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Four new species of the jumping spider genus *Cytaea* Keyserling, 1882 (Araneae: Salticidae) from Australia and New Guinea

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Abstract. *Cytaea* Keyserling, 1882 is one of the most diverse genera of jumping spiders (Salticidae: Euophryini), currently comprising 40 recognised species distributed across the Australian and Oriental Realms. Despite this diversity, most species were described in the 19th and 20th centuries, and the taxonomy of the genus remains problematic, with many species still poorly documented and relationships unresolved. In recent years, revisionary work has clarified the status of several nominal taxa, but many species of *Cytaea* in Australia and New Guinea remain undescribed. Here we describe four new species of *Cytaea* from the Australasian region: *C. arche* sp. nov. (♀), *C. aoide* sp. nov. (♀), *C. melete* sp. nov. (♀), and *C. telksinoe* sp. nov. (♀). Diagnostic illustrations, photographs, and measurements are provided for all species. The discovery of these taxa contributes to a better understanding of the species diversity and distribution of *Cytaea* in one of the world's most megadiverse regions.

Introduction

Salticid spiders constitute a monophyletic family, characterised by a distinctive eye arrangement, excellent vision, diverse mating tactics, and complex jumping behaviour (Maddison, 2015; Girard *et al*., 2021). With over 6,810 described species in 689 genera (WSC, 2025), salticids are distributed worldwide, with their highest diversity occurring in tropical regions. Australia and New Guinea are among the most species-rich regions globally and are listed among the 17 megadiverse countries and recognised biodiversity hotspots. Recent estimates indicate that Australia harbours approximately 519 described jumping spider species, Papua New Guinea (269 species) and West Papua — the Indonesian part of the island — only 13 species (Metzner, 2025). According to other assessments (Żabka, 1991; Żabka, 2007; Maddison & Zhang, 2009; Szűts *et al*., 2020), the actual species richness in both Australia and New Guinea may be two to three times higher than currently documented. *Cytaea* Keyserling, 1882 is one of the most diverse genera of salticids, currently comprising 40 recognised species (WSC, 2025), and is distributed across the

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Australasian and Oriental Realms (Żabka, 1991; Richardson *et al*., 2006; Żabka *et al*., 2019). Most nominal species of *Cytaea* were described in the 19th and 20th centuries. In recent decades, the genus has been studied by various authors (Prószyński, 1976, 1984; Davies & Żabka, 1989; Żabka, 1991; Berry *et al*., 1998; Patoleta & Gardzińska, 2010; Prószyński & Deeleman-Reinhold, 2010, 2013; Wang & Li, 2020; Tam *et al*., 2023). The phylogenetic placement of *Cytaea* was initially proposed by Maddison (2015), but its exact relationships remain unresolved and require further investigation (Żabka, 2007; Zhang & Maddison, 2013, 2015; Maddison, 2015). So far, we have re-examined 16 nominal species of *Cytaea* (Patoleta & Trębicki, 2015; Trębicki *et al*., 2016, 2021). In this paper, we describe four additional new species belonging to this genus.

Material and methods

The material studied was collected during biodiversity surveys conducted in Australia, the Indonesian part of New Guinea, and Papua New Guinea, and preserved in either 75% or 96% ethanol. The present descriptions are based on comparison with 1400 *Cytaea* specimens and thousands of museum specimens examined worldwide. This broad context has allowed us to assess both intra- and interspecific variation and to identify the females described here as morphologically distinct enough to warrant description. Specimens were borrowed from the following institutions: Queensland Museum, Brisbane, Queensland, Australia (**QM**); Western Australian Museum, Perth, Western Australia, Australia (**WAM**); Australian Museum, Sydney, New South Wales, Australia (**AM**); Museum and Art Galleries of the Northern Territory, Darwin, Northern Territory, Australia (**NTM**); and the American Museum of Natural History, New York City, USA (**AMNH**). Specimens were examined and photographed using two microscope and camera setups: an Olympus SZX16 with a Canon 5D camera, and a Nikon Ci with a Nikon D5100 camera. Images were digitally processed using CombineZP or Helicon Focus (for image stacking), and Adobe Photoshop (for editing). Illustrations were made from digital photographs. Epigynes were cleared in 10% potassium hydroxide (KOH) and in methyl salicylate ($C_8H_8O_3$). All measurements are given in millimetres. Photographs of live specimens were provided by Robert Whyte (QM) (Figs 1–2). Terminology follows Zhang and Maddison (2015). For further explanation of morphological characters, see Figures 3–8. Abbreviations used: TL – total length; CL – cephalothorax length; CW – cephalothorax width; CH – cephalothorax height; AL – abdomen length; AW – abdomen width; AH – abdomen height; EFL – eye field length; AEW – anterior eye row width; PEW – posterior eye row width; DAM – diameter of anterior median eye.

Results

The four new species described in this paper share a set of diagnostic characters, including an epigyne lacking a sclerotised lamella, anteriorly positioned copulatory openings, relatively long copulatory ducts, and long, duct-like, multi-coiled spermathecae terminating in small, oval or pear-shaped chambers. Among the species previously described, similar morphological features are found in *Cytaea argentosa* (Thorell, 1881), *C. nimbata* (Thorell, 1881), *C. rubra* (Walckenaer, 1837), and *C. sinuata* (Doleschall, 1859), in which the terminal chamber of the spermatheca lies perpendicular to the longitudinal axis of the epigyne. The newly described species differ from those mentioned above in various combinations of the following features: the number of cheliceral teeth, the position of the copulatory openings, the length of the copulatory ducts, the number and nature of coils or loops in the ductal part of the spermatheca, the size and shape of the spermathecae, the position of their junction with the terminal chamber, and the orientation of the terminal chamber itself, the major axis of which may lie either perpendicular or parallel to the epigynal axis.

