

## **On the First Asian Spiders of the Family Caponiidae (Araneae, Haplogynae), with Notes on the African Genus Diploglena**

Authors: Platnick, Norman I., and Jäger, Peter

Source: American Museum Novitates, 2008(3634) : 1-12

Published By: American Museum of Natural History

URL: <https://doi.org/10.1206/624.1>

---

BioOne Complete ([complete.BioOne.org](https://complete.BioOne.org)) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at [www.bioone.org/terms-of-use](https://www.bioone.org/terms-of-use).

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

---

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

# AMERICAN MUSEUM *Novitates*

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY  
CENTRAL PARK WEST AT 79TH STREET, NEW YORK, NY 10024  
Number 3634, 12 pp., 34 figures December 31, 2008

## On the First Asian Spiders of the Family Caponiidae (Araneae, Haplogynae), with Notes on the African Genus *Diploglena*

NORMAN I. PLATNICK<sup>1</sup> AND PETER JÄGER<sup>2</sup>

### ABSTRACT

A new genus and species, *Laoponia saetosa*, are established to contain the first members of the family Caponiidae to be discovered in Asia. Only two Old World genera of caponiids have been described, both from Africa; in having only two eyes, the newly collected spiders from Laos resemble southern African *Diploglena*, rather than the type genus *Caponia*. However, members of *Diploglena* (which are poorly known, and are therefore discussed and illustrated) have an endite shape and eye pattern indicating that they may be most closely related to the Chilean genus *Tisentnops*. *Laoponia* may be most closely related instead to the endemic Californian genus *Calponia*; similar California/East Asia disjuncts are known in other old spider lineages.

### INTRODUCTION

The spider family Caponiidae is much more diverse, at both the generic and specific levels, in the New World than in the Eastern Hemisphere. Of the dozen genera currently recognized in the family, only two are found in the Old World: the type genus *Caponia* Simon (1887), which has been reported from Ethiopia to South Africa,

and *Diploglena* Purcell (1904), which is known only from southern Africa. It was therefore with great surprise that we studied the specimens reported on below, which were newly collected by the second author in Laos.

The present paper, the sixth in a series on the spider family Caponiidae, is the fourth to deal with members of the “Caponiinae”, a presumably basal group whose members are easily

<sup>1</sup> Peter J. Solomon Family Curator, Division of Invertebrate Zoology, American Museum of Natural History; Adjunct Professor, Department of Biology, City College, City University of New York; Adjunct Professor, Department of Entomology, Cornell University; Adjunct Senior Research Scientist, Center for Environmental Research and Conservation, Columbia University (platnick@amnh.org).

<sup>2</sup> Arachnology, Research Institute Senckenberg, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany (peter.jaeger@senckenberg.de).

recognized by the absence of the subsegmented tarsi and other bizarre leg features that characterize the exclusively New World subfamily Nopinae. Although the Nopinae is arguably a monophyletic group (Platnick, 1995; Platnick and Lise, 2007), caponiines seem to be grouped together only because they lack the obvious leg apomorphies of nopines.

The Laotian specimens (figs. 1, 2) have entire tarsi and lack the other leg specializations of nopines. The only Old World caponiid genera are also not nopines. Members of the African type genus, *Caponia*, resemble only those of the endemic Californian genus *Calponia* Platnick (1993) in retaining the plesiomorphic number of eight eyes. The Laotian specimens, like most caponiid species, have only two eyes (fig. 12); in addition they have a short embolus on the male palp (figs. 3–5) that is unlike the long and elaborate embolus found in male *Caponia* (see Purcell, 1904: figs. 28–35).

Our attention therefore focused instead on the other known Old World genus, *Diploglena*, despite its great geographic separation. Purcell's genus is much less well known than *Caponia*, and has in fact not been illustrated or restudied in detail since its original description in 1904. Only the South African type species is known, although Lawrence (1928) added a subspecies from Namibia based only on "its proportions and larger size". Through the courtesy of Drs. Ansie Dippenaar and Charles Griswold, we have been able to study a few modern specimens of *Diploglena*. Although it is not surprising that the Laotian spiders do not belong to *Diploglena*, we were surprised to find characters that may place *Diploglena* closer to the Chilean genus *Tisentnops* Platnick (1994) than to *Caponia*.

Indeed, of the previously known genera, the closest match to the Laotian specimens in male palpal structure are probably the eight-eyed *Calponia harrisonfordi* Platnick, from California. Although *Calponia* specimens differ in several characters, including eye number, sternal shape, and cheliceral and male palpal setation, it is possible that a generic-level cladistic analysis of the family could show that *Calponia* represents the sister group of the Laotian species. Such an analysis would be premature at present, as several genera remain to be revised, and others need to be newly described, but a disjunction between

Californian and East Asian members of a group is certainly not unprecedented among relatively old lineages of spiders, with the families Hypochilidae and Antrodiaetidae providing obvious examples.

The presence of caponiids in Asia presumably reflects the relatively basal phylogenetic position, and consequent age, of the family. The two fossil species described from Dominican amber by Wunderlich (1988) are relatively advanced taxa (nopines with metatarsal extensions), and the family as a whole probably dates back at least to Pangaean times, if not earlier.

The known Laotian specimens were all taken by sieving leaf litter late in the dry season. The habitats were small but had ample forest cover, often on terrains too steep to be used for agricultural purposes, near streams feeding into the Nam Khan River. The leaf litter layer in these forest patches is thick, averaging 20–30 cm deep. At the type locality, specimens of the sparassid spider genus *Pseudopoda* Jäger were taken; because those spiders apparently require high humidity, these habitats are likely to remain relatively humid even at the peak of the dry season.

Similar habitats occur in Thailand, and given the substantial amount of spider collecting done there over recent years, it seems odd that caponiids have seemingly not been encountered there. Their absence might indicate that the Mekong River is a significant barrier, and that these are highly relictual taxa, but might also be just an artifact of seasonality, since the animals are seemingly adult in the dry season only.

