

## *Orsima ichneumon* and other iridescent chrysoid jumping spiders of tropical Asia (Araneae: Salticidae: Chrysillini: Chrysoida)

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**Summary.** Our current knowledge of a hypothetical clade of mostly iridescent, chrysilline salticids, the Chrysoida, is reviewed, with an emphasis on the field marks of spider records posted recently on iNaturalist. This clade includes the genera *Chrysilla*, *Ogdenia*, *Orsima*, and *Siler*, endemic to tropical and subtropical South and Southeast Asia.

**Keywords.** biogeography, *Chrysilla*, *Ogdenia*, phylogeny, *Siler*

*Cosmophasis ichneumon* was described by Simon (1901a) from a single male specimen collected on Sumatra. Subsequently the Peckhams (1907) described three males and one female of the same species, from Borneo, as *Orsima formica*. Although they did not observe living *Orsima*, the Peckhams reported that a Mr. R. Shelford, a former curator at the Museum of Sarawak, thought that they were ant mimics. Much later, Reiskind (1976), in a short paper entitled *A Bornean salticid mimicking an insect in reverse*, published the first drawing of this spider, to illustrate its habit of raising/lowering its opisthosoma and positioning its extended spinnerets in a manner suggestive of the head of an insect (Figure 1). Reiskind's note was based on a penultimate female that he had observed in Brunei. Reiskind observed lateral movement of the spinnerets suggestive of movement of jaws by an insect, and wrote that although this was *somewhat ant-like*, the spider might also resemble a thin beetle, and this might represent an instance of Batesian mimicry. The false head at the rear might distract a potential predator.



**Figure 1.** **1**, ♀ *Orsima ichneumon* from Bekok, Johor, Malaysia (iNat. obs. 239725944, © Melvyn Yeo, CC BY-NC 4.0). **2**, Adult ♂ *Chrysilla volupe* from Chengamanad, Kerala (iNat. obs. 213072778, © sunnyjosef, CC BY 4.0). Both species extend and raise their spinnerets, and also raise and lower their opisthosoma, as they walk on vegetation. The coloration of both male and female *O. ichneumon* is very similar to that of female *C. lauta* and *C. volupe*, but *O. ichneumon* have a constricted opisthosoma, and longer spinnerets, as shown in (1). As female *O. ichneumon* feed and their opisthosoma expands, this constriction becomes less evident.

In 1984, Prószyński published the first drawings of Simon's holotype male for *Cosmophasis ichneumon* (Figure 20.1). Later Žabka (1992) moved *C. ichneumon* to the genus *Orsima*, recognized *O. formica* as a junior synonym of *O. ichneumon*, and published drawings of the Peckhams' male and female types for *O. formica*. Žabka noted that at least one writer had considered the possibility that these mimicked mutillid wasps *in reverse*. Edmunds (2006) found that *O. ichneumon* on the Malay Peninsula associated with *Polyrhachis* ants, but did not appear to be ant mimics. More recently Wee et al. (2017) observed both male/female courtship and male/male agonistic behavior of *O. ichneumon* captured in Gombak, Selangor, Malaysia. They found these spiders on various plants in the open sun, in the morning, as they captured small insects and fed from the extra-floral nectaries of *Clerodendrum villosum*. In a related study, Painting et al. (2017) suggested that these spiders might also used silk to protect or to guard these nectaries. *O. ichneumon* moved their opisthosoma up and down (*bobbing* or *rattling*) as they walked forward, but backward movement was not described. During courtship, a male would raise its opisthosoma, sometimes to a vertical position, and wave it while stepping from side to side (*skitter*), but did not move its spinnerets. During an agonistic encounter, males would display (*rattling* and *waving*) their elevated opisthosoma, and might then advance to a *grapple and push* position that included direct contact of the chelicerae, with their long legs I extended laterally. This position has been observed for many other salticids.

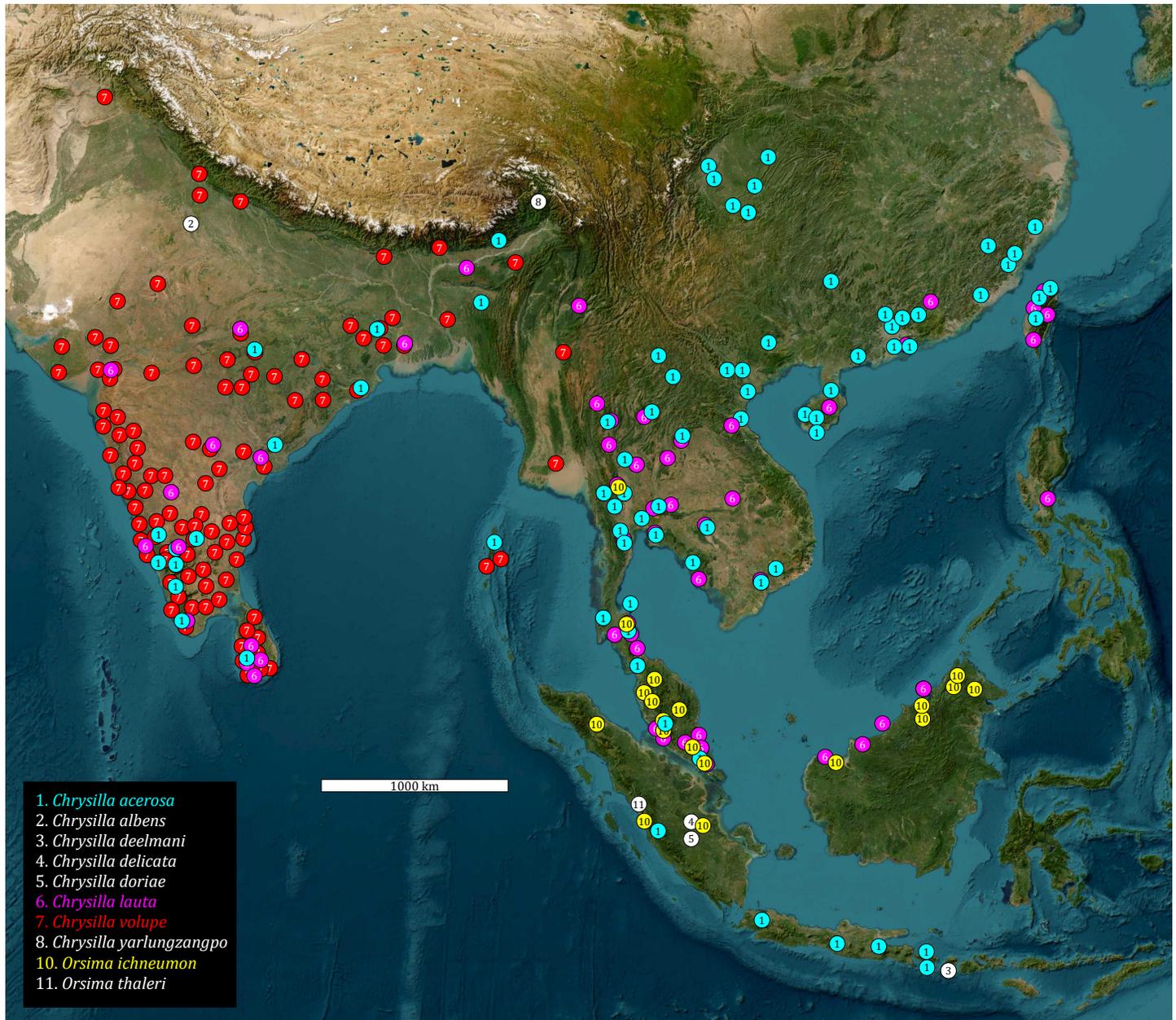
*Orsima ichneumon* is an intriguing spider that raises a lot of questions. If not an ant-mimic, why the constricted opisthosoma? Perhaps it gains an advantage by confusing a variety of insect or even salticid predators, through either misdirection, as suggested by Reiskind, or by other aspects of its appearance and movement. Some features of these spiders may also have evolved to support interspecific communication, agonistic or otherwise.

Iridescence by itself represents a larger question, particularly since a parent clade of (mostly) tropical Asian spiders includes many with a cover of brilliantly iridescent scales. Based in part on a recent study of chrysiline phylogeny supported by the comparison of DNA sequences (Kanesharatnam & Benjamin 2019), I use the clade name *Chrysoida* for this group (Figure 2). Within the Chrysoida, I recognize two sub-clades, the *Chrysilla* group and the *Siler* group.

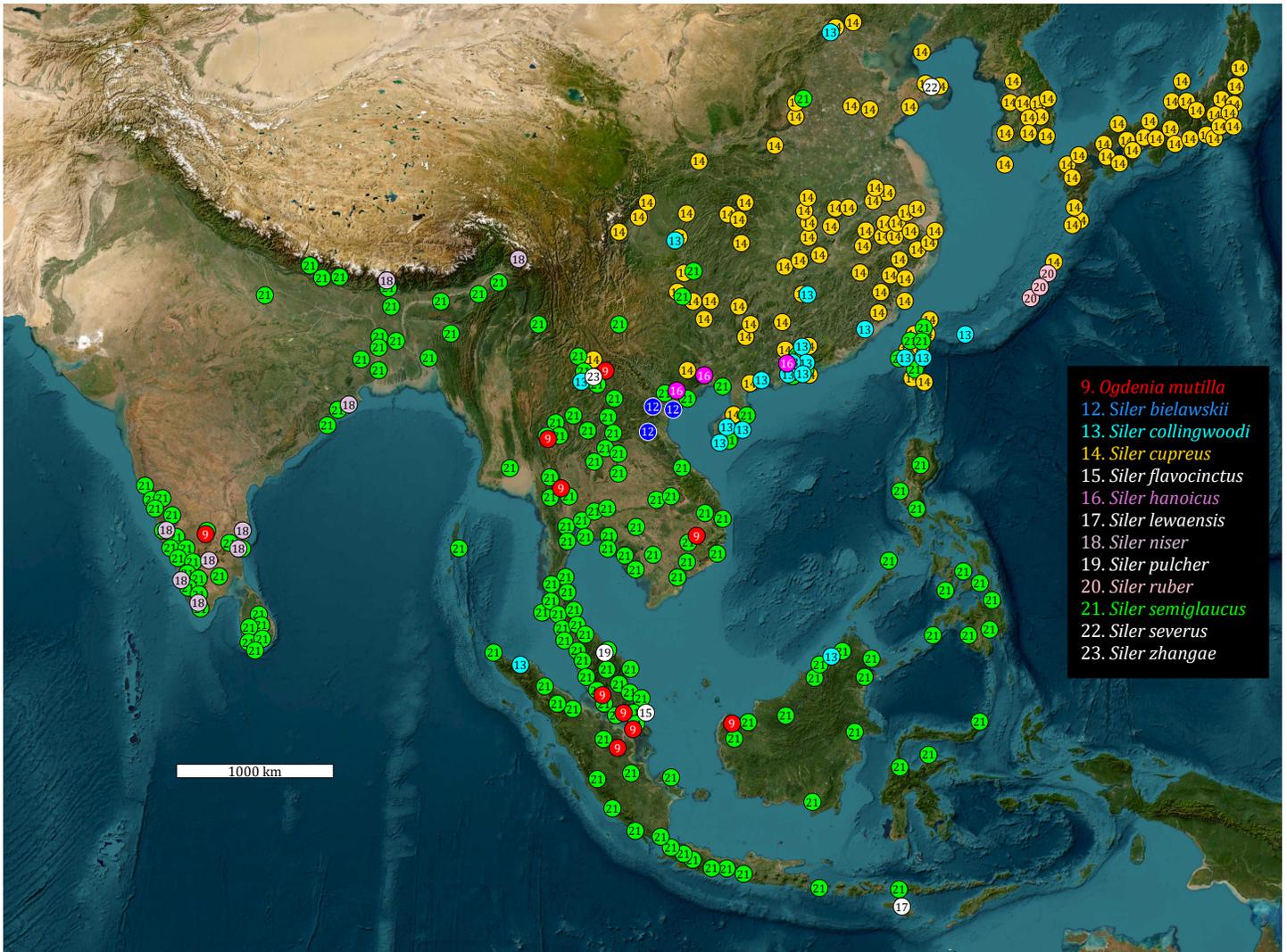
Chrysilini					* <i>Chelicerooides longipalpis</i>	
					<i>Cosmophasis</i>	
	Chrysoida				Chrysilla group	<i>Chrysilla volupe</i>
						<i>Orsima ichneumon</i>
					* <i>Ogdenia mutilla</i>	
					* <i>Siler cupreus</i>	
					<i>Mexcala elegans</i>	
					<i>Helvetia</i>	
					<i>Icius subinermis</i>	
					<i>Menemerus</i>	
					* <i>Heliophanus cupreus</i>	
					<i>Helicius chikunii</i>	
					* <i>Hakka himeshimensis</i>	
					<i>Orienticus vulpes</i>	
					<i>Epocilla aurantiaca</i>	
				* <i>Proszynskia diatreta</i>		
				* <i>Phintelloides jesudasi</i>		
				<i>Phintella</i>		

**Figure 2.** Hypothetical phylogeny for selected chrysiline genera, adapted from Kanesharatnam & Benjamin (2019). Type species for respective genera are indicated with an asterisk (\*) in the column at right. *Orsima* and *Ogdenia*, not part of that DNA study, have been inserted into separate *Chrysilla* and *Siler* groups based on their appearance and documented characters.

The known distribution of chrysoid species in South and Southeast Asia is shown in Figures 3 and 4. Published locality records for these species are also listed in Table 1. Photographs of *Chrysilla* posted on iNaturalist are generally associated with either *C. acerosa*, which is relatively easy to identify, or a *C. volupe* species group comprised of *C. lauta* and *C. volupe*, which are closely related. More recently described *Chrysilla* species are little-known. Identification of *Siler* species can be even more problematic. Until fairly recently, most of these were identified primarily as either *S. semiglaucus* (in the south) or *S. cupreus* (in the north), with most found between southern China and northern Indochina identified as *S. collingwoodi*, a species with a somewhat intermediate appearance. Recently a number of new *Siler* species have also been described, but these are little known.



**Figure 3.** Distribution of *Chrysilla* and *Orsima* species in South and Southeast Asia. This includes both published records, and records posted on iNaturalist, both of which are not always reliable with respect to identification of species. *C. acerosa* has a very wide range of distribution, both east to west and north to south. Most other observations of *Chrysilla* have been associated with either *C. volupe* in South Asia, or *C. lauta* in Southeast Asia. Species known from a single locality are identified with white circles. Background map © OpenStreetMap.



**Figure 4.** Distribution of *Ogdenia* and *Siler* species in South and Southeast Asia. This includes both published records, and records posted on iNaturalist. Species known from a single locality are identified with white circles. Most records have been associated with either *Siler semiglaucus* in the south, or *Siler cupreus* in the north. Background map © OpenStreetMap.

