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## Some Linyphiid Spiders from South America (Araneae, Linyphiidae)

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### ABSTRACT

The results are given of a study of some linyphiid spiders from South America; most of the material examined originated from Chile, but small collections from other regions, including Tristan da Cunha, are also included. The majority of the species examined are haplotracheate ("linyphiine"); very few true (desmitracheate) members of the subfamily Erigoninae, and no native members of the Linyphiinae (*sensu stricto*) or the Micronetinae, are present in the material studied. A total of 65 species is described, of which 44 are new. For the majority of the species it has been necessary to erect new genera, as follows: *Cataercus* (type species *Gonatium fuegianum* Tullgren), *Cautinella* (type species *C. minuta*, new species), *Ctenophysis* (type species *C. chilensis*, new species), *Hormembolus* (type species *Linyphia aysenensis* Tullgren), *Laminacauda* (type species *L. diffusa*, new species), *Notholephyphantes* (type species *Leptyphantes australis* Tullgren), *Notiophantes* (type species *Linyphia meridionalis* Tullgren), *Onychembolus* (type species *O. subalpinus*, new species), *Patagoneta* (type species *Linyphia*

*antarctica* Tullgren), *Rhabdogyna* (type species *Bathyphantes patagonicus* Tullgren), and *Valdiviella* (type species *V. trisetosa*, new species). The taxonomic relationships of the genera are discussed. A synapomorphy of the external female genitalia indicates a common parentage for the genera *Hormembolus*, *Notiophantes*, *Patagoneta*, and *Notholephyphantes*, for the Falkland Islands genus *Falklandoglenes* Usher, and for the subfamily Mynogleninae, but the relationships to the Mynogleninae are not close enough to justify the allocation of any of the genera to that subfamily. *Hormembolus* is linked to the Linyphiinae (*sensu stricto*) by several synapomorphies, but because of differences in the epigynal form it cannot be included in that subfamily. The epigynal form of *Notiophantes* shows some similarities to that of the subfamily Micronetinae. The hypothesis is proposed that the most important branching event in the evolution of the Linyphiidae was that associated with the development of a scape/socket, and a cladogram on this basis is presented.

### INTRODUCTION

Several papers have been published on the linyphiid spiders of South America. Nicolet (1849) described several species, but unfor-

tunately his descriptions and illustrations are in most cases not adequate to identify the species; unless Nicolet's specimens can be lo-

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cated, which so far has not happened, it will be necessary to regard most of his names for the linyphiid species as *nomina dubia*. Keyserling (1886, 1891) described many South American linyphiids, principally from Brazil; his illustrations are not always detailed enough for accurate diagnosis, but fortunately at least some of his types are still available for examination. Simon (1895, 1902) recorded several new species from the Magellan area, but his descriptions, without diagrams, are insufficient to characterize the species; only when his types are available can his names escape relegation to the category of *nomina dubia*. Tullgren (1901, 1902) also described a number of linyphiids from the same region (Patagonia and Tierra del Fuego); most of his types are still in existence.

In recent times, fresh South American material (mainly from Chile) has become available in much larger quantities from the American Museum of Natural History. This material is based mainly on collections carried out by the Chilean naturalists T. Cekašević and L. E. Peña, and on collecting expeditions by N. I. Platnick and R. T. Schuh (1981) and A. Newton and M. Thayer (1982–1983). A small collection of material from Tristan da Cunha was available from the British Museum (Natural History). As a result of these recent collections, and of work on the spiders of South Georgia (Tamballyche, 1954; Forster, 1970) and of the Falkland Islands (Usher, 1983), a much better idea of the linyphiid fauna of southern South America is now emerging. The taxonomy of the Linyphiidae is very different today from that of 80–100 years ago when Keyserling, Simon, and Tullgren published their results, and it has been necessary to transfer most of the recognizable species described by those authors to new genera.

All measurements are in millimeters; the palps illustrated are the right palp, unless stated to the contrary. Abbreviations for morphological terms follow those used in Milledge (1980).

I am indebted to the Library of the British Museum (Natural History) and to Mr. G. H. Locket for help with literature, and to the institutions and individuals listed below for the loan of material.

#### COLLECTIONS EXAMINED

- AMNH, American Museum of Natural History, Dr. N. I. Platnick.  
 BMNH, British Museum (Natural History), Mr. P. Hillyard.  
 HDO, Hope Department, University Museum, Oxford, The Curator.  
 Koninklijk Museum voor Midden-Afrika, Tervuren, Mr. R. Jocqué.  
 MNHN, Muséum National d'Histoire Naturelle, Paris, Dr. J. Heurtault.  
 NHRM, Naturhistoriska Riksmuseet, Stockholm, Dr. T. Kronstedt.  
 Otago Museum, Dunedin, New Zealand, Dr. R. R. Forster.  
 ZMH, Zoologisches Institut und Zoologisches Museum, Universität Hamburg, Dr. G. Rack.

#### *HORMEMBOLUS*, NEW GENUS

TYPE SPECIES: *Linyphia aysenensis* Tullgren.

ETYMOLOGY: The generic name is derived from the Greek "hormia," a fishing line, and "embolus," referring to the form and arrangement of the embolus. The gender is masculine.

DIAGNOSIS: Females are diagnosed by the external and internal forms of the epigynum (description below). Males are diagnosed by the form of the ED, of the embolic membrane, and of the SA (description below).

DESCRIPTION: This genus comprises spiders of total length 2.0–5.5 mm; the carapace is unmodified in both sexes. The eyes are heavily margined with black, and the posterior medians are on shallow black tubercles (fig. 7). The chelicerae have weak files laterally in both sexes; the male chelicerae, which are longer than those of the female, often have minute granulations on the anterolateral face, and sometimes have a small boss basally. The abdomen is grey, with a variable pattern of glistening white spots, and usually with some black bars and/or chevrons dorsally; in the male, the abdomen is sometimes long and cylindrical. The legs are long and slender, longer in the male than in the female, with numerous fairly long spines, as follows: femur I with one dorsal, one prolateral; femora II–IV with one dorsal; patellae I–IV with one dorsal; tibiae I–IV with two dorsal, one prolateral, one retrolateral, several ventral, and two–three short spines distally; metatarsi I–

IV with one–two dorsal, one–two lateral, and one ventral. In *H. fulgens* and *H. festivus* the legs are stouter, and the ventral spines are absent. Metatarsi I–III have a trichobothrium, with TmI 0.15–0.22. The female palp has a tarsal claw. The members of the genus are haplotracheate (Millidge, 1984). The epigynum has the dorsal plate extended (fig. 49) to give a scape, of variable length, which carries a well-developed socket on its ventral side; the scape may project either posteriorly (e.g., fig. 37) or approximately vertically from the epigynal surface (e.g., fig. 46). The ventral side of the scape is connected by a longitudinal ridge to the margin of the ventral plate of the epigynum, and there are shallow depressions (atria) on either side of this ridge. The genital openings lie in these depressions, at or near the anterior ends of sclerotized grooves which form the lateral junctions of the dorsal and ventral plates (e.g., fig. 47). Internally the spermathecae are U-shaped, and the duct to the openings forms a double spiral which is supported on a coiled lamella (figs. 43, 57). The male palpal tibia has no apophyses. The cymbium has two to three stout spines on the mesal side near the distal end. The paracymbium has slender basal and distal arms (e.g., fig. 1). In most species the tegulum has an anterior projection. The suprategulum lies to the posterior of the palpal organ, and the SA is large and relatively complex in form (figs. 3, 4, 28). The ED comprises a long plate, acuminate anteriorly and posteriorly (e.g., fig. 2), with a dorsal slender arm projecting anteriorly; the anterior ventral arm of the plate (lamella, L, fig. 2) differs somewhat from species to species, and is often useful taxonomically. The long, slender embolus (E) and the long embolic membrane (EM) arise from the inner (lateral) side of the plate (figs. 5, 12) at the junction with the stalk; there is an additional small sclerite (R, fig. 5) which may represent the radix. The embolus runs upward into the alveolus, and when viewed from the dorsal side follows an S-shaped pathway (fig. 6) before emerging in contact with the embolic membrane.

**INCLUDED SPECIES:** The type species; *H. subtilis* (Keyserling), new combination; *H. turbidulus* (Keyserling), new combination; and 16 new species described below.

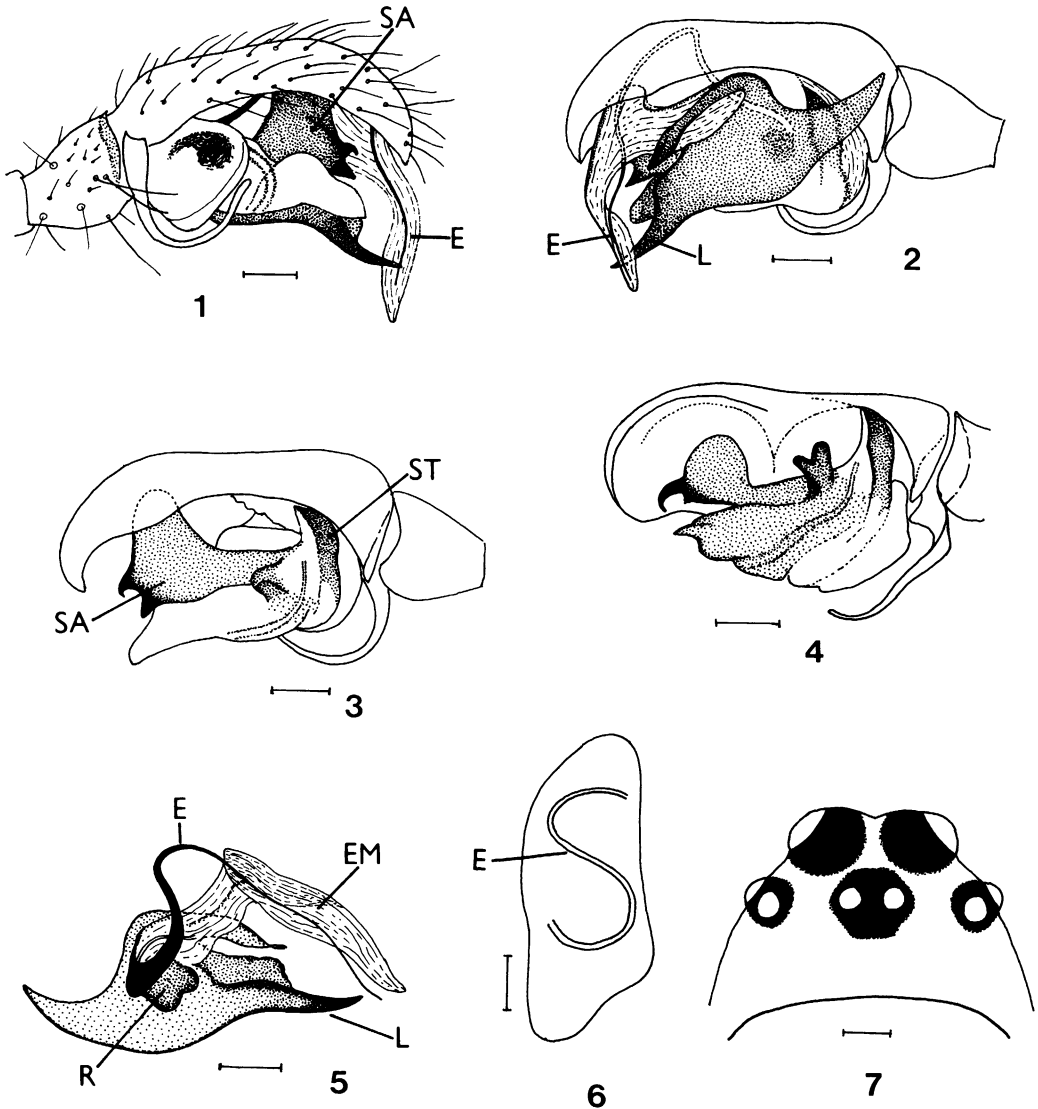
**DISTRIBUTION:** At present known from Chile, Brazil, and Peru, but probably extends throughout South America.

**TAXONOMIC POSITION:** The epigyna of *Hormembolus* have the same basic external form as that present in several South American genera including *Falklandoglenes* Usher from the Falkland Islands, in the genus *Linyphantes* from western North America, and in the Mynogleninae of New Zealand and central Africa. It was postulated (Millidge, 1984) that this epigynal form is one of the more primitive of the family. The combination of this epigynal form with the palpal form precludes the allocation of *Hormembolus* to any of the proposed subfamilies of the Linyphiidae; consequently this genus must be placed, for the present, in the *Stemonyphantes* group. The possible relationships of *Hormembolus* with other groups are examined following the descriptions (see Discussion).

## KEY TO *HORMEMBOLUS* SPECIES

### FEMALES

1. Epigynum (viewed at right angle to the ventral surface) with a moderately long scape (figs. 37–39) ..... 2  
Epigynum with a shorter scape ..... 3
2. Scape long and trunklike (fig. 39) .....  
..... *manuferus*  
Scape (fig. 38) ..... *longiscapus*  
Scape (fig. 37) ..... *aysenensis*
3. Carapace and sternum bright orange, abdomen jet black, legs orange basally and dark brown distally; epigynum (fig. 54) .. *nitidus*  
Color less vivid ..... 4
4. Epigynal ridge with clearly defined, pigmented margins (e.g., figs. 44, 45) ..... 5  
Epigynal ridge with poorly defined, barely pigmented margins (e.g., figs. 32, 47) .... 10
5. Epigynal ridge narrow (figs. 40, 60) ..... 6  
Epigynal ridge broader (e.g., figs. 44, 45) .. 7
6. Epigynum (figs. 40, 42); Chilean species ...  
..... *penai*  
Epigynum (fig. 60); Peruvian species .....  
..... *subtilis*
7. Short scape projecting more or less vertically from epigynal plate (figs. 46, 50) ..... 8  
Short scape barely projecting from epigynal plate (figs. 63, 64) ..... 9
8. Epigynal ridge narrower (figs. 44, 47) .....  
..... *caledonicus*  
Epigynal ridge wider (figs. 45, 48) .....  
..... *chacamus*



FIGS. 1-7. *Hormemبولus aysenensis*. 1. Palp, ectal. 2. Palp, mesal. 3. Palp, mesal, ED removed. 4. Palp, mesoventral, ED removed. 5. ED, ectal. 6. Cymbium, dorsal, to show embolus pathway. 7. Eyes, anterior view.

Abbreviations: E, embolus; EM, embolic membrane; R, radix; SA, suprategular apophysis; ST, suprategulum. Scale lines 0.1 mm.

- 9. Epigynum (figs. 61, 63); Brazilian species . . . . . *turbidulus*
- Epigynum (figs. 62, 64); Brazilian species . . . . . *inquilinus*
- 10. Epigynum with scape clearly projecting posteriorly (figs. 51, 52) . . . . . *maculatus*
- Epigynum with scape not projecting posteriorly (figs. 55, 58) . . . . . 11
- 11. Epigynum (viewed laterally) with scape pro-

- jecting only slightly from the epigynal plate (figs. 55, 56) . . . . . *cereus*
- Epigynum (viewed laterally) with scape projecting more or less vertically from the epigynal plate (figs. 58, 59) . . . . . *stellatus*

MALES

- 1. Embolic coil extends barely, if at all, below the plate of ED (e.g., figs. 2, 14, 19) . . . 2



- Embolic coil extends clearly below the plate of ED (e.g., figs. 9, 25) . . . . . 7
2. Large species (carapace length 2.25 mm); upper arm of ED bifurcate (fig. 17); lamella broad (fig. 16); palp (fig. 15) . . . *cekalovici*  
Smaller species (carapace length 1.8 mm or less); upper arm of ED not bifurcate . . . 3
3. Plate of ED shaped (figs. 19, 21) . . . . . 4  
Plate of ED differently shaped . . . . . 5
4. Lamella (fig. 22); palp (fig. 18) . . . . . *fulgens*  
Lamella (fig. 23); palp (fig. 20) . . . . . *festivus*
5. Lamella of ED sickle-shaped (figs. 13, 14) . . . . . *falcatus*  
Lamella of ED differently shaped . . . . . 6
6. SA (fig. 1); palp (figs. 1, 2) . . . . . *aysenensis*  
SA (fig. 10); palp (figs. 10, 11) . . . . . *silvestris*
7. Embolic coil relatively small (fig. 9) . . . . . *caledonicus*  
Embolic coil larger (figs. 25, 32) . . . . . 8
8. Embolic coil very large (figs. 25, 27) . . . . . 9  
Embolic coil moderately large (figs. 32, 34) . . . . . 10
9. Lamella (fig. 29); palp (fig. 24) . . . . . *penai*  
Lamella (fig. 30); palp (fig. 26) . . . *propinquus*
10. Lamella (fig. 35); palp (fig. 31) . . . *chacamus*  
Lamella (fig. 36); palp (fig. 33) . . . *maculatus*

*Hormembolus aysenensis* (Tullgren),  
new combination  
Figures 1-7, 37, 43

*Linyphia aysenensis* Tullgren, 1902, p. 18, pl. 1, fig. 6 (female holotype from Aisén Valley, Aisén, Chile, January 1897, P. Dusen, in NHRM, examined. Roewer, 1942, p. 587. Bonnet, 1957, p. 2492.

**DIAGNOSIS:** The female is diagnosed by the moderately long epigynal scape (fig. 37). The male is diagnosed by the ED of the palp, in which the embolus does not extend below the plate, coupled with the shape of the plate (fig. 2) and of the SA (fig. 1).

**FEMALE:** Total length 4.0-4.7. Carapace length 1.55-1.80. Carapace brown, with median black stripe. Abdomen grey, with some glistening white patches dorsally, plus one to two black chevrons and black patch just anterior to spinnerets; laterally and ventrally with variable white spots. Sternum deep brown to almost black. Legs brown, with distal ends of tibiae, metatarsi, and tarsi usually slightly darkened; chaetotaxy typical of genus. TmI 0.12-0.15. Epigynum (figs. 37, 43).

**MALE:** Total length 3.4-4.1. Carapace length 1.55-1.80. Color and chaetotaxy as female. Chelicerae dark brown, rugose an-

terolaterally, sometimes with small boss basally. Abdomen long, cylindrical. Palp (figs. 1-6).

**MATERIAL EXAMINED:** CHILE: **Aisén:** The holotype female. **Chiloé:** Chaiten, 0-100 m, Dec. 4, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 2f. **Llanquihue:** Correntoso, N El Chingue, Jan. 20-25, 1980 (L. Peña: AMNH), 2f. **Malleco:** Nahuelbuta, W Angol, 1300 m, Jan. 6-12, 1982 (L. Peña: AMNH), 8f, 3m; Cordillera Nahuelbuta, 1300-1400 m, Dec. 6-12, 1982 (L. Peña: AMNH), 5f. **Osorno:** Parque Nacional Puyehue, Antillanca road, screen-sweeping at dusk, 470-720 m, valdivian rainforest, Dec. 18-24, 1982 (A. Newton, M. Thayer: AMNH), 2m; same, window trap, 690 m, Dec. 24, 1982 (A. Newton, M. Thayer: AMNH), 1f, 2m; Parque Nacional Puyehue, 4.1 km E Anticura, screen-sweeping, 430 m, valdivian rainforest, Dec. 19-26, 1982 (A. Newton, M. Thayer: AMNH), 1f; Parque Nacional Puyehue, Aguas Calientes, 600 m, Feb. 12-20, 1979 (L. Peña: AMNH), 3f; Parque Nacional Puyehue, Calientes, 500 m, Jan. 2-5, 1982 (L. Peña: AMNH), 4f, 4m; 7.7 km NE Termas de Puyehue, window trap, 200 m, valdivian rainforest, Dec. 19-25, 1982 (A. Newton, M. Thayer: AMNH), 1f, 3m; Pucatrihue, coast, Feb. 1-10, 1980 (L. Peña: AMNH), 3f; La Picada, Valle Osorno, 450 m, Jan. 15-20, 1980 (L. Peña: AMNH), 1f. **Valdivia:** 4.1 km W Anticura, window trap, 270 m, valdivian rainforest, Dec. 19-25, 1982 (A. Newton, M. Thayer: AMNH), 1m.

**DISTRIBUTION:** Probably widely distributed in central to southern Chile.

*Hormembolus longiscapus*, new species  
Figure 38

**TYPE:** Female holotype from Laguna La Posada, Escuadrón, Concepción, Chile (Jan. 17, 1976; T. Cekalovic), deposited in AMNH.

**ETYMOLOGY:** The specific name describes the epigynal scape.

**DIAGNOSIS:** The female is diagnosed by the moderately long epigynal scape (fig. 38), which is somewhat longer than, and different in shape from, that of *H. aysenensis*. The male is unknown.

**FEMALE:** Total length 3.8. Carapace length 1.55. Carapace yellow-brown, with median black stripe broadened anteriorly; sides suffused with black. Abdomen grey dorsally, with

one median and two lateral black stripes, and black chevrons posteriorly, interspersed with glistening white spots; ventrally black. Sternum orange, suffused with black. Legs orange to pale brown, with tibiae and metatarsi faintly darkened distally; chaetotaxy typical of genus. TmI 0.20. Epigynum (fig. 38).

**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** Known only from Concepción, Chile.

*Hormembolus manuferus*, new species

Figure 39

**TYPE:** Female holotype from Viña del Mar, Valparaíso, Chile (Feb. 1979; A. Tobar), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective meaning "bearing an elephant's trunk" (*manus* = elephant's trunk—one meaning); this refers to the form of the epigynal scape.

**DIAGNOSIS:** The female is diagnosed by the long, trunklike epigynal scape (fig. 39). The male is unknown.

**FEMALE:** Total length 4.2. Carapace length 1.75. Carapace yellow-brown, with median black stripe and blackish margins. Abdomen fairly long and cylindrical, grey dorsally, with median black stripe plus two lateral black stripes, glistening white spots dorsally and on sides; ventrally black. Sternum black. Legs brown, with faint darker annulations on tibiae and metatarsi; chaetotaxy typical of genus. TmI 0.15. Epigynum (fig. 39).

**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** Known only from Valparaíso, Chile.

*Hormembolus silvestris*, new species

Figures 10, 11

**TYPES:** Male holotype, with one male paratype, from valdivian forest relic, 570 m, Parque Nacional Fray Jorge, Coquimbo, Chile (Nov. 3, 1981; N. I. Platnick and R. T. Schuh), deposited in AMNH.

**ETYMOLOGY:** The specific name refers to the forest habitat of the types.

**DIAGNOSIS:** The male is diagnosed by the form of the ED (fig. 11), in which the embolus does not extend below the plate; this species is close to *H. aysenensis*, but the shape of the

SA is somewhat different (fig. 10; cf. fig. 1). The female is unknown.

**MALE:** Total length 3.5. Carapace length 1.65–1.80. Carapace yellow to brown, with dark median stripe; sides suffused with grey. Chelicerae long, with minute granulations on anterolateral face. Abdomen long, cylindrical; grey dorsally, with black stripe on either side and black chevrons posteriorly, interspersed with few glistening white spots. Sternum orange, heavily suffused with black. Legs pale yellow to yellow-brown, with distal ends of tibiae and metatarsi darker; chaetotaxy typical of genus. TmI 0.17. Palp (figs. 10, 11).

**MATERIAL EXAMINED:** Only the types.

**DISTRIBUTION:** Known only from Coquimbo, Chile.

*Hormembolus falcatus*, new species

Figures 13, 14

**TYPE:** Male holotype from Chacamo (600–700 m), NW Nueva Imperial and W Temuco, Cautín, Chile (Feb. 17–23, 1981; L. Peña), deposited in AMNH.

**ETYMOLOGY:** The specific name is an adjective meaning "sickle-shaped," referring to shape of palpal lamella.

**DIAGNOSIS:** The male is diagnosed by the form of the ED (fig. 14), in which the embolus barely extends below the plate, coupled with the falcate form of the lamella (fig. 13). The female is not known.

**MALE:** Total length 2.95. Carapace length 1.15. Carapace orange. Chelicerae with weak granulations on anterolateral face. Abdomen long, cylindrical, grey dorsally with white blotches, black posteriorly near spinnerets; blackish grey ventrally. Sternum orange, suffused with brown. Legs orange; chaetotaxy typical of genus. TmI 0.16. Palp (figs. 13, 14).

**MATERIAL EXAMINED:** Only the holotype.

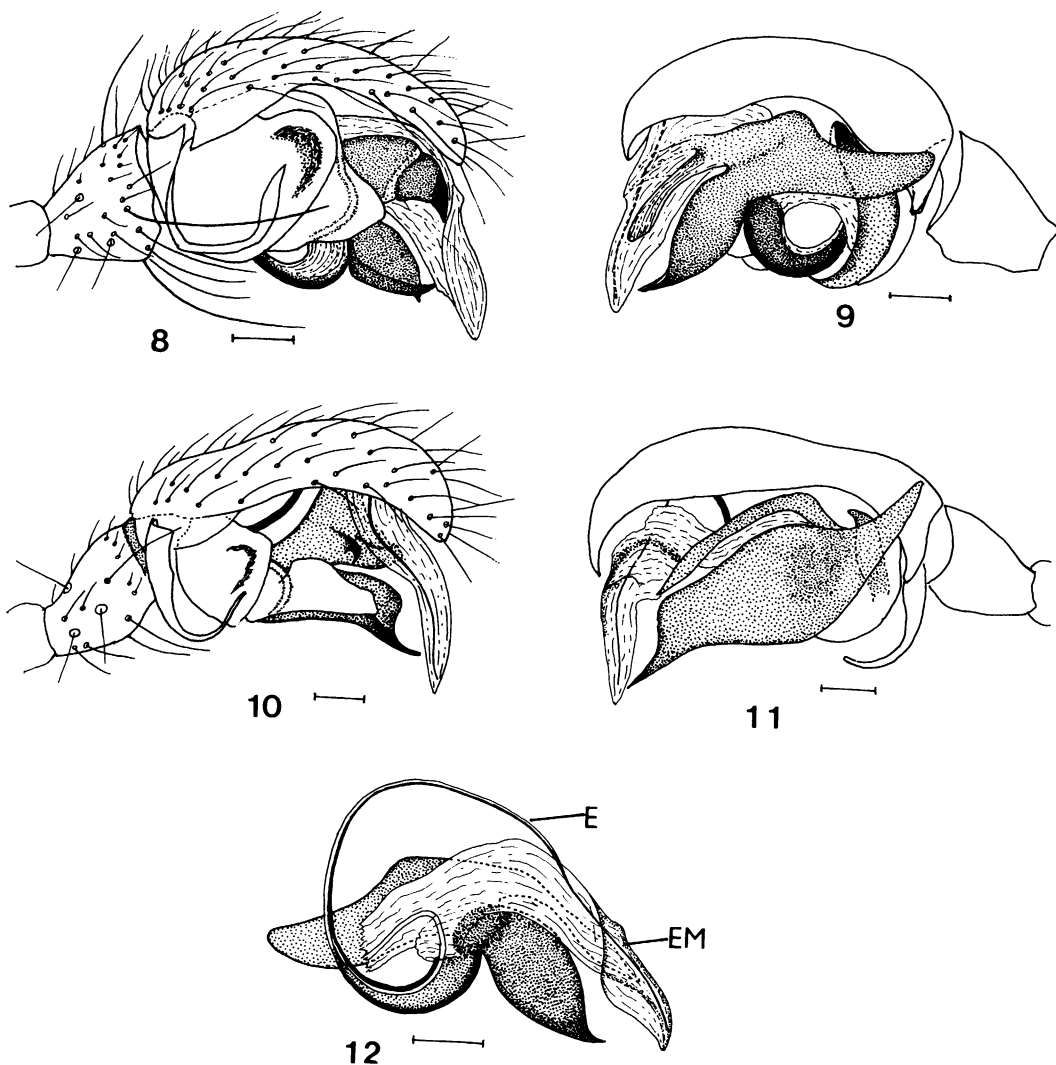
**DISTRIBUTION:** Known only from Cautín, Chile.

*Hormembolus cekalovici*, new species

Figures 15–17

**TYPE:** Male holotype from Estero Nonguen, Concepción, Chile (Dec. 8, 1975; T. Cekalovic), deposited in AMNH.

**ETYMOLOGY:** The specific name is a patronym in honor of the collector.



FIGS. 8-12. Palps. 8. *Hormembolus caledonicus*, ectal. 9. *H. caledonicus*, mesal. 10. *H. silvestris*, ectal. 11. *H. silvestris*, mesal. 12. *H. caledonicus*, ED, ectal.

Abbreviations: E, embolus; EM, embolic membrane. Scale lines 0.1 mm.

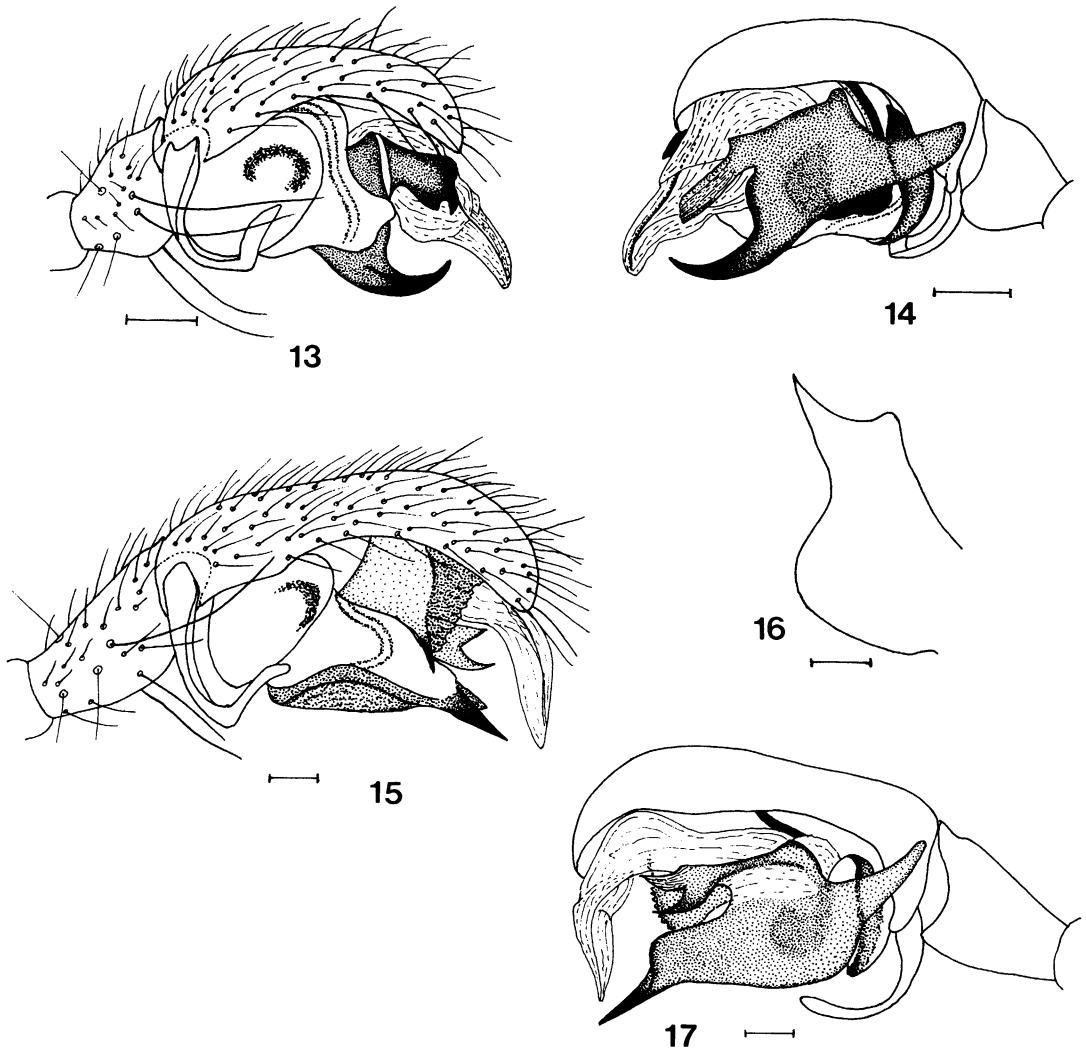
**DIAGNOSIS:** The male is diagnosed by the form of the ED (figs. 15, 17), in which the embolus does not extend below the plate, coupled with the bifurcated upper arm and the broad acuminate lamella (fig. 16), and with the form of the SA (fig. 15). The female is not known.

**MALE:** Total length 5.5. Carapace length 2.25. Carapace brown, with black median stripe expanded behind eyes, and blackish margins. Chelicerae with numerous minute

teeth on anterolateral face, with small boss basally. Abdomen long, cylindrical; black, with irregular lines of glistening white patches dorsally. Sternum orange, heavily suffused with black. Legs long, slender; chaetotaxy typical of genus. TmI 0.15. Palp (figs. 15-17). This species may prove to be the male of *H. manuferus*.

**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** Known only from Concepción, Chile.



FIGS. 13–17. Palps. 13. *Hormembolus falcatus*, ectal. 14. *H. falcatus*, mesal. 15. *H. cekalovici*, ectal. 16. *H. cekalovici*, lamella, ventral. 17. *H. cekalovici*, mesal. Scale lines 0.1 mm.

***Hormembolus fulgens*, new species**

Figures 18, 19, 22

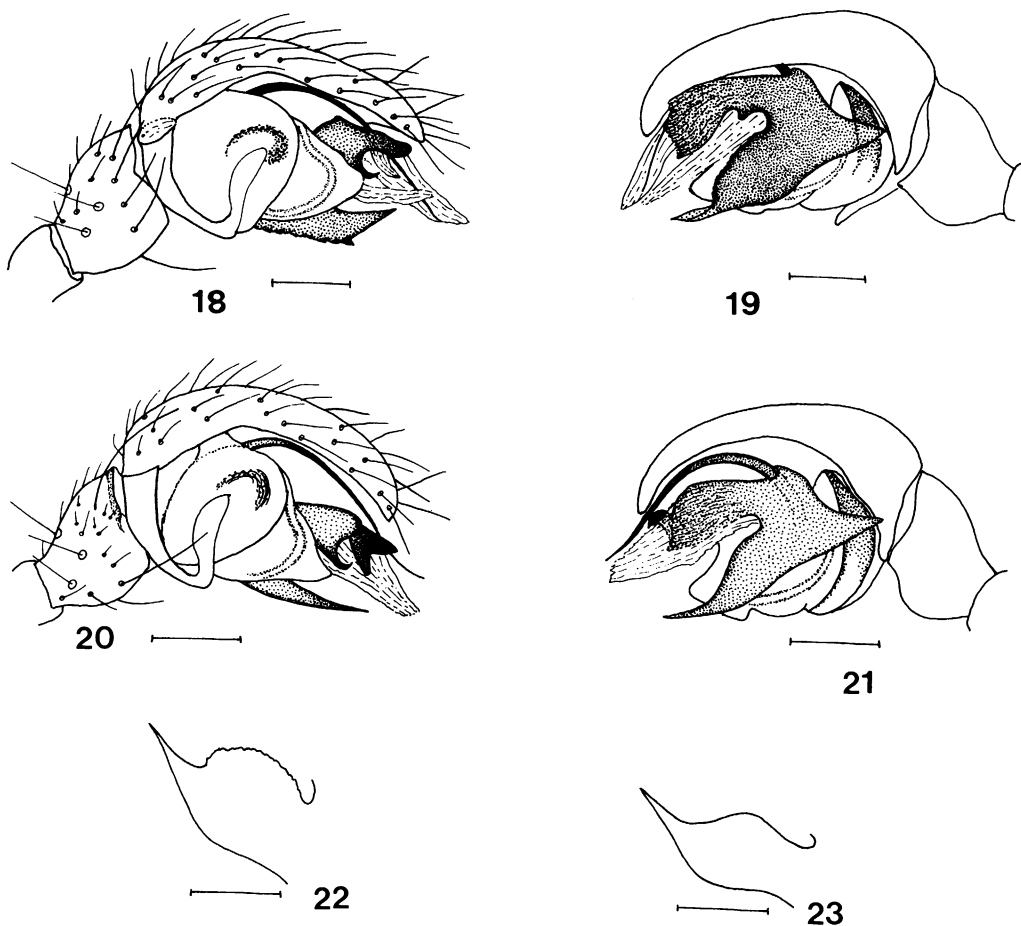
**TYPES:** Male holotype, with two male paratypes, from Volcán Villarrica, Cautín, Chile, window trap, 1250 m, *Nothofagus dombeyi*-*N. pumilio* forest with *Chusquea* (Dec. 15–29, 1982; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective meaning “bright, gleaming,” referring to the color of the species.

**DIAGNOSIS:** The male is diagnosed by the

ED (figs. 18, 19), in which the embolus does not extend below the plate, coupled with the shape of the plate and the form of the SA; it is distinguished from the closely related species *H. festivus* by the shape of the lamella (fig. 22; cf. fig. 23). The female is not known.

**MALE:** Total length 2.3–2.65. Carapace length 1.05–1.25. Carapace orange, with darkened fovea and margins. Chelicerae with weak granulations on anterolateral face. Abdomen ovate; usually black, with two striking white patches dorsally and anteriorly and two



FIGS. 18–23. Palps. 18. *Hormembolus fulgens*, ectal. 19. *H. fulgens*, mesal. 20. *H. festivus*, ectal. 21. *H. festivus*, mesal. 22. *H. fulgens*, lamella, ventral. 23. *H. festivus*, lamella, ventral. Scale lines 0.1 mm.

bright white areas anterior to spinnerets, but in some specimens color more or less completely black, with only faint white markings. Sternum orange. Legs with femora orange, remaining segments yellow to brown, often suffused with black (particularly on patellae and at distal ends of tibiae and metatarsi); leg spines rather weak, with few ventral spines. TmI ca. 0.20. Palp (figs. 18, 19, 22); cymbium and tibia often suffused with black.

**MATERIAL EXAMINED:** CHILE: **Cautín:** the types. **Ñuble:** 22.7 km ESE Recinto, window trap, 1330 m, *Nothofagus* forest, Dec. 10, 1982–Jan. 3, 1983 (A. Newton, M. Thayer: AMNH), 1m; Las Trancas, 19.5 km ESE Recinto, window trap, 1250 m, *Nothofagus* for-

est, Dec. 10, 1982–Jan. 3, 1983 (A. Newton, M. Thayer: AMNH), 5m; same, screen sweeping at dusk, 1m.

**DISTRIBUTION:** Known only from Cautín and Ñuble, Chile.

*Hormembolus festivus*, new species

Figures 20, 21, 23

**TYPE:** Male holotype from Antillanca road, Parque Nacional Puyehue, Osorno, Chile, window trap, 965 m, *Nothofagus pumilio* forest (Dec. 25, 1982; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective which means “relating to a festi-

val," referring to the date of capture of the type.

**DIAGNOSIS:** The male is diagnosed by the palp (figs. 20, 21), in which the embolus does not extend below the plate of the ED, coupled with the shape of the plate and the form of the SA (fig. 20); it is distinguished from the closely related species *H. fulgens* by the shape of the lamella (fig. 23; cf. fig. 22). The female is not known.

**MALE:** Total length 2.0. Carapace length 0.95. Carapace orange, with narrow grey margins. Chelicerae with no granulations on anterolateral face. Abdomen ovate; color variable: type black dorsally, with brilliant white stripe on either side, another male grey dorsally with irregular black chevrons posteriorly. Sternum orange, suffused with some black. Legs with femora orange, remaining segments dusky yellow; leg spines rather weak, with few ventral spines. TmI 0.20. Palp (figs. 20, 21, 23); cymbium and tibia suffused with black.

**OTHER MATERIAL EXAMINED: CHILE: Osorno:** Volcán Casa Blanca, Parque Nacional Puyehue, pan trap, 1270 m, *Nothofagus* forest at treeline, Dec. 20–25, 1982 (A. Newton, M. Thayer: AMNH), 1m.

**DISTRIBUTION:** Known only from Osorno, Chile.

***Hormembolus caledonicus*, new species**

Figures 8, 9, 12, 44, 46, 47

**TYPES:** Male holotype, with four female paratypes, from Caledonia, 700 m, E Mulchén, Bío-Bío, Chile (Feb. 10–15, 1981; L. Peña), deposited in AMNH.

**ETYMOLOGY:** The specific name is an adjective referring to the type locality.

**DIAGNOSIS:** The female is diagnosed by the epigynum (fig. 44), which has the scape scarcely projecting posteriorly and the ridge narrow. The epigynum is rather close to that of *H. chacamus*, but has a somewhat narrower ridge (fig. 44; cf. fig. 45), and also shows differences when viewed more anteriorly (fig. 47; cf. fig. 48). The male is diagnosed by the form of the ED, where the embolic coil extends below the plate, but is relatively small (fig. 9), coupled with the form of the SA (fig. 8).

**FEMALE:** Total length 3.55–3.9. Carapace

length 1.55–1.65. Carapace yellow to dark brown, with median black stripe slightly forked anteriorly. Abdomen grey dorsally, decorated with glistening white patches and black chevrons; ventrally black, with glistening white spots or patches. Sternum dark brown to almost black. Legs yellow to brown, with sometimes faint darker annulations; chaetotaxy typical of genus. TmI 0.12–0.15. Epigynum (figs. 44, 46, 47).

**MALE:** Total length 4.6. Carapace length 1.75. Color and chaetotaxy as female. Chelicerae with minute granulations on anterolateral face. Palp (figs. 8, 9, 12).

**OTHER MATERIAL EXAMINED: CHILE: Bío-Bío:** type locality, Feb. 6–15, 1981 (L. Peña: AMNH), 1m. **Cautín:** Villarrica, Feb. 27–28, 1979 (L. Peña: AMNH), 1m. **Nuble:** Tregualemu, Jan. 24, 1976 (G. Moreno: AMNH), 1m.

