

Three new jumping spiders of the genus *Cosmophasis* from Wallacea (Araneae: Salticidae: Chrysillini)

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Abstract. *Cosmophasis ambonensis* sp.nov. is described from Ambon, and both *C. bandaneira* sp.nov. and *C. waeri* sp.nov. are described from the Banda Islands, each from a single specimen. The female *C. squamata* is described from two specimens collected on Banda Neira. Photographs of seven of the best-known *Cosmophasis*, and four unidentified *Cosmophasis* (*Cosmophasis* sp. A-D) are also presented to support their identification in the field. The status of *C. viridifasciata*, including a distribution that is restricted to Ambon, is discussed.

Key words. Ambon, Banda Besar, Banda Islands, Banda Neira, *Cosmophasis ambonensis*, *Cosmophasis baehrae*, *Cosmophasis bandaneira*, *Cosmophasis bitaeniata*, *Cosmophasis lami*, *Cosmophasis micarioides*, *Cosmophasis squamata*, *Cosmophasis thalassina*, *Cosmophasis umbratica*, *Cosmophasis valeriae*, *Cosmophasis viridifasciata*, *Cosmophasis waeri*, Indonesia, island biogeography

The chrysilline genus *Cosmophasis* Simon 1901 (1901a) includes 58 named species, primarily from tropical southeast Asia and tropical Australia (Appendix 1; WSC 2020; Metzner 2020). This includes 7 existing and 17 new species described in the most recent, and partial, revision of the genus by Žabka & Waldock (2012). This revision remains the best reference with respect to delimitation of the genus. Here we describe 3 new species from Ambon and the Banda Islands, bringing the total number of *Cosmophasis* species to 61. Although this appears to represent a relatively large genus, only 6 of these species (*C. baehrae*, *C. bitaeniata*, *C. lami*, *C. micarioides*, *C. thalassina*, *C. valeriae*) are sufficiently well-known that they might be reliably identified in the field. A seventh species (*C. umbratica*) has been frequently observed and subject to study, yet the female of that species has not been formally described, and neither males nor females can be reliably distinguished from the widely-distributed *C. thalassina*. Living males and females of 4 of the well-known species (*C. bitaeniata*, *C. baehrae*, *C. micarioides*, *C. thalassina*) were recently figured in a popular book on Australian spiders (Whyte & Anderson 2017). Of the 61 species now placed in this genus, 43 are known from either a single gender or a single type specimen, and some of these types have been lost. At least 16 of the 61 species, including all that have been described from Africa, are either misplaced or dubious. Clearly a revision of the entire genus is in order, but this must also be accompanied by a considerable amount of field study in areas that may be difficult to access. Reliance on early descriptions and single specimens will never be sufficient.

Difficulty of access is directly linked to the importance of *Cosmophasis* with respect to our understanding of trans-Wallacean island biogeography and speciation, from the mainland of southeast Asia (Sunda, now submerged in large part) through Wallacea to tropical Australasia (Sahul) and islands of the southwestern Pacific (Figure 1). Through many cycles of Pleistocene glaciation, the islands of Wallacea have maintained their isolation, as stepping-stones between the Sundan and Sahulian biogeographical provinces (Hill 2010). It is noteworthy that, although we might expect to find considerable diversity of this genus in both Borneo, to the west, and New Guinea, to the east, we still know little about the occurrence of *Cosmophasis* in either place, or in the intervening islands of Wallacea.



Figure 1. Known occurrence of *Cosmophasis* species in Sunda, Sahul and adjacent oceanic islands. Better-known species are identified in the key at upper right. See Appendix 1 for identification of the other species, most know from a single locality, by number. The new species described here are from Ambon and the Banda Islands within the Wallacean region (small yellow rectangle near the center), shown in more detail in Figure 2. Localities are based on references cited in Appendix 1, as well as reliable photographs posted in iNaturalist and FLICKR. Note that some records of *C. thalassina* (52, generally found to the south) and *C. umbratica* (57, generally found to the north) are most likely confused, as separation of these species may not be possible. Background image courtesy of NASA/USGS/Landsat.

DNA sequencing supports the placement of *Cosmophasis* (specifically, *C. micarioides*) within the tribe Chrysillini (Bodner 2009; Bodner & Maddison 2012; Maddison 2015), although some related studies (Maddison et al. 2014, 2017) did not include this genus. A more detailed DNA study of several chrysilline genera (Kanesharatnam & Benjamin 2019) did include a "*Cosmophasis* sp." from Sri Lanka, but from the published figure of that specimen it does not appear to be a member of this genus. Another recent "*Cosmophasis*" from India (*C. undulata* Caleb & Karthikeyani 2015) is now placed in the chrysilline genus *Phintelloides* Caleb & Acharya 2020, and we presently have no reliable reports of any *Cosmophasis* in south Asia, west of the Andaman Islands. Chrysillines are thought to originate in tropical Afroeurasia (Hill 2010), and thus the divided and relatively balanced distribution of *Cosmophasis* species between Sunda, Wallacea and Sahul, combined with their apparent restriction to the orient, is of particular interest. The range of one species, *C. lami*, now extends from the Seychelles in the west to the Society Islands and the Hawaiian Islands in the East. One undescribed species has even been found on Diego Garcia, a small atoll in the central Indian Ocean (nadatch13 2020). Although we know little of the biology of these species, their wide transoceanic distribution suggests human transport. The same may apply to most other species in the genus.

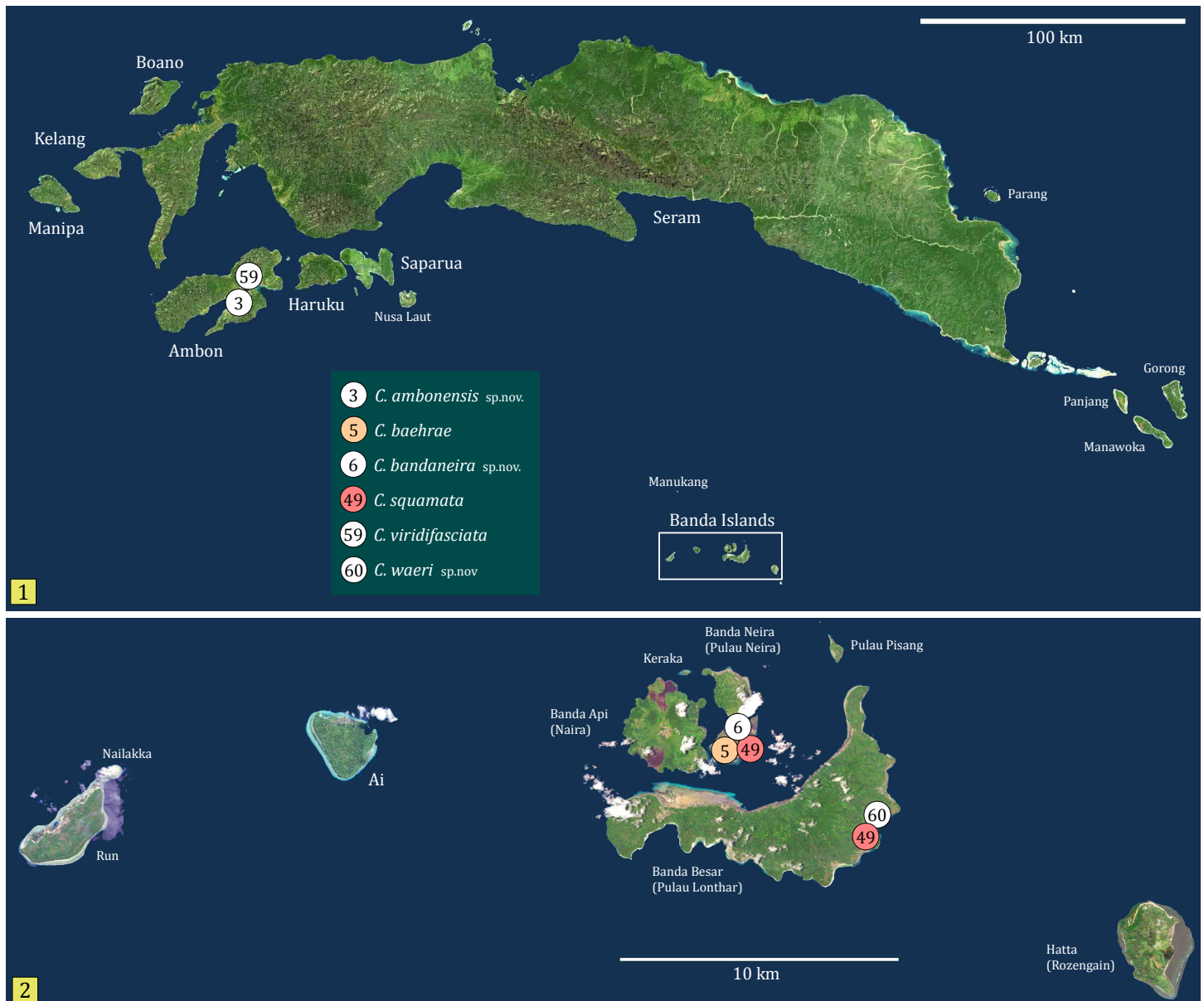


Figure 2. Records of *Cosmophasis* in Ambon and the Banda Islands. Ambon is the type locality for *C. viridifasciata*. The other records are all new. **2**, Detail of Banda Islands corresponding to inset rectangle in (1). See Hurni-Cranston Hill (2020) for more views of the Banda Islands. Background images courtesy of NASA/USGS/Landsat.

Much of the difficulty associated with the identification of *Cosmophasis* species lies in the fact that the general appearance or coloration of different species can be quite similar. For example, *C. baehrae*, *C. squamata* and *C. waeri* females, all found in the Banda Islands, look quite similar. Both males and females tend to have a cover of large, pigmented or transparent, rounded scales on the lateral margins and dorsum of the opisthosoma, overlapping in a manner that resembles an array of teleost fish scales (Figure 3; Hill 1979). Similar scales are also found on the opisthosoma of the African chrysiline *Natta horizontalis* Karsch 1879 (Hill 2009), and comparative DNA studies that include both *Cosmophasis* and *Natta* could be revealing. The bold, transversely-striped patterns of orange-pigmented scales that characterize both male and female *C. bitaeniata* are found in a number of different species, as are the bright bands of iridescent carapacial scales characteristic of *C. thalassina*; both scale patterns can be found in some species (Figure 4). The iridescent or ultraviolet-reflecting scales of the carapace of *Cosmophasis* species are different from their opisthosomal scales in shape and structure (Figure 5; Land et al. 2007), but these scales, and their arrangement, can be very similar in different species.

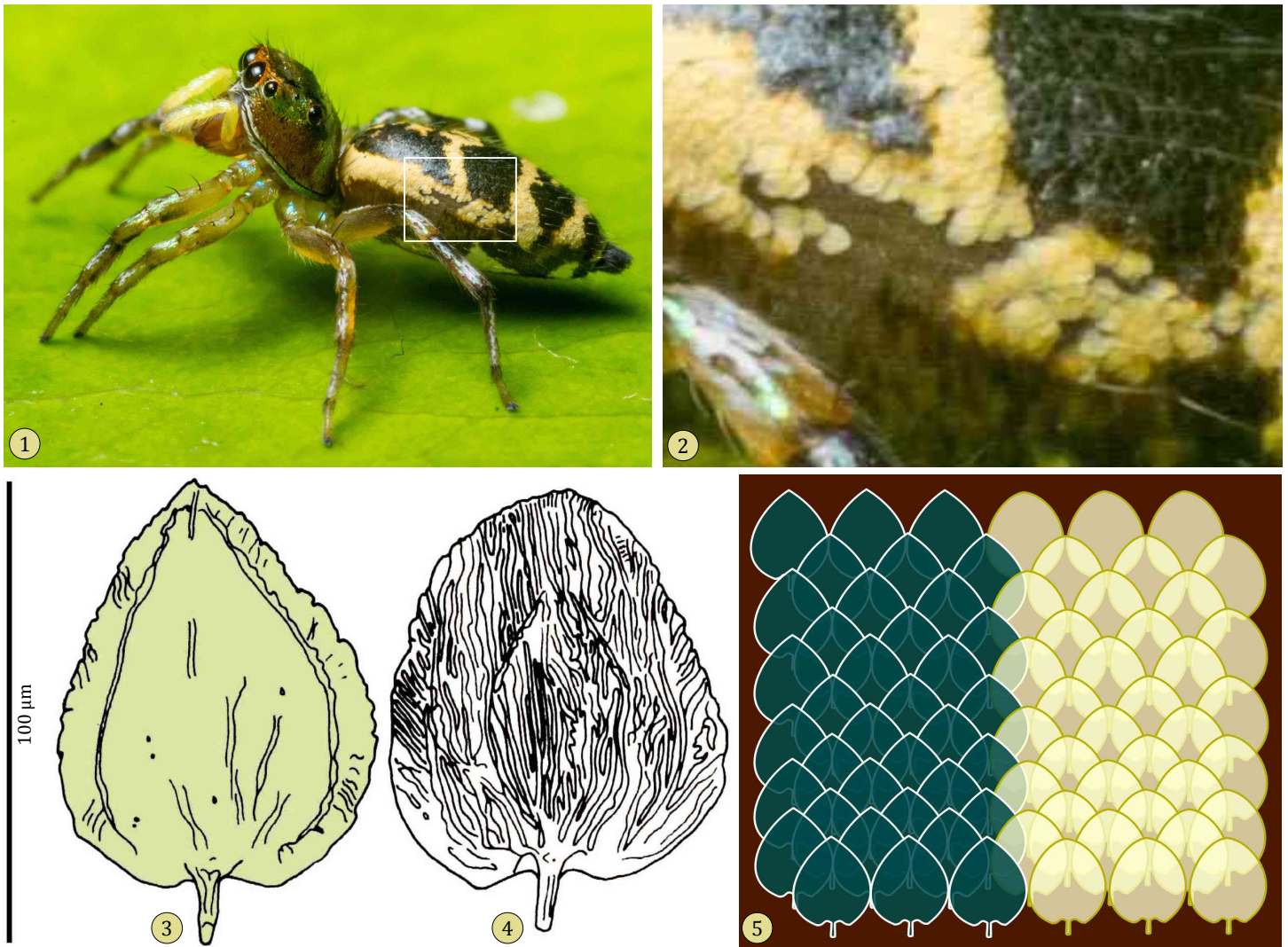


Figure 3. Opisthosomal scale cover of *Cosmophasis*. 1, Adult female *C. squamata* (HC-BB1f, Banda Besar, 8 FEB 2016). 2, Detail of overlapping scales from inset rectangle in (1). 3-4, Camera lucida drawings of dark (olive-green transparent) and light (white granular) opisthosomal scales from a female *Cosmophasis* sp. collected in Brunei in 1975 (after Hill 1979, 2009). 5, Schematic diagram of overlapping opisthosomal scales (posterior direction at the top).

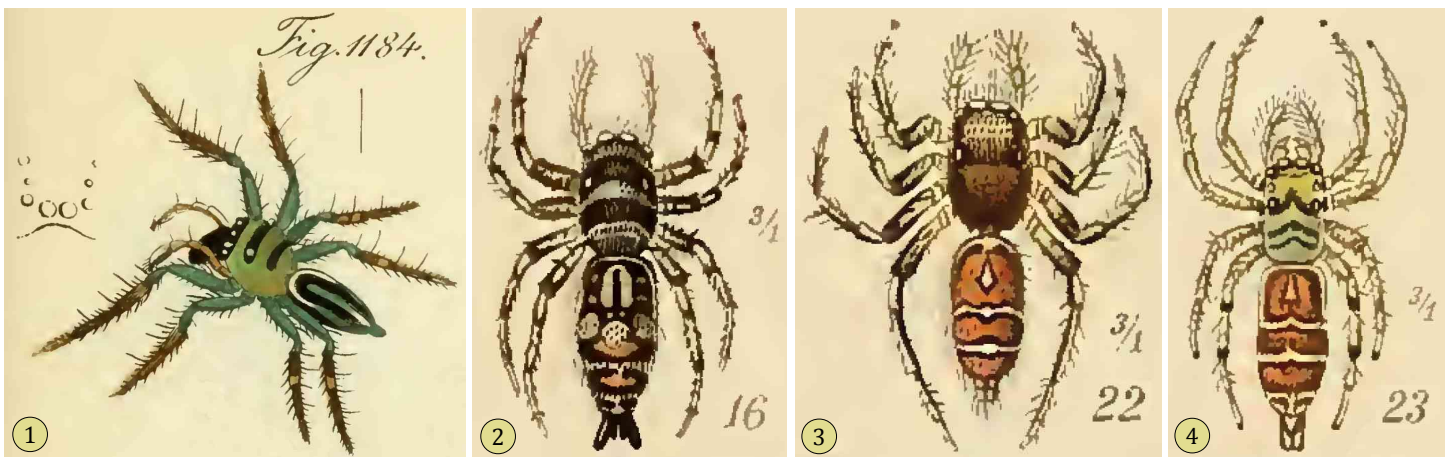


Figure 4. Early drawings of *Cosmophasis* species. 1, Adult ♂ *C. thalassina* (type) from Pulau Bintan just southeast of Singapore (C. L. Koch 1846). This spider, typical of many *Cosmophasis* males, was found in a typical *C. umbratica* location, and may actually represent that species. 2, Adult ♀ *C. micarioides* from Kei Dulah (Strand 2011). 3, Adult ♀ *C. orsimoides* from Elat in the Kei Islands (Strand 2011). 4, Adult or immature ♀ *C. maculiventris* from Trangan in the Kei Islands (Strand 2011).



Figure 5. Two views of dorsal opisthosomal scale cover from the exuvium of a penultimate male *Cosmophasis valerieae* from Bali. At least five different scale types can be seen here: wavy iridescent scales at the median; bright orange pigmented scales with a middorsal keel forming a band on either side of the median; wavy, dark transparent scales surrounding the bright orange scales; wavy, pigmented, semi-transparent scales comprising the anterior marginal band (lower right); wider, dark transparent scales (2, arrow) comparable to those shown in Figure 3:3. Iridescent carapacial scales resemble the wavy scales shown here.

Scale patterns can vary within a *Cosmophasis* species, although this has not been well-documented. Because of this variation, and the similar scale patterns of very different species, recent taxonomic work on *Cosmophasis* (Žabka & Waldock 2012) has focused on distinctive details of the male pedipalp and the female epigynum. Unfortunately for many species we only have inadequate descriptions or poor drawings. Even when drawings of these genitalia exist, subtle differences in detail or perspective may make them less useful for identification. Nonetheless the structure of the epigynum seems to vary a great deal in this genus, and that is very useful. Male pedipalps also vary greatly with respect to the rotation of the embolus from its origin on the tegulum to its slender apex in a distal furrow of the cymbium (Figure 6).

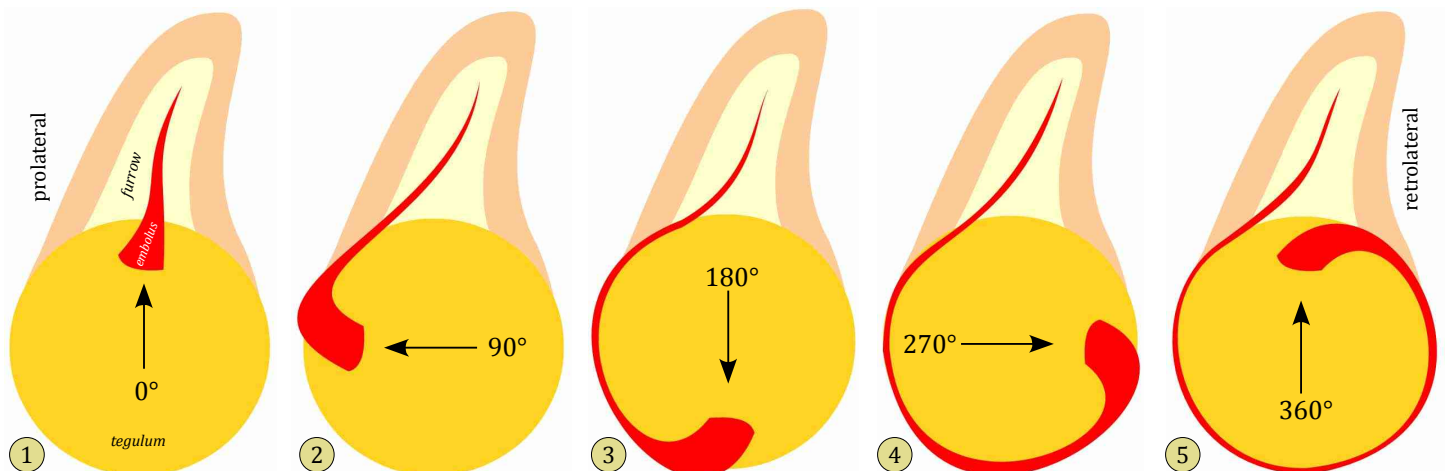


Figure 6. Diagrammatic ventral views of left pedipalp of male *Cosmophasis*, showing the convention used here to estimate the rotation of the embolus (in red) from its tegular origin to its apex in the cymbial furrow. See Appendix 1 for estimates of this rotation by species, based on published drawings or photographs.

Cosmophasis Simon 1901 (1901a)

In addition to our descriptions of three new *Cosmophasis* species from Ambon and the Banda Islands of Indonesia, here we also provide photographic documentation for the relatively well-known species in this genus, with a discussion of the species status of both *C. umbratica* and *C. viridifasciata*. See Žabka & Waldock (2012) for a diagnosis of this genus.

1. *Cosmophasis ambonensis*, new species

Figures 7:1, 8-11, Map (Figures 1-2) #3

Type material. The holotype ♂ (HC-AM1m) was collected as a penultimate by the senior author on a outdoor gravel floor near food stands in Ambon (collected 8 FEB 2016, specimen preserved in alcohol 20 FEB 2016). This single specimen, lacking the left pedipalp as an adult, will be deposited in the Florida State Collection of Arthropods (FSCA), Gainesville.

Etymology. The species name, *ambonensis*, is a reference to the fact that this species is at present only known from Ambon.

Diagnosis. The 390° rotation of the embolus is unusual (see Appendix 1). The pattern of scales on the carapace and dorsal opisthosoma also distinguishes this species from related species with similar scale patterns, many not described (Figure 7).

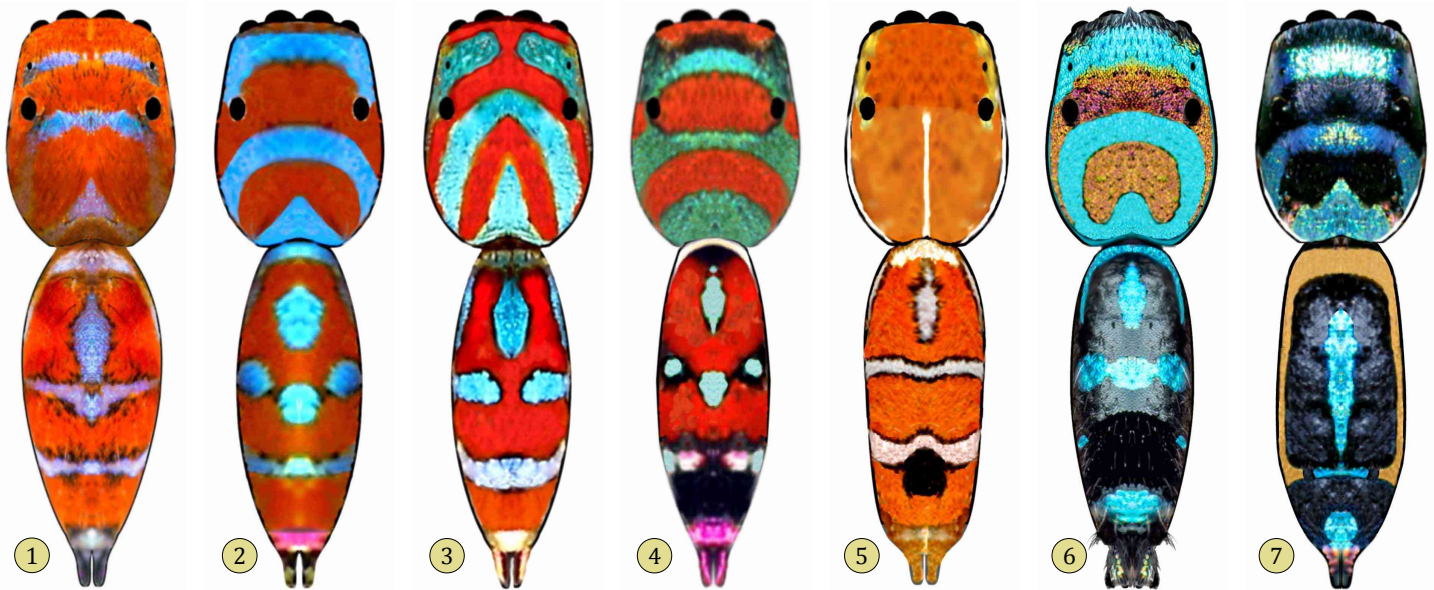


Figure 7. Comparative dorsal views of representative male *Cosmophasis* (drawings not to scale). 1, *C. ambonensis*, sp.nov., Ambon. 2, *Cosmophasis* sp. A, found at Warimak, Waigeo Island, West Papua (Baum 2019) and at Pulau Penem, Fam Islands, Indonesia (Smutný 2020). 3, *Cosmophasis* sp. B, found on Leilei Island (Sustainable Strategies Network 2018), Halmahera Island (Harris 2019), and Ternate Island (Knowles 2021a) in the Bacan Islands, Indonesia. 4, *Cosmophasis* sp. C, found at Manokwari, West Papua (Knowles 2021b). 5, *C. bitaeniata*, Queensland. 6, *C. valerieae*, Bali. 7, *C. bandaneira*, sp.nov., Banda Neira.

Description of male (holotype HC-AM1m; Figures 7:1, 8-11). Body length including spinnerets close to 5.5 mm. Chelicerae typical of males for this genus, about as long as distance from top of paturon to top of carapace, honey or yellow-brown in colour. The front of each paturon is flat, covered with transverse

grooves or striae. One very large, unidentate, anterolateral (prolateral, near base of fang) tooth that projects anteroventrally, two small, unidentate anteromedial teeth, and one large, unidentate, posteromedial (retrolateral, medial) tooth are present on each chelicera (Figure 10:2). The flexible articulation of the chelicerae is about as high as the clypeus, and the height of each is about 1/2 the diameter of an AME. Near the median, white setae extend ventrally from the clypeus, discontinuous with a thin marginal band of white setae that extends from the front around the sides of the carapace, and, above the marginal band, a second thin band of white setae on either side of the face.



Figure 8 (continued on next page). Views of the living holotype male *C. ambonensis* (HC-AM1m). Note that the left pedipalp is missing.



Figure 8 (continued from previous page). Views of the living holotype male *C. ambonensis* (HC-AM1m).



Figure 9. Holotype male *C. ambonensis* (HC-AM1m). 1-4, Detailed views of living spider. 5-7, Views of spider, preserved in ethanol. 1, Note transverse grooves on the front of each paturon. 2-3, Tracts or bands of iridescent light-blue scales are separated by tracts of bright red-orange pigmented scales on both the carapace (2) and the dorsal opisthosoma (3). 4, In this dorsal view, the dorsal (at left) and ventral (at right) distal tibial lobes of the male pedipalp can be seen. To follow the left pedipalp convention for purposes of comparison, this is a mirror image of the right pedipalp.

The anterior eye row is surrounded by white scales below, by bright red-orange scales of the anterior eye region above. Toward the front the sides of the carapace are covered with golden-iridescent scales. The dorsal carapace is covered with three tracts of bright red-orange scales, separated by a narrower, transverse band of light-blue iridescent scales between the PME that is interrupted at the median, about half-way between the ALE and PLE, a somewhat wider transverse band of light-blue iridescent scales just behind the PLE, extending to the rear to meet the margin at either side, and a somewhat triangular, median tract of light-blue to gold iridescent scales at the rear of the carapace (Figure 9:2). Similarly, mostly transverse tracts of light-blue iridescent scales are separated by three wide bands of bright red-orange scales on the dorsal opisthosoma, the first, at the front, interrupted by a median tract of light-blue iridescent scales (Figure 9:3).

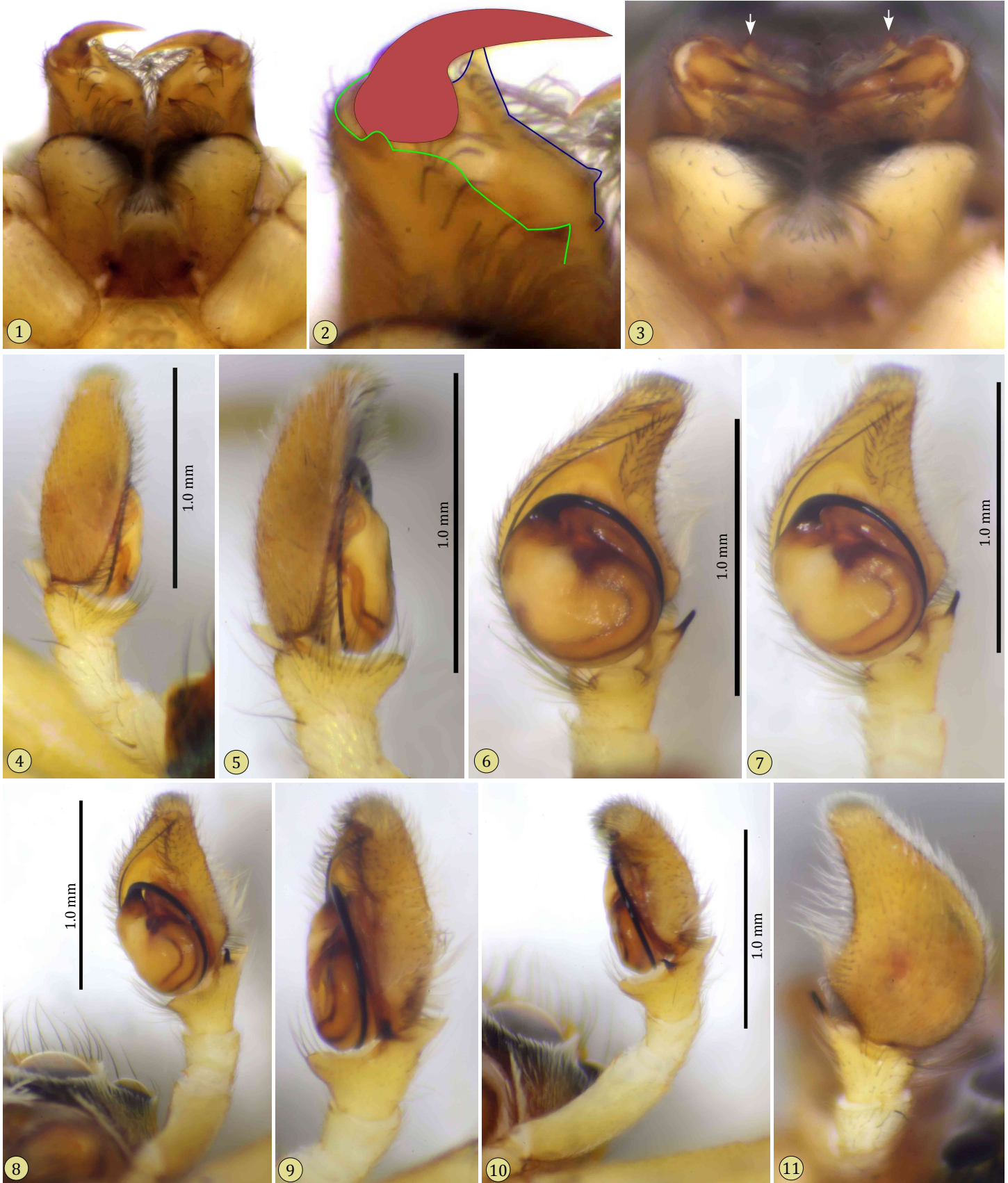


Figure 10. Holotype male *C. ambonensis* (HC-AM1m) in ethanol. **1**, Ventral/rear view of protracted chelicerae, endites and labium. **2**, Detail from (1) showing one large and two small teeth of the promargin (blue line), and one large medial tooth of the retromargin (green line). **3**, Ventral view showing anterior projection of the large promarginal teeth (arrows). **4-11**, Medial (4-5) to ventral (6-8) to lateral (9-10) to dorsal (11) views of right pedipalp (mirror images).

To the front and rear of the dorsal opisthosoma are bands of white to iridescent light-blue setae. The spinnerets are grey-black, with iridescent violet scales on the upper surface of each posterior spinneret. In life the legs are mostly honey or yellow-brown, with some light-blue iridescence above each coxa and femur.

In life the proximal segments of each pedipalp, to include the tibia, are dull yellow, the cybium light yellow-brown, with light-blue iridescence above the distal femur and patella (Figure 9:4). Each tibia has three marginal lobes, one rounded and ventral, one more acute and dorsal, and one retrolateral (lateral) between these, bearing the small, black RTA. Each RTA is hooked at the end (Figure 10:10). The round tegulum is relatively wide, and the distal cymbium extended but relatively short, for spiders of this genus. The 390° rotation of the embolus (see Figure 6 and Appendix 1) is unusual for this genus.

When immature (Figure 11), this male was very similar to the adult in colouration. Since immature males usually have a colour pattern similar to that of females, we can expect to find females of the same appearance at some time. This differs from the high degree of sexual dimorphism that is seen in other *Cosmophasis* species. Presently the female of this species is not known.



Figure 11. Views of the holotype male *C. ambonensis* (HC-AM1m) as a penultimate, with both pedipalps intact.

2. *Cosmophasis baehrae* Żabka & Waldock 2012

Figures 12-17, Map (Figures 1-2) #5

Material examined. Two adult females (HC-BN5f and HC-BN6f) were collected 13 FEB 2017 (preserved 18 FEB 2017) by the senior author on small garden croton plants (Euphorbiaceae: *Codiaeum variegatum* (L.) A. Juss.) growing along the roadside on Banda Neir in the Banda Islands. These specimens will be deposited in the Florida State Collection of Arthropods (FSCA), Gainesville. One male (Figure 11) and two more females from this habitat were also photographed but not collected.

Diagnosis. Adult males (Figure 12) can be identified by their mostly black and white colouration, including a median stripe of white setae extending from the front of the eye region, between the AME, to the clypeus. The sides of the carapace are covered with iridescent violet scales. Females (Figures 13-17) vary in appearance, but are generally brown to bronze or light-orange and ivory-white in colour, with white setae extending to the clypeus between the AME, as in the males. Identification can be confirmed by examining the epigynum, which bears two darker figures, each shaped like a retort (Figure 17). This is a widely-distributed but little-studied species, mostly from the tropical north of Australia (Figure 1).



