

THE SPIDER GENERA *PSECHRUS* AND *FECENIA* (ARANEAE: PSECHRIDAE)

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Abstract. The types of the names of *Psechrus* and *Fecenia* species are described and illustrated from studied material. The *Psechrus* specimens available are grouped into 10 species, some extremely variable. These are *Psechrus himalayanus*; *P. marsyandi*, n. sp. from the Himalayas; *P. torvus*; *P. ghecuanus*; *P. sinensis* (= *mimus*, n. syn.); *P. singaporensis* (= *libeltii*, *annulatus*, *curvipalpus*, n. syn.); *P. kinabalu*, n. sp., from Sabah; *P. borneo*, n. sp., from East Borneo; *P. mulu*, n. sp., from Sarawak; and *P. argentatus* (= *castaneus*, n. syn.). They range from India, Taiwan, southeast Asia, Indonesia, Borneo and New Guinea. Three species of *Fecenia* range from India, Burma, Malay Peninsula, Indonesia, New Guinea and the Solomon Islands: *F. ochracea* (= *buruana*, n. syn.), *F. cylindrata*, and *F. macilenta* (= *sumatrana*, n. syn.). Available evidence suggests that the psechrids are related to the Lycosidae.

While there is great diversity in 2-dimensional horizontal spider webs, there is relatively little diversity in 2-dimensional vertical webs. The best known vertical webs are the "orb-webs," made by 2 seemingly unrelated spider groups, the Uloboridae and members of the superfamily Araneoidea. This raises the question whether, among all the imaginable web forms, the 2-dimensional, vertical webs might assume the complicated orb-web form (and all its modifications) as the most efficient trapping configuration, and thus have been convergently evolved in the 2 groups. Additionally, the orb-web is the final result of a complicated method of construction. It was of considerable interest when the web of *Fecenia ochracea* (Fig. 90) was discovered by Robinson & Lubin (1979). It is a vertical pseudo-orb, but of a different construction from that of the orb-webs of uloborids and araneids. Unfortunately, so little is known of the spiders of the family Psechridae that at first the psechrids could not be determined.

This revision was made to facilitate determination of *Psechrus* Thorell and *Fecenia* Simon species, and to relate the 2 genera to spiders of other families.

All previous work on the family was done by Simon (1892), who perhaps gave the best characterization of the family. Thorell (1878-1897) in the 19th century described new species. Father Chrysanthus (1967) illustrated New Guinea spiders, including the 2 psechrids found on the island. Lehtinen (1967) synonymized species names (some erroneously) and provided some illustrations. Thorell and Simon had enviable knowledge of spiders and great insight into problems of spider phylogeny. Their placement of genera was usually correct. None of us can approach Simon's knowledge; he had even observed the strange web of *Fecenia* in Singapore and compared

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it to that of *Uloborus* (Simon 1892). Unfortunately, neither Thorell nor Simon illustrated the genitalia, which we now usually consider critical species characters.

Doleschall (1827–1859) was a Hungarian-born physician in Java who died in Ambon; during his short stay in the Dutch East Indies he described many new species of the region in 2 monographs (1857, 1859) (Bonnet 1945). Most of his collection is in the Rijksmuseum van Natuurlijke Historie in Leiden; some is lost.

As a rule, these 19th century authors did not designate type specimens. Simon at times added similar-looking specimens from the same general region to the type vial, making it more difficult to identify the specimen on which he based the name. Thorell's collection is in the Museo Civico di Storia Naturale in Genova (except for some of his early collections, which are in the Naturhistoriska Riksmuseet, Stockholm). To those specimens that I have examined from Simon and Thorell collections, I have added typed labels identifying each as a holotype or syntype if this had not previously been done.

Father Chrysanthus was never completely certain if the *Fecenia* specimens from Morobe Province in New Guinea were *F. angustata* (Thorell), *F. maforensis* Simon, or *F. buruana* Reimoser. He examined and illustrated the Thorell specimens of *F. angustata*. He also examined *F. maforensis* determined by Strand and found the epigynum and color pattern of both species similar to his specimens from Dutch New Guinea [Irian Jaya]. Furthermore, he noted that Reimoser's (1936) illustrations of the male *F. buruana* looked almost identical to his own specimens. He decided to call his own specimens tentatively *F. angustata*, and commented that he would not be surprised if all belonged to the same species. He suggested that study of the internal genitalia might be used to resolve the question.

I solved the problem by examining previously described *Fecenia* species from the Asian mainland. The epigynum of the New Guinea specimens has 2 lobes facing each other, with a median, posteriorly hollowed-out tongue in between (Fig. 78, 79), whereas the genitalia of the mainland species are very different (Fig. 80–87). In addition, specimens marked *F. ochracea* (Doleschall) in the Paris museum (presumably marked by Doleschall—the type is missing) lie completely within the range of variation of *F. angustata*.

Several additional problems make the psechrids a difficult group. In many *Psechrus* species the epigynum of females is small, and in the penultimate instar some sclerotized sculpturing occurs in the genital area. Unless a search is made for the seminal receptacles, it is difficult to decide if a penultimate female is the adult of a new species or not.

The problem I faced and its solution started simply: What are the names of the various *Psechrus* and *Fecenia* species? The type specimens were to be examined and illustrated, and the undetermined specimens available sorted into similar groups and named. But the problem did not remain simple. Many types turned out to be juveniles, lacking critical genitalia. Worse yet, specimens were difficult to sort; the genitalia

are very variable and often no 2 specimens were alike. Did those specimens that differed represent new species? The task rapidly grew beyond initial expectation, and still is not finished to my complete satisfaction because of a paucity of mature specimens in collections.

Several genera other than *Psechrus* and *Fecenia* are cited in Roewer's (1955) catalog. The American *Metafecenia* F. P.-Cambridge was removed by Lehtinen and placed in the family Tengellidae as a synonym of *Tengella* Dahl (Wolff 1977). *Stiphidion* Simon, *Matachia* Dalmas, *Neomatachia* Dalmas and *Paramatachia* Dalmas were placed in the Amaurobiidae by Lehtinen (1967), and *Stiphidium* into the Stiphidiidae by Forster (1973). *Matachia* was placed into the Dictynidae by Forster (1967), later into the Desidae (Forster 1970). Eye structure has been most useful in relating these genera (Homann 1971). Since *Metafecenia*, *Matachia* and *Paramatachia* have only canoe-shaped tapeta (Homann 1971), they are not Psechridae in the strict sense. *Stiphidium* has only the posterior median eyes with grate tapeta, and also has teeth on the median tarsal claw but lacks the characteristic claw tuft.

Whereas Lehtinen (1967) removed genera other than *Fecenia* and *Psechrus* from the family, Forster (1973) added 2 genera from New Zealand: *Poaka* Forster and *Haurokooa* Forster; the species of both are hunters and lack the characteristic claw tuft (see below). Their eye structure is unknown.

MATERIALS AND METHODS

Genitalia. The epigynum of *Psechrus* species is covered by white-colored setae in the midline. In order to make illustrations, these setae were removed.

Eyes. To relate genera it is essential in this group to examine eyes. The grate tapetum characteristic of the secondary eyes of Lycosoidea and also present in the Psechridae (Homann 1950, 1971) is not as easily seen and recognized as the more widespread canoe-shaped tapetum, from which the grate tapetum is derived.

One way to examine the grate-shaped tapetum is to remove the eyes and carefully, over a white background, scrape away the black pigment until the grate comes into view. A much easier method (Homann 1971) is to place the whole specimen or just the eye region into methyl benzoate (oil of Niobe). Methyl benzoate readily clears the eyes, but the lines of the tapetum remain and can be seen in reflected light. The lines are enlarged if examined through the spider's lens (Fig. 73, 74); or, the lens can be removed (Fig. 88). Clove oil and Hoyer's medium do not work as clearing agents, perhaps because they also clear the tapetum. A specimen cleared in methyl benzoate can be removed from the oil, washed in alcohol, and placed back into alcohol.

Acronyms for denoting location of specimens are used as follows: AMS, Australian Museum, Sydney; AMNH, American Museum of Natural History; BMNH, British Museum (Natural History); CAS, California Academy of Science; HEO, Hope Entomological Collections, Oxford; MC, F. & J. Murphy collection; MCZ, Museum of Comparative Zoology; MCSN, Museo Civico di Storia Naturale "G. Doria," Genoa; MHNG, Muséum d'Histoire Naturelle, Genève; MNHN, Muséum National d'Histoire Naturelle, Paris;

NMI, National Museum of Ireland, Dublin; NRS, Naturhistoriska Riksmuseet, Stockholm; PAN, Polish Academy of Science, Warsaw; RML, Rijksmuseum van Natuurlijke Historie, Leiden; SMF, Senckenberg Museum, Frankfurt; TY, T. Yaginuma collection; USNM, National Museum of Natural History, Washington; WTS, W. T. Sedgwick collection; ZMK, Zoologisk Museum, Copenhagen.

Family PSECHRIDAE

Psechridae Simon, 1890: 80. Type-genus: *Psechrus*.

Diagnosis. Large 3-clawed spiders with toothed median tarsal claws. All known species also have claw tufts (Fig. 6, 72) and a cribellum. Legs long; 1st patella and tibia longer than carapace and sometimes longer than body length (Fig. 89). First legs longer than 4th; 2nd and 4th subequal in length; 3rd shortest. Distal end of tarsus slightly wider than diameter proximally (Fig. 6, 72). Dorsum of cymbium of ♂ palpi may have scopula (Fig. 8). Setation denser on venter than on dorsum of leg tarsi. Lacking a scopula on legs; with a median tarsal claw present. Cribellum present (Fig. 4, 71) and a row of trichobothria on the tarsi (Fig. 6). Eyes lacking a canoe-shaped tapetum, having instead a grate-shaped tapetum (Fig. 73, 74, 88).