**Table 1.** Published locality records for chrysoid species in South and Southeast Asia, based in part on WSC 2025.

Chrysoidea	1	<i>acerosa</i>	Wang & Zhang 2012	♂♀	29.84167N, 106.35861E, Chongqing	
				♂♀	29.70278N, 106.29028E, Chongqing	
	2	<i>albans</i>	Dyal 1935	♂	29.82222N, 106.42722E, Chongqing	
				♂♀	28.51806N, 104.94139E, Sichuan	
	3	<i>deelemani</i>	Prószyński & Deeleman-Reinhold 2010 Deelman-Reinhold et al. 2024	♂	27.13333N, 93.35000E, Assam	
				♀	8.86667S, 116.11667E, Kute, Lombok	
	4	<i>delicata</i>	Thorell 1890, 1892 Prószyński 1984	♀	Sumatra; small for this genus; epigynum later drawn by Prószyński (1984) shows that this is misplaced in <i>Chrysoidea</i>	
				♂	Sumatra; small for this genus	
	5	<i>doriae</i>	Thorell 1890	♂	Bhamo, Myanmar	
				♂	Phuc-Son, Annam	
	6	<i>*lauta</i>	Thorell 1887, Prószyński 1983, Żabka 1985 <i>(longiventris)</i> Simon 1903b, Żabka 1985 Song & Chai 1991	♂	Hainan	
				♂♀	Taichung, Taiwan	
				♂	Pingtung, Taiwan	
				♂	Thammarat, Thailand	
				Deelman-Reinhold et al. 2024	♂	6.71333N, 79.90250E, Western Province, Sri Lanka
					♂	1.28333N, 103.78333E, Singapore
					♂	1.41667N, 103.95000E, Singapore
♂					2.80111N, 101.51278E, Selangor, Malaysia	
♀					3.40000N, 101.51278E, Pahang, Malaysia	

<b>Chrysilla</b>	7	<i>volupe</i>	( <i>Attus</i> ) Karsch 1879	♂	Sri Lanka
			( <i>Phintella</i> ) Żabka 1988		
			(sp.) Prószyński 1984	♂	Bhutan
			( <i>Phintella</i> ) Caleb & Mathai 2014	♂	13.21418N, 80.23212E, Araabath Lake, Tamil Nadu
			( <i>Chrysilla</i> ) Caleb 2016	♂	13.53413N, 80.20979E, Chennai, Tamil Nadu
			Thumar & Dholakia 2018	♂	20.95000N, 72.93000E, Navsari, Gujarat
			Caleb et al. 2018	♂	13.07100N, 77.58059E, Bengaluru, Karnataka
				♀	13.07261N, 77.57900E, Bengaluru, Karnataka
				♂♀	19.14222N, 72.86758E, Mumbai, Maharashtra
				♂	22.54945N, 72.62332E, Pariyej Lake, Gujarat
♂♀	11.70272N, 76.34433E, Wayanad Wildlife Sanctuary, Kerala				
♂♀	11.70047N, 76.34114E, Wayanad Wildlife Sanctuary, Kerala				
Kanesharatnam & Benjamin 2019	♂	7.28667N, 80.71333E, Kandy District, Sri Lanka			
	♂♀	8.35294N, 80.50404E, Anuradapura District, Sri Lanka			
	♂	7.48645N, 80.37268E, Kurunalgala District, Sri Lanka			
	♂	7.85944N, 80.67444E, Matale District, Sri Lanka			
Deelman-Reinhold et al. 2024	♂	7.26694N, 80.59556E, Peradeniya, Sri Lanka			
	♂♀	6.39306N, 81.33806E, Kataragama Peak, Sri Lanka			
8	<i>yarlungzangpo</i>	Yang & Zhang 2024	♂	29.34390N, 95.34430E, Medong County, China	
<b>Ogdenia</b>	9	<i>*mutilla</i>	( <i>Rooseveltia</i> ) Peckham & Peckham 1907	♀	Kuching, Sarawak, Borneo
			Prószyński 1984, Yang et al. 2024		
			Yang et al. 2024	♂♀	21.90800N, 101.28450E, Yunnan, China
				♀	21.90770N, 101.28240E, Yunnan, China
				♀	21.91080N, 101.28330E, Yunnan, China
				♀	21.90920N, 101.28050E, Yunnan, China
				♂	21.62230N, 101.58920E, Yunnan, China
				♂	2.05500N, 103.54300°E, Johor, Malaysia
				♀	Singapore
				♂	12.86410N, 107.79610E, Dak Lak, Vietnam
♀	12.47960N, 108.33910E, Dak Lak, Vietnam				
<b>Orsima</b>	10	<i>ichneumon</i>	( <i>Cosmophasis</i> ) Simon 1901a	♂	Padang, Sumatra
			( <i>Cosmophasis</i> ) Prószyński 1984		
			( <i>formica</i> ) Peckham & Peckham 1907	♂♀	Kuching, Sarawak, Borneo
			Żabka 1992	♂♀	Ulu Gombak Forest Reserve, Kuala Lumpur
			Reiskind 1976	p♀	District of Temburong, Brunei
			Wee et al. 2017	♂♀	3.32442N, 101.75258E, Gombak, Selangor, Malaysia
			Maddison 2015	♀	4.04200N, 114.81400E, Sarawak
				♂♀	4.04320N, 114.81100E, Sarawak
				♂	3.32500N, 101.76500E, Selangor, Malaysia
				♂	3.32500N, 101.75300E, Selangor, Malaysia
Painting et al. 2017	♂♀	Gombak Field Station, Selangor, Malaysia			
11	<i>thaleri</i>	Prószyński & Deeleman-Reinhold 2012	♀	Mt. Singgalang, Anai, West Sumatra	
<b>Siler</b>	12	<i>bielawskii</i>	Żabka 1985	♀	Cuc Phuong, Ninh Binh Province, Vietnam
			♀	Phu Que, 80 km NW of Vinh	
			♀	Chine, 80 km SW of Hanoi	
	13	<i>collingwoodi</i>	( <i>Salticus</i> ) O. Pickard-Cambridge 1871	♀	Labuan, Malaysia (error?)
			( <i>Siler</i> ) Prószyński 1985	♂	Hong Kong
			Song & Chai 1991	♂♀	Hainan, China
			Baba 2010, Baba et al. 2019	♂♀	Iriomote-jima Island, Japan
			Baba et al. 2019	♀	Ishigaki-jima Island, Okinawa, Japan
	Zhang et al. 2022		Mt. Xiaowutai, Yu County, Hebei Province		
	14	<i>*cupreus</i>	Simon 1889	♀	Yokohama, Japan
Simon 1903a			♂	Japan	
Prószyński 1985			♂♀	Yokohama, Japan	
Bohdanowicz & Prószyński 1987			♂	Izashiki, Sate, Kagoshima, Japan	
Baba et al. 2019			♀	Saruga-jo Valley, Tarumizu-shi, Kagoshima	
Bohdanowicz & Prószyński 1987			♀	Okawa-fall, Yakushima Island, Kagoshima	
			♀	Siro-jima Island, Japan, Kagoshima	
Seo 2001			♂	Mt. Palgong, Daegu, Korea	
			♀	Geumosan, Gumi, Korea	
Peng et al. 2002			♂	Tungher, Hualian County, Taiwan	
	♂	Orchid Island, Taitung County, Taiwan			
15	<i>flavocinctus</i>	( <i>Cyllobelus</i> ) Simon 1901a			
		( <i>Siler</i> ) Prószyński 1985	♀	Singapore	
16	<i>hanoicus</i>	Prószyński 1985			
		Żabka 1985	♂	Hanoi (tentative classification)	
17	<i>lewaensis</i>	Wang et al. 2024	♂♀	21.84550N, 107.88733E, Guangxi Zhuang AR, China	
		Prószyński & Deeleman-Reinhold 2010	♀	W of Lewa, 35 km W of Waingapu, Sumba Island	

<i>Siler</i>	18	<i>niser</i>	Caleb, Parag & Datta-Roy 2023	♂♀	20.16861N, 85.68493E, Odisha, India
			Yang & Zhang 2024	♂♀	28.77450N, 96.73400E, Xizang Autonomous Region, China
	19	<i>pulcher</i>	Simon 1901b	♀	28.59500N, 97.23650E, Xizang Autonomous Region, China
				♂	Kuala Aring, Kelantan, Malay Peninsula
	20	<i>ruber</i>	<i>(rubrum)</i> Baba, Yamasaki & Tanikawa 2019	♀	Amami-Oshima Island, Kagoshima, Japan
				♂	Okinawa-jima Island, Okinawa, Japan
				♂♀	Okinoerabu-jima Island, Kagoshima, Japan
	21	<i>semiglaucus</i>	<i>(Cyllobelus)</i> Simon 1901a, 1901c	♂	Taprobane Island, Ceylon
				♀	Luzon Island, Philippines
				♀	Padang, West Sumatra
				♂	Colombo, Sri Lanka
				♂♀	Hunan, China
				♂♀	Chilavannur, Cochin, Kerala
				♂	Gorumara NP, West Bengal, India
				♀	Dooars, West Bengal, India
	22	<i>severus</i>	<i>(Cyllobelus)</i> Simon 1901a	♂	Tche-fou or Tchoufou, Sina
			<i>(Siler)</i> Prószyński 1985		
	23	<i>zhangae</i>	Wang & Li 2020	♂	21.90967N, 101.27500E, Yunnan, China
				♂	21.90117N, 101.27267E, Yunnan, China
				♂	21.92333N, 101.28200E, Yunnan, China

Chrysoids vary in size. For jumping spiders, which tend to be relatively small, we can apply the following general categories to size, based on body length: *small*, <4 mm; *medium*, 4-8 mm; *large* >8 mm. The published body length for some of the most important chrysoid species are given in Table 2. *Chrysilla* are mostly small to medium, *Ogdenia* medium to large, *Orsima* medium, and *Siler* small to medium in length. However, even within a single species adult body length may vary by a factor of 2.

**Table 2.** Comparative body length without spinnerets for chrysoid salticids. There is often a discrepancy between body length as reported in the text of a publication, and measurements derived from figures in that same publication.

species	♂♀	body length (mm)	reference	notes
<i>Chrysilla acerosa</i>	♂	6.71-9.70	Wang & Zang 2012	in text
	♀	7.16	Wang & Zang 2012	in text
<i>Chrysilla lauta</i>	♂	4.9-5.0	Kanesharatnam & Benjamin 2019	measured from figure, and in text
		4.2-7.1	Deelman-Reinhold et al. 2024	in text
	♀	5.0	Deelman-Reinhold et al. 2024	in text
<i>Chrysilla volupe</i>		5.44	Caleb et al. 2018	in text
	♂	3.46-3.83, 3.74	Kanesharatnam & Benjamin 2019	measured from figure, and in text
		3.4	Deelman-Reinhold et al. 2024	in text
		2.61	Caleb et al. 2018	in text
	♀	4.46-4.74, 3.92	Kanesharatnam & Benjamin 2019	measured from figure, and in text
<i>Chrysilla yarlungzangbo</i>		3.5	Deelman-Reinhold et al. 2024	measured from figure
	♂	6.38	Yang & Zhang 2024	in text: sum of CL and AL
<i>Ogdenia mutilla</i>	♂	6.51-8.00	Yang et al. 2024	in text
	♀	7.98-10.00	Yang et al. 2024	in text
<i>Orsima ichneumon</i>		7.0	Simon 1901a, Peckham & Peckham 1907	in text
	♂	5.1-6.1	Žabka 1992	in text: sum of CL and AL
		4.02	Maddison 2015	measured from photograph
		6.47 ± 0.09	Wee et al. 2017	in text
		5.75-6.1	Žabka 1992	in text: sum of CL and AL
	♀	3.70	Maddison 2015	measured from photograph
<i>Siler collingwoodi</i>		6.69 ± 0.10	Wee et al. 2017	in text
	♀	5.29	Pickard-Cambridge 1871	in text as "2½ lines"
<i>Siler cupreus</i>	♂	3.87	Prószyński 1985	in text: sum of CL and AL
		4.37	Prószyński 1985	in text: sum of CL and AL
	♀	4.0	Simon 1889	in text
<i>Siler hanoicus</i>	♂	3.86, 4.09	Wang et al. 2024	measured from figure, and in text
	♀	5.20, 5.14	Wang et al. 2024	measured from figure, and in text
<i>Siler niser</i>	♂	4.10	Caleb et al. 2023	in text
	♀	5.31-6.88	Caleb et al. 2023	in text
<i>Siler rubrum</i>	♂	3.63-5.88	Baba et al. 2019	in text
	♀	4.38-6.25	Baba et al. 2019	in text
<i>Siler semiglaucus</i>	♂	2.70	Maddison 2015	measured from photograph
	♀	3.35	Maddison 2015	measured from photograph
<i>Siler zhangae</i>	♂	3.76	Wang & Li 2020	in text

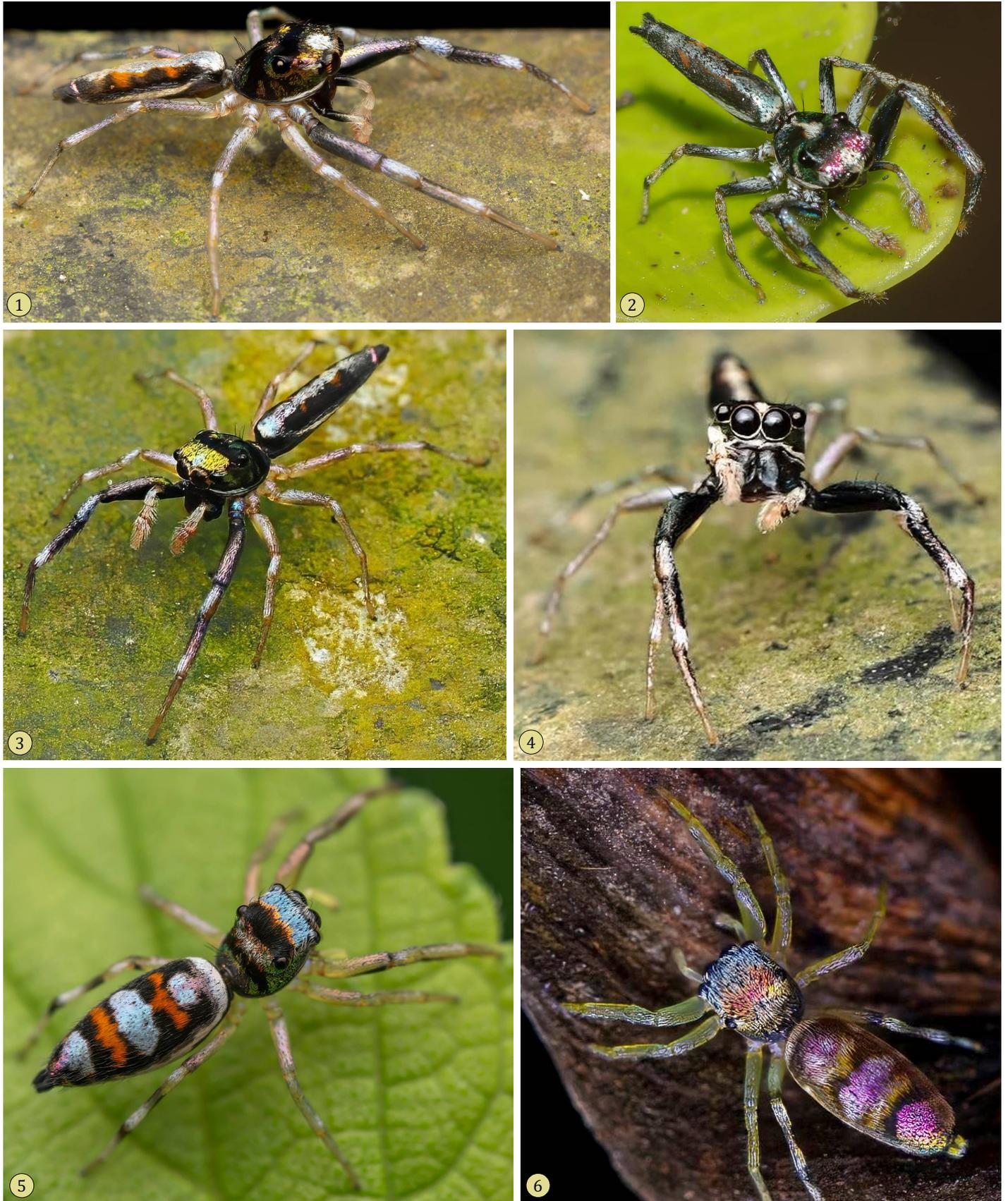
Based on characters that can be seen in photographs, or characters described in publications, I have tentatively placed most of the important chrysoid species into a hypothetical phylogeny (Figure 5). Members of the *Chrysilla* group are more elongated in body shape, and have longer copulatory ducts. Within this group, *C. acerosa* is distinct, but *C. lauta* and *C. volupe* are very similar, with females that resemble *Orsima ichneumon*. Members of the *Siler* group have very short copulatory ducts, and *Ogdenia mutilla*, type for a monotypic genus, might even be placed within the genus *Siler*. In subsequent sections, our knowledge of a series of chrysoid species will be reviewed in more detail.

Chrysoidea	Chrysilla group	Chrysilla	acerosa group		<i>C. acerosa</i>
					<i>C. yarlungzangbo</i>
			volupe group	lauta group	<i>C. deelemanii</i>
					<i>C. lauta</i>
					<i>C. volupe</i>
					<i>Orsima ichneumon</i>
			<i>Ogdenia mutilla</i>		
	Siler group	Siler	semiglaucus group	<i>S. semiglaucus</i>	
				<i>S. niser</i>	
				<i>S. zhangae</i>	
			cupreus group	<i>S. cupreus</i>	
				<i>S. hanoicus</i>	
			collingwoodi group	<i>S. collingwoodi</i>	
<i>S. rubrum</i>					

**Figure 5.** Hypothetical phylogeny of the Chrysoidea. These may all prey on ants, and some appear to be specialized ant predators (Jackson & Van Olphen 2009; Kulkarni & Joseph 2015). Not all described species are shown here.

**The *Chrysilla* group.** This includes *Orsima ichneumon* and species presently assigned to the genus *Chrysilla*. The African *Orsima constricta* Simon 1901, is not considered in this review of Asian spiders. A second *Orsima* species, *Orsima thaleri*, is known only from a single female specimen collected in Sumatra, and is known only from the original description. That species is also not considered here, as the epigynum, as drawn and described, differs considerably from the epigynum of other members of this group, suggesting that it is misplaced. The only well-known *Chrysilla* species are *C. acerosa*, *C. lauta*, and *C. volupe*. *C. yarlungzangpo*, recently described, resembles *C. acerosa* (Figure 6). Curiously, male *C. acerosa* and male *C. lauta* from Southeast Asia both have patches of white scales on the patella and distal tibia of each leg I. A mating pair identified as *C. delicata* is shown here (Figure 7), but Prószyński's (1984) drawing of the epigynum of the holotype female, with a pair of anterior spermathecae, indicates clearly that this species is misplaced in *Chrysilla*, and is not a chrysoid.

