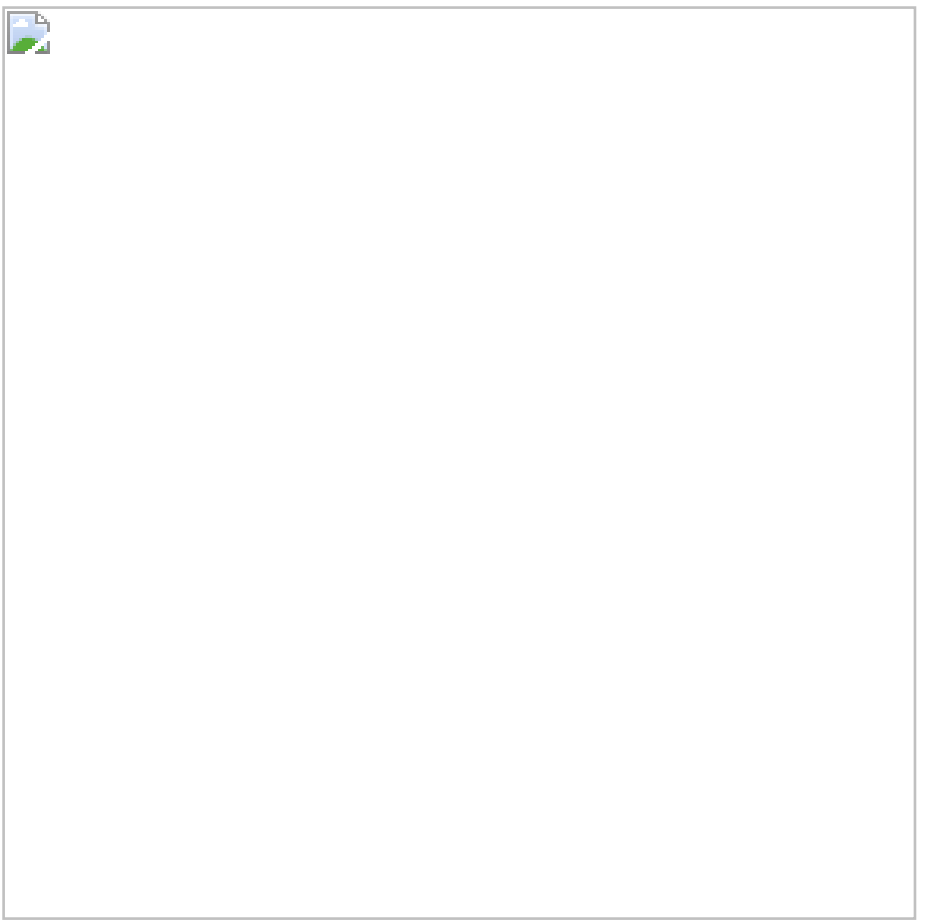

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The Goblin Spider Genus *Pelicinus* (Araneae, Oonopidae), Part 1

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ABSTRACT

Although *Pelicinus* Simon and its type species *P. marmoratus* Simon were initially described from Saint Vincent in the Lesser Antilles, we hypothesize that *Pelicinus* is primarily an Old World genus, occurring natively in both southern Asia and Australasia. The type species has attained an anomalously pantropical distribution, and has been described at least eight times, in at least seven different genera; all those synonyms were based on island populations. *Myrmopopaea jacobsoni* Reimoser from Sumatra, *Gamasomorpha minima* Berland from the Phoenix Islands, *Triaeris pusillus* (Bryant) from the Virgin Islands, *Scaphiella ula* Suman from Hawaii, and *P. mahei* (Benoit) from the Seychelles are newly synonymized with *P. marmoratus*, and the species is newly recorded from the Bahama Islands, Brazil, Kenya, and the Marshall Islands. *Myrmopopaea* Reimoser and *Harryoonops* Makhan and Ezzatpanah are placed as junior synonyms of *Pelicinus*. The bulk of the species-level diversity of *Pelicinus* occurs in Australia. Here we treat only those members of the genus that occur outside that continent; 16 new species are described from Iran (*P. sengleti*), India (*P. lachivala*, *P. madurai*), Thailand (*P. deelemanae*, *P. schwendingeri*, *P. sayam*, *P. khao*), Laos (*P. tham*), Vietnam (*P. duong*), Malaysia (*P. penang*, *P. johor*), the Solomon Islands (*P. churchillae*), Fiji (*P. raveni*), and New Caledonia (*P. monteithi*, *P. damieu*, *P. koghis*).

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INTRODUCTION

The first major paper on New World goblin spiders was the study by Simon (1891) of the fauna of Saint Vincent in the Lesser Antilles. Although nine New World oonopid species had been described in earlier papers by Keyserling, they had all been misplaced in the type genus, *Oonops* Templeton. Simon (1891) was the originator of most of the classical names for American goblin spider genera, including such taxa as *Dysderina*, *Opopaea*, *Scaphiella*, *Stenoonops*, and *Triaeris*, to each of which numerous species (from both the Old and New worlds) have subsequently been attributed, for better or for worse (definitely for worse in the case of the Old World species assigned to *Dysderina*, *Scaphiella*, and *Stenoonops*, and the New World species misplaced in *Opopaea*; see Platnick and Dupérré, 2009a, 2009b, 2010, 2011).

Although oonopids are notable for having, on average, extremely small ranges, there are about a dozen species within the family that have anomalously managed to attain pantropical distributions. In the case of *Opopaea*, for example, the type species, *Opopaea deserticola* Simon (1891), although originally described from Saint Vincent, is pantropical and now thought to be native only to the Old World (Platnick and Dupérré, 2009a). The present paper deals with another of the genera described by Simon (1891), *Pelicinus*, established for the type species *P. marmoratus* Simon (1891) from Saint Vincent.

Unlike the genera mentioned above, the name *Pelicinus* has not been widely used. Only one other New World species has been described, as *Philesius vernalis* Bryant (1945) from Florida. The generic name *Philesius* was established by Simon (1893) as a replacement name for *Pelicinus*, which Simon considered to be preoccupied in the Hymenoptera by *Pelecinus* Latreille (which actually has a different spelling). It is possible that Simon considered the original published spelling to have been a printer's error, but that spelling occurs three times in Simon (1891) and is consistent throughout; Simon's replacement name was therefore rejected as superfluous by both Roewer (1942) and Brignoli (1983). Platnick and Dupérré (2009a) examined the holotype of Bryant's *P. vernalis* and placed the name as one of several junior synonyms of another synanthropic, pantropical species, *Opopaea concolor* (Blackwall).

Saaristo (2001) transferred *Silhouettella mahei* Benoit (1979), from the Seychelles, to *Pelicinus*, placed *Gamasomorpha gracilipes* Wunderlich (1987), from the Canary Islands, as a junior synonym of *P. mahei*, and suggested (2001: 323) "It is even reasonably likely that *S. mahei* is a junior synonym of *P. marmoratus* and also *Scaphiella ula* Suman, 1965 from Hawaii." Subsequent study has confirmed Saaristo's hypothesis; *P. marmoratus* appears to be a pantropical species that has been described at least eight times, as a member of at least seven different genera! Interestingly, all those descriptions were based on island populations, even though the species does occur continentally as well, in both South America (Brazil) and Africa (Kenya). Each of the New World (and many of the Old World) populations are presumably synanthropic in origin; the specimens from Brazil recorded below, for example, were taken in the bathroom of a house, together with ants that may also belong to an introduced species. An association with ants was also reported when one of the synonyms was initially

described from Sumatra (Reimoser, 1933), and one of the new species described below from Malaysia has been taken in a termite nest.

The only other species currently assigned to *Pelicinus* is *P. saaristoi* Ott and Harvey (2008), described from Barrow Island off the coast of Western Australia. Those authors commented (Ott and Harvey, 2008: 81) that "Although this species is the first of the genus to be found in the Australasian region, we are confident that more will be found." That confidence was not misplaced; hundreds of vials of *Pelicinus* are now available in Australian collections, and the diversity there seems sufficiently high that we will probably have to produce separate papers on the faunas of the eastern and western halves of the continent. In the present, initial paper, we treat only those specimens of *Pelicinus* that have been found outside Australia.

Although we initially hypothesized that all the *Pelicinus* specimens from outside Australia would belong to the pantropical type species, that hypothesis was quickly falsified. As detailed below, the genus has localized species that are found both to the north of *P. marmoratus*, extending across southern Asia from Iran to Malaysia, and to the south of that species, with apparent endemics also in the Solomon Islands, Fiji, and New Caledonia.

Specimens of *P. marmoratus* vary considerably in appearance; as noted by Saaristo (2001: 323), the "peculiar pattern of dark quadratic-rectangular patches on [the] abdomen mentioned in [the] descriptions of *P. marmoratus* and also *Scaphiella ula* may be an artifact caused by the preservation liquid or a character which is [a] more or less common feature of the nonscutate oonopids." Certainly the dark patterns (fig. 121) seem to fade in preservative over time; the types of *S. ula* today show a much less distinct pattern than indicated by Suman (1965: figs. 15, 17). Although specimens of *P. marmoratus* and *P. saaristoi* are less heavily sclerotized than their congeners, darkened abdominal patterns are also visible through the dorsal scutum in some of the more heavily sclerotized species.

Pelicinus seems to be the earliest described genus belonging to a group of hard-bodied oonopine taxa including *Silhouettella* Benoit, *Lionneta* Benoit, and *Farqua* Saaristo (see Saaristo, 2001: 309, and Álvarez-Padilla et al., in press, for comments on this group), sharing with at least some other members of that group a distinctively widened distal receptor on the tarsal organ (figs. 20–24, 56–60, 80–84, 116–120). Such widened distal receptors occur, for example, in the type species of *Farqua* (Daniela Andriamalala, in litt.), as well as in the related new Malagasy genera described by Álvarez-Padilla et al. (in press). Although Saaristo (2001) referred to this assemblage of taxa as the *Lionneta* group and Álvarez-Padilla et al. (in press) referred to them as "silhouettelloids," we prefer the informal designation "*Pelicinus* group," recognizing the priority of *Pelicinus*, as well as its more widespread distribution.

Burger (2010: figs. 1A–C, 2A–B, 5A–H, 7F, 8A–G) provided detailed descriptions of the genitalic features of two undescribed species of *Pelicinus* from Australia (under the names *Myrmopopaea* sp. 1, from Queensland, and *Myrmopopaea* sp. 2, from Western Australia). Burger's results confirm the affinity of *Pelicinus* with *Silhouettella* and *Lionneta*, and suggest that the genus *Grymeus* Harvey may also belong to the *Pelicinus* group. Shared features in the female genitalia include the "squiggled" shape of the anterior receptaculum (termed "globular appendix" by Burger), the poreplate in front of the posterior receptaculum (termed

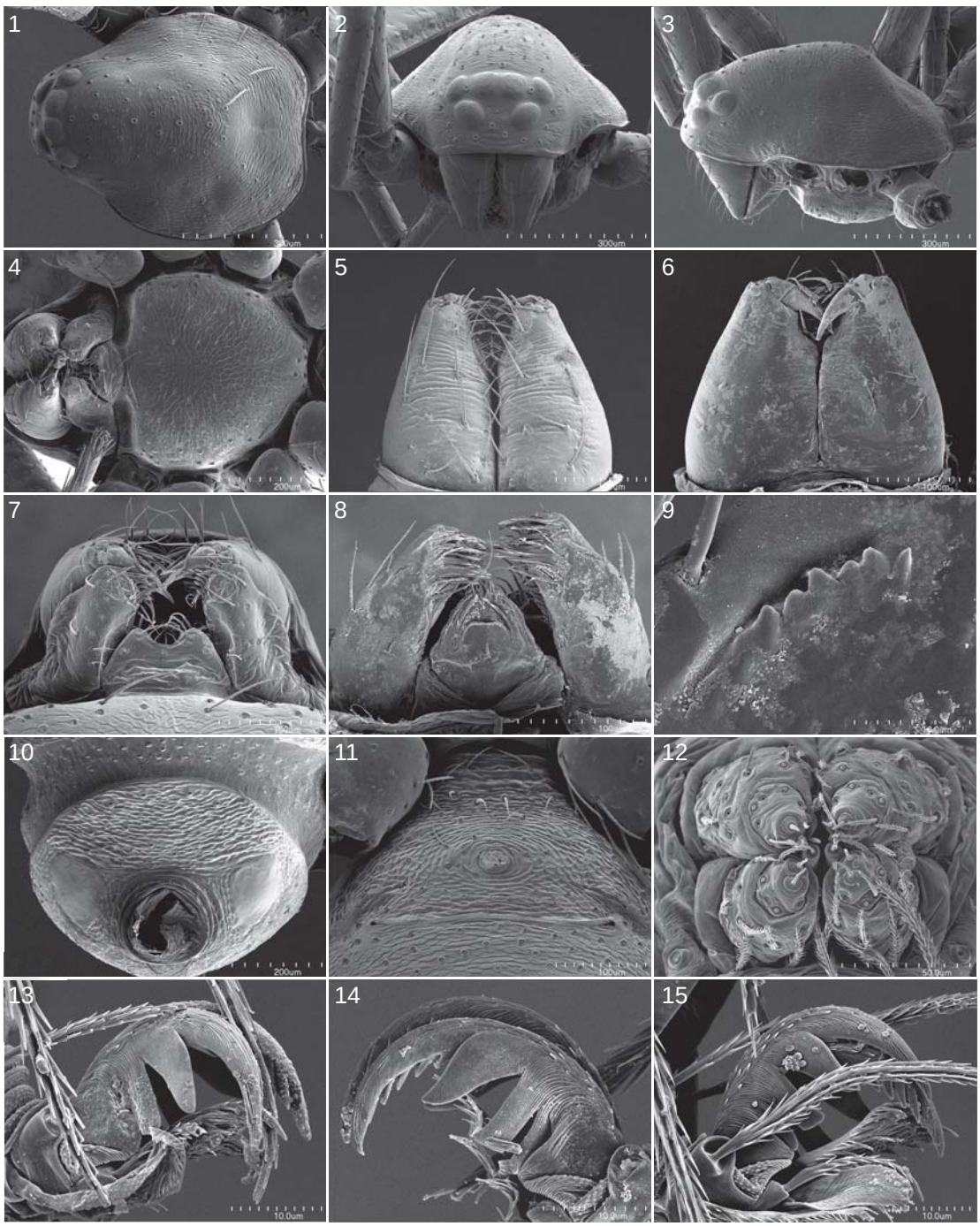
"papillae" by Burger), and the details of the anterior T-shaped projection (termed "paddle-like sclerite" by Burger).

Burger's treatment of the "globular appendix" as a part of the posterior genitalic apparatus may be correct, but is not followed here; we adopt instead Forster's (1980) interpretation of dysderoid female genitalia (see also Forster and Platnick, 1985). Under Forster's view, the pore-plate represents a modification of the posterior wall of the bursa copulatrix, in which case all the genitalic elements anterior of that structure are (evolutionarily, if not also functionally) portions of the anterior, rather than posterior, receptaculum. Certainly the position and shape of the "globular appendix" seem fully homologous to the anterior receptaculum found in such basal oonopid genera as *Sulsula* Simon and *Kapitia* Forster (see Platnick et al., 2012: figs. 137–142, 328, 329).

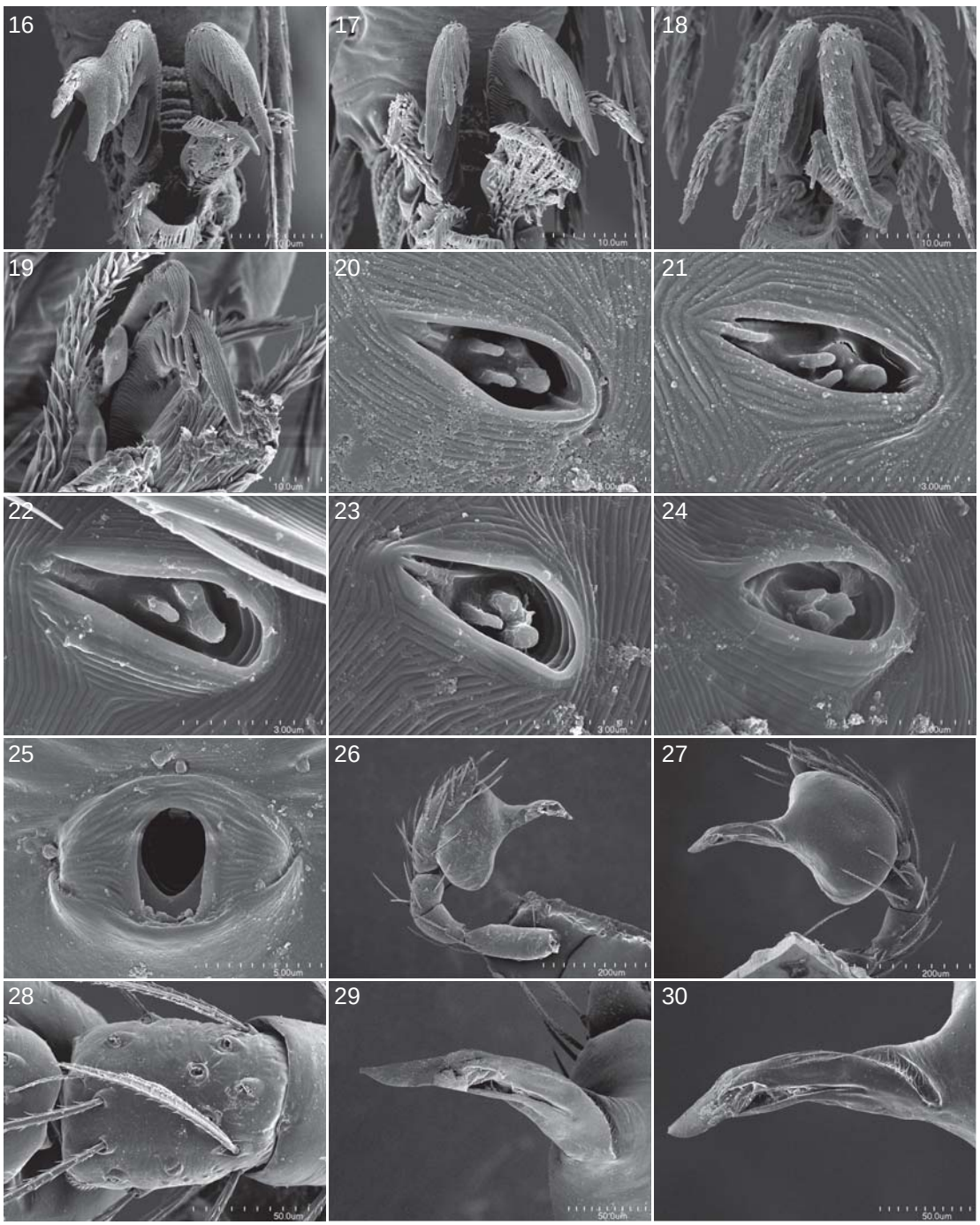
Our methods follow those of Platnick and Dupérré (2009a, 2009b); only differences from the males are mentioned in the descriptions of females. Aside from the pantropical type species, the descriptions are presented in geographic order, starting in Iran and proceeding eastward. Scans were taken from uncoated right male palps, and the images were flipped for consistency (except for the dorsal views of the embolus, which were not flipped). All measurements are in mm. High-resolution versions of the images, many additional images of *P. marmoratus* specimens from various localities, the geocoded locality data, and a distribution map for each species will be available on the goblin spider Planetary Biodiversity Inventory (PBI) project's website (http://research.amnh.org/oonopidae).