Description. Clypeus height equals 2–4 diam. of anterior median eyes (Fig. 3, 70). Chelicerae strong with a proximal, lateral condyle; condyle very distinct in *Fecenia* (Fig. 70). About 4 strong teeth on posterior margin, and about 3 strong teeth on anterior some distance from base of fang. Between base of fang and anterior teeth is a brush of setae (Fig. 70). Labium as wide as long; endites elongate, widened distally (Fig. 9). Fourth legs with calamistrum consisting of 3–4 rows of equal, tiny, distally bent setae. Cribellum narrow and with 2 pieces (Fig. 4, 71). Abdomen elongate, cylindrical (Fig. 1, 2, 68, 69). Integument covered with setae, denser in dark areas. Male only slightly smaller than ♀, with longer legs. Female with very simple epigynum (Fig. 15, 67, 78). Female with claw on palpus; ♂ palpus with various apophyses on palpal articles (Fig. 16, 84). First coxa of ♂ may have short, stubby macrosetae (Fig. 9).

Habits. Psechrids are web spiders. *Psechrus* has an agelenid-like funnel web, a horizontal or curved sheet with a retreat on one end. Unlike agelenids, a psechrud spider hangs under the web (Fig. 89). When disturbed, it returns to the funnel. *Fecenia* has a vertical pseudo-orb (Fig. 90) with a funnel-shaped retreat near the upper edge of the middle. *Psechrus* females carry their egg-sac in the chelicerae, as do pisaurids (Simon 1892).

Species. There are only a few species in the family, placed in 2 genera ranging from SE Asia to Australia. There is considerable individual variation within some species.

Relationships. Until recently, many arachnologists considered those spiders with a cribellum to be a separate lineage from those lacking a cribellum. In recent years, the cribellum has been considered a primitive structure, lost a number of times in separate lines (Lehtinen 1967).

A useful character in grouping various families is the structure of the secondary eyes, especially of the tapetum (Homann 1950, 1971). Most web spiders belonging to the superfamily Araneoidea and to the family Agelenidae have a canoe tapetum (Levi 1980, figs. 122, 123). The canoe-tapetum spiders with a cribellum are the Amaurobiidae and Dictynidae. The Psechridae have a grate-shaped tapetum (Fig. 73, 74, 88). This structure must be derived from a canoe tapetum (Homann 1971). Other families

having a grate tapetum are the Lycosidae, Pisauridae and Ctenidae, all acribellate. Two cribellate genera are known to have a canoe tapetum in the lateral eyes and a grate tapetum in the posterior median eyes (e.g., *Acanthoctenus* and *Zoropsis*). There may also be others.

We cannot determine with certainty whether the grate tapetum is a synapomorphic character in Lycosoidea and Psechridae. It may have evolved independently in related lines. It is clear, however, that Psechridae are derived from ancestors bearing a canoe tapetum, as are the Lycosoidea; it is likely that the Psechridae are related to the Lycosoidea. That female *Psechrus* species carry their egg-sacs in the chelicerae, as do pisaurids and ctenids (and females of some unrelated spiders), may be of importance.

KEY TO GENERA OF PSECHRIDAE

1. Venter of abdomen with median white line (Fig. 2, 37); posterior eye row recurved (Fig. 1, 12) **Psechrus**
 Venter of abdomen with dark band constricted in center by a pair of white patches (Fig. 69, 82); posterior eye row straight (Fig. 68) **Fecenia**

Genus **Psechrus** Thorell, 1878

Psechrus Thorell, 1878: 170. Type-species by monotypy: *Tegenaria argentatus* Doleschall. The gender of the name is masculine.

KEY TO SPECIES OF *Psechrus* (♂)²

(Males of *P. ghecuamus* and *P. borneo*, n. sp., are unknown.)

1. Palpal femur modified with hump, large tooth or notch (Fig. 35, 55, 59) .. 4
 Palpal femur without such modification (Fig. 18) 2
2. Palpal bulb with duct having S-shaped loop (Fig. 13) ... Himalayas (Fig. 91)
 **marsyandi**, n. sp.
 Palpal bulb with duct simply curved (Fig. 7, 16) 3
3. Embolus V-shaped, its length supported by conductor (Fig. 7) ... Himalayas
 (Fig. 91) **himalayanus**
 Embolus filiform, curved laterally, only the tip supported by conductor (Fig.
 16, 17) ... India, Sri Lanka (Fig. 91) **torvus**
4. Femur hardly longer than wide, with a large basal tooth (Fig. 59) ... Borneo
 (Fig. 91) **mulu**, n. sp.
 Femur noticeably longer than wide (Fig. 43, 55) 5
5. Embolus with rectangular base (Fig. 34) ... China (Fig. 91) **sinensis**
 Embolus otherwise (Fig. 40, 42, 54, 58, 62) 6
6. Palpal bulb subspherical; conductor and embolus 2 parallel distal filaments
 (Fig. 62-65) ... Malaya to New Guinea (Fig. 91) **argentatus**
 Bulb and sclerites otherwise (Fig. 40, 42, 54, 58) 7
7. Palpal femur with a basal hump and a large distal notch (Fig. 35, 41) ...
 Malay Penin., Malay Arch. (Fig. 91) **singaporensis**

2. See Addendum, p. 138.

Palpal femur with a large tooth in middle (Fig. 55) ... Borneo (Fig. 91)
 **kinabalu, n. sp.**

KEY TO SPECIES OF *Psechrus* (♀)²

1. A discrete white spot on venter of abdomen in front of cribellum (Fig. 37)
 ... China (Fig. 91) **sinensis**
 Without discrete white spot (Fig. 2) ... Indo-Pacific region 2
2. Epigynum a sclerotized oval plate (Fig. 61) ... Borneo (Fig. 91) .. **mulu, n. sp.**
 Epigynum indistinct structure with 2 more or less parallel slits (Fig. 15, 22,
 45, 57, 67) 3
3. Slits of epigynum wider apart anteriorly than posteriorly, enclosing a vase-
 shaped area (Fig. 22, 24, 26, 28) ... India, Sri Lanka (Fig. 91) **torvus**
 Slits otherwise (Fig. 11, 15, 31, 45, 67) 4
4. Slits of epigynum with a small lobe on each side near margin (Fig. 67);
 internally a large sclerotized sac ventral to seminal receptacles (Fig. 66)
 ... Malay Penin. to New Guinea (Fig. 91) **argentatus**
 Epigynum otherwise 5
5. Slits widest apart near posterior margin, approaching each other anteriorly
 (Fig. 11, 15, 57) 6
 Epigynum with slits subparallel (Fig. 31, 45) 8
6. Epigynum area sclerotized (Fig. 57) ... Borneo (Fig. 91) **borneo, n. sp.**
 Epigynum area not sclerotized (Fig. 11, 15) ... Himalayas (Fig. 91) 7
7. Slit area swollen (Fig. 15) **marsyandi, n. sp.**
 Slit area not swollen (Fig. 11) **himalayanus**
8. Length of 1st patella and tibia about 2.7× length of carapace ... Malay
 Penin., Malay Arch. (Fig. 91) **singaporensis**
 Length of 1st patella and tibia about 1.7× length of carapace ... Burma,
 Thailand (Fig. 91) **ghecuanus**

***Psechrus himalayanus* Simon**

Fig. 7–12, 91

Psechrus himalayanus Simon, 1906: 287 [2♂ syntypes from India: Dehra-Dun, in MNHN, examined].—Hubert, 1973: 678, fig. 7–12, ♀, ♂.

♀. Lateral, ventral white lines on abdomen indistinct. Tarsi with denser setae covering on venter than on dorsum. Total length, 17.5 mm. Carapace, 7.6 mm long, 5.3 mm wide. First femur, 12.6 mm; patella and tibia, 14.3 mm; metatarsus, 11.3 mm; tarsus, 5.4 mm. Second patella and tibia, 12.3 mm; 3rd, 8.4 mm; 4th, 11.7 mm.

♂. First coxae with short, pointed macrosetae (Fig. 9). Total length, 15.0 mm. Carapace, 6.5 mm long, 4.6 mm wide. First femur, 16.0 mm; patella and tibia, 26.7 mm; metatarsus, 17.1 mm; tarsus, 7.8 mm. Second patella and tibia, 14.5 mm; 3rd, 9.7 mm; 4th, 14.8 mm.

Remarks. Unlike most *Psechrus* species, the males do not have the palpal femur modified. The duct lacks the S-shaped loop present in *P. marsyandi*, and the embolus is less filiform (Fig. 7) than that of *P. torvus*. The slits of the female epigynum are not on a swollen area (Fig. 11), as are those of *P. marsyandi*.

Records. INDIA. ♂, Kooloo [Kulu] Val, 1870's, M.N. Carlton (MCZ); ♀, 10 mi (3 km) N of Kathgodam, 1240 m, 1.XII.1961, E.S. Ross (CAS). NEPAL. ♀, Patan [Lalitapur], 1956, ?juv. (MCZ); ♀, Kathmandu Val, 1956-58 (MCZ).

***Psechrus marsyandi* Levi, new species**

Fig. 13-15, 91

♀. Coloration and structure characteristic of genus. (Measurements of ♀ from near Sibang.) Total length, 19 mm. Carapace, 10 mm long, 7 mm wide. First femur, 16 mm; patella and tibia, 20 mm; metatarsus, 15 mm; tarsus, 7 mm. Second patella and tibia, 16 mm; 3rd, 11 mm; 4th, 15 mm.

♂. Palpal femur without apophysis. First coxa with short macrosetae. Total length, 20 mm. Carapace, 9 mm long, 7 mm wide. First femur, 20 mm; patella and tibia, 28 mm; metatarsus, 25 mm; tarsus, 5 mm. Second patella and tibia, 19 mm; 3rd, 25 mm; 4th, 18 mm.

Remarks. This species is larger than *P. himalayanus*; the duct inside the palpal tegulum has an S-loop (Fig. 13), and the slits of the epigynum are on sclerotized raised areas (Fig. 15).

