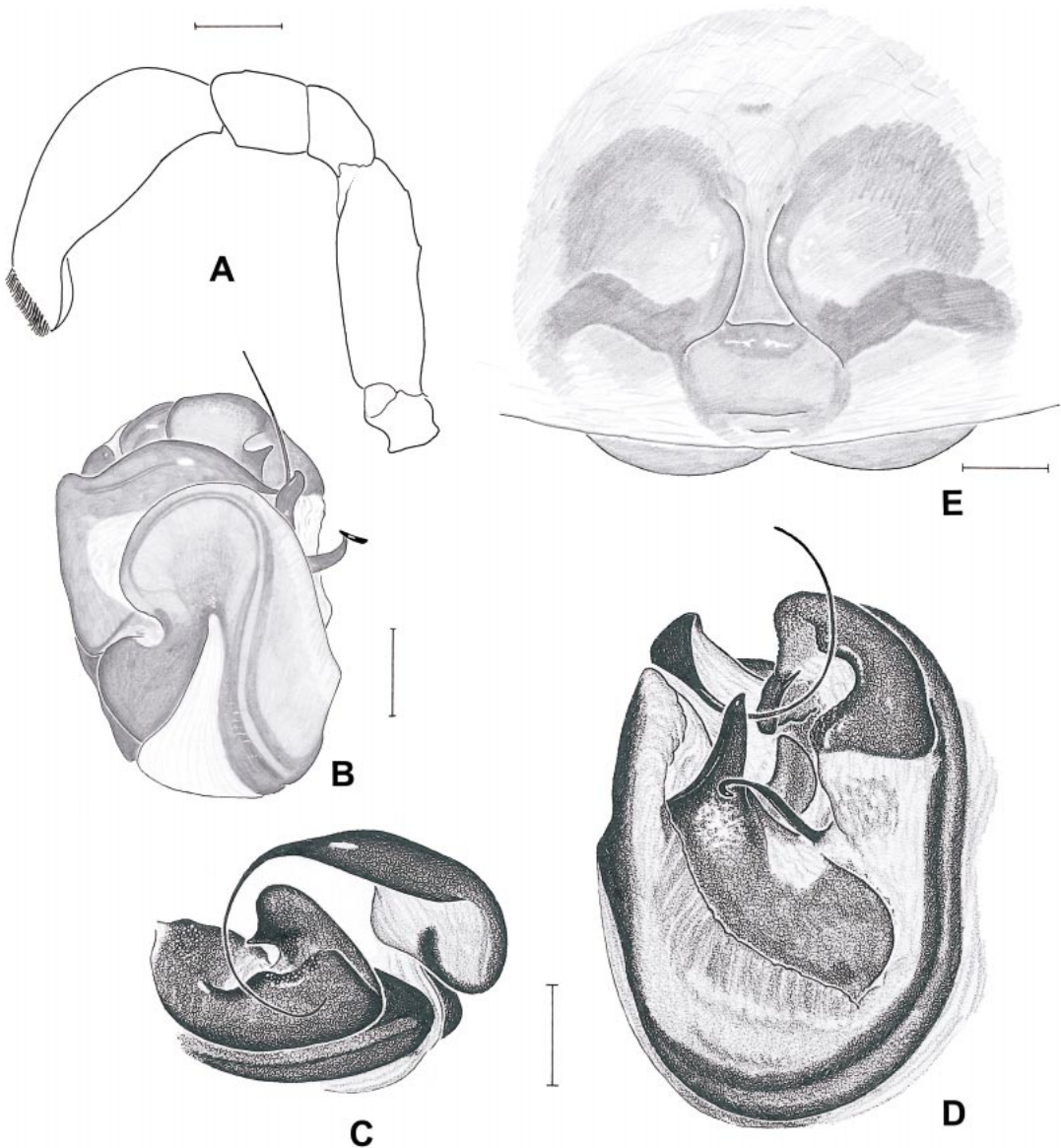


Fig. 120. *Oxysoma longiventre* (Nicolet). **A.** Male palp, retrolateral view (Neuquén, Lago Hermoso). **B.** Same, copulatory bulb, ventral view. **C.** Same, apical view. **D.** Same, retrolateral view. **E.** Epigyne, ventral view (holotype). Scale bars = A, 0.5 mm; B, 0.25 mm; C, D, 0.2 mm; E, 0.1 mm.

d1-1-1. **IV**, tibia v 2-2-2. Legs I and II with many long hairs curved backward, on metatarsi, tibiae. Abdomen length 4.65, width 2.13, spiracle-epigastrium 2.10, spiracle-spinnerets 0.73. Color: carapace grayish yellow, pale, with one median stripe and two laterals, formed by brown dots. Legs pale grayish with brown dots, small spots. Ster-

num pale. Dorsum of abdomen cream with dark dots at sides, cardiac area brown, continued backward in two brown stripes. Venter with brown patch from epigastrium to tracheal spiracle. Palp (figs. 116D-F, 119B, C, 120A-D, 121): tibia short, width/length 0.80. Cymbium relatively large, with apical dorsal patch of thick, angled setae (fig. 119B, C).

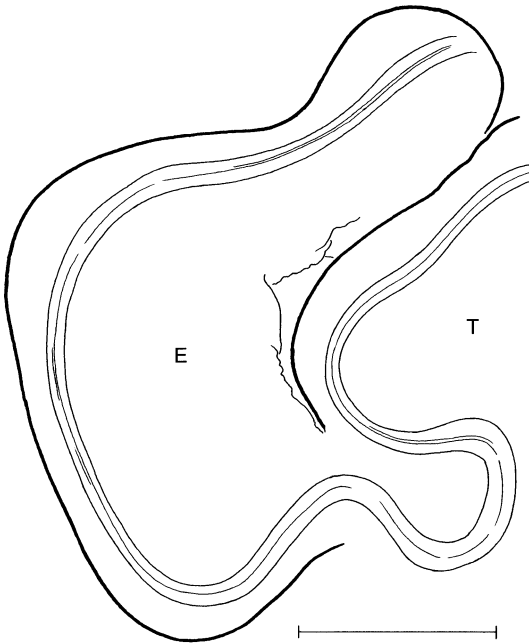


Fig. 121. *Oxysoma longiventre* (Nicolet), detail of male copulatory bulb and sperm duct, cleared, prolateral view (Neuquén, Lago Hermoso). Scale bar = 0.2 mm. (E = embolus; T = tegulum.)

Sperm duct with one loop approximating anterior ventral margin of tegulum, less pronounced loop before entering embolus (fig. 121). Embolus very thin, not associated with canal on secondary conductor, basal process not evident, membranous area ample. Paramedian apophysis with ventral cusp close to base, connected by ridge to sharp tip (fig. 120D). Primary conductor at center of copulatory bulb, flattened, curved (fig. 116F). Secondary conductor with retrolateral portion continued into proximal, thin, weakly sclerotized area; both portions covered by regularly disposed denticles (fig. 116E).

VARIABILITY: The dorsal stripe on abdomen may vary from dark to almost absent. The ventral patch may be absent, sometimes wider in males. Spines: III, metatarsus v 2-0-2 or 2-p1-2.

NATURAL HISTORY: This species builds retreats on foliage, most commonly on "colihue" bamboo (*Chusquea* spp.).

DISTRIBUTION: Southern forests in Argentin

tina, from Neuquén to Chubut provinces, and Chile, from Talca to Osorno provinces.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Neuquén:** Lanín Natl. Park: Hua Hum, I.1985, M. Ramírez, 1 ♀ (MACN-Ar); Lago Hermoso, 15.I.1985, M. Ramírez, 1 ♂ 1 ♀ 7 immatures (MACN-Ar), 1 ♂ (MACN-Ar 9797); Lago Lácar, X.1955, A. Giai, 1 ♂, 6 ♀ (MACN-Ar); 5 km E Hua Hum, 5.XI.1981, Nielsen and Karsholt, 1 ♂ (ZMK), 640 m, 16.XI.1981, 1 ♂ 1 ♀ (ZMK); Lanín Natl. Park, no specific locality, VIII.1978, Schajovskoy, 1 ♀ (MACN-Ar); Pucará, 5-16.II.1956, A. Ogloblin and Sra., 1 ♂ 1 ♀ (MLP), 1.II.1971, 1 ♀ (MACN-Ar 2444), 1970, 1 ♂, II.1974, 2 ♂ 1 ♀ S. Schajovskoy (MACN-Ar), 10.XI.1978, Misión Científica Danesa, 2 ♀ (ZMK); 650 m, 28-29.XI.1981, Nielsen and Karsholt, 1 ♂ (ZMK); Termas de Epulafquen, 9.I.1986, M. Ramírez, 1 ♀ (MACN-Ar); Nahuel Huapi Natl. Park: Isla Victoria, 41°S 71°W, 1.V.65, A. Kovács, 3 ♂ 1 ♀ (AMNH). **Río Negro:** San Carlos de Bariloche, IV.1962, Havrylenko, 1 ♂ (MACN-Ar); road to Tronador, 800 m, 29.XI.1978, Misión Científica Danesa, 1 ♀ (ZMK); Pampa del Toro, Nielsen and Karsholt, 1 ♀ (ZMK); 900 m, 9-10.XI.1981, 1000 m, 21.XI.1978, Misión Científica Danesa, 1 ♀ (ZMK). **Chubut:** Los Alerces Natl. Park: Río Frías, II.1986, M. Ramírez, 1 ♂ (MACN-Ar). **CHILE: Región VII (Maule): Talca:** Alto de Vilches, elev. 1180 m, 35°36'S, 71°04'W, 14.15.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♀ (AMNH); Gil de Vilches, 7.I.1989, M. Ramírez, 1 ♀ (MACN-Ar). **Región VIII (Biobío): Ñuble:** Las Trancas, E Recinto, 1100 m, II.1987, L. Peña, 5 ♀ (AMNH); Recinto, SE Chillán, 12.I.1989, M. Ramírez, 1 ♀ (MACN-Ar, photos MJR R1 1, 43, 44); 40 km W San Fabián de Alicó, 24.II.1992, N. Platnick, P. Goloboff, M. Ramírez, 2 ♂ (AMNH). **Concepción:** Periquillo, 21.XII.1996, T. Cekalovic, 1 ♀ (AMNH). **Región IX (Araucanía): Malleco:** Malalcahuello, 9-15.XII.1985, L. Peña, 4 ♀ (AMNH); Río Blanco, Curacautín, 1.5.II.1959, L. Peña, 1 ♀ (IRSN I.G. 19736); Tolhuaca, 15-25.I.1959, L. Peña, 1 ♀ (IRSN IG 19736), 15.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1 ♂ (AMNH, photos MJR 925-926); Conguillio Natl. Park, 23.II.1992,

M. Ramírez, N. Platnick, P. Goloboff, 1 ♂ 1 ♀ (AMNH), 1 ♂ 1 immature (MACN-Ar), 1 ♂ (MHNS). **Cautín:** Monte Verde, Cavahue, 31.I.1993, L. Peña, 1 ♀ (AMNH). **Osorno:** Puyehue Natl. Park: 480 m, 40°44'S, 72°18'W, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♀ (AMNH); Anticura, 26–31.VII, 1–5.VIII.1983, L. Peña, 1 ♀ (AMNH); 7.III.1984, L. Irrazabal, 1 ♀ (AMNH). **Llanquihue:** Puerto Montt, Río Blanco, 24–19.I.1983, G. Arriagada, 1 ♀ (MHNS 718). *Mistaken Locality:* Prov. Santiago, Malleco, XI.1979, L.E. Peña, 3 ♀ (AMNH) (see Ramírez, 1995b: 83).

Oxysoma itambezinho, new species

Figure 118E–I

TYPE: Male holotype from Brazil, State of Rio Grande do Sul, Cambará do Sul, Itambezinho, ca. 29°02'S, 50°09'W, 27.IX.1991, A. Petersen, in MCTP 1653.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Resembles other *Oxysoma*, *Tasata*, and *Monapia* in having a pale, elongate body with pattern of small dark dots, but can be distinguished by the combination of a strong spine on anterior face of chelicerae and by a conspicuous basal notch on the retrolateral margin of cymbium.

FEMALE: Unknown.

MALE (holotype): Total length 8.65. Carapace length 3.40, width 2.13. Legs very long, thin, length of tibia/metatarsus: I 7.45/6.65; II 5.45/4.79; III 3.33/2.77; IV 5.05/5.19. Chelicerae small, with one anterior spine close to base, two teeth on retromargin. Sternum length 1.67, width 1.10. Spines: leg I, femur d 1–1–1, p 0–d1–1–d1, r 0–d1–d1; tibia v 2–2–2 (basals advanced), p 0–v1–1–0, d r1–1; metatarsus v 2bas, p and r 0–1–1, d 0–2–2 (retrolateral advanced). II = I. III, femur d 1–1–1, p 0–d1–1–d1, r d1ap; patella 0; tibia v p1–2–2, p d1–1, r 0–1, d r1–1; metatarsus v 2–0–p1 and an apical group of hairs, p and r 0–1–1, d 0–p1–2. IV, femur d 1–1–1, p d1ap, r 0–d1–d1; patella 0; tibia v 2–2–2, p and r d1–1, d r1–1; metatarsus v 2–2–p1 and an apical group of hairs, p and r d1–1–1, d 0–p1–2. Legs I and II with many long hairs, curved backward, on metatarsi, tibiae. Abdomen length 5.32, width 1.73, spiracle–

epigastrium 3.72, spiracle–spinnerets 1.86. Color (fig. 118I): Yellow with grayish dorsal pattern. Legs pale grayish with dark dots and few small black spots. Sternum pale. Venter pale with small dark spots, line of small spots at each side, from epigastrium to tracheal spiracle, median stripe from tracheal spiracle to spinnerets. Epigastrium and adjacent posterior area violet. Palp (fig. 118E–H): tibia long, width/length 0.39. Cymbium narrow, retrolateral margin with evident basal notch. Embolus not associated with canal on secondary conductor, basal process thick, with small membranous area. Base of median apophysis thick. Base of paramedian apophysis with protuberance followed by oblique, rugose ridge, forming hollow under tegulum; tip elongate, recurved, distally sinuous. Primary conductor thick, low, transverse. Secondary conductor divided by membranous area prolateral of wide canal (fig. 118H); prolateral portion large, rounded, directed backward; retrolateral portion with apical, flat projection, bearing small peak where canal ends; area around median apophysis less sclerotized, granulate. Heavily sclerotized black area at base of canal, may be part of sperm duct.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Only known from the type locality.

OTHER MATERIAL EXAMINED: None.

Oxysoma saccatum (Tullgren),
new combination

Figures 122–124

Gayenna saccata Tullgren, 1902: 62 (female lectotype, male, female and two immature paralectotypes here designated, from Chile, Río Aisén Valley, I.1897, P. Dusen coll., in NRS, examined). Ramírez, 1995a: 366.

NOTE: *Gayenna sigillum* Mello-Leitão (1941a: 194; holotype immature male from Argentina, Jujuy province, León, III.1939, M. Birabén, in MLP 15025, examined) is probably a junior synonym, and the type locality is probably incorrect. Similar mislabeling occurred with the type of *Opsaltella tigrina*, described in the same work (Ramírez, 1996). A decision on the placement of *G. sigillum* is postponed until more thorough

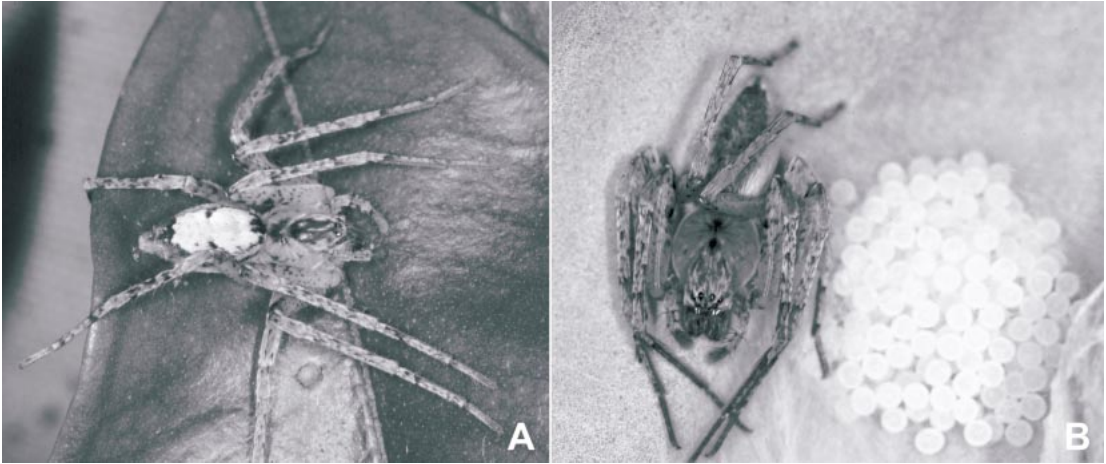


Fig. 122. *Oxysoma saccatum* (Tullgren), female. **A.** Osorno, Puyehue (photo MJR 1419). **B.** Llanquihue, Caleta La Arena (photo MJR 434).

knowledge of the genera *Oxysoma* and *Tasata* is obtained.

DIAGNOSIS: Distinguished by the semicircular margins at the sides of the epigynal anterior pouch (fig. 124G), and by the elongate paramedian apophysis, forming an angle at its base (fig. 124B).

FEMALE (lectotype, measurements of specimen from Chiloé, 15 km S Chepu): Total length 2.07. Carapace length 3.99, width 3.07, wider on legs II–III. Length of tibia/metatarsus: I, 4.66/3.72; II, 3.86/3.17; III, 2.90/2.57; IV, 3.40/3.40. Palpal tarsus length 1.77. Chelicerae with two teeth on retromargin. Sternum length 2.03, width 1.50. Spines: leg I, femur d 1–1–1, p 0–d1–1–d1 or d1ap; tibia v 2–2–2, p and r d1–1, d r1–

0–1–0; metatarsus v 2bas, p and r d1–0, d 0–p1–2. **II**, femur d 1–1–1, p and r 0–d1–d1; tibia and metatarsus = I. **III**, femur = II or r d1ap; patella r d1; tibia = I; metatarsus v 2–0–2 and an apical group of hairs, p and r 0–d1–1, d 0–p1–2. **IV**, femur d 1–1–1, p and r d1ap; patella r d1; tibia = I; metatarsus v 2–2–2, p 0–d1–1, r d1–1–1, d 0–p1–2. Abdomen length 5.32, width 3.06, spiracle–epigastrium 3.13, spiracle–spinnerets 0.83. Color (cf. fig. 122B): carapace pale grayish with brown spots. Legs pale grayish with brownish violet dots, plus spots on femora and patellae. Sternum pale. Dorsum of abdomen yellow with some guanine reticulum, dark dots, densely grouped on posterior sides, venter yellow with white guanine reticulum.

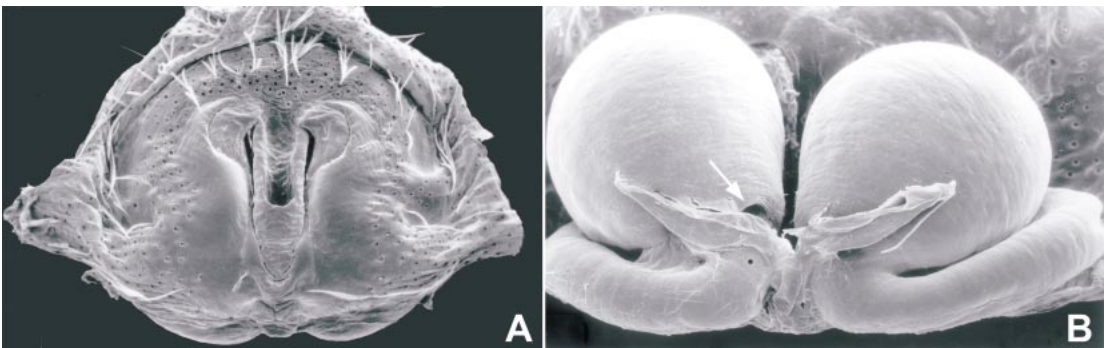


Fig. 123. *Oxysoma saccatum* (Tullgren). **A.** Epigyne, ventral view. **B.** Spermathecae, dorsal view: arrow points to “dictynoid” pore.

