2008. The Journal of Arachnology 36:1–25

The pholcid spiders of Micronesia and Polynesia (Araneae, Pholcidae)

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Abstract. Records of pholcid spiders from Micronesia and Polynesia are presented, along with records from Indonesia and parts of Melanesia. Nineteen species representing eleven genera are included. An illustrated key for Pacific pholcids is provided. Two species and one genus are not yet known from Micronesia or Polynesia, but are included in the key because they may occur there. Seven species are widespread synanthropic or anthropophilic species, two species are widespread native species, and nine species are endemics of one or several neighboring islands. Distribution maps include only specimens we have seen, not literature records.

Keywords: Pholcids, Pacific islands distribution, biogeography, taxonomy

Some synanthropic pholcid spiders are readily transported by human activity, with the result that a few species [e.g., *Pholcus phalangioides* (Fuesslin 1775)] have attained an almost world-wide distribution. The pholcid fauna of Micronesia and Polynesia consists largely of these domestic or semi-domestic species.

In some tropical areas the pholcids form a large part of the spider fauna, and many genera and species have recently been described (Huber 2000, 2001, 2003a, 2003b, 2003c, 2005a, 2005b). In the tropical Pacific the smaller or more highly isolated islands seem not to have been conducive to proliferation of pholcid species. This is in contrast to some other groups of spiders, e.g., in the Hawaiian Islands (Garb 1999; Gillespie 2004). A few new pholcid species, almost all small ground-dwelling spiders, have been found; but many of the Micronesian and Polynesian pholcids belong to cosmotropical or widespread Pacific species. The large continental islands (e.g., the Solomons and Indonesia) have been little investigated, and may harbor a much richer native pholcid fauna (Deeleman-Reinhold 1986; Huber 2005b, unpubl. data). Ten genera and 17 species make up the fauna so far known from the area considered here, Micronesia and Polynesia exclusive of New Zealand (Fig. 1). Eight of these species have very wide, if somewhat patchy, distributions. Six of them are also known from the continental New World and Old World.

METHODS

All pholcid specimens from the Pacific region that could be found in the collection of the Bernice P. Bishop Museum (BPBM) in Honolulu, Hawaii were examined. In addition, we were able to see those in the collection of the Hawaii Department of Agriculture (HDOA), the Entomology Department of the University of Hawaii (UH), the American Museum of Natural History, New York (AMNH), the Queensland Museum, Brisbane, Australia (QMB), the Senckenbergmuseum, Frankfurt, Germany (SMF), the California Academy of Sciences, San Francisco (CAS), and the Australian Museum, Sydney (AMS). Robert G. Holmberg and Don Buckle made available Holmberg's collection from Indonesia (RGH). The remaining records are from the collection of J. Beatty and J. Berry (BB). Holotypes from the "BB" collection, and eventually most of the collection, will be placed in the Bishop Museum.

The BB collection was made by J.W. Berry, E.R. Berry, and J.A. Beatty in a series of collecting trips: Marshall Islands (1968, 3 mo; 1969, 3 mo); Palau (1973, 6 mo); Guam, Yap, Truk (= Chuuk), Ponape (= Pohnpei), Taiwan (1973, 1–2 wk each); Yap (1980, 6 mo); Marquesas, Tuamotu, Society, Cook and Fiji Islands (1987, 2004, 6 mo total); Cook Islands (2002, 6 wk); and the Hawaiian Islands (1995, 1997, 1998, 3 mo). All measurements are in mm. Illustrations of male palps are of the left palp.

In most cases we have given locality data as they appear on the labels in the specimen vials. Where names of localities have changed the new name is given in parentheses, e.g., New Hebrides (= Vanuatu). On recent maps of Fiji, the spellings of some localities have been altered to match their pronunciations. We give the new spellings of these without presenting alternatives. For example, these changes include Nandi (Nadi), Mbau (Bau), Tholo-i-Suva (Colo-i-Suva), and Yanggona (Yaqona).

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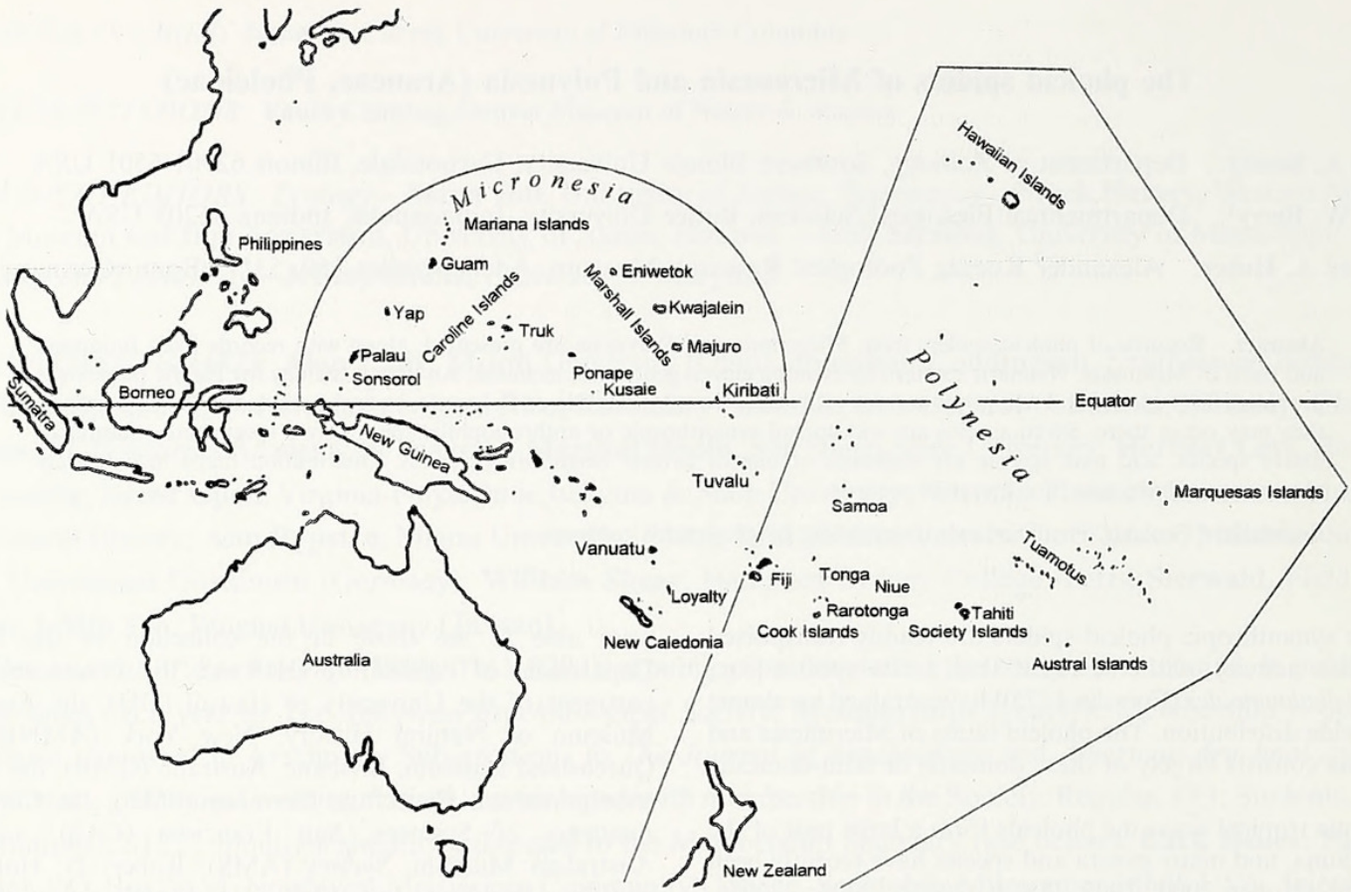


Figure 1.—The islands of the Pacific Ocean, showing the regions of Micronesia and Polynesia. *Note:* Some authorities include the Fiji Islands in Polynesia, while others consider them to be part of Melanesia. New Zealand is part of Polynesia, as is Easter Island.

TAXONOMY

Family Pholcidae C.L. Koch 1851

KEY TO THE PHOLCID SPIDERS OF MICRONESIA AND POLYNESIA

(plus two other widespread species but excluding undescribed species)

1. With six eyes (AME absent) 2
   With eight eyes 8
2. Male chelicerae with long apophyses and male clypeus with sexual modifications (Fig. 2); procursus and bulb as in Fig. 3; epigynum as in Fig. 4; habitus, Fig. 41; known only on Fiji Islands ..... *Aetana fiji*
   Male chelicerae with much shorter apophyses; male clypeus unmodified; male and female genitalia different 3
3. Body size greater than 3 mm; abdomen elongate (Figs. 51, 52); genital bulb with three projections and proximal sclerite (Fig. 30); procursus as in Fig. 29; epigynum as in Fig. 31 ..... *Pholcus* (*Uthina*) spp.
   Body size less than 2 mm; abdomen globular; male and female genitalia different 4
4. All eyes close together on high median elevation (Figs. 32, 33); carapace with deep median groove; procursus and palpal femur as in Fig. 5; epigynum as in Fig. 6 ..... *Modisimus culicinus*
   Eyes in two triads, not elevated, carapace without median groove 5
5. Procursus with ventral flap and bulb with serrated and hooked apophysis (Fig. 10); epigynum with posterior pocket (Fig. 11); habitus Fig. 36 ..... *Spermophora palau*
   Procursus without ventral flap; bulb without serrated apophysis; epigynum without posterior pocket; habitus Figs. 37–40 ..... *Belisana* spp...6
6. Male palpal femur with strong ventral projection (Huber 2005b, fig. 626); eyes not ringed with black pigment (Fig. 37); known only from Fiji ..... *Belisana fiji*
   Male palpal femur without ventral projection; eyes ringed with black pigment; known only from Caroline Islands 7
7. Carapace with dark pattern (Fig. 39); abdomen globular; male clypeus with transverse row of thickened hairs (Huber 2005b, fig. 463), bulb without bulbal apophysis; epigynum without scape ..... *Belisana airai*
   Carapace pale and unmarked; abdomen slightly elongated; male clypeus with cone-shaped median projection, bulb with hooked bulbal apophysis (Huber 2005b, fig. 481); epigynum with scape (Huber 2005b, fig. 484) ..... *Belisana yap*

8. Carapace with median indentation 9
Carapace without median indentation 14
9. Body size less than 3 mm; male clypeus sexually modified (Fig. 7); procursus and epigynum as in Figs. 8, 9 . . . *Holocneminus piritarsis*
Body size greater than 4 mm; male clypeus not sexually modified; procursus and epigynum different 10
10. Abdomen usually as high as or higher than long (Figs. 42–45); male chelicerae frontally with several dark cone-shaped projections 11
Abdomen usually longer than high (Figs. 46–49, 55); male chelicerae with one or two pairs of apophyses 12
11. Female carapace with posterior cone-shaped elevation (Fig. 12); cone-shaped elevations on male chelicerae are elevations of the cuticle; epigynum and procursus as in Figs. 13, 14 . . . . . *Physocyclus globosus*
Female carapace without posterior cone; cone-shaped elevations on male chelicerae are modified hairs; procursus and epigynum as in Figs. 15, 16 . . . . . *Artema atlanta*
12. Abdomen dorsally with characteristic pattern (Fig. 55); male and female chelicerae without stridulatory ridges; legs without small dark lines; male femur I without spines ventrally; epigynum as in Fig. 20 . . . . . *Smeringopus pallidus*
Abdomen without such pattern; male and female chelicerae with stridulatory ridges; legs with many small black lines (Figs. 47, 49); male femur I with spines ventrally 13
13. Abdomen pointed postero-dorsally (Fig. 47); male chelicerae with two characteristic pairs of apophyses (Fig. 17); female carapace with pair of small posterior projections; epigynum as in Fig. 18 . . . . . *Crossopriza lyoni*
Abdomen not pointed postero-dorsally (Fig. 49); male chelicerae with one pair of small apophyses; female prosoma without posterior pair of projections; epigynum as in Fig. 19 . . . . . *Holocnemus pluchei*
(This synanthropic species has not been taken in Micronesia or Polynesia, but is likely to occur there)
14. Body size less than 4 mm; abdomen oval (Figs. 56, 57); procursus with dorsal hinged sclerite (Fig. 21); epigynum with dark crescent-shaped internal structure frontally (Fig. 22) . . . . . *Micropholcus fauroti*
Body size greater than 5 mm; abdomen elongate (Figs. 50, 54); procursus without dorsal hinged sclerite; epigynum not as above 15
15. Abdomen with distinctive patterns dorsally and ventrally (Figs. 53, 54); ocular area in males with pair of horns; procursus strongly curved (Fig. 23); bulb and epigynum as in Figs. 24, 25 . . . . . *Pholcus ancoralis*
Abdomen without or with very indistinct (and different) pattern (Fig. 50); male ocular area without horns; procursus straight (Fig. 26); bulb and epigynum as in Figs. 27, 28 . . . . . *Pholcus phalangioides*

Genus *Aetana* Huber 2005

Aetana Huber 2005a:72.

Type species.—*Aetana omayan* Huber, 2005a, by original designation.

Remarks.—The three known species of this genus are medium sized (~3–4.5 mm total body length), six-eyed spiders with relatively long legs, as compared with *Spermophora*. The modifications on the male palpal femur are unique within pholcids and probably constitute a synapomorphy of the genus. A further synapomorphy might be the absence of sclerites on the genital bulb. One species occurs on the Fiji Islands, the other two in the Philippines and Borneo (Huber 2005a).

Aetana fiji Huber 2005
Figs. 2–4, 41, 58

Aetana fiji Huber 2005a:74.

Material examined.—FIJI: *Viti Levu*: Sawani [18°01′S, 178°28′E]: 2 ♂, 3 ♀, near Suva (18°01′S, 178°28′E), from epiphytes, 19 July 1956, R.R. Forster (BPBM); 1 ♀, Monasavu Watershed [17°45′S, 178°04′E], 1100 m, vegetation beating, 29–30 November 2002, D. Gruner (BPBM); 1 ♂, 1 juvenile, Suva [18°08′S, 178°25′E], "in wettest bush," 9 September 1958, Marples (BPBM); 1 ♀, Tholo-I-Suva, park near Nausori, in web on vegetation, wet forest, 6 May 1987, J.A. Beatty (BB); 1 ♂, 3 km E Monasavu Dam [17°46′S, 178°03′E], elev. 1000 m, 26 July 1987, G. Monteith, D. Cook, "pyrethrum, trees and logs" (QMB S50343); 1 ♀, Mt. Victoria (= Tomanivi) [17°37′S, 178°01′E], elev. 1100–1340 m, 25 July 1987, G. Monteith, D. Cook (QMB S50345). *Taveuni*: 1 ♀, 3 juveniles, Des Voeux Peak [16°51′S, 179°58′W], elev. 900 m, 16 July 1987, G. Monteith, D. Cook, "pyrethrum, tree trunks" (QMB S50349). *Vanua Levu*: 1 ♀, 1 juvenile, Mt. Delaikoro [16°33′S, 179°45′E], elev. 700 m, 21 July 1987, G. Monteith, D. Cook (QMB S 50350); 1 ♀, 4 juveniles, same locality, "pyrethrum, logs and trees" (QMB S50348). *Kandavu*: 1 ♀, Mt. Korongatule [17°41′S, 177°18′E], elev. 300 m, near Matasawalevu, 4 July 1987, G.B. Monteith (QMB S50353).

Natural history.—The collection data suggest that this species builds webs in shrubs and trees.

Distribution in the Pacific.—Viti Levu, Taveuni, Vanua Levu, and Kandavu Islands in the Fiji group.

