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Monograph

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Labahitha spiders (Arachnida: Araneae: Filistatidae) from islands in the Indian and Pacific Oceans

Ivan L.F. MAGALHAES^{1,*}, James W. BERRY², Joseph K.H. KOH³ & Michael R. GRAY⁴

¹División Aracnología, Museo Argentino de Ciencias Naturales ‘Bernardino Rivadavia’,
Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET),
Av. Ángel Gallardo 470, C1405DJR, Buenos Aires, Argentina.

²Department of Biological Sciences, Butler University, Indianapolis, Indiana 46208, USA.

³National Biodiversity Centre, National Parks Board, 259569, Singapore.

⁴Australian Museum, 1 William St, Darlinghurst NSW 2010, Australia.

*Corresponding author: magalhaes@macn.gov.ar

²Email: berryjw@ufl.edu

³Email: josephkhkoh@gmail.com

⁴Email: mrbgray7@gmail.com

¹urn:lsid:zoobank.org:author:799DF5B9-9085-4E58-BE36-371CFADED8AA

²urn:lsid:zoobank.org:author:382ECB13-A41F-4BE9-BB80-429F160A1BA3

³urn:lsid:zoobank.org:author:1558FA15-A467-447E-838C-CE77CEA7BE4C

⁴urn:lsid:zoobank.org:author:AD6E6ED2-297B-4403-8A45-4FD0F5AE4C58

Abstract. The genus *Labahitha* has hitherto comprised two species from peninsular Malaysia and Christmas Island (Australia). We here demonstrate that the genus is widespread in islands and territories across the Indian and Pacific Oceans, including the following species that have been previously assigned to other filistatid genera: *Labahitha marginata* (Kishida, 1936) comb. nov. (= *Filistata bakeri* Berland, 1938 syn. nov.), *Labahitha garciai* (Simon, 1892) comb. nov. (= *Pritha heikkii* Saaristo, 1978 syn. nov., = *Pritha sechellana* Benoit, 1978 syn. nov.), *Labahitha nicobarensis* (Tikader, 1977) comb. nov., *Labahitha littoralis* (Roewer, 1938) comb. nov., *Labahitha insularis* (Thorell, 1891) comb. nov., *Labahitha sundaica* (Kulczyński, 1908) comb. nov. (all transferred from *Pritha*, the latter three provisionally, pending re-examination of the type material); *Labahitha fuscata* (Nakatsudi, 1943) comb. nov. and *Labahitha ryukyuensis* (Ono, 2013) comb. nov. (both transferred from *Tricalamus*). Many of these species have been collected in synanthropic settings and from disparate islands thousands of kilometers apart. This suggests either high dispersal capabilities or, more likely, human-mediated introductions. At least *L. marginata* has been introduced to continental America. Two new species of *Labahitha* are described: *Labahitha platnicki* sp. nov. from New Caledonia and the Bismarck Islands and *Labahitha incerta* sp. nov. from Queensland, Australia. The male of *Labahitha gibsonhilli* (Savory, 1943) is reported for the first time. *Wandella loloata* sp. nov. is described from Papua New Guinea, representing the first record of this genus outside Australia. *Pritha hasselti* (Simon, 1906) from Indonesia is shown to be a Filistatinae, and thus the species is provisionally transferred back to *Filistata*.

Keywords. Asia, new species, Oceania, Prithinae, taxonomy.

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Introduction

Crevice weavers of the family Filistatidae Simon, 1864 are globally distributed despite their modest diversity (185 species in 19 genera as of 2021; WSC 2021). While their taxonomy has been largely neglected for most of the twentieth century, the last few decades have witnessed a surge in systematic efforts in this group, with several revisions oriented towards particular regions or genera (e.g., Gray 1994; Ramírez & Grismado 1997; Marusik & Zamani 2015; Zonstein & Marusik 2016, 2019; Magalhaes & Ramírez 2017, 2019; Magalhaes & Grismado 2019). It is now reasonable to expect that most genera, if not all, will be fully revised in a foreseeable future.

During such revisions, a clear trend has been the progressive dismemberment of *Filistata* Latreille, 1810 which has hitherto served as a taxonomic dumpster in the family and has only recently been delimited objectively (Zonstein & Marusik 2019). Virtually every genus of Filistatidae contains at least one species that was once placed in *Filistata* (see WSC 2021). Lehtinen (1967) was the first to attempt organizing the family, creating new genera for species previously placed in *Filistata*. One of these genera is *Pritha* Lehtinen, 1967 erected to contain small-sized species from the Old World and islands in the Indian and Pacific Oceans. *Pritha* was, in turn, divided into three informal species groups: (1) *P. nana* group containing those species from the Mediterranean area closely related to the generotype, *P. nana* (Simon, 1868); (2) *P. garciai* group including several species from Asia to Australia; and (3) *P. bakeri* group with two species from Samoa and Taiwan.

This paper deals with some species assigned by Lehtinen (1967) to the *garciai* and *bakeri* groups. Re-examination of their type specimens or material from their type localities shows that they are not related to *Pritha nana*, but rather to the recently erected *Labahitha* Zonstein, Marusik & Magalhaes, 2017. *Labahitha* itself is a replacement name for *Mystes* Bristowe, 1938 originally based on a single female specimen from Malaysia (Bristowe 1938). Zonstein *et al.* (2017) re-described the genus and its type species, *L. oonopiformis* (Bristowe, 1938), while Marusik *et al.* (2019) transferred *Filistata gibsonhilli* Savory, 1943 (from Christmas Island, Australia) to the genus. Thus, *Labahitha* has hitherto consisted of only two species. The aim of this paper is to provide a broader overview of this genus, revising the taxonomy of some poorly known species, describing two new species, and recording the male of a described species of *Labahitha*. The paper also records new findings of two other Filistatidae, including the description of a new species of *Wandella* Gray, 1994.

Material and methods

Examined specimens are deposited in the following institutions:

AM	=	Australian Museum, Sydney, Australia
AMNH	=	American Museum of Natural History, New York, USA
CAS	=	California Academy of Sciences, San Francisco, USA
CHNUFPI	=	Coleção de História Natural da Universidade Federal do Piauí, Floriano, Brazil
CRBA	=	Centre de Recursos de Biodiversitat Animal, University of Barcelona, Barcelona
IBSP	=	Instituto Butantan, São Paulo, Brazil
INBIO	=	Instituto Nacional de Biodiversidad, Santo Domingo, Costa Rica
JK	=	Joseph K.H. Koh, Singapore
MACN-Ar	=	Museo Argentino de Ciencias Naturales ‘Bernardino Rivadavia’, Buenos Aires, Argentina

MCZ	=	Museum of Comparative Zoology, Harvard University, Cambridge, USA
MNHN	=	Museum national d'histoire naturelle, Paris, France
MRAC	=	Musée royal de l'Afrique Centrale, Tervuren, Belgium
QM	=	Queensland Museum, South Brisbane, Australia
SMF	=	Senckenberg Museum, Frankfurt, Germany
ZFMK	=	Zoological Research Museum Alexander Koenig, Bonn, Germany
ZMB	=	Zoologisches Museum Berlin, Berlin, Germany

Specimens collected by J. Berry and J. Beatty (JBJB) will be eventually deposited in the Bishop Museum, Honolulu, Hawai'i, USA.

Abbreviations

ALE	=	anterior lateral eye
AME	=	anterior median eye
a.vr	=	apical ventroretrolateral macroseta
PLE	=	posterior lateral eye
PME	=	posterior median eye

Female genitalia were cleaned by digestion using pancreatin solution, and examined while immersed in lactic acid; male genitalia were cleared by immersion in clove oil. Specimens were photographed with a DFC290 camera connected to a Leica M165A stereo microscope or a DXM1200 camera connected to an Olympus BH2 compound microscope. Individual images were combined into extended focus images using Helicon Focus 7. Drawings were made with the aid of a camera lucida. Material for scanning electronic microscopy was prepared and imaged as in Magalhaes (2016). Format of description follows Magalhaes & Ramírez (2017), except that leg measurements are given as “total length (femur, patella, tibia, metatarsus, tarsus)”. Descriptions and list of material examined were prepared using automated spreadsheets (Magalhaes 2019). Specimens without coordinates in the original labels were georeferenced using Google Earth, and their coordinates are expressed between square brackets in the list of examined material.

Results

Class Arachnida Lamarck, 1801
Order Araneae Clerck, 1757
Family Filistatidae Simon, 1864
Subfamily Prithinae Gray, 1995

Genus *Labahitha* Zonstein, Marusik & Magalhaes, 2017

Mystes Bristowe, 1938: 319 (preoccupied in Coleoptera; see Zonstein *et al.* 2017).
Labahitha Zonstein, Marusik & Magalhaes, 2017: 305.

Type species

Mystes oonopiformis Bristowe, 1938, by monotypy.

Emended diagnosis

Labahitha is closely related to *Wandella* Gray, 1994 and *Yardiella* Gray, 1994, with whom it shares a dorsal paraembolic lamina on the palp of males (Fig. 5), excavated tegulum, microteeth combs on the tegulum (Fig. 5H), and complete absence of the macrosetae on the legs of females. Males can be distinguished from *Wandella* and *Yardiella* by: (1) the rounded clypeus, similar to that of the female

(Figs 7, 17) (vs anterior margin of the carapace straight, with acute clypeus in males), (2) paraembolic lamina, which has a ragged margin (Figs 5, 12A–D) (vs entire margin), and may be divided into two parts (Figs 5, 15, 20) or reduced to a small proximal keel almost completely fused to the tegulum (Figs 12A–D, 25) (vs a single free-ending, unfused part); in addition, they usually have an apical macroseta on the ventro-retrolateral face of metatarsal I (vs macroseta usually absent; present in at least *W. murrayensis* Gray, 1994). Females are distinguished from *Wandella* and *Yardiella* by the less contrasting colouration pattern, with weak or absent submarginal bands, leg rings and chevron pattern on the abdomen (Figs 2–3) (vs submarginal bands, chevron and leg rings well-marked). The female genitalia is variable, with paired (Figs 6, 12) or unpaired (Fig. 19) receptacles; the median receptacles may be well-developed (Fig. 12) or reduced (Fig. 6).

Relationships

Labahitha forms a clade with *Wandella* and *Yardiella* on the basis of shared possession of a paraembolic lamina with micro-teeth (Figs 5, 12A–D) and micro-teeth in the male clypeus (Fig. 23F) (see also Gray 1994; Magalhaes 2016; Zonstein *et al.* 2017).

Tentative transfers

The following three species are known only from the females mentioned in the original descriptions, which include poor figures, if any at all. Based on the textual description and their distribution, they are here provisionally transferred to *Labahitha*, taking into account that their current placement in the mainly Eurasian genus *Pritha* (proposed by Lehtinen 1967: 260) is poorly justified. Examination of their type material should be carried out to confirm the generic placement and clarify their identities, as it is not unlikely that they are synonyms of the other species treated here. This is especially important in the case of *Filistata insularis* Thorell, 1891, which has nomenclatorial priority over any of the names treated in this paper.

- (1) *Labahitha littoralis* (Roewer, 1938) comb. nov. (*Filistata littoralis* Roewer, 1938: 8, fig. 3. Female holotype from Indonesia, New Guinea, Kamana, 19 Mar. 1929, deposited in the Institut Royal des Sciences Naturelles de Belgique, Belgium, not examined). Roewer (1938) describes the colouration of the carapace as yellowish brown, without spots or markings; the abdomen as dark grey; the legs as pale yellow and uniform, except for the darker femora. This is similar to pattern in other species of *Labahitha* (Fig. 2C).
- (2) *Labahitha insularis* (Thorell, 1891) comb. nov. (*F. insularis* Thorell, 1891: 17. Female (subadult?) from India, Car Nicobar, repository unknown, not examined). Lehtinen (1967) mentions that the types are deposited in Naturhistorisches Museum Wien, Austria, but the only specimens identified as *Filistata insularis* in this collection come from Sumatra and were collected in 1938 (C. Hörweg, pers. com.), and thus cannot possibly be the types. The description mentions a dark spider, consistent with some species of this genus; the type locality is the same as that of *L. nicobarensis* (Tikader, 1977) comb. nov. and it is not unlikely the two species are synonyms (Fig. 2A).
- (3) *Labahitha sundaica* (Kulczyński, 1908) comb. nov. (*Filistata sundaica* Kulczyński, 1908: 579. Female holotype from Indonesia, Java, deposited in Instytut Zoologiczny, Polska Akademia Nauk, Poland, labelled *Filistata biroii* according to Lehtinen 1967, not examined). Kulczyński (1908) states that the carapace, the sternum, palps and legs are pale yellow, the abdomen is hazelnut brown, and that the mouth parts and distal portion of the legs are suffused with rusty red. This is similar to pattern in other species of *Labahitha* (Fig. 2C).

Composition

Eight species surely belong in the genus: *Labahitha fuscata* (Nakatsudi, 1943) comb. nov., *Labahitha garciai* (Simon, 1892) comb. nov., *Labahitha gibsonhilli* (Savory, 1943), *Labahitha marginata* (Kishida,

1936) comb. nov., *Labahitha nicobarensis* (Tikader, 1977) comb. nov., *Labahitha oonopiformis* (Bristowe, 1938), *Labahitha platnicki* sp. nov. and *Labahitha ryukyuensis* (Ono, 2013) comb. nov. Four other species are tentatively allocated here: *Labahitha incerta* sp. nov., *Labahitha littoralis* (Roewer, 1938) comb. nov., *Labahitha insularis* (Thorell, 1891) comb. nov. and *Labahitha sundaica* (Kulczyński, 1908) comb. nov.

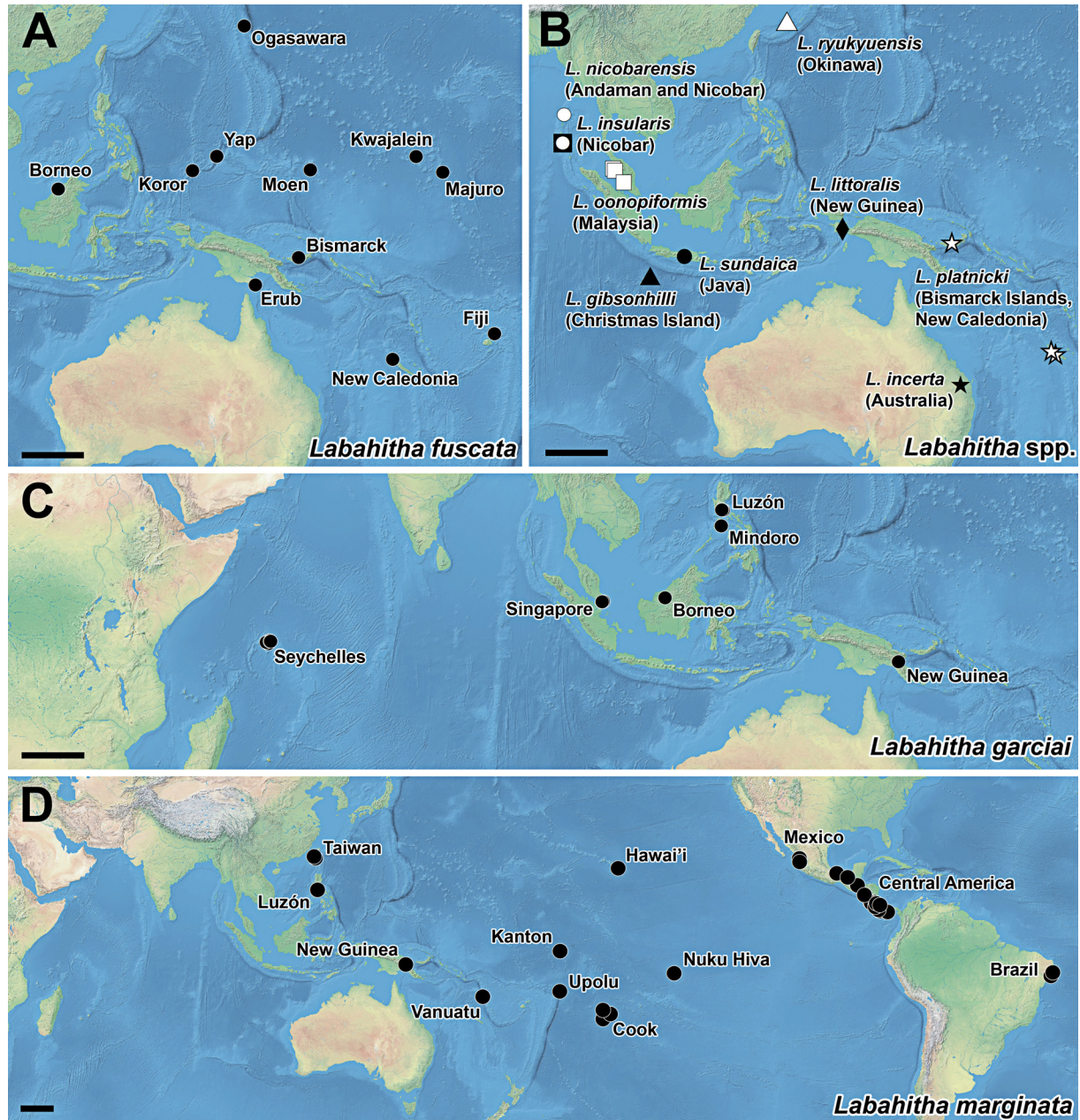


Fig. 1. Geographical distribution of *Labahitha* Zonstein, Marusik & Magalhaes, 2017. **A.** *L. fuscata* (Nakatsudi, 1943) comb. nov. **B.** *Labahitha* spp. (black triangle = *L. gibsonhilli* (Savory, 1943); white circle = *L. nicobarensis* (Tikader, 1977) comb. nov.; white square = *L. oonopiformis* (Bristowe, 1938); white star = *L. platnicki* sp. nov.; white triangle = *L. ryukyuensis* (Ono, 2013) comb. nov.; black star = *L. incerta* sp. nov.; black diamond = *L. littoralis* (Roewer, 1938) comb. nov.; black square = *L. insularis* (Thorell, 1891) comb. nov.; black circle = *L. sundaica* comb. nov. **C.** *L. garciai* (Simon, 1892) comb. nov. **D.** *L. marginata* (Kishida, 1936) comb. nov. Scale bars = 1000 km.

Distribution

The genus is mainly distributed in Oceania and adjacent areas (Fig. 1). Species occur in a wide range spanning the Seychelles, Malaysia, Indonesia, Australia, New Guinea and several islands in the Pacific Ocean; records from the American continent likely represent human-mediated introduction. Material examined by us from India, Sri Lanka, China, Laos, Cambodia, and Thailand belongs to other Prithinae genera, thus we suspect that *Labahitha* is not diverse in continental Asia.

Labahitha fuscata (Nakatsudi, 1943) comb. nov.
Figs 2A–B, 4–6, 29C

Filistata fuscata Nakatsudi, 1943: 148, fig. 1a–c. Female holotype from Palau, Koror Island, Aug. 1941, T. Ogata leg., presumably deposited in the Tokyo University of Agriculture (Ono 2011), not examined. *Filistata fuscata* Kishida, 1947: 999, fig. 2839. Syntypes from Japanese Micronesia, currently untraceable (Ono 2011), not examined. First considered a junior synonym and homonym of *Filistata fuscata* Nakatsudi, 1943 by Ono (2011).

Nr. *Wandella* sp. – Gray 1995: 84, figs 15, 19.

Tricalamus fuscatus – Ono 2011: 185, figs 1–11; 2013: 19.

Notes

Although neither Ono (2011) nor we have examined the type specimens, we have seen plenty of specimens from the type locality and neighbouring islands that tally with the original descriptions of this species. Ono (2013) recorded this species in the Ogasawara Islands in Japan. Gray (1995: fig. 15) was the first to figure the male of this species. See Ono (2011) for a discussion regarding the correct authorship of this species and the priority of Nakatsudi's (1943) name over Kishida's (1947).

Diagnosis

The male is similar to that of *Labahitha gibsonhilli* in the sharp, triangular apex of the paraembolic lamina and the gently curved distal portion of the sperm duct. It differs by the shorter, more stout palpal bulb and the relatively larger paraembolic lamina (Fig. 5B, J–L) (vs palpal bulb longer and slender, with smaller paraembolic lamina in *L. gibsonhilli*). Females can be distinguished from all congeners by the very small median receptacles, which are reduced to a bump with pores, placed posteriorly to the larger, oval lateral receptacles (Fig. 6). The deep brown and uniform colouration is also characteristic (Fig. 4), although also present in *L. ryukyuensis* (Ono 2013).

Material examined

AUSTRALIA • 1 ♂; Queensland, Torres Strait, Darnley Island; [9.59747° S, 143.76142° E]; AM.

BRUNEI • 1 ♀; Tutong, Tasek Merimbun Park HQ; [4.59444° N, 114.67083° E]; 13 Feb. 2013; J.K.H. Koh leg.; wooden wall crevices; JK 130213.1101 • 1 ♀; same collection data as for preceding; 16 Apr. 2011; JK 110416.1907.

FIJI • 1 ♀; Vanua Levu, Lasema; [16.62682° S, 179.01793° E]; W.M. Mann leg.; MCZ 40200.

MARSHALL ISLANDS • 1 ♀; Kwajalein Atoll, Ennugarret Island; [9.38452° N, 167.4881° E]; 9 Jul. 1968; J.W. Berry leg.; beating trees in *Pandanus* forest; JBB • 1 ♂; Majuro Atoll, Woja; [7.09171° N, 171.38268° E]; 26 Jul. 1968; J.W. Berry leg.; in coconut litter; JBB.

MICRONESIA • 1 ♀; Caroline Islands, “Truk Islands” [Chuuk Island], “Moen Island” [Weno Island]; [7.45575° N, 151.84985° E]; 12 Jun. 1978; J. Berry and Beatty leg.; in crevices on buildings; JBB • 1 ♀; Caroline Islands, Yap Island, Yap District, Fedor; [9.45056° N, 138.06269° E]; 1 Feb. 1980; J.W. Berry

leg.; in banana leaves; JBB • 1 ♀; Caroline Islands, Yap Island, Yap District, Fedor; [9.45056° N, 138.06269° E]; 13 Apr. 1980; J.A. Beatty leg.; in web on tree trunk; JBB • 1 ♂, 1 ♀; Caroline Islands, Yap Island, Yap, near Gilman Point; [9.45056° N, 138.06269° E]; 15 Apr. 1980; webs in crevices on mango tree bark; JBB.

NEW CALEDONIA • 2 ♀♀, 1 imm.; Nord, Poum; [20.23333° S, 164.01667° E]; 13 Feb. 1993; N.I. Platnick, R.J. Raven and M.S. Harvey leg.; coastal cliffs; AMNH IFM-0917, IFM-0918.

PALAU • 1 ♂; Caroline Islands, Koror Island; [7.34068° N, 134.4792° E]; 17 Mar. 1973; J. Berry and Beatty leg.; in cave entrance rock cracks; JBB • 1 ♀; same collection data as for preceding; JBB •

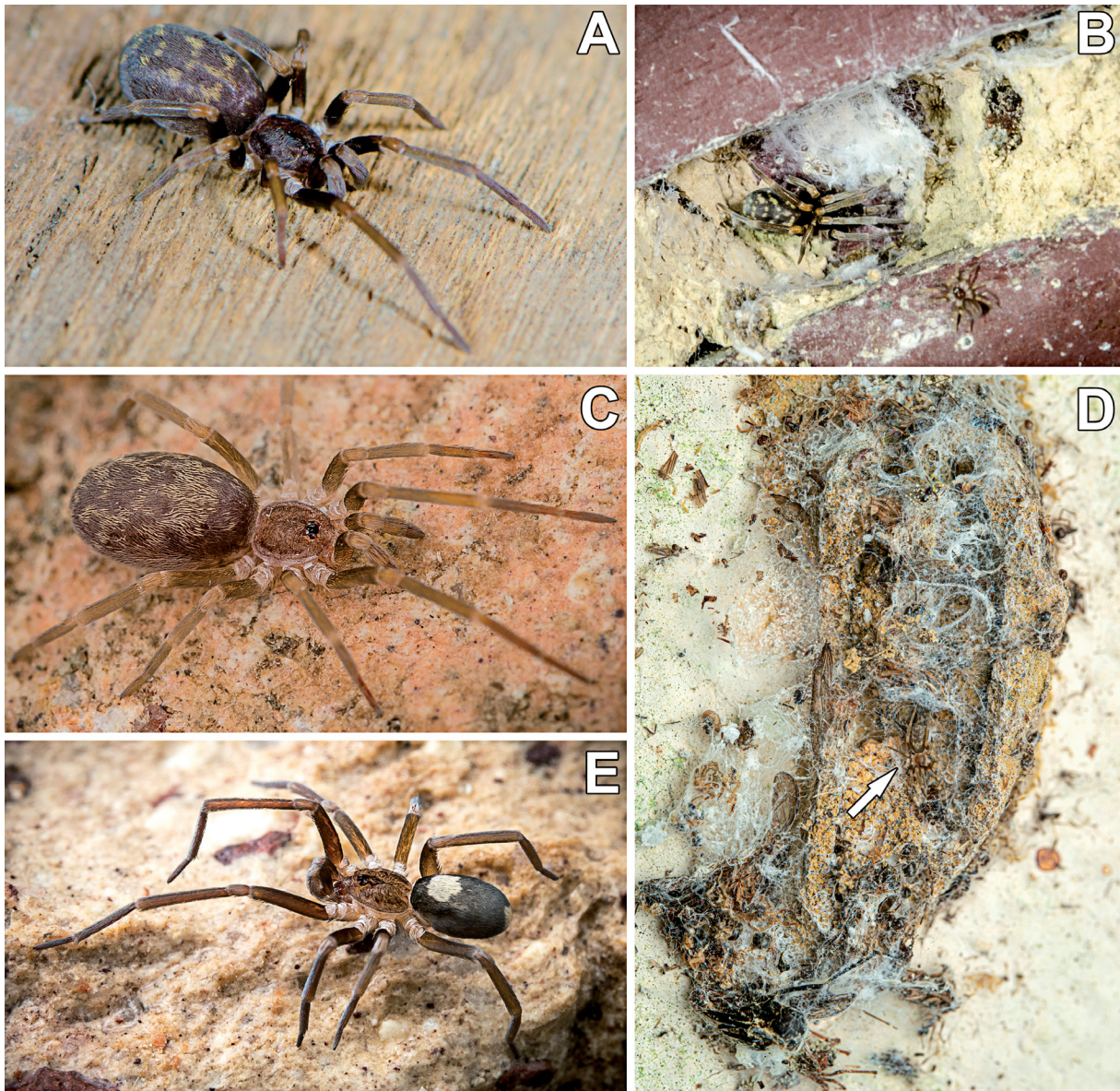


Fig. 2. *Labahitha* Zonstein, Marusik & Magalhaes, 2017, live specimens. **A–B.** *Labahitha fuscata* (Nakatsudi, 1943) comb. nov., from Brunei, Tutong. **A.** Female. **B.** Female with juveniles. **C–E.** *Labahitha garciai* (Simon, 1892) comb. nov., from Singapore. **C.** Male. **D.** Female (arrow) in her web. **E.** Female. Photos by Joseph Koh, except D by Chris Ang.