COLLECTIONS EXAMINED

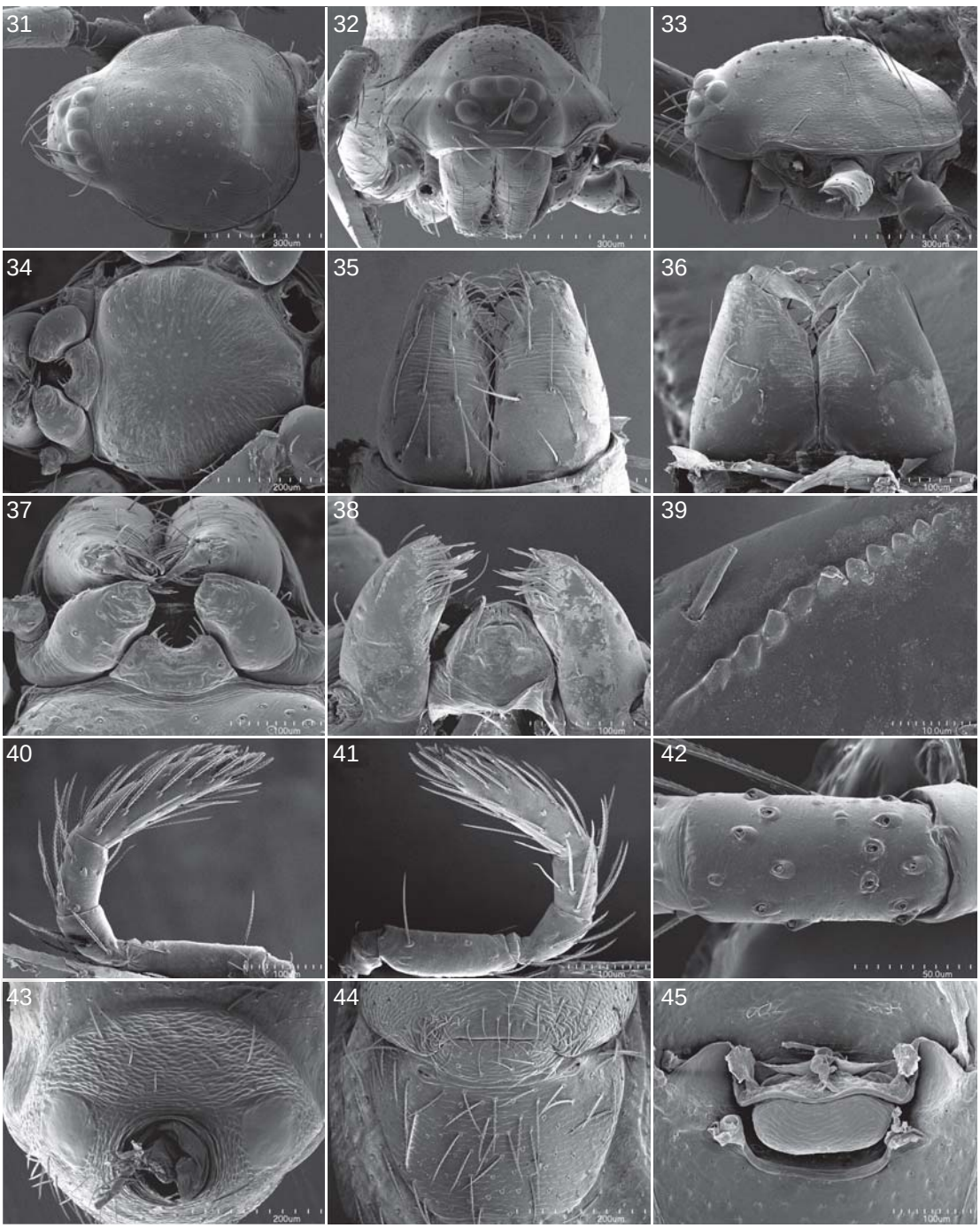
AMNH	American Museum of Natural History, New York NY
BMNH	Natural History Museum, London, England
BPBM	Bernice P. Bishop Museum, Honolulu HI
CAS	California Academy of Sciences, San Francisco CA
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge MA
MHNG	Muséum d'Histoire Naturelle, Geneva, Switzerland
MNHN	Muséum National d'Histoire Naturelle, Paris, France
MPEG	Museu Paraense Emílio Goeldi, Belém, Brazil
MRAC	Musée Royal de l'Afrique Centrale, Tervuren, Belgium
MUNZ	Entomology Research Museum, Lincoln University, Canterbury, New Zealand
NML	Nationaal Natuurhistorisch Museum, Leiden, Netherlands
NMW	Naturhistorischen Museum, Wien, Austria
QMB	Queensland Museum, Brisbane, Australia
USNM	National Museum of Natural History, Smithsonian Inst., Washington DC



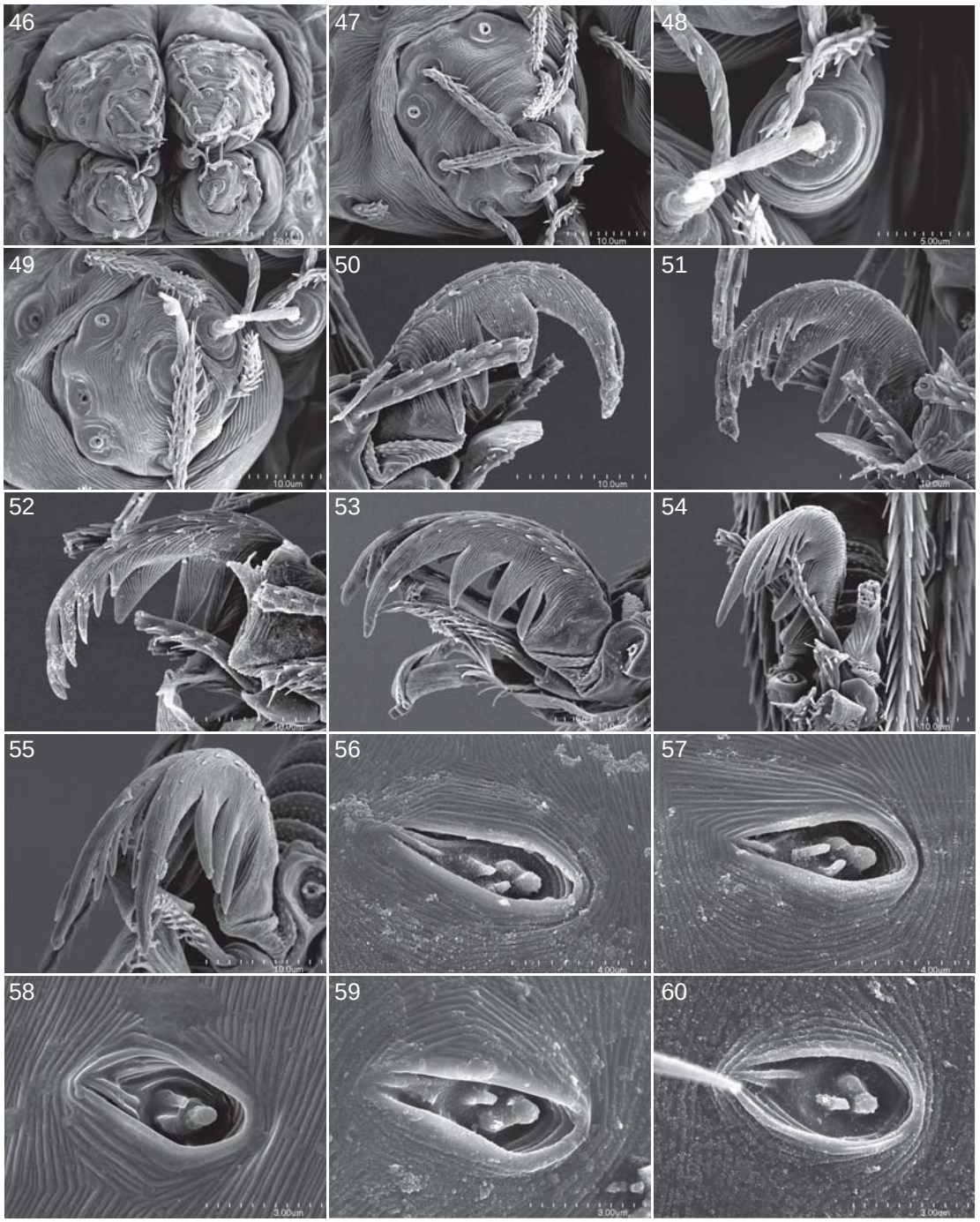
FIGURES 1–15. *Pelicinus marmoratus* Simon, male. **1.** Carapace, dorsal view. **2.** Same, anterior view. **3.** Same, lateral view. **4.** Sternum, ventral view. **5.** Chelicerae, anterior view. **6.** Same, posterior view. **7.** Mouthparts, ventral view. **8.** Labrum and endites, dorsal view. **9.** Serrula, dorsal view. **10.** Abdomen, anterior view. **11.** Epigastric area, ventral view. **12.** Spinnerets, distal view. **13.** Claws, leg II, lateral view. **14.** Same, leg III. **15.** Same, leg IV.



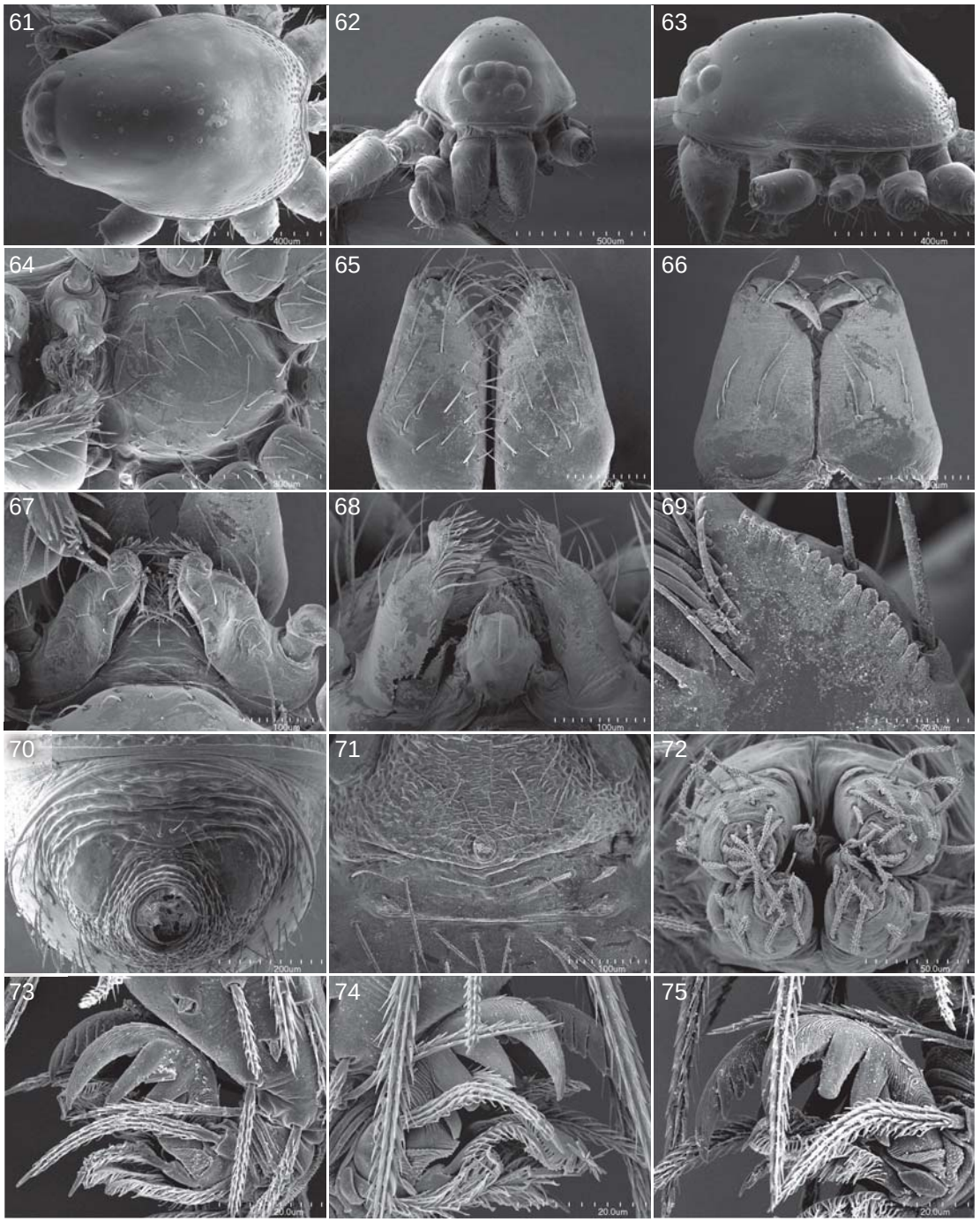
FIGURES 16–30. *Pelicinus marmoratus* Simon, male. **16.** Claws, leg I, distal view. **17.** Same, leg II. **18.** Same, leg III. **19.** Same, leg IV. **20.** Tarsal organ, leg I, dorsal view. **21.** Same, leg II. **22.** Same, leg III. **23.** Same, leg IV. **24.** Same, palp. **25.** Trichobothrial base, metatarsus II, dorsal view. **26.** Palp, prolateral view. **27.** Same, retrolateral view. **28.** Palpal tibia, dorsal view. **29.** Embolus, ventral view. **30.** Same, retrolateral view.



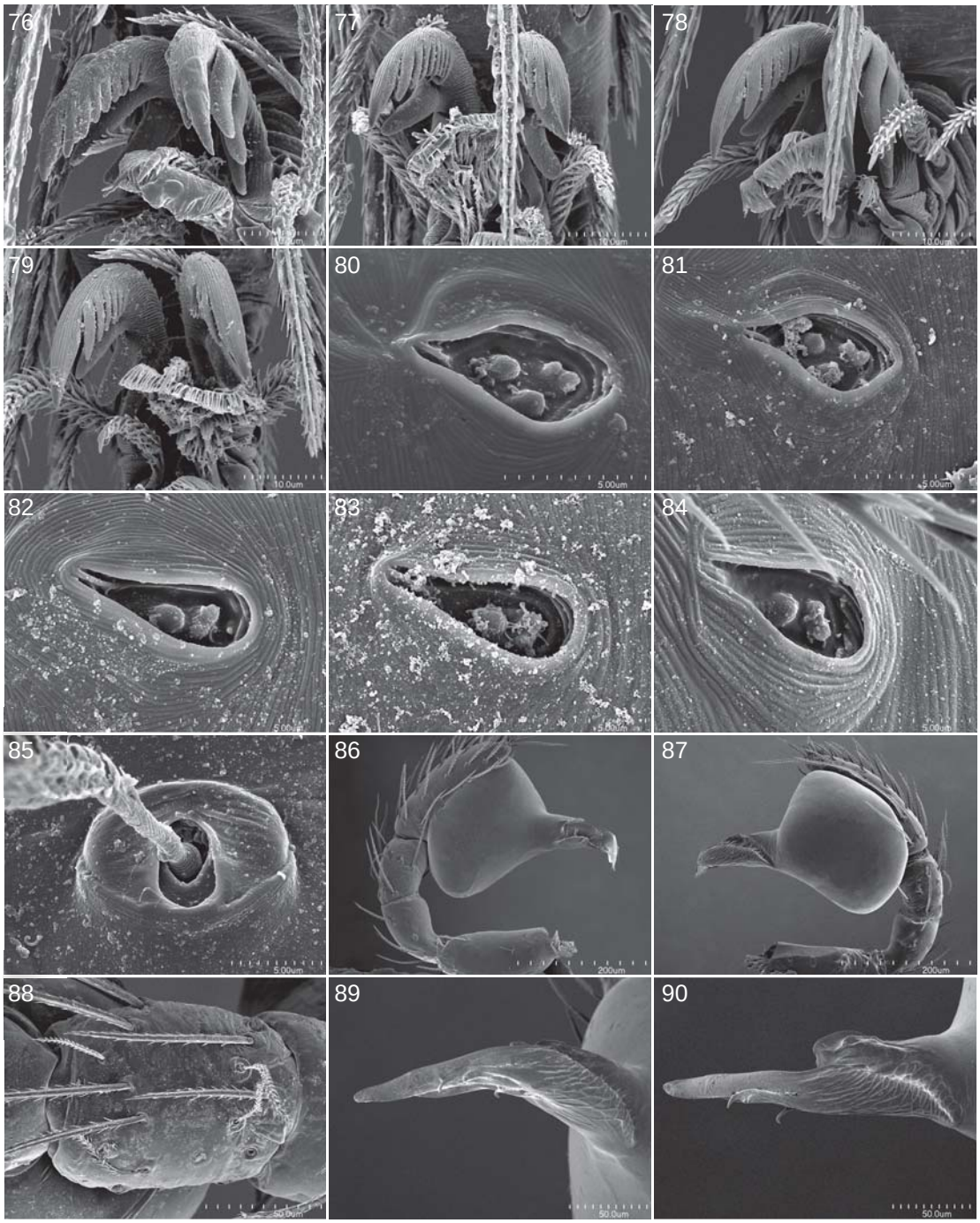
FIGURES 31–45. *Pelicinus marmoratus* Simon, female. **31.** Carapace, dorsal view. **32.** Same, anterior view. **33.** Same, lateral view. **34.** Sternum, ventral view. **35.** Chelicerae, anterior view. **36.** Same, posterior view. **37.** Mouthparts, ventral view. **38.** Labrum and endites, dorsal view. **39.** Serrula, dorsal view. **40.** Palp, prolateral view. **41.** Same, retrolateral view. **42.** Palpal tibia, dorsal view. **43.** Abdomen, anterior view. **44.** Epigastric area, ventral view. **45.** Genitalia, dorsal view.



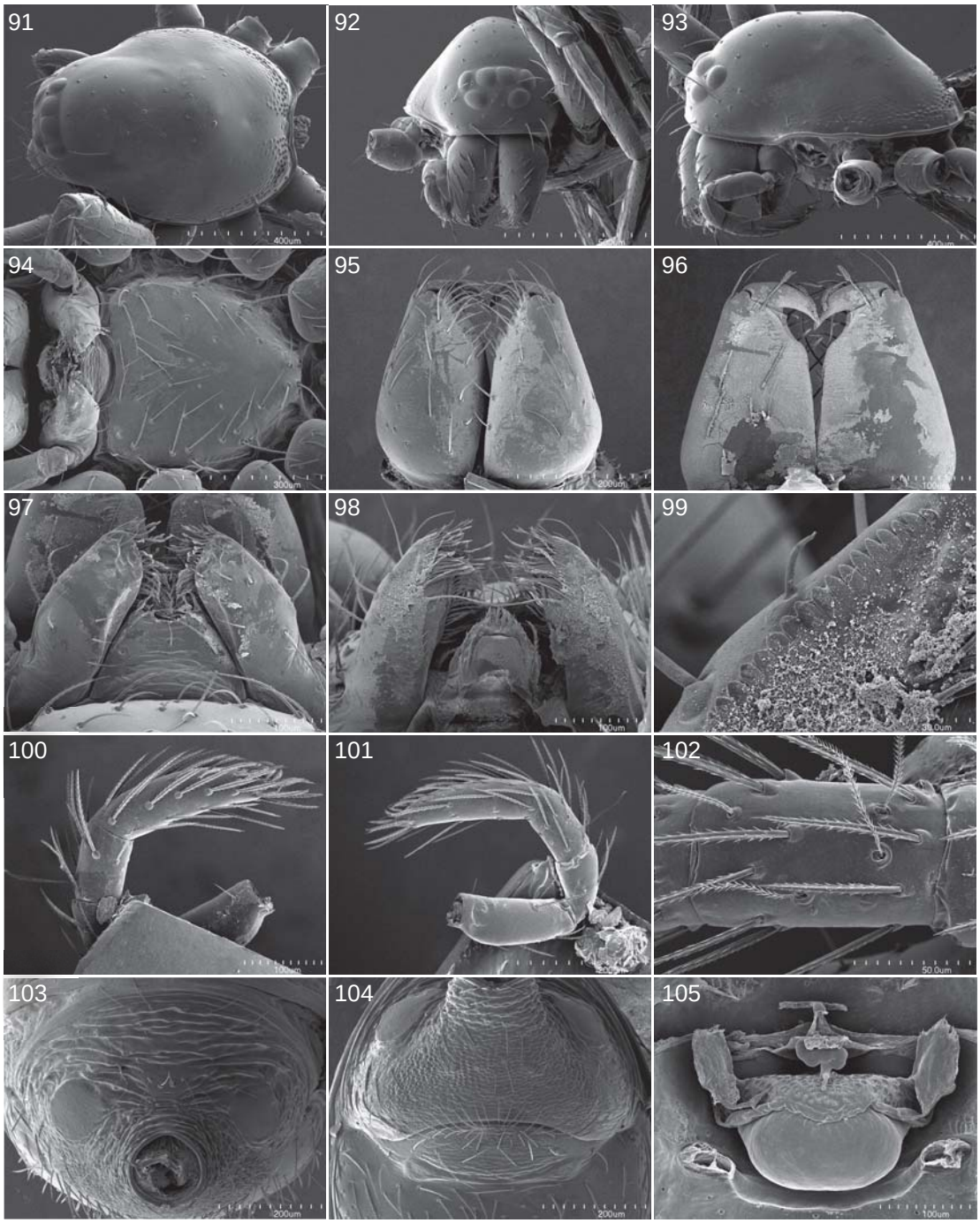
FIGURES 46–60. *Pelicinus marmoratus* Simon, female. **46.** Spinnerets, distal view. **47.** Anterior lateral spinneret, same. **48.** Posterior median spinneret, same. **49.** Posterior lateral spinneret, same. **50.** Claw, leg I, lateral view. **51.** Same, medial view. **52.** Same, leg II. **53.** Claws, leg IV, lateral view. **54.** Claw, leg III, distal view. **55.** Same, leg IV. **56.** Tarsal organ, leg I, dorsal view. **57.** Same, leg II. **58.** Same, leg III. **59.** Same, leg IV. **60.** Same, palp.