Figure 12 (continued on next page). Adult male *Cosmophasis baehrae* from Banda Neira.



Figure 12 (continued from previous page). Adult male *Cosmophasis baehrae* from Banda Neira.



Figure 13 (continued on next page). Female *Cosmophasis baehrae* from Banda Neira (HC-BN5f).

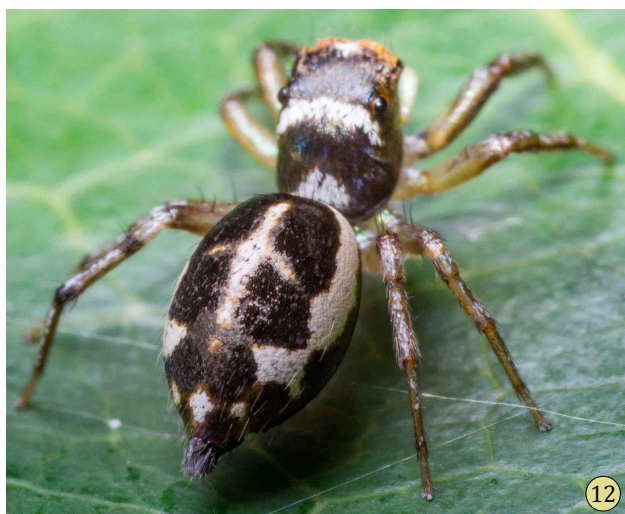
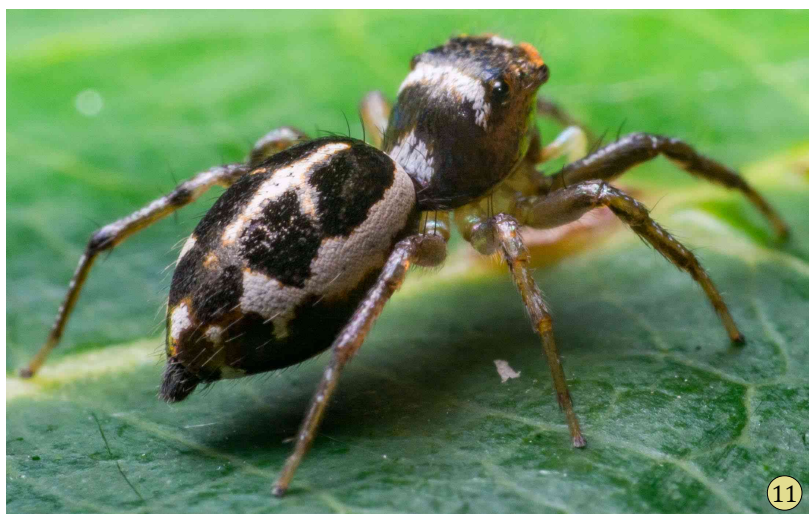
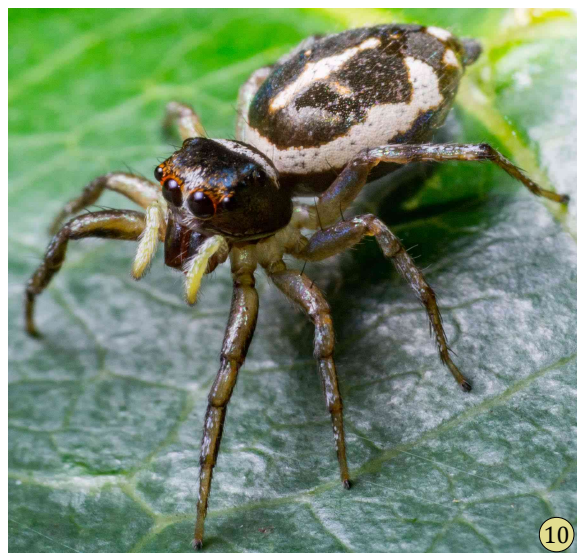


Figure 13 (continued from previous page). Female *Cosmophasis baehrae* from Banda Neira (HC-BN5f).

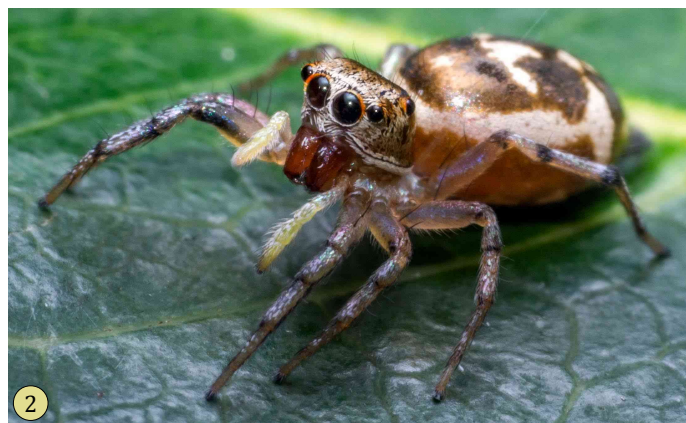
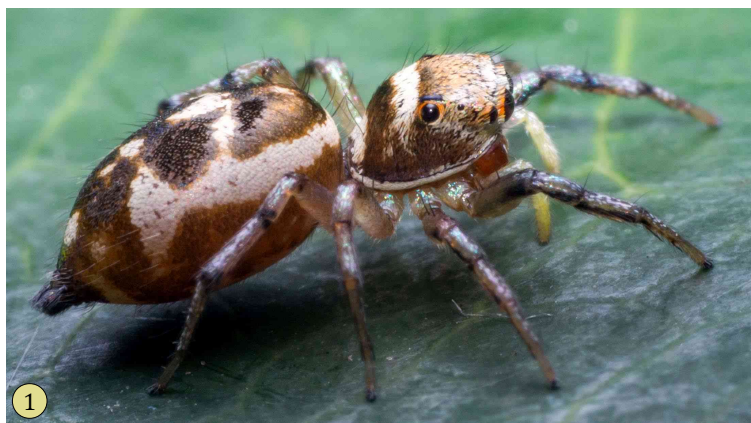


Figure 14 (continued on next page). Female *Cosmophasis baehrae* from Banda Neira (HC-BN6f).



Figure 14 (continued from previous page). Female *Cosmophasis baehrae* from Banda Neira (HC-BN6f).



Figure 15. Two female *Cosmophasis baehrae* from Banda Neira (1-4, 5-6, not collected).

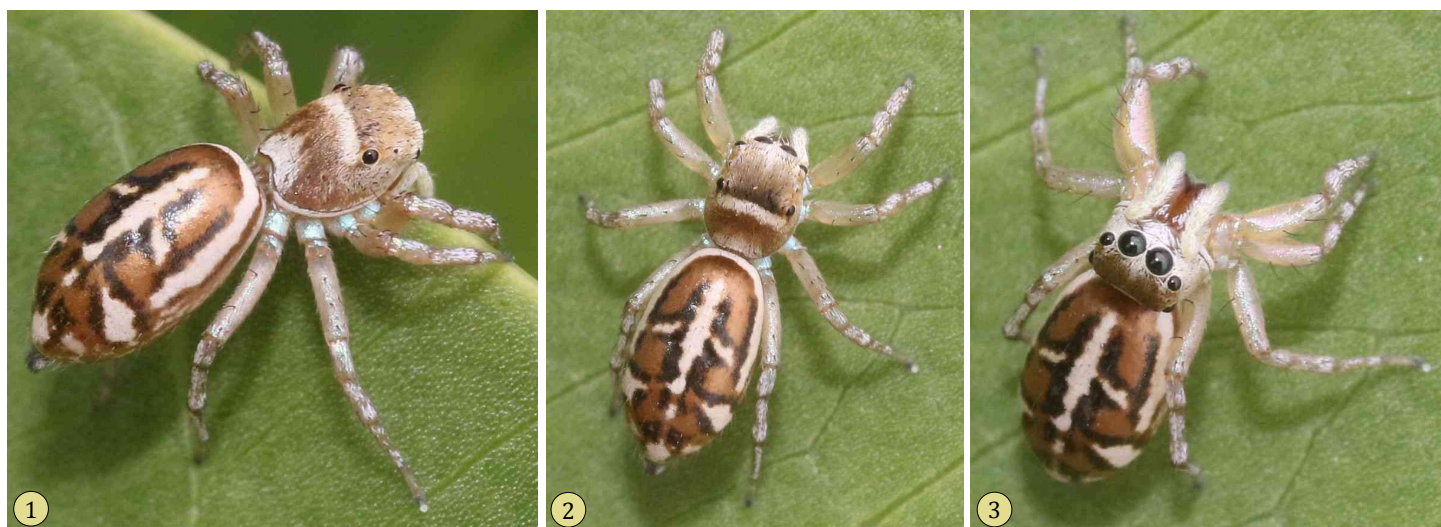


Figure 16. Female *Cosmophasis baehrae* from Cairns, Queensland. Photographs © James Bailey, used under a [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/) license (Bailey 2018a, 2018b, 2018c).

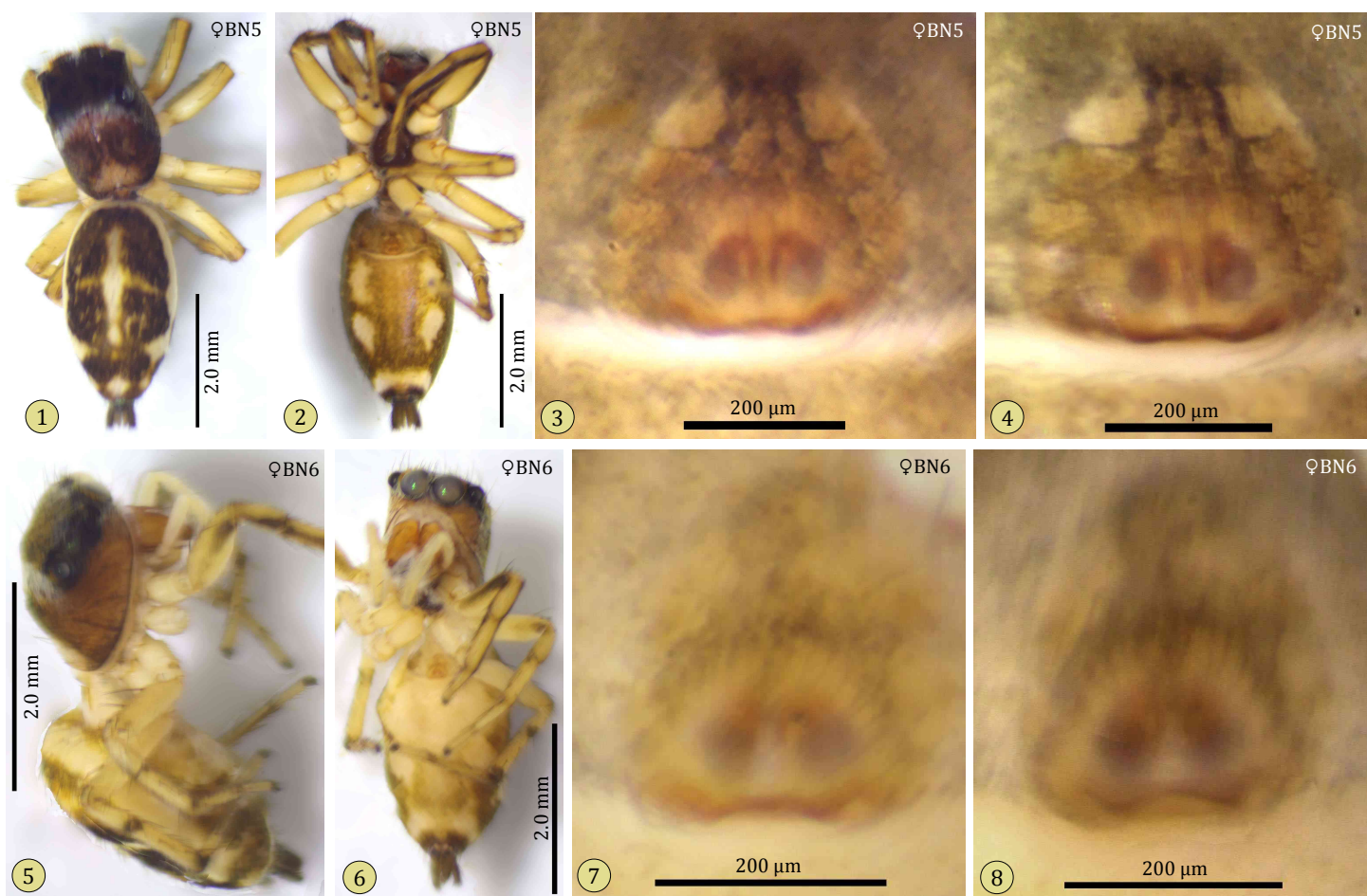


Figure 17. Two female *Cosmophasis baehrae* from Banda Neira in ethanol. 1-4, Female HC-BN5f. 5-8, Female HC-BN6f. 3-4, 7-8, Two images of each epigynum are shown. Note the pair of retort-shaped figures at the center of each epigynum. The appearance of these photos varies according to the plane of focus and perspective, but the shape of these sclerotized figures is quite distinctive under the microscope.

3. *Cosmophasis bandaneira*, new species

Figures 7:7, 18-20, Map (Figures 1-2) #6

Type material. The holotype ♂ (HC-BN1m) was collected by the senior author on a small potted *Codiaeum variegatum* plant in Banda Neira in the Banda Islands (collected 7 FEB 2016, specimen preserved in alcohol 20 FEB 2016). This specimen will be deposited in the Florida State Collection of Arthropods (FSCA), Gainesville.

Etymology. The species name, *bandaneira*, noun in apposition, is a reference to the fact that this species was found on Banda Neira.

Diagnosis. The 380° rotation of the embolus is unusual for the genus (see Figure 6 and Appendix 1). The pattern of scales on the carapace and dorsal opisthosoma can also distinguish this species from related species with similar scale patterns (Figure 7). This general appearance, including the crests of black setae at the front of the eye region, most closely resembles that of the well-known *C. thalassina*. However in that species the rotation of the embolus is only ~160°, and the pedipalps are white with a black distal cymbium. The pedipalp of *C. bandaneira* is yellow with a brown cymbium. In addition, the black area to the rear of the carapace, and the anterior marginal band of *C. bandaneira* are more rectangular in outline.

Description of male (holotype HC-BN1m; Figures 7:7, 18-20). Body length including spinnerets close to 6.5 mm. Chelicerae typical of males for this genus, about as long as distance from top of paturon to top of carapace, dark red-brown in colour. The front of each paturon is flat, covered with transverse grooves or striae. One very large, unidentate, anterolateral (prolateral, near base of fang) tooth that projects anteroventrally, two smaller, unidentate anteromedial teeth, and one large, unidentate, posteromedial (retrolateral, medial) tooth are present on each chelicera (Figure 20:7). The flexible articulation of the chelicerae is about as high as the clypeus, and the height of each is about 1/2 the diameter of an AME. Near the median, white setae extend medioventrally from the clypeus, discontinuous with a thin marginal band of white setae that extends from the front around the sides of the carapace, and, above the marginal band, a second thin band of white setae on either side of the face.

Each anterior eye is surrounded by a line of bordering white scales. A low crest of thick black setae crosses the front of the eye region. Just behind this is a band of bright blue iridescent scales between the small PME, extending to the sides of the carapace on either side where it merges with a cover of gold-green to violet iridescent scales. At the rear of the eye region is a black band between the PLE, extending down to the margin of the carapace on either side. Just behind this is a second transverse band of bright blue iridescent scales extending down to the margin on either side. Behind this is a third, median black area with a rectangular outline toward the front and sides, and at the rear of this is a median, triangular tract of bright blue iridescent scales at the rear of the carapace.

The opisthosoma is mostly shiny black, with a broad anterior marginal band comprised of light yellow scales, rectangular in outline at the front, and extending more than 2/3 of the length of the opisthosoma toward the rear on either side. An interrupted dorsomedial tract of bright blue iridescent scales runs along the length of the opisthosoma behind the anterior marginal band, and separate from it. Below two large white spots, and one smaller white spot at the rear, are present on either side of the opisthosoma. The spinnerets are black, with some iridescent green-gold to violet scales on the dorsal surface of each posterior lateral spinneret. The legs are light to dark brown and banded, mostly dorsally, with white scales. The femora tend to have violet iridescence, and the dorsal surfaces of each coxa and patella have bright, light-blue iridescence.

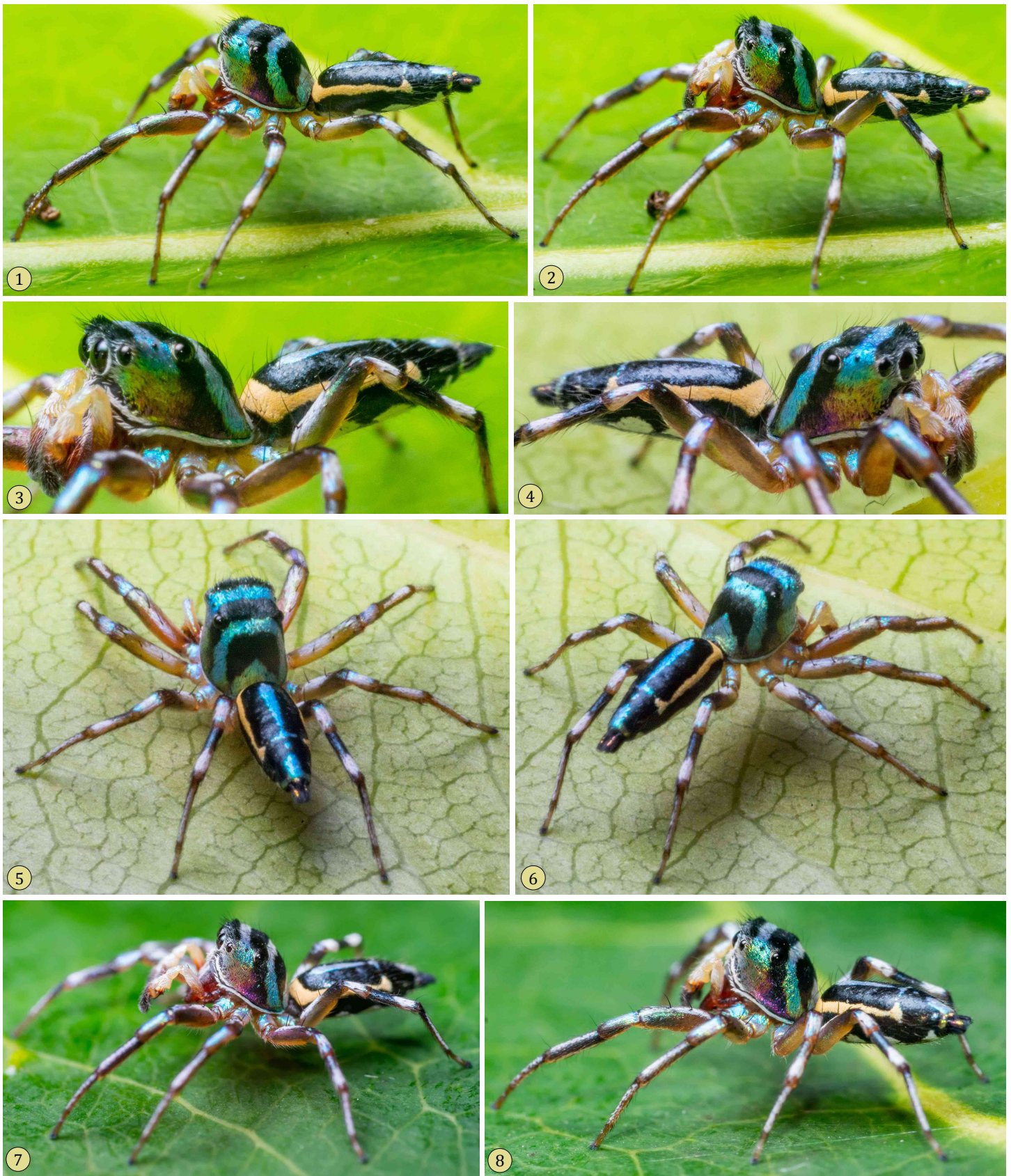


Figure 18 (continued on next page). Views of the living holotype male *Cosmophasis bandaneira* (HC-BN1m).



Figure 18 (continued from previous page). Views of the living holotype male *Cosmophasis bandaneira* (HC-BN1m).

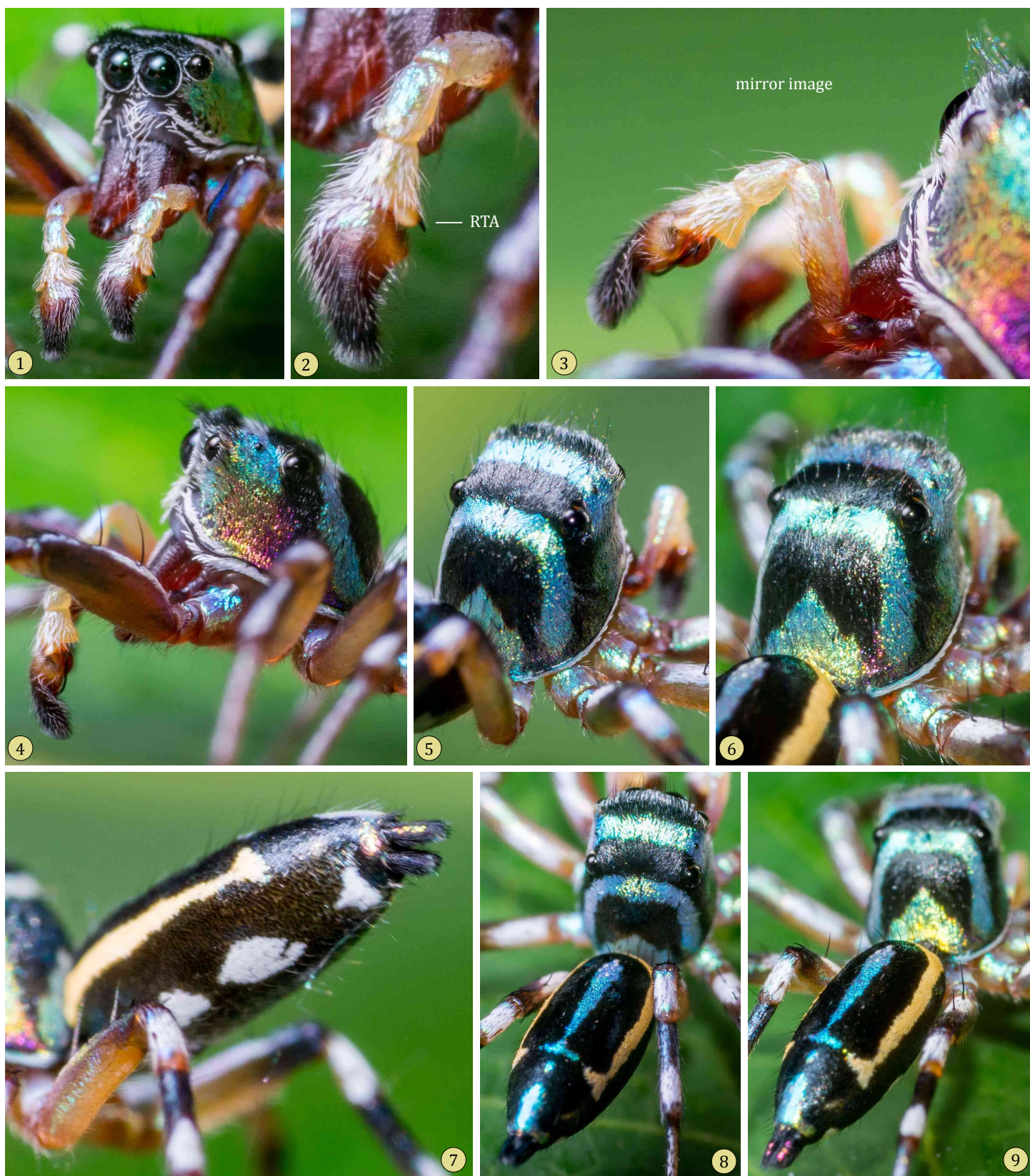


Figure 19. Detailed views of the living holotype male *C. bandaneira* (HC-BN1m). **3**, Mirror image of right pedipalp. **4**, Note the transition from iridescent blue to iridescent green-gold-violet scales on the side of the carapace. **7**, White spots or scale patches on the left ventral opisthosoma. Similar spots are found on a number of different *Cosmophasis* species. Also note the green-gold-violet iridescent scales on the dorsal surface of the posterior lateral spinneret. **8-9**, The colour of the triangular tract of iridescent scales at the rear of carapace, usually light-blue, varies by direction. In (9) this appears to be gold-green.

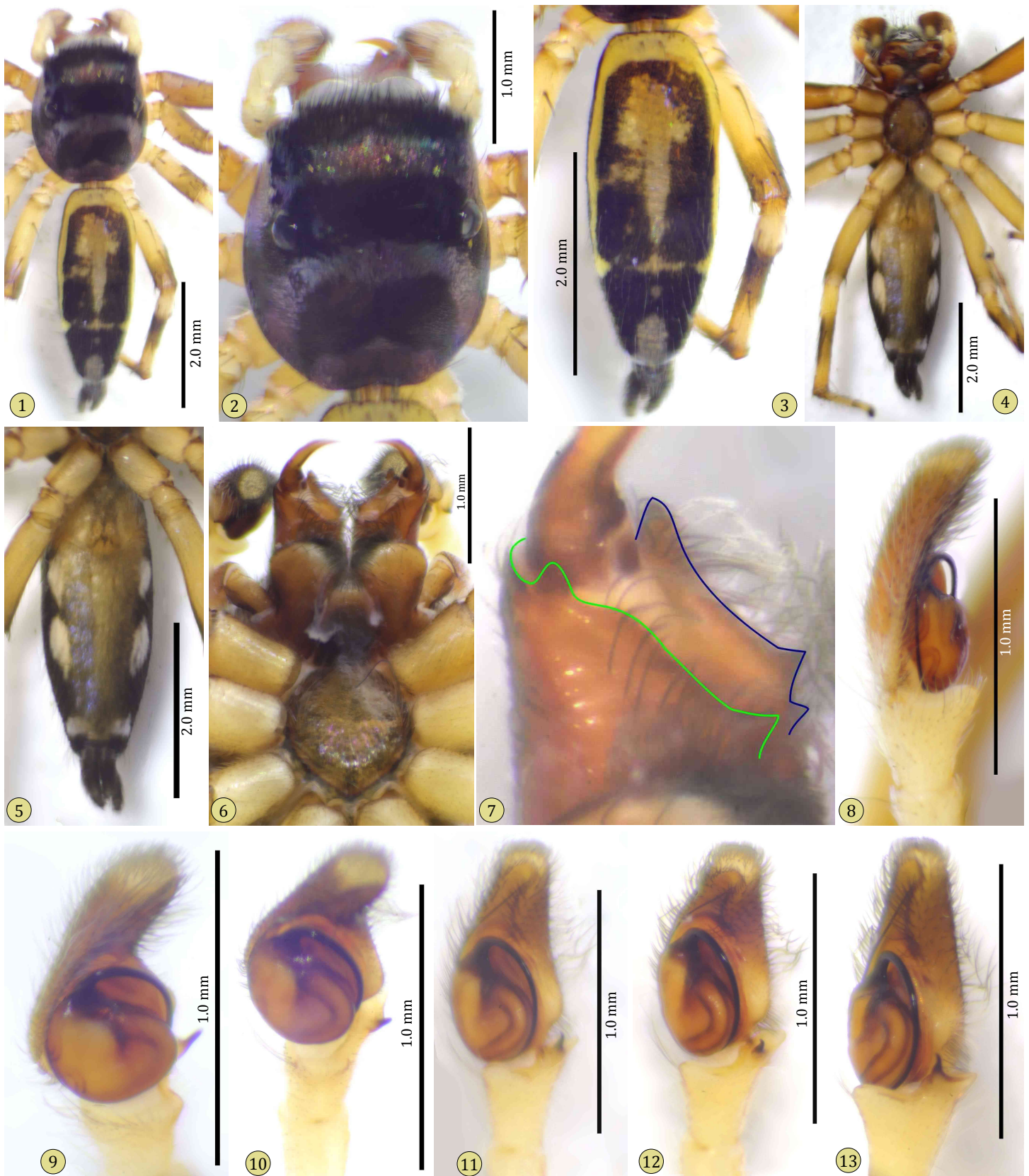


Figure 20. Holotype male *C. bandaneira* (HC-BN1m) in ethanol. **6**, Ventral/rear view of protracted chelicerae, endites, labium, sternum and coxae. **7**, Detailed posterior view of right chelicera from showing one large and two smaller teeth of the promargin (blue line), and one large medial tooth of the retromargin (green line). At left the green line follows the curved projection of the retromargin where it articulates with the base of the fang. **8-13**, Medial or prolateral to ventral and lateral or retrolateral views of right pedipalp (mirror images to support comparison according to the *left pedipalp standard*).

The proximal segments of each pedipalp are light yellow, the proximal cymbium brown, and the distal cymbium dark brown. The dorsal surface of the femur of each pedipalp has an iridescent blue sheen. The tibia of each pedipalp has three marginal lobes, one rounded and ventral, one more acute and dorsal, and one retrolateral (lateral) between these, bearing the small, black RTA. Each RTA is curved ventrally at the end (Figure 20:13). The tegulum is circular from a ventral perspective, and the distal cymbium is long, almost as long as the tegulum, typical for this genus. However the $\sim 380^\circ$ rotation of the embolus is unusual (see Figure 6 and Appendix 1). The detailed structure of the pedipalp is remarkably similar to that of *C. ambonensis* sp.nov., despite the fact that these spiders are quite different in general appearance.

The female is unknown. Since this male resembles males of the more sexually dimorphic *Cosmophasis* species (e.g., *C. thalassina*, *C. umbratica*, *C. valerieae*), we would expect the females to be quite different in appearance. It is also possible that this represents the male of a known species, such as the *C. squamata* that have been found in the Banda Islands, but that remains to be determined.

4. *Cosmophasis bitaeniata* (Keyserling 1882)

Figures 7:5, 22-23, Map (Figure 1) #8

Cosmophasis bitaeniata is perhaps the best-known member of the genus, largely based on studies of its apparently obligatory association with the green tree ant, *Oecophylla smaragdina* (Figure 21), a classic example of *myrmecophily* (Allan & Edgar 2000). It is only known from tropical Sahul, found from northeastern Australia to Papua (Figure 1).

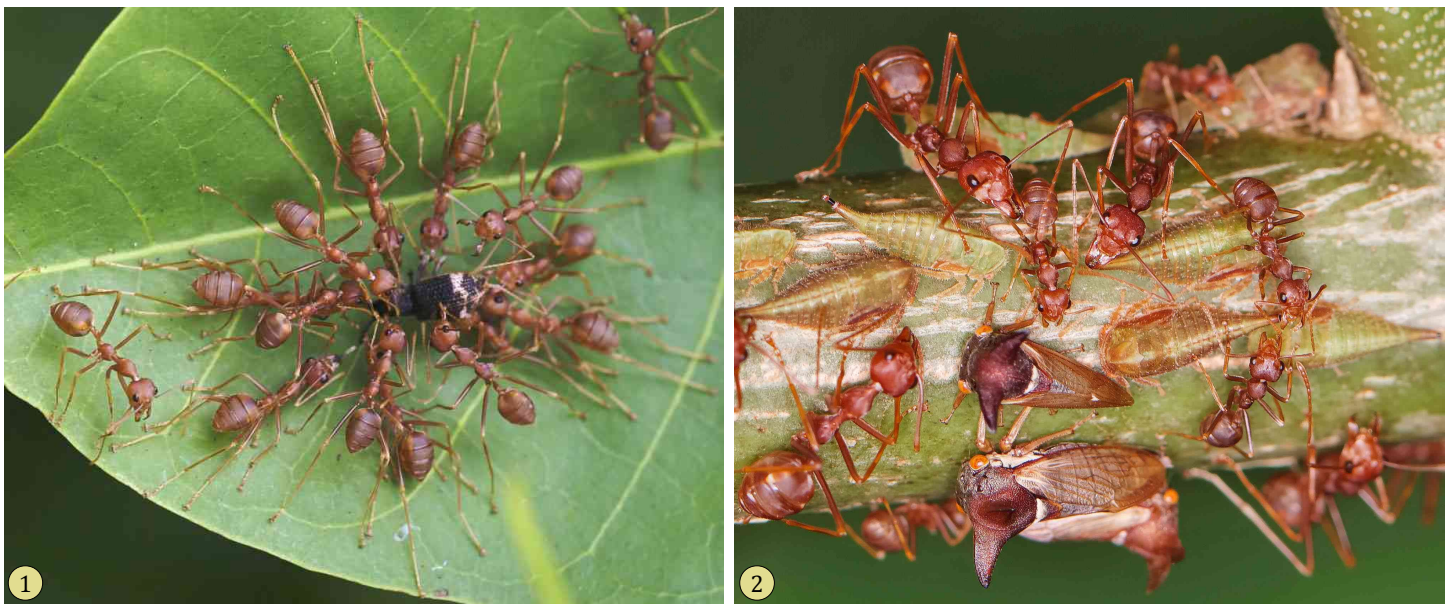


Figure 21. Green tree or weaver ants, *Oecophylla smaragdina* (Fabricius 1775), photographed at Pachuap Khiri Khan, Thailand. **1**, Workers swarming around a captured beetle. **2**, Workers tending a colony of treehoppers. *O. smaragdina* colonies include both major and minor workers, as shown here, and intermediates (Crozier et al. 2010). This is a fiercely aggressive ant species. Photographs © Troup Dresser, used under a [CC BY-NC 2.0](https://creativecommons.org/licenses/by-nc/2.0/) license (1, Dresser 2010; 2, Dresser 2012).

C. bitaeniata take larvae from ant workers, using colony-specific cuticular hydrocarbons (mono- and dimethylalkanes) taken from these prey to support their colony-specific chemical mimicry (Allan 1998; Allan et al. 2002; Elgar & Allan 2004, 2006). They appear to avoid unnecessary contact with the ant workers (Ceccarelli 2006). John (1920) has observed similar behavior by females of an unidentified *Cosmophasis* species (cf. *bitaeniata*, also resemble female *C. valerieae*) in the Andaman Islands.



Figure 22. Adult *Cosmophasis bitaeniata* from Queensland. 1-2, Male from vicinity of Cairns. 3, Male from Laura. 4-6, Females from Townsville. Photo credits: 1-2, © Iain Macaulay, used with permission; 3, © Jim McLean, used with permission. 4-5, © Lek Khauv, used under a [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/) license (Khauv 2014a, 2014b); 6, © briand79, used under a [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/) license (briand79 2017).