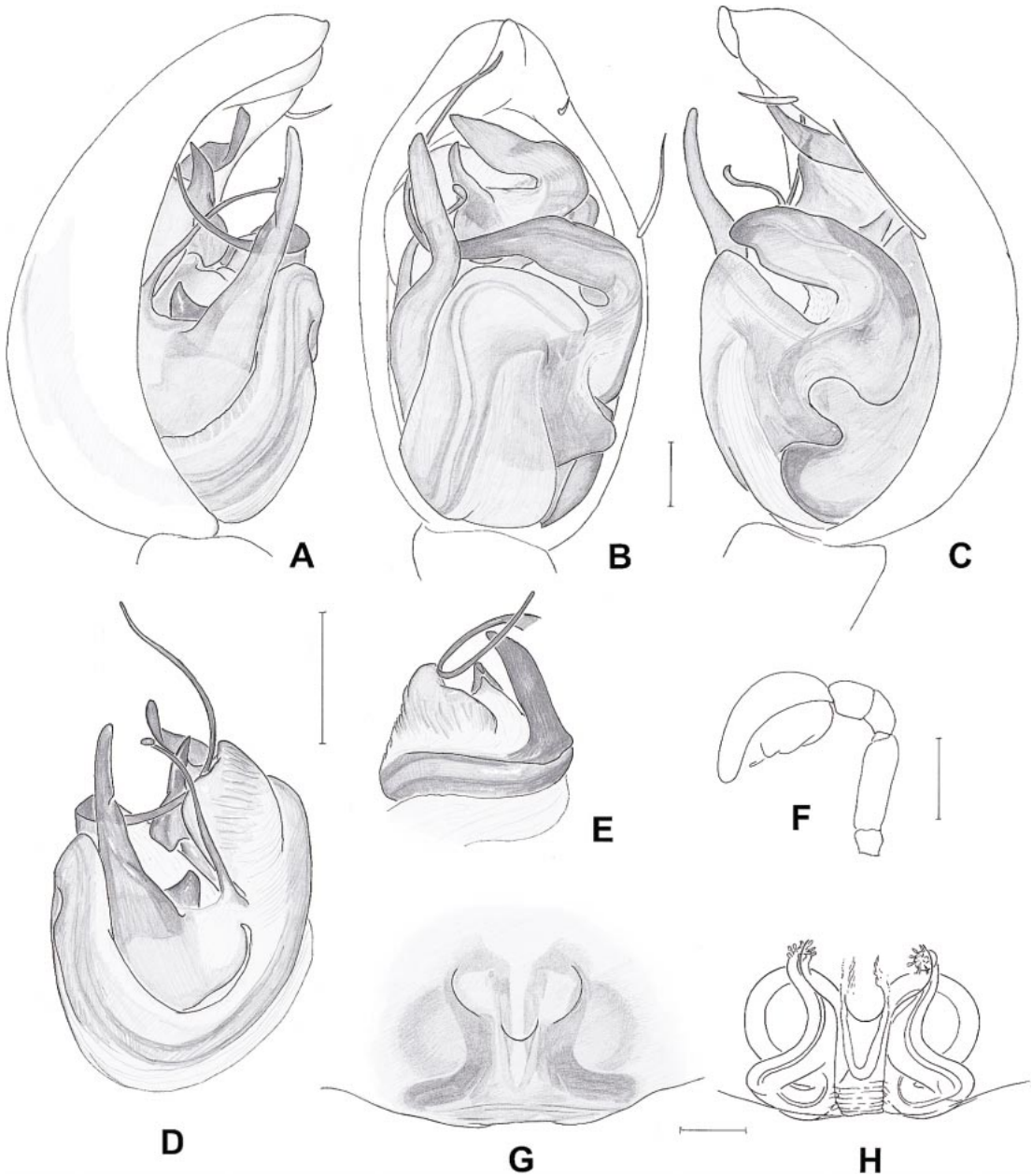


Fig. 124. *Oxysoma saccatum* (Tullgren). **A.** Right male palp, retrolateral view (paralectotype). **B.** Same, ventral view. **C.** Same, prolateral view. **D.** Left male copulatory bulb, retrolateral view (Chiloé, Cole Cole). **E.** Same, apical view. **F.** Right male palp, prolateral view (paralectotype). **G.** Epigyne, ventral view (lectotype). **H.** Same, cleared. Scale bars = A–E, 0.2 mm; F, 1 mm; G, H, 0.1 mm.

Epigyne (figs. 123A, B, 124G, H): anterior pouch elongate, with deep cavity, apparently on independent plate, limited by furrows from rest of median field. Lateral lobes sep-

arate, median field widened posteriorly. Copulatory ducts long, sinuous, with ample posterior loop.

MALE (paralectotype, measurements of

specimen from Chiloé, 25 km N Cucao): Total length 7.32. Carapace length 3.33, width 2.73. Length of tibia/metatarsus: I, 4.52/3.72; II, 3.99/3.13; III, 2.60/2.30; IV, 3.00/3.03. Chelicerae slightly smaller than those of female. Sternum length 1.60, width 1.27. Spines as in female, except: leg **II**, femur = I. **IV**, femur p 0-d1-d1; metatarsus v 2-p1-2. Abdomen length 3.99, width 2.53, spiracle-epigastrium 1.73, spiracle-spinnerets 0.67. Color: pale grayish with brownish violet spots, dots. Carapace with median band not reaching posterior margin, two lateral sinuous stripes. Femora with small spots, paler ventrally, other articles dark, with some pale longitudinal stripes. Sternum with dark spot in front of coxae I-III. Dorsum of abdomen densely dotted, darker on anterior margin of cardiac area, paler on median stripe, venter pale, with three lines of small spots anterior of tracheal spiracle. Palp (fig. 124A-F): tibia short, width/length 0.79, cymbium relatively large. Sperm duct with loop approximating anterior ventral margin of tegulum. Embolus long, thin, not associated with canal on secondary conductor, basal process thick, membranous area ample. Median apophysis long, thin. Paramedian apophysis elongate, forming basal angle. Primary conductor heavily sclerotized, conic. Secondary conductor divided by membranous area prolateral to wide canal; retrolateral portion weakly sclerotized, rounded, globose, striate, with denticles. Conspicuous, apical, flattened prong arising from apical curve of sperm duct (fig. 124E) seems to be part of secondary conductor. Heavily sclerotized black area at base of canal may be part of sperm duct.

VARIABILITY: Color pattern extremely variable. Some frequently repeated dorsal abdominal patterns are a white central patch (fig. 122A), a median dark band (fig. 122B), two posterior white spots, or anterior recurved white arch. Spines: metatarsi III, IV, v 2-p1-2.

NATURAL HISTORY: This species builds retreats on foliage.

DISTRIBUTION: Southern forests in Argentina and Chile, from Neuquén to Chubut, and from Malleco to Tierra del Fuego. One isolated record from Cuesta El Melón (Valparaíso).

OTHER MATERIAL EXAMINED: ARGENTINA: Neuquén: Nahuel Huapi Natl. Park: Río Frías superior, I.1990, M. Ramírez, 4♀ 1♀ penultimate (MACN-Ar); Puerto Blest, II.1986, M. Ramírez, 2♀ (MACN-Ar); 770 m, 4.XII.1978, 1♀, 23.XII.1978, 1♂, Misión Científica Danesa (ZMK); 25-27.X.1981, Nielsen and Karsholt, 1♂ (ZMK); Laguna Los Cántaros, 30.I.1985, M. Ramírez, 13♀ 3 immatures (MACN-Ar); Puerto Blest, trail to Lago Ortiz Basualdo, I.1990, M. Ramírez, 7♀ 4 immatures (MACN-Ar). **Río Negro:** Laguna Frías, 760 m, 16.XI.1966, M.E. Irwin and E.I. Schlinger, 1♀ (CAS). **Chubut:** Los Alerces Natl. Park: Río Frías, II.1986, 1♀ (MACN-Ar). **Tierra del Fuego:** Isla de los Estados, XII.1967, A. Bachmann, 1♂ (MACN-Ar). **CHILE: Región V (Valparaíso): Quillota:** Cuesta El Melón, nr. La Calera, 15.XI.1985, L. Peña, 1♀ (AMNH). **Región IX (Araucanía): Malleco:** Malalcahuello, 9-15.XII.1985, L. Peña, 5♂ (AMNH); Monumento Natural Contulmo, 11.XII.1984-13.II.1985, S. and J. Peck, 2♂ (AMNH), 13.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH), 19-21.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1♀ (MACN-Ar); 340 m, 38°01'S, 73°11'W, 18.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♂ (AMNH). **Cautín:** Monte Verde, Cavañue, 31.I.1993, L. Peña, 1♂ 2♀ (AMNH); Volcán Villarrica Natl. Park, elev. 1025 m, 39°22'S, 71°58'W, 20.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH); Fundo La Selva, W Temuco, NW Nueva Imperial, 700 m, 9-12.XII.1981, L.E. Peña, 1♀ (AMNH); NE Villarrica, 16-31.XII.1964, L. Peña, 1♀ (MCZ); 30 km NE Villarrica, 1-30.I.1965, L. Peña, 1♂ (MCZ). **Región X (Los Lagos): Valdivia:** Las Lajas, W La Unión, 9-13.I.1990, 1♀, 13-15.I.1991, 1♂ 1♀, Peulla, I.1990, M. Ramírez, 2♀ (MACN-Ar). **Osorno:** Entre Lagos to Puerto Octay, 20.I.1969, L. Peña, 1♂ (MCZ); Maicolpué, 64 km W Osorno, 19.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1♀ (AMNH); Puyehue Natl. Park: Aguas Calientes, 425 m, valdivian forest, 31.I.1985, N. Platnick and O. Francke, 1♂ (AMNH), 13-17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 4♂ 3♀ 3♀ penultimates (MACN-Ar), 3♂ 3♀

(MHNS); 480 m, 40°44'S, 72°18'W, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 5♂ 2♀, 2♂ and 2♀ penultimates (AMNH, female photo MJR 1419), 5♀ 2♂, 2♂ and 3♀ penultimates, reared in captivity (MACN-Ar), 4♂ (MHNS); 450 m, 11.XII.1981, Nielsen and Karsholt, 2♂ (ZMK); 600 m, 12–20.XII.1981, L. Peña, 1♀ (AMNH); 40°44'0"S, 72°18'45"W, 450 m, 12.XII.2000–2.I.2001, forest, J. Miller, I. Agnarsson, Alvarez, J. Coddington, G. Hormiga, 1♂ 1♀, 1♀ (USNM); Anticura, 1–11.I.1986, L. Peña, 2♀ (AMNH); 470–720 m, valdivian rainforest, screen-sweeping at dusk, 18–24.XII.1982, A. Newton and M. Thayer, 1♂ 1♀ (AMNH); Los Derrumbes road, Aguas Calientes, 480 m, 40°44'S, 72°18'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ 1♀ (AMNH); 10 km E Puyehue, 24.I.1951, Ross and Michelbacher, 1♀ (CAS); Termas de Puyehue, 600–1500 ft, moss on live trees in mature forest, 24–25.XI.1981, R. Schuh and N. Platnick, 1♂ (AMNH); Pucatrihue, II.1967, L. Peña, 1♀ (MCZ); Puyehue, 500 m, 26.I.1969, L. Peña, 1♂ 2♀ (MCZ). **Llanquihue:** Alerce Andino Natl. Park, elev. 100 m, 41°35'S, 72°41'S, 23.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♂ (AMNH), 1♀ (MACN-Ar), 1♀ (MHNS); Caleta La Arena, 30.I.1991, M. Ramírez, 2♀ (MACN-Ar, photo MJR 434); Chamisa, 13.XII.1968, L. Peña, 1♂ (MCZ); Correntoso, XII.1968, L. Peña, 3♀ (MCZ); Cerro Hornohuínco, Correntoso, XII.1968, L. Peña, 1♀ (MCZ); Petrohué Norte, 13.V.1971, R. Calderón, 1♀ (UC). **Chiloé:** Arroyo Cole Cole, 25 km N Cucao, 8–11.II.1991, M. Ramírez, 1♂ (MACN-Ar); 15 km S Chepu, 3.II.1991, M. Ramírez, 9♂ 1♀ (MACN-Ar, photo MJR 453). **Palena:** Chaitén, XII.1985, L. Peña, 1♂ (AMNH). **Región XI (Ibáñez del Campo):** Aisén: Río Simpson Natl. Park, N margin, 17.II.1991, M. Ramírez, 2♀ (MACN-Ar). **Región XII (Magallanes y Antártica):** **Magallanes:** Otway, El Canelo, 18.III.69, L. Peña, 1♀ (MCZ).

TASATA SIMON

Table 27

Tasata Simon, 1903c: 29 (type species by monotypy *Tasata parcepunctata* Simon, 1903), 1903a: 1032. Ramírez, 1995a: 88.

TABLE 27

Synapomorphies of *Tasata* and Internal Clades

<i>Tasata</i> (clade 148)	
anterior dot on abdomen (4):	absent → present
ratio AME/ALE (15):	AME < ALE → AME minute
dentate ridge on C2 (82):	absent → present
position of APmf (105):	advanced → close
shape APmf (106):	normal → distended
Clade 144	
posterior eye row strongly procurved (13):	absent → present
spine metatarsus III, r d1-x-x (174):	present → absent
Clade 145	
spiral loop SD (58):	weakly coiled → well coiled
C2 divided (85):	absent → present
Clade 146	
spine metatarsus III, v x-r1-x (168):	absent → present
Clade 147	
spiral loop SD (58):	absent → weakly coiled
<i>T. chiloensis</i>	
dark ventral stripe (1):	absent → present
C1 (75):	present → absent
epigynal semicircular ridges (103):	absent → present
spine metatarsus I, d p1-x (144):	present → absent
spine metatarsus II, d p1-x (155):	present → absent
spines metatarsi III and IV, v ap (169):	2 → p1
spine metatarsus III, r d1-x-x (174):	present → absent
<i>T. taim</i>	
anterior dot on abdomen (4):	present → absent
ocular area protruded (10):	absent → present
CO on epigastric furrow (115):	absent → present
spine tibia IV, v r1-x-x (182):	absent → present
<i>T. unipunctata</i>	
posterior eye row strongly procurved (13):	absent → present
ratio PME/PLE (16):	PME = PLE → PME < PLE
ducts AB (123):	long → short
<i>T. parcepunctata</i>	
epigastrium sclerotized (100):	normal → sclerotized
spine metatarsus III, v x-p1-x (167):	present → absent
spine metatarsus III, v x-r1-x (168):	present → absent
spine metatarsus IV, v x-r1-x (190):	present → absent
<i>T. variolosa</i>	
ratio PME/PLE (16):	PME = PLE → PME < PLE
spine metatarsus IV, p d1-x-x (191):	present → absent
<i>T. centralis</i>	
MA thin branches (66):	absent → present
wide membrane separating C2 (80):	absent → present
denticles C2p (88):	present → absent
shape relic C1 (93):	thin, rounded → acute

DIAGNOSIS: Resembles *Oxysoma* and some *Monapia* in having a pale body with pattern of small dark dots, but can be distinguished by having a distended epigynal anterior pouch (figs. 127C, 129G, H). Most species have a characteristically shaped primary conductor, like a thin tongue (fig. 126B).

DESCRIPTION: Color pale with small dark dots, usually also larger black dot at anterior margin of cardiac area. Body flattened. Carapace narrowed in front, anterior median eyes much smaller than laterals; several species with posterior eye row strongly procurved. Chelicerae with variable teeth, three or four on promargin, two, three, or series of denticles on retromargin. Tracheal spiracle closer to spinnerets than to epigastrium. Male palpal tibia 1.5 or more times longer than wide. Sperm duct with curve approaching anterior ventral margin of tegulum, then running through margin, describing curve (fig. 129E) before entering base of embolus (except *T. chiloensis*); in some species the duct describes a spiral before entering embolus (fig. 128D). Embolus commonly very thin, not associated with canal on secondary conductor, without basal process. Paramedian apophysis usually elongate, directed apically, some species with bifid tip. Primary conductor usually wide, flattened, rounded, translucent. Secondary conductor not fused to anterior margin of tegulum; prolateral portion with rounded lobe, flattened, directed backward, with canal ending in sharp, curved tip. Epigyne with lateral lobes separate, median field with anterior pouch ample or well distended. Copulatory ducts arched, encircling spermathecae.

DISTRIBUTION: South America.

COMPOSITION: In addition to the species detailed below: *Tasata tigris* Mello-Leitão, 1941b (male holotype in MNRJ 58269, examined; published as female in the original description, a paragraph referring to the proportion of palp segments [Mello-Leitão, 1941b: 257] supports the identification of this male as the holotype), *Gayenna fusco-taeniata* Keyserling, 1891 (two females and two immatures probably syntypes, in BMNH 702.3.909.1, examined, new combination), *Gayenna reticulata* Mello-Leitão, 1943 (female and female penultimate syntypes in MNRJ 41662, examined, new combination),

Gayenna taperae Mello-Leitão, 1929 (male lectotype and immature paralectotype here designated, in MNRJ, examined, new combination), *Gayenna tripunctata* Mello-Leitão, 1941 (female holotype in MNRJ 38170, examined, new combination), *Oxysoma novum* Mello-Leitão, 1922 (female holotype in MNRJ 1114, examined, new combination), *Oxysoma lineatum* Tullgren, 1905 (female holotype in NRS, examined, new combination), *Anyphaena punctata* Keyserling, 1891 (female holotype in BMNH 1890.7.1.623, examined, new combination), *Oxysoma quinquenotatum* Simon, 1897 (three females and three immatures syntypes, in MHNP 8160, examined, new combination), *Tomopisthes frenatus* Mello-Leitão, 1947 (presumably in Museu de História Natural Capão da Imbuia, Curitiba, not available, tentatively transferred because the body pattern [Mello-Leitão, 1947: fig. 40] is similar to that found in some Brazilian *Tasata*, new combination), and several undescribed species.

EXCLUDED SPECIES: *Tasata albofasciata* Mello-Leitão, 1943 (female holotype in MNRJ 670, examined), belongs to *Tupirinna* in Corinnidae, new combination.

Tasata parcepunctata Simon

Figures 61G, 125B, 126–127, 135A

Tasata parcepunctata Simon, 1903c: 29 (female type from Argentina, no specific locality, should be in MHNP, not found). Mello-Leitão, 1933: 56 (*Pasata*, lapsus).

Tasata parcepunctata: Bonnet, 1959: 4262.

NOTE: Because the type is presumably lost, it is difficult to identify the species described by Simon. He reported a body length of 8 mm, and three retromarginal cheliceral teeth, a combination that I have not seen in any specimen in collections. I provisionally identified the species according to the cheliceral teeth. However, the total length of 8 mm reported by Simon seems too large for this species and approximates more the size of *T. variolosa*. An exhaustive revision of the genus may require designation of a neotype.

DIAGNOSIS: Very similar to *Tasata variolosa* in having a dotted dorsal pattern, but can be distinguished by having only three teeth on the cheliceral retromargin.

FEMALE (Martín García, MACN-Ar 9798):

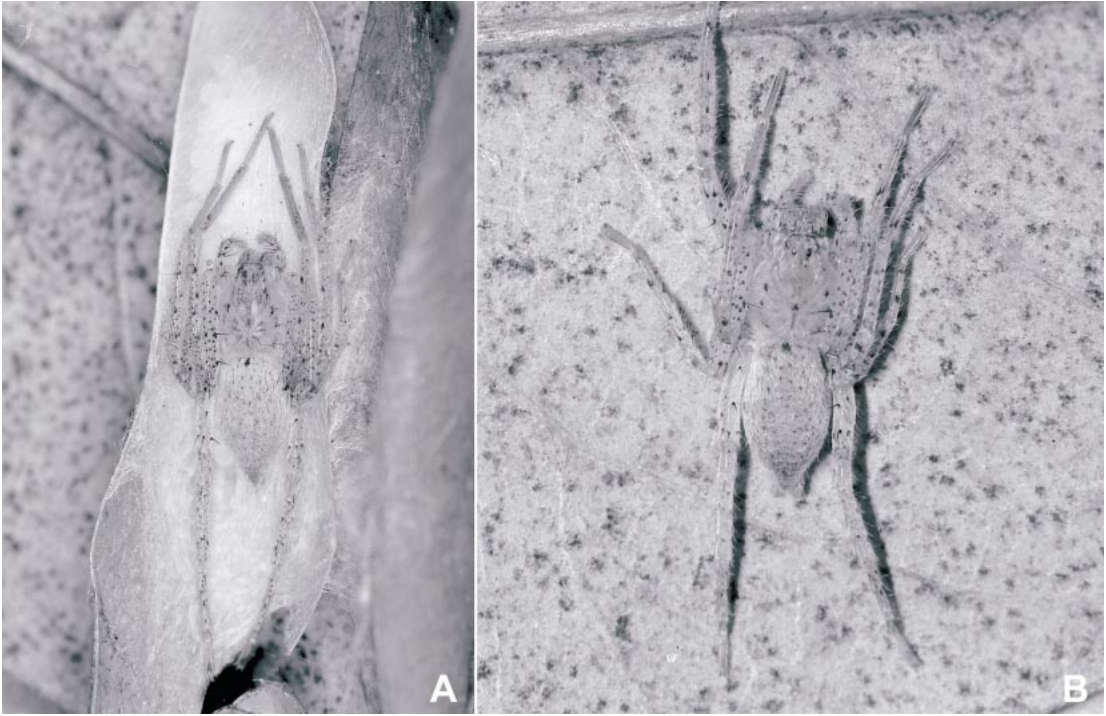


Fig. 125. *Tasata* spp., females (Entre Ríos, Gualeguay, photos MJR 227 and 229). **A.** *T. variolosa* Mello-Leitão, female guarding eggsac. **B.** *T. parcepunctata* Simon.