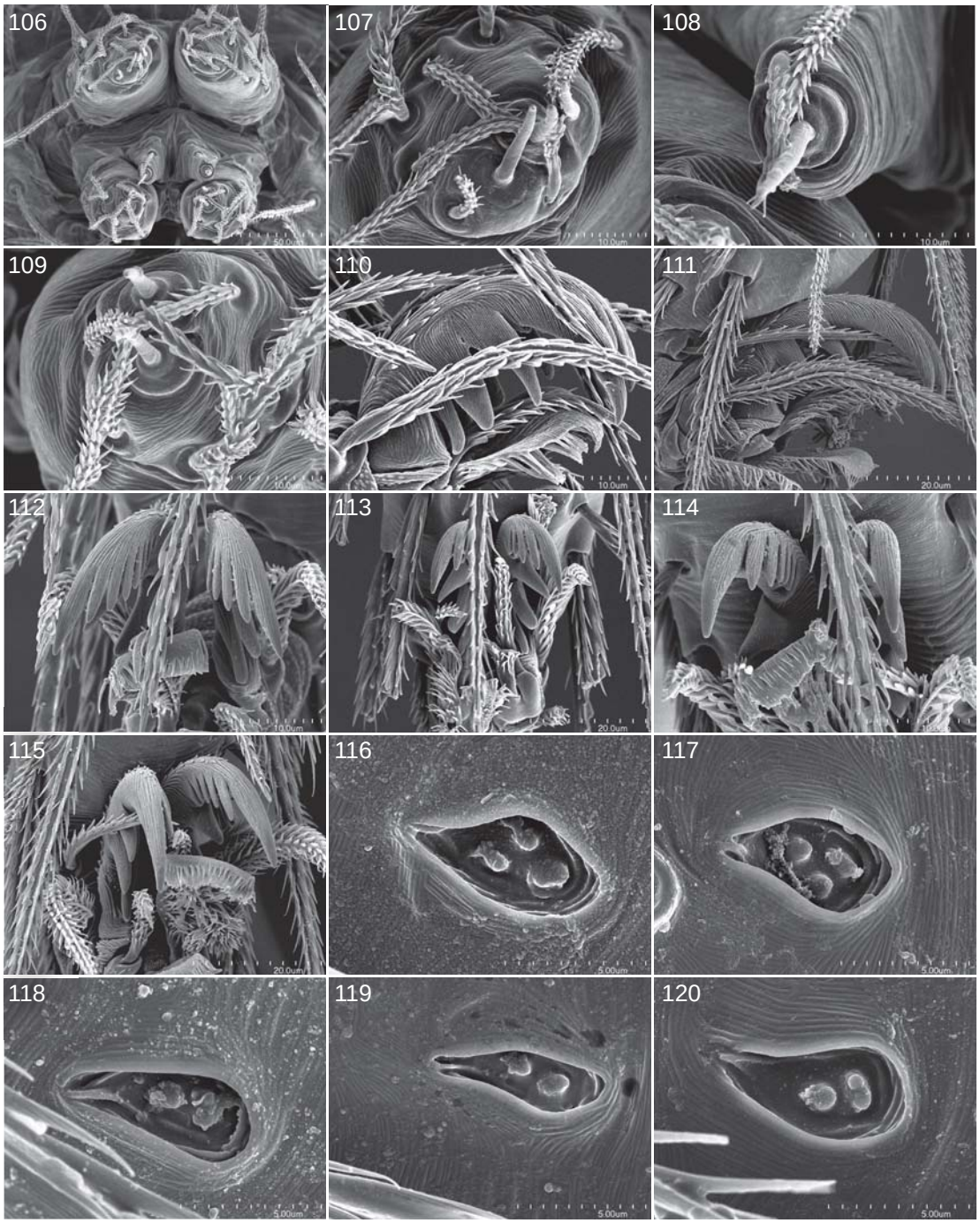
FIGURES 61–75. *Pelicinus koghis*, new species, male. **61.** Carapace, dorsal view. **62.** Same, anterior view. **63.** Same, lateral view. **64.** Sternum, ventral view. **65.** Chelicerae, anterior view. **66.** Same, posterior view. **67.** Mouthparts, ventral view. **68.** Labrum and endites, dorsal view. **69.** Serrula, dorsal view. **70.** Abdomen, anterior view. **71.** Epigastric area, ventral view. **72.** Spinnerets, distal view. **73.** Claws, leg II, lateral view. **74.** Same, leg III. **75.** Same, leg IV.



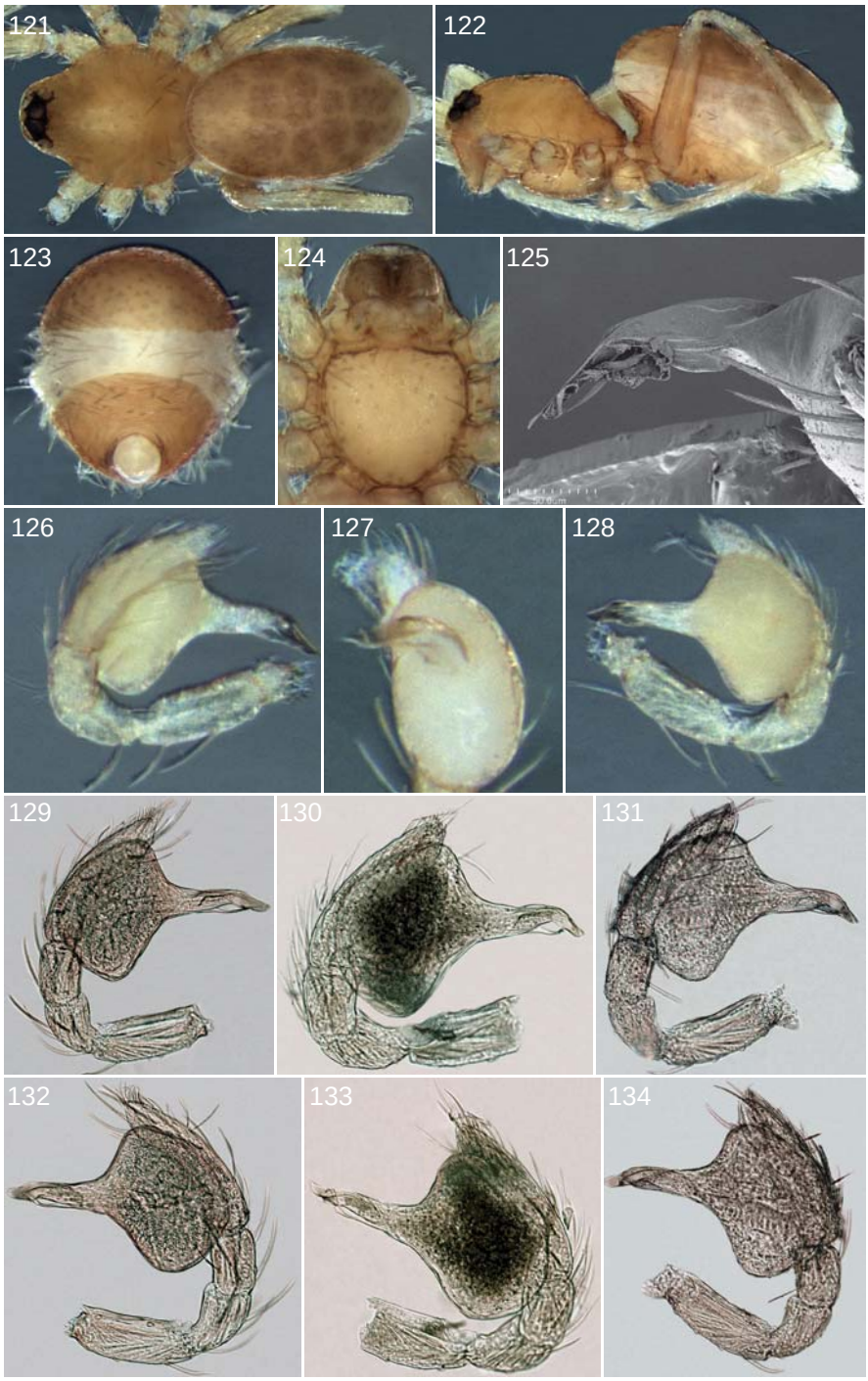
FIGURES 76–90. *Pelicinus koghis*, new species, male. **76.** Claws, leg I, distal view. **77.** Same, leg II. **78.** Same, leg III. **79.** Same, leg IV. **80.** Tarsal organ, leg I, dorsal view. **81.** Same, leg II. **82.** Same, leg III. **83.** Same, leg IV. **84.** Same, palp. **85.** Trichobothrial base, metatarsus II, dorsal view. **86.** Palp, prolateral view. **87.** Same, retrolateral view. **88.** Palpal tibia, dorsal view. **89.** Embolus, ventral view. **90.** Same, retrolateral view.



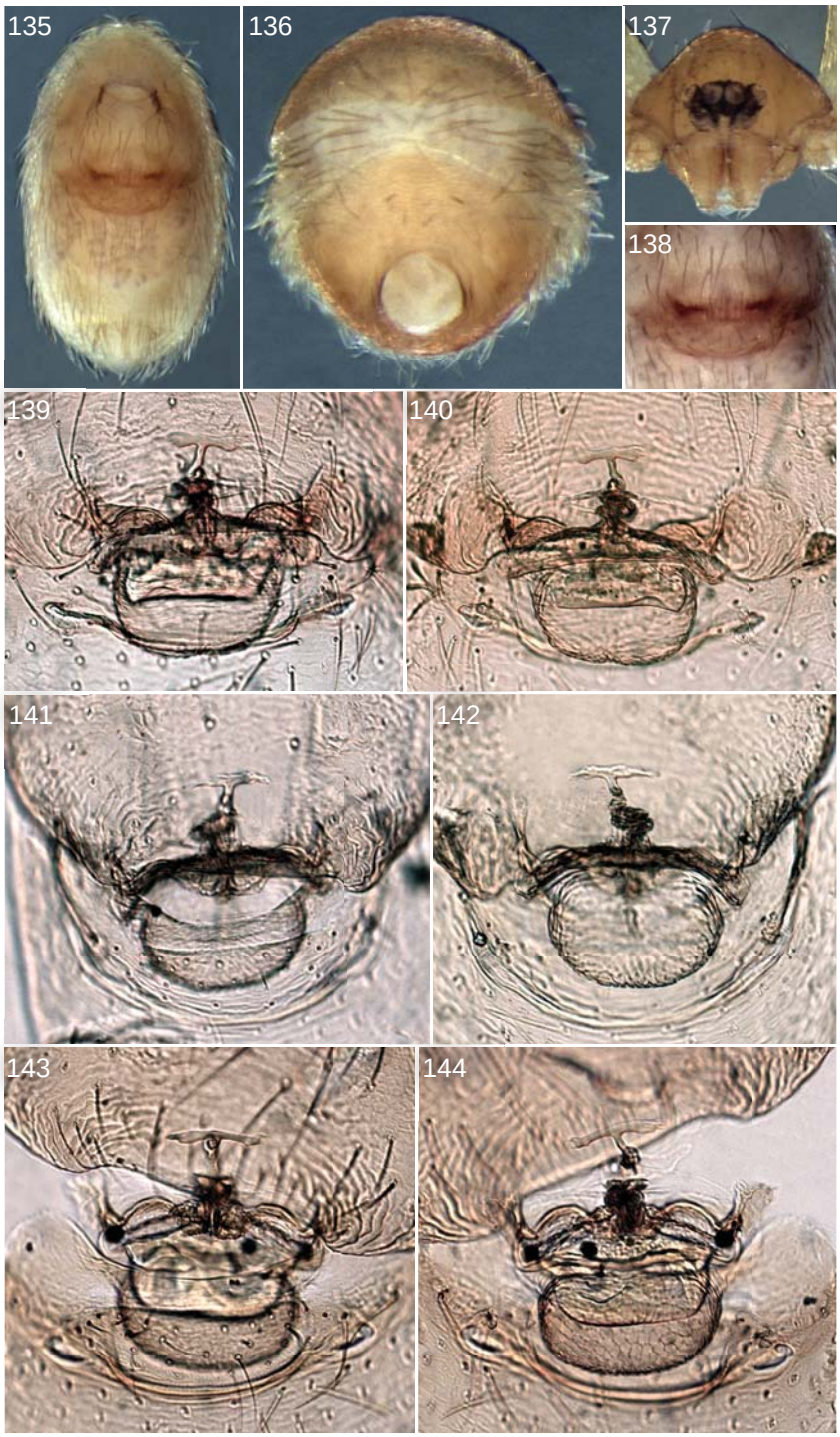
FIGURES 91–105. *Pelicinus koghis*, new species, female. **91.** Carapace, dorsal view. **92.** Same, anterior view. **93.** Same, lateral view. **94.** Sternum, ventral view. **95.** Chelicerae, anterior view. **96.** Same, posterior view. **97.** Mouthparts, ventral view. **98.** Labrum and endites, dorsal view. **99.** Serrula, dorsal view. **100.** Palp, prolateral view. **101.** Same, retrolateral view. **102.** Palpal tibia, dorsal view. **103.** Abdomen, anterior view. **104.** Epigastric area, ventral view. **105.** Genitalia, dorsal view.



FIGURES 106–120. *Pelicinus koghis*, new species, female. **106.** Spinnerets, distal view, **107.** Anterior lateral spinneret, same. **108.** Posterior median spinneret, same. **109.** Posterior lateral spinneret, same. **110.** Claws, leg I, lateral view. **111.** Same, leg IV. **112.** Claws, leg I, distal view. **113.** Same, leg II. **114.** Same, leg III. **115.** Same, leg IV. **116.** Tarsal organ, leg I, dorsal view. **117.** Same, leg II. **118.** Same, leg III. **119.** Same, leg IV. **120.** Same, palp.



FIGURES 121–134. *Pelicinus marmoratus* Simon, male. **121.** Habitus, dorsal view. **122.** Same, lateral view. **123.** Abdomen, anterior view. **124.** Sternum, ventral view. **125.** Left embolus, dorsal view. **126, 129–131.** Left palp, prolateral view. **127.** Same, ventral view. **128, 132–134.** Same, retrolateral view (125–128, Marshall Islands; 129, 132, Brazil; 130, 133, Sumatra; 131, 134 Hawaii).



FIGURES 135–144. *Pelicinus marmoratus* Simon, female. **135.** Abdomen, ventral view. **136.** Same, anterior view. **137.** Carapace, anterior view. **138, 139, 141, 143.** Genitalia, ventral view. **140, 142, 144.** Same, dorsal view (139, 140, Seychelles; 141, 142, Sumatra; 143, 144, Nevis).

Pelicinus Simon

Pelicinus Simon, 1891: 559 (type species by monotypy *Pelicinus marmoratus* Simon).

Philesius Simon, 1893: 303 (superfluous replacement name for *Pelicinus* Simon, not preoccupied by *Pelecinus* Latreille).

Myrmopopaea Reimoser, 1933: 396 (type species by monotypy *Myrmopopaea jacobsoni* Reimoser). NEW SYNONYMY.

Harryoonops Makhan and Ezzatpanah, 2011: 1 (type species by original designation *Harryoonops amrishi* Makhan and Ezzatpanah). NEW SYNONYMY.

Diagnosis: Males of *Pelicinus* can be recognized by the characteristic form of the embolus, which bears a sail-shaped expansion bordered proximally by a channel-shaped excavation (fig. 30); females have a rounded posterior receptaculum followed anteriorly by a poreplate, then a widened and squiggled anterior receptaculum, and finally a narrower (usually T-shaped) anterior process (figs. 143, 144). The greatly widened, rectangular protrusion on the labrum (figs. 8, 38, 68, 98) may also be synapomorphic for the genus, but labral morphology has not yet been documented in other members of the *Pelicinus* group; most other examined oonopids have much narrower protrusions (although there are exceptions, such as *Escaphiella*; see Platnick and Dupérré, 2009b: fig. 578).