**DISTRIBUTION:** Bío-Bío, Cautín, and Ñuble, Chile.

***Hormembolus penai*, new species**

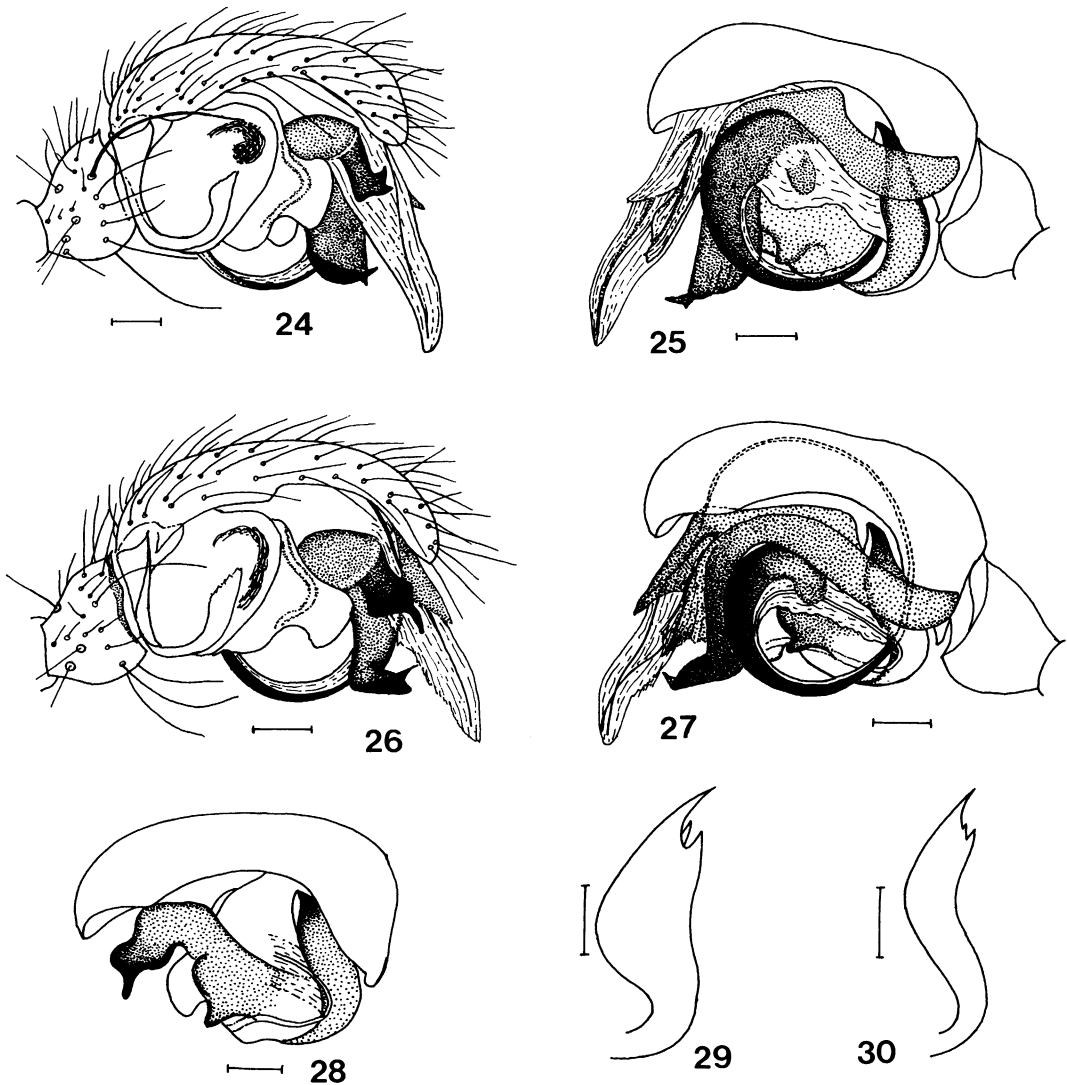
Figures 24, 25, 29, 40–42

**TYPES:** Male holotype, with one female and one male paratype, from Cordillera de Las Raíces, 1100–1300 m, Malleco, Chile (Feb. 5–9, 1979; L. Peña), deposited in AMNH.

**ETYMOLOGY:** The specific name is a patronym in honor of the collector.

**DIAGNOSIS:** The female is diagnosed by the form of the epigynum (figs. 40, 42): the scape projects posteriorly only to a limited degree, and the ridge is narrow. The male is diagnosed by the form of the ED, the embolic coil of which is large and extends well below the lower margin of the plate (fig. 25), coupled with the form of the lamella (figs. 24, 29), which separates *H. penai* from the closely related species *H. propinquus*.

**FEMALE:** Total length 3.1–3.45. Carapace length 1.25. Carapace yellow to orange, with median black stripe widened behind eyes. Abdomen grey dorsally, with median black stripe and black chevrons, interspersed with glistening white spots; sides grey, with variable white spots, ventrally black. Sternum orange, heavily suffused with deep brown or black. Legs yellow to orange; chaetotaxy typical of genus. TmI 0.18–0.22. Epigynum (figs. 40–42).



FIGS. 24–30. Palps. 24. *Hormembolus penai*, ectal. 25. *H. penai*, mesal. 26. *H. propinquus*, ectal. 27. *H. propinquus*, mesal. 28. *H. propinquus*, mesal, ED removed. 29. *H. penai*, lamella, ventral. 30. *H. propinquus*, lamella, ventral. Scale lines 0.1 mm.

**MALE:** Total length 3.1–4.1. Carapace length 1.4–1.75. Color and chaetotaxy as in female. Chelicerae with weak granulations on anterolateral face, with tiny boss basally. Palp (figs. 24, 25, 29); cymbium suffused with black.

**MATERIAL EXAMINED:** CHILE: **Malleco:** Cordillera de Las Raíces, 1600–1800 m, Feb. 13–18, 1980 (L. Peña: AMNH), 1m. **Ñuble:** Las Trancas, Chillan area, Mar. 1, 18, 1983 (L. Peña: AMNH), 1f, 3m.

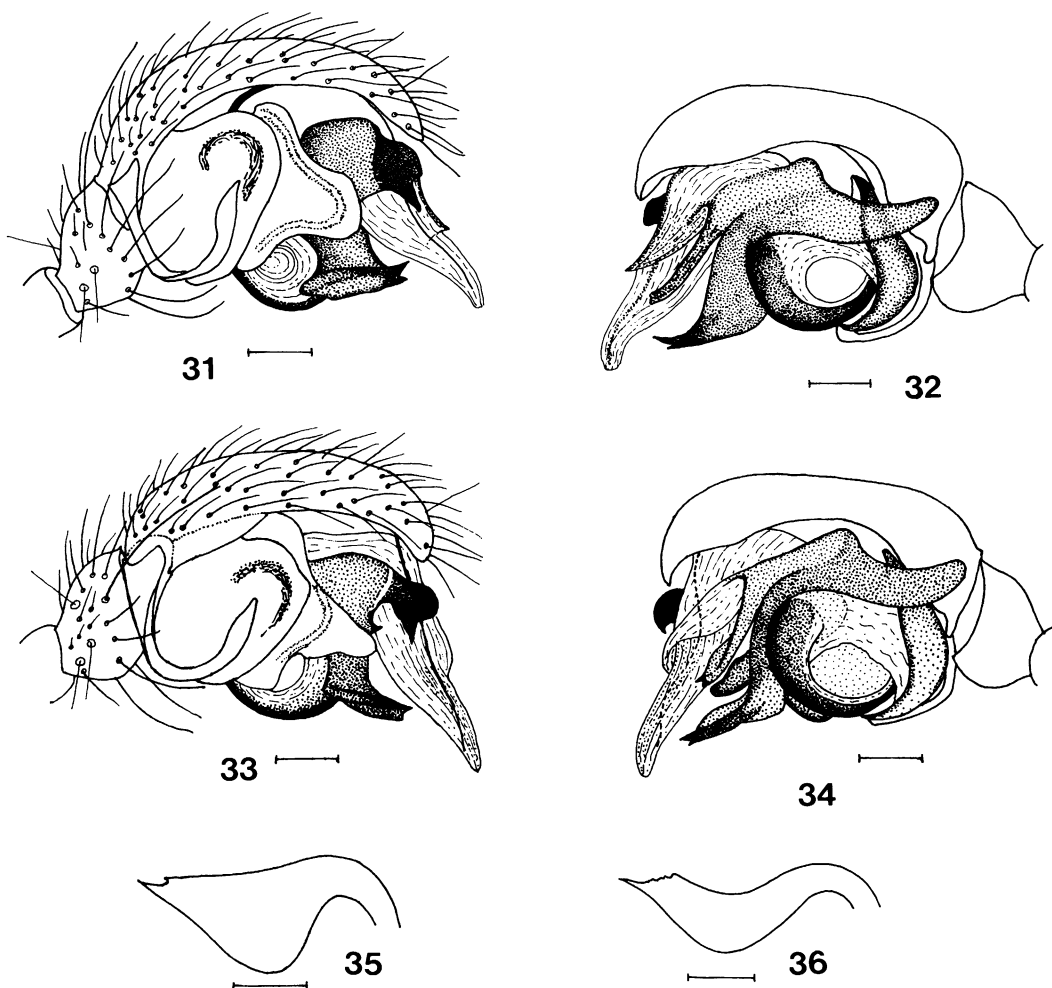
**DISTRIBUTION:** Known only from Ñuble and Malleco, Chile.

*Hormembolus propinquus*, new species

Figures 26–28, 30

**TYPE:** Male holotype from Cordillera Nahuelbuta, 1300–1400 m, Malleco, Chile (Dec. 6–12, 1982; L. Peña), deposited in AMNH.

**ETYMOLOGY:** The specific name is the Latin adjective implying “close relationship,” that is, to the species *H. penai*.



FIGS. 31–36. Palps. 31. *Hormembolus chacamus*, ectal. 32. *H. chacamus*, mesal. 33. *H. maculatus*, ectal. 34. *H. maculatus*, mesal. 35. *H. chacamus*, lamella, ventral. 36. *H. maculatus*, lamella, ventral. Scale lines 0.1 mm.

**DIAGNOSIS:** The male is diagnosed by the form of the ED, the embolic coil of which is large and extends well below the lower margin of the plate (fig. 27); the shape of the lamella (figs. 26, 30) distinguishes this species from the closely related *H. penai*. The female is not known; females taken with the holotype are *H. aysenensis*.

**MALE:** Total length 3.65. Carapace length 1.55. Carapace orange-brown, with faint dark median stripe and dusky margins. Chelicerae with minute granulations on anterolateral faces. Abdomen grey-black, with small glistening white patches dorsally and on sides.

Sternum deep brown. Legs brown; chaetotaxy typical of genus. TmI 0.15. Palp (figs. 26–28, 30).

**MATERIAL EXAMINED:** Only the holotype.

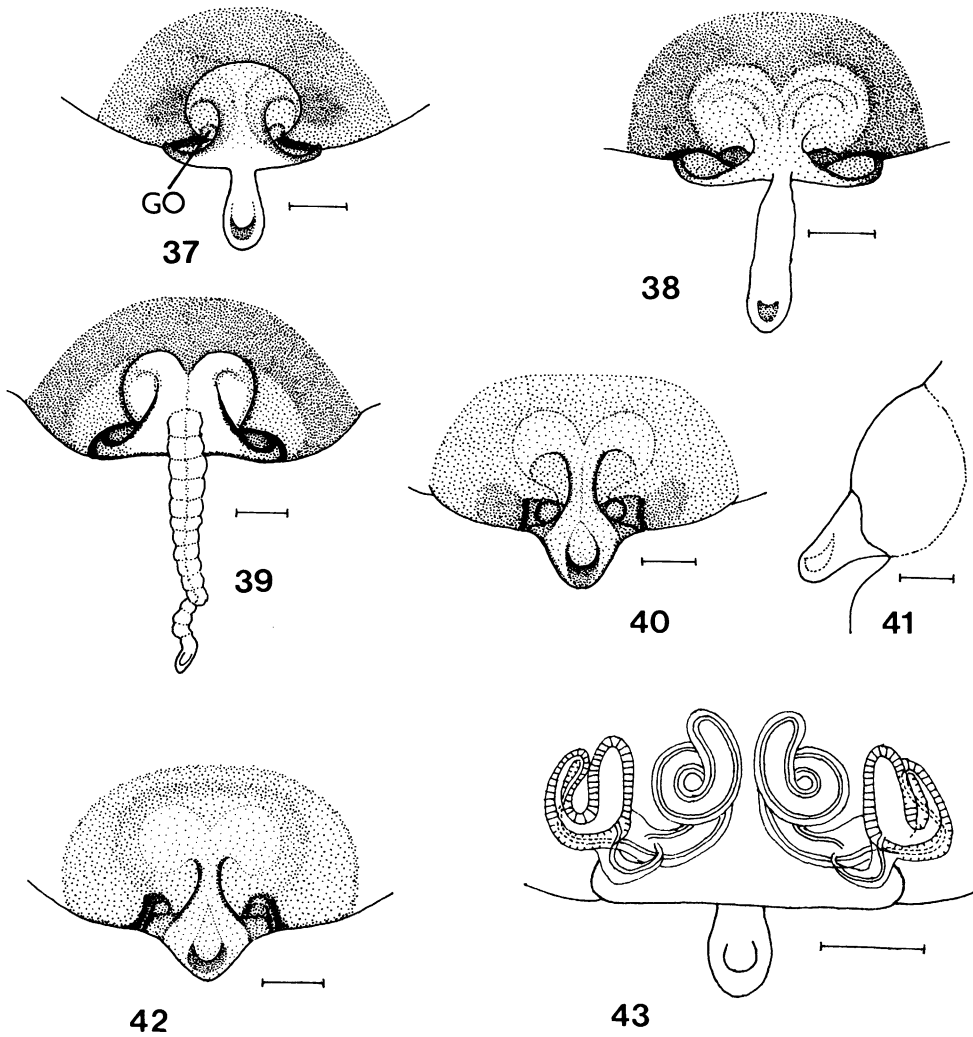
**DISTRIBUTION:** Known only from Malleco, Chile.

***Hormembolus chacamus*, new species**

Figures 31, 32, 35, 45, 48–50

**TYPES:** Male holotype, and three female paratypes, from Chacamo, NW of Nueva Imperial and W of Temuco, Cautín, Chile (Feb. 16–24, 1981; L. Peña), deposited in AMNH.





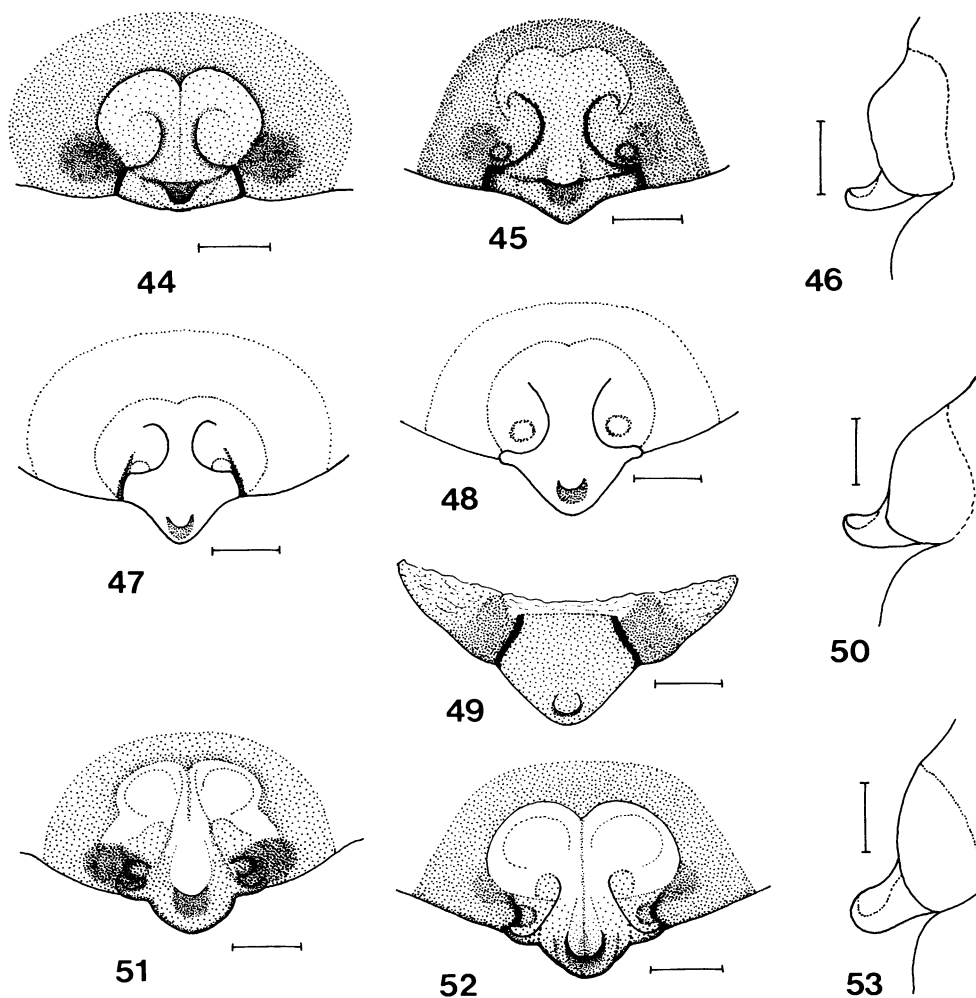
FIGS. 37-43. Epigyna. 37. *Hormembolus aysenensis*. 38. *H. longiscapus*. 39. *H. manuferus*. 40. *H. penai*. 41. *H. penai*, lateral. 42. *H. penai*, another specimen. 43. *H. aysenensis*, internal. Abbreviation: GO, genital opening. Scale lines 0.1 mm.

**ETYMOLOGY:** The specific name is an adjective referring to the locality of the type species.

**DIAGNOSIS:** The female is diagnosed by the epigynum (fig. 45), which has the scape scarcely projecting posteriorly, and the ridge broad and clearly defined. The epigynum is similar to that of *H. aysenensis*, but has a broader ridge and a different appearance when viewed somewhat anteriorly (fig. 48; cf. fig. 47). The male is diagnosed by the form of the ED, the embolic coil of which is mod-

erately large (though smaller than those of *H. penai* and *H. propinquus*), extending well below the lower margin of the plate (fig. 32); the broad lamella then separates this species from the related species *H. maculatus* (fig. 35; cf. fig. 36).

**FEMALE:** Total length 2.8-3.2. Carapace length 1.1-1.2. Carapace yellow to orange, with narrow median dark stripe. Abdomen grey dorsally, with glistening white spots, and black chevrons posteriorly; ventrally black, with sides grey. Sternum yellow to orange,



FIGS. 44–53. Epigyna. 44. *Hormembolus caledonicus*. 45. *H. chacamus*. 46. *H. caledonicus*, lateral. 47. *H. caledonicus*, viewed anteriorly. 48. *H. chacamus*, viewed anteriorly. 49. *H. chacamus*, dorsal. 50. *H. chacamus*, lateral. 51. *H. maculatus*. 52. *H. maculatus*, another specimen. 53. *H. maculatus*, lateral. Scale lines 0.1 mm.

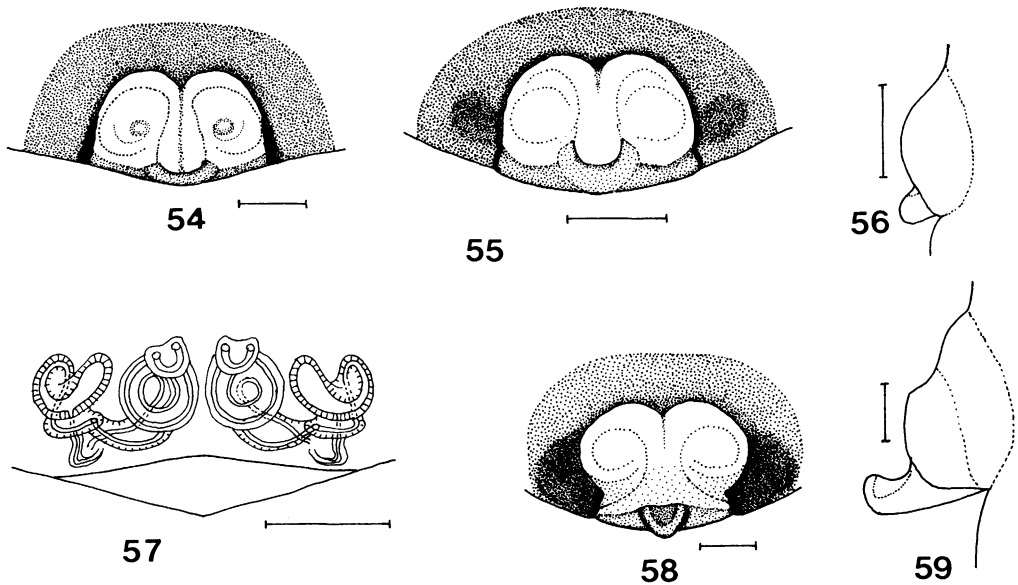
heavily suffused with black. Legs orange, with tibiae suffused with brown; chaetotaxy typical of genus. TmI 0.12–0.15. Epigynum (figs. 48–50).

**MALE:** Total length 2.55–3.1. Carapace length 1.1–1.25. Color and chaetotaxy as in female. Chelicerae weakly granulated anterolaterally, with tiny boss basally. Palp (figs. 31, 32, 35).

**OTHER MATERIAL EXAMINED: CHILE:** **Cautín:** Toltén, Feb. 27, 1979 (L. Peña: AMNH), 1m. **Chiloé:** Isla de Chiloé, Piruquina, Feb. 19, 1983 (T. Cekalovic: AMNH), 1m; Isla de Chiloé, Cucao, SE Castro, Feb.

1981 (L. Peña: AMNH), 1f; Isla de Chiloé, Chepu, Jan. 30, 1981 (L. Peña: AMNH), 1f; Isla de Chiloé, Guabun, N Ancud, Jan. 13–15, 1980 (L. Peña: AMNH), 1f. **Concepción:** Tomé, Dec. 12, 1982 (T. Cekalovic: AMNH), 1f. **Osorno:** Parque Nacional Puyehue, 4.1 km E Anticura, screen sweeping in valdivian rainforest, 430 m, Dec. 19–26, 1982 (A. Newton, M. Thayer: AMNH), 1m. **Valdivia:** 4.1 km W Anticura, pyrethrin fogging of fungusy log in valdivian rainforest, 270 m, Dec. 19–25, 1982 (A. Newton, M. Thayer: AMNH), 1f.

**DISTRIBUTION:** Cautín, Chiloé, Concepción, Osorno, and Valdivia, Chile.



FIGS. 54–59. Epigyna. 54. *Hormembolus nitidus*. 55. *H. cereus*. 56. *H. cereus*, lateral. 57. *H. cereus*, internal. 58. *H. stellatus*. 59. *H. stellatus*, lateral. Scale lines 0.1 mm.

***Hormembolus maculatus*, new species**

Figures 33, 34, 36, 51–53

**TYPES:** Male holotype and female paratype from San Manuel, Melipilla, Santiago, Chile (May 13–14, 1980; L. Peña), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective meaning “spotted,” referring to the abdominal pattern.

**DIAGNOSIS:** The female is diagnosed by the epigynum (figs. 51, 52), which has the ridge barely pigmented and poorly defined, with the scape distinctly projecting posteriorly. The male is diagnosed by the form of the ED, the embolic coil of which is moderately large (as in *H. chacamus*), extending well below the lower margin of the plate (fig. 34); the narrow lamella (fig. 36) then separates this species from the near relative *H. chacamus* (fig. 35).

**FEMALE:** Total length 2.35–2.8. Carapace length 1.0–1.05. Carapace orange to brown, with dark median stripe and dusky margins. Abdomen grey dorsally, with few weak black chevrons, brown to black ventrally; dorsal surface and sides with numerous glistening white spots. Sternum brown to black. Legs orange to brown, with tibiae and metatarsi darkened distally; chaetotaxy typical of ge-

nus, but ventral metatarsal spines absent. Tml 0.15. Epigynum (figs. 51–53).

**MALE:** Total length 3.0–3.4. Carapace length 1.2–1.35. Color and chaetotaxy as in female. Chelicerae with weak granulations anterolaterally. Palp (figs. 33, 34, 36); cymbium suffused with black.

**MATERIAL EXAMINED:** CHILE: **Aconcagua:** La Ligua, E Papudo, Sept. 27, 1980 (L. Peña: AMNH), 1f. **Santiago:** the types. **Valparaíso:** Quintero, Dec. 12, 1980 (L. Peña: AMNH), 1m.

**DISTRIBUTION:** Known only from Aconcagua, Santiago, and Valparaíso, Chile.

***Hormembolus nitidus*, new species**

Figure 54

**TYPE:** Female holotype from Chacamo, NW Nueva Imperial, W Temuco, Cautín, Chile (Feb. 16–24, 1981; L. Peña), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective meaning “bright, handsome,” referring to the color of the species.

**DIAGNOSIS:** The female is diagnosed by the form of the epigynum (fig. 54), coupled with the striking color. The male is not known.

**FEMALE:** Total length 3.55. Carapace length

1.25. Carapace and sternum bright orange. Chelicerae orange, with fang and teeth brown. Palp orange, with tibia and tarsus black. Abdomen jet black. Legs with femora orange basally, shading to dark brown distally; remaining segments dark brown. Chaetotaxy typical of genus, except that metatarsi lack ventral spines. TmI 0.22. Epigynum (fig. 54). It is possible that this is the female of *H. fulgens*.

**MATERIAL EXAMINED:** Only the holotype, which was mixed with specimens of *Spherozozone ardens* (q.v.), which it resembles in color.

**DISTRIBUTION:** Known only from Cautín, Chile.

*Hormembolus cereus*, new species

Figures 55–57

**TYPE:** Female holotype from 12 km E Malcahuello, Malleco, Chile, window trap, 1350 m, *Nothofagus dombeyi*–*Araucaria* forest (Dec. 13–31, 1982; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective which means “waxen,” referring to the pale, waxy appearance of the epigynum.

**DIAGNOSIS:** The female is diagnosed by the form of the epigynum (fig. 55), which is barely pigmented and in which the scape scarcely projects from the epigynal plate (fig. 58). The male is not known.

**FEMALE:** Total length 2.55–2.65. Carapace length 1.0–1.05. Carapace brown, fovea and sides marked with black. Abdomen grey to black, with two white spots dorsally near spinnerets, and few additional white spots dorsally. Sternum orange, sometimes heavily suffused with black. Legs yellow to pale brown, with tibiae and metatarsi sometimes weakly annulated with deep brown; chaetotaxy typical of genus, except that metatarsal spines seem to be absent. TmI 0.22–0.25. Epigynum (figs. 55–57). It is possible that this is the female of *H. festivus*.

**MATERIAL EXAMINED:** CHILE: **Malleco:** the holotype female. **Nuble:** Las Trancas, 19.5 km ESE Recinto, window trap, 1250 m, *Nothofagus* forest, Dec. 10, 1982–Jan. 3, 1983 (A. Newton, M. Thayer: AMNH), 1f; 22.7 km ESE Recinto, window trap, 1330 m, *Nothofagus* forest, Dec. 10, 1982–Jan. 3, 1983 (A. Newton, M. Thayer: AMNH), 2f.

**DISTRIBUTION:** Known only from Malleco and Nuble, Chile.

*Hormembolus stellatus*, new species

Figures 58, 59

**TYPE:** Female holotype from Pirque, Santiago, Chile (Nov. 30, 1982; L. Peña), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective meaning “set with stars,” referring to the abdominal pattern.

**DIAGNOSIS:** The female is diagnosed by the form of the epigynum (fig. 58), which is barely pigmented, with the scape projecting more or less vertically from the epigynal plate (fig. 59). The male is not known.

**FEMALE:** Total length 3.9. Carapace length 1.35. Carapace yellow, with median black stripe, widened behind eyes. Abdomen globular, grey dorsally, with few black chevrons and numerous glistening white spots. Sternum almost black. Legs yellow, with tibiae and metatarsi slightly darkened distally; chaetotaxy typical of genus. TmI 0.12. Epigynum (figs. 58, 59).

**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** Known only from Santiago, Chile.

*Hormembolus subtilis* (Keyserling),

new combination

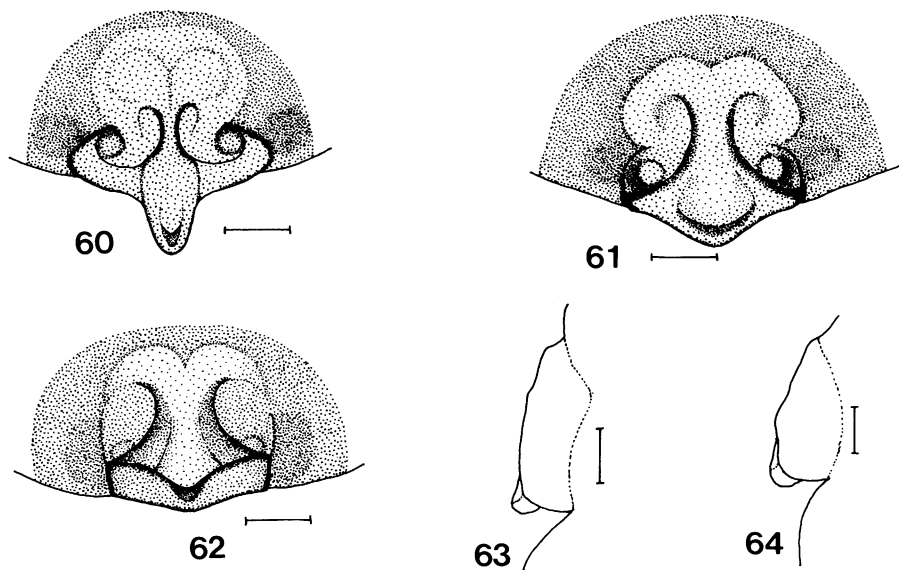
Figure 60

*Frontina subtilis* Keyserling, 1886, p. 111, pl. 15, fig. 195 (three female syntypes from Amable, Peru, in BMNH, examined).

*Linyphia subtilis*: Roewer, 1942, p. 591. Bonnet, 1957, p. 2530.

**DIAGNOSIS:** The female is diagnosed by the epigynum (fig. 60), which has a clearly defined narrow ridge, and a scape which projects posteriorly. The male was described by Keyserling, but no specimens have been seen.

**FEMALE:** Total length 2.8–2.95. Carapace length 1.0–1.15. Carapace brown to deep brown, with blackish markings and margins. Palp brown, tibia and tarsus blackened. Abdomen fairly long, cylindrical; brown, with black markings dorsally and white patches on sides. Sternum deep brown. Legs yellow to brown; most leg spines missing, but remaining ones typical of genus. TmI 0.20. Epigynum (fig. 60).



FIGS. 60–64. Epigyna. 60. *Hormembolus subtilis*. 61. *H. turbidulus*. 62. *H. inquilinus*. 63. *H. turbidulus*, lateral. 64. *H. inquilinus*, lateral. Scale lines 0.1 mm.

**MATERIAL EXAMINED:** Only the female types.

**DISTRIBUTION:** Known only from Peru.

*Hormembolus turbidulus* (Keyserling),  
new combination  
Figures 61, 63

*Frontina turbidula* Keyserling, 1886, p. 120, pl. 15, fig. 202 (two female syntypes from Espirito Santo, Brazil, in BMNH, examined); 1891, p. 228, pl. 9, fig. 170.

*Linyphia turbidula*: Roewer, 1942, p. 591. Bonnet, 1957, p. 2537.

**DIAGNOSIS:** The female is diagnosed by the epigynum (fig. 61), which has a clearly defined, moderately broad ridge, and a scape which barely projects from the epigynal plate (fig. 63). The species is distinguished from *H. inquilinus* by the rather narrower ridge, and by small differences in the scape. The male was described by Keyserling, but no specimens have been seen.

**FEMALE:** Total length 3.4–4.1. Carapace length 1.45–1.55. Carapace brown, fovea and margins weakly suffused with black. Abdomen moderately long, cylindrical; brown with darker median stripe dorsally and white spots on sides. Sternum brown, suffused with grey. Legs brown; most spines missing, but those

remaining typical of genus. Color no doubt greatly faded. TmI 0.12–0.15. Epigynum (figs. 61, 63).

**MATERIAL EXAMINED:** Only the female types.

**DISTRIBUTION:** Known from Brazil and Peru.

*Hormembolus inquilinus*, new species  
Figures 62, 64

**TYPE:** Female holotype from Espirito Santo, Brazil (mixed with the types of *H. turbidulus*), deposited in BMNH.

**ETYMOLOGY:** The specific name is a Latin noun in apposition, meaning “a lodger.”

**DIAGNOSIS:** The female is diagnosed by the epigynum (fig. 62), which has a clearly defined broad ridge, and a scape which barely projects from the epigynal plate (fig. 64). The male is not known.

**FEMALE:** Total length 4.3. Carapace length 1.55. Carapace brown, with ocular area suffused with dark brown. Palp brown, with tibia and tarsus darkened. Abdomen fairly long, cylindrical; brown, with traces of white markings on sides, blackened around spinnerets. Sternum brown. Legs brown; many spines missing, but those remaining typical of genus. TmI 0.15. Epigynum (figs. 62, 64).

MATERIAL EXAMINED: Only the holotype.  
DISTRIBUTION: Known only from Brazil.

*NOTIOHYPHANTES*, NEW GENUS

TYPE SPECIES: *Linyphia meridionalis* Tullgren.

ETYMOLOGY: The generic name is derived from the Greek *notios*, southern, and *hyphantes*, a weaver. The gender is feminine.

DIAGNOSIS: The female is diagnosed by the characteristic form of the epigynum, described below (the female of only one species has been seen). The male is diagnosed by the form of the palpal organ, in particular by the presence of a dark-colored knoblike prominence anteriorly (figs. 68, 70).

DESCRIPTION: This genus comprises several species of total length *ca.* 3.0–3.5 mm. The carapace is unmodified; the PM eyes are situated on shallow black tubercles. The chelicerae have a weak lateral file; the male chelicerae are long and divergent, with long fangs, and with numerous small warts, each bearing a tiny hair, on the anterolateral face. The abdomen has a color pattern of white on black, and is fairly long and cylindrical in the male. The legs are long, armed with spines as follows: femora I–IV, one dorsal; tibiae I–IV, two dorsal, one prolateral, one retrolateral, one or two ventral, and one or two short spines distally; metatarsi I–IV with one dorsal and one or two ventral. Metatarsi I–III have a trichobothrium, with TmI *ca.* 0.25. The female palpal tarsus has a claw. The genus is haplotracheate. The epigynum is in the form of a short scape, which has a small socket distally (fig. 71). This scape is attached dorsally to the dorsal plate of the epigynum, and ventrally a wide, projecting ridge runs to the ventral plate; when viewed laterally, this ridge has a snail-like outline (fig. 73). Although the scape still remains attached to the dorsal plate, a small atrium has opened between the anterior border of this plate and the scape (fig. 72). The genital openings are located in the shallow grooves which lie on either side of the ridge (fig. 71). The internal duct system is relatively simple, but the duct from the opening to the spermatheca makes a long loop inside the ridge of the scape (figs. 74, 75). The male palp has a slender paracymbium, with the distal arm somewhat membranous and translucent. The palpal organ is of similar

pattern to that of *Hormembolus*; the supra-tegulum and stalk are situated at the posterior of the organ, and the SA is long and curved (fig. 66). The ED is rather similar to that of *Hormembolus* but more complex (fig. 67); the embolic membrane is apparently fused along most of its length to the inner (lateral) side of the upper arm of the ED, and the latter has a black knoblike swelling anteriorly. The distal ends of the upper arm of the plate and of the embolic membrane form a U-shaped channel which holds the distal end of the embolus. The latter is broad and ribbonlike basally, but slender distally (fig. 67), and curves up into the alveolus before emerging at the anterior end of the palp near to the upper arm of the ED.

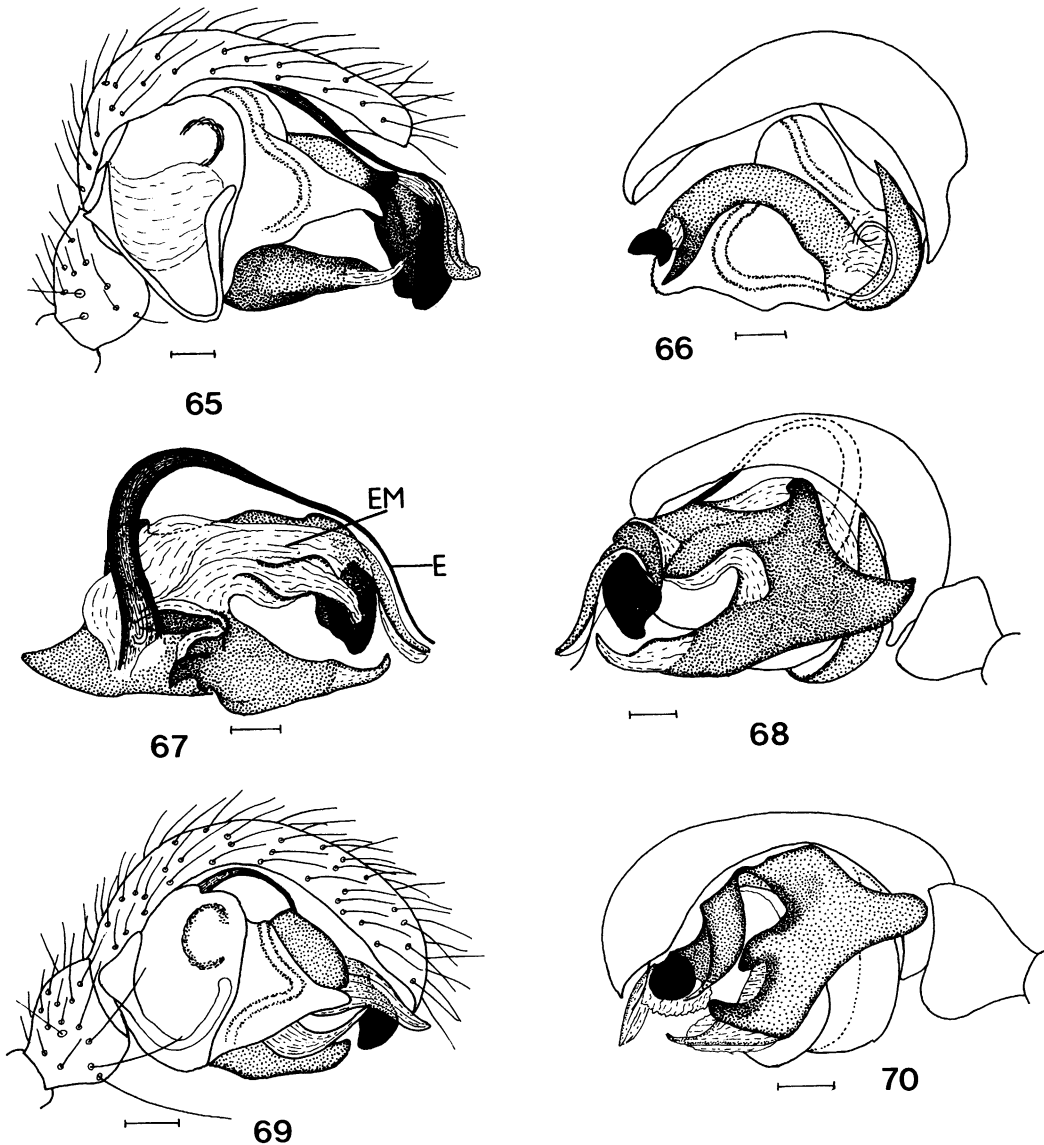
INCLUDED SPECIES: *Linyphia meridionalis* Tullgren, *Frontina elegans* Keyserling, and *Frontina bipunctata* Keyserling; the latter species is included on the basis of Keyserling's figures (Keyserling, 1886), and no specimens have been seen.

DISTRIBUTION: Known from Brazil, Peru, Chile, and Panama (*N. bipunctata*); probably endemic to South and (?) Central America.

TAXONOMIC POSITION: The external genitalia of the female are of the same basic form as in *Hormembolus*, with the median ridge rather more exaggerated; however, the internal genitalia are significantly different in the two genera. Another important difference in the epigyna is that in *Notiohyphantes* a small atrium has opened at the junction of the scape with the dorsal plate. The male palpal organ is of the same basic form as in *Hormembolus*, but here also there are significant differences. It seems clear, from the external epigynal structure, that *Notiohyphantes* should be grouped with *Hormembolus*, but the considerable differences in the internal duct structure indicate that the relationship between the two genera is not close (see Discussion at end of paper).

*Notiohyphantes meridionalis* (Tullgren),  
new combination  
Figures 65–68, 71–75

*Linyphia meridionalis* Tullgren, 1901, p. 215, pl. 16, fig. 7 [male holotype from Casa Tweedie, Punta Arenas, Magallanes, Chile, Dec. 1896, O. Nordenskiöld (Tullgren reported that only one male was taken, and a specimen which is pre-



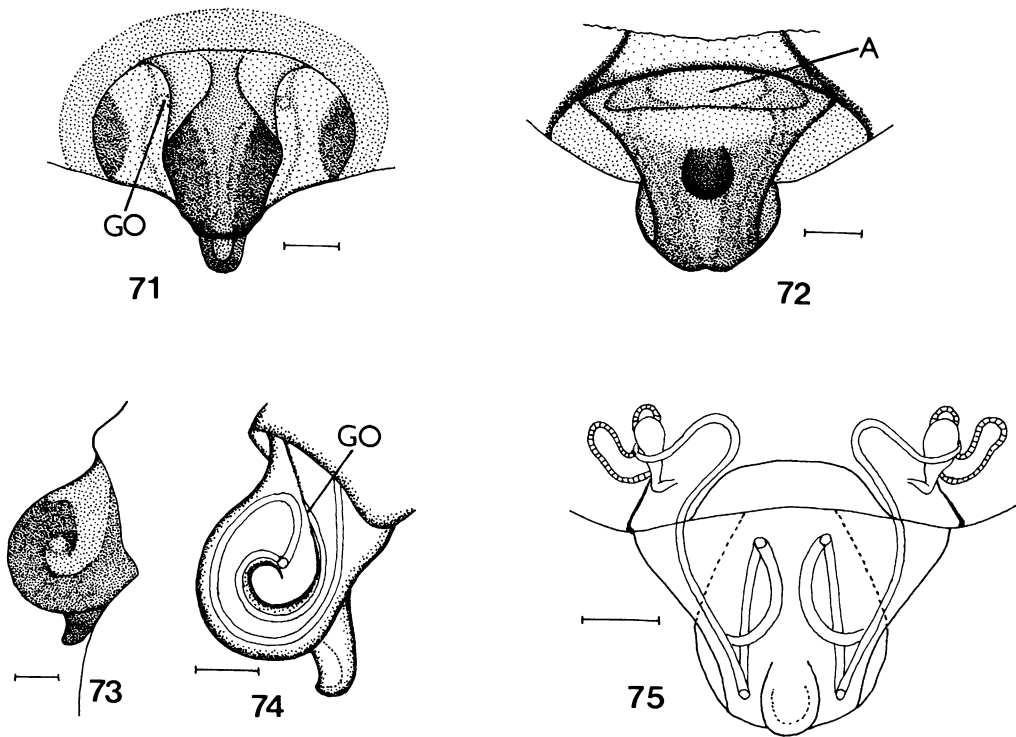
FIGS. 65–70. Palps. 65. *Notiohyphantes meridionalis*, ectal. 66. *N. meridionalis*, ectal, ED removed. 67. *N. meridionalis*, ED, ectal. 68. *N. meridionalis*, mesal. 69. *N. elegans*, ectal. 70. *N. elegans*, mesal. Abbreviations: E, embolus; EM, embolic membrane. Scale lines 0.1 mm.

sumably this male is present in NHRM, but is mislabeled “*Linyphia australis*”) examined]. Roewer, 1942, p. 590. Bonnet, 1957, p. 2515.

**DIAGNOSIS:** The female is diagnosed by the characteristic form of the epigynum (figs. 71, 73). The male is diagnosed by the palp (figs. 65, 68), which is distinguished from that of *N. elegans* by the larger and differently shaped black swelling on the ED. The geographical

range will also probably distinguish *N. meridionalis* from *N. elegans* and *N. bipunctata*.

**FEMALE:** This sex has not previously been described. One female was taken in the same locality as a male, on the same date, and is presumed to be of the same species. Total length 3.1–3.8. Carapace length 1.3–1.45. Carapace orange to deep brown, with dusky markings and margins. Abdomen black, dorsally with broad irregular white stripe and



FIGS. 71–75. *Notiohyphantes meridionalis*, epigynum. 71. Ventral. 72. Caudodorsal. 73. Lateral. 74. Lateral, to show course of duct. 75. Internal.