Total length 6.65. Carapace length 2.43, width 2.00, wider on legs II–III. Length of tibia/metatarsus: I, 2.27/1.87; II, 1.93/1.63; III, 1.17/1.32; IV, 1.73/2.03. Palpal tarsus length 0.87. Chelicerae with four teeth on promargin and three on retromargin, apical one largest. Sternum length 1.37, width 1.05. Spines: leg **I**, femur d 1–1–1, p 0–d1–1–d1, r 0–d1–d1; tibia v 2–2–2, p and r 1–1; metatarsus v 2bas, p and r 1–0, d 0–p1–2. **II = I**. **III**, femur d 1–1–1, p and r 0–d1–d1; patella 0 or rd1; tibia v p1–2–2 or 2–2–2, p and r 1–1, d r1–0–1–0 bristles; metatarsus v 2–0–2 and an apical group of hairs, p d1–1–1 or p 0–1–1, r d1–1–1, d p1–2. **IV**, femur d 1–1–1, p 0–d1–d1, r d1ap; patella r d1; tibia v p1–2–2, p and r d1–1, d r1–0–1–0 bristles; metatarsus v 2–p1–2 and an apical group of hairs, p and r d1–1–1, d 0–p1–2. Abdomen length 4.39, width 3.06, spiracle–epigastrium 1.90, spiracle–spinnerets 0.77. Color: grayish yellow with small dots dark gray, small violet spots. Sternum pale. Abdomen with dark anterior dot. Venter with three lines of small spots from epigastric furrow to tracheal spi-

racle. Epigyne (figs. 127C, 135A): lateral lobes separate, median field slightly elevated; anterior pouch wide, with cavity extending at sides. Copulatory ducts visible through cuticle, similar to those of *T. variolosa*.

MALE (Martín García, MACN-Ar 9798): Total length 5.72. Carapace length 2.73, width 2.17. Length of tibia/metatarsus: I, 3.33/3.20; II, 3.00/2.30; III, 1.73/1.67; IV, 1.90/1.47. Chelicerae slightly larger than those of female, fang long, thick, promarginal teeth distanced, retromarginals grouped. Sternum length 1.40, width 1.03. Spines as in female, except: leg **III**, patella r d1; tibia v p1–2–2, d r1–0–1–0 spines. **IV**, tibia = **III**. Legs I and II with long hairs, curved backward, on metatarsi, tibiae. Abdomen length 3.06, width 2.00, spiracle–epigastrium 1.33, spiracle–spinnerets 0.50. Color: similar to female, but darker, reddish. Venter pale, epigastrium with violet spots bordering pulmonary plates. Palp (figs. 61G, 126, 127A, B): tibia width/length 0.68. Sperm duct with loop approximating anterior ventral margin of tegulum, pronounced spiral before reaching

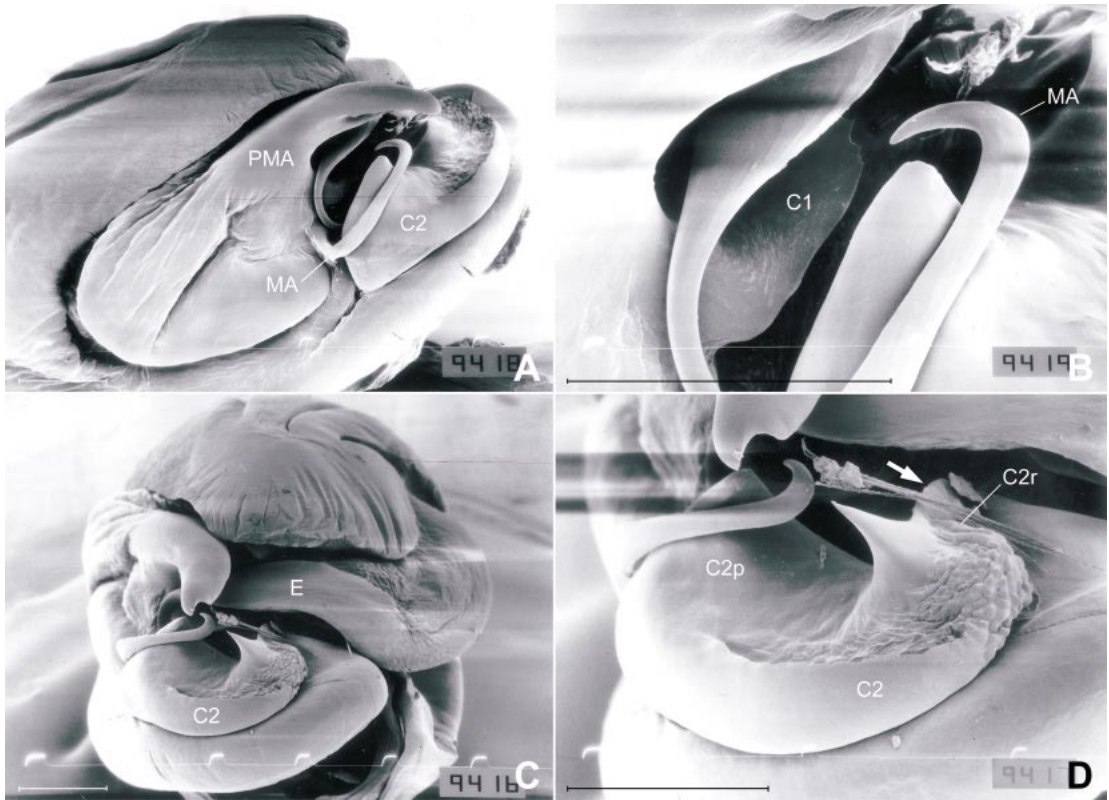


Fig. 126. *Tasata parcepunctata* Simon, male copulatory bulb (Buenos Aires, Isla Martín García). **A, B.** Retrolateral view. **C, D.** Apical view: arrow points to flattened lobe on C2p. (C1 = primary conductor; C2 = secondary conductor; C2p = prolateral portion of C2; C2r = retrolateral portion of C2; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

embolus. Embolus very thin, without basal process, membranous area extensive. Paramedian apophysis thick, elongate, with two cusps at tip, retrolateral cusp larger. Primary conductor wide, flattened, rounded. Secondary conductor small, ventral side weakly sclerotized, anterior prolateral border becoming membranous, covered by denticles (fig. 126D); retrolateral portion weakly sclerotized, rounded, continued basally in membranous area.

VARIABILITY: Spines: metatarsus III, v 2–0–2, rarely 2-p1–2, p and r 0–1–1, rarely d1–1–1.

NATURAL HISTORY: This species builds retreats on foliage, most frequently on “tala” trees (*Celtis tala*).

DISTRIBUTION: Argentina, in Entre Ríos and Buenos Aires provinces, and Uruguay. Sympatric with *Tasata variolosa*.

OTHER MATERIAL EXAMINED: URUGUAY: Departamento Maldonado: Cerro de Las Animas, 8.VI.1961, N.L.H. Krauss, 1♀ (AMNH). **ARGENTINA: Entre Ríos:** Arroyo Manantiales and Ruta 11 (km 103), 23.X.1982, P. Goloboff and M. Ramírez, 1♀ (MACN-Ar); Concordia, 3–6.III.1964, M.E. Galiano, 2 immatures (MACN-Ar); Gualeguay, 20.VIII.1989, M. Ramírez, 2♀ (MACN-Ar, photos MJR 228, 229, 309); El Palmar Natl. Park, 14.VII.1985, M. Ramírez, 1♀ (MACN-Ar); 27.III.1986, M. Ramírez, 1♂ (MACN-Ar); XI.1988, M.E. Galiano, 1♀ penultimate (MACN-Ar); Río Gualeguaychú and Ruta Nac. 14, 14.VII.1985, M. Ramírez, 1♀ (MACN-Ar). **Buenos Aires:** Alsina, FCGM, 20.IV.1983, P. Goloboff, M. Ramírez, 1♀ (MACN-Ar); Atucha, 9.VI.1985, P. Goloboff, M. Ramírez, 2♀ (MACN-Ar); 27.VII.1985, P. Goloboff, M. Ramírez, 2♀

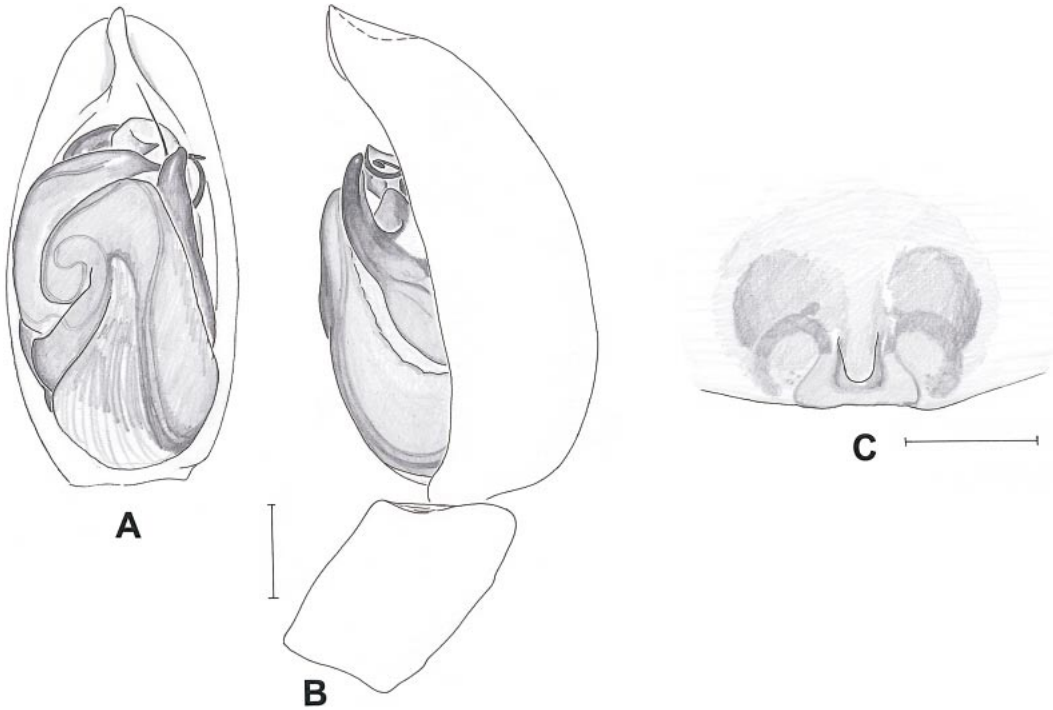


Fig. 127. *Tasata parcepunctata* Simon (Buenos Aires, Isla Martín García, MACN-Ar 9798). **A.** Male palp, ventral view. **B.** Same, retrolateral view. **C.** Epigyne, ventral view. Scale bars = 0.2 mm.

(MACN-Ar); 8.IX.1989, M. Ramírez, 1 ♀ (MACN-Ar), 15.IX.1990, M. Ramírez, 1 ♀ (MACN-Ar); Ciudad de Buenos Aires, IV.1940, F. Monrós, 1 ♀ (MACN-Ar); Delta, Río Carapachay, VII.1941, F. Monrós, 1 ♀ (MACN-Ar); Delta, Río Sarmiento, Las Rosas, 25.III.1950, A. Bachmann, 1 immature (MACN-Ar); Glew, 1972, Carpintero, 1 ♀ (MACN-Ar); Hudson, 11.IV.1984, M. Ramírez, 1 ♀ 2 ♂ (MACN-Ar), 1.V.1984, M. Ramírez, 4 ♀ (MACN-Ar); Isla Martín García, IX.1938, J.M. Viana, 1 ♂ (MACN-Ar 414); 25.V.1990, M. Ramírez, 3 ♂ 4 ♀ (MACN-Ar), 1 ♂ 1 ♀ (MACN-Ar 9798); La Armonía, Cobo, 10.VI.1965, J.M. Gallardo, E. Maury, 2 ♂ 1 ♀ (MACN-Ar); Laguna de los Padres, talar, 29.V.1989, J. Farina, 1 ♂ (MMLS); 25 km S Magdalena, 13–14.VIII.1983, P. Goloboff and M. Ramírez, 1 ♀ (MACN-Ar); Otamendi, 5.IX.1980, A. Zanetic, P. Goloboff, 1 ♀ (MACN-Ar); Reserva Otamendi, 10.VI.1997, M. Ramírez, L. Compagnucci, C. Grismado, F. Uehara, 1 ♀ (MACN-Ar); Tandil, IV.1985, C. Scioscia, 2 ♀ (MACN-Ar).

Tasata variolosa Mello-Leitão

Figures 125A, 128

Tasata variolosa Mello-Leitão, 1943c: 239 (five females syntypes from Brazil, state of Rio Grande do Sul, B. Rambo coll., in MNRJ 42236, examined).

Tasata parcepunctata: Ramírez, 1995a: 366 (misidentification).

DIAGNOSIS: Very similar to *T. parcepunctata* in having a dotted dorsal pattern, but can be distinguished by having five to seven small teeth on the cheliceral retromargin and by the sclerotized area anterior of the epigyne (fig. 128F).

FEMALE (syntype): Total length 10.30. Carapace length 3.60, width 2.90. Chelicerae (fig. 128E) with six small teeth on retromargin (right retromargin abnormal, with two additional denticles behind the other six). Sternum length 1.90, width 1.40. Length of tibia/metatarsus: I, 4.66/3.72; II, 3.99/3.19; III, 2.53/2.33; IV, 3.17/3.23. Spines: leg I, femur d 1–1–1, p 0–d1–d1, r d1ap; tibia v 2–2–2, p and r 1–1; metatarsus v 2bas, p and r

1-0, d p1-0-2. **II** = **I**. **III**, femur d 1-1-1, p and r 0-d1-d1; patella 0; tibia v p1-2-2, p and r 1-1, d r1-0-1-0; metatarsus v 2-2-2, p and r 1-1, d p1-2. **IV**, femur d 1-1-1, p and r d1ap; patella r d1; tibia = **III**; metatarsus v 2-2-2, p and r d1-1-1, d 0-p1-2. Abdomen length 6.65, width 4.80. Spiracle-epigastrium 2.87, spiracle-spinnerets 1.53. Color (fig. 125A): yellow, with dark small dots, small reddish brown spots. Chelicerae with longitudinal anterior dark line. Abdomen paler (ovigerous), with anterior dark dot. Venter pale. Epigyne (fig. 128F, G) on sclerotized area with rectangular anterior border, anterior pouch wide, almost without cavity, median field slightly elevated behind and at sides of anterior pouch.

MALE (Punta Lara, MACN-Ar 9803): Total length 7.32. Carapace length 3.30, width 2.63. Length of tibia/metatarsus: **I**, 5.19/4.20; **II**, 4.26/3.27; **III**, 2.60/2.37; **IV**, 3.30/3.36. Chelicerae slightly larger than those of female, with five teeth on retromargin. Sternum length 1.67, width 1.30. Spines as in female, except: leg **I**, femur p 0-d1-1-d1, r 0-d1-d1; tibia d r1bas. **II** = **I**. **III**, metatarsus v 2-0-2, apicals shorter. **IV**, metatarsus p 0-1-1. Abdomen length 4.00, width 2.00, spiracle-epigastrium 1.53, spiracle-spinnerets 0.73. Color as in female, but slightly darker. Palp (fig. 128A-D): tibia length/width 0.54. Copulatory bulb similar to that of *T. parcepunctata*. Paramedian apophysis with curved tip. Sperm duct with pronounced spiral before reaching embolus. Primary conductor concave, rounded. Secondary conductor large, anterior border slightly elevated, ventral side weakly sclerotized (fig. 128C).

VARIABILITY: Five or six teeth on cheliceral retromargin (rarely seven). Spines: metatarsus **III**, v 2-0-2 (rarely 2-2-2), **IV**, p 0-1-1.

NATURAL HISTORY: This species builds retreats on foliage.

DISTRIBUTION: Southeastern Brazil, Uruguay, and northeastern Argentina, in Buenos Aires, Entre Ríos, and Misiones provinces. Except for the Brazilian and Misiones records, this species is sympatric with *Tasata parcepunctata* in much of its distribution.

OTHER MATERIAL EXAMINED: **BRASIL**: **São Paulo**: Capital, Ipiranga, 30.V.1942, A. Zoppei, 1♀ penultimate (MZUSP 14056);

24.V.1942, A. Zoppei, 1♀ penultimate (MZUSP 14069). **Rio Grande do Sul**: Cachoeira do Sul, Cordilheira, 9.IX.1992, R.G. Buss, 1♀ (MCTP 3340); Porto Alegre, no date, P. Buck, 1♂ (MNRJ 18363); no specific locality or date, B. Rambo, 1♀ (MNRJ ex-41661), 5♀ (MNRJ 41959). **URUGUAY**: **Departamento Montevideo**: Prado, 8.X.1973, R. Capocasale, 1♂ (CAS). **ARGENTINA**: **Misiones**: Fracrán, 23.XI.1948, M. Birabén, 1♂ 3♀ 2 immatures (MLP); Refugio Piñalito, XI.1954, R. Schiapelli, M.E. Galiano, 1♀ (MACN-Ar); Santa María, XII.1947, J.M. Viana, 1♀ (MACN-Ar 2558). **Entre Ríos**: Gualeguay, 20.VIII.1989, M. Ramírez, 3♀ (MACN-Ar, photo MJR 227); El Palmar Natl. Park, 14.X.1984, M. Ramírez, 4♀ (MACN-Ar). **Buenos Aires**: Ciudad de Buenos Aires, 1993, M. Ramírez, 1♂ (MACN-Ar); Delta, estación experimental INTA, VII.1968, A. Bachmann, 1♂ 1♀ (MACN-Ar); Delta, Arroyo Carreras, VIII.1941, F. Monrós, 2♂ 1♀ (MACN-Ar); Delta, Canal Arias, VI.1941, F. Monrós, 1♂ (MACN-Ar); Delta, intersection of Paraná de Las Palmas with Canal 6, VII.1968, A. Bachmann, 1♀ (MACN-Ar); Delta, Río Gálvez, IX.1941, F. Monrós, 1♂ 1♀ (MACN-Ar 918); Delta, Tigre, Río Luján and Arroyo Guayracá, VI.1982, M. Ramírez, 1♀ (MACN-Ar); Dique Luján, 26.IX.1982, P. Goloboff and M. Ramírez, 1♀ (MACN-Ar); Escobar, 23.VII.1984, M. Ramírez, 2♂ (MACN-Ar); Hudson, 1.V.1984, M. Ramírez, 2♂ 1♀ (MACN-Ar); Isla Martín García, 25.V.1990, M. Ramírez, 15♂ 1♀ 1 immature (MACN-Ar), and 1♂ 1♀ misidentified as *T. parcepunctata* in Ramírez (1995a); Laguna de los Padres, talar, 29.V.1989, J. Farina, 2♂ 1♀ (MMLS); La Plata, 1942, 1♀ (MLP); 25 km S Magdalena, 13-14.VIII.1983, P. Goloboff and M. Ramírez, 1♀ (MACN-Ar); Otamendi, 7.X.1979, P. Goloboff, 1♀ (MACN-Ar); Reserva Otamendi, 10.VI.1997, M. Ramírez, L. Compagnucci, C. Grismado, F. Uehara, 2♂ (MACN-Ar); Partido de Luján, 24.V.1981, M. Ramírez, 1♂ 1♀ (MACN-Ar); Ponedvedra, 19.V.1979, P. Goloboff, 2♂ (MACN-Ar); Punta Lara, Ensenada, VIII.1972, M.E. Galiano, 3♂ (MACN-Ar); 25.IV.1984, M.E. Galiano, C. Scioscia, 5♂ 3♀ (MACN-Ar), 10.X.1984, M.E. Galiano, 1♂ 1♀ (MACN-Ar),

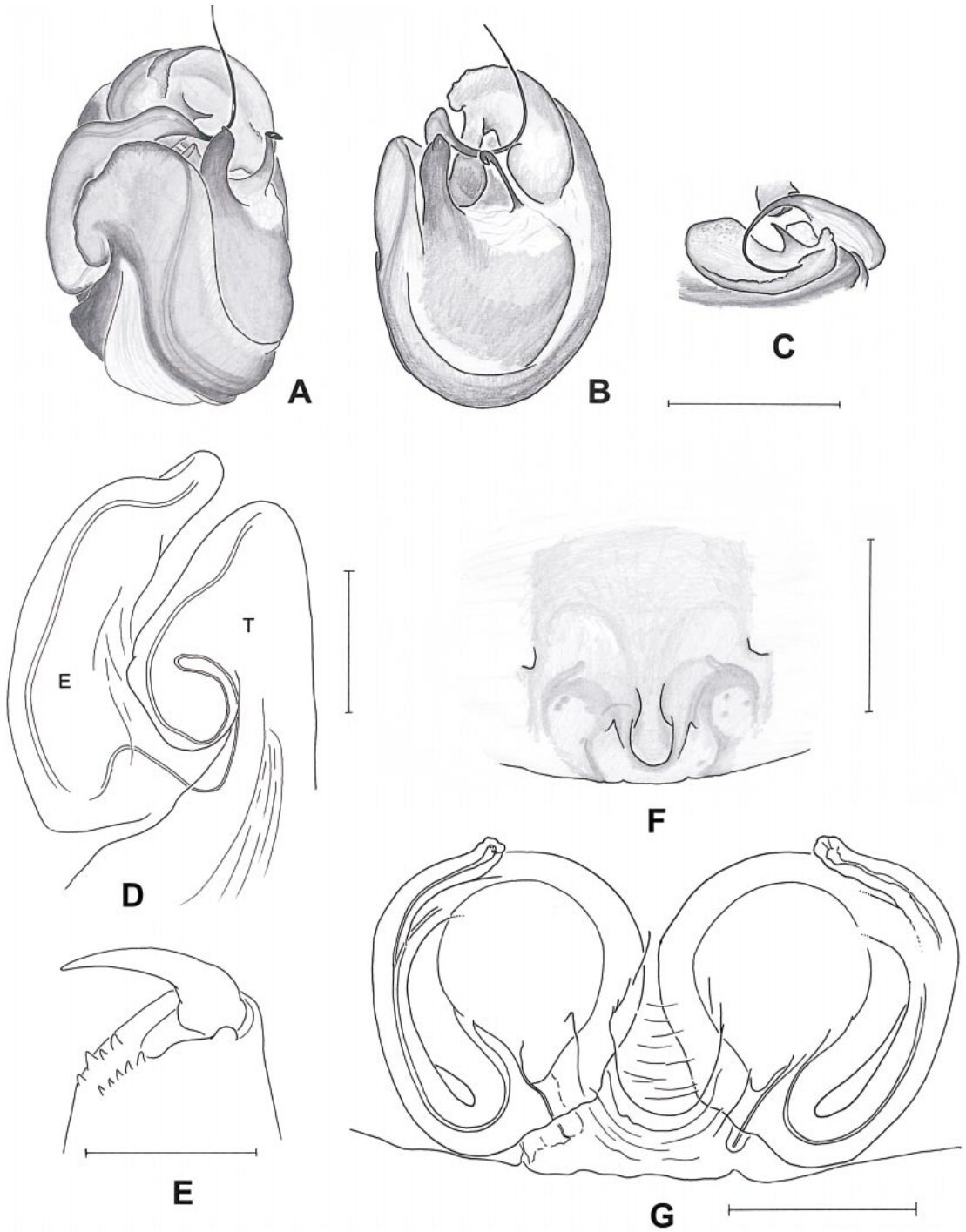


Fig. 128. *Tasata variolosa* Mello-Leitão. **A.** Male copulatory bulb, ventral view (Buenos Aires, Punta Lara, MACN-Ar 9803). **B.** Same, retrolateral view. **C.** Same, apical view. **D.** Same, detail pro-lateral, cleared. **E.** Female left chelicera, ventral view (MACN-Ar 9803). **F.** Epigyne, ventral view (syntype). **G.** Same, cleared. Scale bars = A–C, E, F, 0.5 mm; D, G, 0.2 mm. (E = embolus; T = tegulum.)