Taxonomy

Order Araneae Clerck, 1757

Family Salticidae Blackwall, 1841

Tribe Euophryini Simon, 1903

Figures 1-2. Habitus of Salticidae showing unique eye arrangement. Living female of *Cytaea sp*. (1) and female *Cytaea arche* sp. nov. (2).

Genus *Cytaea* Keyserling, 1882

Type species: *Cytaea alburna* Keyserling, 1882, by consequent designation by Simon (1903)

Cytaea Keyserling, 1882: 1380–1381; Simon, 1903: 810–817; Żabka, 1991: 24; Berry *et al*., 1998: 150–151; Murphy & Murphy, 2000: 349; Prószyński & Deeleman-Reinhold, 2010: 162; Prószyński & Deeleman-Reinhold, 2013: 117–118; Patoleta & Trębicki, 2015: 556; Zhang & Maddison, 2015: 31; Trębicki *et al*., 2016: 379, Trębicki *et al*., 2021: 936–945.

Cytaea arche sp. nov.

urn:lsid:zoobank.org:act:6572ED0E-04A8-45ED-858B-231F47F84EC8

Figs 2–12.

Type material. Holotype ♀ T115093 (WAM), Australia, Western Australia, Purnululu National Park [Bungle Bungle National Park], 17°24'00.0"S 128°23'00.0"E , leg. A.F. Longbottom, 23.09.1999.

Other material examined. 1 ♀, Australia, Northern Territory, Wongalara Wildlife Sanctuary, 14°06'26.7"S 134°29'22.4"E, leg, Harvey M.S., 3.06.2012, NTMA004602 (NTM); 1 ♀, Australia, Northern Territory, Katherine Gorge, 14°17'51.2"S 132°28'26.4"E, leg, 29.06.1977, collected from tree trunk. KS51189 (AM); 1 ♀, cocoon with embryos, Australia, Western Australia, Prince Regent River, 15°34'00.0"S 126°06'00.0"E, leg, Main, B.Y., 20.10.1985, T115068 (WAM); 1 ♀, Australia, Western Australia, Anjo Peninsula, 14°00'30.2"S 126°28'08.7"E, leg, Borys Malkin, 14-15.02.1945, IZC 00325454 (AMNH).

Diagnosis. *Cytaea arche* sp. nov. can be distinguished from the morphologically most similar species, *C. sinuata* (Doleschall, 1859), by several characters. The new species has four promarginal teeth on the chelicerae, compared to six in *C. sinuata*. The coloration scales covering cephalothorax and abdomen differs markedly: olive in *C. arche* vs dark brown in *C. sinuata*. The copulatory ducts in *C. arche* are notably thicker-walled than in *C. sinuata*. The duct-like spermathecae of *C. arche* are also less complex, with five slightly curved coils, in contrast to nine sharply bent coils in *C. sinuata*. In *C. arche*, the median loop of the spermathecal duct is shorter than the lateral loop, while in *C. sinuata* the reverse is true. Additionally, the lateral loop in *C. sinuata* lies much closer to the median region of the epigyne, whereas in *C. arche* it is more distantly positioned. The spermathecal ducts in *C. arche* descend centrifugally and enter the terminal chambers in a straight trajectory, whereas in *C. sinuata* they make a turn before entering the chambers. The terminal chambers in *C. arche* are oval, with their longer axis aligned nearly parallel to the epigynal axis, while in *C. sinuata* the longer axis lies perpendicular. This species can thus be distinguished from *C. sinuata* by its shorter and less complex spermathecal ducts, and from *C. aoide* sp. nov. and *C. melete* sp. nov. by the anterior (rather than posterior) junction of the ducts with the pear-shaped terminal spermatic chambers.

Description (holotype). Cephalothorax pale brownish, covered with numerous brown setae and white scales (Fig. 3). Eye surroundings black, covered with long, black setae. Eye field wider than long, its length 41% of CL. PME halfway between PLE and ALE. Fovea well visible, located between PLE (Fig. 3). Just behind PLE, on the thoracic part, is a yellow median stripe, gradually narrowing posteriorly. Thoracic slope steep, starts well behind PLE. Clypeus orange, covered with dense, long, white scales, its height about 33% of AME diameter (Fig. 6). Chelicerae orange, moderately robust, slightly inclined anteriorly; promargin with 4 teeth, retromargin with a single bicuspidate tooth (Fig. 7). Endites and labium orange, with pale chewing margins (Fig. 7). Sternum oval, pale yellow (Fig. 4). Legs with pale coxa, trochanter and femur; tibia, metatarsus and tarsus light orange. All legs covered with numerous spines and setae (Figs 3–4). Leg formula: III-I-IV-II. Abdomen elongate, whitish, covered with sparse brown hairs and olive scales, the latter numerous on sides (Fig. 3). Spinnerets pale, not distinctive. Epigyne with two oval windows, occupying more than half of the epigynal plate and separated by a narrow median septum (Fig. 8). Copulatory openings sclerotised, located anteriorly, facing each other slightly diagonally (Fig. 11). Copulatory ducts run through half of the epigyne, arched. Spermathecae duct-like, long and twisted (as shown in Fig. 12), falling centrifugally into a small, oval terminal chamber. Accessory glands well visible: ag1 located near the copulatory duct entry and ag2 at the terminal chamber (Fig. 11).