Figure 23. Adult female *Cosmophasis bitaeniata* from Townsville or Cairns, Queensland. Photographs © Iain Macaulay, used with permission.

Diagnosis. Unlike the many sexually dimorphic *Cosmophasis*, male and female *C. bitaeniata* have essentially the same colour pattern (Figures 22-23). Except for the eye region, the carapace is relatively glabrous and uniform in colour, with a narrow, white dorsomedian stripe behind the eye region. Legs are relatively uniform in colour, with a black stripe on the anterior of each femur. The pattern of scales on the dorsal opisthosoma resembles that of several other *Cosmophasis* species, but the first transverse white stripe is not interrupted as in *C. valerieae* and there is a median black blotch just behind the second white stripe. In males and unfed females the opisthosoma tends to be more cylindrical than in related species. The origin of the male embolus is near the proximal end of the tegulum (rotation $\sim 220^\circ$), the cymbium is relatively short for the genus, and the female epigynum has two distinctive loops (sclerotized ducts) on either side that are best seen in published photographs (Žabka & Waldock 2012). Unless new forms of this species are discovered, both sexes are easy to identify.

5. *Cosmophasis lami* Berry, Beatty & Prószyński 1997

C. squamata Saaristo 2002, syn.

Figures 24-27, Map (Figure 1) #24

This less colourful spider is the most widely-distributed member of the genus, ranging from the Seychelles Islands in the west to the Society Islands in the east (Figure 1). Little is known of the behaviour of this spider. Representatives from several different locations are shown here to illustrate the relatively uniform appearance of adults (Figures 24-27).



Figure 24. Adult male *Cosmophasis lami* from the Singapore Botanic Garden. 5, Note the violet iridescence on the side of the carapace. Photographs © Nicky Bay, used with permission.

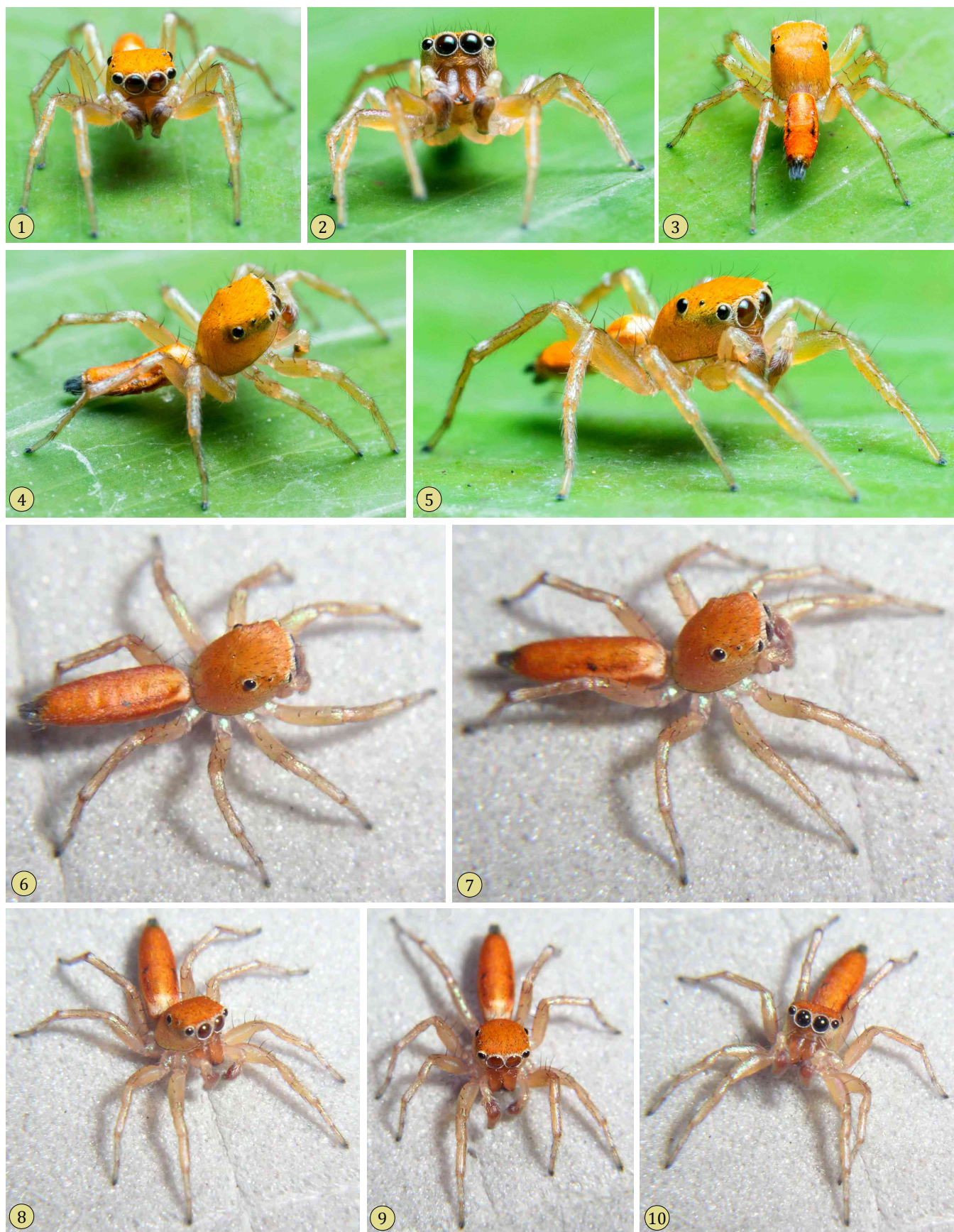


Figure 25. Two adult male *Cosmophasis lami*. 1-5, Male from Bali. 6-10, Male from Port Moresby, Papua. Photographs (6-10) © Wayne P. Maddison, used under a [CC BY 3.0](https://creativecommons.org/licenses/by/3.0/) license.



Figure 26. Four adult female *Cosmophasis lami*. 1-2, Port Moresby, Papua. 3-4, Singapore. 5, Simpang Ampat, Malaysia. 6-9, Home Fitness Corner, Singapore. Photo credits: 1-2, © Wayne P. Maddison, used under a [CC BY 3.0](#) license; 3-4, © Marcus Ng, used under a [CC BY-NC 4.0](#) license (Ng 2021a, 2021b); 5, © Richard Ong, used under a [CC BY-NC 4.0](#) license (Ong 2019); 6-9, © Nicky Bay, used with permission.



Figure 27. Three adult female *Cosmophasis lami* from Bali (1-5, 6, 7-8).

Diagnosis. Males are more uniform orange in colouration, with some iridescence on the sides of the carapace (Figure 24:5), and may have a narrow or indistinct black line along the anterior lateral margins of the opisthosoma. Females vary more in appearance, also with some iridescence on the sides of the carapace (Figure 26:4), a wide, off white marginal band on either side of the opisthosoma, and dark markings that may include transverse bands on the dorsal opisthosoma. See Žabka & Waldock (2012) for a recent redescription of this species.

6. *Cosmophasis micarioides* (L. Koch 1880)

Figures 28-30, Map (Figure 1) #32

This colourful and sexually dimorphic species has been found from the tropical northeastern coast of Australia to the Kei Islands and Papua (Figure 1). Jackson (1986) described the agonistic and courtship display of males, and the cohabitation of males and females. The male courtship display includes elevation and rotation of the opisthosoma, with the legs extended to the sides in several characteristic positions. Otherwise little is known of the biology of these spiders.

Diagnosis. Males (Figures 28, 29:1) resemble *C. thalassina*, but can be readily separated from that species by the presence of a black stripe extending down the side of the carapace below each ALE. Females (Figures 29-30) have a more distinctive colour pattern. See Žabka & Waldock (2012) for a recent redescription of this species, including many illustrations of the genitalia.



Figure 28 (continued on next page). Male *Cosmophasis micarioides* from Queensland. 1, Penultimate male with red-orange bands across the dorsal carapace. 2-6, Adult male. Photographs (1-6) by Stephen Mudge, used with permission.

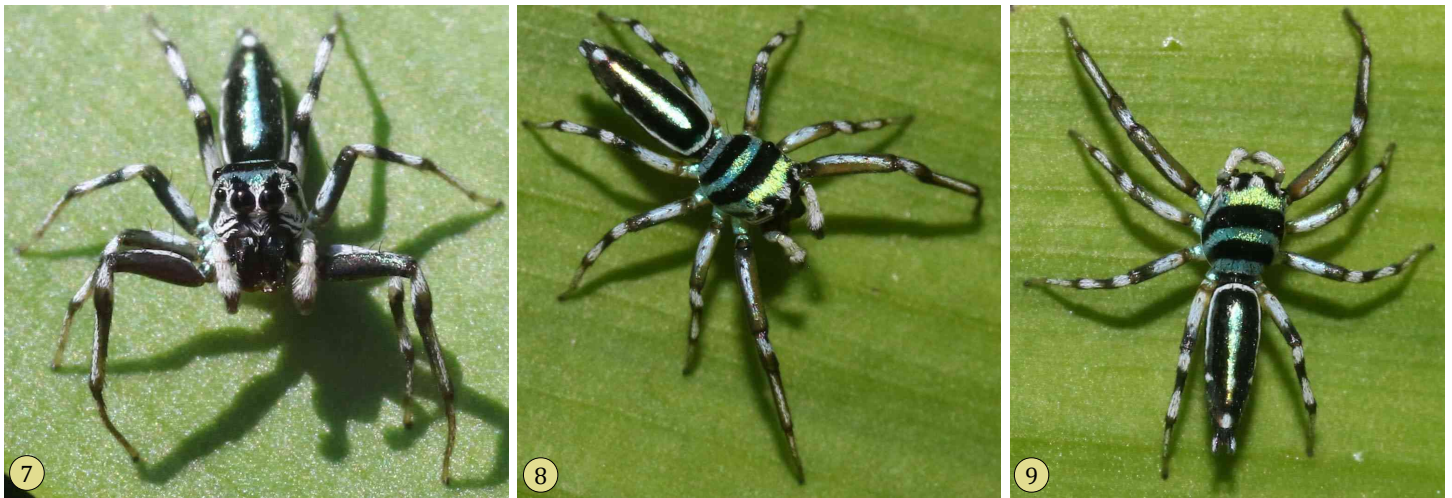


Figure 28 (continued from previous page). Male *Cosmophasis micarioides* from Queensland. 7-9, Adult male from Cairns. Photographs (7-9) by James Bailey, used under a [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/) license (Bailey 2018d, 2018e, 2018f).



Figure 29. *Cosmophasis micarioides* from Queensland. 1, Mating pair. 2-4, Three different adult females. Photographs (1-4) by Stephen Mudge, used with permission.



Figure 30. Adult female *Cosmophasis micarioides* from Brisbane, Queensland. This represents the southernmost extent of the range of this species. Photographs (1-2) by tjeales, used under a [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/) license (tjeales 2019a, 2019b).

7. *Cosmophasis squamata* Kulczyński 1910

Figures 3:1-2, 31-33, Map (Figure 1) #49

Almost all that we have known of this spider is based on a single female specimen collected on Bougainville Island in the Solomon Islands in the month of September, at some time prior to 1910. When Kulczyński (1910) described this specimen in Latin, he provided only a simple drawing of the epigynum, later redrawn from this specimen by Prószyński (1984). The *C. squamata* male and female later described by Saaristo (2002) are actually *C. lami*, and the male *C. squamata* remains unknown. We have considered the possibility that *C. bandaneira* sp.nov. represents the male of this species, but that relationship is only speculative at this point.

Material examined. One adult female (HC-BB1f) was collected 8 FEB 2016 from a small plant on Banda Besar. This specimen will be deposited in the Florida State Collection of Arthropods (FSCA), Gainesville. A second female was photographed on Banda Neira (Figure 32) but not collected.

Diagnosis. To identify this species we must rely on characters that were described by Kulczyński, as well as Prószyński's subsequent drawing of the epigynum (Figure 33:12-13; Appendix 2) Other than the epigynum, the characters given by Kulczyński are insufficient to distinguish this spider from several other species. Nonetheless the epigynum is distinctive, bearing two nearly parallel furrows running lengthwise on either side of the median (Figure 33:7-13).

Description of female. Pedipalps are uniform light yellow with a few white setae; they probably fluoresce brightly in ultraviolet light as do the pedipalps of female *C. umbratica* (Lim, Land & Li 2007). The chelicerae are dark amber, glabrous. There is one prominent tooth on the retromargin, and two small *denticles* on the promargin of the fang groove. Below, the AME are surrounded by white scales, above all four anterior eyes are surrounded by orange scales. The carapace is covered with iridescent green to gold scales, with one dark band passing through the posterior eye row, and a second dark band behind this. On either side of the carapace these dark bands are wider, violet iridescent. There are two narrow white marginal bands, the upper only present near the front of the carapace. The dorsal opisthosoma is covered with dense, overlapping, large, dark round scales, interrupted by bands of overlapping large, light-yellow round scales, one wrapping around both sides from the front margin, and three oriented transversely. In addition there are several median patches of the same light-yellow scales.

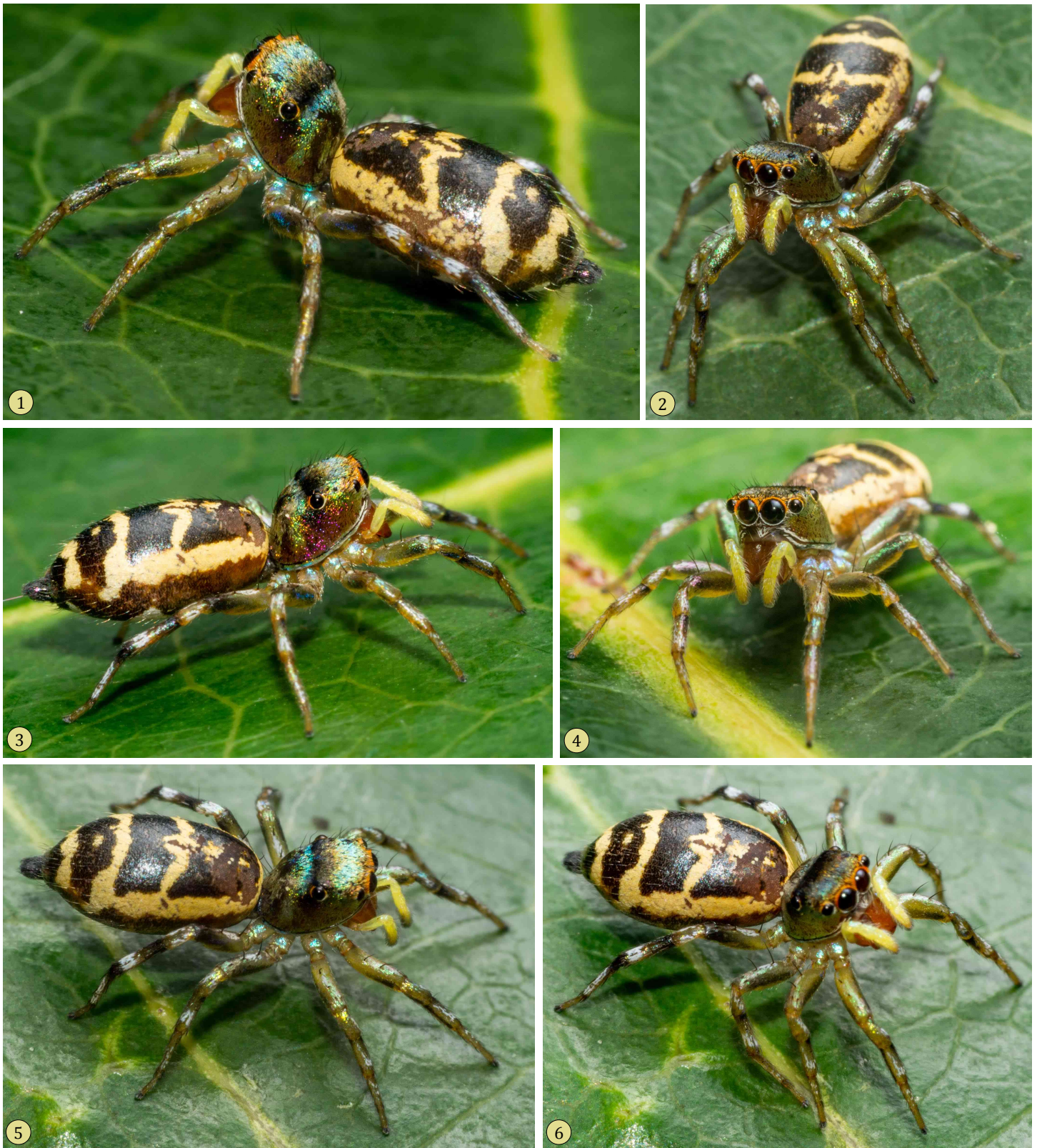


Figure 31 (continued on next page). Adult female *Cosmophasis squamata* from Banda Besar (HC-BB1f).



Figure 31 (continued from previous page). Adult female *Cosmophasis squamata* from Banda Besar (HC-BB1f).



Figure 32. Adult female *Cosmophasis squamata* from Banda Neira.

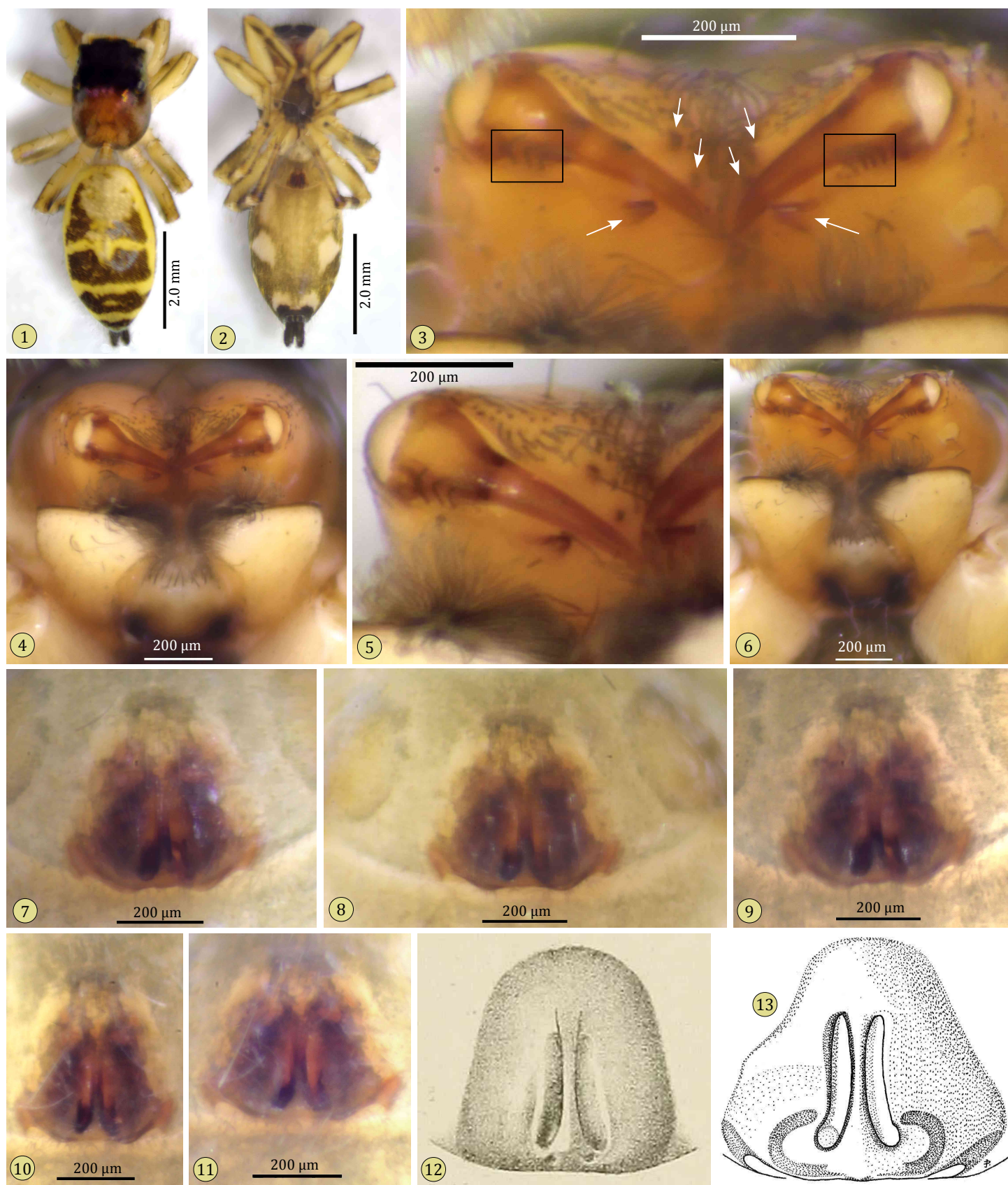


Figure 33. Adult female *Cosmophasis squamata* from Banda Besar (HC-BB1f), preserved in alcohol. **1**, Dorsal view. **2**, Ventral view. **3-6**, Posteroventral views of chelicerae, showing large retromarginal tooth, and two small promarginal denticles, on either paturon (**3**, arrows). Rectangles (**3**) identify arrays of 3-4 stout setae near the base of the retromargin of each fang groove. **7-11**, Exterior or ventral views of the epigynum. The first (**7**) is best illuminated to show the long furrow on either side of the septum. **12-13**, Drawings of epigynum. **12**, Kulczyński 1910. **13**, Prószyński 1984, used by permission.

The spinnerets are black, with iridescent violet scales above the posterior spinnerets. There are three pairs of large white patches on the venter, the rear pair smaller and contiguous (Figure 33:2). The legs are mostly light yellow, with some white banding on the patellae and distal metatarsus, and an iridescent sheen, particularly on the dorsal surface of the coxae. The epigynum (Figure 33: 7-13) is elevated and highly sclerotized, with a longitudinal furrow on either side of the elevated septum. These furrows diverge at the rear where more dark pigment is visible, and also diverge toward the front. Overall the epigynum is triangular in shape, with a well-defined posterior margin.

The male *Cosmophasis squamata* is not known. As noted previously, It is possible that *C. bandaneira* sp.nov. is the male of either this species, or a closely related species. Two somewhat different penultimate males that have been photographed by the senior author (THC) on Banda Besar, but not reared to the adult stage, are shown in Figure 34.



Figure 34. Two different penultimate male *Cosmophasis* sp. photographed on Banda Besar. 1-3, This penultimate male is closer to the female *C. squamata* in colouration. 4-6, Penultimate male with more iridescent blue, black and white.

8. *Cosmophasis thalassina* (C. L. Koch 1846)

Figures 35-40, Map (Figure 1) #52

Cosmophasis thalassina, the type species for *Cosmophasis*, is well-known across the tropical north of Australia and neighboring Papua (Figure 1; Žabka & Waldock 2012; Whyte & Anderson 2017), but there is some question regarding its distribution to the north and west, in Sunda. The females appear to be quite variable in colouration. Little is known of the biology of this species, other than a single observation of what appears to represent a female of this species feeding on butterfly eggs in Queensland (Donovan & Hill 2017). C. L. Koch (1846) described this species from a male collected on Bantan Island, just southeast of Singapore (Appendix 4).

Diagnosis. No type specimens have been found, so our ability to identify this species relies primarily on the original description by C. L. Koch (1846; see Figure 4:1 and Appendix 4), and its subsequent redescription by Žabka & Waldock (2012). In Australia, males can be readily separated from *C. baehrae* by their lack of a lateral black stripe below each ALE. Behind a white face that extends partly to the sides of the carapace, each male has a short but thick black crest above the anterior eye row, a second black band extending between the PLE, and a third black band crossing the rear of the carapace. Otherwise the carapace is covered with mostly iridescent green, but perhaps iridescent blue, scales, with the sides of the carapace covered with multicoloured gold to violet scales.

The opisthosoma is generally black, with a white marginal band extending around the sides from the front, and a tract of bright iridescent scales at the median. On the venter are the three pairs of large white spots seen in other *Cosmophasis* species. The pedipalps are white with black tips, a feature shared with male *C. baehrae* and perhaps other species. Genitalia are well-described by Žabka & Waldock (2012). The male pedipalp is not unusual. The origin of the embolus is near the 160° position, depending somewhat on how it is photographed or drawn, and the distal cymbium is quite short. Although females vary greatly in colouration, their genitalia may suffice for their identification.

According to Žabka & Waldock (2012), *C. micans* (L. Koch 1880) from "Cape York" is a good species, but they could find no specimens of this Australian species and none may exist, perhaps not even in nature. The female of this species is not known. There is little in the description of the male, and the drawings that accompany this description (Appendix 3), to suggest that this is anything other than a male *C. thalassina*. However, according to L. Koch, the AME of this male are separated from the lower edge of the carapace (the bottom of the clypeus) by almost twice their length. This is remarkable, something not seen in other *Cosmophasis*. But Koch's drawing fails to show the flexible articulation of the chelicerae between the clypeus and the chelicerae, and this may have been misinterpreted by the artist. Because of this articulation, the AME of *C. thalassina*, at least in a preserved specimen, can be separated from the chelicerae by something close to two times their diameter. In a revision of the genus *C. micans* might be declared a *nomen dubium*.

Although *C. thalassina* is widely-distributed and both the male and female have been described, it can still be difficult to identify this spider in the field. In large part this is due to its similarity with *C. umbratica*, or perhaps to some other species with a similar appearance that have yet to be described from life. The living males illustrated by Žabka & Waldock (2012, fig. 60A-B) look like *C. baehrae*. The examples that we show here (Figures 35-40) agree with the original description of *C. thalassina*, as well as the excellent photographs of that species recently published by Whyte & Anderson (2017).



Figure 35. Male *Cosmophasis thalassina* from Pachuap Khiri Khan, Thailand. Photographs © Troup Dresser (Dresser 2011a, 2011b).



Figure 36. Male *Cosmophasis thalassina* from Bali. Photographs © Nicky Bay, used with permission.

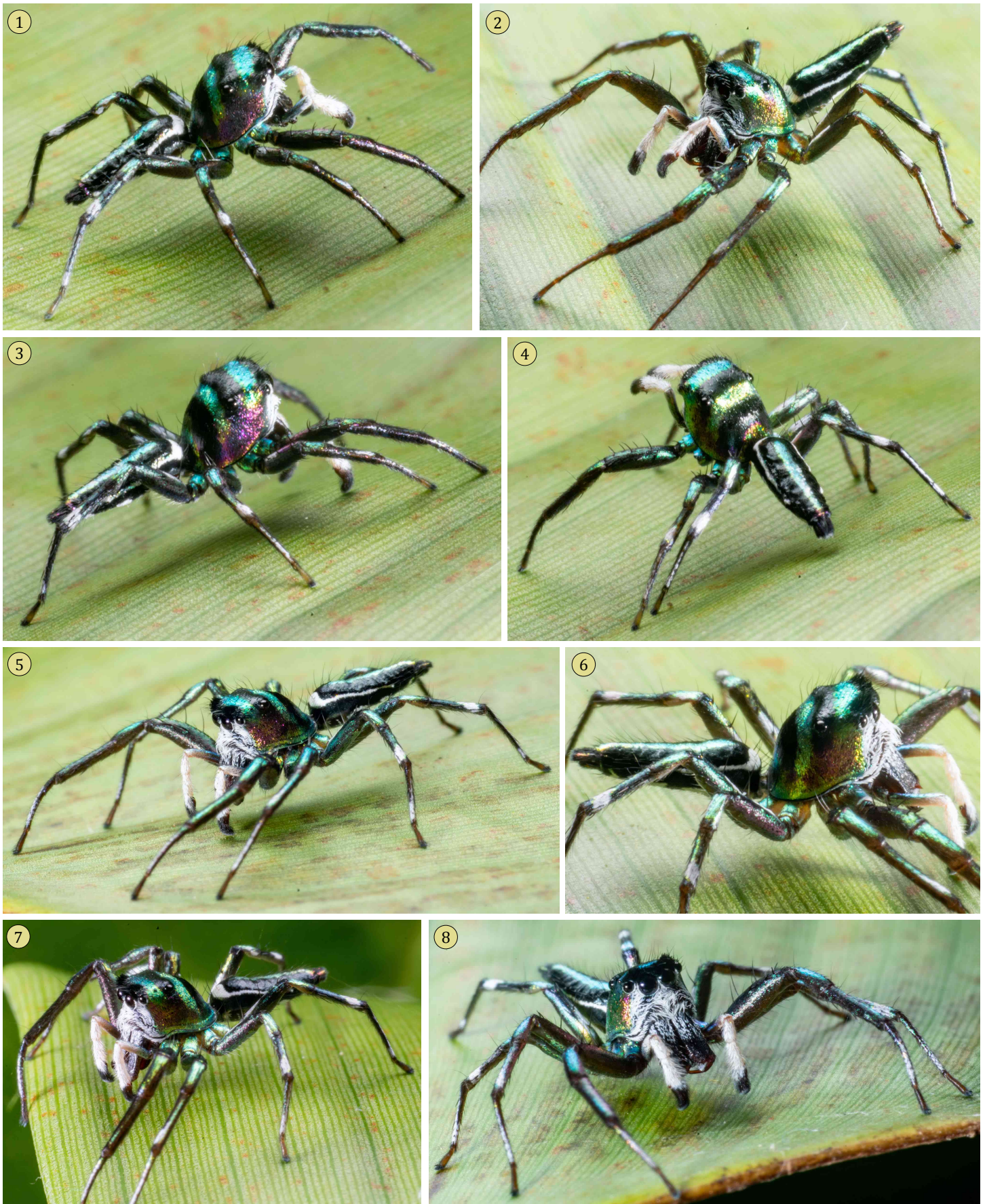


Figure 37 (continued on next page). Male *Cosmophasis thalassina* from Bali.

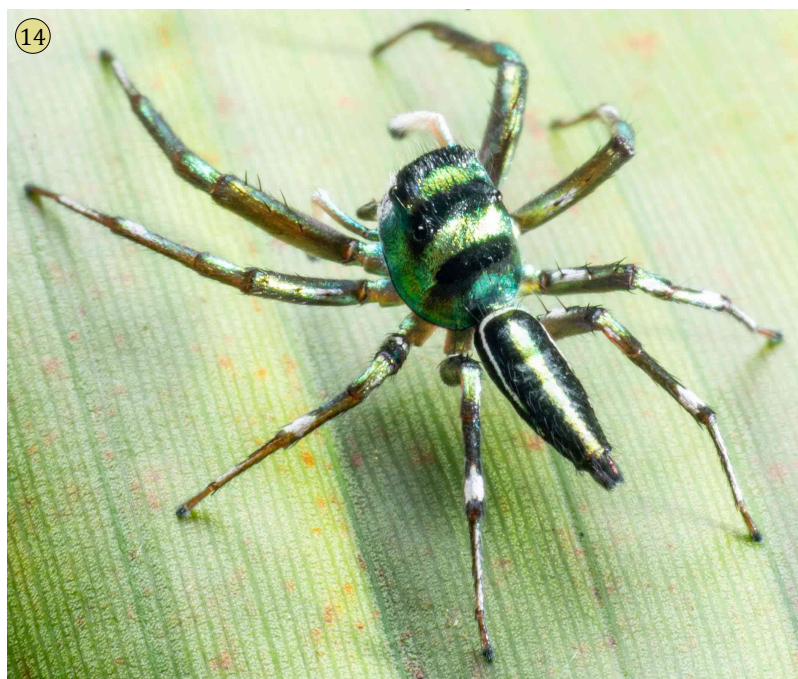
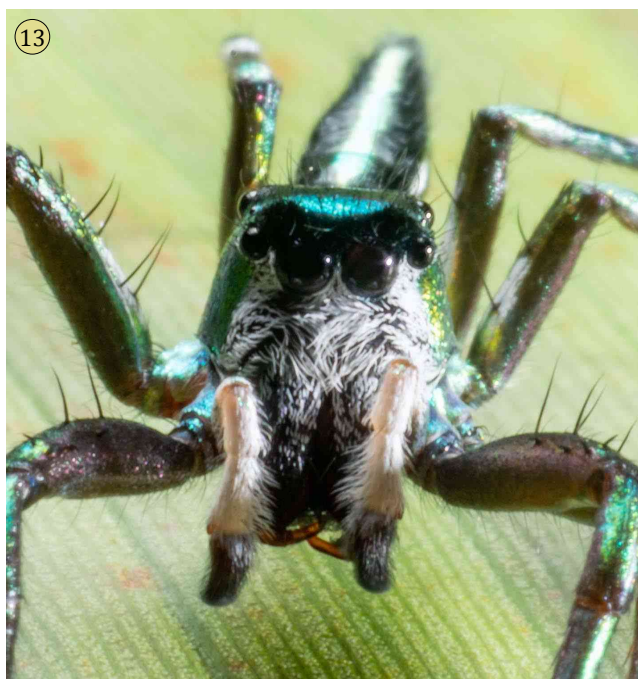
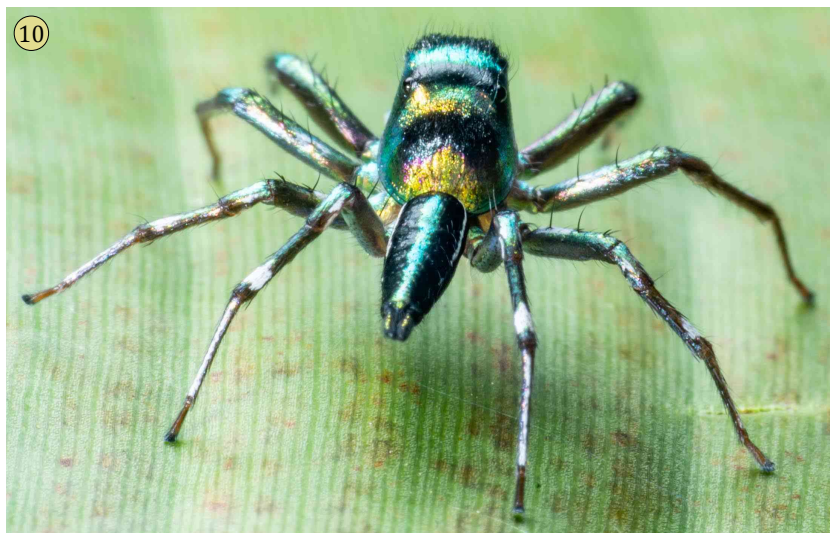


Figure 37 (continued from previous page). Male *Cosmophasis thalassina* from Bali.