Description: Total length of males 1.4–2.2, of females 1.6–2.4. Carapace, sternum, mouthparts, abdominal scuta yellow to red-brown, without pattern, abdomen soft portions white to yellow, sometimes with dark markings visible through dorsal scutum, legs yellow to orange-brown. **Cephalothorax:** Carapace broadly oval in dorsal view, anteriorly narrowed to 0.49 times its maximum width or less, pars cephalica slightly elevated in lateral view (figs. 3, 33, 63, 93), anterolateral corners with slightly sclerotized triangular projections, pars thoracica with rounded posterolateral corners, without depressions or radiating rows of pits, posterolateral edge without pits, posterior margin not bulging below posterior rim, posterolateral surface without spikes; surface of elevated portion of pars cephalica smooth or reticulate, sides finely reticulate (figs. 1, 31) or granulate (figs. 61, 91); fovea absent, lateral margin straight, rebordered, without denticles; plumose setae near posterior margin of pars thoracica absent; marginal, nonmarginal pars cephalica, pars thoracica setae light, needlelike, scattered. Clypeus margin slightly rebordered, straight in front view (figs. 2, 32, 62, 92), vertical in lateral view, high, ALE separated from edge of carapace by their radius or more, median projection absent; setae light, needlelike. Chilum absent. Eyes six, well developed, PME largest, ALE oval, PME squared, PLE oval; posterior eye row recurved from above, straight from front; ALE separated by more than their diameter, ALE-PLE separated by less than ALE radius, PME touching throughout most of their length, PLE-PME separated by less than PME radius. Sternum wider than long, not fused to carapace, surface smooth (figs. 64, 94) or reticulate (if reticulate, sculpturing present everywhere except front, figs. 4, 34), median concavity and hair tufts absent, radial furrow opposite coxae III absent, radial furrows between coxae present only in *P. sengleti*, where furrows contain rows of small pits, surface without pits, sickle-shaped structures absent, anterior margin with continuous transverse groove, posterior margin not extending posteriorly of coxae IV, anterior corner unmodified, lateral margin with infracoxal grooves containing

anterior and posterior openings, distance between coxae approximately equal, extensions of precoxal triangles absent, lateral margins unmodified, without posterior hump; setae sparse, dark, needlelike, densest laterally, originating from surface. Chelicerae straight, anterior face unmodified (figs. 5, 35, 65, 95); without teeth on promargin or retromargin; fangs without toothlike projections, directed medially, shape normal, without prominent basal process, tip unmodified (figs. 6, 36, 66, 96); setae dark, needlelike, densest medially; paturon inner margin with short interdigitating setae, distal region, posterior surface, promargin, inner margin all unmodified, laminate groove absent. Labium triangular, not fused to sternum, anterior margin indented at middle (figs. 7, 37, 97), same as sternum in sclerotization; with six or more setae on anterior margin, subdistal portion with unmodified setae. Labrum with wide dorsal projection (figs. 8, 38, 68, 98). Endites distally not excavated, serrula present in single row (figs. 39, 69, 99), sometimes reduced to few teeth (fig. 9), anteromedian tip of males sometimes distinctly narrowed (fig. 67), posteromedian part unmodified, same as sternum in sclerotization. Female palp without claw or spines (figs. 40, 41, 100, 101), patella without prolateral row of ridges, tibia with at least two trichobothria (figs. 42, 102), tarsus unmodified. **Abdomen:** Cylindrical, without long posterior extension, rounded posteriorly, interscutal membrane without rows of small sclerotized platelets. Booklung covers large, ovoid, without setae, anterolateral edge unmodified, sometime darkened; posterior spiracles connected by groove (figs. 11, 44, 71, 104). Pedicel tube short, ribbed, scutum extending far dorsal of pedicel, plumose hairs, matted setae on anterior ventral abdomen in pedicel area, cuticular outgrowths near pedicel all absent. Dorsal scutum without color pattern, not fused to epigastric scutum, anterior half without projecting denticles. Epigastric scutum surrounding pedicel (figs. 10, 43), portion of scutum dorsal of pedicel often with transverse ridges (figs. 70, 103), small lateral sclerites absent, protruding only in males of *P. raveni*, that of females without lateral joints. Postepigastric scutum of males long, almost rectangular, fused to epigastric scutum, anterior margin unmodified, without posteriorly directed lateral apodemes, that of females shorter, not fused to epigastric scutum (fig. 44). Spinneret scutum present as incomplete ring. Supraanal scutum absent. All scuta strongly sclerotized (except in *P. marmoratus*). Dorsal, epigastric, postepigastric setae dark, needlelike, those of epigastric area not thickened. Spinneret scutum with fringe of stout setae. Dense patch of setae anterior to spinnerets absent. Interscutal membrane with setae. Colulus present. Spinnerets (scanned only in *P. marmoratus* and *P. koghis*): anterior laterals with one major ampullate gland spigot on wide base plus one or two piriform gland spigots (figs. 12, 46, 72, 106, 107), posterior medians of both sexes with single spigot (figs. 12, 48, 72, 108), posterior laterals of both sexes with two spigots (figs. 12, 49, 72, 109). **Legs:** Femur IV not thickened, same size as femora I–III, patella plus tibia I shorter than carapace, tibia I unmodified, tibia IV specialized hairs on ventral apex, ventral scopula, metatarsi I, II mesoapical comb, metatarsi III, IV weak ventral scopula all absent. Leg spines absent. Tarsi without inferior claw. Outer margins of superior claws with three or four large, irregularly shaped teeth (figs. 13–15, 50–53, 73–75, 110, 111), inner margins with four to eight smaller teeth situated near tip of claw (figs. 14–19, 54, 55, 76–79, 112–115). Trichobothrial bases with low ridges (figs. 25, 85). Tarsal organs with three receptors on legs I, II, two receptors on legs III, IV, palps, distal

receptor greatly widened (figs. 20–24, 56–60, 80–84, 116–120). **Genitalia:** Male epigastric region with small to large, circular to oval sperm pore situated in front of anterior spiracles (figs. 11, 71), weakly rebordered; furrow without Ω-shaped insertions, without setae. Male palp of normal size, not strongly sclerotized, right and left palps symmetrical, proximal segments, cymbium, bulb all yellow; trochanter of normal size, unmodified; femur of normal size, two or more times as long as trochanter, without posteriorly rounded lateral dilation, attaching to patella basally; patella shorter than femur, not enlarged, without prolateral row of ridges, setae unmodified; tibia with three trichobothria (figs. 28, 88); cymbium yellow, narrow in dorsal view, not fused with bulb, extending beyond distal tip of bulb, plumose setae, stout setae, distal patch of setae all absent, bulb 1–1.5 times as long as cymbium, stout, tapering apically (figs. 26, 27, 86, 87); embolus without prolateral excavation, with conspicuous sail bordered by long excavation (figs. 30, 90), often with small, basal projections (fig. 89); conductor present, narrow (fig. 29). Female genitalia with strong, usually transverse posterior receptaculum bordered anteriorly by poreplate; anterior receptaculum reduced to squiggled tube followed anteriorly by T-shaped process (figs. 45, 105).

Distribution: Aside from the pantropical type species, the genus occurs in southern Asia and Australasia.

Synonymy: The type species of *Myrmopopaea* is here placed as one of several junior synonyms of the type species of *Pelicinus*. The type species of the recently "described" genus *Harryoonops* was based on a single male from Iran; the two-line generic "description" provided by its authors is completely useless (it could fit almost any gamasomorphine genus), and the five photographs they provided are of extremely low quality. So far as we can tell from those inferior images, their male belongs to *Pelicinus*; it was taken in a province of Iran to the northeast of the Iranian specimens described below as *P. sengleti*. There seem to be sufficient differences in the shape of the embolus tip to separate their species from ours, but we are unable to include their species in our key, as none of the features required for a species-level identification can actually be determined from their thoroughly inadequate "contribution."

Identification: Accurate identification requires scanning electron microscopy of the male palp (especially a dorsal view of the male embolus) and compound microscopy of digested female genitalia. For convenience, we have provided a key to species that relies on more easily observable features, but the results should be confirmed by comparison of genitalic characters.

Key to Species (except *P. amrishi*)

1. Dorsal scutum of abdomen punctate (figs. 298, 341).....2
– Dorsal scutum of abdomen reticulate or smooth (figs. 182, 199).....6
2. Scuta weakly sclerotized (figs. 121, 135).....*marmoratus*
– Scuta strongly sclerotized (figs. 297, 314).....3
3. Posterior portion of pars thoracica without granulations; sternum coarsely reticulate; Fiji .....*raveni*
– Posterior portion of pars thoracica with granulations; sternum smooth; New Caledonia.....4

4. Anterior surface of epigastric scutum with few ridges (figs. 315, 325).....*damieu*
– Anterior surface of epigastric scutum with several ridges (figs. 298, 341).....5
5. Anterior surface of epigastric scutum with narrow ridges at midline (figs. 298, 308).....*monteithi*
– Anterior surface of epigastric scutum without narrow ridges at midline (figs. 331, 341).....*koghis*
6. Sternum with radial furrows between coxae (fig. 148); Iran.....*sengleti*
– Sternum without radial furrows.....7
7. Posterior portion of pars thoracica with granulations; Solomon Islands.....*churchillae*
– Posterior portion of pars thoracica without granulations.....8
8. Booklung covers same color as rest of epigastric scutum (figs. 175, 217, 235).....9
– Booklung covers darker than rest of epigastric scutum (figs. 164, 182).....11
9. Anterior surface of epigastric scutum with three weak ridges at sides only (fig. 175); India.....*lachivala*
– Anterior surface of epigastric scutum with more than three ridges; Thailand.....10
10. Anterior surface of epigastric scutum with about five ridges (figs. 235, 245).....*khao*
– Anterior surface of epigastric scutum with about eight ridges (fig. 217).....*sayam*
11. Ridges on anterior surface of epigastric scutum thickened, strong (fig. 199); Thailand.....*schwendingeri*
– Ridges on anterior surface of epigastric scutum not thickened (figs. 164, 182).....12
12. Elevated portion of pars cephalica smooth.....13
– Elevated portion of pars cephalica reticulate.....15
13. Abdomen with dark markings visible through dorsal scutum (figs. 261, 268); Malaysia.....14
– Abdomen without dark markings (fig. 208); Laos.....*tham*
14. Ridges absent on dorsal half of anterior surface of epigastric scutum (fig. 263).....*penang*
– Ridges present on dorsal half of anterior surface of epigastric scutum (fig. 270).....*johor*
15. Males (those of *P. duong* unknown).....16
– Females (those of *P. madurai* unknown).....17
16. Posterior margin of anterior sternal groove with elevated, procurved median portion (fig. 165); India.....*madurai*
– Posterior margin of anterior sternal groove with recurved median portion (fig. 183); Thailand.....*deelemanae*
17. Postepigastric scutum relatively short (fig. 227); Vietnam.....*duong*
– Postepigastric scutum relatively long (fig. 191); Thailand.....*deelemanae*

Pelicinus marmoratus Simon
Figures 1–60, 121–144

Pelicinus marmoratus Simon, 1891: 559, fig. 4 (one male and two female syntypes from Saint Vincent, no specific locality, in BMNH; examined).

Philesius marmoratus: Simon, 1893: 303.

Myrmopopaea jacobsoni Reimoser, 1933: 397, figs. 1–3 (male holotype and female paratype from Fort de Kock [= Bukittinggi], Sumatra, in NMW; examined). NEW SYNONYMY.

Gamasomorpha minima Berland, 1942: 5, fig. 1a (male holotype from Canton Island, Phoenix Islands, in BPBM; examined). NEW SYNONYMY.

Hytanis pusilla Bryant, 1942: 326, figs. 13, 14 (female holotype from Christiansted, Saint Croix, Virgin Islands, in MCZ; examined). NEW SYNONYMY.

Scaphiella ula Suman, 1965: 230, figs. 15–20 (male holotype from Puu Papaa peak, Oahu, Hawaii, in BPBM; examined). NEW SYNONYMY.

Triaeris reticulatus Chickering, 1968: 354, figs. 6–13 (male holotype from Saint Croix, Virgin Islands, in MCZ; examined). First synonymized with *Hytanis pusilla* by Chickering, 1973.

Triaeris pusillus: Chickering, 1973: 228.

Silhouettella mahei Benoit, 1979: 205, fig. 6A (male holotype from Morne Blanc, Mahé, Seychelles, in MRAC; examined). NEW SYNONYMY.

Gamasomorpha gracilipes Wunderlich, 1987: 65, figs. 37–39 (male holotype from Valle Gran Rey, La Gomera, Canary Islands, in Naturmuseum Senckenberg; examined by Michael Saaristo). First synonymized with *Silhouettella mahei* by Saaristo, 2001.

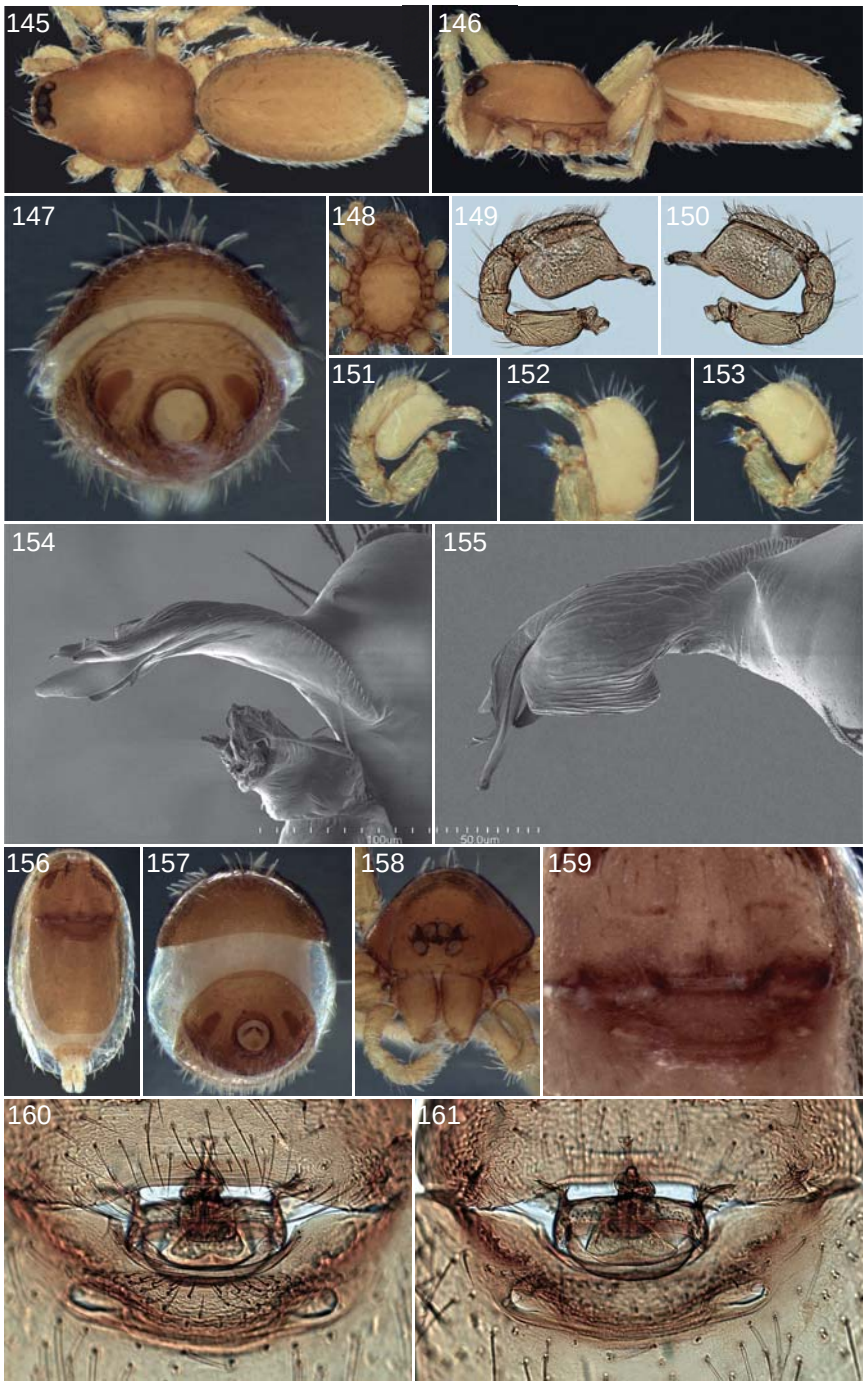
Pelicinus mahei: Saaristo, 2001: 321, figs. 40–46.

Diagnosis: Both sexes can easily be separated from members of all the other species detailed below by the much weaker scuta on the abdomen (figs. 121–123, 135, 136).

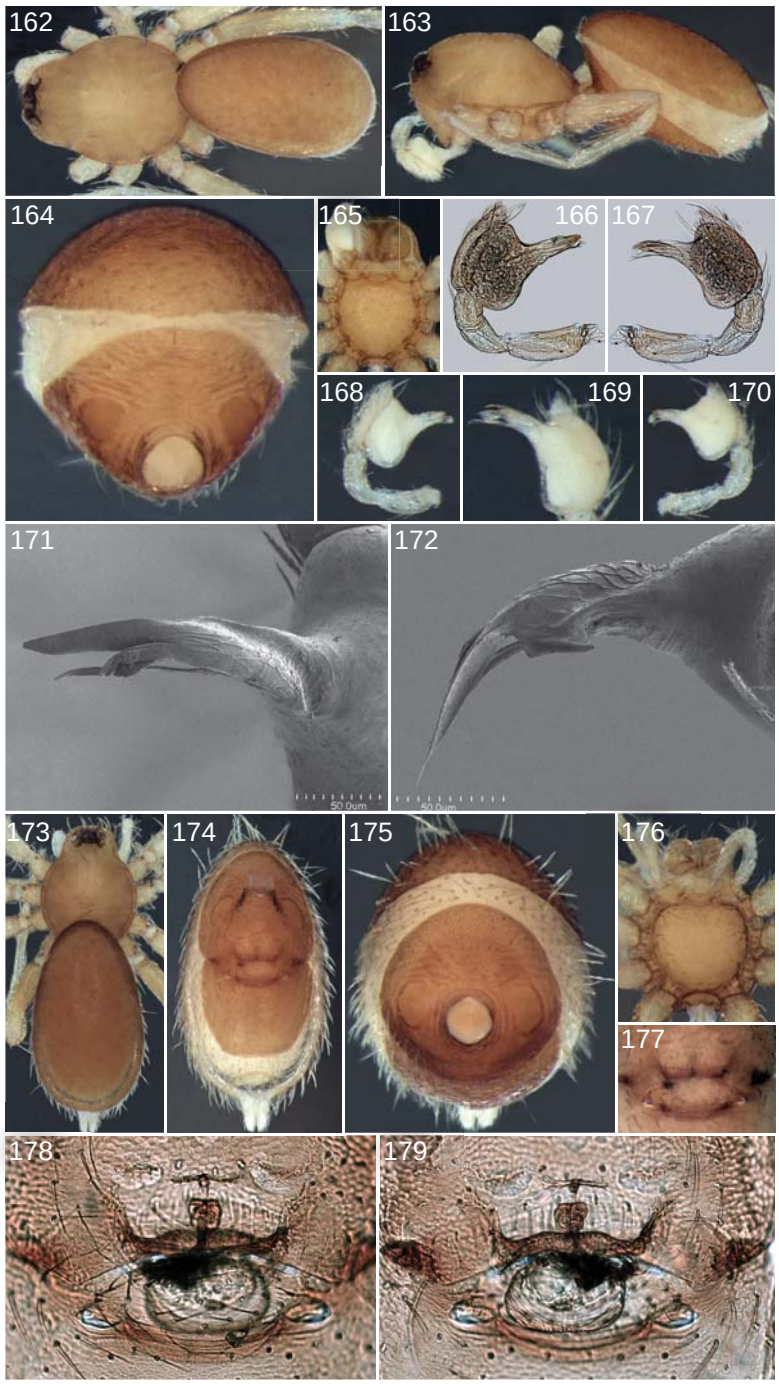
Male (PBI_OON 38284, figs. 1–30, 121–134): Total length 1.40. Carapace yellow, elevated portion of pars cephalica finely reticulate, sides finely reticulate. Sternum yellow, finely reticulate. Mouthparts yellow, endites unmodified. Abdomen with dark patches visible through dorsal scutum. Scutopedicel region with numerous elevations not fused into ridges. Dorsal scutum pale orange, punctate, covering most of abdomen length, width. Postepigastric scutum pale orange, covering about ¾ of abdominal length. Embolus light, with narrow basal process extending as far distally as sail-shaped flange.

Female (PBI_OON 38284, figs. 31–60, 135–144): Total length 1.61. Postepigastric scutum short, almost rectangular, covering about half of abdominal length. Posterior receptaculum wide, bordered anteriorly by wide poreplate, dorsal and ventral edges of poreplate distinct, ventral edge sinuous.