Dimensions. TL 6.35, CL 2.6, CW 2.25, CH 1.5, AL 4.0, AW 2.75, AEW 1.76, PEW 1.76, EFL 1.07, AME 0.54, ALE 0.27, PME 0.07, PLE 0.24, DAM 1.1.

Leg I. 6.07 (1.93+1.15+1.13+1.18+0.68); leg II: 5.92 (1.88 +1.03+1.23+1.13+0.65); leg III: 6.18 (2.0+1.0+1.15+1.38+ 0.65); leg: IV: 6.04 (1.88+0.88+1.25+1.38+0.65).

Male. Unknown.

Distribution. Recorded from the central western part of northern Australia.

Etymology. After Arche, a muse in Greek mythology, meaning “the beginning”.

Cytaea aoide sp. nov.

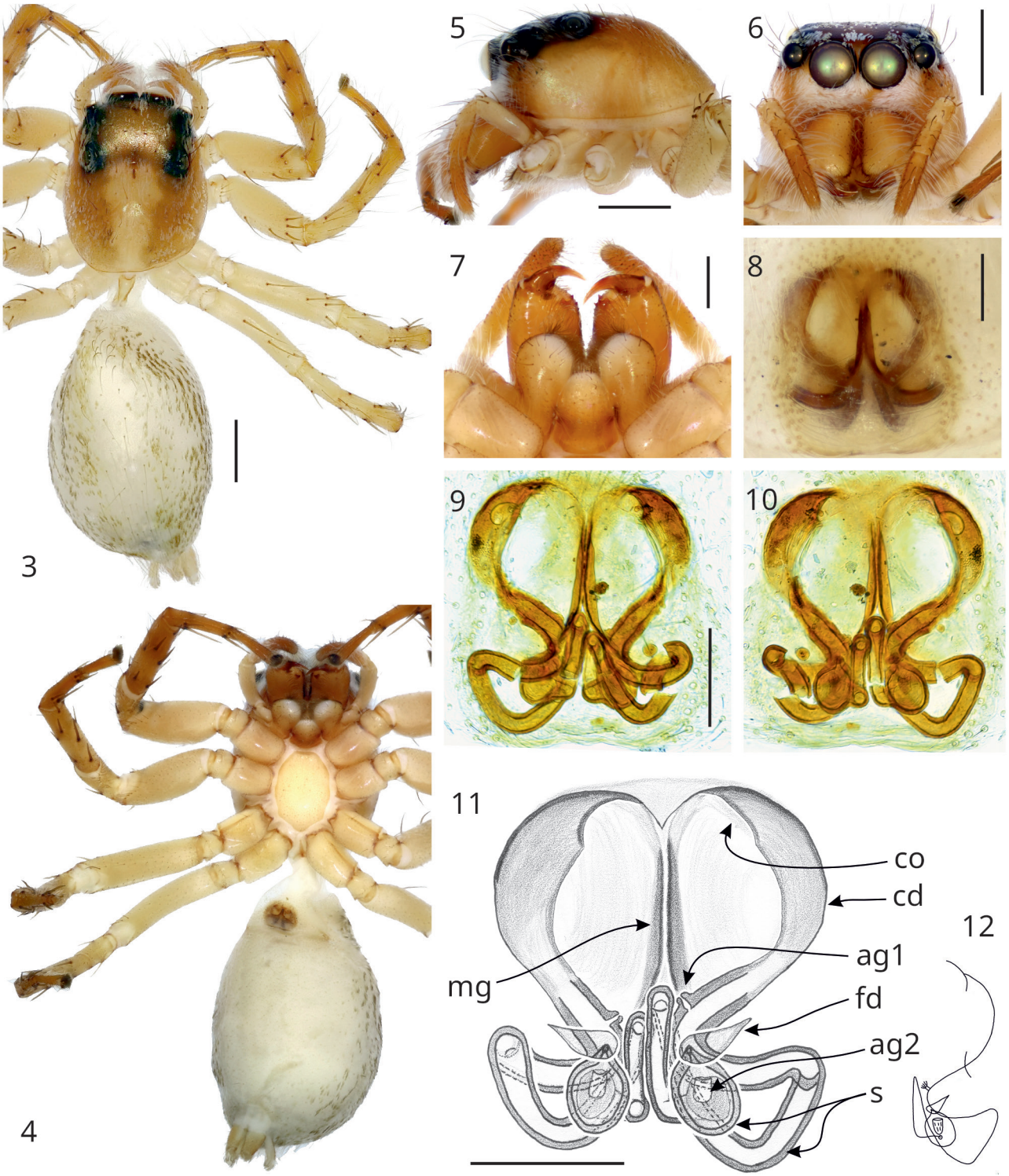
urn:lsid:zoobank.org:act:FA25B106-1C07-481E-A328-F833AB8B9F08

Figs 13–22.