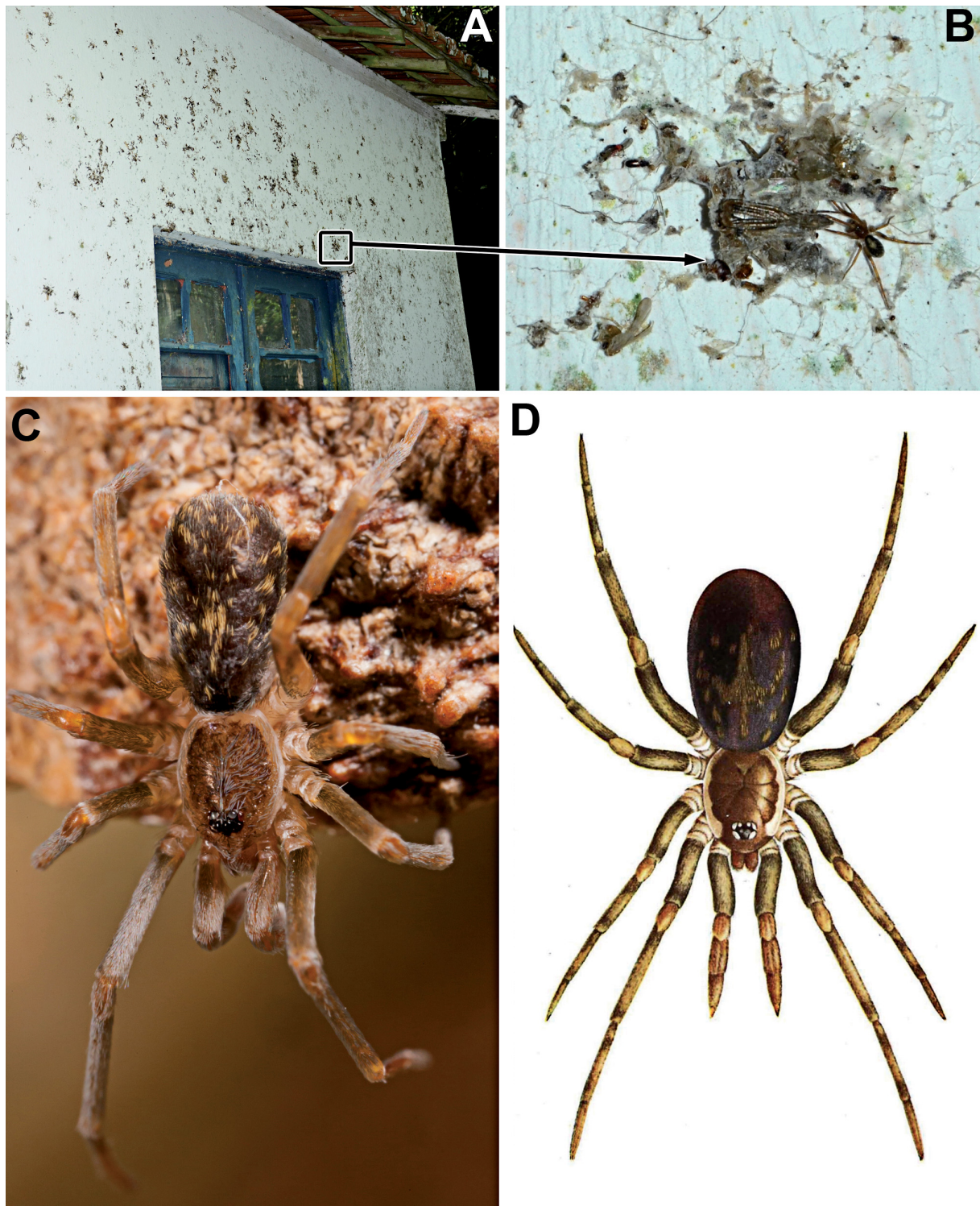


Fig. 3. *Labahitha marginata* (Kishida, 1936) comb. nov., females. **A–B.** Brazil, Pernambuco, Tamandaré. **A.** House wall with webs. **B.** Female and prey remains on web. **C.** Mexico, Campeche, Calakmul. **D.** Original illustration included in the description of *Filistata marginata*. Photos: A–B by Leonardo Carvalho; C by Fabián Vol; D reproduced from Komatsu (1936).

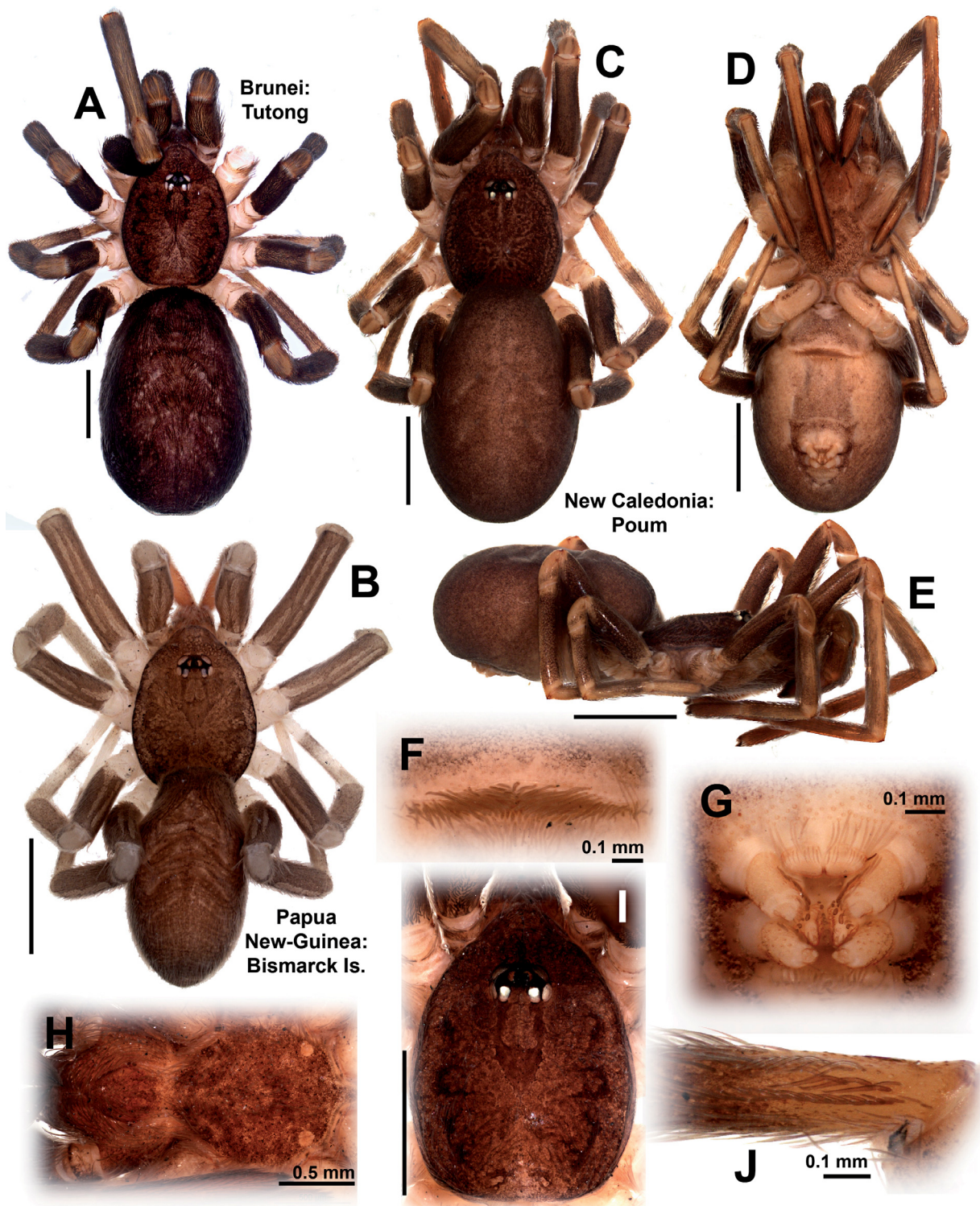


Fig. 4. *Labahitha fuscata* (Nakatsudi, 1943) comb. nov., females. **A.** Brunei, Tutong, habitus, dorsal (JK 130213.1101). **B.** Papua New Guinea, Bismarck Islands, habitus, dorsal (ZMB). **C–G.** New Caledonia, Poum (AMNH IFM-0917). **C.** Habitus, dorsal. **D.** Habitus, ventral. **E.** Habitus, lateral. **F.** Genital region, ventral. **G.** Spinnerets, ventral. **H–J.** Female from the same locality (AMNH IFM-0918). **H.** Sternum, ventral. **I.** Carapace, dorsal. **J.** Left calamistrum, retrolateral. Scale bars = 1 mm, except where noted.

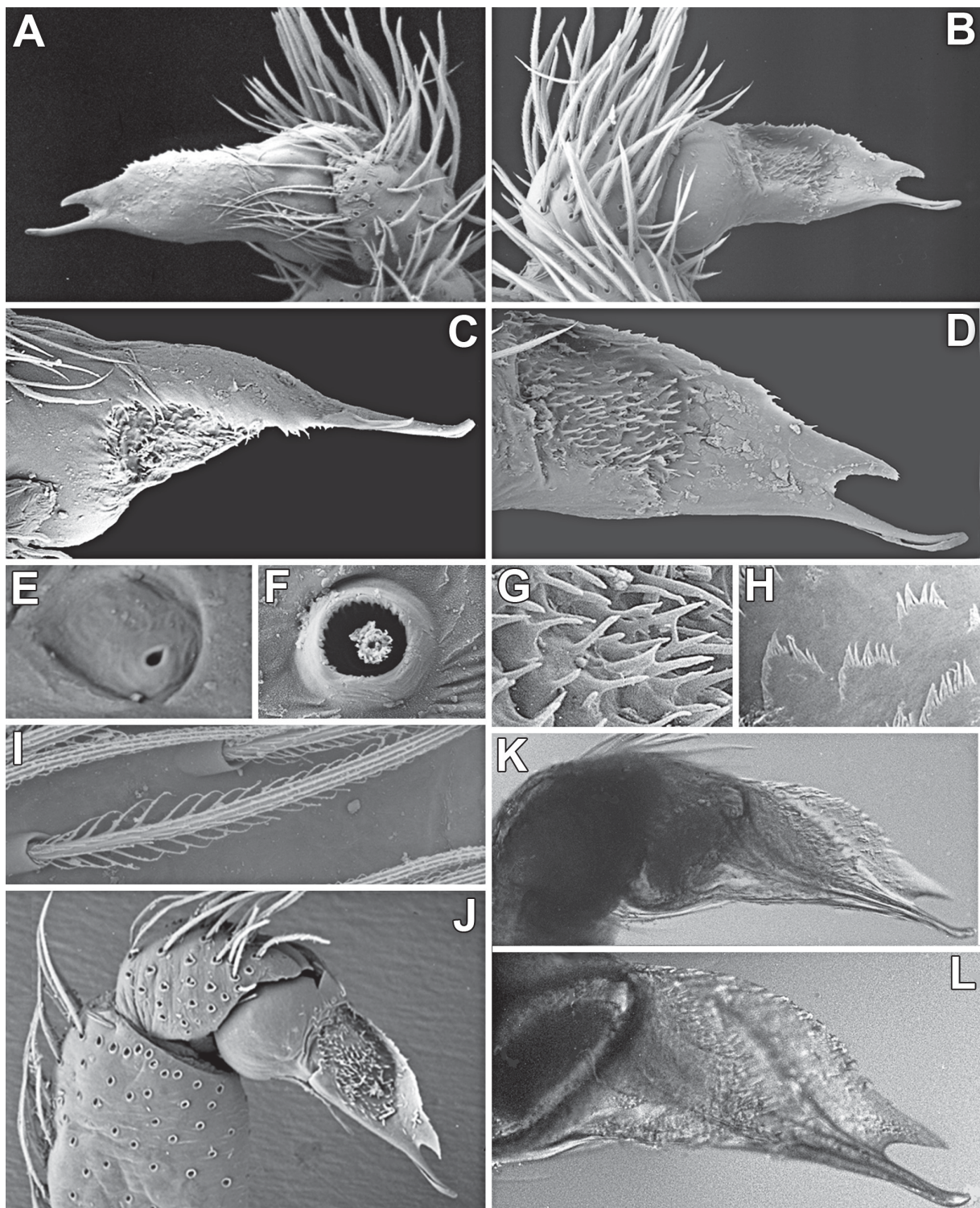


Fig. 5. *Labahitha fuscata* (Nakatsudi, 1943) comb. nov., males. **A–I.** Palau, Koror (JBJB), left palp. **A.** Retrolateral. **B.** Prolateral. **C.** Dorsal. **D.** Prolateral, detail. **E.** Tarsal organ. **F.** Trichobothria base. **G.** Detail of tegular spines. **H.** Detail of arrays of micro-teeth combs. **I.** Semi-plumose seta. **J.** Marshall Islands (JBJB), prolateral. **K–L.** Torres Strait, Darnley Island (AM), prolateral. Figures not to scale.

1 ♀; Caroline Islands, Koror Island; [7.34068° N, 134.4792° E]; 17 Mar. 1973; J. Berry and J. Beatty leg.; in crevices of tree trunk bark; JBB • 1 ♂, 1 ♀; Caroline Islands, Koror Island, on Entomology Lab building; [7.34068° N, 134.4792° E]; 7 Mar. 1973; J.A. Beatty leg.; JBB • 1 ♀; same collection data as for preceding; 6 Mar. 1973; J. Berry and J. Beatty leg.; JBB.

PAPUA NEW GUINEA • 2 ♀♀; Bismarck Islands; [5.55234° S, 150.13883° E]; 18 Nov. 1896; ZMB.

Description

Male (from Palau, Koror Island, Entomology Laboratory, JBB)

COLOURATION (in ethanol). Carapace grey-brown, with darker irregular patterning in the median postocular area and the weakly defined mid-lateral and lateral marginal bands. Chelicerae, labium, endites and sternum brown. Legs with dark grey-brown pigmentation on femora, paler on tibiae and reduced to absent on remaining segments. Abdomen colour brownish grey with and several indistinct chevrons, but patterning poorly preserved.

HABITUS. Anterior margin of carapace subrounded, sclerotized but apical part with an unsclerotized curved edge. Sternum subrounded, posteriorly bluntly pointed, a pair of posterior sigilla present.

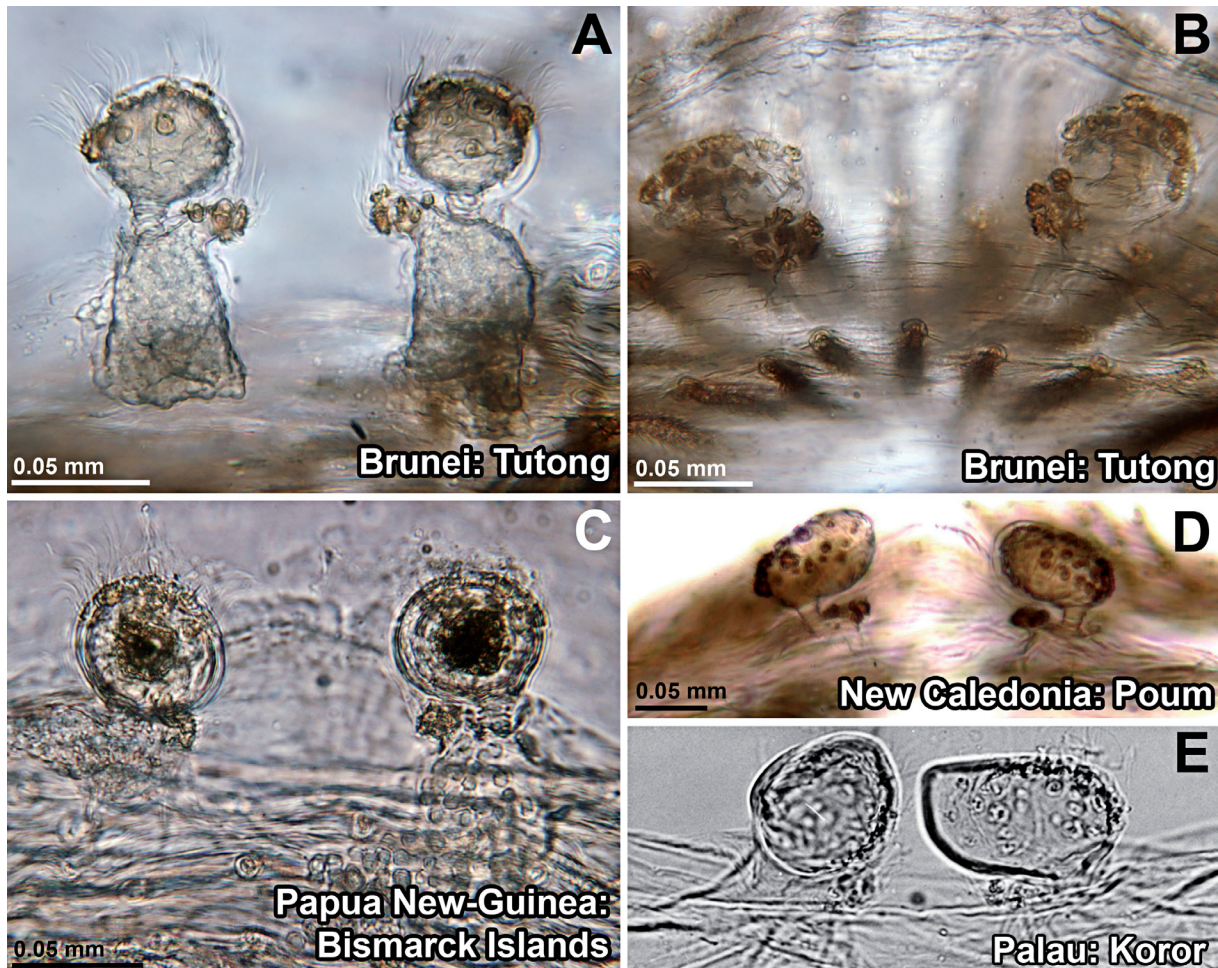


Fig. 6. *Labahitha fuscata* (Nakatsudi, 1943) comb. nov., endogyne, dorsal, lactic acid cleared. **A.** Brunei, Tutong (JK 110416.1907). **B.** Same locality (JK 130213.1101). **C.** Papua New Guinea, Bismarck Islands, habitus, dorsal (ZMB). **D.** New Caledonia, Poughe (AMNH IFM-0918). **E.** Palau, Koror (JBB) (not to scale).

MEASUREMENTS. Total length 3.23. Carapace length 1.37, width 1.13. Clypeus length 0.33. Eye diameters and interdistances: AME 0.05, PME 0.08, ALE 0.09, PLE 0.09, AME–AME 0.05, PME–PME 0.09. Sternum length 0.95, width 0.71. Palp: femur length 0.77, height 0.23; tibia length 0.49, height 0.22. Legs 1423. Leg I: 6.33 (1.63, 0.49, 1.80, 1.42, 0.99). II: 4.63 (1.24, 0.43, 1.14, 1.18, 0.64). III: 4.26 (1.10, 0.39, 0.95, 1.07, 0.75). IV: 5.41 (1.41, 0.49, 1.43, 1.44, 0.64). Abdomen length 1.86, width 0.86.

LEG MACROSETAE. Metatarsus (Mt) I 1 a.vr.

PALP (Fig. 5). Cymbium horseshoe shaped; bulb enlarged with a median constriction, sperm duct N-shaped with a single coil; tegulum with a large prolateral excavation, its surface adorned with strongly spined short ridges (each typically bispinate); large crest-like paraembolic process with a fimbriated dorsal margin bent more or less prolaterally, and narrowing distally to end in an extension above the embolus; comb-like microtooth arrays present on paraembolic process; embolus slender, slightly curved.

Female (from Palau, Koror Island, Entomology Laboratory, JBJB)

COLOURATION. Carapace similar to male, but anterior margin of carapace pigmented. Abdomen greyish brown with a longitudinal pale patch mid-dorsally and several indistinct pale chevrons laterally. One pair of posterior sternal sigilla present.

MEASUREMENTS. Total length 4.75. Carapace length 1.69, width 1.33. Clypeus length 0.29. Sternum length 0.95, width 0.71. Palp: femur length 0.91, height 0.3; tibia length 0.42, height 0.3. Leg I: 5.71 (1.45, 0.52, 1.49, 1.32, 0.93). II: 4.22 (1.16, 0.49, 0.95, 0.95, 0.67). III: 3.7 (1.05, 0.48, 0.78, 0.85, 0.54). IV: 4.92 (1.41, 0.60, 1.25, 1.05, 0.61). Abdomen length 3.06, width 2.07.

LEG MACROSETAE. Absent. Calamistrum with three rows.

EPIGASTRIC FURROW. Unmodified.

ENDOGYNE (Fig. 6). Median lobes very small with a few clustered pores; lateral lobes large, ovoid in side view, with scattered pores.

Variation

Male genitalia is similar across islands (Fig. 5). The shape of the lateral receptacles varies from rounded to oval, and the pores in the lateral receptacles may be concentrated in the ectal side or dispersed throughout the receptacle (Fig. 6).

Natural history

Specimens have been collected in habitats as diverse as wooden wall crevices, in coconut litter, in crevices on buildings, by beating trees in *Pandanus* forest, in banana leaves, in web on tree trunk, in webs in crevices on tree bark, in coastal cliffs and in cave entrance rock cracks.

Distribution

Widespread in Micronesia and Melanesia, extending into Borneo and Japan (Fig. 1).

Labahitha garciai (Simon, 1892) comb. nov.
Figs 2C–E, 7–12, 28A, 29A–B

Filistata garciai Simon, 1892: 37. Two males and one female syntypes from Philippines, Grotte de San-Mateo, Mar.–Apr. 1890, E. Simon leg. (MNHN AR 5414), examined through photos.

Filistata pulchella Simon, 1893: 66. Male and female syntypes from Philippines, Antipolo, Mar.–Apr. 1890, E. Simon leg., deposited in the MNHN, not examined. Male syntype illustrated by Lehtinen (1967: fig. 23). First synonymized with *Filistata garciai* by Lehtinen (1967).

Pritha heikkii Saaristo, 1978: 99, figs 1–10. Holotype female from Seychelles, Mahé, 30 Oct. 1975, M. Saaristo leg., deposited in the Zoological Museum of the University of Turku, not examined.

Syn. nov.

Pritha sechellana Benoit, 1978: 677, figs A–B. Holotype male from Seychelles, Curieuse, 17 Aug. 1972, (MRAC 143165), examined. First synonymized with *Pritha heikkii* by Saaristo (2010). **Syn. nov.**

Pritha garciai – Lehtinen 1967: 260, fig. 23.

Pritha heikkii – Saaristo 2010: 69, fig. 10.1–6.

Labahitha sp. – Zonstein *et al.* 2017: fig. 4.