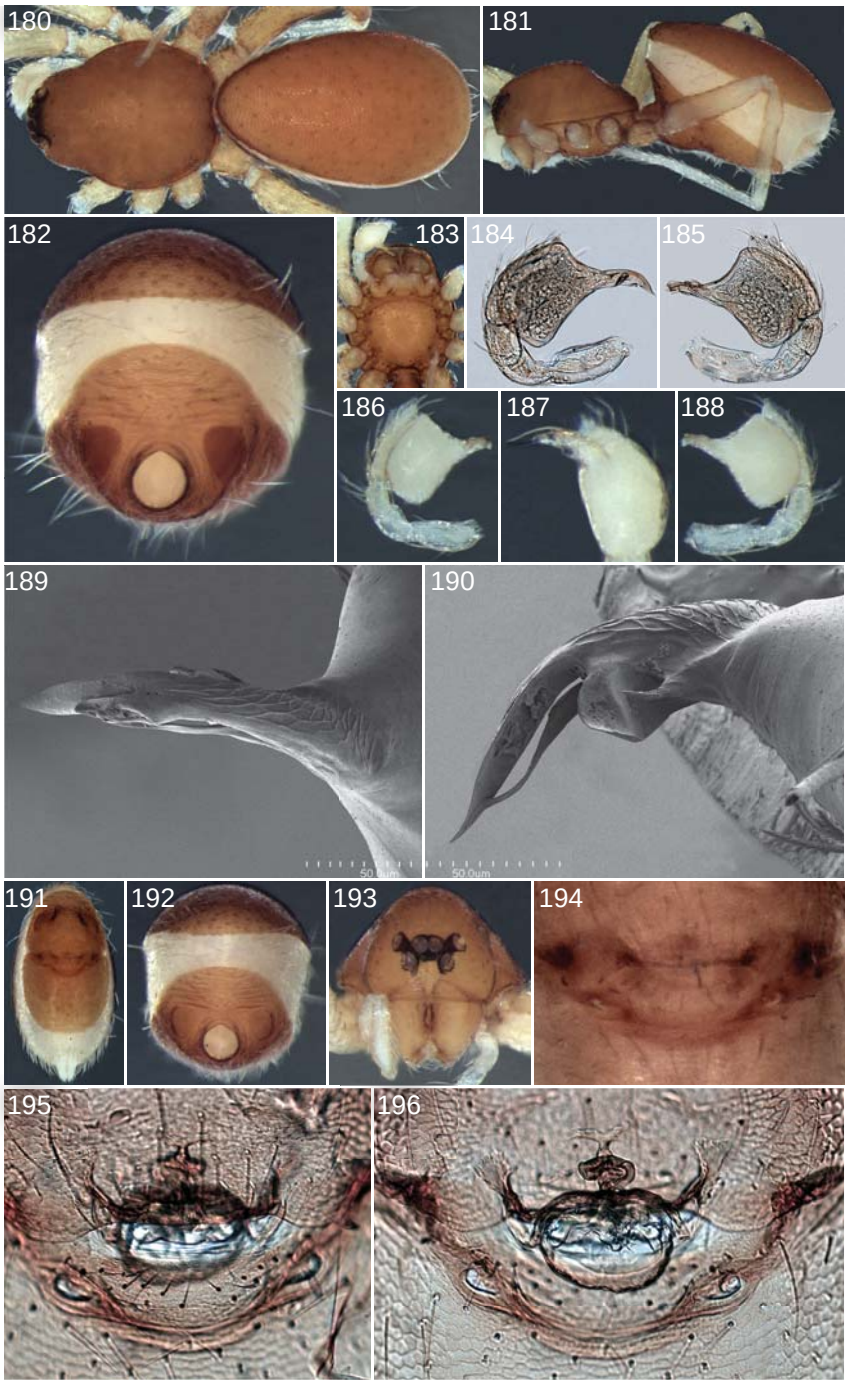
Material Examined: WEST INDIES: **Bahama Islands:** *Turks and Caicos Islands:* Providenciales: 4 km NW Wheeland on N coast, 21°50′N, 72°18′W, Jan. 27, 1998, under leaf litter on sand under shrubs on beach front dunes (W. Steiner, J. Swearingen, USNM PBI_OON 803), 1♂, 2♀. **Virgin Islands:** *Saint Croix:* no specific locality, Sept. 3, 1966 (A. Chickering, MCZ PBI_OON 806), 1♂ (holotype); Christiansted (Beatty, MCZ PBI_OON 805), 1♀ (holotype). **Leeward Islands:** *Nevis:* no specific locality, Sept. 1966 (A. Chickering, MCZ 66843, PBI_OON 807), 1♀ (paratype). **Windward Islands:** *Saint Vincent:* no specific locality (H. Smith, BMNH PBI_OON 802), 1♂, 2♀ (syntypes), (MNHN 5680, PBI_OON 4736), 1♂, 1♀. SOUTH AMERICA: **Brazil:** *Pará:* Ananindeua, 1°23′S, 48°24′W, Feb. 4, 2009 (B. Silva, MPEG 18821, PBI_OON 810), 1♂, 1♀, Feb. 8, 2009 (B. Silva, MPEG 18820, PBI_OON 811), 1♀. OLD WORLD: **Canary Islands:** *La Gomera:* Valle Gran Rey, July or Dec. 1988, in sedge litter about 100 m from shore (J. Wunderlich, Naturmuseum Senckenberg 36927, 37927, PBI_OON 809), 1♂, 1♀ (holotype, paratype,



FIGURES 145–161. *Pelicinus sengleti*, new species, male (145–155) and female (156–161). **145.** Habitus, dorsal view. **146.** Same, lateral view. **147, 157.** Abdomen, anterior view. **148.** Sternum, ventral view. **149, 151.** Left palp, prolateral view. **150, 153.** Same, retrolateral view. **152.** Same, ventral view. **154.** Left embolus, retrolateral view. **155.** Right embolus, dorsal view. **156.** Abdomen, ventral view. **158.** Carapace, anterior view. **159, 160.** Genitalia, ventral view. **161.** Same, dorsal view.



FIGURES 162–179. *Pelicinus madurai*, new species, male (162–172) and *P. lachivala*, new species, female (173–179). **162, 173.** Habitus, dorsal view. **163.** Same, lateral view. **164, 175.** Abdomen, anterior view. **165, 176.** Sternum, ventral view. **166, 168.** Left palp, prolateral view. **167, 170.** Same, retrolateral view. **169.** Same, ventral view. **171.** Left embolus, ventral view. **172.** Right embolus, dorsal view. **174.** Abdomen, ventral view. **177, 178.** Genitalia, ventral view. **179.** Same, dorsal view.



FIGURES 180–196. *Pelicinus deelemanae*, new species, male (180–190) and female (191–196). **180.** Habitus, dorsal view. **181.** Same, lateral view. **182, 192.** Abdomen, anterior view. **183.** Sternum, ventral view. **184, 186.** Left palp, prolateral view. **185, 188.** Same, retrolateral view. **187.** Same, ventral view. **189.** Left embolus, retrolateral view. **190.** Right embolus, dorsal view. **191.** Abdomen, ventral view. **193.** Carapace, anterior view. **194, 195.** Genitalia, ventral view. **196.** Same, dorsal view.

examined by M. Saaristo). **Kenya:** *Coast:* Kilifi, Sept. 7, 1977, garden elev. 10 m (M. Graham, AMNH PBI_OON 36748), 1♀, Aug. 1980, litter, elev. 30 m (B. Fulton, AMNH PBI_OON 36648, 36851), 5♂, 1♀. **Seychelle Islands:** *Grande Soeur:* no specific locality, Sept. 10, 1975 (M. Mühlenberg, MRAC 177123, 177126, 177159, 177178, PBI_OON 33081, 33082, 33096, 33124), 1♂, 3♀, Sept. 17, 1975 (M. Mühlenberg, MRAC 177125, PBI_OON 33053), 1♂; *Mahé:* Morne Blanc, S slope, June 26, 1972, elev. 470 m (P. Benoit, J. Van Mol, MRAC 146340, PBI_OON 33068), 1♂ (holotype); *Petite Soeur:* no specific locality, Sept. 10, 1975 (M. Mühlenberg, MRAC 177097, 177146, PBI_OON 33054, 33067), 2♀, Sept. 24, 1975 (M. Mühlenberg, MRAC177101, PBI_OON 33110), 1♀. **Indonesia:** *Sumatra:* West Sumatra: Fort de Kock [= Bukittinggi] (E. Jacobson, NMW 210, PBI_OON 43545, 43546), 4♂, 1♀ (including types). **Hawaii:** *Oahu:* W slope, Puu Papaa Peak, Kaneohe, Nov. 22, 1964, leaf mold (T. Suman, BPBM 3738, PBI_OON 804), 1♂, 1♀ (holotype, allotype). **Marshall Islands:** *Eniwetok Atoll:* Parry Islet, June 13, 1969, Scaevola/Messerschmidia litter (J. Berry, AMNH PBI_OON 38284), 2♂, 3♀. *South Gugeegue Island:* Kwajalein, July 24, 1969, Pandanus/Scaevola litter (J. Berry, AMNH PBI_OON 38283), 1♂, 4♀. **Phoenix Islands:** Canton Island, Mar. 17, 1924 (E. Bryan, BPBM PBI_OON 25536), 1♂ (holotype). **Tonga Islands:** *Tonga:* Nuku'alofa, Apr. 7, 2011, collected at Auckland, New Zealand, seaport from soil under shipping container that came from Nuku'alofa (M. McNeill, MUNZ PBI_OON 43538), 1♂.

Distribution: Pantropical.

Synonymy: Most of the synonyms seem to be due to generic-level misplacements; of prior workers, only Saaristo (2001) correctly associated his specimens with *Pelicinus*, and he anticipated some of the new synonymies as well.

Pelicinus sengleti, new species

Figures 145–161

Types: Male holotype and female allotype from Dizgaran, 33°44′N, 46°59′E, Lorestān, Iran (May 16, 1974; A. Senglet), deposited in MHNG (PBI_OON 15349).

Etymology: The specific name is a patronym in honor of the collector, Antoine Senglet.

Diagnosis: The presence of sternal furrows radiating to the coxae (fig. 148) separates this species from all the others described here. Females have a distally narrow anterior genitalic process and distinctive sets of tiny cuticular protrusions situated at the sides of the posterior receptaculum (fig. 161).

Male (PBI_OON 15350, figs. 145–155): Total length 2.03. Carapace pale orange, elevated portion of pars cephalica smooth, sides granulate. Sternum pale orange, finely reticulate. Mouthparts pale orange, endites unmodified. Abdomen without dark patches. Scutopedicel region with three ridges, all interrupted at middle. Dorsal scutum pale orange, reticulate (except middle surface smooth), covering full length of abdomen, no soft tissue visible from above. Postepigastric scutum pale orange, covering nearly full length of abdomen. Embolus light, sail extending almost full length of embolus, prolateral side expanded distally.

Female (PBI_OON 12156, figs. 156–161): Total length 2.39. Postepigastric scutum long, almost rectangular. Anterior genitalic process distally narrow; cuticle at sides of posterior receptaculum with tiny, sharp projections.

Material Examined: **Iran:** *Khūzestān:* near Ahvāz, 31°08′N, 48°55′E, May 21, 1974 (A. Senglet, MHNG PBI_OON 15348), 1♀; Masdjed Soleyman, 31°59′N, 49°16′E, May 20, 1974 (A. Senglet, MHNG PBI_OON 12170), 1♀. *Kohkīlūyeh:* route de Charām, 30°28′N, 50°50′E, May 22, 1974 (A. Senglet, MHNG PBI_OON 12156), 2♀. *Lorestān:* Pol-e Dockhtar, 33°10′N, 47°44′E, May 17, 1974 (A. Senglet, MHNG PBI_OON 15350), 1♂, 1♀.

Distribution: Southwestern Iran.

Pelicinus amrishi (Makhan and Ezzatpanah), new combination

Harryoonops amrishi Makhan and Ezzatpanah, 2011: 1, figs. 1–5 (male holotype from Semnan, Semnan, Iran, reportedly deposited in University of Tehran, unavailable).

Diagnosis: We presume that this species is most closely related to *P. sengleti*, but the tip of the embolus appears to be longer and narrower than in the males of that species.

Male: Largely unknown (see the original "description").

Female: Unknown.

Material Examined: None

Distribution: Northeastern Iran.

Pelicinus lachivala, new species

Figures 173–179

Type: Female holotype taken at an elevation of 650 m in the Lachivala Forest, 13 km E of Dehra Dun, Garhwal, Uttar Pradesh, India (Oct. 17, 1979; I. Löbl), deposited in MHNG (PBI_OON 12513).

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

Diagnosis: Females have the squiggled anterior receptaculum forming a rectangle; the T-shaped anterior process has an enlarged base and elongated arms (figs. 178, 179).

Male: Unknown.

Female (PBI_OON 12513, figs. 173–179): Total length 2.08. Carapace pale orange, elevated portion of pars cephalica finely reticulate, sides finely reticulate. Sternum pale orange, finely reticulate. Mouthparts orange. Abdomen without dark markings. Scutopedicel region with three faint ridges at sides only. Dorsal scutum pale orange, reticulate, covering full length of abdomen, no soft tissue visible from above. Postepigastric scutum pale orange, short, almost rectangular, covering about ¾ of abdomen length. Squiggled portion of anterior duct forming rectangle; T-shaped process with widened base, long branches.

Other Material Examined: None.

Distribution: Northern India (Uttar Pradesh).

Pelicinus madurai, new species

Figures 162–172

Type: Male holotype taken by sifting at an elevation of 250–350 m at a site 21 km N of Madurai, Alagarkovil, Tamil Nādu, India (Dec. 2, 1972; C. Besucht, I. Löbl), deposited in MHNG (PBI_OON 15601).

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

Diagnosis: Males have weak median ridges on the dorsal portion of the scutopedicel region and stronger but medially interrupted ridges on the ventral portion (fig. 164); the conductor extends beyond the tip of the embolus and has its tip directed proximally (figs. 166–172).

Male (PBI_OON 15601, figs. 162–172): Total length 1.54. Carapace pale orange, elevated portion of pars cephalica finely reticulate, sides finely reticulate. Sternum pale orange, finely reticulate. Mouthparts pale orange, endites unmodified. Abdomen without dark markings. Scutopedicel region, ventral portion with three ridges at sides, interrupted at middle, dorsal portion with weak ridges at middle. Dorsal scutum pale orange, reticulate, covering most of abdomen length, width. Postepigastric scutum pale orange, covering about ¾ of abdomen length. Conductor extending beyond embolus, tip directed proximally.

Female: Unknown.

Other Material Examined: **India:** *Karnataka:* Jog Falls, 14°14′N, 74°50′E, Jan. 20–22, 1990 (V., B. Roth, CAS 39753, PBI_OON 35483), 1♂.

Distribution: Southern India (Karnataka and Tamil Nādu).

Pelicinus deelemanae, new species

Figures 180–196

Types: Male holotype and female allotype taken in leaf litter in Sam Roi Yot National Park, Prachuap Khiri Khan, Thailand (Dec. 1990; C., P. Deeleman), deposited in NML (PBI_OON 31765).

Etymology: The specific name is a patronym in honor of one of the collectors, Christa Deeleman.

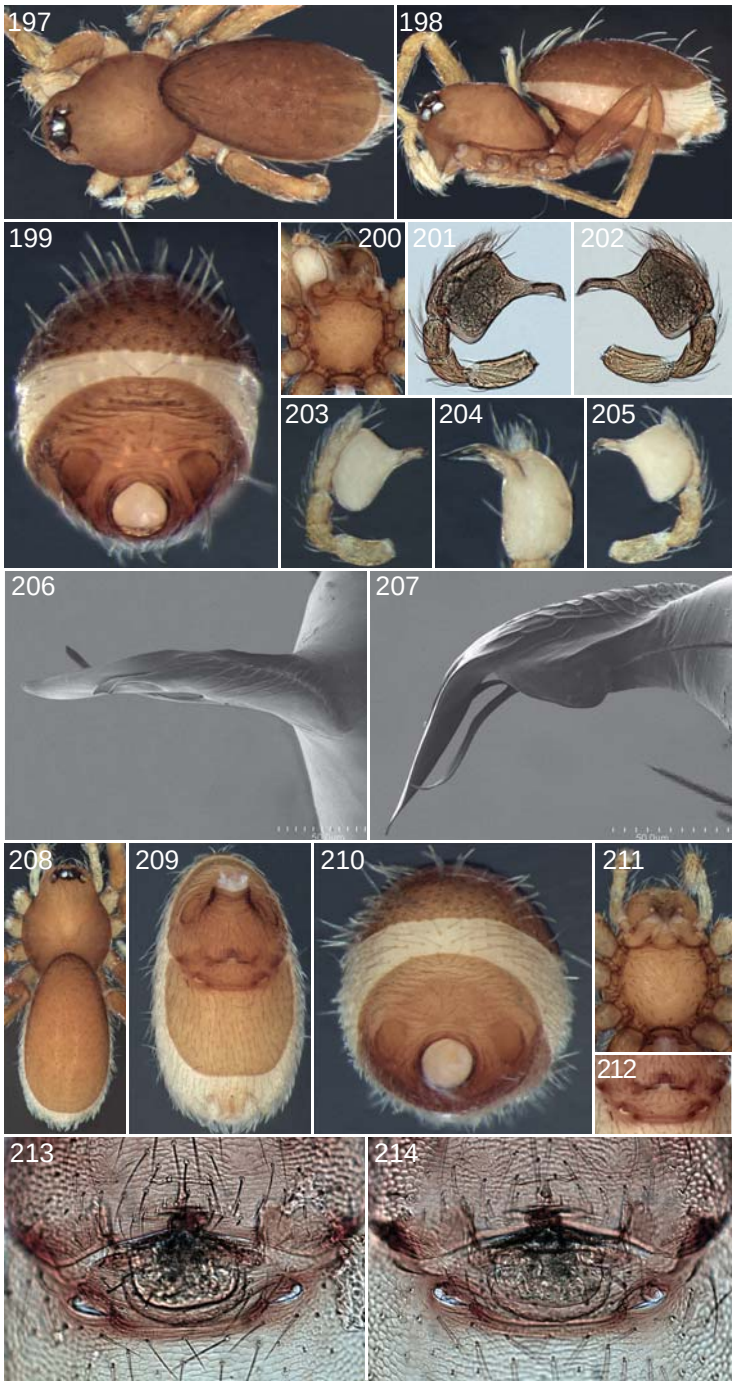
Diagnosis: Males have about six transverse ridges on the scutopedicel area, of which the two dorsalmost are not weakened medially (fig. 182), and a short embolus with a stubby tip (figs. 184–190). Females show dark cuticular patches through the dorsal abdominal scutum, have the squiggled anterior receptaculum oriented largely transversely, and have a very short base on the T-shaped anterior process (figs. 195, 196).

Male (PBI_OON 11985, figs. 180–190): Total length 1.85. Carapace pale orange, elevated portion of pars cephalica finely reticulate, sides finely reticulate. Sternum pale orange, finely reticulate. Mouthparts pale orange, endites unmodified. Abdomen without dark markings. Scutopedicel region with six transverse ridges, four most ventral ridges weaker at midline. Dorsal scutum pale orange, reticulate, covering most of abdomen length, width. Postepigastric scutum pale orange, covering about ¾ of abdomen length. Embolus relatively short, with stubby tip.