18.IX.1986, M. Ramírez, 2♀ 1♂ (MACN-Ar); 28.XI.1985, M.E. Galiano, C. Scioscia, 3♀ without legs, in nest of wasp *Auplopus* sp., det. J. Genise (MACN-Ar); IV.1986, M.E. Galiano, C. Scioscia, 4♂ (MACN-Ar); V.1986, C. Scioscia, 1♂ 1♀ (MACN-Ar), 16.VII.1989, M. Ramírez, 2♂ 1♀ (MACN-Ar 9803, photo MJR 280–282); Tigre, Rincón de Milberg, 5.III.1981, M. Ramírez, 1♀ (MACN-Ar).

Tasata unipunctata (Simon),
new combination

Figure 129

Oxysoma unipunctatum Simon, 1896b: 505 (male lectotype, male, female and immature, and a female of *Wulfila* sp., all paralectotypes here designated, from Venezuela, Caracas, in MHNP 8161, examined). Mello-Leitão, 1922: 20.

NOTE: The variant described by Simon (1896b) is a male from Brazil, Minas Gerais, Matozinhos. According to my preliminary revisions of Brazilian collections, several species may occur in Brazil, all very similar and difficult to distinguish, with subtle variation in genitalia. It is still not clear how much of this variation reflects true interspecific differences.

DIAGNOSIS: Provisionally distinguished by the combination of very small AME (fig. 129F), a small retrolateral ridge on male paramedian apophysis, the triangular shape of epigynal anterior pouch, and the ample loop described by the copulatory ducts, before the spermathecae.

FEMALE (paralectotype): Carapace length 2.80, width 2.45. Length of tibia/metatarsus: I, 3.90/3.50; II, 3.40/3.10; III, 2.35/2.1; IV, 3.00/3.40. Chelicerae with two teeth on retromargin. Spines: leg I, femur d 1–1–1, p 0–d1–d1, r d1ap; tibia v 2–2–2, p and r 1–1; metatarsus v 2bas, p and r 1–0, d 0–p1–0–2. II = I. III, femur d 1–1–1, p and r d1ap; patella 0; tibia v 0–2–2, p and r 1–1, d r1–0–1–0; metatarsus v 2–0–2, p 0–d1–1, r d1–1–1, d 0–p1–2. IV, femur = III; patella r d1; tibia v p1–2–2, p and r 1–1, d r1–0–1–0; metatarsus v 2–2–2, p and r d1–1–1, d 0–p1–2. Color (fig. 129B): quite faded, yellow. Legs with small, elongate, brownish violet spots at base of some tibial spines, including ventrals. Abdomen with anterior dark dot, lateral

stripes of white guanine reticulum. Sternum and venter pale. Chelicerae with anterior longitudinal brown line. Epigyne (fig. 129G, H): lateral lobes close to each other anterior of anterior pouch, which has triangular opening. Copulatory ducts describing ample loop before entering spermathecae.

MALE (lectotype): Carapace length 2.60, width 2.25, wider on legs II–III. Length of tibia/metatarsus: I, 4.85/2.25; II, 4.05/3.60; III, 2.65/2.40; IV, 3.40/3.70. Chelicerae slightly longer and narrower than those of female. Spines as in female, except: leg I, tibia d r1–0–1–0. II, femur r 0–d1–d1; tibia = I. III, tibia v p1–2–2. IV, femur = III. Color (fig. 129A) as in female. Palp (fig. 129C–E): tibia long, width/length 0.48. Sperm duct with loop approximating anterior ventral margin of tegulum, slight spiral before reaching embolus. Embolus very thin, without basal process, membranous area ample. Paramedian apophysis thick, elongate, with acute tip. Primary conductor concave, rounded. Secondary conductor large, prolateral portion with denticles on apical margin; retrolateral portion weakly sclerotized on proximal part, with tiny denticles on central concavity.

VARIABILITY: The male from São Paulo has reddish dorsal pattern on carapace and abdomen.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Known only from type locality, and probably also from Minas Gerais and São Paulo.

OTHER MATERIAL EXAMINED: One male and two females from Brazil, São Paulo, São José do Barreiro, Serra da Bocaína, 1960 m, XI.1968, M. Alvarenga (AMNH), and one male from Brazil, Minas Gerais, Matozinhos (MHNP 8163), described as a variant by Simon (1896b), have slight differences with the types, but might well be conspecific.

Tasata taim, new species

Figure 130

TYPES: Male holotype and penultimate female paratype from Brazil, State of Rio Grande do Sul, Santa Vitória do Palmar, Estação Ecológica do Taim, ca. 33°31'S, 53°21'W, 12.IX.1991, A. Lise, in MCTP 0992. The female was close to ecdysis, and the genitalia could be dissected.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Distinguished from other *Tasata* by having a greenish, extremely elongate abdomen, and a flattened carapace with white hairs at the sides.

FEMALE (penultimate, paratype): Abdomen extremely elongate, legs very long, including leg III. Total length 7.58. Carapace length 2.50, width 1.87, wider on legs II–III. Length of tibia/metatarsus: I, 2.87/2.50; II, 2.80/2.43; III, 1.90/1.83; IV, 2.63/2.93. Palpal tarsus length 1.00. Chelicerae with four teeth on promargin, three on retromargin, apical one smaller. Sternum length 1.27, width 1.07. Spines (long on anterior legs): leg I, femur d 1–1–1, p 0–d1–1–0–d1, r 0–d1–d1; tibia v 2–p1–2–0–2 (x–p1–x–x–x abnormal, absent in other female and male), p d1–d1–1–0 or d1–1, r d1–1; metatarsus v 2bas, p and r d1–1–0, d 0–p1–0–2. II, femur d 1–1–1, p and r 0–d1–d1; tibia v 2–2–2, p and r d1–1; metatarsus = I. III, femur = II; patella r d1; tibia v 2–2–2, p and r 1–1, d r1–0–1–0; metatarsus v 2–2–2, p and r d1–1–1, d 0–p1–2. IV = III. Abdomen length 5.45, width 2.00, spiracle–epigastrium 2.40, spiracle–spinnerets 1.57. Color as in male. Epigyne (not sclerotized, dissected from immature, similar to that of mature female, fig. 130F, G): lateral lobes separate, anterior pouch ample. Copulatory openings close to epigastric furrow, copulatory ducts thin (most probably because of being unsclerotized), ducts of accessory bulbs long (but short in adult female). Spermathecae unmodified, spherical (collapsed in clove oil).

MALE (holotype): Total length 8.25. Carapace length 2.90, width 2.10. Length of tibia/metatarsus: I, 4.99/4.66; II, 4.52/4.12; III, 3.07/2.93; IV, 4.12/4.39. Left chelicera with two teeth on retromargin, apical one missing, right normal. Sternum length 1.50, width 1.23. Spines as in female, except: leg I, tibia v 2–2–2, p 1–1. III, metatarsus v 2–r1–2. Abdomen length 5.60, width 1.73, spiracle–epigastrium 2.23, spiracle–spinnerets 1.83. Color (fig. 130A): carapace pale grayish with three longitudinal dark bands, one median, two laterals. Many white hairs covering clypeus, margins of carapace, its pale stripes, pale areas of sternum, coxae. Legs grayish with small dark dots, contrasting on femora. Ster-

num, labium, endites yellow, each with longitudinal stripe of irregular dark spots, darker on anterior, posterior ends of sternum. Dorsum of abdomen with white guanine reticulum (except on cardiac area and posterior end), wide grayish band, from posterior half of cardiac area to anal tubercle; sides grayish. Venter with white guanine reticulum, two longitudinal stripes from epigastrium to spinnerets, touching corners of tracheal spiracle. Epigastrium with two longitudinal spots, at internal margins of pulmonary plates. Palp (fig. 130B–E): tibia long, width/length 0.47. Sperm duct with loop approximating anterior ventral margin of tegulum, slight spiral before reaching the embolus. Embolus very thin, without basal process, membranous area ample, concave, projecting dorsally. Paramedian apophysis sinuous, with acute tip. Primary conductor concave, rounded, apex in contact with lobe on prolateral portion of secondary conductor. Prolateral portion of secondary conductor with denticles at apical margin; retrolateral portion with tiny denticles.

VARIABILITY: Female MCTP 6852 has an additional, smaller distal tooth on the cheliceral promargin. The differences in the spermathecae are presumably because of incomplete development of the paratype.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Known only from type locality.

OTHER MATERIAL EXAMINED: **BRASIL: Rio Grande do Sul:** Porto Alegre, 22.I.1995, W. Guevell, 1 ♀ (MCTP 6852).

Tasata chiloensis, new species

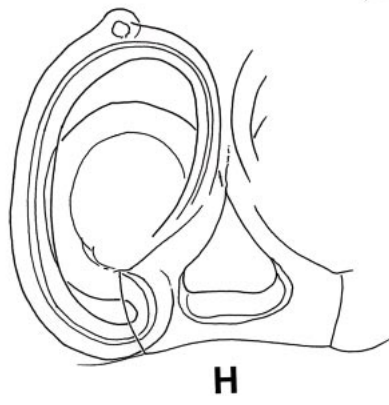
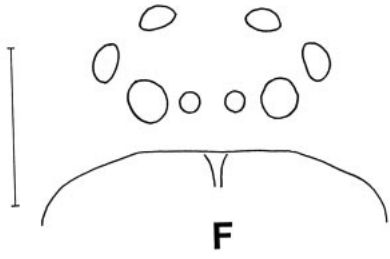
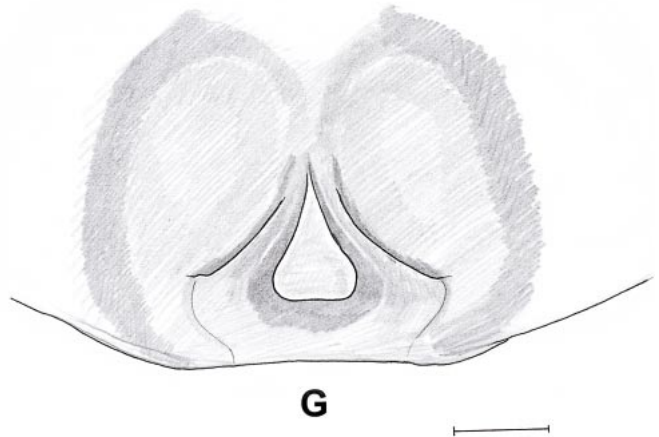
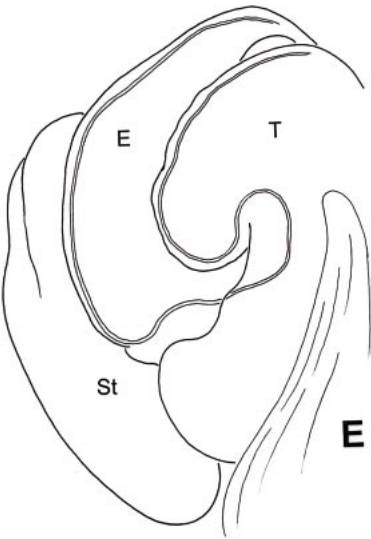
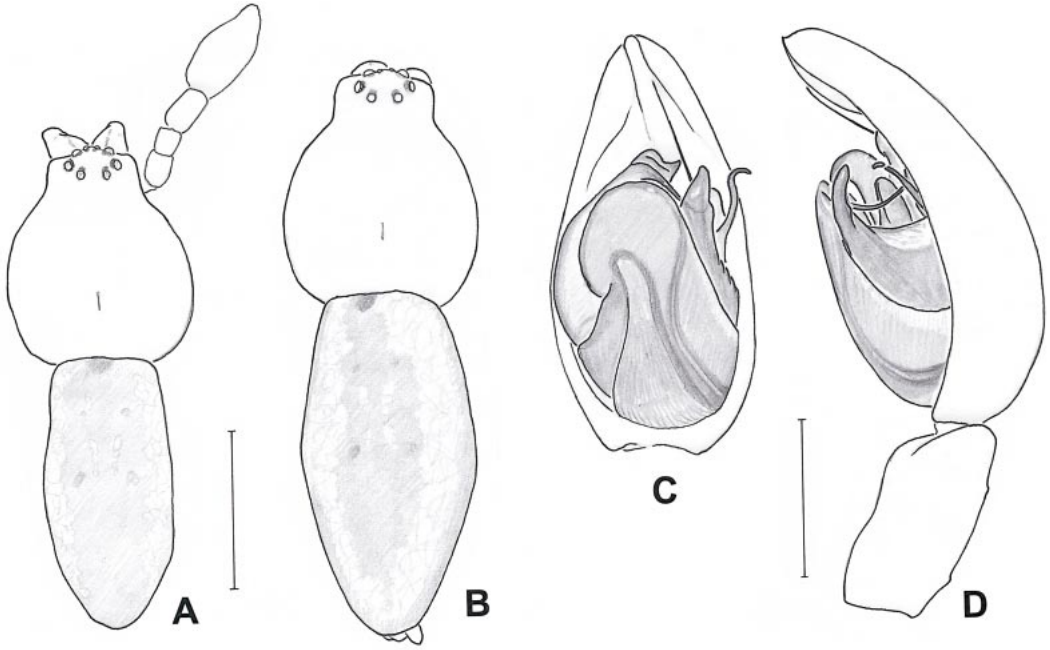
Figures 131, 132

TYPES: Female holotype and male paratype from Chile, Región X, Chiloé province, Cordillera de San Pedro, Piroquina, 500 m, 10–11.III.1987, L. Peña, deposited in AMNH.

ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: Distinguished by having semi-circular anterior epigynal ridges, combined with a wide, posteriorly displaced anterior pouch (fig. 132F) and a transversely striated embolar base (fig. 132E).

FEMALE (holotype, fig. 132A): Total length 7.71. Carapace length 3.13, width 2.43, wid-



er on legs II–III. Length of tibia/metatarsus: I, 3.86/2.93; II, 3.59/2.67; III, 2.17/1.83; IV, 2.70/2.50. Palpal tarsus length 1.20. Chelicerae with two teeth on retromargin. Sternum length 1.57, width 1.20. Spines: leg I, femur d 1–1–1, p 0–0–d1–1–d1, r 0–d1–d1; tibia v 2–2–2, p and r 1–1; metatarsus v 2bas, p and r 1–0, d 2ap. **II** = I. **III**, femur d 1–1–1, p and r 0–d1–d1; tibia v p1–2–2, p and r d1–1, d r1–1; metatarsus v 2–0–p1 and group of apical hairs, p and r 0–1–1, d 0–p1–r1–2. **IV**, femur d 1–1–1, p and r d1ap; patella r 1; tibia = **III**; metatarsus v 2–p1–p1 and group of apical hairs, p and r d1–1–1, d 0–p1–2. Abdomen length 4.52, width 2.00, spiracle–epigastrium 2.07, spiracle–spinnerets 0.80. Color: yellow with small brown dots on legs I and II, patellae III and IV with dorsal apical spot. Dorsum with pattern of darker dots, abdomen with white guanine reticulum on sides, and ventral median dark band from epigastrium to tracheal spiracle. Epigyne (fig. 132F, G): lateral lobes separate, median field rugose, slightly elevated at sides of anterior pouch. Anterior pouch wide, surrounded by U-shaped suture, posterior border reaching epigastric furrow. Margins of lateral lobes continued into semicircular anterior carinae. Copulatory ducts surrounding spermathecae.

MALE (paratype): Total length 7.71. Carapace length 3.33, width 2.60. Length of tibia/metatarsus: I, 6.12/4.92; II, 5.65/4.26; III, 3.46/2.60; IV, 4.12/3.46. Chelicerae as those of the female, right retromargin with three teeth (apical one smaller). Sternum length 1.63, width 1.27. Spines as in female, except: leg I, tibia d r1–0–1–0. **II**, tibia = I. **III**, femur p 0–d1–1–d1; patella r d1; metatarsus d 0–p1–2. **IV**, metatarsus p 0–1–1. Abdomen length 4.52, width 1.85, spiracle–epigastrium 2.03, spiracle–spinnerets 0.67. Color as in female. Palp (fig. 132B–E): tibia width/length 0.75, cymbium relatively large. Sperm duct with loop approximating anterior ventral margin of tegulum, which projects over paramedian

apophysis. Embolus very thin, base with transverse anterior striae (fig. 132E), basal process absent, membranous area prolonged in lobe. Median apophysis long. Paramedian apophysis with retrolateral curved tip, one ventral/prolateral shorter projection. Primary conductor absent, only sclerotized stripe remains. Secondary conductor with two lateral prongs, one at each side of end of canal; prolateral portion with rounded lobe fitting under embolus; canal ending in pointed projection, with prolateral, rugose prong; retrolateral portion large, weakly sclerotized, membranous at apical/retrolateral side, with basal elevated prong.

VARIABILITY: The three cheliceral teeth on right retromargin of paratype are abnormal. Spines: metatarsus IV v 2–2–p1, p 0–1–1.

NATURAL HISTORY: This species builds retreats on foliage, most commonly on “colihue” bamboos (*Chusquea* spp., fig. 131A, B).

DISTRIBUTION: Humid forests in Chile, in Osorno, Llanquihue and Chiloé provinces.

OTHER MATERIAL EXAMINED: **ARGENTINA:** Neuquén: Puerto Blest, 7–20.I.2000, L. Lopardo and A. Quaglino, 2 immatures (MACN-Ar). **CHILE:** **Región X (Los Lagos):** Osorno: El Mirador, 45 km W La Unión, 900 m, 1–2.III.1987, L. Peña, 4♂ 3♀ (AMNH); Puyehue Natl. Park: 700 m, 9.XII.1994, L. Peña, 1♀ (AMNH); 480 m, 40°44'S, 72°18'W, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♀ (AMNH, eggsac in MACN-Ar, photo MJR 1411–1413), 1♀, 1 eggsac, 1 immature (MACN-Ar); 12 km SE Aguas Calientes, 700 m, 21.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH); Aguas Calientes, 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 4 immatures (MACN-Ar). **Llanquihue:** Alerce Andino Natl. Park, elev. 100 m, 41°35'S, 72°41'S, 23.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH).

←

Fig. 129. *Tasata unipunctata* (Simon). **A.** Male (lectotype). **B.** Female (paralectotype). **C.** Male palp, ventral view (lectotype). **D.** Same, retrolateral view. **E.** Detail of copulatory bulb, prolateral view, cleared (São Paulo, Bocaina). **F.** Male eyes, anterior view (lectotype). **G.** Epigyne, ventral view (paralectotype). **H.** Same, cleared. Scale bars = A, B, 2 mm; C, D, F, 0.5 mm; E, 0.2 mm; G, H, 0.1 mm. (E = embolus; St = subtegulum; T = tegulum.)