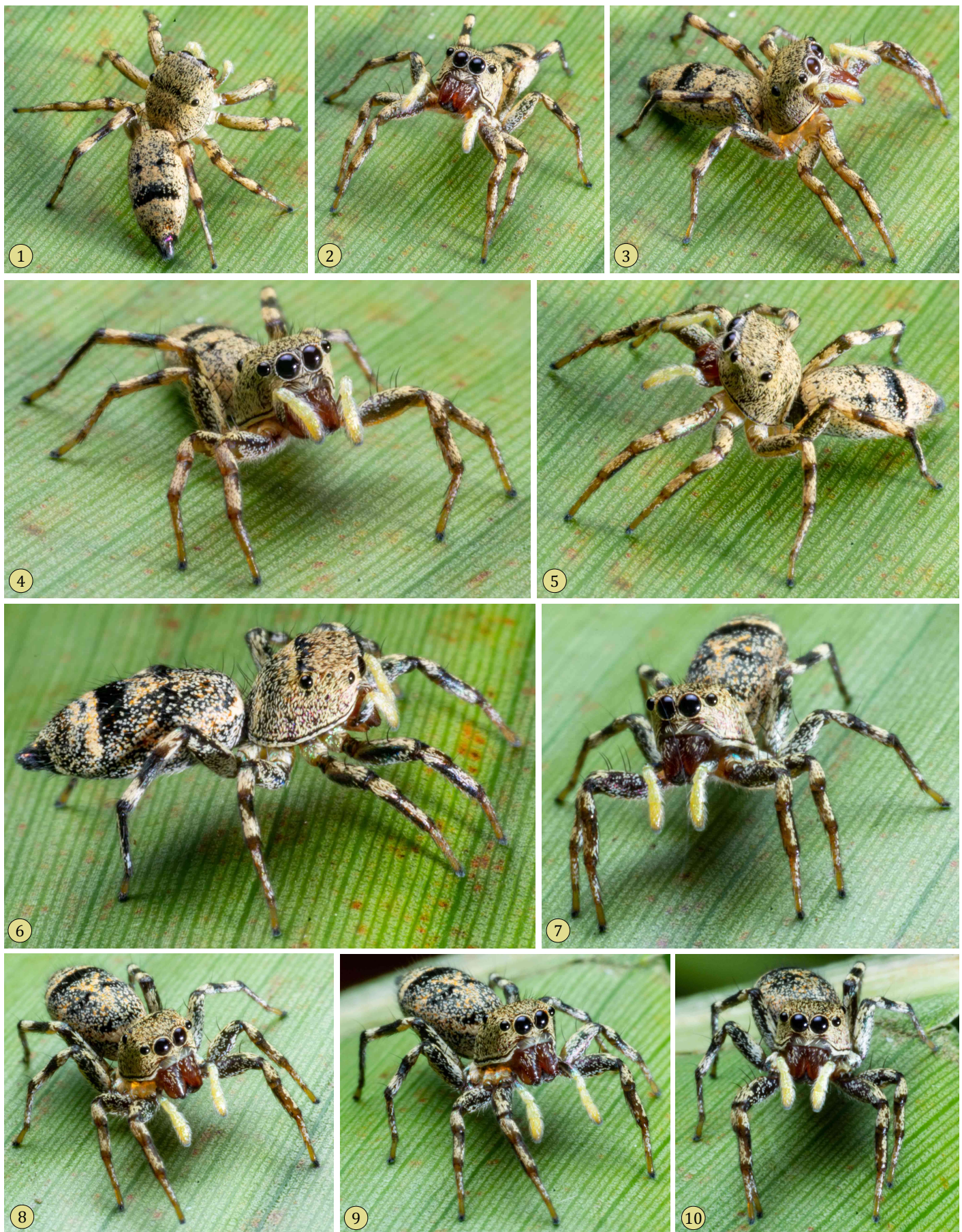


Figure 38. Female *Cosmophasis thalassina* from Bali.



Figure 39. Immature *Cosmophasis thalassina* from Bali. 1-5, Earlier instar. 6-10, Later instar.



Figure 40. Immature male *Cosmophasis thalassina* from Bali. 1-5, Earlier instar. 6-9, Penultimate.

9. *Cosmophasis umbratica* Simon 1903

Figures 41-45, Map (Figure 1) #57

A series of studies of the courtship and agonistic behavior of *Cosmophasis umbratica* have been published in recent years, based on spiders collected in Singapore (Lim & Li 2004, 2006a, 2006b, 2007, 2013; Lim, Land & Li 2007; Lim, Li & Li 2008; Taylor & McGraw 2007). Land et al. (2007) described the layered structure of iridescent, ultraviolet reflecting scales of this species, and Bulbert et al (2015) later studied the predatory cost of male ornamentation. With all of these studies, one might assume that this species is well-known. That is not the case. The only descriptions that we have for *C. umbratica* are Simon's original but brief text description of a male, and subsequent drawings of Simon's male specimen by Prószyński (1984). Both appear here in their entirety, with a new English translation of Simon's description, in Appendix 5. Dyal (1935) listed an all-black 5 mm female with diminutive ALE from remote Lahore, Pakistan under *C. umbratica*. That specimen is definitely not a *Cosmophasis*. Thus the female of *C. umbratica*, though often subject to study, has never been described.

But even the description of the male (Simon 1903b; Prószyński 1984) is problematic. There is little here to suggest that *C. umbratica* is anything other than a synonym for *C. thalassina*. This is supported by the fact that the type for *C. thalassina* came from Bintan Island (see Appendix 4), near Singapore where *C. umbratica* has been most often observed. The drawing of the male pedipalp of *C. umbratica* by Prószyński (1984) differs somewhat from more recent published (Žabka & Waldock 2012) images of the pedipalp of *C. thalassina* in that the rotation of the pedipalp in the former is about 220°, the latter 160°. However this does not account for the possibility of intraspecific variation, or the possibility that Prószyński's drawing is either skewed in angle or inaccurately drawn.

At present the two species cannot be reliably separated in the field. Those identified as *C. umbratica* have either a locality closer to Singapore than to Australia, males with more gold-colour in their iridescent scales, or females with more colourful scale colour. But we also know that female *C. thalassina* are quite variable in colouration, even in Australia, with distinct to indistinct transverse bars across the dorsal opisthosoma. In Figures 41-45 we present a series of photographs of males and females that could be identified as *C. umbratica*, as well as photographs of immatures from the same areas. The immatures are similar to the immature *C. thalassina* shown above (Figures 39-40).

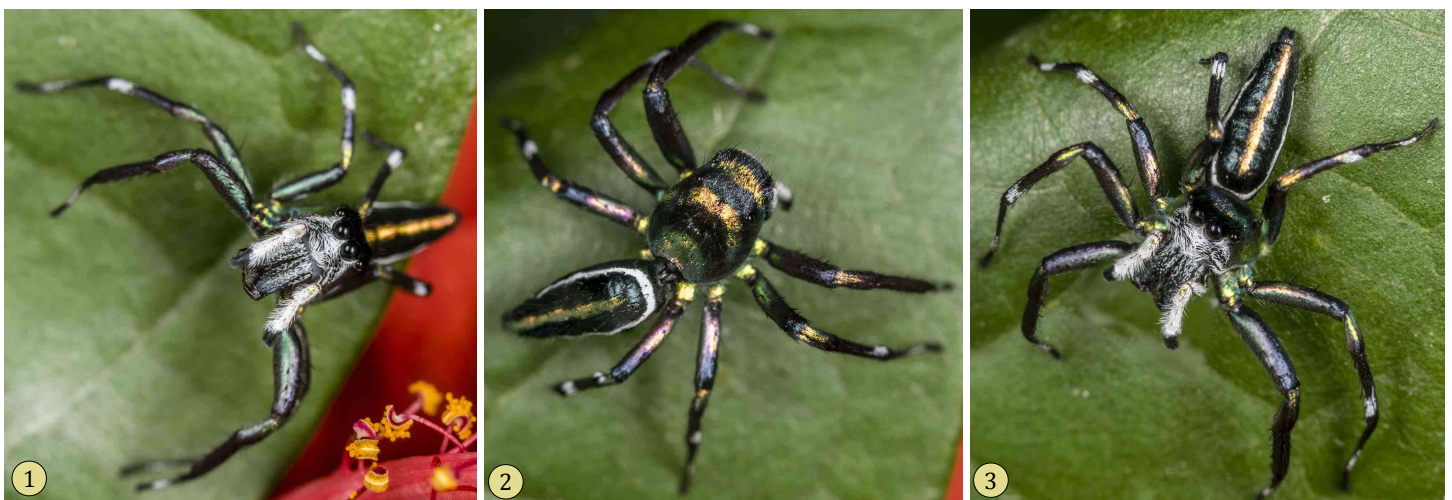


Figure 41. Adult male *Cosmophasis umbratica* from Ubud, Bali. Photographs © Norm Farmer (normfarmerimages), used under a [CC BY-NC 4.0](#) license (Farmer 2018a, 2018b, 2018c).



Figure 42. Adult male *Cosmophasis umbratica* from Singapore. 1-4, Ang Mo Kio Town Garden West. 5-7, Mandai Track. Photographs © Nicky Bay, used with permission.



Figure 43 (continued on next page). Adult female *Cosmophasis umbratica* from Singapore. 1-4, Pasir Ris Park. Photographs © Nicky Bay, used with permission.



Figure 43 (continued from previous page). Adult female *Cosmophasis umbratica* from Singapore. 7-10, Tengah Estate. Photographs © Nicky Bay, used with permission.



Figure 44. Adult female *Cosmophasis umbratica* from Singapore. Photographs © Kwan Han (www.NatureLoveYou.sg), used with permission.



Figure 45. Immature *Cosmophasis umbratica* from Singapore. 1-2, Penultimate male from Sugei Buloh Wetland Reserve. 3-6, Immature or penultimate female. Photographs © Nicky Bay, used with permission.

10. *Cosmophasis valerieae* Prószyński & Deeleman-Reinhold 2010

Figures 5, 7:6, 46-49, Map (Figure 1) #58

This little-known, recently described species is known only from the southernmost islands of Indonesia (Lesser Sunda), from Java to East Nusa Tenggara. Prószyński & Deeleman-Reinhold (2010) designated a female holotype and a male allotype for this species, both from Samokat, Sumbawa Besar. Here (Figures 46-49) we provide photographs of living *C. valerieae* to make it possible to recognize these in the field.

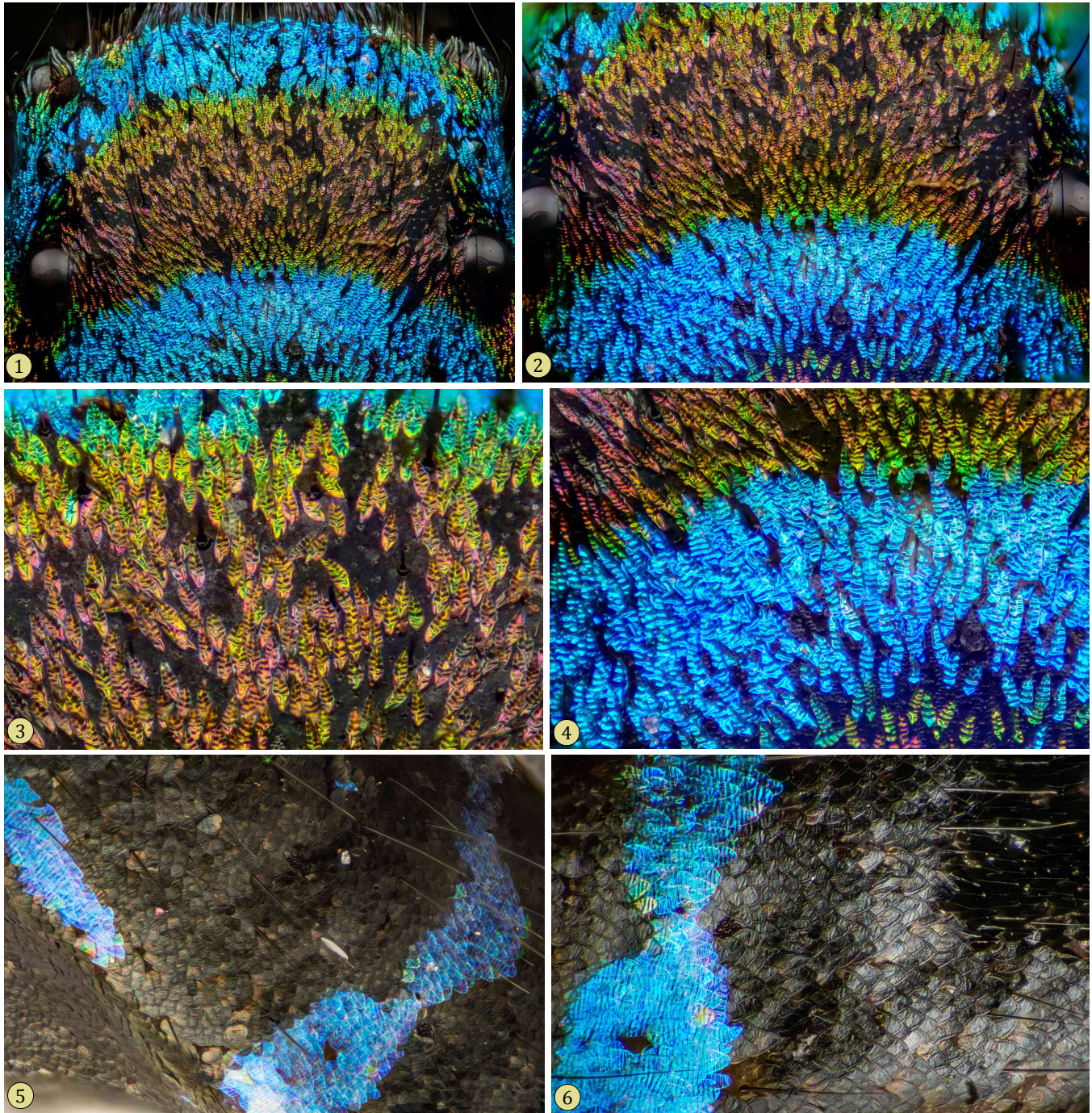


Figure 46. Detailed views of the scales of an adult male *Cosmophasis valerieae* from Bali. **1**, Dorsal view of eye region showing alternating bands of light blue and violet-gold iridescent scales. These scales are lanceolate and wavy. **2-4**, Details from (1). **5-6**, Two views of the scales covering the dorsal opisthosoma. Isolated tracts of blue, lanceolate, iridescent scales are surrounded by a dense array of black, round, and semi-transparent overlapping scales.

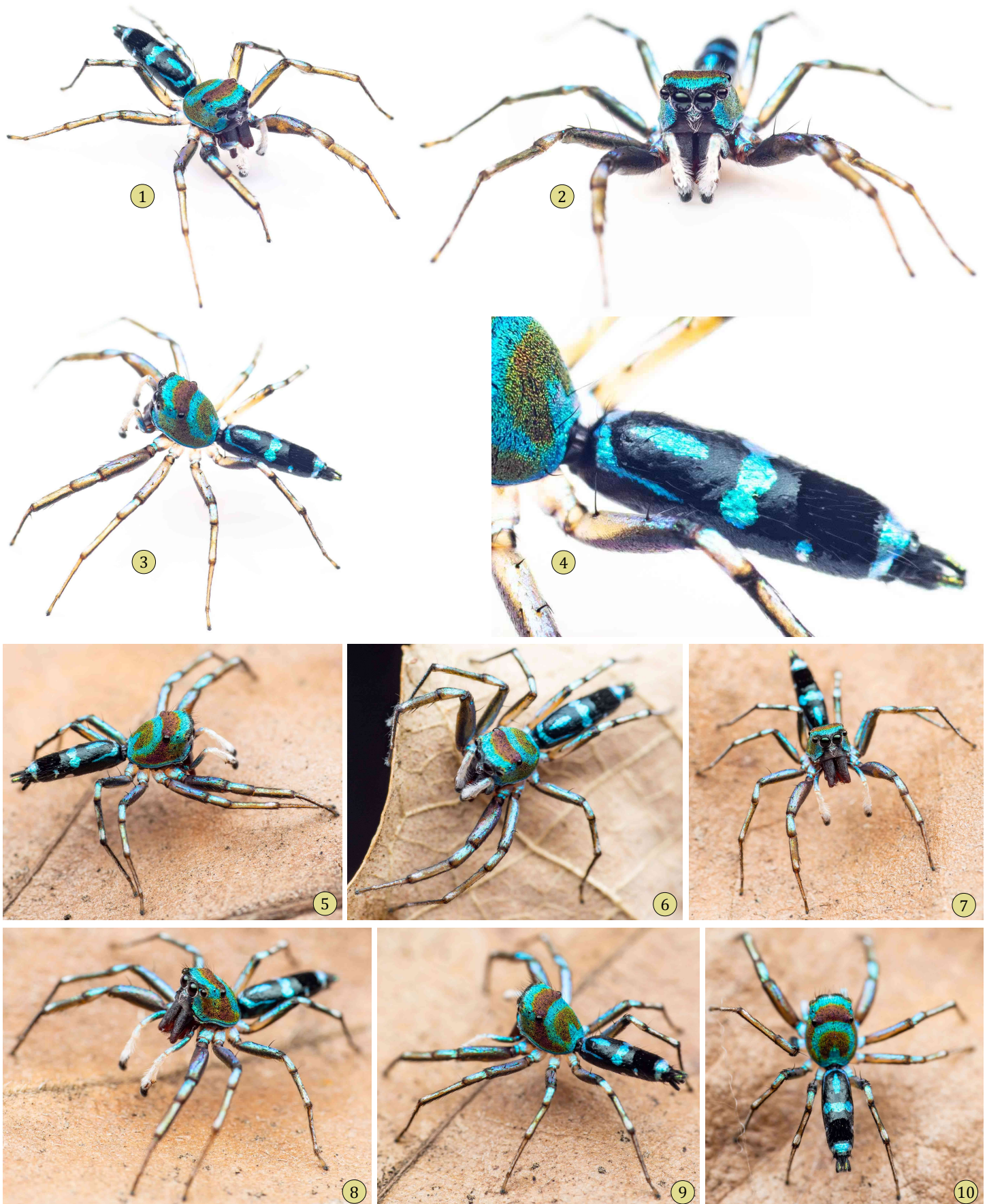


Figure 47 (continued on next page). Adult male *Cosmophasis valeriae* from Bali.

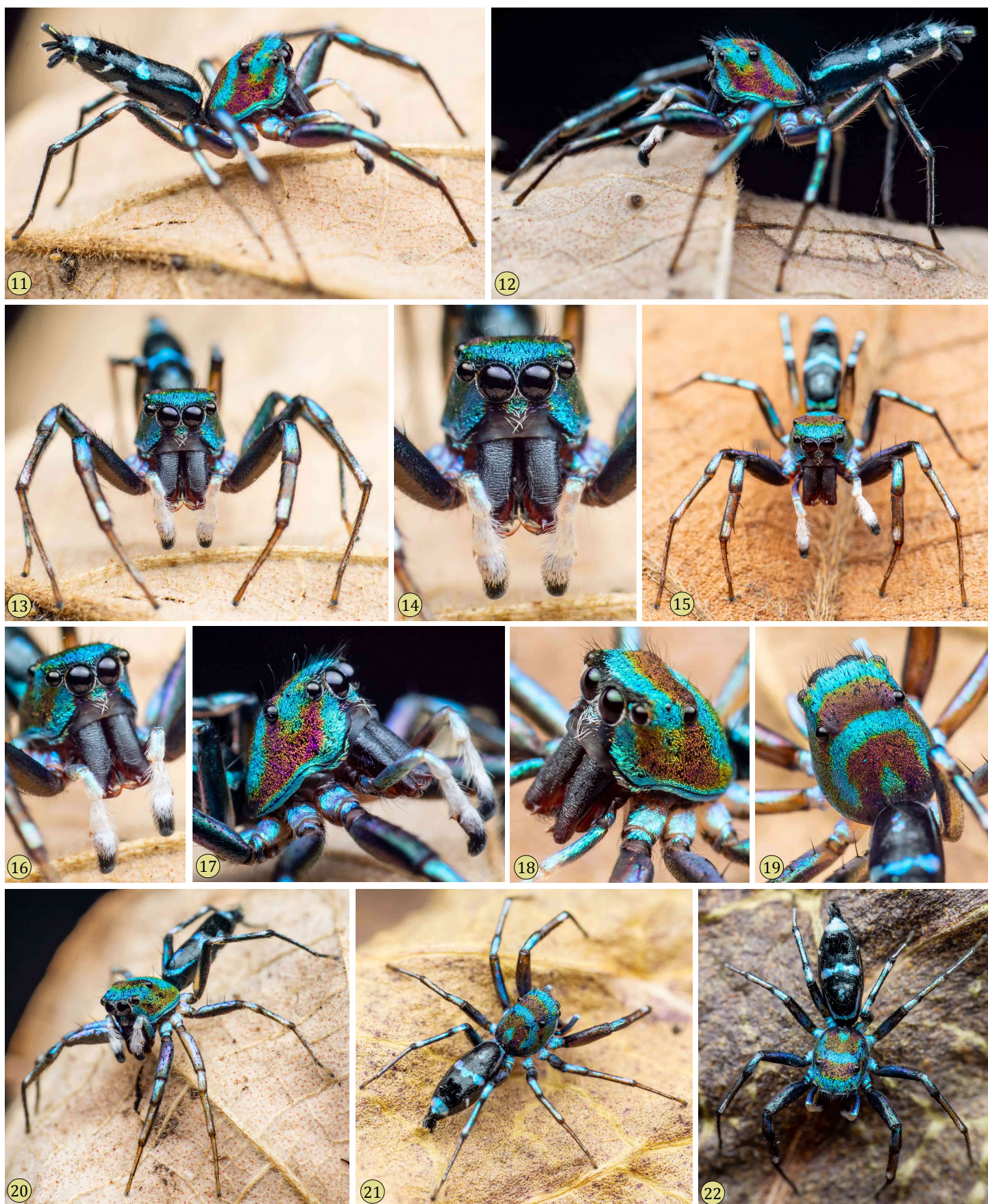


Figure 47 (continued from previous page). Adult male *Cosmophasis valeriae* from Bali.



Figure 48. Adult female *Cosmophasis valeriae* from Bali.

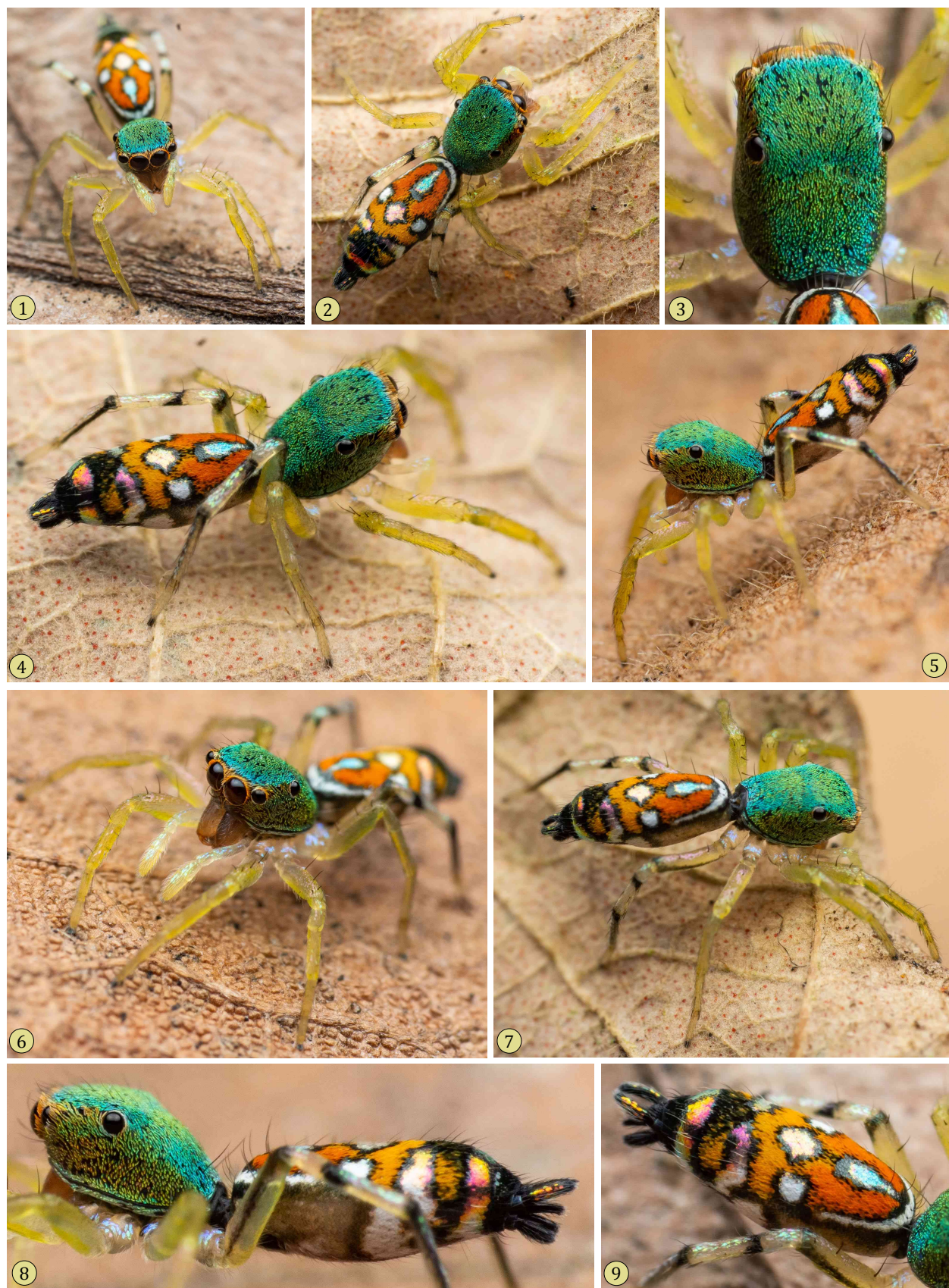


Figure 49. Immature *Cosmophasis valeriae* from Bali. Both males and females have the colours of an adult female when immature.

Diagnosis. Males (Figure 47) resemble other, well-known species like *C. thalassina* and *C. umbratica* in most features, including the general appearance of the pedipalps, but they are otherwise readily identifiable. Instead of black, the transverse bands of the carapace are comprised of brilliant, violet-gold iridescent scales. The wide articulation of the carapace (clypeus) with the chelicerae is jet-black, interrupted by only a few white clypeal setae at the median. Instead of a long median tract of iridescent scales on the dorsal opisthosoma, there is a transverse band comprised of three fused circular patches of these scales. The dense array of overlapping, pitch-black scales that cover most of the opisthosoma can also be used to distinguish male *C. valeriae*.

Females of this sexually dimorphic species (Figure 48) are even more distinctive. The carapace is uniformly covered with vivid green (yellow to blue-green) iridescent scales, with some orange scales around the anterior eyes. Markings on the opisthosoma include a background of bright orange scales and resemble those of *C. bitaeniata*, but instead of a transverse band across the dorsal opisthosoma, three separate white spots, each outlined in black, are present. These spots are not fused as they are in the male. The epigynum of the female (Prószyński & Deeleman-Reinhold 2010) is also diagnostic.

Immatures (Figures 5, 49) resemble the adult female. In Figure 5 you can see the detailed structure of the orange opisthosomal scales of this species. As in other *Cosmophasis*, the large, rounded scales that overlap to form a tight array are only found on the opisthosoma.

11. *Cosmophasis viridifasciata* (Doleschall 1859)

Figure 50, Map (Figure 1) #59

Salticus viridifasciatus Doleschall 1859 (♂)

not *Salticus fulvovittatus* Doleschall 1859 (♀)

not *Thiania albo-cincta* Thorell 1877 (♀)

Maevia viridifasciata Thorell 1878 (♂♀)

not *Cosmophasis viridifasciata* Simon 1901 (♂)

not *Cosmophasis viridifasciata* Merian 1911 (♂♀)

Cosmophasis viridifasciata Prószyński 1984 (♂♀)

Previously this was the only *Cosmophasis* species described from Ambon, and no photographs of the living animals are available. Earlier descriptions with English translations are provided here in Appendix 6. The original description by Doleschall (1859) is inadequate for the identification of this species, and there is no basis for suggestions by Doleschall or subsequent writers that *S. fulvovittatus* Doleschall 1859, also from Ambon, is a synonym. The *Thiania albo-cincta* subsequently described by Thorell (1877), based on a female specimen collected in Kendari, Sulawesi by Beccari, is a mis-match with the brief description of *S. fulvovittatus* and there is no reason to associate this with *C. viridifasciata*. Thorell's later (1878) description of the male *C. viridifasciata*, based on specimens collected in Ambon by Beccari (~1874) differ only with respect to size from Doleschall's brief description, but this character by itself can vary. Subsequent drawings of specimens from Ambon in the Simon collection by Prószyński (1984), and more recent photographs of specimens collected by Beccari in Ambon, now in the Thorell collection, are in agreement (Figure 50), and these provide a definitive description of both the male and the female of this species. Simon (1901) figured a male of a different species with the large tooth of the anterior margin of the fang groove in a medial rather than lateral (base of fang) position. Merian's (1911) figure of the male pedipalp clearly shows a different species from Kema, Sulawesi, with the origin of the embolus at a completely different position; his description of a female cannot be associated with any species in particular. *Cosmophasis viridifasciata* is known only from Ambon and has not been collected recently.

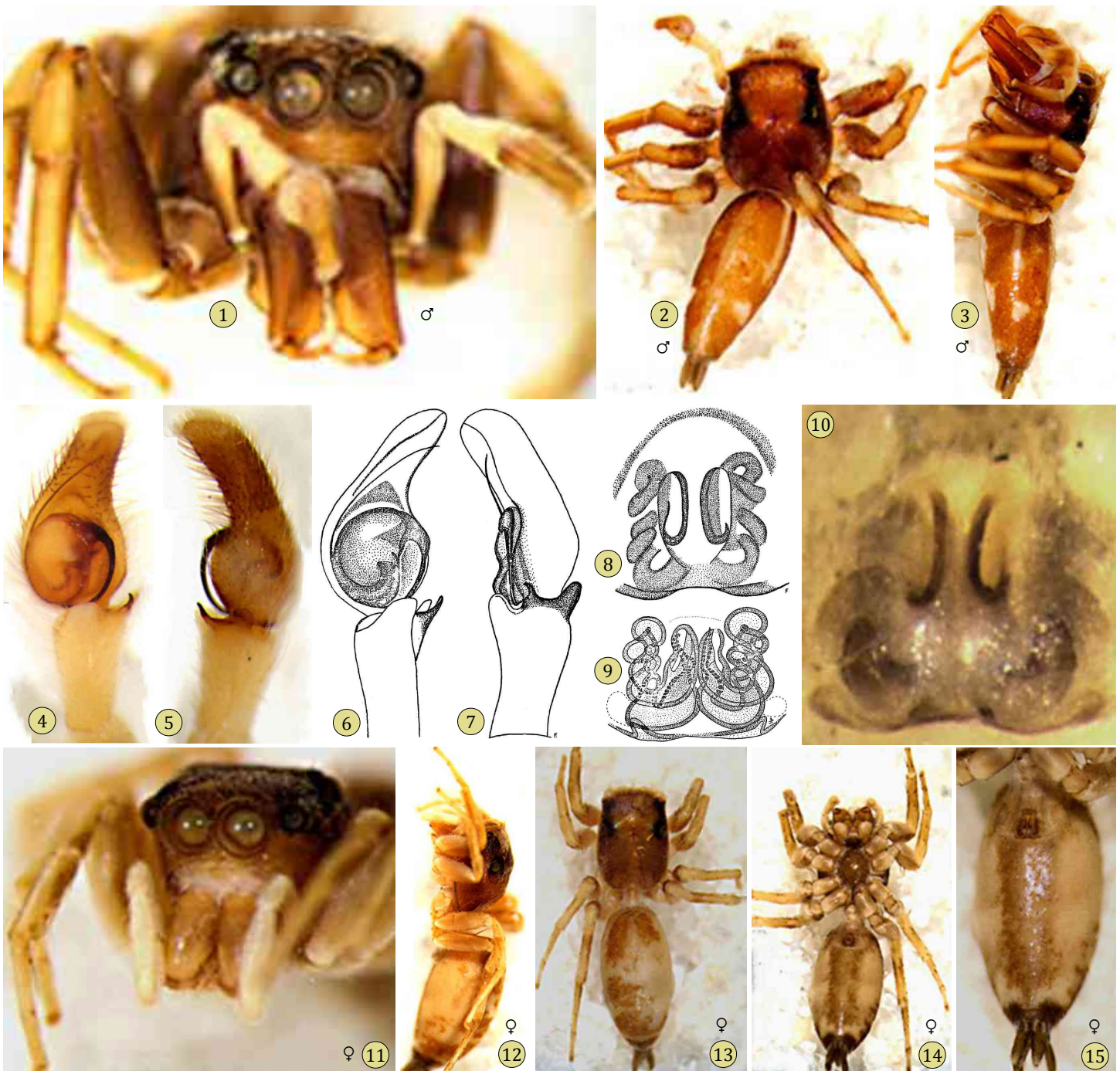


Figure 50. Male (1-7) and female (8-15) *Cosmophasis viridifasciata* from Ambon. **1-5**, Photographs of a male specimen (*Maevia viridifasciata*) collected by Odorado Beccari, now in the Thorell collection at the Museo Civico di Storia Naturale Giacomo Doria di Genova. **4-5**, Ventral and dorsolateral views of left pedipalp. Note the origin of the embolus in a position near 320°. **6-7**, Drawings of a left pedipalp based on a specimen from Ambon in the Simon collection, now in the MNHN, Paris (Prószyński 1984). **8-9**, Ventral (8) and dorsal (9) views of dissected female epigynum based on a specimen from Ambon in the Simon collection, now in the MNHN, Paris (Prószyński 1984). **10-15**, Ventral view of epigynum (10) and other views of a female specimen (*Maevia viridifasciata*) collected by Beccari, now in the Thorell collection at the Museo Civico di Storia Naturale Giacomo Doria di Genova (CL 2.70, CW 2.15, AEW 1.80, PEW 1.80, EFL 1.08, CH 1.55, AL 3.60, AW 1.55). Thorell's collection includes a number of males, females, and immatures of this species. Image credits: 1-5, 10-15, copyright © Joanne Gardzińska, used with permission; 6-7, copyright © Jerzy Prószyński, used with permission. Images shown here can also be accessed in published or posted catalogs (Prószyński 2016, 2020; Metzner 2021).

Diagnosis. The male *Cosmophasis viridifasciata* resembles the male *C. thalassina* in many respects, but can be separated from that species by the presence of two pairs of white spots on the sides of the opisthosoma, the first pair connected to the anterior marginal band on either side. In addition the origin of the embolus at a 320° position on the tegulum is quite different from either the ~160° position of *C. thalassina*, or the ~120° position of *C. umbratica* (see Figure 6; Appendix 1). The female *C. viridifasciata* also resembles several other species, including *C. squamata*, with respect to many characters including scale cover, but can be identified by the distinctive structure of the epigynum (Figure 50:8-10).