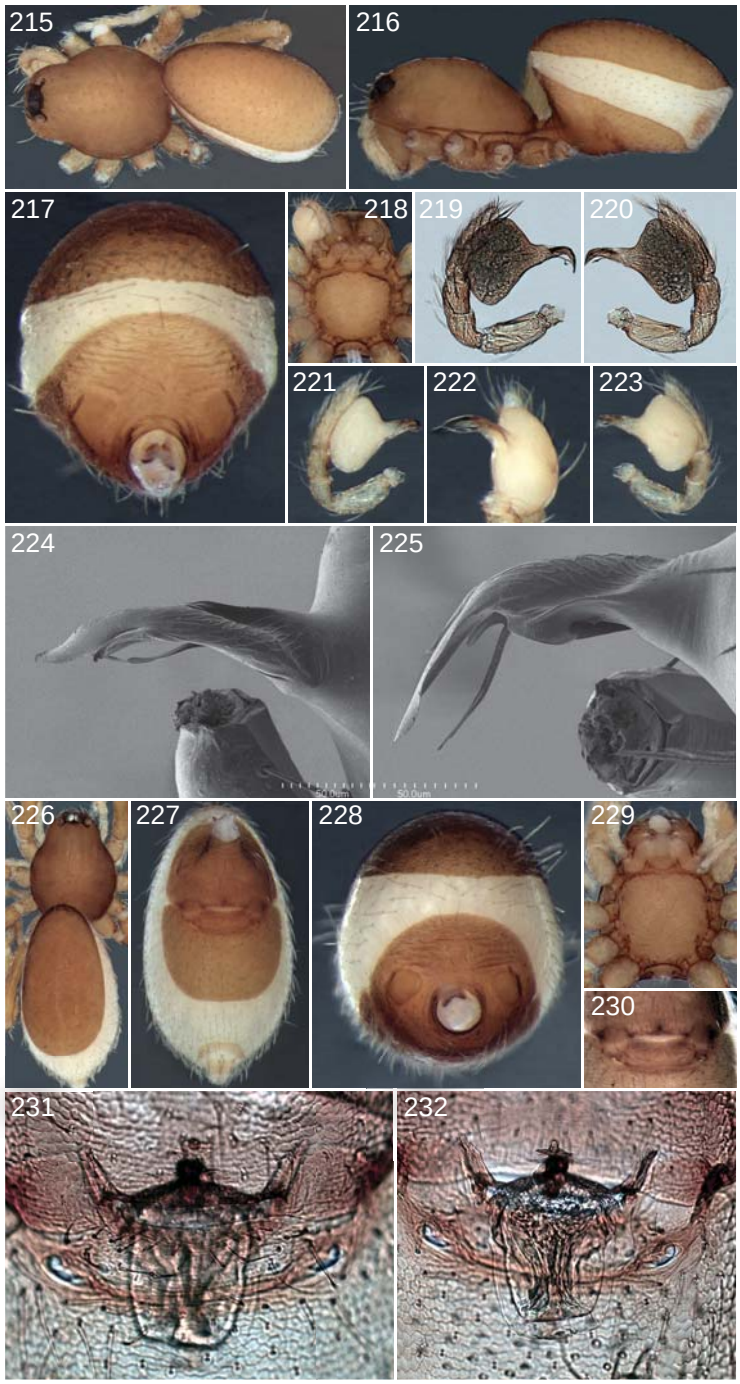
Female (PBI_OON 31765, figs. 191–196): Total length 1.67. Abdomen dorsum with about six transverse rows of rectangular dark patches. Postepigastric scutum long, almost rectangular, covering about ¾ of abdomen length. Squiggled portion of anterior genitalic duct oriented largely transversely, T-shaped anterior process with very short base.

Other Material Examined: None.

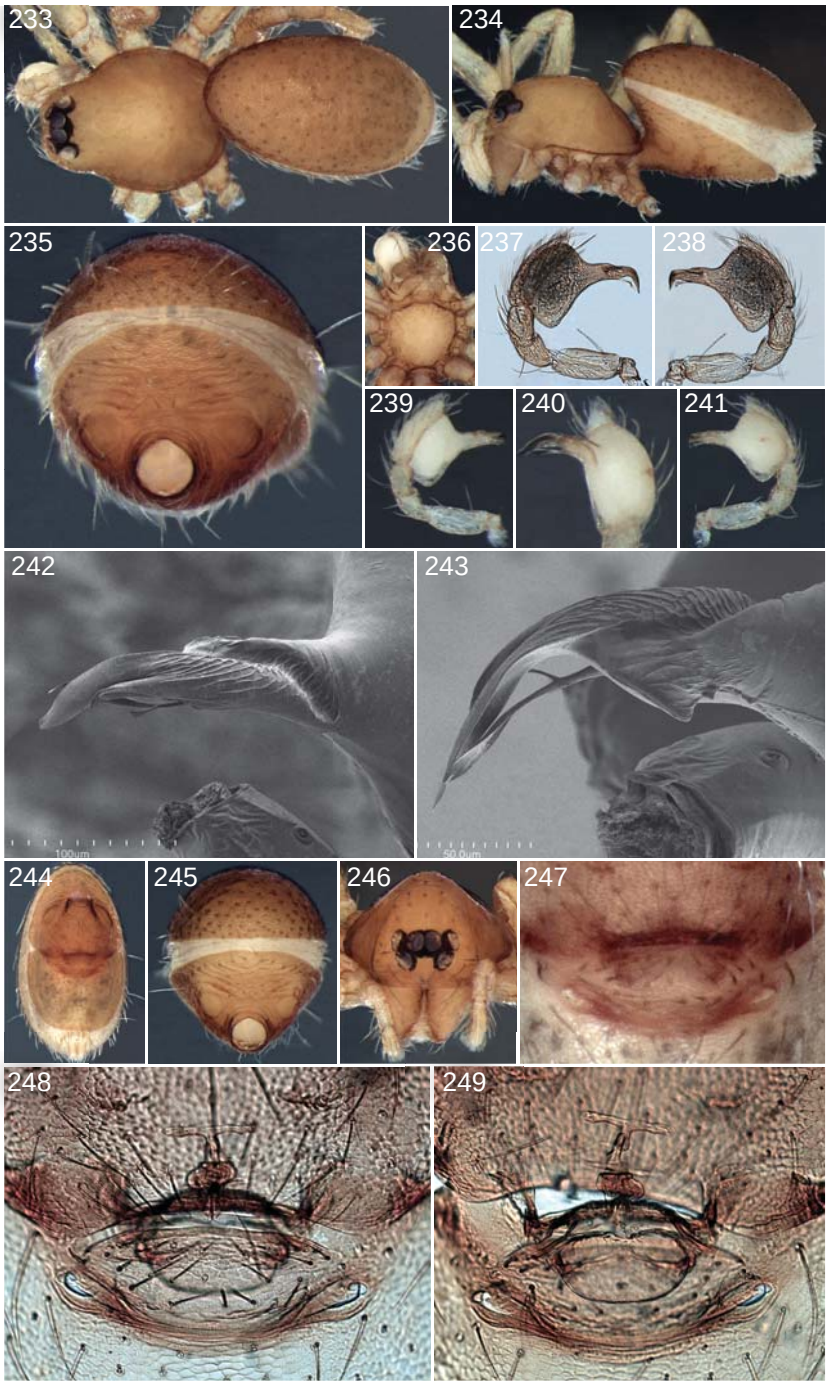
Distribution: Western Thailand (Prachuap Khiri Khan).



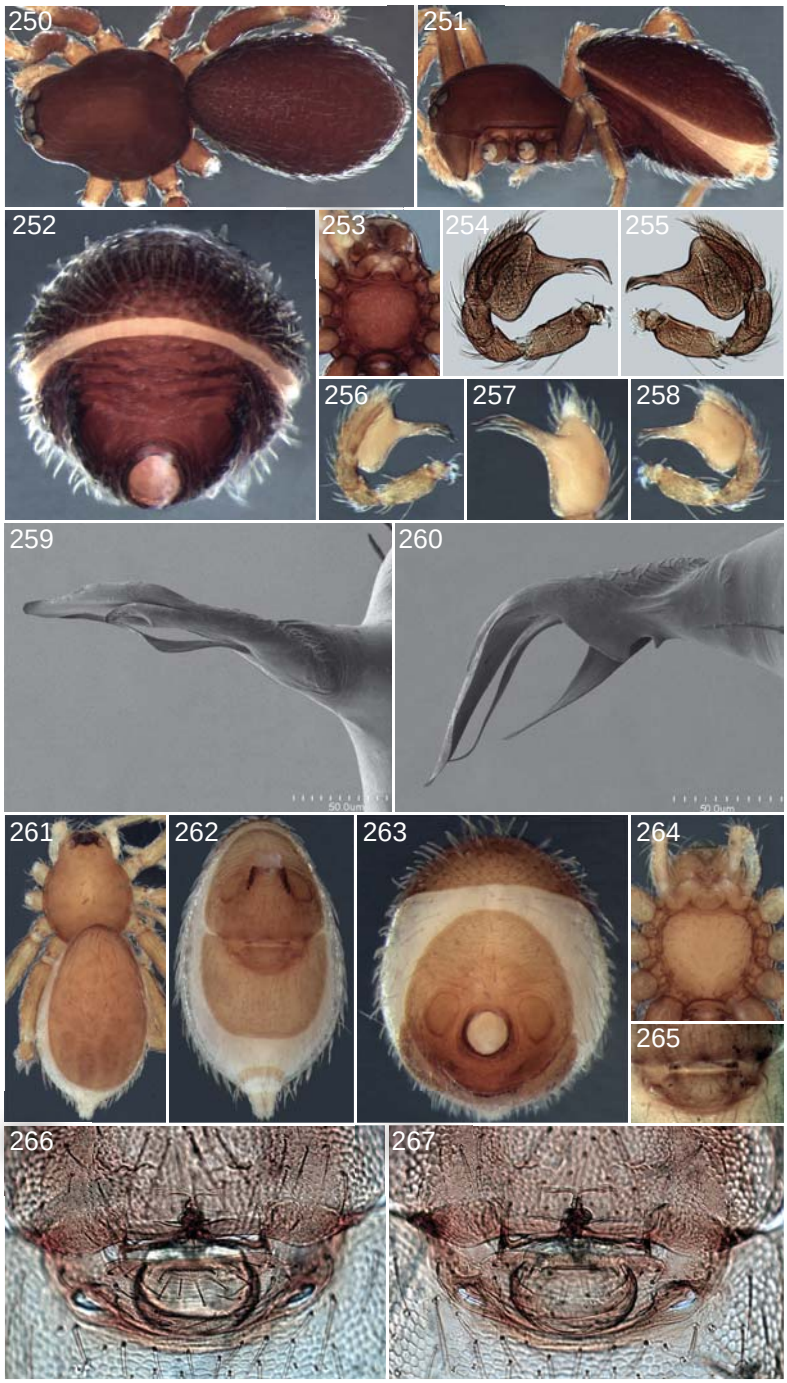
FIGURES 197–214. *Pelicinus schwendingeri*, new species, male (197–207) and *P. tham*, new species, female (208–214). **197, 208.** Habitus, dorsal view. **198.** Same, lateral view. **199, 210.** Abdomen, anterior view. **200, 211.** Sternum, ventral view. **201, 203.** Left palp, prolateral view. **202, 205.** Same, retrolateral view. **204.** Same, ventral view. **206.** Left embolus, retrolateral view. **207.** Right embolus, dorsal view. **209.** Abdomen, ventral view. **212, 213,** Genitalia, ventral view. **214.** Same, dorsal view.



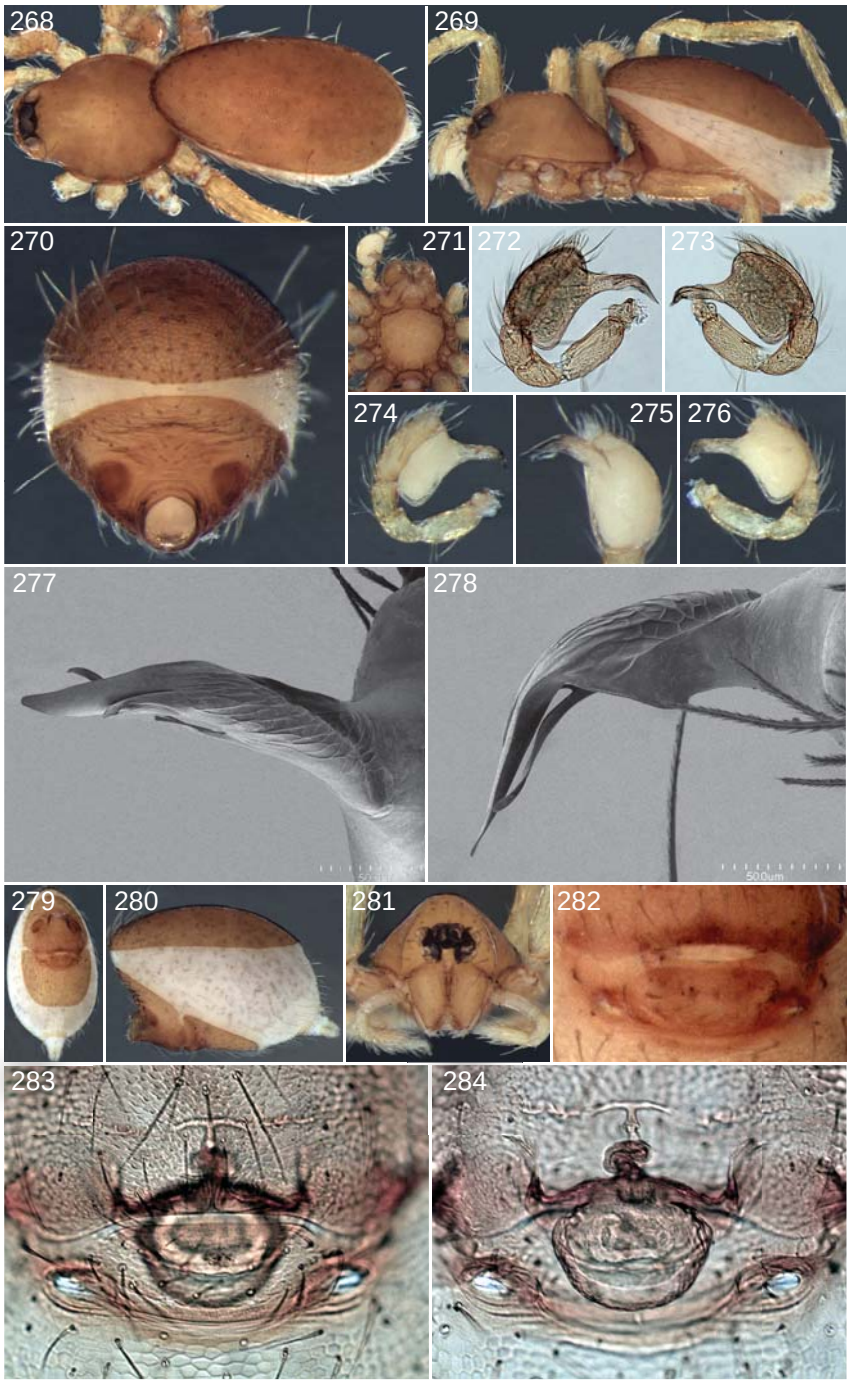
FIGURES 215–232. *Pelicinus sayam*, new species, male (215–225) and *P. duong*, new species, female (226–232). **215, 226.** Habitus, dorsal view. **216.** Same, lateral view. **217, 228.** Abdomen, anterior view. **218, 229.** Sternum, ventral view. **219, 221.** Left palp, prolateral view. **220, 223.** Same, retrolateral view. **222.** Same, ventral view. **224.** Left embolus, ventral view. **225.** Right embolus, dorsal view. **227.** Abdomen, ventral view. **230, 231.** Genitalia, ventral view. **232.** Same, dorsal view.



FIGURES 233–249. *Pelicinus khao*, new species, male (233–243) and female (244–249). **233.** Habitus, dorsal view. **234.** Same, lateral view. **235, 245.** Abdomen, anterior view. **236.** Sternum, ventral view. **237, 239.** Left palp, prfvolateral view. **238, 241.** Same, retrolateral view. **240.** Same, ventral view. **242.** Left embolus, retrolateral view. **243.** Right embolus, dorsal view. **244.** Abdomen, ventral view. **246.** Carapace, anterior view. **247, 248.** Genitalia, ventral view. **249.** Same, dorsal view.



FIGURES 250–267. *Pelicinus raveni*, new species, male (250–260) and *P. penang*, new species, female (261–267). **250, 261.** Habitus, dorsal view. **251.** Same, lateral view. **252, 263.** Abdomen, anterior view. **253, 264.** Sternum, ventral view. **254, 256.** Left palp, prolateral view. **255, 258.** Same, retrolateral view. **257.** Same, ventral view. **259.** Left embolus, retrolateral view. **260.** Right embolus, dorsal view. **262.** Abdomen, ventral view. **265, 266,** Genitalia, ventral view. **267.** Same, dorsal view.



FIGURES 268–284. *Pelicinus johor*, new species, male (268–278) and female (279–284). **268.** Habitus, dorsal view. **269.** Same, lateral view. **270.** Abdomen, anterior view. **271.** Sternum, ventral view. **272, 274.** Left palp, prolateral view. **273, 276.** Same, retrolateral view. **275.** Same, ventral view. **277.** Left embolus, retrolateral view. **278.** Right embolus, dorsal view. **279.** Abdomen, ventral view. **280.** Same, lateral view. **281.** Carapace, anterior view. **282, 283.** Genitalia, ventral view. **284.** Same, dorsal view.

Pelicinus schwendingeri, new species

Figures 197–207

Type: Male holotype from semi-evergreen rainforest at an elevation of 60–80 m on a limestone hill ca. 1 km E of Ao Luk Tai, Ao Luk District, 8°22′02″N, 98°44′17″E, Krabi, Thailand (June 9–10, 2008; P. Schwendinger), deposited in MHNG (PBI_OON 16086).

Etymology: The specific name is a patronym in honor of the collector, Peter Schwendinger.

Diagnosis: The scutopedicel region has six transverse ridges, of which the four most ventrally situated are interrupted at the middle, with two of the ridges diverted anteriorly and the other two diverted posteriorly (fig. 199); the conductor is widened at about half its length (figs. 201–207).

Male (PBI_OON 16086, figs. 197–207): Total length 1.70. Carapace pale orange, elevated portion of pars cephalica finely reticulate, sides finely reticulate. Sternum pale orange, finely reticulate. Mouthparts pale orange, anterior portion of endites abruptly constricted, rectangular. Abdomen dorsum posterior half with irregularly shaped dark maculations visible through dorsal scutum. Scutopedicel region with about six transverse ridges, most ventral four ridges interrupted, radiated medially. Dorsal scutum pale orange, reticulate, covering most of abdomen length, width. Postepigastric scutum pale orange, covering about ¾ of abdomen length. Conductor widened at about half its length.

Female: Unknown.

Other Material Examined: None.

Distribution: Southern Thailand (Krabi).

Pelicinus sayam, new species

Figures 215–232

Types: Male holotype and male paratype taken at an elevation of 20–80 m in the Ko Chang National Park, above Sayam Bay, Chang Island, Laem Ngop District, Trat, Thailand (Nov. 15, 1998; P. Schwendinger), deposited in MHNG (PBI_OON 15550).

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

Diagnosis: The scutopedicel region has about eight transverse ridges, of which the dorsalmost are the shortest, and the ventralmost are only slightly weakened around the midline (fig. 217); the conductor is boat-shaped, with its tip directed distally (figs. 219–225).

Male (PBI_OON 15550, figs. 215–225): Total length 1.60. Carapace pale orange, elevated portion of pars cephalica finely reticulate, sides finely reticulate. Sternum pale orange, finely reticulate. Mouthparts pale orange, endites unmodified. Abdomen without dark markings. Scutopedicel region with about eight transverse ridges, dorsal ones shortest, ventral ones only slightly weakened around midline. Dorsal scutum pale orange, reticulate, covering most of abdomen length, width. Postepigastric scutum pale orange, covering about ¾ of abdomen length. Conductor boat shaped, tip directed distally.

Female: Unknown.

Other Material Examined: None.

Distribution: Eastern Thailand (Trat).

Pelicinus khao, new species

Figures 233–249

Types: Male holotype, female allotype, and male paratype taken at an elevation of 1150 m in Khao Yai National Park, Pak Chong District, Nakhon Ratchasima, Thailand (Oct. 24, 1997; P. Schwendinger), deposited in MHNG (PBI_OON 15505).

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

Diagnosis: Both sexes have about five transverse ridges on the scutopedicel region, all medially interrupted (figs. 235, 245). The tip of the embolus is darkened and directed prolaterally, and the conductor is subdistally expanded (figs. 237–243); the squiggled anterior receptaculum is relatively short, and the basal part of the T-shaped anterior process is long, with a bulbous dorsal expansion (figs. 248, 249).