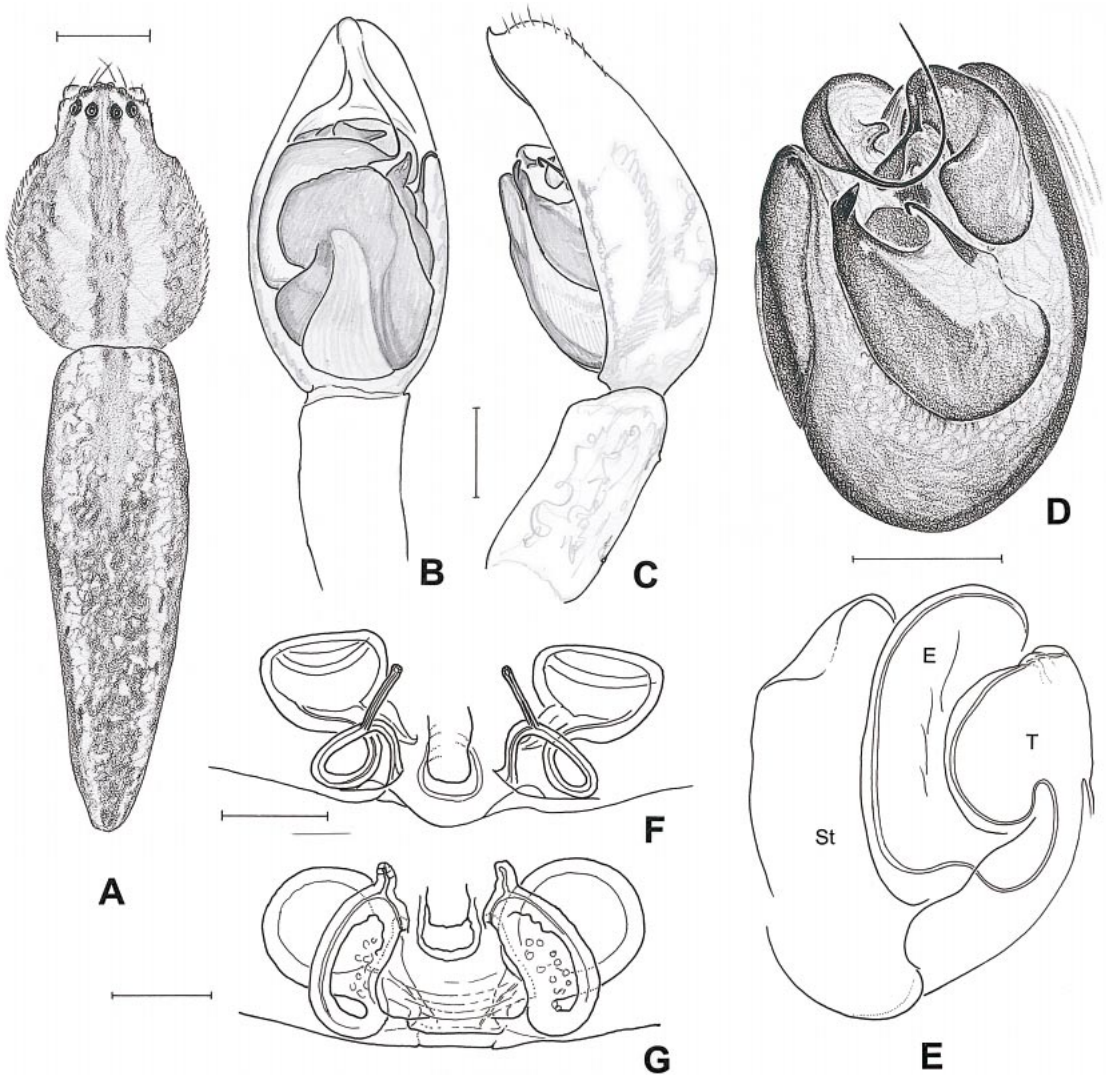


Fig. 130. *Tasata taim*, n. sp. **A.** Male (holotype). **B.** Male palp, ventral view. **C.** Same, retrolateral view. **D.** Copulatory bulb, retrolateral-ventral view. **E.** Same, cleared, detail prolateral. **F.** Cleared epigyne, ventral view (paratype, spermathecae collapsed during clearing). **G.** Cleared epigyne, ventral view (MCTP 6852). Scale bars = A, 1 mm; B, C, 0.25 mm; D, E 0.2 mm; F, G, 0.1 mm. (E = embolus; St = subtegulum; T = tegulum.)

Tasata centralis, new species

Figures 133, 134

TYPES: Male holotype from Argentina, Córdoba province, Calamuchita, ca. 31°55'S, 64°38'W, XII.1941, J.M. Viana, deposited in MACN-Ar 9804.

ETYMOLOGY: The specific name refers to its distribution through central Argentina.

DIAGNOSIS: Distinguished from all other

Tasata by having a bifid male paramedian apophysis (fig. 133B), and by the flattened anterior projections at the sides of the epigynal anterior pouch (fig. 134C).

FEMALE (Tilcara, not type): Total length 5.20. Carapace length 1.93, width 1.45, wider on legs II–III. AME 2/3 ALE. Length of tibia/metatarsus: I, 1.97/1.75; II, 1.57/1.38; III, 1.03/1.15; IV, 1.62/1.83. Palpal tarsus



Fig. 131. *Tasata chilensis*, n. sp. (Osorno, Puyehue, photos MJR 1411, 1413). **A.** Retreat on bamboo. **B.** Same, female guarding eggsac.

length 0.70. Chelicerae with five small teeth on retromargin. Sternum length 1.03, width 0.85. Spines: leg **I**, femur d 1-1-1, p (1-d1)ap, r d1ap; tibia v 2-2-2, p and r d1-1; metatarsus v 2bas, p and r 1-0, d 0-p1-2. **II**, femur d 1-1-1, p and r d1ap; tibia and metatarsus = **I**. **III**, femur d 1-1-1, p and r 0-d1-d1; patella r d1; tibia v p1-2-2, p and r d1-1, d r1-0-1-0; metatarsus v 2-2-2, p and r d1-1-1, d 0-p1-2. **IV**, femur = **II**; patella r d1; tibia and metatarsus = **III**. Abdomen length 3.17, width 2.27, spiracle-epigastrium 1.50, spiracle-spinnerets 0.53. Color: carapace pale grayish with dark ocular area and lateral dark stripes with some radial darker lines. Legs pale grayish with many dark dots on femora, spots on other segments. Sternum grayish with center yellow. Abdomen yellow, dorsum with tenuous median longitudinal pattern, venter yellow with some dark dots. Epigyne (fig. 134C): lateral lobes well separated, projecting anteriorly at sides of pouch; anterior pouch wide, deeply notched, median field slightly elevated at sides of the anterior pouch.

MALE (holotype): Total length 4.65. Carapace length 2.13, width 1.60. Length of tibia/metatarsus: **I**, 2.97/2.27; **II**, 1.87/1.67; **III**, 1.22/1.30; **IV**, 2.43/2.03. Chelicerae slightly longer than those of female. Sternum length 1.13, width 0.90. Spines as in female, except: leg **III**, tibia v 2-2-2. **IV**, tibia v 2-2-2. Abdomen length 2.17, width 1.27, spiracle-epigastrium 1.10, spiracle-spinnerets 0.37. Color as in female, but abdomen with white guanine reticulum, dorsal pattern grayish violet, wider behind cardiac area, with very dark anterior dot. Palp (figs. 133, 134A, B): tibia

width/length 0.75. Sperm duct with loop approximating anterior ventral margin of tegulum, evident spiral loop before reaching embolus. Embolus with membranous ventral area, without basal process. Median apophysis with short splinters at base. Paramedian apophysis bifid, retrolateral tip pointed, prolateral tip flattened, rounded. Primary conductor elongate, pointed. Secondary conductor totally divided by narrow membranous area (fig. 133A); prolateral portion with two projections, one median bearing canal, another prolateral beak-shaped, arising from flattened process; canal not evident, because entire central area membranous; retrolateral portion complex, with internal concavity.

VARIABILITY: Some specimens have a dorsal abdominal dark band, wider behind cardiac area.

NATURAL HISTORY: Unknown.

DISTRIBUTION: Argentina, from Jujuy to Chubut provinces.

OTHER MATERIAL EXAMINED: **ARGENTINA:** **Jujuy:** Tilcara, V.1983, P. Goloboff, 1 ♀ (MACN-Ar). **Córdoba:** Calamuchita, "El Sauce", XII.1941, 2 immatures (MACN-Ar); Huerta Grande, II.1943, collector unknown, 1 ♂ (MACN-Ar). **Buenos Aires:** Carmen de Patagones, II.1937, J.M. Viana, 2 ♀ (MACN-Ar 250); N Lavalle, Salina Las Barrancas, 28.V.1951, B.S. Gerschman, 1 ♂ (MACN-Ar 3295). **La Pampa:** Laguna Luro, 8.IV.1962, collector's name illegible, 1 ♂ (MACN-Ar 9805). **Neuquén:** ciudad de Neuquén, no date, O. de Ferrariis, 1 ♀ (MACN-Ar); Departamento Limay, Mahuida, 20.VIII-7.IX.1963, J.M. Gallardo, 1 ♀ (MACN-Ar).

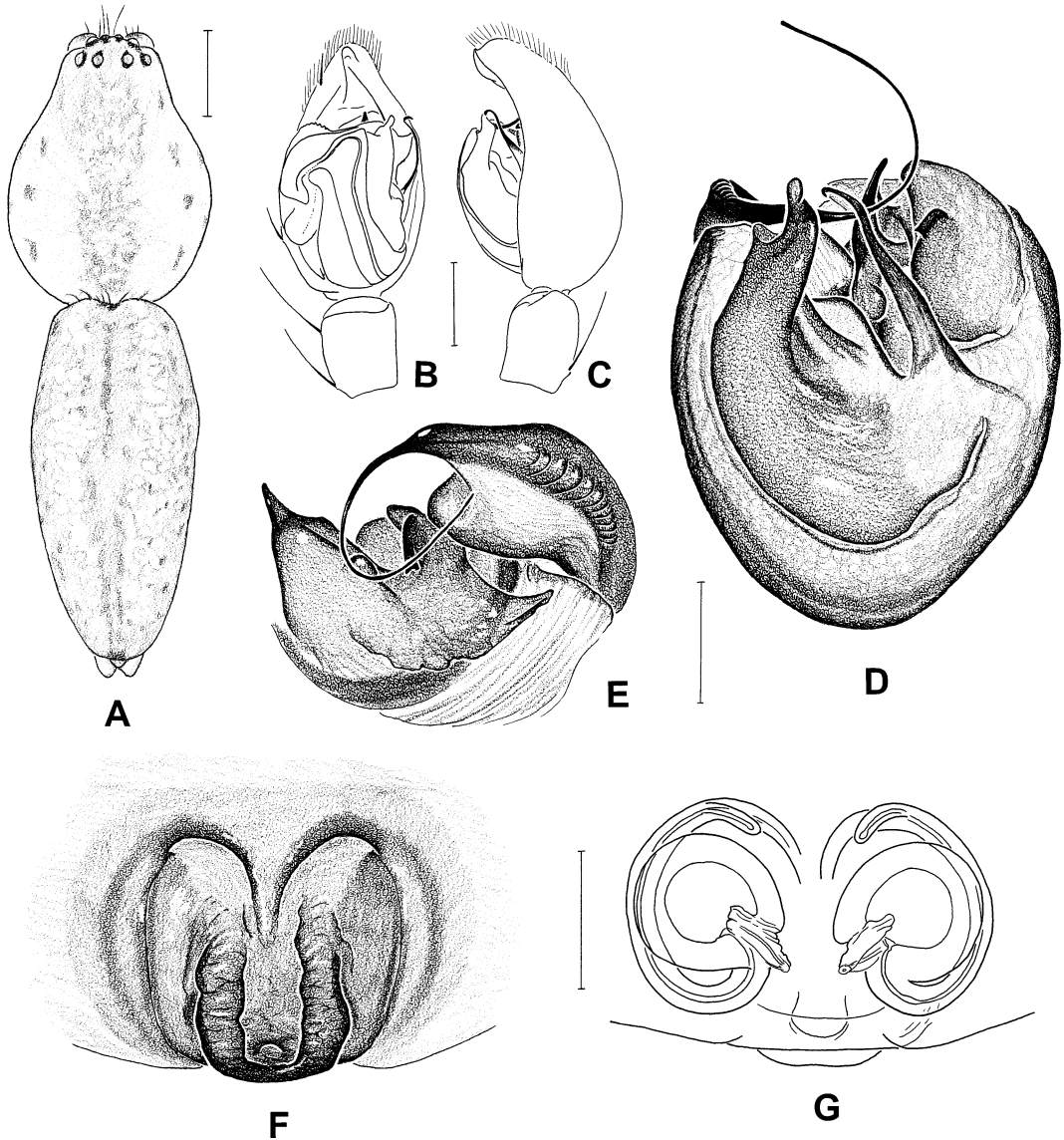


Fig. 132. *Tasata chiloensis*, n. sp., female holotype, male from Osorno, El Mirador. **A.** Female. **B.** Male palp, ventral view. **C.** Same, retrolateral view. **D.** Male copulatory bulb, retrolateral view. **E.** Same, apical view. **F.** Epigyne, ventral view. **G.** Same, cleared. Scale bars = A, 1 mm; B, C, 0.5 mm; D–G, 0.2 mm.

Chubut: Península de Valdez, Punta Norte, 2.VIII.1972, M. Rumboll, 1 ♀ (MACN-Ar).

Synonymized with *Oxysoma* Nicolet by Simon, 1897a: 30, 92, 96, 100.

PHIDYLE SIMON

Table 28

Phidyle Simon, 1880: 228, 286 (type species by monotypy *Sparassus punctipes* Nicolet, 1849).

DIAGNOSIS: The single known species resembles *Monapia* and some *Oxysoma* in having a membranous area dividing the secondary conductor (fig. 135D), but it can be distinguished by having a narrow, elevated epi-

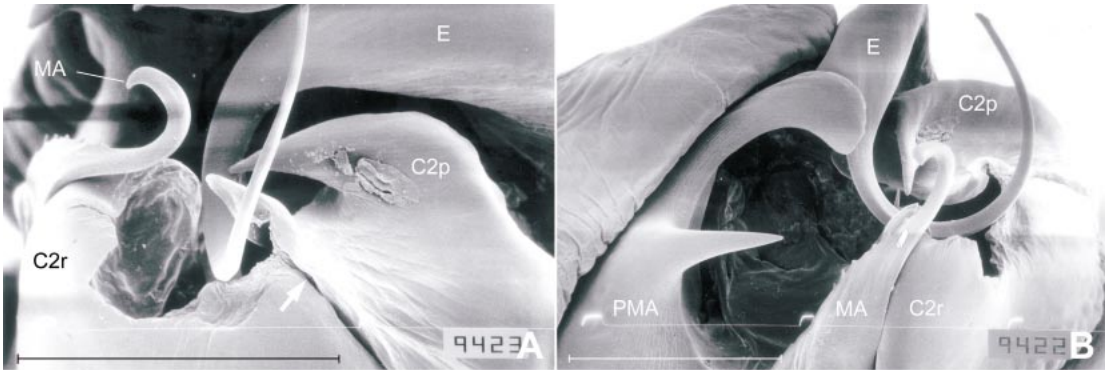


Fig. 133. *Tasata centralis*, n. sp., male copulatory bulb (Buenos Aires, Salina Las Barrancas). **A.** Apical view: arrow points to membranous area dividing C2. **B.** Retrolateral view. (C2p = prolateral portion of C2; C2r = retrolateral portion of C2; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

gynal median field (fig. 135B), greatly modified secondary conductor, and by lacking the synapomorphies of those genera.

DESCRIPTION: Chelicerae with three teeth on promargin, two on retromargin, similar in male and female. Legs spinose in both sexes. Tracheal spiracle closer to spinnerets than to epigastrium. Male palpal tibia long, about two times longer than wide (fig. 137B). Sperm duct with curve approximating ante-

rior ventral margin of tegulum, then running through tegular margin before entering embolus (fig. 137C). Embolar base with longitudinal projecting ridge, without basal process, with small ventral membranous area (fig. 135C). Apex of paramedian apophysis with retrolateral curved projection, prolateral blunt cusp. Primary conductor wide, well sclerotized. Secondary conductor totally divided by membranous area (fig. 135D), well

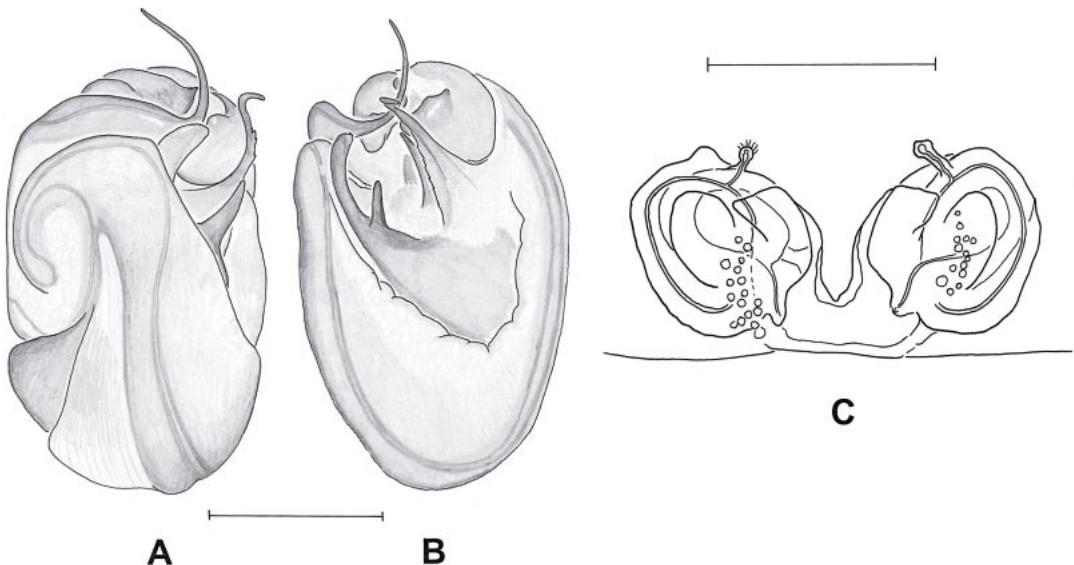


Fig. 134. *Tasata centralis*, n. sp. **A.** Male copulatory bulb, ventral view (La Pampa, MACN-Ar 9805). **B.** Same, retrolateral view. **C.** Cleared epigyne, ventral view (Jujuy, Tilcara). Scale bars = 0.2 mm.

TABLE 28
Autapomorphies of *Phidyle punctipes*

apical margin tegulum extended (55): absent → present
base embolus anterior ridge (99): absent → present
spine metatarsus II, p d1-x-x (153): absent → present
spine tibia III, v r1-x-x (161): absent → present
spine tibia IV, v r1-x-x (182): absent → present

separated from anterior margin of tegulum by membranous area (sperm duct describing curve bordering this area); prolateral portion with canal vestigial, fused to anterior dorsal margin of tegulum; retrolateral portion complex, with several projections, one acute, with sort of longitudinal canal. Epigyne (figs. 135B, 137E–G): median field elongate, elevated, anterior pouch well defined. Copulatory openings at sides of anterior pouch. Copulatory ducts approximately parallel, close to suture between lateral lobes and median field. Ducts of accessory bulbs short.

COMPOSITION: Only the type species.

Phidyle punctipes (Nicolet)

Figures 135B–D, 136, 137

Sparassus punctipes Nicolet, 1849: 418 (female holotype from Chile, Valdivia, in MHNP, examined).

Sparassa punctipes: Simon, 1864: 396.

Phidyle punctipes: Simon, 1880: 287.

Oxysoma punctipes (not *O. p.* Nicolet, 1849: 512): Simon, 1897a: 100.

DIAGNOSIS: See generic diagnosis.

FEMALE (Fray Jorge): Total length 6.65. Carapace length 2.90, width 2.23, wider on legs II–III. Length of tibia/metatarsus: I, 3.27/2.53; II, 2.87/1.97; III, 2.00/1.87; IV, 2.53/2.73. Palpal tarsus length 0.73. Chelicerae unmodified, with two teeth on retromargin. Sternum length 1.50, width 1.17. Spines: leg I, femur d 1–1–1, p and r 0–d1–d1; tibia v 2–2–2, p and r d1–1, d r1–0–1–0; metatarsus v 2bas, p and r d1–1–1, d 0–p1–2. II, femur d 1–1–1, p 0–0–d1–1–d1, r 0–d1–d1; tibia = I; metatarsus = I. III, femur = II; patella r d1; tibia = I; metatarsus = I, but v 2–p1–2. IV, femur d 1–1–1, p 0–d1–d1, r d1ap; patella r d1; tibia = I; metatarsus = I, but v 2–2–2. Abdomen length 4.25, width 2.65, spiracle–epigastrium 1.67, spiracle–spinnerets 0.73. Color (fig. 136): pale grayish yellow, with

dark small spots. Legs with small spots at bases of spines and setae, dorsal apical spot on tarsi. Sternum with small spot in front of each coxae, those of coxa IV contiguous. Abdomen with dorsal pattern of dark spots, dots, pale stripe surrounding cardiac area and dorsal pattern. Venter with small spots, two larger at sides of tracheal spiracle. Epigyne: see generic description.