Abbreviations: A, atrium; GO, genital opening. Scale lines 0.1 mm.

faint pale chevrons; a few white markings present on sides and ventrally. Sternum brown to black. Legs orange-brown to brown, with darker annulations; chaetotaxy typical of genus. TmI 0.25–0.28. Epigynum (figs. 71–75).

MALE: Total length 3.2–3.3. Carapace length 1.45–1.6. Color and chaetotaxy as in female, except abdominal pattern less pronounced. Clypeus high, with carapace sloping strongly to posterior. Chelicerae long, divergent, with long fangs; numerous small warts, each with tiny hair, on anterolateral faces. Palp (figs. 65–68).

MATERIAL EXAMINED: CHILE: **Concepción:** Lenga, Apr. 6, 1980 (T. Cekalovic: AMNH), 1f. **Coquimbo:** Lorna de Penuelas, Nov. 25–30, 1961 (A. F. Archer: AMNH), 1f. **Magallanes:** Punta Arenas, male holotype. **Santiago:** Quilicura, May 1979 (L. Peña: AMNH), 1f, 4m.

DISTRIBUTION: Central to southern Chile.

*Notiohyphantes elegans* (Keyserling),  
new combination

Figures 69, 70

*Frontina elegans* Keyserling, 1891, p. 233, pl. 9, fig. 174 (male holotype from Rio Grande, Rio Grande do Sul, Brazil, in BMNH, examined).

*Linyphia elegans*: Bonnet, 1957, p. 2499.

*Linyphia elegantula* Roewer, 1942, p. 588 (*nomen novum* for *F. elegans*, preoccupied in *Linyphia*).

DIAGNOSIS: The male is diagnosed by the form of the palpal organ (figs. 69, 70); the black prominence on the ED is smaller than in *N. meridionalis*, and the ED is differently shaped. The female is not known.

MALE: The only specimen seen is the holotype, which is rather bleached and transparent. Total length 2.7. Carapace length 1.35. Chelicerae long, divergent, with numerous small warts on anterolateral faces. Chaetotaxy apparently typical of genus. Palp (figs. 69, 70).



MATERIAL EXAMINED: Only the holotype.

DISTRIBUTION: Brazil.

*PATAGONETA*, NEW GENUS

TYPE SPECIES: *Linyphia antarctica* Tullgren.

ETYMOLOGY: The generic name is derived from *Patagonia* and the Greek *neta*, spun. The gender is feminine.

DIAGNOSIS: The female of the single species is diagnosed by the form of epigynum, both external and internal (figs. 81, 82). The male is diagnosed by the form of the palpal organ (figs. 76, 78).

DESCRIPTION: The single species has a total length of 3.5–4.5 mm. The carapace and abdomen have no distinctive patterns. The lateral eyes are on a shallow tubercle. The chelicerae have very weak lateral files. The legs have numerous strong spines: femora I have one dorsal, one prolateral; femora II have one dorsal; the tibiae have the dorsal spines 2222, and there are several lateral and ventral spines; metatarsi I–IV have one prolateral and one retrolateral spine, but no dorsal spines. Metatarsi I–III have a trichobothrium, with TmI 0.22–0.24. The female palpal tarsus has a claw. The genus is haplotracheate. The epigynum is of the same basic external form as in *Hormembolus*: a scape, equipped with a large, deep socket, arises from the dorsal plate, and is connected by a fairly massive ridge to the ventral plate (figs. 81, 83). The genital openings lie in depressions on either side of the ridge, near the anterior ends of the lateral junctions of the dorsal and ventral plates (fig. 82). The internal duct arrangement is complex: the fertilization duct runs from the small spermatheca via a twisted ribbon, while the sperm duct runs from the opening to the spermatheca by a tortuous spiral pathway which is difficult to see in its entirety (fig. 82). The male palp has a large paracymbium, which is furnished with numerous long hairs (fig. 76). The suprategulum and the stalk are located near the posterior of the palpal organ; the suprategular apophysis is long and stout, with a pointed hook distally (figs. 76, 78, 79). The ED is complex: the radical part is a lightly sclerotized plate, with a well-defined sclerotized lateral margin, and a sclerotized tail-

piece (figs. 77, 80); at its anterior end this plate narrows to become the embolus, which forms a broad ribbon basally but is slender and hairlike distally. A lightly sclerotized, curved arm arises from the region of the stalk; along its length this arm has a U-shaped channel which carries the distal part of the embolus. A membranous lamella (the embolic membrane) also originates from the stalk area. An additional sclerite, in the form of a stout coil with heavily sclerotized outer margins, is attached to the radical part below the tailpiece, with the junction only lightly sclerotized; this sclerite may correspond to the "terminal apophysis" present in some linyphiid genera (Merrett, 1963).

INCLUDED SPECIES: Only the type species.

DISTRIBUTION: Southern Chile.

TAXONOMIC POSITION: The female genitalia of *Patagoneta* are of the same basic external form as in *Hormembolus*, with the central ridge more highly developed; the internal duct system, however, differs distinctly from that of *Hormembolus*. The male palpal organ has a complex ED which is widely different from that of *Hormembolus*. The external epigynal form of *Patagoneta* indicates that this genus should be grouped with the South American genera *Hormembolus*, *Notiohyphantes*, *Notholepthyphantes*, and *Falklandoglenes*; the internal duct configuration of the epigynum, and the form of the palpal organ, however, show that *Patagoneta* is probably not closely related to any of those genera (see Discussion at end of paper).

*Patagoneta antarctica* (Tullgren),

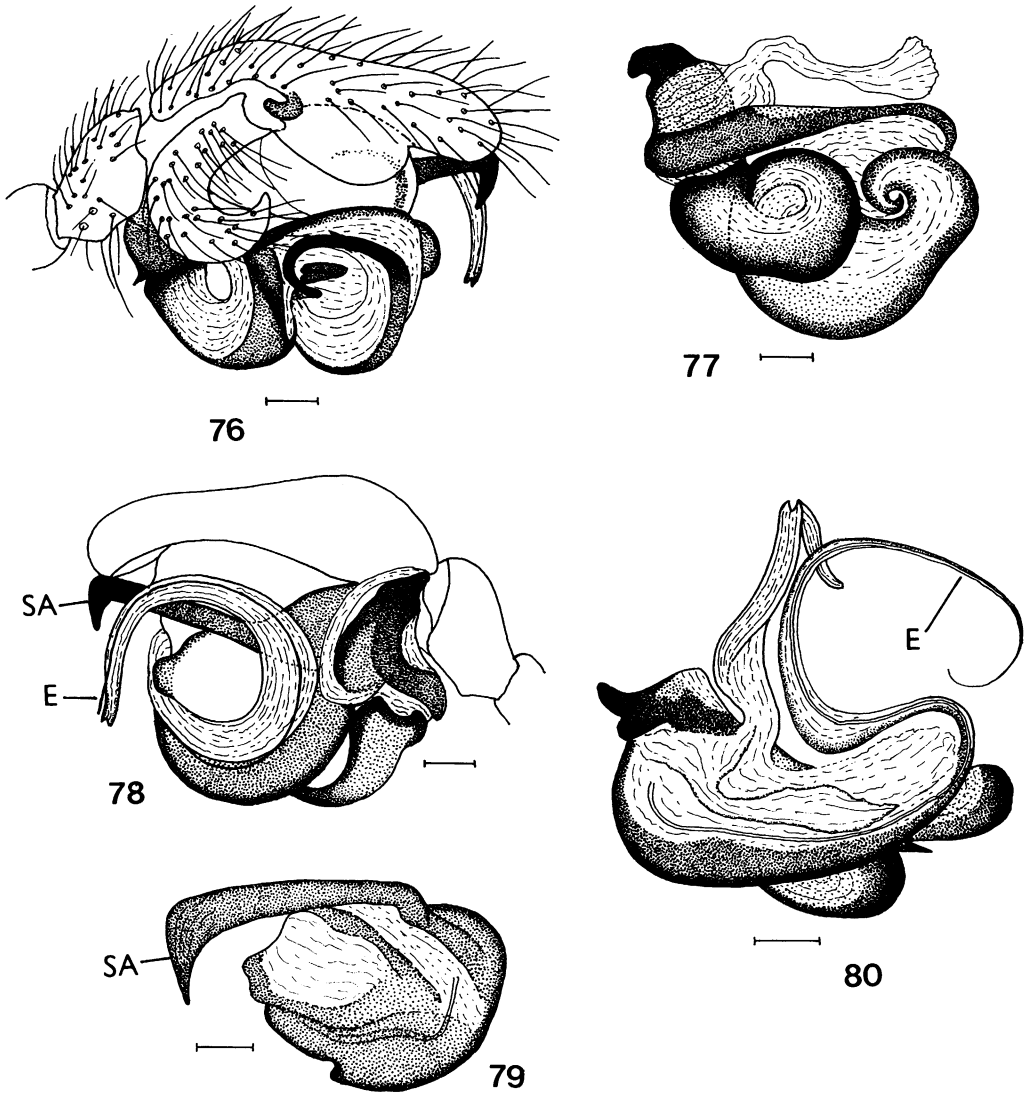
new combination

Figures 76–80, 81–83

*Linyphia antarctica* Tullgren, 1901, p. 214, pl. 17, fig. 2 (female holotype from Punta Arenas, Magallanes, Chile, Nov. 25, 1895, O. Norden-skiöld, in NHRM, examined). Roewer, 1942, p. 586. Bonnet, 1957, p. 2492.

DIAGNOSIS: Both sexes are diagnosed by the genitalia (see generic description above).

FEMALE: Total length 4.0–4.6. Carapace length 1.4–1.65. Carapace yellow-brown to deep brown, with blackish fovea, striae, and margins; numerous bristles present along median line and in and around ocular area. Ab-



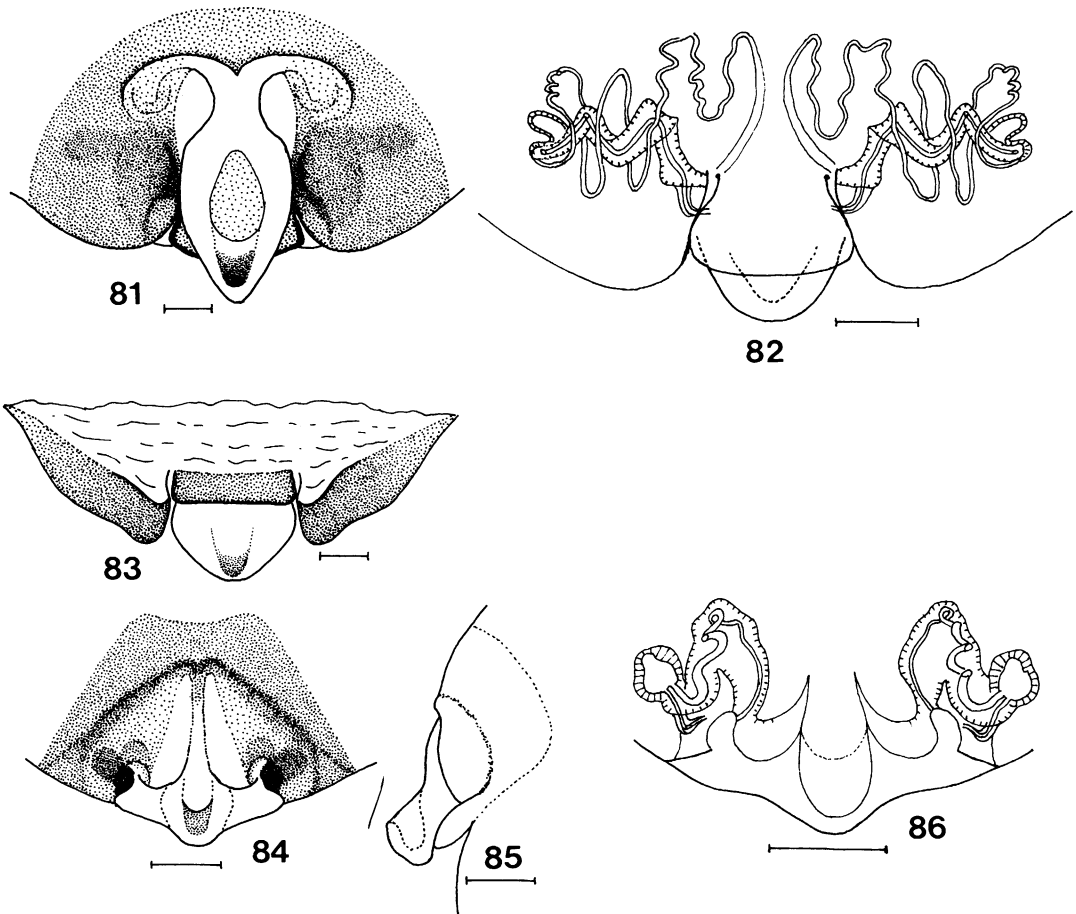
FIGS. 76–80. *Patagoneta antarctica*, palp. 76. Ectal. 77. ED, ectal. 78. Mesal. 79. Palpal organ, ED removed. 80. ED, ectal, embolus displaced.

Abbreviations: E, embolus; SA, supratregular apophysis. Scale lines 0.1 mm.

domen grey, with irregular white blotches dorsally, ventrally, and laterally. Sternum brown to deep brown, slightly rugose. Legs yellow to brown, weakly annulated with deeper brown. Chaetotaxy as in generic description. Epigynum (figs. 81–83).

MALE: This sex has not previously been described. Total length 3.3–3.45. Carapace length 1.65–1.75. Color and chaetotaxy as in female. Palp (figs. 76–80).

MATERIAL EXAMINED: CHILE: **Cautín:** Villarrica, Feb. 27–28, 1979 (L. Peña: AMNH), 1f. **Concepción:** Bosque de Ramuntcho, Dec. 12, 1961 (A. F. Archer: AMNH), 1f. **Magallanes:** Punta Arenas, 1895, female holotype; same, Feb. 12, 1963 (T. Cekalovic: AMNH), 2f. **Malleco:** Parque Nacional Nahuelbuta, 1300 m, Feb. 1–6, 1979 (L. Peña: AMNH), 4f, 1m; Nahuelbuta, W Angol, 1300 m, Jan. 12, 1982 (L. Peña: AMNH), 1f. **Osor-**



FIGS. 81–86. Epigyna. **81.** *Patagoneta antarctica*, ventral. **82.** *P. antarctica*, internal. **83.** *P. antarctica*, dorsal. **84.** *Notholepthyphantes australis*, ventral. **85.** *N. australis*, lateral. **86.** *N. australis*, internal. Scale lines 0.1 mm.

no: Parque Nacional Puyehue, Antillanca road, window trap, 965 m, *Nothofagus pumilio* forest, Dec. 25, 1982 (A. Newton, M. Thayer: AMNH), 1m.

DISTRIBUTION: Southern Chile.

#### *NOTHOLEPHTYPHANTES*, NEW GENUS

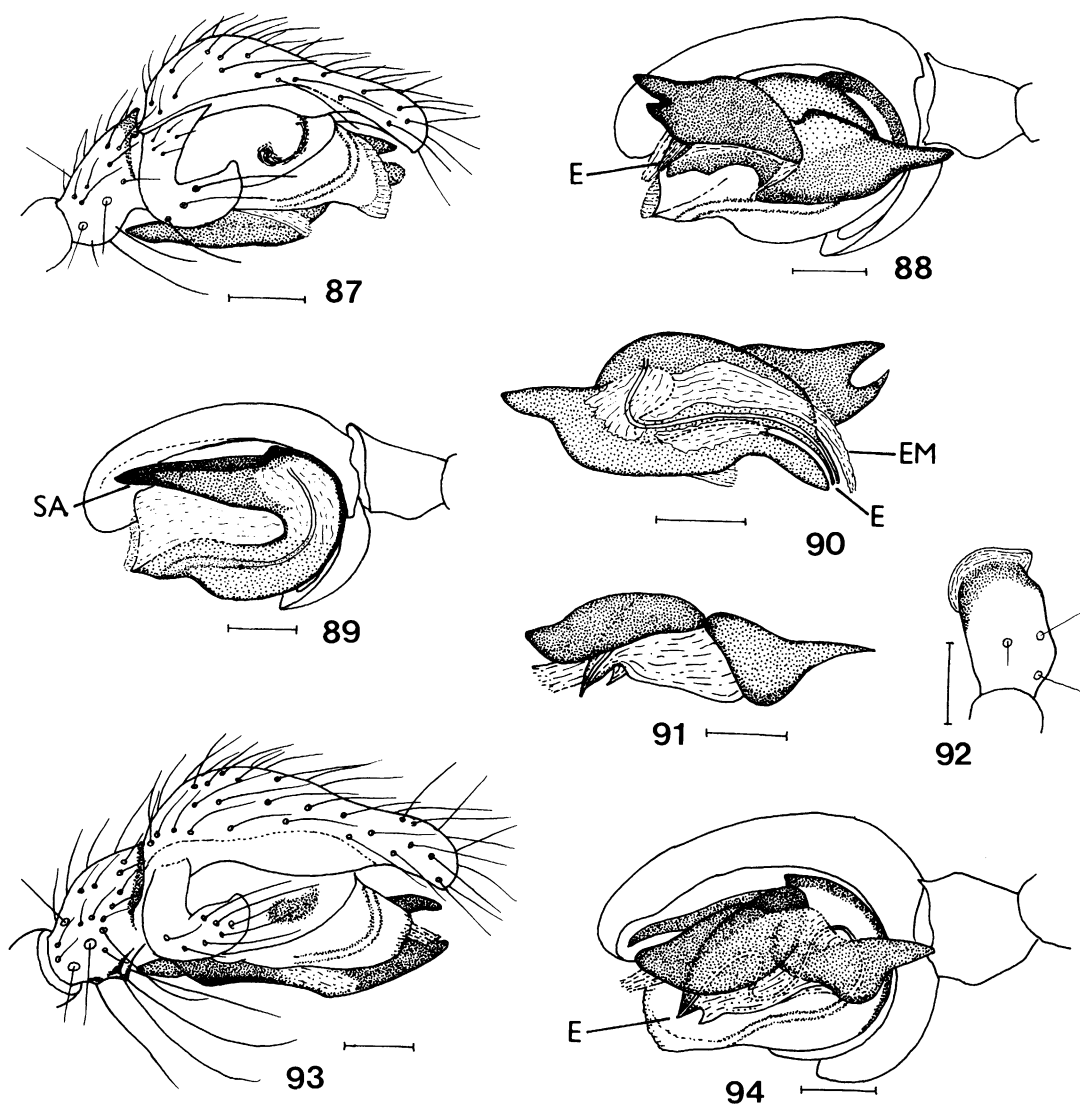
TYPE SPECIES: *Lepthyphantes australis* Tullgren.

ETYMOLOGY: The genus name is derived from the Greek *nothos*, spurious, and *Lepthyphantes*. The gender is feminine.

DIAGNOSIS: The female is known for only one species; this is diagnosed by the external form of the epigynum (fig. 84), coupled with the internal duct configuration (fig. 86). The

males are diagnosed by the ED of the palp, which is as shown in figs. 88 and 94.

DESCRIPTION: Small spiders, total length 2.2–2.75 mm. The carapace is unmodified in both sexes; the posterior median eyes are fairly large, less than one diameter apart. The chelicerae have weak lateral files, and in the male there may be tiny warts on the antero-lateral face. The maxillae, particularly of the male, have several tiny pointed tubercles, each carrying a bristle. The abdomen has a variable pattern of black chevrons and white patches. The legs are long and slender, with numerous strong spines, as follows: femora I–II, and sometimes III, one dorsal, I sometimes one prolateral; tibiae I–IV two dorsal,



FIGS. 87-94. Palps. 87. *Notholephyphantes australis*, ectal. 88. *N. australis*, mesal. 89. *N. australis*, mesal, ED removed. 90. *N. australis*, ED, ectal. 91. *N. erythropera*, ED, ventral. 92. *N. australis*, tibia, dorsal. 93. *N. erythropera*, ectal. 94. *N. erythropera*, mesal.

Abbreviations: E, embolus; EM, embolic membrane; SA, suprategular apophysis. Scale lines 0.1 mm.

one prolateral, one retrolateral, and one ventral; metatarsi I-IV one dorsal, sometimes with one prolateral on I-II. Metatarsi I-III have a trichobothrium, with TmI *ca.* 0.2. The female palpal tarsus is clawless. The genus is haplotracheate. The epigynum (figs. 84, 85) is of the same form externally as in *Hormem-bolus*, with the dorsal plate extended into a short scape/socket which is connected by a narrow ridge to the margin of the ventral plate;

the genital openings are located in the shallow depressions on either side of the ridge. The internal duct system (fig. 86) is more or less encapsulated with the spermatheca, and the duct follows a relatively short but tortuous course from the spermatheca to the opening. The male palpal tibia has a small translucent marginal apophysis distally; this is most pronounced in the type species (fig. 92). The paracymbium is stout, with the distal arm

short and armed with a number of long bristles (figs. 87, 93). The tegulum is slightly laminar and translucent anteriorly. The supra-tegulum and the stalk are located at the posterior of the palpal organ, and the long SA is pointed distally (fig. 89). The ED is somewhat complex, comprising two or three sclerites joined by lightly sclerotized regions (figs. 88, 90, 91, 94); the anterior pointed end of one of these sclerites forms the embolus.

**INCLUDED SPECIES:** The type species and *Linyphia erythrocer* Simon.

**DISTRIBUTION:** Central and southern Chile.

**TAXONOMIC POSITION:** The epigynum in this genus has the same external form as in *Hormembolus*, but internally the spermathecae and duct system are different. The form of the male palpal organ is very different from that of *Hormembolus*. Both the male and the female genitalic structures exclude *Notholephyphantes* from all the currently proposed subfamilies of the Linyphiidae (Millidge, 1984), and for the present this genus must be placed in the *Stemonyphantes* group. The congruence of the external epigynal forms of *Notholephyphantes* and *Hormembolus* indicate that these two genera must be related, but the wide differences in the palpal forms show that this relationship cannot be close (see Discussion at end of paper).

*Notholephyphantes australis* (Tullgren),  
new combination  
Figures 84–90, 92

*Lepthyphantes australis* Tullgren, 1901, p. 212, pl. 17, fig. 1 (female holotype from Última Esperanza, Magallanes, Chile, April 2, 1896, O. Nordenskiöld, in NHRM, examined). Roewer, 1942, p. 560. Bonnet, 1957, p. 2413.

**DIAGNOSIS:** The female is diagnosed by the epigynum (figs. 84, 85), which is very similar to that of some *Hormembolus* species. The male is diagnosed by the ED of the palpal organ, which has a characteristic form (fig. 88) easily distinguished from that of *N. erythrocer*.

**FEMALE:** Total length 2.2–2.8. Carapace length 0.90–0.95. Carapace yellow to yellow brown, often suffused with black anteriorly and on sides. Eyes large, with posteriors all *ca.* their radius apart. Abdomen fairly globular; black, with variable grey and white

markings dorsally, laterally, and ventrally, sometimes forming chevrons dorsally. Sternum orange, suffused with black, or entirely black. Legs yellow, strongly annulated with dark brown or black; chaetotaxy typical of genus. TmI 0.22. Epigynum (figs. 84–86).

**MALE:** Total length 2.2–2.4. Carapace length 0.95–1.1. Carapace as in female, but with black median stripe. Abdomen grey dorsally, with median black stripe followed by chevrons and some glistening white blotches. Sternum black. Legs and chaetotaxy, as in female. Palp (figs. 87–90, 92). The two sexes were not taken together, but were found in the same general area; their characters are generally in agreement, and it is assumed that they are conspecifics. The male has not previously been described.

**MATERIAL EXAMINED:** CHILE: **Llanquihue:** 7 km N Ensenada, in moss litter concentrate, 400 m, Nov. 26, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1f. **Magallanes:** Última Esperanza, the female holotype. **Malleco:** 6.5 km E Malalcahuello, window trap, 1080 m, *Nothofagus dombeyi* forest with *Chusquea*, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 5m; same, baited pitfall trap, 1m; Parque Nacional Tolhuaca, Lago Malleco, in wet leaves and flood debris, 890 m, disturbed *Nothofagus* forest, Jan. 1, 1983 (A. Newton, M. Thayer: AMNH), 1f. **Osorno:** Termas de Puyehue, forest, 180 m, Nov. 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1m; 7.7 km NE Termas de Puyehue, window trap, 200 m, valdivian rainforest, Dec. 19–25, 1982 (A. Newton, M. Thayer: AMNH), 1f.

**DISTRIBUTION:** Central and southern Chile.

*Notholephyphantes erythrocer* (Simon),  
new combination  
Figures 91, 93, 94

*Linyphia erythrocer* Simon, 1902, p. 24 (male holotype from Navarin, Puerto Toro, Magallanes, Chile, Dec. 19, 1892, Michaelsen, in ZMH, examined). Roewer, 1942, p. 588. Bonnet, 1957, p. 2501.

**DIAGNOSIS:** The female is not known. The male is readily separated from *N. australis* by the form of the ED (figs. 91, 94).

**MALE:** Total length 2.75. Carapace length 1.30. Carapace orange, with faint dusky markings; eyes smaller than in *N. australis*.

Abdomen white dorsally, with broad median black stripe followed by broken chevrons; ventrally black, with two white bands. Sternum orange, suffused with grey. Legs yellow, with traces of annulations on tibiae. Chaetotaxy typical of genus; TmI 0.15–0.20. Palp (figs. 91, 93, 94); tibial apophysis vestigial.

MATERIAL EXAMINED: Only the holotype.

DISTRIBUTION: Known only from Magallanes, Chile.

#### LAMINACAUDA, NEW GENUS

TYPE SPECIES: *Laminacauda diffusa*, new species.

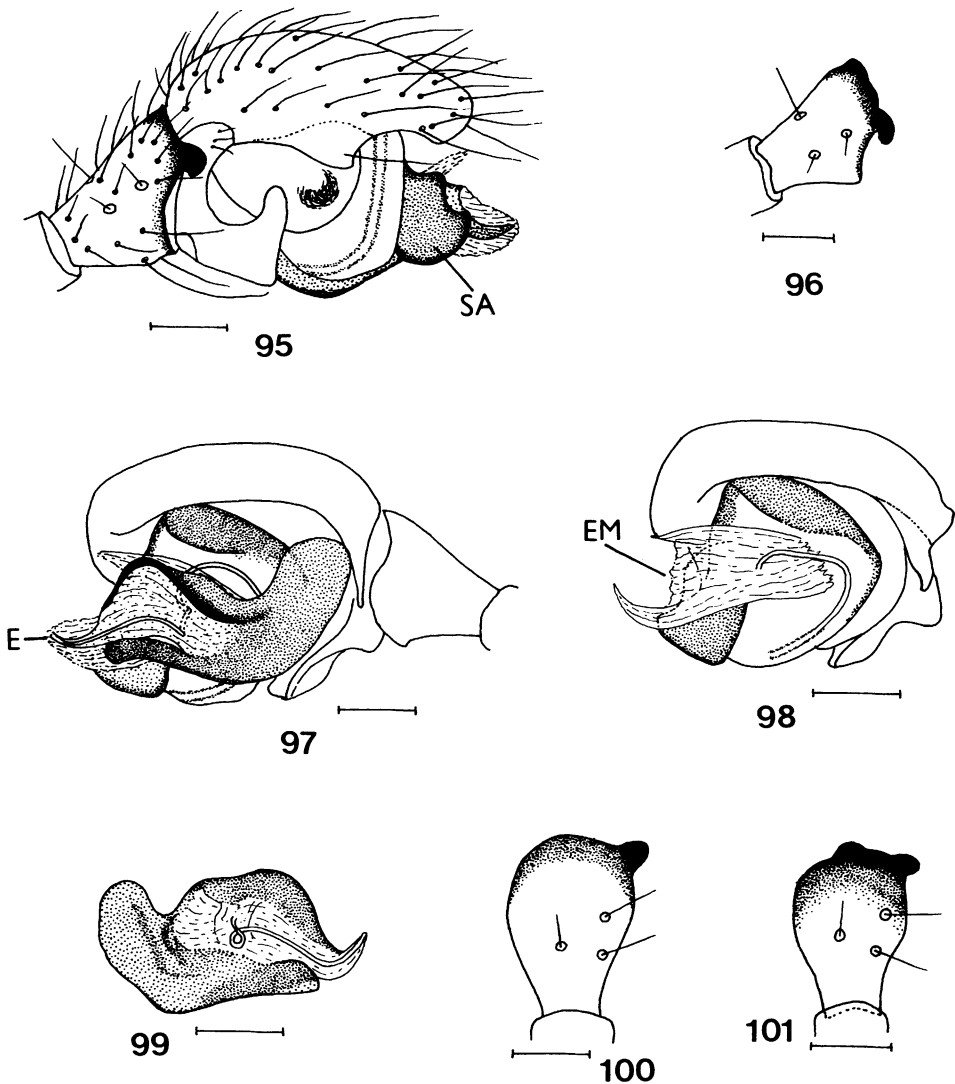
ETYMOLOGY: The generic name is derived from the Latin *lamina*, a thin sheet, and *cauda*, a tail, referring to the form of the tailpiece of the embolic division of the male palp. The gender is feminine.

DIAGNOSIS: Females are diagnosed by the epigynum, which has a well-defined ventral scape with no socket, coupled with the position of the genital openings and the configuration of the internal ducts (description below). Males are diagnosed by the form of the embolic division of the male palp.

DESCRIPTION: Total length 2.2–8.2 mm. The carapace is unmodified in both sexes. The chelicerae have lateral files, sometimes rather weak; the males of some species have a pointed boss anteriorly. The maxillae are usually armed with several pointed warts, particularly well developed in the males. The abdomen in most species has a dorsal pattern composed of an irregular median black stripe followed by black chevrons on a white or grey background; on the sides and ventrally the color is grey with variable white markings. The legs vary from short and robust to relatively long and slender. The dorsal tibial spines are 2222 in both sexes; in the continental South American species these are the only tibial spines, and the metatarsi and femora are spineless. In three of the four species present on the southern Atlantic island group of Tristan da Cunha, however, the tibiae have a number of additional spines, lateral and ventral, and there are spines also on the metatarsi. This more complex spinal armature may approach the primitive state of spination of the genus. Metatarsi I–III have a trichobothrium, with TmI 0.3–0.65. In four species (in-

cluding both continental and Tristan species) a trichobothrium is present also on metatarsus IV. The female palp is clawless. The tracheal form is intermediate between the typically desmitracheate and the typically haplotracheate forms. The median tracheae are rather stouter than in haplotracheate genera, but more slender than in erigonine genera, and divide into three to five finer branches (fig. 288); only one branch from each trachea appears to pass through the petiole into the prosoma. This tracheal form (which has been checked in the three species *L. diffusa*, *L. newtoni*, and *L. tristani*) is fairly close to that in *Allomengea* (Blest, 1976). The epigynum has the ventral plate extended posteriorly to give a scape which has no socket (figs. 124–135). The genital openings lie at the anterior ends of two roughly conical pockets which are located on the dorsal side of the scape at its anterior end, adjacent to the small dorsal plate (figs. 136, 137). The spermathecae are narrow, lightly sclerotized sacs, and the duct from the spermatheca to the opening forms a short double helix inside a heavily sclerotized capsule (figs. 138, 139). In some species, however, the angle of the capsule makes the double helix less evident (figs. 140, 142). The male palpal tibia has one or two sclerotized apophyses (e.g., figs. 100, 104); dorsally there are three (2 + 1) trichobothria (fig. 100), except in *L. maxima* and *L. tristani* where there are five (3 + 2) (figs. 148, 154). The paracymbium is stout; the basal arm has a group of three or four short hairs near the junction with the cymbium. The suprategulum and the suprategular apophysis (SA) are well developed (fig. 98); the stalk which carries the duct to the ED arises near the base of the SA. The ED comprises a long plate, the posterior part of which is laminar and rounded. The dorsal and ventral margins of the plate are well sclerotized, and between these is a lightly sclerotized area; the embolus is not a distinct separate sclerite, but a pointed projection on the anterior of the plate (figs. 99, 106). A transparent embolic membrane arises from the stalk (fig. 98).

INCLUDED SPECIES: *Laminacauda fuegiana* (Tullgren), new combination, *L. plagiata* (Tullgren), new combination, and 13 new species (including the type species). The new species include four from Tristan da Cunha



FIGS. 95–101. *Laminacauda diffusa*. 95. Palp, ectal. 96. Argentina specimen, palpal tibia, ectal. 97. Palp, mesal. 98. Palp, mesal, ED removed. 99. ED, ectal. 100. Palpal tibia, dorsal. 101. Argentina specimen, palpal tibia, dorsal.

Abbreviations: E, embolus; EM, embolic membrane; SA, suprategular apophysis. Scale lines 0.1 mm.

(apparently of South American origin), and one from Central America; the Tristan species are not included in the keys.

**DISTRIBUTION:** *Laminacauda* appears to be present throughout South America, and in parts of Central America. The genus occurs eastward as far as Tristan da Cunha.

**TAXONOMIC POSITION:** The epigynal scape in this genus, though superficially similar to those of the subfamily Drapetiscinae, has the

genital openings in the probably more primitive position near the base of the scape, with the ducts to the openings scarcely entering it. The internal duct configuration also appears to be of a primitive form, rather similar to that of the genus *Protoerigone* of the Mynogleninae (Blest, 1979, figs. 542, 543). The ED of the palp of *Laminacauda* is different from those of the subfamilies Mynogleninae, Linyphiinae (s. str.), or Micronetinae, and de-

spite the atypical tracheal form, the genus must be placed either in the Drapetiscinae or in the *Stemonyphantes* group. The nearest relative to *Laminacauda* may be *Ostearius*; this genus has similar female genitalia (though internally somewhat simpler), and its ED is generally similar to that of *Laminacauda*, with the same rounded, laminar tailpiece. The genus *Limoneta* (Bosmans and Jocqué, 1983), from central and southern Africa, has the ED and the epigynum somewhat similar to those of *Laminacauda*; the palpal tibia, the paracymbium, and the SA of the palp are different, however, as is the internal duct configuration of the epigynum. *Limoneta* is typically haplotracheate.

#### KEY TO *LAMINACAUDA* SPECIES<sup>2</sup>

##### FEMALES

1. Trichobothrium present on metatarsus IV . . . 2  
Trichobothrium absent on metatarsus IV . . . 4
2. Epigynum indented posteriorly . . . . . 3  
Epigynum rounded posteriorly (fig. 128) . . .  
..... *fuegiana*
3. Epigynum (fig. 129) . . . . . *peruensis*  
Epigynum (fig. 131) . . . . . *monticola*
4. Epigynal scape very short, with posterior margin broadly indented (fig. 127) . . . . .  
..... *argentinensis*  
Scape longer, narrowed posteriorly . . . . . 5
5. Scape fairly short, with posterior margin sharply indented (figs. 124, 125) . . . . . 6  
Scape moderately long . . . . . 7
6. Scape (fig. 125) deeply indented on posterior margin, with two dark markings just anterior to the notch . . . . . *plagiata*  
Scape (fig. 124) less deeply indented, lacking the two dark markings . . . . . *diffusa*
7. Scape with lateral margins distinctly indented (fig. 130); Bolivian species . . . . . *boliviensis*  
Scape with lateral margins barely indented (fig. 132); Panamanian species . . . . . *denticheles*  
Scape with lateral margins not indented (fig. 126); Chilean species . . . . . *newtoni*

##### MALES

1. Trichobothrium present on metatarsus IV . . . 2  
Trichobothrium absent on metatarsus IV . . . 3
2. ED (fig. 122); tibial apophysis (fig. 120) . . . . .  
..... *fuegiana*  
ED (fig. 123); tibial apophysis (fig. 121) . . . . .  
..... *parvipalpis*

3. Tibial apophysis, viewed ectally, roughly triangular (figs. 109, 114) . . . . . 4  
Tibial apophysis not of this form . . . . . 5
4. Palpal tibia long (fig. 109); tibial apophysis (fig. 110) . . . . . *argentinensis*  
Palpal tibia shorter (fig. 114); tibial apophysis (figs. 112, 113) . . . . . *thayerae*
5. Tibia with dorsal apophysis (figs. 103, 104, 117) . . . . . 6  
Tibia without dorsal apophysis . . . . . 7
6. ED (fig. 107); tibial apophysis (fig. 103) . . . . .  
..... *plagiata*  
ED (fig. 108); tibial apophysis (fig. 104) . . . . .  
..... *newtoni*  
ED (fig. 144); tibial apophysis (fig. 117) . . . . .  
..... *boliviensis*
7. ED (fig. 97); tibial apophysis (figs. 100, 101); palp (fig. 95) . . . . . *diffusa*  
ED (fig. 146); tibial apophysis (fig. 118); palp (fig. 145), Panamanian species . . . *denticheles*

#### *Laminacauda diffusa*, new species

Figures 95–101, 124, 136, 139

TYPE: Male holotype from Volcán Villarica, Cautín, Chile, window trap, 1120 m, *Nothofagus dombeyi*–*Saxegotha*, forest with *Drimys* (Dec. 15–29, 1982; A. Newton and M. Thayer), deposited in AMNH.

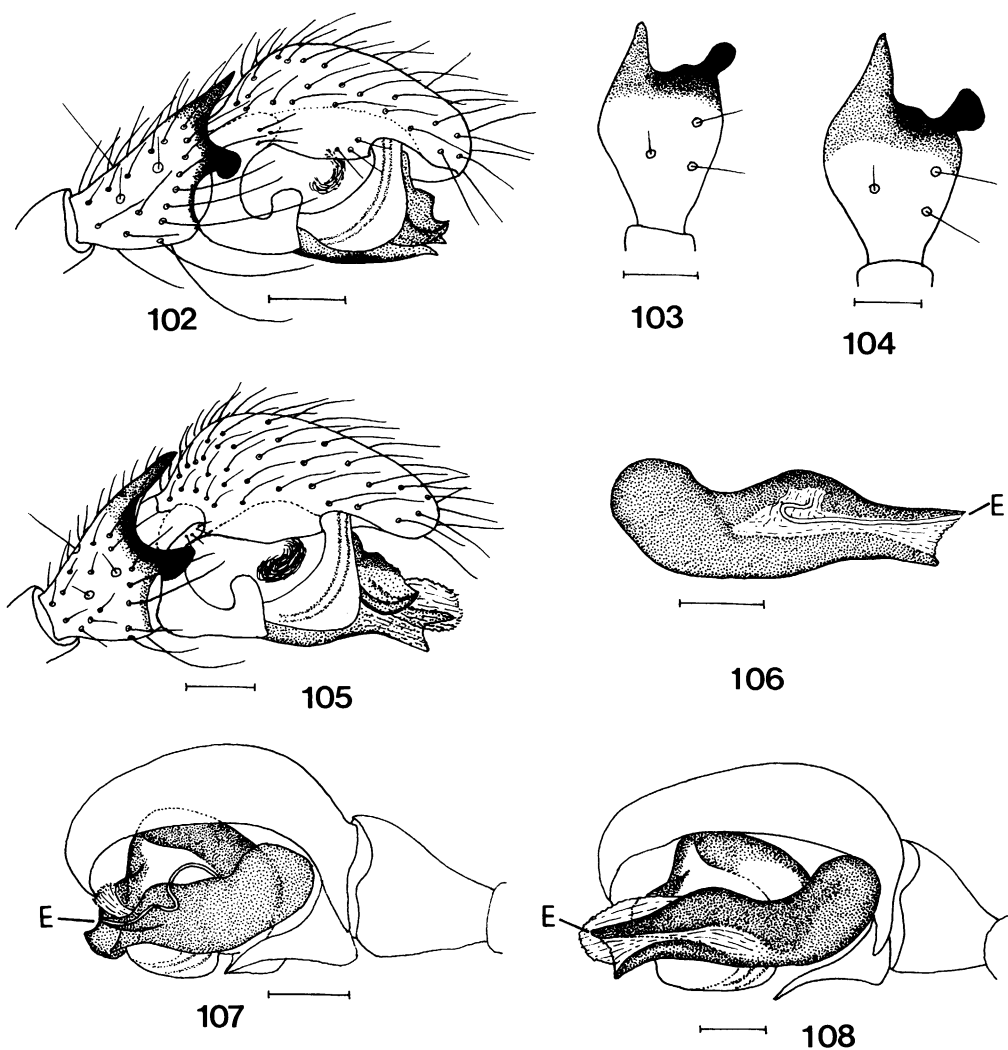
ETYMOLOGY: The specific name is a Latin adjective meaning “copious, extensive,” referring to the wide distribution of the species.

DIAGNOSIS: The female is diagnosed by the form of the epigynal scape (fig. 124); this is distinguished from the very similar scape of *L. plagiata* by the smaller indentation of the posterior margin and by the absence of two dark-colored areas anterior to the indentation. The male is diagnosed by the forms of the palpal tibia (figs. 95, 96, 100, 101) and palpal organ (fig. 97). Both sexes lack a trichobothrium on metatarsus IV.

FEMALE: Total length 2.2–2.6. Carapace length 1.1–1.25. Carapace brown to orange-brown, with dusky markings, ocular area suffused with black. Abdomen usually grey to black, with variable pattern of white markings and chevrons dorsally, with variable white markings ventrally; occasionally dorsal pattern with black median stripe and black chevrons on white background. Sternum orange-brown, suffused with grey, particularly on margins. Legs brown to orange-brown; chaetotaxy typical of genus. Metatarsi I–III with trichobothrium; TmI 0.40–0.50. Epigynum (figs. 124, 136, 139).

<sup>2</sup> Excluding species from Tristan Da Cunha.





FIGS. 102–108. Palps. 102. *Laminacauda plagiata*, ectal. 103. *L. plagiata*, tibia, dorsal. 104. *L. newtoni*, tibia, dorsal. 105. *L. newtoni*, ectal. 106. *L. newtoni*, ED, mesal. 107. *L. plagiata*, mesal. 108. *L. newtoni*, mesal.

Abbreviation: E, embolus. Scale lines 0.1 mm.

**MALE:** Total length 2.5. Carapace length 1.1. Color and chaetotaxy as in female. Chelicerae with pointed boss anteriorly. Palp (figs. 95–101): there are small differences between specimens from Chile and Argentina.