Male (PBI_OON 15505, figs. 233–243): Total length 1.76. Carapace pale orange, elevated portion of pars cephalica finely reticulate, sides finely reticulate. Sternum pale orange, finely reticulate. Mouthparts pale orange, endites distally narrowed into rectangle. Abdomen without dark markings. Scutopedicel region with five transverse ridges, all interrupted at middle. Dorsal scutum pale orange, reticulate, covering full length of abdomen, no soft tissue visible from above. Postepigastric scutum pale orange, covering about ¾ of abdomen length. Embolus with darkened, sinuous tip, directed prolaterally, conductor expanded near tip.

Female (PBI_OON 15505, figs. 244–249): Total length 2.24. Elevated portion of pars cephalica smooth. Abdomen dorsum with scattered dark markings. Dorsal scutum covering most of abdomen length, width. Postepigastric scutum short, almost rectangular, covering about 2/3 of abdomen length. Squiggled portion of anterior receptaculum relatively short, basal part of T-shaped sclerite long, with bulbous dorsal expansion.

Other Material Examined: **Thailand:** *Nakhon Ratchasima:* Khao Yai National Park, Nov. 4–9, 1987, thin litter, primary forest on slope, elev. 800 m (C., P Deeleman, NML PBI_OON 31556, 31712), 1♂, 1♀.

Distribution: Northeastern Thailand (Nakhon Ratchasima).

Pelicinus tham, new species

Figures 208–214

Type: Female holotype taken in secondary forest near stream at an elevation of 980 m at Tham Champee, 15°12′04″N, 106°08′07″E, NW of Pakxong, Bolaven Plateau, Champasak, Laos (Oct. 2, 2010; P. Schwendinger), deposited in MHNG (PBI_OON 32272).

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

Diagnosis: Females have about six transverse ridges on the scutopedicel area, with the ventralmost four ridges interrupted medially (fig. 210); the apodemes are distinctively narrow and angular, the basal portion of the T-shaped anterior process has a posteriorly enlarged dorsal bulb and the arms are long (figs. 213, 214).

Male: Unknown.

Female (PBI_OON 37772, figs. 208–214): Total length 1.86. Carapace pale orange, elevated portion of pars cephalica smooth, sides finely reticulate. Sternum pale orange, finely

reticulate. Mouthparts pale orange. Abdomen without dark markings. Scutopedicel region with six transverse ridges, most ventral four ridges interrupted at middle. Dorsal scutum pale orange, reticulate, covering most of abdomen length, with. Postepigastric scutum pale orange, short, almost rectangular, covering about 2/3 of abdomen length. Genitalic apodemes narrow, angular; basal portion of T-shaped sclerite with posteriorly expanded dorsal bulb, arms long.

Other Material Examined: None.

Distribution: Southern Laos (Champasak).

Pelicinus duong, new species

Figures 226–232

Type: Female holotype taken in an evergreen gallery forest at an elevation of 70 m at the Suoi (= Waterfall) Tranh, 10°10′52.8″N, 104°00′51.0″E, SE of Duong Dong, Phu Quoc Island, Kien Giang, Vietnam (Aug. 13, 2003; P. Schwendinger), deposited in MHNG (PBI_OON 15466).

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

Diagnosis: Females can easily be recognized by the elongated posterior receptaculum (figs. 231, 232).

Male: Unknown.

Female (PBI_OON 15466, figs. 226–232): Total length 1.93. Carapace pale orange, elevated portion of pars cephalica finely reticulate, sides finely reticulate. Sternum pale orange, finely reticulate. Mouthparts pale orange. Abdomen dorsum with scattered dark markings visible through dorsal scutum. Scutopedicel region with five transverse ridges, only dorsalmost ridge not interrupted medially. Dorsal scutum pale orange, reticulate, covering most of abdomen length, width. Postepigastric scutum pale orange, short, almost rectangular, covering about 2/3 of abdomen length. Posterior receptaculum elongated, T-shaped anterior sclerite with short arms.

Other Material Examined: None.

Distribution: Southern Vietnam (Kien Giang).

Pelicinus penang, new species

Figures 261–267

Type: Female holotype taken at an elevation of 150–330 m on Penang Hill, above Botanical Garden, Penang Island, Penang, Malaysia (Dec. 2, 1991; P. Schwendinger), deposited in MHNG (PBI_OON 12651).

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

Diagnosis: Females can easily be recognized by the dorsal projection on the squiggled anterior receptaculum, which reaches almost to the arms of the T-shaped anterior process (figs. 266, 267).

Male: Unknown.

Female (PBI_OON 12651, figs. 261–267): Total length 1.93. Carapace pale orange, elevated portion of pars cephalica smooth, sides finely reticulate. Sternum pale orange, surface

finely reticulate. Mouthparts pale orange. Abdomen dorsum with scattered, large, dark markings visible through dorsal scutum. Scutopedicel region with about four transverse ridges, all medially interrupted. Dorsal scutum pale orange, reticulate, covering most of abdomen length, width. Postepigastric scutum pale orange, short, almost rectangular, covering about 2/3 of abdomen length. Squiggled portion of anterior duct with dorsal projection reaching almost to arms of T-shaped sclerite.

Other Material Examined: None.

Distribution: Northern Malaysia (Penang).

Pelicinus johor, new species

Figures 268–284

Types: Male holotype and female allotype taken in a rainforest at an elevation of 20 m at Gunung Arong, 2°33′12.1″N, 103°45′20.5″E, 15 km N Mersing, Johor, Malaysia (May 29–30, 2004; P. Schwendinger), deposited in MHNG (PBI_OON 11985).

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

Diagnosis: Males have the dorsalmost ridge on the scutopedicel region entire (fig. 270) and a long, narrow tip on the embolus (figs. 272–278); females have the squiggled anterior receptaculum tubular and sinuous (figs. 283, 284).

Male (PBI_OON 11985, figs. 268–278): Total length 1.82. Carapace pale orange, elevated portion of pars cephalica smooth, sides finely reticulate. Sternum pale orange, finely reticulate. Mouthparts pale orange, endites distally narrowed into white projection, tip directed laterally. Abdomen dorsum with scattered, small dark markings visible through dorsal scutum. Scutopedicel region with about five transverse ridges, most dorsal ridge strong, entire, others weaker, medially interrupted. Dorsal scutum yellow, reticulate, covering most of abdomen length, width. Postepigastric scutum pale orange, covering about ¾ of abdomen length. Embolus with long, narrowed tip.

Female (PBI_OON 11985, figs. 279–284): Total length 1.94. Scutopedicel region with about six transverse ridges, three dorsalmost ridges strong, entire, others weaker, medially interrupted. Dorsal scutum pale orange. Postepigastric scutum short, almost rectangular, covering about 2/3 of abdomen length. Squiggled portion of anterior genitalic duct tubular, sinuous.

Other Material Examined: **Malaysia:** *Johor:* Mersing Forest Reserve, 10 km from Jermaluang-Kangkar Lenggor, Oct. 23, 1980, from nest of termite, *Dicuspiditerme fissifax* (D., A. Kistner, AMNH PBI_OON 231), 1♂.

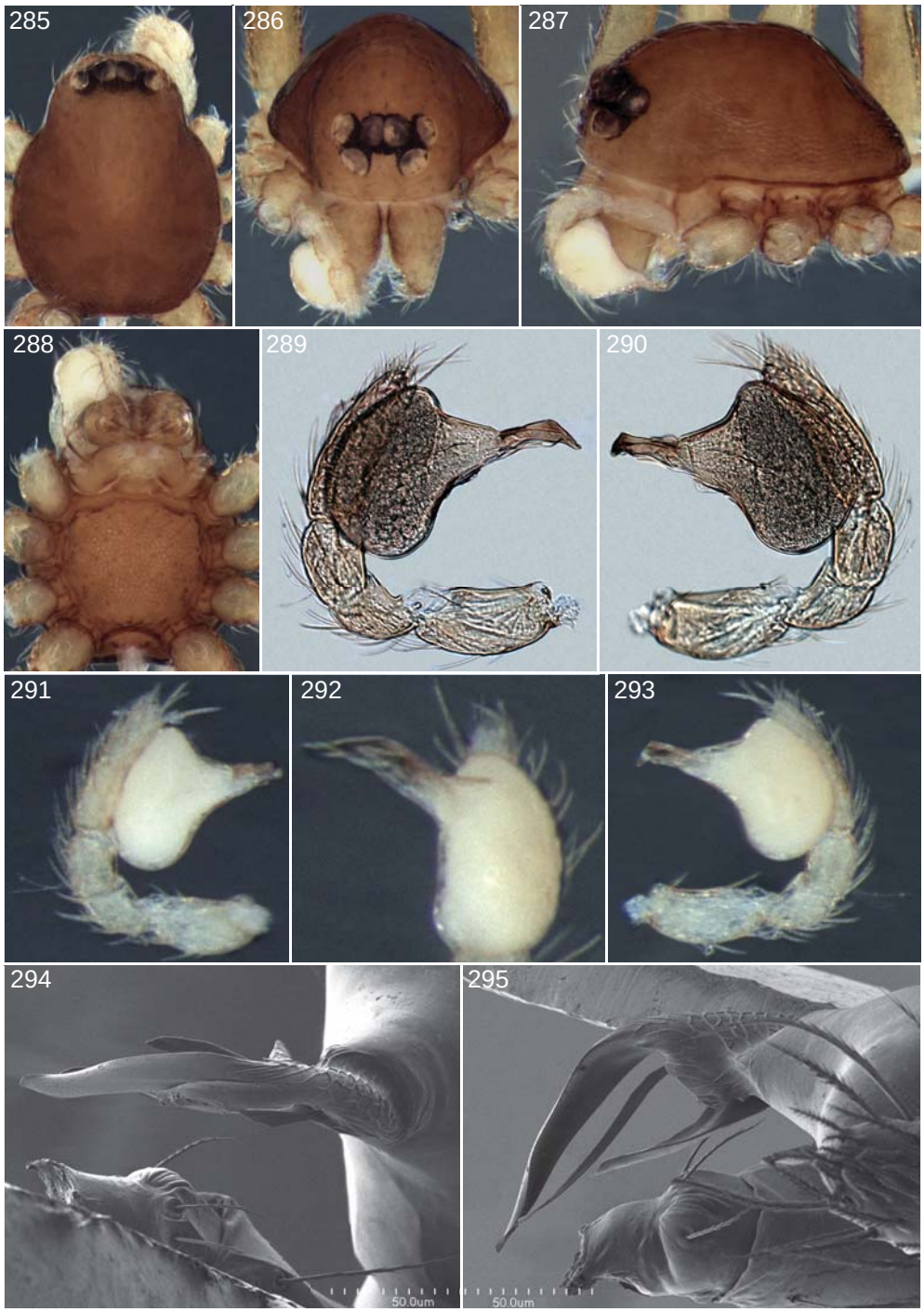
Distribution: Southern Malaysia (Johor).

Pelicinus churchillae, new species

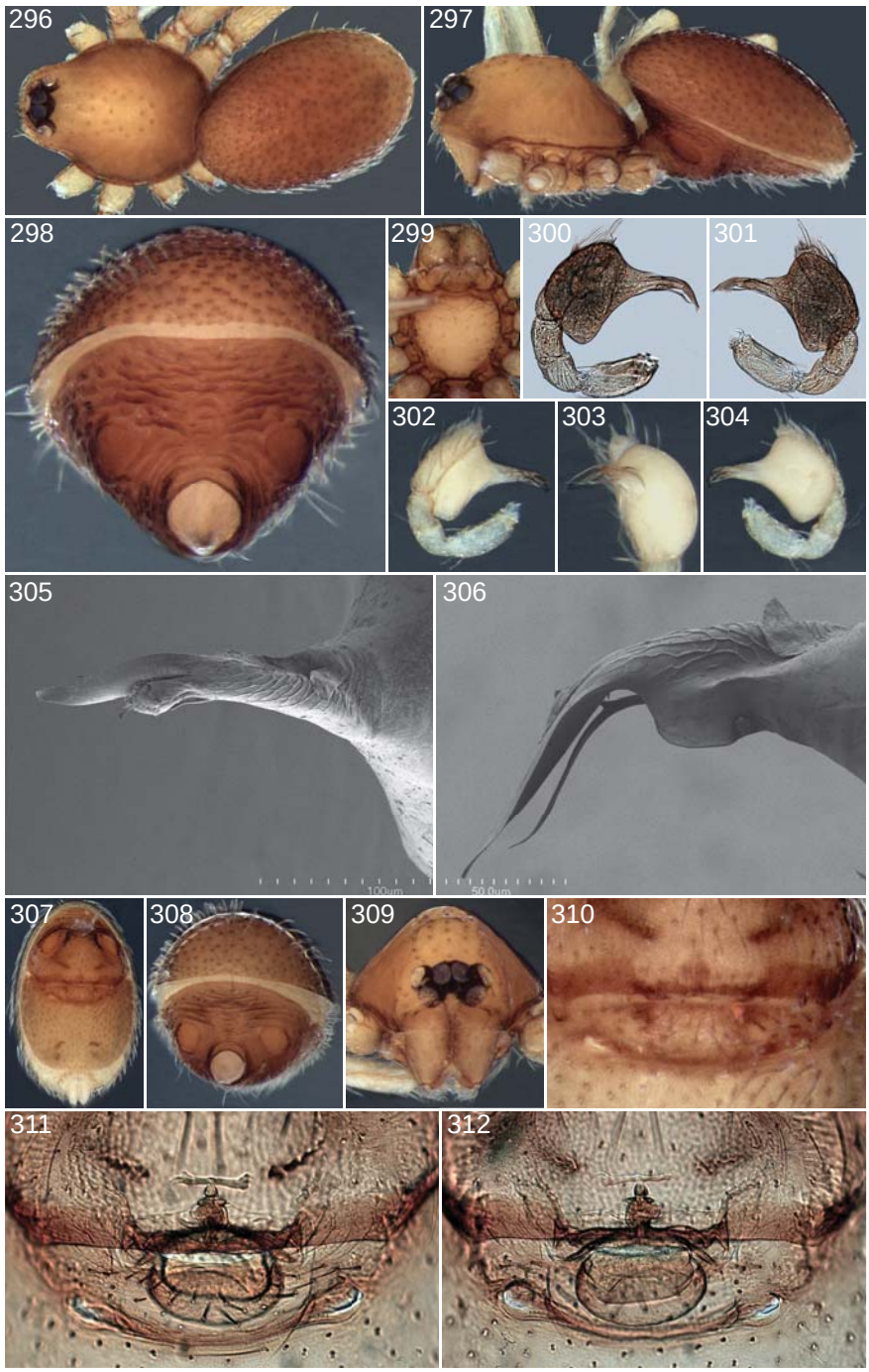
Figures 285–295

Type: Male holotype (missing abdomen) taken in pitfall trap at campsite at Javae Station, New Georgia, Solomon Islands (June 21–26, 1990; T. Churchill), deposited in QMB (S18921, PBI_OON 7209).

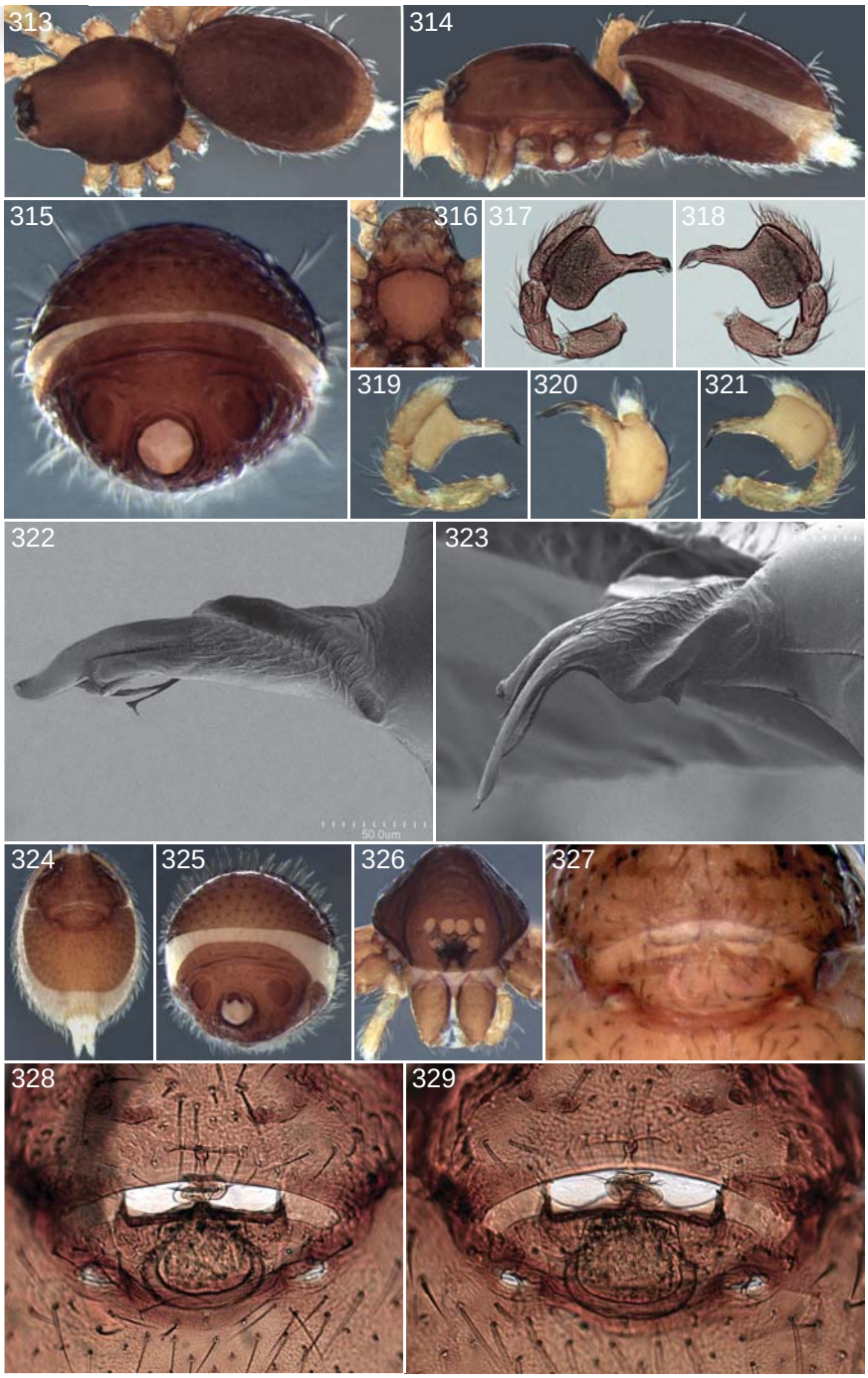
Etymology: The specific name is a patronym in honor of the collector, Tracey Churchill.