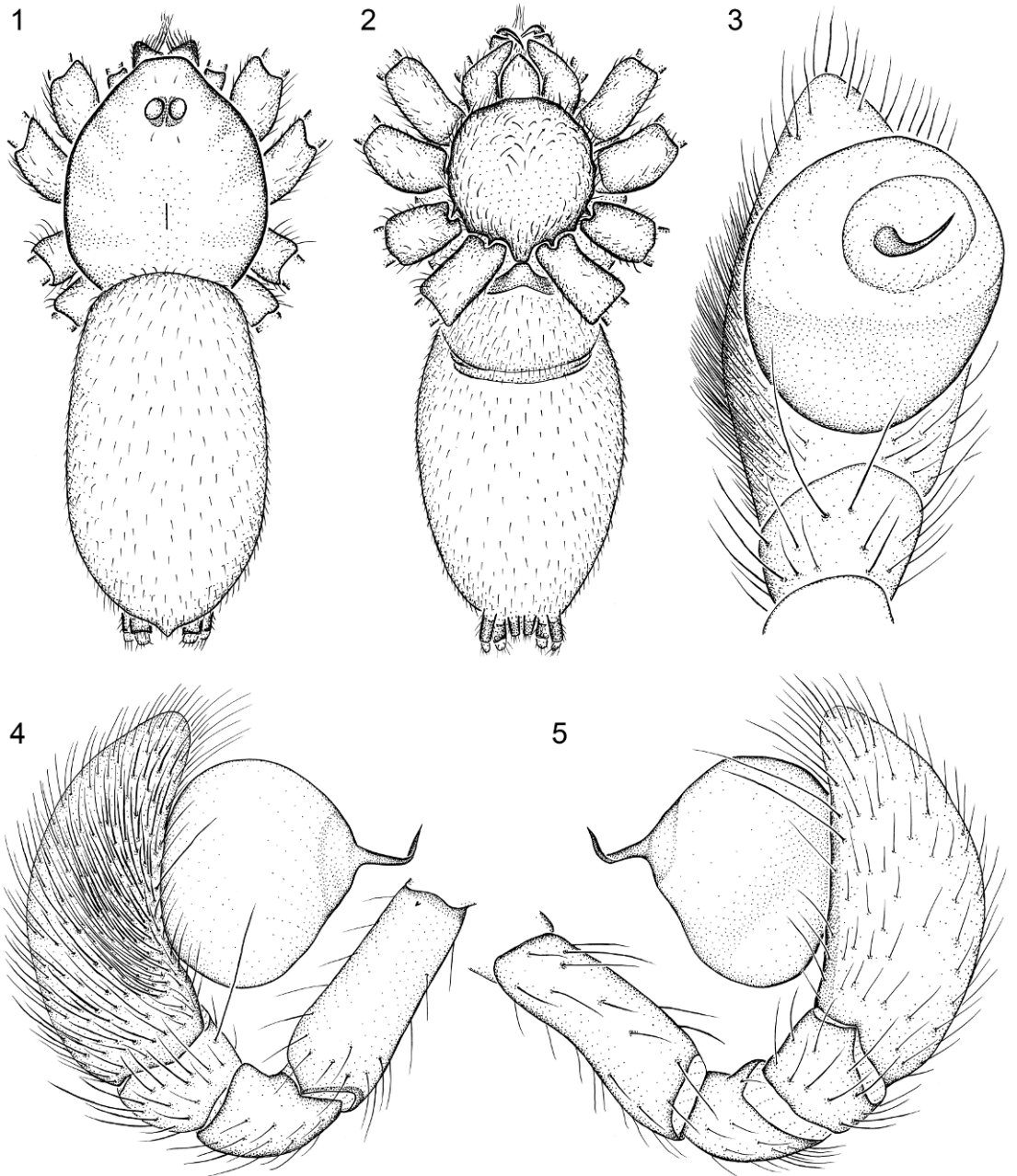
The specimens reported on here are deposited in the collections of the American Museum of Natural History (AMNH), the California Academy of Sciences in San Francisco (CAS), the Research Institute Senckenberg in Frankfurt (SMF), and the Plant Protection Research Institute in Pretoria (PPRI).

## SYSTEMATICS

### *Laoponia*, new genus

TYPE SPECIES: *Laoponia saetosa*, new species.

ETYMOLOGY: The generic name is a contraction of "Laotian *Caponia*", and is feminine in gender.



Figs. 1–5. *Laoponia saetosa*, new species, male. 1. Cephalothorax and abdomen, dorsal view. 2. Same, ventral view. 3. Left male palp, ventral view. 4. Same, prolateral view. 5. Same, retrolateral view.

**DIAGNOSIS:** Members of the genus can be separated from the previously known caponiid genera as follows: from *Caponia*, *Caponina* Simon, and *Notnops* Platnick by the presence of only two eyes (although some specimens

show irregular pale areas, within the oval ocular ring of black pigment, that may represent remnants of the other eyes, there are no cuticular traces of lenses in those areas; see fig. 12) and the much shorter male



embolus, from *Diploglena* by the normal (rather than anteriorly expanded) endites and the absence of a tegular apophysis on the male palp, from *Calponia* by the presence of only two eyes and a row of elongated macrosetae on the anterior face of the cheliceral paturon, from *Taintnops* Platnick by the shorter male embolus, from *Tisentnops* Platnick by the normal size and position of the eyes, and from the nopine genera (*Nops* MacLeay, *Nopsides* Chamberlin, *Orthonops* Chamberlin, *Nyetenops* Platnick and Lise, and *Tarsonops* Chamberlin) by having entire, rather than subsegmented, tarsi.