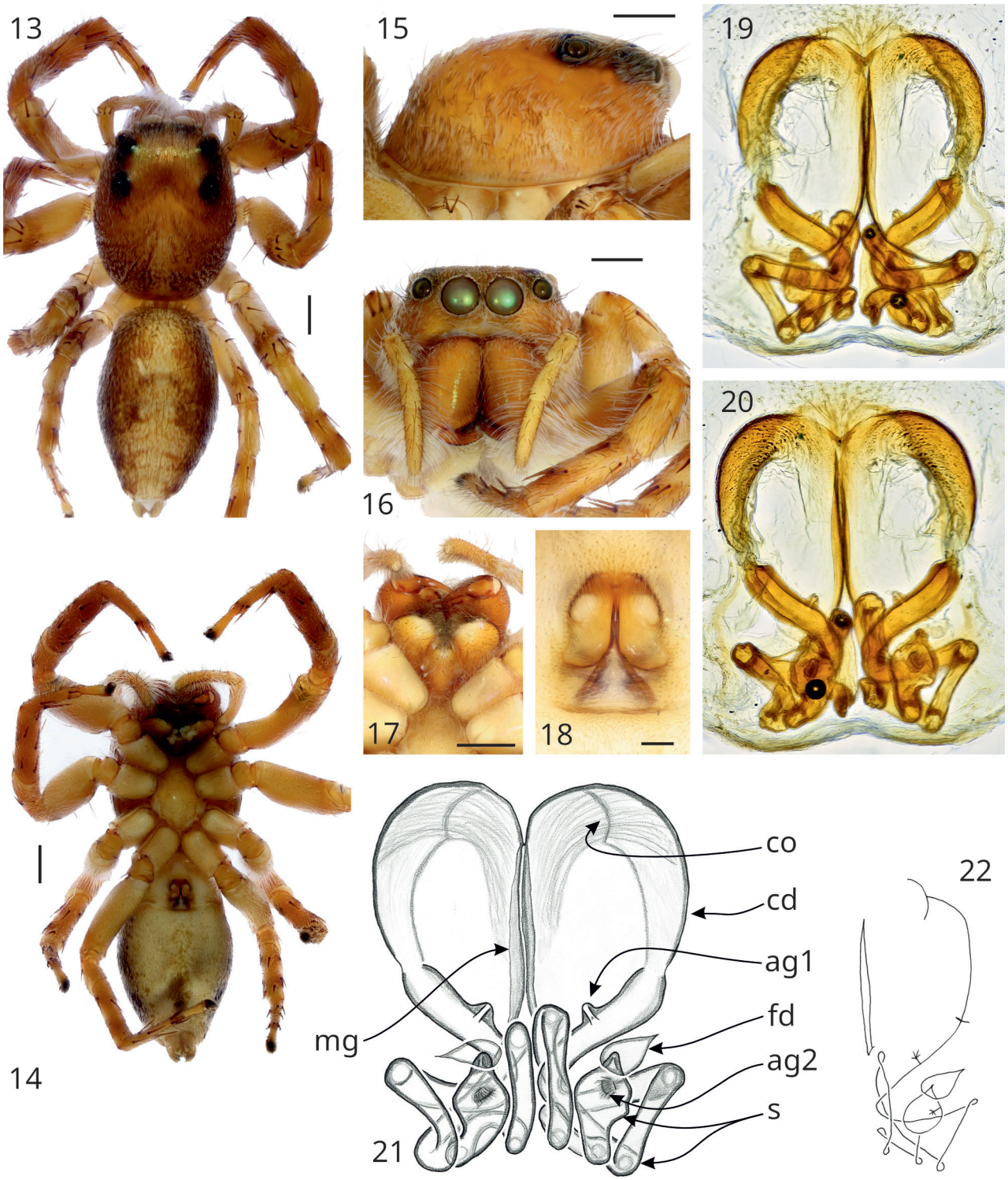
Type material. Holotype ♀, Papua New Guinea, East Sepik Province, Kairiru Island, Mount Malangis, 3°20'00.0"S 143°33'00.0"E, leg, Borrell O.W., 4.05.1976, KS8027 (AM).

Other material examined. Only known from female holotype.

Diagnosis. *Cytaea aoide* sp. nov. is most similar to *C. melete* sp. nov., but these two species can be distinguished by the shape of the epigynal windows and the configuration of the spermathecal ducts. In *C. aoide*, the copulatory ducts are less curved than in *C. melete*. The duct-like spermathecae make seven sharp turns (Fig. 22), whereas in *C. melete* they form seven slight, more rounded coils. The lateral spermathecal loop in *C. aoide* is shorter and makes sharp turns, occupying approximately 52% of the spermatheca’s total length, while in *C. melete* the loop is



Figures 3-12. *Cytaea arche* sp. nov. Holotype. (3) dorsal view; (4) same, ventral view; (5) same, cephalothorax lateral view; (6) same, frontal view; (7) same, chelicerae dentation; (8) epigyne dorsal view; (9) same, dorsal view; (10) same, ventral view; (11–12) same, schematic drawings (**co.** copulatory opening; **cd.** copulatory duct; **mg.** median guide; **s.** spermatecae; **ag I** – **ag II.** accessory glands; **fd.** fertilization duct). Scale bars = 1mm, except for Figs 8-11 (0.2mm).