Genus *Artema* Walckenaer 1837

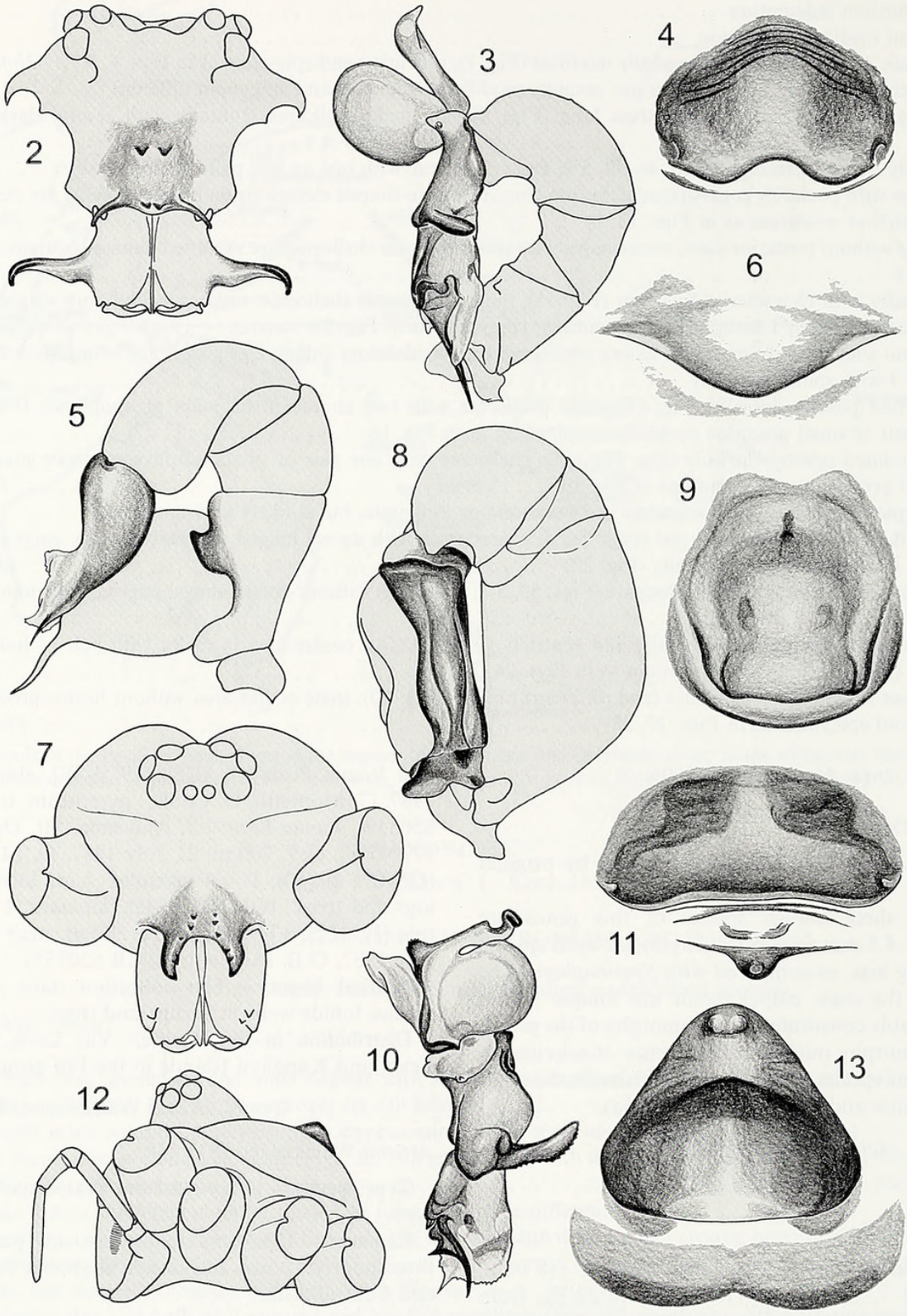
Artema Walckenaer 1837:438.

Type species.—*Artema atlanta* Walckenaer 1837, by monotypy.

Remarks.—This genus comprises one pantropical species, three poorly known and doubtful species in the Middle East and Central Asia.

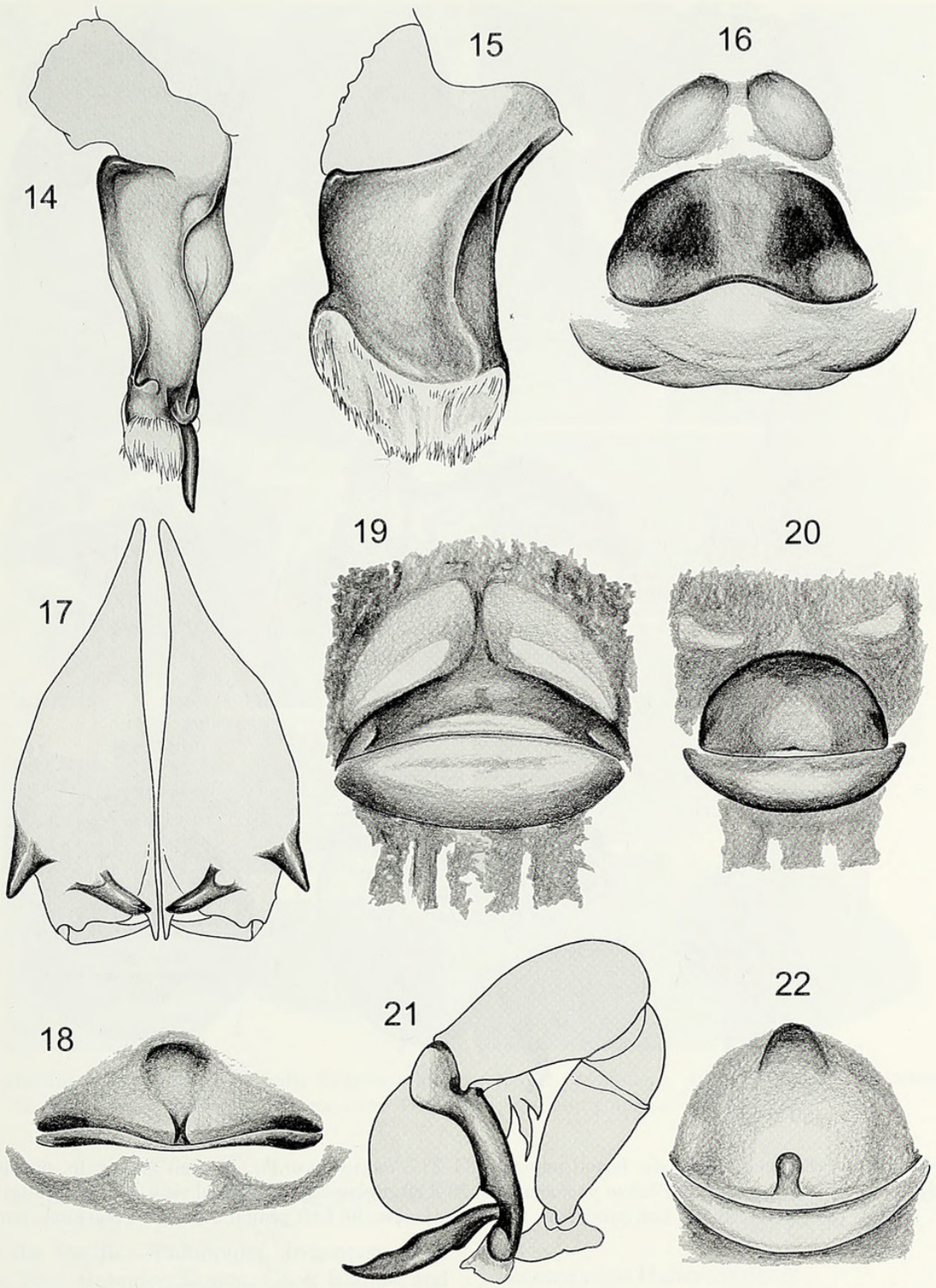
Artema atlanta Walckenaer 1837
Figs. 15, 16, 42, 43, 59

Artema atlanta Walckenaer 1837:656
Artema mauriciana Walckenaer 1837:657
Pholcus sisyphoides Doleschall 1857:408
Artema convexa Blackwall 1858:332
Pholcus borbonicus Vinson 1863:132
Artema mauricia Vinson 1863:141
Pholcus rotundatus Karsch 1879:106
Artema kochii Kulczynski 1901:3, 19



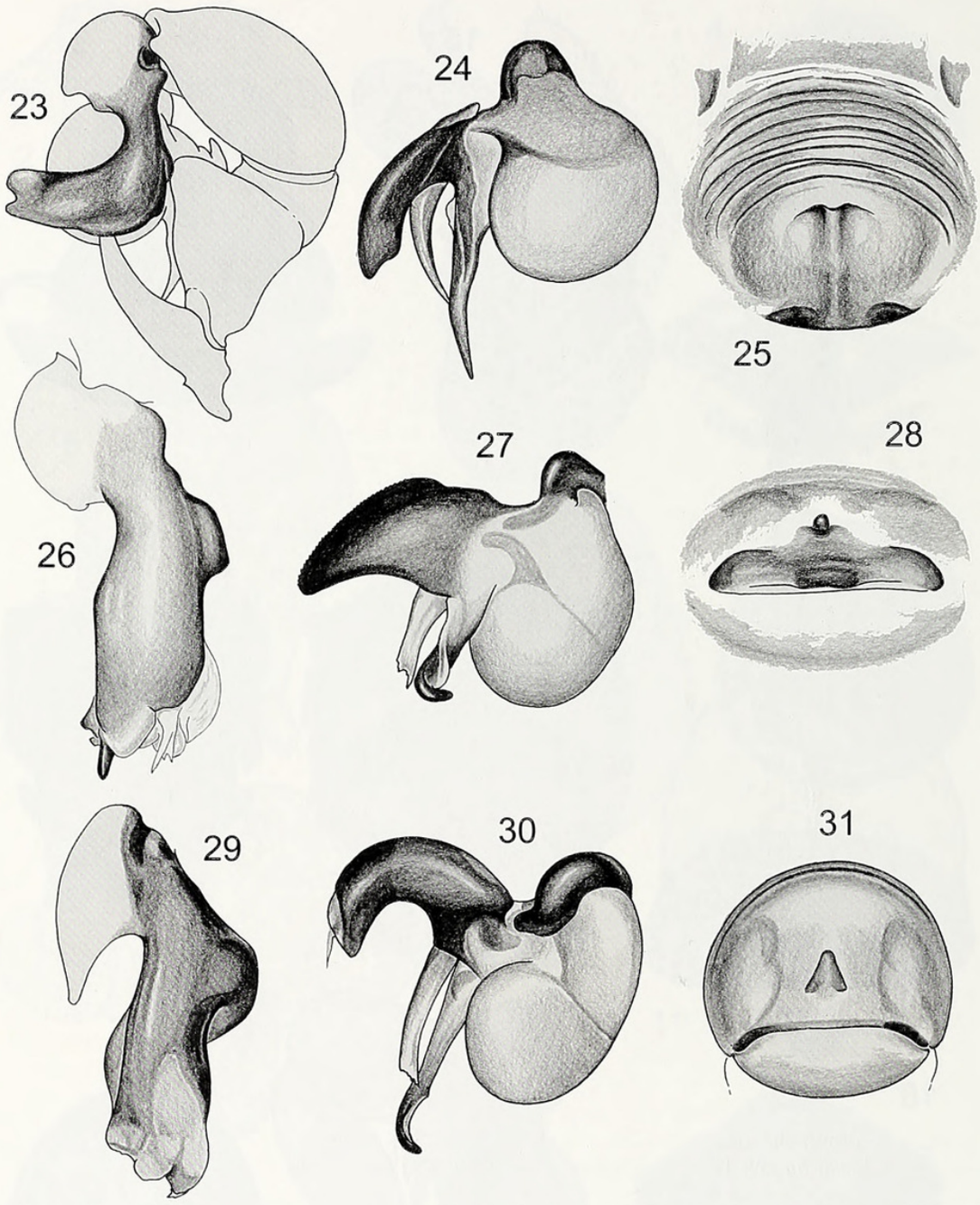
Figures 2–13.—Distinctive characters of Pacific Island pholcids. 2–4. *Aetana fiji*: 2. Male prosoma and chelicerae, frontal view; 3. Left male palp, retrolateral view; 4. Epigynum, ventral view. 5, 6. *Modisimus culicinus*: 5. Left male palp, retrolateral view; 6. Epigynum, ventral view. 7–9. *Holocneminus piritarsis*: 7. Male prosoma and chelicerae, frontal view; 8. Left male palp, retrolateral view; 9. Epigynum, ventral view. 10, 11. *Spermophora palau*: 10. Left male procursus and bulb, retrolateral view; 11. Epigynum, ventral view. 12, 13. *Physocyclus globosus*: 12. Female prosoma, lateral view; 13. Epigynum, ventral view. Figures at various scales.

Material examined.—GILBERT ISLANDS (= Kiribati): *Tanaeang* [1°31′S, 175°05′E]: 2 ♀, N. Tabiteuea, 1972, 2 ♀, P.D. Manser (BPBM); *Tarawa* [1°25′S, 173°02′E]: 1 ♀, 1 juvenile, Belio, 14 August 1956 (BPBM); 1 ♀, Bairiki, in building, November 1957, N.L.H. Krauss (BPBM). HAWAIIAN ISLANDS: *Lanai* [20°49′N, 156°59′W]: 1 ♂, 1 ♀, 1 juvenile, Holopoe Bay, 7–9 February 1985, V. & B. Roth (BPBM); *Midway* [25°45′N, 171°43′W]: 2 ♀, Sand Island, Henderson



Figures 14–22.—Distinctive characters of Pacific Island pholcids. 14. *Physocyclus globosus*, left procursus, retrolateral view. 15, 16. *Artema atlanta*: 15. Left procursus, retrolateral view; 16. Epigynum, ventral view. 17, 18. *Crossopriza lyoni*: 17. Male chelicerae, frontal view; 18. Epigynum, ventral view. 19. *Holocnemus pluchei*, epigynum, ventral view. 20. *Smeringopus pallidus*, epigynum, ventral view. 21, 22. *Micropholcus fauroti*: 21. Left male palp, retrolateral view; 22. Epigynum, ventral view. Figures at various scales.

Ave, inside bunker, 20 December 1997, G.M. Nishida (BPBM); *Oahu* [21°19′N, 157°54′W]: 1 ♀, in Bishop Museum, no date, F.G. Howarth (BPBM); 1 ♂ (pinned), in basement, 23 January 1923, no collector (HDOA); 1 ♂, Bishop Museum, 31 January 1927 (no collector) (BPBM); 1 ♀, Bishop Museum, 15 October 1952, C. Hoyt (BPBM); 1 ♂ (pinned), Honolulu, August 1959, F.A. Bianchi (HDOA); 1 ♂, 1 ♀, 1 juvenile, Honolulu, Manoa, "a nuisance in house," 16 December 1960 (HDOA); 2 ♀, 1 juvenile, Honolulu, Manoa, in house, 12 December 1962, N.L.H. Krauss (HDOA); 1 ♀, Honolulu, Bishop Museum, August 1964, T. Suman (BPBM); 5 juveniles, Honolulu, elev. 50–100 m, 28 April 1976, N.L.H. Krauss; 1 ♀, Honolulu, 19 May 1972, no collector (BPBM); 1 ♀, 1 juvenile, Honolulu, elev. 0–100 m, April 1973, N.L.H. Krauss (BPBM);