**DESCRIPTION:** Moderate-sized caponiids with two eyes (fig. 1); females unknown. Carapace oval, pars cephalica flattened, gradually narrowed opposite palpal coxae, pars thoracica sloping; cuticle with raised sculpturing outlining tiny circular to hexagonal cells, strong bristle behind each eye and pair of dorsally directed strong bristles on clypeus; thoracic groove short, shallow. Eyes dark, separated by less than their diameter, set back from anterior margin of clypeus by about twice their diameter, surrounded by oval ring of black pigment interrupted at sides and along midline. Chelicerae paturon with row of four long, strong bristles along anteromedian face, bristles of each side overlapping distally; median lamina long, with heavily sclerotized anteromedian tip (fig. 6), about half of space between lamina and base of fang occupied by white membranous lobe; lateral surface with stridulatory ridges (fig. 7; pick at base of prolateral side of palpal femur, figs. 4, 9, 10). Endites convergent, acuminate, not truncated or expanded distally, anterior surface distally with strong serrula consisting of single tooth row (fig. 9), proximally with three strong setae originating from enlarged bases (figs. 9, 11). Labium triangular, fused to sternum; anterior surface of labrum bearing transverse rows of tiny teeth (fig. 8). Sternum oval, cuticle with raised sculpturing as on carapace; cephalothoracic membranes with weak epimeric sclerites dorsal of coxae I, II, and III plus IV; epimeric sclerites not fused with triangular sclerites extending from sternal margin to and between coxae. Leg formula 4123; legs without spines; metatarsi and tarsi entire, without subsegmentation or membranous processes;

tarsi with three claws; paired claws with about 10 teeth, most distal of which are largest; unpaired claw long, without teeth, almost fused to protruding onychium (fig. 18). Tarsal organ exposed (fig. 19); trichobothria present on tibiae, metatarsi, and tarsi, their bases with semicircular rim bearing only low ridges (fig. 17). Abdomen with two pairs of respiratory spiracles clustered around epigastric groove; anterior spiracles leading to several tracheoles; posterior spiracles of each side leading to three tracheal trunks (two large ones extending anteriorly into cephalothorax, one much narrower extending posteriorly for most of abdominal length, as in Forster and Platnick, 1985: fig. 889) (tracheae observed in juvenile digested with pancreatin, as per Álvarez-Padilla and Hormiga, 2008); posterior spiracles connected by transverse duct. Male spinnerets in typical caponiid arrangement (fig. 20); anterior laterals with single large major ampullate gland spigot, without piriform gland spigots (fig. 21); posterior medians with two or three aciniform gland spigots and single spigot with lower base presumed to serve minor ampullate gland (figs. 22, 23); posterior laterals with four aciniform gland spigots and two spigots with lower bases that may serve minor ampullate glands (figs. 24, 25). Male palpal patella and tibia short, unmodified; cymbium ovoid, without distinct dorsal pad of short setae but with thickened setae on promargin (fig. 13); ventral surface of bulb with small circular area clearly delimited from remainder of cuticle (figs. 14–16); embolus narrow, bent distally at about half its length (figs. 4, 5).

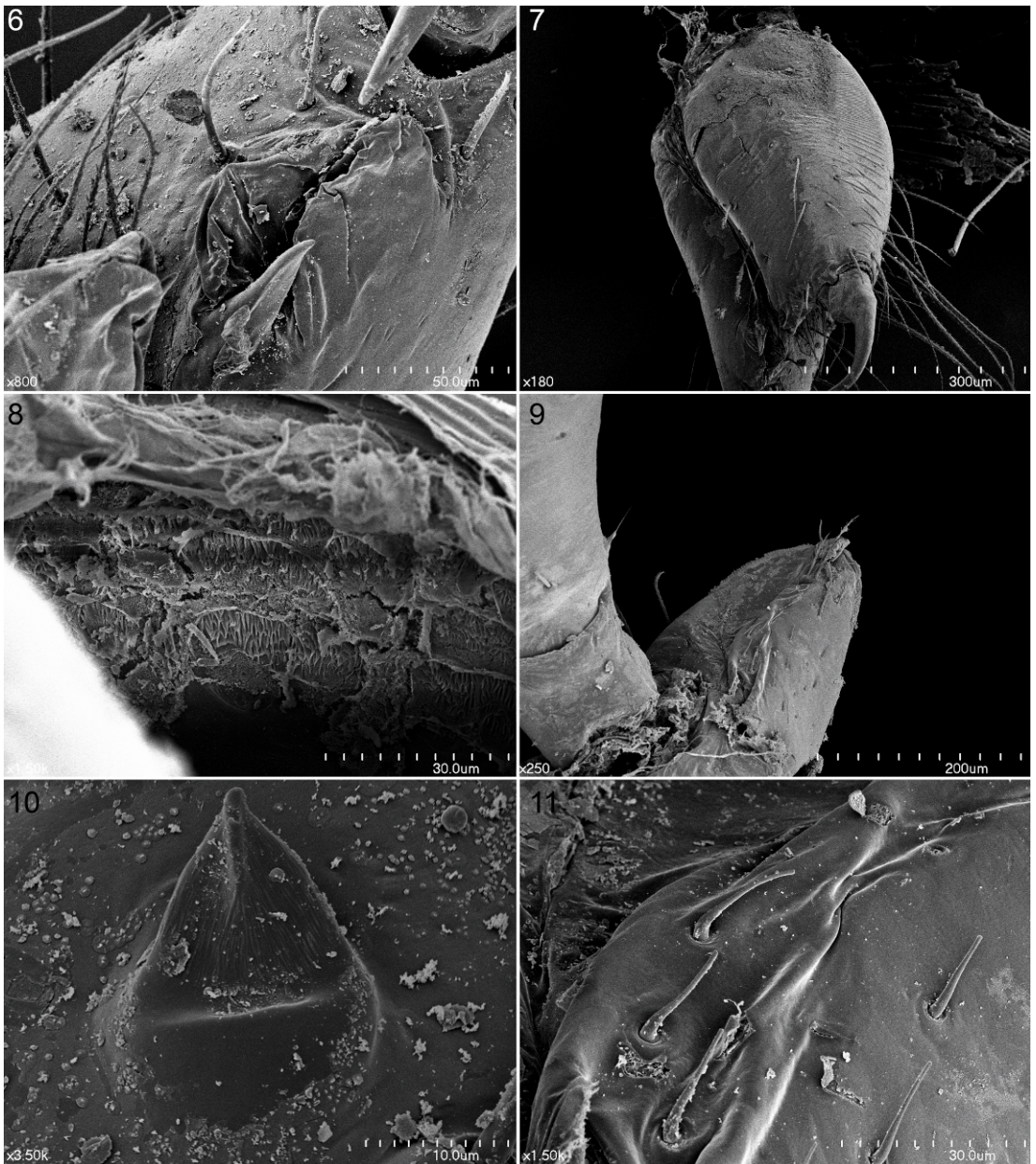
**DISTRIBUTION:** Known only from Luang Prabang Province, Laos.