Notes

The original description of Simon (1892) mentions at least two females, but the vial with the syntypes contains one female, a male with both palps attached, and a loose male palp. We did not examine the holotype of *F. pulchella*, but Lehtinen (1967: fig. 23) provided an excellent illustration of the palp of the holotype and the type localities of both species are nearby (Simon 1892, 1893). This indicates that the synonymy is correct. We did not examine the type material of *Pritha heikkii*, but the illustrations in the original description and the proximity between type localities indicate that the synonymy proposed by Saaristo (2010) is correct.

Diagnosis

Males are similar to those of *L. oonopiformis*, *L. ryukyuensis* and *L. nicobarensis* by the teardrop-shaped bulb with a keel-shaped paraembolic lamina. They differ from *L. oonopiformis* by the shorter embolus (vs longer), from *L. ryukyuensis* by the more globose base of the bulb (vs base of the bulb more tubular) and from *L. nicobarensis* by the longer, more curved embolus (vs embolus short and straight) (Fig. 10). Females are more similar to those of *L. oonopiformis* and *L. gibsonhilli* by the large membranous base of the receptacles and well-developed median receptacle; they differ from *L. oonopiformis* by the median receptacles subequal in size to the laterals (vs median receptacles notably enlarged) and from *L. gibsonhilli* by the globose median receptacles with evenly scattered pores (vs median receptacles with pores restricted to medial face) (Fig. 11).

Examined type material

Syntypes of *Filistata garciai*

PHILIPPINES • 2 ♂♂, 1 ♀; Manila, Cueva de San Mateo; Mar.–Apr. 1890; E. Simon leg.; MNHN AR 5414.

Pritha sechellana

Holotype

SEYCHELLES • ♂; Curieuse centre, degraded forest; [4.28159° S, 55.72172° E]; 17 Aug. 1972; P.L.G. Benoit and J.J. Van Mol leg.; MRAC 143165.

Allotype

SEYCHELLES • ♀; same collection data as for holotype; MRAC 143165.

Paratypes

SEYCHELLES • 3 ♀♀, 2 imm.; Praslin, Vallée de Mai; [4.33° S, 55.73839° E]; 25 Jul. 1972; P.L.G. Benoit and J.J. Van Mol leg.; in the humus; MRAC 143106.

Other material examined

MALAYSIA • 1 ♂; Sarawak, Kapit, Sut-Gaat Felling Area; Nanga Suau; [1.9949° N, 112.9331° E]; 20 Apr. 1978; T. Lau leg.; AMNH IFM-0936.

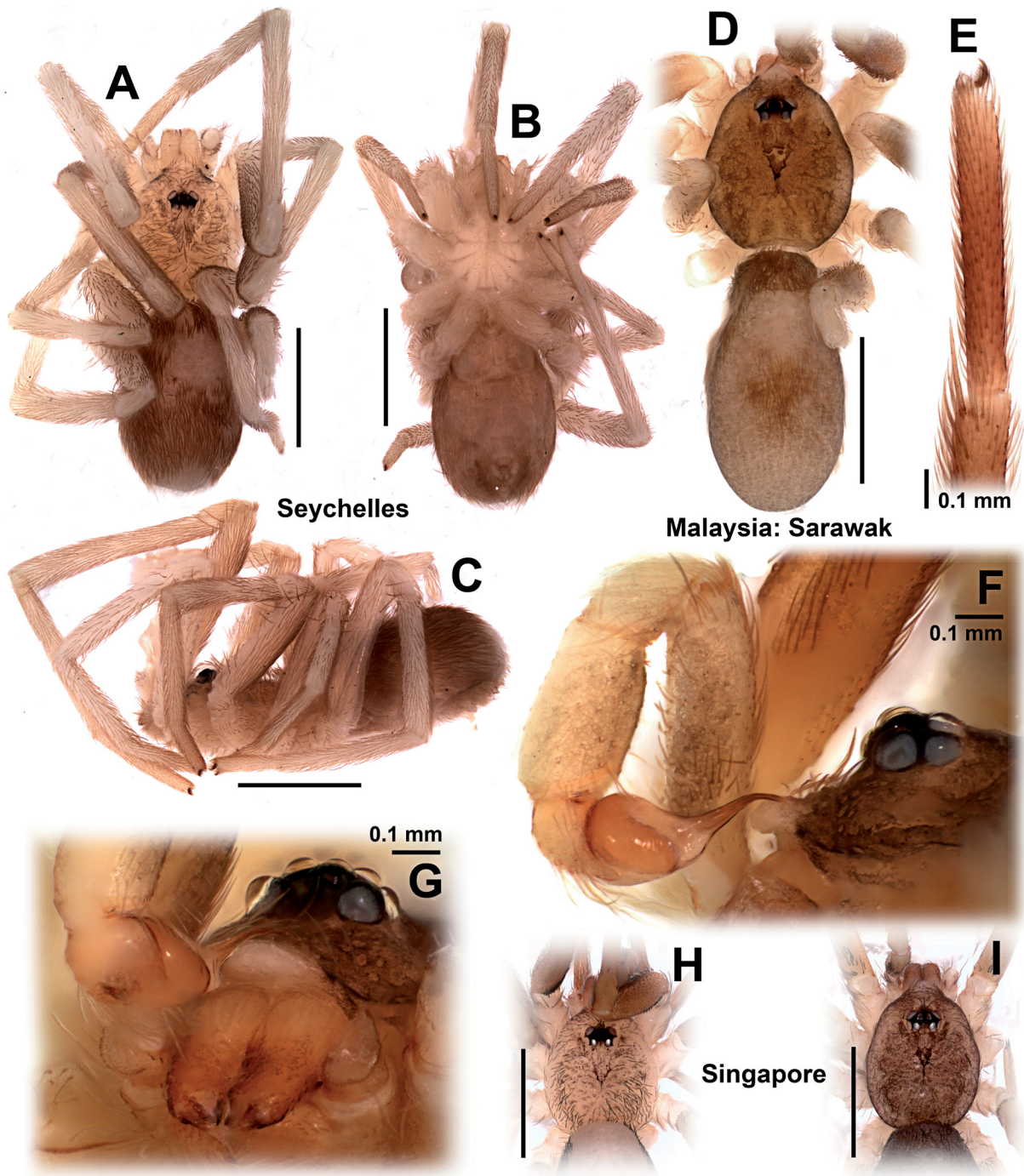


Fig. 7. *Labahitha garciai* (Simon, 1892) comb. nov., males. A–C. Holotype of *Pritha sechellana* Benoit, 1978 (MRAC 143165). A. Dorsal. B. Ventral. C. Lateral. D–G. Male from Malaysia, Sarawak (AMNH IFM-0936). D. Habitus, dorsal. E. Left leg I, retrolateral. F. Clypeus, lateral. G. Clypeus, subventral. H–I. Males from Singapore, Upper Selatar Reservoir Park (ZFMK 12710), carapace, dorsal. Scale bars = 1 mm, except where noted.

PAPUA NEW GUINEA • 5 ♀♀; Morobe Province, E of Wau, Boston ranch; [7.33714° S, 146.71594° E]; 6 Mar. 1979; H.W. Levi, Y.D. Lubin and M.H. Robinson leg.; MCZ 40221.

PHILIPPINES • 8 ♂♂, 6 imm.; Mindoro, San Jose; [12.34714° N, 121.06605° E]; Mar. 1945; E.S. Ross leg.; CAS 9060572 • 2 ♀♀, 1 imm.; same collection data as for preceding; CAS 9060573 • 3 ♀♀, 4 imm.; same collection data as for preceding; CAS 9060574 • 1 ♀; same collection data as for preceding; CAS 9060575 • 6 ♀♀, 1 imm.; Rizal, Montalban; [14.60375° N, 121.30841° E]; 16 Feb. 1951; J.F. Bergseng

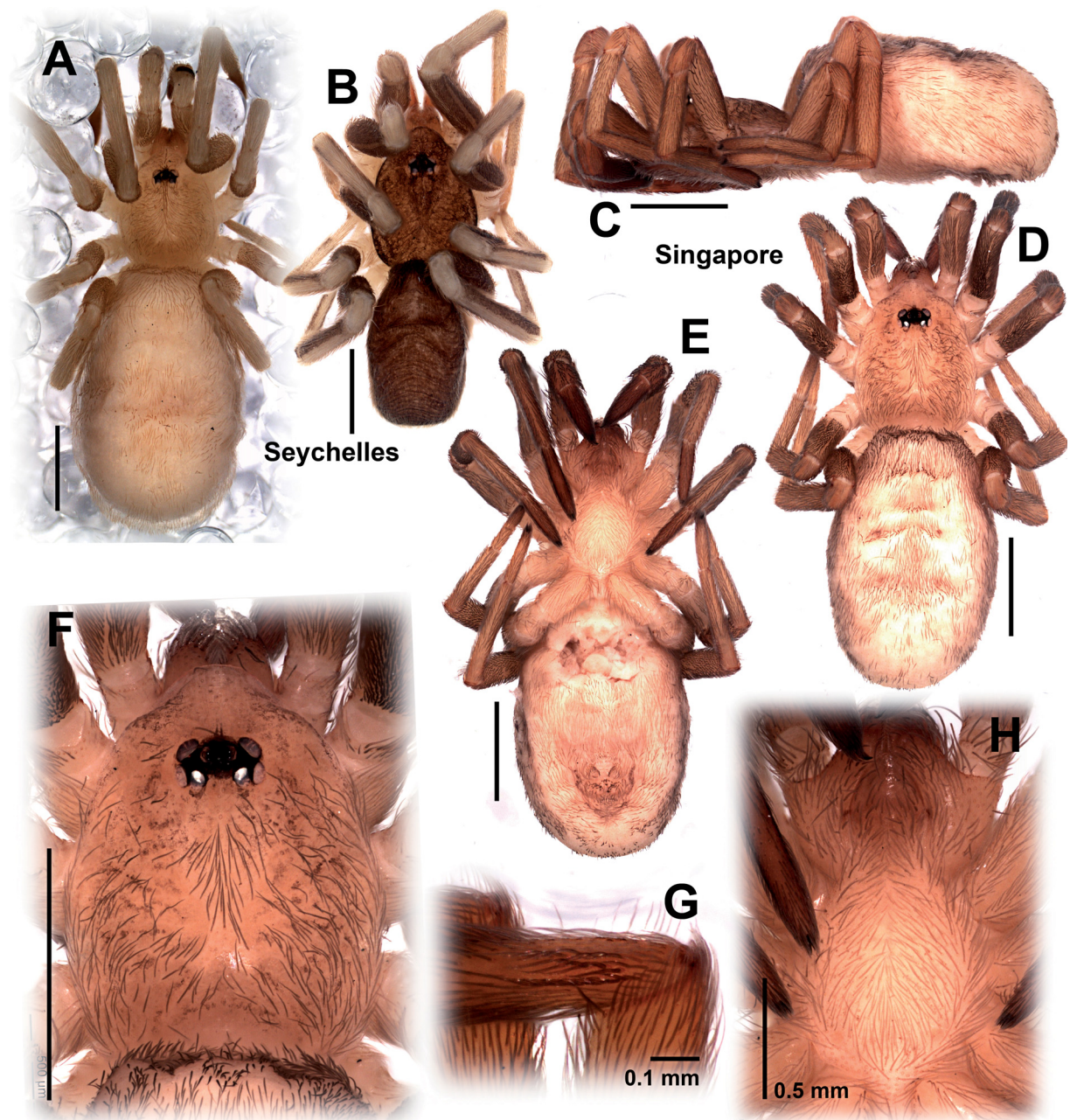


Fig. 8. *Labahitha garciai* (Simon, 1892) comb. nov., females. **A.** Allotype of *Pritha sechellana* Benoit, 1978 (MRAC 143165), dorsal. **B.** Paratype of *Pritha sechellana* Benoit, 1978 (MRAC 143106). **C–H.** Female from Singapore, Dairy Farm Nature Park (JK 130823.0003). **C.** Lateral. **D.** Dorsal. **E.** Ventral. **F.** Carapace, dorsal. **G.** Left calamistrum, retrolateral. **H.** Sternum, ventral. Scale bars: 1 mm, except where noted.

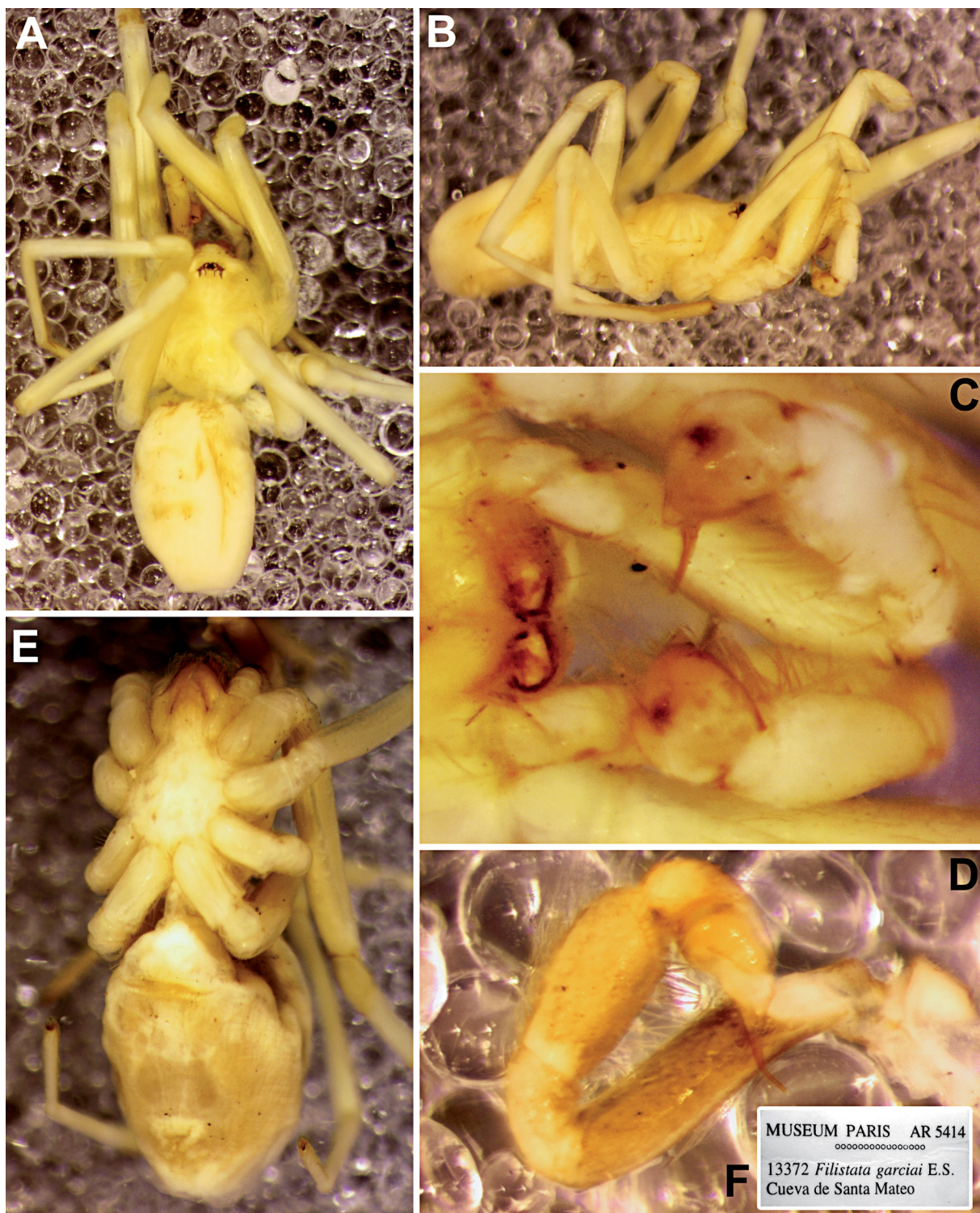


Fig. 9. *Labahitha garciai* (Simon, 1892) comb. nov., syntypes of *Filistata garciai* (MNHN AR 5414). A. Male, dorsal. B. Male, lateral. C. Male palps. D. Loose palp within the vial. E. Female, ventral. F. Label associated to specimens. Figures not to scale.

leg.; MCZ 39060 • 2 ♀♀; Rizal, Montalban, Umber; [14.60375° N, 121.30841° E]; 21 Dec. 1950; MCZ 40197.

SINGAPORE • 2 ♂♂, 2 ♀♀, 1 imm.; Upper Selatar Reservoir Park; 1.4° N, 103.80667° E; 15 Feb. 2015; B.A. Huber and D. Court leg.; ZFMK 12710 • 1 ♀; Dairy Farm Nature Park; 1.36611° N, 103.78056° E; 23 Aug. 2013; J.K.H. Koh leg.; wall of abandoned hut; JK 130823.0003 • 1 ♂; Pulau Ubin, Camp Resilience, National Police Cadet Corps; 1.41861° N, 103.96833° E; 10 Mar. 2015; J.K.H. Koh leg.; old building wall; JK 150310.0001 • 1 ♀; same collection data as for preceding; JK 150310.0002.

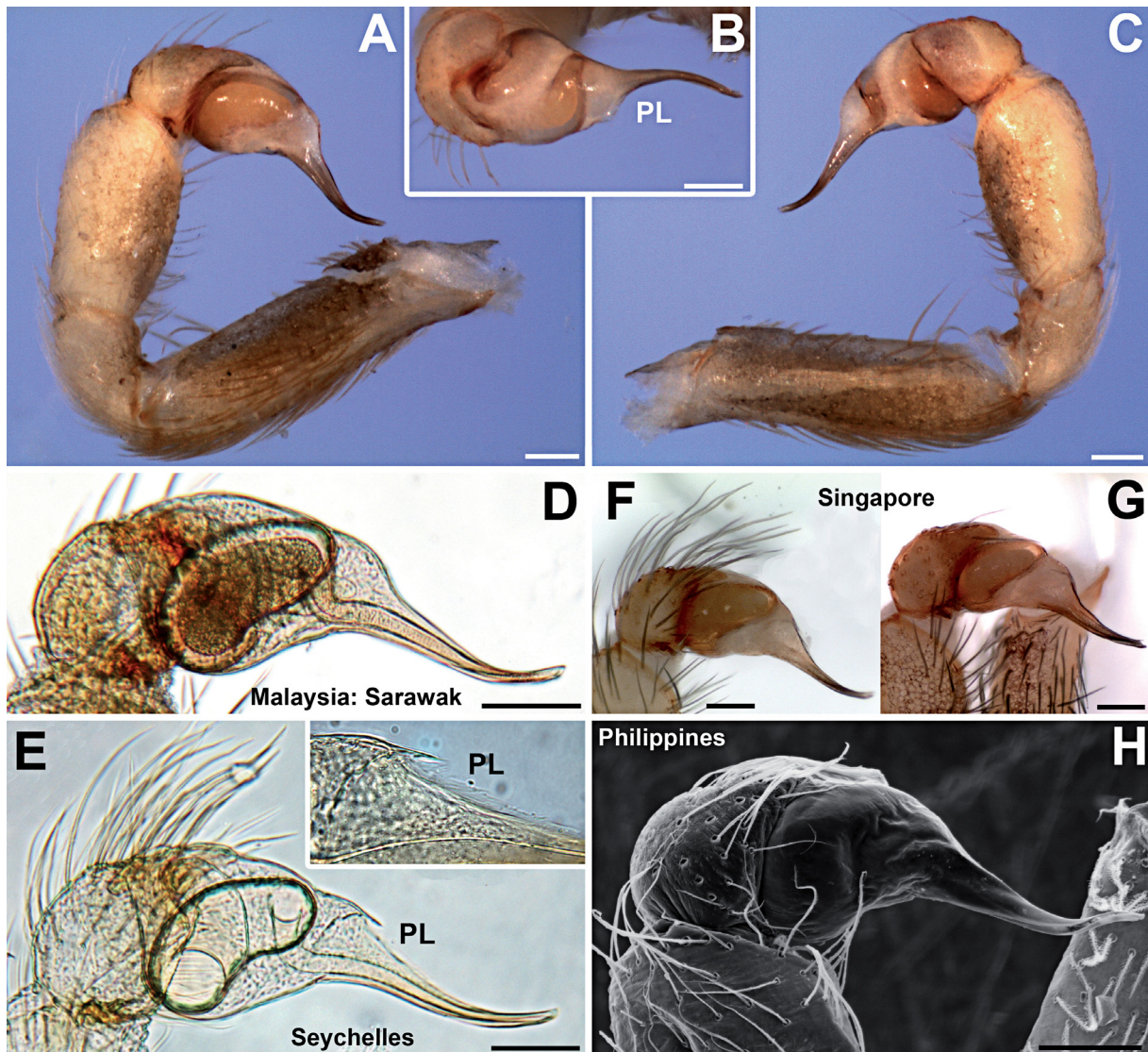


Fig. 10. *Labahitha garciai* (Simon, 1892) comb. nov., left male palps (D–E clove oil cleared). A–D. Male from Malaysia, Sarawak (AMNH IFM-0936). A. Prolateral. B. Dorsal. C. Retrolateral. D. Bulb, prolateral. E. Holotype of *Pritha sechellana* Benoit, 1978 (right palp, mirrored) (MRAC 143165). F–G. Males from Singapore, Upper Selatar Reservoir Park (ZFMK 12710), bulbs, prolateral (G, right palp, mirrored). H. Male from Philippines, Mindoro, San Jose (CAS 9060572), bulb, prolateral. Abbreviation: PL = paraembolic lamina. Scale bars = 0.1 mm, except where noted.

Description

Male (from Kapit, Sarawak, Malaysia, AMNH IFM-0936)

COLOURATION. Carapace light brown, with brown median pattern and lateral borders and faint submarginal bands. Chelicerae orange brown. Labium, endites and sternum cream. Legs cream, except for orange brown femur I and light brown tarsus I, without rings. Abdomen light brown; dorsum with two patches of white setae, one large and anterior and one smaller and posterior; venter cream.

HABITUS. Anterior margin of the carapace subrounded, with unsclerotized clypeus. Eye apodemes present. Sternum subrounded, sigilla not visible.

MEASUREMENTS. Total length 3.16. Carapace length 1.32, width 1.03. Clypeus length 0.24. Eye diameters and interdistances: AME 0.06, PME 0.08, ALE 0.11, PLE 0.09, AME–AME 0.02, PME–PME 0.09. Sternum length 0.82, width 0.69. Palp: femur length 0.68, height 0.23, tibia length 0.38, height 0.20. Leg I: 5.76 (1.49, 0.38, 1.67, 1.45, 0.77). II: 4.18 (1.14, 0.39, 1.07, 1.06, 0.52). III: 3.64 (1.05, 0.32, 0.83, 0.97, 0.47). IV: 4.77 (1.23, 0.47, 1.27, 1.28, 0.52). Abdomen: length 1.81, width 0.97.

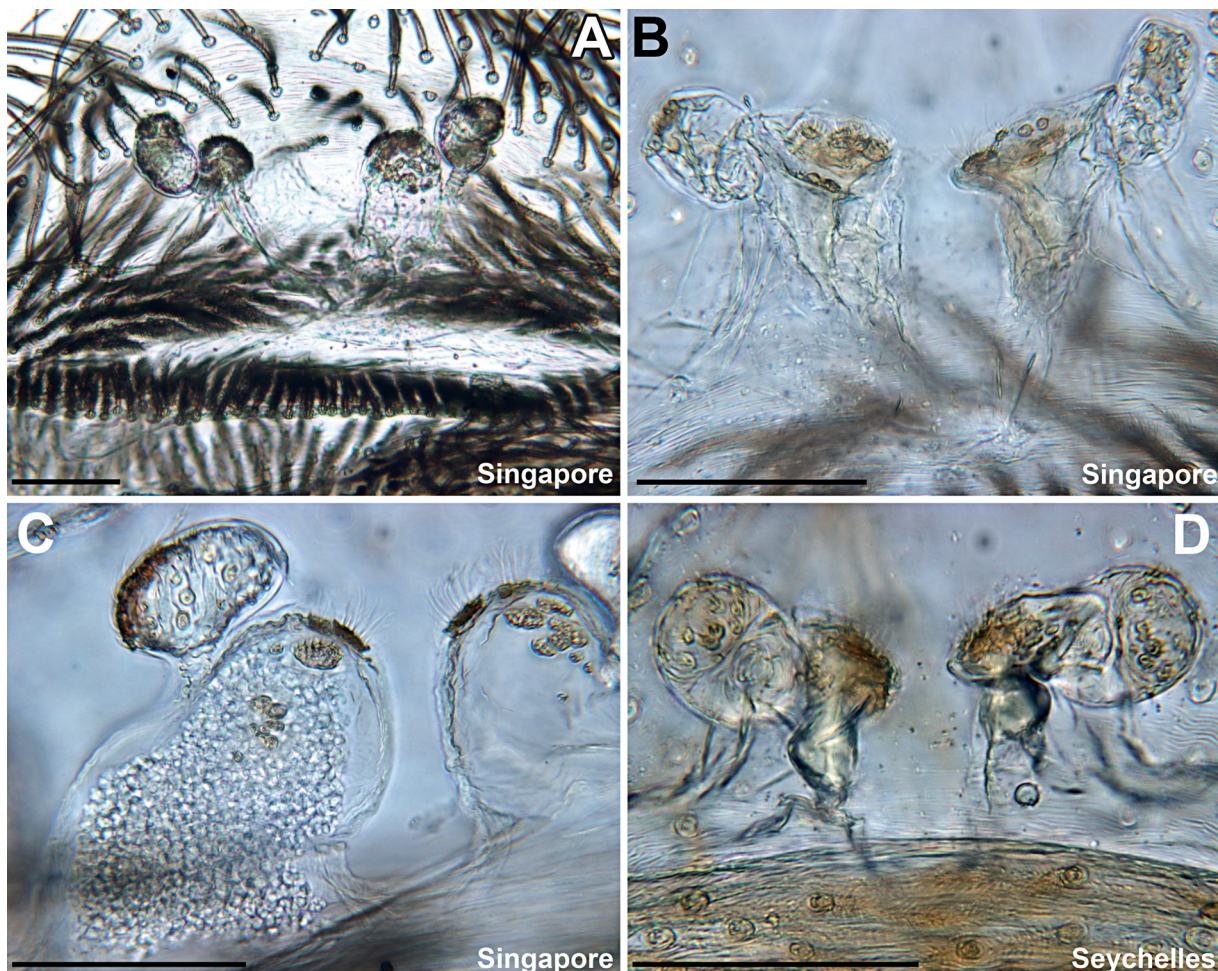


Fig. 11. *Labahitha garciai* (Simon, 1892) comb. nov., endogyne, dorsal, lactic acid cleared. **A.** From Singapore, Pulau Ubin (JK 150310.0002). **B.** From Singapore, Dairy Farm Nature Park (JK 130823.0003). **C.** From Singapore, Upper Selatar Reservoir Park (ZFMK 12710). **D.** Paratype of *Pritha sechellana* Benoit, 1978 (MRAC 143106). Scale bars: 0.1 mm.