**MATERIAL EXAMINED:** ARGENTINA: **Chubut:** El Hoyo, Feb. 26, 1961, Sept. 3, 1961, July 1962, Sept. 1962 (A. Kovacs: AMNH), 6f, 1m; Epuyén, Nov. 18, 1962 (A. Kovacs: AMNH), 1f; Cholila, Apr. 2, 1965 (A. Kovacs: AMNH), 1m. **Río Negro:** El Bolsón, July 7, 1961, Aug. 17, 1961, June 25, 1962,

July 20, 1962 (A. Kovacs: AMNH), 4f, 1m; El Negro, Oct. 17, 1961 (A. Kovacs: AMNH), 1f. **Tierra del Fuego:** Ushuaia, Feb. 1961 (B. Malkin: AMNH), 1f. **CHILE:** **Atacama:** Huasco, Oct. 13, 1980 (L. Peña: AMNH), 1f; Quebrada Maitencillo, NW Vallenar, Oct. 11, 1980 (L. Peña: AMNH), 1f. **Cautín:** Villarica, Dec. 19, 1961 (A. F. Archer: AMNH), 1f. **Chiloé:** between Chacao and Ancud, 30 m, Nov. 27, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1m. **Colchagua:** Fundo Millohue, Cunoco, Mar. 25, 1961 (A. F. Archer:

AMNH), 1f. **Concepción**: 6 km S San Pedro, window trap, 360 m, *Pinus* sp. forest, Dec. 12, 1982–Jan. 2, 1983 (A. Newton, M. Thayer: AMNH), 1m. **Coquimbo**: Loma de Penulas, 6 km from La Serona, Nov. 25–30, 1961 (A. F. Archer: AMNH), 2f. **Llanquihue**: Isla Calbuco, Feb. 21–27, 1962 (A. F. Archer, H. McMillin: AMNH), 1m. **Magallanes**: Puerto Williams, Isla Navarino, Mar. 16–17, 1961 (B. Malkin: AMNH), 1f; Laguna Figueroa, Jan. 28, 1976 (T. Cekalovic: AMNH), 1f. **Malleco**: Lonquimay, Feb. 1980 (L. Peña: AMNH), 1f. **Ñuble**: Las Trancas, 19.5 km ESE Recinto, berlese of forest leaf and log litter, 1250 m, *Nothofagus* forest, Dec. 10, 1982–Jan. 3, 1983 (A. Newton, M. Thayer: AMNH), 1f. **Osorno**: Osorno, Sept. 1977 (A. Tobar: AMNH), 1f; Parque Nacional Puyehue, Antillanca road, window trap, 720 m, *Nothofagus* forest, Dec. 18–24, 1982 (A. Newton, M. Thayer: AMNH), 1f; same, screen sweeping, 720–1000 m, Dec. 18–24, 1982 (A. Newton, M. Thayer: AMNH), 1f; Parque Nacional Puyehue, 4.1 km E Anticura, 430 m, valdivian rainforest, Dec. 18–24, 1982 (A. Newton, M. Thayer: AMNH), 1f. **Santiago**: Chacabuco, 4.4 km W Tiltill, 700 m, small stream in xeric scrub, Jan. 5, 1983 (A. Newton, M. Thayer: AMNH), 1f; Quilicura, May 25, 1979 (L. Peña: AMNH), 1f. **Valdivia**: Lago Calafquen (Playa), Feb. 13, 1977 (T. Cekalovic: AMNH), 1f. **Valparaíso**: Quillota, Jan. 1979 (A. Tobar: AMNH), 1f; Quillota, 4 km E Quebrada Alvarado, dead leaves at stream edge, 500 m, Jan. 5, 1983 (A. Newton, M. Thayer: AMNH), 1f.

**DISTRIBUTION**: Widely distributed throughout southern Chile and Argentina.

*Laminacauda plagiata* (Tullgren),  
new combination

Figures 102, 103, 107, 125

*Hilaira* (?) *plagiata* Tullgren, 1901, p. 204, pl. 1, fig. 10 (female holotype from Punta Arenas, Magallanes, Chile, Nov. 25, 1895, O. Nordenskiöld, in NHRM, examined). Roewer, 1942, p. 657. Bonnet, 1957, p. 2213.

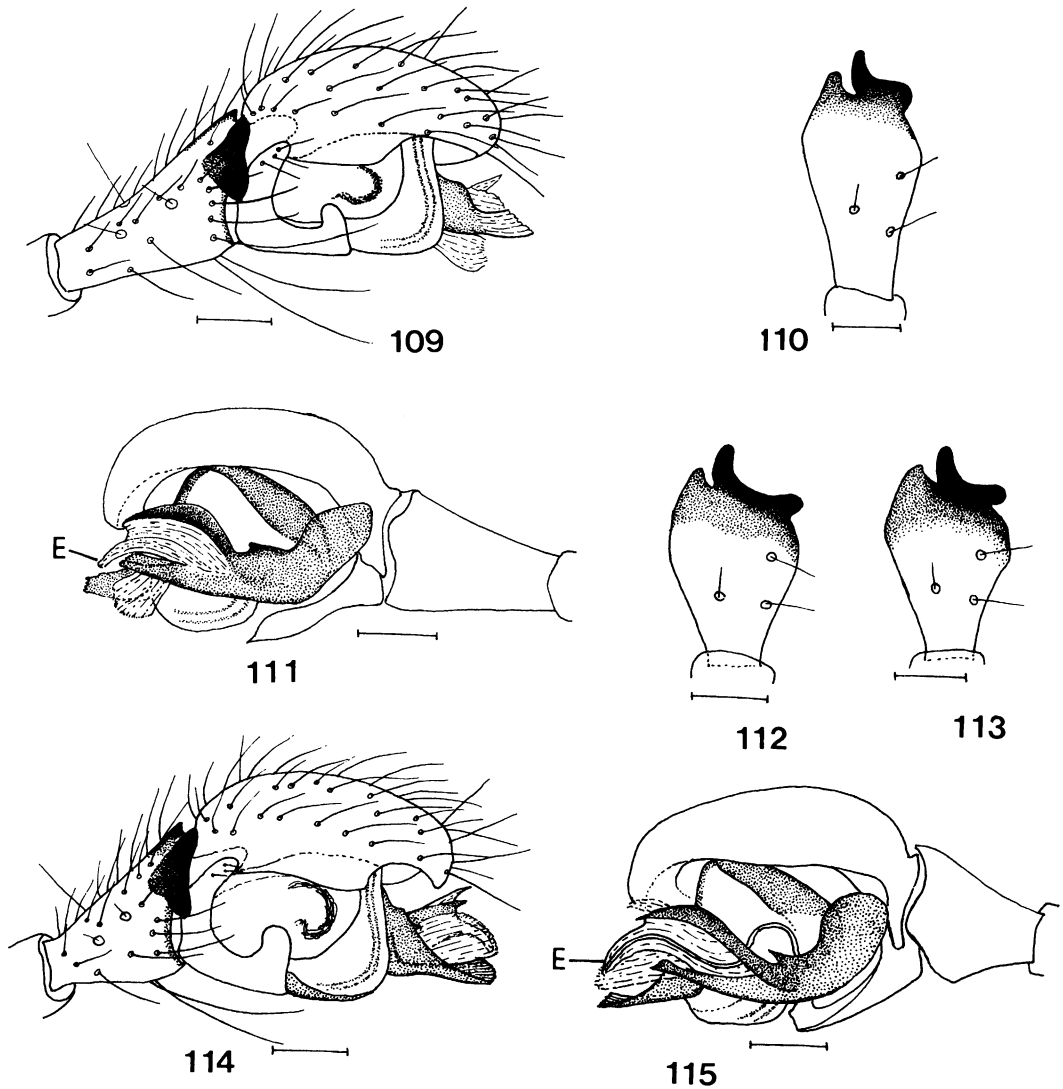
**DIAGNOSIS**: Both sexes lack a trichobothrium on metatarsus IV. The female is diagnosed by the moderately short scape of the epigynum (fig. 125); this is distinguished from the similar scape of *L. diffusa* by the greater

indentation and by the presence of two small dark-colored areas just anterior to the indentation. The male is diagnosed by the tibial apophysis (fig. 103), which is close to that of *L. newtoni*, and by the ED (fig. 107), which is quite distinct from that of *L. newtoni*. The species is rather variable in size.

**FEMALE**: Total length 2.35–3.2. Carapace length 1.0–1.5. Carapace orange, with faint dusky markings. Abdomen white dorsally, with irregular median black stripe and black chevrons; ventrally grey, with variable white markings. Sternum orange, suffused with black. Legs yellow to orange; spines typical of genus. Metatarsi I–III with trichobothrium; TmI 0.50–0.55. Epigynum (fig. 125).

**MALE**: Total length 1.9–3.0. Carapace length 1.0–1.45. Color and chaetotaxy as in female. Chelicerae without boss anteriorly. Palp (figs. 102, 103, 107).

**MATERIAL EXAMINED**: ARGENTINA: **Chubut**: El Hoyo, Sept. 3, 1961 (A. Kovacs: AMNH), 1f. **Río Negro**: El Bolson, July 20, 1962 (A. Kovacs: AMNH), 2f, 2m. **Tierra del Fuego**: Lower Point beach, E end naval base, May 1, 1961 (P. F. Squires: AMNH), 2f, 1m; Ushuaia, Feb. 1961 (B. Malkin: AMNH), 10f, 8m. CHILE: **Cautín**: Volcán Villarrica, window trap, 1250 m, *Nothofagus dombeyi*-*N. pumilio* forest with *Chusquea*, Dec. 15–29, 1982 (A. Newton, M. Thayer: AMNH), 2m; same, berlese of forest leaf and log litter, 1f. **Concepción**: Bosque de Ramuntcho, Oct. 14–16, 1961 (A. F. Archer: AMNH), 1m. **Magallanes**: Puerto Williams, Isla Navarino, Mar. 16–17, 1961 (B. Malkin: AMNH), 1f, 1m; 1 mi W Punta Arenas, grass and brush, Mar. 31, 1961 (M. Jones: AMNH), 1f; Canal Fitzroy, Punta Turn, Jan. 31, 1976 (T. Cekalovic: AMNH), 2f, 1m. **Malleco**: Puente Las Toscas, 21 km ESE Victoria, flood debris and under stones at edge of small river, 480 m, Dec. 14, 1982 (A. Newton, M. Thayer: AMNH), 5f, 5m; Parque Nacional Tolhuaca, Lago Malleco, 890 m, disturbed *Nothofagus* forest, Jan. 1, 1983 (A. Newton, M. Thayer: AMNH), 1m; 6.5 km E Malalcahuello, window trap, 1080 m, *Nothofagus dombeyi* forest with *Chusquea*, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 1f. **Osorno**: Osorno, Aug.–Sept. 1977 (A. Tobar: AMNH), 5f, 2m; Río Negro, Aug. 1977 (A. Tobar: AMNH), 1f; Pucatrihue, on coast, Feb. 1–10,



FIGS. 109–115. Palps. 109. *Laminacauda argentinensis*, ectal. 110. *L. argentinensis*, tibia, dorsal. 111. *L. argentinensis*, mesal. 112. *L. thayerae*, holotype, tibia, dorsal. 113. *L. thayerae*, Chiloé specimen, tibia, dorsal. 114. *L. thayerae*, ectal. 115. *L. thayerae*, mesal.

Abbreviation: E, embolus. Scale lines 0.1 mm.

1980 (L. Peña: AMNH), 2f. **Santiago:** Lo Barnechea, Nov. 2, 1967 (J. Valencia: AMNH), 1m.

**DISTRIBUTION:** Widely distributed in southern Chile and Argentina.

*Laminacauda newtoni*, new species

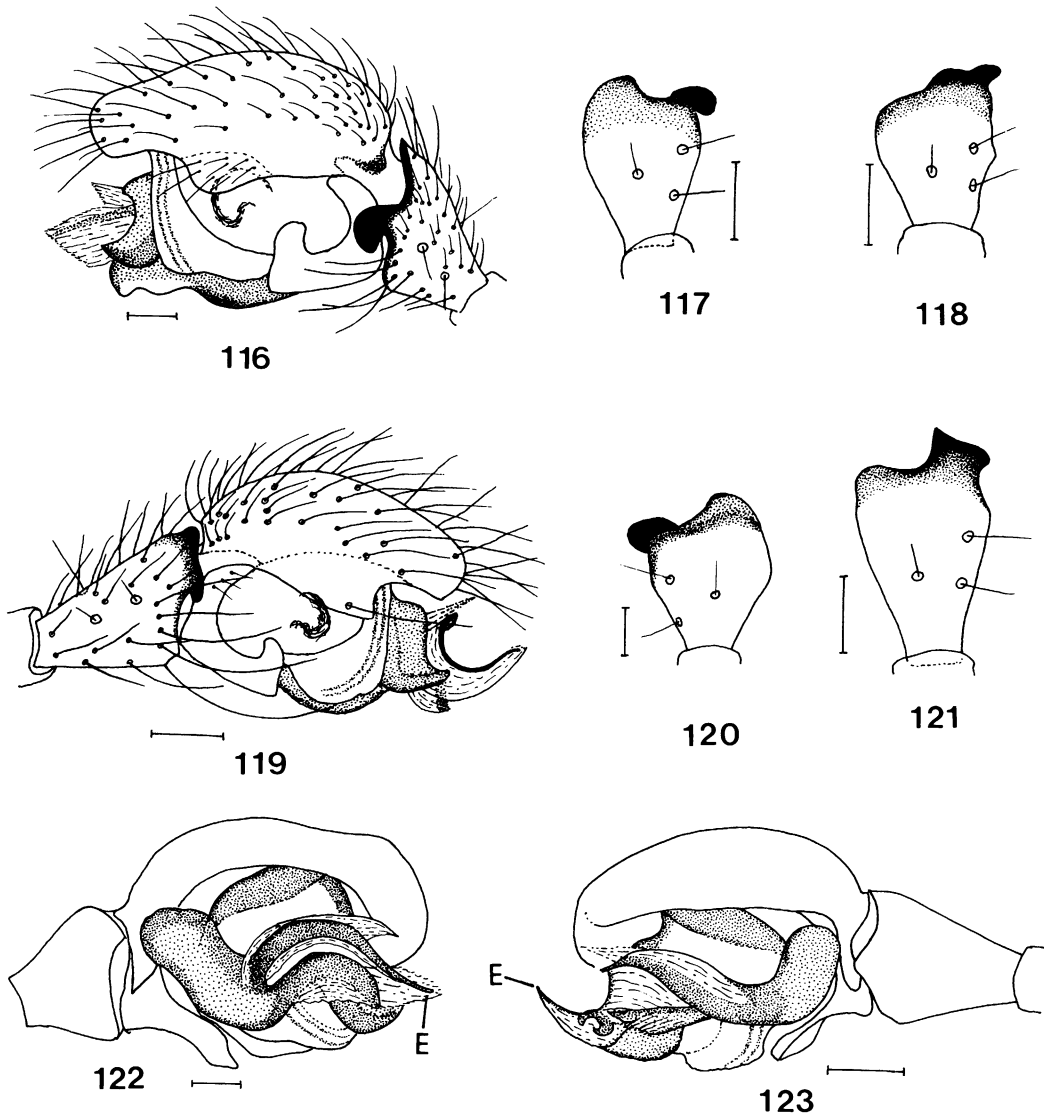
Figures 104–106, 108, 126, 137, 138

**TYPES:** Male holotype, with four female paratypes, from Volcán Casa Blanca, Parque

Nacional Puyehue, Osorno, Chile, carrion trap, 1270 m, at treeline in *Nothofagus* forest (Dec. 20–25, 1982; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name is a patronym in honor of one of the collectors of the holotype.

**DIAGNOSIS:** Both sexes lack a trichobothrium on metatarsus IV. The female is diagnosed by the relatively long epigynal scape,



FIGS. 116–123. Palps. 116. *Laminacauda fuegiana*, left palp, ectal. 117. *L. boliviensis*, tibia, dorsal. 118. *L. denticelis*, tibia, dorsal. 119. *L. parvipalpis*, ectal. 120. *L. fuegiana*, left tibia, dorsal. 121. *L. parvipalpis*, tibia, dorsal. 122. *L. fuegiana*, left palp, mesal. 123. *L. parvipalpis*, mesal.

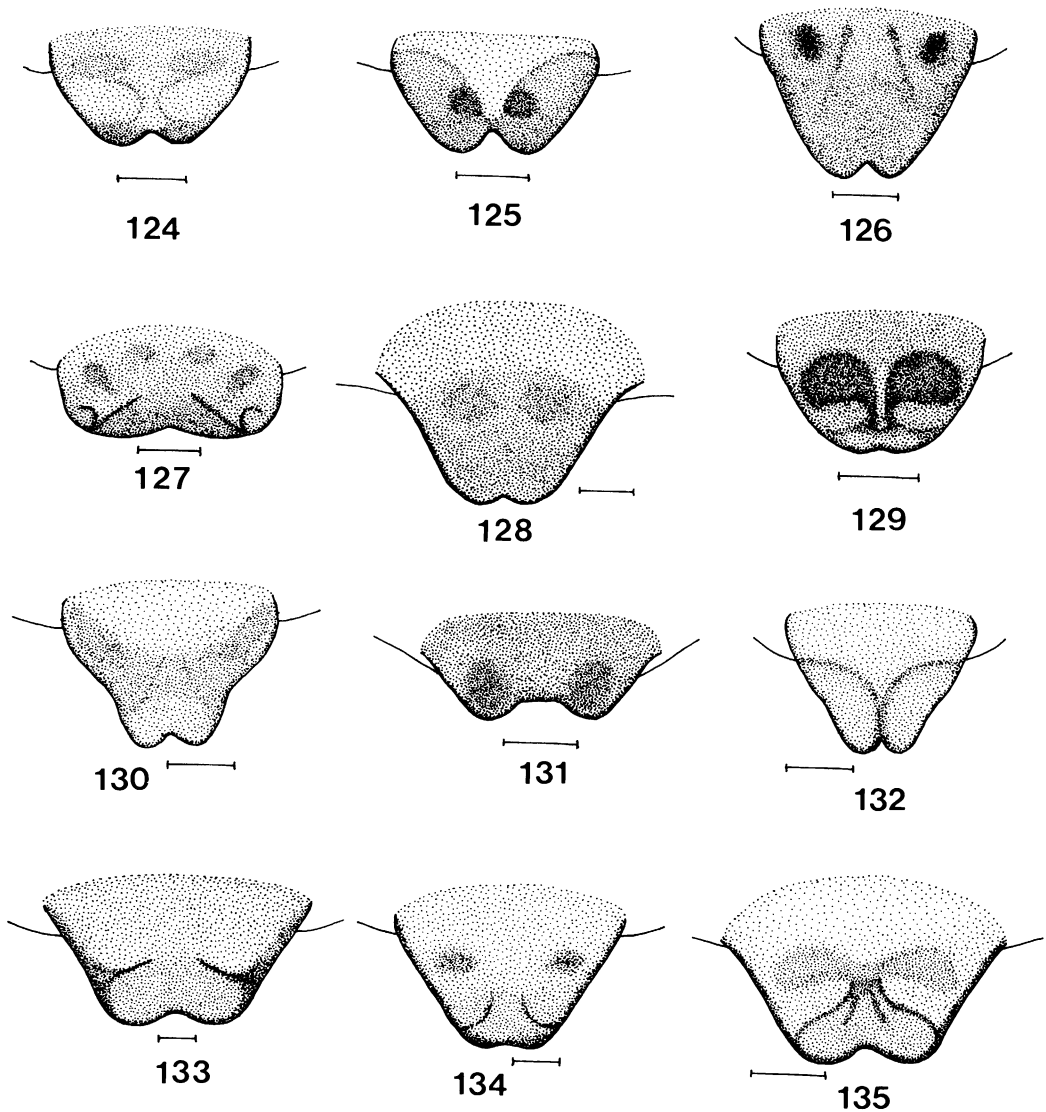
Abbreviation: E, embolus. Scale lines 0.1 mm.

which has the posterior margin but not the lateral margins indented (fig. 126). The male is diagnosed by the palpal tibia, which has two distinct apophyses (fig. 104), and by the ED (figs. 105, 108).

**FEMALE:** Total length 2.5–2.9. Carapace length 1.1–1.2. Carapace orange-brown, with dusky markings. Abdomen creamy white, dorsally with median black stripe and black

chevrons; sides and ventral surface marked to variable degree with black. Sternum orange-brown, suffused with variable amounts of black. Legs orange to orange-brown; spines typical of genus. Metatarsi I–III with trichobothrium; TmI 0.45–0.50. Epigynum (figs. 126, 137, 138).

**MALE:** Total length 2.65. Carapace length 1.2. Color and chaetotaxy as in female. Che-



FIGS. 124–135. Epigyna. 124. *Laminacauda diffusa*. 125. *L. plagiata*. 126. *L. newtoni*. 127. *L. argentinensis*. 128. *L. fuegiana*. 129. *L. peruensis*. 130. *L. boliviensis*. 131. *L. monticola*. 132. *L. denticelis*. 133. *L. maxima*. 134. *L. luscinia*. 135. *L. tristani*. Scale lines 0.1 mm.

licerae without boss anteriorly. Palp (figs. 104–106, 108).

**MATERIAL EXAMINED:** ARGENTINA: **Tierra del Fuego:** Ushuaia, Feb. 1961 (B. Malkin: AMNH), 1m. **CHILE:** **Osorno:** type locality, pan trap, Dec. 20–25, 1982 (A. Newton, M. Thayer: AMNH), 1f, 2m; Parque Nacional Puyehue, Volcán Casa Blanca, berlese of forest leaf and log litter, 1100–1130 m,

*Nothofagus pumilio*–*N. antarctica* forest with *Drimys*, Dec. 20, 1982 (A. Newton, M. Thayer: AMNH), 5f, 3m; Parque Nacional Puyehue, Antillanca road, berlese of forest leaf and log litter, 965 m, *Nothofagus pumilio* forest, Dec. 18–25, 1982 (A. Newton, M. Thayer: AMNH), 1f, 2m.

**DISTRIBUTION:** The few records are from southern Argentina and central Chile.

*Laminacauda argentinensis*, new species

Figures 109–111, 127

**TYPES:** Male holotype, with two female paratypes, from El Bolson, Río Negro, Argentina (July 20, 1962; A. Kovacs), deposited in AMNH.

**ETYMOLOGY:** The specific name refers to the country of origin of the holotype.

**DIAGNOSIS:** Both sexes lack a trichobothrium on metatarsus IV. The female is diagnosed by the short scape of the epigynum (fig. 127). The male is diagnosed by the elongated tibia, which has the apophysis (viewed laterally) more or less triangular in shape (fig. 109), and by the forms of the ED and of the SA (figs. 109, 111).

**FEMALE:** Total length 3.65. Carapace length 1.55. Carapace orange-brown, with faint dusky markings; ocular area suffused with black. Abdomen whitish dorsally, with variable median black stripe and black chevrons; ventrally grey, with variable white markings. Sternum orange, faintly suffused with grey. Legs orange; spines typical of genus. Metatarsi I–III with trichobothrium; TmI 0.40. Epigynum (fig. 127).

**MALE:** Total length 3.2–3.35. Carapace length 1.55. Color and chaetotaxy as in female. Chelicerae with minute tubercle anteriorly. Palp (figs. 109–111).

**MATERIAL EXAMINED:** ARGENTINA: **Chubut:** El Hoyo, Sept. 3, 1961 (A. Kovacs: AMNH), 1f. **Río Negro:** El Bolson, May 20, 1962 (AMNH), 2f; Aug. 13, 1961 (AMNH), 2f, 1m; July 7, 1961, 1f (A. Kovacs: AMNH).

**DISTRIBUTION:** Known only from Chubut and Río Negro, Argentina.

*Laminacauda thayerae*, new species

Figures 112–115

**TYPE:** Male holotype from 4.1 km E Anticura, Parque Nacional Puyehue, Osorno, Chile, window trap, 430 m, valdivian rainforest (Dec. 19–26, 1982; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name is a patronym in honor of one of the collectors of the holotype.

**DIAGNOSIS:** The female is unknown. The male is diagnosed by the absence of a trichobothrium on metatarsus IV, coupled with the forms of the tibial apophysis (figs. 112, 113)

and of the ED and SA (figs. 115, 114); it differs from the fairly closely related species *L. argentinensis* by the shorter palpal tibia and the forms of the ED and SA.

**MALE:** Total length 2.45–2.65. Carapace length 1.35–1.45. Carapace orange, with dusky markings; ocular area suffused with black. Chelicerae with minute pointed boss anteriorly. Abdomen black, with only faint paler markings dorsally. Sternum orange, suffused with black. Legs orange; spines typical of genus. Metatarsi I–III with trichobothrium; TmI 0.30–0.35. Palp (figs. 112–115).

**MATERIAL EXAMINED:** CHILE: **Chiloé:** 25 km S Castro, 24 m, Dec. 1, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1m. **Osorno:** holotype.

**DISTRIBUTION:** Known only from Chiloé and Osorno, Chile.

*Laminacauda fuegiana* (Tullgren),  
new combination

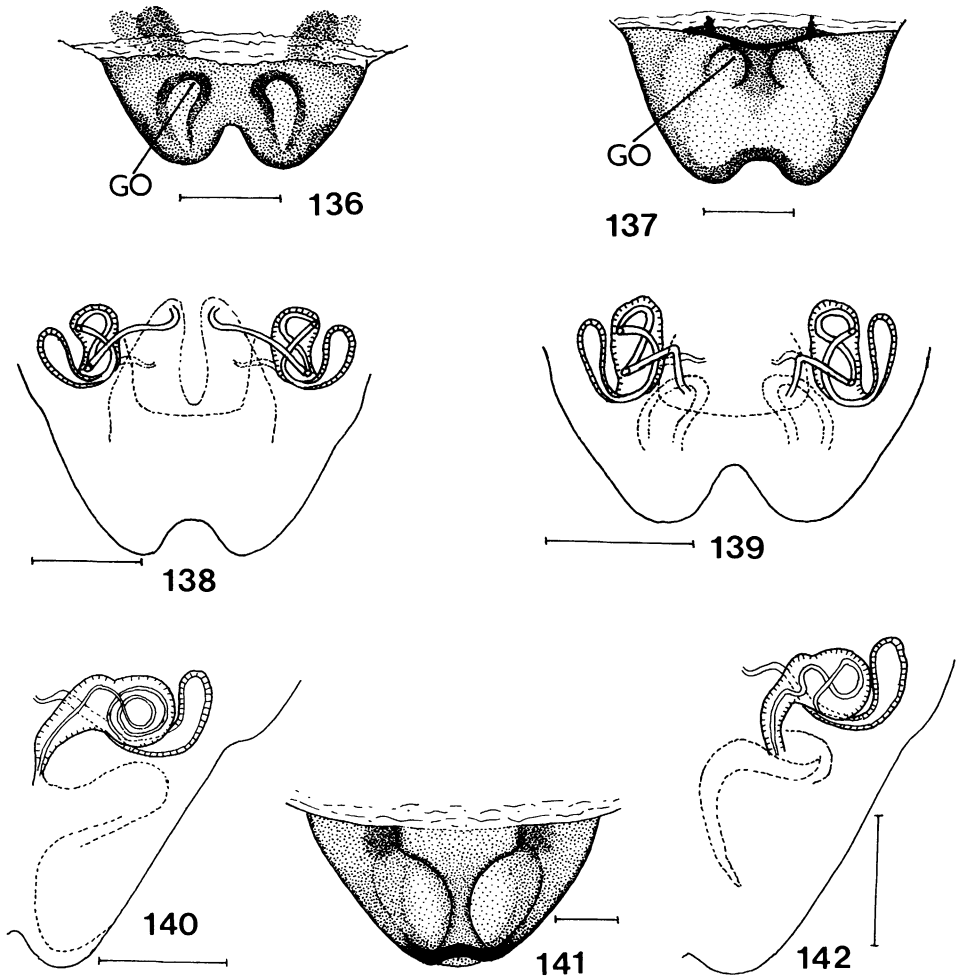
Figures 116, 120, 122, 128, 141

*Tmeticus fuegianus* Tullgren, 1901, p. 205, pl. 16, fig. 4 (one male and several female syntypes from Bahía Gente Grande, Tierra del Fuego, Magallanes, Chile, Dec. 27, 1895, O. Norden-skiöld; one male syntype [mixed with *Tmeticus pollicatus*] and two female syntypes are present in NHRM, examined).

*Porrhomma fuegianum:* Roewer, 1942, p. 603. Bonnet, 1958, p. 3756.

**DIAGNOSIS:** Both sexes have a trichobothrium on metatarsus IV. The female is distinguished from the two other South American females (*L. peruensis* and *L. monticola*) which have this trichobothrium by the form of the epigynal scape (fig. 128) and by its larger size. The male is diagnosed by the form of the tibial apophysis (fig. 120) and of the ED (fig. 122), which, together with its larger size, serve to distinguish it from *L. parvipalpis*, the only other South American male now known which has the trichobothrium on metatarsus IV.

**FEMALE:** Total length 4.55–4.8. Carapace length 2.0. Carapace orange-brown, with faint darker markings; ocular area darkened. Abdomen yellow-grey dorsally, with median black stripe; black ventrally. Sternum orange. Legs orange; spines typical of genus. Metatarsi I–IV with trichobothrium; TmI 0.45–0.50. Epigynum (figs. 128, 141).



FIGS. 136-142. Epigyna. 136. *Laminacauda diffusa*, dorsal. 137. *L. newtoni*, dorsal. 138. *L. newtoni*, internal. 139. *L. diffusa*, internal. 140. *L. dentichelis*, internal. 141. *L. fuegiana*, dorsal. 142. *L. luscina*, internal.

Abbreviation: GO, genital opening. Scale lines 0.1 mm.

**MALE:** Total length 4.25. Carapace length 2.0. Color and chaetotaxy as in female. Chelicerae with pointed boss anteriorly. Palp (figs. 116, 120, 122).

**MATERIAL EXAMINED:** Only the types.

**DISTRIBUTION:** Known only from the extreme south of Chile.

***Laminacauda parvipalpis*, new species**

Figures 119, 121, 123

**TYPE:** Male holotype, with one juvenile, from 4 km E Quebrada Alvarado, Quillota, Valparaíso, Chile, among dead leaves at

stream edge, ca. 500 m (Jan. 5, 1983; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name is an adjective referring to the relatively small size of the palp.

**DIAGNOSIS:** The female is unknown. The male is diagnosed by the presence of a trichobothrium on metatarsus IV, and by the ED (fig. 123) and the tibial apophysis (fig. 121), which distinguish this species from *L. fuegiana*.

**FEMALE:** Unknown; a female taken in the same locality as the holotype is *L. diffusa*.

**MALE:** Total length 3.2. Carapace length 1.5. Carapace yellow-brown. Chelicerae with minute tubercles on anterolateral face. Abdomen white, dorsally with median blackish line and black chevrons; white ventrally and on sides, with grey to black markings. Sternum yellow-brown, suffused with black. Legs yellow-brown; spines typical of genus. Metatarsi I–IV with trichobothrium; TmI 0.55. Palp (figs. 119, 121, 123) rather small relative to size of spider.

**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** Known only from Valparaíso, Chile.

*Laminacauda peruensis*, new species

Figure 129

**TYPE:** Female holotype from Lima to Tarma, Peru (Dec. 30, 1958; A. M. Nadler), deposited in AMNH.

**ETYMOLOGY:** The specific name records the country of origin of the type.

**DIAGNOSIS:** The female is diagnosed by the presence of a trichobothrium on metatarsus IV, and by the form of the epigynal scape (fig. 129), which distinguishes this species from *L. fuegiana* and *L. monticola*, which also have a trichobothrium on metatarsus IV. The male is unknown.

**FEMALE:** Total length 2.35. Carapace length 1.0. Carapace orange, with faint dusky markings. Abdomen dorsally whitish, with irregular black stripe and black chevrons; grey ventrally and on sides, with paler markings. Sternum orange, suffused with black. Legs orange; spines typical of genus. Metatarsi I–IV with trichobothrium; TmI 0.45. Epigynum (fig. 129).

**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** Known only from Peru.

*Laminacauda monticola*, new species

Figure 131

**TYPE:** Female holotype from 6.5 km NE La Paz, altiplano, near Juana de Potosi Mt., Bolivia, at 14,500 ft, under flat rock (Feb. 10, 1959; R. Walsh), deposited in AMNH.

**ETYMOLOGY:** The specific name refers to the habitat of the type.

**DIAGNOSIS:** The female is diagnosed by the presence of a trichobothrium on metatarsus IV, and by the shape of the epigynal scape (fig. 131), which distinguishes this species

from the females of the two other species which have a trichobothrium on metatarsus IV. The male is unknown.

**FEMALE:** Total length 3.0. Carapace length 1.1. Carapace orange-brown, with dusky markings. Abdomen creamy white dorsally, with median black stripe and black chevrons; ventrally grey, with some variable white markings. Sternum orange, heavily suffused with black. Legs orange; spines typical of genus. Metatarsi I–IV with trichobothrium; TmI 0.50–0.55. Epigynum (fig. 131).

**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** Known only from a high altitude (4450 m) in Bolivia.

*Laminacauda boliviensis*, new species

Figures 117, 130, 143, 144

**TYPES:** Male holotype, with one female paratype and two juveniles, from Tiahuanaco, La Paz, Bolivia (June 10–13, 1960; B. Malkin), deposited in AMNH.

**ETYMOLOGY:** The specific name records the country of origin of the holotype.

**DIAGNOSIS:** Both sexes lack a trichobothrium on metatarsus IV. The female is diagnosed by the shape of the relatively long scape, which is distinctly indented on the lateral margins (fig. 130). The male is diagnosed by the form of the tibial apophyses (fig. 117) and of the ED (fig. 144).

**FEMALE:** Total length 3.0. Carapace length 1.35. Carapace orange-brown, with ocular area suffused with black. Abdomen whitish dorsally, with median black stripe and black chevrons; ventrally grey. Sternum yellow to orange, suffused with black. Legs yellow to orange; spines typical of genus. Metatarsi I–III with trichobothrium; TmI 0.40–0.45. Epigynum (fig. 130).

**MALE:** Total length 2.55. Carapace length 1.25. Color and chaetotaxy as in female. Chelicerae with strong pointed boss anteriorly. Palp (figs. 117, 143, 144).

**MATERIAL EXAMINED:** Only the holotype and female paratype.

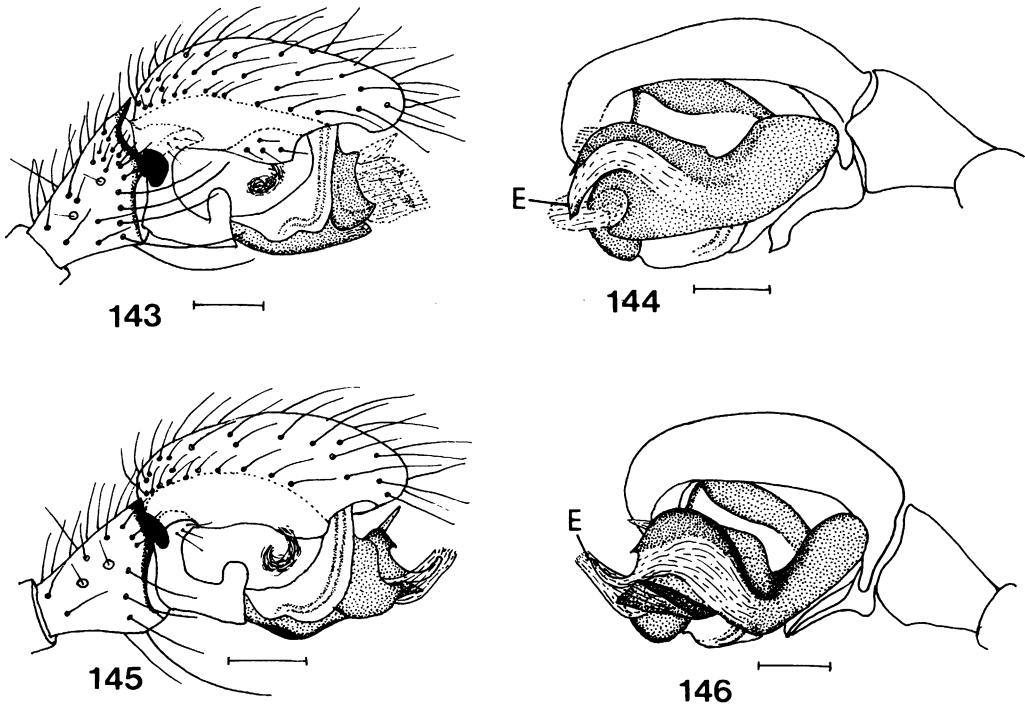
**DISTRIBUTION:** Known only from Bolivia.

*Laminacauda denticelis*, new species

Figures 118, 132, 140, 145, 146

**TYPES:** Male holotype, with one female and three male paratypes, from Cerro Punto, Chi-





FIGS. 143–146. Palps. 143. *Laminacauda boliviensis*, ectal. 144. *L. boliviensis*, mesal. 145. *L. dentichelis*, ectal. 146. *L. dentichelis*, mesal.

Abbreviation: E, embolus. Scale lines 0.1 mm.

riqui, Panama (March 4, 1936; W. J. Gertsch), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective implying “with a tooth on the chelicera,” referring to the male.

**DIAGNOSIS:** Both sexes lack a trichobothrium on metatarsus IV. The female is diagnosed by the form of the epigynal scape, which is moderately long and barely indented on the lateral margins (fig. 132). The male is diagnosed by the tibial apophysis (fig. 118), and by the form of the ED (fig. 146), the shape of the lower arm of which distinguishes this species from its close relative *L. diffusa*; the two species are also distinguished by their geographical distribution.

**FEMALE:** Total length 2.65. Carapace length 1.2. Carapace orange-brown, with weak dusky markings; ocular area suffused with black. Abdomen whitish grey, with weakly defined black markings dorsally. Sternum orange, suffused to variable extent with black. Legs orange-brown; spines typical of genus. Metatarsi I–III with trichobothrium; TmI 0.50. Epigynum (figs. 132, 140).

**MALE:** Total length 2.35–2.65. Carapace length 1.15–1.35. Color and chaetotaxy as in female. Chelicerae with strong pointed boss anteriorly. Palp (figs. 118, 145, 146).

**MATERIAL EXAMINED:** Only the types.

**DISTRIBUTION:** Known only from Panama.

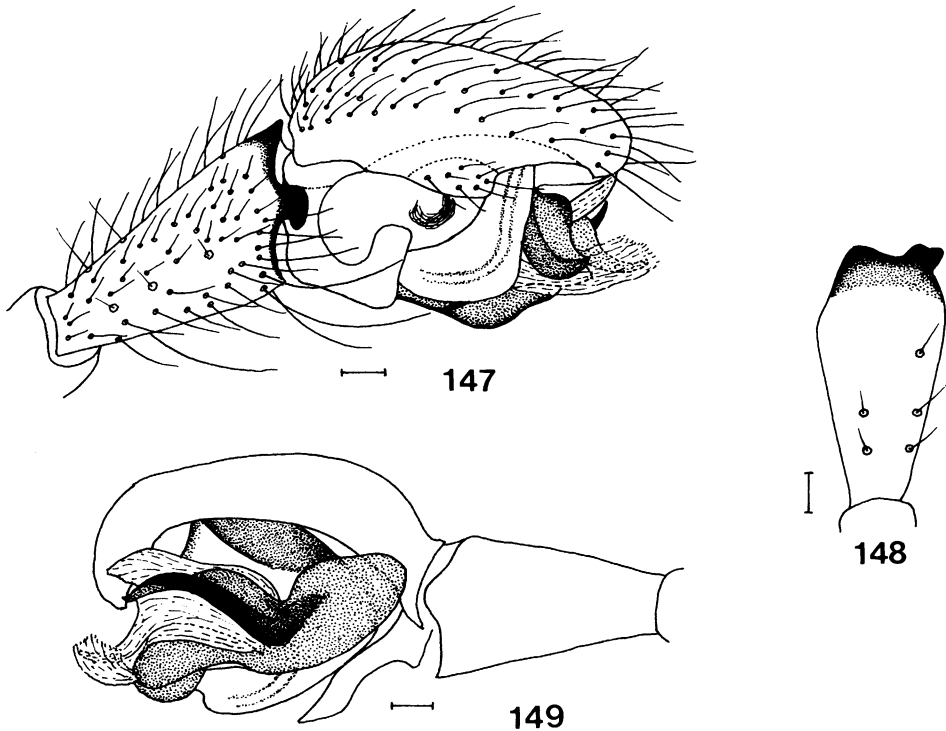
***Laminacauda maxima*, new species**

Figures 133, 147–149

**TYPES:** Male holotype, with one paratype female and two paratype males, from Inaccessible Island, Tristan da Cunha (1982; R. C. Preece), deposited in BMNH.

**ETYMOLOGY:** The specific name is an adjective referring to the large size of the species.

**DIAGNOSIS:** Among the Tristan species, this one is diagnosed at once by its large size. The female epigynum (fig. 133) is very similar in shape to that of *L. tristani*, but the latter species is smaller and has a trichobothrium on metatarsus IV. The male has the palp (figs. 147–149) fairly close to that of *L. tristani*, but apart from the size difference, the latter species has a trichobothrium on metatarsus IV.



FIGS. 147–149. *Laminacauda maxima*. 147. Palp, ectal. 148. Palpal tibia, dorsal. 149. Palp, mesal. Scale lines 0.1 mm.

**FEMALE:** Total length 8.2. Carapace length 3.3. Carapace deep orange, with dusky markings. Chelicerae fairly massive, with long fang. Abdomen white dorsally, with median black stripe and black chevrons; black ventrally and on sides, with few white markings. Sternum orange, suffused with black. Legs orange to brown, with metatarsi slightly darkened. Tibiae with two dorsal spines, and one prolateral, one retrolateral, two–three ventral pairs, and one–two short spines distally. Metatarsi I–II with one ventral spine, metatarsus III with one dorsal and two ventral, metatarsus IV with two dorsal and three–four ventral. Femora spineless. Metatarsi I–III with trichobothrium; TmI 0.38–0.40. Epigynum (fig. 133).

**MALE:** Total length 6.2–6.7. Carapace length 3.1–3.3. Color and chaetotaxy as in female. Chelicerae massive, with long fangs, but without pointed boss anteriorly. Palp (figs. 147–149); tibia with five (3 + 2) trichobothria.