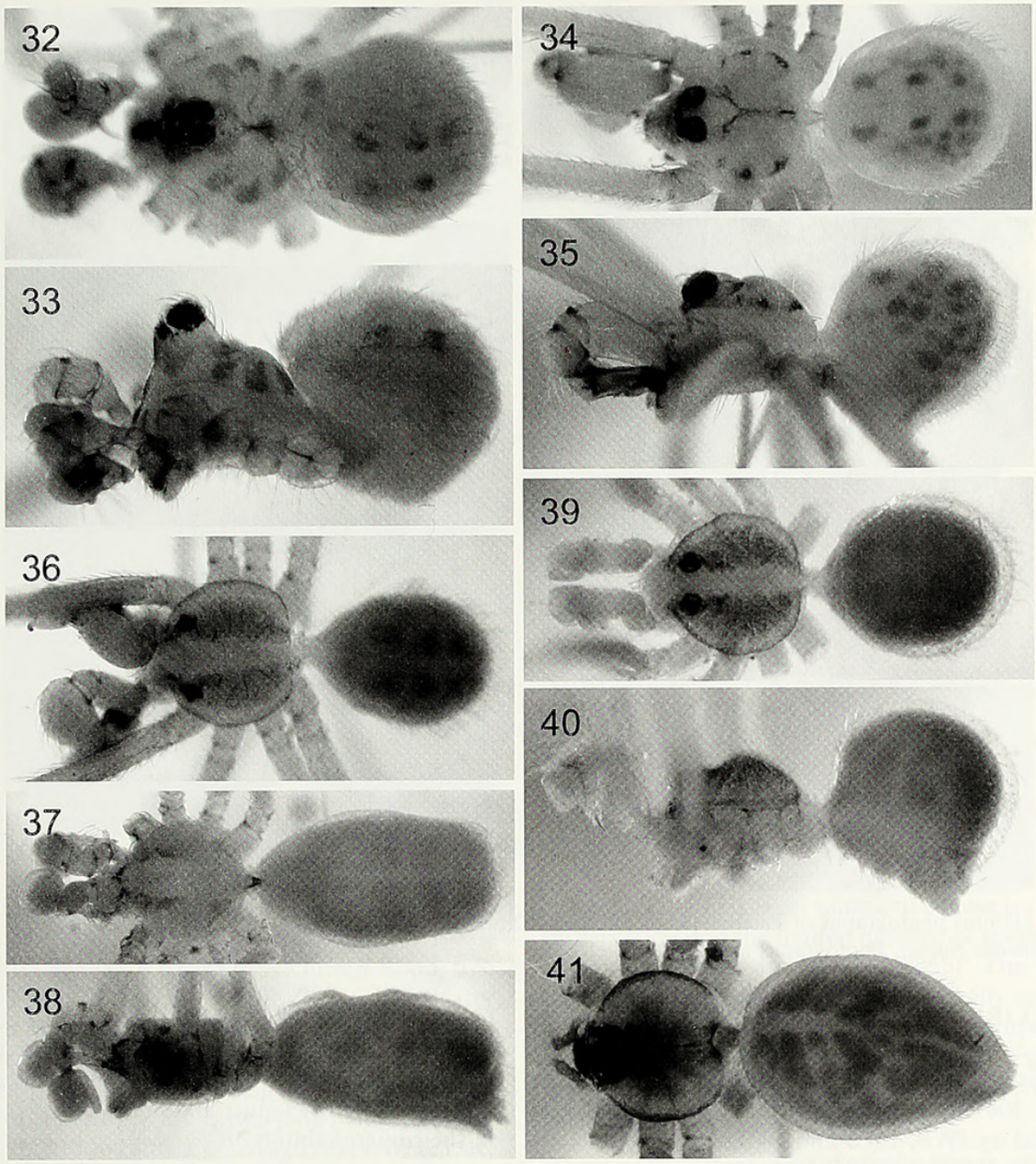
Figures 23–31.—Distinctive characters of Pacific Island pholcids. 23–25. *Pholcus ancoralis*: 23. Left male palp, retrolateral view; 24. Left genital bulb; 25. Epigynum, ventral view. 26–28. *Pholcus phalangioides*: 26. Left procursus, retrolateral view; 27. Left genital bulb; 28. Epigynum, ventral view. 29–31. *Pholcus* (*Uthina*) sp. B: 29. Left procursus, retrolateral view; 30. Left genital bulb; 31. Epigynum, ventral view. Figures at various scales.

1 ♀, Honolulu, Kalihi, in building, 30 January 1978, N. Evenhuis (BPBM); 1 ♂, Honolulu, Bishop Museum, Pauahi Hall, 17 July 1978, H. Megens (BPBM); 1 ♀, Honolulu, Pacific Heights, under house, November 1997, S. Swift (BPBM); 1 ♀, Honolulu, January 1958, D.E. Hardy (UH); 1 ♀, Lower Nuuanu, in office building, 17 January 1989, E. Leong (HDOA); 1 ♂, 6 June 1989, H. Shiroma (HDOA); 1 ♂, Pawaa, outside Entomology Laboratory, 27 February 1991, K. Murai (HDOA); 1 ♂ (pinned), Pawaa, HDOA office, under shelf, 26 November 1996, B. Kumashiro (HDOA); 1 ♂, 3 ♀, 2 juveniles, Kaluku, 27 September 1975, L. Pinter (UH); 1 ♂, 3 ♀, 3 juveniles, Waianukole, 17 October 1975, L. Pinter (UH).

Additional new records: INDONESIA: *Sulawesi* [3°36′S, 119°51′E]: 1 ♀, in house, April–May 1995, D. & F. Krill (RGH).

Remarks.—This species is among the largest of all pholcid spiders. Although it is reported from many Pacific Islands, a number of these records are old (Brignoli 1981); and the spider may now be absent from areas where it had previously occurred. Our collecting on many Pacific islands has not produced any specimens of the species, though we have seen specimens from Hawaii.

Description.—Large (to 12 mm body length), eight-eyed pholcid. Abdomen higher than long; legs long, femur I length about 1.9 times body length. Thoracic groove deep, running to



Figures 32–41.—Habitus photographs of Pacific Islands pholcids. 32, 33. *Modisimus culicinus*. 34, 35. *Holocneminus piritarsis*. 36. *Spermophora palau*. 37, 38. *Belisana fiji*. 39, 40. *Belisana airai*. 41. *Aetana fiji*. Photographs at various scales.

rear margin of carapace. Procursus and epigynum as in Figs. 15, 16.

Distribution in the Pacific.—Philippines, Indonesia, New Guinea, Australia, New Hebrides, Samoa, Cook Islands, and Hawaii.

Natural history.—All examined specimens with habitat data were collected in buildings, including bunkers in fortifications.

Genus *Belisana* Thorell 1898

Belisana Thorell 1898:278

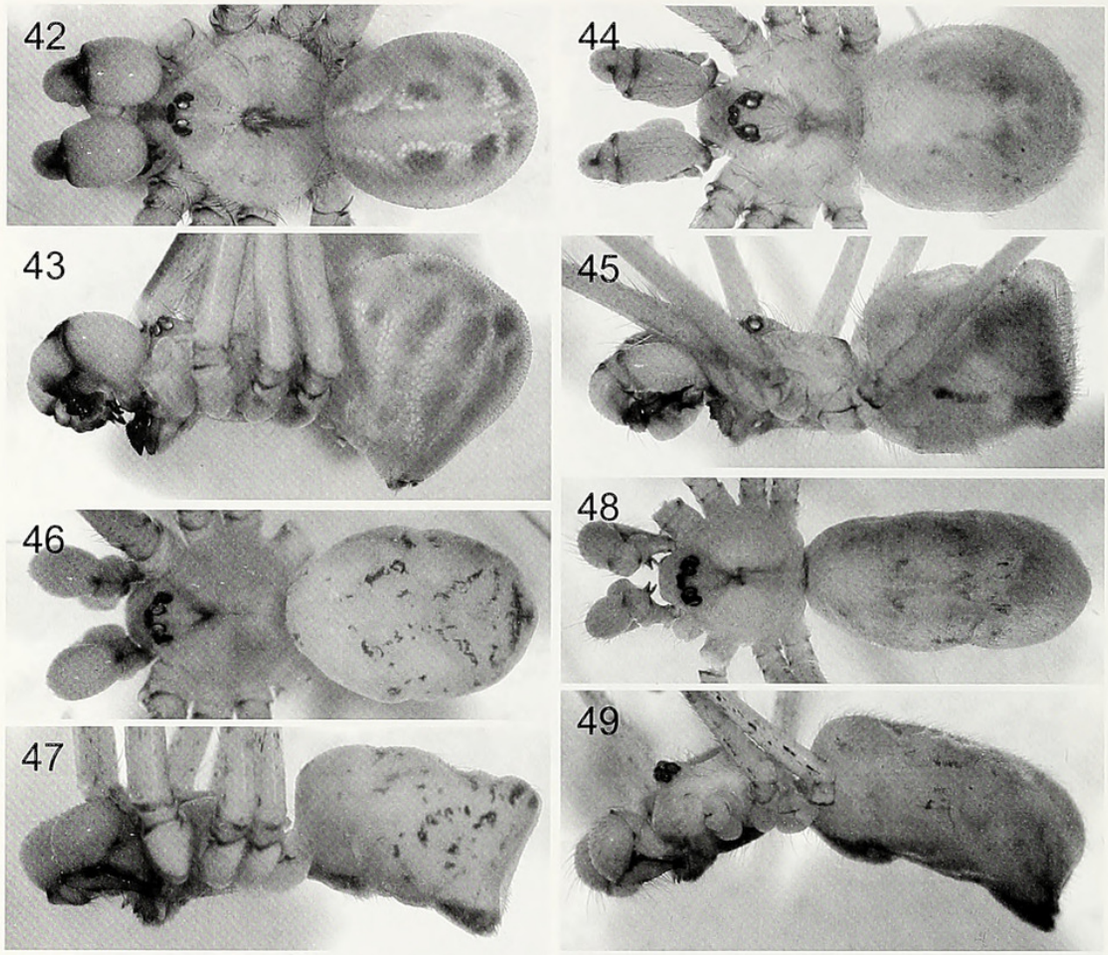
Type species.—*Belisana tauricornis* by original designation and monotypy.

Remarks.—The genus *Belisana* Thorell until recently included only two nominal species. A revision by Huber (2005b) resulted in over 50 new species, including three of the four species below.

Belisana airai Huber 2005
Figs. 39, 40, 60

Belisana airai Huber 2005b:78

Material examined.—CAROLINE ISLANDS: *Palau Islands* [ca. 7°10′N, 134°21′E]: 1 ♀, Arakabesan Island [7°10′N, 134°26′E]: mixed forest in litter, elev. 20 feet (6 m), 16 February 1973 (BB); 1 ♂, mixed forest, elev. 20 feet (6 m), 22 February 1973 (BB); 6 ♀, 3 juveniles, dry forest litter, elev. 374 feet (114 m), 1 March 1973 (BB); Babelthuap Island [7°20′N, 134°22′E]: 1 ♀, 1 juvenile, hill above Nekkin Forestry Headquarters, 3 February 1973 (BB); 1 ♂, 2 ♀, 2 juveniles, Airai [7°20′N, 134°33′E], dry forest, 10 March 1973 (BB); 2 ♂, 4 ♀, 3 juveniles, Airai, near airstrip, lowland forest, 27 March 1973 (BB); 3 ♂, 9 ♀, 3 juveniles, Airai, mango tree litter, 5 May 1973 (including holotype) (BB); Koror Island: 1 ♀, banana litter below Entomology Laboratory, 20 February 1973 (BB);



Figures 42–49.—Habitus photographs of Pacific Islands pholcids. 42, 43. *Artema Atlanta*. 44, 45. *Physocyclus globosus*. 46, 47. *Crossopriza lyoni*. 48, 49. *Holocnemus pluchei*. Photographs at various scales.

1 ♀, 9 March 1973 (BB); 2 ♂, 1 ♀, litter next to taro patch, 3 April 1973 (BB); 3 ♀, litter next to taro patch, 9 May 1973 (BB); *Malakal Island* [7°19′N, 134°27′E]: 2 ♂, 1 juvenile, dry forest litter, elev. 300 feet (91 m), 14 March 1973 (BB). All specimens collected by JWB, ERB and JAB.

Distribution in the Pacific.—Palau Islands.

Natural history.—All specimens for which microhabitat data are available were taken in ground litter.

Belisana yap Huber 2005
Fig. 60

Belisana yap Huber 2005b:81.

Material examined.—CAROLINE ISLANDS: *Palau* [7°22′N, 134°30′E]: Koror Island [7°20′N, 134°36′E]: 1 ♂, 3 ♀, lowland forest, 27 March 1973 (BB); Koror Island: 2 ♀, tree shaking in vacant lot, 13 March 1973 (BB); Kayangel Atoll [8°04′N, 134°43′E]: 1 ♂, 1 ♀, from banana tree, 21 May 1973 (BB); 1 ♀, tree shaking, 23 May 1973 (BB); *Yap* [9°28′N, 138°05′E]: 1 ♀, Gilman Point [9°26′N, 138°03′E], 29 May 1973 (BB); 1 ♀, Map [9°33′N, 138°09′E], tree shaking, 23 May 1973 (BB); *Yap* [9°28′N, 138°05′E]: 1 ♀, Gilman Point, shaking and sweeping, 30 May 1973 (BB); 2 ♀, 1 juvenile, road to Fanif, shaking banana leaves, 31 May 1973 (BB); 1 ♂, 1 ♀, 1 juvenile, Aringel village, tree shaking, 1 February 1980 (BB); 1 ♀, Fedor village [9°29′N, 138°04′E], near taro patch, 10 March 1980 (BB); 3 ♂, Wanyan, in litter, 17 April 1980 (including holotype) (BB); 1 ♂, Fedor village, banana leaves, 1 February 1980 (BB). All specimens collected by JWB, ERB and JAB.

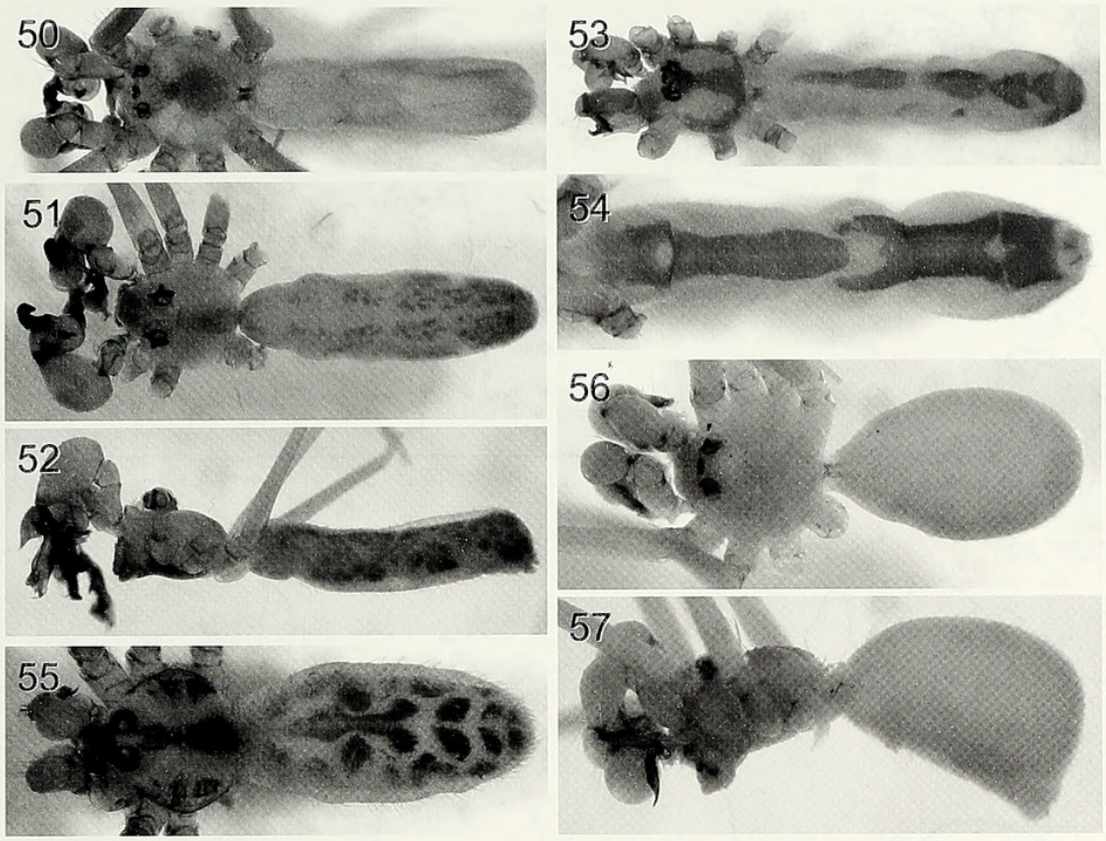
Remarks.—Similar to *B. airai* above, but paler, with longer legs and a slightly longer abdomen. The two species also differ in their microhabitat.

Natural history and distribution in the Pacific.—A few specimens were taken from ground litter; but the majority were obtained by sweeping, or by shaking shrubs, small trees or dead lower leaves on banana plants. Collected in both Yap and the Palau Island group.

Belisana fiji Huber 2005
Figs. 37, 38, 60

Belisana fiji Huber 2005b:113.