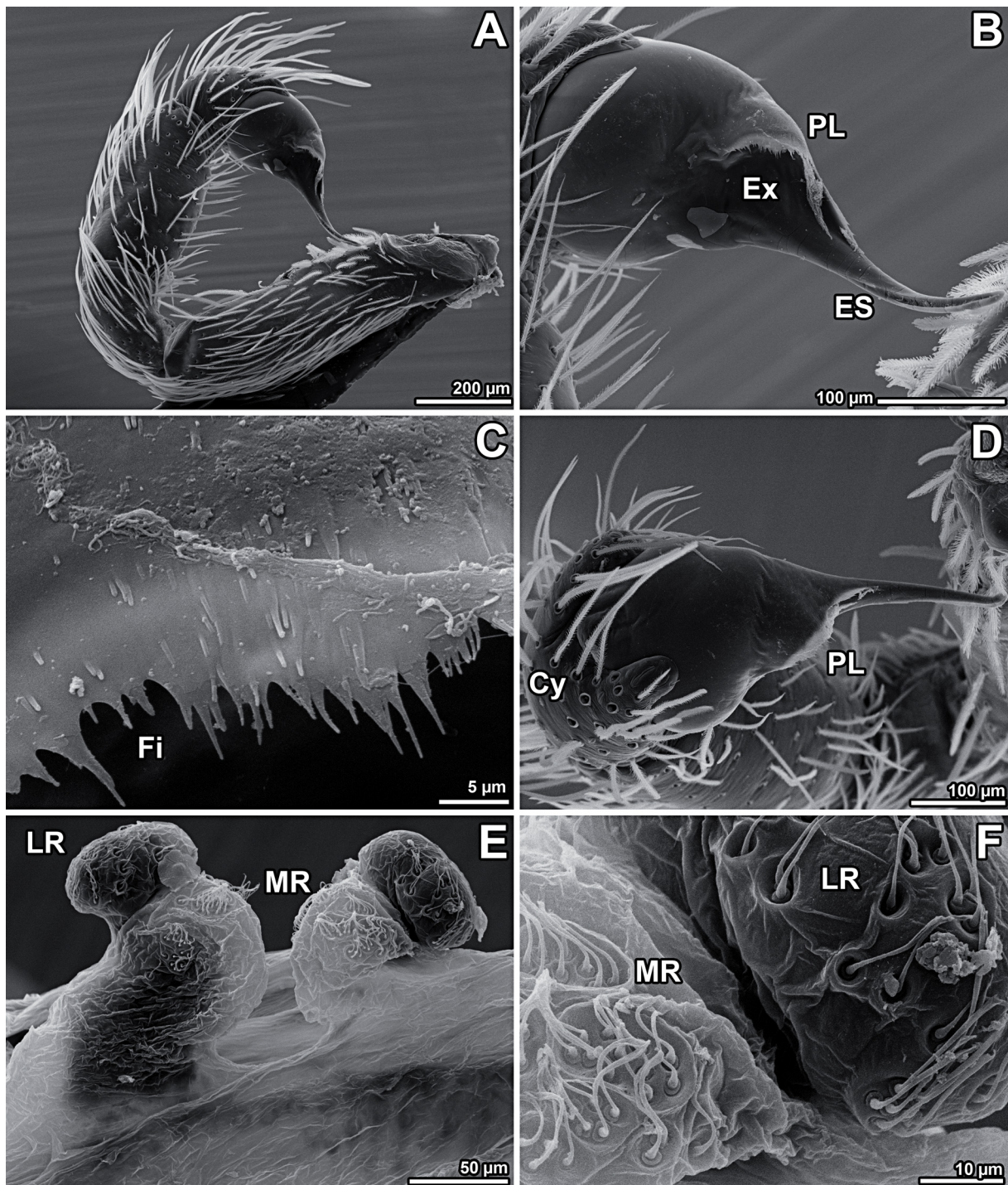


Fig. 12. *Labahitha garciai* (Simon, 1892) comb. nov., from Singapore, Upper Selatar Reservoir Park (ZFMK 12710), genitalia. **A–D.** Male. **A.** Left palp, prolateral view. **B.** Bulb, prolateral view. **C.** Same, detail of paraembolic lamina. **D.** Bulb, dorsal. **E–F.** Female. **E.** Endogyne, cleared, dorsal. **F.** Same, detail of receptacle pores. Abbreviations: Cy = cymbium; ES = embolic slit; Ex = tegular excavation; Fi = fimbriations on paraembolic lamina; LR = lateral receptacle; MR = median receptacle; PL = paraembolic lamina.

LEG MACROSETAE. Mt I 1a.vr.

PALP (Fig. 10). Cymbium horseshoe shaped, bulb piriform, narrowing rapidly towards embolus, sperm duct N-shaped, with a single coil, proximally enlarged, prolateral excavation small, just beneath paraembolic lamina, paraembolic lamina small, spoon-shaped, with fimbriated margin, embolus long and gently curved.

State of the specimen: lost many abdomen setae, many legs, and abdomen separated from the cephalothorax; left palp dissected.

Female (from Dairy Farm Nature Park, Singapore, JK 1308230003)

COLOURATION. As in male, except where noted. Carapace cream, sparsely stippled with brown. Legs yellow, except for white coxae. Abdomen cream, dorsum with sparse white setae on the abdomen.

HABITUS. Anterior margin of the carapace unmodified. Eye apodemes present. Sternum suboval, with a well-marked pair of posterior sigilla.

MEASUREMENTS. Total length 4.22. Carapace length 1.61, width 1.25. Clypeus length 0.31. Eye diameters and interdistances: AME 0.07, PME 0.08, ALE 0.10, PLE 0.08, AME–AME 0.02, PME–PME 0.12. Sternum length 0.93, width 0.73. Palp: femur length 0.74, height 0.32, tibia length 0.46, height 0.27. Leg I: 4.49 (1.18, 0.41, 1.17, 0.99, 0.74). II: 3.78 (1.08, 0.42, 0.83, 0.88, 0.57). III: 3.14 (0.86, 0.39, 0.66, 0.76, 0.47). IV: 4.46 (1.31, 0.44, 1.17, 1.05, 0.49). Abdomen: length 2.69, width 1.79.

LEG MACROSETAE. Absent. Calamistrum with three rows with 7-4-6 setae.

EPIGASTRIC FURROW. Adorned with thick setae.

ENDOGYNE (Fig. 11). Median receptacles large, with pores clustered in large groups set apart from each other; lateral receptacles on a short stalk, large, oval, with more pores in the ectal face.

Variation

This species has two colour morphs (yellow and brown; Figs 7H–I, 8A–B). This had been noted by Simon (1892: 37: “♀. Long. 5 mill. — Cephalothorax, pedes-maxillares pedesque pallide testaceo-lurida [...] Var. ♀. Cephalothorax et femora infusca.”) and Benoit (1978: 678: “*P. sechellana* se présente sous deux colorations différentes, à savoir une forme jaune pâle et une forme mélanique”). The shape of the female receptacles varies: they may bulge distally (Fig. 11A), be slightly sinuous (Fig. 11C) or collapse (Fig. 11B, D). Males (N = 5): total length 2.63–3.16 (2.92), carapace length 1.22–1.35 (1.29), femur I length 1.49–1.69 (1.61), tibia I length 1.67–1.87 (1.76), femur/carapace ratio 1.13–1.34 (1.25). Females (N = 5): total length 4.11–4.75 (4.41), carapace length 1.4–1.79 (1.54), femur I length 1.18–1.78 (1.41), tibia I length 1.17–1.81 (1.44), femur/carapace ratio 0.73–0.99 (0.91).

Natural history

The species has been collected in synanthropic settings in Singapore and in the Seychelles (“very common in minute crevices of the walls of the Reef Hotel”; Saaristo 1978: 100).

Distribution

Known from Malaysia (Sarawak), Papua New Guinea, the Philippines, Seychelles and Singapore (Fig. 1C).

Labahitha gibsonhilli (Savory, 1943)

Fig. 13

Filistata gibsonhilli Savory, 1943: 355. Female lectotype and paralectotype (designated and illustrated by Marusik *et al.* 2019) from Australia, Christmas Island, 1939, C.A. Gibson-Hill leg., deposited in the Oxford University Museum of Natural History, not examined.

Labahitha gibsonhilli – Zonstein & Marusik 2019: 86. — Marusik *et al.* 2019: 258, figs 1–4.

Notes

Marusik *et al.* (2019) examined and figured the holotype of this species. We here illustrate the male for the first time (Fig. 13).

Diagnosis

The male is similar to that of *Labahitha fuscata* in the sharp, triangular apex of the paraembolic lamina and the gently curved distal portion of the sperm duct. It differs by the longer and slender palpal bulb and the relatively smaller paraembolic lamina (Fig. 13B) (vs palpal bulb shorter and stouter, with larger paraembolic lamina in *L. fuscata*). Females are more similar to those of *L. oonopiformis* and *L. garciai* by the large membranous base of the receptacles and well-developed median receptacle; they differ from these species by the curved median receptacles with pores restricted to medial face (Marusik *et al.* 2019: fig. 4) (vs median receptacles globose with pores distributed evenly).

Material examined

AUSTRALIA • 1 ♂; Christmas Island; AM.

Distribution

Known only from Christmas Island, Australia (Fig. 1B).

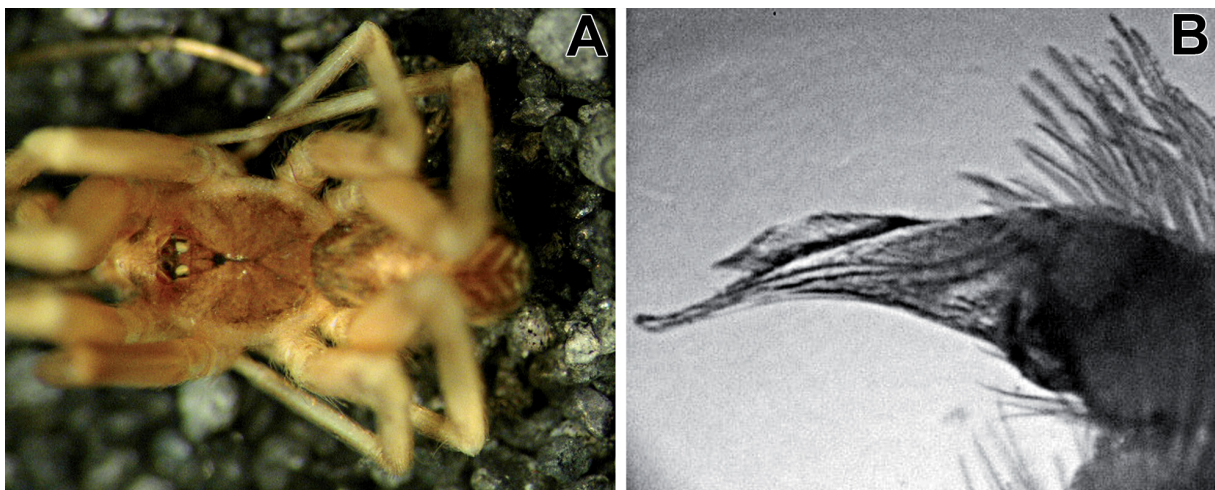


Fig. 13. *Labahitha gibsonhilli* (Savory, 1943), ♂ (AM). **A.** Habitus, dorsal. **B.** Left palp, retrolateral. Figures not to scale.

Labahitha incerta sp. nov.

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Figs 14–15, 28D

Notes

This hitherto undescribed species, known from a single male, shares some characters with *Wandella*, such as a contrasting colouration (Fig. 14A) and the lack of a true macroseta in metatarsus I (Fig. 14D). On the other hand it presents characters typical of *Labahitha*, such as a subrounded clypeus (Fig. 14E) (vs straight or sharp in *Wandella*), and the paraembolic lamina divided in two parts and apparently with a ragged margin (Fig. 15B, D). We decided to allocate this species in *Labahitha* provisionally until more data is collected, but the possibility that it belongs in the mainly Australian genus *Wandella* cannot be excluded.

Diagnosis

The male is most similar to *L. marginata* in the paraembolic lamina divided in two parts, with a rounded apex near the embolus; it differs by the less obvious fimbriations in the paraembolic lamina and the

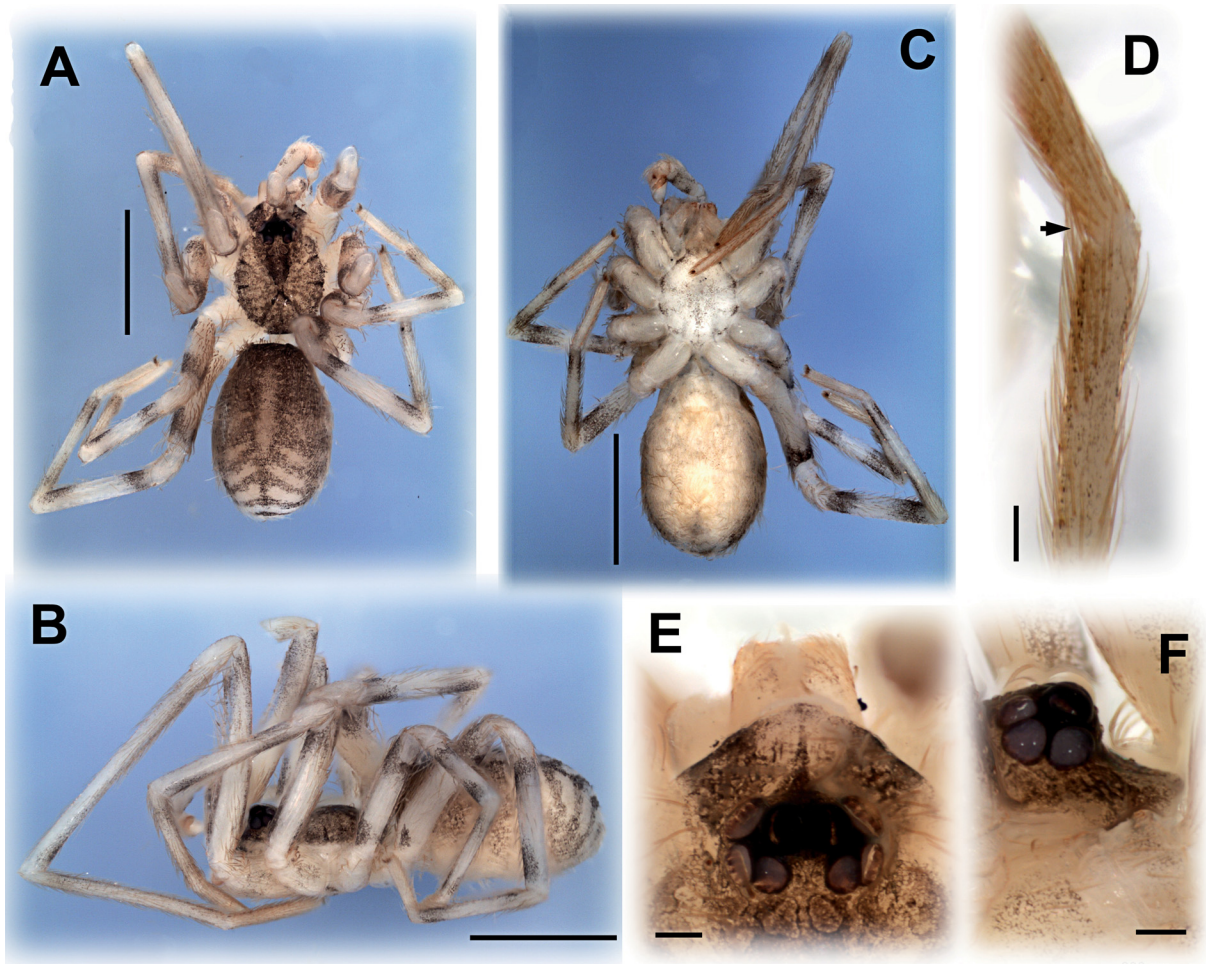


Fig. 14. *Labahitha incerta* sp. nov., holotype, ♂, from Australia, Queensland, Nipping Gully (QM S.78659). **A.** Habitus, dorsal. **B.** Same, lateral. **C.** Same, ventral. **D.** Left metatarsus I, retrolateral. The arrow indicates where a macroseta should be present. **E.** Eye region and clypeus, dorsal. **F.** Same, lateral. Scale bars: A–C = 1 mm; D–F = 0.1 mm.

bulb without a median constriction (Fig. 15) (vs fimbriations more prominent, bulb with a clear median constriction).

Etymology

The name is an adjective meaning ‘uncertain’ and refers to the tentative placement of this species in this genus.

Type material

Holotype

AUSTRALIA • ♂; Queensland, Nipping Gully, site 5; 25.7° S, 151.43333° E; 240 m a.s.l.; 7 Jul. 1999; G.B. Monteith leg.; vine scrub; pyrethrum; QM S.78659.

Additional material examined

None.

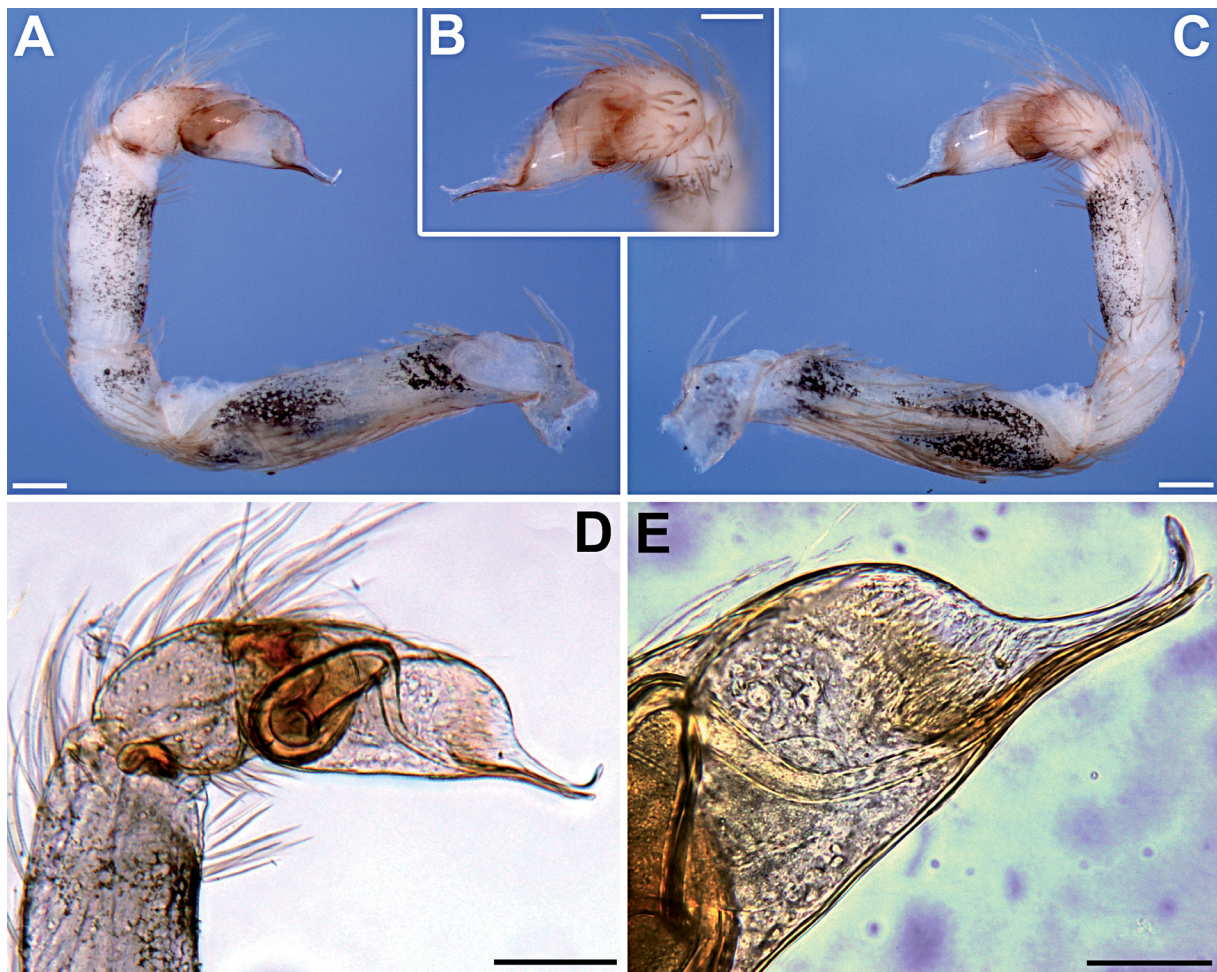


Fig. 15. *Labahitha incerta* sp. nov., holotype, ♂, from Australia, Queensland, Nipping Gully (QM S.78659), left palp. **A.** Prolateral. **B.** Subdorsal. **C.** Retrolateral. **D.** Clove oil cleared, prolateral. **E.** Detail of embolus and paraembolic lamina, prolateral. Scale bars = 0.1 mm.

Description

Male holotype (from Nipping Gully, Queensland, Australia, QM S.78659)

COLOURATION. Carapace cream with dark brown median pattern and clypeal markings, light brown median area, and slightly dark submarginal bands. Chelicerae, labium and endites cream, with a small light brown patch. Sternum cream with diffuse light brown patches along the border. Legs cream, with incomplete light brown rings in the base and apex of the femora, tibiae and metatarsi (except for leg I, with barely visible markings in femur and tibia only). Abdomen light brown, clothed with whitish setae, with a cream, oval, elongate patch in the first half and four transverse cream patches posteriorly; venter cream.

HABITUS. Anterior margin of the carapace subrounded, with unsclerotized tip. Eye apodemes present. Sternum subrounded.

MEASUREMENTS. Total length 2.91. Carapace length 1.22, width 1.02. Clypeus length 0.20. Eye diameters and interdistances: AME 0.08, PME 0.08, ALE 0.11, PLE 0.08, AME–AME 0.01, PME–PME 0.09. Palp: femur length 0.61, height 0.17, tibia length 0.43, height 0.15. Leg I: 6.27 (1.54, 0.37, 1.86, 1.53, 0.97). II: — (1.08, 0.32, 1.09, x, x). III: — (0.95, 0.35, 0.92, x, x). IV: 4.59 (1.24, 0.33, 1.23, 1.21, 0.58). Abdomen: length 1.63, width 1.08.

LEG MACROSETAE. Absent, but a ventral stronger seta in the apex of metatarsus I is present.

PALP (Fig. 15). Cymbium horseshoe shaped, bulb suddenly narrowing towards embolus, sperm duct N-shaped, with a single coil, prolateral excavation very large and high, apparently with comb-like arrays of micro-teeth, paraembolic lamina free, prolaterally curved, with rounded apex, ending close to embolus apex, embolus short.

State of the specimen: has lost some setae from the legs and abdomen, left palp dissected, right legs I and II separated from the body at the patella-tibia joint.

Female

Unknown.

Distribution

Known only from the type locality in Australia, Queensland (Fig. 1B).

Labahitha marginata (Kishida, 1936) comb. nov.
Figs 3, 16–24, 28B–C, 29D–E

Filistata marginata Kishida in Komatsu, 1936: 151, pl. 22. Syntypes from Taiwan, Tainan, Aug. 1935, K. Kishida leg., lost or untraceable, not examined.