MALE (Fray Jorge): Total length 5.05. Carapace length 2.17, width 1.73. Length of tibia/metatarsus: I, 3.46/2.73; II, 2.87/2.33; III, 1.87/1.80; IV, 2.40/2.53. Chelicerae similar to those of female. Sternum length 1.22, width 0.97. Spines as in female, except: legs I and II, metatarsus v 2–r1–0. III, IV, metatarsus v 2–(p1–2)–2 (normally 2–2–2). Abdomen length 2.83, width 1.83, spiracle–epigastrium 1.33, spiracle–spinnerets 0.42. Color as in female. Palp: see generic description.

NATURAL HISTORY: This species builds retreats on foliage of trees or shrubs.

VARIABILITY: Many specimens with abdomen dark at all sides, pale dorsally, sometimes with four dorsal dark spots on the pale area. Some females with narrower epigynal median field and small notch on anterior pouch (compare fig. 137E and G).

DISTRIBUTION: Southern forests and chaparrals in Chile, from the relict forest in Fray Jorge to Palena and Chiloé provinces.

OTHER MATERIAL EXAMINED: **CHILE: Región IV (Coquimbo): Limarí:** Fray Jorge Natl. Park, 579 m, valdivian forest relict, pitfalls, 3.XI.1981, N. Platnick and R. Schuh, 1♂ (AMNH); elev. 580 m, 10.XI.1993, 30°40'S, 71°41'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♂ 2♀, 1♀ (AMNH, photos MJR 1306–1308), 1♂ 1♀ (MACN-Ar), 1♂ 1♀ (MHNS). **Choapa:** El Bato (farm in mountains), E Illapel, 10.X.1985, L. Peña, 3♀ (AMNH); 22 mi N Los Vilos, 13.XII.1950, Ross and Michelbacher, 1♀ (CAS); 25.IX.1971, J. Solervicens, 1♂ (UC); N Los Vilos, 3.X.1990, L. Peña, 1♀ (AMNH); Los Vilos, Cariloleu, 11.X.1994, L. Peña, 2♀ (AMNH); Pichidangui, 32°08'S, 71°32'W, 12.VIII.1966, E. Schlinger, 1♀, 2♂ (CAS). **Coquimbo:** Fundo Palo Colorado, Quilimarí, 9.VIII.1971, R. Calderón, 1♀ (UC). **Región V (Valparaíso): Petorca:** Petorca, 8.X.1986, L.E. Peña, 1♀ (AMNH); Zapallar, 27.XI.1950, Ross and Michelbach-

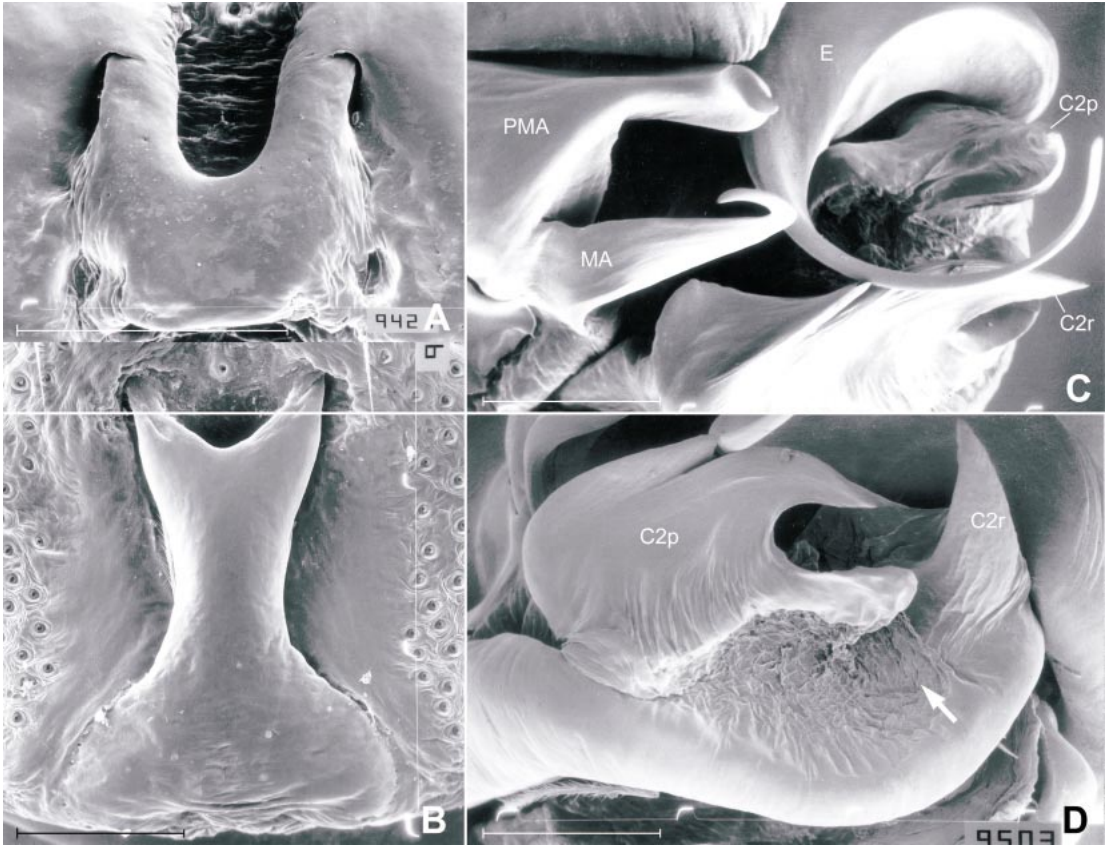


Fig. 135. **A.** *Tasata parcepunctata* Simon, epigyne, ventral view (Buenos Aires, Isla Martín García). **B–D.** *Phidyle punctipes* (Nicolet) (Limarí, Fray Jorge). **B.** Epigyne, ventral view. **C.** Male copulatory bulb, ventral-retrolateral view. **D.** Same, apical view; arrow points to membranous area dividing C2. Scale bars = 0.1 mm. (C2p = prolateral portion of C2; C2r = retrolateral portion of C2; E = embolus; MA = median apophysis; PMA = paramedian apophysis.)

er, 1♀, 1♀, 1♀, 1♀ (CAS). **Quillota:** Cuesta El Melón, nr. La Calera, 15.XI.1985, L. Peña, 1♀ (AMNH); Cuesta La Dormida, 26.IX.1995, A. Ugarte, 1♀ (AMNH). **Valparaíso:** 10 mi N Concón, 16.XII.1950, Ross and Michelbacher, 1♀ (CAS); central Coast (no specific locality), 31.X.1982, no collector, 3♂ (AMNH); Cuesta El Melón, 3.XI.1981, L. Peña, 1♂ (AMNH); Quintero, 11–12.V.1961, R. Donoso and A. Archer, 6♂ 1♀ (AMNH); pitfalls in relict forest, 12.VIII.1968, R. Calderón G., 1♂, 1♀ (AMNH), 12.XII.1980, L. Peña, 1♀ (AMNH); relict forest, 21.XII.1988, V. and B. Roth, 1♂ (CAS); Valparaíso, 15.VIII.1961, J. Kothmann, 1♂ (AMNH). **San Felipe de Aconcagua:** Cachagua,

14.XII.1980, L. Peña, 2♂ (AMNH). **San Antonio:** Quebrada de Córdoba, nr. El Tabo, 1–4.XI.1985, L. Peña, 2♀ (AMNH), 15–20.II.1979, L. Peña, 1♂ 1♀ (AMNH). **Región Metropolitana (Santiago):** Santiago: Ciudad de Santiago (habitación), 16.V.1961, R. Donoso, 1♂ (AMNH); Melipilla, La Viluma, 13–14.V.1980, L. Peña, 1♂, 1♀ (AMNH); Quilicura, V.1979, L. Peña, 1♀ (AMNH). **Región VII (Maule):** Curicó: El Coigo, Cordillera Curicó, 23.III.1983, L. Peña, 1♂ (AMNH). **Cauquenes:** Agua Buena, 12.VI.1984, L. Irrazaval, 1♀ (AMNH); Tregualemu, 520 m, 6–7.XI.1993, L. Peña and A. Ugarte, 1♀ (AMNH). **Región VIII (Biobío):** Nuble: Cobquecura, 8–9.XI.1993, L. Peña, 1♀ (AMNH); Las Cabras, 26–



Fig. 136. *Phidyle punctipes* (Nicolet), female (Limarí, Fray Jorge, photo MJR 1307).

28.XII.1986, L. Umaña, 2 ♀ (AMNH); Los Lleuques, 5–20.XII.1985, L. Umaña, 1 ♀ (AMNH). **Concepción:** Agua Larga, 23.III.1996, T. Cekalovic, 1 ♀ (AMNH); road Chome-Ramuntcho, 8.XI.1996, T. Cekalovic, 5 ♀ (AMNH); Cerro Caracol, Concepción, elev. 200 m, 36°51'S, 73°02'W, 17.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1 ♀ (MACN-Ar, photos MJR 1379, 1380), Escuadrón, 18.XI.1996, 1 ♀, 3.IV.1988, TC-205, 2 ♂, 10.IV.1988, 2 ♂ 1 ♀, 1 ♂, 3.IX.1988, 1 ♀, T. Cekalovic (AMNH); Estero Nonguén, 14.III.2001, T. Cekalovic, 1 ♂ (AMNH); Fundo El Manzano, 8.XI.1992, T. Cekalovic, 1 ♀ (AMNH); Hualpén, 16.V.1975, Quesada, 1 ♀ (AMNH); 7.VI.1996, T. Cekalovic, 2 ♂ 13 ♀ (AMNH); Penco, 18.IX.1986, T. Cekalovic, 2 ♀ (AMNH); Península Tumbes, Playa Brava, 3.X.1983, T. Cekalovic, 1 ♀ (AMNH); Periquillo, 4.IV.1994, 1 ♂, 16.IX.1996, 1 ♀ penultimate, 21.XII.1996, 1 ♀, 10.IV.1997, 2 ♂, 22.III.1997, 1 ♂, T. Cekalovic (AMNH); Laguna San Pedro, 23.XI.1994, T. Cekalovic, 2 ♀ (AMNH); Lagunillas, 6.XI.1993, T. Cekalovic, TC-366, 1 ♀ (AMNH). **Arauco:** Villa Melilla, Lago Lanalhue, 12.IV.1997, T. Cekalovic, 6 ♂, 1 ♀ (AMNH). **Biobío:** Caledonia, E Mulchen, 700 m, 10–15.II.1981, L.E. Peña, 1 ♀ (AMNH); Lengua, Teta Norte, 12.III.1979, M. Casanueva, 1 ♂ (UC); Los Morongos, E Los Niches, 600 m, 17–20.XI.1994, L. Peña, 2 ♀ (AMNH); N Ralco/Trapa-Trapa, 21–22.XI.1994, P. Peña, 1 ♀ (AMNH); W Ralco, Santa Bárbara, 400 m, 22–23.XI.1994, L. Peña, 2 ♀ (AMNH). **Región IX (Araucanía): Malleco:** El Manzano (Arauco/Malleco Provs.), Cordillera Nahuelbuta, 3–5.III.1986, L. Peña, 1 ♂ (AMNH). **Cautín:** 5.III.1986, L. Peña, 1 ♂ (AMNH); Pucón, 15.XI–2.XII.1980, Malaise trap in peninsula, S.A. Marshall, 1 vial (number of specimens not recorded) (AMNH); lakeshore, dung traps, 15.XI–XII.1989, S.A. Marshall, 1 ♀ (AMNH); pan trap under Malaise on point, 8–13.XI.1989, S.A. Marshall, 1 ♀ (AMNH); Tolten (coastal town), 27.II.1979, L. Peña, 2 ♂ (AMNH). **Región X (Los Lagos): Valdivia:** Huachocopihue, 7.III.1965, H. Levi, 1 ♂ (MCZ); Isla Teja, farmland, 6.III.1965, H. Levi, 1 ♂ (MCZ); Santo Domingo, 19.IX.1976, E. Krahmer, 2 ♀ (AMNH); Valdivia, 12.X.1976, E. Krahmer, 8 ♀ (AMNH); XI–XII.1982, E. Krahmer, 3 ♀ (MHNS 700), 1983, E. Krahmer, 2 ♂ (MHNS 827). **Osorno:** hills S Maicolpué, 64 km W Osorno, elev. 50 m, 19.II.1992, M. Ramírez, N. Platnick, P. Goloboff, 1 ♀ (AMNH); Anticura, 26–31.VII, 1–5.VIII.1983, L. Peña, 6 ♀ (AMNH), 19–29.X.1985, L. Peña, 1 ♀ (AMNH); Osorno, VIII.1977, A. Tobar, 1 ♀ (AMNH); 10 km E Puyehue, 24.I.1951, Ross and Michelbacher, 1 ♀ (CAS); Puyehue Natl. Park, Anticura, 1.XI.1982, 1 ♀ (MHNS 705); Pucatrihue, I–III.1968, L. Peña, 1 ♀ penultimate, 1 ♀ (MCZ); 26–28.III.1968, L. Peña, 3 ♂, 1 ♂, 1 ♂ (MCZ), 12.IV.1986, L. Peña, 1 ♀ (MCZ). **Llanquihue:** Cerro Derrumbe, 14.III.1974, R. Calderón, 2 ♂ (UC); Correntoso, XII.1969, L. Peña, 2 ♀ (MCZ); N Correntoso, IV–V.1989, 1 ♂, VI–VII.1989, 1 ♂ 6 ♀, L. Peña (AMNH); N Correntoso, NE Puerto Montt, VIII.IX.1989, L. Peña, 2 ♀ (AMNH); Chamisa, 13.XII.1968, L. Peña, 1 ♀ (MCZ); Cerro Hornohuincó, Correntoso, XII.1968, L. Peña, 1 ♀ (MCZ); 4 km S Los Muermos, 170 m, *Nothofagus-Podocarpus* assoc., 12.XI.1966, E. Schlinger, M. Irwin, 1 ♀ (CAS); Vicente Pérez Rosales Natl. Park, Cayutue, road to Calbutue, 19.III.1974, 3 ♀ (UC); Petrohué, 29.III.1968, L. Peña, 2 ♂ (MCZ). **Chiloé:** Isla de Chiloé: Canan, 26.II.1972, T. Cekalovic, TC-38, 1 ♀ (AMNH); Dalcahue, 3.IV.1967, L. Peña, 10 ♂ (MCZ), 1–4.IV.1968, L. Peña, 1 ♂

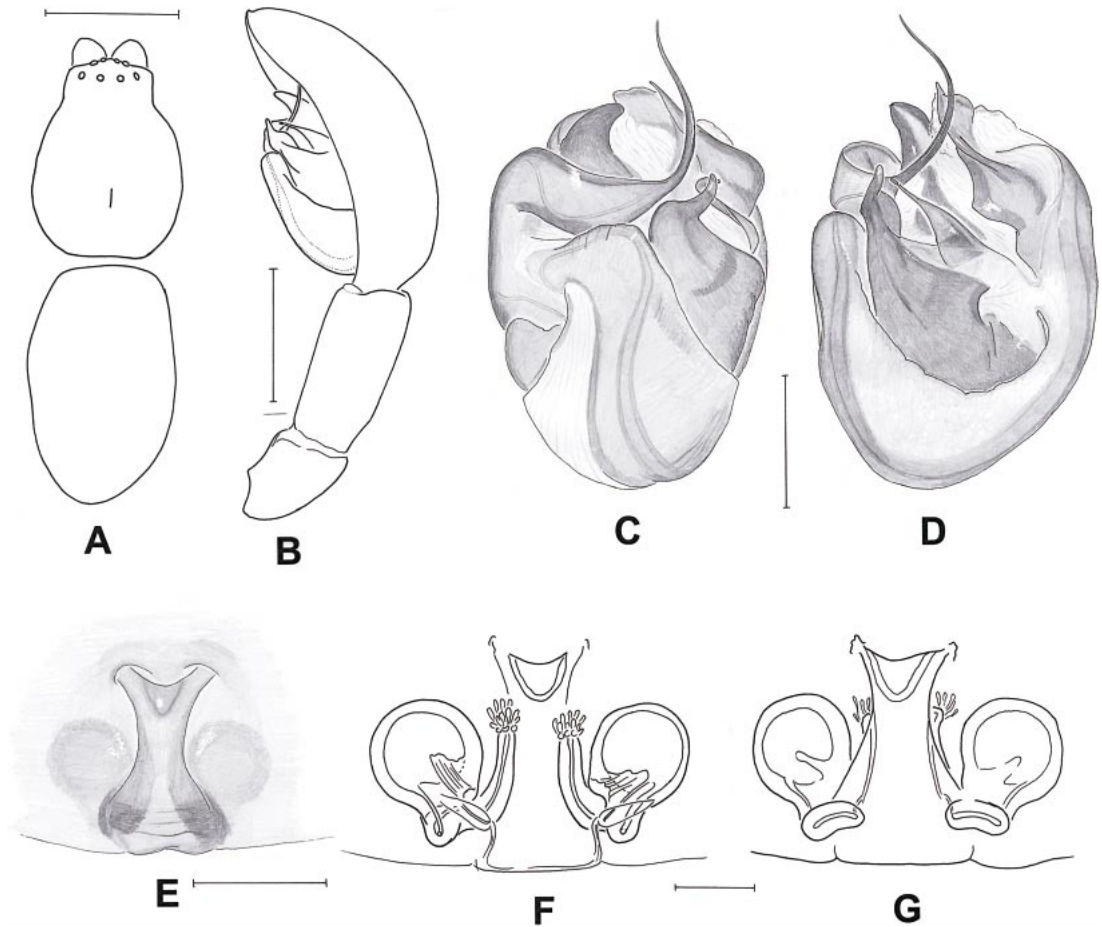


Fig. 137. *Phidyle punctipes* (Nicolet). **A.** Female (holotype). **B.** Male palp, retrolateral view (Limarí, Fray Jorge). **C.** Same, copulatory bulb, ventral view. **D.** Same, retrolateral view. **E.** Epigyne, ventral view (Fray Jorge). **F.** Cleared epigyne, ventral view (holotype). **G.** Same, dorsal view. Scale bars = A, 2 mm; B, 0.4 mm; C–E, 0.2 mm; F, G, 0.1 mm.

(MCZ); Terao, S Chonchi, 10–20.III.1988, 1♂ 2♀ 18–21.I.1990, 1♀, L. Peña (AMNH). **Palena:** Chaitén, XII.1985, L. Peña, 9♀ (AMNH). *Locality Not Found:* Cuesta las Siete Vueltas, 29.IV.1980, R. Calderón, 1♂ (UC). *No Locality:* Coll. G. Mann F (presumably from Chile), 50–6, 1♂ (MHNS). *Mistaken Locality:* Santiago Prov., Malleco, XI.1979, L. Peña, 2♀, 2♀, 1♀ (AMNH) (see Ramírez, 1995b: 83).

MONAPIA SIMON

Table 29

Monapia Simon, 1897a: 93, 96, 97, 101 (type species by original designation *Monapia atomaria*

Simon, 1897). Gerschman and Schiapelli, 1970: 131–135. Ramírez, 1995a: 366, 381, 1995b: 78. Revised by Ramírez, 1995b, 1999.