Material examined.—FIJI: *Viti Levu*: 10 ♂, 2 ♀, 7 juveniles, 3 mi S. of Serea [17°53′S, 178°18′E], Lomaivuna District, picked from forest tree, 30 May 1987, J.W. & E.R. Berry (BB) (including holotype); 5 ♂, 7 ♀, 3 juveniles, Nausori [17°40′S, 178°25′E, Koronovia Research Station, shaken from trees, 18 May 1987, J.W. & E.R. Berry (BB); 1 ♀, Tholo-I-Suva Forest Reserve [17°55′S, 178°32′E], ~10 mi N. Nausori, dense ridgetop forest, 20 May 1980, J.A. Beatty (BB); 1 ♂, 2 ♀, Nausori Highlands, Leweitoko Block [17°46′S, 178°38′E], elev. ~1500 feet (457 m), "shaking," 27 May 1987, J.W. & E.R. Berry (BB); 2 ♀, Nausori Highlands, 600 m, "Pyrethrum, trees and logs," 13 July 1987, G. Monteith (QMB S50352); 1 ♂, 2 ♀, 1



Figures 50–57.—Habitus photographs of Pacific Islands pholcids. 50. *Pholcus phalangioides*. 51, 52. *Pholcus (Uthina)* sp. B. 53, 54. *Pholcus ancoralis*. 55. *Smeringopus pallidus*. 56, 57. *Micropholcus fauroti*. Photographs at various scales.

juvenile, Lomaivuna District, ~3 km N Nangali, tree shaking in pine woods, 30 May 1987, J.W. & E.R. Berry (BPBM); 1 ♂, Namosi Road [18°05′S, 178°14′E], 3 km N Queens Road, tree shaking in forest, 7 May 1987, J.W. & E.R. Berry, J.A. Beatty (BB); 5 ♀, 22.4 km W. of Suva [18°07′S, 178°15′E], sweeping and shaking in forest, 5 May 1987, J.W. & E.R. Berry (BB); 1 ♂, Sawani, near Suva [~18°10′S, 178°28′E], from epiphytes, 19 July 1956, R.R. Forster (BPBM); 1 ♀, sweeping mangrove near Namuka Harbor [18°20′S, 178°08′E], 2 May 1987, J.W. & E.R. Berry (BB); 1 ♂, Nanggelewal village [17°43′S, 178°05′E], elev. 260 m, vegetation beating, 28 November 2002, D. Gruner (BPBM); 1 ♂, 1 ♀, 3 km E. of Monasavu Dam [17°46′S, 178°03′E], elev. 1000 m, "Pyrethrum, trees and logs," 26 July 1987, Monteith, Cook (QMB); *Ovalau Island* [17°41′N, 178°50′E]: 1 ♂, Lovoni track behind Levuka [17°40′S, 178°47′E], 13 November 1988, R. Raven (QMB).

Remarks.—This is an unusual representative of the genus with a slightly elongate abdomen and distinctive male genitalia.

Natural history and distribution in the Pacific.—Most specimens were collected by sweeping, shaking, or beating of vegetation. Known only from Viti Levu and Ovalau Islands, Fiji.

Belisana n. sp. "A"
Fig. 60

Material examined.—CAROLINE ISLANDS: *Palau:* 1 ♂, 1 ♀, Angaur Island [6°54′N, 134°07′E]: banana-betel palm stand, 27 April 1973 (BB); Babelthuap Island [7°22′N, 134°33′E]: 1 ♂, 2 juveniles, Airai [7°22′N, 134°33′E], tree shaking in mixed forest, 11 March 1973 (BB). All specimens collected by JWB, ERB and JAB.

Remarks.—This is an undescribed species. Because of poor preservation and the limited number of specimens, this species was not described by Huber (2005b). The male specimen is very close to *B. yap*, both morphologically and geographically, but with different male cheliceral armature. Additional specimens in good condition are needed to permit description of this species. It is included only to call attention to its existence.

Genus *Crossopriza* Simon 1893

Crossopriza Simon 1893:460

Type species.—*Artema pristina* Simon 1890 by original designation.

Remarks.—This genus currently comprises six species in Africa and Middle East plus one pantropical species.

Crossopriza lyoni (Blackwall 1867)
Figs. 17, 18, 46, 47, 61

Pholcus lyoni Blackwall 1867:392.
Smeringopus lyoni (Blackwall): Thorell 1895:70.
Crossopriza lyoni (Blackwall): Simon 1893:475.
Crossopriza brasiliensis Mello-Leitão 1935:94.
Crossopriza mucronata Mello-Leitão 1942:389.
Crossopriza francoisi Millot 1946:154.
Crossopriza stridulans Millot 1946:156.

Material examined.—CAROLINE ISLANDS: *Palau* [7°20′N, 134°29′E]: 1 ♀, Koror [7°21′N, 134°36′E], in Entomology building, 30 January 1973, J.W. Berry (BB); 1 ♀, Koror, in Entomology building, 6 March 1973, J.A. Beatty

Figure 58.—Distribution of *Aetana fiji* in the Pacific is indicated by stars.

(BB); *Yap* [9°20′N, 138°07′E]: 3 ♀, Colonia, in buildings, 30 May 1973, J.W. Berry (BB); 5 ♀, Colonia, in building, 11 April 1980, 1 juvenile, J.W. Berry & J.A. Beatty (BB). MARSHALL ISLANDS: *Majuro* [7°04′N, 171°20′E]: 1 ♀, 2 juveniles, Uliga, in building, 6 August 1969, J.W. Berry (BB).

Additional new records: INDONESIA: *Ambon* [3°39′S, 128°09′E]: 1 ♂, 3 juveniles, no further data, 11 September 1994, R. Holmberg (RGH); 1 ♀, 1 juvenile, Poka, in building, 14 March 1994, R. Holmberg (RGH); 2 ♂, 2 ♀, Poka, Yette deKock's house, 15 April 1995, R. Holmberg (RGH); 4 ♀, 3 juveniles, Galala, 10–24 July 1997, Rut Pulungan (RGH); 2 ♀, 1 juvenile, Ambon City [3°39′S, 128°09′E], Dasilva village, 15 July 1997, Fenesa (RGH); 2 ♂, 2 ♀, 5 juveniles, R. Lateri, near Paso, 20 July 1997, Ronny, (RGH); 2 ♀, 1 juvenile, Wailela, near Poka, 25 July 1997, Eli Sangaji (RGH). *Java*: Yogyakarta [7°47′S, 110°22′E], 1 ♀ mid-February 1994, R. Holmberg (RGH). *Seram* [2°04′S, 128°10′E]: 2 ♂, 11 ♀, 4 juveniles, Western part, Pira, 16 November 1996, R. Pays, J. Mahurny, M. Rivi (RGH); 2 ♂, 16 ♀, 10 juveniles, Western part, Ety, 17 November 1996, J. Nikijuli, N. Sapulete (RGH). *Sulawesi* [5°02′S, 119°59′E]: 2 ♀, Ujung Pandang [5°09′S, 119°24′E], in museum, 30 June 1994, R. Holmberg (RGH); 3 ♀, 1 juvenile, Tenggara, in building, 1–8 July 1994, R. Holmberg (RGH); 1 ♀, Kemaraya, Kendari, in house, 11 March 1997, L. Kovinus et al. (RGH). MALAYSIA: *Kedah* [7°07′N, 99°49′E]: 1 ♂, 6 ♀, 2 juveniles, Kedah Peak (Gunung Gerai) [5°47′N, 100°18′E], on building at foot of peak, 6 January 1985, J.A. Beatty (BB).

Description.—Medium (to 6 mm body length), eight-eyed pholcid. Male chelicerae with two distinctive pairs of apophyses (Fig. 17). Legs long, femur I about 2½ times body length in female, longer in male. Abdomen trapezoidal in lateral view, high and abruptly truncate behind (Fig. 47). Legs yellowish, heavily marked with short dark lines. Femora white distally, patellae brown.

Remarks.—Originally described from India (Blackwall 1867), *Crossopriza lyoni* has become quite widespread in the tropics, but it appears to be missing or uncommon in the central and east Pacific islands. It is found almost exclusively in buildings, judging from data with the specimens we examined.

Distribution in the Pacific.—Indonesia, Australia, New Guinea, Caroline and Marshall Islands.

Natural history.—Found in or on buildings.

Genus *Holocneminus* Berland 1942

Holocnemius Berland 1942:13

Type species.—*Holocnemius piritarsis* Berland 1942, by monotypy.

Figure 59.—Distribution of *Artema atlanta* in the Pacific is indicated by stars.

Remarks.—This genus comprises two nominal species, but the actual number of species is uncertain. It occurs from Sri Lanka in the east to the Pitcairn Islands (Henderson Island).

Holocneminus piritarsis Berland 1942
Figs. 7–9, 34, 35, 62

Holocnemius piritarsis Berland 1942:14

Material examined.—MARSHALL ISLANDS: *Eniwetok* [11°21′N, 162°14′E]: 1 ♀, 2 juveniles, Buganegan [11°21′N, 162°11′E], 6 August 1968, J.W. Berry (BB); 2 ♀, 3 juveniles, Grinem Island [11°22′N, 162°09′E], coconut forest litter, 12 June 1969, J.W. Berry (BB); 2 ♀, 2 juveniles, Grinem Island, coconut litter in *Pisonia* forest, 21 June 1969, J.W. Berry (BB); 2 ♂, 1 ♀, 4 juveniles, Igurin Island [11°20′N, 162°13′E], coconut litter in *Pisonia* forest, 25 June 1968, J.W. Berry (BB); 2 ♀, 4 juveniles, Libiron Island [11°27′N, 162°10′E], *Pisonia* forest litter, 21 June 1969, J.W. Berry (BB); 6 ♂, 6 ♀, 9 juveniles, Rigili Island [11°27′N, 162°05′E], *Pisonia* forest litter, mostly coconut, 26 June 1968, J.W. Berry (BB); 5 ♀, 5 juveniles, Rigili Island, coconut litter in *Pisonia* forest, 2 July 1968, J.W. Berry (BB). *Kwajalein* [9°03′N, °34′E]: 2 juveniles, South Gugeegu [8°51′N, 167°45′E], *Scaevola-Pandanus* litter, 24 July 1969, J.W. Berry (BB). *Majuro Island* [7°06′N, 171°05′E]: 1 ♀, coconut-breadfruit forest, pitfall, 3 August 1969, J.W. Berry (BB); 4 ♀, 3 juveniles, Long Island [7°04′N, 171°22′E], 6 miles (9.6 km) from Laura, under coconut husks, 24 March 1980, J.A. Beatty (BB).

Description.—Small (body length to 3 mm) eight-eyed pholcid. Male clypeus modified (Fig. 7) and chelicerae with stridulating files. Abdomen higher than long, teardrop-shaped (Fig. 35). Legs medium length, femur I about equal to body length in female, 1¼ body length in male. Palp and epigynum as in Figs. 8, 9.

Remarks.—The odd inflated palpal tarsus of the female (a generic character) is consistently present in the 24 females examined. The holotype is a female from Rurutu in the Austral Islands (examined). Females in this genus are not reliably identifiable. Confirmation of the identity of our specimens requires comparison with males from Rurutu. *Holocneminus maculatus* Marples 1955 from Samoa has been synonymized with *H. piritarsis* by Benton & Lehtinen (1995), but a justification for the synonymy was not presented.

Distribution in the Pacific.—Definitely known only from Rurutu, Austral Islands, and possibly from Samoa (Marples 1955), Henderson Island (Benton & Lehtinen 1995) and the Marshall Islands (new records above).

Natural history.—Lives in ground litter.

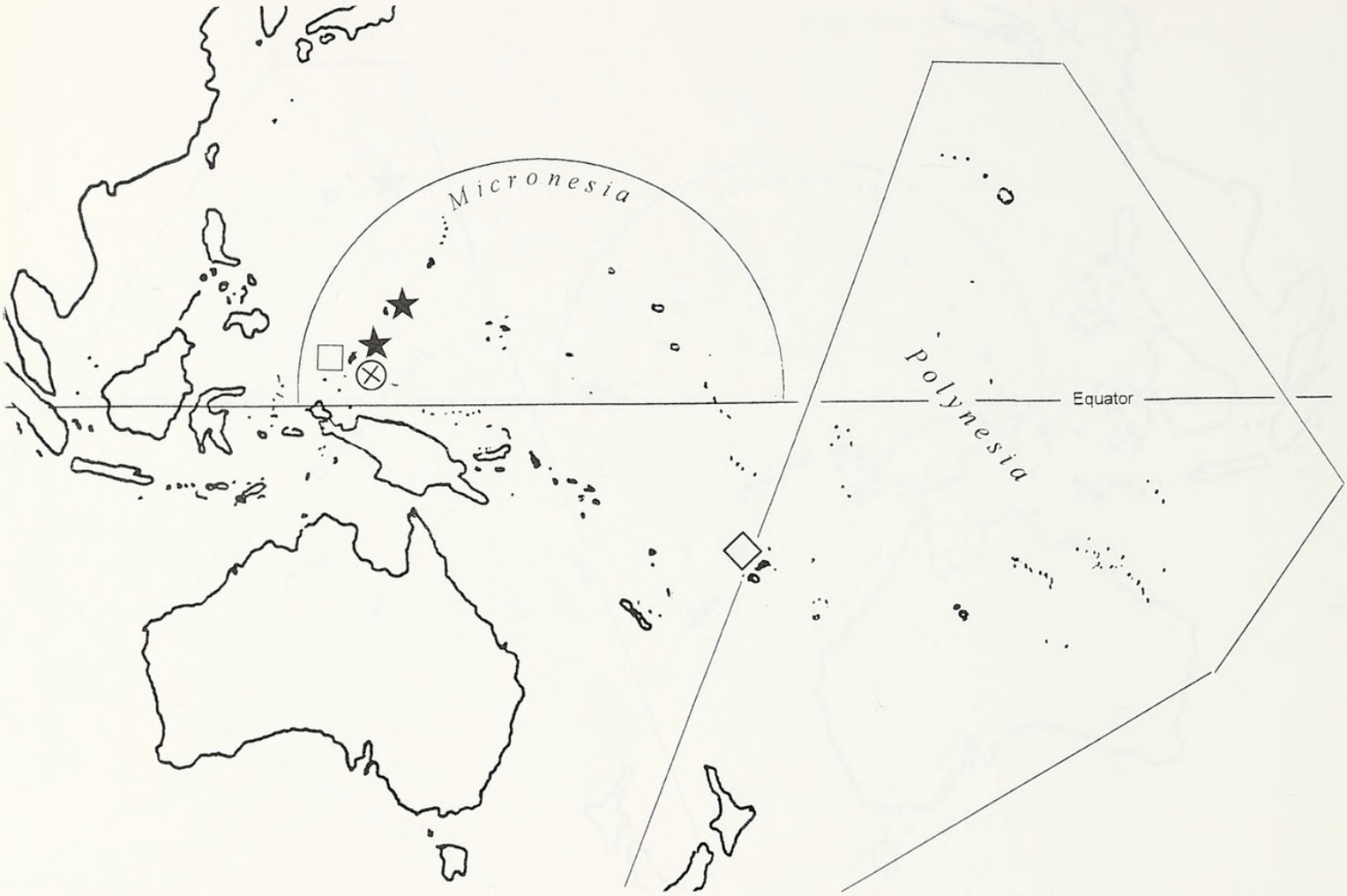


Figure 60.—Distribution of the genus *Belisana* in the Pacific. *Belisana* sp. A is indicated by a circle with a cross, *Belisana yap* is indicated by a star, *Belisana airai* is indicated by an open box, and *Belisana fiji* is represented by a diamond shape.

Holocneminus new species
Fig. 62

Material examined.—CAROLINE ISLANDS: *Yap* [9°29′N, 138°03′E]: 2 ♂, 3 ♀, 2 juveniles, Fedor [9°29′N, 138°04′E], in coconut litter, February 1980 (BB); Map [9°32′N, 138°10′E]: 1 ♂, 3 ♀, Chool, in pile of coconut husks, 12 April 1980 (BB); 2 ♂, 12 ♀, 5 juveniles, Mabuu [9°31′N, 134°06′E], in mouth of cave, 27 April 1980 (BB); 1 ♀, 1 juvenile, near Japanese tunnels, 29 April 1980 (BB). All collected by JWB, ERB and JAB.

Remarks.—Distinctly different from the described species of the genus. Several other undescribed species have been seen from the Indonesia-New Guinea region. Further study of this group is required.

Genus *Micropholcus* Deeleman-Reinhold & Prinsen 1987

Micropholcus Deeleman-Reinhold & Prinsen 1987:73.

Type species.—*Pholcus fauroti* Simon 1887, by original designation and monotypy.

Remarks.—This genus comprises two species, one of which is pantropical; the other is from Yemen.