Types. Holotype ♂, NEPAL: Lamjung Distr: Marsyandi, Senghe, 1050 m, rockwall shrubs nr river bank, 10.IV.1980, J. Martens & Ausobsky (SMF). Paratypes. NEPAL: sev. ♀, juv. ♂, with holotype, Pokhara, nr Seti Riv, 28°14'N, 83°59'E, 1000 m, 4.VIII.1954, K. Hyatt (BMNH); sev. ♀ on walls along Mayangdi Khola nr Darban, 28°24.5'N, 83°23.5'E, 16.VI.1954, K. Hyatt (BMNH); sev. ♀ nr Sibang, 28°27.5'N, 83°22.5'E, 18 VI.1954, K. Hyatt (BMNH).

The specific name is a noun in apposition.

***Psechrus torvus* (O. P.-Cambridge)**

Fig. 16-28, 91

Tegenaria torvus O. P.-Cambridge, 1869: 376, pl. 11, fig. 10-12 [♂ and ♀ syntypes from Ceylon (Sri Lanka) and India, in HEO, examined].

Psechrus torvus: Simon, 1892: 234, fig. 173, 175, ♂.—Pocock, 1900: 211, fig. 66, ♀, ♂.

Psechrus alticeps Pocock, 1899: 75 [penultimate ♀ syntype, ♂ syntype without palpi from India: Bonmudi (?Bonmundi), in BMNH, examined].

Lehtinen (1967) synonymized *P. ghecuanus* Thorell and *P. alticeps* Pocock with *P. torvus*, and gave as doubtful synonymy *P. mimus* Chamberlin. The synonymy of *P. alticeps* is correct, the others are not. The genital area of the juvenile female of *P. alticeps* is like that of juveniles of *P. torvus* collected with adults.

♀. Orange-brown, chelicerae darkest. Paired indistinct marks on dorsum of abdomen, marks largest posteriorly. Venter with S-shaped white lateral lines. Abdomen length only 1.5× its width. Total length, 16.2 mm. Carapace, 7.8 mm long, 5.2 mm wide. First femur, 11.5 mm; patella and tibia, 16.0 mm; metatarsus, 11.7 mm; tarsus, 5.7 mm. Second patella and tibia, 12.3 mm; 3rd, 8.0 mm; 4th, 11.5 mm.

♂. Colored like ♀. Without macrosetae on 1st coxa, and without apophysis or notch on palpal femur (Fig. 18). Total length, 14.0 mm. Carapace, 6.5 mm long, 4.0 mm wide. First femur, 13.0 mm; patella and tibia, 17.3 mm; metatarsus, 14.1 mm; tarsus, 6.6 mm. Second patella and tibia, 17.3 mm; 3rd, 8.0 mm; 4th, 12.1 mm.

Note. One specimen from Sri Lanka lacked the median ventral white line. Fig. 16-18, 21, 22 were made from syntypes of *P. torvus*; Fig. 19, 20 from the type of *P. alticeps*.

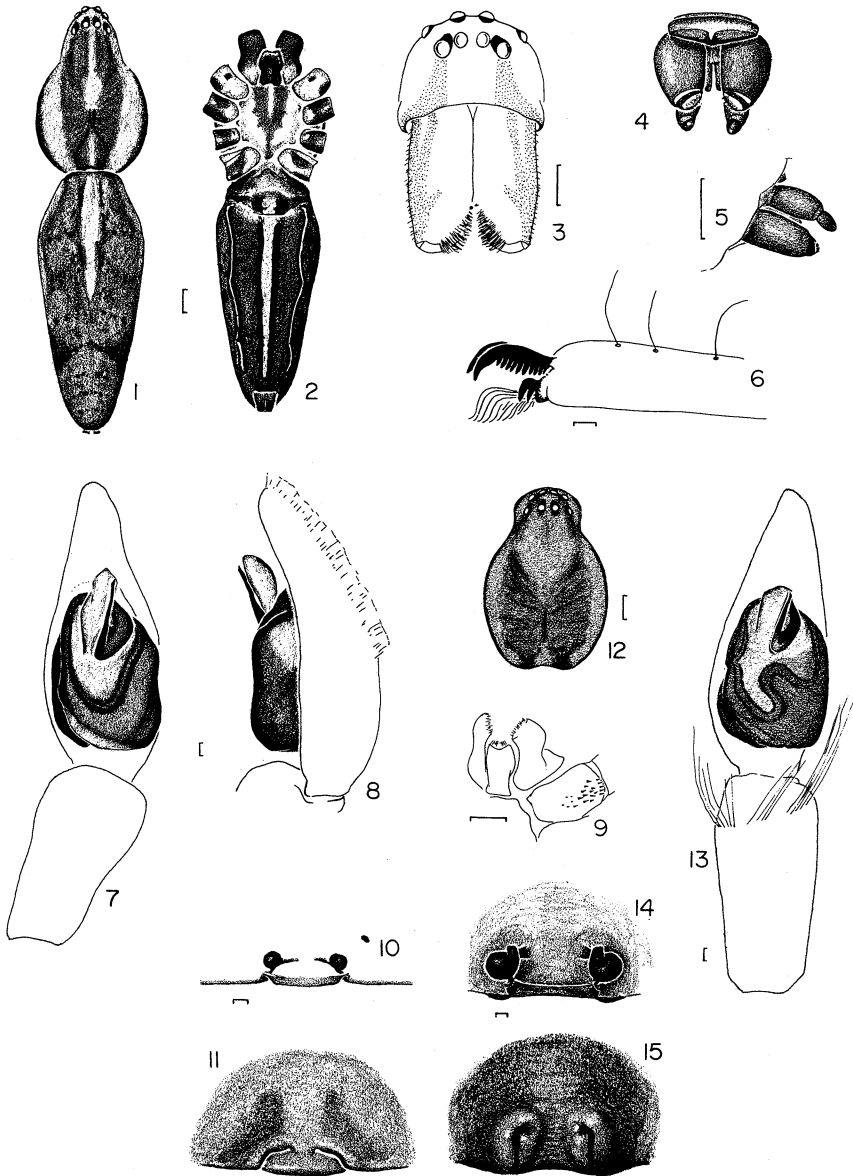


FIG. 1-15. 1-6, *Psechrus argentatus*. 1-2, ♀, without legs: (1) dorsal, (2) ventral; 3, eye and chelicerae of juv. ♀. 4-5, spinnerets and cribellum of juvenile ♂: (4) ventral, (5) lateral; 6, posterior view of left 4th tarsus, ♀, 1 claw tuft removed. 7-12, *Psechrus himalayanus*. 7-8, left palpus, ♂: (7) ventral, (8) lateral; 9, labium, endites and left 1st coxa, ♂; 10-11, ♀ epigynum: (10) dorsal, cleared, (11) ventral; 12, carapace, ♀. 13-15, *Psechrus marsyandi*. 13, left palpus; 14-15, ♀ epigynum: (14), dorsal, cleared, (15) ventral. Scale: Fig. 1-5, 12 = 1.0 mm; all others = 0.1 mm.

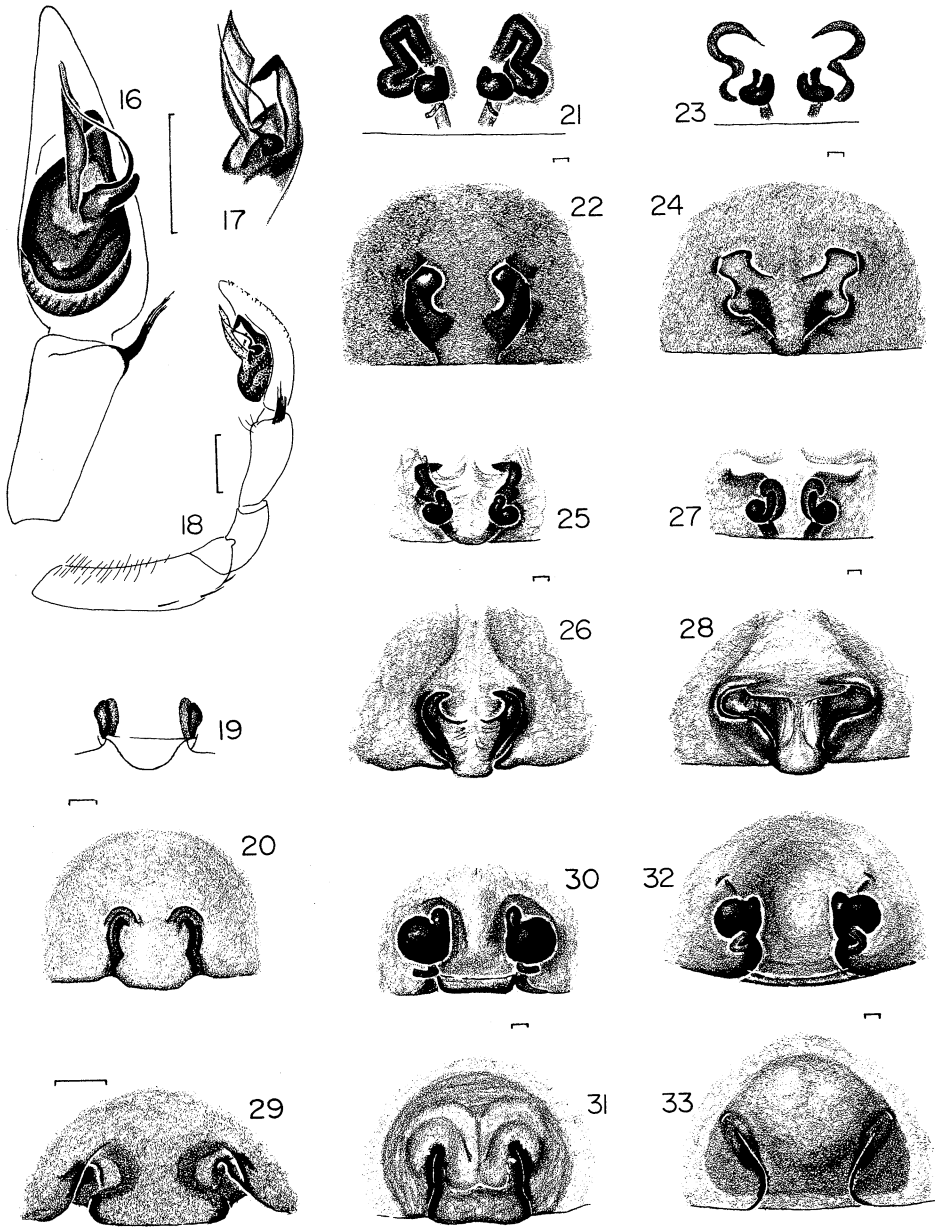


FIG. 16-33. 16-28, *Psechrus torvus*. 16-18, left δ palpus: (16) ventral, (17) embolus and conductor, lateral, (18) lateral; 19-28, δ epigyna: (19-20) juvenile [(19) dorsal, cleared, (20) ventral], (21-22) syntypes of *P. torvus*, (23-28) specimens from Sri Lanka [(23, 25, 27) dorsal, cleared, (24, 26, 28) ventral]. 29-33, *P. ghecuanus*, δ epigynum. 29, holotype, juvenile; 30-31, specimen from Northern Thailand; 32-33, doubtful specimen from "Pumbarai" India: (30, 32) dorsal, cleared, (31, 33) ventral. Scale: Fig. 16-18 = 1.0 mm; all others = 0.1 mm.