*C. lauta* (Figures 8-13) and *C. volupe* (Figures 14-17) are very similar, and it may be impossible to distinguish the two species by either the structure of the male pedipalp, the female epigynum, or the general appearance and coloration of the female. The posterior spinnerets of female *C. volupe* have white tips; those of *C. lauta* are entirely black. Male *C. lauta* appear to have a more elongated opisthosoma, but this character may vary between individuals. For field identification, the male *C. lauta* has generally been recognized by the presence of a brilliantly iridescent middorsal stripe running along the length of the opisthosoma, flanked on either side by a darker stripe. The male *C. volupe*, which has been reported from some of the same localities in South Asia, can often be identified by the presence of several zig-zag, transverse bands or tracts of bright, pigmented red scales that cross the middorsal stripe. However, *C. lauta* from South Asia may also have two bright red dorsal spots at front of the opisthosoma, and legs covered with the golden, iridescent scales more typical of *C. volupe*. It is possible that a slight difference in the shape of the posterior edge of the RTA of the two species may exist. In the future, DNA sequencing from populations representing *Chrysilla* species should help us to further understand their relationship.



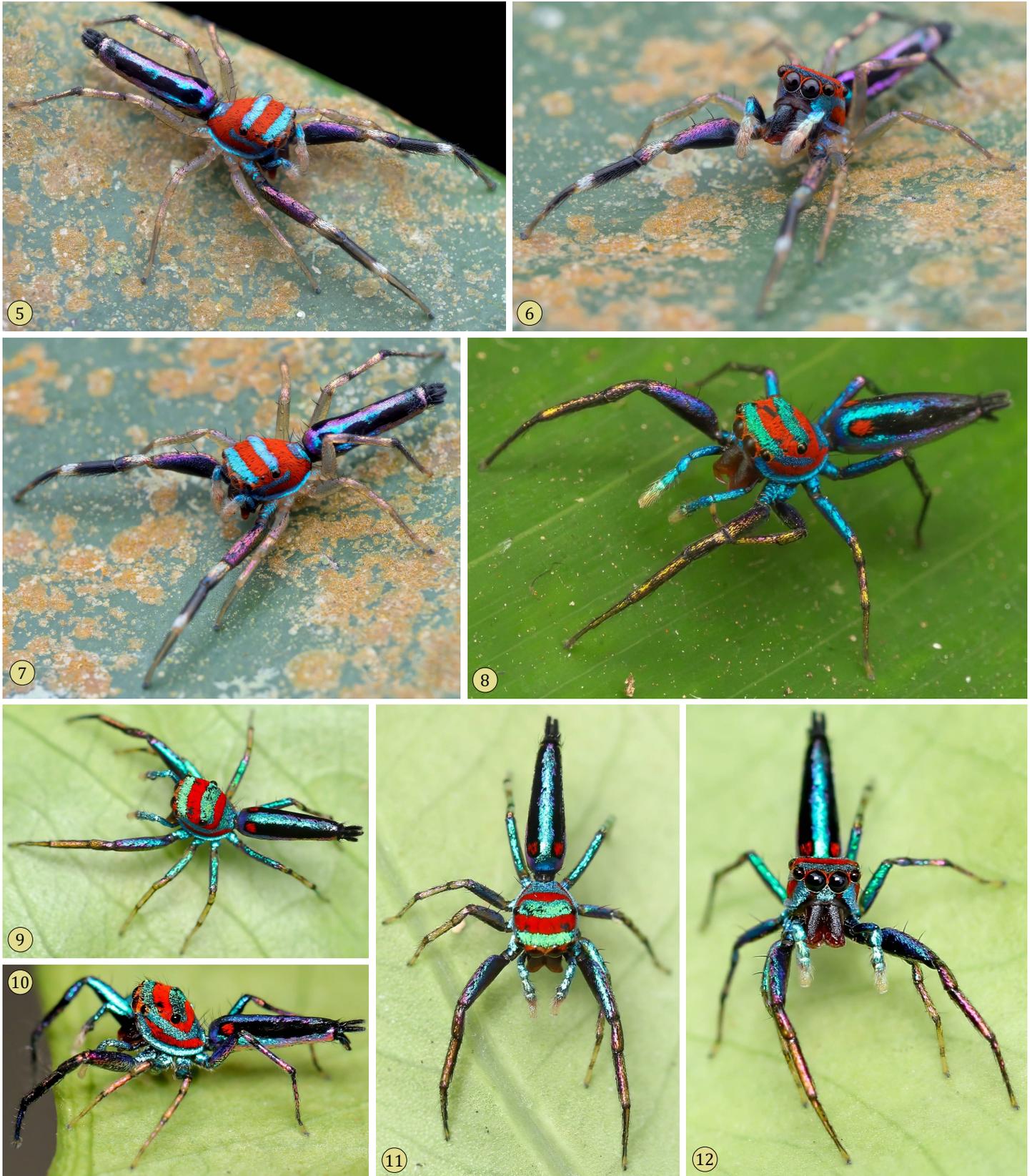
**Figure 6.** *Chrysilla acerosa*. 1, ♂, Hong Long (iNat. obs. 266562219, © winston\_bennett, CC BY-NC 4.0). 2, ♂, Kaeng Krachan, Phetchaburi, Thailand (iNat obs. 78801802, © ian\_dugdale, CC BY 4.0). 3-4, ♂, Hong Kong, (iNat. obs. 281202616, © Hsiu Hing Wo, Ivan, CC BY-NC 4.0). 5, ♀, Hong Kong (iNat. obs. 123652715, © Lawrence Hylton, CC BY 4.0). 6, ♀, Karnataka (iNat. obs. 140350285, © pavan\_tavrekere, CC BY-NC 4.0).



**Figure 7.** Mating "*Chrysilla*" *delicata*, Singapore. This species is misplaced in *Chrysilla*. Photo credits: iNat. obs. 229207614, © Melvyn Yeo, CC BY-NC 4.0.



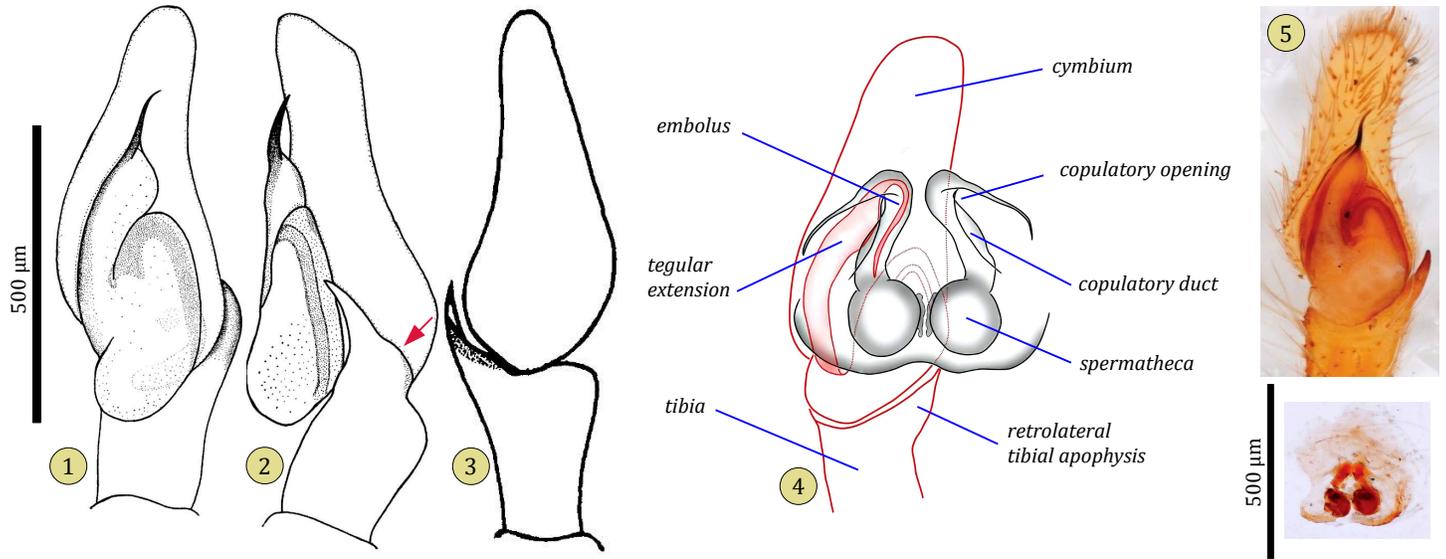
**Figure 8 (continued on next page).** ♂ *Chrysilla lauta*. Note that males from Southeast Asia (1-7) have more translucent, off-white legs II-IV, with bands of white scales on the patella and distal tibia of leg I, and a distinct transverse band at the rear of the opisthosoma. In contrast males identified as this species from Sri Lanka (8-12) have iridescent blue-green scales on the femora, and a cover of golden scales on the distal segments, of all legs. They also have a pair of anterodorsal red spots on the opisthosoma 1-2, Singapore (iNat. obs. 242217122, © Melvyn Yeo, CC BY-NC). 3-4, Singapore (iNat. obs. 242217127, © Melvyn Yeo, CC BY-NC).



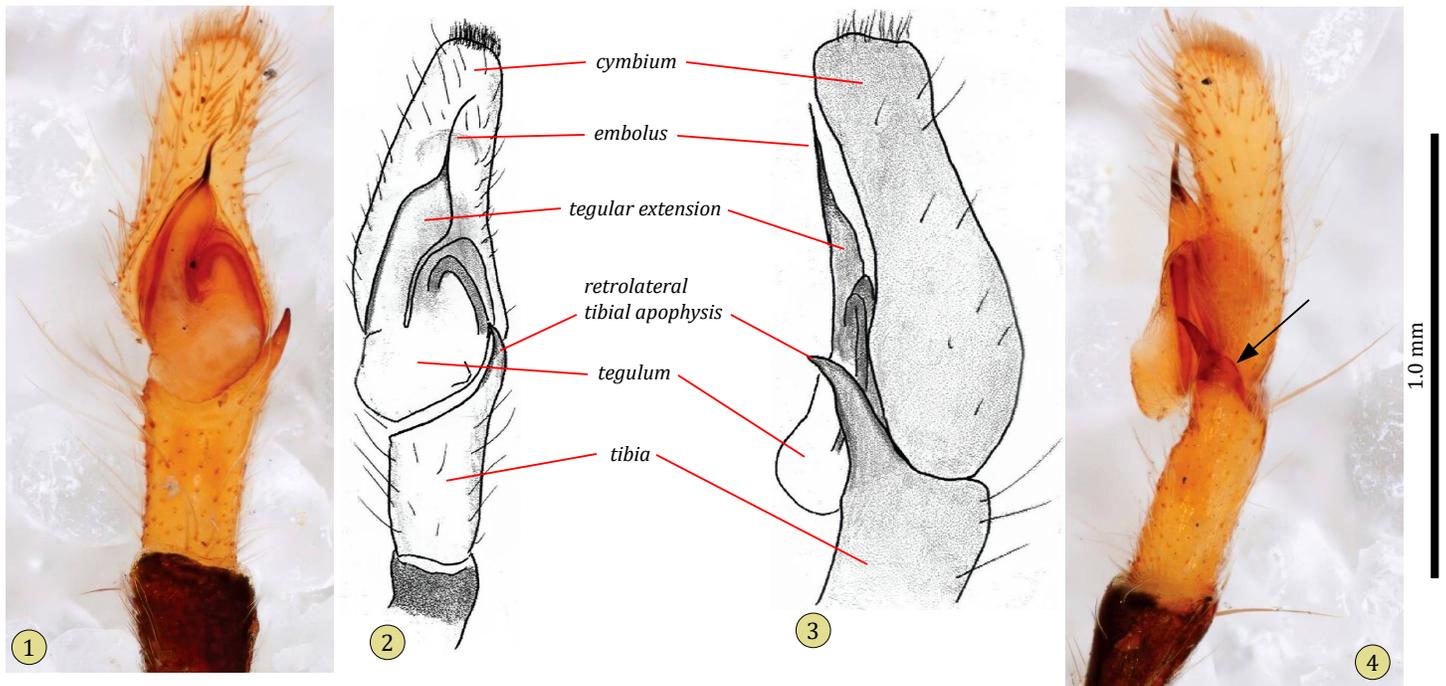
**Figure 8 (continued from previous page).** ♂ *Chrysilla lauta*. 5-7, Johor, Malaysia (iNat. obs. 240731017, © Melvyn Yeo, CC BY-NC). 8, Sri Lanka (iNat. obs. 21202473, © Roman Prokhorov, CC BY-NC). 9-12, Sri Lanka (iNat. obs. 66999823, © Chathuri Jayatissa, CC BY-NC).



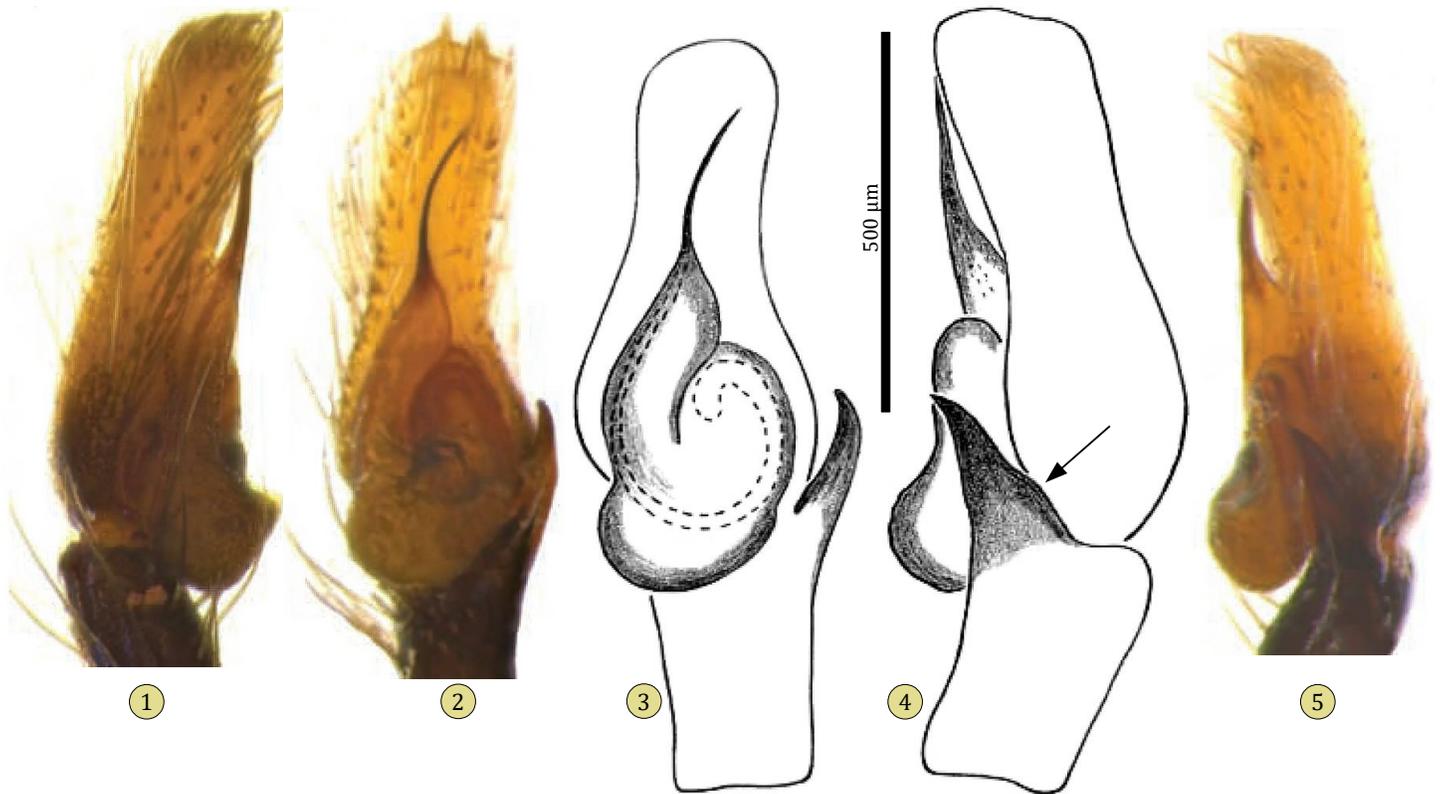
**Figure 9.** ♀ *Chrysilla lauta*. 1-4, Singapore (iNat. obs. 240909223, © Melvyn Yeo, CC BY-NC). 5-6, Singapore (iNat. obs. 177447281, © Md Jusri, CC BY-NC 4.0).