Micropholcus fauroti (Simon 1887)
Figs. 21, 22, 56, 57, 63

Pholcus fauroti Simon 1887:453.
Pholcus infirmus Thorell 1895:72.
Pholcus unicolor Petrunckevitch 1929:147.
Leptopholcus occidentalis Mello-Leitão 1929:95.
Pholcus senegalensis Millot 1941:14.
Pholcus chavanei Millot 1946:130.
Micromerys occidentalis (Mello-Leitão 1946:75).
Micropholcus fauroti (Simon): Deeleman-Reinhold & Prinsen 1987:73.

Material examined.—GILBERT ISLANDS (= Kiribati): *Butaritari* [3°05′N, 172°49′E]: 2 ♂, Butaritari, December 1957, N.L.H. Krauss (BPBM). HAWAIIAN ISLANDS: *Oahu* [21°19′N, 157°56′W]: 1 ♂, St. Louis Heights, in house, 6 March 1986, B. Kumashiro (HDOA); *Hawaii* [19°21′N, 155°56′W]: 1 ♀, 20 miles (32 km) S of Kona, Manuka NARS, Mal Lua Cave #1, dark zone, 3 February 1991, F. Howarth, P. Stone, D. Tanaka (BPBM). MARSHALL ISLANDS: *Majuro* [7°04′N, 171°20′E]: 2 ♂, 2 ♀, Uliga Island [7°06′N, 171°22′E], on building, 6 August 1969, J.W. Berry (BB).

Figure 61.—Distribution of *Crossopriza lyoni* in the Pacific is indicated by stars.

Additional new records: INDONESIA: *Ambon* [3°39′S, 128°09′E]: 2 ♂, 1 ♀, no further location, December 1993, R. Holmberg (RGH); 1 ♀, no further location, 19 April 1994, R. Holmberg (RGH); 3 ♂, 3 ♀, in house, 17–18 May 1994, R. Holmberg (RGH); 1 ♀, no further location, 1994, R. Holmberg (RGH). 3 ♂, 2 ♀, Natsepa [3°39′S, 128°10′E], bathroom, 3 March 1994, R. Holmberg (RGH); (no further location), 1 ♂, 17 September 1994, R. Holmberg (RGH); 1 ♂, with ant prey, no further location, 30 December 1994, R. Holmberg (RGH); 2 ♂, 3 ♀, no further location, 15-26 April 1995, Audrey Leatimia (RGH); 1 ♂, Natsepa, in house, 1 December 1994, R. Holmberg (RGH); 1 ♂, 2 ♀, Natsepa, in garage, 10–24 January 1995, R. Holmberg (RGH); 5 ♂, 8 ♀, 9 juveniles, hatchlings, Natsepa, in garage, 28 January 1995, R. Holmberg (RGH); 18 ♂, 18 ♀, 9 juveniles, Natesepa, in garage, 2 March 1995, R. Holmberg (RGH); 1 ♂, 2 ♀, Natsepa Beach, house and garage, 19 March 1995, eats ants, R. Holmberg (RGH); 7 ♀, Natsepa Beach, in garage, 19 March 1995, R. Holmberg (RGH); 4 ♂, 6 ♀, Natsepa, in garage, 14 April 1995, R. Holmberg (RGH); 1 ♂, 3 ♀, 2 juveniles, Natsepa, in living room and bath, 16–17 April 1995, R. Holmberg (RGH); 7 ♂, 10 ♀, 8 juveniles, Natsepa, bedroom, 29 April 1995, R. Holmberg (RGH); 1 ♀, Natsepa, in garage, 16 June 1995, R. Holmberg (RGH); 4 ♀, Natsepa, in garage, 5 November 1995, R. Holmberg (RGH). *Bali* [8°30′S, 115°30′E]: 1 ♀, Ubud, June 1995, R. Holmberg (RGH). *Irian Jaya* [2°32′S, 140°42′E]: 1 ♀, Jayapura, from house, 24 July–13 August 1995, John Moore (RGH). *Java* [7°59′S, 110°36′E]: 1 ♀, Yogyakarta [7°47′S, 110°22′E], mid-February 1994, R. Holmberg (RGH); 1 ♂, Yogyakarta, November 1995, R. Holmberg (RGH). MALAYSIA: *Penang* [5°21′N, 100°18′E]: 2 ♀, Georgetown [5°21′S, 100°18′E], 3 Medan Tembaga, on building, 19 December 1984, J.A. Beatty (BB).

Description.—Small (body length about 2–3 mm), pale, eight-eyed pholcid. Thoracic groove shallow, inconspicuous. Male procursus with characteristic dorsal projection (Fig. 21), epigynum unsclerotized, with distinctive internal crescent-shaped structure visible through cuticle anteriorly (Fig. 22). Legs long, femur I about 1½ times body length in female, twice body length in male.

Remarks.—Rarely found in Micronesia and Polynesia, but common further to the west and in Australia. Unusual in lacking external sclerotizations of the epigynum. The female epigynal region usually projects markedly (Deeleman-Reinhold & Prinsen 1987).

Distribution in the Pacific.—Present but scarce in Hawaii, Gilbert Islands (= Kiribati), Marshall Islands and Australia. Common in Indonesia.

Natural history.—In or on buildings. According to notes on the collection labels, specimens taken in Indonesia eat ants (see data above).

Figure 62.—Distribution of *Holocneminus* n. sp. is indicated by an open box and *Holocneminus piritarsis* is indicated by stars.

Genus *Modisimus* Simon 1893

Modisimus Simon 1893:485.

Type species.—*Modisimus glaucus* Simon 1893, by original designation and monotypy.

Remarks.—Fifty-seven species are currently included in the genus, ranging from Mexico to northern South America and the West Indies, plus one introduced in the USA, Pacific Islands and Africa.

Modisimus culicinus (Simon 1893)
Figs. 5, 6, 32, 33, 64

Hedypsilus culicinus Simon 1893:322.
Hedypsilus lawrencei Lessert 1938:434.
Modisimus culicinus (Simon): Huber 1997:233.

Material examined.—COOK ISLANDS: *Aitutaki* [18°49′S, 159°46′W]: 1 ♀, near airstrip, beaten from *Pandanus*, 29 March 1987, J.A. Beatty, J.W. Berry (BB). HAWAIIAN ISLANDS: *Hawaii* [18°54′N, 155°40′W]: 1 ♀, Kau District, sand beach area, 5 February 1997, J.W. & E.R. Berry (BB); 1 ♀, Kau District at South Point [18°55′N, 155°40′W], on lava rock, 9 February 1997, J.W. & E.R. Berry (BB). *Oahu* [21°19′N, 157°36′W]: 1 ♀, Mt. Tantalus, elev. 1000 feet (305 m), xeric leaf mold, 22 October 1966, J.R. Vockeroth (BPBM); 1 ♀, Mt. Tantalus, elev. 1000 feet (305 m), pan trap among *Acacia* and *Cereus*, 8 November 1966, J.R. Vockeroth (BPBM); 4 ♂, 2 ♀, near Kaena Point, N. side, 25 January 1985, V. & B. Roth (BPBM); 1 ♂, 1 ♀, Koko Head, 31 January 1985, V. & B. Roth (BPBM); 1 ♀, TAMC , litter, August 1995, S. Swift (BPBM); 1 ♀, Lualualei, 29 May 1996, D. Preston (BPBM). MARSHALL ISLANDS: *Eniwetok* [11°21′N, 162°14′E]: 4 ♂, 1 ♀, Eniwetok Island [11°20′N, 162°19′E], under rocks, 1 August 1969, J.W. Berry (BB); 1 ♀, Eniwetok Island, rocky drift line, 16 July 1968, J.W. Berry (BB); 2 ♂, Eniwetok Island, in building, 23 June 1968, J.W. Berry (BB); 1 ♀, Engebi Island [11°39′N, 162°14′E], rocky drift line, 17 July 1968, J.W. Berry (BB); 2 ♀, Eniwetok Island, rubble in drift line, 2 August 1968, J.W. Berry (BB); 1 ♀, 1 juvenile, Eniwetok Island, *Scaevola* litter, 16 June 1969, J.W. Berry (BB). *Kwajalein*: 1 ♀, Kwajalein Island [8°43′N, 167°44′E], in building 15 June 1968, J.W. Berry (BB); 1 ♀, Kwajalein [8°43′S, 167°44′W], in garbage heap, 20 July 1969, J.W. Berry (BB). SOCIETY ISLANDS: *Moorea* [17°29′S, 149°48′W]: 1 juvenile, Paopao village, in building, 11 January 1987, J.W. Berry (BB). TUAMOTU ISLANDS: 1 ♂, 1 ♀, 1 juvenile, Manihi [14°26′S, 149°03′W]: Topihairi Island, 3 June 1987, E.R. Berry (BB); 1 ♀, Rangiroa, Avatoru Island [14°56′S, 147°42′W], 7 June 1987, E.R. Berry (BB).

Additional new records: INDONESIA: *Ambon* [3°39′S, 128°09′E]: 1 ♀, in egg cartons, 15 April 1995, R.

Figure 63.—Distribution of *Micropholcus fauroti* in the Pacific is indicated by stars.

Holmberg (RGH). NEW HEBRIDES (= Vanuatu) [15°06′S, 147°29′E]: 1 ♀, 15 January 1944, J.S. Haeger, W.R. Enns (AMNH).

Description.—Small (body length 1.2–1.5 mm) six-eyed pholcid, the eyes in two nearly contiguous triads on a distinctive elevated head region (Fig. 33). Male with short thorn-like spurs on anterior cheliceral face and a prominent inverted U-shaped mound in front of eyes. Epigynum very simple (Fig. 6).

Remarks.—This cosmopolitan species with New World origins has been previously reported in the Pacific only from Micronesia, New Guinea, and Australia (Huber 2001). Possibly its less synanthropic habit accounts for this. Of the 18 collections for which we have habitat data, only four were taken in buildings.

Distribution in the Pacific.—Marshall, Cook, Society, Tuamotu and Hawaiian Islands, New Guinea, Australia, Indonesia.

Natural history.—Mostly taken under rocks or in litter, occasionally in buildings.

Genus *Pholcus* Walckenaer 1805

Pholcus Walckenaer 1805:80.

Type species.—*Aranea phalangoides* Fuesslin 1775, by subsequent designation, but by whom is unknown. The authors have searched the literature for this citation without success.

Remarks.—This genus comprises over 100 species with worldwide distribution.

Pholcus ancoralis L. Koch 1865
Figs. 23–25, 53, 54, 65

Pholcus ancoralis L. Koch 1865:862

Material examined.—AMERICAN SAMOA: *Tutuila* [14°16′S, 170°42′W]: 1 ♀, Moloata, elev. 1000 feet (305 m), 27 July 1940, E.C. Zimmerman (BPBM); 1 ♀, Aunuu Island [14°17′S, 170°33′W], off Tutuila, 20 January 1952 (BPBM); 1 ♀, 3 juveniles, Fagatogo [14°17′S, 170°42′W], 13 July 1973, J.A. Beatty (BB); 4 ♀, Fagatogo, 14 July 1973, 9 juveniles, J.A. Beatty (BB). AUSTRAL ISLANDS: *Raivavae* [26°50′S, 147°20′W]: 1 ♂, 1 juvenile, slopes of Tavaia, elev. 500 feet (152 m), 28 November 2002, R. Englund (BPBM). CAROLINE ISLANDS: *Ponape* [6°52′N, 158°14′E]: 3 ♂, 1 ♀, Nett District [6°53′S, 158°13′W], cliff near hilltop near Nanpil, elev. 1500 feet (457 m), 6 June 1973, J.A. Beatty, J.W. Berry (BB). *Kusaie* (= Kosrae) [5°19′N, 163°01′E]: 2 ♂, 2 ♀, Lelu Island. *Yap* [9°28′N, 138°05′E] Tora, 4 November 1975, 3 ♂, 5 ♀, juveniles, M. Lundgren (CAS). COOK ISLANDS: *Atiu* [19°58′S, 158°07′W]: 1 ♂, 2 ♀, between buttresses on tree trunk, 23 January 2002, J.A. Beatty (BB). *Mauke* [20°10′S, 157°07′W]: 1 ♀, on tree trunk, 1 February 2002, J.A. Beatty (BB). 1 ♀, 1 juvenile, webs in recesses on *Barringtonia* trunk, 2 February 2002. *Mitiaro* [19°52′S, 157°42′W]: 1 ♀, 1 juvenile, 29

Figure 64.—Distribution of *Modisimus culicinus* in the Pacific is indicated by stars.

January 2002, J.A. Beatty (BB); 1 ♂, 2 ♀, coral island (21°S, 158°W), 19–21 January 1996, J. Boutin (CAS). *Rarotonga* [21°14′S, 159°46′W]: 2 ♀, Arorangi [21°13′S, 159°49′W], roadside sweeping, elev. 50 m, 1 March 1987, J.W. & E.R. Berry (BB); 1 ♀, Te Rua Manga [21°14′S, 159°41′W], elev. 300 m, tree shaking, 5 March 1987, J.W. & E.R. Berry (BB); 1 ♂, 1 juvenile, Arorangi, roadside bank, 14 March 1987, J.W. & E.R. Berry, J.A. Beatty (BB); 3 ♂, 14 ♀, 2 juveniles, Turangi Valley [21°44′S, 159°44′W], webs on steep banks, 18 March 1987, J.W. & E.R. Berry, J.A. Beatty (BB); 2 ♂, near Raemaru [21°14′S, 159°48′W], elev. 25 m, tree shaking, 24 March 1987, J.W. & E.R. Berry, J.A. Beatty (BB); 1 ♀, Turangi Valley, elev. 20 m, tree shaking, 1 April 1987, J.W. & E.R. Berry, J.A. Beatty (BB); 2 ♀, 2 juveniles, Tupapa Valley [21°12′S, 159°44′W], elev. 150 m, 2 April 1987, J.W. & E.R. Berry, J.A. Beatty (BB); 3 ♂, Turangi Valley, in abandoned building, 12 January 2002, J.A. Beatty (BB); 1 ♀, 1 juvenile, Papua Valley [21°13′S, 159°49′W], near waterfall, 16 January 2002, J.A. Beatty (BB); 1 ♂, 1 ♀, Matavera [21°13′S, 159°44′W], Tom Douke's place, in green house, 17 January 2002, J.A. Beatty (BB). FIJI ISLANDS: [17°53′S, 177°58′E]: 1 ♂, 1 ♀, collection Roewer (1947) (SMF, RII/8904). *Fulanga* [19°7′S, 178°34′W]: 1 ♂, 1 juvenile (20°S, 178°W), 5 August 1924, E.H. Bryan (AMNH). *Kandavu* [19°01′S, 178°21′E]: 3 ♂, 1 ♀, 1 juvenile, 2 km SE Vunisea, elev. 20 m., 28 June 1987, G. Monteith (QMB, S50342, 50346); 1 juvenile, waterfall 2.5 km E of Vunisea, 29–30 June 1987, G. Monteith (QMB) (S50351); 1 juvenile, waterfall 2.5 km E of Vunisea, elev. 50 m, 29–30 June 1987, G.B. & S.R. Monteith (QMB, S50339); 1 ♂, 3 ♀, 1 juvenile, Langalevu, elev. 0–20 m, 2–7 July 1987, G.B. Monteith (QMB, S 50340, 50347). *Lau* [19°01′S, 177°03′E]: 2 ♀, 1 juvenile, Komo (19°S, 178°W), 20 August 1924, E.H. Bryan (AMNH). *Mango* [17°29′S, 179°10′E]: 2 ♀, 18 September 1924, E H. Bryan (AMNH). *Mothe* [18°40′S, 178°03′E]: 2 ♂, 2 ♀, 16 August 1924, E.H. Bryan (AMNH). *Ovalau* [17°41′S, 178°50′E]: 1 ♀, Lovoni track behind Levuka, 13 November 1988, R. Raven (QMB, S14318); 1 juvenile, Levuka, through dalo, yanggona plantations, creeks, some forest, 13 November 1988, T. Churchill (QMB, S14303). *Vanua Levu* [16°41′S, 179°10′E]: 2 ♂, 2 ♀, 19 km S Savu Savu, elev. 20 m, 19 July 1987, Monteith, Cook (QMB, S50341); 1 ♀, 82 km E of Lambasa on Wainikoro Rd. towards Odo Point, logged RF [16°17′S, 179°40′E], 21 November 1988, T.B. Churchill (QMB, S14230); 1 ♂, 1 ♀, along road between Lambasa and Savu Savu, 19 November 1988, T.B. Churchill (QMB, S14244). *Taveuni* [16°59′S, 179°53′E]: 1 ♂, L. Tagimauthia track, elev. 400 m, 17 July 1987, Monteith, Cook (QMB, S50344). *Viti Levu* [18°08′S, 178°26′E]: 1 ♂, Suva, Tholo-i-Suva [18°08′S, 178°26′E], 7 February 1969, J.E. Tobler (CAS); 1 ♀, Suva, Tholo-i-Suva Forest Park, mahogany "rain forest," no date, T. Churchill, R. Raven (QMB, S14264); 1 ♀, 1 juvenile, Fulton College near Suva [18°06′S, 178°28′E],