**MATERIAL EXAMINED:** Only the types.

**DISTRIBUTION:** Almost certainly endemic to Tristan da Cunha.

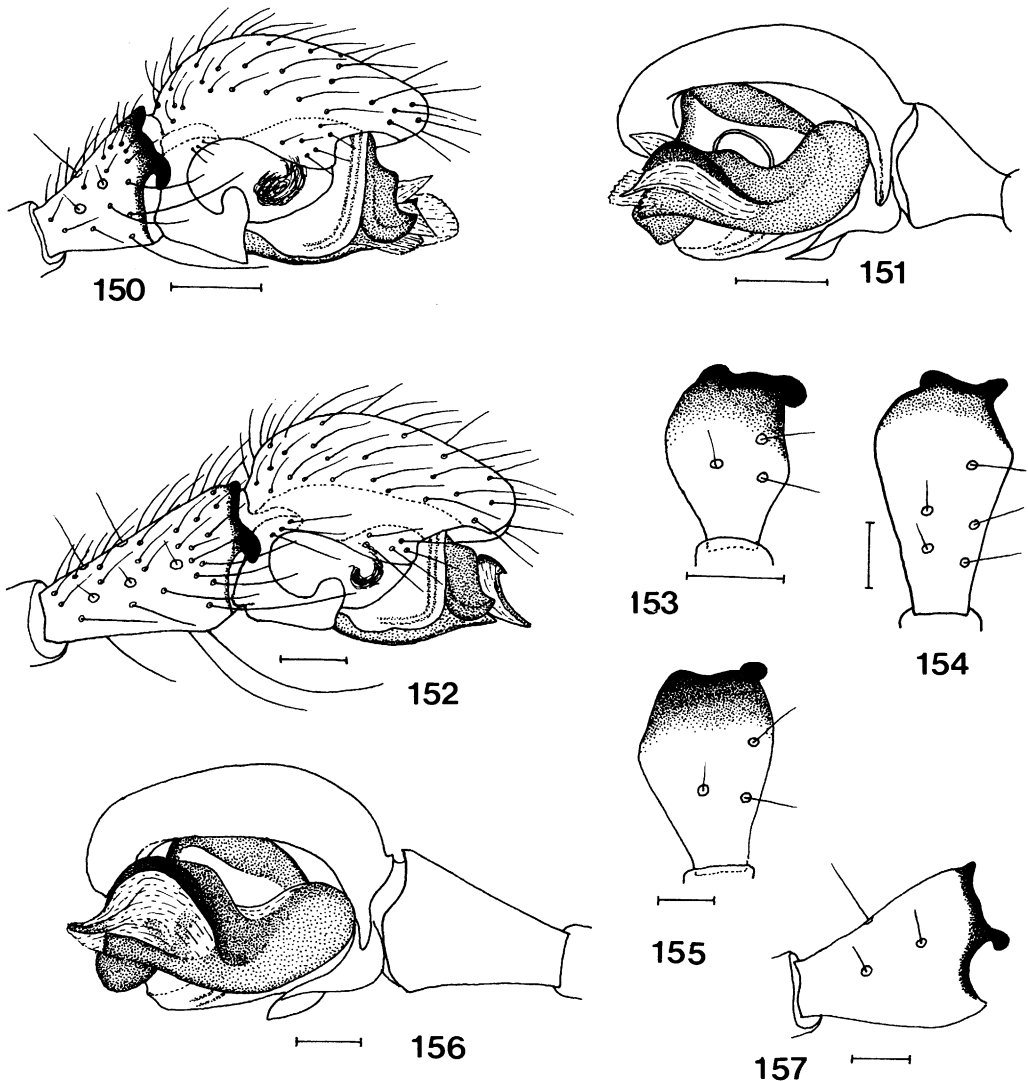
*Laminacauda insulanus*, new species  
Figures 150, 151, 153

**TYPE:** Male holotype from Inaccessible Island, Tristan da Cunha (1982; R. C. Preece), deposited in BMNH.

**ETYMOLOGY:** The specific name is a noun in apposition, meaning “an islander.”

**DIAGNOSIS:** The female is not known. The male is diagnosed by the form of the tibial apophysis (fig. 153) and of the ED (fig. 151), which, coupled with its relatively small size, will distinguish it from the other Tristan species. This species is close to *L. diffusa*, and is presumably derived from it.

**MALE:** Total length 2.55. Carapace length 1.2. Carapace brown with faint dusky markings; ocular area suffused with black. Chelicerae without boss anteriorly. Abdomen white



FIGS. 150–157. Palps. 150. *Laminacauda insulanus*, ectal. 151. *L. insulanus*, mesal. 152. *L. tristani*, ectal. 153. *L. insulanus*, tibia, dorsal. 154. *L. tristani*, tibia, dorsal. 155. *L. luscinia*, tibia, dorsal. 156. *L. tristani*, mesal. 157. *L. luscinia*, tibia, ectal. Scale lines 0.1 mm.

dorsally, with median black stripe and black chevrons; ventrally with broad white stripe, sides black with white markings. Sternum pale brown, suffused with black. Legs orange-brown. Tibiae with two spines dorsally; in addition, tibiae II with one prolateral, tibiae III one prolateral and one ventral, and tibiae IV one prolateral, one retrolateral, and two ventral. Metatarsi I–II spineless; metatarsi III with one dorsal and one ventral; metatarsi IV with one dorsal, one ventral, one prolateral, and one retrolateral. Femora spineless.

Metatarsi I–III with trichobothrium; TmI 0.55–0.60. Palp (figs. 150, 151, 153).

MATERIAL EXAMINED: Tristan da Cunha: type locality, one male paratype.

DISTRIBUTION: Probably endemic to Tristan da Cunha.

*Laminacauda luscinia*, new species

Figures 134, 142, 155, 157

TYPES: Male holotype, with three female paratypes and three juveniles, from Night-

ingale Island, Tristan da Cunha, among thick grass (May 6, 1949; M. K. Rowan), deposited in BMNH.

**ETYMOLOGY:** The specific name is a Latin noun in apposition, meaning "a nightingale," referring to the type locality.

**DIAGNOSIS:** As part of the Tristan fauna, the female is diagnosed by the form of the epigynal scape (fig. 134). The male has the palpal organ very similar to that of *L. tristani*, but differs from the latter species in the form of the tibial apophysis (figs. 155, 157), in the number of trichobothria on the palpal tibia, in the absence of a trichobothrium on metatarsus IV, and in the value of TmI.

**FEMALE:** Total length 4.45–5.0. Carapace length 1.95–2.2. Carapace brown to orange-brown, with faint dusky markings; ocular area suffused with black. Abdomen white dorsally, with median black stripe and black chevrons; ventrally with broad white stripe, sides blackish with white markings. Sternum orange-brown, suffused with black. Legs brown to orange-brown. Tibiae with two spines dorsally, plus two prolateral, two retrolateral, two pairs ventrally, and small cluster distally. Metatarsi I–II with one–two ventral spines, metatarsi III–IV with two dorsal, two prolateral, two retrolateral, and two ventral. Femora spineless. Metatarsi I–III with trichobothrium; TmI 0.27–0.32. Epigynum (figs. 134, 142).

**MALE:** Total length 4.25. Carapace length 2.0. Specimen in rather poor condition, but color and chaetotaxy apparently as in female. Chelicerae without pointed boss anteriorly. Palp (figs. 155, 157); tibia with three (2 + 1) trichobothria dorsally; palpal organ almost identical to that of *L. tristani*.

**MATERIAL EXAMINED:** Only the types.

**DISTRIBUTION:** Probably endemic to Tristan da Cunha.

*Laminacauda tristani*, new species

Figures 135, 152, 154, 156

**TYPES:** Male holotype, with female paratype and three juveniles, from Nightingale Island, Tristan da Cunha (May 6, 1949; M. K. Rowan), deposited in BMNH.

**ETYMOLOGY:** The specific name is the genitive of "Tristan."

**DIAGNOSIS:** As part of the Tristan fauna,

this species can be diagnosed by the presence of a trichobothrium on metatarsus IV, and by the stout legs. The genitalia are fairly close to those of *L. maxima*.

**FEMALE:** Total length 3.8. Carapace length 1.75. Carapace orange-brown; ocular area suffused with black. Chelicerae fairly massive, with long fangs. Abdomen whitish dorsally, with median black stripe and black chevrons; ventrally with broad white stripe on grey background. Sternum orange, suffused with black. Legs orange, short, stout (tibia I l/d 5); tibiae with two dorsal spines only, short and weak. Metatarsi and femora spineless. Both metatarsi IV missing, but juveniles taken with adults (probably of same species, judging by the stout legs) all have trichobothrium on metatarsus IV; TmI 0.65. Epigynum (fig. 135).

**MALE:** Total length 4.1. Carapace length 1.9. Color and chaetotaxy as in female, except that holotype has trichobothrium on right metatarsus IV, but none on left. Chelicerae fairly massive, with long fangs, but no boss anteriorly. Palp (figs. 152, 154, 156); tibia with five (3 + 2) trichobothria dorsally.

**MATERIAL EXAMINED:** Only the types.

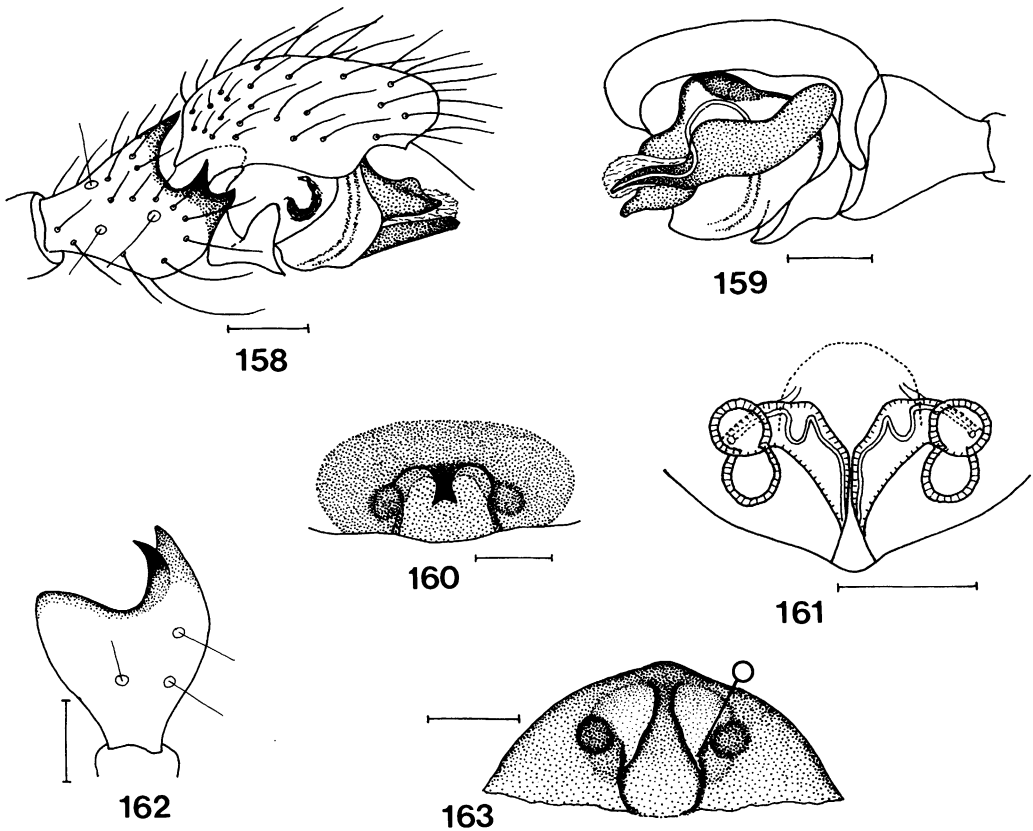
**DISTRIBUTION:** Probably endemic to Tristan da Cunha.

*OSTEARIUS* Hull

*Ostearius* Hull, 1911, p. 583 [type species *Tmeticus nigricauda* O. P.-Cambridge, 1907 (= *Linyphia melanopygia* O. P.-Cambridge, 1879), by original designation]. Roewer, 1942, p. 646. Locket and Millidge, 1953, p. 325. Bonnet, 1958, p. 3217.

**DIAGNOSIS:** The single species of the genus can usually be diagnosed, in fresh specimens, by the red/black color of the abdomen. Preserved specimens, which have lost their color, are diagnosed in the female by the epigynum, and in the male by the palp.

**DESCRIPTION:** The genus contains a single species, of total length 2.0–2.5 mm. The carapace is unmodified in both sexes. The chelicerae have a weak lateral file, and in the male there is a pointed tubercle anteriorly. The maxillae, especially of the male, have several tiny pointed tubercles. The abdomen is usually red or pink anteriorly, black posteriorly around the spinnerets. The legs are of medium length. The tibial spines are 2222



FIGS. 158–163. *Ostearius melanopygius*. 158. Palp, ectal. 159. Palp, mesal. 160. Epigynum, ventral. 161. Epigynum, internal. 162. Palpal tibia, dorsal. 163. Epigynum, dorsal.  
Abbreviation: O, genital opening. Scale lines 0.1 mm.

dorsally, with no lateral or ventral spines; the femora and metatarsi are spineless. Metatarsi I–III have a trichobothrium, with TmI *ca.* 0.45. The female palpal tarsus is clawless. The single species is haplotracheate. The ventral plate of the epigynum forms a short scape; the genital openings lie on the caudal surface of the scape, at the anterior ends of funnel-shaped pockets, adjacent to the dorsal plate (fig. 163), and the ducts do not run along the scape (fig. 161). The palpal tibia carries a bifid apophysis anterolaterally (figs. 158, 162). The palpal organ has a stout SA (fig. 158), which carries the stalk near to its distal end. The embolic division (ED) is a simple plate with a rounded laminar tailpiece; the pointed embolus is an anterior extension of the plate (fig. 159). A short embolic membrane arises from the stalk.

**INCLUDED SPECIES:** Only the type species.

**DISTRIBUTION:** Almost worldwide.

**TAXONOMIC POSITION:** *Ostearius* appears to be fairly closely related to *Laminacauda*. The epigynum has the same basic form in both genera, but in *Ostearius* the internal duct structure and the spermathecae are somewhat simpler. The structure of the male palp is also generally similar in both genera, with the SA stout and carrying the stalk well to the anterior of the palpal organ. The ED of *Ostearius*, which has a rounded laminar tail as in *Laminacauda*, is fairly close to that of *L. newtoni*. In addition to these genitalic characters, there are two somatic characters common to both genera, namely the presence of pointed warts on the maxillae, and the chaetotaxy. The tracheal form of *Ostearius* is, however, typically haplotracheate, where-

as *Laminacauda* is intermediate in tracheal form.

Although *Ostearius melanopygius* is now widespread throughout the world (van Helsing, 1972, p. 389), it is suggested that the genus in fact forms part of the native fauna of South America, and may indeed belong to the relict fauna of Gondwanaland. This hypothesis is based on the following data: (1) the congruence of the genitalia of *Ostearius* with those of the probably endemic South American genus *Laminacauda*; (2) the absence of such congruence with any European or (probably) North American haplotracheate genus; (3) the red/black abdominal color, which is quite uncharacteristic of a European species, but is not unknown in linyphiids from the Americas (e.g., "*Linyphia*" *coccinea* Hentz); and (4) the presence of *Ostearius* in New Zealand. The current widespread distribution of *Ostearius* would, on this hypothesis, be the result of comparatively recent dispersals.

*Ostearius melanopygius* (O. P.-Cambridge)  
Figures 158–163

*Linyphia melanopygia* O. P.-Cambridge, 1879, p. 696 (male holotype, from New Zealand, in HDO, not examined).

*Ostearius melanopygius*: Roewer, 1942, p. 646. Lockett and Millidge, 1953, p. 326. Bonnet, 1958, p. 3217. Kaston, 1981, p. 901.

*Erigone matei* Keyserling, 1886, p. 139 (see Ivie, 1967, p. 129).

*Erigone nigrianus* Keyserling, 1886, p. 222 (see Ivie, 1967, p. 129).

*Erigone atriventer* Urquhart, 1887, p. 102 (female holotype from Te Karaka, New Zealand, A. T. Urquhart, in Otago Museum, examined). NEW SYNONYMY.

*Nerienne arcuata* Tullgren, 1901, p. 200 (syntype females from Última Esperanza, Magallanes, Chile, 1899, in NHRM, examined). This synonymy was recognized by Dr. Å. Holm, but apparently not published. NEW SYNONYMY.

*Oedothorax melacra* Chamberlin, 1916, p. 236 (see Ivie, 1967, p. 129).

**DIAGNOSIS:** With fresh specimens, both sexes can usually be diagnosed by the color. The female is also diagnosed by the form of the epigynum (figs. 160, 163). The male is diagnosed by the forms of the palpal tibia (fig. 162) and of the palpal organ (figs. 158, 159). The chaetotaxy is a confirmatory character.

**FEMALE:** Total length 2.0–2.5. Carapace length 1.0–1.1. Carapace brown, with dusky markings and margins. Maxillae with two or three small pointed warts. Abdomen light red to red anteriorly, black around spinnerets; red color fades in alcohol, becoming grey or brown. Sternum brown to orange-brown, usually suffused with black. Legs yellow-brown to orange-brown; chaetotaxy as indicated above. Epigynum (figs. 160, 161, 163).

**MALE:** Total length 1.8–2.2. Carapace length 0.9–1.1. Color and chaetotaxy as in female. Chelicerae with strong pointed boss anteriorly; maxillae with several pointed warts. Palp (figs. 158, 159, 162).

**MATERIAL EXAMINED:** ARGENTINA: **Río Negro:** El Bolson, Feb. 1, 1961, 1f, 1m; Aug. 13, 1961, 8f, 2m; July 20, 1962, 1m (all A. Kovacs: AMNH). BOLIVIA: **La Paz:** Tiahuanaco, June 10–13, 1960 (B. Malkin: AMNH), 2f. CHILE: **Magallanes:** Última Esperanza, 1899 (O. Nordenskiöld: NHRM), 2f (*Nerienne arcuata*); Peninsula de Brunswick, Berranco Amarillo, Jan. 27, 1971 (T. Cekalovic: AMNH), 1f. **Santiago:** El Salto, Oct. 1979 (L. Peña: AMNH), 2f, 1m; Quilicura, May 1979 (L. Peña: AMNH), 6f, 2m. **Valparaíso:** Quillota, Jan. 1979 (A. Tobar: AMNH), 1f; Viña del Mar, Feb. 1977–June 1979 (A. Tobar: AMNH), numerous f, m.

**DISTRIBUTION:** Almost worldwide.

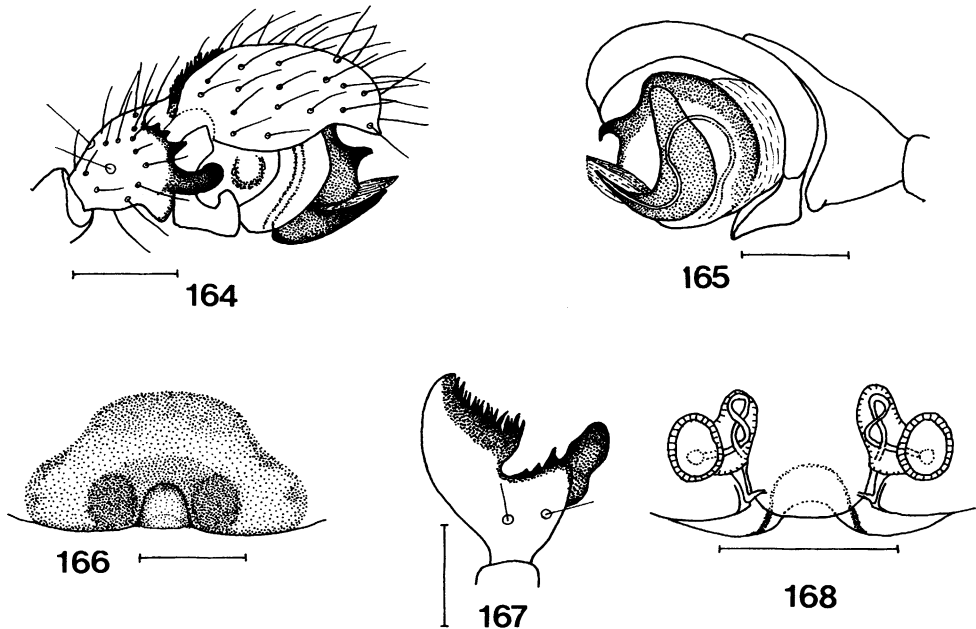
**CTENOPHYSIS, NEW GENUS**

**TYPE SPECIES:** *Ctenophysis chilensis*, new species.

**ETYMOLOGY:** The generic name is derived from the Greek *cteis*, *ctenos*, a comb, and *phyein*, to grow, referring to the comblike apophysis on the male palpal tibia. The gender is masculine.

**DIAGNOSIS:** The single species of the genus is diagnosed by the forms of the male and female genitalia (descriptions below); the internal duct configuration of the epigynum is more distinctive than the external form. The chaetotaxy is a confirmatory character.

**DESCRIPTION:** The single species of the genus is 1.5–1.8 mm in total length; the coloration is unremarkable. The chelicerae have clear lateral files; the abdomen is somewhat coriaceous. The legs are fairly short and stout, with tibia I l/d (female) 6–6.5; the dorsal tibial spines are 2211, and the femora and meta-



FIGS. 164–168. *Ctenophysis chilensis*. 164. Palp, ectal. 165. Palp, mesal. 166. Epigynum, ventral. 167. Palpal tibia, dorsal. 168. Epigynum, internal. Scale lines 0.1 mm.

tarsi are spineless. Metatarsi I–III have a trichobothrium, with TmI 0.40–0.45. The female palp is clawless. The genus is haplotracheate. The epigynum (fig. 166) is a very short scape, on the dorsal side of which lie the genital openings, adjacent to the dorsal plate. The internal ducts are encapsulated with the spermathecae, and follow a short double spiral course to the openings (fig. 168). The male palpal tibia has complex apophyses, one of which has a comblike structure (fig. 167). The SA of the palpal organ has a small pointed hook anteriorly (fig. 165). The ED is simple (fig. 165), the embolus being merely a pointed extension of the plate. A small embolic membrane, lightly sclerotized on its dorsal margin, arises from the stalk.

INCLUDED SPECIES: Only the type species.

DISTRIBUTION: Central Chile.

TAXONOMIC POSITION: Despite its strongly erigonine appearance, *Ctenophysis* is haplotracheate. The ED is very simple, rather as in *Ostearius*. The epigynum has the ventral plate produced into a short scape, and the internal ducts have what is probably a relatively primitive configuration. On the basis of the epigynal structure the genus must be

allocated for the present to the *Stemonyphantes* group.

#### *Ctenophysis chilensis*, new species

Figures 164–168

TYPE: Male holotype, with 2 female and 16 male paratypes, from Volcán Villarrica, Cautín, Chile, window trap, 1120 m, *Nothofagus dombeyi*–*Saxegotha* forest with *Drimys* (Dec. 15–29, 1982; A. Newton and M. Thayer), deposited in AMNH.

ETYMOLOGY: The specific name refers to the country in which the species is found.

DIAGNOSIS: The female is diagnosed by the epigynum (figs. 166, 168). The male is diagnosed by the tibial comb (fig. 167) and by the form of the palpal organ (figs. 164, 165).

FEMALE: Total length 1.65–1.80. Carapace length 0.65–0.75. Carapace yellow to orange, with faint dusky markings and margins. Abdomen glossy black, rather coriaceous, occasionally with faint pale chevrons dorsally. Sternum yellow to orange, suffused with black. Legs orange to orange-brown, with tibiae pale basally; chaetotaxy as indicated above. Epigynum (figs. 166, 168).

**MALE:** Total length 1.55–1.7. Carapace length 0.65–0.75. Color as in female. Palp (figs. 164, 165, 167).

**OTHER MATERIAL EXAMINED:** CHILE: **Cautín:** pitfall trap at type locality, Dec. 15–29, 1982 (A. Newton, M. Thayer: AMNH), 5f, 4m; Volcán Villarrica, window trap, 1250 m, *Nothofagus dombeyi*–*pumilio* forest with *Chusquea*, Dec. 15–29, 1982 (A. Newton, M. Thayer: AMNH), 4m. **Llanquihue:** Lago Chapo, 13.5 km E Correntoso, berlese of forest leaf and log litter, 310 m, valdivian rainforest, Dec. 16–27, 1982 (A. Newton, M. Thayer: AMNH), 1f; same, carrion trap, 1m. **Ñuble:** Las Trancas, 19.5 km ESE Recinto, window trap, 1250 m, *Nothofagus* forest, Dec. 10, 1982–Jan. 3, 1983 (A. Newton, M. Thayer: AMNH), 1m. **Osorno:** hills S Mui-colpue, berlese of forest leaf and log litter at 160 m in secondary valdivian forest, Dec. 21, 1982 (A. Newton, M. Thayer: AMNH), 1f; Parque Nacional Puyehue, Antillanca road, berlese of forest leaf and log litter, 720 m, *Nothofagus* forest, Dec. 18–24, 1982 (A. Newton, M. Thayer: AMNH), 2f, 1m; same, window trap, 2m; same, berlese of forest leaf and log litter, 690 m, valdivian rainforest, Dec. 18–24, 1982 (A. Newton, M. Thayer: AMNH), 1f; Parque Nacional Puyehue, 4.1 km E Anticura, window trap, 430 m, valdivian rainforest, Dec. 18–26, 1982 (A. Newton, M. Thayer: AMNH), 1m; Parque Nacional Puyehue, Volcán Casa Blanca, pan traps, 1130–1180 m, above treeline in valdivian rainforest, Dec. 20–25, 1982 (A. Newton, M. Thayer: AMNH), 1m. **Valdivia:** 4.1 km W Anticura, window trap, 270 m, valdivian rainforest, Dec. 19–25, 1982 (A. Newton, M. Thayer: AMNH), 1m.

**DISTRIBUTION:** Frequent in central Chile.

#### *RHABDOGYNA*, NEW GENUS

**TYPE SPECIES:** *Bathyphantes patagonicus* Tullgren.

**ETYMOLOGY:** The generic name is derived from the Greek *rhabdos*, a rod, and *gyne*, a woman, or female, referring to the rodlike projection from the epigynal scape. The gender is feminine.

**DIAGNOSIS:** Females are diagnosed by the presence of a rodlike apophysis on the epigynal scape (figs. 172, 174). The single male

known is diagnosed by the complex tibial apophyses, and by the form of the palpal organs (figs. 169–171). The chaetotaxy is a confirmatory character.

**DESCRIPTION:** The species have a total length of *ca.* 2 mm. The carapace is unmodified in both sexes; chelicerae have clear lateral files. The abdomen has a pattern of white on black. The legs are relatively long and slender, with tibia I/d (female) *ca.* 10; the dorsal tibial spines are 2222, and the femora and metatarsi spineless. Metatarsi I–III have a trichobothrium, with TmI 0.25–0.30. The female palpal tarsus is clawless. The genus is haplotracheate. The ventral plate of the epigynum is produced to form a scape, from which projects posteriorly a short rodlike member with no socket (figs. 172, 174). The genital openings lie on the dorsal side of the scape, near the posterior end (fig. 176). The internal duct system is simple, but appears to be encapsulated with the spermatheca (fig. 175). The male palpal tibia has three apophyses (figs. 169, 171). The SA of the palpal organ is stout (fig. 169), and the stalk which carries the duct to the ED lies at the extreme distal end of the SA (fig. 170). The ED comprises a translucent, kidney-shaped plate from which arises ribbon which distally becomes the embolus, and a broad membranous sclerite. The embolic membrane arises from the junction of the stalk and the ED.

**INCLUDED SPECIES:** *R. patagonica* (Tullgren), new combination, and *R. chiloensis*, new species.

**DISTRIBUTION:** Central and southern Chile.

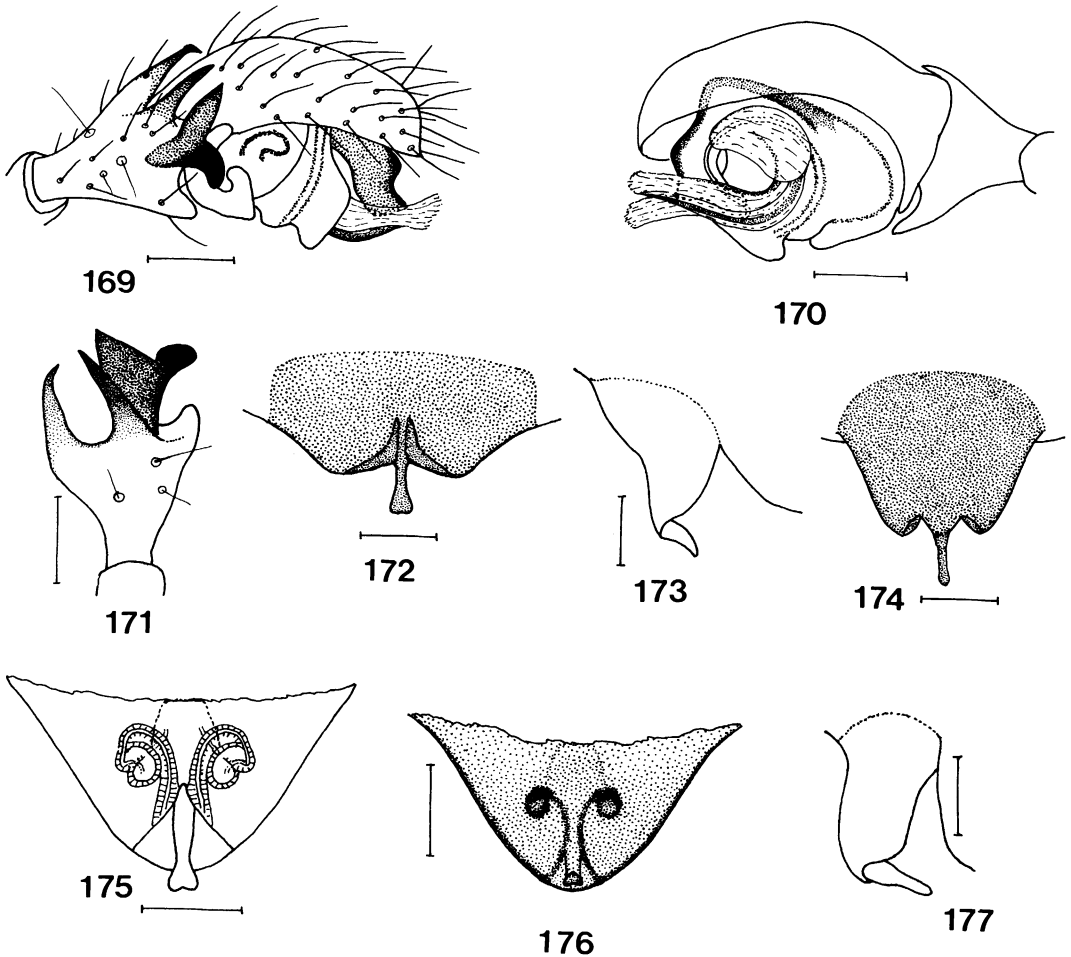
**TAXONOMIC POSITION:** The relationships of this genus are obscure. The epigyna are somewhat similar to those of the genus *Lamina-cauda*, but the male palp is quite different from those of that genus. The form of the epigynum probably places this genus in the Drapetiscinae.

#### *Rhabdogyna patagonica* (Tullgren), new combination

Figures 169–173, 175, 176

*Bathyphantes patagonicus* Tullgren, 1901, p. 211, pl. 15, fig. 12 (female holotype from between 54°S and the Cordilleras, Tierra del Fuego, Jan. 26, 1896, O. Nordenskiöld, in NHRM, examined). Roewer, 1942, p. 572. Bonnet, 1955, p. 867.





FIGS. 169–177. 169. *Rhabdogyna patagonica*, palp, ectal. 170. *R. patagonica*, palp, mesal. 171. *R. patagonica*, palpal tibia, dorsal. 172. *R. patagonica*, epigynum, ventral. 173. *R. patagonica*, epigynum, lateral. 174. *R. chiloensis*, epigynum, ventral. 175. *R. patagonica*, epigynum, internal. 176. *R. patagonica*, epigynum, dorsal. 177. *R. chiloensis*, epigynum, lateral. Scale lines 0.1 mm.

**DIAGNOSIS:** The female is diagnosed by the epigynum (figs. 172, 173), which is significantly wider than that of *R. chiloensis* (fig. 174). The male is diagnosed by the complex tibial apophyses (figs. 169, 171), and by the form of the palpal organ (fig. 170).

**FEMALE:** Total length 1.9–2.2. Carapace length 0.90–0.95. Carapace orange to brown, with blackish markings and margins. Abdomen dorsally white, with irregular black stripe and black chevrons, sometimes almost completely black posteriorly; ventrally and on sides black, occasionally with few white markings. Sternum orange to brown, heavily

suffused with black. Legs orange to brown, with faint darker annulations; spines typical of genus. TmI 0.25–0.30. Epigynum (figs. 172, 173, 175, 176).

**MALE:** This sex has not previously been described; it has not been taken with the female, but has been found in the same general area, and agrees with the female in size, color, and chaetotaxy. Total length 1.9–2.2. Carapace length 0.90–0.95. Palp (figs. 169–171).

**MATERIAL EXAMINED:** CHILE: **Coquimbo:** Parque Nacional Fray Jorge, berlese of floor litter and root mat, 580 m, valdivian forest relict, Nov. 3, 1981 (N. I. Platnick, R. T.

Schuh: AMNH), 5f; same, 180–270 m, Nov. 5, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1m. **Magallanes:** the female holotype. **Mal-leco:** 12 km E Malalcahuello, baited pitfall trap, 1350 m, *Nothofagus dombeyi*–*Araucaria* forest, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 1m.

**DISTRIBUTION:** Central to southern Chile.

***Rhabdogyna chiloensis*, new species**

Figures 174, 177

**TYPE:** Female holotype from Vilupulli, Isla de Chiloé, Chiloé, Chile (Feb. 18, 1983; T. Cekalovic), deposited in AMNH.

**ETYMOLOGY:** The specific name relates to the locality of the holotype.

**DIAGNOSIS:** The female is diagnosed by the epigynum (figs. 174, 177), which is significantly narrower than that of *R. patagonica*. The male is not known.

**FEMALE:** Total length 2.0. Carapace length 0.90. Carapace yellow-brown, with blackish markings and margins. Abdomen black, with two longitudinal rows of white spots dorsally. Sternum yellow, suffused with black. Legs yellow-brown, suffused with some black (only femora remain). Epigynum (figs. 174, 177).

**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** Known only from Chiloé, Chile.

**NEOMASO FORSTER**

*Neomaso* Forster, 1970, p. 39 (type species *Neomaso claggi* Forster by original designation). Brignoli, 1983, p. 348.

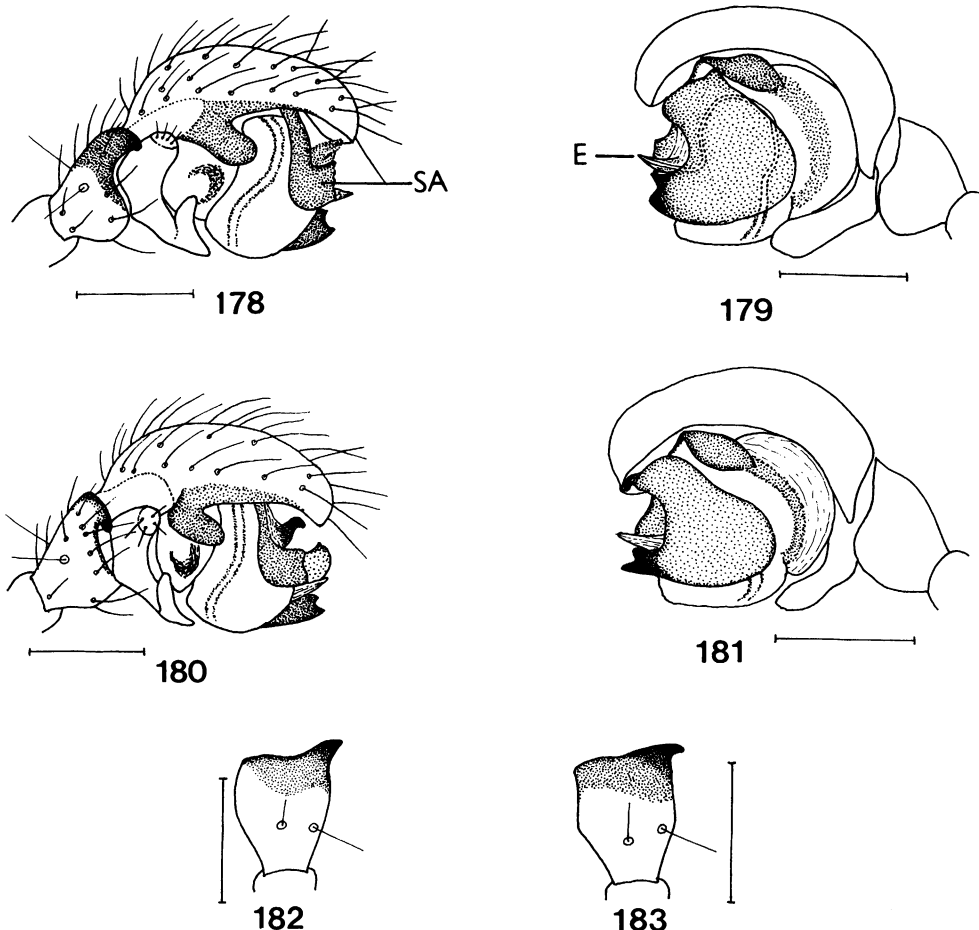
**DIAGNOSIS:** The female is diagnosed by the epigynal scape, which has no socket, coupled with the position of the genital openings and the configuration of the internal ducts (description below). The male is diagnosed by the thumblike projection on the ectal margin of the palpal cymbium, coupled with the form of the embolic division (ED) and of the suprategular apophysis (SA).

**DESCRIPTION:** This genus comprises spiders of total length 1–5 mm. The carapace has no lobes, but in a few species is moderately raised behind the eyes (fig. 215). The chelicerae have lateral files. The abdomen is usually grey to black, often with poorly defined paler chevrons dorsally. The legs are fairly short in the smaller species, and relatively longer in the larger species. The femora

and metatarsi are spineless; the tibiae have only dorsal spines, which are 2211 in all species except *N. pollicatus*, where they are 2222. Metatarsi I–III have a trichobothrium, with TmI 0.25–0.50. The female palpal tibia is clawless. The genus is haplotracheate. The ventral plate of the female epigynum is extended posteriorly to give a scape. The genital openings are located inside a small atrium on the dorsal side of the scape near the posterior end; this atrium may be divided by a longitudinal septum (fig. 237). In *N. pollicatus* the atrium is more or less on the posterior end of the scape. Internally, the ducts from the openings run anteriorly for a short distance, then loop posteriorly, and finally run along the scape to the spermathecae (figs. 239–241). The male palpal tibia has a sclerotized apophysis distally, usually small. The cymbium has a well-developed thumblike extension on the ectal side (e.g., figs. 178, 218). The paracymbium is stout, with a long basal arm and a short distal arm; at its junction with the cymbium the basal arm has a small swelling which carries several hairs (e.g., fig. 178). The suprategulum is large (fig. 226), running well to the anterior of the palpal organ; it terminates distally in a fairly massive apophysis (SA), which has a small subsidiary apophysis on its inner lightly sclerotized surface (figs. 190, 226). The stalk, which carries the duct to the ED, arises from the SA, well to the anterior of the palp (fig. 226). The ED consists of a plate, the basic shape of which is more or less constant in all the species; the short anteroventral projection from the plate shows small differences from species to species. In a few species, the plate carries a projecting apophysis on the mesal side; this is usually short and laminar (fig. 219), but in *N. pollicatus* it forms a long spike (fig. 228). The short, weakly sclerotized, pointed embolus arises directly from the lightly sclerotized region where the stalk joins the ED, at the anterior end of the plate (fig. 227). A short, transparent membrane (embolic membrane), which lies adjacent to the embolus, also originates in this area; this membrane is difficult to see in the smaller species.

**INCLUDED SPECIES:** The type species; *N. bilobatus* (Tullgren), new combination; *N. pollicatus* (Tullgren), new combination; and 9 new species described below.

**DISTRIBUTION:** Chile, Argentina, and South



FIGS. 178–183. Palps. 178. *Neomaso minimus*, ectal. 179. *N. minimus*, mesal. 180. *N. parvus*, ectal. 181. *N. parvus*, mesal. 182. *N. minimus*, tibia, dorsal. 183. *N. parvus*, tibia, dorsal.

Abbreviations: E, embolus; SA, suprategular apophysis. Scale lines 0.1 mm.

Georgia; probably endemic to South America, although two small, very pale colored males from Kerguelen, Southern Ocean (Jan. 30–31, 1965; M. Hay: Otago Museum) also appear to belong to this genus.

**TAXONOMIC POSITION:** *Neomaso* is close to the Palearctic haplotracheate genus *Asthenargus* Simon, but there are distinct, if small, differences. The male palp of the type species of *Asthenargus* (*paganus* Simon) has a lateral projection on the cymbium, but this is not thumblike; the paracymbium also differs in form. The SA is generally similar, but the shape of the small subsidiary apophysis is different; the plate of the ED is differently shaped, and there is no sign among the known

*Asthenargus* species of the development of a projecting apophysis, as in a few *Neomaso* species. The epigynum of *Asthenargus paganus* is generally similar to those of the *Neomaso* species, but there is a small difference in the duct pathway, with the duct running directly forward from the opening. The tibial spines of *Asthenargus* are 2221, but this difference is probably not significant. It seems probable that *Neomaso* and *Asthenargus* arose from a common parent (i.e., are sister groups), but that in the long period since the two lines were separated they have diverged significantly from one another. *Neomaso*, like *Asthenargus*, fits into the proposed subfamily Drapetiscinae (Millidge, 1984).

KEY TO *NEOMASO* SPECIES

## FEMALES

1. Carapace length *ca.* 2 mm; epigynum (figs. 234, 235) ..... *pollicatus*  
Carapace length 1 mm or less ..... 2
2. Eyes in narrow grouping (fig. 196); epigynum (fig. 204) ..... *angusticeps*  
Eyes not in narrow grouping ..... 3
3. Epigynal scape short (figs. 198–202) ..... 4  
Epigynal scape longer (figs. 230–233) ..... 7
4. Scape not narrowed posteriorly (fig. 198) ..... *minimus*  
Scape narrowed posteriorly (figs. 199–202) .. 5
5. Scape (fig. 200) ..... *tullgreni*  
Scape (fig. 201) ..... *peltatus*  
Scape (figs. 199, 202) ..... 6
6. Carapace profile (fig. 212) ..... *cavus*  
Carapace profile (fig. 210) ..... *patagonicus*
7. Carapace distinctly raised behind eyes (figs. 216, 217) ..... 8  
Carapace less raised ..... 9
8. Scape (fig. 231) ..... *bilobatus*  
Scape (fig. 230) ..... *gibber*
9. Scape (fig. 233) ..... *claggi*  
Scape (fig. 232) ..... *scutatus*

## MALES

1. Palp with rodlike apophysis projecting from ED (fig. 225); large species (carapace length 1.8–2.0 mm) ..... *pollicatus*  
Palp not of this form; relatively small species (carapace length 1.0 mm or less) ..... 2
2. Carapace raised and narrowed anteriorly (fig. 214); palp with elongated tibia (figs. 193, 197) ..... *angusticeps*  
Carapace not of this form; palp with shorter tibia ..... 3
3. Tibial apophysis fairly large and stout (figs. 205, 218, 220) ..... 4  
Tibial apophysis fairly small ..... 6
4. Carapace distinctly raised behind eyes (fig. 215) ..... *gibber*  
Carapace barely raised behind eyes ..... 5
5. Tibial apophysis (figs. 218, 222) ..... *claggi*  
Tibial apophysis (figs. 220, 224) ... *fagicola*
6. Tibia (figs. 182, 183) ..... 7  
Tibia with lateral apophysis less well defined (figs. 188, 189, 195) ..... 8
7. Tibial apophysis (figs. 178, 182); ED (fig. 179) ..... *minimus*  
Tibial apophysis (figs. 180, 183); ED (fig. 181) ..... *parvus*
8. Carapace profile (fig. 211); ED (fig. 187) ..... *tullgreni*  
Carapace profile (fig. 213); ED (fig. 192) ..... *cavus*

Carapace profile (fig. 210); ED (fig. 185) ..... *patagonicus*

*Neomaso minimus*, new species

Figures 178, 179, 182, 198, 209

TYPES: Male holotype, with 13 male and 25 female paratypes, from 4.1 km W of Anticura, Valdivia, Chile, leaf litter of forest floor, 270 m, valdivian rainforest (Dec. 19–25, 1982; A. Newton and M. Thayer), deposited in AMNH.