Filistata bakeri Berland, 1938: 187, figs 159–162. Male holotype and female allotype from Vanuatu, Santo, Jun.–Jul. 1927, Baker leg., deposited in MNHN AR 3436, examined. **Syn. nov.**

Filistata bakeri – Berland 1942: 24.

Pritha bakeri – Lehtinen 1967: 260. — Ramírez *et al.* 2021: 17.

Filistata marginata – Kayashima 1943: 11, pl. 7 fig. 1. — Lee 1966: 15, fig. 2d. — Wang 1987: 252, fig. 1H–K. — Song *et al.* 1999: 46, fig. 17u.

Prithinae sp. Costa Rica MR11 – Wheeler *et al.* 2017: 583.

Prithinae IFMsp22 – Magalhaes & Ramírez 2017: 668.

Pritha marginata – Zonstein & Marusik 2019: 88.

Notes

Zonstein & Marusik (2019: 88) considered the type locality of *Filistata marginata* as “Japan, Honshu, Akita Prefecture, Senboku”. This was apparently a mistake: H. Ono (in litt.) informed us that the original text in Komatsu (1936) reads “Distribution: Taiwan. In August of 1935, Mr. Kyukichi Kishida found this spider in a hotel at Tainan where he stayed. [...] Afterwards, Mr. Izumi Kayashima announced that this spider is very common in houses in Taihoku.” Taihoku was an administrative region of the island while it was under Japanese rule, and corresponds to modern-day Taipei. Apparently, the old Japanese kanji ‘tai’ was misread by Zonstein & Marusik as ‘sen’, causing the confusion. Thus, the correct type locality of this species is Taiwan, Tainan. This species is cited in books on Taiwanese spiders (Kayashima 1943; Lee 1966), supporting this view. H. Ono (in litt.) kindly informed us that “after the death of Dr. Kishida in 1968, no specimen has been found, which he presumably held”, and thus we may consider that the type specimens of *F. marginata* have been lost. We have examined specimens from Taiwan, Pingtung

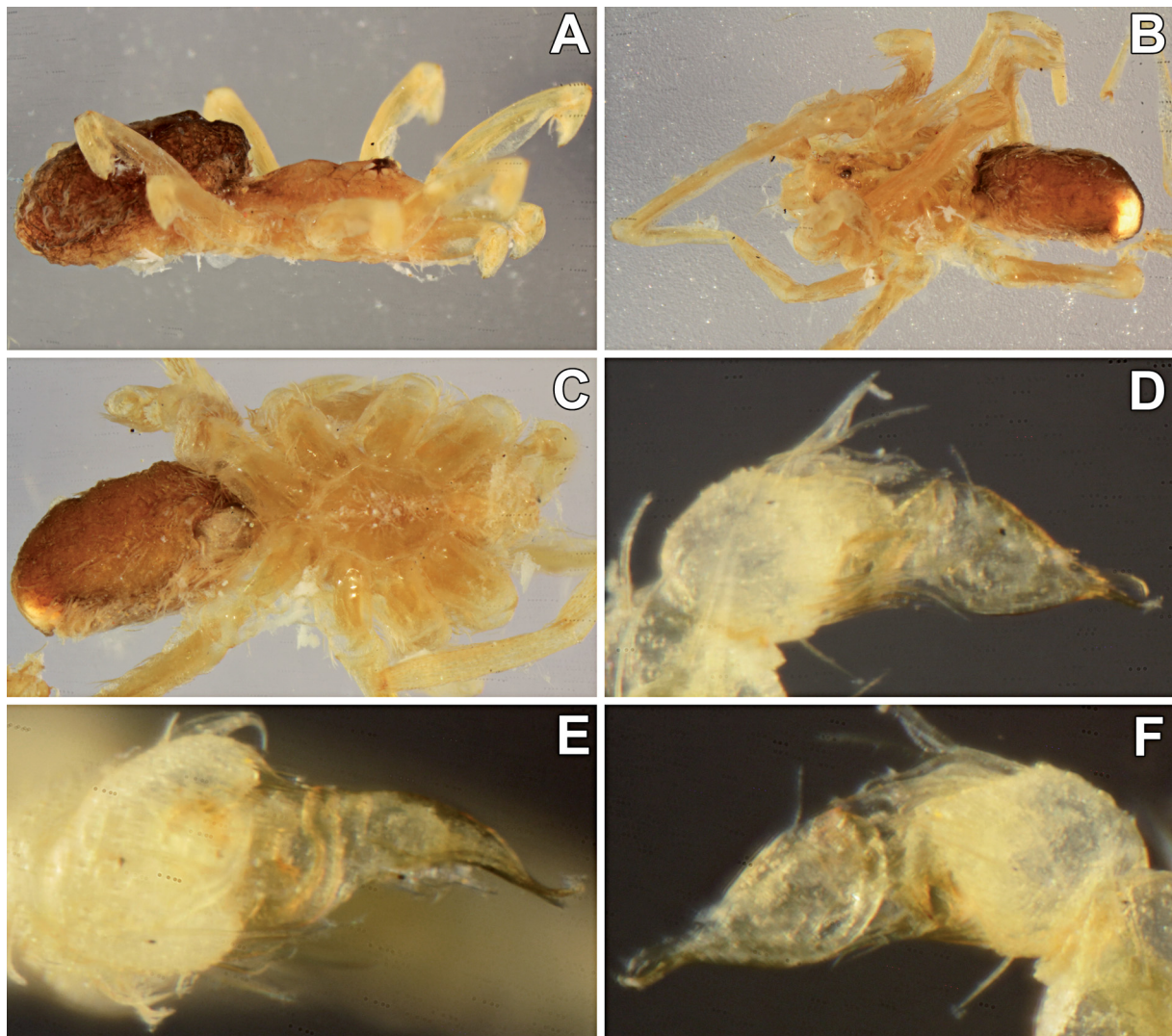


Fig. 16. *Labahitha marginata* (Kishida, 1936) comb. nov., type material of *Filistata bakeri* Berland, 1938 from Vanuatu, Espiritu Santo. **A.** Paratype, ♀ (MNHN AR 3437), habitus, lateral. **B–F.** Holotype, ♂ (MNHN AR 3436). **B.** Habitus, dorsal. **C.** Habitus, ventral. **D.** Left palp, prolateral view. **E.** Dorsal. **F.** Retrolateral. Figures not to scale.

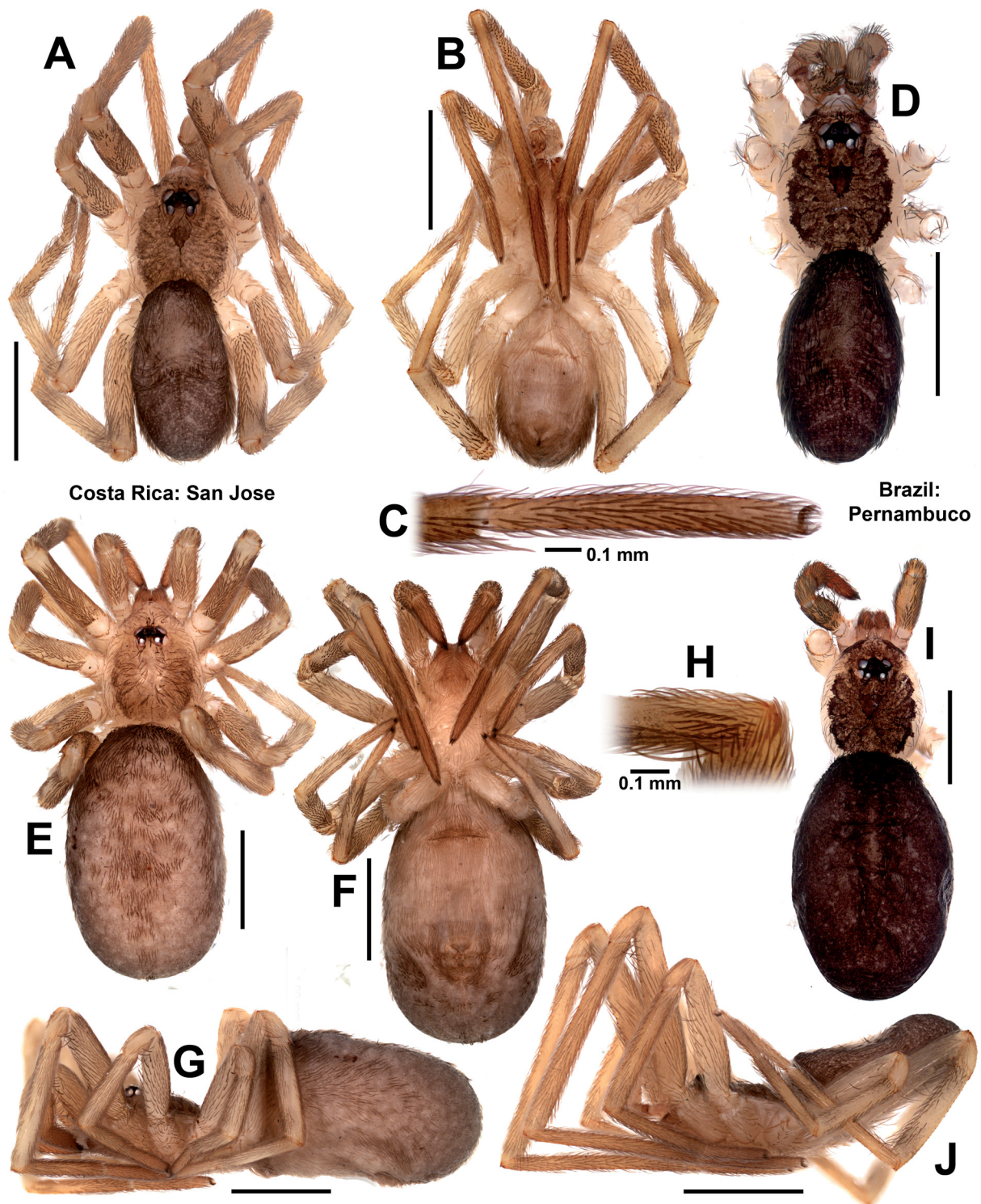


Fig. 17. *Labahitha marginata* (Kishida, 1936) comb. nov., somatic morphology. **A–C, E–H, J.** From Parque Nacional La Cangreja, San Jose, Costa Rica (INBIO 79582). **D, I.** From Tamandaré, Pernambuco, Brazil (CHNUFPI 1590). **A.** Male habitus, dorsal. **B.** Ventral. **C.** Right leg I, retrolateral. **D.** Male habitus, dorsal. **E.** Female habitus, dorsal. **F.** Ventral. **G.** Lateral. **H.** Left calamistrum, retrolateral. **I.** Female habitus, dorsal. **J.** Male habitus, lateral. Scale bars = 1 mm, except where noted.

(50 km to the south of Tainan) whose habitus morphology fits well with Komatsu's (1936) illustration, thus ascertaining the identity of this species. Since this is the only filistatid known to occur in Taiwan and the original illustrations match our specimens, this name can be objectively applied to this species, precluding the need for a neotype (see International Code of Zoological Nomenclature, article 75.1). Wang (1987: fig. 1i) was the first to illustrate the female genitalia of this species, showing the single pair of receptacles with a trilobulate structure; however, the locality of the illustrated specimens is unclear.

The types of *Filistata bakeri* are in a bad state of preservation, and apparently have dried at some point. The palp of the holotype is deformed, especially the sperm duct; the colours are faded, but Berland's illustration match the colour pattern of fresh specimens examined by us. Berland (1938) mentions a male paratype,

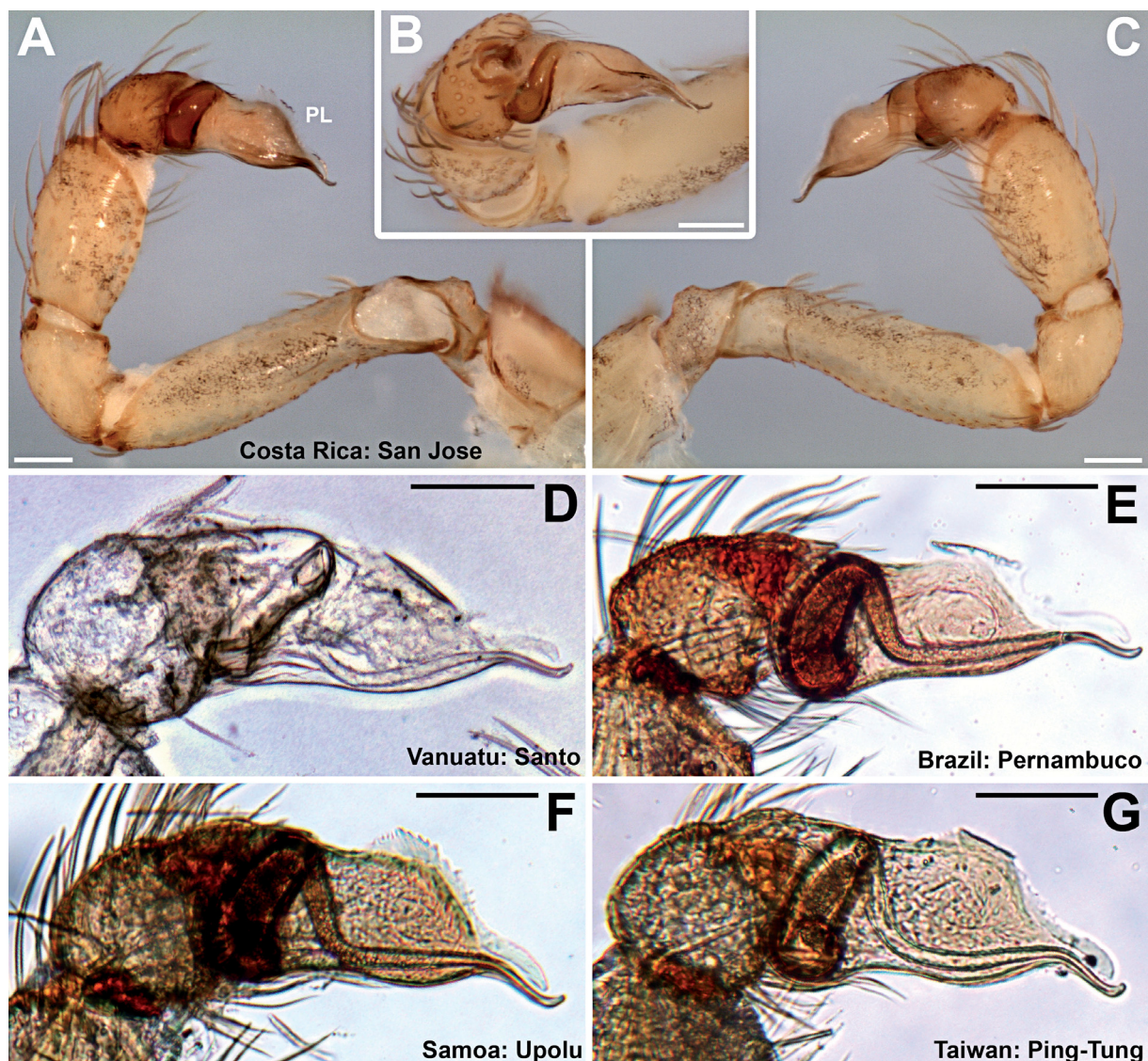


Fig. 18. *Labahitha marginata* (Kishida, 1936) comb. nov., male left palps (D–G clove oil cleared). A–C. From Parque Nacional La Cangreja, San Jose, Costa Rica (INBIO 79582). **D.** Holotype of *Filistata bakeri* Berland, 1938 (MNHN AR 3436) from Vanuatu, Espiritu Santo. **E.** Tamandaré, Pernambuco, Brazil (CHNUFPI 1590). **F.** Upolu, Samoa (right palp, mirrored) (AMNH IFM-0886). **G.** Chao-Chow, Ping-Tung, Taiwan (AMNH IFM-0871). Scale bars = 0.1 mm.

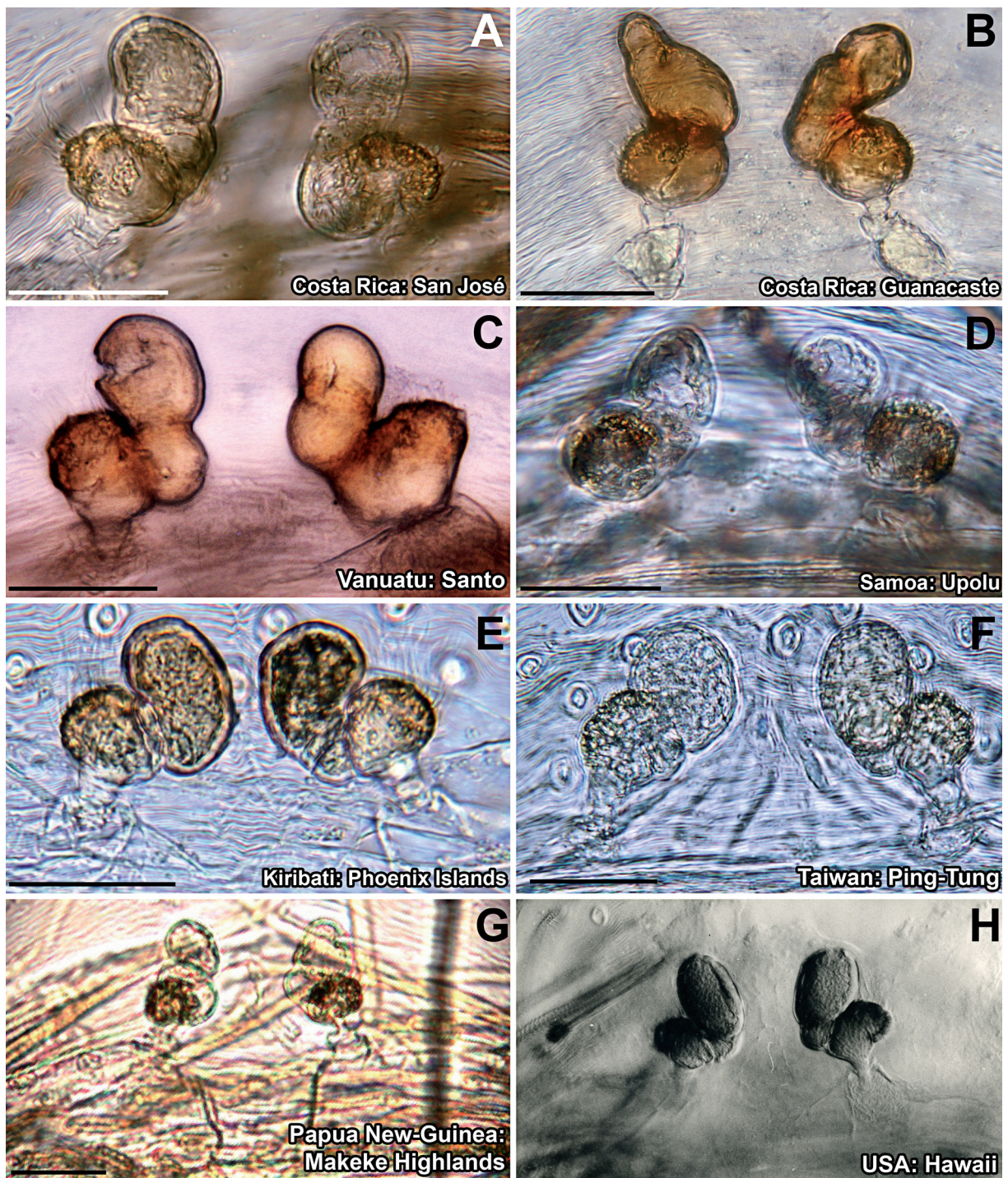


Fig. 19. *Labahitha marginata* (Kishida, 1936) comb. nov., female endogyne, dorsal, lactic acid cleared. **A.** From Parque Nacional La Cangreja, San Jose, Costa Rica (INBIO 79582). **B.** Bagaces, Guanacaste, Costa Rica (INBIO 104619). **C.** Vanuatu, Espiritu Santo (MNHN AR 3436). **D.** Upolu, Samoa (AMNH IFM-0885). **E.** Kanton, Phoenix Islands, Kiribati (AMNH). **F.** Chao-Chow, Ping-Tung, Taiwan (AMNH IFM-0872). **G.** Makeke Highlands, Papua New Guinea (AM KS.59201). **H.** Hawai'i, USA (AM). Scale bars = 0.05 mm.

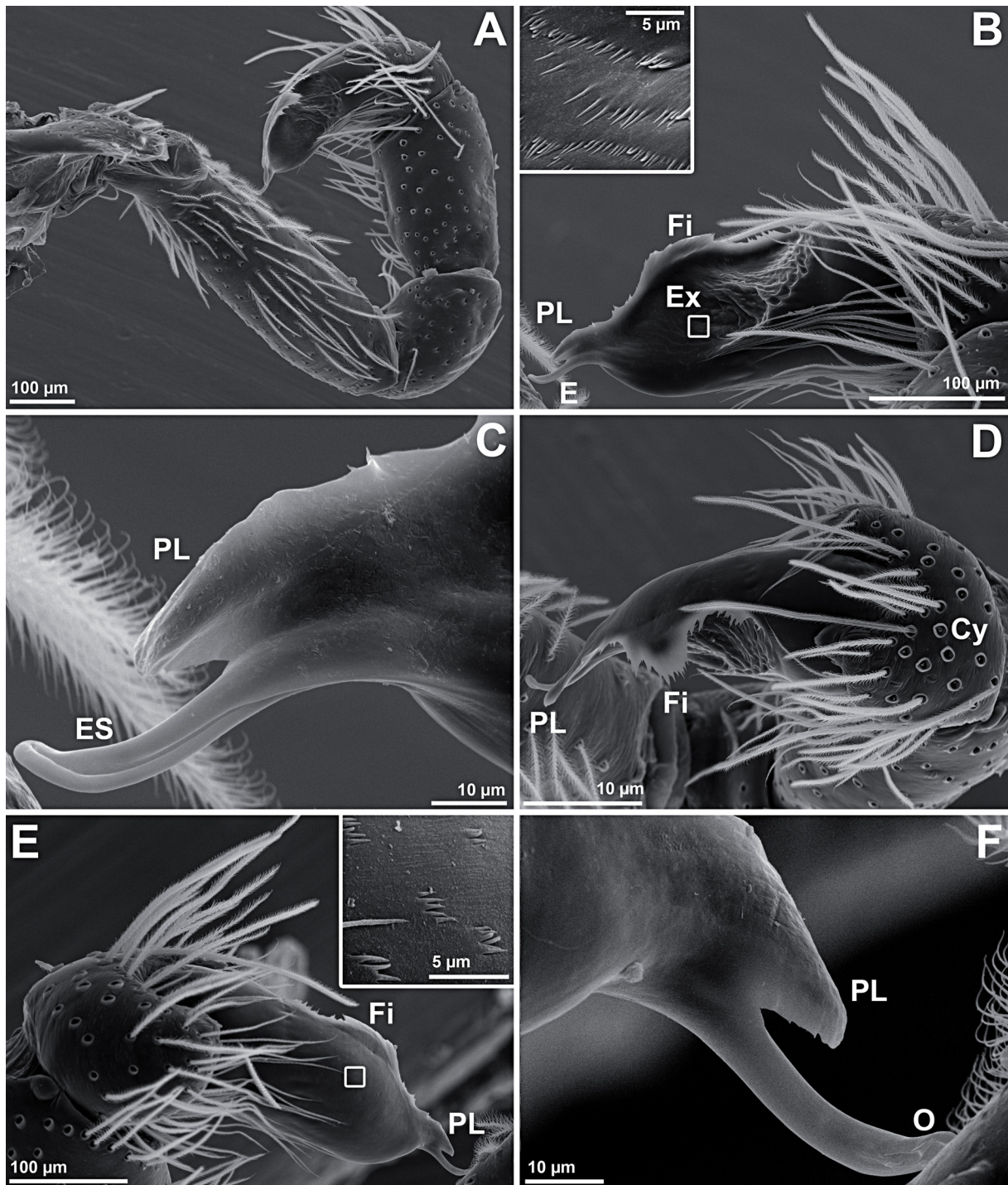


Fig. 20. *Labahitha marginata* (Kishida, 1936) comb. nov., male from Costa Rica, Alajuela, Upala (INBIO 108899), right male palp. **A.** Prolateral. **B.** Bulb, prolateral. Inset showing tegular micro-teeth. **C.** Embolus and apex of paraembolic lamina, prolateral. **D.** Bulb, dorsal. **E.** Bulb, retrolateral. **F.** Embolus and apex of paraembolic lamina. Abbreviations: Cy = cymbium; E = embolus; ES = embolic slit; Ex = tegular excavation; Fi = fimbriations on paraembolic lamina; O = embolus opening; PL = paraembolic lamina.

but the two vials we saw contain only one male, six females and one immature. Records of this species by Berland (1942) from Austral Islands could not be checked and are not included in the map; his report of this species for Christmas Island probably refers to *L. gibsonhilli*. Lehtinen (1967) included two species in his *Pritha bakeri* group: *Filistata bakeri* from Vanuatu and a species from Taiwan he thought to be new (his revision did not account for *F. marginata*). We here show that specimens from both islands are conspecific; specimens from Taiwan (Fig. 19F) and Vanuatu (Fig. 19C) show similar female genitalia, and the differences observed in males (Fig. 18D, G) are due to the bad preservation of the holotype of *Filistata bakeri*.