12. *Cosmophasis waeri*, new species

Figures 51-52, Map (Figures 1-2) #60

Type material. The holotype ♀ (HC-BB5f) was collected by the senior author on a small potted *Codiaeum variegatum* plant at Waer, on the eastern side of Banda Besar (Banda Island), in the Banda Islands (collected 8 FEB 2016, specimen preserved in alcohol 18 FEB 2016). This specimen will be deposited in the Florida State Collection of Arthropods (FSCA), Gainesville.

Etymology. The species name, *waeri* is a reference to the fact that this species was found at Waer on Banda Besar.

Diagnosis. The female *C. waeri* most closely resembles *C. squamata*, also found on Banda Besar. However the epigynum is completely convex, lacking the two parallel furrows characteristic of *C. squamata*. In addition, a small orange spot is present at the center of each darker area on the dorsal opisthosoma of *C. waeri*. Below each light-yellow or off-white marginal band on either side of the opisthosoma, there is only a narrow and irregular dark brown line in the female *C. waeri*. This dark line is much wider in *C. squamata*. The carapace of our specimen appears to be rubbed in the eye region, but there is no sign of the pair of dark transverse bands that cross the carapace of *C. squamata*. The male is not known.

Description of female (Figures 51-52). Length about 5 mm (Figure 52:1-2). Chelicerae typical for genus, dark amber in colour, mostly glabrous. A single large, unidentate, triangular tooth is present, toward the median, on both the anterior and posterior margins of each fang groove (Figure 52: 3-4). White scales surround the anterior eyes below, orange scales above. Scale cover of eye region not known. Narrow white band present around the margin of the carapace, a shorter narrow band just above this near the front. Carapace dark brown, with dense cover of iridescent green-gold scales around the sides and to the rear of the PLE.

Dorsal opisthosoma covered with dense array of dark brown, rounded, overlapping scales, with a wide marginal band of light-yellow or off-white, rounded, overlapping scales extending from the front around most of the length of each side. Below this on either side a narrow, interrupted, brown line is present. Three transverse bands of these scales cross the dorsal opisthosoma, where a less regular and interrupted median tract of the same scales is also present. A small orange spot is present at the center of each dark-brown area. At the rear of the dorsal opisthosoma, and on the dorsal surfaces of the posterior lateral spinnerets, iridescent violet scales are present. Below, the opisthosoma is light yellow-brown, with two pairs of large white spots on either side, and a dark then light transverse band at the rear (Figure 52:2). The spinnerets are grey and unremarkable. Legs as shown in Figure 50, with some iridescence and indistinct longitudinal stripes. The epigynum (Figure 52:5-9) is convex and triangular, similar in outline to that of *C. squamata* but otherwise distinctive. Figure 52:9 (and to a lesser degree, Figure 52:5) best illustrates the pair of convex, diagonal lobes on either side of the septum, each behind a longer but narrower transverse lobe.

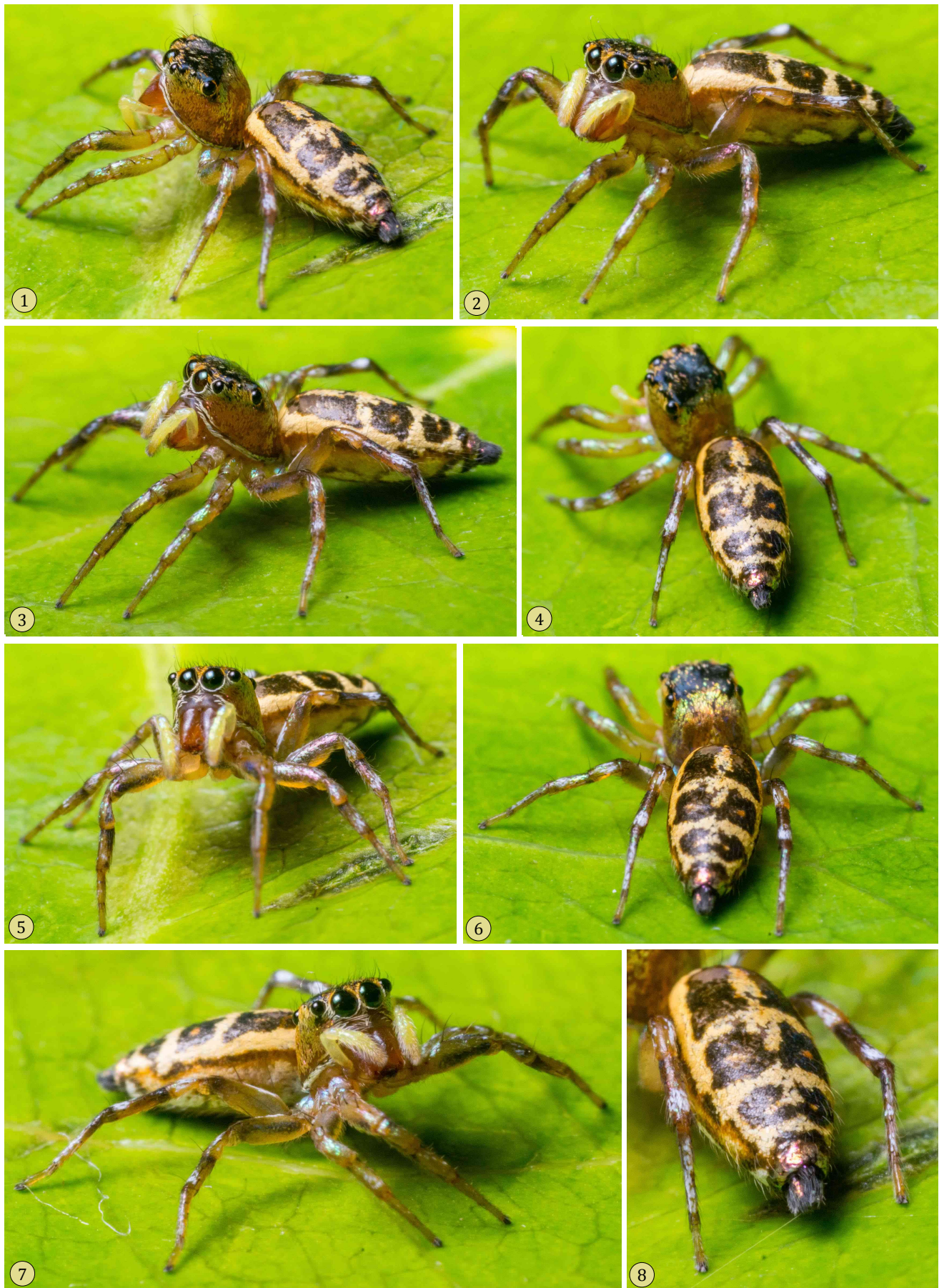


Figure 51. Adult female *Cosmophasis waeri* sp.nov. from Banda Besar.



Figure 52. Adult female *Cosmophasis waeri* sp.nov. from Banda Besar, in alcohol. **3**, Ventral view of anterior prosoma with chelicerae in retracted position. **4**, Ventral view of anterior prosoma with chelicerae in extended position. Note the single large tooth to the front, and to the rear, of each fang, in a medial position. **5-9**, Ventral views of the epigynum. The convexity of the surface of the epigynum is best seen in (5) and (9).

12. Four unidentified *Cosmophasis* species

Figures 7:2-4, 54, Map (Figure 53) #4-7

As we noted previously, a revision of the genus *Cosmophasis* is in order, but this will require a considerable amount of work, both in the field and in the laboratory of the taxonomist. A few species, like *C. bitaeniata* and *C. micarioides*, are fairly well-known, but most are not and some can be challenging even to the specialist. Based on photographs posted on the internet, on *iNaturalist* and elsewhere, we have identified four species (*Cosmophasis* sp. A-D; Figures 7:2-4, 53-54) that we cannot identify, but in the absence of type specimens it is not possible to describe or to name them at this time.

Recent observations of an unidentified *Cosmophasis* in the Andaman Islands (John 2020), as well as the photograph of *Cosmophasis* sp. A shown here (Figure 54:4), suggest that we may find that many different species in this genus, like *C. bitaeniata*, have evolved a special relationship with the Green Tree Ant (*Oecophylla smaragdina*) based on chemical mimicry. The island biogeography of this genus, spanning the continental faunal provinces of both Sunda and Sahul, may also be associated with the evolution of many unique, locally endemic forms. There are thousands of small islands in the region, almost all unexplored by students of the Salticidae.

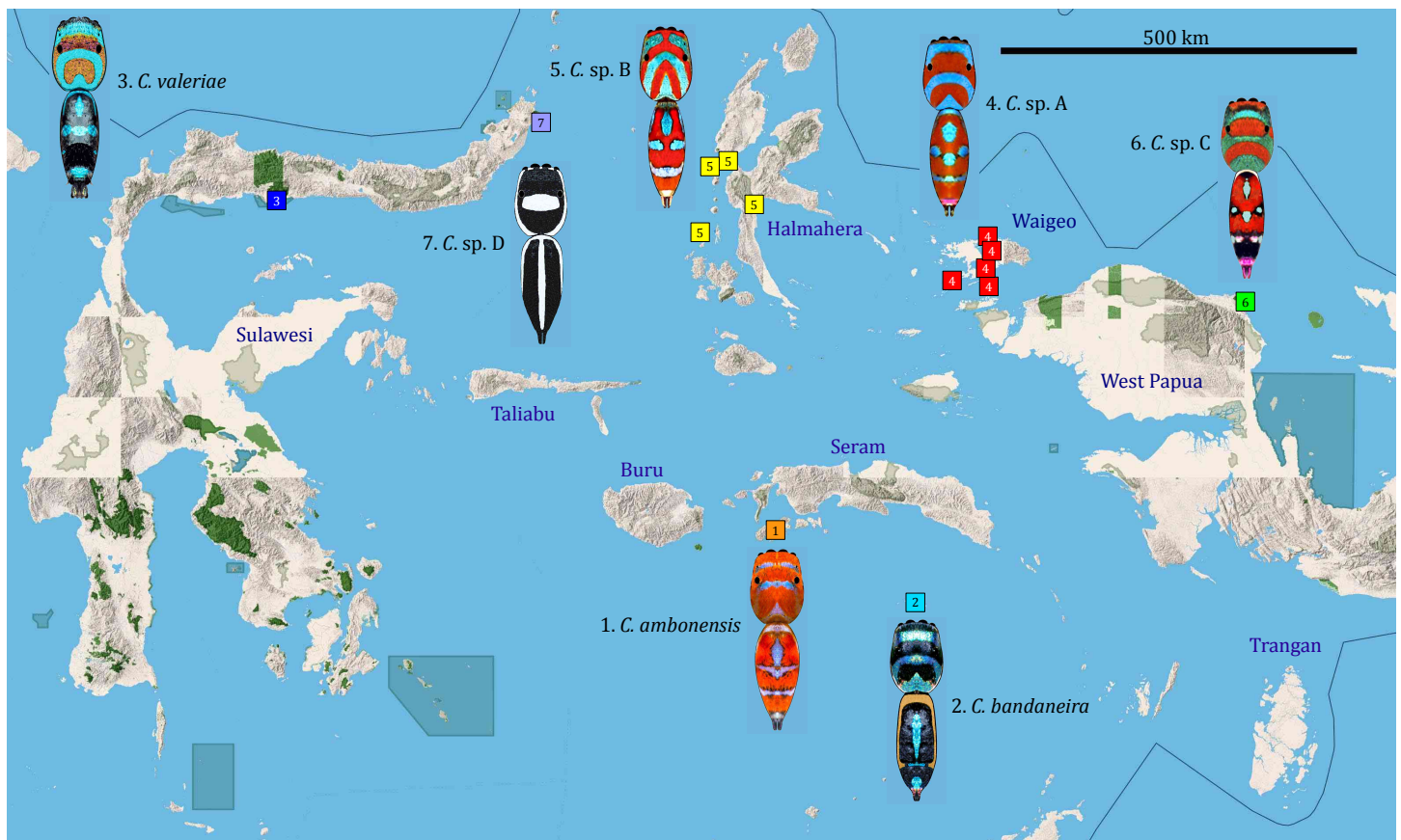


Figure 53. Sites corresponding to photographic records of *Cosmophasis* in northeastern Indonesia, with drawings of the dorsal prosoma and opisthosoma of adult males. Background map and data from OpenStreetMap and the OpenStreetMap Foundation, © [OpenStreetMap contributors](https://www.openstreetmap.org/).

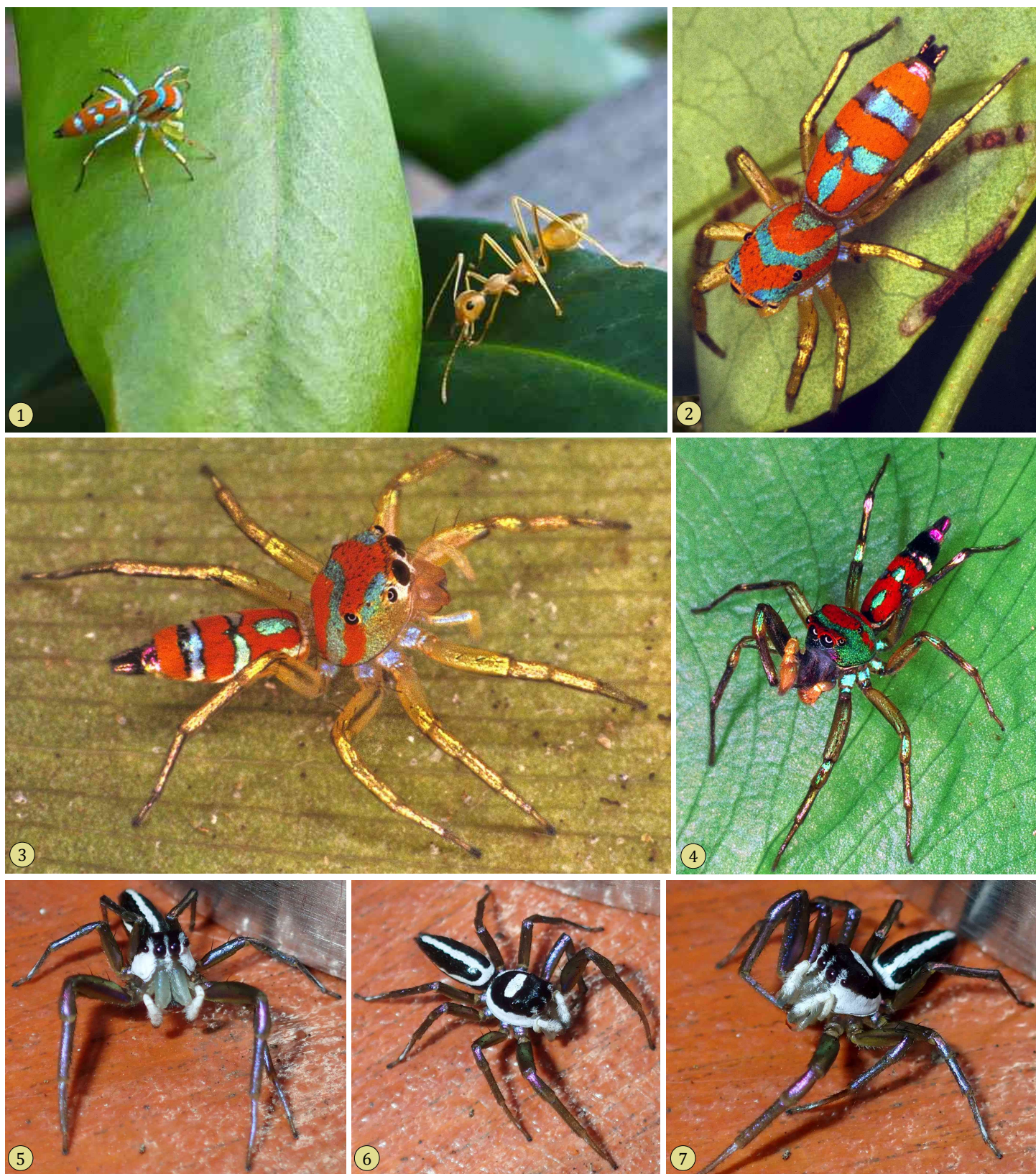


Figure 54. Four unidentified *Cosmophasis* species. **1**, *Cosmophasis* sp. A with a Green Tree Ant (*Oecophylla smaragdina*) from Pulau Penem in the Fam Islands, just west of Waigeo. **2**, Female *Cosmophasis* sp. B from Sidangoli, Halamhera Island (9.5 mm?). **3**, Penultimate male *Cosmophasis* sp. B from Ternate Island (10.0 mm?). Adults have similar colouration. **4**, Adult male *Cosmophasis* sp. C from Manokwari, West Papua (17.0 mm?). **5-7**, Adult male *Cosmophasis* species D. from Lembbeh Island. Photo credits: **1**, © Leoš Smutný, used with permission (Smutný 2020); **2-4**, © David Knowles, used with permission; **5-7**, © Dan Schofield, used under a CC BY-NC 4.0 license (Schofield 2020a, 2020b, 2020c).

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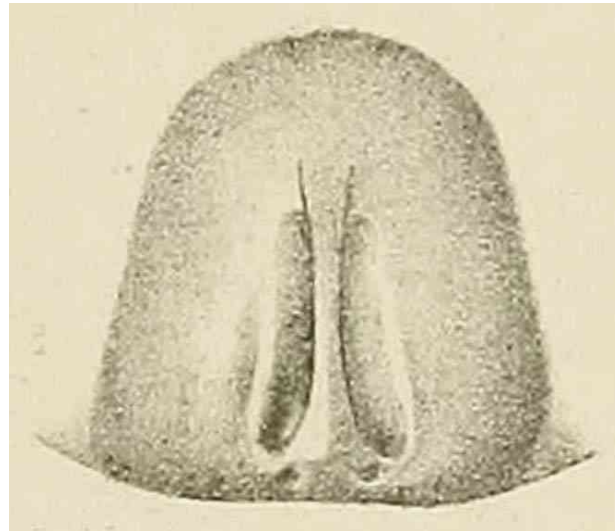
Appendix 1. *Cosmophasis* species

#	species	origin of embolus ^o	author	♂♀	type locality	notes/other key references
1	<i>albipes</i>		Berland & Millot 1941	♀	Macenta, Guinée Française	misplaced in genus?
2	<i>albomaculata</i>	30	Schenkel 1944	♂	Soë, Timor	
3	<i>ambonensis</i>	390	Hurni-Cranston & Hill 2021	♂	Ambon	sp.nov
4	<i>arborea</i>	45	Berry, Beatty & Prószyński 1997	♂♀	Yap, Caroline Islands	
5	<i>baehrae</i>	30	Žabka & Waldock 2012	♂♀	Barrow Island, Western Australia	distributed across northern Australia
6	<i>bandaneira</i>	380	Hurni-Cranston & Hill 2021	♂	Banda Neira	sp.nov.
7	<i>banika</i>		Žabka & Waldock 2012	♀	Banika Island, Solomon Islands	
8	<i>bitaeniata</i>	220	(Keyserling 1882)	♂♀	Sydney (doubtful)	northeastern coast of Australia to Papua; Žabka & Waldock 2012
9	<i>chlorophthalma</i>	?	Simon 1898	♂♀	Mallicolo, Nouvelle-Calédonie	
10	<i>chopardi</i>	0	Berland & Millot 1941	♂	Man, Côte d'Ivoire	misplaced in genus
11	<i>colemanni</i>		Žabka & Waldock 2012	♀	Gordenvale, Queensland	
12	<i>courti</i>	120	Žabka & Waldock 2012	♂♀	Musgrave River, Central Province, Papua	
13	<i>cypria</i>		(Thorell 1890)	♀	Sumatra	
14	<i>darwini</i>	20	Žabka & Waldock 2012	♂	Edith Falls, Northern Territory	
15	<i>depilata</i>	?	Caporiacco 1940	♂	Lago Regina Margherita, Laghi Etiopici	misplaced in genus?
16	<i>estrellaensis</i>	220	Barrion & Litsinger 1995	♂	Estrella Village, Narra, Palawan, Philippines	
17	<i>fazanica</i>	0	Caporiacco 1936	♂	Scorteccius in Murzuk, Libya	misplaced in genus, immature type, Denis 1966 added adult male
18	<i>gemmans</i>	40	(Thorell 1890)	♂	Sumatra	Prószyński 2016
19	<i>harveyi</i>	220	Žabka & Waldock 2012	♂	Waritsian Village, Markham Valley, Morobe Province, Papua	
20	<i>hortoni</i>	250	Žabka & Waldock 2012	♂	Russell Islands, Solomon Islands	
21	<i>humphreysi</i>		Žabka & Waldock 2012	♀	Rampa Bomasa, Madang Province, Papua	
22	<i>kairiru</i>		Žabka & Waldock 2012	♀	Kairiru Island, East Sepik Province, Papua	
23	<i>kohi</i>	270	Žabka & Waldock 2012	♂	Waritsian Village, Morobe Province, Papua	
24	<i>lami</i>	220	Berry, Beatty & Prószyński 1997	♂♀	Suva, Viti Levu, Fiji	widely distributed from Sunda to Indo-Pacific islands; Žabka & Waldock 2012; Suguro 2013
25	<i>laticlavata</i>	90?	(Thorell 1892)	♂♀	Sungei Bulu, Sumatra	Prószyński 1984, 2016
26	<i>longiventris</i>	?	Simon 1903a	♂	Vietnam	questionable species
27	<i>lucidiventris</i>		Simon 1909	♂♀	Gabon	misplaced in genus; Clark 1974 added drawings
28	<i>lungga</i>		Žabka & Waldock 2012	♀	Lungga, Guadalcanal, Solomon Islands	
29	<i>maculiventris</i>		Strand 1911	♀	Ngaiguli, Terangen, Aru and Kei Islands	immature?
30	<i>masarangi</i>	?	Merian 1911	♂	Masarang, Celebes	unusually large RTA
31	<i>micans</i>	150	(L. Koch 1880)	♂	Cape York, Queensland	Žabka & Waldock 2012: no specimens known; confused with <i>thalassina</i>
32	<i>micarioides</i>	90	(L. Koch 1880)	♂♀	Port Mackay, Queensland	found from northeastern Australia to Papua; Žabka & Waldock 2012
33	<i>miniaceomicans</i>		(Simon 1888)	♀	Port Blair, Andaman Islands	
34	<i>modesta</i>	190	(L. Koch 1880)	♂	Cape York, Queensland	Žabka & Waldock 2012: no specimens known; Whyte & Anderson 2017: may be <i>thalassina</i>
35	<i>monacha</i>		(Thorell 1881)	♀	Monte Epa, Novae Guineae	
36	<i>motmot</i>		Žabka & Waldock 2012	♀	Motmot Island, Lake Wisdom, Papua	
37	<i>obscura</i>		(Keyserling 1882)	♀	Cape York, Queensland	Žabka & Waldock 2012; Whyte & Anderson 2017: may be <i>thalassina</i>
38	<i>olorina</i>	60	(Simon 1901b)	♂	Kandy, Insula Taprobane (Sri Lanka)	Prószyński 1984
39	<i>ombria</i>	45	Thorell 1877	♂♀	Ragni de Sebebes	Žabka & Waldock 2012
40	<i>orsimoides</i>		Strand 1911	♀	Elat, Groß-Kei (Kei Islands)	
41	<i>panjangensis</i>	200	Žabka & Waldock 2012	♂	Krakatau	
42	<i>parangpilota</i>	325	Barrion & Litsinger 1995	♂	Molave, Zamboanga del Sur, Mindanao	
43	<i>psittacina</i>		(Thorell 1887)	im	Burma	immature only, dubious
44	<i>pulchella</i>		Caporiacco 1947	♀	Alta Alae, Ethiopia	misplaced in genus?
45	<i>quadrincta</i>		(Simon 1885)	♀	Singapore	
46	<i>rakata</i>	30	Žabka & Waldock 2012	♂♀	Pulau Rakata, Krakatau Islands	
47	<i>risbeci</i>		Berland 1938	♀	Santo, New Hebrides	misplaced in genus?
48	<i>sertungensis</i>		Žabka & Waldock 2012	♀	Pulau Serung, Krakatoa Islands	
49	<i>squamata</i>		Kulczyński 1910	♀	Bougainville, Solomon Islands	Prószyński 1984; ♂ of Saaristo 2002 not this species
50	<i>strandi</i>	?	Caporiacco 1947	♂	Arusha; Pangani East Africa	misplaced in genus
51	<i>tavurvur</i>		Žabka & Waldock 2012	♀	Tavurvur Volcano, Rabaul, East New Britain; Mandang, Mandang Province, Papua	
52	<i>thalassina</i>	160	C. L. Koch 1846 (type for genus)	♂♀	Inseln Bintang (Pulau Bintan)	found from northern Australia to Papua and possibly Thailand; Žabka & Waldock 2012; not Prószyński 1984
53	<i>tricincta</i>	0	Simon 1909	♂♀	Bahia de San Carlos, Ile Fernando Poo; Farim, Guinée portug. (coast of West Africa)	misplaced in genus
54	<i>trioipina</i>	80	Barrion & Litsinger 1995	♂	Legaspi, Albay Prov., Luzon, Philippines	
55	<i>tristriatus</i>	30	(L. Koch 1880)	♂♀	Pelew Inseln (Palau, 07°21'N, 134°28'E)	Žabka & Waldock 2012
56	<i>trobriand</i>		Žabka & Waldock 2012	♂♀	Kiriwina Island, Trobriand Islands, Papua	
57	<i>umbratica</i>	220	Simon 1903b	♂	Forêt du Nirou, Sumatra	Dyal 1935 ♀ from Lahore, Pakistan cannot be associated with this species; may be confused with <i>thalassina</i>
58	<i>valerieae</i>	170	Prószyński & Deeleman-Reinhold 2010	♂♀	Samokat, Sumbawa	found from Java east into Wallacea
59	<i>viridifasciata</i>	320	(Doleschall 1859)	♂♀?	Amboina	Simon 1901a; Thorell 1877, 1878; Merian 1911; Prószyński 1984
60	<i>waeri</i>		Hurni-Cranston & Hill 2021	♀	Waer, Banda Besar	sp.nov.
61	<i>weyersi</i>		(Simon 1899)	♀	Sumatra	<i>Siler</i> sp. according to Prószyński 198

Appendix 2. Original description of *Cosmophasis squamata* Kulczyński 1910

from Kulczyński 1910 (p. 402-403, pl. 17, fig. 12)

Tafel XVII. 12. *Cosmophasis squamata* n. sp., epigyne (X 29).
In plerisque figuris (exceptis 11 et 13) pili omissi sunt.



Cosmophasis E. Sim. *Cosmophasis squamata* n. sp. Taf. 17. (Fig. 12). Femina. Cephalothorax 2.75 mm longus, in $\frac{2}{3}$ longitudinis, ubi latissimus est, 1.9, sub oculis posticis 1.85 latus, fronte 1.65 lata, similis atque in *Cosmophasi thalassina* (C. L. Koch). Quadrungulus oculorum ante 1.65, pone 1.7 latus¹ [1 Etiam in femina *Cosmophasis thalassinae* quadrangulus oculorum paullulo latior est pone quam ante.], 1.12 longus. Diametri oculorum anticorum: mediorum 0.48, lateralium 0.26, oculorum seriei 2^{ae} 0.07, posticorum 0.25 (una cum eminentia, cui innati sunt hi oculi, 0.28) mm longae; intervalla oculorum anticorum: medium 0.05, lateralia 0.097 longa; oculi seriei 2^{ae} ab anticis lateralibus 0.32, a posticis 0.27, oculi postici inter se 1.3, a margine cephalothoracis 0.91 remoti. Clypeus sub oculis mediis ca. 0.1 altus. Mandibulae (retractae) 0.44 longae, basi 0.26 latae, latere exteriori recto, apice intus late rotundato-angustatae, paullo proiectae, leviter transverse rugosae, ante ad sulcum unguicularem dentibus duobus inaequalibus, pone dente uno forti, triangulari, apicem versus paullulo foras curvato instructae. Pedum I femur supra aculeis 1.1.3, patella 0, tibia ante 1, subter 2.2.2, metatarsus pone basim 2 et prope apicem 2, (pedes II desunt), pedum III femur 1.1.3, patella utrimque 1, tibia in latere utroque 1.1.1, subter pone basim 1 et in apice 2, metatarsus in dimidio basali supra 2 et subter 2 prope medium supra 1, prope apicem aculeis 5 ornatus; pedum IV armatura similis atque III, sed tibia subter pone basim aculeis 2 armata et aculei metatarsi duo inferiores fere in medio siti. Femur, patella, tibia, metatarsus, tarsus pedum I 1.5, 0.75, 0.98, 0.82, 0.6, III 1.5, 0.75, 1.0, 1.2, 0.52, IV 1.72, 0.78, 1.35, 1.55, 0.65 mm longa. Abdomen (paullo contusum) 3.5, cum mamillis 3.9 longum, 1.6 latum. Epigyne mediocriter definila, ca. 0.7 longa, 0.55 lata, cornea, modice convexa, foveis ornata duabus profundis, elongatis, ca. 0.3 longis, 0.065 latis, intus et pone melius quam extrinsecus et ante definitis, inter se septo ca. 0.065 lato, subplano distinctis, pone, ubi leviter dilatatae et paullo foras curvatae sunt, a margine postico epigynae 0.08 remotis; septum anteriora versus paullulo dilatatum, paullo longius quam foveae productum et sensim evanescens.

Humefactae araneae cephalothorax umbrinus, in lateribus paullo pallidior quam supra, dense inaequaliter nigro reticulatus, margine laterali nigro, macula nigra ornatus totam aream oculorum occupanti et paullo pone earn producta, pone excisa. Mandibulae rufescenti flavae; sternum et labium fuliginea, hoc apice late albidum; maxillae, palpi, pedes pallide flavi, metatarsus IV basi pone vitta brevi nigra pictus, tarsi posteriores saltern paullo pallidiores quam metatarsi. Abdominis dorsum nigricans et ferrugineum, dense rufescenti-flavo maculatum et fasciis non latis pallide flavidis ornatum tribus: prima in margine antico abdominis supra sita, in latera abdominis paullo (?) producta, secunda in $\frac{2}{5}$, tertia in $\frac{3}{5}$ longitudinis posita, leviter recurvatis. Latera abdominis isabellina, pone colore laete ferrugineo tincta; venter obscure avellaneus. Epigyne fulva, mamillae et partes abdominis eis proximae nigrae. (Color abdominis in exemplo nostro non bene conservatus.) Exemplum nostrum paullo detritum est; cephalothorax squamis tectus fuisse videtur oblongis, undulatis, iuxta positis, paene decoloribus, subpellucidis, iridescentibus, picturam nullam evidentiorum formantibus; oculi postici cingulo angustissimo albo cincti; cinguli oculorum anticorum mediorum in lateribus ochroleuci, infra albidis (supra detriti); clypeus squamis elongatis albis, modice confertis tectus. Sternum praeter pilos albos sat longos squamis albidis paullo pellucidis instructum. Mandibulae, palpi, pedes pilis (neque squamis) ornati, palpi sat confertis praesertim apicem versus, albis, mandibulae et pedes dispersis, obscurioribus. Abdomen undique squamis tectum magnis rotundatis laevibus, ut tegulae in tecto altera alteram magna ex parte tegentibus, albidis, flavidis, pallidius et laetius ferrugineis, fuscis, nonnullis - ni fallor - decoloribus pellucidis; desiccatum abdomen supra flavido et ferrugineo, passim etiam fusco variegatum est, fasciis supra dictis modice expressis, albidis, et paullo pone fasciam posticam vestigio fasciae similis, brevioris, ornatum, prope mamillas nigricans nitidum; latera in parte anteriore magis cinerea, in posteriore magis ferruginea videntur, venter (secundum medium saltem) cinereus est, ad mamillas niger. *Cosmophasis Marxii* (Thor.), quae e speciebus huius generis mihi notis, paucis, imprimis similis est huic speciei, differt ab ea foveis epigynae multo brevioribus (ca. 0.11 mm modo longis), vadosis, intus tantum septo bene definitis, ceterum diffusis. Ins. Salomonis: ins. Bougainville; mense Septembri, femina adulta.

new English translation of text

Cosmophasis E. Simon *Cosmophasis squamata* new species, Plate 17, Figure 12. Female. Cephalothorax 2.75 mm long, widest (1.9 mm) at $\frac{2}{3}$ of its length, 1.85 mm wide below the posterior eyes, 1.65 mm wide at the front, like *Cosmophasis thalassina* (C. L. Koch). Ocular quadrangle 1.65 mm wide at the front, 1.7 mm wide at the rear (In the female *C. thalassina* the ocular quadrangle is slightly wider at the rear than at the front), and 1.12 mm long. Diameter of the eyes: AME 0.48 mm, ALE 0.26 mm, PME 0.07 mm, PLE 0.25 mm (or 0.28 mm including the raised area around the PLE); distance between the eyes: AME-AME 0.05 mm, AME-ALE 0.097 mm, PME separated from the ALE by 0.32 mm, PME separated from the PLE by 0.27 mm, PLE-PLE 1.3 mm, PLE to margin of carapace 0.91 mm. Clypeus below the AME about 0.1 mm high. Chelicerae (retracted to the rear) 0.44 mm long, 0.26 mm wide at the base, the lateral sides straight, distally rounded and narrower, slightly projecting, with slight transverse wrinkles and two unequal teeth of the fang groove, one strong and triangular, the other toward the outside curved. Leg I spines: dorsal femur 1.1.3, patella 0, anterior tibia 1, below the tibia 2.2.2, proximal metatarsus 2, distal metatarsus 2. Leg II the same. Leg III spines: femur 1.1.3, patella 1 on each side, tibia on both sides 1.1.1, below proximal tibia 1, below distal tibia 2, proximal metatarsus 2 above and 2 below, middle metatarsus 1 above, distal end of metatarsus 5. Spines of leg IV similar to those of leg III, but below the proximal tibia 2 and the two inferior spines of the metatarsi are placed at the middle. Length of femur, patella, tibia, metatarsus, and tarsus for legs in mm: leg I, 1.5, 0.75, 0.98, 0.82, 0.6, leg III 1.5, 0.75, 1.0, 1.2, 0.52, IV 1.72, 0.78, 1.35, 1.55, 0.65. Opisthosoma (slightly damaged) 3.5 mm in length, with spinnerets 3.9 mm in length, and 1.6 mm wide. Epigynum of average definition, about 0.7 mm long, 0.55 mm wide, horny, slightly convex, decorated with two better defined furrows, each about 0.3 mm long, 0.065 mm long, slightly separated laterally where they are bent, about 0.08 mm in front of the posterior margin of the epigynum. Toward the front the septum is slightly dilated and the furrows slowly fade away.