Figure 65.—Distribution of *Pholcus ancoralis* is indicated by stars, *Pholcus phalangoides* is indicated by a circle with a cross, *Pholcus* sp."A" is indicated by a circle with a dash, and *Pholcus* sp. "B" is indicated by a diamond shape.

on vegetation beside mangrove swamp, 5 January 1975, N. Poulter (AMS, KS 56210). HAWAIIAN ISLANDS: *Hawaii* [19°26′N, 154°51′W]: 1 ♀, Isaac Hale Beach Park, 25 February 1995, J.W. & E.R. Berry (BB); 1 ♀, Puna District, route 137, m.m. 17–18, on wooden building, 2 February 1997, J.W. & E.R. Berry (BB). MARQUESAS ISLANDS: *Fatu Hiva* [10°28′S, 138°38′W]: 1 ♀, Hanevave Valley, Teaotu, elev. 1000 feet (305 m), under dead bark, 9 September 1930, Pacific Entomol. Survey (BPBM). *Hiva Oa* [9°47′S, 139°00′W]: 1 ♀, 2 juveniles, sweeping and shaking vegetation, elev. 500 m, 12 February 1987, J.W. & E.R. Berry (BB). *Nuku Hiva* [8°54′S, 140°06′W]: 1 ♀, 2 juveniles, above Taiohae, elev. 800 m, sweeping, 23 January 1987 (BB). *Tahuata* [9°56′S, 139°05′W]: 2 ♀, 2 prosomata, Ananatuuna Valley, elev. 1300 feet (396 m), 18 July 1930, LeBronnec, Tauraa (BPBM). *Ua Huka* [8°54′S, 139°31′W]: 2 ♂, 3 ♀, 1 juvenile, Hanatekea, Hane Valley, elev. 900 feet (274 m), 24 February 1931, LeBronnec, H. Tauraa (BPBM). SAMOA: *Upolu:* Apia and Pago-Pago [14°28′S, 172°02′W]: 2 ♀, 17 July 1934, W.M. Karshner (CAS). *Savaii* [13°28′S, 172°21′W]: 1 ♂, 1 ♀, Mataatu Harbor, shore trail, 18 October 1938, C.E. Olsen (AMNH); Salailua: (14°S, 172°W) 1 ♀, 14 May 1924. E.H. Bryan (AMNH). SOCIETY ISLANDS: *Tahiti* [17°42′S, 149°25′W]: 1 ♂, no further data (BPBM); 2 ♀, Taravao, January 1960, N.L.H. Krauss (BPBM). *Huahine* [16°42′S, 151°00′W]: 1 ♂, 1 ♀ (dried), valley W of Mt. Takatea, elev. 800 feet (244 m), 30 December 1934, E.C. Zimmerman (BPBM). *Moorea* [17°32′S, 149°49′W]: 2 ♂, 11 April 1961, R. Schick (AMNH); 2 ♀, 1 juvenile, Faatoa Valley, elev. 300 feet (91 m), 24 September 1934, E.C. Zimmerman (BPBM); 1 ♂, 2 ♀, Paopao [17°30′S, 149°49′W], tree shaking, mango forest, 11 January 1987, J.W. & E.R. Berry (BB); 2 ♂, 4 ♀, 4 juveniles,Paopao, in forested gorge, 12 January 1987, J.W. & E.R. Berry (BB); 2 ♂, 4 ♀, Tohivea [17°32′S, 149°49′W], elev. ~2000 feet (610 m), tree shaking in forest, 13 January 1987, J.W. & E.R. Berry (BB); 1 ♂, 1 ♀, near Paopao, in *Cyrtophora moluccensis* (Doleschall 1857) web, 5 May 1991, Heather Proctor (BB). *Rapa* [27°36′S, 144°19′W]: 1 ♀, Area, 1 July 1936, E.C. Zimmerman (BPBM). TONGA: *Vavau* [18°36′S, 173°57′E]: 1 juvenile, 28 June 1928, J.E. Hoffmeister (BPBM).

Additional new records: NEW CALEDONIA: *Yahoué* [22°11′S, 166°03′E]: 1 juvenile, elev. 0–100 m, November 1986, N.L.H. Krauss (AMNH). *Loyalty Islands* [20°35′S, 166°36′E]: 1 ♂, 1 ♀, Ovea Island, 15 June 1938, L. Macmillan (AMNH). *Prov. Sud*: 1 ♀, Port Boise [22°21′S, 166°58′E], coast, 8 February 1993, N.I. Platnick, R.J. Raven, M.S. Harvey (AMNH). NEW HEBRIDES (= Vanuatu): *Espiritu Santo* [15°24′S, 166°56′E]: 4 ♀, 1 juvenile (2 vials), August

Figure 66.—Distribution of *Physocyclus globosus* in the Pacific is indicated by stars.

1943–June 1944, J. S. Haeger (AMNH); 1 ♂, 4 ♀, juveniles, May 1944, G. Banner (AMNH). *Erromanga Island* [19°04′S, 169°13′E]: 1 ♀, March–April 1937, L. Macmillan (AMNH). SOLOMON ISLANDS: *Vella Lavella* [7°45′S, 156°38′E]: 1 ♀, 2 juveniles, Barakoma, elev. 0–50 m, November 1972, N.L.H. Krauss (AMNH).

Description.—Large (body length 5–8 mm) eight-eyed pholcid. Abdomen elongate, cylindrical, with distinctive dorsal and ventral marks (Figs. 53, 54). Legs long, femur I about twice body length in both sexes.

Remarks.—This very common species with southeast Asian affinities is apparently missing from Australia (Huber 2001). It is much less synanthropic than *Smeringopus pallidus*, which it resembles in size and shape. It appears to be a native Pacific Island spider, not an introduction from elsewhere, as many of the other large pholcids are.

Distribution in the Pacific.—Known from northeast New Guinea eastward to the Austral and Marquesas Islands and Hawaii.

Natural history.—Occasionally taken on or in buildings, but the specimens we examined (those that had any habitat data) were mostly from natural habitats – between buttresses on tree trunks, in webs among dense vegetation in damp shady areas, under bark, and, in one case, in the web of the araneid spider, *Cyrtophora moluccensis*.

Pholcus phalangioides (Fuesslin 1775)
Figs. 26–28, 50, 65

Aranea phalangioides Fuesslin 1775:61.
Aranea meticulosa Fourcroy 1785:537.
Pholcus phalangioides Walckenaer 1805:80.
Pholcus atlanticus Hentz 1850:284.
Pholcus nemastomoides L. Koch 1838:97.
Pholcus litoralis L. Koch 1867:193.

Material examined.—NEW CALEDONIA [21°43′S, 165°49′E]: 1 ♀, 7 miles (11 km) E of La Foa, 16–22 April 1945, C.L. Remington (AMNH). NEW HEBRIDES (= Vanuatu): 1 ♂, 1 ♀, Espiritu Santo [15°24′S, 166°56′E], May 1944, G. Banner (AMNH).

Remarks.—This widespread species has not been found in the Micronesian and Polynesian islands, but it has been found in nearby Melanesia (in New Caledonia and Vanuatu). Since it likely exists on other islands, it has been included here.

Pholcus spp. cf. *Uthina luzonica* Simon 1893

Remarks.—The two morphospecies below are close to *Uthina luzonica* Simon 1893, as well as to *Pholcus tagoman* Huber 2001 and *P. longiventris* (Simon 1893). *Uthina luzonica*

is known only from the female and, in this species group, separation of species on the basis of female specimens is very ambiguous. Revision of the whole group is required to determine the placement of these species. The two morphospecies below are very similar, differing only in the shapes of the uncus (Fig. 30 is from sp. B; in sp. A the uncus is wider distally) and appendix (the appendix of sp. A is more hooked at the tip than in Fig. 30). Because *Uthina* Simon is probably a synonym of *Pholcus*, the species are here listed as *Pholcus*.

Pholcus sp. A
Fig. 65

Material examined.—FIJI: *Viti Levu* [18°03′S, 178°27′E]: 1 ♀, 1 juvenile, Tholo-I-Suva Forest Park, 15 May 1980 (BB); 1 ♂, 4 ♀, Nanduruloulou Research Station, 15 May 1980; 1 ♀, 2 juveniles, hill forest 16 miles (26 km) W of Suva [18°03′S, 178°12′E], 16 May 1980 (BB); 2 ♂, 6 ♀, 4 juveniles, 8–10 miles (13–16 km) N of Nausori [17°48′S, 178°33′E], hill forest, on vegetation, 20 May 1980 (BB); 2 ♂, 4 juveniles, 8 miles (13 km) NE of Navua, soil bank, 2 May 1987 (BB); 3 ♂, 3 ♀, 1, 3 juveniles, 22.4 km W of Suva, forest, in litter and swept from vegetation, 5 May 1987 (BB); 1 ♀, 7 juveniles, Tholo-I-Suva Forest Park [18°03′S, 178°27′E], in litter, 6 May 1987 (BB); 1 ♂, 1 ♀, on vegetation, 6 May 1987 (BB); 2 ♀, Namosi Road 3 km N of Queen's Road [18°09′S, 178°14′E], tree shaking, 7 May 1987 (BB); 1 ♀, Nausori, Koronivia Research Station [18°01′S, 178°32′E], sweeping, 8 May 1987 (BB); 2 ♀, 2 juveniles, 1.7 km S of Naimborembore, sweeping, 8 May 1987 (BB); 2 ♂, 7 ♀, 5 juveniles, Nausori, Koronivia Research Station [18°01′S, 178°32′E], shaking banana leaves, 18 May 1987 (BB); 1 ♂, 9 km W of Suva, on soil bank, 23 May 1987 (BB); 1 ♀, Lomaivuna [17°50′S, 178°14′E], about 3 miles (5 km) S of Serea, on forest tree, 30 May 1987 (BB). All collected by JWB, ERB, and JAB.

Pholcus sp. B
Figs. 29–31, 50, 51, 65

Material examined.—CAROLINE ISLANDS: *Palau:* 1 ♀, Babelthuap Island [7°24′N, 134°28′E], mixed tropical forest, tree shaking, 11 March 1973; 1 ♂, 2 ♀, 2 juveniles, Airai, lowland forest, 27 March 1973; 1 ♀, Ngaremlengui, in beached boat, 21 April 1973; 1 ♀, 1 juvenile, same data, except in forest; Koror Island [7°22′N, 134°30′E], 5 ♂, 6 ♀, in cave, 17 March 1973; 1 ♂, in cave, 3 April 1973; 1 ♀, in banana litter, 20 March 1973; 1 ♂, 1 ♀, 6 juveniles, in compost pile at Entomology Laboratory, 24 March 1973; Malakal Island [7°14′N, 134°24′E]: 1 ♂, 2 ♀, 1 juvenile, roadside, 14 March 1973; 1 ♂, 1 ♀, in cave, 17 April 1973. All collected by JWB, ERB and JAB.

Genus *Physocyclus* Simon 1893

Physocylus Simon 1893:470.
Decetia O. Pickard-Cambridge 1898:234.
Decetica E. Strand 1929:18.

Type species.—*Physocylus*: *Pholcus globosus* Taczanowski 1874 by original designation.

Remarks.—This genus comprises 17 species in North and Central America, plus a single, *Physocyclus globosus*, cosmopolitan species.

Physocyclus globosus (Taczanowski 1874)
Figs. 12–14, 44, 45, 66

Pholcus gibbosus Keyserling 1877:208.
Physocyclus globosus Simon 1893:470.
Decetia incisa O. Pickard-Cambridge 1898:234.
Physocyclus dubius Mello-Leitão 1922:210.
Physocyclus muricola Badcock 1932:7.
Physocyclus orientalis Zhu & Song 1999:63.

Material examined.—AMERICAN SAMOA: *Tutuila* [14°16′S, 170°42′W]: 2 ♀, Pago Pago, elev. 0–100 m, March 1972, N.L.H. Krauss (BPBM); 1 ♂, Fagatogo, 13 July 1973, J.A. Beatty (BB). CAROLINE ISLANDS: *Palau* [7°20′N, 134°28′E]: 2 ♂, 3 ♀, 4 juveniles, Angaur [6°54′N, 134°07′E], in house, 30 April 1973, J.A. Beatty, J.W. & E.R. Berry (BB); 1 ♀, Kayangel [8°04′N, 134°43′E], in building, 21 May 1973, J.W. Berry (BB); 1 ♀, Koror [7°20′N, 134°36′E], in Entomology building, 2 February 1973, J.W. Berry (BB); 8 ♂, 9 ♀, 6 juveniles, Koror, 6 March 1973, J.W. Berry, J.A. Beatty (BB); 1 ♀, Koror, in Entomology building, 18 April 1973, J.W. Berry (BB); 2 ♀, Peleliu, in house, 23 March 1973, J.W. & E.R. Berry (BB). *Ponape* [6°20′N, 158°12′E]: 1 ♀, Kolonia, 7 June 1973, J.W.Berry, J.A. Beatty (BB); 3 ♂, 1 juvenile, Kolonia, in and on buildings, 27 March 1980, J.A. Beatty (BB). *Yap* [9°29′N, 138°12′E]: 2 ♂, 2 ♀, 2 juveniles, Colonia [9°31′N, 138°07′E], in buildings, 30 May 1973, J.A. Beatty, J.W. Berry (BB); 1 ♀, Colonia, in house, 19 May 1980, J.W. Berry (BB); 1 ♀, 1 juvenile, Torá, 4 November 1975, M. Lundgren (CAS). *Ulithi Atoll* [10°00′N, 139°47′E]: 1 ♂, Falalop Island, 21 June 1971, M. Lundgren (CAS). COOK ISLANDS: *Aitutaki* [18°49′S, 159°46′W]: 1 ♂, 3 ♀, January 1960, N.L.H. Krauss (BPBM); 3 ♀, 1 juvenile, Amuri [18°51′S, 159°47′W], Josie's Lodge, in house, 26 March 1987, J.A. Beatty (BB); 1 ♂, 2 ♀, Ureia [18°49′S, 159°47′W], in abandoned house, 30 March 1987, J.W. Berry, J.A. Beatty (BB). *Atiu* [19°58′S, 158°07′W]: 1 ♀, in Humphreys' house, 22 January 2002, J.A. Beatty (BB). *Mangaia* [21°54′S, 157°55′W]: 1 ♀, 1 juvenile, in building, 11 February 2002, J.A. Beatty (BB). *Mauke* [20°10′S, 157°20′W]: 4 ♂, 3 ♀, 3 juveniles, in buildings, 31 January 2002, J.A. Beatty (BB). *Mitiaro* [19°52′S, 1157°30′W]: 1 ♂, 1 ♀, 1 juvenile, in building, 28 January 2002, J.A. Beatty (BB); 2 ♂, 5 ♀, 3 juveniles, in building, 31 January 2002, J.A. Beatty (BB). *Rarotonga* [21°14′S, 159°46′W]: 2 ♀, 1 juvenile, 15–18 January 1996, J. Boutin (CAS); 1 ♀, Arorangi [21°13′S, 159°49′W], in house, 1 March 1987, J.W. & E.R. Berry (BB); 1 ♀, Arorangi, in house, 11 March 1987, J.W. Berry (BB); 2 ♂, 2 ♀, Ngatangiia [21°14′S, 159°43′W], in house, 17 March 1987, J.W. Berry (BB); 1 ♂, 1 ♀, Kii Kii Motel, 11 January 2002, J.A. Beatty (BB). FIJI: *Viti Levu* [17°53′S, 177°58′E]: 1 ♀, Nandi [17°48′S, 177°23′E], in building, 14 May 1980, J.A. Beatty (BB); 1 ♂, Nandi, in building, 19 April 1987, J.A. Beatty, J.W. Berry (BB); 1 ♂, 2 ♀, 2 juveniles, Suva [18°06′S, 178°28′E], University of the South Pacific campus, on stone wall, 30 May 1987, J.W. Berry (BB). *Ongea* [19°08′S, 178°24′E]: 1 ♀, 30 July 1924, E.H. Bryan (AMNH). HAWAIIAN ISLANDS: *Oahu* [21°19′N, 157°54′W]: 2 ♀, Pearl City [21°23′N, 157°58′W], 28 March 1968, B. Chambers (BPBM); 1 ♂, 2 ♀, 2 juveniles, Manao [21°19′N, 157°48′W], in fruitfly laboratory, 9 August 1987, M. Wong (HDAO); 1 ♀, 3 juveniles, Niu Valley [21°17′N, 157°44′W], in corner of garage ceiling, 24 April 1995, B.