Diagnosis

The male is most similar to *L. incerta* sp. nov. in the paraembolic lamina divided in two parts, with a rounded apex near the embolus; it differs by strong fimbriations in the paraembolic lamina and the bulb with a median constriction (Fig. 18) (vs smaller fimbriations, bulb without clear median constriction). Females are unique among all filistatids by the genitalia with a single pair of stalked, trilobate receptacles (Fig. 19).

Examined type material

Holotype of *Filistata bakeri*

VANUATU • ♂; Espiritu Santo; [15.30036° S, 166.91821° E]; Jun.–Jul. 1927; Baker leg.; MNHN AR 3436.

Allotype of *Filistata bakeri*

VANUATU • ♀; same collection data as for holotype; MNHN AR 3436.

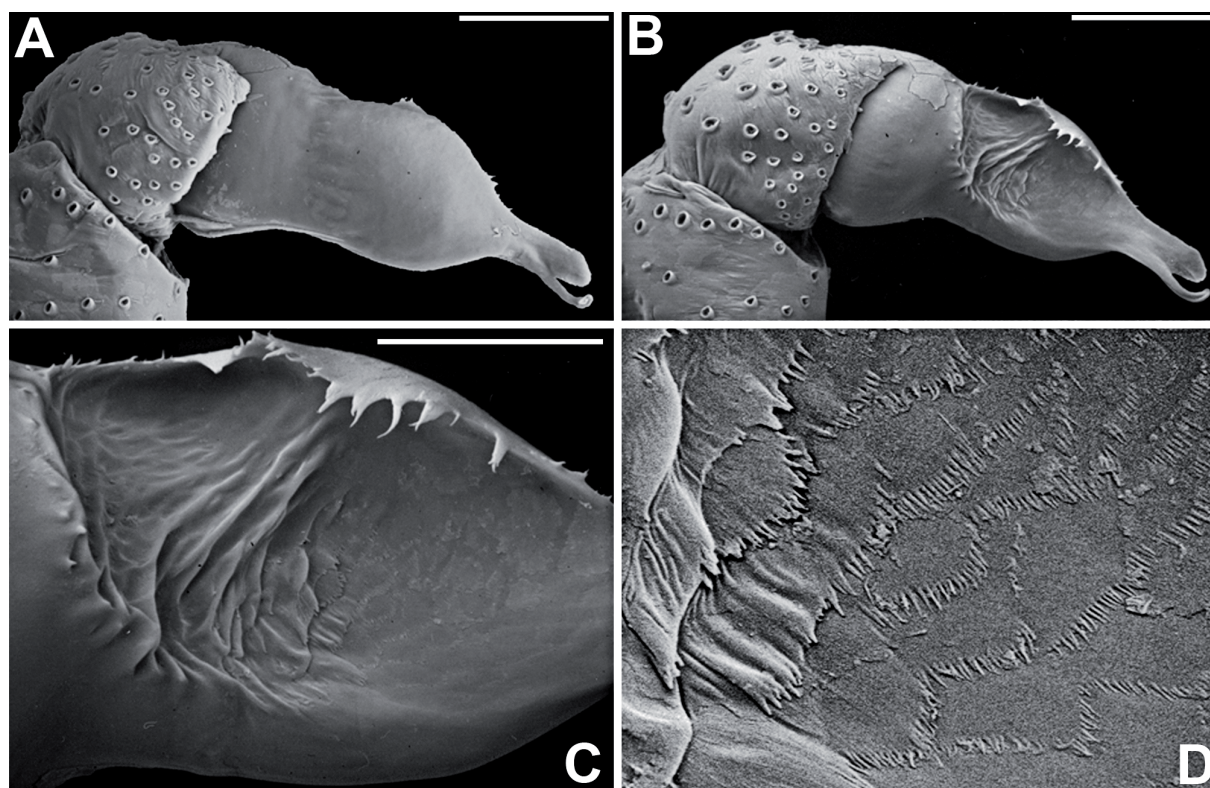


Fig. 21. *Labahitha marginata* (Kishida, 1936) comb. nov., male from Samoa (AMNH), left palp. **A.** Retrolateral, mirrored. **B.** Prolateral. **C.** Detail of paraembolic lamina and tegular excavation. **D.** Arrays of micro-teeth combs. Scale bars: A–B = 0.1 mm; C = 0.05 mm.

Paratypes of *Filistata bakeri*

VANUATU • 5 ♀♀, 1 imm.; same collection data as for holotype; MNHN AR 3437.

Additional material examined

BRAZIL – **Alagoas** • 3 ♀♀; Maceió; [9.64986° S, 35.70892° W]; 11 Sep. 2003; N. Lo-Man-Hung leg.; IBSP 41004. – **Pernambuco** • 1 ♂, 1 ♀; Tamandaré, Reserva Biológica de Saltinho; 8.72986° S, 35.17614° W; 44 m a.s.l.; 26 May 2015; L.S. Carvalho leg.; in house; CHNUFPI 1590 • 1 ♂, 1 ♀; same collection data as for preceding; CHNUFPI 1591 • 2 ♂♂, 10 ♀♀, 1 imm.; same collection data as for preceding; CHNUFPI 1595.

COOK ISLANDS • 1 ♀; Aitutaki Island, Ubelia District, main village; [18.86629° S, 159.80005° W]; 27 Mar. 1987; J.A. Beatty leg.; in crevices on buildings; JBJB • 4 ♀♀, 4 imm.; Mitriaro coral island; [19.87742° S, 157.70186° W]; 19–21 Jan. 1996; J. Boutin leg.; CAS 9062893 • 1 ♀; Rarotonga; 21.20525° S, 159.80218° W; 15–25 Jan. 1996; J. Boutin leg.; mixed forest; CAS 9062894.

COSTA RICA – **Alajuela** • 5 ♂♂, 11 ♀♀, 1 imm.; Upala, San Gerardo; [10.89778° N, 85.01306° W]; 600 m a.s.l.; Jun. 2009; C. Viquez and J. Mata leg.; manual collecting; INBIO 108899. – **Guanacaste** • 3 ♂♂, 9 ♀♀; Bagaces, Sendero Cantera; [10.52516° N, 85.25414° W]; 100 m a.s.l.; 19–22 Nov. 2008; C. Viquez leg.; manual collecting; INBIO 104619 • 3 ♀♀; Liberia, Estación Maritza; [10.6346° N, 85.44068° W]; 600 m a.s.l.; 21 Apr. 2004; C. Viquez leg.; manual collecting; INBIO 104556 • 4 ♀♀, 1 imm.; Santa Rosa; [10.83793° N, 85.70511° W]; 21 Jun. 2006; C. Viquez leg.; INBIO. – **Heredia** • 1 imm.; 4 km SE of Puerto Viejo de Sarapiquí, Finca La Selva; [10.45399° N, 84.01939° W]; 27–30 Sep. 1981; C.E. Griswold leg.; CAS 9058484 • 1 ♀; same collection data as for preceding; Oct. 1981; C.E. Griswold leg.; CAS 9058483 • 1 ♂, 5 ♀♀, 1 imm.; same collection data as for preceding; Sep.–Oct. 1981; C.E. Griswold leg.; CAS 9062895. – **Limón** • 8 ♀♀, 1 imm.; Moín; [9.99243° N, 83.09519° W]; 17–18 May 1987; D. Ubick leg.; CAS 9060445. – **Puntarenas** • 1 ♂; Altamira, Sendero Proyecto Agricultura Orgánica; [8.37826° N, 83.11195° W]; 1065 m a.s.l.; 6 Aug. 2003; C. Viquez and R. Gutiérrez leg.; manual collecting; INBIO 74353 • 1 ♂, 11 ♀♀; Coto Brus., Jardín Botánico Las Cruces; [8.95402° N, 83.07042° W]; 7–8 Nov. 2001; C. Viquez leg.; manual collecting; INBIO 77891 • 4 ♂♂, 17 ♀♀; Osa, Finca Mora Maroto; [8.94631° N, 83.53346° W]; 100 m a.s.l.; 21 May 2006; C. Viquez leg.; manual collecting; INBIO 108901 • 1 ♀; Osa Peninsula, 2.5 mi SW of Rincon; 8.70758° N, 83.48703° W; 1–7 Mar. 1967; OTS Adv. Zoo. Course leg.; MCZ 145046 • 1 ♀; Parrita; [9.51864° N, 84.33054° W];

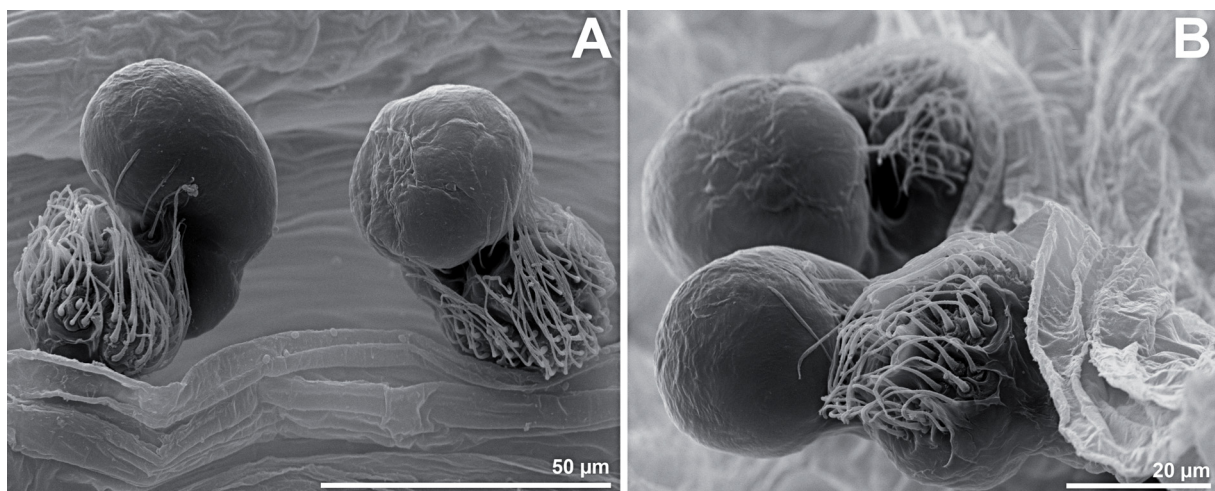


Fig. 22. *Labahitha marginata* (Kishida, 1936) comb. nov., female from Costa Rica, Alajuela, Upala (INBIO 108899), endogyne, pancreatin digested. **A.** Dorsal view. **B.** Sublateral view.

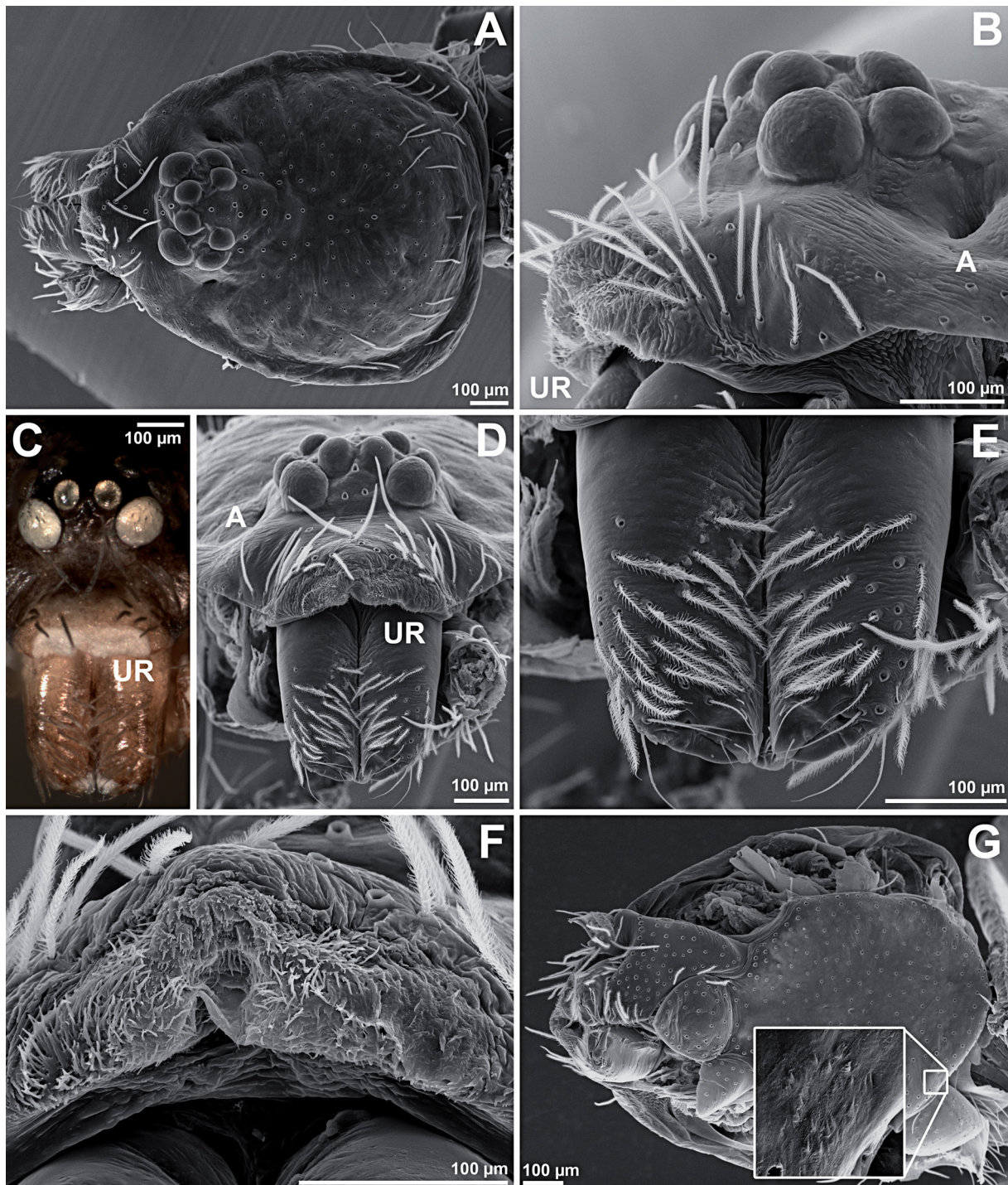


Fig. 23. *Labahitha marginata* (Kishida, 1936) comb. nov., male from Costa Rica, Alajuela, Upala (INBIO 108899), cephalothorax. **A.** Dorsal. **B.** Eye region, sublateral. **C.** Subanterior, dry specimen before sputter-coating. **D.** Subanterior. **E.** Chelicerae, subanterior. **F.** Unsclerotized region of the clypeus, subventral. **G.** Ventral. Inset showing sigillum. Abbreviations: A = eye apodeme; UR = unsclerotized region of the clypeus.

20 m a.s.l.; 13 Jan. 1989; W. Eberhard leg.; MCZ 145044 • 3 ♂♂; same collection data as for preceding; Jan. 1989; W. Eberhard leg.; MCZ 145045 • 1 ♀; same collection data as for preceding; 13 Jan. 1989; W. Eberhard leg.; near oil palm plantation; MCZ 145043. – **San José** • 2 ♂♂, 5 ♀♀; Puriscal, Parque Nacional La Cangreja, estación de funcionarios; [9.83214° N, 84.33317° W]; 324 m a.s.l.; 25 Jan. 2005; C. Viquez leg.; manual collecting; INBIO 79582.

GUATEMALA • 4 ♀♀; Tijax; [15.37521° N, 89.26903° W]; 11 Jul. 2006; C. Viquez leg.; INBIO.

KIRIBATI • 1 ♀; Phoenix Islands, Kanton; [2.80427° S, 171.64329° W]; 1956; N.L.H. Krauss leg.; AMNH • 1 ♀; same collection data as for preceding; Sep. 1950; N.L.H. Krauss leg.; AMNH.

MARQUESAS ISLANDS • 1 ♀; Nuku Hiva Island, Taiohae; [8.90895° S, 140.10112° W]; 20 Jan. 1987; J.W. Berry leg.; on building; JBB.

MEXICO – **Chiapas** • 1 ♂, 1 ♀; Palenque; [17.51098° N, 91.99305° W]; 24–25 Aug. 1977; C.E. Griswold and T.C. Meikle leg.; AMNH. – **Nayarit** • 4 ♂♂, 14 ♀♀, 1 imm.; 1 mile S of Acaponeta; [22.49611° N, 105.36281° W]; 15 Aug. 1963; W.J. Gertsch and W. Ivie leg.; AMNH • 1 ♂, 2 ♀♀; bridge at Río Caponeta; [22.49611° N, 105.36281° W]; 1 Aug. 1964; W.J. Gertsch leg.; AMNH • 1 ♂; San Blas, 50 yards from ocean; [21.5413° N, 105.28472° W]; 16 Mar. 1961; D. and H. Campbell leg.; CAS 9062900. – **Veracruz** • 1 ♂, 1 ♀; Catemaco, Estación de Biología Tropical Los Tuxtles; 18.58644° N, 95.07514° W; 31 Jul. 2014; L.S. Carvalho leg.; CHNUFPI 1191 • 3 ♀♀; same collection data as for preceding; CHNUFPI 1197.

NICARAGUA – **Chinandega** • 1 ♂, 3 ♀♀; El Viejo, Sto. Thomas, Villa Argentina; 12.75° N, 87.396° W; 38 m a.s.l.; 26 Nov. 2007; C. Viquez and J. Mata leg.; INBIO NIC4 • 4 ♂♂, 11 ♀♀, 5 imm.; same collection data as for preceding; in house; AMNH • 2 ♂♂, 2 ♀♀; same collection data as for preceding; AMNH.

PANAMA • 3 ♀♀; Chiriquí, Hornitos; 8.71524° N, 82.23548° W; 6 Jun. 2006; M.J. Ramírez leg.; in houses along highway; MACN-Ar 33845 • 1 ♀; Veraguas, Santiago, El Manguito; 8.09572° N, 80.98373° W; 10 Jun. 2008; M. Ramírez leg.; MACN-Ar 33854 • 1 ♂, 1 ♀; same collection data as for preceding; 6 Jun. 2007; CRBA, ex-MACN-Ar 33857 • 1 ♀; same collection data as for preceding; 9 Jun. 2007; MACN-Ar 33846 • 1 ♀, 2 imm.; same collection data as for preceding; MACN-Ar 33847.

PAPUA NEW GUINEA • 1 ♀; Makeke Highlands; 6.48727° S, 145.59442° E; Feb. 1973; D. Kirkness leg.; AM KS.59201.

PHILIPPINES • 1 ♀; Laguna, Los Baños, Mount Makiling; 14.13639° N, 121.19444° E; Luzon and Baker leg.; SMF 3501.

SAMOA • 2 ♂♂, 3 ♀♀, 1 imm.; Upolu; [13.83333° S, 171.75° W]; AMNH IFM-0885, IFM-0886.

TAIWAN • 1 ♂, 3 ♀♀, 18 imm.; Ping-Tung, Chao-Chow; [22.52937° N, 120.56242° E]; 6 Jun. 1956; D.E. Beck leg.; AMNH IFM-0871, IFM-0872.

USA • 1 ♀; Hawai'i; [19.89677° N, 155.58278° W]; AM.

Description

Male (from Parque Nacional La Cangreja, San Jose, Costa Rica, INBIO 79582)

COLOURATION. Carapace light brown, with brown median pattern, and cream lateral margins. Chelicerae, labium and endites light brown. Sternum light cream. Legs cream, with very faint light brown markings

on the proximal and distal ends of tibiae III–IV. Abdomen brown, with faint light brown chevron posteriorly, and a large patch of white setae anteriorly on dorsum.

HABITUS. Anterior margin of the carapace subrounded, with unsclerotized tip. Eye apodemes present. Sternum subrounded, sigilla not visible.

MEASUREMENTS. Total length 2.49. Carapace length 1.19, width 0.93. Clypeus length 0.23. Eye diameters and interdistances: AME 0.07, PME 0.09, ALE 0.13, PLE 0.10, AME–AME 0.02, PME–PME 0.10. Sternum length 0.73, width 0.65. Palp: femur length 0.56, height 0.17, tibia length 0.32, height 0.19. Leg I: 6.20 (1.59, 0.40, 1.80, 1.55, 0.86). II: 4.21 (1.21, 0.35, 1.14, 0.99, 0.52). III: — (0.99, 0.30, 0.87, x, x). IV: 4.85 (1.32, 0.35, 1.26, 1.31, 0.61). Abdomen: length 1.58, width 0.82.

LEG MACROSETAE. Mt I 1a.vi.

PALP (Figs 18, 20–21). Cymbium horseshoe shaped, bulb enlarged, with a median constriction, sperm duct N-shaped with a single coil, prolateral excavation very large occupying most of the tegulum, paraembolic lamina large, in two parts, with fimbriations proximally and digitiform distally, ending close to the apex of the embolus, embolus short and slightly curved.

State of the specimen: good, lacking some setae; left palp and right leg I dissected.

Female (from Parque Nacional La Cangreja, San Jose, Costa Rica, INBIO 79582)

COLOURATION. As in male, except for lack of brown markings on carapace and chevron in the abdomen.

HABITUS. Eye apodemes present. Sternum subrounded.

MEASUREMENTS. Total length 3.86. Carapace length 1.25, width 1.02. Clypeus length 0.28. Eye diameters and interdistances: AME 0.06, PME 0.08, ALE 0.12, PLE 0.11, AME–AME 0.02, PME–PME 0.09. Sternum length 0.86, width 0.67. Palp: femur length 0.72, height 0.30, tibia length 0.39, height 0.23. Leg I: 4.89 (1.28, 0.37, 1.31, 1.13, 0.80). II: — (1.08, 0.35, 0.88, x, x). III: — (0.92, 0.35, 0.70, x, x). IV: 4.32 (1.27, 0.39, 1.11, 0.97, 0.58). Abdomen: length 2.56, width 1.63.

LEG MACROSETAE. Absent. Calamistrum with three rows with 5-5-6 setae.

EPIGASTRIC FURROW. Adorned with thick setae.

ENDOGYNE (Figs 19, 22). Median receptacles absent, lateral receptacles on a short stalk, trilobulate, sclerotized, with several glandular pores restricted to the proximal lobe. State of the specimen: good, genitalia dissected.

Variation

Female seminal receptacles may be fully sclerotized or hyaline (Fig. 19); perhaps this may depend on the maturity or reproductive status of the females. Males (N = 5): total length 2.19–2.79 (2.55), carapace length 0.99–1.2 (1.15), femur I length 1.31–1.59 (1.49), tibia I length 1.57–1.8 (1.72), femur/carapace ratio 1.18–1.34 (1.29). Females (N = 5): total length 2.73–4.96 (3.79), carapace length 1.17–1.8 (1.42), femur I length 1.1–1.58 (1.36), tibia I length 1.13–1.72 (1.4), femur/carapace ratio 0.88–1.02 (0.96).

Distribution

Widely distributed in tropical Polynesia, with other records in Taiwan, Philippines, New Guinea, Vanuatu, and in continental America from Mexico to Brazil (Fig. 1D).