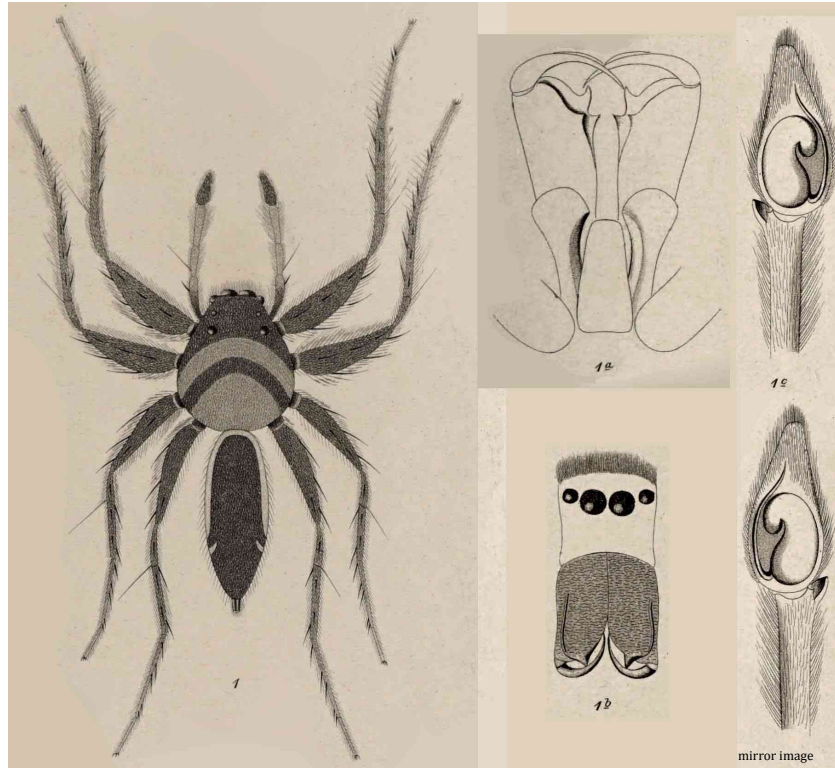
In fixative the carapace is umber in colour, slightly paler on the sides than above, with dense, irregular black reticulation, the lateral margins black, a black spot covering the entire area of the eyes, extending beyond that to the rear and then ending. Chelicerae reddish yellow; sternum and labium sooty, the sides of the apex white; endites, pedipalps, legs light yellow, metatarsus IV with a short black spot near the base, the posterior tarsi at least a little paler than the metatarsi. Dorsal opisthosoma black and reddish brown, ornamented with three short and dense rufous-yellow bands: the first situated around the anterior margin of the opisthosoma, perhaps slightly extended to the sides, the second about $\frac{2}{5}$ of the length of the opisthosoma behind this, and the third, slightly recurved, about $\frac{2}{5}$ of the length of the opisthosoma behind the second. The sides of the opisthosoma have a slight rusty tint, the venter obscure in all ways. The fulva of the epigynum, the spinnerets and near parts of the opisthosoma are black. However the colour of the abdomen has not been preserved in our specimen. Our specimen is somewhat damaged; the carapace seems to have been covered with oblong or undulate scales or, according to position, almost colorless, transparent, and iridescent blue; the posterior eyes with narrow white marks; the area between each AME and ALE is yellowish, whitish below, and damaged above; on the clypeus are long white scales, slightly packed. In addition to white hairs small white, transparent scales are present on the sternum. Chelicerae, pedipalps and legs are decorated with white hairs but not scales, crowded at the tips of the pedipalps, dispersed and more obscure on the chelicerae and legs. On all sides the opisthosoma is covered with large, round scales, each covering the other, white, yellowish, pale and slightly rusty, brown, and some I believe are transparent and colorless. When dry the opisthosoma is yellow and rusty above, even though it is dark coloured. The upper band is moderate in appearance, white, and a little behind the band is a trace of a similar band, short, ornate, shining black near the spinnerets. The anterior lateral sides are flat black, appearing rusty toward the rear, the venter (second middle part) is ash-gray, black at the spinnerets. *Cosmophasis Marxii* (Thorell) [*Maevia marxii* Thorell 1890, now *C. ombria*], a member of this genus that is known to me, briefly, has a similar appearance to this species, differing in that the epigynum is much smaller (only about 0.11 mm long), full of shadows, within the septum well defined, otherwise diffuse. Solomon Islands: Bougainville Island; month of September; adult female.

Appendix 3. Original description of *Cosmophasis micans* L. Koch 1880

from L. Koch 1880 (p. 1173-1175, pl. 102, figs. 1a, 1b, 1c)

Amycus micans n. spec. T. CII. f. 1. Mas. f. 1a. Mandibeln (Rüchseite), Maxillen und Lippe. f. 1b. Mandibeln (Vorderseite) und vorderste Augenreihe. f. 1c. Tibialglied der Palpen und Kopulationsorgane.

Amycus micans, new species. Plate 102. fig. 1. Male. fig. 1a. Rear view of chelicerae, endites and labium. fig. 1b. Anterior view of chelicerae and first eye row. fig. 1c. Pedipalp.



Mas. Der Cephalothorax schwarzbraun, schwarzbraun beschuppt, ein glosser, dreeckiger Flecken an der hinteren Abdachung, eine breite Querbinde hinter den Augen der dritten Reihe, sich in die Seiten herabziehend, durch violett-grün und golden schillernde Schüppchen gebildet; der Raum zwischen den Augen mit violett schillernden Schuppen belegt; hinter den Augen der ersten Reihe eine Querbinde von grün-, gold- und roth schillernden Schüppchen; der Clypeus weiss beschuppt. Die Mandibeln schwarzbraun, die Klauen röthlichbraun. Maxillen und Lippe dunkel-, das Sternum schwarzbraun, das letztere weiss behaart und mit goldgrünen Schuppen bedeckt. - Das Abdomen schwarz, dunkelbraun behaart, oben ein von der Basis abgehender, mit goldgrünen Schuppen belegter, durchlaufender Längsstreifen, an der Basis eine aus weissen Schüppchen gebildete Querbinde, von welcher bis zum Beginn des hinteren Drittheils reicht und sich am Ende zu einem Flecken erweitert. Die unterseite mit weissen, schwach blau schillernden Schüppchen bedeckt, beiderseits ein durchlaufender Längsstreifen rein weissen Schuppen. Das Femoral-, Patellar- und Tibialglied der Palpen weiss behaart und beschuppt; das erstere schwarzbraun, die beiden letzteren hellbräunlichgelb; die Decke der Kopulationsorgane dunkelbraun, an der Basis weiss- sonst braun behaart. Die Beine mit farbig schillernden Schüppchen belegt. dunkelbraun, die Patellen und Tibien lichter gefärbt. Die Hüften oben mit lebhaft gold-grün schillernden Schuppen bedeckt. - Die Spinnwarzen schwarz. Der Cephalothorax so lang als Patella und Tibia eines Beines des ersten Paares, um 0^m00075 länger als breit, in den Seiten stark gerundet, vorn mehr als hinten verschmälert, nach den Seiten senkrecht und mit leichter Wölbung abfallend, vom Hinterrande bis zur dritten Augenreihe ansteigend, vo da zur ersten Augenreihe sanft geneigt, vorn sehr hoch, mit lanzettförmigen, quergestreiften Schuppen dicht belegt. Die Mittelritze mässig lang, in einem Querindrucke hinter der dritten Augenreihe. Unterhalb der Augen einzelne lange Haare; über der vordersten Augenreihe ein Querstreifen dichter, vorwärts gerichteter, haarförmiger Schuppen, zwischen welchen einzelne lange Haare hervorragen. Der Clypeus mit lanzettförmigen Schuppen bedeckt, senkrecht abfallend. Die Augenviereck breiter als lang, hinten so breit als vorn. Die vorderste Augenreihe den Clypeus überragend, gerade; die MA. von mässiger Grösse, fast in der doppelten Breite ihres Durchmessers über dem Kopfrande stehend, dicht beisammen, von den SA. nur durch einen schmalen Zwischenraum getrennt. Die SA. so gross als die Augen der dritten Reihe; die Augen der zweiten über der Linie zwischen dem SA. der ersten und dem Auge der dritten Reihe, von deisem etwas weiter, als von jenem entfernt. - Die Augen der dritten Reihe vom Seitenrande weiter als von einander abstehend. -

Die Mandibeln etwas vorwärts gerichtet, länger als die Patella eines Beines des ersten Paares, mit stumpfkantigem Aussenrande und nach Innen geneigter, nicht gewölbter Vorderfläche, bis zum Ende gleichbreit und nicht divergirend, unten nach Innen mit leichter Rundung abgeschnitten, mattglänzend, der Quere nach gerunzelt, weitschichtig mit Körnern, welche ein angedrücktes, feines Haar tragen, bestreut, an der Basis mit Schüppchen belegt, am Innenrande und am unteren Ende aussen und innen mit langen Haaren besetzt; über der Einlenkung

der Klaue ein grosser, am Ende spitzer, vorwärts gerichteter Zahn; längs des Aussenrandes, oberhalb der Mitte beginnend und bis zum unteren Ende herabverlaufend ein feiner Kiel. - Die Klauen kurz, wenig und erst an der Spitze stärker gekrümmt; der Unterrand schneidend scharf und vor dem Uebergang in Spitze etwas hervortretend. Am vorderer Klauenfalzrande ein grösserer und ein kleinerer Zahn, am Hinterrande nur ein Zahn, etwa von der Grösse des grösseren am vorderen Falzrande. Die Maxillen lang, gewölbt, aus schmaler Basis vorn mässig erweitert, mit gerundetem Vorderrande. vorn nach Innen schräg abgestutzt und hier dicht befranset. Die Lippe mehr als halb so lang als die Maxillen, vorn stark verschmälert; am Vorderrande gerade abgeschnitten. Das sternum breit oval, wenig gewölbt, dict mit lanzettförmigen, quergestreiften Schuppen bedeckt und mit langen, abstehenden Haaren reichlich bewachsen. - Das Abdomen viel schmaler als der Cephalothorax, c. 2½ mal so lang als breit, vorn und hinten abgestumpft, in den Seiten leicht gerundet, nach Vorn und Hinten gleichmässig und nur wenig verschmälert, mit ovalen Schuppen bedeckt und weitschichtig mit langen, abstehenden Borsten besetzt. Das oberste Paar der Spinnwarzen cylindrisch, leicht gebogen, den unterste etwas kürzer, konisch. Die Palpen lang, dünngliederig. Der Femoraltheil leicht auswärts gekrümmt, mit feinen, mässig langen Haaren bewachsen und oben mit Schüppchen belegt. - Das Patellarglied dicht beschuppt, mit langen Haaren besetzt, von der Basis bis zum Ende gleichdick. Der Tibialtheil merklich länger als das Patellarglied, dicht beschuppt und mit langen Haaren, besonders dicht längs der Innenseite besetzt. Am vorderen Ende aussen ein kurzer, am Ende abgerundeter, breiter, innen ausgehöhlter Fortsatz, nach Innen von diesem an der Unterseite ein an seinem breiten Ende ausgerandeter kurzer Zahn. Die Decke der Kopulationsorgane kürzer als das Tibialglied, und nicht breiter als dieses am Ende, gewölbt, and der Basis beiderseits gerundet, vorn mässig verschmälert, am Ende schräg nach Vorn abgestutzt und gerundet und hier dict kurz behaart, sonst licht mit mässig langen Haaren bewachsen und um die Basis mit Schüppchen belegt. - Die Scheibe der Kopulationsorgane nierenförmig, flach; der Sporn innen von der Basis abgehend, längs des Innenrandes verlaufend und mit seiner feinen Spitze die Scheibe etwas überragend.

Die Beine mit metallisch schillernden Schuppen belegt. Die Schenkel unten mit langen, abstehenden, oben mit kürzeren, vorwärts gerichteten Haaren besetzt. Die Tibien der beiden Vorderpaare mit kürzeren und längeren Haaren besetzt. Am Ende aller Patellen oben eine lange Borste. Die Metatarsen der beiden Vorderpaare und die Tarsen kurz behaart, erstere unten ausserdem mit sehr langen, feinen, abstehenden Haaren reichlich besetzt. Die Patellen, Tibien, Metatarsen und Tarsen der beiden Hinterpaare gleichmässig ziemlich kurz behaart. An Femur I oben 1.1.1, vorn 1.1.1, Stacheln, an Femur II oben 1.1.1, vorn 1.1.1, hinten 1.1.1, an Femur III oben 1.1.1, vorn 1.1.1, hinten 1.1; and Femur IV. oben 1.1.1, hinten 1 (Ende). Nur an den Patellen der beiden Hinterpaare hinten je Metatarsen an der Basis und am Ende kurze Stacheln. An Tibia III vorn 1.1.1, unten 2.2.2; and den Metatarsen an der Basis und am Ende Stacheln. an den Tibien des dritten und vierten Paares hinten 1.1, unten 2.2; die Metatarsen der ganzen Länge nach bestachelt. Tibia I beträchlich länger als die Patella, beide zusammen länger als Metatarsus und Tarsus; erstere weit länger als der Tarsus; in gleichem Längenverhältnisse auch die Glieder des zweiten Paares. - Patella und Tibia III kürzer als Patella und Tibia IV; Metatarsus und Tarsus IV länger als Patella und Tibia. Länge des Cephalothorax: 0^m003, des Abdomen 0^m004, eines Beines des ersten, zweiten oder vierten Paares: 0^m0075, des dritten: 0^m0065. Cap York (Mr. Bradley's Sammlung).

new English translation of text

Male. The cephalothorax is black-brown, with black-brown scales, a glossy, triangular spot on the rear slope, a wide transverse band behind the PLE, drawn down to the sides, formed by shimmering purple-green and golden scales; the space between the eyes is covered with shimmering violet scales; behind the eyes of the first row a transverse band of green, gold and red shimmering scales; the clypeus is covered with white scales. The chelicerae black-brown, the fangs reddish-brown. Endites and labium dark, the sternum black-brown, the latter white, hairy and covered with golden-green scales. The abdomen is black, with dark brown hair, and at the top a continuous longitudinal stripe, covered with golden-green scales, at the base a transverse band formed from white scales, from which it extends to the beginning of the posterior third and widens to a spot at the end. The underside is covered with white, slightly shimmering blue scales, on both sides a continuous longitudinal strip of pure white scales. The femoral, patellar and tibial parts of the pedipalps are hairy and scaled; the former black-brown, the latter two light brownish-yellow; the covering of the copulatory organs dark brown, with white hair at the base, otherwise brown. The legs are covered with shimmering colored scales, the patellae dark brown and tibiae lighter colored. The upper coxae are covered with vivid, shimmering gold-green scales. The spinnerets are black. The cephalothorax as long as the patella and tibia of leg I, about 0.75 mm longer than wide, strongly rounded on the sides, more narrowed in front than behind, sloping vertically towards the sides and with a slight curve, rising from the rear edge to the third row of eyes, from there gently inclined towards the first row of eyes, very high in front, densely covered with lanceolate, striated scales. The central fissure moderately long, in a transverse impression behind the third row of eyes. Individual long hairs below the eyes; above the first eye row a horizontal stripe of thick, forward-directed, hair-like scales, between which individual long hairs protrude. The clypeus covered with lanceolate scales, sloping vertically. The eye region wider than long, behind as wide as in front. The first eye row protruding from the clypeus, straight; the AME of moderate size, standing almost twice their diameter above the edge of the head, close together, separated from the ALE only by a narrow space. The ALE as large as the PLE; the PME above the line connecting the ALE and PLE, a little further from the ALE than from the PLE. The PLE are further from the margin than they are from each other.

The chelicerae are directed somewhat forward, longer than the patella of one leg of the first pair, with a blunt-edged outer margin and an inwardly inclined, non-curved front surface, evenly wide and not diverging up to the end, trimmed inwards with a slight curve at the bottom, matt-glossy, wrinkled transversely, layered with grains, which bear a pressed, fine hair, sprinkled, covered with scales at the base, covered with long hair on the inside and on the lower end outside and inside; above the turn of the fang a large, pointed, forward tooth; along the outer edge, beginning above the middle and running down to the lower end, a fine keel. The fangs short, slightly and only more curved at the tip; the lower edge cutting sharp and protruding somewhat at the point in front of the upper edge. On the front margin of the claw groove one larger and one smaller tooth, on the rear edge only one tooth, roughly the size of the larger one on the front margin of the groove. The endites long, arched, moderately widened in front from a narrow base, with a rounded front edge, the front inwardly trimmed and fringed tightly here. The labium more than half as long as the endites, greatly narrowed in front, cut straight at the front edge. The sternum broadly oval, slightly arched, thickly covered with lanceolate, striated scales and overgrown with long, protruding hairs. The abdomen much

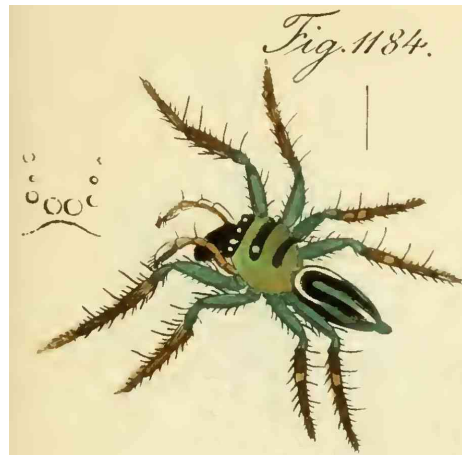
narrower than the cephalothorax, about 2½ times as long as wide, blunted in front and behind, slightly rounded on the sides, evenly and only slightly narrowed towards the front and back, covered with oval scales and covered with long, protruding bristles in many layers. The top pair of spinnerets is cylindrical, slightly curved, the bottom pair somewhat shorter and conical. The pedipalps are long, thin-limbed. The femur slightly curved outwards, covered with fine, moderately long hair and covered with scales at the top. The patella is densely scaled, covered with long hair, of equal thickness from the base to the end. The tibia is noticeably longer than the patella, densely scaled and covered with long hairs, particularly close along the inside. At the front end on the outside a short, at the end rounded, wide, inside hollowed-out appendage, towards the inside of this on the underside a short tibial apophysis that is edged out at its broad end. The cymbium is shorter than the tibia and not wider than this at the end, arched, rounded on both sides at the base, moderately narrowed at the front, truncated and rounded at the end obliquely forwards and with short hair here, otherwise lightly overgrown with moderately long hair and covered with flakes around the base. The tegulum kidney-shaped, flat, the apophysis curving inwardly starting from the base, running along the inner edge and with its fine point slightly protruding beyond the disc of the tegulum.

The legs are covered with shimmering metallic scales. The femora below are covered with long, protruding hair, and above with shorter, forward-directed hair. The tibia of the two anterior legs is covered with shorter and longer hair. A long bristle at the top of each patella. The metatarsi and tarsi of the two front legs with short hairs, the former also richly covered with very long, fine, protruding hairs below. The patellae, tibiae, metatarsi and tarsi of the two posterior legs are equally hairy and fairly short. Spines: femur I top 1.1.1, front 1.1.1, femur II top 1.1.1, front 1.1.1, back 1.1.1, femur III top 1.1.1, front 1.1.1, back 1.1, femur IV above 1.1.1, rear 1 (end). Only on the patellae of the two posterior legs behind each metatarsus at the base and short spines at the end. On tibia III in front 1.1.1, below 2.2.2, and the metatarsi at the base and spines at the end. On the tibia of the third and fourth leg behind 1.1, below 2.2, the metatarsal spines along their entire length. Tibia I considerably longer than the patella, both together longer than the metatarsus and tarsus, the former far longer than the tarsus. The segments of the second leg also have the same length ratio. Patella and tibia III shorter than patella and tibia IV, metatarsus and tarsus IV longer than patella and tibia. Length of the cephalothorax 3 mm, the abdomen 4 mm, the first, second and fourth legs 7.5 mm, and the third leg 6.5 mm. Cape York (collection of Mr. Bradley).

Appendix 4. Original description of *Cosmophasis thalassina* (C. L. Koch 1846)

from C. L. Koch 1846 (p. 124, pl. CCCCLIII, fig. 1184)

Plexippus thalassinus. Tab. CCCCLIH. Fig. 1184.



Vorderleib goldfarbig grün, mit drei schwarzen Querstreifen; Hinterleib schwarz, mit drei weissen Längslinien; Beine zimmetroth, goldgrün fleckig. Länge fast 3 ". Der Kopf sehr hoch, am Vorderrande stark ausgebogen, die Kopfplatte kurz. Hinterleib viel dünner als der Vorderleib. Alles Uebrige von regelmässigem Baue. Kopf und Thorax gelbgrün, prachtvoll goldfarbig glänzend, über der vordem Augenreihe ein Querstreif, ein etwas breiter zwischen den hintern Scheitelaugen und ein mondförmig gebogener auf der hintern Abdachung des Thorax sammetartig tief schwarz; das Gesicht unter der vordem Augenreihe und ein Schieffleck am vordem Seitenwinkel von Härchen zart weiss. Die Fresszangen schwarz. Die Taster blass zimmetröthlich, die Haarbedeckung weiss, die Endhälfte des letzten Gliedes und die Genitalien schwarz. Der Hinterleib schwarz, eine Rückenlinie gelblich goldgrün, eine Seitenlinie, zugleich über den Vorderrand ziehend, weiss. Die Beine zimmetbraun, die Schenkel und Kniee oben, desgleichen ein Fleck auf der Spitze der Schienbeine der zwei goldfarbig grünen Vorderpaare, ein solcher Fleck auf den Schienbeinen der zwei Hinterpaare weiss, Männchen. Weibchen unbekannt. Vaterland: Die Insel Bintang, in Hinterindien.

new English translation of text

Prosoma gold-colored green, with three black horizontal stripes; abdomen black with three white, longitudinal lines; legs cinnamon-red, golden-green spotted. Length almost 6.75 mm. The head very high, strongly arched at the front edge, the eye region short. The rear is much thinner than the front. Everything else is normal. Head and thorax yellow-green, gloriously golden-colored, a horizontal stripe above the front row of eyes, a somewhat wider one between the separated posterior eyes, and a moon-shaped curved one on the posterior slope of the thorax, velvety deep black; the face under the front row of eyes and a crooked spot on the front corners bear delicate white hairs. The

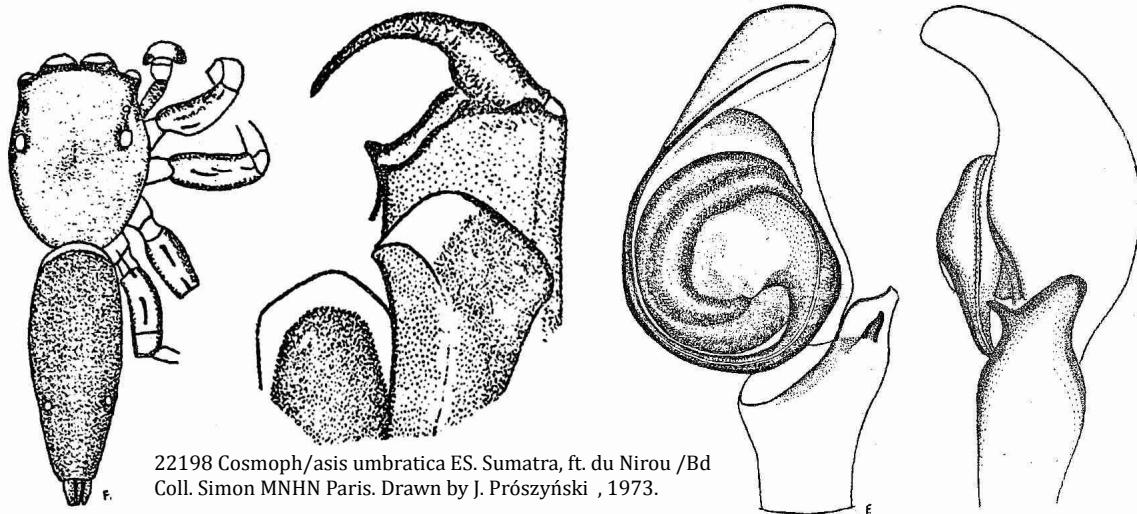
chelicerae black. The pedipalps are pale cinnamon-red, the hair covering white, the end half of the cymbium and the tegulum black. The abdomen black with middorsal yellowish gold-green line, and a white lateral line that extends around the anterior margin. The legs brown, the femora and patellae above, also a white spot on the tibia of the gold-colored green legs I and legs III-IV, males. Female unknown. Locality: Bintan Island, in Indochina.

Appendix 5. Original descriptions of *Cosmophasis umbratica* Simon 1903

from Simon 1903b (p. 301, 308-309)

[301:] Les Arachnides qui font l'objet de ce travail ont été capturés par M. J. Bouchard dans la province de Palembang, Sud-Est de Sumatra, les uns dans le marais de Bahaton au niveau de la mer, les autres dans la vaste forêt du Nirou, qui s'étend au loin dans l'intérieur et qui est presque impénétrable. [308-309:] **13. *Cosmophasis umbratica*, sp. nov.** — ♂ **Long. 5 mill.** — Cephalothorax altus, niger, parte cephalica antice parce viridi-aeneo-squamulata, thoracica antice, pone oculos, linea transversa leviter recurva, postice, in declivitate, macula ovata, similiter squamulatis, ornata. Pili oculorum albi. Clypeus oculis mediis vix angustior, in medio et utrinque in genis sat longe et crasse albo-pilosus. Abdomen angustum et longum, antice obtuse truncatum, postice acuminatum, nigrum, supra nigro-micanti-squamulatum, ad marginem anticum vitta transversa, in parte apicali punctis parvis binis, niveo-squamulatis, ornatum, subtus fere glabrum, sed utrinque antice linea tenui, postice macula longa, albo-pilosis, marginatum. Mamillae nigrae. Chelae longae, fere parallelae, antice deplanatae, nigrae, transversim striatae et parce albo-pilosae sed ad apicem area laeviore et glabra notatae, extus in dimidio apicali tenuiter carinatae et intus, ad marginem apicalem, minute dentatae, subtus rufulae marginibus sulci longis et dentibus remotis, ungue longo, rufulo, compresso et supra carinato. Partes oris nigrae. Sternum nigrum, viridi-aureo-squamulatum. Pedes longi, femoribus exceptis, fulvo-rufescentes, coxis posticis luteis, parce viridi-squamulatis, trochanteribus supra similiter squamulatis, femoribus utrinque late nigro-vittatus, reliquis articulis, tarsis exceptis, utrinque fusco-lineatus, aculeis debilibus paucis ordinariis armati. Pedes-maxillares sat breves, nigri, apice femoris, patella, tibiaeque pallide luteis, crasse et longe niveo-pilosis; tibia patella brevior, apophysibus apicalibus binis, superiore compressa lata, truncata et subtus minute dentata, inferiore gracili, acuta et infra directa, extus armata; tarso longo, ad basin ovato et convexo, ad apicem longe attenuato et leviter curvato. Forêt du Nirou.

from Prószyński 1984 (p. 24, used with permission)



22198 *Cosmophasis umbratica* ES. Sumatra, ft. du Nirou /Bd
Coll. Simon MNHN Paris. Drawn by J. Prószyński, 1973.

new English translation of text (from Simon 1903b)

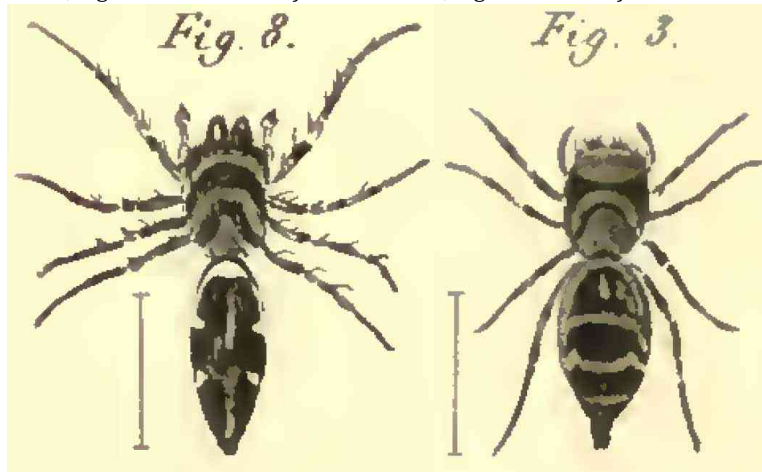
[301:] The Arachnids which are the subject of this work were captured by M. J. Bouchard in the province of Palembang, South-East of Sumatra, some in the Bahaton marsh at sea level, the others in the vast forest of Nirou, which extends far into the interior and which is almost impenetrable. [308-309:] **13. *Cosmophasis umbratica*, sp. nov.** ♂ length 5 mm. Cephalothorax high, black, the anterior head bearing coppery-green scales, behind the eyes, with a slightly curved transverse line, to the rear, in the declivity, an ovate spot, similarly adorned with scales. Hairs around the eyes white. The clypeus slightly narrower than the diameter of the AME, in the middle and on either side long and thick white hair. Abdomen narrow and long, obtuse and truncated at the front, tapering at the rear, black, above with shining black scales, a band across the front margin, at the apex adorned with two spots of small, snowy scales, below almost glabrous, but on either lateral margin a thin line, a long spot at the rear, white-haired. Spinnerets black. Chelicerae long, almost parallel, the anterior flat, black, with transverse lines and scattered white hairs except at the apex light and glabrous, outside in the middle of the apex a thin keel and inside, at the margin of the apex, minute teeth, below the long, reddish margin of the fang groove and separate from the teeth, a long reddish fang, compressed and keeled above. Mouth parts black. Sternum black, covered with green-gold scales. Legs long, particularly the femur, reddish-yellow, the rear of the coxae yellow, moderately green-scaled, the trochanter above similarly scaled, the femora on both sides with a wide black band, the remaining segments, except for the tarsus, with yellow lines on both sides, weakly armed with a few ordinary spines. The pedipalps are short, black, the apex of the femur, patella, and tibia pale yellow, with long and thick white hairs; tibia and patella short, with two apical apophyses, the upper compressed and wide, truncated, and the lower with a minute tooth, slender below, sharp and pointed down, projecting on the outside; the tarsus (cymbium) long, ovate and convex at the base, the apex long, attenuated, thin and curved. Forest of Nirou.

Appendix 6. Early descriptions of *Cosmophasis viridifasciata* (Doleschall 1859)

Included are descriptions that have been associated with this species in the past.

from Doleschall 1859 (p. 19-20; pl. 3, fig. 8; pl. 5, fig. 3)

Pl. 3, Fig. 8 ♂ *Salticus viridifasciatus*. Pl. 5, Fig. 3 ♀ *Salticus fulvovittatus*.



15. *Salticus viridifasciatus* nov. sp. Piceus; thorace oblongo, sat elevato, fasciis tribus transversis aureo-viridibus, cupreo nitentibus signato, palpis niveis; abdomine elongato, antice albo cincto, stria mediana longitudinali, maculisque in medio dorsi sitis viridibus; pedibus gracilibus 1. 2. 4. 3. nigris albo viridique inaculatis. Long. 2". Zeer sierlijk gekleurd en geteekend. De bovenkaken klein, plat, schuinsch, zwart. De oogen zwart, de voormiddelste zeer groot. De zijvlakten van den thorax met een prachtig, rooden glans. Op den rug drie dwarsche groene dwarsstrepen, waarvan de 2 voorste smal, de 3^e bijna driekantig, zich op de achtervlakte bevindende. Het achterlijf veel langer dan de thorax, langwerpig, zwart, aan de voorste vlakte wit gezoomd; aan weerszijden twee kleine witte driehoekige vlekken en in het midden van den rug 3 smalle groene steepjes, waarvan de middelste dwars, de beide andere overlangs verlopen. De buikvlakte zwart met witte vlekken. Het sternum en de heupgeledingen der pooten goudgroen. Deze zijn van gelijke sterkte, dun, weinig behaard, zwart en groen gevlekt. *Habit.* Amboina. Niet zelden te vinden gedurende de heetste middaguren op lage heesters.

17. *Salticus fulvovittatus* nov. sp. Piceus, thorace brevissimo gibboso, in lateribus pulcherrime refulgente, fasciis tribus transversis aureo-viridibus notato; abdomine elongato ovali, antice linea fulva cincto, dein transversim fulvo trivittato; ventre nigro, albo maculato; pedibus corpore brevioribus 4.2.3.1. nigris rufo viridique maculatis. Long. 2". Mischien het wijfje van Nr. 15. De oogen zwart, van bruinroode kringen omgeven; de voelers goudgeel. De zijvlakten van den thorax hebben dienzelfden prachtige weerschijn als bij *S. viridifasciatus*, welke ook op gelijke wijze geteekend is; de middelste groene dwarsband is de smalste. Het achterlijf ovaal, zwartbruin, 1 1/2 maal zoo lang als de thorax; de voorste helft geel gezoomd; behalve deze bevinden zich op den rug 3 tot 4 fijne gele dwarsstrepen. Op de buikvlakte 5 tot 6 witte rondachtige vlekken. De spintepels duidelijk, echter niet verlengd. *Habit.* Amboina. Niet zeldzaam, voornamelijk op bloeiende komposieten. Maakt op de ondervlakte der bladen een digt, sneeuwwit tentvormig nest, waarin zich de spin bij naderend gevaar verschuilt en hare eijeren legt.

new English translation of text

15. *Salticus viridifasciatus* nov. sp. Pitch black; cephalothorax oblong, elevated enough, three green-gold transverse stripes, bright coppery marked, pedipalps shapeless, abdomen elongated, anterior fifth part white, with longitudinal median stripe, middorsal spots green; legs thin 1.2.4.3 decorated with black, white and green. Length 4.5 mm. Very gracefully colored and drawn. The anterior surface of each paturon is small, flat, oblique, black. The eyes black, the anterior median very large. The sides of the cephalothorax with a beautiful red glow. On the back are three green transverse stripes, of which the 2 foremost are narrow, the 3rd almost triangular, located on the surface of the back. The abdomen much longer than the thorax, elongated, black, with a white anterior margin; on either side two small white triangular spots and in the middle of the back 3 narrow green bars, the middle one running crosswise, the other two running longitudinally. The venter is black with white spots. The sternum and the hip joints of the legs are golden green. These are of equal strength, thin, little hair, speckled black and green. *Locality.* Amboina. Not uncommon to find during the hottest afternoon hours on low shrubs.