Figure 67.—Distribution of *Smeringopus pallidus* in the Pacific is indicated by stars.

Kumashiro (HDAO); 1 ♀, 3 juveniles, Liliha [21°19′N, 157°52′W], in house in pantry corners, 8 December 1997, S. Swift (BPBM). MARQUESAS ISLANDS: *Hiva Oa* [9°48′S, 139°01′W]: 2 ♂, 5 ♀, 3 juveniles, Entomology Survey (no further data) (BPBM); 4 ♀, 3 juveniles, Atuona Valley [9°47′S, 139°01′W], 7 July 1929, Mumford, Adamson (BPBM); 11 ♂, 16 ♀, 31 juvenile (2 vials), Atuona Valley, in house, 11 July 1929, Mumford, Adamson (BPBM); 1 ♂, 2 ♀, 2 juveniles, Atuona [9°48′S, 139°01′W], in house, 8 February 1987, J.W. & E.R. Berry (BB). *Nuku Hiva* [8°55′S, 140°06′W]: 1 ♀, Taiohae [8°55′S, 140°06′W], November 1929, Mumford, Adamson (BPBM); 1 ♂, 1 ♀, 1 juvenile, Taiohae, on building, 20 January 1987, J.W. & E.R. Berry (BB); 2 ♂, 3 ♀, 3 juveniles, Taiohae, on building 25 January 1987, J.W. & E.R. Berry (BB); 3 ♂, 1 ♀, 2 juveniles, Taiohae, on porch, 26 January 1987, J.W. & E.R. Berry (BB). *Ua Huka* [8°56′S, 139°33′W]: 1 ♂, 2 ♀, 1 juvenile, Tearamataikii, elev. 730 feet (222.5 m), 19 March 1931, LeBronnec, Tauraa (BPBM). MARSHALL ISLANDS: *Arno* [7°03′N, 171°34′E]: 2 ♀, Ina Island, 21 July 1950, I. LaRivers (BPBM). *Eniwetok* [11°22′N, 162°20′E]: 4 ♀, 5 juveniles, Eniwetok Marine Biology Lab (EMBL) [11°20′N, 162°20′E], in building, 12 June 1968, J.W. Berry (BB); 1 ♂, 1 ♀, 2 juveniles, in building, 23 June 1968, J.W. Berry (BB); 1 ♂, 1 ♀, 2 juveniles, in building, 29 June 1968, J.W. Berry (BB); 3 ♂, 1 ♀, 15 juveniles, EMBL, in building, 20 July 1968, J.W. Berry (BB); 9 ♂, 9 ♀, 3 juveniles, EMBL, in cabinets in building, 1 August 1968 (BB); 1 ♀, Parry Island [11°24′N, 162°22′E] , in building, 10 June 1969, J.W. Berry (BB). *Majuro* [7°05′N, 171°22′E]: 1 ♂, 1 ♀, 1 juvenile, Uliga [7°06′N, 171°22′E], in Mieco Hotel, 25 July 1968, J.W. Berry (BB); 1 ♀, Uliga, in building, 6 August 1969, J.W. Berry (BB); 1 ♀, 1 juvenile, main village, in building, 22 March 1980, J.A. Beatty (BB). SOCIETY ISLANDS: *Tahiti* [17°32′S, 149°33′W]: 4 ♀, Papeete, December 1907 (CAS). *Moorea:* 2 ♀, 3 juveniles, Paopao [17°30′S, 149°49′W] , in house, 13 June 1987, J.W. & E.R. Berry (BB). TOKELAU ISLANDS: *Nokunano* [9°08′S, 171°47′W]: 1 ♀, 5 September 1998, M. Laird (BPBM). TONGA: *Tongatabu* [21°09′S, 175°16′W]: 1 ♂, no further data (BPBM). TUAMOTU ISLANDS: *Manihi:* Topihairi [14°26′S, 146°03′W]: 2 ♂, 2 ♀, 2 juveniles, house and garden, 5 June 1987, E.R. Berry (BB).

Additional new records: INDONESIA: *Ambon* [3°39′S, 128°09′E]: 1 ♀, December 1993, R. Holmberg (RGH); 1 ♂, 25 March 1994, R. Holmberg (RGH); 1 ♀, Natsepa, in garage, 28 January 1995, R. Holmberg (RGH); 1 ♂, Natsepa, in garage, 2 March 1995, R. Holmberg (RGH); 1 ♀, Natsepa Beach [3°39′S, 128°10′E], in house 31 March 1995, R. Holmberg (RGH); 1 ♂, Natsepa, in house 6–9 April 1995, R. Holmberg (RGH); 11 ♀, 8 juveniles, Poka, Yette deKock's house, in egg carton, 15 April 1995, R. Holmberg (RGH); 4 ♂, 19 ♀, house and garage, 15–26 April 1995, R. Holmberg (RGH); 1 ♀, Natsepa, living room and bath, 16–17 April 1995, R. Holmberg (RGH); 1 ♀, 1 juvenile, Natsepa, bedroom, 29

April 1995, R. Holmberg (RGH); 2 ♀, Poka, in house, 1 May 1995, Yette deKock, R. Holmberg (RGH); 1 ♀ (no further data), student, August 1995; 1 ♀, January 1996, Yette deKock (RGH); 4 ♀, 4 juveniles, Galala, 10–24 July 1997, Rut Pulungan (RGH); 2 ♂, 2 ♀, 4 juveniles, Poka, 24 July 1997, Nanuru (RGH); *Irian Jaya* [2°32′S, 140°42′E]: 2 ♀, 3 juveniles, Abepuna, 10 km SW Jayapura [2°32′S, 140°42′E] , 21–23 July 1995, R. Holmberg (RGH); 2 ♂, 6 ♀, 11 juvenile, Jayapura, in house, 17 July–13 August 1995, J. Moore (RGH); 1 ♀, 4 juveniles, Jayapura, in house, 24 July–13 August 1995, J. Moore (RGH); 5 ♂, 2 ♀, 7 juveniles, Jayapura, in house, 13 August 1995, J. Moore (RGH); *Java* [17°59′S, 110°36′E]: 1 ♂, 1 ♀, 3 juveniles, Bogor, in guest house, 15–17 September 1995. *Seram* [2°52′S, 128°10′E]: 1 ♀, west part, from vegetation, 20 April 1996, Yette deKock (RGH). *Sulawesi* [5°20′S, 119°54′E]: 1 ♂, Andounohu, near Kendari [1°54′S, 121°06′E], 6 March 1997, Luisiana Korinus et al. (RGH). NEW CALEDONIA: 1 ♀, Bourail [21°34′S, 165°28′E], March 1959, N.L.H. Krauss (BPBM); 2 ♀, Thio [21°36′S, 166°12′E] , March 1959, N.L.H. Krauss (BPBM). *Loyalty Islands* [20°37′S, 166°33′E]: 1 ♀, Ovea Island, 14 June 1938, L. Macmillan (AMNH). SOLOMON ISLANDS: *Bougainville* [6°15′S, 155°14′E]: 2 ♀, Buin, elev. 0–100 m, October 1971, N.L.H. Krauss (BPBM). NEW HEBRIDES (= Vanuatu) [16°43′S, 168°17′E]: 1 ♂, 1 ♀, in building, 13 December 1943, W.R. Enns (AMNH).

Description.—Medium-sized (body length about 3.5–5.5 mm) eight-eyed pholcid. Male chelicerae with stridulatory files and several anterolateral tubercles. Abdomen globose (Figs. 44, 45). Thoracic groove deep. Legs moderately long, femur I a little longer than body length in female, about 1½ times body length in male. Female with distinctive cone on carapace (Fig. 12), epigynum and procursus as in Figs. 13, 14.

Remarks.—This species, along with *Smeringopus pallidus*, is the most widespread and abundant indoor pholcid in the Pacific Islands. The other synanthropic species have more restricted geographic distributions or occur less commonly in buildings.

Distribution in the Pacific.—Known from Indonesia and Australia east to Marquesas and Tuamotu Islands and Hawaii.

Natural history.—The material examined was taken almost exclusively in buildings.

Genus *Smeringopus* Simon 1890

Smeringopus Simon 1890:94

Type species.—*Pholcus pallidus* Blackwall 1858, by original designation and synonomy.

Remarks.—This genus comprises 21 species in Africa and Madagascar, plus one species which is virtually cosmopolitan.

Smeringopus pallidus (Blackwall 1858)
Figs. 20, 55, 67

Pholcus pallidus Blackwall 1858:433.
Pholcus elongatus Vinson 1863:307.
Pholcus distinctus O. Pickard-Cambridge 1869:390.
Pholcus tipuloides L. Koch 1872:281.
Pholcus tigrinus Taczanowski 1874:104.
Pholcus margarita Workman 1878:451.
Smeringopus elongatus (Vinson); Simon 1890:94.
Priscula tigrina (Taczanowski); Simon 1893:478.
Smeringopus purpureus Moenkhaus 1898:90.
Smeringopus todai Kishida 1913:827.
Smeringopus geniculatus Mello-Leitão 1918:121.
Smeringopus pallidus (Blackwall): Mello-Leitão 1918:119; Lee 1960:35.
Smeringopus kishidai Saito 1933:41.
Smeringopus katangae Giltay 1935:2.

Material examined.—AMERICAN SAMOA: *Tutuila* [14°16′S, 170°42′W]: 1 ♀, Fagatogo, 13 July 1973, J.A. Beatty (BB); 2 ♀, 4 juveniles, Fagatogo [14°17′S, 170°33′W], 14 July 1973, J.A. Beatty (BB). *Upolu* [13°50′S, 171°45′W]: 2 ♂, 1 ♀, 1 juvenile, Apia District, Marschall leg., April 1966. CAROLINE ISLANDS: *Palau* [6°54′N, 134°08′E]: 2 ♂, 9 ♀, Angaur [6°54′N, 134°07′E], in house, 30 April 1973, J.W. & E.R. Berry, J.A. Beatty (BB); 2 ♀, 1 juvenile, Angaur, in barrel outdoors, April 1973, J.W. & E.R. Berry, J.A. Beatty (BB); 1 ♂, 6 ♀, 1 juvenile, Babelthuap, Ngaremlengui [7°30′N, 134°22′E], in old Japanese bunker, 23 April 1973, J.W. & E.R. Berry, J.A. Beatty (BB); 1 ♂, 4 ♀, 4 juveniles, Malakal [7°19′N, 134°27′E], in cave, 17 April 1973, J.W. & E.R. Berry, J.A. Beatty (BB); *Truk* [7°27′N, 151°51′E]: 1 ♂, 2 ♀, 1 juvenile, Moen Island [7°26′N, 151°51′E], in building, 31 March 1980, J.A. Beatty (BB); *Yap* [9°31′N, 138°07′E]: 4 ♂, 6 ♀, Colonia [9°33′N, 138°09′E], in building, 30 May 1973, J.W. Berry, J.A. Beatty (BB); 1 ♀, 2 juveniles, Tora, 4 November 1975, M. Lundgren (CAS). COOK ISLANDS: *Mauke* [20°09′S, 157°20′W]: 1 ♀, in building, 31 January 2002, J.A. Beatty (BB). *Rarotonga* [21°14′S, 159°46′W]: 1 ♀ (no further data) (BPBM); 3 ♀, 2 juveniles, Arorangi [21°13′N, 159°49′E], in house, 11 March 1987, J.W. & E.R. Berry, J.A. Beatty (BB); 3 ♂, 2 ♀, 2 juveniles, Turangi Valley [21°44′N, 159°44′E], on fern-covered bank, 16 March 1987, J.A. Beatty, J.W. & E.R. Berry (BB); 1 ♀, Turangi Valley, in building, 12 January 2002, J.A. Beatty (BB). FIJI: *Viti Levu:* 4 ♂, 8 ♀, 1 juvenile, Nandarivatu [17°34′S, 177°57′E], in garage, 12 April 1987, J.A.Beatty, J.W. & E.R. Berry (BB); 3 ♂, 5 ♀, 1 juvenile, Nausori [18°01′S, 178°31′E], on tin building, 17 May 1980, J.A. Beatty (BB); 2 ♀, 1 juvenile, Suva (no further data) (BPBM). HAWAIIAN ISLANDS: *Midway* [25°45′N, 156°59′W]:1 ♂, 33 ♀, 4 juveniles, Eastern Island, no further data (BB); 1 ♂, 2 ♀, 4 juveniles, Eastern Island [28°12′N, 177°19′W], in storage shed, 14 May 1997, G.M. Nishida (BPBM); 1 ♂, 1 ♀, 2 juveniles, Sand Island [28°12′N, 177°22′W], inside bunker, 30 April 1998, G.M. Nishida (BPBM). *Kauai* [21°54′N, 159°28′W]:1 ♀, Koloa, cave #11, transition zone, 13 September 1978, F.G. Howarth (BPBM); 1 ♂, 4 ♀, Kapaa [22°05′N, 159°18′W], Kawai, around house, 13 January 1988, no collector (BB). *Lanai* [20°49′N, 156°59′W]:3 ♂, 3 ♀, 1 juvenile, Shipwreck Beach, 2–9 February 1985, V. & B. Roth (BPBM). *Oahu* [21°19′N, 157°56′W]:1 ♂, 5 ♀, 5 juveniles, Kepapa (no further data) (UH); 1 ♀, 1 juvenile, Honolulu, 1923, S.C. Ball (BPBM); 1 ♀, Kaimuki, in bath house, November 1952, Amy Suehiro (BPBM); 1 ♀, Ewa, July 1959, F.A. Bianchi (was pinned) (HDAO); 1 ♂, Honolulu, Bishop Hall annex, 5 August 1964, T. Suman (BPBM); 1 ♀, hillside behind Kailua Drive-in theater, on web, 8 November 1964, T.W. Suman (BPBM); 1 ♀, windward, near Sea Life park, litter on dry hillside, 15 November 1964, T.W. Suman