Figures 13-22. *Cytaea aoide* sp. nov. Holotype. (13) dorsal view; (14) same, ventral view; (15) same, cephalothorax lateral view; (16) same, frontal view; (17) same, chelicerae dentation; (18) epigyne dorsal view; (19) same, dorsal view; (20) same, ventral view; (21-22) same, schematic drawings (**co.** copulatory opening; **cd.** copulatory duct; **mg.** median guide; **s.** spermatecae; **ag I** – **ag II.** accessory glands; **fd.** fertilization duct). Scale bars = 1mm, except for Figs 18-21 (0.2mm).

circular and occupies about 75% (Figs 30–31 vs Figs 21–22). In both species, the spermathecae terminate posteriorly in a pear-shaped chamber, with the longer axis of the chamber aligned parallel to the epigynal axis. However, in *C. aoide*, the chamber is tilted outward toward the lateral spermathecal loop, and the fertilisation duct (fd) is located around the midpoint of the spermathecal length. In *C. melete*, the chamber is oriented closer to the median axis of the epigyne, and the fertilisation duct exits more apically, almost reaching accessory gland I (ag1).

Description (holotype). Cephalothorax brown, covered with numerous brown setae and brown and white scales (Figs 13, 15). Eye surroundings black. Eye field wider than long, its length 36% of CL. PME halfway between PLE and ALE. Fovea well visible, located between PLE (Fig. 13). Thoracic slope steep starts well behind PLE. Clypeus light-brown, covered with dense, brown and white scales, its height about 36% of AME diameter (Fig. 16). Chelicerae light-brown, moderately robust, inclined downwards, covered by sparse brown hairs (Fig. 16). Promargin with 4 teeth, retromargin with a single bicuspidate tooth (Fig. 17). Endites and labium yellowish, with pale chewing margins (Fig. 17). Sternum oval, yellowish (Fig. 14). Legs I–II brownish, III–IV yellowish with brown rings on podomeres (Figs 13–14). All legs covered with white hairs and brown setae; spines numerous (Figs 13–14, 16). Leg formula: I–III–II–IV. Abdomen elongate, yellowish with herringbone pattern, densely covered with brown and whitish scales (Fig. 13). Spinnerets pale brown, not distinctive. Epigyne with two oval windows, occupying more than half of the epigynal plate and separated by a narrow median septum (Fig. 18). Copulatory openings sclerotised, located anteriorly, facing each other (Fig. 21). Copulatory ducts run through half of the epigyne. Spermathecae duct-like, long and twisted (as shown at Figs 19–22), fall posteriorly into a pear-shaped terminal chamber. Accessory glands well visible: ag1 located near the copulatory duct entry and ag2 close to the fertilisation duct (Fig. 21).

Dimensions. TL 9.8, CL 4.5, CW 3.65, CH 2.25, AL 5.0, AW 3.15, AEW 2.7, PEW 2.83, EFL 1.6, AME 0.67, ALE 0.39, PME 0.11, PLE 0.39, DAM 1.5.

Leg I. 9.5 (2.65+1.75+2.25+2.0+0.85); leg II: 8.75 (2.65 +1.75+1.9+1.65+0.8); leg III: 9.15 (3.0+1.65+1.65+2.0 +0.85); leg: IV: 8.7 (2.65+1.5+1.75+2.1+0.7).

Male. Unknown.

Distribution. Known only from the type locality.

Etymology. Named after Aoide, a muse from Greek mythology. The Latin meaning of Aoide is “singing and poetry”.

Cytaea melete sp. nov.

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Figs 23–31.

Type material. Holotype ♀ Sansapor, New Guinea, A.P.O. 159, leg, R. B. Burrows, Dec. 1944 (AMNH number currently unavailable).

Diagnosis. *Cytaea melete* sp. nov. can be distinguished from the morphologically most similar species, *C. aoide* sp. nov., by the degree and pattern of sclerotisation on the epigyne and by the configuration of the spermathecae ducts. In *C. melete*, the sclerotisation is limited to the copulatory openings and the median guide, whereas in *C. aoide* the entire margin of the epigynal windows is sclerotised (Fig. 18 vs Fig. 28). Median guide sclerotization shields in *C. melete* continue down true field of spermatheca, while in *C. aoide* are going above the median and lateral spermathecal loops. The copulatory ducts in *C. melete* are more curved than in *C. aoide*. The spermathecae in *C. melete* form gentle coils, including a distinct full lateral circle in the initial part (Fig. 30), which is absent in *C. aoide*, where the ducts form sharp angular turns without a circular lateral loop.

Description (holotype). Cephalothorax brown, covered with brown setae and brown and white scales (Figs 23, 25). Eye surroundings black. Eye field wider than long, its length 33% of CL. PME halfway between PLE and ALE. Fovea well visible, located between PLE (Fig. 23). Thoracic slope steep, starts well behind PLE. Clypeus yellowish, covered with dense, white scales, its height about 33% of AME diameter (Fig. 26). Chelicerae brownish, moderately robust, inclined downwards. Promargin with 4 teeth, retromargin with a single bicuspidate tooth (Fig. 27). Endites and labium brown, with pale chewing margins. Sternum oval, whitish (Fig. 24). Legs light-brown, ventrally pale. All legs covered with white hairs and sparse brown setae; spines numerous (Figs 23–24). Leg formula: I–III–IV–II. Abdomen elongate, yellowish with herringbone pattern, covered with sparse brown hairs and light-brown scales, the latter more numerous on sides (Fig. 23). Spinnerets pale, not distinctive. Epigyne with two oval windows, occupying slightly more than half of the epigynal plate and separated by a narrow median septum (Fig. 28). Copulatory openings sclerotised, located anteriorly (Fig. 30). Copulatory ducts run through half of the epigyne. Spermathecae duct-like, long and twisted (as shown at Figs 29–31), fall posteriorly into a pear-shaped terminal chamber. Accessory glands well visible: ag1 located near the copulatory duct entry and ag2 on the terminal chamber, close to the fertilisation duct (Fig. 30).