Variation. Adult females vary in size from 15.0 mm to 21.5 mm; adult males from 12.2 to 15.0 mm.

Remarks. The lack of modification of the ♂ palpal femur (Fig. 18) differentiates this species from most others; the longer embolus (Fig. 16, 17) sets it apart from *P. himalayanus* and *P. marsyandi*. The epigynal slits enclose a vase-shaped area, wider anteriorly than posteriorly (Fig. 22, 24, 26, 28). The sculpturing around the slits is quite variable.

Records. SRI LANKA: 1♀, juv., Maskeliya, Laxapana Plantation, 4000 ft [1200 m], 7.XI.1979, W.T. Sedgwick (MCZ); "Ceylon" (ZMK); sev. ♀, Newara Eliya, 28.X.1979, Sedgwick (WTS); 1♀, Kandy, 28.X.1979, Sedgwick (WTS); 1♀, Peak Wilderness, Ratnapura, 8.XI.1979, Sedgwick (WTS).

***Psechrus ghecuanus* Thorell**

Fig. 29–33, 91

Psechrus ghecuanus Thorell, 1897: 261 [2 juvenile ♀ syntypes from Burma: Karen Prov, Ghecu, in NRS, examined].

♀ (from Doi Suthep, northern Thailand). Eye region dark. Bands of carapace indistinct. Sternum light on each side. Dorsum of abdomen dark. Median ventral line distinct, lateral lines with only slight undulation. Secondary eyes 1.2 diam. of anterior median eyes. Anterior median eyes 0.8 diam. apart, touching laterals. Posterior median eyes 0.7 diam. apart, 0.8 from laterals. Total length, 21.5 mm. Carapace, 9.9 mm long, 6.6 mm wide. First femur, 14.2 mm; patella and tibia, 17.6 mm; metatarsus, 11.7 mm; tarsus, 5.8 mm. Second patella and tibia, 14.1 mm; 3rd, 10.0 mm; 4th, 13.9 mm.

♂. Unknown.

Note. A juvenile type specimen (Fig. 29) had a total length of 18 mm, carapace length 8.0 mm. The leg proportions were identical to those of the mature specimen described. The localities of the mature females from Thailand (Fig. 30, 31) are close to the type locality in Burma. The Pumbarai locality is puzzling (Fig. 32, 33); "Pumbarai" could not be found in gazetteers.

Remarks. *Psechrus ghecuanus* differs from the female of *P. torvus* by having subparallel slits in the epigynum (Fig. 31); from *P. singaporensis* by having much shorter legs (length of the 1st patella-tibia is about 1.7× that of the carapace).

Records. THAILAND: 1♀, Doi Suthep, 8.III.1959, B. Degerbøl (ZMK); 1♀, Dai Inthanon, 8.V.1958, B. Degerbøl (ZMK). INDIA: 1♀, Pumbarai [?], 27.III.1927, Carl & Escher (MHNG).

***Psechrus sinensis* Berland**

Fig. 34–39, 91

Psechrus sinensis J. & L. Berland, 1914: 131, fig. 1–3, ♂ [2♂ syntypes from China: Kouy-Tchéou Prov, Kouy-Yang (Kueiyang, Kweichow), P. Cavalerie, in MNHN, examined].—Schenkel, 1963: 20, fig. 3, ♀.—Roewer, 1954: 1378.—Bonnet, 1958: 3804.—Lehtinen, 1967: 261, fig. 474, ♂.

Psechrus mimus Chamberlin, 1924: 2 [penultimate ♀ holotype from China: Kiangsu Prov, Suchan (Soochow), in USNM, examined]. **New synonymy.**

The female examined and illustrated by Schenkel came from Kony tscheu, Pin-fag region, Szetchuan [Szechwan], and is significantly smaller in size than the male types of *P. sinensis*. Chamberlin's specimen of *P. mimus* (Fig. 36, 37) is of similar size

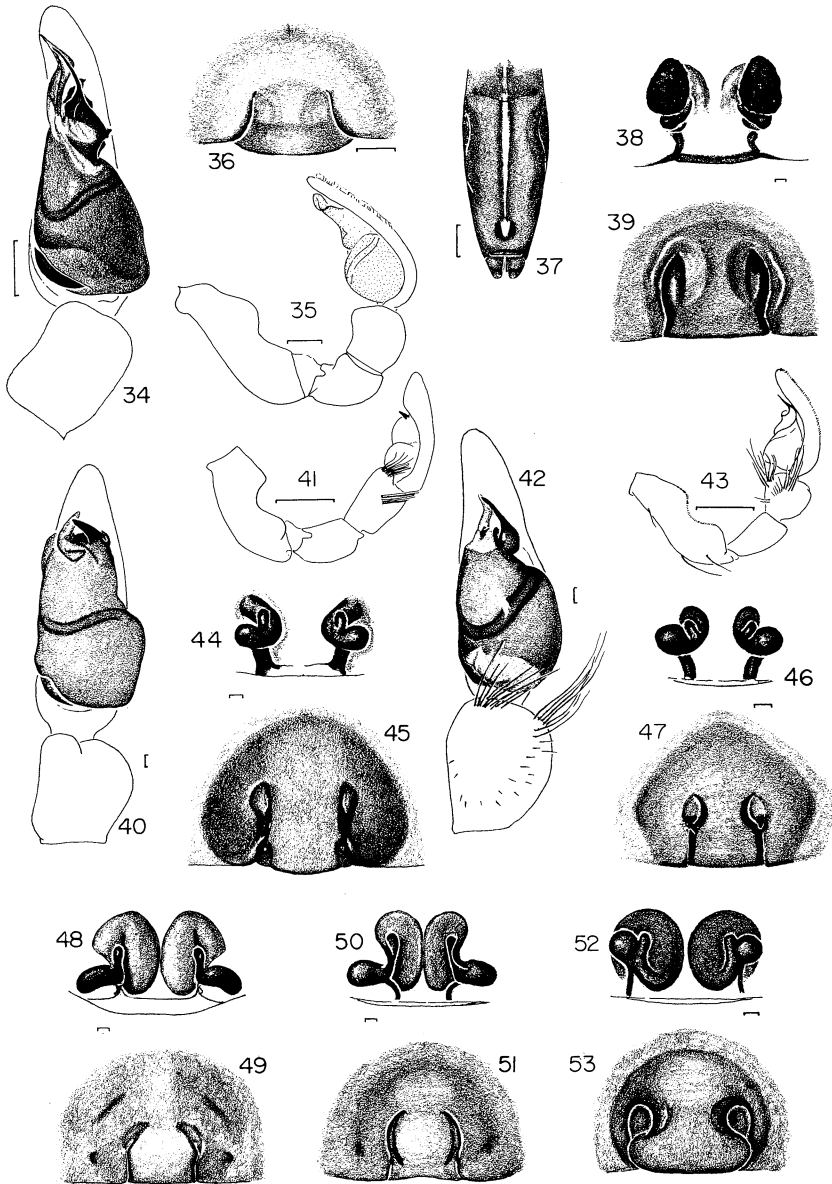


FIG. 34-53. 34-39, *Psechrus sinensis*. 34-35, left ♂ palpus: (34) ventral, (35) lateral; 36-37, juvenile ♀: (36) epigynal area, (37) venter of abdomen; 38-39, epigynum of ♀ from Formosa: (38) dorsal, cleared, (39) ventral. 40-53, *Psechrus singaporensis*. 40-43, left ♂ palpus: (40, 42) ventral, (41, 43) lateral [(40-41) specimen from Batu Caves, Kuala Lumpur, Malaysia, (42-43) specimens from Genting, Malaysia]; 44-53, ♀ epigynum: (44, 46, 48, 50, 52) dorsal, cleared, (45, 47, 49, 51, 53) ventral [(44-45) specimen from Batu Caves, Kuala Lumpur, Malaysia, (46-47) specimen from Singapore, (48-49) specimen from Mentawai I, (50-51) specimen from Palembang, Sumatra, (52-53) specimen from Preanger, Java]. Scale: Fig. 34, 35, 37, 41, 43 = 1.0 mm; all others = 0.1 mm.

to Schenkel's and appears to match it. The Schenkel specimen was not examined. I think that both the Schenkel specimen and Chamberlin's *P. mimus* are penultimate instar females; both have the characteristic white spot in front of the cribellum (Fig. 37). Lehtinen synonymized *P. mimus* with *P. torva* but questioned the synonymy. It is not certain if the female illustrated from Taiwan (Fig. 38, 39) belongs to Berland's males from mainland China. Fig. 34 and 35 were made from the mirror image of the right palpus of Berland's syntype.

♀ (from Taiwan, probably this species). Total length, 21 mm. Carapace, 9 mm long, 7 mm wide. First femur, 15 mm; patella and tibia, 19 mm; metatarsus, 15 mm; tarsus, 6 mm. Second patella and tibia, 14 mm; 3rd, 10 mm; 4th, 14 mm.

♂. The 1st coxae with short, stubby macrosetae, denser near distal edge. Total length, 23 mm. Carapace, 12 mm long, 7 mm wide. First femur, 23 mm; patella and tibia, 31 mm; metatarsus, 23 mm. Second patella and tibia, 24 mm; 3rd, 15 mm; 4th, 19 mm.