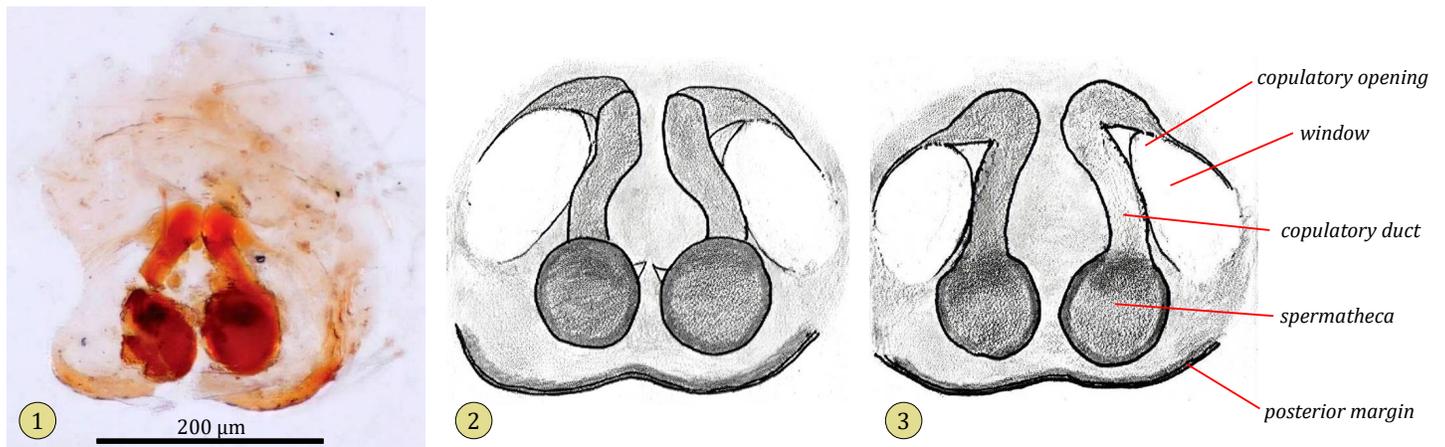
**Figure 10.** 1-3, Ventral, retrolateral, and dorsal views of the left pedipalp of the holotype ♂ for *Chrysilla lauta*, from Myanmar (adapted from Prószyński 1983). Note slight “bump” on dorsal edge of the RTA (arrow). 4, Schematic drawing showing the fit of the embolus into the copulatory opening of the epigynum (4-5 adapted from © Deeleman-Reinhold et al. 2024, CC BY 4.0). 5, As shown by the relative size of the pedipalp and epigynum, only the tip of the embolus could actually enter the copulatory duct.



**Figure 11.** Left pedipalp of a ♂ *Chrysilla lauta* (specimen CM 15726, probably from the Malay Peninsula; adapted from © Deeleman-Reinhold et al. 2024, CC BY 4.0). All images are shown here to the same scale. Note discrepancies in size and proportion between the photographs and the respective drawings of a ventral view (1-2) and a retrolateral view (3-4). For example, in the drawings the embolus is much longer. This illustrates the principle that *a photograph is a record, a drawing is an interpretation*. 4, Note the slight bump on the dorsal side of the RTA, not shown in the drawing (3).



**Figure 12.** Left pedipalp of a ♂ *Chrysilla lauta* from the Western Province of Sri Lanka (adapted from © Kanesharatnam & Benjamin 2019, CC BY 4.0). All figures are shown to scale. Note the relatively long embolus of this specimen, and the slight bump on the dorsal side of the RTA (4, arrow).



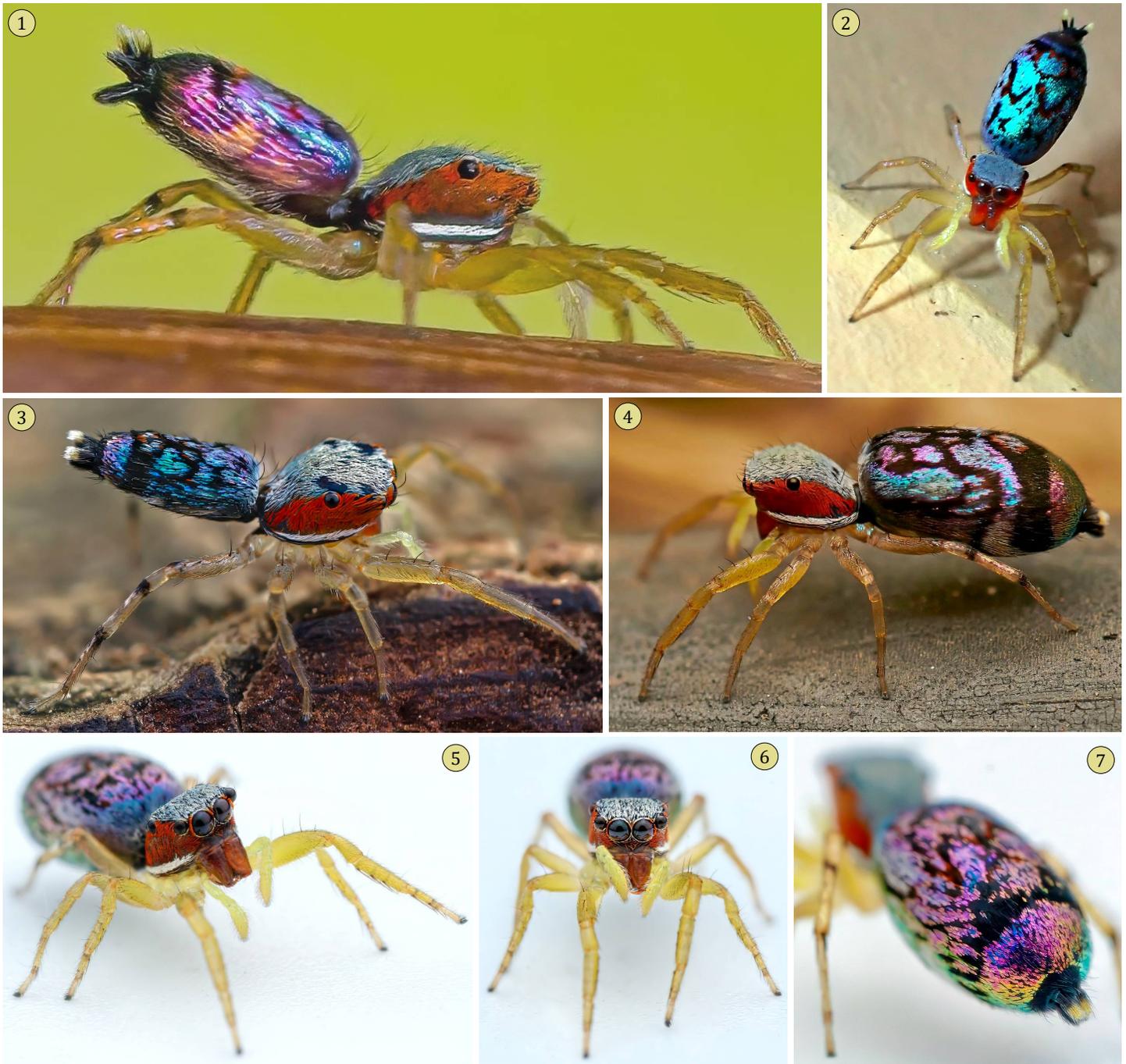
**Figure 13.** Epigynum of *Chrysilla lauta* (specimen CM 19182, Gentang, Pahang, Malaysia; adapted from © Deeleman-Reinhold et al. 2024, CC BY 4.0). All images are presented at the same scale; note the discrepancy in both size and the relative length of the copulatory duct between the photograph and the drawings. **1-2**, Dorsal (internal) views of cleared epigynum. The epigynum was probably damaged in the process of extraction and clearing, but it can be seen that the length of each copulatory duct (in 1) is approximately equal to the diameter of a spermatheca. **3**, Ventral (external) drawing of cleared epigynum.



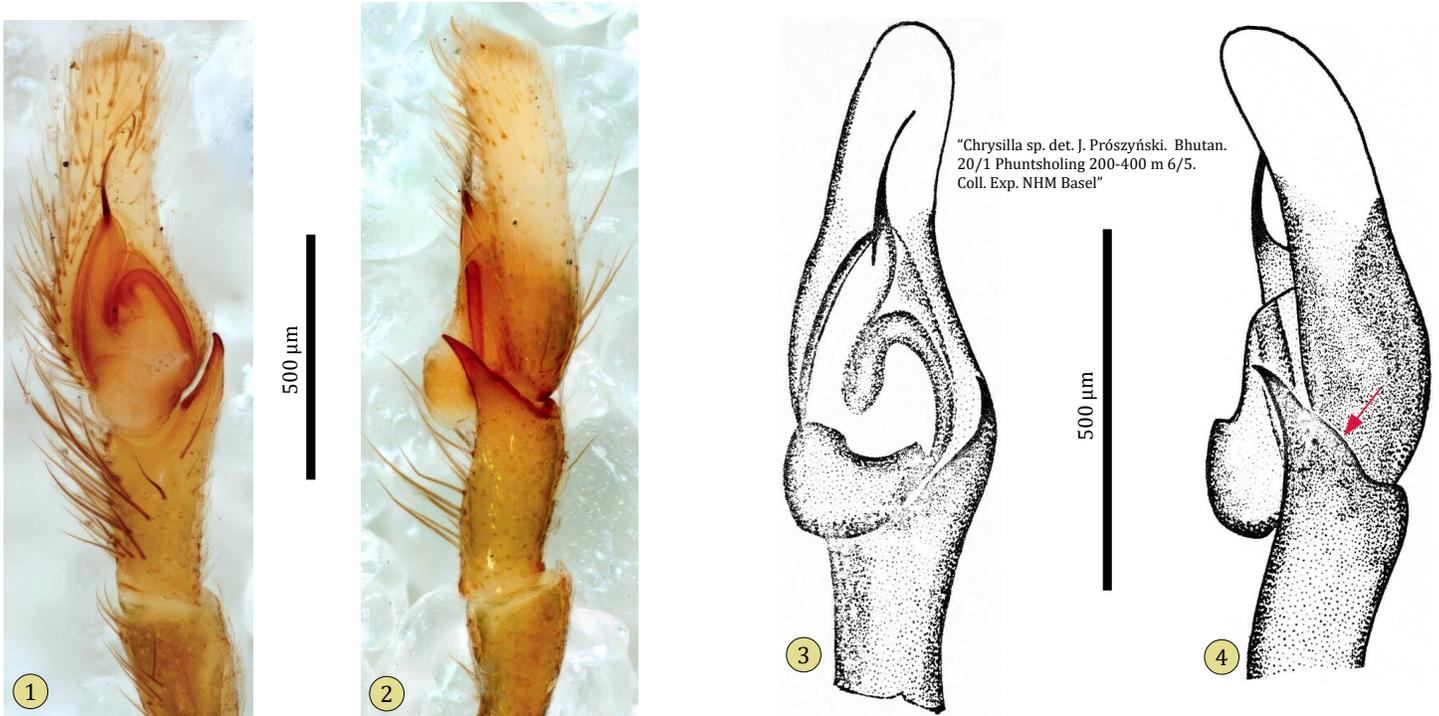
**Figure 14 (continued on next page).** ♂ *Chrysilla volupe*. 1, Shimoga, Karnataka (iNat. obs. 85492059, © Girish Gowda, CC BY-NC 4.0). 2-3, Mysuru, Karnataka (iNat. obs. 148462035, © Hardeep Gazdar, CC BY-NC 4.0). 4-6, Bengaluru, Karnataka (iNat. obs. 186707102, © 360pixual, CC BY-NC 4.0).



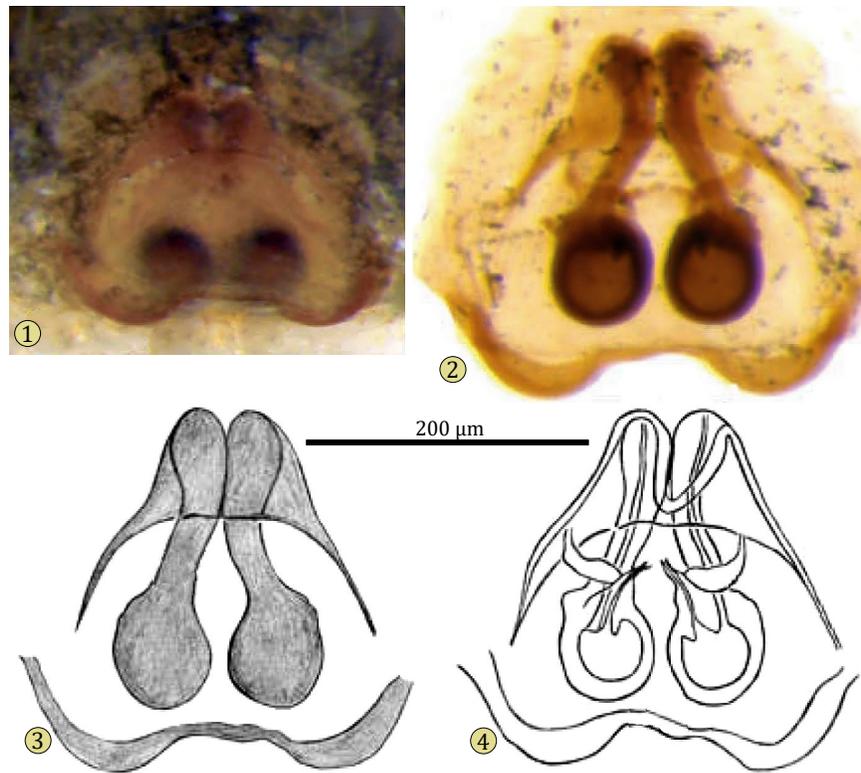
**Figure 14 (continued from previous page).** ♂ *Chrysilla volupe*. **7-9**, Joida, Karnataka (iNat. obs. 194265705, © Gururaj Gouda, CC BY-NC 4.0). **10**, Kurunegala, Sri Lanka (iNat. obs. 53569251, © Thilina Hettiarachchi, CC BY-NC 4.0). **11**, Karnataka (iNat. obs. 207884394, © K S Gopi Sundar, CC BY-NC 4.0). **12-15**, Kolkata, West Bengal (iNat. obs. 46701330, © Anubhav Agarwal, CC BY-NC 4.0). **16-17**, Ghodshet, Maharashtra (iNat. Obs. 279245310, © Chinmay Sonawane, CC BY 4.0).



**Figure 15.** ♀ *Chrysilla volupe*. Note elevation of the opisthosoma and extension of the spinnerets (1-2), much like the behavior of *Orsima ichneumon*. The upper (posterior) spinnerets of the ♀ (but not the ♂) *C. volupe* are tipped with white. The spinnerets of ♀ *C. lauta* are entirely black, but are often displayed in the same manner. **1**, Rajkot, Gujarat (iNat. obs. 176431203, © Ashok Mashru, CC BY-NC 4.0). **2**, Joida, Karnataka (iNat. obs. 259953967, © saraptor, CC BY-NC 4.0). **3**, Shimoga, Karnataka (iNat. obs. 194265705, © Girish Gowda, CC BY-NC 4.0). **4**, Bengaluru, Karnataka (iNat. obs. 104764892, © Karthik, CC BY-NC 4.0). **5-7**, Bengaluru, Karnataka (iNat. obs. 94720480, © Manjunath Acharya, CC BY-NC 4.0).



**Figure 16.** Pedipalp of ♂ *Chrysilla volupe*. Prószyński's (1984) drawing shows a slight bump on the rear margin of the RTA (4, arrow), much like that seen in *C. lauta*. 1-2. Ventral and retrolateral views, mirror images of the right pedipalp (specimen CM 15916, Peradenia, Leersia, Sri Lanka; adapted from © Deeleman-Reinhold et al. 2024, CC BY 4.0). 3-4, Ventral and retrolateral views of left pedipalp (Bhutan, adapted from Prószyński 1984, identified as *C. volupe* by Żabka 1988).



**Figure 17.** Ventral or external (1, 3) and dorsal or internal (2, 4) views of the epigynum of *Chrysilla volupe* (adapted from © Kanesharatnam & Benjamin 2019, CC BY 4.0). All images are drawn to the same scale, but clearly the scale given for (1) did not agree with (2-4).

Both ♂ and ♀ *Orsima ichneumon* (Figures 18-20) resemble the female *Chrysilla lauta* in general coloration, but their legs are striped and their spinnerets, particularly the posterior pair, are much longer. The male pedipalp and female epigynum are also similar to *C. lauta*. The real distinguishing characteristic of this genus is the constriction of the opisthosoma, less evident in well-fed older females.