DIAGNOSIS: Resembles *Oxysoma*, *Phidyle*, *Tasata*, and *Araiya* in having spinose metatarsi of legs I and II (in both sexes, and immatures), but it can be distinguished by having a transverse epigynal anterior pouch and a median depression between the lateral lobes, which is filled by a copulatory plug in mated females. Two species with greatly modified epigyne (*Monapia lutea* and *Monapia huaria*) have only a vestige of the anterior pouch, with the median depression no longer recognizable (as well as most of the

TABLE 29
Synapomorphies of *Monapia* and Internal Clades

<p><i>Monapia</i> (clade 160) male chelicerae (17): strong → smaller membranous lobe on C2 (87): absent → present shape relic C1 (93): thin, rounded → acute shape APmf (106): normal → transverse median depression on epigynum (108): absent → present ducts AB (123): long → short copulatory plug (128): absent → present</p> <p>Clade 149 cymbial retrolateral basal notch (52): absent → present basal process on embolus (96): absent → present</p> <p>Clade 150 dark ventral stripe (1): absent → present</p> <p>Clade 151 leg III very short (27): normal → III very short spines on chelicerae (129): absent → present ventral spines femur I (131): absent → several ventral spine tibia III, v x-x-p1 (164): present → absent spine tibia III, v x-x-r1 (165): present → absent spine patella IV, r d1 (180): present → absent</p> <p>Clade 152 four dots on abdomen (5): absent → present ocular area protruded (10): absent → present ducts AB (123): short → long ventral spines on palp (130): absent → present spines tibia I, v ap (138): 2ap → 0ap spine metatarsus I, v x-p1-x (140): absent → present spine metatarsus I, v x-r1-x (141): absent → present spine tibia II, v x-x-p1 (150): present → absent spine tibia II, v x-x-r1 (151): present → absent spine patella III, r d1 (158): present → absent spine tibia III, v x-r1-x (163): present → absent</p> <p>Clade 153 scopulae anterior tibiae (33): present → absent pouch in median depression (109): absent → present pairs spines tibia I v (132): 2-2-2 or less → 2-2-2-2 or more</p> <p>Clade 154 basal process on embolus (96): absent → present ducts AB (123): short → long FD advanced (127): absent → present</p> <p>Clade 155 male chelicerae (17): smaller → strong base C2r (91): wide, thin → thick lateral lobes (110): fused with suture → fused without suture fusion CD (114): walls fused → common lumen proximal CD thin walls (120): absent → present copulatory plug (128): present → absent</p> <p>Clade 156 scopulae anterior tibiae (33): present → absent basal tegular notch displaced prolaterally (61): absent → present embolar base (98): cylindrical → flattened lateral lobes (110): contiguous → fused with suture fusion CD (114): separate → walls fused</p>	<p>Clade 156 (Continued) lumen of proximal CD (119): thin → ample spine metatarsus III, p d1-x-x (171): present → absent spine metatarsus III, r d1-x-x (174): present → absent spine metatarsus IV, p d1-x-x (191): present → absent</p> <p>Clade 157 anterior eye row (11): straight → recurved denticles C2r (90): absent → present embolus very long (95): normal → very long lateral lobes (110): separate → contiguous</p> <p>Clade 158 cymbial conductor wide (49): narrow → wide</p> <p>Clade 159 shape of PMA (68): <i>Philisca</i> type, or bifid → slender base C2r (91): thick → wide, thin <i>M. vittata</i> spine metatarsus III, v x-r1-x (168): absent → present</p> <p><i>M. tandil</i> spine patella III, r d1 (158): present → absent spine metatarsus IV, v x-r1-x (190): present → absent</p> <p><i>M. alupuran</i> basal process on embolus (96): absent → present</p> <p><i>M. fierro</i> denticles C2p (88): absent → present</p> <p><i>M. carolina</i> base C2r (91): wide, thin → thick spine tibia III, v r1-x-x (161): absent → present</p> <p><i>M. charrua</i> spine metatarsus II, p d1-x-x (153): absent → present</p> <p><i>M. guenoana</i> spine tibia II, v x-p1-x (148): present → absent spine metatarsus III, d x-p1-x (177): present → absent spine metatarsus IV, p x-1-x (192): present → absent spine metatarsus IV, d x-p1-x (197): present → absent spine metatarsus IV, d x-x-p1 (198): present → absent</p> <p><i>M. angusta</i> apical loop SD (53): absent → present membranous lobe on C2 (87): present → absent embolar base (98): cylindrical → flattened pouch in median depression (109): present → absent spine tibia IV, v r1-x-x (182): absent → present</p> <p><i>M. dilaticollis</i> cymbial retrolateral apical notch (50): absent → present spine metatarsus II, p d1-x-x (153): absent → present</p> <p><i>M. silvatica</i> shape of PMA (68): slender → <i>Philisca</i> type spine tibia IV, v p1-x-x (181): present → absent spine tibia IV, v r1-x-x (182): absent → present</p> <p><i>M. pichinahuel</i> denticles C2r (90): present → absent</p> <p><i>M. lutea</i> no autapomorphies!</p> <p><i>M. huaria</i> no autapomorphies!</p>
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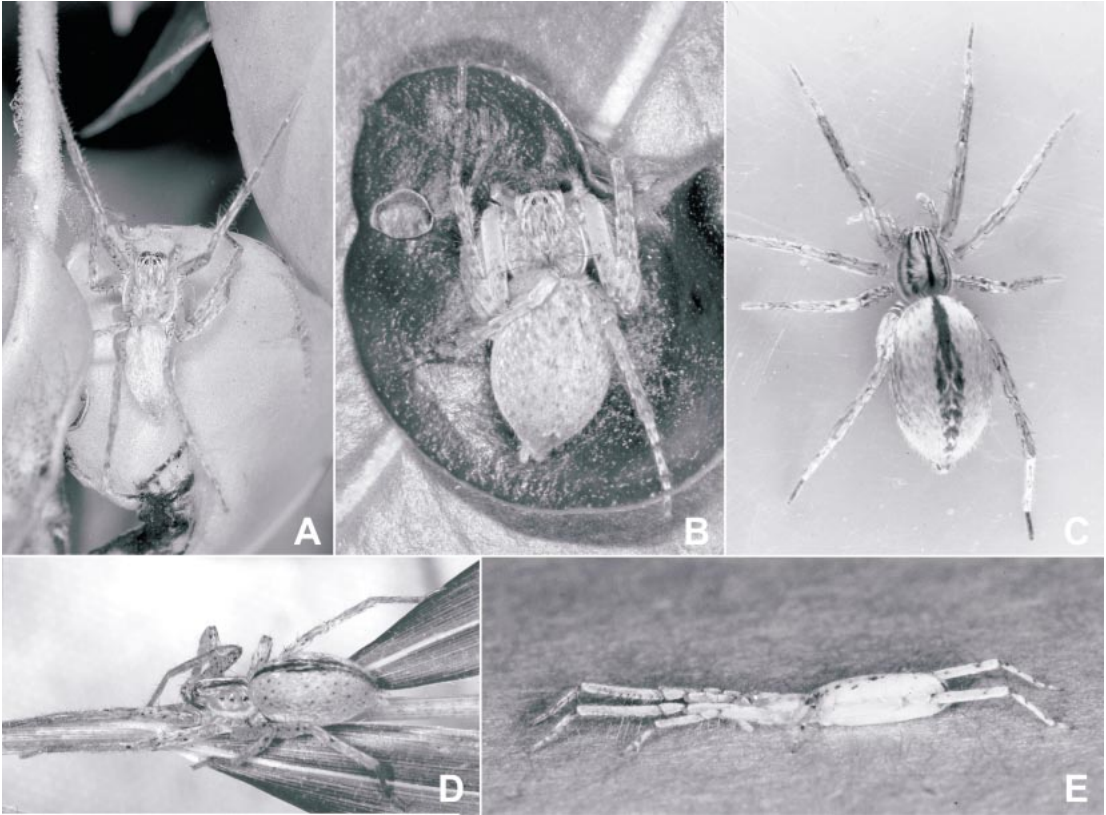


Fig. 138. Females of *Monapia* spp. **A.** *Monapia dilaticollis* (Nicolet) (Ñuble, Recinto, photo MJR 37). **B.** *M. pichinahuel* Ramírez (Talca, Vilches, photo MJR 1374). **C.** *M. fierro* Ramírez (Buenos Aires, Sierra de la Ventana, photo MJR 1). **D.** *M. vittata* (Simon) (Osorno, Volcán Casablanca, photo MJR 1421). **E.** *M. guenoana* Ramírez (Entre Ríos, Gualleguay, photo MJR 305).

median field), and lack copulatory plugs; they are however easily distinguished by having an ample, median copulatory opening. Three species (clade 152) with elongate body and spinose forelegs (e.g., fig. 138E) resemble some *Oxysoma* and *Tasata*.

DESCRIPTION: See Ramírez (1995b, 1999).

NOTE: The hypotheses of relationships between *Monapia* species remain the same as proposed in Ramírez (1995b, 1999), except for the further resolution in the placement of *Monapia alupuran*.

DISTRIBUTION: Southern Chile, Argentina, and Uruguay.

COMPOSITION: Thirteen species detailed below and in Ramírez (1999).

NOMEN DUBIUM: Specimens of *Clubiona citrina* Nicolet, 1849 (three immature syntypes badly preserved, in MHNP 4227, ex-

amined) are unrecognizable, being probably *Monapia*.

TYPES NOT EXAMINED: *Monapia moreirae* Mello Leitão, 1915 (male and female syntypes, presumably in MNRJ, not found).

Monapia vittata (Simon)

Figure 138D

Tomopisthes vittatus Simon, 1884: 135.

Monapia vittata: Ramírez, 1995b: 81, 1999: 418.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1995b, 1999). Additional data are provided below.

FEMALE: Spines: leg **I**, femur d 1-1-1, p and r 0-d1-d1; tibia v 2-2-2, p and r d1-1; metatarsus v 2bas, p and r 1, d 0-p1-2. **II** = **I**. **III**, femur=I; patella r d1; tibia v p1-2-2 or 2-2-2, p and r d1-1, d r1-0-1-0; metatar-

sus v 2-2-2, p and r d1-1-1, d 0-p1-2. **IV** = **III**.

MALE: Spines as in female.

NEW RECORDS: ARGENTINA: Neuquén: Lago Nompelhuén, NW Aluminé, 12.I.1985, E. Maury and A. Toth, 1♀ penultimate (MACN-Ar); San Martín de los Andes, Cerro Chapelco, 1700 m, II.1961, M. Galiano, 5♀ (MACN-Ar 5292). **Río Negro:** Lago Nahuel Huapi, Havrylenko, 1950, 4♂ 10♀ (MACN-Ar 5507); San Carlos de Bariloche, II.1954, M.E. Galiano, 2♂ 1♀ (MACN-Ar 5413). **Chubut:** El Hoyo, VIII.1964, M. Birabén, 1♂ 1♀ (MACN-Ar); El Maitén, 20.VI.1962, A. Kovács, 3♂ 5♀ 3 immatures (AMNH); IX.1961, 14♂ 17♀ (MLP); Leleque, 71°06'W, 42°28'W, 12.II.1965, A. Kovács, 1♀ (AMNH); Esquel, road to La Hoya, 16.XI.1988, V.D. Roth, 1♀ (CAS). **Santa Cruz:** Calafate, II.1963, E. Maury, 1♀ (MACN-Ar); IX.1996, G. Schmidt, 3♀ (SMF), 16.I.1980, P.A. Goloboff, 1♂ 1♀ (MACN-Ar); Lago San Martín, X.1939, S. Radone, 1♂ (MACN-Ar 599); Los Cerros, Tres Lagos, 9.III.1948, M. Birabén, 6♀ (MLP); IV.1949, Waring, 2♂ 4♀, 1♀, 2♂ 2♀ (MLP). **CHILE: Región Metropolitana (Santiago): Santiago:** Farellones, 2500 m, III.1983, M. Elgueta, (MHNS 735). **Región X (Los Lagos): Osorno:** Paso Puyehue, 1200 m, 19.I.1969, L. Peña, 16♀ (MCZ); Puyehue Natl. Park: Antillanca, 40°46'30"S, 72°11'30"W, 1050-1350 m, alpine meadow, pitfall 57T1, 12-15.XII.2000, J. Miller, I. Agnarsson, Alvarez, J. Coddington, G. Hormiga, 1♀ (USNM), same, pitfall 56T1, 1♀ (USNM). **Región XII (Magallanes y Antártica): Última Esperanza:** Torres del Paine Natl. Park: Laguna Larga, 51°1'30"S, 72°52'45"W, 300 m, 7.XII.2000, under rocks in steppe, J. Miller, I. Agnarsson, 1♀ (USNM), Lago Sarmiento de Gamboa, 51°2'0"S, 72°46'15"W, 100 m, 6-9.XII.2000, steppe, J. Miller, I. Agnarsson, 1♀, 1♀ (USNM). **Magallanes:** Cerro Castillo, Natales, 13.XII.1960, L. Peña, 1♀ (MCZ); Isla Navarino, Puerto Williams, 6.I.1963, P. Darlington, 2♀ (MCZ); Península Hardy, Isla Hoste, Bahía Orange, 2-3.I.1963, P.J. Darlington, 1♀ (MCZ); Laguna Parrillar Natl. Res., 53°24'15"S, 71°15'45"W, bog, 1-10.XII.2000, 350 m, J. Miller, I. Agnarsson,

1♀ (USNM), same, in rotten wood, 1♂, (USNM).

NOTE: The female recorded from Santiago, far north from the known distribution of the species, is quite similar to the high-altitude variants from Neuquén and Osorno (fig. 138D; Ramírez, 1995b: figs. 46, 50).

Monapia alupuran Ramírez

Monapia alupuran Ramírez, 1995b: 82, 1999: 418.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1995b, 1999). Additional data are provided below.

FEMALE: Spines: leg **I**, femur d 1-1-1, p 0-1-d1, r d1ap; tibia v 2-2-2, p and r d1-1; metatarsus v 2bas, p and r 1, d 2ap. **II**, femur d 1-1-1, p and r d1ap; tibia and metatarsus = **I**. **III**, femur = **II**; patella d r1; tibia v p1-2-2, p and r d1-1, d r1-0-1-0; metatarsus v 2-0-2, p and r d1-1-1 or 0-1-1, d 0-p1-2. **IV**, femur = **II**; patella r d1; tibia = **III**; metatarsus v 2-p1-2 or 2-2-2, p and r d1-1 or 0-1-1, d 0-p1-2.

MALE: Same as in female, but **III**, metatarsus v 2-p1-2.

NEW RECORDS: CHILE: Región VII (Maule): Talca: Alto de Vilches, 17-24.X.1964, L. Peña, 8♂ 6♀ (MCZ), 18-25.X.1964, L. Peña, 1♀ 1♀ penultimate (MCZ). **Región VIII (Biobío): Nuble:** Las Trancas, 1200 m, 24-27.XI.1994, L. Peña, 2♂ (AMNH); Las Trancas, E Chillán, 29-30.XI.1990, L. Peña, 1♀ (AMNH). **Biobío:** N Ralco/Trapa-Trapa, 21-22.XI.1994, P. Peña, 1♂ (AMNH). **Región X (Los Lagos): Osorno:** Puyehue Natl. Park, 700 m, 9.XII.1994, 2♀ (AMNH).

Monapia dilaticollis (Nicolet)

Figure 138A

Clubiona dilaticollis Nicolet, 1849: 436.

Monapia dilaticollis: Ramírez, 1995b: 78, 1999: 418.

Oxysoma delfini: Berland, 1924: 435 (misidentification).

NOTE: Simon (1905a) described *Oxysoma delfini* for an immature female from the Juan Fernández Islands (type not found). Berland (1924) identified a female from Mas a Tierra as belonging to that species, but it belongs to *Monapia dilaticollis* (specimen in NRS,

examined). However, according to Simon's original description, the PME are two times larger than the AME in *O. delfini*, while in *M. dilaticollis* they are only slightly larger.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1995b, 1999). Additional data are provided below.

FEMALE: Spines: leg **I**, femur d 1-1-1, p 0-1-d1, r 0-d1-d1; tibia v 2-2-2, p d1-1, r 0-1, metatarsus v 2bas, p and r 1, d 2ap. **II**, femur d 1-1-1, p and r 0-d1-d1; tibia and metatarsus = I. **III**, femur = II; patella d r1; tibia v p1-2-2 or 2-2-2, p and r d1-1, d r1-0-1-0; metatarsus v 2-p1-2, p and r d1-1-1, d 0-p1-2. **IV**, femur d 1-1-1, p 0-d1-d1, r d1ap; patella and tibia = III; metatarsus v 2-2-2, p and r d1-1-1, d 0-p1-2.

MALE: Spines as in female.

NEW RECORDS: ARGENTINA: Neuquén: Lanín Natl. Park: Lago Lolog, 6 km N San Martín de los Andes, Masner-Malaise (wet), clearing, *Nothofagus* (lenga), ca. 950 m, Gentili property, 23.XI-1.XII.1989, S.A. Marshall, 1♂ (AMNH). **CHILE: Región IV (Coquimbo): Choapa:** Céspedes, Illapel, 1150 m, 13-15.X.1994, L. Peña, 1♀, 1100 m, 13-14.X.1990, L. Peña, 3♂ 1♀ (AMNH); Los Vilos, Cariloleu, 11.X.1994, L. Peña, 3♀ (AMNH). **Región V (Valparaíso): Quillota:** Cuesta La Dormida, 6.IX.1995, 1♀, 1♀, 22.IX.1995, 1♀, 2♂ 1♀ 1 immature, 26.IX.1995, 1♂, 1♀, 2♂ 2♀ 2 immatures, 1♂ 1♀, 20.X.1995, 1♀, A. Ugarte (AMNH). **Región Metropolitana (Santiago): Santiago:** Bucalemi, San Antonio, 23-24.X.1994, L. Peña, 1♂ 2♀ (AMNH); Melipilla, La Viluma, 13-14.V.1980, L. Peña, 6♂ 1♀ (AMNH). **Cordillera:** Rfo Clarillo Natl. Res., 940 m, 26.XI.1993, 33°44'S, 70°28'W, N. Platnick, K. Catley, M. Ramírez, T. Allen, 2♀ (AMNH). **Región VII (Maule): Talca:** Alto de Vilches, 17-24.X.1964, L. Peña, 2♀ (MCZ); Las Placetas, San Clemente, 800 m, 19-20.XI.1994, L. Peña, 1♂ (AMNH). **Lincares:** Bullileo, Parral, 5-8.XII.1990, L. Peña, 1♂ 5♀ (AMNH); 700 m, 5-9.XII.1990, L. Peña, 2♀ (AMNH). **Cauquenes:** Tregualemu, 4-5.XI.1993, L. Peña, A. Ugarte, 1♀ (AMNH); 520 m, 6-7.XI.1993, L. Peña and A. Ugarte, 2♂ (AMNH). **Región VIII (Biobío): Ñuble:** Chillán, 2.I.1976, G. Moreno, 2♀ (AMNH); Cobquecura, 8-9.XI.1993, L. Peña, 2♂ 1♀ (AMNH); W Ralco, Santa Bár-

bara, 400 m, 22-23.XI.1994, L. Peña, 1♂ 2♀ (AMNH); Fundo El Roble, Chacabuco, 17.XI.1992, L. Peña, 1♀ (AMNH). **Conceptión:** Caleta Chome, 7.XII.1995, T. Cekalovic, 1♀ (AMNH); Curinam, 20.I.1996, T. Cekalovic, 1♂ 1♀ (AMNH); Estero Nonguén, 2.XI.1996, 1♂ 1♀, 11.XI.1996, 4♀, 13.I.1997, 1♀, T. Cekalovic (AMNH); Fundo El Manzano, 29.XI.1996, 7.XII.1996, T. Cekalovic, 1♀ (AMNH); Lomas Coloradas, 15.X.1961, A. Archer, 2♀ (AMNH); 24.XI.1996, T. Cekalovic, 5♀ (AMNH); Mitrihue, 29.XII.1996, T. Cekalovic, 2♀ (AMNH); Palo Grande, road to Santa Juana, 29.XII.1996, T. Cekalovic, 1♀ (AMNH); Periquillo, 7.X.1994, 1♂ 19♀, 8.XII.1994, 4♀, 13.X.1995, 1♂ 3♀, 16.IX.1996, 2♂ 2♀, 3.XI.1996, 4♀, 21.XII.1996, 2♀, 22.III.1997, 1♂, 29.XII.2000, 3♀, T. Cekalovic (AMNH); Quilacoya, 9.X.1993, T. Cekalovic, 2♀ (AMNH); Laguna Chica de San Pedro, 5.XII.1994, T. Cekalovic, 4♀ (AMNH). **Arauco:** 2 km S Cruce Camino Colicó Norte, 20.X.1996, T. Cekalovic, 2♀ (AMNH); 5 km N Curanilahue, 20.X.1996, T. Cekalovic, 3♀ 2 immatures (AMNH). **Biobío:** W Ralco, Santa Bárbara, 400 m, 22-23.XI.1994, L. Peña, 6♀ (AMNH). **Región IX (Araucanía): Cautín:** 30 km NE Villarrica, 1-30.I.1965, L. Peña, 2♀, 1♀ (MCZ). **Región X (Los Lagos): Valdivia:** Valdivia, 12.X.1976, E. Krahmer, 1♀ (AMNH). *Mistaken Locality:* Prov. Santiago, Malleco, XI.1979, L.E. Peña, 1♂ (AMNH) (see Ramírez, 1995b: 83).

Monapia silvatica Ramírez

Monapia silvatica Ramírez, 1995b: 84, 1999: 418.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1995b, 1999). Additional data are provided below.

FEMALE: Spines: leg **I**, femur d 1-1-1, p 0-1-d1, r d1ap; tibia v 2-2-2, p and r d1-1; metatarsus v 2bas, p and r 1, d 2ap. **II**, femur d 1-1-1, p and r d1ap; tibia and metatarsus = I. **III**, femur = II; patella d r1; tibia v p1-2-2, p and r d1-1, d r1-0-1-0; metatarsus v 2-0-2, p and r 0-1-1, d 0-p1-2. **IV**, femur = II; patella r d1; tibia = III; metatarsus v 2-p1-2, p 0-1-1, r d1-1-1 or 0-1-1, d 0-p1-2.

MALE: Spines as in female.