Dimensions. TL 9.5, CL 4.5, CW 3.75, CH 2.85, AL 4.75, AW 2.85, AEW 2.75, PEW 2.7, EFL 1.5, AME 0.71, ALE 0.4, PME 0.07, PLE 0.3, DAM 1.57.

Leg I. 9.94 (3.0+1.88+2.3+1.88+0.88); leg II: 8.93 (2.85 +1.65+1.88+1.75+0.8); leg III: 9.19 (3.0+1.63+1.63+2.05 +0.88); leg: IV: 9.01 (2.95+1.4+1.88+1.9+0.88).

Male. Unknown.

Distribution. Known only from the type locality.

Etymology. Named after Melete, a muse from Greek mythology. The Latin meaning of Melete is “an exercise, study, work”.

Cytaea telksinoe sp. nov.

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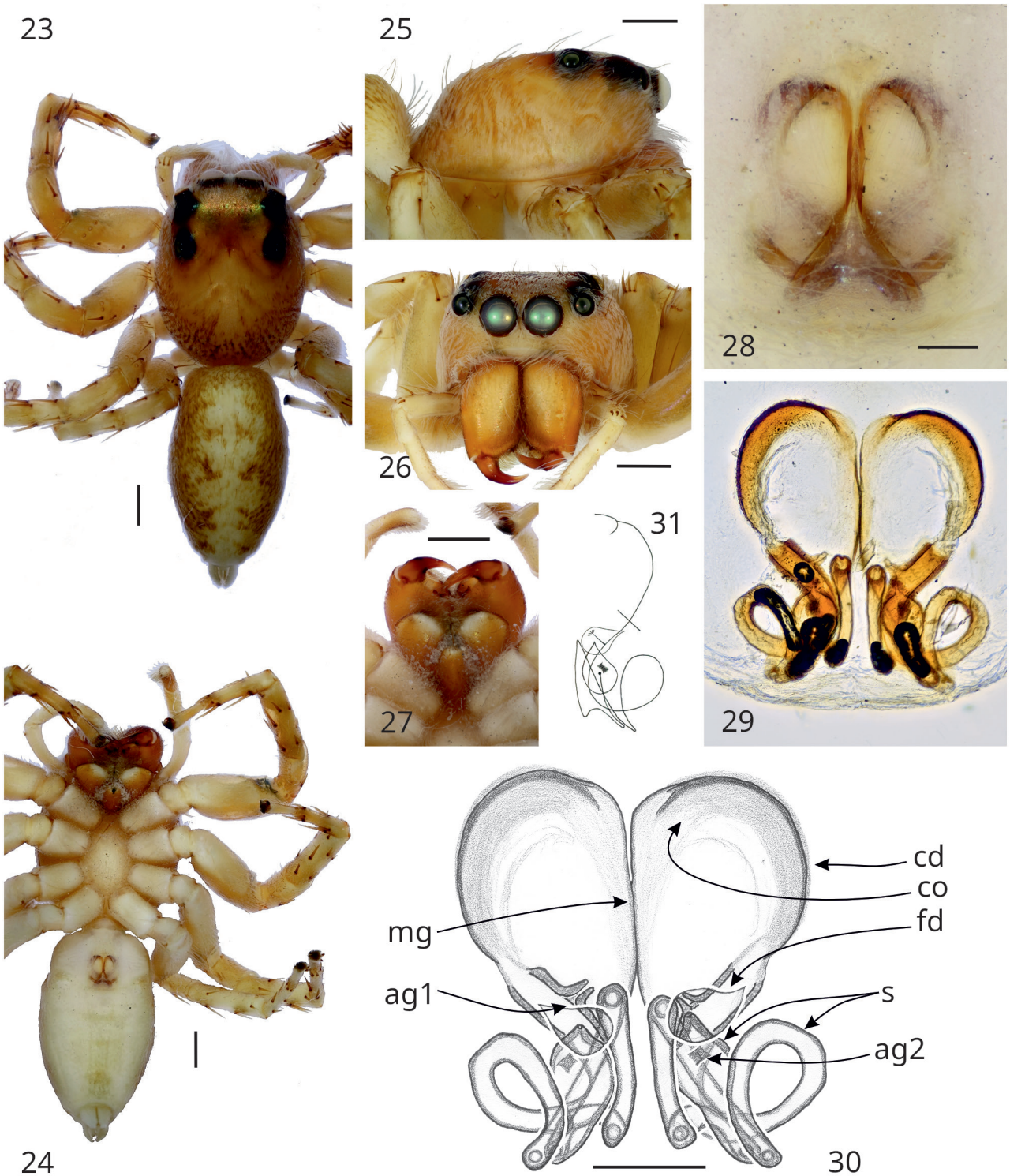
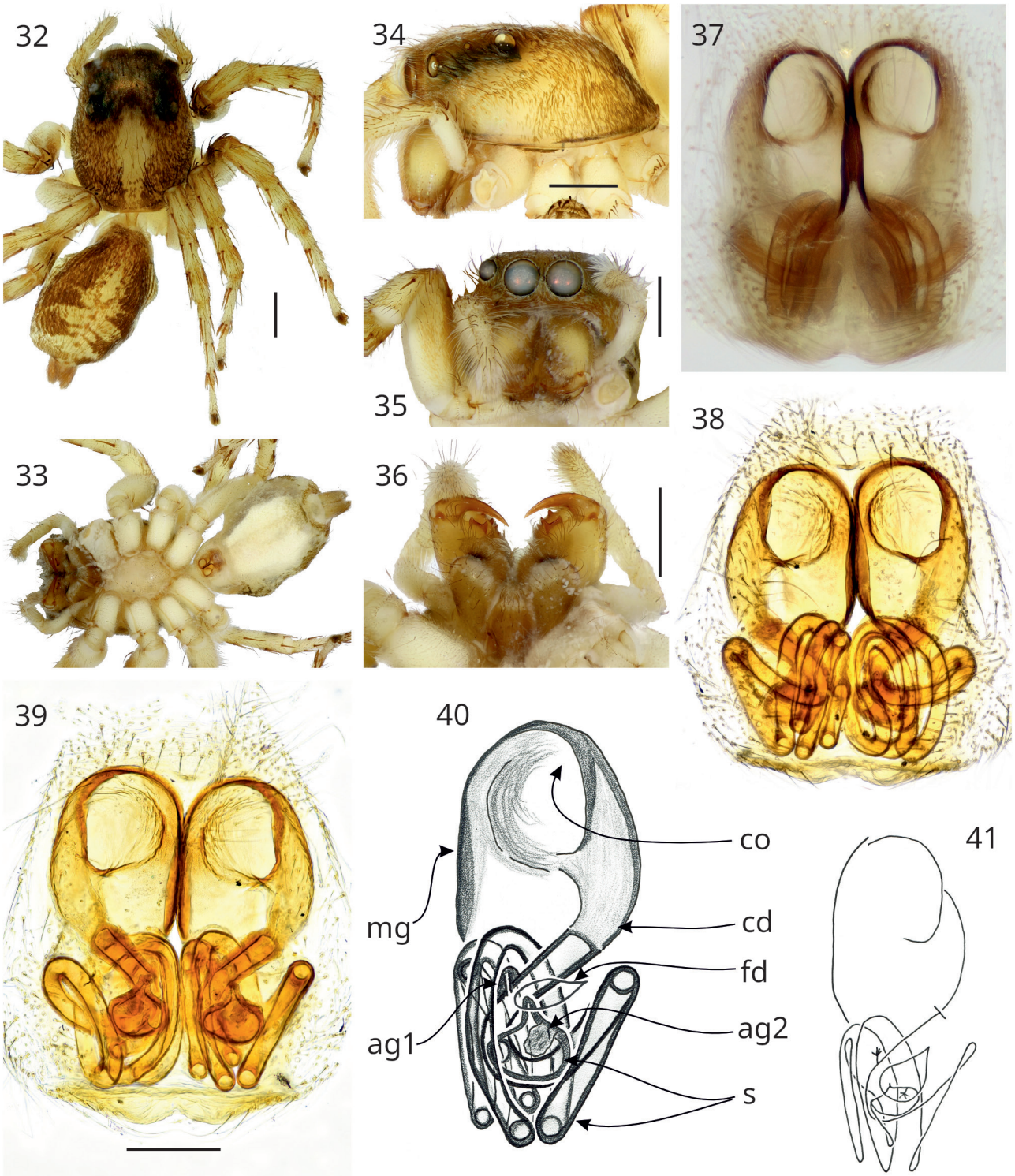
Figs 32-41.