*Laoponia saetosa*, new species

Figures 1–25

**TYPE:** Male holotype taken sieving leaf litter at slope of stream at dusk, at an elevation of 328 m, at Houay Kho, 19°44'09.1"N, 102°16'37.5"E, Ban Pak Bak, Nam Khan, SE Luang Prabang, Luang Prabang Prov., Laos (Mar. 23, 2007; P. Jäger), deposited in SMF.

**ETYMOLOGY:** The specific name is from the Latin adjective *saetosus* ("with hairs or bris-



Figs. 6–11. *Laoponia saetosus*, new species, male. 6. Left chelicera, distal view. 7. Right chelicera, retrolateral view. 8. Labrum, anterior view. 9. Left palpal endite, dorsal view. 10. Stridulatory pick on left palpal femur, prolateral view. 11. Modified setae on base of palpal endite, dorsal view.

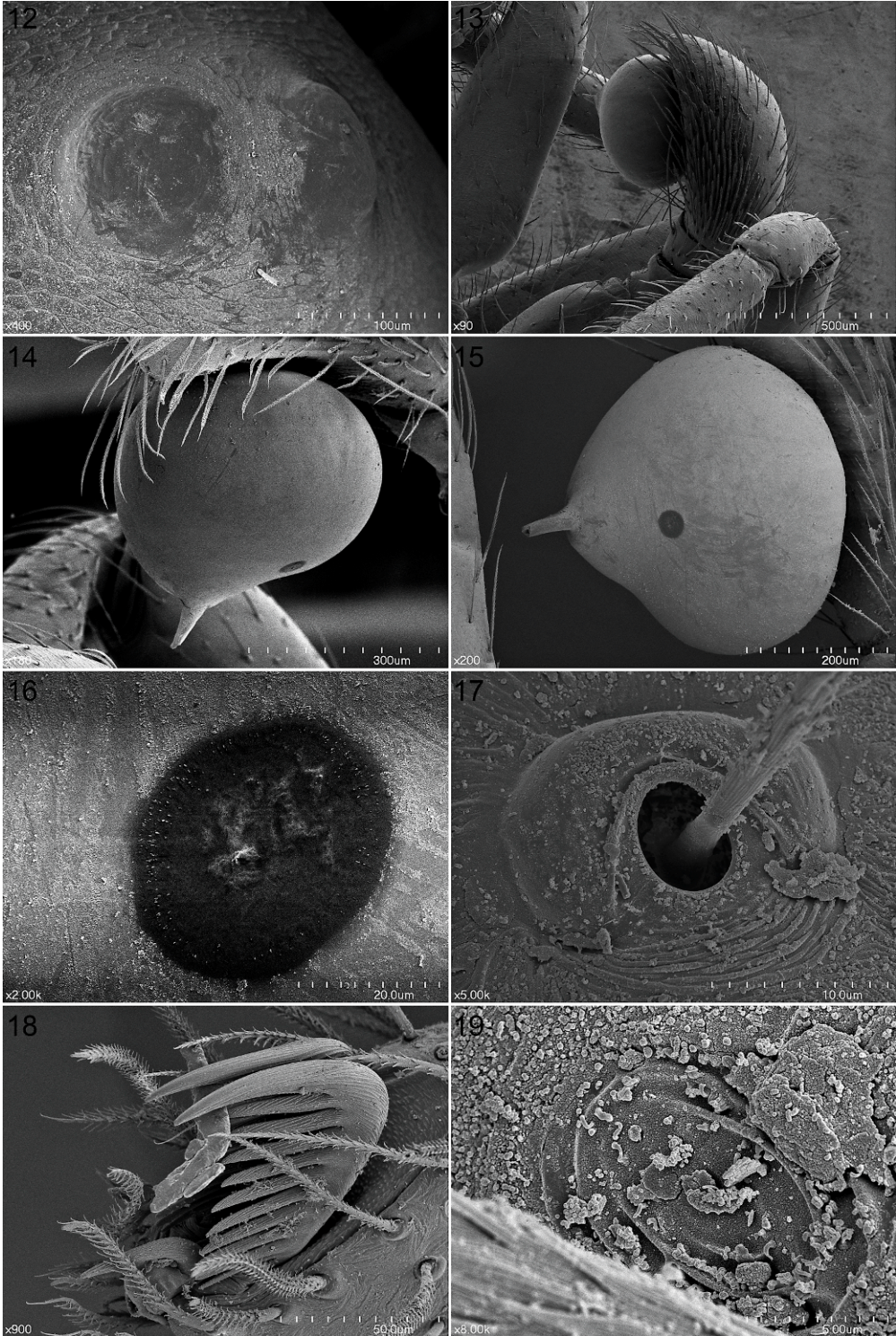
cles”) and refers to the stiff bristles on the cheliceral paturon.

**DIAGNOSIS:** With the characters of the genus and palpi as in figs. 3–5.

**MALE (HOLOTYPE):** Total length 2.83 mm. Carapace 1.29 mm long, 1.05 mm wide, uni-

formly pale orange; mouthparts yellow; sternum pale orange; abdomen uniformly white, with scattered long setae. Palpal tibia and cymbium with promarginal surfaces heavily setose; bulb circular, embolus very narrow, abruptly bent distally at about half its length (figs. 3–5).





FEMALE: Unknown.