Remarks. The male differs from *P. torvus* by having a modified palpal femur (Fig. 35); it differs from other species by the rectangular shape of the base of the embolus (Fig. 34). Females can be separated from other species by the distinct white spot in front of the cribellum (Fig. 37).

Records. TAIWAN. 1 ♀, 1894, Holst (BMNH); 1 juv., Mt Yômeizan, 3.VIII.1967, M. Shimojana (TY).

***Psechrus singaporensis* Thorell**

Fig. 40–53, 91

Psechrus singaporensis Thorell, 1894: 321 [♀ holotype from Singapore, in NMI, examined].

Psechrus libeltii Kulczynski, 1908: 561, pl. 23, fig. 31, ♀ [2 ♀ and 2 juvenile syntypes from Sumatra: Palembang, in PAN, examined]. **New synonymy.**

Psechrus annulatus Kulczynski, 1908: 565, pl. 23, fig. 21, ♀ [2 ♀ syntypes from Java: Terr. Preanger, Nusa Kembangan, in PAN, examined]. **New synonymy.**

Psechrus curvipalpis Fage, 1929: 358, fig. 1–4, ♀, ♂ [♀, ♂ syntypes from Malaysia: Selangor, Batu caves, Kuala Lumpur, in MNHN, examined].—Bonnet, 1958: 3804. **New synonymy.**

♀ (syntype of *P. curvipalpis*). Abdomen with light cardiac mark, an indistinct paraxial light line on each side and several transverse light lines posteriorly. Venter with a paraxial light line on each side, gently curved toward median anteriorly and toward the sides $\frac{1}{3}$ from posterior end. Line of darker, minute sclerites on each side of abdomen. Eyes relatively large compared to other species. Total length, 16.5 mm. Carapace, 5.4 mm long, 3.8 mm wide. First femur, 12.7 mm; patella and tibia, 14.7 mm; metatarsus, 11.3 mm; tarsus, 6.3 mm. Second lost; 3rd patella and tibia, 7.0 mm; 4th, 11.1 mm.

The ♀ holotype of *P. singaporensis* with total length of 11.1 mm. Carapace, 4.5 mm long, 3.0 mm wide. First femur, 9.9 mm; patella and tibia, 12.4 mm. Second patella and tibia, 8.7 mm; 3rd lost; 4th, 8.6 mm.

♂ coloration like ♀, with only a few short macrosetae on distal edge and posterior of 1st coxae. Palpal femur with apophysis (Fig. 41, 43). Total length (of syntype of *P. curvipalpis*), 15.5 mm. Carapace, 6.1 mm long, 4.2 mm wide. First patella and tibia, 21.8 mm; 2nd lost; 3rd, 11.8 mm; 4th, 13.7 mm.

Note. The proportions of the types of *P. singaporensis* (Fig. 46, 47) and *P. curvipalpis* (Fig. 44, 45) match. They would not if *P. curvipalpis* were a sibling cave-adapted species. The proportions of the types of *P. libeltii* (Fig. 50, 51) and *P. annulatus* (Fig.

52, 53) also correspond with those of *P. singaporensis*. Total length of females varies from 11–20 mm; males, 10–16 mm. Virtually all specimens (unless from the same locality) first thought to belong to separate species. But as each subsequent specimen turned out to differ slightly in proportions and genitalic structures, they were all lumped; this may be wrong. Fig. 40, 41, 44, and 45 were prepared from the type of *P. curvipalpis*. It is possible that some of the females from Indonesia (Fig. 48–51) belong to *P. argentatus*.

Remarks. The male differs from those of other species by the small, toothlike embolus (Fig. 40, 42), and by the relatively long legs: the length of the 1st patella and tibia is about 3.5× that of the carapace. The female has the epigynum with 2 variably shaped slits (Fig. 45, 47, 49, 51, 53), variably shaped pockets ventral to the seminal receptacles, and longer legs than related species. The length of the 1st patella and tibia is about 2.7× that of the carapace.

Records. MALAYSIA: 1♂, Selangor, Batu Caves, 10.VI.1976 (wts); sev. ♀, 23.V.1959, 3.V.1960, 16.VIII.1960, H.E. McClure (SMF); 1♀, Cameron Highlands, Pahang, 16.II.1974 (wts); 1♂, Genting, 18.VIII.1979, reared from juv., mature 23.III.1980 (MC). INDONESIA: SUMATRA: 1♀, Kep. Mentawai, Sipora, 1925 (SMF).

***Psechrus kinabalu* Levi, new species**

Fig. 54–55, 91

♀ unknown.

♂. Carapace light with gray band, as wide as posterior median eyes in front, having parallel sides but narrowing posteriorly, and enclosing some light area behind eyes. Sides of thorax gray. Light band with parallel sides between median and lateral dark areas. Sternum gray except for sides and a median white line more distinct anteriorly. Clypeus and chelicerae light. Legs with dark patches. Dorsum of abdomen with light cardiac area, otherwise dark streaked. Venter with median white line tapering to a point near cribellum. Lateral white lines almost straight. Secondary eyes 1.2 diam. of anterior medians. Anterior medians their radius apart, touching laterals. Posterior median eyes 0.3 diam. apart, their radius from laterals. Coxae without macrosetae. Total length, 10.1 mm. Carapace, 5.0 mm long, 3.5 mm wide. First femur, 14.2 mm; patella and tibia, 16.8 mm; metatarsus, 15.8 mm; tarsus, 8.0 mm. Second patella and tibia, 12.0 mm; 3rd, 7.8 mm; 4th, 12.6 mm.

Remarks. The very simple palpus and longer palpal femur (Fig. 55) differentiate this species from *P. singaporensis*.

Type. Holotype ♂, MALAYSIA: SABAH (Borneo): Mt Kinabalu, 5500 ft (1680 m), 20–24.I.1976, E.W. Classey (MC, BMNH).

The specific name is a noun in apposition.

***Psechrus borneo* Levi, new species**

Fig. 56–57, 91

♀. No distinct markings on dorsum of carapace and abdomen; latter appears mottled. Venter of abdomen with median line and undulating thin line on each side. Posterior median eyes 1.1 diam. of anterior medians, laterals 1.2 diam. Anterior median eyes their diameter apart, almost touching laterals. Posterior median eyes their diameter apart, slightly more than their diameter from laterals. Total length, 14.5 mm. Carapace, 5.8 mm long, 4.4 mm wide. First femur, 13.7

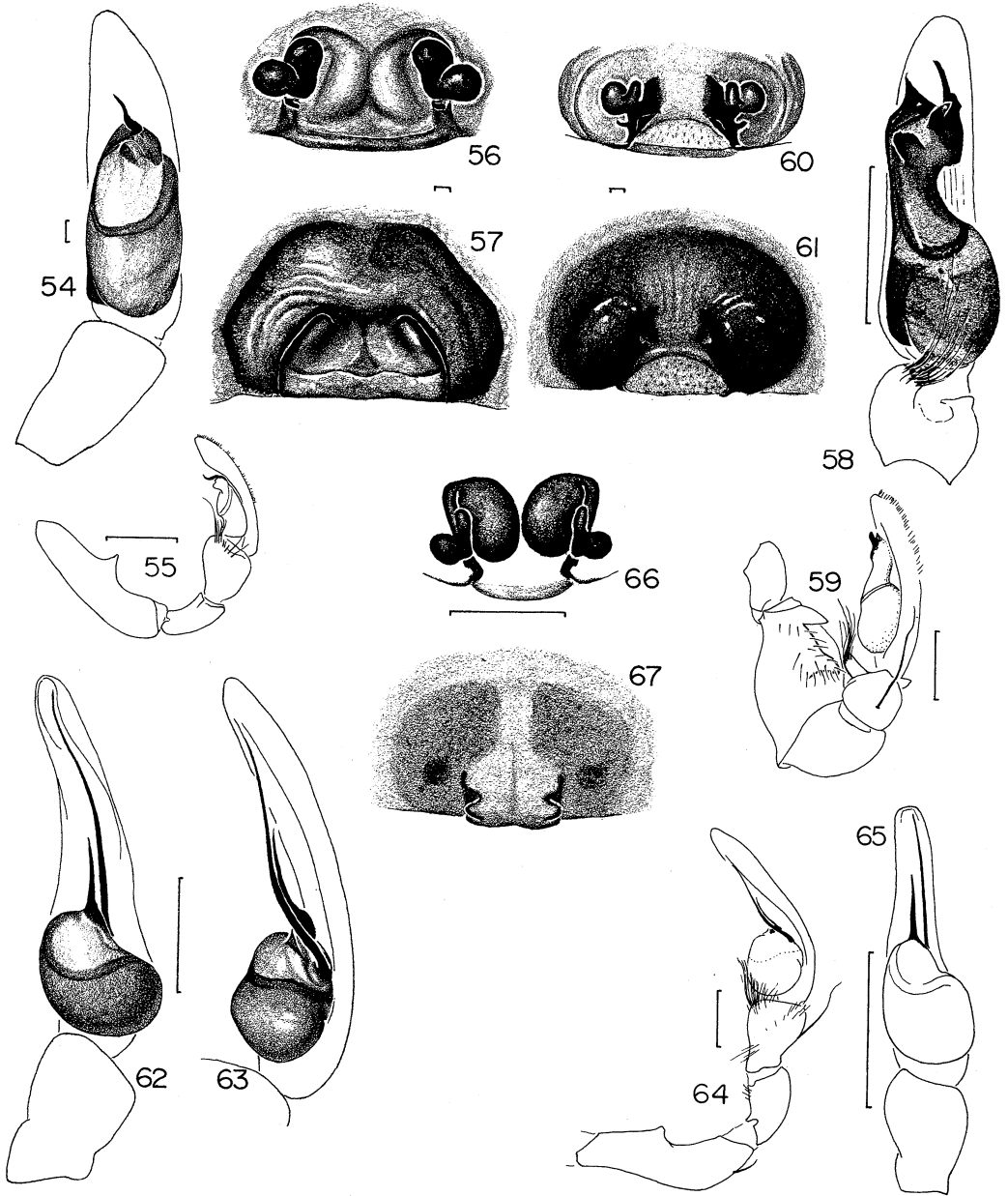


FIG. 54-67. 54-55, *Psechrus kinabalu*, left ♂ palpus: (54) ventral, (55) lateral. 56-57, *Psechrus borneo*, epigynum: (56) dorsal, cleared, (57) ventral. 58-61, *Psechrus mulu*. 58-59, left ♂ palpus: (58) ventral, (59) lateral; 60-61, epigynum: (60) dorsal, cleared, (61) ventral. 62-67, *Psechrus argentatus*. 62-65, left ♂ palpus: (62, 65) ventral, (63-64) lateral [(62-64) specimen from New Guinea, (65) specimen from Sabah]; 66-67, epigynum: (66) dorsal, cleared, (67) ventral. Scale: Fig. 54, 56, 57, 60, 61 = 0.1 mm; all others = 1.0 mm.

mm; patella and tibia, 16.2 mm; metatarsus, 12.7 mm; tarsus, 6.2 mm. Second patella and tibia, 11.8 mm; 3rd, 7.6 mm; 4th, 11.9 mm.