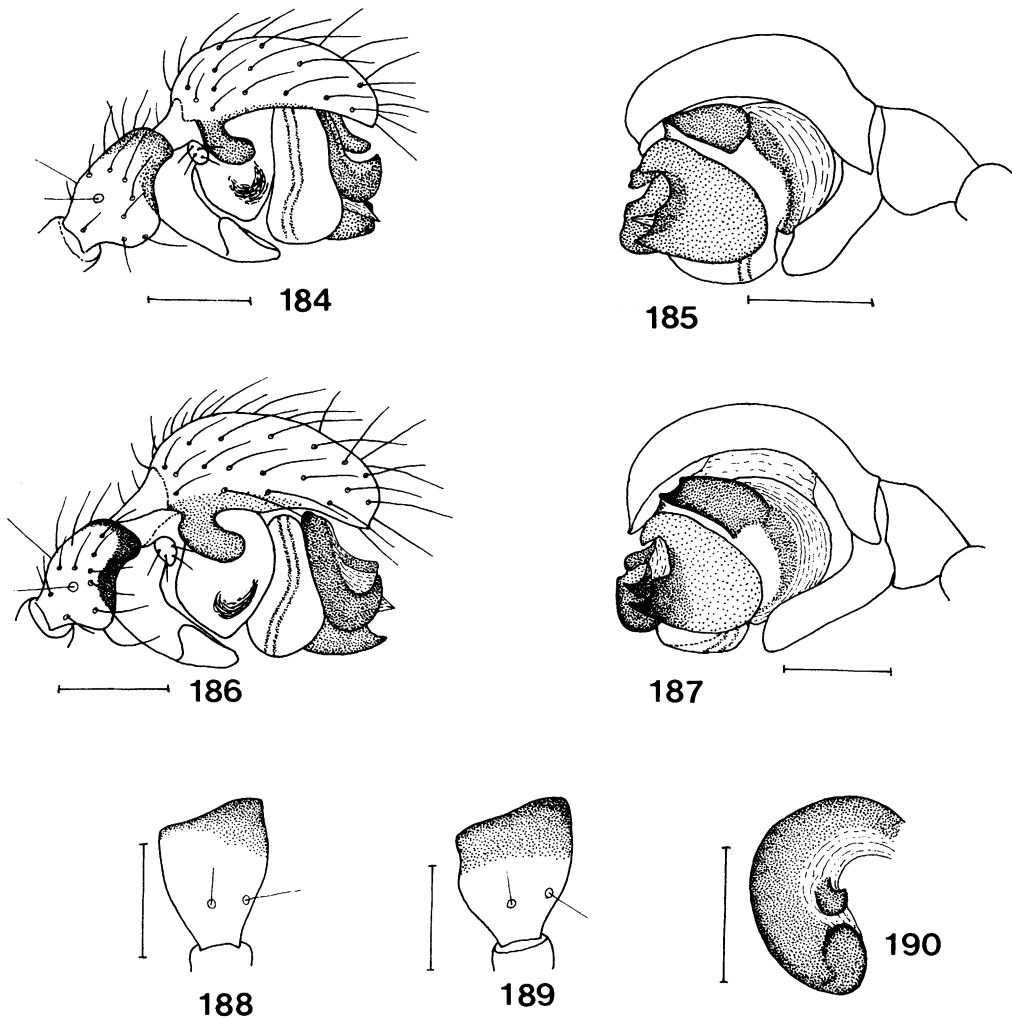
ETYMOLOGY: The specific name refers to the small size of the species.

DIAGNOSIS: The female is diagnosed by the small size and by the short epigynal scape (fig. 198). The male is diagnosed by its small size, the form of the tibial apophysis (figs. 178, 182), and the form of the ED (fig. 179). *N. minimus* males are very close to those of *N. parvus*, but there are small differences in the tibial apophysis and in the shape of the lower arm of the ED.

FEMALE: Total length 1.0–1.25. Carapace length 0.50–0.55. Carapace yellow to orange. Abdomen pale grey to black, with faint paler chevrons posteriorly; occasionally almost white dorsally, with irregular median black stripe, and black around spinnerets. Sternum yellow to orange. Legs yellow to orange-brown; chaetotaxy typical of genus. TmI 0.30–0.35. Epigynum (fig. 198).

MALE: Total length 1.15–1.25. Carapace length 0.60–0.65. Color and chaetotaxy as in female. Carapace more or less flat behind eyes (fig. 209). Palp (figs. 178, 179, 182).

OTHER MATERIAL EXAMINED: CHILE: **Arauco:** 16 km N Tres Pinos, berlese of forest leaf and log litter, 170 m, *Cupressus-Eucalyptus* forest, Dec. 12, 1982 (A. Newton, M. Thayer: AMNH), 1f. **Cautin:** Volcán Villarica, berlese of forest leaf and log litter, 1250 m, *Nothofagus dombeyi*-*N. pumilio* forest with *Chusquea*, Dec. 15–29, 1982 (A. Newton, M. Thayer: AMNH), 1f. **Chiloé:** Isla de Chiloé, 5 km N Quellon, berlese of floor litter and moss in modified forest, 105 m, Dec. 1, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1m; Isla de Chiloé, Piruquina, Feb. 19, 1983 (T. Cekalovic: AMNH), 1f. **Concepción:** Penco, Feb. 11, 1979 (T. Cekalovic: AMNH), 1f. **Malleco:** 6.5 km E Malalcahuello, window trap, 1080 m, *Nothofagus dombeyi* forest with



FIGS. 184–190. Palps. 184. *Neomaso patagonicus*, ectal. 185. *N. patagonicus*, mesal. 186. *N. tullgreni*, ectal. 187. *N. tullgreni*, mesal. 188. *N. patagonicus*, tibia, dorsal. 189. *N. tullgreni*, tibia, dorsal. 190. *N. tullgreni*, supratregular apophysis, anterolateral. Scale lines 0.1 mm.

*Chusquea*, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 12m; same, berlese of leaf and log litter, 1f; same, baited pitfall trap, 3m; 12 km E Malalcahuello, berlese of forest leaf and log litter, 1350 m, *Nothofagus dombeyi*–*Araucaria* forest, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 1f, 1m; 14 km E Malalcahuello, window trap, 1570 m, *Nothofagus pumilio*–*Araucaria* forest, Dec. 13–31 (A. Newton, M. Thayer: AMNH), 13m; same, in baited pitfall trap, 18m; Parque Nacional Nahuelbuta, Nov. 19, 1981 (T. Cekalovic: AMNH), 3f; same, berlese of mossy

forest floor litter (*Nothofagus, Araucaria*), 1250 m, Nov. 19, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 6f, 2m. **Osorno:** Chincay, 10 km E Bahia Mansa, berlese of forest leaf and log litter, 50 m, secondary valdivian forest, Dec. 21, 1982 (A. Newton, M. Thayer: AMNH), 2f; Parque Nacional Puyehue, Antillanca road, berlese of forest leaf and log litter, 470 m, valdivian rainforest, Dec. 20–25, 1982 (A. Newton, M. Thayer: AMNH), 4f, 1m. **Valdivia:** 4.1 km E Anticura, dung and squid trap, 270 m, valdivian rainforest, Dec. 19–25, 1982 (A. Newton, M. Thayer:

AMNH), 1f; same, leaf litter of forest floor, 2f.

DISTRIBUTION: Widespread in central Chile.

*Neomaso parvus*, new species

Figures 180, 181, 183

TYPE: Male holotype from Las Trancas, 19.5 km ESE Recinto, Nuble, Chile, window trap, 1250 m, *Nothofagus* forest (Dec. 10, 1982–Jan. 3, 1983; A. Newton and M. Thayer), deposited in AMNH.

ETYMOLOGY: The specific name refers to the small size of the species.

DIAGNOSIS: The male is diagnosed by its small size, by the form of the tibial apophysis (figs. 180, 183), and by the form of the ED (fig. 181). This species is very close to *N. minimus*. The female is unknown.

MALE: Total length 1.30–1.35. Carapace length 0.60. Carapace yellow to orange; profile more or less identical to that of *N. minimus* (fig. 209). Abdomen grey dorsally, with faint paler chevrons; paler ventrally. Sternum yellow, with narrow orange margin. Legs orange to orange-brown; chaetotaxy typical of genus. TmI 0.25–0.30. Palp (fig. 180, 181, 183).

OTHER MATERIAL EXAMINED: CHILE: Ñuble: 22.7 km ESE Recinto, window trap, 1330 m, *Nothofagus* forest, Dec. 10, 1982–Jan. 3, 1983 (A. Newton, M. Thayer: AMNH), 1m.

DISTRIBUTION: Known only from Nuble, Chile.

*Neomaso patagonicus* (Tullgren),  
new combination

Figures 184, 185, 188, 199, 203, 210

*Walckenaera patagonica* Tullgren, 1901, p. 196, pl. 15, fig. 5 (two female syntypes from Ferrier and Sierra del Toro, Patagonia, 1899, E. Nordenskiöld, in NHRM, examined; this is not in agreement with Tullgren's statement [1901, p. 199] that the species was based on two subadult females from Campo Toro, Patagonia). Roewer, 1942, p. 672. Bonnet, 1959, p. 4814.

*Bathyphantes* (?) *hermani* Tullgren, 1901, p. 212, pl. 15, fig. 13 (male holotype from Herman, near Río Tres Pasos, Patagonia, April 1, 1899, E. Nordenskiöld, in NHRM, examined). Roewer, 1942, p. 572. NEW SYNONYMY.

*Bathyphantes hermanicus*: Bonnet, 1954, p. 864 (invalid emendation).

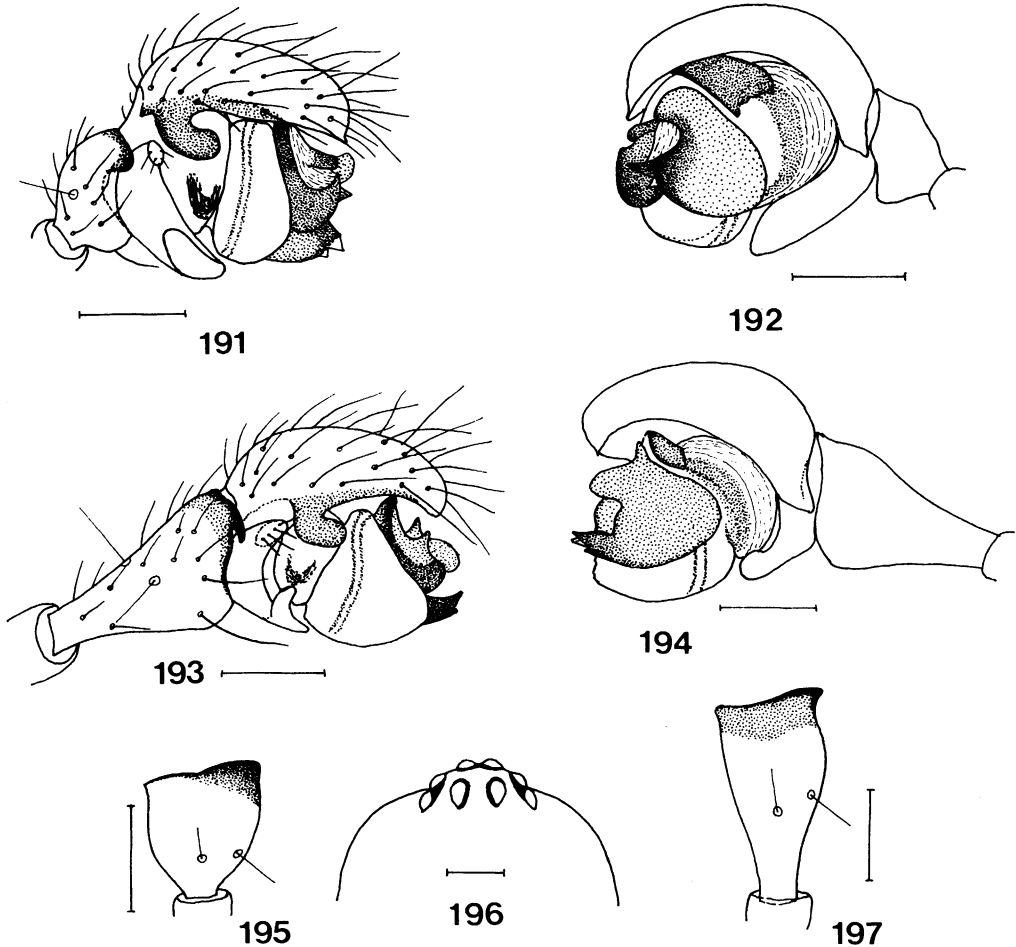
DIAGNOSIS: The female is diagnosed by the short epigynal scape (fig. 199), coupled with

the carapace profile (fig. 210), which distinguishes it from *N. cavus*. The male is diagnosed by the form of the tibial apophysis (figs. 184, 188) and of the ED (fig. 185), coupled with the carapace profile (fig. 210); the tibial apophysis and the ED are very close to those of *N. tullgreni*, which can be distinguished by the carapace profile.

FEMALE: Total length 1.35–2.0. Carapace length 0.60–0.80. Carapace yellow-brown to orange, with dusky markings and margins; only slightly raised behind eyes (fig. 210), though some variation exists here. Abdomen variable in color: dorsally dull white with median black stripe and black chevrons, to black with two rows of white patches; ventrally black, with variable white markings. Sternum yellow suffused with black, or completely black. Legs yellow, orange-brown, or brown, sometimes suffused with grey; chaetotaxy typical of genus. TmI 0.35–0.40. Epigynum (figs. 199, 203). Specimens show some variation in size, color, and carapace profile; more than one species may be represented.

MALE: Total length 1.40–1.55. Carapace length 0.70–0.75. Color as in female, but less variable; chaetotaxy as in female. Carapace profile (fig. 210). Palp (figs. 184, 185, 188).

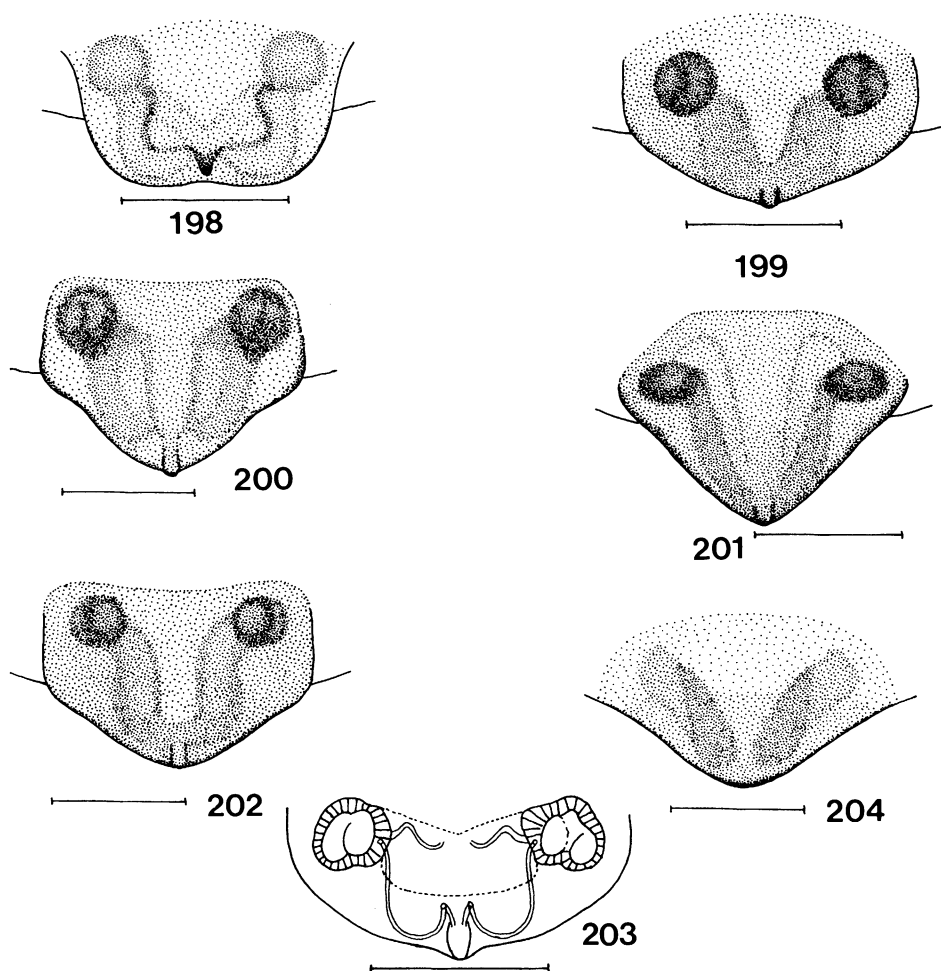
MATERIAL EXAMINED: CHILE: Chiloé: Isla Quinchao, 4 km from Curaco de Velez, Jan. 30, 1983 (T. Cekalovic: AMNH), 3f; Isla de Chiloé, Lago Huillinco, Jan. 31, 1983 (T. Cekalovic: AMNH), 2f; Isla de Chiloé, Castro, 300 m, Feb. 17, 1983 (T. Cekalovic: AMNH), 1f. Concepción: Cerro Caracol, Concepción, Mar. 25, 1973 (T. Cekalovic: AMNH), 1f; Tomé, Dec. 12, 1982 (T. Cekalovic: AMNH), 1f. Coquimbo: Parque Nacional Fray Jorge, berlese of floor litter and root mat, 580 m, valdivian forest relict, Nov. 3, 1981 (N. I. Platnick, R. T. Schuh: AMNH), numerous f and m; same, 180–270 m, Nov. 5, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 5f, 5m. Llanquihue: Lago Chapo, 13.5 km E Correntoso, berlese of forest leaf and log litter, 310 m, valdivian rainforest, Dec. 16–27, 1982 (A. Newton, M. Thayer: AMNH), 7f. Magallanes: The female syntypes, and holotype of *B. hermani*; Cordillera Darwin, Feb. 28, 1962 (E. Sipton: BMNH), 1f. Malleco: 12 km E Malalcahuello, window trap, 1350 m, *Nothofagus dombeyi*–*Araucaria* forest, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 2m; 14 km E Malalcahuello, berlese



FIGS. 191-197. 191. *Neomaso cavus*, palp, ectal. 192. *N. cavus*, palp, mesal. 193. *N. angusticeps*, palp, ectal. 194. *N. angusticeps*, palp, mesal. 195. *N. cavus*, palpal tibia, dorsal. 196. *N. angusticeps*, female, eyes. 197. *N. angusticeps*, palpal tibia, dorsal. Scale lines 0.1 mm.

of forest leaf and log litter, 1570 m, *Nothofagus pumilio*-*Araucaria* forest, Dec. 13-31, 1982 (A. Newton, M. Thayer: AMNH), 9f, 5m. **Osorno:** Termas de Puyehue, forest, 180 m, Nov. 24, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1f; same, litter from moss, forest floor, 460 m, Nov. 25, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1f; Parque Nacional Puyehue, Antillanca road, berlese of forest leaf and log litter, 690 m, valdivian rainforest, Dec. 18-24, 1982 (A. Newton, M. Thayer: AMNH), 1f; same, 470 m, Dec. 20-25, 1982 (A. Newton, M. Thayer: AMNH), 3f; same, berlese of forest leaf and log litter, 965 m, *Nothofagus pumilio* forest, Dec. 18-25, 1982 (A. Newton, M. Thayer: AMNH), 1f; same,

berlese of forest leaf and log litter, 845 m, *Nothofagus*-*Saxegothea* forest, Dec. 18-24, 1982 (A. Newton, M. Thayer: AMNH), 8f; same, berlese of forest leaf and log litter, 470 m, valdivian rainforest, Dec. 20-25, 1982 (A. Newton, M. Thayer: AMNH), 1f; same, pyrethrin fogging of mossy log, 470-720 m, Dec. 18-24, 1982 (A. Newton, M. Thayer: AMNH), 2f; Parque Nacional Puyehue, Volcán Casa Blanca, berlese of litter at bases of alpine shrubs, 1270 m, just above treeline, Dec. 22-25, 1982 (A. Newton, M. Thayer: AMNH), 4f; same, berlese of forest leaf and log litter, 1100-1130 m, *Nothofagus pumilio*-*N. antarctica* forest with *Drimys*, Dec. 20, 1982 (A. Newton, M. Thayer: AMNH), 5f;



FIGS. 198–204. Epigyna. 198. *Neomaso minimus*. 199. *N. patagonicus*. 200. *N. tullgreni*. 201. *N. peltatus*. 202. *N. cavus*. 203. *N. patagonicus*, internal. 204. *N. angusticeps*. Scale lines 0.1 mm.

same, pan trap, 1270 m, treeline in *Nothofagus* forest, Dec. 20–25, 1982 (A. Newton, M. Thayer: AMNH), 1f; Parque Nacional Puyehue, 4.1 km E Anticura, baited pitfall trap, 430 m, valdivian rainforest, Dec. 19–26, 1982 (A. Newton, M. Thayer: AMNH), 1f.

DISTRIBUTION: Central to southern Chile.

*Neomaso tullgreni*, new species

Figures 186, 187, 189, 190, 200, 211

TYPES: Male holotype, with five female holotypes, from Antillanca road, Parque Nacional Puyehue, Osorno, Chile, berlese of forest leaf and log litter, 720 m, *Nothofagus* forest

(Dec. 18–24, 1982; A. Newton and M. Thayer), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of Prof. A. Tullgren.

DIAGNOSIS: The female is diagnosed by its small size and the shape of the epigynal plate (fig. 200). The male is diagnosed by the forms of the tibial apophysis (figs. 186, 189) and the ED (fig. 187), coupled with the carapace profile (fig. 211).

FEMALE: Total length 1.55–1.65. Carapace length 0.65–0.70. Carapace yellow to yellow-brown, with greyish markings and margins; ocular area sometimes suffused with black. Abdomen grey to black, with dorsally some



variable white chevrons; occasionally almost wholly white dorsally. Sternum yellow, suffused with black, especially on margins. Legs pale yellow, shaded with orange on tibiae and tarsi; chaetotaxy typical of genus. TmI 0.27–0.32. Epigynum (fig. 200).

**MALE:** Total length 1.35–1.5. Carapace length 0.70. Color and chaetotaxy as in female. Carapace profile (fig. 211). Palp (figs. 186, 187, 189, 190).

**OTHER MATERIAL EXAMINED: CHILE:**  
**Cautín:** Volcán Villarrica, baited pitfall trap, 1250 m, *Nothofagus dombeyi*–*N. pumilio* forest with *Chusquea*, Dec. 15–29, 1982 (A. Newton, M. Thayer: AMNH), 1m. **Chiloé:** Isla de Chiloé, 5 km N Quellon, berlese of floor litter and moss, 105 m, modified forest, Dec. 1, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1f; Isla de Chiloé, crossroad to Chonchi, Jan. 31, 1983 (T. Cekalovic: AMNH), 1f. **Osorno:** Parque Nacional Puyehue, Antillanca road, berlese of forest leaf and log litter, 845 m, *Nothofagus*–*Saxegothaea* forest, Dec. 18–24, 1982 (A. Newton, M. Thayer: AMNH), 1f, 1m; same, 690 m, valdivian rainforest, Dec. 18–24, 1982 (A. Newton, M. Thayer: AMNH), 2f; 7.7 km NE Termas de Puyehue, berlese of forest leaf and log litter, 200 m, valdivian rainforest, Dec. 19–25, 1982 (A. Newton, M. Thayer: AMNH), 1f. **Talco:** 47 km E Talco, under rocks, 420 m, modified hillside, Nov. 13, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1f.

**DISTRIBUTION:** Central Chile.

*Neomaso peltatus*, new species

Figure 201

**TYPE:** Female holotype from vicinity of Chaiten, Chiloé, Chile, berlese of moss in forest, 0–100 m (Dec. 7, 1981; N. I. Platnick and R. T. Schuh), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective meaning “with a shield,” a reference to the epigynal scape.

**DIAGNOSIS:** The female is diagnosed by the shape of the epigynal scape (fig. 201). This is very similar to that of *N. tullgreni*, but the differences are considered sufficient to justify the description of this spider as a separate species. The male is unknown.

**FEMALE:** Total length 1.40. Carapace length 0.55. Carapace yellow, with faint greyish

markings and narrow black margins. Abdomen black, with two rows of white blotches dorsally. Sternum yellow with grey margins. Legs yellow-brown; spines mainly missing. TmI 0.42. Epigynum (fig. 201).

**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** At present known only from Chiloé, Chile.

*Neomaso angusticeps*, new species

Figures 193, 194, 196, 197, 204, 214

**TYPE:** Male holotype from Parque Nacional Fray Jorge, Coquimbo, Chile, berlese of forest litter and root mat, 180–270 m (Nov. 5, 1981; N. I. Platnick and R. T. Schuh), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective meaning “with a narrow head,” referring to the shape of the male carapace.

**DIAGNOSIS:** The female is diagnosed by the narrow grouping of the eyes (fig. 196), coupled with the epigynal form (fig. 204). The male is diagnosed by the raised and narrowed anterior of the carapace (fig. 214), the elongated palpal tibia (figs. 193, 197), and the form of the ED (fig. 194).

**FEMALE:** Total length 1.85. Carapace length 1.0. Carapace yellow to orange, somewhat narrowed anteriorly, with eyes in narrow group (fig. 196). Abdomen grey, with faint darker markings dorsally. Sternum yellow, elongated. Legs yellow-brown to orange; chaetotaxy typical of genus. TmI 0.33–0.35. Epigynum (fig. 204). This female, though not taken with the male, appears to correspond with it.

**MALE:** Total length 2.2. Carapace length 1.1. Color and chaetotaxy as in female. Carapace elevated and narrowed anteriorly (fig. 214). Palp (figs. 193, 194, 197).

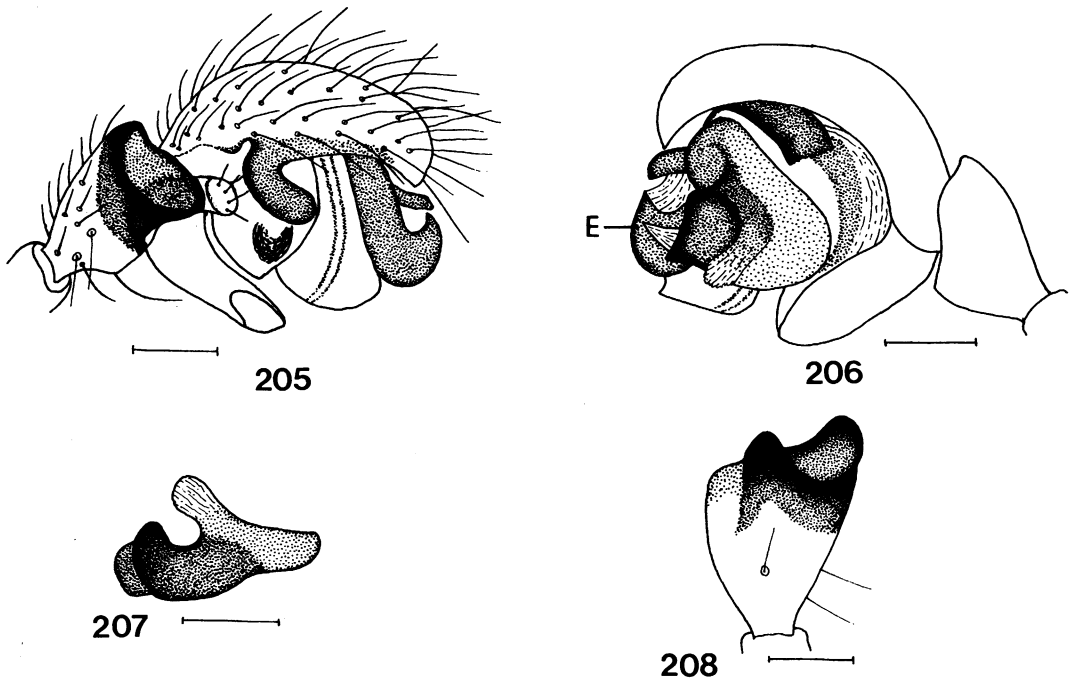
**OTHER MATERIAL EXAMINED: CHILE: Coquimbo:** Parque Nacional Fray Jorge, berlese of floor litter and root mat, 580 m, valdivian forest relict, Nov. 3, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1f.

**DISTRIBUTION:** Known only from Coquimbo, Chile.

*Neomaso cavus*, new species

Figures 191, 192, 195, 202, 212, 213

**TYPES:** Male holotype, with three female and two male paratypes, from 12 km E Malal-



FIGS. 205–208. *Neomaso gibber*. 205. Palp, ectal. 206. Palp, mesal. 207. ED, ventral. 208. Palpal tibia, dorsal.

Abbreviation: E, embolus. Scale lines 0.1 mm.

cahuello, Malleco, Chile, baited pitfall trap, 1350 m, *Nothofagus dombeyi*–*Araucaria* forest (Dec. 13–31, 1982; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective meaning “hollowed,” referring to the profile of the male carapace.

**DIAGNOSIS:** The female is diagnosed by the form of the epigynal scape (fig. 202) coupled with the carapace profile (fig. 212). The epigynum is, however, barely distinguishable from that of *N. patagonicus*, and the carapace profile varies somewhat; hence females cannot always be distinguished with certainty from those of *N. patagonicus*. The male is diagnosed by the small tibial apophysis (figs. 191, 195), by the form of the ED (fig. 192), and by the carapace profile (fig. 213).

**FEMALE:** Total length 1.65–1.80. Carapace length 0.70. Carapace orange-yellow, with grey markings and margins; profile (fig. 212). Abdomen grey-black, with faint lighter markings dorsally. Sternum yellow, suffused

with black, to completely black. Legs orange to orange-brown; chaetotaxy typical of genus. TmI 0.33–0.40. Epigynum (fig. 202).

**MALE:** Total length 1.65. Carapace length 0.70. Color and chaetotaxy as in female. Carapace profile (fig. 213). Palp (figs. 191, 192, 195).

**OTHER MATERIAL EXAMINED: CHILE: Malleco:** type locality, same data, berlese of forest leaf and log litter, 2f; window trap, 1f, 1m (all AMNH).

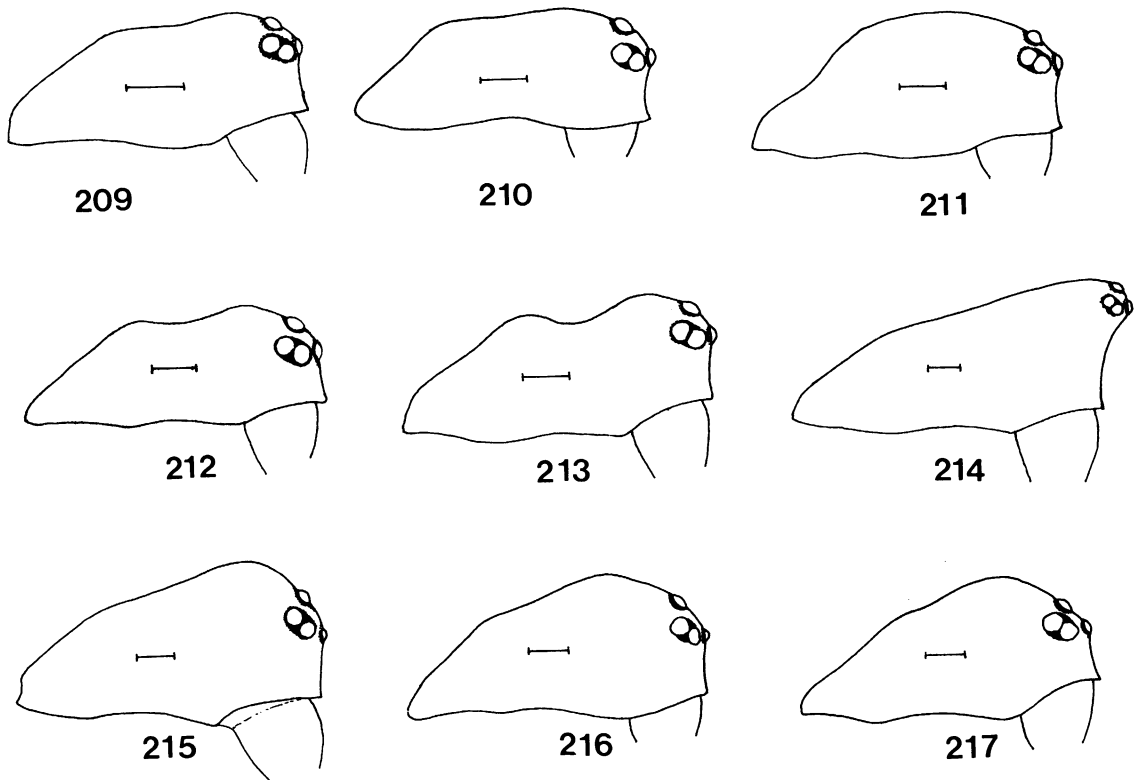
**DISTRIBUTION:** Known only from Malleco, Chile.

#### *Neomaso claggi* Forster

Figures 218, 219, 222, 223, 233, 237, 238, 240

*Neomaso claggi* Forster 1970, p. 40, figs. 1, 22–26 (male holotype from Bay of Isles, Paul’s Beach, South Georgia, January 22, 1961, N. V. Jones, in Bishop Museum, Honolulu, not examined; paratypes in Otago Museum, examined). Brignoli, 1983, p. 348.

**DIAGNOSIS:** The female is diagnosed by the form of the epigynal scape (fig. 233). The male



FIGS. 209–217. Carapaces. 209. *Neomaso minimus*, male. 210. *N. patagonicus*, male. 211. *N. tullgreni*, male. 212. *N. cavus*, female. 213. *N. cavus*, male. 214. *N. angusticeps*, male. 215. *N. gibber*, male. 216. *N. gibber*, female. 217. *N. bilobatus*, female. Scale lines 0.1 mm.

is diagnosed by the tibial apophysis (figs. 218, 222) and by the ED, which has a short laminar apophysis (figs. 219, 223).

**FEMALE:** Total length 1.85–2.0. Carapace length 0.80–0.85. Carapace orange to orange-brown, with faint dusky markings and narrow black margins; only slightly raised behind eyes. Abdomen black, sometimes with faint lighter markings dorsally. Sternum yellow, reticulated and edged with black. Legs orange to orange-brown; chaetotaxy typical of genus. TmI 0.43–0.50. Epigynum (figs. 233, 237, 238, 240).

**MALE:** Total length 1.80–1.90. Carapace length 0.85–0.93. Color and chaetotaxy as female. Palp (figs. 218, 219, 222, 223); the ED has a short laminar apophysis, slightly different in the Chilean specimens from that in the paratypes.

**MATERIAL EXAMINED:** SOUTH GEORGIA: Paratypes. CHILE: Osorno: Parque Nacional Puyehue, Antillanca Road, berlese of forest leaf and log litter, 965 m, *Nothofagus pumilio* forest, Dec. 18–25, 1982 (A. Newton, M. Thayer: AMNH), 4f, 2m; same, window trap (A. Newton, M. Thayer: AMNH), 1f.

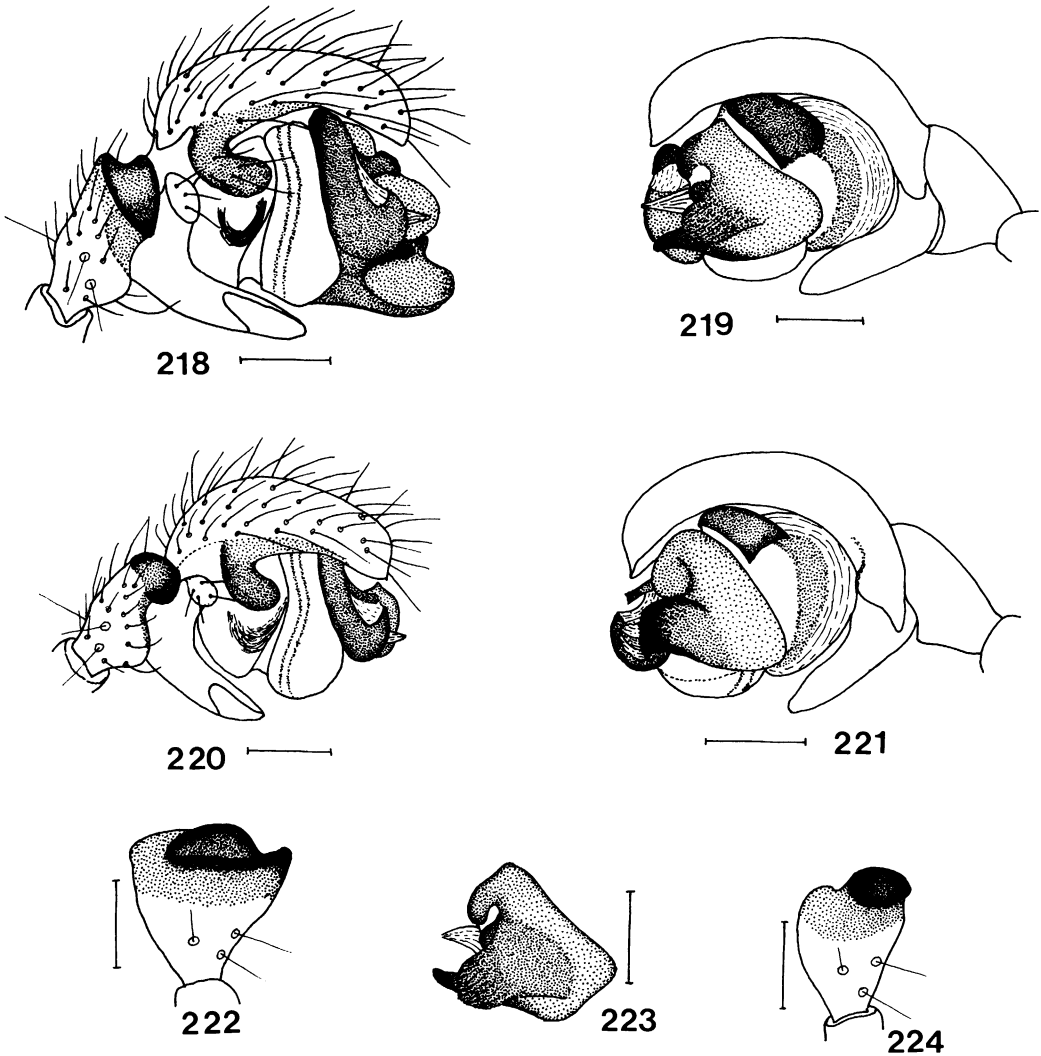
**DISTRIBUTION:** Known only from South Georgia and Osorno, Chile.

*Neomaso bilobatus* (Tullgren),  
new combination

Figures 217, 231, 236, 239

*Walckenaera* (?) *bilobata* Tullgren, 1901, p. 197, pl. 15, fig. 6 (female holotype from Herman, near Río Tres Pasos, Patagonia, April 4, 1899, E. Nordenskiöld, in NHRM, examined).

*Grammonota bilobata*: Roewer, 1942, p. 730. Bonnet, 1957, p. 2054.



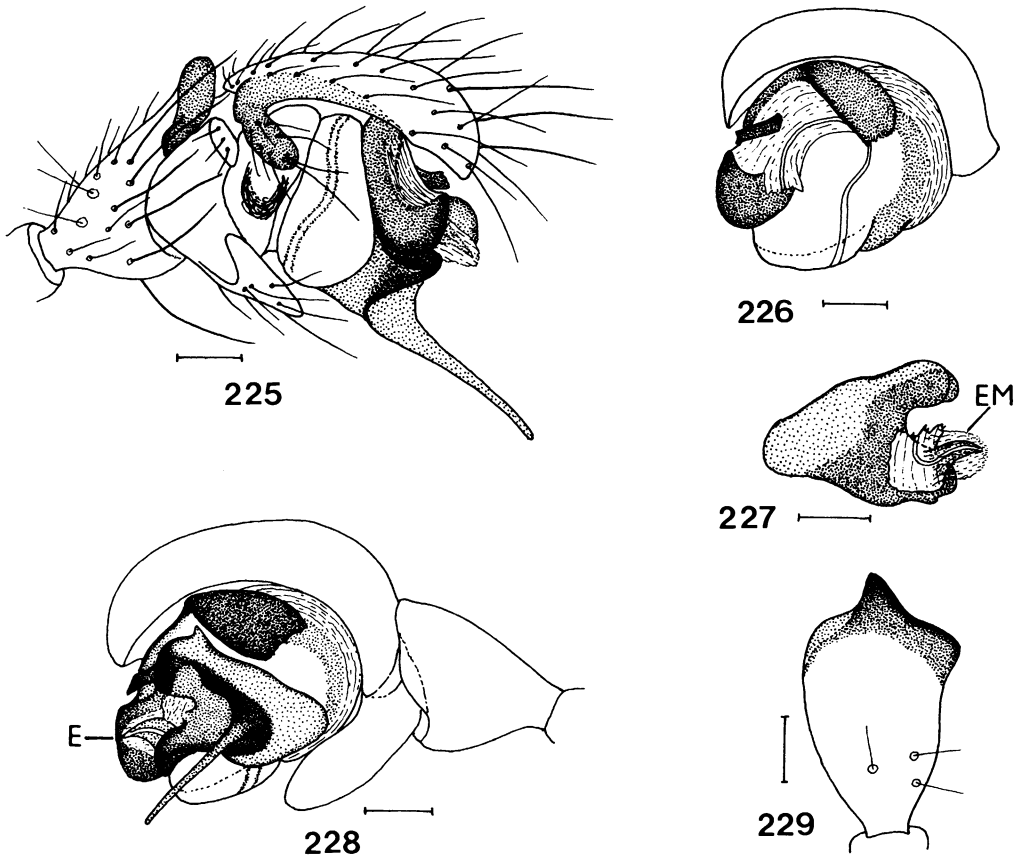
FIGS. 218–224. Palps. 218. *Neomaso claggi*, ectal. 219. *N. claggi*, mesal. 220. *N. fagicola*, ectal. 221. *N. fagicola*, mesal. 222. *N. claggi*, tibia, dorsal. 223. *N. claggi*, ED. 224. *N. fagicola*, tibia, dorsal. Scale lines 0.1 mm.

**DIAGNOSIS:** The female is diagnosed by the relatively long epigynal scape, which is distinctly notched posteriorly (fig. 231), coupled with the carapace profile (fig. 217). The male is unknown.

**FEMALE:** Total length 1.8–1.9. Carapace length 0.80–0.90. Carapace orange, distinctly raised behind eyes (fig. 217). Abdomen dull white dorsally, with median black stripe and black chevrons. Sternum orange, suffused with grey. Legs orange; chaetotaxy typical of

genus. TmI 0.35. Epigynum (figs. 231, 236, 239).

**MATERIAL EXAMINED:** CHILE: **Magalanes:** the holotype; Seno Otway, Río El Ganso, Dec. 31, 1962 (T. Cekalovic: AMNH), 3f; Río Blanco, Jan. 1, 1963 (T. Cekalovic: AMNH), 2f. **Osorno:** Parque Nacional Puyehue, Antillanca road, berlese of forest leaf and log litter, 965 m, *Nothofagus pumilio* forest, Dec. 18–25, 1982 (A. Newton, M. Thayer: AMNH), 1f.



FIGS. 225–229. *Neomaso pollicatus*. 225. Palp, ectal. 226. Palp, mesal, ED removed. 227. ED, ectal, spike broken off. 228. Palp, mesal. 229. Tibia, dorsal.

Abbreviations: E, embolus; EM, embolic membrane. Scale lines 0.1 mm.

**DISTRIBUTION:** Known only from Magalanes and Osorno, Chile.

*Neomaso scutatus*, new species

Figure 232

**TYPE:** Female holotype from Antillanca road, Parque Nacional Puyehue, Osorno, Chile, window trap, 965 m, *Nothofagus pumilio* forest (Dec. 18–25, 1982; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name is a Latin adjective meaning “armed with a shield,” referring to the epigynal scape.