Figures 23-31. *Cytaea melete* sp. nov. (23) dorsal view; (24) same, ventral view; (25) same, cephalothorax lateral view; (26) same, frontal view; (27) same, chelicerae dentation; (28) epigyne dorsal view; (29) same, ventral view; (30-31) same, schematic drawings (**co.** copulatory opening; **cd.** copulatory duct; **mg.** median guide; **s.** spermatecae; **ag I** – **ag II.** accessory glands; **fd.** fertilization duct). Scale bars = 1mm, except for Figs 28-30 (0.2mm).



Figures 32-41. *Cytaea telksinoe* sp. nov. Holotype. (32) dorsal view; (33) same, ventral view; (34) same, cephalothorax lateral view; (35) same, frontal view; (36) same, chelicerae dentation; (37) epigyne dorsal view; (38) same, dorsal view; (39) same, ventral view; (40-41) same, schematic drawings (**co.** copulatory opening; **cd.** copulatory duct; **mg.** median guide; **s.** spermatecae; **ag I** – **ag II.** accessory glands; **fd.** fertilization duct). Scale bars = 1mm, except for Figs 37-40 (0.2mm).

Type material. Holotype ♀, Indonesia, Papua, Tolikara Regency, Mount Doorman, 3°28'00.0"S 138°25'00.0"E, leg. D. Kirkness, 1.02.1973, KS19005 (AM).