(BPBM); 1 ♂, Kailua, in house, July 1966, T. Suman (BPBM); 1 ♂, 1 juvenile, Manana Island, 12 September 1967, R.D. Spadoni (BPBM); 1 ♀, Honolulu, Bishop Museum grounds, 27 October 1967, P. Schaefer (BPBM); 2 ♀, 1 juvenile, Pearl City [21°23′N, 157°58′W], 28 March 1968, B. Chambers (BPBM); 1 ♂, Honolulu, 19 May 1972 (no collector) (BPBM); 1 ♀, 3 juveniles, Kahuka, 27 September 1975, L. Pinter (UH); 1 ♂, Honolulu, Nuuanu Pali Drive, Norfolk pine litter, 20 February 1985, V. & B. Roth (BPBM); 1 ♂, St. Louis, in house, 6 September 1985, B. Kumashiro (HDAO); 1 ♀, Kaimuki, under metal lid, 26 March 1990, D.J. Preston (BPBM); 1 ♂, 1 juvenile, Kailua, in bathroom, 1 November 1991, W. Fischer (HDAO); 1 ♂, Honolulu, Diamond Head [21°19′N, 157°47′W], under trash, 25 December 1997, J.A. Beatty (BB). *Maui* [20°48′N, 156°18′W]:1 ♂, Waianapanapa Cave, Makai pool, twilight zone, 24 January 1973, F.G. Howarth (BPBM); 1 ♀, Kanaio [20°05′N, 156°21′W], burial cave #1, twilight zone, 16 December 1992, F.G. Howarth (BPBM); 1 ♀, Kanaio, garbage pit, transition zone, 2 February 1993, F.G. Howarth et al. (BPBM). *Molokai* [21°09′N, 159°28′W]:3 ♂, 3 ♀, Kalaukol, elev. 10 feet (3 m), 24 May 1996, W. Perreira (BPBM); 1 ♂, Papu Str., 24 May 1996, W. Perreira (BPBM). *Hawaii* [19°21′N, 155°56′W]:1 ♀, Manuka NARS Mal Lua cave #1, dark zone, 3 February 1991, F. Howarth, F. Stone, D. Tanaka (BPBM); 1 ♂, 4 ♀, 1 juvenile, Waipio Valley [20°06′N, 155°35′W], along stream, 14 February 1995, J.W. & E.R. Berry (BB); 1 ♂, Hilo [19°43′N, 155°05′W], 22 February 1995, J.W. & E.R. Berry (BB); 1 ♂, 1 ♀, 1 juvenile, Route 137, m.m. 17–18, in building, 31 January 1997 (BB); 2 ♂, 2 ♀, 2 juveniles, Route 137, m.m. 17–18, in building, 2 February 1997, J.W. & E.R. Berry (BB); 1 ♀, Kau [18°52′N, 155°38′W], Green Sand Beach, 5 February 1997, J.W. & E.R. Berry (BB); 1 ♀, 2 juveniles, Kau at South Point, on lava rock, 9 February 1997, J.W. & E.R. Berry (BB). GILBERT ISLANDS (= Kiribati) [1°31′N, 175°05′E]:1 ♀, no further data. MARIANA ISLANDS: *Guam* [13°27′N, 144°45′E]:1 ♀, 1 juvenile, 1923, Hornbostel (no further data) (BPBM); 1 ♀, Tamuning [13°29′N, 144°47′E], on building, 3 March 1973, J.A. Beatty (BB); *Rota* [14°08′N, 145°12′E], 2 ♀, Talakaya, 60 m, 17 May 1958, W. Mitchell (BPBM). MARQUESAS ISLANDS: *Hiva Oa* [9°47′S, 139°00′W]: 1 ♀ (no further data) (BPBM); 1 ♂, 1 juvenile, Atuona Valley, 11 July 1929, Mumford, Adamson (BPBM); 3 ♂, 2 ♀, 1 juvenile, Hanamenu [9°45′S, 139°08′W], shaking ridgetop vegetation, 200 m, 5 February 1987, J.W. & E.R. Berry (BB); 1 ♂, Atuona, shaking low vegetation, 8 February 1987, J.W. & E.R. Berry (BB). *Nuku Hiva* [8°54′S, 140°06′W]: 2 ♀, 3 juveniles, Taiohae [8°55′S, 140°06′W], on stone cemetery wall, 20 January 1987, J.W. & E.R. Berry, 1 ♀, Taiohae in building, 25 January 1987, J.W. & E.R. Berry, 1 ♀ (BB); 1 ♀, 1 juvenile, Toovii [8°49′S, 140°12′W], on building, 29 January 1987, J.W. & E.R. Berry (BB). MARSHALL ISLANDS: *Arno Atoll* [7°03′N, 171°34′E], 1 ♂, 2 ♀, no further data; 1 ♂, 4 ♀, Ine Island, 21 July 1950, Ira LaRivers (BPBM). *Eniwetok* [11°21′N, 162°14′E], 6 ♀, 3 juveniles, Japtan [11°28′N, 162°23′E], on oil barrels, 22 July 1968, J.W. Berry (BB); 1 ♀, Parry [11°24′N, 162°22′E], in building, 10 June 1969, J.W. Berry (BB);2 ♀, Engebi [11°39′N, 162°14′E], in box, 19 September 1975, L. Cheng (BPBM); 2 ♂, 3 ♀, 2 juveniles (2 vials), Eniwetok hut, 21 September 1975 (BPBM). *Kwajalein* [9°03′N, 167°34′E], 1 ♀ (no further data), 20 May 1965 (BPBM); 3 ♀, 2 juveniles, Namur [9°23′N, 167°28′E], on wall of building, 23 July 1969, J.W. Berry (BB); 1 ♂, Namur, in building 27 July 1969, J.W. Berry (BB). *Majuro* [7°05′N, 171°22′E], 2 ♂, 4 ♀, 7 juveniles, Uliga village [7°06′N, 171°22′E], in building, 22 March 1980, J.A. Beatty (BB); 1 ♀, 10 juveniles, Uliga, Eastern Gateway Hotel, under giant clam shell on ground, 22 March 1980, J.A. Beatty (BB). NIUE: *Alofi* [19°03′S, 169°55′W], 1 ♀, 1 juvenile, elev. 0–60 m, December 1979, N.L.H. Krauss (BPBM). SOCIETY ISLANDS: *Moorea* [17°29′S, 149°48′W], 1 ♀, 1 juvenile, in house, 13 January 1987, J.W. & E.R. Berry (BB). TONGA: *Vavau* [18°36′S, 173°57′E], 1 ♀, Neiafu, elev. 0–100 m, January 1980, N.L.H. Krauss (BPBM).

Additional new records: AUSTRALIA: *Queensland* [16°49′S, 145°37′E], 1 ♀, Kuranda, 300 m, 16 May 1964 (no collector) (BPBM). INDONESIA: *Ambon* [3°39′S, 128°09′E], 2 ♀, 4 juveniles, 25 March 1994, R. Holmberg (RGH); 2 ♂, 3 ♀, in garage, 15–19 May 1994, R. Holmberg (RGH); 4 ♂, 5 ♀, in garage, 22 May 1994, R. Holmberg (RGH); 1 ♂, 1 ♀, Natsepa [3°39′S, 128°10′E], in garage, 11 June 1994, R. Holmberg (RGH); 1 ♀, Poka, in building, 22 July 1994, R. Holmberg (RGH); 3 ♂, 3 ♀, 4 juveniles, Natsepa, in garage, 5 November 1994, R. Holmberg (RGH); 1 ♀, 1995, R. Holmberg (RGH); 2 ♀, Natsepa, in garage, 24 January 1995; 4 ♂, 9 ♀, 16 juveniles, 28 January 1995; 1 ♂, 9 ♀, 6 juveniles, 2 March 1995, R. Holmberg (RGH); 1 ♂, Natsepa, in house, 13 March 1995, R. Holmberg (RGH); 1 ♂, 2 ♀, 1 juvenile, in house 15–24 April 1995, Audrey Leatemia (RGH); 1 ♀, Natsepa, in house, 29 April 1995, R. Holmberg (RGH); 1 ♀, in house, 30 April 1995, Audrey Leatemia (RGH); 1 ♀, 1 juvenile, 25 May 1995, Rudi Harfone (RGH); 1 ♂, 1 ♀, Poka, in office, 13 June 1995, R. Holmberg (RGH); 1 ♂, 3 ♀ and hatchlings, Natsepa, in garage,16 June 1995, R. Holmberg (RGH); 2 ♂, 2 ♀, 1 juvenile, Natsepa, 11–13 August 1995, R. Holmberg (RGH); 1 ♀, Natsepa, in garage, 13 August 1995, R. Holmberg (RGH); 1 ♂, 4 ♀, 3 juveniles, Waimena, 27 August 1995, Rina Budiman (RGH); 2 ♂, 4 ♀, 6 juveniles, Poka, in office, 1 September 1995, Ornie Sirabessy (RGH); 2 ♀, 2 juveniles, Galala, 1–24 July 1997, Rut Pulungan (RGH); 1 ♀, Ambon City [3°39′S, 128°09′E], Dasilna Village, 15 July 1997, Fenesa (RGH); 8 ♂, 18 ♀, 17 juveniles, Negen Lama, near Paso, 20–21 July 1997, Marsia (RGH); 1 ♀, Poka, across from Ambon City, 24 July 1997, Yette deKock et al. (RGH). *Bali*, 1 ♀, Ubud [8°31′S, 115°15′E], 11 June 1993, R. Holmberg (RGH). *Java* [7°41′S, 110°43′E], 1 ♂, Bogan, in guest house, 15–17 July 1995, R. Holmberg (RGH). *Seram* [2°52′S, 128°10′E], 6 ♂, 11 ♀, 4 juveniles, Kanikeh, in house, 30 November 1994, R. Holmberg (RGH); 2 ♀, 1 juvenile, Kanikeh, 24 August 1995, Kristen Leus et al. (RGH); 1 ♀, 1 juvenile, Melinani, 28 August 1995, Kristen Leus et al. (RGH); 5 ♀, 1 juvenile, Melinani, 29 August 1995 (RGH); 2 ♂, 8 ♀, 4 juveniles, western part, 1996–97 (no collector) (RGH); 3 ♂, 13 ♀, 2 juveniles, western part, in house, April 1996, Yette deKock; 1 ♀, 1 juvenile, Seriholu, 6 July 1996, Nico T. (RGH); 8 ♂, 22 ♀, 2 juveniles, Piru, 16 November 1996, Mia Rivi, Julai Mahumay, Rory Pays (RGH); 4 ♀, Ety, 17 November 1996, Io. Nikijulu (RGH); 4 ♂, 2 ♀, 1 juvenile, Nintari, near Pira, 12 July 1997 (RGH). *Sulawesi* [1°31′S, 124°50′E], 1 ♂, Manado, in house, May 1995, Charles Yonge (RGH). NEW CALEDONIA: *Voh* [21°32′S, 165°48′E], 1 ♀, elev. 0–50 m, 22–23 January 1969,

Figure 68.—Distribution of *Spermophora palau* in the Pacific is indicated by stars.

N.L.H. Krauss (BPBM); 1 ♂, 2 ♀, 1 juvenile, 7 mi E of La Foa [21°43′S, 165°49′E], 14 April 1945, C.L. Remington (AMNH). NEW HEBRIDES (= Vanuatu): *Banks Island:* 1 ♂, Vanua Lava [13°49′S, 167°29′E]: Sola, elev. 0–200 m, January 1974, N.L.H. Krauss (BPBM); 1 ♀, 1 juvenile, *Efate Island*, Vila Harbour, elev. 0–100 m, January 1987, N.L.H. Krauss (AMNH). PHILIPPINE ISLANDS: *Luzon*: 1 ♀, 2 juveniles, Ifugao, Banaue [17°03′N, 121°13′E], in house (no date), A. Bocek (BB). SOLOMON ISLANDS: *Russell Islands* [9°06′S, 159°11′E]: 4 ♀, 1 juvenile, December 1944, R.B. Eads (AMNH); *Guadalcanal* [9°30′S, 160°06′E]: 4 ♀, Lunga River region, no date, F.E. Samson (AMNH); 4 ♂, 6 ♀, 17 June 1944, Beck (AMNH).

Remarks.—This was the most common pholcid in the Pacific collections we examined. In shape and size it resembles *Pholcus ancoralis* but is readily distinguished by its abdominal pattern.

Description.—Medium-sized (body length 4–8 mm) eight-eyed pholcid. Male with small frontal tooth-like tubercle on chelicera near fang. Thoracic groove a more-or-less circular depression just behind cephalic region. Abdomen elongate, cylindrical, marked with two parallel rows of more-or-less rhomboidal purplish patches dorsally (Fig. 55), a few lateral patches the same color; and ventrally a median lengthwise band which divides into two parallel bands in front of spinnerets. Legs long, femur I almost twice body length in female, a little more than twice in males. Small simple epigynum as in Fig. 20.

Distribution in the Pacific.—Known from Philippines, Indonesia and Australia to New Caledonia, Marquesas and Hawaii.

Natural history.—Found mostly in buildings, but also in caves, under *Tridacna* shell on ground, and in webs on vegetation.

Genus *Spermophora* Hentz 1841

Spermophora Hentz 1841:117.
Oophora Hentz 1850:285.
Simonius Kishida 1913:1020.

Type species.—*Spermophora meridionalis* Hentz 1841, by monotypy.

Remarks.—This genus currently has 36 described species species from Africa, and Eurasia to western Pacific Islands. One introduced species almost worldwide.

Spermophora palau Huber 2005
Figs. 10, 11, 36, 68

Spermophora palau Huber 2005a:68.

Material examined.—CAROLINE ISLANDS: *Palau:* Babelthuap Island [7°22′N, 134°33′E]: male holotype. *Ponape*

Island: 1 ♂, 1 ♀, 1 juvenile, Kolonia [6°57′N, 158°12′E]: coffee leaf malt, Berlese funnel, 7 January 1953, J.L. Gressitt (BPBM); 1 ♂, same but not in coffee leaf malt (BPBM); 4 ♀, same locality, rotten stump, 17 January 1953, J.L. Gressitt (BPBM); 1 ♀, same locality, wet compost, 7 January 1953, J.L. Gressitt (BPBM); 3 ♀, 3 juveniles, east of Kolonia, elev. ~200 feet (61 m), in pile of coconut husks, 5 June 1973, J.A. Beatty, J.W. Berry (BB); 1 ♀, Ponape, wet forest litter, 8 June 1973, J.W. Berry, J.A. Beatty (BB); 1 ♀, Ponape, SW of Sekere School, shaken from bushes on bank, 10 June 1973, J.W. Berry, J.A. Beatty (BB); 1 ♀, Etscheit Property, near Kolonia, 7 June 1973, J.W. Berry, J.A. Beatty (BB); *Sokehs Island (= Deke Sokehs)* [6°59′N, 158°13′E): 1 ♂, 1 ♀, 1 juvenile, breadfruit and banana litter, 9 June 1973, J.W. Berry, J.A. Beatty (BB); 1 ♂, 3 ♀, 2 juveniles, same data but in pile of coconut husks (BB); *Truk*: Moen Island [7°26′N, 151°51′E]: 1 ♂, Mt. Terosken, 28 December 1952, J.L. Gressitt? (BPBM); 1 ♂, 1 ♀, 1 juvenile, forest litter, breadfruit and other trees, 12 June 1973, J.W. Berry, J.A. Beatty (BB); 5 ♀, same data but coconut litter (BB); 2 ♀, same data but tree shaking, mixed forest, hill above quarry (BB); *Tol Island* [7°21′N, 151°37′E]: 1 ♀, Mt. Unibot, 1 January 1953, J.L. Gressitt (BPBM).

Remarks.—Like most representatives of true *Spermophora*, this small six-eyed pholcid is provided with a median pocket on the female abdomen behind the epigynum (Fig. 11). Males have a distinctive ventral serrated flap on the procursus (Fig. 10).

Distribution in the Pacific.—This species has been found only on the Caroline Islands (Palau, Truk, and Ponape). The widespread *S. senoculata* differs from *S. palau* by the long bulbal apophysis, the bifid ventral procursus apophysis, the absence of pockets on the epigynum, and by the paired (instead of median unpaired) pockets posteriorly on the female abdomen. *Spermophora senoculata* has not been reported from the Pacific, but it may be found found there because of the frequency of importation of exotic species almost everywhere.

ACKNOWLEDGMENTS

We thank Tino Gonsalves, then collection manager, for access to the Bernice P. Bishop Museum pholcid collection, Bernarr Kumashiro for access to the Hawaii Department of Agriculture, and Dick Tsuda for the University of Hawaii material. Robert Holmberg's Indonesian specimens were sorted and shipped by Don Buckle, for which we thank both of them. We thank Norman Platnick (AMNH), Charles Griswold (CAS), Robert Raven (QMB), Mike Gray and Graham Millidge (AMS), and Peter Jäger (SMF) for the loan of specimens.

We are especially grateful for the Academic Research Grants from Butler University to JWB which helped support the field work. The U.S. Department of Energy provided travel funds for the work in the Marshall Islands. Two travel grants from the Indiana Academy of Science to JWB were of material assistance. Elizabeth Ramsey Berry's contributions to all phases of the fieldwork in the Pacific and at home have been invaluable. The staff of the Bishop Museum, Honolulu, has been of assistance in many ways over a period of decades. We also wish to thank the staff of the Richard Gump Laboratory, Moorea, Society Islands; Dr. Madhu Kamath at the Forestry Station, Tholo-i-Suva; Dr. Kamlesh Kumar and Satya Ram Singh at the Koronivia Station in Fiji; Ozanne Rohi in Hiva Oa and the Forestry Department in Nuku Hiva (Marquesas Islands); Rick and Gwen Welland in Rarotonga, Josie and David Sadaraka in Aitutaki, Gerald McCormack in Rarotonga, and Marshall and Jeanne Humphreys in Atiu (Cook Islands). Also Sakie Morris, Demei Otobed and Rubak Obak in the Palau Islands provided valuable assistance. In the Yap Islands, Mel Lundgren, Gabriel Ayin, Sister Ann Dowling and Marge Falanruw contributed greatly to our work. The assistance of Dean Jamieson was valuable in finding good collecting sites in Hawaii. Without the cooperation of all these people our field work would have been much less pleasant and productive.

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