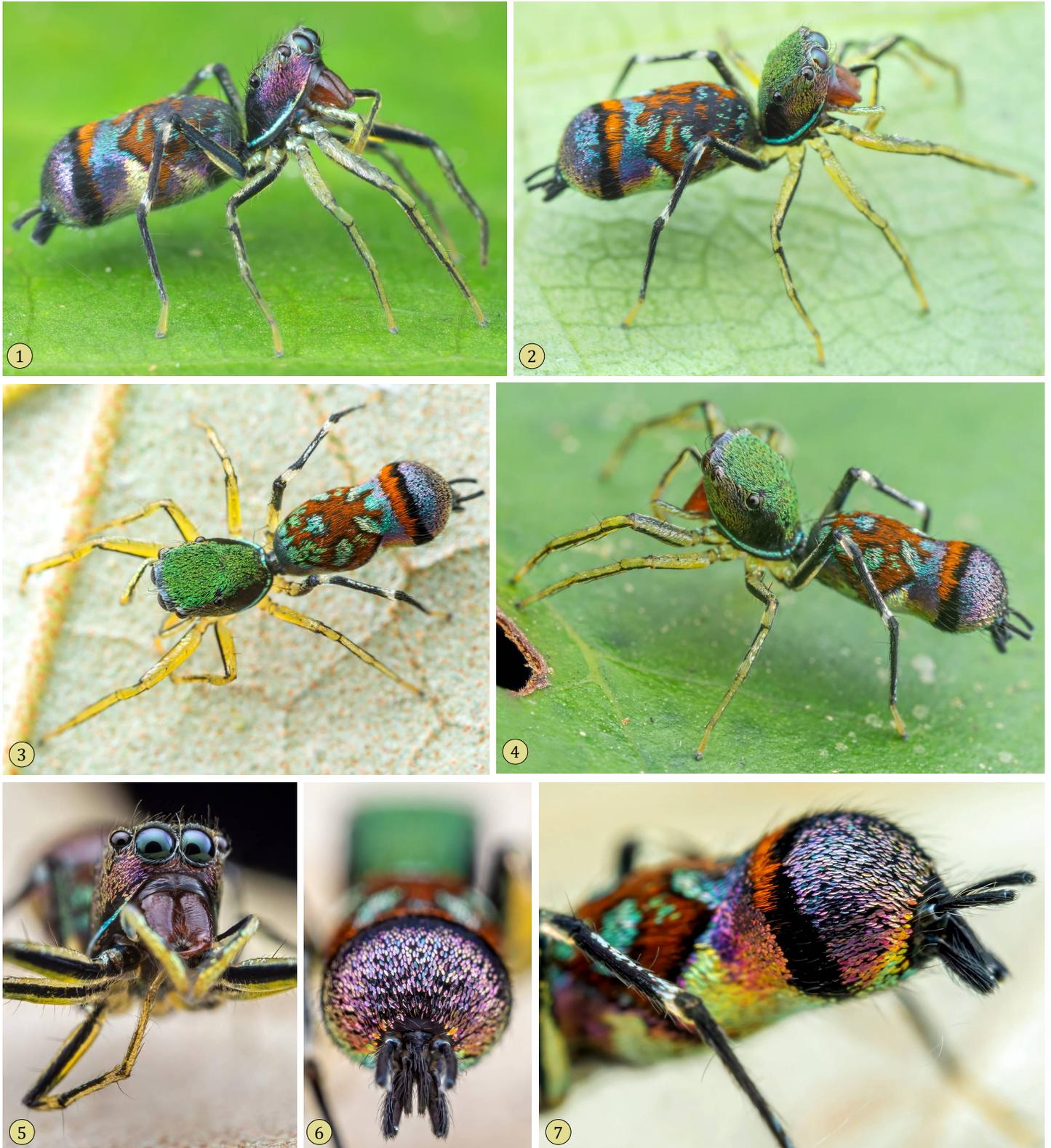
**Figure 18 (continued on next page).** ♂ *Orsima ichneumon*. Males, like females, have narrow pedipalps, but they are covered with gold, iridescent scales. **1-2**, Sarawak, Malaysia (iNat. obs. 251327471, © DolceAmore, CC BY-NC 4.0). **3-6**, Gunung Mulu National Park, Sarawak (iNat. obs. 173132750, © Nicky Bay, with permission).



**Figure 18 (continued from previous page, continued on next page).** ♂ *Orsima ichneumon*. 7-9, Singapore (iNat. obs. 164359288, © Artur Tomaszek, with permission). 10, Bohorok, Sumatra (iNat. obs. 268009441, © Bridgette Gower, CC BY-NC 4.0). 11-12, penultimate ♂, Gunung Pantii Recreational Forest, Johor, Malaysia (iNat. obs. 241044836, © Melvyn Yeo, CC BY-NC 4.0).



**Figure 18 (continued from previous page).** ♂ *Orsima ichneumon*. **13-16**, penultimate ♂, Gunung Pantu Recreational Forest, Johor, Malaysia (iNat. Obs. 217010263, © Nicky Bay, with permission). **17**, penultimate ♂, Gunung Mulu National Park, Sarawak (iNat. obs. 263081256, © Adriano Losso, CC BY-NC 4.0). **18**, penultimate ♂, Bekok, Johor, Malaysia, iNat. obs. 239725966, © Melvyn Yeo, CC BY-NC 4.0).



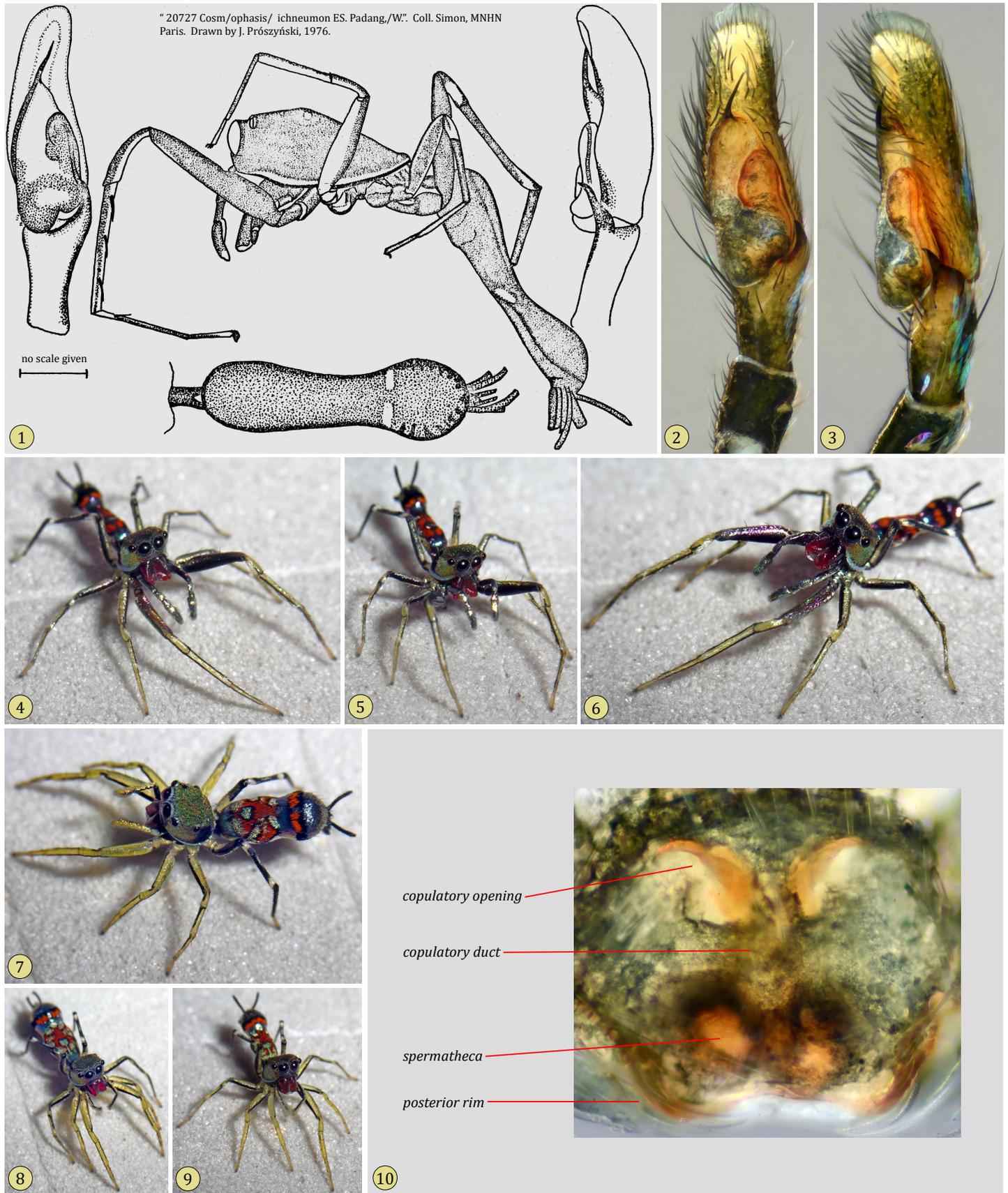
**Figure 19 (continued on next page).** ♀ *Orsima ichneumon*. 1-2, Bekok, Johor, Malaysia (iNat. obs. 239725953, © Melvyn Yeo, CC BY-NC 4.0). 3-7, Bekok, Johor, Malaysia (iNat. obs. 209424877, © Nicky Bay, with permission).



**Figure 19 (continued from previous page, continued on next page).** ♀ *Orsima ichneumon*. 8-9, Johor, Malaysia (iNat. obs. 229880430, © Melvyn Yeo, CC BY-NC 4.0). 10-11, Bekok, Johor, Malaysia (iNat. obs. 216727959, © Nicky Bay, with permission). (11) looks like an adult ♂. 12-13, Bekok, Johor, Malaysia (iNat. obs. 216727961, © Nicky Bay, with permission).



**Figure 19 (continued from previous page).** ♀ *Orsima ichneumon*. **14**, near Bohorok, Sumatra. feeding on a salticid spider (iNat. obs. 268024184, © kaylene77, CC BY-NC 4.0). **15-17**, Trusmadi Forest Reserve, Sabah (iNat. obs. 271426309, © Nicky Bay, with permission). **18**, Bekok, Johor, Malaysia (iNat. obs. 239725944, © Melvyn Yeo, CC BY-NC 4.0).



**Figure 20.** *Orsima ichneumon*. **1**, Drawings of male by Prószyński (1984). **2-10**, Photographs of ♂ (2-6: SWK12-3375) and two ♀ (7-8, 10: SWK12-1053, and 9: SWK12-3381) from Gunung Mulu National Park in Sarawak. The male pedipalp (2-3) and female epigynum (10) are similar to those of *Chrysilla lauta*, but with a more uniform diameter along their length. Photo credits: 2-10: © W. Maddison, used and modified under a CC BY 3.0 license (Maddison 2015).

For reference, I also include here an English translation of Simon's description of this species (as *Cosmophasis Ichneumon*), as well as the Peckhams' subsequent (1907) description of *Orsima formica*, now recognized as a junior synonym of *O. ichneumon*. Neither description included any figures; the first available figure for this species was drawn much later by Prószyński (1984), from Simon's male specimen (Figure 20.1).

(Simon 1901a, p. 148:)

**Cosmophasis Ichneumon** sp. nov. ♂. Long. 7 mill. — Cephalothorax niger, opacus, supra squamulis subrotundis viridiaureis crebre vestitus, utrinque in declivitate remote viridi violaceoque squamulatus et linea marginali argentea exili cinctus. Pili oculorum cinerei. Clypeus latus, parce nitente-squamulatus. Abdomen longissimum, cephalothorace fere duplo longius, teretiusculum, in medio valde et longe constrictum, fere petiolatum, ad apicem ampliatus et subglobosum, antice area subquadrata splendide viridi-squamulata, dein pilis simplicibus coccineis et macula media subrotunda nitente-squamulata, dein zona transversa lata splendide viridi violaceoque squamulata, postice lineolis transversis binis, 1<sup>a</sup> coccineo-pilosa, altera violaceo-micanti squamulata, vittaque transversa apicali similiter squamulata stricte decoratum, subtus viridi violaceoque squamulatum. Chelae fusco-rufulae, longae et parallelae, glabrae, subtiliter coriaceae et prope apicem breviter carinulatae. Sternum nigrum, parce albo-pilosum et viridi-squamulatum. Pedum 1<sup>i</sup> paris coxa trochanter femurque nigra, hoc supra ad apicem luteo-vittato, reliqui articuli lutei utrinque nigro-lineati. Pedes 2<sup>i</sup> et 3<sup>i</sup> parium lutei utrinque nigro-lineati. Pedes 4<sup>i</sup> paris nigri, femore ad basin luteo-vittato, patella tibiaque ad apicem luteo-notatis, tarso luteo. Pedes maxillares graciles, nigri, laete viridi-aureo squamulati, tibia patella vix brevior, angustior, tereti, apophysi apicali parva extus instructa, tarso angusto longo et tereli, bulbum superante. — Sumatra : Padang.

**Cosmophasis ichneumon** sp. nov. ♂. Length: 7 mm. The cephalothorax is black, dull, densely covered above with nearly round, greenish-golden scales. On both sides of the carapace, it is sparsely covered with green and violet scales and bordered by a thin silvery marginal line. The eye hairs are gray. The clypeus is broad, with a sparse covering of shiny scales. The abdomen is very long, almost twice as long as the cephalothorax, slightly cylindrical, strongly and extensively constricted in the middle, nearly stalked, and widened and somewhat subglobular at the tip. At the front, it has a somewhat square area with brilliantly green scales, followed by simple scarlet hairs and a somewhat rounded, shiny-scaled central spot. Then comes a wide transverse band brilliantly covered with green and violet scales, followed posteriorly by two transverse lines, one with scarlet hairs, the other with violet-shining scales, and an apical transverse band similarly decorated with scales. The underside is covered with green and violet scales. The chelicerae are reddish-brown, long and parallel, smooth, finely leathery, and with short ridges near the tip. The sternum is black, sparsely covered with white hairs and green scales. In the first pair of legs, the coxa, trochanter, and femur are black; the femur has a yellow stripe near the tip. The remaining segments are yellow, with black longitudinal lines on both sides. The second and third pairs of legs are yellow with black lines on both sides. The fourth pair of legs is black; the femur has a yellow stripe at the base, the patella and tibia are marked with yellow at the tip, and the tarsus is yellow. The pedipalps are slender, black, brightly covered with greenish-golden scales. The tibia is just slightly shorter and narrower than the patella, cylindrical, equipped with a small apical projection on the outside. The tarsus is narrow, long, and cylindrical, extending beyond the bulb. Locality: Sumatra: Padang.

(Peckham & Peckham 1907, p. 630:)

**Orsima formica** sp. nov. ♂. Length 6.5 mm. Legs 1432. ♀. Length 7 mm. Legs 4132, femur of the first slightly thickened in both sexes. The cephalothorax is rather high, with the cephalic plate nearly level.

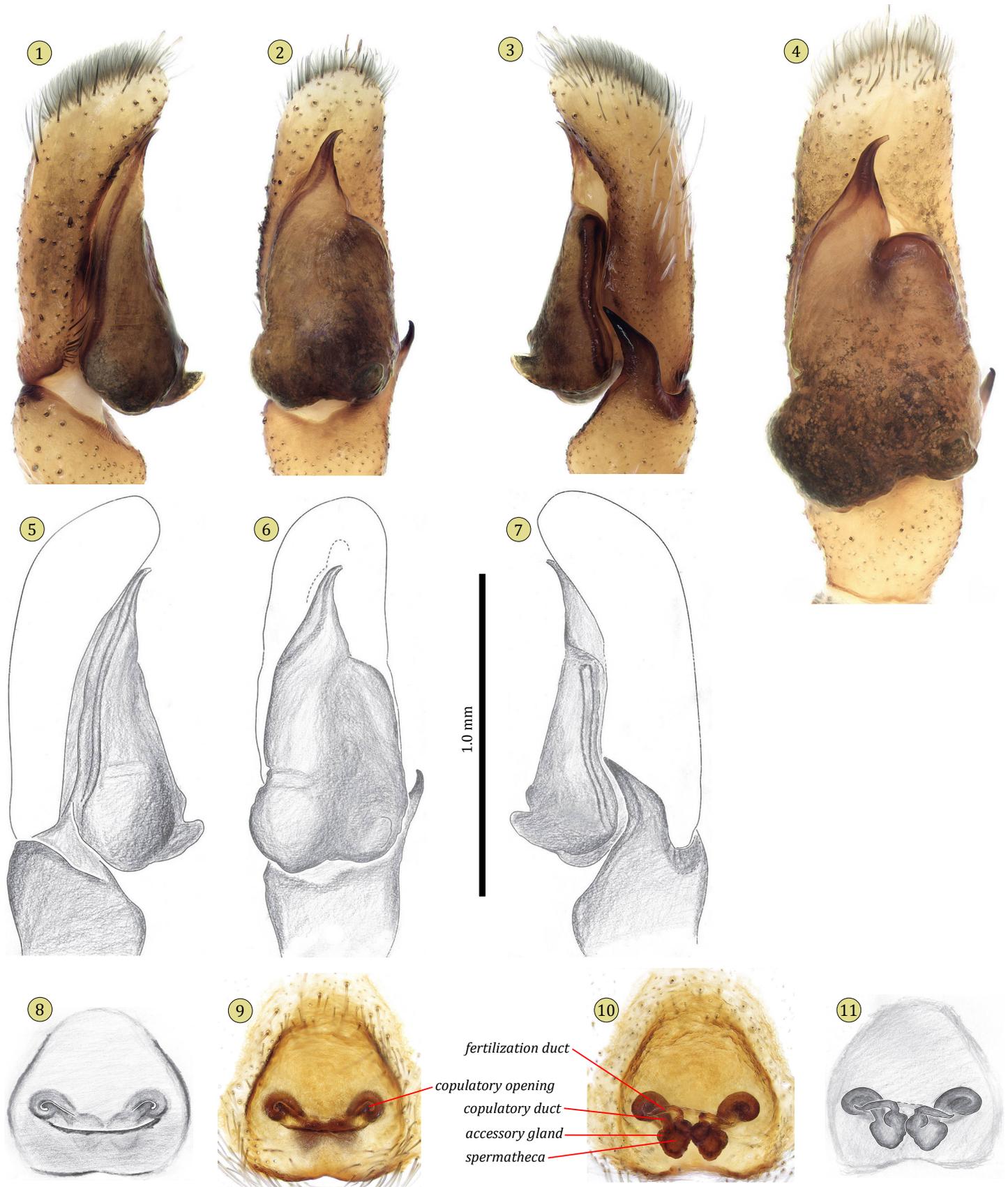
The thoracic part falls steeply in the female, but in the male rounds off in a longer, more gradual slope. It is a little wider in the thoracic than in the cephalic part and is slightly narrower above than below. The quadrangle of the eyes occupies nearly half of the cephalothorax, is one-third wider than long, and is a little wider behind than in front. The front eyes are close together in a straight row, the middle being twice as large as the lateral. The second row is halfway between the others. The dorsal eyes stand out prominently and form a row about as wide as the cephalothorax. The sternum is rounded behind, truncated in front. The first coxae are separated by the width of the labium, which is a little longer than wide. The clypeus is narrow. The falces [**chelicerae**] are vertical and rather long. The lower margin has one tooth, and the upper two, one large and one small. The legs are slender. The first and second, besides lateral spines, have 3-3 under the tibia and 2-2 under the metatarsus. The spines on the posterior legs are very weak. In the male the abdomen is strongly constricted behind the middle and is wider behind this point than in front of it. The spinnerets are long. The coloring is very brilliant. In the male there is a wide bright band of iridescent green extending from the front eyes to the posterior margin and occupying the entire upper surface. The sides of the thoracic part are black, but those of the cephalic are covered with iridescent pinkish scales, which extend across the clypeus. All around the lower margin of the cephalothorax is a narrow band of silvery white. The abdomen has a covering of silvery iridescent scales, with two transverse bands of deep coppery red, one in front of and one behind the constriction. From the front one, two curved bands of the same red color extend forward, partly enclosing a circular spot of the iridescent scales. The sternum and venter are also covered with iridescence. The falces [**chelicerae**] are light yellowish. The palpi are dark, covered with shining scales, as is also the femur of the first leg. The tibia and metatarsus of the fourth are black in the middle with pale extremities. Otherwise the legs are pale yellow with black streaks in front and behind. The coloring of the female is similar, excepting that a transverse band of white iridescent scales, coming up from below, crosses the abdomen behind the middle, taking the place of the constriction in the male. The femur of the first leg is not darkened, the palpi, as well as the legs, being pale yellow with black streaks in front and behind. Three males from Kuching and one female from Sarawak. Mr. Shelford says that this species mimics an ant. Its form is certainly ant-like, although its coloring is gorgeous and striking. Although it has but two, instead of three, pairs of metatarsal spines, it agrees very well with Simon's description of the genus *Orsima* which heretofore has had but one representative, *O. constricta* from Congo.