OTHER MATERIAL EXAMINED: LAOS: **Luang Prabang Prov.:** Houay Tham, 19°44'51.2"N, 102°13'15.4"E, between Ban Khon Why and Xieng Ngeun, Nam Khan, SE Luang Prabang, Mar. 24, 2007, elev. 363 m, sieving leaf litter at rocks along stream (P. Jäger, SMF), 2♂, same (AMNH), 1♂.

DISTRIBUTION: Known only from Laos; a juvenile that probably belongs to this species was taken sieving leaf litter outside a cave, at an elevation of 373 m, at Tham Pathok, 20°33'08.2"N, 102°37'92.5"E, Nong Khiao, Nam Ou, NE Luang Prabang, Luang Prabang Prov., Laos, Mar. 17–18, 2007 (P. Jäger, F. Steinmetz, SMF).

### *Diploglena* Purcell

*Diploglena* Purcell, 1904: 169 (type species by monotypy  
*Diploglena capensis* Purcell, 1904).

DIAGNOSIS: Specimens of this nonnopine genus can easily be recognized by the shape of the palpal endites (fig. 27), which are distally expanded and have a sinuous anterolateral margin. Among the other described caponiids, members of the Mexican genus *Nopsides* Chamberlin and the Chilean genus *Tisentnops* have endites that are similarly expanded (see Chamberlin, 1924: fig. 39; and Platnick, 1994: fig. 26). *Nopsides* is a nopine, and its members can easily be distinguished from those of *Diploglena* by the subsegmented tarsi, but they also resemble those of *Diploglena* in having the anterior median eyes set farther back on the carapace than is typical for the family. In *Nopsides*, though, there are four eyes present, with the presumptive anterior lateral pair occurring midway between the anterior margin of the clypeus and the anterior median eyes (Chamberlin, 1924: fig. 38), whereas in *Diploglena* only two eyes occur. Specimens of *Tisentnops* (which is not a nopine) can easily be distinguished from those of *Diploglena* by the presence of a row of

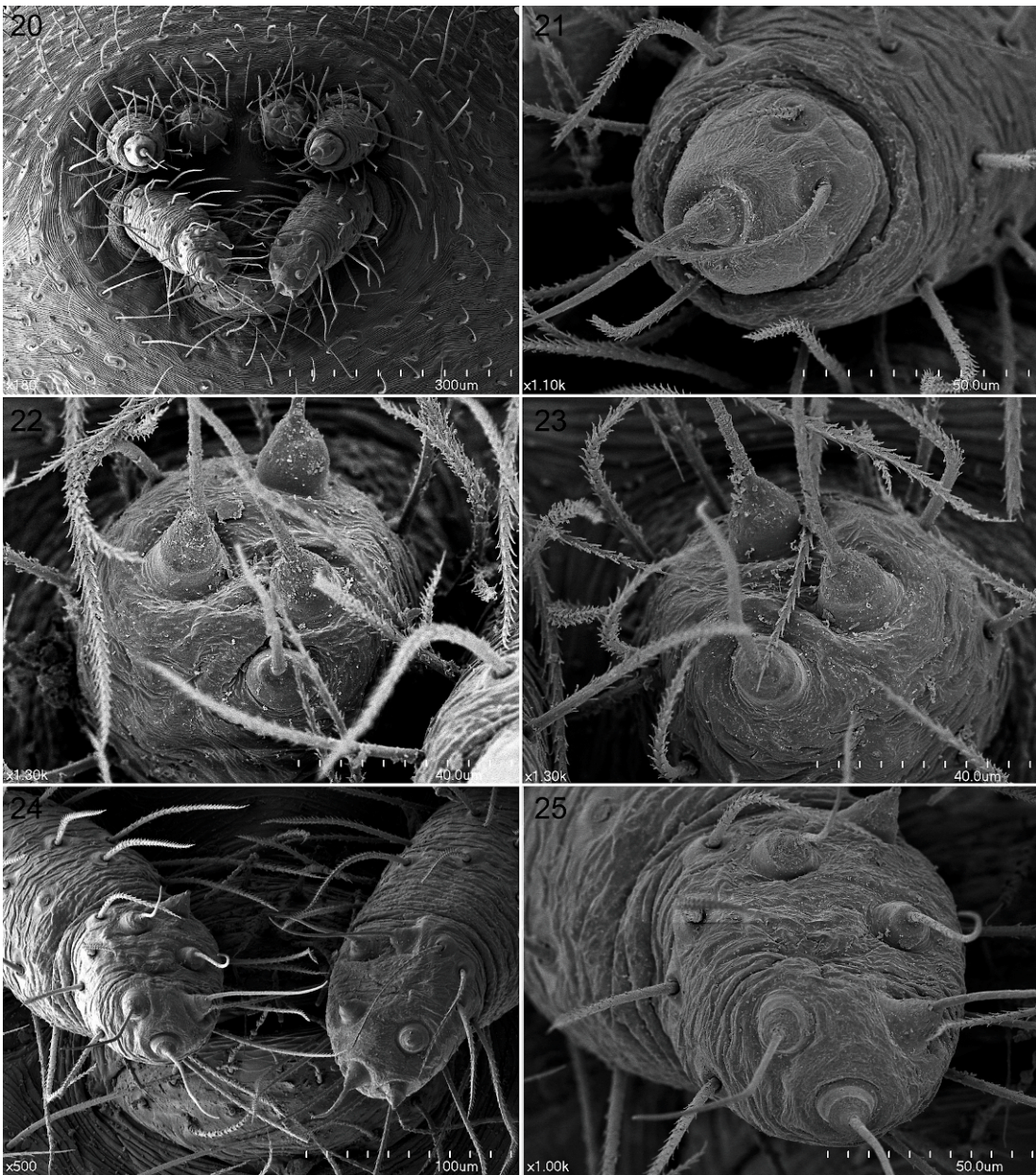
squared tubercles on the anterior margin of the endites (Platnick, 1994: fig. 26). Although the two eyes of *Tisentnops* are differently placed (anteriorly advanced rather than unusually posterior), they are greatly reduced in size (Platnick, 1994: fig. 4), a character also true for *Diploglena* (to a slightly lesser degree, fig. 26). It is possible that the reduction in eye size is a synapomorphy uniting *Diploglena* with *Tisentnops*. *Diploglena* specimens are also notable for the enlarged femora, patellae, and tibiae found on the first pair of legs (and, to a lesser degree, the second). The femora are laterally compressed, especially proximally, but all three leg segments are more than twice as high as the metatarsi and tarsi.