17. *Salticus fulvovittatus* nov. sp. Pitch black, the cephalothorax very short and humpbacked, on the sides beautifully decorated, marked with three green-gold transverse stripes; abdomen elongate and oval, anterior fifth part yellow, with three yellow transverse bands; venter black, white spotted, legs shorter 4.2.3.1 spotted with black, red and green. Length 4.5 mm. Perhaps the female of No. 15. The eyes black, surrounded by brown-red circles; the pedipalps are golden yellow. The sides of the cephalothorax have the same splendid appearance as in *S. viridifasciatus*, which is also drawn in the same way; the middle green transverse band is the narrowest. The abdomen oval, black-brown, 1 1/2 times as long as the cephalothorax, the front half yellow laced; besides this there are 3 to 4 fine yellow transverse stripes on the back. On the venter 5 to 6 white roundish

spots. The spinnerets are clear, but not elongated. *Locality.* Amboina. Not rare, especially on flowering composites. On the underside of the leaves makes a dense, snow-white tent-shaped nest, in which the spider hides in approaching danger and lays its eggs.

from Thorell 1877 (p. 591-594)

Gen. *Thiania* C. L. Koch 1846. 95. *Th. (?) albo-cincta* n. cephalothorace ferrugineo-testaceo, squamulis ad maximam partem pallide aureis tecto, area tamen interoculari nigricanti, squamulis flavis et luteis vestita; palpis flavis, pedibus testaceis; abdomine supra et in lateribus squamulis densis ferrugineo-luteis tecto, cingulo recurvo supra petiolum, vittis transversis duabus, media et postica, ut et fascia angusta longitudinali a cingulo ilio ad vittam anteriorem ducta ornato, hac pictura argenteo-albicanti; ventre sub-argenteo toto. — ♀ ad. Long, circa 5 ½ millim.

Femina. — *Cephalothorax* patellam + tibiam + $\frac{2}{3}$ metatarsi 4ⁱ paris longitudine aequans, paullulo longior quam patella + tibia + metatarsus 1ⁱ paris, paene dimidio longior quam latior, fronte paullo rotundata, lateribus parum rotundatis anteriora versus paullo angustatus, a medio inter coxas 2ⁱ et 3ⁱⁱ parium lateribus fortiter rotundatis posteriora versus angustatus, in medio postice emarginatus; non altus, dorso ante oculos posticos (paene in medio dorsi ipsius situs) sat leviter proclivi et parum convexo, pone hos oculos magis declivi, paene recto et in declivitatem posticam parum praeruptam et ipso dorso paene duplo brevioris sensim transeunt. Supra in medio, mox pone oculos posticos, impressione transversa recurva evidentissima praeditus est cephalothorax, praeterea paene laevis, arcubus supraciliariibus oculorum posticorum humilibus, sed bene expressis; pilis sub-erectis longis sparsus et squamulis densis vestitus est. Clypeus humilis valde, altitudine vix $\frac{1}{4}$ diametri oculi maximi aequans. Oculi antichi perfecte visibiles quum desuper inspicitur cephalothorax, in seriem leviter modo sursum curvatam dispositi: linea margines eorum superiores tangens recta est. Quadrangulus oculorum parum plus $\frac{1}{3}$ longitudinis cephalothoracis occupat et aequae paene latus est atque cephalothorax in loco ubi locati sunt oculi postici; saltem $\frac{1}{3}$ latior est quam longior, vix vel parum latior antice quam postice. Oculi medii antichi maximi, spatio minuto sejuncti; oculi laterales antichi parvi, mediis plus duplo minores et spatio dimidiam diametrum suam paene aequanti ab iis remoti. Oculi seriei 2^{ae} minuti, paene in medio inter posticos et laterales anticos siti (paullulo fortasse longius ab illis quam ab his). Oculi postici saltern aequae magni sunt atque laterales antichi, et non multo (vix tota diametro sua) altius quam ii positi; spatium quo inter se distant multo (saltem dupla oculi diametro) majus est quam spatium quo a margine cephalothoracis sunt remoti. Oculi tres ejusdem lateris lineam levissime modo foras et paullo deorsum curvatam designant. Sternum breviter et inverse ovatum fere, coxis multo latius; spatium inter coxas 1ⁱ paris latitudinem labii aequat. Mandibulae directae, parallelae, versus apicem sensim paullo angustatae, altitudinem faciei longitudine aequantes, dimidio longiores quam latiores, tibias anticas crassitie paullo superantes, in dorso nitidissimae, subtilissime transversim striatae, parce pubescentes; unguis mediocris. Maxillae longae, angustae, parallelae, basin versus sensim angustatae, latere exteriore recto, apice intus late et oblique truncato, praeterea rotundato; dimidio longiores quam labium, quod saltem dimidio longius est quam latius, versus apicem truncatum sensim angustatum. Palpi mediocres, internodiis cylindratis, modice pubescentes et pilosi. Pedes breves, sat graciles, anteriores parum robustiores quam posteriores; parce pilosi et pubescentes sunt, aculeis multis mediocribus armati. Pedes 4ⁱ paris reliquis sunt longiores, 2ⁱ et 1ⁱ (qui vix vel parum longiores sunt quam 2ⁱ) reliquis breviores. Tibia cum patella 4ⁱ paris metatarsum cum tarso ejusdem paris aequat, et paullo longior est quam tibia cum patella 3ⁱ paris. Tibiae omnes patellis evidenter et non parum (in pedibus 4ⁱ paris plus dimidio) longiores sunt. Patellae posteriores cum femoribus, tibiis et metatarsis omnibus aculeati; tibiae et metatarsi posteriores non tantum apice sed etiam ad basin et medium aculeis muniti sunt, tibiae 1ⁱ paris subter 2. 2. 2., antice 1, tibiae 2ⁱ paris subter 2. 2. 2., antice 1. 1. aculeos ostendunt; metatarsi anteriores modo 2. 2. aculeos, subter, habere videntur. Abdomen anguste et inverse ovato-ellipticum fere, antice obtusum, plus duplo longius quam latius, pilis longioribus sparsum, dense squamulosum. Vulva ex foveis duabus parvis obscuris spatio angusto longitudinali sejunctis constare videtur. Mamillae sat longae, superiores cylindratae, inferiores cylindrato-conicae, crassiores et paullo breviores quam superiores.

Color. — Cephalothorax ferrugineo-testaceus, area interoculari nigricanti, pilis nigris sparsa squamulisque flavis et luteis tecta; praeterea squamulis pallide aureis ad partem sub-cupreis et (in lateribus mox sub oculis) viridi-aeneis undique vestitus est cephalothorax; clypeus albicanti-pilosus. Oculi antichi viridiglauci, annulo supra luteo, praeterea vero albicanti circumdati. Sternum testaceum, albicanti-pubescent, paullulo virescenti-squamulosum. Mandibulae luteo-testaceae, ungui fusco. Maxillae et labium pallide testacea. Palpi flavi, albicanti-pubescentes, setis paucis nigris sparsi. Pedes flavo-testacei, aculeis nigris. Abdomen in fundo supra et in lateribus testaceo-ferrugineum, squamulis obscure vel ferrugineo-luteis, sub-aureo-micantibus dense tectum, et vittis duabus transversis angustioribus albo-argenteis usque versus ventrem productis ornatum, altera in medio dorsi, altera in medio inter eam et anum sita; praeterea supra petiolum vitta angusta recurva albicanti cinctum est, quae utrinque in lateribus paene ad medium eorum producitur: ab hoc cingulo ad anteriorem vittarum transversarum fascia angusta longitudinalis media argenteo-albicans ducta est; in summo apice dorsum paullo sub-virescenti- et sub-argenteo-squamulosum videtur. Latera abdominis antice sub-argenteo-squamulosa sunt, venter testaceus totus, squamulis sub-argenteis tectus quoque. Mamillae navo-testaceae.

Lg. corp. 5½; lg. cephaloth. 2½, lat. ej. paene 1¾, lat. front 1½ millim.; lg. abd. 3½, lat. ej. 1½ millim. Ped I et II 4¼, III 4¾, IV 5¼ millim.; pat. + tib. III 1½, pat. + tib. IV, ut metat. + tars. IV, 1½ millim. Feminam singulam ad Kandari invenit Cel. Beccari. Etsi mas mihi ignotus est, ad gen. *Thiania* C. L. Koch hanc feminam retuli; nonne recte? Ad formam corporis in universum *Epiblemis* valde similis est, sed vix ulli ex generibus Europaeis a Cel. Simon acceptis adscribenda. Quamquam clypeo humili, spatio inter oculos posticos multo majore quam est spatium quo hi oculi a margine cephalothoracis distant, et forma abdominis ab ex. gr. *Maevia* bene distinctum videatur gen. *Thiania* (saltem *Th. (?) albo-fasciata* nostra), suspicor, feminas quasdam generis *Maeviae* formam generis *Thiania* induere posse. *Salt. enim fulvo-vittatus* Dol. (1) qui certe nihil est nisi femina *S. (Maeviae) viridi-fasciati* Dol. (2) ad formam corporis et oculorum dispositionem cum *Th. (?) albo-vittata* nostra paene plane congruit. [(1) Tweede Bijdr., cet., p. 20, Tab. V, fig. 3. (2) Ibid., p. 19. Tab. III, fig. 8.)]

new English translation of text (Thorell 1877; note that translation from Latin is imprecise)

Genus *Thiania* C. L. Koch 1846. 95. *Thiania* (?) *albo-cincta* sp.nov. Cephalothorax rusty-brick in colour, for the most part covered with pale gold scales, but with the area between the eyes blackish, covered with yellowish scales; pedipalps yellow, legs brick in colour; abdomen covered with rusty-saffron scales above and on the sides, a recurved band above the pedicel, two transverse bands, middle and posterior, a narrow longitudinal, silvery-white band extending from the front, the venter entirely near-silver. ♀ adult length about 5.5 mm.

Female. — Cephalothorax equal in length to the patella + tibia + $\frac{2}{3}$ metatarsus of leg IV, slightly longer than the patella + tibia + metatarsus of leg I, nearly half as long as wide, the front slightly rounded, the sides rounded at the front, the side margins little rounded and slightly narrowed at the front, at the middle between coxae II and III the lateral margins are strongly rounded and narrow at the median posterior margin; not tall, above in front of the posterior eyes (almost in the middle of the back), slightly downward and a bit convex, behind these eyes flat and sloping downward nearly straight and in the posterior declivity not steep and nearly half as wide across. Above in the middle, right behind the posterior eyes, the cephalothorax has an obvious transverse, recurved impression, in addition a slight but well marked arch above the posterior eyes; covered with sub-erect long, sparse hairs and dense scales. Clypeus slightly strong, with a height equal to just $\frac{1}{4}$ the diameter of the AME. Anterior eyes completely visible when the cephalothorax is observed from above, arranged in a slightly curved line: the line across the top of these eyes is straight. The ocular quadrangle occupies less than $\frac{1}{3}$ of the length of the cephalothorax, which is widest at the posterior eye row; at least $\frac{1}{3}$ wider than long, just slightly narrower at the front than at the rear. The AME are large, only slightly separated; the ALE small, the AME more than twice their diameter and separated from them by about the same distance. The PME minute, nearly in the middle between the PLE and the ALE (perhaps a little more distant from the former than from the latter). The PLE are just as large as the ALE, and are positioned not much (hardly by their diameter) higher; the distance between the PLE and the ALE is greater than their distance from the margin of the cephalothorax. A line on the lateral side of the three side eyes is slightly curved downward. Sternum short and inversely ovate, the coxae much wider; the distance between the coxae of legs I and II is equal to their width. Chelicerae straight, parallel, appear slightly narrower toward the apex, equalling the length of the height of the face, longer than wide at the middle, the anterior legs slightly exceeding their thickness, bright above, below with transverse striations, few hairs; fang unremarkable. Endites long, narrow, parallel, gradually narrowed toward the base, straight on the sides, the apex wide on the inside and obliquely truncated, more rounded; half as long as the labium, longer by half than wide, toward the truncated apex slightly narrowed. Pedipalps unremarkable, cylindrical, moderately covered with hair. Legs short, quite thin, the anterior legs a bit more robust than the posterior legs: scarcely haired, armed moderately with spines. Legs IV are longer than the rest, legs II and I (which is a bit longer than leg II) are shorter than the rest. The length of the tibia + patella of leg IV is equal in length to the tarsus, and slightly longer than the tibia + patella of leg III. The tibiae of all legs appear to more than a little longer than the patellae (in legs IV half again as long). The posterior patella, with the femur, tibia and metatarsus all bear spines; the posterior tibia and metatarsus are armed with spines not only at the apex but also at the base and middle, the tibia of leg I 2.2.2 below, in front 1, tibia of leg II 2.2.2 below, in front 1.1; the metatarsus of the anterior legs bear 2.2 spines below. The abdomen is narrow and shaped inversely ovate-elliptical, at the front obtuse, more than twice as long as wide, with sparse hairs and dense scales along the length. The epigynum has two slightly obscure, narrow, longitudinal structures. The spinnerets are long, the posterior lateral (above) spinnerets cylindrical, the anterior lateral (below) spinnerets cylindrical-conical, grosser and slightly shorter than the posterior lateral spinnerets.

Color. — Cephalothorax dusky brick, the area between the eyes blackish, covered with sparse black hairs, and yellow and yellowish scales; in addition pale gold to coppery scales and, on the sides under the eyes, the cephalothorax is covered with green-bronze; the clypeus with whitish hairs. Anterior eyes blue-green, ringed above with yellow, in addition to a whitish surround. Sternum brick colour, with white hairs, and slightly green scales. Chelicerae brick yellow, fangs darker. Endites and labium light brick colour. Pedipalps yellow, with white and sparse black hairs. Legs brick-yellow, spines black. Abdomen viewed from above and on the sides rusty-brick colour, with dense cover of indistinctly rusty-white, shining near-gold scales, and displaying two silvery-white transverse lines extending to the venter, one in the middle, the other in-between this and the anus; just above the pedicel there is a narrow, white recurved line that extends on each side to the middle: to this band at the front transverse line the longitudinal silver-white tract is connected; at the top a few greenish and silvery scales can be seen. On the sides of the anterior abdomen are silvery scales, the venter entirely brick-colour, also covered with silvery scales. Spinnerets strongly brick-colour.

Length of body $5\frac{1}{2}$; length of cephalothorax $2\frac{1}{2}$, the sides nearly $1\frac{3}{4}$ high, width at front $1\frac{1}{2}$ mm; length of abdomen $3\frac{1}{2}$, width $1\frac{1}{2}$ mm. Legs I and II $4\frac{1}{4}$, III $4\frac{3}{4}$, IV $5\frac{1}{4}$ mm; patella + tibia III $1\frac{1}{2}$, patella + tibia IV, and metatarsus + tarsus IV, $1\frac{2}{3}$ mm. One female from Kandari [Kendari, Sulawesi] collected by Beccari. It seems to me uncertain to refer this female to the genus *Thiania* C. L. Koch; not correct? The overall shape of the body is similar to *Epiblemum*, but it is hardly allowed to ascribe this to any of the European groups of Simon. Nevertheless the low clypeus, the much greater distance between the PLE than the distance between these eyes and the margin, and the shape of the abdomen like *Maevia* suggest *Thiania* (at least our *Thiania* (?) *albo-fasciata*), to suspect, that female *Maevia* have the form of *Thiania*. *Salticus fulvo-vittatus* Doleschall (1) would certainly be nothing more than the female *Salticus* (*Maevia*) *viridi-fasciata* Doleschall (2) which in the form of the body and the position of the eyes almost entirely matches our *Thiania* (?) *albo-vittata*. [(1) Tweede Bijdr., cet., p. 20, Tab. V, fig. 3. (2) Ibid., p. 19. Tab. III, fig. 8.)]

from Thorell 1878 (p. 5-8, 278-283)

[5-8 in part:] II. Ragni di Amboina raccolti dal Prof. O. Beccari. Dopo la pubblicazione dei suddetti lavori di Doleschall si è aggiunto poco alle nostre cognizioni intorno all' Aracno-Fauna di questa isola. Le collezioni di Doleschall dei ragni d' Amboina e d'altre parti dell' Arcipelago Indiano, furono da lui regalate al Museo Zoologico di Leida; e Yan Hasselt ha pubblicato recentemente una lista delle specie di questa raccolta che erano ancora in uno stato di conservazione sufficiente per essere determinate. Una specie di questa lista, il *Pholcus*

elongatus Vins., non è descritta nei lavori di Doleschall, ma io credo che quest' autore l' abbia compresa nel suo *Ph. phalangioides* Walck. Inoltre Van Hasselt parla di una nuova specie di « *Attus* » (senza darne il nome o la descrizione) « affine al *Salticus fimbriatus* Dol. », la quale chiamerò *Sinnis* (?) *Hasseltii*; egli dà pure una figura colorata dell' *Epeira caput lupi* Dol., e fa diverse osservazioni sopra altre specie. — Nella prima parte dei presenti studi, fra le specie comuni a Selebes e ad altre località ne ho citato 14 di Amboina, tutte raccolte dal Prof. Beccari, che non erano prima state osservate in quest'isola; quindi il numero delle specie di Amboina già conosciute sembrerebbe giungere a 91. La collezione dei ragni di Amboina fatta dal Prof. Beccari ed ora conservata nel Museo Civico di Genova, contiene, oltre poche forme che non ho potuto determinare né descrivere, 100 specie diverse; numero molto maggiore di quelle che erano note a Doleschall. Di queste specie 50 appartengono alle Orbitelariae, 13 alle Retitelariae, 6 alle Tubitelariae, 7 alle Laterigradae, 5 alle Citigradae e 19 alle Saltigradae. Alcune furono raccolte nel 1873; ma la maggior parte il Prof. Beccari le radunò nel breve spazio di un solo mese, il Dicembre del 1874! Le specie per lo più sono rappresentate da parecchi esemplari, e molte da un gran numero, in generale di ambedue i sessi; e veramente questa raccolta si può considerare come una delle più interessanti e ricche che siano state portate in Europa dalle regioni intertropicali. Delle 100 specie contenute in essa ed enumerate nel seguente catalogo descrittivo, 43 sono già descritte o citate da Doleschall ed altre 14 da me (loc. cit.); 43 sono nuove per Amboina e 37 di esse sembrano non ancora descritte. Delle specie menzionate da Doleschall e da Van Hasselt, 34 mancano nei materiali del Prof. Beccari; pertanto il numero totale delle specie di ragni che si sa essere abitanti di Amboina è portato da questa collezione a 134, cioè non molto meno del doppio di quelle che ci ha fatto conoscere Doleschall.

La grande preponderanza in numero delle Orbitelariae e delle Saltigradae, e specialmente del primo gruppo (al quale appartiene la metà delle specie raccolte dal Prof. Beccari) è molto sorprendente; essa in parte può essere attribuita al fatto che questi gruppi in Amboina, come in Selebes ed in generale nelle regioni tropicali, sono rappresentati molto più riccamente che gli altri; ma senza dubbio dipende pure, ed anzi più particolarmente, dalla più grande facilità colla quale si possono raccogliere le specie di queste sezioni. Pertanto un giudizio sulla ricchezza relativa di specie dei differenti gruppi, ricavato dalle cifre succitate, sarebbe prematuro, come nel caso di Selebes. Si potrebbe dire lo stesso se si volesse venire a generalità intorno alla distribuzione geografica delle specie e delle sezioni superiori; perciò io mi limiterò a dare alla fine della rivista della raccolta in questione, un catalogo di tutti i ragni trovati finora in Amboina, coll' aggiunta delle altre località nelle quali, per quanto io so, sono stati osservati; lasciando che il lettore tragga da queste notizie quelle conclusioni che crederà meglio.

La lista seguente delle specie comprese nella collezione del Prof. Beccari, contiene le descrizioni delle specie nuove o poco conosciute, con quelle osservazioni sulle altre che io ho creduto poter essere utili alla generalità degli Aracnologi. Trovo conveniente di dare note descrittive piuttosto lunghe della maggior parte delle specie già illustrate da Doleschall, poiché, sebbene le descrizioni e le figure di quest'autore siano buone pei suoi tempi, e gli esemplari raccolti in Amboina si possano in generale determinare facilmente con esse, pure è molto raro il caso che bastino per la determinazione sicura dei ragni di altre località. Finora noi conosciamo soltanto una piccola parte della Fauna Aracnologica fuori d' Europa, e l' Arcipelago Malese e la Papuasias non fanno eccezione a questo riguardo, benché siano meglio conosciuti, relativamente ai loro ragni, della maggior parte delle altre regioni intertropicali. Lo studio dei ragni di Selebes e di Amboina, e il piccolo numero delle specie (25) conosciute come comuni a queste due isole (numero che forma soltanto circa due noni della cifra delle specie trovate finora nella prima di queste isole e un poco meno di un quinto di quelle che si conoscono dell'altra), mi inducono a credere che le varie isole dell' Arcipelago Malese e della Papuasias siano abitate da specie in gran parte differenti, ma probabilmente spesso molto affini fra loro e non sempre distinguibili con facilità. Pertanto io credo molto lontana quell' epoca in cui le descrizioni dei ragni di queste parti del mondo potranno essere corte e sufficienti in pari tempo. Sori (Liguria) 15 Aprile 1878.

[278-283:] 97. [*Maevia*] **M. viridi-fasciata** (Dol.) cephalothorace nigro, lateribus partis cephalicae, vittis duabus transversis recurvis in dorso et macula triangula ad marginem posticum sita viridi-aeneis; pedibus nigro- et pallido-annulatis, aeneo- et albo-squamulosis; abdomine viridi-aeneo, vitta recurva alba in declivitate antica sita et utrinque ad medium laterum retro producta, maculis striisve transversis utrinque 2 albis ad latera dorsi, posterius, positis, secundum medium vero dorsi antice fascia brevi lanceolata plerumque sub-cuprea et pone eam serie macularum vel saltem macula supra-anali ejusdem coloris ornato; ventre obscure aeneo, maculis 6 albis in duas series ordinatis, posticis 2 parvis, reliquis magnis et oblongis; parte palporum tibiali apice extus procurso brevi in duos lobos diviso munita, lobo superiore desuper viso spinam brevem simulanti, inferiore uncum acuminatum incurvum formanti. — ♂ ad. Long. 5½-7½ millim.

Cephalothorace nigro, squamulis viridi-aeneis, cupreis et aureis ad maximam partem vestito, vitta vel vittis duabus transversis nigris plus minus distinctis ornato; abdomine supra obscure aeneo, pictura lutea vel flava, e vitta transversa recurva in declivitate antica sita et usque ad medium laterum producta, vittis tribus transversis pone eam et stria longitudinali media antica praecipue constanti; pedibus et ventre ut in mare est dictum. — ♀ ad. Long. 5½-6½ millim.

Syn.: 1859. *Salticus viridifasciatus* Dol., Tweede Bijdr., cet., loc. cit., p.19 (=♂).

1859. *Attus viridifasciatus* id., ibid., Tab. III, fig. 8 (=♂).

1859. *Salticus fulvovittatus* id., ibid., p. 20, Tab. V, fig. 3 (=♀).

Mas. — *Cephalothorax* patellam + tibiam + dimidium metatarsi 4ⁱ paris, vel patellam + tibiam 1ⁱ paris longitudine fere aequans, circiter ½ longior quam latior; in lateribus ample et sat fortiter (posterius fortius) rotundatus, infra anteriora versus igitur sat fortiter angustatus, lateribus partis cephalicae supra vero parallelis; frons modice rotundata, fere ¼ angustior quam pars thoracica. Supra in medio, paulo pone oculos posticos, impressione forti transversa paulo recurva et sulco parvo in medio notata praeditus est cephalothorax, ut in affinis, arcubus supraciliaribus oculorum posticorum parum expressis; praeterea aequalis est, secundum marginem frontalem supra vitta pilorum brevium densorum sub-erectorum, intermixtis pilis longioribus munitus, qui quasi cristam vel (si in medio detriti sunt), penicillos duos brevissimos formant. Valde altus est cephalothorax, dorso ipso ante et pone oculos posticos (qui fere in medio ipsius dorsi positi sunt) sat leviter proclivi et declivi et parum convexo, in declivitatem posticam, ipso dorso fere dimidio brevior et non multo praeruptam, sensim transeunti. Clypeus altissimus: altitudo ejus dimidiam diametrum oculi maximi superat. Series *oculorum* anticorum modo leviter sursum curvata: linea margines eorum superiores tangens recta est; laterales antichi mediis plus duplo, paene triplo minores sunt et ab iis spatio

remoti quod fere dimidiam diametrum oculi lateralis aequat. Quadrangulus oculorum plus $\frac{1}{3}$, fere $\frac{2}{3}$, longitudinis cephalothoracis occupat: rectangulus est, vix $\frac{1}{4}$ latior quam longior, et postice non parum (vix vero dupla oculi diametro) angustior quam cephalothorax eodem loco. Oculi 2^{ae} seriei minuti, paene in medio inter oculos laterales anticos et oculos posticos locati. Oculi postici paullo majores quam laterales antici et diametro sua altius quam ii positi; spatium quo inter se distant evidenter minus est quam id quo a margine cephalothoracis sunt remoti. *Sternum* breviter et inverse orbiculato-ovatum, coxis multo latius; spatium inter coxas 1ⁱ paris labii latitudinem superat. *Mandibulae* paene directae vel paullo porrectae, parallelae, rimam angustam inter se relinquentes; sub-cylindratae sunt, in apice late et oblique truncatae, patellis 1ⁱ paris paullo crassiores, altitudinem faciei longitudine superantes, triplo longiores quam latiores; in dorso recto, ad latus exterius, versus apicem, costa tenui longitudinali sunt munitae, et magis intus, versus apicem, ubi deplanatae et sub-excavatae sunt, sulco longitudinali paullo obliquo instructae et transversim striatae, praeterea coriaceae, paullo pilosae. Sulcus unguicularis antice, ad basin unguis, dente forti armatus est, anguli sulci interiores (anticus et posticus) dentem parvum format, et praeterea latus mandibulae interius prope sulcum dente parvo munitum videtur. Unguis sat longus et, basi excepta, gracilis. *Maxillae* longiores, sub-ovatae, labio circa dimidio longiores, apice latae et, intus, oblique truncatae, angulo apicis exteriore modo levissime dilatato-rotundato, non vel parum prominenti; *labium* multo longius quam latius, versus apicem truncatum sensim angustatum. Palpi graciles, clava tibiam anticam latitudine paene aequanti; pars patellaris sub-cylindrata est, paene duplo longior quam latior; pars tibialis desuper visa ea paullulo brevior, et apicem versus sensim paullo incrassata, circa dimidio longior quam latior apice (a latere inferiore visa parte patellari longior est): apex lateris exterioris partis tibialis in laminam brevem profunde bilobam producta est, lobo superiore apicem obtusum versus sensim angustato (desuper viso speciem spinae brevioris anteriora versus et foras directae praebenti), lobo inferiore uncum acuminatum incurvum formanti. Pars tarsalis parte tibiali paullo longior eaque paullo (vix dimidio) latior, ovato-lanceolata, apice obtuso; bulbus parvus, rotundatus, humilis: e medio lateris exterioris ejus spina longissima gracillima exit, primum retro directa et dein circum bulbum curvata, apice longo versus apicem partis patellaris pertinenti. *Pedes* longitudine mediocri; 1ⁱ paris interdum, in exemplis magnis, reliquos longitudine superant, in exemplis vero parvis 4ⁱ paris pedes reliquis longiores sunt. Sat graciles sunt pedes, praesertim apicem versus, anteriores reliquis paullo robustiores; femora 1ⁱ paris compressa sunt et supra arcuata, metatarsi multo graciliores quam tibiae. Tibiae patella dimidio-duplo longiores; tibia cum patella 4ⁱ paris longior quam tibia cum patella 3ⁱⁱ paris, sed brevior quam metatarsus cum tarso 4ⁱ paris. Patella 4ⁱ paris paullulo crassior sed vix longior quam 3ⁱⁱ paris patella videtur; tibia 4ⁱ paris basi patella paullo angustior est. Femora omnia, patellae posteriores, tibiae et metatarsi omnes aculeis gracilibus armata: tibiae anteriores subter 2. 2., antice 1. 1. aculeos ostendunt, metatarsi anteriores subter 2.2. et, in pedibus 2ⁱ paris, 1 antice (apice). Metatarsi 4ⁱ paris non apice tantum verum etiam ad medium et basin aculeati. *Abdomen* longum et angustum, circa duplo et dimidio longius quam latius, sub-lanceolatum. *Mamillae* longae, sub-cylindratae, superiores longiores et multo angustiores quam inferiores, articulo 2^o non longiore quam latiore, obtuso. *Color*. — *Cephalothorax* niger, vittis duabus latis transversis e squamulis viridi-aeneis (intermixtis interdum cupreis) formatis et macula magna triangula ejusdem coloris ad marginem posticum sita ornatus, lateribus quoque partis cephalicae eodem modo viridi-aeneis; vitta anterior paullo pone marginem frontalem (qui vittam angustiore densissime nigro-pilosam format) ducta est et paullo modo recurva, vitta posterior per impressionem mediam deorsum et retro ducta et curvata est, usque ad margines laterales pertinens; praeterea cephalothorax squamulis atris est vestitus, excepto clypeo, qui pube alba est munitus, et annulis oculos anticos cingentibus, qui colore albicanti vel cinerascanti ad maximam partem sunt. *Sternum* nigrum, albicanti-pilosum et viridi-aeneo-squamulosum. *Mandibulae* nigro-fuscae vel fuscae. *Maxillae* et *labium* nigro-fusca, saepe apice pallida. *Palpi* flavi, parte femorali basi et parte tarsali paene tota (basi pallida excepta) nigricantibus; pars femoralis ad partem, partes patellaris et tibialis totae cum basi partis tarsalis pube alba supra tectae sunt, pars tarsalis praeterea nigro-pubescent. *Pedes* aut nigricantes, annulis pallidioribus, aut testacei, plus minus evidenter nigricanti-annulati; squamulis viridi-aeneis vestiti sunt et squamulis albis quoque, quae annulos vel maculas in partibus pedum pallidioribus formant. *Abdomen* in fundo nigrum, supra squamulis plus minus obscure viridi-aeneis ad maximam partem vestitum; in declivitate antica vitta transversa est cinctum, quae utrinque posteriora versus usque ad medium laterum est continuata; in dorso anterior fasciam longitudinalem angustam abbreviatam lanceolatam versicolore sub-cupream, cyaneum, virescentem vel albicantem colorem sentientem ostendit, et ad utrinque latus, posterius, dorsum maculas vel strias parvas duas albas habet, quae maculae vel striae 4 fere in quadratum dispositae sunt: duae anteriores earum cum apicibus vittae illius sunt conjunctae et in medio longitudinis dorsi positae, duae posteriores in medio inter eas et anum; mox supra anum macula vel series longitudinalis macularum, colore fasciae mediae, conspicitur. Latera inferius et venter obscure aeneo-squamulosa: utrinque, secundum latera ventris, inter rimam genitalem et mamillas, series macularum trium albissimarum extensa est, posticis duabus harum sex macularum parvis et paullo ante mamillas sitis, reliquis majoribus, oblongis. *Mamillae* nigrae.

Femina a mare multum differt, etiam forma *cephalothoracis*, qui multo minus altus et paullo longior est quam in mare et minus fortiter in lateribus rotundatus: frons igitur non multo angustior quam pars thoracica et levius rotundata; spatium inter oculos posticos paullo majus est quam id quo a margine cephalothoracis distant hi oculi; altitudo clypei veri vix $\frac{1}{4}$ diametri oculi maximi superat. Cephalothorax aequae fere longus est ac patella + tibia + dimidium metatarsi 4ⁱ paris, circa $\frac{2}{3}$ longior quam latior; vitta illa frontali e pilis brevibus sub-erectis densis formata carere videtur (?). Praeterea cephalothorax, *oculi* et *sternum* sunt ut in femina diximus. *Mandibulae* directae, parallelae, forma ordinaria, modo duplo longiores quam latiores, in dorso leviter convexae, aequales, laeves et nitidae; sulcus unguicularis modo dente singulo parvo antice et postice, intus, armatus videtur. *Pedes* breves, apicem versus sensim angustati, 4ⁱ paris reliquis longiores; tibiae non multo (modo in 4ⁱ paris dimidio) longiores quam patella, metatarsus cum tarso 4ⁱ paris brevior quam tibia cum patella ejusdem paris. Aculei pedum ut in mare diximus. *Abdomen* brevius et crassius quam in eo, duplo saltem longius quam latius, anguste ovatum. *Vulva* ex foveis duabus longis et valde angustis (saltern triplo longioribus quam latioribus), parallelis, septo angusto junctis constat. *Color* quoque feminae a maris colore multis rebus differt. *Cephalothorax* niger vel, praesertim postice, sub-testaceus est, squamulis viridi-aeneis et aureis ad maximam partem tectus, intermixtis saepe cupreis (in lateribus saepe squamulis cupreis vestitus); in medio inter oculos posticos vitta lata transversa nigricanti-aenea interdum conspicitur, et magis postice vestigia vittae fortiter recurvae nigricantis vidisse videor. Clypeus albicanti-pubescent; annuli circum oculos anticos lutei vel luteo-rubri, inferius albicantes. *Sternum* ut in mare. *Mandibulae*, *maxillae* et *labium* pallide fusca, hae saepe basi infuscatae. *Palpi* flavo-testacei, pallido-pubescentes. *Pedes* aut nigricantes, annulis testaceis, aut testacei, plus minus evidenter nigro-annulati et virescenti- alboque squamulosi. *Abdomen* supra squamulis obscure aeneis tectum est et pictura lutea vel flava e squamulis formata ornatum: in declivitate antica cingulus adest ad medium laterum ductus; posterius dorsum tres vittas transversas angustiores, apicibus paullulo retro curvatas habet, quarum antica, paullo ante medium dorsi sita, cum apicibus cinguli illius

conjuncta est, postica paullo ante anum sita: interdum hae tres vittae omnes in apicibus dilatatae sunt, prima in medio quoque, postice; in spatio ante primam harum vittarum linea brevis longitudinalis adest, et inter vittas duas posteriores stria vel macula ejusdem coloris. *Vulva* nigra. *Venter* et *mamillae* ut in mare.

♂. Lg. corp. 7½; lg. cephaloth. 3½, lat. ej. paullo plus 2½, lat. front. paene 2 millim.; lg. abdomen plus 4, lat. ej. 1½ millim. Ped I 9 (pat + tib 3½). II 8½, III 7½, IV 8½ millim.; pat + tib. III 2½, pat. + tib. IV 2¾, metat. + tars. IV 3 millim. ♀. Lg. corp. 6¼; lg. cephaloth. 2¼, lat. ej. 2, lat. front 1½ millim.; lg. abd. 4, lat. ej. 2 millim. Ped I 4½, II 4½, III 5½, IV 6½; pat. + tib. III 1½, pat. + tib. IV 2, metat. + tars. IV 2 millim. Exempla multa (pleraque mascula) ad magnam partem detrita pulcherrimae hujus speciei vidi, quae differentia magna inter marem et feminam ut et longitudine pedum 1¹ paris in mare valde varianti conspicua est.