Remarks. The unique, fairly sclerotized epigynum with a median depression (Fig. 57) separates this species from the similarly long-legged *P. singaporensis*.

Types. Holotype ♀, INDONESIA: KALIMANTAN (Borneo): Birang Riv. [12°11'N, 117°28'E], E. Mjöberg (NRS). Paratype: KALIMANTAN: 1 juv., Mt Tibang (NRS).

The specific name is a noun in apposition.

***Psechrus mulu* Levi, new species**

Fig. 58–61, 91

♀. Carapace with light band on each side of thorax. Margin of thorax black. Chelicerae reddish. Sternum yellow-brown. Legs with dark spots near base of macrosetae. Dorsum of abdomen indistinctly streaked, cardiac area lightest. Venter with median light line very distinct, but lateral line only present on anterior. Total length, 15.4 mm. Carapace, 5.9 mm long, 4.2 mm wide. First femur, 11.2 mm; patella and tibia, 13.5 mm; metatarsus, 11.1 mm; tarsus, 6.0 mm. Second patella and tibia, 10.6 mm; 3rd, 7.8 mm; 4th, 10.9 mm.

♂. Distal row of bristles on coxae 1 and 2, and row of weaker bristles on trochanters 1 and 2. Total length, 12.6 mm. Carapace, 5.0 mm long, 3.9 mm wide. First femur, 17.0 mm; patella and tibia, 19.5 mm; metatarsus, 18.2 mm; tarsus, 8.8 mm. Second patella and tibia, 15.0 mm; 3rd, 10.5 mm; 4th, 15.1 mm.

Remarks. The male can readily be distinguished from all other species by the unusually short palpal femur bearing a tooth (Fig. 59), and also by the waisted bulb of the palpus (Fig. 58). The epigynum, unlike that of most other species, is heavily sclerotized and domed, with the posterior median area lighter. In Fig. 61 the exposed bases of the setae are shown as dots.

Types. Holotype ♂, 1♂ paratype and 2♀ paratypes, MALAYSIA: SARAWAK (Borneo): Gua Payau, Deer Cave, 25.IV.1978, P. Chapman, R. Geogr. Soc.-Sarawak Govt. Gunona Mulu Expedition (BMNH, no. 1981.4.10.1–4).

The specific name is a noun in apposition.

***Psechrus argentatus* (Doleschall)**

Fig. 1–6, 62–67, 91

Tegenaria argentata Doleschall, 1857: 407 [holotype from Amboina (Ambon), lost].

Psechrus argentatus: Thorell, 1878: 171.—Roewer, 1955: 1378.—Bonnet, 1958: 3803.—Chrysanthus, 1967: 105, fig. 68–71, ♀.—Lehtinen, 1967: 260, fig. 475, ♂.

Psechrus castaneus Hogg, 1915: 434, fig. 22, ♀ [♂, ♀ syntypes from New Guinea, in BMNH, examined]. **New synonymy.**

♀. Abdomen brown and black; with some white hairs and very contrasting white ventral lines (Fig. 2). Carapace with eye region narrower and more projecting than other species (Fig. 1). Total length, 20 mm. Carapace, 8.0 mm long, 5.8 mm wide. First femur, 17.1 mm; patella and tibia, 20.6 mm; metatarsus, 17.2 mm; tarsus, 7.3 mm. Second patella and tibia, 15.1 mm; 3rd, 10.2 mm; 4th, 15.1 mm.

♂. There is little sexual dimorphism. Palpal femur with apophysis (Fig. 64). The 1st coxae lack macrosetae. Total length, 17.0 mm. Carapace, 6.8 mm long, 5.0 mm wide. First

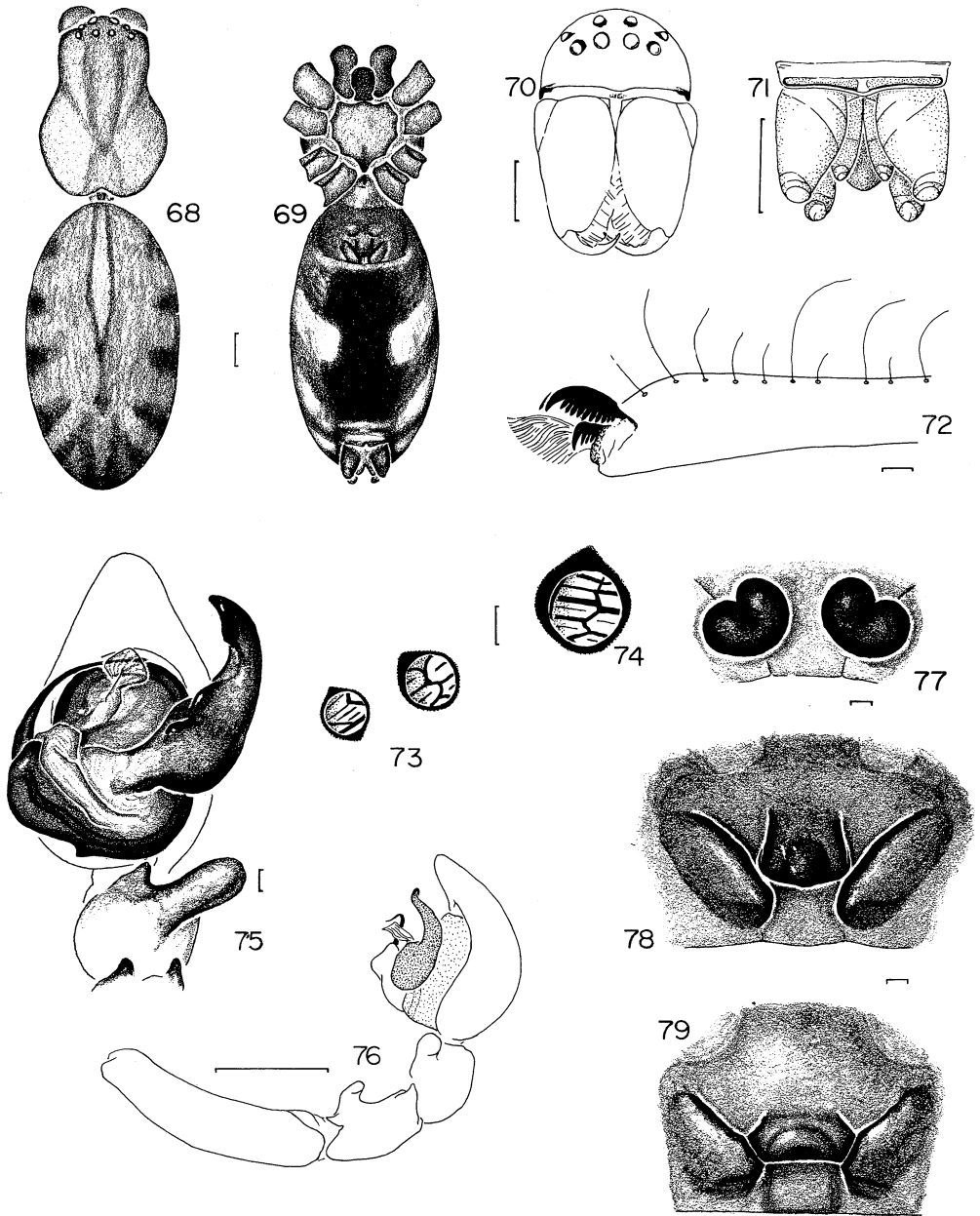


FIG. 68-79. *Fecenia ochracea*. 68-69, ♀ without legs: (68) dorsal, (69) ventral; 70, eye region and chelicerae, ♀; 71, cribellum and spinnerets, ♀; 72, posterior view of left 4th tarsus, 1 claw tuft removed, ♀; 73, left lateral eyes, showing grate tapetum, ♀; 74, left posterior median eye, showing tapetum, ♀; 75-76, left ♂ palpus; 77-79, epigynum: (77) dorsal, cleared, (78-79) ventral [(77-78) specimen from Wau, New Guinea, (79) specimen from Ambon, Ceram]. Scale: Fig. 68-71, 76 = 1.0 mm; all others = 0.1 mm.