**DIAGNOSIS:** The female is diagnosed by the form of the epigynal scape (fig. 232). The male is not known.

**FEMALE:** Total length 1.70. Carapace length 0.85. Carapace orange-yellow, with faint

dusky margins; only slightly raised behind eyes. Abdomen grey dorsally, with sides and ventral surface dull white mottled with black. Sternum yellow, with grey margins. Legs pale yellow to orange; chaetotaxy typical of genus. TmI 0.37–0.40. Epigynum (fig. 232).

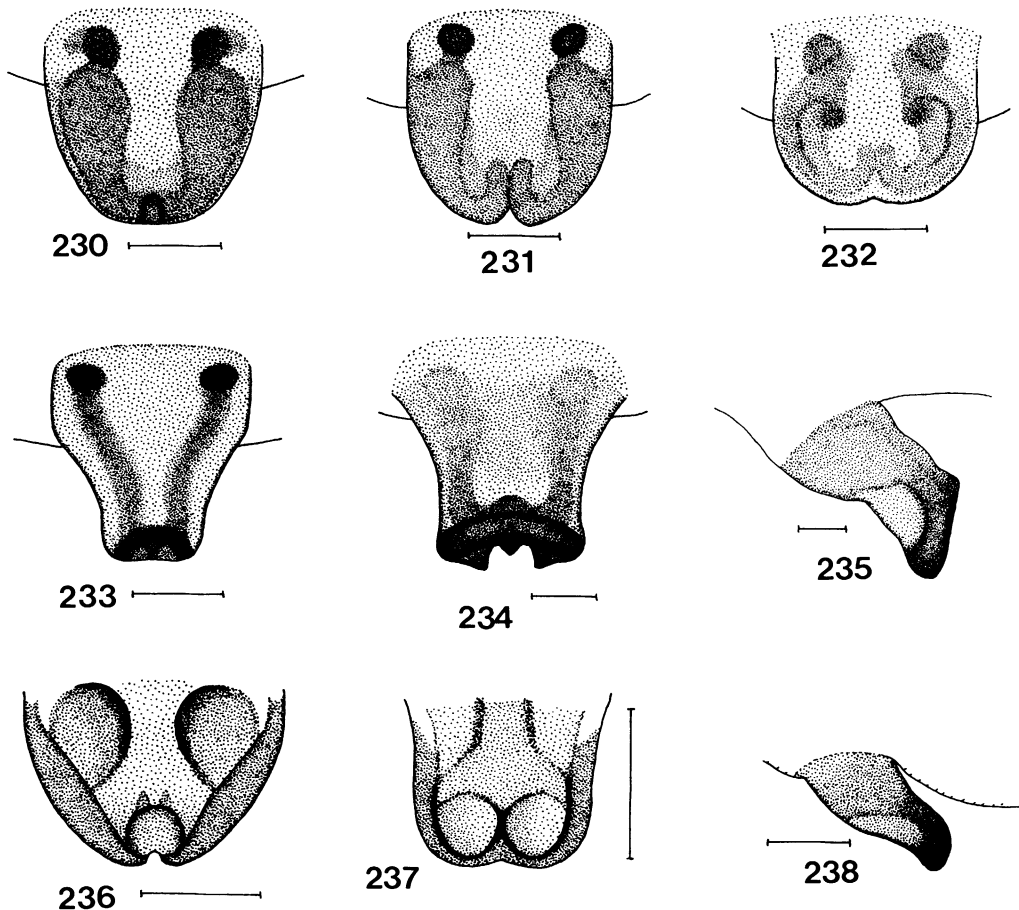
**MATERIAL EXAMINED:** Only the holotype.

**DISTRIBUTION:** Known only from Osorno, Chile.

*Neomaso gibber*, new species

Figures 205–208, 215, 216, 230

**TYPES:** Male holotype, with female paratype, from 14 km E Malalcahuello, Malleco, Chile, baited pitfall trap, 1570 m, *Nothofagus pumilio*–*Araucaria* forest (Dec. 13–31, 1982; A. Newton and M. Thayer), deposited in AMNH.



FIGS. 230–238. Epigyna. 230. *Neomaso gibber*. 231. *N. bilobatus*. 232. *N. scutatus*. 233. *N. claggi*. 234. *N. pollicatus*. 235. *N. pollicatus*, lateral. 236. *N. bilobatus*, dorsal. 237. *N. claggi*, dorsal. 238. *N. claggi*, lateral. Scale lines 0.1 mm.

**ETYMOLOGY:** The specific name is a Latin adjective meaning “hump-backed,” referring to the raised carapace of the male.

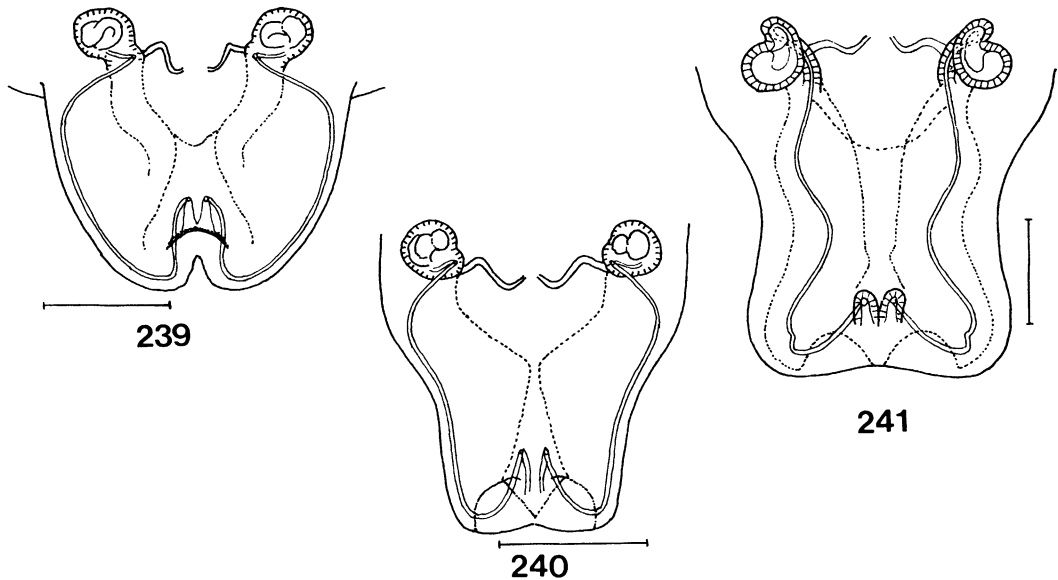
**DIAGNOSIS:** The female is diagnosed by the carapace profile (fig. 216), coupled with the form of the epigynal scape (fig. 230). The male is diagnosed by the fairly massive tibial apophysis (figs. 205, 208), coupled with the carapace profile (fig. 215) and the form of the ED, which has a short laminar apophysis (figs. 206, 207).

**FEMALE:** Total length 1.85–1.95. Carapace length 0.70–0.80. Carapace yellow-brown to orange-brown; raised behind eyes (fig. 216). Abdomen black, with irregular white bars or chevrons dorsally. Sternum yellow, suffused with grey on margins. Legs orange-yellow to

orange; chaetotaxy typical of genus. TmI 0.35–0.40. Epigynum (fig. 230).

**MALE:** Total length 1.90–2.0. Carapace length 0.85–0.90. Color and chaetotaxy as in female. Carapace fairly steeply raised behind eyes (fig. 215). Palp (figs. 205–208); blunt, somewhat laminar apophysis present on ED.

**OTHER MATERIAL EXAMINED:** CHILE: **Magallanes:** Bahía Orange Bay, Peninsula Hardy, Isla Hoste, Mar. 9, 1961 (B. Malkin: AMNH), 1m; Cordillera Darwin, Feb. 27, 1962 (E. Sipton: BMNH), 1m. **Malleco:** window trap at type locality, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 1m; berlese of forest leaf and log litter at type locality, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 1f. **Osorno:** Parque Nacional Puy-



FIGS. 239–241. Epigyna, internal. 239. *N. bilobatus*. 240. *N. claggi*. 241. *N. pollicatus*. Scale lines 0.1 mm.

ehue, Volcán Casa Blanca, carrion trap, 1270 m, treeline in *Nothofagus* forest, Dec. 20–25, 1982 (A. Newton, M. Thayer: AMNH), 1m.

DISTRIBUTION: Southern Chile.

*Neomaso fagicola*, new species

Figures 220, 221, 224

TYPE: Male holotype from Antillanca road, Parque Nacional Puyehue, Osorno, Chile, window trap, 965 m, *Nothofagus pumilio* forest (Dec. 18–25, 1982; A. Newton and M. Thayer), deposited in AMNH.

ETYMOLOGY: The specific name is a Latin noun in apposition meaning “one who lives amongst beeches,” referring to the type locality.

DIAGNOSIS: The male is diagnosed by the relatively strong tibial apophysis (figs. 220, 224), coupled with the form of the ED (fig. 221). The female is unknown.

MALE: Total length 1.65. Carapace length 0.80. Carapace orange, scarcely raised behind eyes. Abdomen grey-black, with whitish sides. Sternum yellow, with narrow orange margin. Legs orange; chaetotaxy typical of genus. TmI 0.35. Palp (figs. 220, 221, 224).

MATERIAL EXAMINED: Only the holotype.

DISTRIBUTION: Known only from Osorno, Chile.

*Neomaso pollicatus* (Tullgren),  
new combination

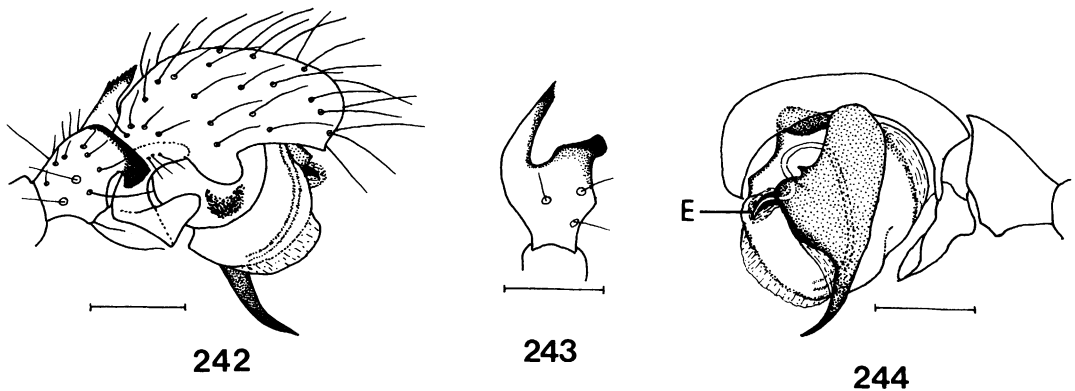
Figures 225–229, 234, 235, 241

*Tmetiscus pollicatus* Tullgren, 1901, p. 206, pl. 16, fig. 5 (male syntype from Última Esperanza, Magallanes, Chile, April 2, 1896, O. Nordenskiöld; female syntypes from Punta Arenas, Magallanes, Chile, Nov. 28, 1895, O. Nordenskiöld and Puerto Haberton, Tierra del Fuego, Feb. 14, 1896, O. Nordenskiöld, in NHRM, examined). *Haplisis pollicata*: Roewer, 1942, p. 536. Bonnet, 1957, p. 2086.

*Neriene pictonensis* Simon, 1902, p. 18 (female holotype from Patagonia, in ZMH, examined, appears to be a subadult specimen of *T. pollicatum* approaching the final molt). NEW SYNONYMY.

*Hilaira balia* Crosby and Bishop, 1929, p. 103, pl. 2, figs. 7–11 (one male and one female syntype from Butalcura, Isla de Chiloé, Chile, April 5, 1920, in AMNH, examined). NEW SYNONYMY.

DIAGNOSIS: The female is diagnosed by its relatively large size and its characteristic epigynal scape (figs. 234, 235). The male is diagnosed by its relatively large size, and by the ED of the palpal organ, from which projects a long, distinctive apophysis (figs. 225, 228).



FIGS. 242–244. *Onychembolus subalpinus*. 242. Palp, ectal. 243. Tibia, dorsal. 244. Palp, mesal. Abbreviation: E, embolus. Scale lines 0.1 mm.

**FEMALE:** Total length 4.9–5.0. Carapace length 1.9–2.2. Carapace orange-brown to chestnut-brown. Abdomen grey to black, with paler blotches or chevrons dorsally. Sternum orange, suffused with black. Legs orange-brown to chestnut-brown, with patellae paler and tibiae yellow basally. Tibial spines 2222; TmI 0.46–0.50. Epigynum (figs. 234, 235).

**MALE:** Total length 4.5–5.0. Carapace length 1.8–2.1. Color and chaetotaxy as in female. Eyes in fairly narrow group, with ocular area projecting over clypeus; numerous long bristles in ocular area. Palp (figs. 225–229).

**MATERIAL EXAMINED: ARGENTINA:** **Chubut:** El Hoyo, Sept. 3, 1961 (A. Kovacs: AMNH), 1f. **Rio Negro:** El Bolson, Feb. 1, 1961, 2f, Aug. 13, 1961, 3f, 1m, May 20–27, 1962, 1f (all A. Kovacs: AMNH). **Tierra del Fuego:** Puerto Haberton, female syntypes; La Patiaia, Feb. 20–23, 1961 (B. Malkin: AMNH), 2f, 1m. **CHILE:** **Aisén:** Cisne Medio (Punte Travieso), Feb. 10, 1983 (T. Cekalovic: AMNH), 1f. **Chiloé:** 25 km S Castro, 24 m, Dec. 1, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 2f; Puntra, Dec. 21–23, 1981 (L. Peña: AMNH), 1f. **Llanquihue:** Parque Philippi, Puerto Varas, Mar. 2, 1962 (A. F. Archer, H. McMillin: AMNH), 2f; Isla Calbuco, Feb. 21–28, 1962 (H. McMillin, A. F. Archer: AMNH), 2f, 2m. **Magallanes:** male and female syntypes; Puerto Williams, Isla Navarino, Mar. 16–17, 1961 (B. Malkin: AMNH), 6f, 4m; same, July 27, 1963 (T. Cekalovic: AMNH), 1f; Bahía Orange Bay, Peninsula Hardy, Isla Hoste, Mar. 9, 1961

(B. Malkin: AMNH), 1f. **Malleco:** 6.5 km E Malalcahuello, baited pitfall trap, 1080 m, *Nothofagus dombeyi* with *Chusquea*, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 1m; same, window trap, 1m; 14 km E Malalcahuello, baited pitfall trap, 1570 m, *Nothofagus pumilio*–*Araucaria*, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 1m; same, window trap, 1m. **Osorno:** Osorno, Aug. 1977 (A. Tobar: AMNH), 1f, Oct. 1977 (A. Tobar: AMNH), 1m.

**DISTRIBUTION:** Southern Chile and Argentina.

#### *ONYCHEMBOLUS*, NEW GENUS

**TYPE SPECIES:** *Onychembolus subalpinus*, new species.

**ETYMOLOGY:** The generic name is derived from the Greek *onyx*, *onychos*, a claw, and “embolus,” referring to the form of the embolus. The gender is masculine.

**DIAGNOSIS:** The male of the single species is diagnosed by the form of the palpal organ (fig. 244). The chaetotaxy is a confirmatory character. The female is not known.

**DESCRIPTION:** This genus comprises a single species, a small, dull-colored spider of total length 1.65–1.9 mm; only the male is known. The chelicerae have weak lateral files. The legs have the tibial spines 2222, but fairly short and weak; the femora and metatarsi are spineless. Metatarsi I–III have a trichobothrium, with TmI *ca.* 0.35. The genus is haplotracheate. The palpal tibia has two apophyses (figs. 242, 243). The tegulum is somewhat



laminar anteriorly, and the suprategulum and the SA are well developed; the stalk arises from near the distal end of the SA. The ED comprises a plate with a long pointed extension ventrally; the embolus is a small pointed, clawlike sclerite which arises directly from the stalk, at the anterior end of the plate (fig. 244). A tiny embolic membrane also derives from the stalk.

**INCLUDED SPECIES:** Only the type species.

**DISTRIBUTION:** At present known only from Osorno, Chile.

**TAXONOMIC POSITION:** Despite its erigone appearance, *Onychembolus* is haplotracheate. As in several other South American haplotracheate genera, the ED is a relatively simple plate, from the inner (lateral) side of which arise the embolus and embolic membrane. The stalk arises from the SA, well to the anterior of the palp, as in *Neomaso*, and the embolus is a short stub as in that genus. It seems probable that *Onychembolus* is near *Neomaso*, but until the epigynal form is known this must remain uncertain.

***Onychembolus subalpinus*, new species**

Figures 242–244

**TYPE:** Male holotype, with one male paratype, from Volcán Casa Blanca, Parque Nacional Puyehue, Osorno, Chile, carrion trap, 1270 m, just above treeline (Dec. 22–25, 1982; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name relates to the habitat of the type.

**DIAGNOSIS:** The male is diagnosed by the tibial apophyses (figs. 242, 243), and by the form of the palpal organ (fig. 244). The female is not known.

**MALE:** Total length 1.65–1.9. Carapace length 0.80–0.90. Carapace yellow to orange, with faint dusky markings and margins. Abdomen black. Sternum yellow to orange, suffused with black. Legs orange, fairly short and stout, with tibia I l/d 6–6.5; chaetotaxy as given in generic description. Palp (figs. 242–244).

**OTHER MATERIAL EXAMINED:** CHILE: **Osorno:** type locality, pan trap, Dec. 20–25, 1982 (A. Newton, M. Thayer: AMNH), 1m.

**DISTRIBUTION:** Known only from Osorno, Chile.

***VALDIVIELLA*, NEW GENUS**

**TYPE SPECIES:** *Valdiviella trisetosa*, new species.

**ETYMOLOGY:** The generic name is a diminutive derived from the name of the Chilean province where the holotype of the type species was taken. The gender is feminine.

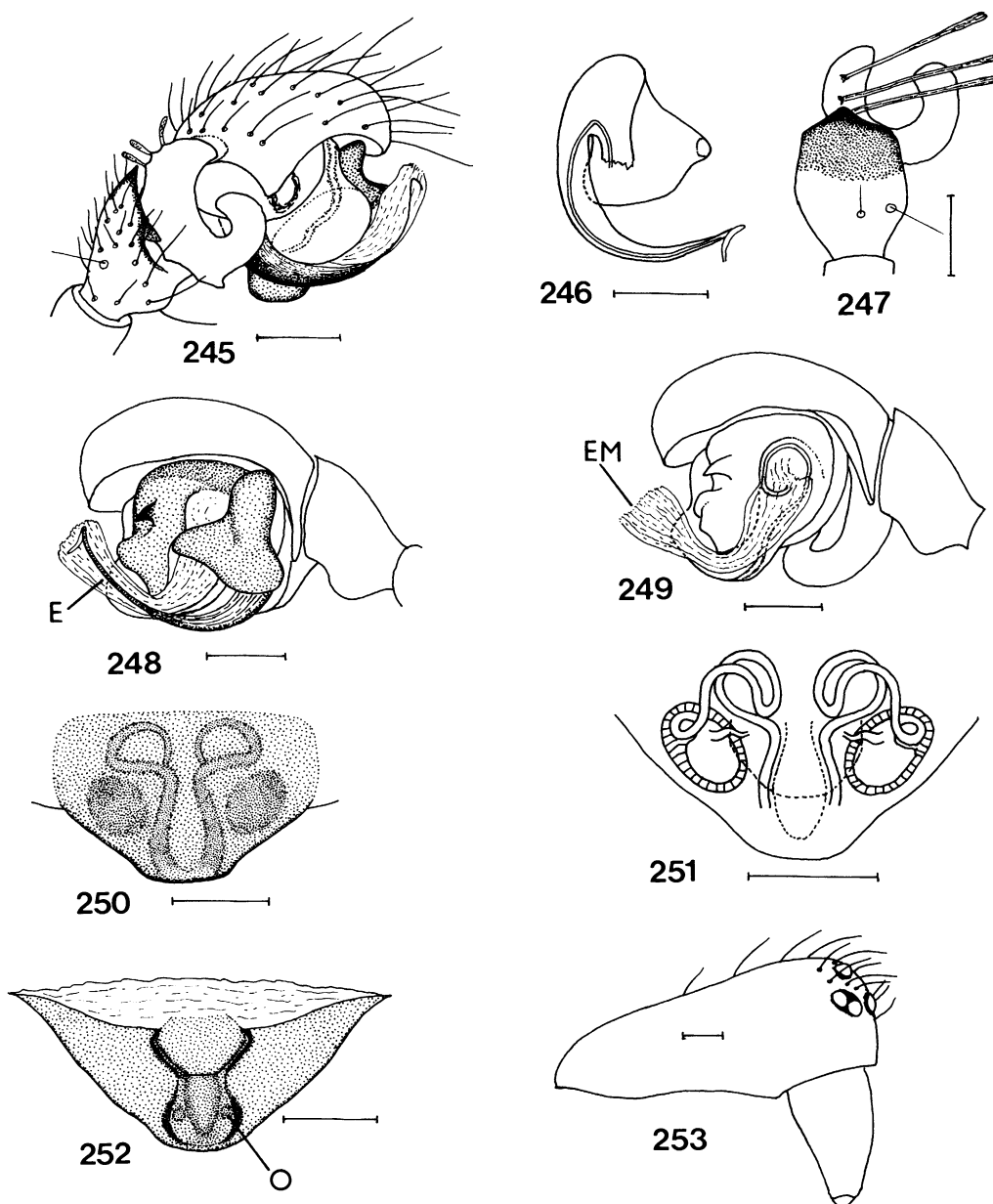
**DIAGNOSIS:** Only one species is known. The female is diagnosed by the epigynum, which has a short ventral scape and sinuous internal ducts (figs. 250, 251). The male is diagnosed by the paracymbium of the palp, which has three long spines on the basal arm (fig. 247), and by the form of the ED. The chaetotaxy is a confirmatory character.

**DESCRIPTION:** The single member of the genus has a total length of *ca.* 2 mm. The carapace is unmodified, but in the male there are numerous bristles in and around the ocular area (fig. 253). The legs are moderately short and stout, with tibia I l/d 5–6; the dorsal tibial spines are 2222, and the femora and metatarsi are spineless. Metatarsi I–III have a trichobothrium, with TmI *ca.* 0.35. The female palpal tarsus is clawless. The genus is haplotracheate. The epigynum (figs. 250, 252) has the ventral plate extended into a short scape; the genital openings lie on the dorsal side of the scape near the distal end. The internal ducts follow a looped pathway from the spermathecae to the openings (fig. 251). The male palpal tibia is produced dorsally into a short blunt apophysis (fig. 247). The paracymbium carries three long, somewhat spatulate spines on the basal arm. The suprategulum is well developed, and the SA is stout, with a strong tooth mesally (fig. 248). The stalk is located near the posterior of the palpal organ (fig. 249), and a broad embolic membrane arises from it. The ED comprises a plate which, viewed mesally, is almost triangular (fig. 248); the embolus arises on the inner (lateral) side of the plate, and forms a broad ribbon basally which narrows distally (figs. 246, 248).

**INCLUDED SPECIES:** Only the type species.

**DISTRIBUTION:** Central Chile.

**TAXONOMIC POSITION:** Despite its erigone appearance, *Valdiviella* is haplotracheate. As in several other South American haplotracheate genera, the ED of the palpal organ comprises a relatively simple plate, from the lateral side of which originate the embolus



FIGS. 245–253. *Valdiviella trisetosa*. 245. Palp, ectal. 246. ED, ectal. 247. Palpal tibia and paracymbium. 248. Palp, mesal. 249. Palp, mesal, ED removed. 250. Epigynum, ventral. 251. Epigynum, internal. 252. Epigynum, dorsal. 253. Male carapace, lateral.

Abbreviations: E, embolus; EM, embolic membrane; O, genital opening. Scale lines 0.1 mm.

and the embolic membrane. The external form of the epigynum (a scape derived from the dorsal plate, with the openings on the dorsal side near to the posterior end) places *Valdiviella* in the subfamily Drapetiscinae.

*Valdiviella trisetosa*, new species

Figures 245–253

TYPES: Male holotype, with 15 female and three male paratypes, from 4.1 km W Anticura, Valdivia, Chile, leaf litter of forest floor,

270 m, valdivian rainforest (Dec. 19–25, 1982; A. Newton and M. Thayer), deposited in AMNH.

**ETYMOLOGY:** The specific name refers to the three setae on the male paracymbium.

**DIAGNOSIS:** The female is diagnosed by the epigynum (figs. 250–252). The male is diagnosed by the form of the ED (fig. 248), and by the presence on the paracymbium of three long spines (fig. 247).

**FEMALE:** Total length 1.75–2.1. Carapace length 0.85–0.90. Carapace yellow to orange. Abdomen dorsally black with paler chevrons or bars, or grey with black chevrons or patches; sides with white stripe or patch, ventrally black or grey. Sternum yellow, with narrow orange margin, sometimes weakly mottled with grey. Legs orange to orange-brown, with tibiae, metatarsi, and tarsi sometimes weakly suffused with brown. Chaetotaxy typical of genus; TmI 0.33–0.35. Epigynum (figs. 250–252).

**MALE:** Total length 1.65–2.0. Carapace length 0.8–0.9. Color and chaetotaxy as in female. Carapace with numerous bristles in and around ocular area (fig. 253). Palp (figs. 245–249).

**MATERIAL EXAMINED:** CHILE: **Cautín:** Volcán Villarrica, window trap, 1120 m, *Nothofagus dombeyi*–*Saxegothea* forest with *Drimys*, Dec. 15–29, 1982 (A. Newton, M. Thayer: AMNH), 3m. **Chiloé:** vicinity of Chaiten, 0–100 m, berlese of wet forest floor litter, Dec. 5–7, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1f, 1m; same, berlese of forest moss, Dec. 12, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1m; Isla de Chiloé, Piruquina, Feb. 19, 1983 (T. Cekalovic: AMNH), 3f. **Concepción:** Estero Nonguen, Apr. 21, 1976 (T. Cekalovic: AMNH), 6f. **Llanquihue:** Lago Chapo, 13.5 km E Correntoso, berlese of forest leaf and log litter, 310 m, valdivian rainforest, Dec. 16–27, 1982 (A. Newton, M. Thayer: AMNH), 1f. **Malleco:** Parque Nacional Nahuelbuta, Nov. 19, 1981 (T. Cekalovic: AMNH), 2f; same, berlese of mossy forest floor litter, 1250 m, *Nothofagus-Araucaria* forest, Nov. 19, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 1m; 6.5 km E Malalcahuello, window trap, 1080 m, *Nothofagus dombeyi* forest with *Chusquea*, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 13 m; same, baited pitfall trap, 2m;

12 km E Malalcahuello, window trap, 1350 m, *Nothofagus dombeyi*–*Araucaria* forest, Dec. 13–31, 1982 (A. Newton, M. Thayer: AMNH), 2m. **Ñuble:** Las Trancas, 19.5 km ESE Recinto, berlese of forest leaf and log litter, 1250 m, *Nothofagus* forest, Dec. 10, 1982–Jan. 3, 1983 (A. Newton, M. Thayer: AMNH), 1f. **Osorno:** Parque Nacional Puyehue, 4.1 km E Anticura, berlese of forest leaf and log litter, 430 m, valdivian rainforest, Dec. 19–24, 1982 (A. Newton, M. Thayer: AMNH), 1f; Parque Nacional Puyehue, Antillanca road, berlese of forest leaf and log litter, 470 m, valdivian rainforest, Dec. 20–25, 1982 (A. Newton, M. Thayer: AMNH), 2f, 2m; same, 965 m, *Nothofagus pumilio* forest, Dec. 18–25, 1982 (A. Newton, M. Thayer: AMNH), 3f; same, 845 m, Dec. 18–24, 1982 (A. Newton, M. Thayer: AMNH), 1m; Termas de Puyehue, carrion trap, 200 m, valdivian rainforest, Dec. 19–25, 1982 (A. Newton, M. Thayer: AMNH), 2f; same, berlese of forest leaf and log litter, 1f; Termas de Puyehue, forest, 180 m, and in litter from moss on forest floor, 460 m, Nov. 24–25, 1981 (N. I. Platnick, R. T. Schuh: AMNH), 6f, 3m. **Valdivia:** the types.

**DISTRIBUTION:** Widely distributed throughout central Chile.

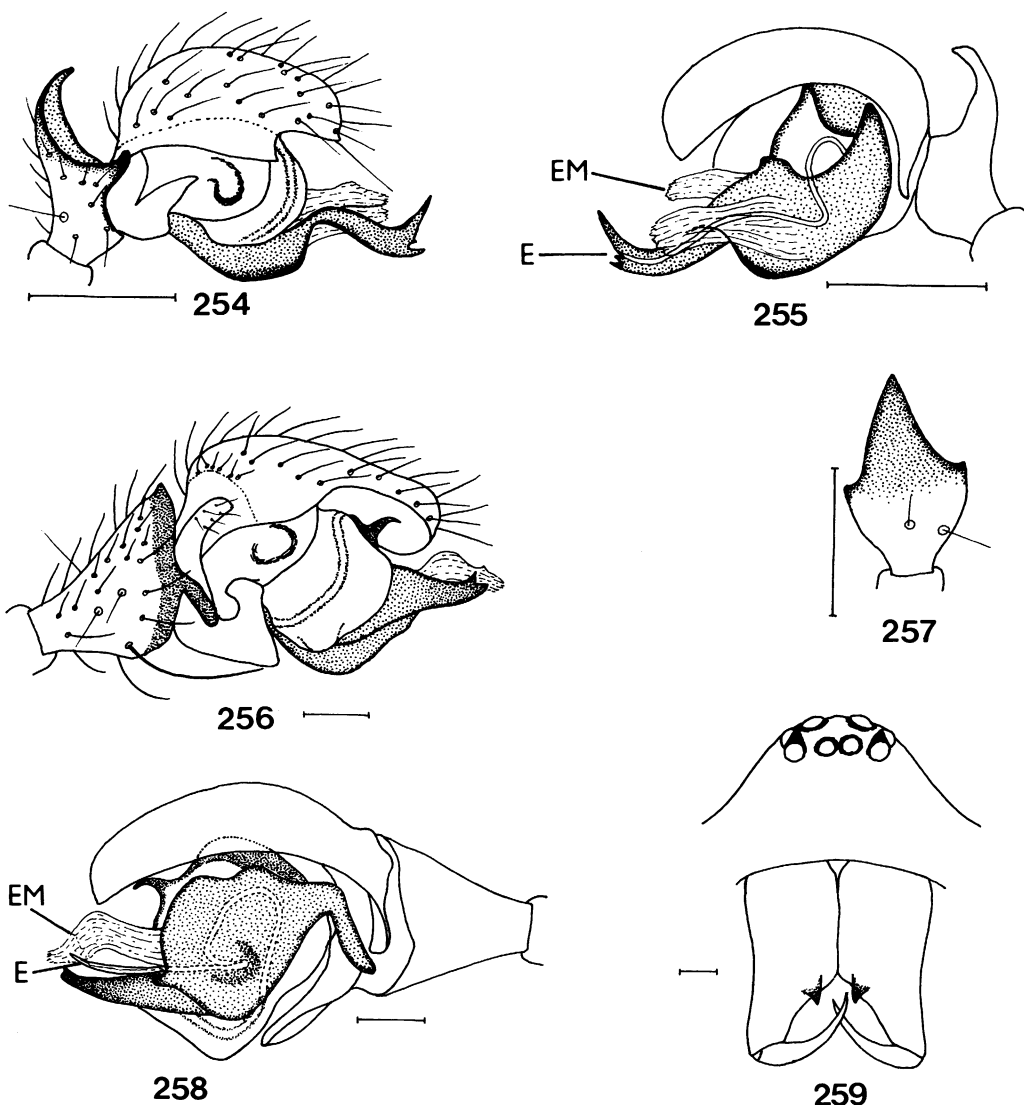
#### CAUTINELLA, NEW GENUS

**TYPE SPECIES:** *Cautinella minuta*, new species.

**ETYMOLOGY:** The generic name is a diminutive based on the locality of the type species; the gender is feminine.

**DIAGNOSIS:** The male of the only species is diagnosed by the form of the palpal organ (figs. 254, 255); the chaetotaxy is a confirmatory character. The female is unknown.

**DESCRIPTION:** The single species (of which the female is not known) is a tiny spider of total length 1.15 mm, and of sober coloration. The carapace is unmodified. The legs are short and stout; the tarsi are fusiform, and longer than the metatarsi. The dorsal tibial spines are 2211, but scarcely different from hairs; the femora and metatarsi are spineless. Metatarsi I–III have a trichobothrium, with TmI ca. 0.4. The palpal tibia has a fairly long apophysis dorsally (figs. 254, 257). There is a well-developed suprategulum, but no SA.



FIGS. 254–259. 254. *Cautinella minuta*, palp, ectal. 255. *C. minuta*, palp, mesal. 256. *Catacercus fuegianus*, palp, ectal. 257. *Cautinella minuta*, palpal tibia, dorsal. 258. *Catacercus fuegianus*, palp, mesal. 259. *C. fuegianus*, male chelicerae.

Abbreviations: E, embolus; EM, embolic membrane. Scale lines 0.1 mm.

The ED comprises a large plate, from which arises the stout embolus, which carries several small teeth distally (fig. 255); a broad membranous apophysis originates from the outer (mesal) side of the plate. An embolic membrane arises from the region of the stalk. The tracheal form was not determined.

INCLUDED SPECIES: Only the type species.

DISTRIBUTION: Known only from Cautín, Chile.

TAXONOMIC POSITION: Despite its small size and erigonine appearance, *Cautinella* is probably haplotracheate. As in several other South American haplotracheate genera, the ED comprises a relatively simple plate, from the inner (lateral) side of which the embolus arises.

es; an unusual feature is the additional membranous sclerite which originates from the mesal side of the plate. It is not possible to decide the taxonomic position of this genus until its epigynal form is known.

*Cautinella minuta*, new species

Figures 254, 255, 257

TYPE: Male holotype from Volcán Villarica, Cautín, Chile, window trap, 1120 m, *Nothofagus dombeyi*-*Saxegothea* forest with *Drimys* (Dec. 15-29, 1982; A. Newton and M. Thayer), deposited in AMNH.

ETYMOLOGY: The specific name refers to the small size of the spider.

DIAGNOSIS: The male is diagnosed by the characteristic form of the palpal organ (figs. 254, 255), coupled with its small size. The female is not known.

MALE: Total length 1.15. Carapace length 0.50. Carapace pale yellow-brown, with faint grey markings and black margins. Abdomen black, with faint traces of grey chevrons dorsally. Sternum yellow, with narrow grey margin. Legs pale orange-brown, short, stout, with tibia I l/d 4.5; tarsi fusiform, longer than metatarsi. TmI 0.4. Palp (figs. 254, 255, 257).

MATERIAL EXAMINED: Only the holotype.

DISTRIBUTION: Known only from Cautín, Chile.

*CATACERCUS*, NEW GENUS

TYPE SPECIES: *Gonatium fuegianum* Tullgren.

ETYMOLOGY: The generic name is derived from the Greek *kata*, down, and *kerkos*, a tail, referring to the posterior end of the ED of the male palp. The gender is masculine.

DIAGNOSIS: The single known species of this genus (male only) is diagnosed by the form of the male palpal organ (figs. 256, 258), the ED of which has a large plate with a narrow, down-turned tail.

DESCRIPTION: The single species (male only) has a total length of 2.9 mm. The carapace is unmodified, and, like the abdomen, has no distinct pattern. The chelicerae have a pointed boss anteriorly (fig. 259) and clear lateral files. Because of the loss of some legs and of most of the spines, the spinal armature of the legs is at present not known. Whether meta-

tarsus IV has a trichobothrium is not known; TmI is 0.5. The palpal tibia has a short rod-like apophysis laterally (fig. 256). The supra-tegular apophysis (SA) has a hooklike projection anteriorly (figs. 256, 258); the stalk appears to be located near to the end of the SA. The ED comprises a broad plate with a narrow, down-turned tail; the embolus, which is narrow and only slightly curved, arises from the inner (lateral) side of the plate. A broad "lamella" which is distally emarginate also originates on the lateral side of the plate. A wide embolic membrane arises from the region of the stalk. Since only one specimen is known, the tracheal form could not be determined.

INCLUDED SPECIES: Only the type species.

DISTRIBUTION: Known only from Magalanes, Chile.

TAXONOMIC POSITION: *Catacercus* has the ED of the same general form as in several other of the South American haplotracheate genera, and although no determination has been possible, it is probable that this genus is haplotracheate. It is not possible to form any opinion on the taxonomic position of the genus until its epigynal form is known.

*Catacercus fuegianus* (Tullgren),  
new combination

Figures 256, 258, 259

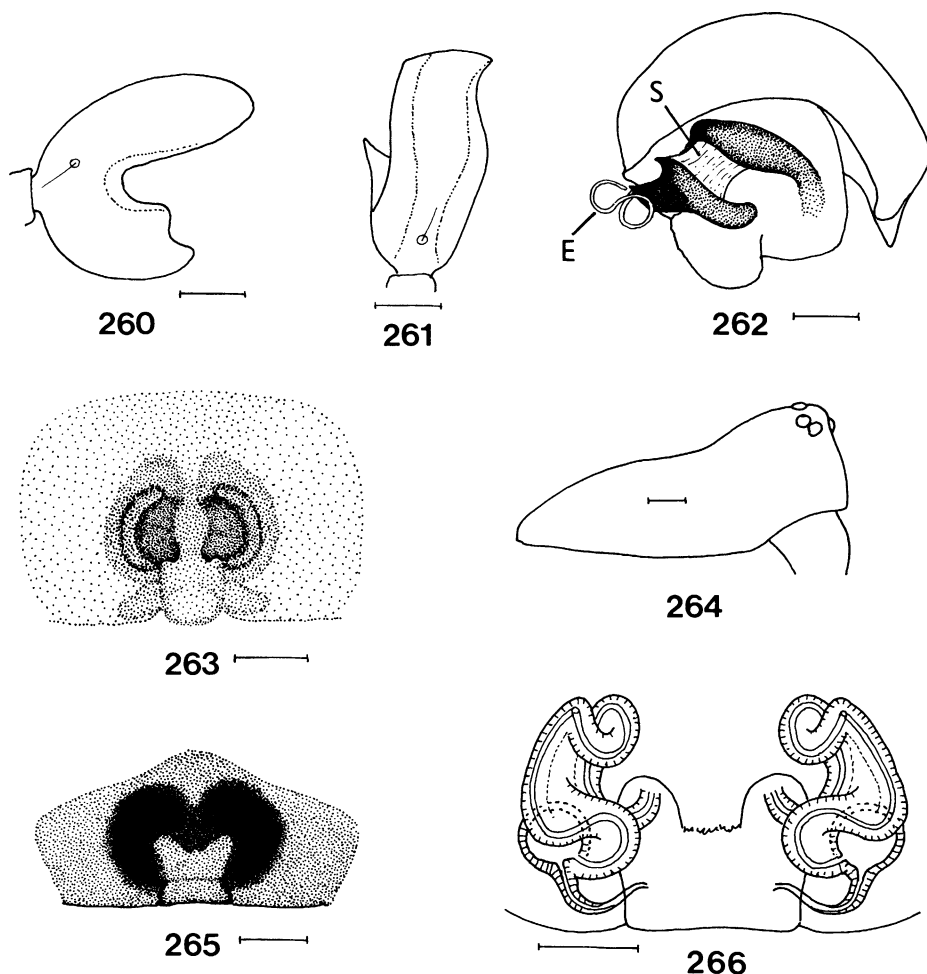
*Gonatium fuegianum* Tullgren, 1901, p. 198, pl. 15, fig. 7 (male holotype from Río Tres Pasos, Patagonia, 1899, E. Nordenskiöld, in NHRM, examined). Roewer, 1942, p. 630. Bonnet, 1957, p. 2033.

DIAGNOSIS: The male is diagnosed by the form of the palp (figs. 256, 258), coupled with the pointed boss of the chelicerae (fig. 259).

MALE: Total length 2.9. Carapace length 1.35. Carapace yellow-brown (Tullgren says "light brown with black margins"), with eyes in fairly narrow group. Chelicerae with pointed boss anteriorly (fig. 259). Abdomen brown, suffused with black (Tullgren says "black"). Sternum yellow, reticulated with black. Legs yellow; some segments, most spines missing. TmI 0.5. Palp (figs. 256, 258).

MATERIAL EXAMINED: Only the holotype.

DISTRIBUTION: Known only from Magalanes, Chile.



FIGS. 260–266. 260. *Sphecozone rubescens*, palpal tibia, ectal. 261. *S. rubescens*, palpal tibia, dorsal. 262. *S. rubescens*, palp, mesal (embolus slightly expanded). 263. *S. rubescens*, epigynum. 264. *S. rubescens*, male carapace, lateral. 265. *S. affinis*, epigynum. 266. *S. affinis*, epigynum, internal. Abbreviations: E, embolus; S, stalk. Scale lines 0.1 mm.

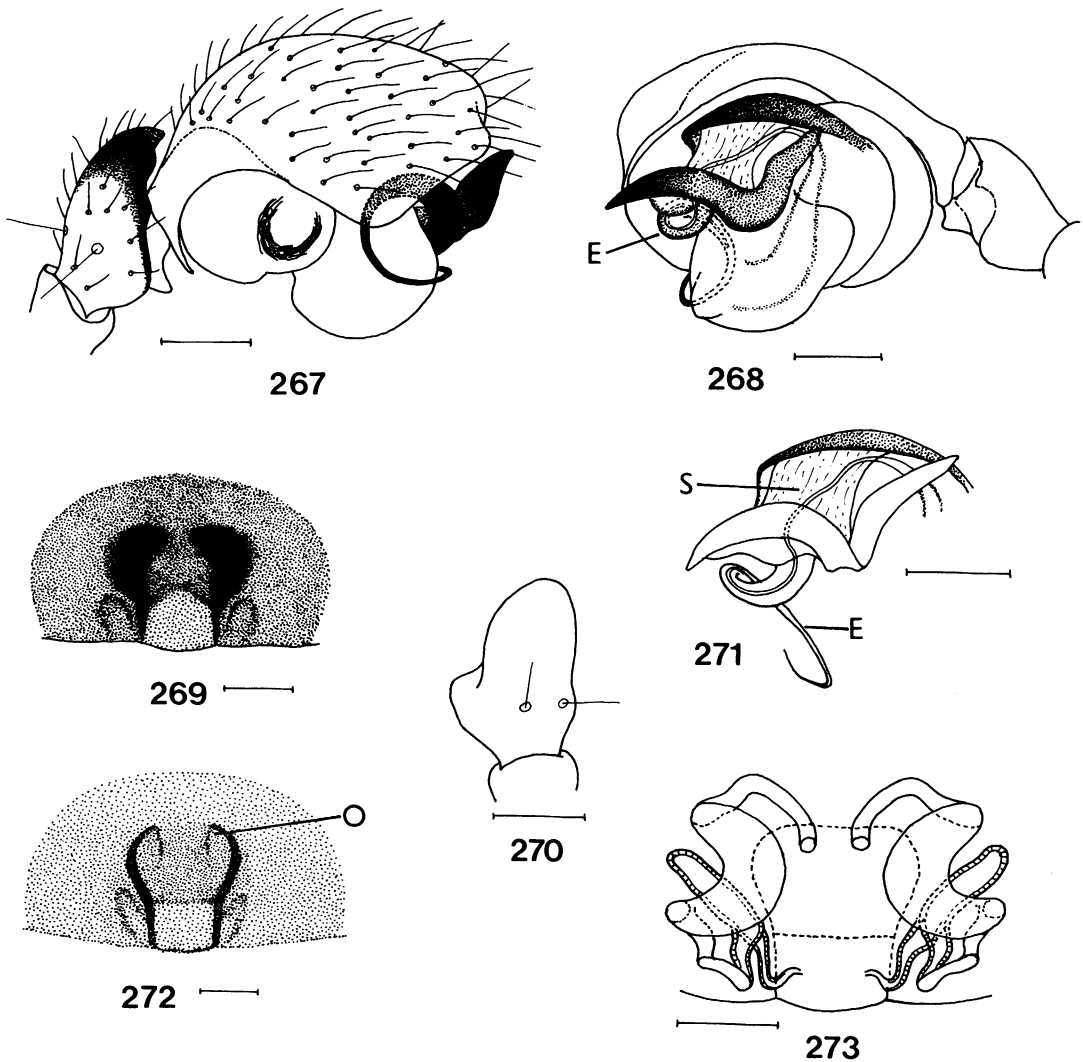
#### SPHECOZONE O. P.-CAMBRIDGE

*Sphecozone* O. P.-Cambridge, 1870, p. 733 (type species *Sphecozone rubescens* O. P.-Cambridge, by monotypy). Roewer, 1942, p. 710. Bonnet, 1958, p. 4118. Van Helsdingen, 1979, p. 410. *Hypselistoides* Tullgren, 1901, p. 202 (type species *Hypselistoides affinis* Tullgren, by monotypy).  
NEW SYNONYMY.