**The *Siler* group.** This clade includes the 12 described species of *Siler* as well as *Ogdenia mutilla*, the only member of the monotypic genus *Ogdenia*. *O. mutilla* (Figures 21-22) looks very much like a giant *Siler*, and with a body length near 10 mm, it is 2-3 times the length of *Siler* species. Yang et al. (2024) recently reviewed this genus in detail (Figure 22). It appears that all members of the *Siler* group are specialists that feed primarily on ants, to include ant eggs and larvae (Grob 2015; Hawes 2018). When then walk, they raise and wave their extended legs I, often in a vertical position.

The genus *Siler* is definitely in need of revision. The ♀ *S. collingwoodi* described by O. Pickard-Cambridge (Figure 26.1) does not appear to represent the same species as that most recently associated with this species name (Figures 23-25, 26.2-26.4). *S. cupreus*, the type species for the genus, is a well-known ant predator from East Asia (Figures 27-28). *S. hanoicus* (Figure 29), recently described by Wang et al., is very similar to *S. cupreus*. The ♂ *S. niser* (Figure 30) looks just like a ♂ *S. semiglaucus*, although the pedipalp is somewhat different; the ♀ *S. niser* looks like spiders recently identified as *S. collingwoodi*. The ♂ *S. zhangi* (Figure 31), like the ♂ *S. niser* and the ♂ *S. semiglaucus*, has a "bottle brush" of long black setae on the upper and lower side of each tibia I (see Hill 2009), and the three species appear to be closely related. *S. semiglaucus* (Figures 32-35), the best-known member of the genus, may also be the smallest *Siler*. The male pedipalp of *S. semiglaucus* has an acute distal extension of the tegulum, but no distinctly separate embolus at the tip. This distinctive feature may be related to the small size of these spiders.



**Figure 21.** ♀ *Ogdenia mutilla* in Singapore. **1**, Feeding on large ant (iNat. obs. 53356980, © budak, CC BY-NC 4.0). **2-4**, Note the mantispid larva wrapped around the pedicel of this female (inset, 3) (iNat. obs. 239363627, © Melvyn Yeo, CC BY-NC 4.0). **5-7**, Waving legs I (iNat. obs. 253760999, © Melvyn Yeo, CC BY-NC 4.0).



**Figure 22.** *Ogdenia mutilla*. **1-3**, ♂, prolateral to retrolateral views of left pedipalp. **4**, ♂, ventral view of a larger left pedipalp. **5-7**, Drawings corresponding to 1-3. **8-9**, Ventral (exterior) views of epigynum. **10-11**, Dorsal (interior) views of epigynum. All figures are shown at the same scale. Image credits: 1-11, © Yang et al. 2024, used and adapted under a CC BY 4.0 license.



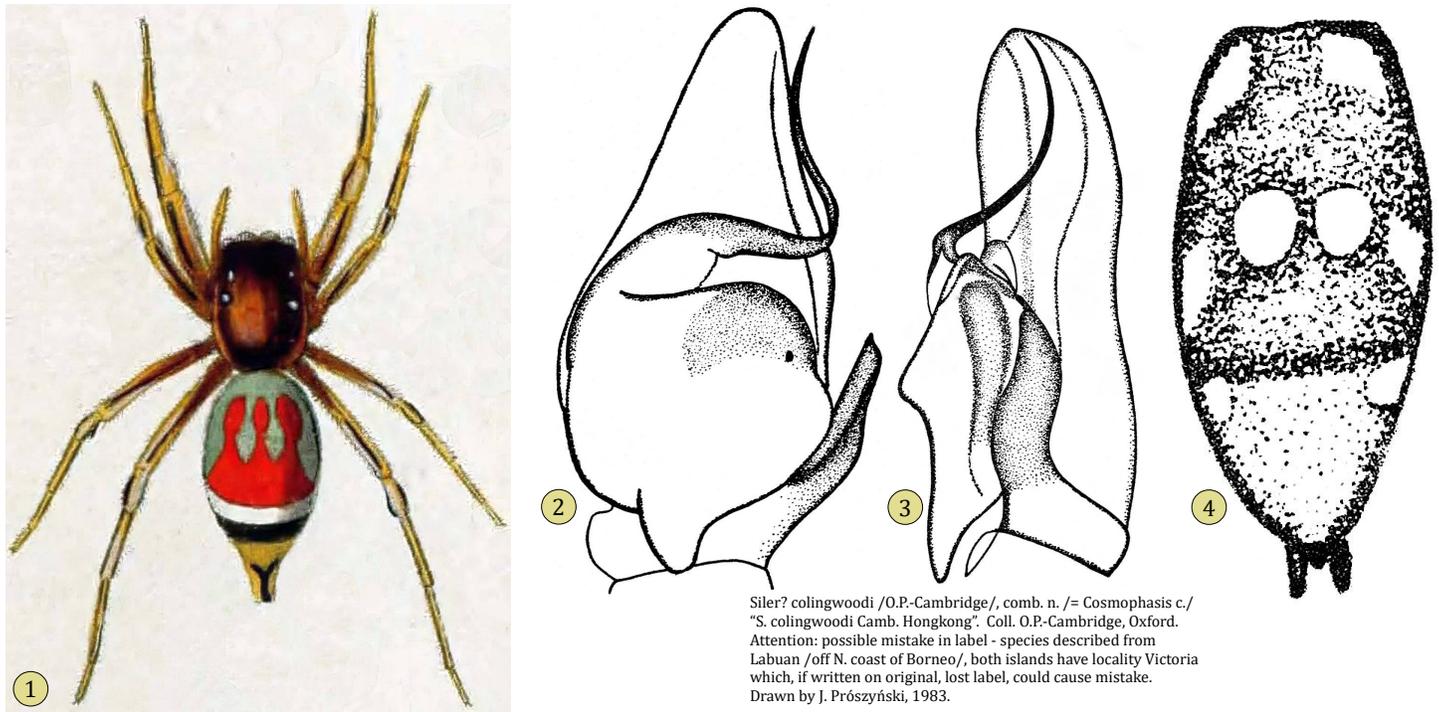
Figure 23. Courtship and mating by *Siler collingwoodi* from Hong Kong (iNat. obs. 211391917, © PK Yeung, CC BY-NC 4.0).



Figure 24. ♂ *Siler collingwoodi* from Hong Kong. These look much like the better-known *S. semiglaucus*, but may be larger. 1, (iNat. obs. 211391917, © PK Yeung, CC BY-NC 4.0). 2, (iNat. obs. 77411300, © hollythefrog, CC BY-NC 4.0). 3-4, (iNat. obs. 217841661, © sashahaldane, CC BY-NC 4.0).



**Figure 25.** ♀ *Siler collingwoodi* from Hong Kong. Note the difference between these and the ♀ described by O. Pickard-Cambridge (Figure 26.1). 1-2, (iNat. obs. 217441833, © Kit Law, CC BY-NC 4.0). 3-4, (iNat. obs. 220432476, © benjonion, CC BY-NC 4.0). 5, (iNat. obs. 94908967, © hollythe frog, CC BY-NC 4.0). 6, (iNat. obs. 164730610, © Lawrence Hylton, CC BY 4.0).



**Figure 26.** *Siler collinwoodi*. 1, Drawing of the type ♀ from Malaysia by O. Pickard-Cambridge (1871). 2-4, Ventral and retrolateral views of left pedipalp, and dorsal opisthosoma, of a ♂ *Siler* from Hong Kong (adapted from Prószyński 1984). Prószyński (1985) nominated this specimen as the holotype for *S. collingwoodi*, and his drawings of the distinctive male pedipalp are the reference for subsequent records of this species.

For reference, the original description of a female *Salticus collingwoodi* from Malaysia by O. Pickard-Cambridge (1871) is given below. Apparently without access to this female, Prószyński (1984, 1985) drew a male *Siler* from Hong Kong (Figures 26.2-26.4) and gave it this name.

(O. Pickard-Cambridge 1871, p. 621:)

Family SALTICIDES. GENUS SALTICUS (Bl.). *SALTICUS COLLINGWOODII*, n. sp. (Plate XLIX. fig. 5). *Female adult*, length 2½ lines [5.29 mm]. The *cephalothorax* (which is of ordinary form) is of a bright reddish yellow-brown colour margined by a narrow band of bright shining silvery hairs; the upper part of the caput [head] is darker than the rest, and is clothed with short yellowish-grey hairs, and a patch or short transverse band of bright scarlet ones between the two posterior eyes. The *eyes* are in the ordinary position—those of the third row (the two smallest of the eight) being within the straight line of those of the second and fourth rows, and nearer to those of the latter respectively than to the former. The *falces* [chelicerae] are moderate in length and strength, a little projecting and slightly divergent at their extremities; they are of a dull yellow-brown colour. The legs are rather short, moderately strong, and their relative length appears to be 4, 1, 2, 3, there being very little, if any, difference between those of the second and third pairs; they are of a brownish-yellow colour striped with longitudinal lines of black, and silvery shining white hairs, and are armed with a few inconspicuous spines. The *abdomen* is of a short oval form; two-thirds of the upper-side forwards are of a bright scarlet, marked conspicuously in front and on the sides by a broad irregular margin of dove-coloured grey tinged with olive-green; two large somewhat oval patches of the same colour occupy the centre of the scarlet portion, and are connected with the front border by a narrow line or neck of a similar hue; this pattern is edged narrowly with black; the hinder extremity of the abdomen is black, divided from the scarlet fore part by a broad, shining, silvery-white transverse band, which is also divided from the scarlet by a slender black line. The spinners are prominent, of a dull white colour, with a broad black transverse band in the middle of the superior pair; the underside of the

abdomen is of a silvery shining white colour, reflecting rich metallic tints in a strong light, and margined behind with black; all the above colours on the abdomen are formed by a short close-set covering of hairs or pubescence. A single adult female of this beautiful *Salticus* was contained in the collection under consideration, and was found at Labuan; it is, I believe, new to science; and it gives me great pleasure to connect with it the name of Dr. Collingwood, who has enabled me to give the above report on the Spiders collected by him.



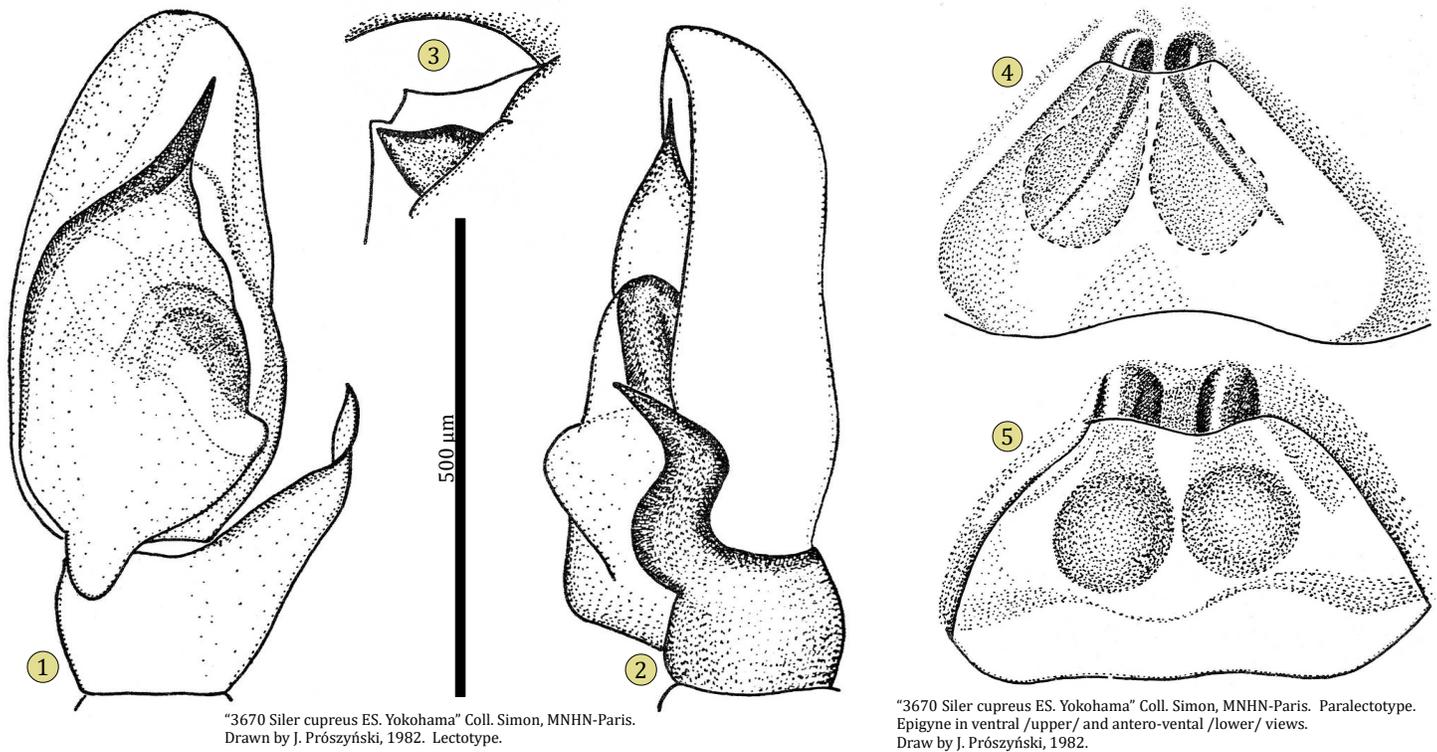
**Figure 27 (continued on next page).** *Siler cupreus*. 1-3, ♂, Yilan, Taiwan (iNat. obs. 80058082, © Max Hsieh(雁子), CC BY-NC 4.0). 4-6, ♂, New Taipei, Taiwan (iNat. obs. 252111183, © 丸善斯基, CC BY-NC 4.0). 7, ♂, Taiwan (iNat. obs. 36198177, © Ben Tsai 蔡維哲, CC BY-NC 4.0). 8, ♂, Suzhou, Jiangsu, China (iNat. obs. 171015672, © Simba, CC BY-NC 4.0).



**Figure 27 (continued from previous page, continued on next page).** *Siler cupreus*. **9**, ♂, Osaka, Japan (iNat. obs. 81424692, © mande010, CC BY-NC 4.0). **10-11**, ♂ preying on ant (**10**) and ♀ (**11**), Toyama, Japan (iNat. obs. 182389671, © masa\_i, CC BY-NC 4.0). **12**, ♀ preying on ant, Hino, Tokyo, Japan (iNat. obs. 283320235, © WATANABE Hitoshi 渡辺仁, CC BY 4.0). **13**, ♀, New Taipei, Taiwan (iNat. obs. 36198175, © Ben Tsai 蔡維哲, CC BY-NC 4.0). **14**, ♀ preying on large ant, Taiwan (iNat. obs. 64933220, © Ben Tsai 蔡維哲, CC BY-NC 4.0). **15**, ♀ Taiwan (iNat. obs. 36198175, © Ben Tsai 蔡維哲, CC BY-NC 4.0).