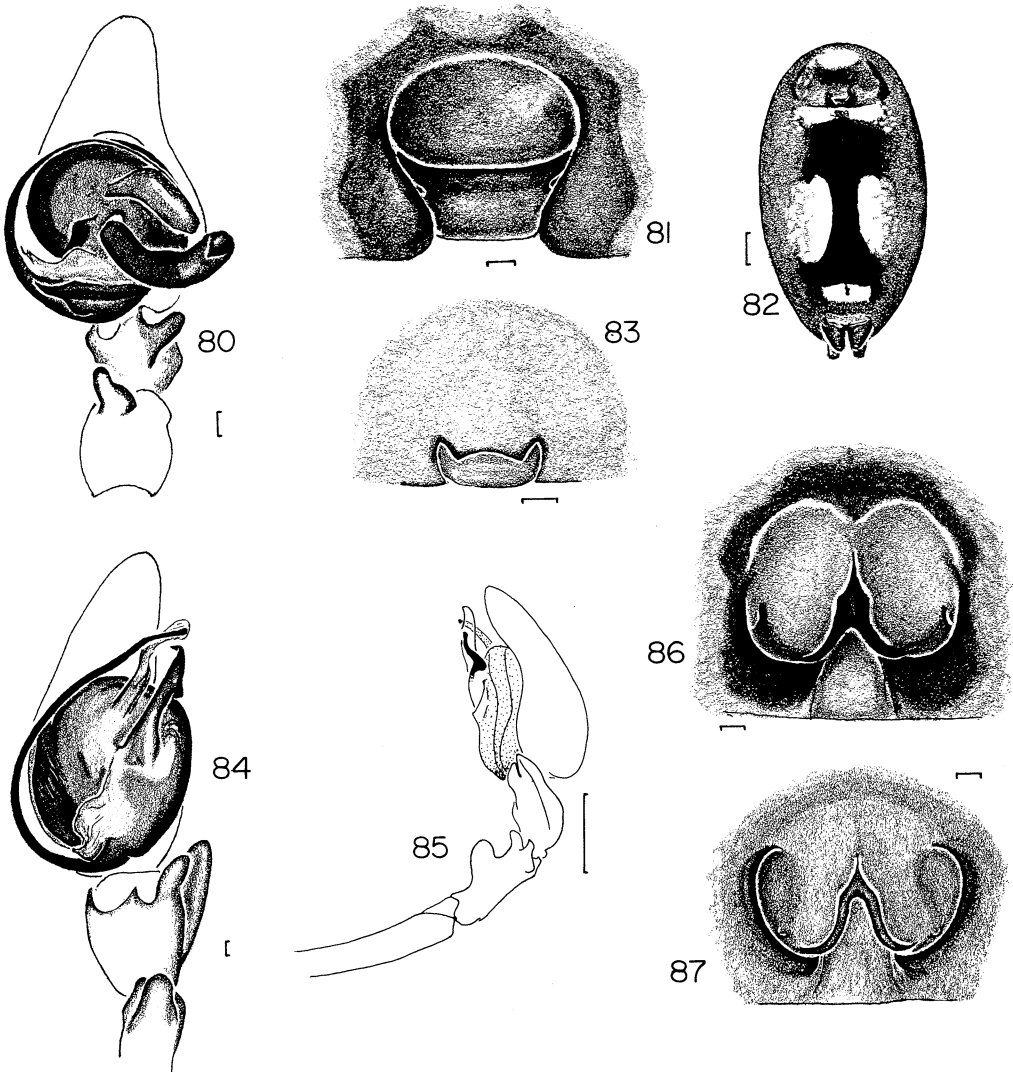


FIG. 80-87. 80-82, *Fecenia cylindrata*. 80, left ♂ palpus; 81, epigynum; 82, ♀ abdomen, ventral. 83-87, *Fecenia macilentata*. 83, juvenile, epigynal area (type of *F. protensa*); 84-85, left ♂ palpus: (84) ventral, (85) lateral; 86-87, epigynum: (86) specimen from India, (87) specimens from Sumatra. Scale: Fig. 82, 85 = 1.0 mm; all others = 0.1 mm.

femur, 21.2 mm; patella and tibia, 23.0 mm; metatarsus, 22.3 mm; tarsus, 9.7 mm. Second patella and tibia, 17.3 mm; 3rd, 10.9 mm; 4th, 16.3 mm.

Variation. Males from the Malay Peninsula and Sabah have larger tegulum and shorter conductor and embolus (Fig. 65). Perhaps some females assigned to *P. singaporensis* from Indonesia (Fig. 48-51) belong to *P. argentatus*.



FIG. 88. Tapetum of posterior median eye of *Psechrus*, showing the grate tapetum (photo by Homann).

Remarks. The unique palpus, a nearly spherical tegulum, and the parallel filiform conductor and embolus (Fig. 62, 65) readily separate males from those of other species. Only details of the epigynum, a small lobe on each side at the posterior end of the slits (Fig. 67), and the large pockets located ventrally between the seminal receptacle (Fig. 66) separate females from other species. The species is long-legged. The length of the 1st patella-tibia is $3.3\times$ that of the carapace in males; $2.5\times$ in females.

Records. Father Chrysanthus (1967) examined specimens from Ceram (Molucca Is) belonging to the Thorell collection. MALAYSIA: SELANGOR: 1♂, juv., Templer Park, 28.III.1976, W.T. Sedgwick (wrs). SABAH: 1♂, Kota Kinabalu, hillside, 11.VIII.1979, F. & J. Murphy (mc). INDONESIA: SULAWESI (Celebes): 1♀, Mt Sapoetan, VIII.1937, C.T. Brues (mcz); ARU IS. (Kepulauan Aru): 1♀, Pulau Penambulai, 1.IV.1908, M. Merton (SMF). NEW GUINEA [Papua New Guinea and Irian Jaya]: Many records from low elevations, coast, peninsulæ, and islands off New Guinea, none from higher elevations, except the following: PNG: Morobe Prov, Wau, to about 1600 m, most others below 1000 m; BISMARCK ARCH: NEW BRITAIN: 1♀, Rabaul, 1909, E. Wolff (SMF); 1♂, "Hassan" (?) (ZMK).

Genus *Fecenia* Simon

Mezentia Thorell, 1881: 204. Type species by monotypy: *M. angustata* Thorell. Name preoccupied by *Mezentia* Stål, 1878, an orthopteran.

Fecenia Simon, 1887: p. cxci. New name for *Mezentia* Thorell, preoccupied. The gender of the name is feminine.

KEY TO SPECIES OF *Fecenia* (♂)

1. Lateral apophysis of ♂ palpal bulb as long as or longer than width of bulb, and its axis subparallel to that of bulb (Fig. 75) . . . Philippines to Solomon Is (Fig. 92) **ochracea**
- Lateral apophysis of ♂ palpal bulb shorter than width of bulb, or having axis at right angles (Fig. 80, 84) 2



FIG. 89. a, Web of *Psechrus argentatus*, 25 cm diam., retreat at right; b, *Psechrus argentatus*, ♂.



FIG. 90. Pseudo-orb of *Fecenia ochracea*, curled leaf retreat in center of web (on upper margin of photograph).

- 2. Axis of lateral apophysis of bulb at right angles to that of bulb (Fig. 80) . . . Burma (Fig. 92) **cylindrata**
 Axis of lateral apophysis subparallel to axis of palpus (Fig. 84) . . . India to Malay Penin. and Sumatra (Fig. 92) **macilenta**

KEY TO SPECIES OF *Fecenia* (♀)

- 1. Epigynum with a median structure (Fig. 78, 79, 86, 87) 2
 Epigynum with a median depression (Fig. 81) . . . Burma (Fig. 92) **cylindrata**
- 2. Epigynum with wide median tongue (Fig. 78, 79) . . . Philippines to Solomon Is (Fig. 92) **ochracea**
 Epigynum with a narrow median sclerotized structure pointing anteriorly (Fig. 86, 87) . . . India to Malay Penin. and Sumatra (Fig. 92) **macilenta**

Fecenia ochracea (Doleschall)

Fig. 68-79, 92

Tegenaria ochracea Doleschall, 1859: 50, pl. 8, fig. 8, ♀ [♀ holotype from Ceram: Amboina (Ambon) ("not uncommon"), in RML, lost (van der Hammen, pers. commun., Feb. 1978)].

Mezentia angustata Thorell, 1881: 204 [♀ type from Moluccas: Ternaté Is, in MCSN, examined by Chrysanthus].

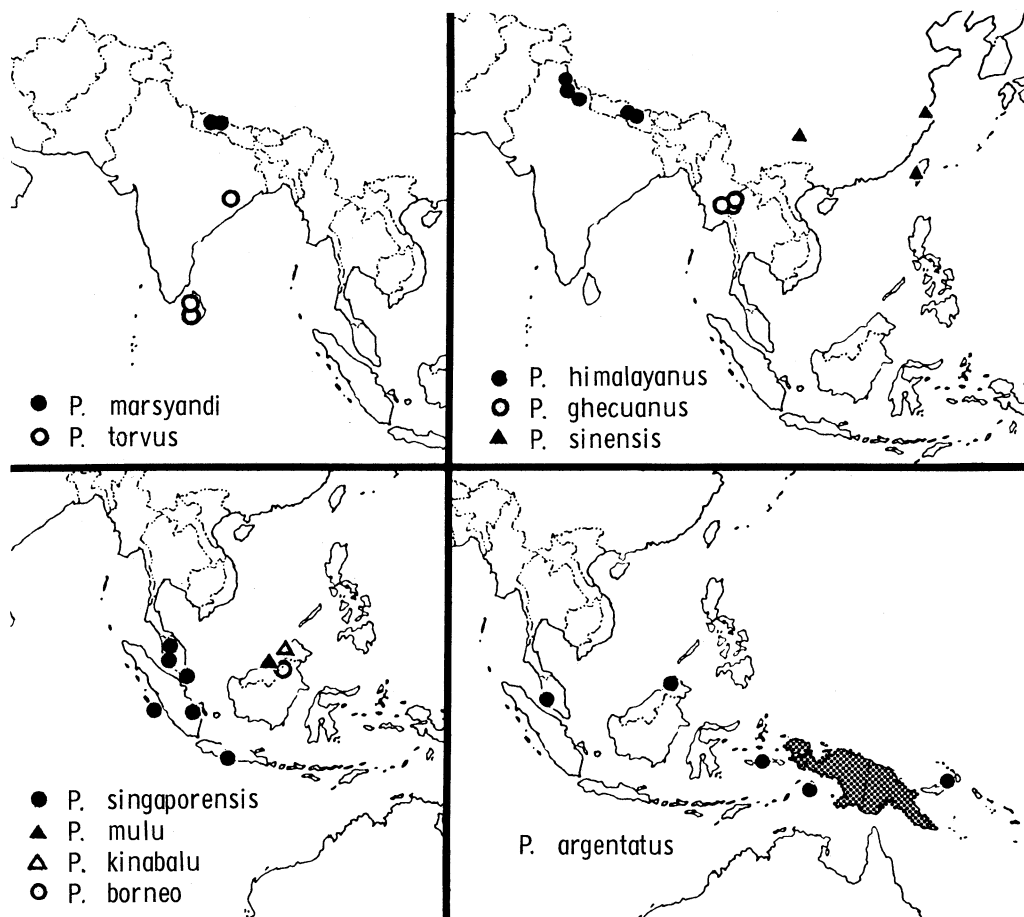


FIG. 91. Distribution of *Psechrus* species.