DESCRIPTION: Moderate-sized caponiids with two eyes (figs. 26, 27). Carapace oval, pars cephalica flattened, slightly narrowed opposite palpal coxae, pars thoracica slightly sloping; cuticle with raised sculpturing outlining irregularly rectangular cells, with scattered long, weak setae concentrated at rear of pars cephalica and around ocular area; thoracic groove obsolete. Eyes dark, separated by about their diameter, set back from anterior margin of clypeus by about five times their diameter, surrounded by oval ring of black pigment. Chelicerae paturon with clump of strong bristles along anteromedian face, bristles of each side overlapping distally, clump occupying almost total length of paturon; median lamina long, without sclerotized anteromedian tip, about two-thirds of space between lamina and base of fang occupied by white membranous lobe; lateral surface with stridulatory ridges (pick at base of prolateral side of palpal femur, fig. 29). Endites expanded distally to almost twice their width at base, with laterally sinuous distal margin, serrula not apparent, seemingly fused with distal endite margin, median surface of anterior face unsclerotized. Labium almost diamond-shaped, not fused to sternum; anterior surface of labrum with pair of long, longitudinal, submarginal scler-

←

Figs. 12–19. *Laoponia saetosa*, new species, male. **12.** Eyes, dorsal view. **13.** Right palp, prolateral view. **14.** Right palpal bulb, prolateral view. **15.** Same, ventral view. **16.** Same, close-up. **17.** Trichobothrial base from tarsus IV, dorsal view. **18.** Claws of tarsus I, oblique lateral view. **19.** Tarsal organ from tarsus IV, dorsal view.



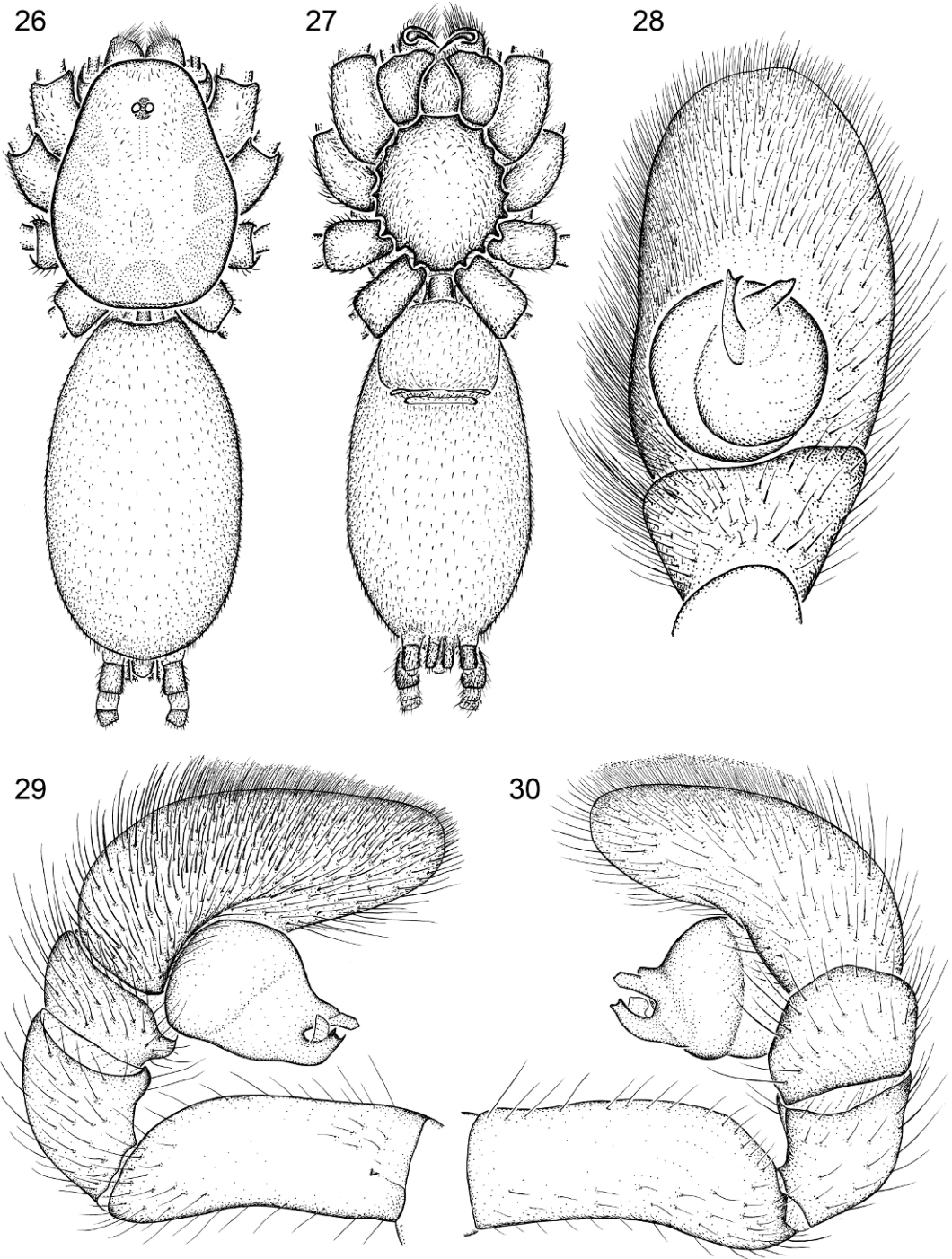


Figs. 20–25. *Laoponia saetosa*, new species, male. 20. Spinnerets, distal view. 21. Left anterior lateral spinneret, distal view. 22. Left anterior median spinneret, distal view. 23. Right anterior median spinneret, distal view. 24. Posterior lateral spinnerets, distal view. 25. Right posterior lateral spinneret, distal view.