NEW RECORDS: **CHILE: Región VII (Maule): Talca:** Alto de Vilches, 17–24.X.1964, L. Peña, 1♀ (MCZ). **Región VIII (Biobío): Biobío:** N Ralco/Trapa-Trapa, 21–22.XI.1994, P. Peña, 2♀ (AMNH). **Región IX (Araucanía): Cautín:** Flor del Lago Ranch, Villarrica, Polo Field, 39°12.300'S, 72°08.367'W, 282 m, canopy fogging GT *Nothofagus obliqua* roble, 13.XII.2001, Arias et al., 4♂ 8♀ 8 immatures (UCB), 2♀ (AMNH), 2♂ 2♀ (MACN). **Región X (Los Lagos): Valdivia:** 12.X.1976, E. Krahmer, 1♀ (AMNH), 1984, E. Krahmer, 2 immatures (MHNS 848). *Mistaken Locality:* Prov. Santiago, Malleco, XI.1979, L.E. Peña, 2♂ penultimates (AMNH) (see Ramírez, 1995b: 83).

Monapia pichinahuel Ramírez

Figure 138B

Monapia pichinahuel Ramírez, 1995b: 83, 1999: 418.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1995b, 1999). Additional data are provided below.

FEMALE: Spines: leg **I**, femur d 1–1–1, p 0–1–d1, r d1ap; tibia v 2–2–2, p and r d1–1; metatarsus v 2bas, p and r 1, d 2ap. **II**, femur d 1–1–1, p and r d1ap; tibia and metatarsus = I. **III**, femur = II; patella d r1; tibia v p1–2–2, p and r d1–1, d r1-0-1-0; metatarsus v 2–0–2, p and r 0–1–1, d 0-p1–2. **IV**, femur = II; patella r d1; tibia = III; metatarsus v 2–2–2 or 2-p1–2, p 0–1–1 or d1–1–1, r d1–1–1 or 0–1–1, d 0-p1–2.

MALE: Spines as in female, except leg **III**, metatarsus v 2-p1–2.

NEW RECORDS: **CHILE: Región VII (Maule): Cauquenes:** Tregualemu, 4–5.XI.1993, L. Peña, A. Ugarte, 1♀ (AMNH). **Talca:** Alto de Vilches, 17–24.X.1964, L. Peña, 7♂ 4♀ (MCZ). **Región VIII (Biobío): Ñuble:** Las Trancas, E Chillán, 29–30.XI.1990, L. Peña, 4♀ (AMNH); Las Trancas, II.1987, L. Peña, 5♀ (AMNH), 1200 m, 24–27.XI.1994, L. Peña, 12♂ 17♀ (AMNH); Las Trancas, Cordillera de Chillán, 20.XI.1976, G. Moreno, 1♂ (AMNH), 1–10.XII.1965, L. Peña, 1♂, 1♀ (MCZ). **Región IX (Araucanía): Malleco:** Nahuelbuta Natl. Park, 1200 m, *Nothofagus-Araucaria* assoc., 5.XI.1966, M. Irwin and E. Schlinger,

1♂ (CAS). **Región X (Los Lagos): Valdivia:** Valdivia, XI–XII.1982, E. Krahmer, 1♂ penultimate (MHNS 700).

Monapia huaría Ramírez

Monapia huaría Ramírez, 1995b: 85, 1999: 418.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1995b, 1999). Additional data are provided below.

FEMALE: Spines: leg **I**, femur d 1–1–1, p 0–1–d1, r d1ap; tibia v 2–2–2, p and r d1–1; metatarsus v 2bas, p and r 1, d 2ap. **II**, femur d 1–1–1, p and r d1ap; tibia and metatarsus = I. **III**, femur = II; patella d r1; tibia v p1–2–2 or 2–2–2, p and r d1–1, d r1-0-1-0; metatarsus v 2-p1–2, p and r 0–1–1, d 0-p1–2. **IV**, femur = II; patella r d1; tibia = III; metatarsus v 2–2–2, p 0–1–1, r d1–1–1 or 0–1–1, d 0-p1–2.

MALE: Spines as in female.

NEW RECORDS: **CHILE: Región IV (Cochimbo): Elqui:** Ñagué, 26.IX.1980, L. Peña, 1♀ (AMNH); N. Los Vilos, 3.X.1990, L. Peña, 2♂ (AMNH). **Choapa:** Bahía Mansa, N Huentelquén, 2–3.X.1993, L. Peña, 1♀ (AMNH).

Monapia lutea (Nicolet)

Clubiona lutea Nicolet, 1849: 429.

Monapia lutea: Ramírez, 1995b: 86, 1999: 418.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1995b, 1999). Additional data are provided below.

FEMALE: Spines: leg **I**, femur d 1–1–1, p 0–1–d1, r d1ap; tibia v 2–2–2, p and r d1–1; metatarsus v 2bas, p and r 1, d 2ap. **II**, femur d 1–1–1, p and r d1ap; tibia and metatarsus = I. **III**, femur = II; patella d r1; tibia v p1–2–2 or 0-p1–2, p and r d1–1, d r1-0-1-0; metatarsus v 2–0–2, p and r 0–1–1, d 0-p1–2. **IV**, femur = II; patella r d1; tibia v p1–2–2 or p1-p1–2, p and r d1–1, d r1-0-1-0; metatarsus v 2-p1–2 or 2–2–2, p 0–1–1, r d1–1–1 or 0–1–1, d 0-p1–2.

MALE: Spines as in female.

NEW RECORDS: **ARGENTINA: Río Negro:** El Bolsón, 24.XI.1962, Birabén, many ♀ (MACN-Ar), 2♂ 16♀ (MLP); 21.II.1963, 4♂ 14♀ (MLP); 25.IX.1962, A. Kovács, many specimens (AMNH). **Chubut:** El Hoyo, 1.I.1962, A. Kovács, 2♀ (AMNH);

Lago Puelo Natl. Park, 20.XI.1965, A. Kovács, 7♀ 1♂ (AMNH). **CHILE: Región VII (Maule): Cauquenes:** Tregualemu, 50 m, 4–5.XI.1993, L. Peña, A. Ugarte, 3♀ (AMNH); 500 m, 7.XI.1993, L. Peña, 1♂ (AMNH). **Linares:** Fundo Malcho, Andes in Parral, 10–11.XI.1993, L. Peña, 2♀ (AMNH). **Región VIII (Biobío): Ñuble:** Cobquecura, 8–9.XI.1993, L. Peña, 2♂ 2♀ (AMNH). **Concepción:** road Chome-Ramuntcho, 8.XI.1996, T. Cekalovic, 1♀, 2♂ (AMNH); Caleta Chome, 14.X.1995, T. Cekalovic, 1♂ 3♀ (AMNH), 10.I.1997, T. Cekalovic, 1♀ (AMNH); Curinam, 14.XII.1996, T. Cekalovic, 2♀ (AMNH); Escuadrón, 18.XI.1996, T. Cekalovic, 9♂ (AMNH); Estero Nonguén, 14.III.2001, T. Cekalovic, 1♀ (AMNH); Fundo El Manzano, 12.X.1996, 1♀, 18.XI.1996, 2♀, 7.XII.1996, 3♂ 4♀, 23.IX.1996, 1♂ 2♀, 29.XI.1996, 3♀, T. Cekalovic (AMNH); road intersection Hualpén-Ramuntcho, 17.X.1998, T. Cekalovic, 2♀ (AMNH); Laguna La Posada, 15.XII.1994, T. Cekalovic, 1♂ 5♀ (AMNH); Lomas Coloradas, 15.X.1961, A. Archer, 3♂ 4 immatures (AMNH); 24.XI.1996, T. Cekalovic, 4♀ (AMNH); Mitrihue, 29.XII.1996, T. Cekalovic, 1♀ (AMNH); Periquillo, 20.IX.1999, T. Cekalovic, 2♀ (AMNH). **Biobío:** N Ralco/Trapa-Trapa, 21–22.XI.1994, P. Peña, 1♀ (AMNH); W Ralco, Santa Bárbara, 400 m, 22–23.XI.1994, L. Peña, 3♂ 11♀ (AMNH). **Región IX (Araucanía): Malleco:** Monumento Natural Contulmo, 340 m, 38°01'S, 73°11'W, 18.XI.1993, N. Platnick, K. Catley, M. Ramírez, T. Allen, 1♀ (AMNH), 19–21.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1♀ (MACN-Ar). **Cautín:** Flor del Lago Ranch, Villarrica, Polo Field, 39°12.300'S, 72°08.367'W, 282 m, canopy fogging GT *Nothofagus obliqua* roble, 13.XII.2001, Arias et al., 1♂ 2♀ (UCB), 1♂ 1♀ (MACN); Monte Verde, Cavahue, 31.I.1993, L. Peña, 3♀ (AMNH); Pucón lakeshore, dung traps, 15.XI–5.XII.1989, S.A. Marshall, 1♀ (AMNH). **Región X (Los Lagos): Valdivia:** Nancul, Fundo “El Lingue”, 8.II.1993, T. Cekalovic, 1♀ (AMNH); Mashue (?), on leaves, 11–15.II.1974, L. Alvarez, 2♀ (AMNH); Valdivia, 12.X.1976, E. Krahmer, 3♂ 1♀ (AMNH), 1984, E. Krahmer, 1♂ 1♀ 1 immature (MHNS 848). **Osorno:** Puyehue

Natl. Park: Aguas Calientes, 13–17.XII.1998, M. Ramírez, L. Compagnucci, C. Grismado, L. Lopardo, 1♀ (MACN-Ar), 2♀ (MHNS), Anticura, Osorno, 12.X.1967, A. Tobar, 1♀ (AMNH), Anticura, 40°40'0"S, 72°10'30"W, 350 m, 13.XII.2000–2.I.2001, forest, J. Miller, Alvarez, J. Coddington, G. Hormiga, 1♀ (USNM). **Llanquihue:** Lago Chapo, 14.II.1996, T. Cekalovic, 1♀ (AMNH); Puerto Montt, Río Blanco, 24–19.I.1983, G. Arriagada, 1♀ (MHNS 718). **Chiloé:** Isla de Chiloé: Pid-Pid, 19.II.1996, T. Cekalovic, 1♀ (AMNH), 17.II.1997, T. Cekalovic, 1♀ (AMNH); Terao, 5 km SW Chonchi, 19.II.1997, 1♀, 2.II.2001, 1♀, T. Cekalovic (AMNH); Isla Quinchao, Hullar Alto, 10.II.1994, T. Cekalovic, 1♀ (AMNH); “camino a yladad”, 8.II.1994, T. Cekalovic, 1♀ (AMNH); Isla Lemuy, Aldachildo, 20.II.1996, T. Cekalovic, 1♀ (AMNH). *No Locality:* 36, 1♀ (IG 15765, IRSN).

Monapia fierro Ramírez

Figure 138C

Monapia fierro Ramírez, 1999: 423.

DESCRIPTION AND DIAGNOSIS: See Ramírez (1999).

VARIABILITY: Spines: III, metatarsus v 2p1–2.

NEW RECORDS: **ARGENTINA: Buenos Aires:** Ciudad de Buenos Aires, 1952, B.S. Gerschman, 1♀ (MACN-Ar), 1966, Pallares, 1♀ (MACN-Ar); Orense, 10.XI.1969, C. Rebollo, 1♀ (MACN-Ar); Punta Lara, Ensenada, III.1943, A. Moreno, 1♀ (MLP); Río Luján, estación FCGM, pastizal, 5.X.1993, M. Ramírez and A. Pérez, 1♀ (MACN-Ar); Rosas, F.C.G.S., date and collector unknown, 3♀ (MACN-Ar).

Monapia carolina Ramírez

Figure 139A–D

Monapia carolina Ramírez, 1999: 427.

DIAGNOSIS: See Ramírez (1999). Males are very similar to those of *Monapia fierro* in genitalia, but they can be distinguished by having a longer tip on the paramedian apophysis.

FEMALE: See Ramírez (1999).

MALE (Pampa de Achala): Total length 5.32. Carapace length 2.63, width 2.03.

Length of tibia/metatarsus: I, 1.97/1.70; II, 1.70/1.50; III, 1.50/1.50; IV, 2.07/2.47. Chelicerae slightly narrower than those of female. Sternum length 1.47, width 1.10. Spines: leg I, femur d 1-1-1, p 0-0-1-d1, r 1ap; tibia with two rows of ventral spines, six prolateral, five retrolateral, approximately 2-2-2-2-p1-2 (left) and 2-2-2-2-p1-0-2 (right), p and r 1-1; metatarsus v 2bas, p and r 1, d 0-p1-2. **II**, femur d 1-1-1, p and r 0-d1-d1; tibia v 2-2-2-0-2, p and r 1-1; metatarsus = I. **III**, femur = II; patella r d1; tibia v 2-2-2 (the r1bas smaller), p and r 1-1; metatarsus v 2-0-2, p and r d1-1-1, d 0-p1-2. **IV**, femur d 1-1-1, p and r 1ap; patella and tibia = III; metatarsus v 2-2-2, p and r d1-1-1, d 0-p1-2. Abdomen length 2.73, width 1.63, spiracle-epigastrium 1.07, spiracle spinnerets 0.43. Color as in female. Palp (fig. 139A-D): tibia width/length 0.79. Retrolateral margin of cymbium with slight basal notch. Sperm duct with anterior ventral loop not evident. Embolus thick, sinuous. Apex of paramedian apophysis thin, hook-shaped. Primary conductor triangular. Secondary conductor divided by membranous area with blunt lobe close to retrolateral portion; prolateral portion curved, flattened; canal wide, crossed by diagonal sclerotized stripe; retrolateral portion with thick base, long, flattened apex; retrolateral portion separated from anterior margin of tegulum by suture, prolateral portion separated by membranous area.

NATURAL HISTORY: All specimens from Pampa de Achala were collected on grasses; at that time (31 August, winter) the nine adult females collected were ovigerous.

NEW RECORDS: ARGENTINA: Córdoba: Pampa de Achala, 15 km W El Cóndor, 31.VII.1999, L. Lopardo and M. Ramírez, 1♂ 9♀ 4 immatures (MACN-Ar).

NOTE: I am indebted to Lara Lopardo (MACN-Ar) for collecting the only known male.

Monapia angusta (Mello-Leitão)

Figure 139E-H

Arachosia angusta Mello-Leitão, 1944: 357 (holotype immature from Argentina, Buenos Aires province, Tigre, Río Guayracá, in MLP 16100, not reexamined).

Monapia angusta: Ramírez, 1999: 422.

DIAGNOSIS: See Ramírez (1999). Males resemble those of *Monapia guenoana* in having an anterior cheliceral spine, but can be distinguished by having a thicker embolus.

FEMALE: See Ramírez (1999).

MALE (San Isidro): Total length ca. 6.15. Carapace length 2.17, width 1.37. Length of tibia/metatarsus: I, 3.86/3.10; II, 2.53/1.97; III, 1.35/1.10; IV, 3.59/2.67. Chelicerae small, narrow, anterior face with black spot, thick spine close to clypeus. Sternum length 1.25, width 0.87. Spines: leg I, femur d 1-1-1, p 0-0-v1-d1 and an oblique apical line of thick bristles, r 1ap; tibia v 2-2-2-2-0, d r1-1 bristles; metatarsus v 2-2-2 (probably the p and r displaced)-0-0, d 2-p1-r1-0-2. **II**, femur d 1-1-1, p and r d1ap; tibia v 2-r1-2-r1-2 (both x-r1-x-r1-x are probably the r d1-1 displaced), p d1-1, d r1-1 bristles; metatarsus v 2-r1 (probably the r displaced)-r1-0, p 1-0, d p1-2. **III**, femur d 1-1-1, p 0-d1-d1, r d1ap; tibia v p1-p1-0, p and r d1-1, d r1-1; metatarsus v 2-0-1 or 2bas, p 0-d1-1, r 0-v1-v1, d p1-2. **IV**, femur d 1-1-1; tibia v 2-2-2, p and r d1-1, d r1-1; metatarsus v 2-(p1-r1)-1, p d1-1-1, r d1-1-1 (very large), d 0-p1-2. Abdomen length ca. 2.40, width 0.90 (wrinkled and curved), spiracle-epigastrium ca. 0.80, spiracle spinnerets ca. 0.73. Color as in female. Palp (fig. 139E-H): tibia very long, width/length 0.38. Copulatory bulb partially distended (specimen recently moulted). Sperm duct passing through anterior ventral margin of tegulum. Embolus very thick, suddenly narrowed distally, medial ventral portion not sclerotized. Paramedian apophysis poorly developed, tip curved, hook-shaped. Primary conductor absent. Secondary conductor totally divided by membranous area, both portions well separated from anterior margin of tegulum, prolateral portion quite reduced; base of retrolateral portion thin, deeply notched; area corresponding to canal wide, not sclerotized.

NEW RECORDS: ARGENTINA: Buenos Aires: Río Luján, estación FCGM, marsh with "espadaña", 5.X.1993, M. Ramírez and A. Pérez, 3 immatures 1♂ penultimate (MACN-Ar); San Isidro, Reserva Ribera Norte, 16.II.1999, M. Pandolfi, 1♂ (MACN-Ar).

NOTE: I am indebted to Matías Pandolfi

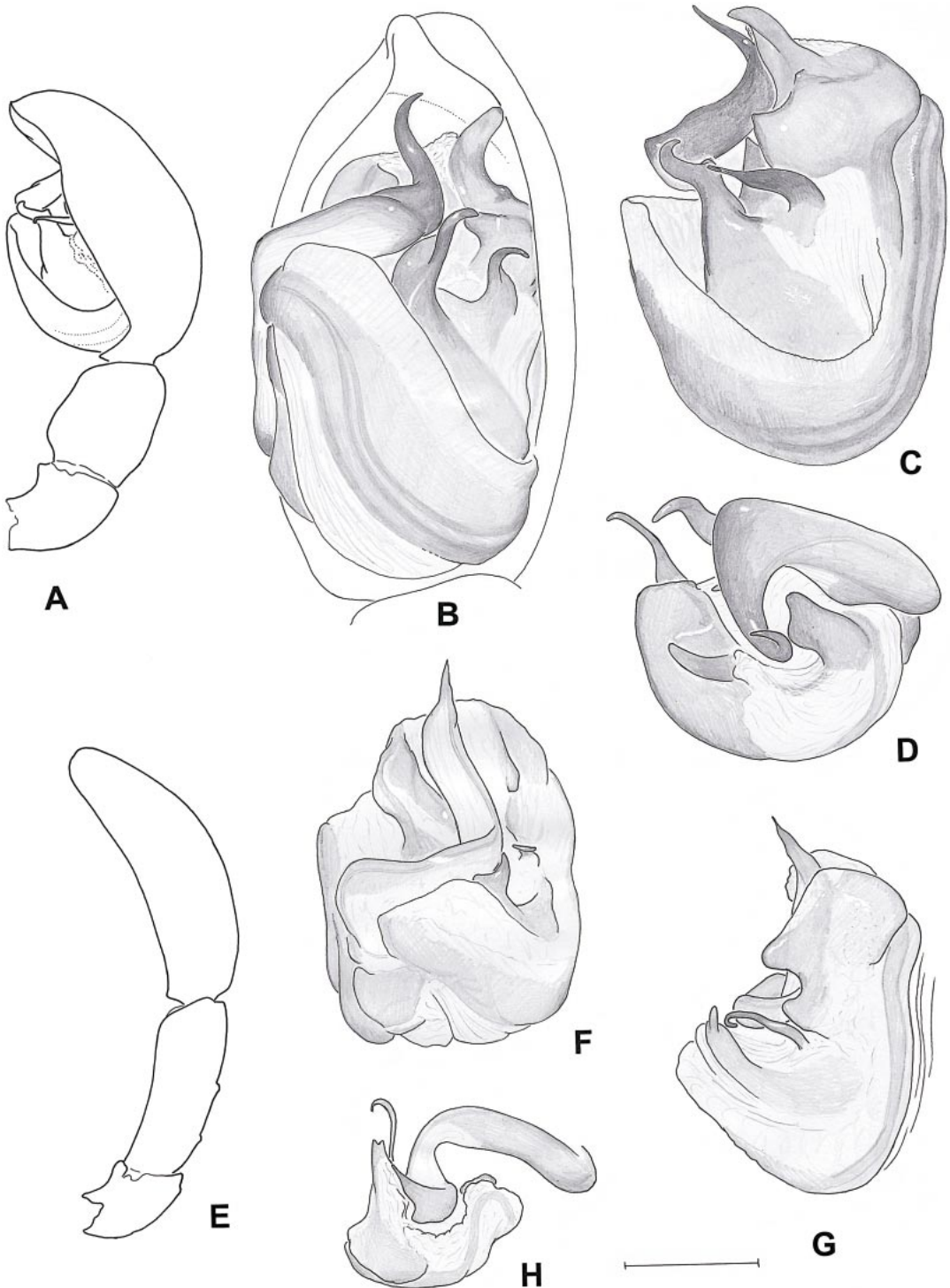


Fig. 139. **A–D.** *Monapia carolina* Ramírez, male (Córdoba, Pampa de Achala). **A.** Palp, retrolateral view. **B.** Same, ventral view. **C.** Copulatory bulb, retrolateral view. **D.** Same, apical view. **E–H.** *Monapia angusta* (Mello-Leitão), male (Buenos Aires, San Isidro). **E.** Palp, retrolateral view. **F.** Copulatory bulb, ventral view. **G.** Same, retrolateral view. **H.** Same, apical view. Scale bar A, E = 0.4 mm, all other, 0.2 mm.

(University of Buenos Aires) for collecting the only known male.

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