**Figure 27 (continued from previous page).** *Siler cupreus*. **16-18**, ♀, Guangzhou, Guangdong, China (iNat. obs. 281457951, © yunshi2084, CC BY-NC 4.0). **19**, ♀, Hangzhou, Zhejiang, China (iNat. obs. 221782933, © 汪湛闻/muyaocraft, CC BY-NC 4.0). **20**, ♀ preying on large ant, Nanjing, Jiangsu, China (iNat. obs. 215450242, © komet2022, CC BY-NC 4.0). **21-22**, ♀ preying on large ant, Beijing, China (iNat. obs. 285238166, © Yishen Xiao, CC BY-NC 4.0). **23**, ♀, Wuhan, Hubei, China (iNat. obs. 205225087, © adrianuskomnenus, CC BY-NC 4.0). **24**, ♀, Hong Kong (iNat. obs. 143499606, © simoncheung, CC BY-NC 4.0). **25**, ♀ preying on large ant (iNat. obs. 47947927, © onidiras-iNaturalist, CC BY-NC 4.0).



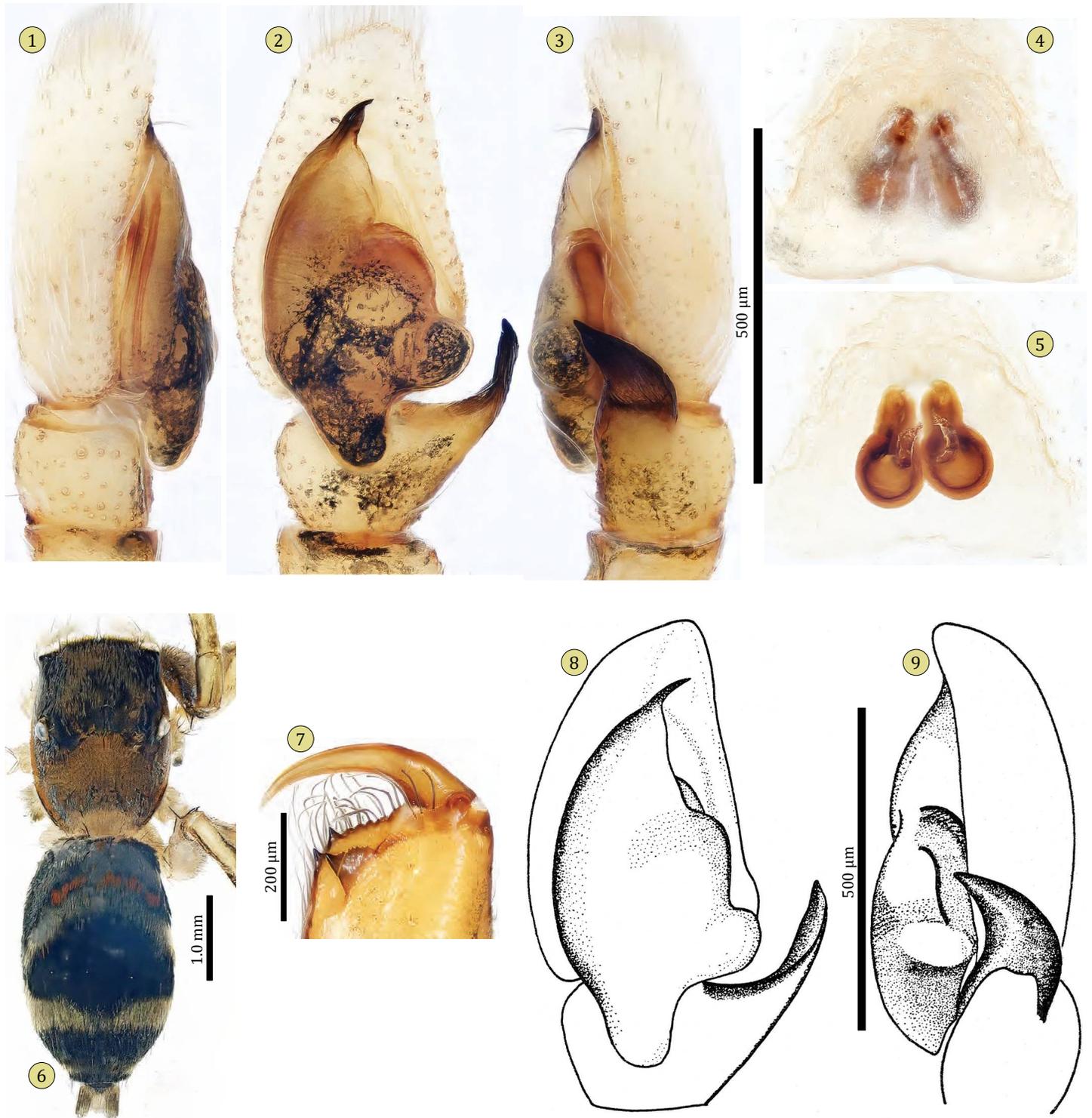
**Figure 28.** *Siler cupreus* from the Simon collection, drawn by Prószyński (1984). 1-2, Ventral and retrolateral views of the left ♂ pedipalp. 3, Cheliceral dentition. 4-5, Two ventral (external) views of the epigynum.

Simon's (1989) description of the female is presented here, with an English translation.

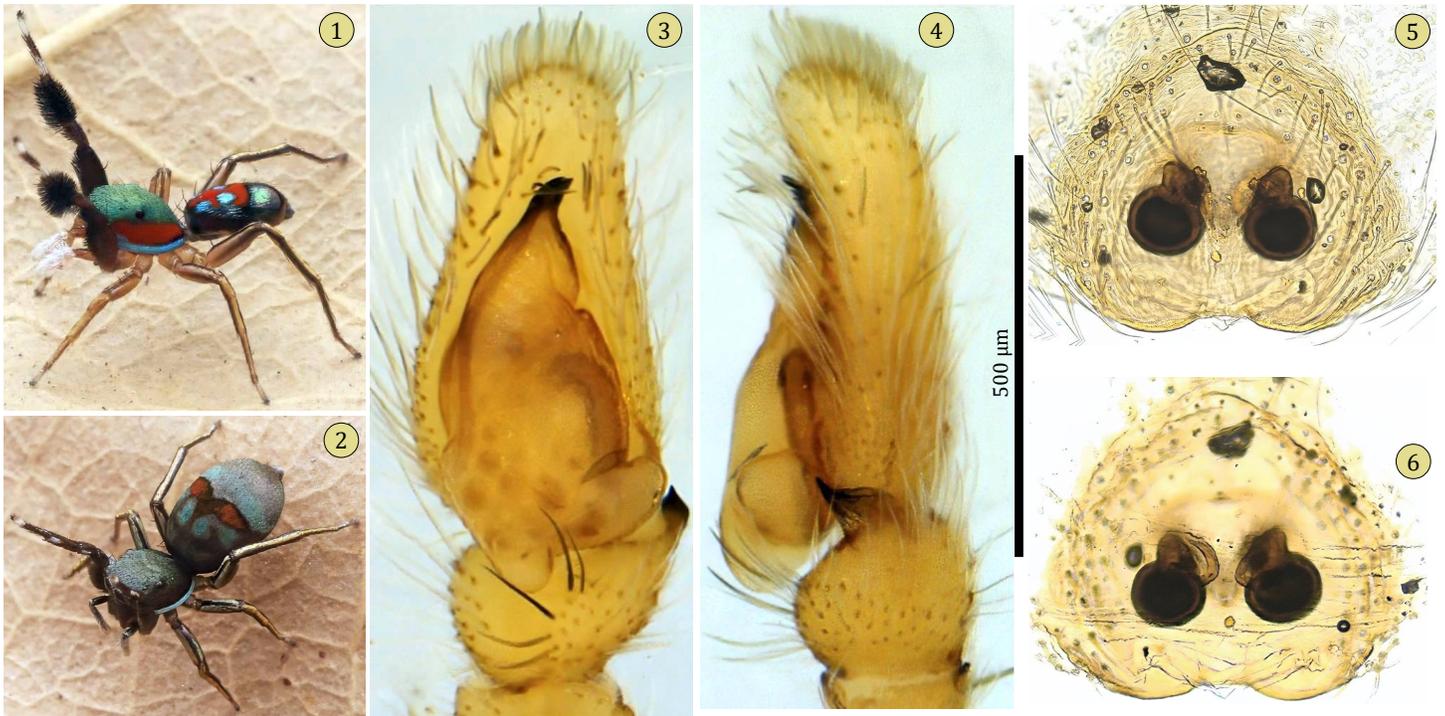
(Simon 1889, p.250:)

3. *SILER CUPREUS*, sp. nov., ♀. — Long. 4 mill. — Cephalothorax niger, parte thoracica paulo dilutiore, parte cephalica fulvo thoracica sordide albido simpliciter pubescentibus, linea marginali exili viridimetallica cinctus. Pili oculoruin supra flavo-aurantii, infra oculos albidi. Clypeus fere glaber. Abdomen late ovatum, nigrum, flavo-micanti squamulatum, macula media magna nigroaenea notatum?, subtus squamulis laete purpureo-micantibus obtectum. Sternum fuscum, albido parce pilosum. Pedes obscure olivacei, femoribus supra tibiis metatarsisque utrinque nigro-lineatis, femoribus, praesertim anticis, supra purpureo-squamulatis, tibiis metatarsisque lineis albo-pilosis ornatis, aculeis debilibus. Area vulvae nigra, semi-circulari, carina lala, antice valde attenuata, acuta et longe triquetra, longitudinaliter secta. — Yokohama.

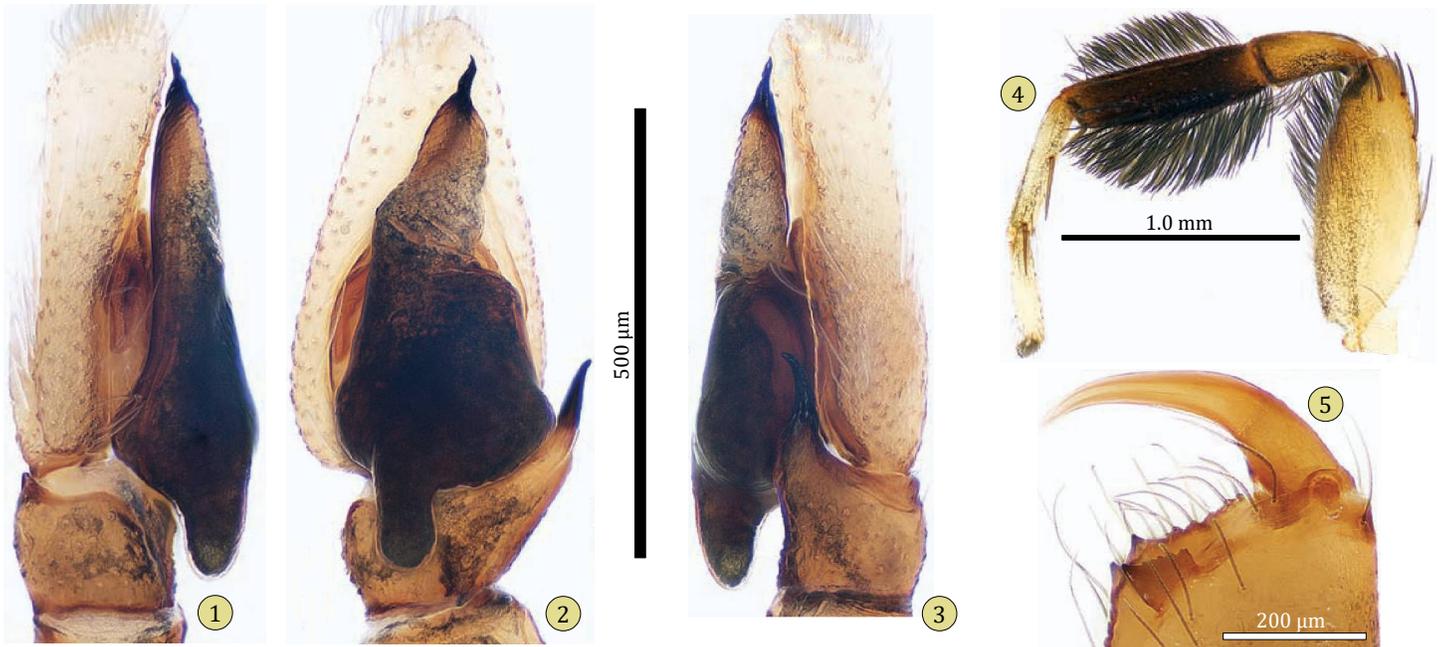
3. *Siler cupreus*, new species, ♀ — Length: 4 mm — Cephalothorax black, with the thoracic area somewhat lighter, the cephalic part tawny and the thoracic part dull whitish, both covered with fine hair, and bordered by a narrow greenish-metallic marginal line. The hairs above the eyes are yellow-orange, below the eyes whitish. The clypeus is almost glabrous. The abdomen is broadly oval, black, covered with yellow-shining scales, and marked with a large central black-bronze spot ?, [meaning of ? not certain] below, the abdomen is covered with brightly purple-shining scales. The sternum is dark brown, sparsely hairy with whitish hairs. The legs are dark olive, with the femora, tibiae, and metatarsi lined with black on both sides; the femora, especially the front legs, are covered above with purple scales. The tibiae and metatarsi are decorated with white-haired lines. Spines weak. The epigynum is black, semicircular, with a broad keel (raised ridge), sharply narrowing toward the front, pointed and distinctly three-sided, and longitudinally divided. — Collected in Yokohama.



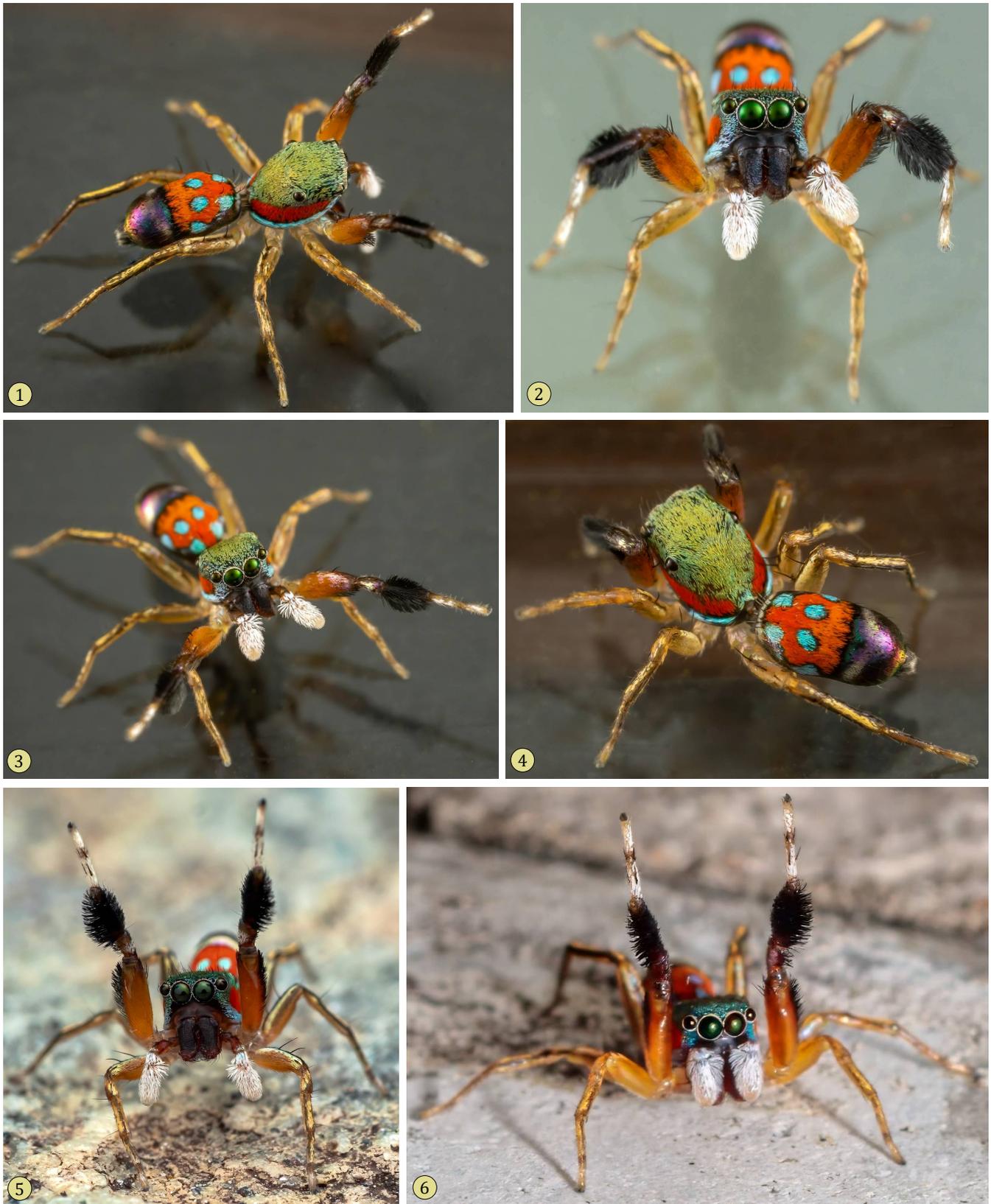
**Figure 29** *Siler hanoicus*. This species closely resembles *S. cupreus*, and may represent a junior synonym for that species. **1-3**, Prolateral, ventral, and retrolateral views of left ♂ pedipalp. **4-5**, Ventral (external) and dorsal (internal) views of epigynum. 1-5 are presented at the same scale. **6**, Dorsal view of ♀, with a color pattern like that of many of the ♀ *S. cupreus* shown in Figure 27. **7**, Cheliceral dentition. **8-9**, Earlier drawings the left pedipalp of the ♂ holotype by Prószyński (1984, 1985). Credit for images: 1-7 adapted from © Wang et al. 2024, CC BY 4.0; 8-9 adapted from Prószyński 1984.