[294 in part:] Elenco del ragni. Finora osservati in Amboina. In questo elenco ho anche cercato di dare, per quanto me l'ha permesso la letteratura aracnologica per ora a me accessibile, una enumerazione completa delle località dove furono finora osservate le diverse specie di ragni abitanti Amboina; nei casi in cui io stesso non ho veduto esemplari provenienti dalla località citata, ho aggiunto il nome dell' autore da cui ho attinta l' indicazione. Le notizie intorno alla sinonimia sono date soltanto per quelle specie che non sono state trattate nei presenti Studi (I e II). Le specie a me ignote sono segnate con un asterisco.

[311-312 in part] Gen. **Maevia** (C. L. Koch) 1848. 130. *M. viridi-fasciata* (Dol.) 1859. - Labuan (Cambr.); Amboina; Nuova Guinea: Ramoi.

Si vede da questo catalogo — se si omettono le località che mi paiono incerte, e dopo le quali ho messo un segno d'interrogazione — che delle 134 specie annoverate, 79, o quasi 59%, furono finora osservate solamente in Amboina; 55 specie, o più del 41%, sono comuni ad Amboina ed ad altre località. Fra queste 55 specie, 15 (cioè più dell' 11% del numero totale, 134) sono diffuse tanto all' ovest di Amboina (nell' Asia, particolarmente nell' Arcipelago Indo-Malese, e nell' Africa), quanto all'est di quest' isola (nell' Australia, la Papuasie soprattutto, e fino nell' America); 30 specie (più del 22%) sono state osservate solamente all' ovest, 10 specie (quasi 7½%) solamente all' est di Amboina. — Sei specie sono comuni ad Amboina ed all' Africa, cinque ad Amboina ed all' America: queste (*Nephilengys Malabarensis* (Walck.), *Uloborus zosis* id., *Pholcus sisypoides* Dol., *Heteropoda venatoria* (Linn.) e *Icius* (?) *convergens* (Dol.)) sono tutte specie circumtropicali. È molto sorprendente la cifra abbastanza scarsa di specie orientali (Papuane ecc.) finora trovate in Amboina, paragonata al gran numero di specie che quest' isola sembra abbia in comune coi paesi all'ovest. Ma questa cifra verrà senza dubbio aumentata di molto, quando l' Aracno-fauna della Nuova Guinea e delle isole adiacenti sarà meglio conosciuta; e mi pare pure probabile, che parecchie specie date dagli autori come comuni ad Amboina e Giava, non siano state correttamente determinate, e che per questo il numero delle specie occidentali debba subire qualche riduzione. Dei ragni della Nuova Guinea a me conosciuti (più di 50 specie), almeno 25% sono Pure abitanti d' Amboina. Pertanto io credo, che nonostante le cifre succitate, è molto probabile che la fauna aracnologica di Amboina appartenga al tipo Australiano (Papuano o Austro-Malese), piuttosto che all' Asiatico (Indo-Malese).

new English translation of text (Thorell 1878; note that translation from Latin is imprecise)

[5-8 in part:] **II. Amboina spiders collected by Prof. O. Beccari.** After the publication of the aforementioned works by Doleschall little has been added to our knowledge about the Arachno-Fauna of this island. Doleschall's collections of spiders in Amboina and other parts of the Indian Archipelago were donated by him to the Zoological Museum of Leiden, and Yan Hasselt recently published a list of species in this collection that were still in sufficient conservation status to be determined. One species on this list, *Pholcus elongatus* Vins., is not described in the works of Doleschall, but I believe that this author has included it in his *Pholcus phalangioides* Walck. Furthermore, Van Hasselt speaks of a new species of "*Attus*" (without giving its name or description) related to *Salticus fimbriatus* Dol., which he will call *Sinnis* (?) *Hasseltii*; he also gives a colored figure of *Epeira caput lupi* Dol., and makes various observations on other species. In the first part of the present studies, among the species common to Celebes and other localities I mentioned 14 of Amboina, all collected by Prof. Beccari, which had not previously been observed on this island; therefore the number of Amboina species already known would seem to reach 91. The collection of Amboina spiders made by Prof. Beccari and now preserved in the Civic Museum of Genoa contains, beyond a few forms that I have not been able to determine or describe, 100 different species; a much greater number than were known by Doleschall. Of these species, 50 belong to the Orbitelariae, 13 to the Retitelariae, 6 to the Tubitelariae, 7 to the Laterigradae, 5 to the Citigradae and 19 to the Saltigradae. Some were collected in 1873, but most of them were gathered by Prof. Beccari in the short space of a single month, December 1874! The species are mostly represented by several specimens, and many by a large number, generally of both sexes, and truly this collection can be considered as one of the most interesting and richest that has been brought to Europe from intertropical regions. Of the 100 species contained in it and enumerated in the following descriptive catalog, 43 are already described or cited by Doleschall and another 14 by me (loc. cit.); 43 are new to Amboina and 37 of them seem not yet described. Of the species mentioned by Doleschall and Van Hasselt, 34 are missing from Prof. Beccari's materials; therefore the total number of species of spiders known to be inhabitants of Amboina is brought by this collection to 134, that is not much less than the double of those that Doleschall has introduced us to.

The great preponderance in number of the Orbitelariae and Saltigradae, and especially of the first group (to which half of the species collected by Prof. Beccari belong) is very surprising; it can in part be attributed to the fact that these groups in Amboina, as in Celebes and in general in the tropical regions, are much more richly represented than the others; but doubtless it also depends, and indeed more particularly, on the greatest ease with which the species of these sections can be collected. Therefore a judgment on the relative richness of species of the different groups, obtained from the above figures, would be premature, as in the case of Celebes. The same could be said if we wanted to come to generalities around the geographical distribution of the species and the upper sections; therefore I will limit myself to giving at the end of the directory of the collection in question, a catalog of all the spiders found so far in Amboina, with the addition of the other localities in which, as far as I know, they have been observed; letting the reader draw from this information those conclusions that he will believe best. The following list of the species included in the collection of Prof. Beccari contains descriptions of the new or little known species, with those observations on the others that I believed could be useful to the generality of Arachnologists. I find it convenient to give rather long descriptive notes of most of the species already illustrated by Doleschall since, although the descriptions and figures of this

author are good for his time, and the specimens collected in Amboina can in general be easily determined with them, yet it is very rare that they are sufficient for the reliable determination of spiders from other locations. So far we know only a small part of the Arachnological Fauna outside Europe, and the Malay Archipelago and Papua are no exceptions in this respect, although they are better known for their spiders than most other intertropical regions. The study of the spiders of Celebes and Amboina, and the small number of species (25) known to be common to these two islands (a number which forms only about two ninths of the number of species found so far in the first of these islands and a little less than one fifth of those known about the other), lead me to believe that the various islands of the Malay Archipelago and Papua are inhabited by largely different species, but probably often very similar to each other and not always easily distinguishable. Therefore I believe that the epoch in which the descriptions of the spiders of these parts of the world will be short and sufficient at the same time is very far away. Sori (Liguria) April 15, 1878.

[278-283:] 97. [*Maevia*] *M. viridi-fasciata* (Doleschall), ♂ adult length 5½-7½ mm: Cephalothorax black, the head brick in colour, with two recurved transverse lines on top and a triangular spot at the posterior margin that are coppery green; legs black and white-ringed, coppery and white scaled; abdomen coppery green, a white recurved line at the front extending to the middle on either side, two white spots on either side of the dorsum, behind in the middle of the dorsum a short lanceolate coppery area, and behind a series of spots or at least the same spot near the anus; venter dark bronze with six white spots in two series, the rear two large and oblong; the RTA short and divided into two lobes, the superior lobe appearing from above to be a spine, the inferior lobe terminating in a hook. ♀ adult length 5½-6½ mm: Cephalothorax black, mostly covered with with coppery-green, coppery and gold scales, ornamented with two more or less distinct black lines; abdomen indistinctly coppery above, pained yellow or blonde, a recurved transverse line at the front declivity extending laterally to the middle, three transverse lines behind this and a distinct longitudinal anterior median line at the front; legs and venter as in the male.

Syn.: 1859. *Salticus viridifasciatus* Dol., Tweede Bijdr., cet., loc. cit., p.19 (=♂).
 1859. *Attus viridifasciatus* id., ibid., Tab. III, fig. 8 (=♂).
 1859. *Salticus fulvovittatus* id., ibid., p. 20, Tab. V, fig. 3 (=♀).

Male. — *Cephalothorax* almost equal to the patella + tibia + half of the metatarsus of leg IV, about ⅓ longer than wide, amply and strongly enough rounded on the sides and rear, except at the front where it is strongly narrowed, the lateral sides of the head are parallel; the front moderately rounded, about ¼ narrower than the thorax. Above in the middle, just behind the posterior eyes, a slightly recurved strong impression and small sulcus in the middle of the cephalothorax, and nearby, slight eyelashes of the posterior eyes are expressed; in addition a second frontal margin above a brief line of dense, sub-erect hairs, intermixed with long hairs, is present, and as a comb (if they are not worn inside), forming two short pencils. The cephalothorax is very tall, anterodorsally and behind the posterior eyes (in a middle dorsal position) slightly downward sloping and convex, the posterior slope at the top half as short and not very steep. Clypeus very tall, with a height that exceeds half the diameter of the AME; the AME more than twice the ALE, nearly triple the minors and half the diameter of the ALE distant. Ocular quadrangle occupies more than ⅓, almost ½, of the length of the cephalothorax; this rectangle is, just ¼ wider than long, at the rear not much (hardly twice the diameter of the eyes) narrower than the cephalothorax at the same place. The PME minute, located nearly in the middle between the ALE and the PLE. The PLE slightly larger and set higher than the ALE; the distance between the PLE appears to be less than their distance from the margin of the cephalothorax. *Sternum* short and inversely oval-round, the coxae much wider; the distance between the coxae of legs I exceeds the width of the labium. The *chelicerae* almost straight but extend slightly, in parallel, a narrow space left between them; they are sub-cylindrical, wide at the apex and obliquely truncated, somewhat thicker than the patellae of legs I, their length exceeding the height of their face, three times as long as wide; on the back right side, towards the top, the longitudinal rib thin walled and more inward, toward the top, where they are under-excavator flattened, are slightly slanted equipped with a trench extending transverse streaks, also leathery, slightly hairy. The anterior fang groove, at the base of the fang, armed with a strong tooth, the medial (anterior and posterior) margins of the fang groove with small teeth, and in addition small teeth can be seen on the medial sulcus. The fangs are long and, except at the base, thin. The *maxillae* long, sub-ovate, about half longer than the labium, with a wide apex and, medially, obliquely truncated, the shape of the lateral distal edge slightly dilated and rounded, not or slightly prominent; labium much longer than wide, distally slightly truncated and narrower. Pedipalps thin, the width of the tip about the same, the patella sub-cylindrical, almost twice as long as wide; the tibia seen from above slightly shorter, at the apex versus the rest slightly thicker, about half longer than wide at the end (the patella is longer at the lateral ventral side): the apex of the tibia is markedly extended into two lobes, the superior lobe obtuse rather than narrow (seen from above there appears to be a short anterior spine), the inferior lobe bearing a curved spine. The tarsus of the pedipalp longer than the tibia by half, with an obtuse apex; the tegulum small, round, low: at the middle lateral side a very long thin spine emerges, first directed to the rear and then curved around the bulb, the apex as long as the apex of the patella. Length of *legs* unremarkable; legs I sometimes, in most examples, will exceed the length of the rest, in some legs IV are longer than the rest. The legs are thin, particularly distally, the anterior legs slightly more robust; The femora of legs I are compressed and curved above, the metatarsi much thinner than the tibiae. Tibiae twice as long as the patellae; tibia plus patella of leg IV longer than the tibia plus patella of leg III, but shorter than the metatarsus plus the tarsus of leg IV. Patella of leg IV appears to be slightly cruder but longer than the patella of leg III; the tibia of leg IV is slightly narrower than the patella at the base. All femora, posterior patellae, tibiae and metatarsi armed with thin spines; spines of the anterior tibiae 2.2.2 below, in front 1.1, anterior metatarsi 2.2 below, and, on legs II, 1 anterior (at the apex). Metatarsi of legs IV not at the apex but spined at the middle and the base. Abdomen long and narrow, about 2 and one half times longer than wide, sub-lanceolate. Spinnerets long, sub-cylindrical, the upper (posterior lateral) longer and narrower than the lower (anterior lateral), the second segment not longer than wide, obtuse. *Color.* — *Cephalothorax* black, ornamented with two wide transverse lines comprised of green-bronze scales (mixed with coppery) and a large triangular spot of the same colour at the posterior margin, laterally on both sides of the head green-bronze; anterior line slightly behind the front margin (which is covered narrowly with dense black hairs) is slightly recurved, posterior line from the middorsal impression leads to the rear and is curved, reaching the lateral margin on either side; in addition the cephalothorax is covered with black scales, except for the clypeus, which has some white, and rings around the anterior eyes, which are mostly white or grey. *Sternum* black, with white hairs and green-bronze scales. *Chelicerae* black-brown or brown. *Endites* and *labium* black-brown, but distally pale. *Pedipalps* yellow, the base of the femur and all of the tarsus (except the pale base) blackish; the femur in part, all of the patella and tibia with the base of the tarsus (cymbium)

are covered with white above, the distal tarsus (cymbium) nonetheless black-haired. Legs either blackish, with pale rings, or brick-colour, with or without evident blackish rings; green-bronze and white scales form spots or rings on the legs. Venter of *abdomen* black, above mostly covered with more or less obscure gree-bronze scales; a transverse line is present in the anterior declivity, which is continuous to on either side, reaching half-way to the rear; a narrow anterodorsal, lanceolate multicoloured line of coppery, blue, greenish or white colours is present, and to either side, to the rear, dorsal white spots or two small white lines, these spots or four lines are arranged in a square: the anterior two are joined with the apex line in a middorsal longitudinal position, the two posterior in the middle between the sides and the anus; spots just above the anus or a longitudinal series of moderate colour bands are also seen. The lower sides and venter bear obscure bronze scales: on both sides of the belly, and the groove between the epigastric groove and the spinnerets are a series of three white spots extended by six spots behind these two spinnerets, and slightly in front of the spinnerets, mostly oblong. The spinnerets black.

Female very different from the male, as is the shape of the cephalothorax, which is much less tall, slightly longer, and less strongly rounded at the lateral margins than that of the male: the front therefore is not much narrower than the thorax and only slightly rounded; the distance between the PLE is slightly greater than their distance from the lateral margin of the cephalothorax; the height of the clypeus barely exceeds $\frac{1}{4}$ the diameter of the AME; a front line of short, sub-erect hairs seems to be lacking (?). Further we have the *cephalothorax*, *eyes* and *sternum* in the female. Chelicerae straight, parallel, of ordinary form, now twice as long as wide, on top slightly convex, angles smooth and sleek; the fang groove armed with a single small medial tooth on the front and back. Legs short, narrower toward the apex, legs IV longer; tibia not much (now half for leg IV) longer than patella, metatarsus plus tarsus of leg IV shorter than tibia plus patella of the same leg. Spines of the legs as in the male. *Abdomen* short and thicker than in male, twice as long as wide, narrowly ovate. Epigynum with two long and very narrow (about three times as long as wide) pits, parallel, narrowly separated by the septum. The *colour* of each female differs from the male in many ways. Cephalothorax black or, particularly at the rear, near brick-colour, covered with green-bronze and gold scales for the most part, often intermixed with copper (the sides often covered with coppery scales; in the middle between the posterior eyes can be seen a wide, transverse, blackish-bronze line, and further to the rear the signs of a stronger, recurved blackish line may be seen. Clypeus with white hairs; rings around the anterior eyes off-white to off-white-red, white below. *Sternum* as in the male. *Chelicerae*, *endites* and *labium* light brown, often darker at the base. *Pedipalps* brick-yellow, slightly hairy. Legs either black with brick-coloured rings, or brick-coloured, with more or less visible black rings and overlaid with greenish scales. *Abdomen* above covered with obscure bronze scales and ornamented with a pattern of whitish or yellow scales: these lead from the anterior to the middle on the sides, the posterior dorsum has three narrow transverse lines, the furthest slightly curved, whose front, situated a little before the middle of the dorsum, is joined with the ends of the bands, the posterior situated slightly before the anus: sometimes all three lines are dilated at the apex, first in the middle and posterior; in the position before the first of these lines is a short longitudinal line, and between the two posterior lines a spot of the same colour. *Epigynum* black. *Venter* and *spinnerets* as in the male.

♂. Body length $7\frac{1}{2}$, cephalothorax length $3\frac{1}{3}$, width slightly more than $2\frac{1}{2}$, width at front almost 2 mm; abdomen length more than 4, width $1\frac{1}{2}$ mm. Leg I 9 (patella + tibia $3\frac{1}{3}$), leg II $8\frac{1}{2}$, leg III $7\frac{1}{2}$, leg IV $8\frac{1}{3}$ mm. Patella + tibia III $2\frac{1}{3}$, patella + tibia IV $2\frac{3}{4}$, metatarsus + tarsus IV 3 mm. ♀. Body length $6\frac{1}{2}$; cephalothorax length $2\frac{1}{2}$, width 2, width at front $1\frac{2}{3}$ mm; abdomen length 4, width 2 mm. Leg I $4\frac{2}{3}$, II $4\frac{1}{3}$, III $5\frac{1}{2}$, IV $6\frac{1}{2}$ mm; patella + tibia III $1\frac{2}{3}$, patella + tibia IV 2, metatarsus + tarsus IV 2 mm. Many specimens (most males) for the most part display the beauty of this species, what differs greatly between males and females is that the length of leg I in the male is distinctly variable.

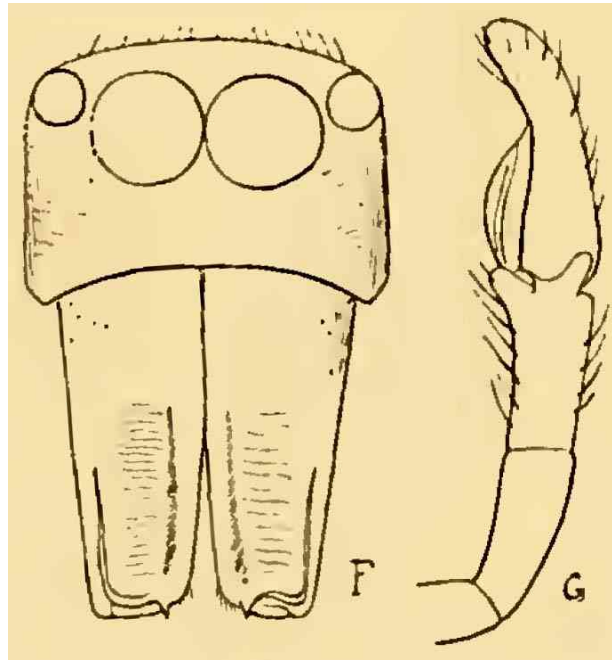
[294 in part:] List of spiders so far observed in Amboina. In this list I have also tried to give, as far as the arachnological literature that is accessible to me so far, a complete enumeration of the places where the different species of Amboina-dwelling spiders have been observed up to now; in cases in which I myself have not seen specimens from the mentioned locality, I have added the name of the author from whom I have drawn the indication. Information about synonymy is given only for those species that have not been dealt with in the present Studies (I and II). Species unknown to me are marked with an asterisk.

[311-312 in part] Genus **Maevia** (C. L. Koch) 1848. 130. *M. viridi-fasciata* (Dol.) 1859. - Labuan (Cambr.); Amboina; Nuova Guinea: Ramoi.

It can be seen from this catalog - if we omit the localities that seem uncertain to me, and after which I have put a question mark, that of the 134 counted species, 79, or almost 59%, have so far been observed only in Amboina; 55 species, or more than 41%, are common in Amboina and other localities. Among these 55 species, 15 (i.e. more than 11% of the total number, 134) are widespread both west of Amboina (in Asia, particularly in the Indo-Malay Archipelago, and in Africa), as well as in the east of this island (in Australia, especially Papua, and up to America); 30 species (more than 22%) were observed only in the west, 10 species (almost $7\frac{1}{2}\%$) only in the east of Amboina. Six species are common to Amboina and Africa, five to Amboina and America: these (*Nephilengys Malabarensis* (Walck.), *Uloborus zosis* id., *Pholcus sisypoides* Dol., *Heteropoda venatoria* (Linn.) And *Icius* (?) *convergens* (Dol.)) are all circumtropical species. The rather scarce number of oriental species (Papuan, etc.) found in Amboina so far is very surprising, compared to the large number of species that this island seems to have in common with the countries to the west. But this figure will undoubtedly be greatly increased when the Arachno-fauna of New Guinea and adjacent islands is better known, and it also seems probable to me that several species given by the authors as common to Amboina and Java have not been correctly determined, and that for this reason the number of western species must undergo some reduction. Of the spiders of New Guinea known to me (more than 50 species), at least 25% are pure inhabitants of Amboina. Therefore I believe that, despite the above figures, it is very likely that the arachnological fauna of Amboina belongs to the Australian type (Papuan or Austro-Malayan), rather than to the Asian (Indo-Malayan) type.

from Simon 1901 (p. 548-549, figs. 659(F)-660(G), ♂)

Figures 659-660: F. *Cosmophasis viridifasciata* Dol. Face et chélicères ♂. G. Id. P. M. ♂.] F. *Cosmophasis viridifasciata* Dol. Face and chelicera ♂. G. Pedipalp of same ♂.]



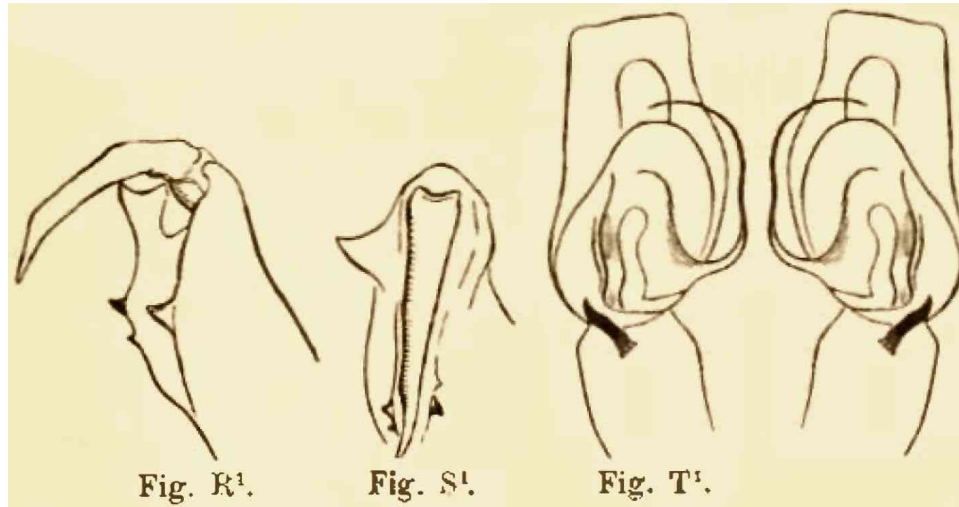
Le genre *Cosmophasis*, répandu dans l'Inde, à Ceylan, dans l'Indo-Chine et surtout en Malaisie et en Australie, est aussi représenté dans l'Afrique tropicale occidentale (*C. caerulea* E. Sim.) et orientale (*C. nigrocyanea* E. Sim.) et à Madagascar; les espèces de Malaisie (*C. viridifasciata* Dol., *thalassina* C. K. [*Amycus splendens* L. Koch], *micans* L. Koch, etc.) sont des plus brillantes, étant revêtues de squamules, tantôt d'un violet irisé, tantôt d'un vert doré, disposées sur le céphalothorax en larges zones transverses, sur l'abdomen en bandes longitudinales séparées par des espaces très noirs, parfois par des lignes et des taches blanches; leur large bandeau est garni de barbes blanches plurisériées; leurs pattes sont d'un jaune pâle et souvent rayées de noir; les espèces africaines (*C. nigrocyanea*, *caerulea* E. Sim.) sont aussi d'un vert métallique ou d'un bleu d'acier, avec de grosses macules blanches sur l'abdomen. *C. bitaeniata* Keyserl. (1) et quelques autres espèces australiennes ont l'abdomen d'un jaune doré coupé de ceintures blanches lisérées de noir; beaucoup d'espèces plus petites (*C. laticlavata* Th., *Collingwoodi* Cambr., *quadricincta*, *miniaceomicans*, *Weyersi* E. Sim. (2), etc., etc.), sont en partie d'un beau rouge, en partie d'un vert pâle métallique, diversement disposés. [(1) Keyserling a décrit deux fois cette espèce dans le même ouvrage, le mâle sous le nom de *Sobara bitaeniata*, la femelle sous le nom de *Selaophora rubra*. (2) J'avais rapporté les deux dernières au genre *Vellutus*.

new English translation of text (Simon 1901)

The genus *Cosmophasis*, widespread in India, Ceylon, Indochina and especially in Malaysia and Australia, is also represented in tropical western (*C. caerulea* E. Sim.) and eastern Africa (*C. nigrocyanea* E. Sim.) and Madagascar; the Malaysian species (*C. viridifasciata* Dol., *thalassina* C. K. [*Amycus splendens* L. Koch], *micans* L. Koch, etc.) are the most brilliant, being covered with scales, sometimes of an iridescent purple, sometimes of a golden green, arranged on the cephalothorax in large transverse bands, on the abdomen in longitudinal bands separated by very black areas, sometimes by white lines and spots; their wide band is trimmed with white, multiserial setae; their legs are pale yellow and often striped with black; the African species (*C. nigrocyanea*, *caerulea* E. Sim.) are also metallic green or steel blue, with large white spots on the abdomen. *C. bitaeniata* Keyserl. (1) and some other Australian species have a golden yellow abdomen with white bands edged with black; many smaller species (*C. laticlavata* Th., *Collingwoodi* Cambr., *quadricincta*, *miniaceomicans*, *Weyersi* E. Sim. (2), etc., etc.), are partly beautiful red, partly a pale metallic green, variously arranged. [(1) Keyserling has described this species twice in the same work, the male under the name of *Sobara bitaeniata*, the female under the name of *Selaophora rubra*. (2) I had referred the last two to the genus *Vellutus*.

from Merian 1911 (p. 307-308, figs. R1, S1, T1)

Figures R1, S1, T1: Fig. R1. *Cosmophasis viridifasciata* (Dol.) ♂ aus Mapane. Linke Chelicere. Fig. S1 (same) von unten. Fig. T1. (same) ♂ aus Mapane. Taster. Fig. R1. *Cosmophasis viridifasciata* (Dol.) ♂ from Mapane. Left chelicera. Fig. S1 (same) from below. Fig. T1. (same) ♂ from Mapane. Pedipalp. [Fig T1, right pedipalp shown, mirror image added at right of figures here for comparison]



Cosmophasis Simon 1901. Die Gattung bewohnt Indien, Ceylon, tropisches West- und Ost-Afrika, Madagaskar, Indochina, Indoaustralischer Archipel, Australien und Gebiete von Polynesien. Die im Folgenden genannten Spinnen sind von Herr Simon als *Cosmophasis* bezeichnet worden. *Cosmophasis viridifasciata* (Dol.). (Textfig. R1, S1, T1.) Soviel nach der Beschreibung und Abbildung von Doleschall zu ersehen ist, stimmen die vorliegenden Exemplare mit der (Tweede Bijdr., p. 19 und tab. 3, fig. 8) dargestellten Art überein. Identisch mit dieser Art sind *Maevia ombria* Thorell (Ragni di Selebes, p. 248-251) und *Thiania albocincta* Thorell (ibid., p. 251-254); identisch ist auch nach Thorell, und wie ich auch glaube, *Salticus fulvovittatus* Dol. (Tw. Bijdr., p. 20 und tab. 5, fig. 3). - 3 männliche Exemplare aus Zentral-Celebes sind unter sich gleich; ob ein weibliches aus der Minahassa derselben Art zugehörig ist, bleibt fraglich. Für die Form des Cephalothorax, dessen Besetzung mit Haaren und dessen Färbung, sowie für die Lage der Augen, ist das von Simon (Vol. 2, p. 542 und 549) Gesagte maßgebend; Ergänzungen verlangen nur die Beschreibungen der Cheliceren (s. auch Thorell, Ragni di Selebes, p. 249) und der männlichen Palpen; hierfür verweise ich auf die hier gegebenen Zeichnungen, für welche nur zu bemerken ist, daß an den Palpen außerordentlich zahlreich vorhandene Borsten und Haarreihen nicht dargestellt sind, um das Bild der charakteristischen Teile nicht zu stören. Das Endglied der männlichen Taster ist am scharf abgeschnittenen Ende überaus reich mit feinen kurzen Härchen von hellgelber Farbe besetzt; eine wenig tiefe Grube außerhalb des Geißelfeldes (deren Umgrenzung in der Zeichnung angedeutet ist) ist ringsum mit derben schwarzen Härchen dicht besetzt; zahlreiche lange Borsten finden sich ohne bestimmte Anordnung an den Seiten des Endgliedes. - Für die Chelicere der männlichen Spinne ist der seitliche nach innen gerichtete starke Zahn an der Basis der Klaue besonders typisch; aus den von verschiedenen Seiten aufgenommenen Zeichnungen ergibt sich Größe und Lage der einzelnen Zähne. Dichte Haarbüschel und lange Borsten sind den Klauenrändern aufgesetzt. Beim weiblichen Exemplar fehlt der starke inuere Chelicerenzahn an der Basis der Klaue, die beiden kleinen Zähne auf derselben Seite sind etwas weiter voneinander entfernt als bei den männlichen Exemplaren.

Die Färbung der männlichen Spinnen ist braunschwarz, am vordern Teil des Cephalothorax und auf den Seiten des Abdomens grün irisierend; rings um den Cephalothorax zieht ein Band weißer Härchen. Von einem Querband vorn am Abdomen ausgehend zieht je ein weißlicher Streifen den Abdomenseiten entlang, ein ähnlicher Längsstreifen findet sich auf dem Rücken des Abdomens. Die Beine sind dunkelbraun, von den Palpen bt das Anfangs- und das Endglied dunkel, der Rest hellgelblich. 2 ♂♂. Flachland von Mapane. 1 ♂. Posso-See. Die weibliche Spinne ist hell bräunlich, zeigt aber im übrigen dieselbe Zeichnung wie die Männchen; am Ende des Abdomens, kurz vor den Spinnwarzen, fällt ein grünschimmerndes Band auf. Die Bauchseite des abdomens zeigt ein breites dunkles Längsband. 1 ♀. Kema. Während die männlichen Exemplare mit der von Thorell gegebenen Beschreibung von *Maevia ombria* ♂ nach der Ausbildung der Cheliceren und der Färbung der Spinne übereinstimmen, entspricht das weibliche der Beschreibung für *Thiania albocincta* ♀; wir könnten es danach bei den beobachteten abweichenden Charakteren mit geschlechtlichen Unterschieden zu tun haben, bei der Gruppe der *Chrysilleae* sind starke geschlechtliche Differenzen schon beobachtet worden, aber die im Folgenden zu beschreibende Art scheint gegen diese Auffassung zu sprechen oder diese doch wesentlich zu stören. Die Art ist schon aus Java, Celebes (Kendari) und Amboina bekannt.

new English translation of text (Merian 1911)

Cosmophasis Simon 1901. The genus inhabits India, Ceylon, tropical West and East Africa, Madagascar, Indochina, the East Indies, Australia and areas of Polynesia. The spiders named below have been called *Cosmophasis* by Simon. *Cosmophasis viridifasciata* (Dol.). (Text figures R1, S1, T1.) As far as can be seen from the description and illustration by Doleschall, the present specimens correspond to the type shown (Tweede Bijdr., p. 19 and tab. 3, fig. 8). Identical to this species are *Maevia ombria* Thorell (Ragni di Selebes, p. 248-251) and *Thiania albocincta* Thorell (ibid., p. 251-254); also identical according to Thorell, and, as I also believe, is *Salticus fulvovittatus* Dol. (Tw. Bijdr., p. 20 and tab. 5, fig. 3). - 3 males from Central Celebes are the same; whether a female from the Minahassa belongs to the same species remains questionable. What Simon said (Vol. 2, pp. 542 and 549) is decisive for the shape of the cephalothorax, its structure with hair and its color, as well as for the position of the eyes; Only the descriptions of the chelicerae (see also Thorell, Ragni di Selebes, p. 249) and the male palps require additions. For this purpose I refer to the drawings given here, for which it should only be noted that the extremely numerous bristles and rows of hairs present on the palps are not shown in order not to disturb the image of the characteristic parts. At the sharply cut end, the terminal segment of the male pedipalp is extremely richly covered with fine, short hairs of a light yellow color; a little deep pit outside the setal field (the border of which is indicated in the drawing) is densely covered with coarse black hairs all around; numerous long bristles are found on the sides of the terminal segment without any particular arrangement. - For the chelicerae of the male spider, the strong lateral inwardly directed tooth at the base of the fang is particularly typical. The size and position of the individual teeth is the result of drawings taken from different sides. Dense tufts of hair and long bristles are attached to the fang edges. In the female specimen the strong inner cheliceral tooth at the base of the fang is absent, and the two small teeth on the same side are a little further apart than in the male specimens.

The coloring of the male spiders is brown-black, iridescent green on the anterior part of the cephalothorax and on the sides of the abdomen. A band of white hairs runs around the cephalothorax. Starting from a transverse band at the front of the abdomen, a whitish stripe runs along the sides of the abdomen, a similar longitudinal stripe is found on the back of the abdomen. The legs are dark brown, the first and last limbs of the palps are dark, the rest light yellow. 2 ♂♂. Mapane plains. 1 ♂. Posso Lake. The female spider is light brownish, but otherwise shows the same appearance as the males; at the end of the abdomen, just before the spinnerets, there is a shimmering green band. The ventral side of the abdomen shows a broad, dark longitudinal band. 1 ♀. Kema. While the male specimens agree with the description of the ♂ *Maevia ombria* given by Thorell with respect to the formation of the chelicerae and the color of the spider, the female corresponds to the description for the ♀ *Thiania albocincta*; according to this, we could be dealing with sexual differences in the observed deviating characters. In the Chrysillae group, strong sexual differences have already been observed, but the species to be described below [*C. masarangi* n. sp.] seems to speak against this view or to disturb it significantly. This species [*C. viridifasciata*] is known from Java, Celebes (Kendari) and Amboina.