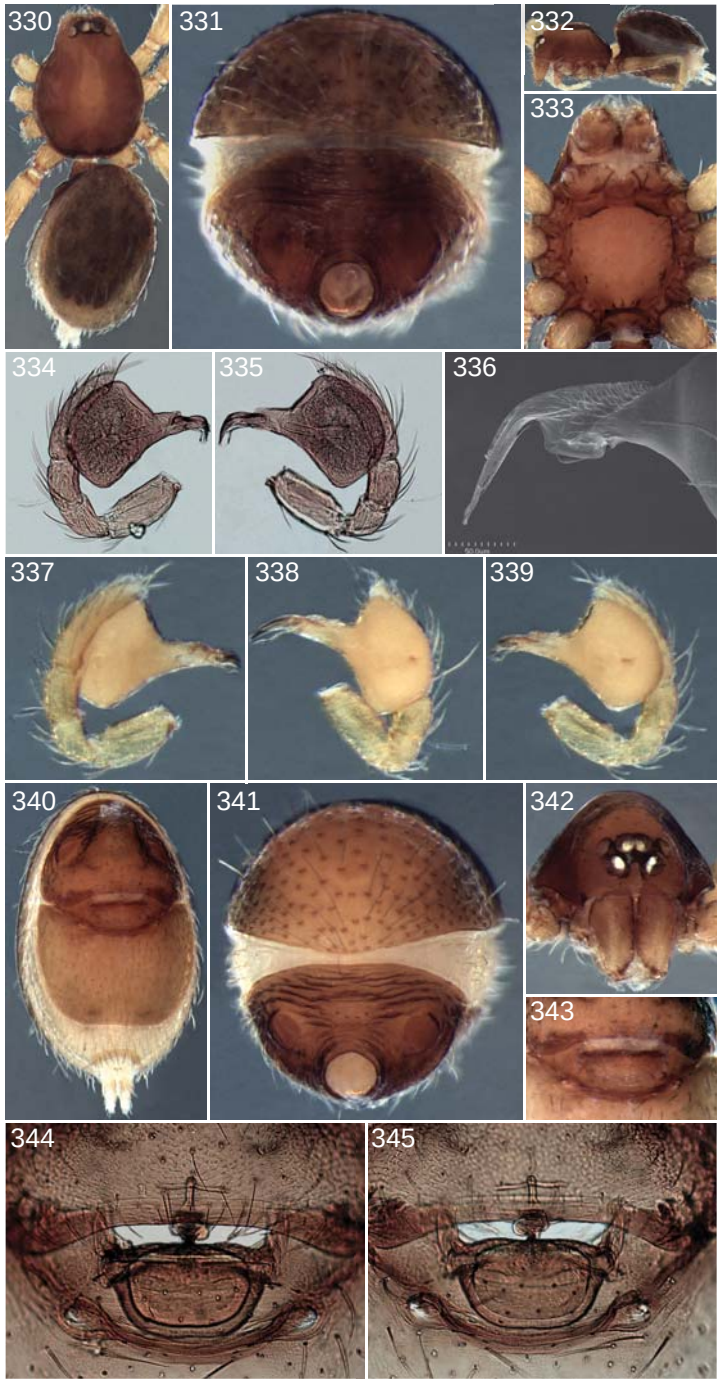
FIGURES 285–295. *Pelicinus churchillae*, new species, male. **285.** Carapace, dorsal view. **286.** Same, anterior view. **287.** Same, lateral view. **288.** Sternum, ventral view. **289, 291.** Left palp, prolateral view. **290, 293.** Same, retrolateral view. **292.** Same, ventral view. **294.** Left embolus, retrolateral view. **295.** Right embolus, dorsal view.



FIGURES 296–312. *Pelicinus monteithi*, new species, male (296–306) and female (307–312). **296.** Habitus, dorsal view. **297.** Same, lateral view. **298, 308.** Abdomen, anterior view. **299.** Sternum, ventral view. **300, 302.** Left palp, prolateral view. **301, 304.** Same, retrolateral view. **303.** Same, ventral view. **305.** Left embolus, retrolateral view. **306.** Right embolus, dorsal view. **307.** Abdomen, ventral view. **309.** Carapace, anterior view. **310, 311.** Genitalia, ventral view. **312.** Same, dorsal view.



FIGURES 313–329. *Pelicinus damieu*, new species, male (313–323) and female (324–329). **313.** Habitus, dorsal view. **314.** Same, lateral view. **315, 325.** Abdomen, anterior view. **316.** Sternum, ventral view. **317, 319.** Left palp, prolateral view. **318, 321.** Same, retrolateral view. **320.** Same, ventral view. **322.** Left embolus, retrolateral view. **323.** Right embolus, dorsal view. **324.** Abdomen, ventral view. 326. Carapace, anterior view. **327, 328.** Genitalia, ventral view. **329.** Same, dorsal view.



FIGURES 330–345. *Pelicinus koghis*, new species, male (330–339) and female (340–345). **330.** Habitus, dorsal view. **331, 341.** Abdomen, anterior view. **332.** Habitus, lateral view. **333.** Sternum, ventral view. **334, 337.** Left palp, prolateral view. **335, 339.** Same, retrolateral view. **336.** Right embolus, dorsal view. **338.** Left palp, ventral view. **340.** Abdomen, ventral view. **342.** Carapace, anterior view. **343, 344.** Genitalia, ventral view. **345.** Same, dorsal view.

Diagnosis: Males resemble those of the New Caledonian species in having granulations at the rear of the pars thoracica, but can be distinguished by the combination of having the cephalothorax orange rather than red (figs. 285–288) and the embolus basally broad, narrowing gradually from the bulb (figs. 289–295).

Male (PBI_OON 7209, figs. 285–295): Carapace length 0.66 (abdomen missing). Carapace pale orange, elevated portion of pars cephalica smooth, sides granulate. Sternum pale orange, finely reticulate. Mouthparts pale orange, endites distally with narrow, rounded, white tip. Abdomen missing. Embolus basally broad, gradually narrowed toward bulb.

Female: Unknown.

Other Material Examined: None.

Distribution: Solomon Islands (New Georgia).

Pelicinus raveni, new species

Figures 250–260

Type: Male holotype taken in forest litter on hill behind Levuka, Ovalau, Fiji Islands (Nov. 14, 1988; R. Raven), deposited in QMB (S14277, PBI_OON 6556).

Etymology: The specific name is a patronym in honor of the collector, Robert Raven.

Diagnosis: Males can easily be recognized by their dark red carapace without posterior granulations (fig. 250), by the ventrally produced epigastric region (fig. 251), and by the deeply bifid embolus, which is well separated from the sinuous conductor (figs. 254–260).

Male (PBI_OON 38478, figs. 250–260): Total length 1.92. Carapace dark red-brown, elevated portion of pars cephalica smooth, sides finely reticulate. Sternum dark red-brown, coarsely reticulate. Mouthparts dark red-brown, endites distally narrowed into white, rectangular projections with laterally directed tips. Abdomen without dark markings. Scutopedicel region with four irregular, thick transverse ridges. Dorsal scutum dark red-brown, punctate, covering full length of abdomen, no soft tissue visible from above. Postepigastric scutum dark red-brown, covering nearly full length of abdomen. Embolus deeply bifid, well separated from sinuous conductor.

Female: Unknown.

Other Material Examined: **Fiji Islands:** *Kandavu:* 2 km SE Vunisea, June 28, 1987, pyrethrum spraying of logs and trees, elev. 20 m (G. Monteith, QMB S75985, PBI_OON 22773), 1♂. *Viti Levu:* ca. 10 mi E Nadi in Nausori Highlands, May 27, 1987, in rocky outcrop and grass, elev. ca. 1500 ft (J., E. Berry, AMNH PBI_OON 38337), 1♂; Nausori Highlands Forest Preserve, Leweitoka Block, May 27, 1987, litter, elev. 1500 ft (J., E. Berry, AMNH PBI_OON 38478), 1♂.

Distribution: Southwestern Fiji Islands (Viti Levu, Ovalau, and Kandavu).

Pelicinus monteithi, new species

Figures 296–312

Type: Male holotype from Berlese sample of rainforest litter taken at an elevation of 700 m at Mandjélia, 20°24′S, 164°32′E, New Caledonia (May 12, 1984; G. Monteith, D. Cook), deposited in QMB (S79751, PBI_OON 22583).

Etymology: The specific name is a patronym in honor of one of the collectors, Geoff Monteith.

Diagnosis: Males resemble those of *P. raveni* and the other New Caledonian species in having a punctate dorsal abdominal scutum (fig. 298), but differ in their lighter coloration (fig. 296) and the long embolus, which extends past the conductor and has a blunt tip (figs. 300–306). Females have a distinctively bell-shaped dorsal extension on the base of the anterior T-shaped process (figs. 311, 312).

Male (PBI_OON 22639, figs. 296–306): Total length 1.77. Carapace pale orange, elevated portion of pars cephalica smooth, sides finely reticulate, posterior portion with granulations. Sternum pale orange, surface smooth, microsculpture absent. Mouthparts pale orange, endites unmodified. Abdomen without dark markings. Scutopedicel region with six heavy, sinuous transverse ridges. Dorsal scutum pale orange, punctate, covering more than ¾ of abdomen length, no soft tissue visible from above. Postepigastric scutum pale orange, covering about ¾ of abdomen length. Embolus long, extending past conductor, with blunt tip.

Female (PBI_OON 21464, figs. 307–312): Total length 2.01. Postepigastric scutum short, almost rectangular. Dorsal expansion on base of T-shaped sclerite bell shaped.

Other Material Examined: **New Caledonia:** Mandjélia, 20°24′S, 164°32′E, May 13–Oct. 1992, pitfall trap (R. Raven, E. Guilbert, G. Ingram, QMB 79626, PBI_OON 21464), 1♀; Nehoue Campground, 20°26′S, 164°14′E, Nov. 6, 2001, pyrethrum spraying of trees and logs, elev. 50 m (C. Burwell, G. Monteith, QMB 79734, PBI_OON 22639), 3♂, Nov. 30, 2003, pyrethrum spraying of trees and logs, elev. 50 m (G. Monteith, QMB S79769, PBI_OON 22616), 1♂.

Distribution: Northern New Caledonia.

Pelicinus damieu, new species

Figures 313–329

Types: Male holotype, female allotype, and two male paratypes taken in rainforest pitfall traps at an elevation of 480 m on the W slope of Col d'Amieu, 21°37′S, 165°49′E, New Caledonia (Dec. 6–30, 2004; G. Monteith), deposited in QMB (S79770, PBI_OON 22608).

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

Diagnosis: Males resemble those of *P. koghis* but have a smaller, more rounded embolar sail (figs. 317–323); females have a narrower posterior receptaculum (figs. 328, 329).

Male (PBI_OON 22601, figs. 313–323): Total length 1.54. Carapace dark red-brown, elevated portion of pars cephalica smooth, sides granulate. Sternum dark red-brown, smooth, microsculpture absent. Mouthparts dark red-brown, endites distally with narrowed, white projections with laterally directed tips. Abdomen dorsum with scattered dark markings visible through dorsal scutum. Scutopedicel region with three transverse ridges, middle ridge much thicker than others. Dorsal scutum dark red-brown, punctate, covering most of abdomen length, width. Postepigastric scutum dark red-brown, covering about ¾ of abdomen length. Embolar sail with small, triangular spur at base.

Female (PBI_OON 22659, figs. 324–329): Total length 1.77. Postepigastric scutum short, almost rectangular. Posterior receptaculum narrow, squiggled portion of anterior duct relatively wide.

Other Material Examined: **New Caledonia:** Col d'Amieu, W slope, 21°37′S, 165°49′E, Nov. 14, 2002, pyrethrum spraying of trees and logs, elev. 470 m (C. Burwell, G. Monteith, QMB S79767, PBI_OON 22573), 1♀, Nov. 25, 2003, pyrethrum spraying of trees and logs, elev. 470 m (G. Monteith, QMB S79773, PBI_OON 22633), 1♀, Jan. 27, 2004, Berlese, litter, elev. 470 m (G. Monteith, QMB S79746, PBI_OON 22601), 3♂, Apr. 18, 2005, Berlese, elev. 420 m (G. Monteith, QMB S79804, PBI_OON 22659), 1♀; 2 km W Col d'Amieu Forestry Station, May 26, 1987, elev. 430 m (N. Platnick, R. Raven, AMNH PBI_OON 121), 2♂; Col de Roussettes, May 29, 1987, dry forest, elev. 490 m (N. Platnick, R. Raven, AMNH PBI_OON 122), 1♂; 7 km S Gelima, 21°36′S, 165°58′E, Nov. 15, 2002, pyrethrum spraying of trees and logs, elev. 730 m (C. Burwell, G. Monteith, QMB S79772, PBI_OON 22599), 1♀; Ningua Reserve Camp, 21°45′S, 166°09′E, Nov. 12–13, 2001, Berlese, rainforest litter, elev. 1100 m (G. Monteith, QMB S60486, PBI_OON 7483), 1♂, Nov. 13–27, 2001, rainforest pitfall, elev. 1100 m (G. Monteith, QMB S60502, PBI_OON 812), 1♂.

Distribution: Central New Caledonia.

Pelicinus koghis, new species

Figures 61–120, 330–345

Type: Male holotype from Berlese sample of rainforest litter taken at an elevation of 500 m at the Monts des Koghis Auberge, near Noumea, New Caledonia (July 26–Aug. 13, l978; S., J. Peck), deposited in AMNH (PBI_OON 126).

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

Diagnosis: Males resemble those of *P. damieu* but have a larger, more angular embolar sail (figs. 334–339); females have a wider posterior receptaculum (figs. 344, 345).

Male (PBI_OON 22618, figs. 61–90, 330–339): Total length 1.85. Carapace orange-brown, elevated portion of pars cephalica smooth, sides granulate. Sternum orange-brown, smooth, microsculpture absent. Mouthparts orange-brown, endites anteriorly constricted into distal knob. Abdomen dorsum with dark patches visible through dorsal scutum. Scutopedicel region with five ridges, dorsalmost, ventralmost shorter than others. Dorsal scutum orange-brown, punctate, covering most of abdomen length, width. Postepigastric scutum orange-brown, covering about ¾ of abdomen length. Embolus with two short ventral processes.

Female (PBI_OON 22618, figs. 91–120, 340–345): Total length 1.92. Scutopedicel region with seven ridges, two ventralmost interrupted at middle. Postepigastric scutum short, almost rectangular, covering about 2/3 of abdomen length. Poreplate longer at middle than sides, squiggled portion of anterior duct mostly oriented transversely.

Other Material Examined: **New Caledonia:** Dzumac road, junction, 22°02′S, 166°28′E, Jan. 26, 2004, pyrethrum spraying of trees and logs, elev. 950 m (G. Monteith, QMB 79760, PBI_OON 22582), 1♂; Foret Nord, 22°19′S, 166°55′E, Dec. 1, 2004–Jan. 9, 2005, pitfalls, elev. 480 m (G. Monteith, Grimbacher, QMB S79771, PBI_OON 22618), 3♂, 5♀, Dec. 2, 2004–Jan. 9, 2005, pitfalls, elev. 200 m (G. Monteith, Grimbacher, QMB S79765, PBI_OON 22604), 1♂, Apr. 21, 2005, Berlese, elev. 210 m (G. Monteith, QMB S79803, PBI_OON 22655), 1♂; Kwa Neie summit, 22°20′S, 166°55′E, Nov. 22, 2001–Jan. 30, 2002, pitfall, elev. 500 m (G. Monteith,

QMB S79768, PBI_OON 22575), 1♂; Monts des Koghis, 22°11′S, 166°01′E, Nov. 3, 2002, Berlese, rainforest litter, elev. 700 m (G. Monteith, QMB S79744, PBI_OON 22610), 1♂, 1♀; Monts des Koghis, Auberge, near Noumea, July 26–Aug. 13, 1978, fungi with logs and litter, elev. 500 m (S., J. Peck, AMNH PBI_OON 127), 1♂; Pic du Grand Kaori, 22°17′S, 166°53′E, Nov. 22, 2004–Jan. 12, 2005, rainforest pitfalls, elev. 250 m (G. Monteith, Grimbacher, QMB S79766, PBI_OON 22613), 4♂, 2♀; Port Boise, 22°21′S, 166°58′E, Nov. 21, 2001, Berlese, rainforest litter, elev. 20 m (QMB S59836, PBI_OON 6984), 1♂; Rivierè Bleue, humid forest, Oct. 27, 1988, sifting litter (R. Raven, T. Churchill, QMB S12709, PBI_OON 22507), 1♀.

Distribution: Southern New Caledonia.

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REFERENCES

Álvarez-Padilla, F., D. Ubick, and C.E. Griswold. In press. *Noideattella* and *Tolegnaro*, two new genera of goblin spiders from Madagascar, with comments on the gamasomorphoid and silhouettelloid oonopids (Araneae, Oonopidae). Bulletin of the American Museum of Natural History.

Benoit, P.L.G. 1979. Contributions à l'étude de la faune terrestre des îles granitiques de l'archipel des Séchelles (Mission P.L.G. Benoit–J.J. Van Mol 1972). Oonopidae (Araneae). Revue de Zoologie Africaine 93: 185–222.

Berland, L. 1942. Polynesian spiders. Occasional Papers of Bernice P. Bishop Museum 17: 1–24.

Brignoli, P.M. 1983. A catalogue of the Araneae described between 1940 and 1981. Manchester: Manchester University Press, 755 pp.

Bryant, E.B. 1942. Notes on the spiders of the Virgin Islands. Bulletin of the Museum of Comparative Zoology 89: 317–366.

Bryant, E.B. 1945. Some new or little known southern spiders. Psyche 52: 178–192.

Burger, M. 2010. Complex female genitalia indicate sperm dumping in armored goblin spiders (Arachnida, Araneae, Oonopidae). Zoology 113: 19–32.

Chickering, A.M. 1968. The genus *Triaeris* Simon (Araneae, Oonopidae) in Central America and the West Indies. Psyche 75: 351–359.

Chickering, A.M. 1973. Notes on *Heteroonops* and *Triaeris* (Araneae; Oonopidae). Psyche 80: 227–229.

Forster, R.R. 1980. Evolution of the tarsal organ, the respiratory system and the female genitalia in spiders. *In* J. Gruber (editor), Verhandlungen 8. Internationaler Arachnologen-Kongress: 269–284. Wien: Verlag H. Egermann.

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.

Makhan, D., and S. Ezzatpanah. 2011. *Harryoonops amrishi* gen. et sp. nov., the first Oonopidae species (Araneae) described from Iran. Calodema 170: 1–5.

Ott, R., and M.S. Harvey. 2008. A new species of *Pelicinus* from Barrow Island, Western Australia (Araneae: Oonopidae). Arthropoda Selecta 17: 81–85.

Platnick, N.I., et al. 2012. Tarsal organ morphology and the phylogeny of goblin spiders (Araneae, Oonopidae), with notes on basal genera. American Museum Novitates 3736: 1–52.

Platnick, N.I., and N. Dupérré. 2009a. The goblin spider genera *Opopaea* and *Epectris* (Araneae, Oonopidae) in the New World. American Museum Novitates 3649: 1–43.

Platnick, N.I., and N. Dupérré. 2009b. The American goblin spiders of the new genus *Escaphiella* (Araneae, Oonopidae). Bulletin of the American Museum of Natural History 328: 1–151.

Platnick, N.I., and N. Dupérré. 2010. The goblin spider genera *Stenoonops* and *Australoonops* (Araneae, Oonopidae), with notes on related taxa. Bulletin of the American Museum of Natural History 340: 1–111.

Platnick, N.I., and N. Dupérré. 2011. The Andean goblin spiders of the new genus *Scaphidysderina* (Araneae, Oonopidae), with notes on *Dysderina*. American Museum Novitates 3712: 1–51.

Reimoser, E. 1933. Fauna Sumatrensis. (Bijdrage No. 72). Araneina. Tijdschrift voor Entomologie 76: 396–400.

Roewer, C.F. 1942. Katalog der Araneae von 1758 bis 1940. Bremer Zeitung 1: 1–1040.

Saaristo, M.I. 2001. Dwarf hunting spiders or Oonopidae (Arachnida, Araneae) of the Seychelles. Insect Systematics and Evolution 32: 307–358.

Simon, E. 1891. On the spiders of the island of St. Vincent. Part 1. Proceedings of the Zoological Society of London 1891: 549–575.

Simon, E. 1893. Histoire naturelle des araignées. Paris: Roret, 1: 257–488.

Suman, T.W. 1965. Spiders of the family Oonopidae in Hawaii. Pacific Insects 7: 225–242.

Wunderlich, J. 1987. Die Spinnen der Kanarischen Inseln und Madeiras. Langen, Germany: Triops Verlag, 435 pp.

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