**Figure 30.** *Siler niser* from Odisha, India. **1**, Adult ♂. **2**, Adult ♀. **3-4**, ♂, ventral (**3**) and retrolateral (**4**) views of left pedipalp of the ♂. **5-6**, Ventral (external, **5**) and dorsal (internal, **6**) views of cleared epigynum. Photo credits: 1-6, © Caleb et al. 2023, used and adapted under a CC BY 4.0 license.



**Figure 31.** ♂ holotype for *Siler zhangae*. **1-3**, lateral to retrolateral views of left pedipalp. **4**, Prolateral view of right leg. **5**, Anterior view of right chelicera. Photo credits: 1-5, © Wang & Li 2020, used and adapted under a CC BY 4.0 license



**Figure 32 (continued on next page).** ♂ *Siler semiglaucus*. There are several other *Siler* species that look much like *S. semiglaucus*, so identification here is tentative. **1-4**, Ratnapura, Sri Lanka (iNat. obs. 32762903, © Roman Prokhorov, CC BY-NC 4.0). **5**, Dharmasthala, Karnataka (iNat. obs. 58833589, © Manjunath Acharya, CC BY-NC 4.0). **6**, Prachin Buri, Thailand (iNat. obs. 170241573, © John Sim, CC BY-NC 4.0).



**Figure 32 (continued from previous page).** ♂ *Siler semiglaucus*. **7-8**, Prachin Buri, Thailand (iNat. obs. 170241573, © John Sim, CC BY-NC 4.0). **9**, Singapore (iNat. obs. 255580749, © Melvyn Yeo, CC BY-NC 4.0). **10**, Bohorok, Sumatra (iNat. obs. 265365298, © Bridgette Gower, CC BY-NC 4.0). **11-13**, Sungai Penuh, Jambi, Sumatra (iNat. obs. 70450758, © Luke Mackin, CC BY-NC 4.0).



**Figure 33 (continued on next page).** ♀ *Siler semiglaucus*. As with the males, there are several other *Siler* species with females that look like these; except for 5-6 (see Figure 35) their identification is tentative. **1-3**, Columbo, Sri Lanka (iNat. obs. 185406094, © Roman Prokhorov, CC BY-NC 4.0). **4**, Guddekeri, Karnataka (iNat. obs. 110024049, © Girish Gowda, CC BY-NC 4.0). **5-6**, Feeding on ant larvae, Ernakulam, Kerala (iNat. obs. 48544027, © sunnyjosef, CC BY 4.0). **7**, Tinsukia, Assam (iNat. obs. 150405559, © Hardeep Gazdar, CC BY-NC 4.0).



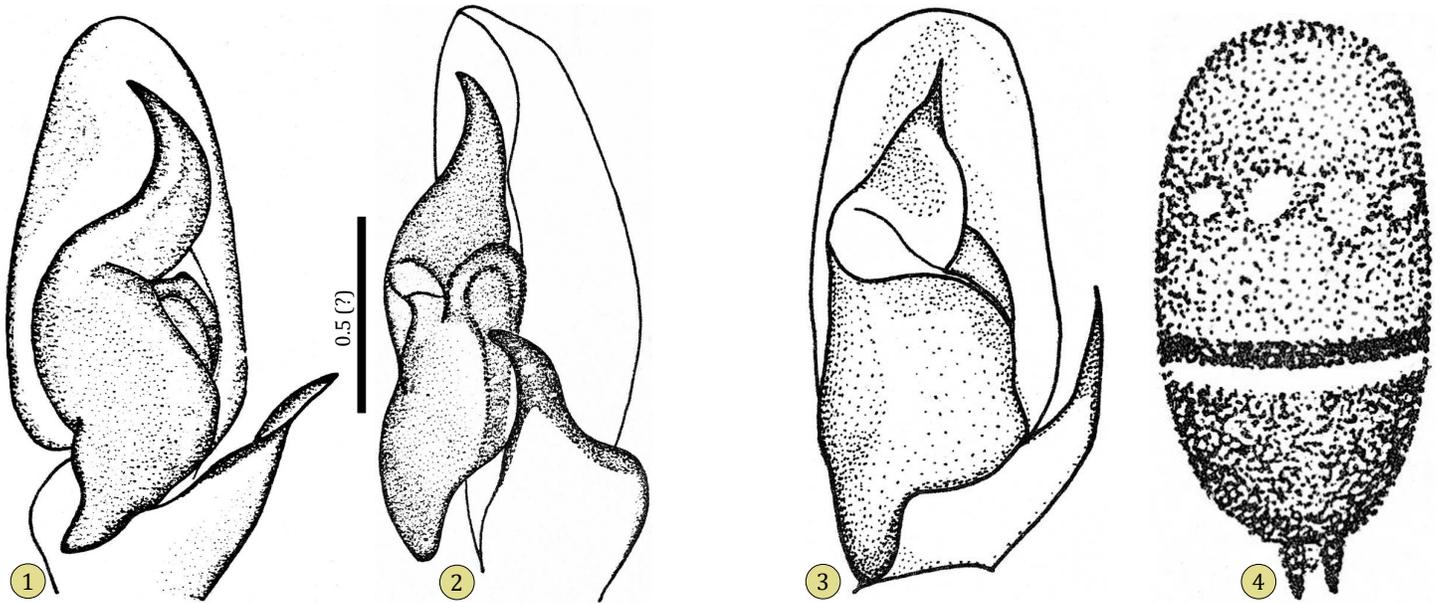
**Figure 33 (continued from previous page, continued on next page).** ♀ *Siler semiglaucus*. **8**, Feeding on ant, Tinsukia, Assam (iNat. obs. 150405559, © Hardeep Gazdar, CC BY-NC 4.0). **9**, Samut Sakhon, Thailand (iNat. obs. 127176124, © Walk A Long, CC BY-NC 4.0). **10-12**, Tha Bo, Nong Khai, Thailand (iNat. obs. 132783984, © paioj1970, CC BY-NC 4.0). **13-14**, Bentong, Pahang, Malaysia (iNat. obs. 162724265, © Nadja Baumgartner, CC BY-NC 4.0).



**Figure 33 (continued from previous page, continued on next page).** ♀ *Siler semiglaucus*. **15-16**, Bentong, Pahang, Malaysia (iNat. obs. 162724265, © Nadja Baumgartner, CC BY-NC 4.0). **17-18**, Feeding on ant, Pulai, Johor, Malaysia (iNat. obs. 239909183, © Melvyn Yeo, CC BY-NC 4.0). **19**, Singapore (iNat. obs. 244876096, © Melvyn Yeo, CC BY-NC 4.0). **20**, Jambi, Sumatra (iNat. obs. 102220887, © Luke Mackin, CC BY-NC 4.0).



**Figure 33 (continued from previous page).** ♀ *Siler semiglaucus*. **21-22**, Jambi, Sumatra (iNat. obs. 102220887, © Luke Mackin, CC BY-NC 4.0). **23-25**, Sungai Penuh, Sumatra (iNat. obs. 99959517, © Luke Mackin, CC BY-NC 4.0). **26-27**, Cijeruk, Bogor Regency, West Java (iNat. obs. 146954758, © Wildan R. Ardani, CC BY 4.0).

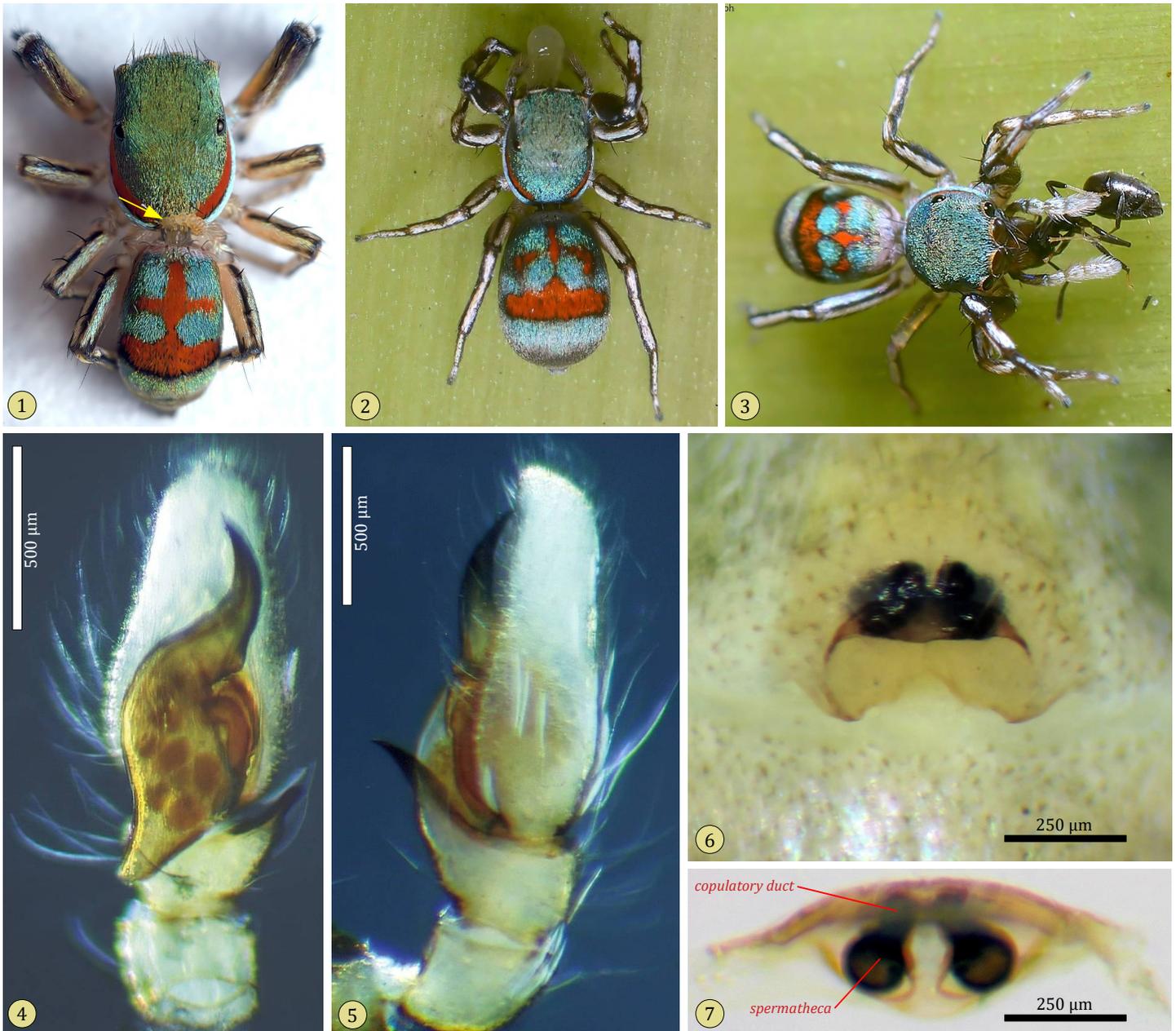


1-2 *Siler semiglaucus*/Sim./, comb. n. - "16262 Cyllobellus/ellus/ semiglaucus ES. Colombo. Kandy!" Coll. Simon, MNHN-Paris. Drawn by J. Prószyński, 1976.

3-4 *Siler semiglaucus*/Sim./ - different species - "Cyllobellus semiglaucus Sim. Sumatra: Fort de Kock. Jacobson". Mus. Wien. Drawn by J. Prószyński, 1980.



**Figure 34.** *Siler semiglaucus*. 1-2, Ventral and retrolateral view of left ♂ pedipalp, adapted from Prószyński (1984). 3-4, Ventral view of left pedipalp and dorsal opisthosoma of a second male labelled "semiglaucus," also adapted from Prószyński (1984), thought to represent a different species. 5-8, Photographs of a ♂ (SWK12-2227) from Gunung Mulu National Park in Sarawak. 9-11, Photographs of a ♀ (SWK12-3356) from Gunung Mulu National Park in Sarawak. 5-6, Ventral and ventrolateral views of the left pedipalp of the male. 9, Ventral (external) view of dissected epigynum. The posterior rim and dark spermathecae are visible. Not visible in this preparation, the copulatory ducts are very short. Photo credits: 5-11: © W. Maddison, used and modified under a CC BY 3.0 license (Maddison 2015).



**Figure 35.** *Siler semiglaucus* from Chilavannur, Cochin, Kerala, adapted from © Kulkarni & Joseph 2015 (CC BY 4.0). **1**, ♂ specimen. Note the remains of a mantispid larva wrapped around the pedicel (arrow). **2**, ♀ feeding on what appears to be a young ant larva. **3**, ♀ feeding on a captured ant (*Technimymex* sp.). **4-5**, Ventral and dorsolateral views of a mirror image of the right ♂ pedipalp. **6**, Ventral (exterior) view of the epigynum. **7**, Dorsal (interior) view of the extracted and cleared epigynum. Note the short copulatory ducts, characteristic of *Siler*. Photo credits: 1-3, © Sunny Joseph; 4-7, © Siddharth Kulkarni.

As demonstrated by Figures 34-35, we now have reliable records for *Siler semiglaucus* from Sri Lanka, Kerala, and Sarawak, confirming the wide distribution of this species in South and Southeast Asia. Simon did not identify the specific locality (either Sri Lanka or Luzon) of the male that he described, but we can associate his description of *Cylobelus (Siler) semiglaucus* with the male from Sri Lanka later drawn by Prószyński (Figures 34.1-34.2). Here I provide an English translation of Simon's description of this species for reference. Also see Hill (2009) for a translation of Simon's (1901c) description, including his depiction of the bottle brush on tibia I of the male.

(Simon 1901a, p. 151:)

[*Cyllobelus*] **C. semiglaucus** sp. nov. ♂. Long. 3,5-4 mill. Cephalothorax niger, postice leviter rufescenti-tinctus, supra crebre luteo-viridi pubescens, utrinque vitta latissima postice ampliata laete-rubro-coccineo-pilosa lineaque marginali exili viridi-nitida ornatus. Pili oculorum albidi. Clypeus angustus glaber. Abdomen oblongum, antice laete coccineum linea marginali arcuata maculisque maximis quatuor subrotundis pallide viridi-micantibus et tenuiter nigro-cinctis ornatum, postice nigrum et splendide viridi violaceoque squamulatum, subtus omnino micanti-squamulatum. Chelae fulvo-rufulae, valde coriaceae. Sternum fuscum albo-squamulatum. Pedes pallide lutei, parce albo-argenteo-squamulati, antichi reliquis multo robustiores, tibia nigricanti, femore subtus tibia et supra et subtus longissime nigro-fimbriatis. Pedes maxillares lutei, niveo-pilosi, parvi, apophysi tibiali tenui, acuta et divaricata. — Ins. Taprobane; ins. Luzonia (Philipp.).

[*Cyllobelus*] *C. semiglaucus* sp. nov. ♂. Length: 3.5–4 mm. Cephalothorax black, with a slightly reddish tinge toward the rear, densely covered above with yellowish-green pubescence. On each side, adorned with a very broad band, expanded posteriorly, of bright red-scarlet hairs, and a slender, shiny green marginal line. Hairs around the eyes whitish. Clypeus narrow, glabrous. Abdomen oblong; anteriorly bright scarlet, with an arched marginal line and four very large, somewhat rounded pale green-shining spots, each finely edged in black; posteriorly black and covered in brilliantly green and violet iridescent scales. Underside entirely covered with shiny scales. Chelicerae tawny reddish, strongly leathery. Sternum dark, with white scales. Legs pale yellow, sparsely covered with silvery-white scales. The front legs are much more robust than the others. The tibia is blackish; the femur is fringed below, and the tibia [tibia I, as shown in Simon's 1901c figure] both above and below, with long black hairs. Pedipalps yellow, snowy-haired, small, with a slender, sharp, and divergent tibial apophysis. Localities: Island of Taprobane (Sri Lanka); island of Luzon (Philippines).

### Acknowledgements

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