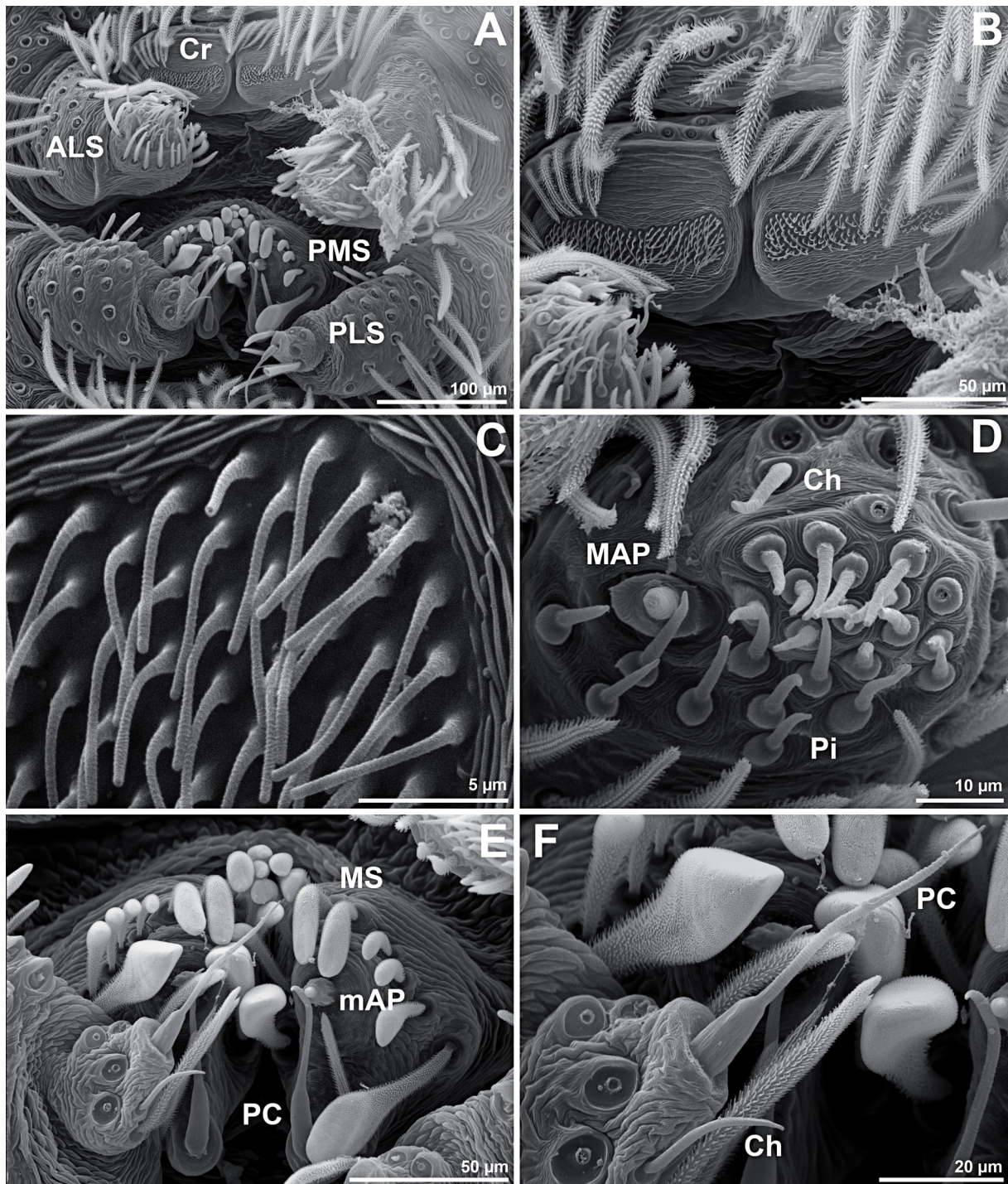


Fig. 24. *Labahitha marginata* (Kishida, 1936) comb. nov., female from Costa Rica, Alajuela, Upala (INBIO 108899), spinnerets. **A.** Spinnerets, ventral view. **B.** Cribellum, ventral view. **C.** Cribellar spigots. **D.** Left ALS, ventral view. **E.** PMS, ventral view. **F.** Right PLS, ventral view. Abbreviations: ALS = anterior lateral spinnerets; Ch = chemosensory seta; Cr = cribellum; MAP = major ampullate gland spigot; mAP = minor ampullate gland spigot; MS = modified seta; PC = paracribellar gland spigot; Pi = piriform gland spigot; PLS = posterior lateral spinnerets; PMS = posterior median spinnerets.

Labahitha nicobarensis (Tikader, 1977) comb. nov.

Filistata nicobarensis Tikader, 1977: 160, fig. 1A–C. Holotype female and paratype male and females from India, Car Nicobar, 8 Mar. 1970, B.K. Tikader leg., deposited in the National Collection, Zoological Survey of India, Calcutta or in the Zoological Survey of India, Poona, not examined.

Pritha nicobarensis – Patel 1978: 186.

Notes

We have not examined the type specimens, but the teardrop-shaped bulb with a keel-like paraembolic lamina figured in the original description (Tikader 1977: fig. 1C) clearly indicates this species belongs to *Labahitha*. We provided a tentative diagnosis and consider this species as valid, but re-examination of the type material would be desirable to confirm its validity. It should be noted that there is an older available name based on specimens also from the Nicobar islands, *Filistata insularis* Thorell, 1891, which we were unable to examine; it is not unlikely that they could be synonyms.

Diagnosis

Males are similar to those of *L. oonopiformis*, *L. ryukyuensis* and *L. garciai* by the teardrop-shaped bulb with a keel-shaped paraembolic lamina. They differ from all these species by the shorter, more straight and robust embolus (Tikader 1977: fig. 1c). The female genitalia has never been illustrated and thus we are unable to provide a diagnosis for the female at this time.

Description

See Tikader (1977).

Distribution

India, Andaman and Nicobar islands (Fig. 1B).

Labahitha oonopiformis (Bristowe, 1938)

Fig. 25

Mystes oonopiformis Bristowe, 1938: 319, figs 10–13. Female holotype from Malaysia, Parit Buntar, H.T. Pagden leg., lost (see Zonstein *et al.* 2017), not examined; male neotype from Malaysia, Pahang, Genting, J. Murphy & F. Murphy leg., deposited in the Manchester Museum (MMUE G7572.1100), examined by photos.

Labahitha oonopiformis – Zonstein *et al.* 2017: 307, figs 1A–E, 2A–F, 3A–D, 5A–C. — Marusik *et al.* 2019: 258, figs 6–7.

Notes

This is the type species of the genus. The holotype from Parit Buntar is lost, and a neotype was designated by Zonstein *et al.* (2017) based on specimens from ca 240 km to the southeast of Parit Buntar. We have now examined specimens from Penang, ca 50 km to the northwest of Parit Buntar, providing additional evidence that Zonstein *et al.* (2017) interpreted Bristowe's description correctly. We provide the first SEM images of the male of this species (Fig. 25A–B).

Diagnosis

Males are similar to those of *L. garciai*, *L. ryukyuensis* and *L. nicobarensis* by the teardrop-shaped bulb with a keel-shaped paraembolic lamina. They differ from *L. garciai* by the longer embolus (vs shorter),

from *L. ryukyuensis* by the more globose base of the bulb (vs base of the bulb more tubular) and from *L. nicobarensis* by the longer, more curved embolus (vs embolus short and straight) (Fig. 25A). Females are more similar to those of *L. garciai* and *L. gibsonhilli* by the large membranous base of the receptacles and well-developed median receptacle; they differ from *L. garciai* by the median receptacles larger in size than the laterals (vs median and lateral receptacles subequal in size) and from *L. gibsonhilli* by the globose median receptacles with evenly scattered pores (vs median receptacles with pores restricted to medial face) (Fig. 25C).

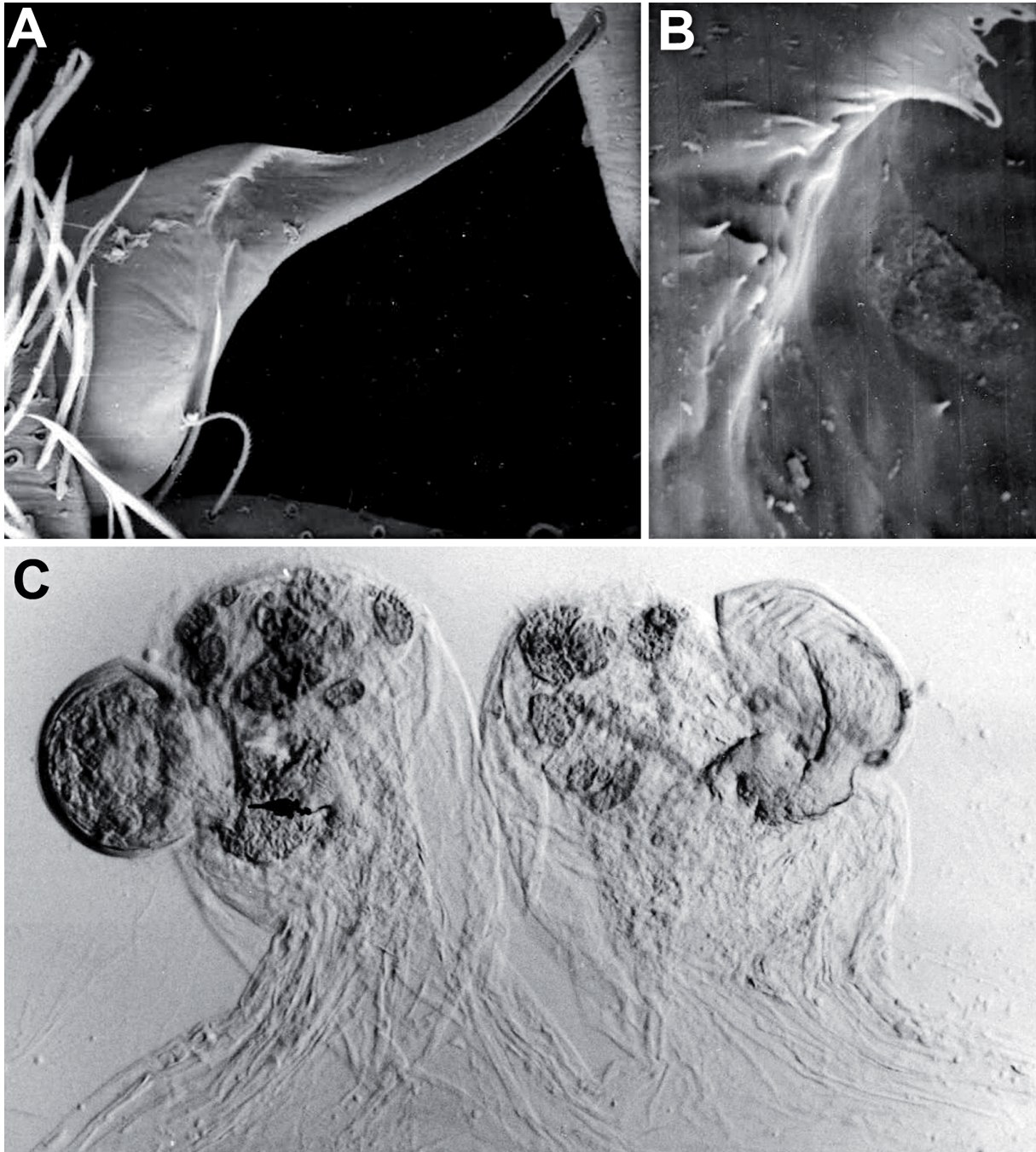


Fig. 25. *Labahitha oonopiformis* (Bristowe, 1938) from Malaysia, Penang, Telok Bahang (JBJB). **A.** Left male bulb, prolateral. **B.** Detail of paraembolic lamina. **C.** Female endogyne, dorsal. Figures not to scale.

Material examined

MALAYSIA • 1 ♂, 1 ♀; Penang, Telok Bahang, Muka Head, USM Field Sta.; [5.45968° N, 100.21067° E]; 22 Dec. 1984; J.A. Beatty leg.; on buildings; JBJB.

Description

See Zonstein *et al.* (2017).

Variation

The shape and size of the median receptacles of females varies (Fig. 25C; Zonstein *et al.* 2017: fig. 5).

Distribution

Peninsular Malaysia (Fig. 1B).

Labahitha platnicki sp. nov.

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Figs 26–27, 29F

Diagnosis

The male is unknown. Females can be diagnosed from congeners by the colouration pattern (carapace deep brown with lighter margins and abdomen dark with light grey transversal markings; Fig. 26A) (vs colouration usually uniform, especially in the abdomen) and by the genitalia: the median receptacles are sclerotized, with many pores packed together, and have a median constriction (Fig. 27) (vs median receptacles without a median constriction).

Etymology

The species is named after the eminent arachnologist Norman Platnick, who collected part of the type series and has recently passed away in an untimely manner, in memory of his innumerable contributions to arachnology and systematics.

Type material

Holotype

NEW CALEDONIA • ♀; Nord, Foué, W of Koné; 21.1° S, 164.81667° E; 15 Feb. 1993; N.I. Platnick, R.J. Raven and M.S. Harvey leg.; under bark of trees along beach; AMNH IFM-0890.

Paratypes

NEW CALEDONIA • 3 ♀♀, 1 imm. (together with the holotype); same collection data as for holotype; AMNH • 14 ♀♀; Nord, Roche Percée nr. Plage de Poè, W of Bourail; 21.6° S, 165.43333° E; 18 Feb. 1993; N.I. Platnick, R.J. Raven and M.S. Harvey leg.; coastal cliffs; AMNH IFM-1747.

PAPUA NEW GUINEA • 5 ♀♀, 3 imm.; Bismarck Islands; [5.55234° S, 150.13883° E]; 16 Aug. 1894; ZMB IFM-0720 • 1 ♀; Bismarck Islands, “Rala” [Rabaul?]; [5.55234° S, 150.13883° E]; 27 Jan. 1897; under bark of *Alstonia*; ZMB.

Other material examined

None.

Description

Male

Unknown.

Female (holotype from Koné, Foué, Nord, New Caledonia, AMNH IFM-0890)

COLOURATION. Carapace reddish brown on median area, lateral borders yellow, with dark brown V-shaped median pattern, submarginal bands and clypeal markings. Chelicerae, labium and endites orange brown. Sternum orange brown stippled with dark brown. Legs yellowish cream, becoming orange brown distally, with longitudinal brown bands on femora, tibiae and metatarsi. Abdomen dark brown, dorsum with five grayish cream chevron-like markings posteriorly, venter greyish cream with brown pigment around spinnerets.

HABITUS. Anterior margin of the carapace unmodified. Eye apodemes present. Sternum suboval, with one pair of posterior sigilla.

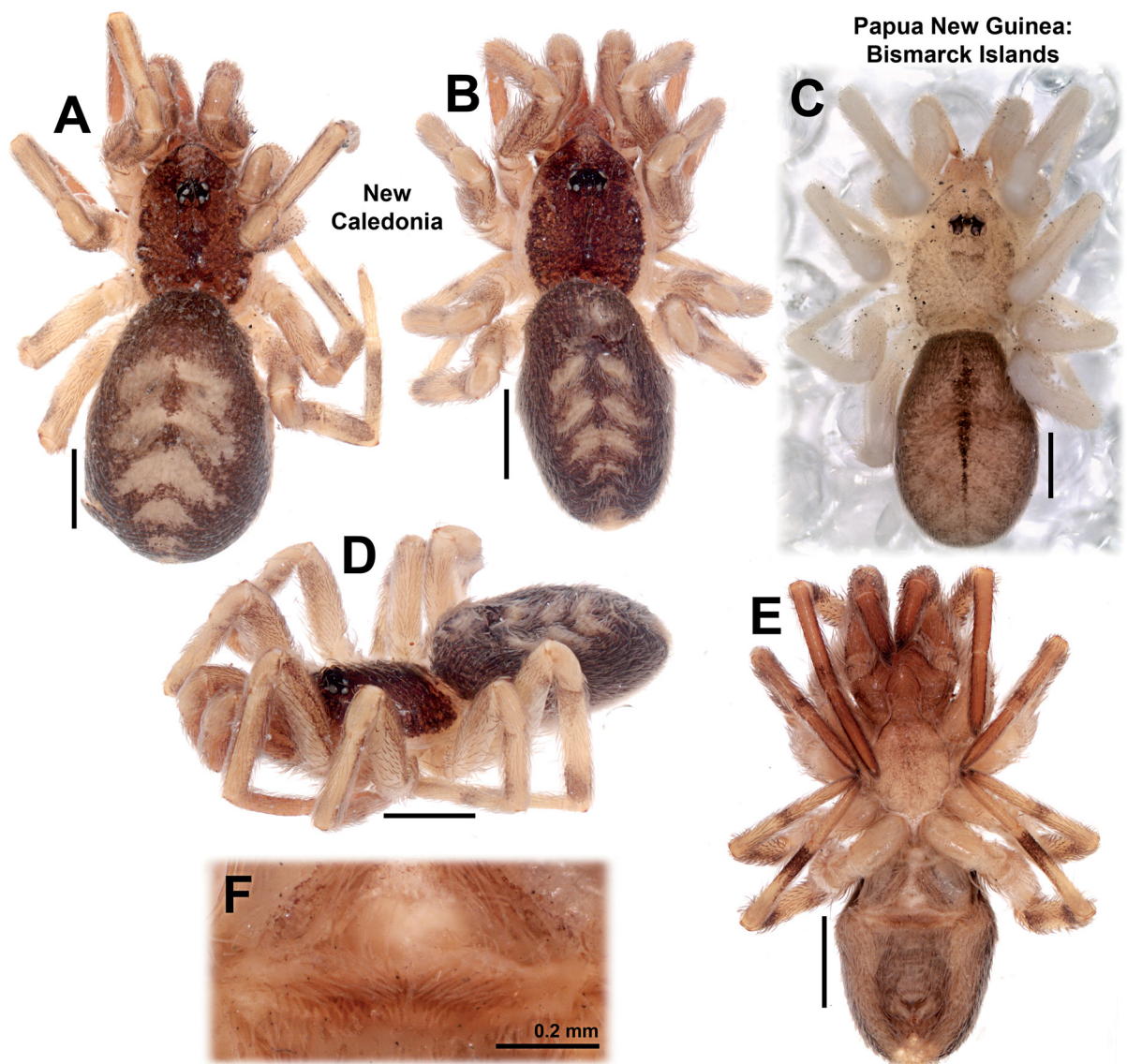


Fig. 26. *Labahitha platnicki* sp. nov., female somatic morphology. **A.** Holotype from New Caledonia, Nord, Foué (AMNH IFM-0890), habitus, dorsal. **B, D–F.** Paratype from New Caledonia, Nord, Plage de Poè (AMNH IFM-1747). **B.** Habitus, dorsal. **C.** Papua New Guinea, Bismarck Islands (ZMB IFM-0720), habitus, dorsal. **D.** Habitus, lateral. **E.** Ventral. **F.** Genital region, ventral. Scale bars = 0.5 mm, except where noted.

MEASUREMENTS. Total length 2.63. Carapace length 1.09, width 0.85. Clypeus length 0.22. Eye diameters and interdistances: AME 0.04, PME 0.06, ALE 0.06, PLE 0.06, AME–AME 0.02, PME–PME 0.08. Sternum length 0.66, width 0.49. Palp: femur length 0.62, height 0.24, tibia length 0.33, height 0.21. Leg I: 3.30 (0.90, 0.32, 0.83, 0.73, 0.52). II: 2.69 (0.77, 0.28, 0.64, 0.58, 0.42). III: 2.29 (0.69, 0.24, 0.49, 0.53, 0.34). IV: 3.08 (0.93, 0.31, 0.74, 0.70, 0.40). Abdomen: length 1.71, width 1.18.

PALP AND LEG MACROSETAE. Absent.

EPIGASTRIC FURROW. Unsclerotized, with two lateral patches of thicker setae.

ENDOGYNE (Fig. 27). Two pairs of receptacles, median receptacle globular, sclerotized, with a constricted base, bearing many glandular pores; lateral receptacle globular, unsclerotized, bearing few glandular pores. Interpulmonary fold large, pentagonal, covering the seminal receptacles.

STATE OF THE SPECIMEN. Genitalia dissected, right legs I–II and left legs III–IV missing from patella.

Variation

The median receptacles of specimens from the Bismarck Islands are more clearly bilobate (Fig. 27B), while they are merely constricted in females from New Caledonia (Fig. 27C). The discovery of males would be desirable to ascertain their co-specificity. Females (N = 4): total length 2.09–2.63 (2.35), carapace length 0.86–1.16 (1.01), femur I length 0.73–0.99 (0.85).

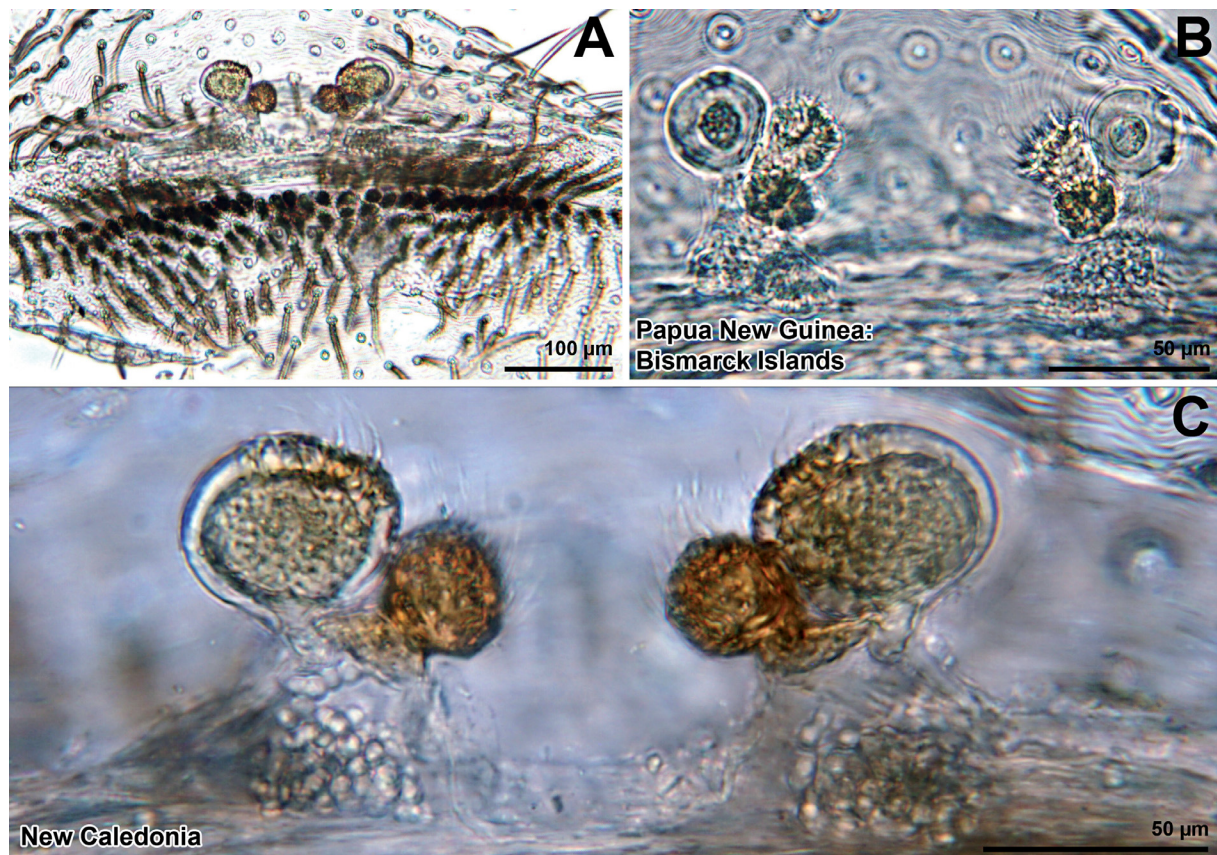


Fig. 27. *Labahitha platnicki* sp. nov., endogyne, dorsal. **A, C.** Holotype, ♀, from New Caledonia, Nord, Foué (AMNH IFM-0890). **B.** Papua New Guinea, Bismarck Islands (ZMB IFM-0720).

Natural history

Label data indicate specimens have been collected under bark of *Alstonia* R.Br. trees in the Bismarck Islands, and in coastal cliffs and under bark in coastal trees in New Caledonia.

Distribution

New Caledonia and Bismarck Islands, Papua New Guinea (Fig. 1B).

Labahitha ryukyuensis (Ono, 2013) comb. nov.

Tricalamus ryukyuensis Ono, 2013: 16, figs 1–11. Holotype male (NSMT-Ar 9930) and paratype males and females (NSMT-Ar 9931–9935) from Kamara, Okinawa-shi, Okinawa Prefecture (Okinawajima Island), Japan, 22 May 2011, T. Naka leg., deposited in the National Museum of Nature and Science, Tokyo, not examined.

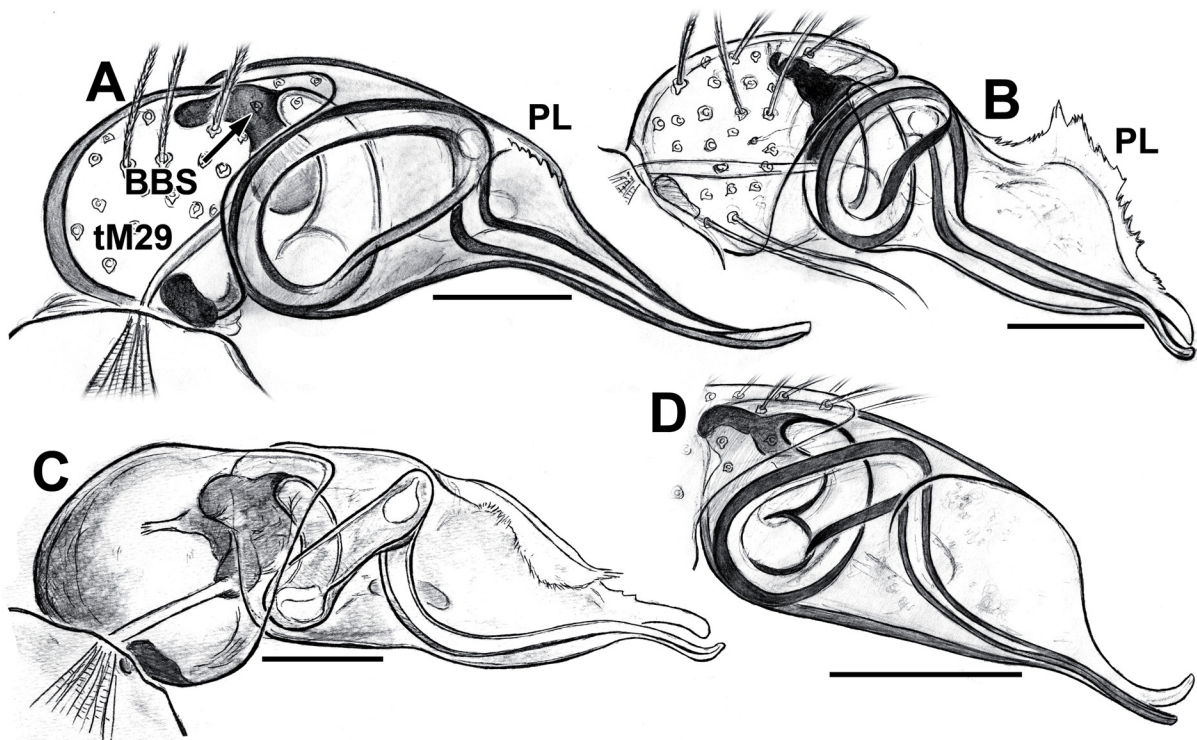


Fig. 28. *Labahitha* spp., left bulbs, prolateral, clove oil cleared. **A.** *Labahitha garciai* (Simon, 1892) comb. nov. from Malaysia, Sarawak, Kapit (AMNH IFM-0936). **B–C.** *Labahitha marginata* (Kishida, 1936) comb. nov. **B.** Costa Rica, San José, Parque Nacional La Cangreja (INBIO 79582). **C.** Holotype of *Filistata bakeri* Berland, 1938 from Vanuatu, Espiritu Santo (MNHN AR 3436). The palp appears to have been dry and some structures seem deformed, especially the sperm duct. **D.** *Labahitha incerta* sp. nov., holotype Australia, Queensland, Nipping Gully (QM S.78659). Abbreviations: BBS = basal bulb sclerite; PL = paraembolic lamina; tM29 = tendon of the claw flexor muscle. Scale bars = 0.1 mm.