**DIAGNOSIS:** Males are diagnosed by the presence of most of the family characters of the Linyphiidae, but by the absence of a paracymbium on the palp. Females are diagnosed by a combination of the chaetotaxy, the epig-

ynal form (both external and internal), and the color.

**DESCRIPTION:** This genus comprises small, fairly brightly colored spiders (total length 2.4–3.5 mm). The carapace is unmodified in both sexes, but may be raised anteriorly in the male (fig. 264). The eyes are rather small, with the posteriors all 1.5 diameters or more apart. The chelicerae have weak lateral files. The petiole is strongly sclerotized, but is not usually very prominent; the abdomen is usually somewhat coriaceous. The legs vary from moderately long and slender to relatively short and stout. The femora and metatarsi are



FIGS. 267–273. *Sphecozone modesta*. 267. Palp, ectal. 268. Palp, mesal. 269. Epigynum. 270. Palpal tibia, dorsal. 271. ED and stalk. 272. Epigynum, pale specimen. 273. Epigynum, internal. Abbreviations: E, embolus; S, stalk; O, genital opening. Scale lines 0.1 mm.

spineless; the tibial spines are 1111 in the female, but the male tibiae are spineless. Metatarsi I–IV have a trichobothrium, with TmI 0.3–0.5. The members of the genus are desmitracheate. The epigynum is quite typical of an erigonine species, being somewhat similar in form, at least externally, to the epigynum of some species of such genera as *Ceratinopsis* and *Grammonota*. The genital openings are in a shallow atrium on the ventral surface, near the anterior ends of the two

grooves which mark the junctions of the dorsal and ventral plates (fig. 272). Internally, the spermathecae are round or elongated, and the ducts follow a convoluted course to the openings. The tibia of the male palp is extended into an apophysis anteriorly. No trace of a paracymbium appears to be present. The palpal organs have a suprategulum, but there is no definite suprategular apophysis. The stalk which carries the duct to the ED is very stout and located well to the anterior of the

palpal organ (fig. 271). The ED is small and simple, with a short slender curled embolus; distally the embolus appears to lie in a groove on the ectal side of the tegulum.

INCLUDED SPECIES: *S. rubescens* O. P.-Cambridge; *S. modesta* (Nicolet), new combination; *S. affinis* (Tullgren), new combination; and *S. ardens*, new species.

EXCLUDED SPECIES: *Sphecozone nigra* O. P.-Cambridge (male holotype in HDO, examined) belongs in *Ceratinopsis* Emerton or possibly in *Tutaibo* Chamberlin. Simon's transfer of *Nematogmus dentimana* Simon to *Sphecozone* was an error (van Helsdingen, 1979, p. 407).

DISTRIBUTION: Known from Brazil, Paraguay, and Chile; probably endemic to South America.

TAXONOMIC POSITION: Apart from the absence of the paracymbium, the male palp of *Sphecozone* has typical linyphiid characters: there is a distinct suprategulum, the ED is a separate sclerite connected to the suprategulum by a stalk, and the sperm reservoir is in the form of an inverted U (Millidge, 1980). It is postulated that the presence of the "hinged" paracymbium is plesiomorphic for the Linyphiidae, and that *Sphecozone* is a true erigonine in which the paracymbium has been lost secondarily. In some species of the erigonine genera *Ceratinopsis* and *Ceraticelus* Simon, the paracymbium has moved part-way toward disappearance, by a process involving reduction or loss of the "hinge" and partial fusion of the arms of the paracymbium with the cymbium; this process of incorporation of the paracymbium into the cymbium would appear to have reached completion in *Sphecozone*. It is probable that *Sphecozone* is related to *Ceratinopsis* and *Ceraticelus*; the suprategulum in *Sphecozone* is similar to those of these two genera, and the ED of *Sphecozone* may be a degenerate form of the ED characteristic of these genera, reduced in tail length and in embolus length. The epigyna of the *Sphecozone* species are also quite similar to those of some members of *Ceratinopsis* and *Ceraticelus*.

Heimer (1982) has suggested that the function of the paracymbium, in those families which have this sclerite, is to halt the rotation of the expanding palpal organ; clearly, in *Sphecozone*, the palpal organ functions per-

fectly well in the absence of the paracymbium.

## KEY TO SPECIES

### FEMALES

1. Carapace deep brown to black, abdomen creamy white dorsally, with black markings; tibia I l/d ca. 7, epigynum (figs. 269, 272) ..... *modesta*  
Carapace orange, abdomen black or reddish ..... 2
2. Tibia I l/d ca. 8; epigynum (fig. 265) .. *affinis*  
Tibia I l/d ca. 12-14 ..... 3
3. Abdomen pink or cinnamon-red, black around spinnerets; epigynum (fig. 263) .. *rubescens*  
Abdomen shiny black; epigynum (fig. 278) ..  
..... *ardens*

### MALES (male of *affinis* not known)

1. Carapace deep brown to black, abdomen creamy white dorsally, with black markings; tibial apophysis (figs. 267, 270); ED (fig. 268) ..... *modesta*  
Carapace orange, abdomen black or reddish ..... 2
2. Tibial apophysis (figs. 260, 261); ED (fig. 262) ..... *rubescens*  
Tibial apophysis (figs. 274, 275); ED (fig. 277) ..... *ardens*

### *Sphecozone rubescens* O. P.-Cambridge Figures 260-264

*Sphecozone rubescens* O. P.-Cambridge, 1870, p. 733, pl. 44, fig. 2 (two female and one male syntypes from near Santa Fe, Minas Gerais, Brazil; in HDO, examined; these specimens are labeled "Ceylon," presumably as a result of some earlier confusion of labels). Roewer, 1942, p. 710. Bonnet, 1958, p. 4118. Van Helsdingen, 1979, p. 410.

DIAGNOSIS: The female can probably be diagnosed by a combination of the epigynal form and the color, but this needs to be checked with fresh specimens. The male is diagnosed by the palpal tibia (figs. 260, 261) and by the form of the ED (fig. 262).

FEMALE: Total length 3.1. Carapace length 1.2-1.25. The types are greatly faded, and the following colors are taken from original description. Carapace, chelicerae, sternum, and basal parts of the femora bright red-brown, tinged with orange. Remainder of legs, palpi, and anterior of carapace strongly suffused with



black. Abdomen glossy, bright pinkish or cinnamon red, with 4–5 slender pale angular lines or chevrons dorsally; posterior end of abdomen black. Epigynum deep reddish brown, almost black. Petiole was said to be very distinct, suggesting species may be antlike when alive. Legs long, slender, with tibia I l/d 12–14; spines typical of genus. TmI *ca.* 0.4. Epigynum (fig. 263); fresh specimens will be much more heavily pigmented.

**MALE:** Total length 2.45. Carapace length 1.0. Color and TmI as in female. Carapace is somewhat raised anteriorly (fig. 264). Palp (figs. 260–262).

**MATERIAL EXAMINED:** Only the types.

**DISTRIBUTION:** Brazil and Paraguay.

*Sphecozone modesta* (Nicolet),  
new combination  
Figures 267–273

*Theridion modestum* Nicolet, 1849, p. 526 (Chile; location of types not known).

*Erigone modesta*: Keyserling, 1886, p. 229, pl. 19, fig. 284.

*Ceratinopsis modesta*: Roewer, 1942, p. 706. Bonnet, 1956, p. 1020.

*Note:* I have not seen specimens of *Theridion modestum* Nicolet; Keyserling (1886) indicates that the species he treats as *Erigone modesta* is *Theridion modestum* Nicolet, and the species described below seems to be that figured by Keyserling.

**DIAGNOSIS:** The female is diagnosed by the color, the epigynum (figs. 269, 272), and the relatively stout legs. The male is diagnosed by the color, the palpal tibia (fig. 270), and the form of the ED (figs. 268, 271).

**FEMALE:** Total length 3.1–3.55. Carapace length 1.25–1.45. Carapace brown to almost black. Abdomen creamy white, dorsally with median black serrated stripe of variable length; sides and area around spinnerets black. Sternum deep brown to black. Legs brown to deep brown, suffused or annulated with black, relatively stout, with tibia I l/d 6–7.5. Spines typical of genus; TmI 0.45–0.50. Epigynum (figs. 269, 272) varies in depth of pigmentation, hence in appearance. Spermathecae (fig. 273) long, cylindrical.

**MALE:** Total length 2.45–2.60. Carapace length 1.1. Color and TmI as in female, except that median dorsal stripe of abdomen often reduced to black spot. Palp (figs. 267, 268, 270, 271).

**MATERIAL EXAMINED:** CHILE: **Santiago:** Santiago, in alfalfa, May 7, 1979 (R. H. Gonzalez: AMNH), numerous f, m, and juveniles; 1979 (L. Peña: AMNH), 2f, 1m; Quilicura, May 1979 (L. Peña: AMNH), 2f; Pirque, Oct. 5, 1982, Nov. 20, 1982, Nov. 30, 1982 (L. Peña: AMNH), 3f, juveniles. **Valdivia:** Lago Calafquen, Feb. 13–17, 1977 (T. Cekalovic: AMNH), numerous f, m.

**DISTRIBUTION:** Chile (“throughout Chile,” according to Nicolet) and Argentina (Keyserling, 1886). Keyserling’s record for Brazil appears somewhat doubtful.

*Sphecozone ardens*, new species  
Figures 274–279

**TYPES:** Male holotype, with 13 female and two male paratypes, from Chacamo, NW Nueva Imperial and W Temuco, Cautín, Chile (Feb. 16–24, 1981; L. Peña), deposited in AMNH.

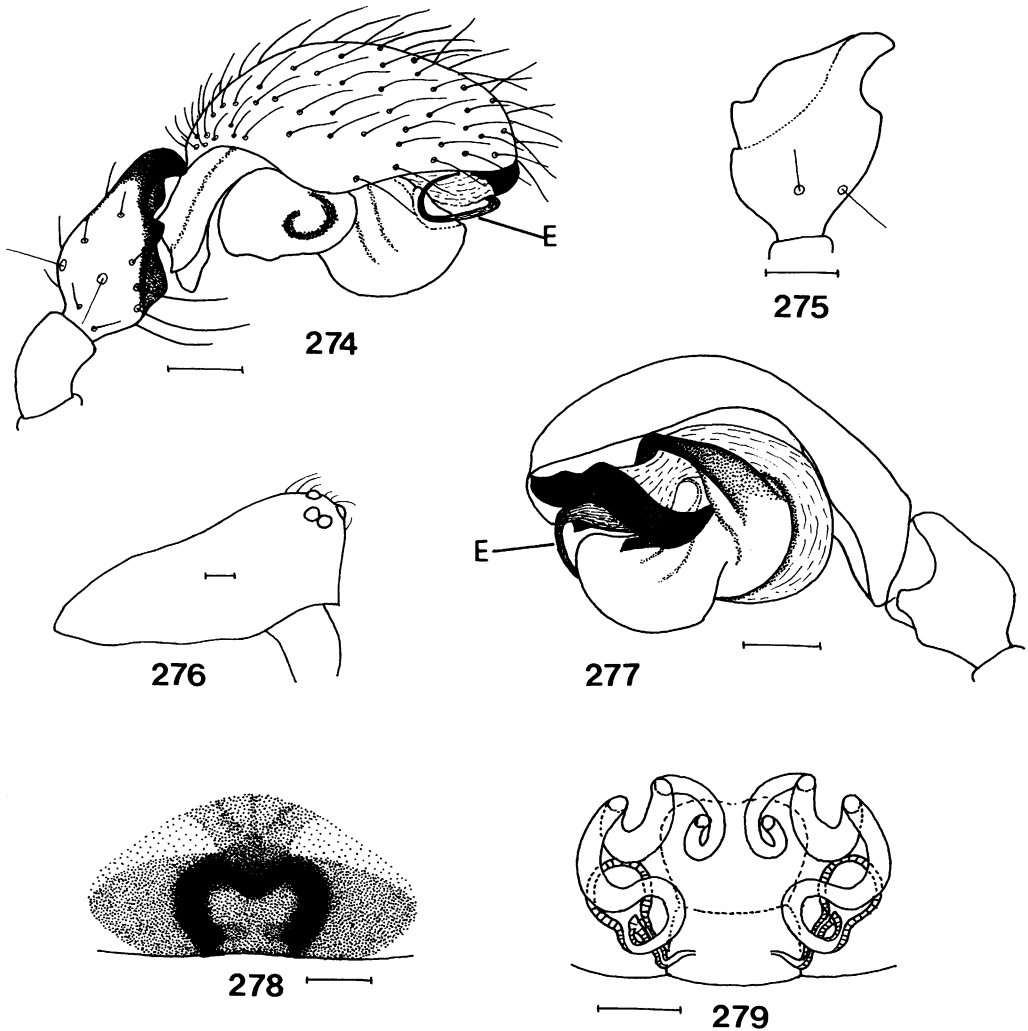
**ETYMOLOGY:** The specific name is a Latin adjective meaning “glowing, gleaming,” referring to the striking color of the species.

**DIAGNOSIS:** The female is diagnosed by the color, by the epigynum (fig. 278), and by the relatively slender legs. The male is diagnosed by the color, by the palpal tibia (fig. 275), and by the form of the ED (fig. 277).

**FEMALE:** Total length 2.4–3.0. Carapace length 1.1–1.2. Carapace and sternum bright orange. Abdomen shiny black. Legs relatively long, slender, with tibia I l/d 13–14. Femora orange, suffused with black distally; remaining leg segments brown to deep brown. Spines typical of genus; TmI 0.45–0.50. Epigynum (figs. 278, 279); spermathecae more or less globular.

**MALE:** Total length 2.45–2.55. Carapace length 1.1–1.2. Color and TmI as in female. Carapace somewhat raised anteriorly (fig. 276). Palp (figs. 274, 275, 277); cymbium black.

**MATERIAL EXAMINED:** CHILE: **Bío-Bío:** Caledonia, E Mulchen, 700 m, Feb. 10–15, 1981 (L. Peña: AMNH), 1f. **Cautín:** Villarica, Feb. 27–28, 1979 (L. Peña: AMNH), 1f; Toltén (coastal town), Feb. 27, 1979 (L. Peña: AMNH), 1f; Chacamo, NW Nueva Imperial, W Temuco, 600–700 m, Feb. 17–23, 1981 (L. Peña: AMNH), 7f, 3m. **Concepción:** Tomé, Dec. 12, 1982 (T. Cekalovic: AMNH), 1f,



FIGS. 274–279. *Sphecozone ardens*. 274. Palp, ectal. 275. Palpal tibia, dorsal. 276. Male carapace, lateral. 277. Palp, mesal. 278. Epigynum. 279. Epigynum, internal.

Abbreviation: E, embolus. Scale lines 0.1 mm.

1m, juvs. **Osorno:** Parque Nacional Puyehue, Volcán Casa Blanca, pan trap, 1270 m, tree-line in *Nothofagus* forest, Dec. 20–25, 1982 (A. Newton, M. Thayer: AMNH), 1f, 4m.

DISTRIBUTION: Central Chile.

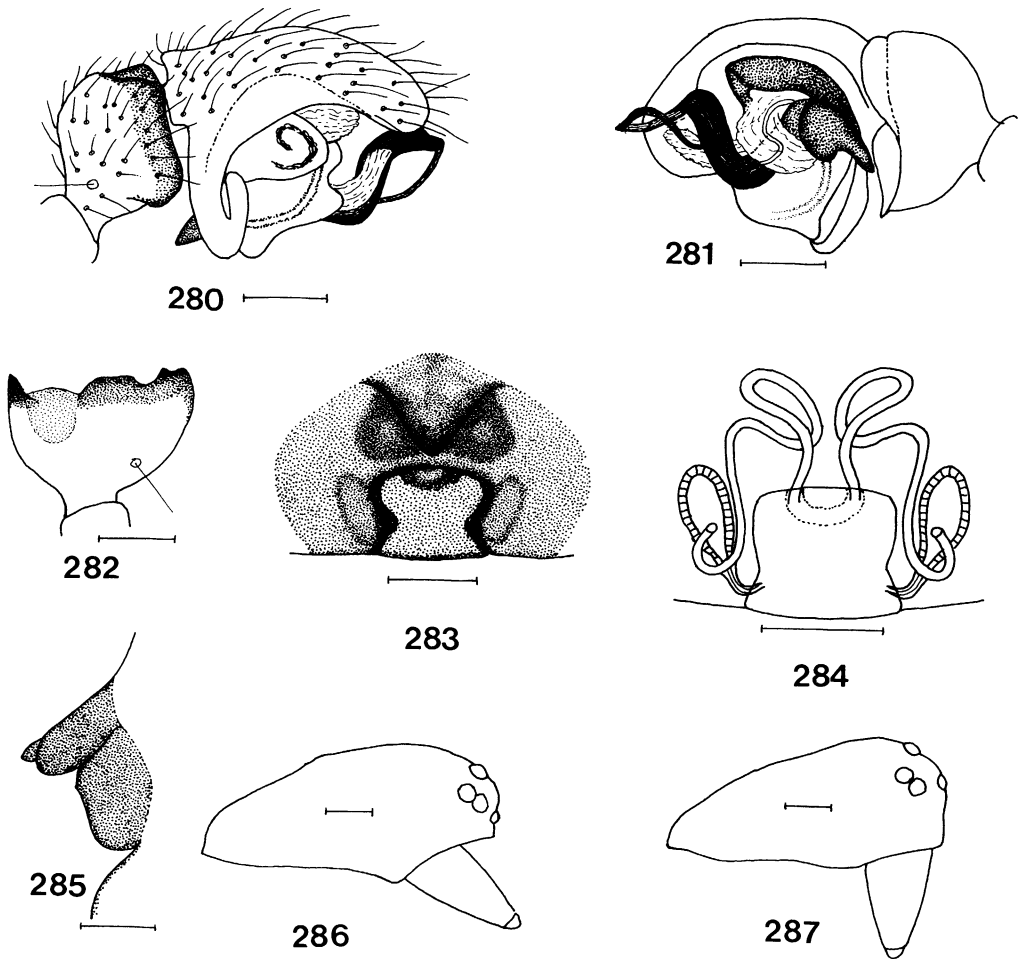
*Sphecozone affinis* (Tullgren),  
new combination  
Figures 265, 266

*Hypselistoides affinis* Tullgren, 1901, p. 202, pl. 15, fig. 9 (one female syntype from Lennox Cove, Tierra del Fuego, Feb. 5, 1896, O. Norden-skiöld, and one female syntype from Lagatovia,

Tierra del Fuego, Feb. 10, 1896, O. Norden-skiöld, in NHRM, examined). Roewer, 1942, p. 709. Bonnet, 1957, p. 2267.

DIAGNOSIS: The female is diagnosed by the color, the epigynum (fig. 265), and the relatively stout legs. The value of TmI (ca. 0.3) should also distinguish this species from the somewhat similarly colored *S. ardens*. The male is unknown.

FEMALE: Total length 2.45–2.65. Carapace length 1.1–1.2. Judging from Tullgren's description, specimens not greatly faded. Carapace and sternum orange; abdomen black.



FIGS. 280–287. *Ceratinopsis antarctica*. 280. Palp, ectal. 281. Palp, mesal. 282. Palpal tibia, dorsal. 283. Epigynum. 284. Epigynum, internal. 285. Epigynum, lateral. 286. Male carapace, lateral (Osorno specimen). 287. Male carapace, lateral (holotype). Scale lines 0.1 mm.

Legs relatively short, stout, with tibia I 1/d 8. Femora orange basally, suffused with brown distally; remaining segments orange suffused with brown. Spines typical of genus; TmI *ca.* 0.30. Epigynum (figs. 265, 266) may appear somewhat different in fresh specimens, depending on degree of pigmentation.

**MATERIAL EXAMINED:** Only the types.

**DISTRIBUTION:** Known only from Magallanes, Chile.

#### CERATINOPSIS EMERTON

*Ceratinopsis* Emerton, 1882, p. 36 (type species *Erigone interpres* O. P.-Cambridge, designated by Simon, 1894, p. 673). Roewer, 1942, p. 705. Bonnet, 1956, p. 1017.

**DISCUSSION:** This genus is well known in North and Central America, where there are numerous species. Several species have also been recorded from South America, Africa, Australia, and Japan; the European species recorded under *Ceratinopsis* in recent years, following Wunderlich (1970), may not in fact belong in this genus.

The following species have been recorded from the more southern parts of South America (Roewer, 1942; Bonnet, 1956): *C. antarctica* Simon, *C. araeonciformis* Simon, *C. distincta* (Nicolet), *C. lineata* (Tullgren), *C. michaelseni* Simon, *C. modesta* (Nicolet), *C. nigriana* (Keyserling), *C. rubicunda* (Keyserling), and *C. tumidosa* (Keyserling).

*Ceratinopsis michaelsoni* was based on an immature specimen, and must be regarded as a *nomen dubium*; *C. distincta* is not identifiable from Nicolet's description, and this too must rank as a *nomen dubium*. Keyserling's figures for *C. rubicunda* and *C. tumidosa* are scarcely adequate to identify his species. *Ceratinopsis nigriana* is a synonym of *Ostearius melanopygius* (see Ivie, 1967). *C. modesta* is described above under *Sphecozone*. *Ceratinopsis antarctica* and *C. araeonciiformis* were described without figures, but fortunately specimens are available from MNHN. I have seen only the male of *C. araeonciiformis*, which is not a *Ceratinopsis*; the palp lacks a paracymbium, and although the ED is relatively complex, the species may belong in *Sphecozone* (possibly the male of *S. affinis*?). *Ceratinopsis lineata* is said to be probably a synonym of *C. araeonciiformis* (see Simon, 1902). *Ceratinopsis antarctica*, which is the only species among those named above which can definitely be identified as a *Ceratinopsis*, was present in the material examined, and is redescribed below.

It is hoped to publish a revision of the American species of *Ceratinopsis* at a later date, and the characters of the genus will therefore not be dealt with here.

#### *Ceratinopsis antarctica* Simon

Figures 280–287

*Ceratinopsis antarctica* Simon, 1895, p. 169 (male and female types from Patagonia, C. Backhausen; one male, four female, presumably syntypes, in MNHN, examined). Roewer, 1942, p. 705. Bonnet, 1956, p. 1018.

**DIAGNOSIS:** The female is diagnosed by the epigynum (figs. 283, 284), coupled with the chaetotaxy. The male is diagnosed by the palp (figs. 280–282), coupled with the chaetotaxy.

**FEMALE:** Total length 1.5–1.9. Carapace length 0.70–0.75. Carapace brown, with dark patch on fovea, ocular area and clypeus suffused with black. Eyes rather small, widely spaced, with posteriors all *ca.* two diameters apart. Abdomen globular, dorsally white with median black line and black chevrons posteriorly; sides and ventral surface black, with few white markings. Sternum practically black. Legs yellow to orange-brown, fairly long, slender; long tibial spines 1111, TmI 0.30–0.35. Epigynum (figs. 283–285).

**MALE:** Total length 1.5–1.7. Carapace length 0.65–0.70. Carapace brown, suffused with black anteriorly, with dusky markings. Eyes as in female. Abdomen black, with weak, irregular white markings. Sternum and legs as in female, but tibial spines shorter. Palp (figs. 280–282); paracymbium partly fused to cymbium.

**VARIATION:** There appear to be two forms of the male; in the Llanquihue specimen (similar to the type male) the clypeus is high, with the chelicerae placed normally (fig. 287), while in the Osorno specimen the clypeus is low, and the chelicerae are set well back (fig. 286). Both forms have palps of similar form, and whether they represent two species is not clear at present; none of the three females taken shows any such dichotomy.

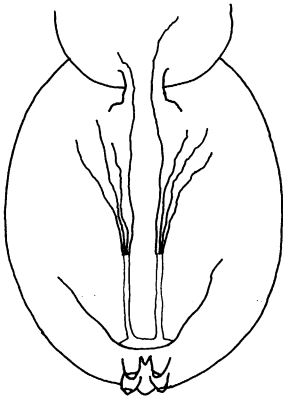
**MATERIAL EXAMINED:** CHILE: **Chiloé:** Vilupulli, Isla de Chiloé, Jan. 29, 1983 (T. Cekalovic: AMNH), 1f. **Llanquihue:** Lago Chapo, berlese of forest leaf and log litter, 310 m, valdivian rainforest, Dec. 16–27, 1982 (A. Newton, M. Thayer: AMNH), 1f; same, 320 m, 1m; same, window trap, 1f. **Magallanes:** the types. **Osorno:** Parque Nacional Puyehue, 4.1 km E Anticura, window trap, 430 m, valdivian rainforest, Dec. 19–26, 1982 (A. Newton, M. Thayer: AMNH), 1m.

**DISTRIBUTION:** Central and southern Chile.

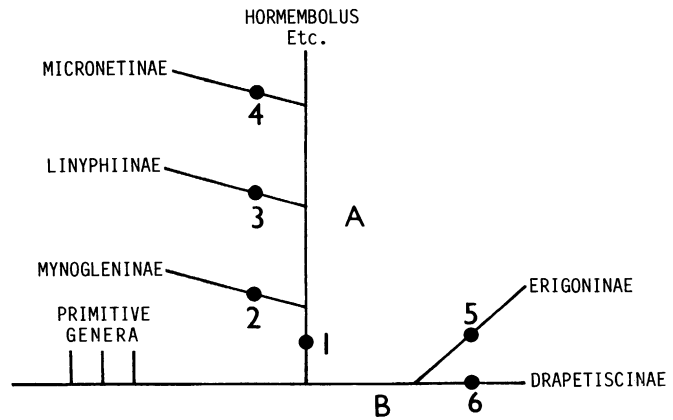
#### DISCUSSION: TAXONOMY AND BIOGEOGRAPHY

Of the 15 genera dealt with in this paper, 12 are definitely haplotracheate (Millidge, 1984); these latter include several genera of small spiders which, from the male palpal structure, would normally be considered to be erigonine. There is one genus, *Lamina-cauda*, in which the tracheal system is more or less intermediate between the typically haplotracheate and the typically desmitracheate forms (fig. 288).

With the exception of *Neomaso*, *Rhabdogyna*, and *Valdiviella*, which fall in the Drapetiscinae, none of the haplotracheate genera fits into any of the defined subfamilies; on the basis of their epigynal form, such genera are placed, as an interim measure, in the *Stemonyphantes* group. The absence of members of the Linyphiinae (s. str.) and the Micronetinae (apart from the ubiquitous, introduced, *Lepthyphantes tenuis*), both of



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FIGS. 288–289. 288. *Laminacauda*, tracheae. 289. Cladogram for Linyphiidae: for numbered characters, see text.

which subfamilies are represented in New Zealand and Australia, is surprising.

The only true erigonine genera so far encountered are *Ceratinopsis* and *Sphecozone*. The former is likely to have arrived from North and Central America, where the genus is common and widespread, and the latter may well be related to (and perhaps derived from) *Ceratinopsis*. This paucity of native erigonines in southern South America, and their virtual absence in New Zealand and probably Australia, suggests that the branching to the subfamily Erigoninae may have taken place outside the boundaries of Gondwanaland, presumably in Laurasia, and that, even now, so long after the fragments of these two landmasses came together, the erigonines have barely spread into the more southerly parts of erstwhile Gondwanaland. Certainly there appear to be no climatic conditions in southern South America or in New Zealand to inhibit the erigonines, and indeed a number of introduced erigonines are now flourishing in New Zealand. A necessary corollary to this hypothesis, however, would be that the numerous erigonine species of central Africa are mainly of Eurasian, and possibly North American, origin.

Most of the haplotracheate genera dealt with in this paper have external epigynal forms which are postulated (Millidge, 1984) to be among the more primitive of the family,

and consequently these genera fall (as mentioned above) in the *Stemonyphantes* group. One in particular of these forms, namely that with a scape/socket derived from the dorsal plate but attached by a ridge to the ventral plate, is that present in the genera *Hormembolus*, *Notiohyphantes*, *Notholephyphantes*, and *Patagoneta*; the same external epigynal form is present in the genus *Falklandoglenes* from the Falkland Islands, and in the Mynogleninae of New Zealand and Central Africa. Some of the epigynal forms present in the *Stemonyphantes* group are, of course, less primitive than others, and it seems probable that the particular form present in the taxa listed above is not the most primitive; that is, this form is apomorphic within the family. Consequently, this external epigynal form is considered to be a valid character on which to base hypotheses of relationships. This being so, the synapomorphy of this epigynal form indicates that the taxa listed above are related. The major grouping thus postulated, with a relatively primitive epigynal form, must be an ancient one, and although the basic external epigynal form has remained constant over what must be a very long period of time, considerable changes have taken place within the group with regard to the internal epigynal structure and the palpal structure. This external epigynal form is currently associated with a number of different internal epigynal

configurations and with a number of different palpal structures, indicating that within the group there have been a number of separate lines of development.

In the genus *Hormembolus* the configuration of the internal duct system of the epigynum appears to be basically similar to that of members of the Mynogleninae (particularly the genus *Haplinis* Simon), with the duct from the spermatheca to the genital opening in the form of a double spiral lying mesal to the spermatheca (fig. 43). The forms of the palpal organ, and particularly of the ED, in *Hormembolus* and in the Mynogleninae are, however, very different, with the ED of *Hormembolus* having a large plate whereas in the Mynogleninae the embolus is more or less naked, apart from a small radix. The widely differing character states of the male palpal organ indicate that *Hormembolus* and the Mynogleninae cannot be closely related. A similar comparison between the genus *Falklandoglenes* and the Mynogleninae shows that the two states of the character "form of ED" are more congruent, since the ED of *Falklandoglenes* lacks a plate; the small radix in this genus, however, is different in form from that of the Mynogleninae. A full examination of the internal genitalia of the female of *Falklandoglenes* has not been possible, but the configuration appears to be different from that in the Mynogleninae. As with *Hormembolus*, therefore, it must be inferred that *Falklandoglenes* and the Mynogleninae cannot be closely related. At the present time there is no known South American genus which has the required external epigynal form coupled with an internal duct configuration and a palpal structure which are both sufficiently close to those of the Mynogleninae to justify regarding the genus as a *close* relative of the Mynogleninae. In addition, no South American genus so far discovered has the clypeal pits/glands characteristic of the Mynogleninae. Thus, although the synapomorphy of the external epigynal form indicates that the Mynogleninae and these South American genera are descended from a common parent, the relationships do not appear to be close enough to warrant the allocation of any of these genera to the Mynogleninae.

The genus *Hormembolus* shares some characters with the genus *Microlinyphia* and

with some species of *Linyphia*. The shared characters are: (1) the external epigynal form; the two states of this character, in *Hormembolus* and *Microlinyphia*, are regarded as near derivative forms on the basis (Millidge, 1984) that the form in *M. pusilla* (the type species) could readily be derived from that in *Hormembolus* by the opening of a slit or rudimentary atrium between the scape and the ventral plate; (2) the basic form of the ED of the male palp, in which the shape of the plate is similar, and the embolus is basically similar in form and position; (3) the location of the PM eyes on shallow black tubercles; and (4) the male chelicerae, which are elongated, with numerous small warts or granulations on the anterolateral faces (this character is weakened or absent in the *Linyphia* species). The congruence of characters 1–4 would support the hypothesis that *Hormembolus* and *Microlinyphia* (and some members of *Linyphia*) are quite closely related. This close relationship is not supported, however, by a further character: (5) the internal genital configuration of the female; the states of this character in *Hormembolus* and *Microlinyphia*/Linyphiinae are widely dissimilar (fig. 43 of this paper; cf. van Helsdingen, 1970, fig. 38; Millidge, 1984, fig. 62). There are, however, several different internal genital configurations in females of the Linyphiinae (s. str.) as currently defined. The genera *Linyphia*, *Bathyphantes*, and *Lessertinella*, for example, have the internal genitalia of the same basic form as in *Microlinyphia*. The genera *Kaestneria*, *Laetesia*, and *Laperousea*, on the other hand, have a configuration which appears to be basically similar to that of *Hormembolus*. That is, the spermatheca is closer to the dorsal plate and the seminal duct is in the form of a double spiral on the mesal side of the spermatheca; the double spiral is, however, greatly reduced in these genera in comparison with *Hormembolus*, to no more than a single turn. Careful examination has shown that in those genera with the *Microlinyphia* duct configuration, the duct running from the left-hand (viewed dorsally) spermatheca to the genital opening (i.e., the sperm duct) is coiled anticlockwise; and although the coiling is vestigial in the *Kaestneria* group of genera, the direction of this coiling is the same as in *Microlinyphia*. In *Hormembolus* and in *Hap-*

*linis*, on the other hand, the corresponding coiling of the duct is clockwise; that is, the chiral form in *Hormembolus* and in the Mynogleninae is the mirror image of that in the Linyphiinae. It seems probable, therefore, that *Hormembolus*, which shares some character congruences with both the Linyphiinae and the Mynogleninae, must be placed somewhere between these two subfamilies.

The coiled seminal duct in *Australolinyphia* (Millidge, 1984, fig. 58) has the *Microlinyphia* chiral form, not the Mynogleninae form, which supports the suggestion that this genus belongs in the Linyphiinae rather than the Mynogleninae. The same basic internal epigynal configuration as that in *Microlinyphia* is present in the genus *Stemonyphantes* and in the North American species "*Linyphia*" *rita* Gertsch and "*L.*" *catalina* Gertsch (Millidge, 1984); in each of these taxa the coil of the seminal duct has the chiral form of the Linyphiinae. The external epigyna in these taxa lack the scape/socket, and are considered to be more primitive than those in the *Hormembolus* group; hence it appears likely that the internal configuration in these taxa is also a fairly primitive character, which has been retained in *Microlinyphia*/Linyphiinae. The internal configuration in *Australolinyphia* may represent an intermediate between the *Microlinyphia* and *Kaestneria* forms; the *Australolinyphia* structure could be derived from a form like that of "*L.*" *catalina* by movement of the rudimentary spermathecal sac posteriorly along the corkscrewlike (i.e., weakly coiled) axial duct (fertilization duct), while conversion of the *Australolinyphia* form to that of *Kaestneria* would involve only an angular movement of the duct system toward the mesal side of the spermatheca, followed by a reduction in the number of turns of the coil.

Both *Microlinyphia* and the subfamily Linyphiinae (s. str.) appear to be absent, or virtually so, in South America, or at least in southern South America; most, if not all, of the numerous "*Linyphia*" species of Keyserling, Simon, and Tullgren (Bonnet, 1957) are wrongly attributed to this genus, and it is questionable if any of the species even fall in the Linyphiinae (s. str.). Both *Microlinyphia* and *Linyphia* are present in North America, Eurasia, and Africa (van Helsdingen, 1969,

1970); in Australia and New Zealand, however, the subfamily Linyphiinae is represented only by genera with the *Kaestneria* internal configuration, and with other, probably more primitive, configurations which nevertheless have the *Microlinyphia* chiral form. There seem to be no good reasons why members of the Linyphiinae should not be able to exist in South America. Their absence here, if confirmed by future work, would suggest that the branching which led to the Linyphiinae—almost certainly early in the evolution of the family—originated in a region isolated from what is now South America. The species "*Linyphia*" *rita* and "*L.*" *catalina* from North America suggest themselves as relatives of the ancestral stock of the Linyphiinae; these two species have characters 2–5, given above, more or less congruent with those of *Microlinyphia*/*Linyphia*, but the external epigynal form (character 1) lacks the scape/socket, and, as mentioned earlier, these species are consequently regarded as more primitive than *Hormembolus* in this respect. The presence in these two species of the male characters 2 and 4 (basic form of ED, and form of chelicerae) suggests that these are also relatively primitive characters retained by *Hormembolus*, *Microlinyphia*, and some members of the Linyphiinae.

The epigynum of *Notiohyphantes* is of the same basic external form as that of *Hormembolus*, but also exhibits several characters which are present in the epigyna of the subfamily Micronetinae. These characters are: (1) a socket at the distal end of a scape attached to the ventral plate; (2) a relatively simple internal duct system, with the ducts from the genital openings to the spermathecae running along the scape; and (3) an atrium between the dorsal plate and the scape (this is rudimentary in *Notiohyphantes*). This opening of a slit, or rudimentary atrium, between the scape/socket and the dorsal plate, is also present in a few members of the Mynogleninae (Blest, 1979) and in the genus *Linyphantes* of western North America. Further development of an epigynum of the *Notiohyphantes* type, by enlargement of the atrium and by relatively small modifications to the scape itself, would produce the basic epigynal form of the Micronetinae. As in the case of *Hormembolus* and the Mynogleninae dis-

cussed earlier, however, the congruences of the epigynal form are not accompanied by corresponding congruences of the palpal form; this is quite different in *Notiohyphantes* from that in the Micronetinae, and consequently *Notiohyphantes* cannot itself be a close relative of the Micronetinae. A possible closer relative would be a genus in which the epigynal form was as in *Notiohyphantes*, but where the palpal form was somewhat as in *Notholepthyphantes*, which has the ED of the palpal organ segmented into several more or less distinct sclerites (as is the case in the Micronetinae), and in which the posterior median eyes are not located on black tubercles. No such genus is currently known. The apparent paucity or absence of the Micronetinae in South America suggests that, as in the cases of the Erigoninae and the Linyphiinae (s. str.) mentioned earlier, the branching leading to this subfamily took place in a region which had little or no contact with South America.

The relationships of the genera *Notholepthyphantes* and *Patagoneta* are obscure; they do not appear to be closely related to any of the suggested subfamilies of the Linyphiinae. As mentioned above, the male palpal organ of *Notholepthyphantes* may represent a primitive stage in the splitting of the ED into discrete sclerites, as present in the Micronetinae, but the palpal organ of *Patagoneta*, and its internal epigynal form, are unlike those of any other genus. On present knowledge, these two genera must be regarded as small side branches which arose fairly early in the evolution of the family.

On the basis of the external epigynal form, it has been suggested above that the Mynogleninae and the Linyphiinae (s. str.)/*Microlinyphia* originated from a common parent which is also the parent of *Hormemبولus* and related genera. The epigynal form of *Notiohyphantes* now suggests that the subfamily Micronetinae is also derived from the same parent. The synapomorphy linking these subfamilies is the presence on the epigynum of a socket at the distal end of, and on the ventral side of, a scape which is an extension of the dorsal plate, but connected by a ridge to the ventral plate, or a clear derivative form of this. On the parsimonious hypothesis that this character was developed only once, the

most important branching event to take place in the evolution of the Linyphiidae was probably that which resulted from the development of this character. This is shown in the cladogram (fig. 289), in which the numbered characters are: (1) presence of scape/socket; (2) presence of clypeal pits/glands; (3) atrium opened between scape/socket and ventral plate; (4) atrium opened between scape/socket and dorsal plate; (5) desmitracheate tracheae; (6) presence of scape (without socket) produced by extension posteriorly of ventral plate. Branch A, which carries the epigynal scape/socket, then produced as side branches the subfamilies Mynogleninae, Linyphiinae (s. str.), and Micronetinae, as well as the genera *Hormemبولus*, etc. There are at present no synapomorphies known to indicate whether in branch A the Linyphiinae are most closely related to the Mynogleninae or to the Micronetinae.

The other main branch, B, lacked the particular form of scape present in branch A, but was able to develop scapes by extension of the ventral plate. These scapes have the genital openings on the dorsal or caudal side. This branch led to the Drapetiscinae, and, resulting from the development of another important character, to the Erigoninae. It now seems probable that no valid distinction can be drawn between the Drapetiscinae and those genera of the *Stemonyphantes* group (Milledge, 1984) which have a short epigynal scape derived from the ventral plate (e.g., *Eulaira*, *Ostearius*, *Mioxena*, *Laminacauda*), and that these should be transferred to the Drapetiscinae. The sister-group relationship between the Drapetiscinae and the Erigoninae depicted in the cladogram (fig. 289) cannot be confirmed by any specific synapomorphies, but is supported by, firstly, the presence of intermediate tracheal forms in a few members of the Drapetiscinae (*Allomengea*, see Blest, 1976; and *Laminacauda*, fig. 288), and in no other subfamily so far as currently known; and secondly, the presence of almost identical epigynal forms (both external and internal) in several genera of the Erigoninae and the Drapetiscinae (e.g., *Erigone* and *Asthenargus*), but in no other subfamily. The wide variety of palpal forms present in the Drapetiscinae must indicate the presence of a



number of branches in this probably ancient subfamily, and this is also true for the Erigoninae.

The *Hormembolus* group of genera, which will include *Linyphantes*, should probably be regarded not as a monophyletic group, but rather as a number of short side branches, some of which might eventually be raised to subfamily rank. This also applies to some of the genera of the *Stemonyphantes* group, and particularly to those which appear to be the most primitive. The sequence of the branchings shown in figure 289 is not significant; the chronology of the branchings is not known, and probably never can be known with any degree of certainty.

This hypothesis, that the principal branching event in the evolution of the Linyphiidae was associated with the development of the scape/socket, has necessitated a change in the scheme proposed earlier (Millidge, 1984), the chief difference being that the Erigoninae/Draperiscinae are no longer placed in close association with the Mynogleninae.

If the main subdivisions of a family are to be regarded as subfamilies, then strictly speaking the two branches A and B should rank as subfamilies, and the side branches from A and B should become tribes. If this were done, branches A and B would, in fact, carry the traditional subfamily names, A being the Linyphiinae and B being the Erigoninae. Since, however, figure 289 represents a hypothesis, and no final conclusions have been reached, it would be inadvisable at present to demote the subfamilies given in figure 289 to the status of tribes.

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