Fecenia angustata: Simon, 1892: 226.—Roewer, 1955: 1377.—Bonnet, 1956: 1896.—Chrysanthus, 1967: 102, fig. 55–57, 60–64, ♀, ♂.

Fecenia ochracea: Simon, 1906: 287, fig. 1.—Roewer, 1955: 1376.—Bonnet, 1956: 1897.

Fecenia maforensis Simon, 1906: 287, fig. 1A, ♀ [♀ type from New Guinea: Mafor I, in MNHN, examined].

New synonymy.

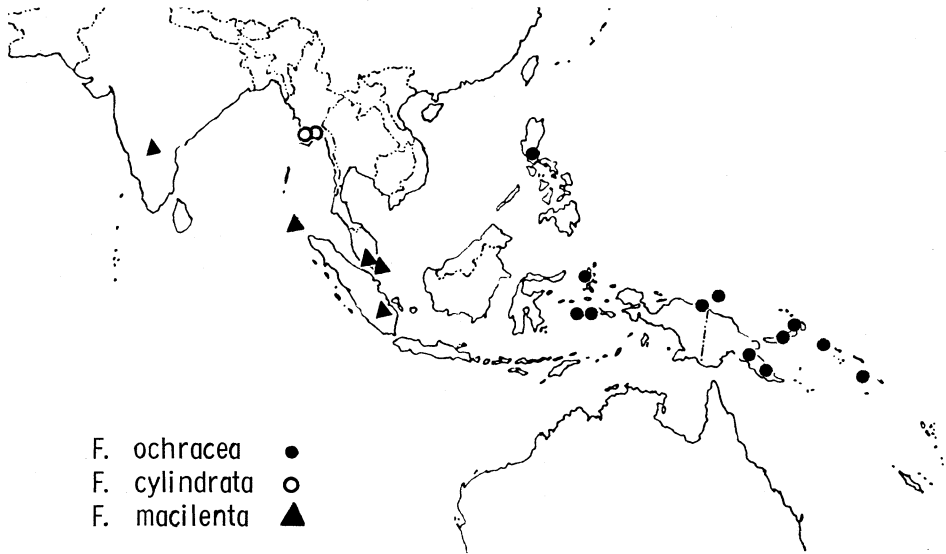
Fecenia oblonga Rainbow, 1913: 7, fig. 5, ♀ [♀ holotype from Solomon I, in AMS, examined].

Fecenia montana Kulczynski, 1910: 389, pl. 17, fig. 1, ♀ [♀ holotype from Neu Pommern (New Britain), in PAN, examined].

Fecenia cinerea Hogg, 1915: 437, fig. 23, ♀ [♀ holotype from Dutch New Guinea (Irian Jaya) in BMNH, examined].

Fecenia buruana Reimoser, 1936: 406, fig. 1, ♀, ♂ [♀ lectotype here designated from Buru I (Kap. Buru), in ZMA, examined]. **New synonymy.**

Doleschall's type specimens have not been found. The type locality of *F. ochracea* is Ambon, between Buru Island and New Guinea, both places where this species

FIG. 92. Distribution of *Fecenia* species.

occurs. I see no reason to assume that Ambon has a different species than the islands on either side. Specimens of *F. ochracea* in the Muséum National d'Histoire Naturelle, Paris from Amboina, Ceram (Fig. 79), Edkor, are perhaps Doleschall's specimens. All illustrations except Fig. 79 were made from specimens collected at Wau, Papua New Guinea.

♀. Carapace brown, sternum brownish with posterior black spot. Legs brown. Only patellae and distal ends of femora dark brown. Dorsum of abdomen brown. Cardiac outline dark. Sides with 4 dorso-ventral gray bands, 5 light patches in between bands. Anterior median eyes slightly larger than others. Total length, 15.0 mm. Carapace, 5.4 mm long, 3.6 mm wide. First femur, 8.3 mm; patella and tibia, 10.8 mm; metatarsus, 8.2 mm; tarsus, 3.4 mm. Second patella and tibia, 7.3 mm; 3rd, 4.3 mm; 4th, 6.5 mm.

♂. Similar to ♀. Total length, 9.5 mm. Carapace, 3.8 mm long, 2.8 mm wide. First femur, 11.7 mm; patella and tibia, 14.0 mm; metatarsus, 12.6 mm; tarsus, 4.8 mm. Second patella and tibia, 6.5 mm; 3rd, 4.0 mm; 4th, 6.3 mm.

Variation. There is considerable variation in genitalia. Some palpi and epigyna seem wider than others, while others are more elongate.

Remarks. Females are readily recognized by the median tongue in the epigynum (Fig. 78, 79); males by the large, distally directed, lateral apophysis of the palpus (Fig. 75, 76).

Records. PHILIPPINES. Luzon I: 1♀, Laguna Prov, Los Baños, Baker (MCZ). IRIAN: 1♀, Hollandia [Jayapura, Djayapura], VII-IX, Markos, Hart (AMNH); 1♂, same locality, V.1945, B. Malkin (AMNH). PNG: NEW GUINEA (SE): ♀,♂, Oro Bay, B. Struck (AMNH); Morobe Prov, Wau, numerous collections (MCZ). BISMARCK ARCH: NEW BRITAIN: 1♀, Karavat, Lowland Agric. Exp. Stn, Y. Lubin (MCZ). BISMARCK

ARCH.: 1♀, Aua I, 1909, E. Wolff (SMF). SOLOMON IS: 1♀, Auki, 1916, W.M. Mann (MCZ); 1♀, Guadalcanal, 1944, F. Cilley (AMNH).

Fecenia cylindrata Thorell

Fig. 80–82, 92

Fecenia cylindrata Thorell, 1895: 64 [1 juv. syntype from Burma: Tharrawaddy, in NRS, examined].—Lehtinen, 1967: 234, fig. 473, ♂.

Several adult specimens of this species from Palon, Burma are in NHMS. The epigynum on each side posteriorly in the depression has some cement from the male which seals the structure (not illustrated) and prevents a second mating.

Remarks. The median depression of the female epigynum (Fig. 81) and the shape and direction of the lateral apophysis of the palpus (Fig. 80) distinguish this species.

Record. BURMA: sev. ♀, ♂, Palon, Pegu, L. Fea (ZMK).

Fecenia macilenta (Simon)

Fig. 83–87, 92

Mezentia macilenta Simon, 1885: 451, pl. 10, fig. 17 [♂ holotype from Malaysia: Malacca, in MNHN, examined].

?*Fecenia protensa* Thorell, 1891: 31 [juvenile ♀ type from Nicobar Is (Bay of Bengal), in SMK, examined].

Doubtful synonymy.

Fecenia macilenta: Simon, 1892: 225, fig. 171, 172.—Roewer, 1955: 1376.—Bonnet, 1956: 1897.

Fecenia travancoria Pocock, 1899: 750 [♀ holotype from India: Madaloray (?), Deccan, in BMNH, examined].

Fecenia sumatrana Kulczynski, 1908: 568, pl. 23, fig. 20, ♀ [♀ holotype from Indonesia: Sumatra, Palembang, in PAN, examined]. **New synonymy.**

Since immature, the placement of *F. protensa* remains uncertain. It is probably this species.² Fig. 83 was prepared from the type of *F. protensa*; Fig. 84 from the type of *F. macilenta*; Fig. 86 from the type of *F. travancoria*; and Fig. 87 from the type of *F. sumatrana*.

♀. Type of *F. travancoria* in poor condition, but appears similar to *F. ochracea*. Secondary eyes slightly smaller than others. Anterior median eyes 1.5 diam. apart, 1 from laterals. Posterior median eyes about 2 diam. apart and 2 from laterals. Total length, 13.0 mm. Carapace, 5.6 mm long, 3.8 mm wide. First femur, 9.0 mm; patella and tibia, 12.0 mm; metatarsus, 9.1 mm; tarsus, 3.8 mm. Second patella and tibia, 7.8 mm; 3rd, 4.5 mm; 4th, 7.2 mm.

♂. Diameter of anterior median eyes 2× that of secondary eyes. A pair of small knobs on the clypeus, side by side, 1 each below an anterior median eye. Chelicerae elongated, 3.7 mm long, with 3 teeth on anterior margin; the middle are largest and slightly asymmetrical; 4 on the posterior margin. Dorsum of cymbium has very dense, scopula-like hair. Total length, 12.5 mm. Carapace, 5.7 mm long, 4.1 mm wide. First femur, 18.7 mm; patella and tibia, 21.7 mm; metatarsus, 20.2 mm; tarsus, 7.3 mm. Second patella and tibia, 11.7 mm; 3rd, 6.8 mm; 4th, 10.5 mm.

Remarks. This species is distinguished by the median sclerotized, anteriorly pointed structure in the depression of the epigynum (Fig. 86, 87) and the small, distally extending lateral apophysis of the palpus (Fig. 84, 85).

Record. SINGAPORE: 2♀, 1898, H.N. Ridley (BMNH).

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ADDENDUM

After the manuscript went to press, the description of *Psechrus nicobarensis* Tikader, 1977 (*Rec. Zool. Surv. India* **72**: 208, fig. 27, ♀♂) was found. The illustrations are those of a *Fecenia*. It is possible that it is *F. protensa* Thorell from the same locality, known only from juveniles. The psechrids received on loan from the Indian Zoological Survey for this study were all juveniles, although Tikader (1977) indicates that many mature paratypes of this species exist in the collection.