Notes

The structure of the male palp (drop-shaped bulb with a keel-shaped paraembolic lamina; Ono 2013: figs 1–3) and somatic morphology indicate this species belongs in *Labahitha* and is a close relative of *L. oonopiformis*, *L. garciai* and *L. nicobarensis*, thus we propose the new combination.

Diagnosis

Males are similar to those of *L. oonopiformis*, *L. garciai* and *L. nicobarensis* by the teardrop-shaped bulb with a keel-shaped paraembolic lamina. They differ by the more slender palpal tibia, the less globose base of the bulb (Ono 2013: figs 1–3) (vs palpal tibia shorter and stouter, bulb base globose). Females are more similar to those of *L. oonopiformis*, *L. garciai* and *L. gibsonhilli* by the large membranous base of the receptacles and well-developed median receptacle; they differ in having the median receptacles

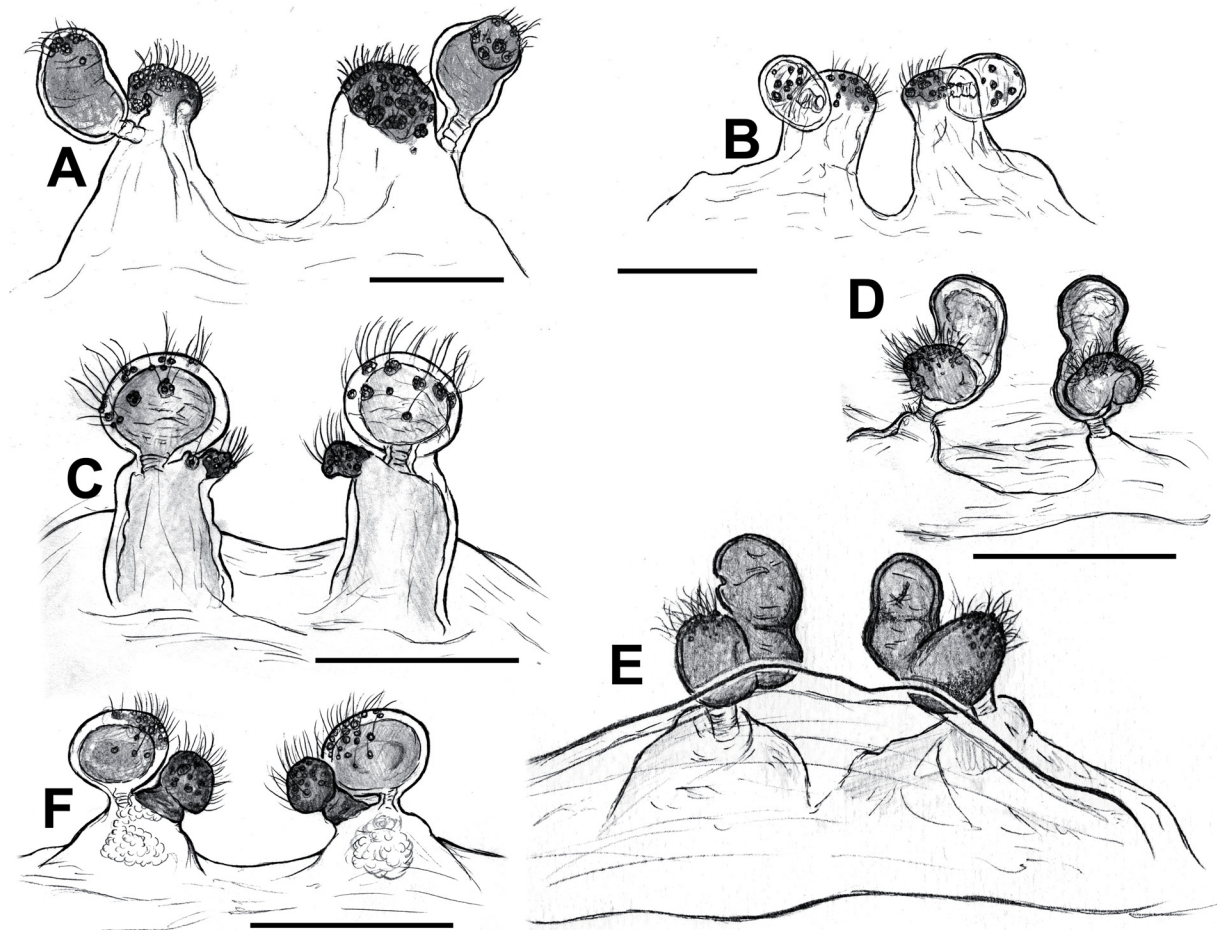


Fig. 29. *Labahitha* spp., endogyne, dorsal. **A.** *Labahitha garciai* (Simon, 1892) comb. nov. from Singapore, Pulau Ubin (JK 150310.0002). **B.** Paratype of *Pritha sechellana* Benoit, 1978 from Seychelles, Praslin (MRAC 143106). **C.** *Labahitha fuscata* (Nakatsudi, 1943) comb. nov. from Brunei, Tutong (JK 110416.1907). **D–E.** *Labahitha marginata* (Kishida, 1936) comb. nov. **D.** Costa Rica, San José, Parque Nacional La Cangreja (INBIO 79582). **E.** Paratype of *Filistata bakeri* Berland, 1938 from Vanuatu, Espiritu Santo (MNHN AR 3437). **F.** Holotype of *Labahitha platnicki* sp. nov. from New Caledonia, Nord, Foué (AMNH IFM-0890). Scale bars = 0.1 mm.

smaller than the laterals (Ono 2013: fig. 9) (vs median receptacles subequal in size or larger than the laterals).

Description

See Ono (2013).

Natural history

Ono (2013) reports that specimens were collected in delicate webs with a central tubular retreat in inclined ground in the edge of a forest. One egg-sac had approximately 40 eggs.

Distribution

Known only from the type locality (Okinawajima Island, Japan) (Ono 2013) (Fig. 1).

Genus *Wandella* Gray, 1994

Wandella Gray, 1994: 41.

Type species

Wandella barbarella Gray, 1994.

Diagnosis, relationships, and description

See Gray (1994) and Magalhaes (2016).

Composition

Thirteen species previously described (see WSC 2021) and *Wandella loloata* sp. nov.

Distribution

Australia, here newly recorded in Papua New Guinea.

Wandella loloata sp. nov.

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Fig. 30

Diagnosis

This species is most similar to *Wandella grayi* Magalhaes, 2016 due to the tapering, long palpal bulb with erect paraembolic lamina in the male, and the female with columnar median receptacles attached to the rounded lateral receptacles via a stalk. Males can be diagnosed by the shorter, less curved embolus and the larger paraembolic lamina with an acute tip (Fig. 30A–B) (vs embolus longer and more curved, and smaller, curved paraembolic lamina in *W. grayi*). Females can be diagnosed by the digitiform median receptacles, widest at the base, and by the stalk of the lateral receptacles connecting apically (Fig. 30E–F) (vs median receptacles with even width throughout, and stalks of the lateral receptacles connecting basally).

Etymology

The name is a noun in apposition and is taken from the type locality.

Type material

Holotype

PAPUANEW GUINEA • ♂; Central Province, Loloata Island; 10 Nov. 1985; D.J. Court leg.; AMKS32718.

Paratype

PAPUA NEW GUINEA • 1 ♀; same collecting data as for holotype; AM KS32717.

Description

Male holotype (AM KS32718)

COLOURATION. Carapace mostly pale brownish-cream, lateral margins translucent; postocular area with a middorsal grey patterned triangular patch that narrows toward the foveal area around which it divides; lateral carapace with three grey pigment patches forming incomplete lateral bands; a pair of larger anterolateral grey patches flank the mostly cream-coloured clypeus. Chelicerae, labium, endites and sternum cream; abdomen pale creamy brown. Legs pale creamy brown, with dark grey partial ring-like patches restricted to proximal and distal femora and tibiae. Abdomen with well-defined brownish patterning on a cream ground. Frontal abdomen dark brown connecting dorsally to a broad middorsal brown patch with a paler central area; from this arise 5–6 pairs of brownish-grey dorsal chevrons reducing in size posteriorly; these are flanked below by a set of 4–5 smaller lateral chevrons on each side. Venter pale brown.

HABITUS. Anterior margin of carapace subrounded but anterolateral margins with concave ('pinched') curvature, clypeus unsclerotized and unpigmented. Sternum subrounded, bluntly pointed posteriorly, sigilla not seen.

MEASUREMENTS. Total length 2.43. Carapace length 1.02, width 0.79. Clypeus length 0.24. Eye diameters and interdistances: AME 0.07, PME 0.08, ALE 0.09, PLE 0.08; AME–AME 0.03, PME–PME 0.082. Sternum length 0.71, width 0.57. Palp: femur length 0.59, height 0.20; tibia length 0.33, height 0.14. Legs 1423. Leg I: 5.99 (1.50, 0.40, 1.78, 1.41, 0.90). II: 4.26 (1.07, 0.31, 1.31, 1.02, 0.55). III: 3.87 (1.02, 0.33, 1.02, 1.05, 0.45). IV: 4.99 (1.31, 0.32, 1.67, 1.12, 0.57). Abdomen length 1.51, width 0.92.

LEG MACROSETAE. Absent.

PALP. Cymbium horseshoe shaped; tegulum with a shallow prolateral excavation; presence or absence of microspine surface structures could not be verified; sperm duct N-shaped with a single coil; crest-like paraembolic process present; embolus slender, slightly curved.

Female paratype (AM KS32717)

COLOURATION. As in male.

HABITUS. Sternal sigilla not seen.

MEASUREMENTS. Total length 3.57. Carapace length 1.57, width 1.31. Clypeus length 0.31. Eye diameters and interdistances: AME 0.06, PME 0.09, ALE 0.20, PLE 0.11; AME–AME 0.06, PME–PME 0.15. Sternum length 1.06, width 0.95. Palp: femur length 0.86 width 0.36; tibia length 0.50, width 0.26. Legs I: 6.9 (1.79, 0.43, 1.90, 1.64, 1.14). II: 4.44 (0.83, 0.37, 1.19, 1.05, 1.00). III: 3.88 (0.95, 0.40, 0.95, 0.75, 0.83). IV: 5.9 (1.59, 0.50, 1.52, 1.31, 0.98). Abdomen length 2.14, width 1.48.

LEG MACROSETAE. Absent. Calamistrum with three rows of setae.

EPIGASTRIC FURROW. Unmodified.

ENDOGYNE. Lateral receptacle large and rounded with scattered pores and a curved stalk-like basal attachment; median receptacles smaller with many pores clustered apically.

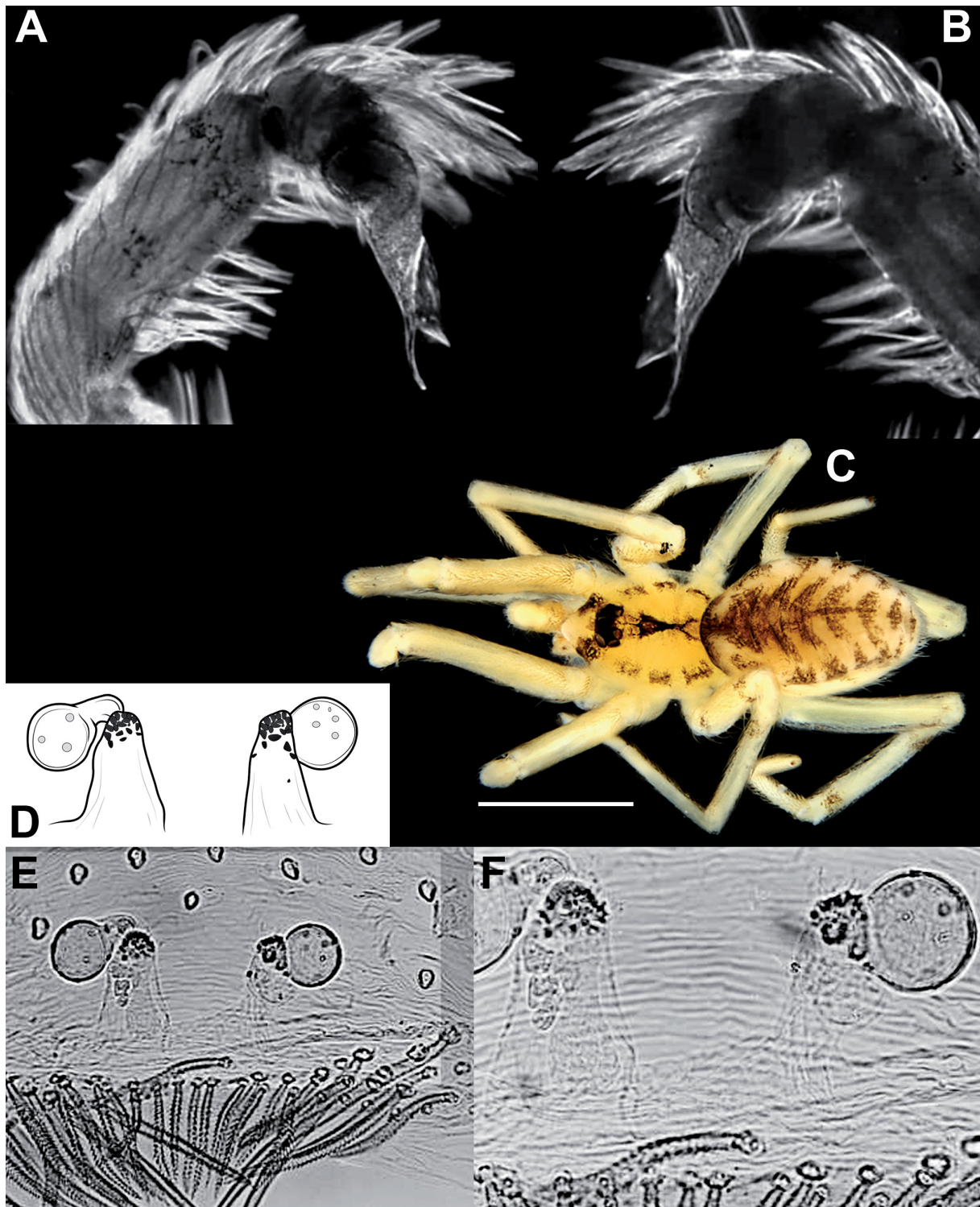


Fig. 30. *Wandella loloata* sp. nov. from Papua New Guinea, Loloata Island. **A–C.** Male holotype (AM KS32718). **A.** Left palp, prolateral. **B.** Retrolateral. **C.** Habitus, dorsal. **D–F.** Female paratype (AM KS32717), endogyne, dorsal.

Distribution

Known only from the type locality (Loloata Island, Papua New Guinea).

Genus *Filistata* Latreille, 1810

Filistata hasselti Simon, 1906 comb. rest.

Fig. 31

Filistata hasselti Simon, 1906: 308. Female holotype from Indonesia, locality uncertain (“Java, Sum., ver. Celebes”), deposited in MNHN AR 5438, examined by photos.

Pritha hasselti – Lehtinen 1967: 260.

Notes

Lehtinen (1967) claims to have examined a type specimen of *F. hasselti* deposited in the Zoölogische Museum der Universiteit van Amsterdam, Netherlands. This is unusual since type specimens of Simon are usually deposited in the MNHN. The specimen we examined is correctly labelled and fits with the description given by Simon (1906) and we have no reason to believe it is not the holotype. We examined photos of this specimen as its distribution suggested it might belong to *Labahitha*, but it clearly belongs in the Filistatinae, not in the Prithinae, due to the tarsal macrosetae, calamistrum in a crest and with a median gap, and the deep thoracic fovea (Fig. 31). We did not perform a dissection to examine and illustrate its genitalia. The subfamily Filistatinae is otherwise not represented in the Oriental region, and thus the generic affinity of *Filistata hasselti* is unclear. The only other filistatine specimen known to us from the Oriental region is a juvenile from Malaysia, Selangor, Kepong, Aug. 1947, R. Traub leg. deposited in the AMNH, whose generic affinity is also unclear. We allocate *F. hasselti* in *Filistata* to restore the original combination, and because it shares a calamistral gap with *Filistata* and *Zaitunia* Lehtinen, 1967.

Examined type material

Holotype

INDONESIA • 1 ♀; “Java, Sum., ver. Celebes”; 17484; MNHN AR 5438.

Discussion

Labahitha (replacement name for *Mystes*) was originally described in another family, Pholcidae C.L. Koch, 1850, an error that was not corrected until very recently (Huber *et al.* 2014). For that reason, it was completely ignored for many years by anyone working on filistatids. We here radically change the composition of *Labahitha*, known in 2017 from a single species. This is done mainly by revising already described species that had been incorrectly allocated in other genera, mainly *Pritha* and *Tricalamus*. The genus is now morphologically heterogeneous, but some characters are shared by all species: a rounded male clypeus (vs sharp in the related genera *Wandella* and *Yardiella*), a ragged margin of the paraembolic lamina, legs with faint rings or uniform colouration, and uniform colour of the abdomen. Males also typically show a single macroseta at the apex of metatarsus I, but this macroseta is absent in *L. incerta* sp. nov. – one of the reasons why it is allocated provisionally in the genus. We here present additional morphological data on *Labahitha* using SEM images. *Labahitha marginata* shows the same micro-projections in the clypeus (Fig. 23F) as do *Labahitha garciai* (Zonstein *et al.* 2017) and *Wandella* (Magalhaes 2016), corroborating this as a synapomorphy uniting these genera (it is also likely present in *Yardiella*; ILMF, unpublished). The spinnerets (Fig. 24) are also very similar in structure to those of *Wandella*, as in the lack of aciniform gland spigots (a character shared with other genera, such as

Pritha). Finally, we present SEM images of the male palp of *L. oonopiformis* (Fig. 25A–B), confirming the existence of micro-teeth and a ragged margin of the paraembolic lamina.

The most curious aspect of the genus is its geographic distribution (Fig. 1). The closest relatives, *Wandella* and *Yardiella*, are largely restricted to Australia, with a single record from Papua New Guinea reported here. *Labahitha* is distributed from Malaysia to Australia, but most commonly occurs in islands

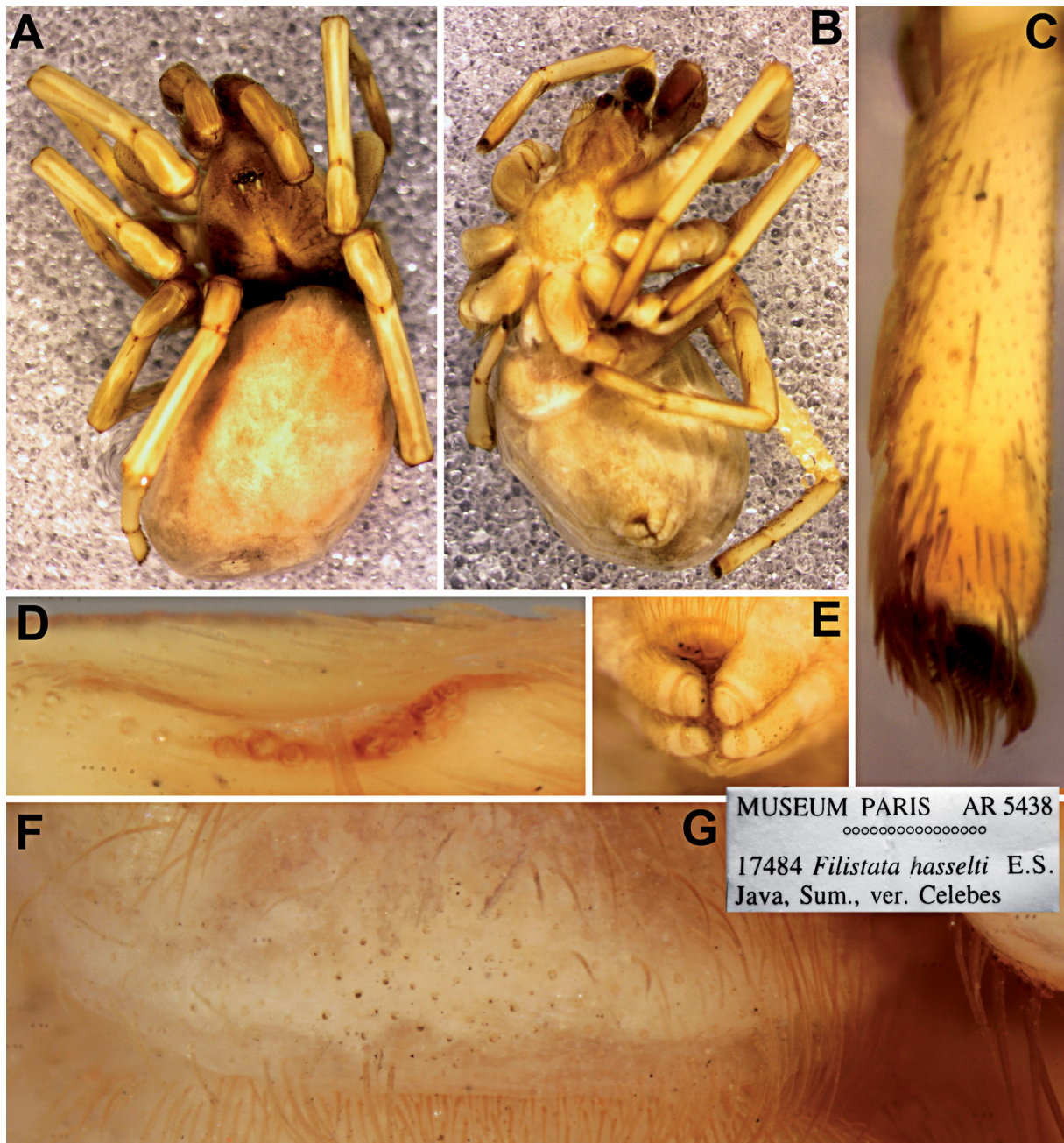


Fig. 31. *Filistata hasselti* (Simon, 1906) comb. rest., holotype, ♀ (MNHN AR 5438). **A.** Habitus, dorsal. **B.** Ventral. **C.** Tarsus, note tarsal macroseta. **D.** Left calamistrum (most setae lost). Note gap in the calamistrum rows. **E.** Spinnerets, ventral. **F.** Genital region, ventral. **G.** Label associated to the specimen. Figures not to scale.

in the Indian and Pacific Oceans. Some species seem to be narrow endemics (such as *L. gibsonhilli* in Christmas Island, and *L. ryukyuensis* in Okinawa), but at least *L. marginata*, *L. fuscata* and *L. garciai* have extremely wide distributions spanning several islands and thousands of kilometres. This was noted by Berland (1942: 24) regarding *L. marginata* (under *Filistata bakeri*): “Whether this dispersal is natural, or due to artificial introduction by man is difficult to decide; it seems impossible to see direct relations between so widely separated points in the Pacific.” Because some species are endemic to volcanic islands, it seems that at least some natural overwater dispersal is achieved by these spiders. On the other hand, in some areas their presence is almost surely due to artificial introduction, such as in Brazil. Studying the poorly known species (such as *L. sundaica*, *L. littoralis*, *L. nicobarensis* and *L. insularis*) will be important to establish the limits of distribution of species in this genus. A phylogeny of the genus might reveal the timing and pattern of their arrival to the islands, but this will be a Herculean undertaking requiring extensive sampling in numerous disparate locations.

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