Diagnosis. *Cytaea telksinoe* sp. nov. is most similar to *C. nimbata* (Thorell, 1881), a species known from New Guinea, but differs in several external and genitalic characters. The cephalothoracic pattern in *C. telksinoe* forms a distinctive diamond shape extending from the fovea toward the posterior edge of the cephalothorax, whereas in *C. nimbata* the pattern is triangular, with an equilateral triangle whose base begins between the posterior lateral eyes (Fig. 32). The abdominal patterns also differ markedly between the two species. Cheliceral dentition in *C. telksinoe* consists of four promarginal teeth, compared to five in *C. nimbata*. The epigynal windows are non-sclerotised in the new species, whereas in *C. nimbata* they are distinctly sclerotised. The span of the copulatory ducts in *C. telksinoe* is approximately equal to the span of the spermathecae, while in *C. nimbata* the ducts span a noticeably wider area. The median spermathecal loops in *C. telksinoe* complete two full coils, compared to three in *C. nimbata*. Additionally, the lateral loop of the spermatheca in *C. telksinoe* is straight with a sharp turn, whereas in *C. nimbata* the spermatheca duct forms an outwardly bent loop.

Description (holotype). Cephalothorax brown, covered with numerous brown setae and brown scales (Figs 32, 34). Eye surroundings black. Eye field wider than long, its length 39% of CL. PME halfway between PLE and ALE. Fovea well visible, located between PLE (Fig. 32). Thorax with a yellow median stripe; thoracic slope steep, starts well behind PLE. Clypeus brown, covered with dense, brown and white scales, its height about 29% of AME diameter (Fig. 35). Chelicerae yellowish, darker at the base, moderately robust, inclined downwards, covered by sparse brown hairs (Fig. 35). Promargin with 4 teeth, retromargin with a single bicuspidate tooth (Fig. 36). Endites and labium grey-brown, with lighter chewing margins (Fig. 36). Sternum oval, whitish (Fig. 33). Legs light-brown, covered with brown hairs and brown setae (Figs 32–34). Leg formula: III–IV–II–I. Abdomen elongate, yellowish with herringbone pattern, densely covered with brown scales (Fig. 32). Spinnerets light-brown, not distinctive. Epigyne with strongly marked copulatory openings, occupying more than half of the epigynal windows and separated by a narrow median septum (Fig. 37). Copulatory ducts run through half of the epigyne. Spermathecae duct-like, long and twisted (as shown at Figs 38–41), fall centrifugally into oval terminal chambers. Accessory glands well visible: ag1 located near the copulatory duct and ag2 close to the fertilisation duct (Fig. 40).

Dimensions. TL 7.0, CL 3.5, CW 3.3, CH 1.2, AL 3.5, AW 2.3, AEW 2.21, PEW 2.13, EFL 1.36, AME 0.61, ALE 0.34, PME 0.09, PLE 0.3, DAM 1.26.

Leg I. 7.67 (2.3+1.38+1.78+1.38+0.83); leg II: 7.68 (2.5+1.35+ 1.5+1.55+0.78); leg III: 7.89 (2.63+1.25+ 1.38+1.85+0.78); leg: IV: 7.84 (2.5+1.23+1.55+1.83+0.73).

Male. Unknown.

Distribution. Known only from the type locality.

Etymology. Named after Telksinoe, a muse from Greek mythology. The Latin meaning of Telksinoe is "charming mind".

Discussion

As a result of this study, the number of described *Cytaea* species increases to 44. The four newly described species appear to form a distinct species group, alongside four previously known members of the genus: *C. nimbata*, *C. sinuata*, *C. rubra*, and *C. argentosa*. Together, these eight species may constitute a separate evolutionary lineage, distinct from that of *C. alburna* – the type species of the genus. While *C. alburna* and the species described here share duct-like spermathecae with two accessory glands, they differ in key aspects of the female epigyne, including the shape and complexity of the copulatory ducts and the position of the copulatory openings. Notably, the redescription of *C. alburna* based on the type and newly collected material (Trębicki *et al*., 2021) revised the interpretation of the epigyne morphology, identifying the long duct-like structure as the spermatheca rather than the copulatory duct. This reinterpretation enables more accurate homology assessments across *Cytaea*, including the four new species described here. All eight species are characterised by epigynes following a common structural plan, differing primarily in quantitative traits such as the shape and length of the copulatory ducts and the degree of coiling in the spermathecae. These characters appear to reflect an evolutionary trend of morphological elaboration or simplification in the female genitalia, potentially driven by sexual selection mechanisms.

The new species described in this study are based on a single sex – females – and, in several cases, on single specimens. While such limited material often presents challenges and may lead to taxonomic uncertainty (Huber *et al.*, 2024), in this case the newly described taxa were selected from among numerous museum specimens and exhibit sufficiently distinct morphological features to justify their recognition as valid species. Detailed morphological documentation and comprehensive descriptions are provided to facilitate future matching with the opposite sex. It is worth noting that in some groups of tropical invertebrates, species originally described from singletons have later been confirmed as valid, albeit genuinely rare, taxa (Wells *et al*., 2019). While rarity may sometimes be a consequence of inadequate or uneven sampling effort, extensive surveys in tropical regions consistently reveal that a substantial proportion of species – often around 30% – are represented by singletons (Lim *et al.*, 2012). Although DNA sequences were not available for the specimens described here due to their age and degraded DNA, it is important to note that obtaining genetic data from historical museum material remains a significant technical challenge (Raxworthy & Smith 2021). Nevertheless, this approach – central to the emerging field of museomics – is increasingly being applied to taxonomic research, including our ongoing work on *Cytaea* (Trębicki *et al.*, in prep.). This project aims to recover COI barcodes and genomic data from historical specimens of the genus, and is expected to yield molecular data for many species, including some of those described in the present paper. Our findings provide new insight into the morphology and diversity of *Cytaea* and underscore the need for a comprehensive taxonomic revision of the genus supported by molecular phylogenetic analyses.

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