otized strips. Sternum oval but with slightly produced knobs at anterolateral corners, opposite lateral sides of endite bases, cuticle with scattered depressions; cephalothoracic membranes with weak epimeric sclerites dor-

sally between coxae I and II, II and III, and III and IV; epimeric sclerites not fused with triangular sclerites extending from sternal margin to and between coxae. Female palpal tarsus expanded, extremely hirsute but with-





Figs. 26–30. *Diploglena capensis* Purcell. 26. Cephalothorax and abdomen, dorsal view. 27. Same, ventral view. 28. Left male palp, ventral view. 29. Same, prolateral view. 30. Same, retrolateral view.

out well-defined dorsal pad of short setae. Leg formula 4123; legs without spines; metatarsi and tarsi entire, without subsegmentation or membranous processes; tarsi with three claws; paired claws with about six relatively short teeth, unpaired claw short, without teeth, almost fused to protruding onychium. Tarsal organ not scanned; trichobothria present on tibiae, metatarsi, and tarsi, their bases not scanned. Abdomen with two pairs of respiratory spiracles clustered around epigastric groove; internal anatomy not investigated. Spinnerets in typical caponiid arrangement, with posterior medians situated almost as far forward as anterior laterals; spigots not scanned, but females apparently with single, large cylindrical gland spigot situated at center of posterior median spinneret spigot field (no similarly enlarged spigot evident on posterior laterals). Male palpal patella and tibia short, unmodified; cymbium ovoid, with distinct dorsal pad of short setae; embolus accompanied by second tegular apophysis (figs. 28–30). Female epigastric area with pair of transverse sclerotized strips, almost meeting at midline.

**DISTRIBUTION:** Known only from South Africa and Namibia.

### *Diploglena capensis* Purcell

#### Figures 26–30

*Diploglena capensis* Purcell, 1904: 170, figs. 36–38 (three male and four female syntypes from St. Helena Bay, Malmesbury Div., Western Cape Province, South Africa, should be in the South African Museum, not examined).

**DIAGNOSIS:** With the characters of the genus and genitalia as in figs. 28–30.

**MALE:** Described by Purcell (1904).

**FEMALE:** Described by Purcell (1904).

**OTHER MATERIAL EXAMINED:** **NAMIBIA:**

**Erongo:** 10 mi W Okombahe, May 10, 1958, elev. 920 m (E. Ross, R. Leech, CAS), 1♀. **SOUTH AFRICA: Northern Cape:** 20 km N Concordia, 26°40'S, 22°40'E, June 2, 1997, from scorpion burrow (A. Harrington, PPRI 98/291), 1♂; Garies, Namaqualand, Nov. 14, 1949 (B. Malkin, CAS), 1♀; Henkries, June 2, 1997, in scorpion burrow (A. Harrington, PPRI 98/292), 1♂, 2♀; Kweekfontein, June 2, 1997, from burrow of scorpion, *Opisthophthalmus crassimanus* Purcell (A. Harring-

ton, PPRI 98/290), 1♂. **Western Cape:** Saldanha Bay, Nov. 18, 1949 (B. Malkin, CAS), 1♀; Tierberg, July 25, 1989 (R. Dean, PPRO 91/40), 1♂.

**DISTRIBUTION:** Known only from the western parts of South Africa and Namibia. Lawrence (1928: 225) described *D. capensis major*, as a new “variety”, based on a female from Kaross, Namibia; collections including males will be needed to help determine whether the Namibian population is conspecific with the specimens from the cape, or belongs to a diagnosable taxon.

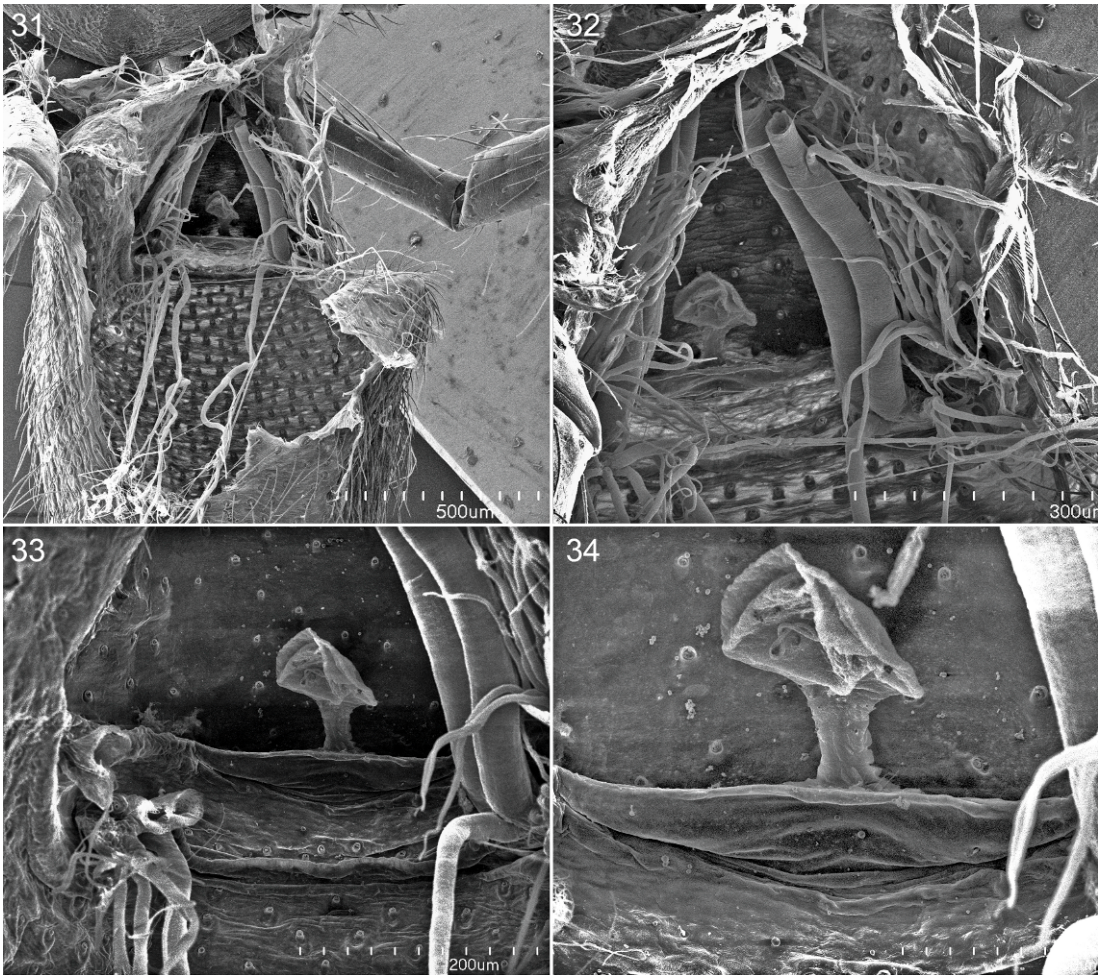
### SUPPLEMENT

After the manuscript for this paper was accepted, the second author returned to Laos for additional fieldwork, and was able to collect an adult female of the new species. This specimen was taken by sieving litter along a streambed in secondary forest with bamboo, banana, and mango (Laos: Luang Prabang Prov.: Xieng Ngeun Distr., SE Luang Prabang, Ban Keng Koung, N side Nam Khan, 19°40'963"N, 102°18'442"E, elev. ca. 372 m, Feb. 25, 2008). This specimen, 2.69 mm long, was digested with pancreatin, and shows the same arrangement of the tracheal system (figs. 31, 32) as the juveniles examined earlier. The female genitalia consist of a single receptaculum, probably globose in life, situated on a short stalk (figs. 33, 34); the tiny tube-shaped structure evident on the dorsal side of the receptaculum in those figures is probably just a small segment of a tracheole that broke off during preparation and adhered to the receptaculum surface.

### ACKNOWLEDGMENTS

We thank Drs. Ansie Dippenaar (PPRI) and Charles Griswold (CAS) for providing specimens. At AMNH, Matthias Burger, Nadine Dupérré, Mohammad Shadab, Lou Sorkin, and Steve Thurston assisted with the tracheal system examination, illustrations, scanning electron micrographs, and plates. We are grateful to Manivone Thoummabouth, Ouane Sirisack, Kim Valakone, Edina Ifticene, Chearmoua Bear Khue (“La Maison du Patrimoine”, Heritage House, Luang Prabang),





Figs. 31–34. *Laoponia saetosa*, new species, female abdomen with dorsum removed, pancreatin digestion, dorsal views. **31, 32.** Respiratory system, showing two large anterior tracheal trunks and narrower posterior trunk arising from posterior spiracle of each side. **33, 34.** Female genitalia, showing receptaculum on narrow stalk.

and Anne-Gaëlle Verdier (International River and Heritage Institute, Tours) for their help in organizing field work, and for supporting the second author's work within the partnership between the Research Institute Senckenberg and the Nam Khan ecovalley prefiguration study (candidate for the UNESCO Man and the Biosphere program) hosted at the Heritage House of Luang Prabang. The expedition to Laos was partly supported by a donation from the Rhomberg family (Germany) through the BIOPAT program. We thank Gustavo Hormiga and Darrell Ubick for helpful reviews of the manuscript.

## REFERENCES

- Álvarez-Padilla, F., and G. Hormiga. 2008. A protocol for digesting internal soft tissues and mounting spiders for scanning electron microscopy. *Journal of Arachnology* 35: 538–542.
- Chamberlin, R.V. 1924. The spider fauna of the shores and islands of the Gulf of California. *Proceedings of the California Academy of Sciences* 12: 561–694.
- Forster, R.R., and N.I. Platnick. 1985. A review of the austral spider family Orsolobidae (Arachnida, Araneae), with notes on the superfamily Dysderoidea. *Bulletin of the American Museum of Natural History* 181(1): 1–230.

- Lawrence, R.F. 1928. Contributions to a knowledge of the fauna of South-West Africa VII. Arachnida (Part 2). *Annals of the South African Museum* 25: 217–312.
- Platnick, N.I. 1993. A new genus of the spider family Caponiidae (Araneae, Haplogynae) from California. *American Museum Novitates* 3063: 1–8.
- Platnick, N.I. 1994. A review of the Chilean spiders of the family Caponiidae (Araneae, Haplogynae). *American Museum Novitates* 3113: 1–10.
- Platnick, N.I. 1995. A revision of the spider genus *Orthonops* (Araneae, Caponiidae). *American Museum Novitates* 3150: 1–18.
- Platnick, N.I., and A. Lise. 2007. On a new genus of the spider subfamily Nopinae (Araneae, Caponiidae) from Brazil. *American Museum Novitates* 3595: 1–9.
- Purcell, W.F. 1904. Descriptions of new genera and species of South African spiders. *Transactions of the South African Philosophical Society* 15: 115–173.
- Simon, E. 1887. Observation sur divers arachnides: synonymies et descriptions. *Annales de la Société Entomologique de France, series 6, 7 (Bull.)*: 158–159, 167, 175–176, 186–187, 193–195.
- Wunderlich, J. 1988. Die fossilen Spinnen im Dominikanischen Bernstein. *Beiträge zur Araneologie* 2: 1–378.

Complete lists of all issues of the *Novitates* and the *Bulletin* are available at World Wide Web site <http://library.amnh.org/pubs>. Inquire about ordering printed copies via e-mail from [scipubs@amnh.org](mailto:scipubs@amnh.org) or via standard mail from: American Museum of Natural History, Library—Scientific Publications, Central Park West at 79th St., New York, NY 10024. TEL: (212) 769-5545. FAX: (212) 769-5009.