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Revision of the genus *Draconarius* Ovtchinnikov 1999 (Agelenidae: Coelotinae) in Yunnan, China, with an analysis of the Coelotinae diversity in the Gaoligongshan Mountains

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Table of contents

Abstract	4
Introduction	5
Material and methods	7
Coelotinae diversity and geography in Gaoligongshan	10
Relationships of Gaoligongshan coelotines with those from other areas	12
Taxonomy	14
Agelenidae C.L.Koch 1837	14
Coelotinae F.O. Pickard-Cambridge 1893	14
<i>Draconarius</i> Ovtchinnikov 1999	14
Key to Yunnan <i>Draconarius</i> species	14
<i>Draconarius absentis</i> Wang 2003	17
<i>Draconarius adnatus</i> sp. nov.	19
<i>Draconarius agrestis</i> Wang, 2003	21
<i>Draconarius anceps</i> sp. nov.	23
<i>Draconarius argenteus</i> (Wang, Yin, Peng & Xie 1990)	24
<i>Draconarius capitulatus</i> Wang 2003	24
<i>Draconarius catillus</i> sp. nov.	28
<i>Draconarius curiosus</i> Wang 2003	30
<i>Draconarius curvus</i> sp. nov.	31
<i>Draconarius degeneratus</i> (Liu & Li 2009) comb. nov.	33
<i>Draconarius denisi</i> Schenkel 1963	34
<i>Draconarius disgregus</i> Wang 2003.....	34
<i>Draconarius dubius</i> Wang 2003	35
<i>Draconarius duplus</i> sp. nov.	39
<i>Draconarius episomos</i> Wang 2003	40
<i>Draconarius euryembolus</i> sp. nov.	42
<i>Draconarius exilis</i> Zhang, Zhu & Wang 2005	45
<i>Draconarius flos</i> Wang & Jäger 2007	47
<i>Draconarius gigas</i> sp. nov.	49
<i>Draconarius griswoldi</i> Wang 2003	50
<i>Draconarius guoi</i> sp. nov.	53
<i>Draconarius immensus</i> Xu & Li 2006	54
<i>Draconarius improprius</i> sp. nov.	55
<i>Draconarius incertus</i> Wang 2003	56
<i>Draconarius introhamatus</i> (Xu & Li 2006) comb. nov.	58
<i>Draconarius kavanaughi</i> sp. nov.	58
<i>Draconarius laohuanglongensis</i> (Liu & Li 2009) comb. nov.	61
<i>Draconarius laticavus</i> sp. nov.	61
<i>Draconarius latusincertus</i> sp. nov.	63
<i>Draconarius levyi</i> sp. nov.	68
<i>Draconarius lini</i> Liu & Li 2009.....	70
<i>Draconarius longlingensis</i> sp. nov.	73
<i>Draconarius mikrommatos</i> sp. nov.	73
<i>Draconarius mupingensis</i> Xu & Li 2006	74
<i>Draconarius noctulus</i> (Wang, Yin, Peng & Xie 1990) comb. nov.	75
<i>Draconarius nudulus</i> Wang 2003	75
<i>Draconarius olorinus</i> sp. nov.	76
<i>Draconarius ornatus</i> (Wang, Yin, Peng & Xie 1990)	77
<i>Draconarius papillatus</i> Xu & Li 2006	79
<i>Draconarius paraspiralis</i> sp. nov.	79
<i>Draconarius paraterebratus</i> Wang 2003	80
<i>Draconarius patellabifidus</i> Wang 2003	81

<i>Draconarius penicillatus</i> (Wang, Yin, Peng & Xie 1990)	84
<i>Draconarius pseudoagrestis</i> sp. nov.	84
<i>Draconarius pseudobrunneus</i> Wang 2003	85
<i>Draconarius pseudocapitulatus</i> Wang 2003	89
<i>Draconarius pseudospiralis</i> sp. nov.	94
<i>Draconarius pseudowuermlii</i> Wang 2003	100
<i>Draconarius quattour</i> sp. nov.	101
<i>Draconarius renalis</i> sp. nov.	102
<i>Draconarius rotundus</i> Wang 2003	104
<i>Draconarius simplicidens</i> Wang 2003	105
<i>Draconarius spiralis</i> sp. nov.	106
<i>Draconarius tangi</i> sp. nov.	108
<i>Draconarius tridens</i> sp. nov.	108
<i>Draconarius trinus</i> Wang & Jäger 2007	112
<i>Draconarius uncatus</i> (Liu & Li 2009) comb. nov.	112
<i>Draconarius wrasei</i> Wang & Jäger 2010	113
<i>Draconarius xuae</i> sp. nov.	114
<i>Draconarius yani</i> sp. nov.	114
Acknowledgements	118
References	126

Abstract

A total of 71 species of the spider subfamily Coelotinae are recorded from Yunnan, China. The seven species that belong to the *Coelotes pseudoterrestris* species group were revised by Wang *et al.* (2009). Three species of the genus *Pireneit-ega*, one species of the genus *Platocoelotes* will be studied in a future revision of the genera. The rest of the 60 *Draconarius* species are described in this study, including 26 new species. All the new species were collected during a 10 year inventory of the Gaoligongshan Mountains in western Yunnan by the California Academy of Sciences and the Hunan Normal University: *Draconarius adnatus* **sp. nov.** (♂♀), *D. anceps* **sp. nov.** (♀), *D. catillus* **sp. nov.** (♂), *D. curvus* **sp. nov.** (♀), *D. duplus* **sp. nov.** (♀), *D. euryembolus* **sp. nov.** (♂), *D. gigas* **sp. nov.** (♂), *D. guoi* **sp. nov.** (♀), *D. improprius* **sp. nov.** (♀), *D. kavanaughi* **sp. nov.** (♂), *D. laticavus* **sp. nov.** (♀), *D. latusincertus* **sp. nov.** (♂♀), *D. levyi* **sp. nov.** (♀♂), *D. longlingensis* **sp. nov.** (♂), *D. mikrommatos* **sp. nov.** (♀), *D. olorinus* **sp. nov.** (♀), *D. paraspiralis* **sp. nov.** (♂♀), *D. pseudoagrestis* **sp. nov.** (♂), *D. pseudospiralis* **sp. nov.** (♂♀), *D. quattour* **sp. nov.** (♀), *D. renalis* **sp. nov.** (♀), *D. spiralis* **sp. nov.** (♂♀), *D. tangi* **sp. nov.** (♂), *D. tridens* **sp. nov.** (♂), *D. xuae* **sp. nov.** (♀), and *D. yani* **sp. nov.** (♀). Five species are transferred from *Coelotes* to *Draconarius*: *Draconarius degeneratus* (Liu & Li 2009) **comb. nov.**, *D. introhamatus* (Xu & Li 2006) **comb. nov.**, *D. laohuanglongensis* (Liu & Li 2009) **comb. nov.**, *D. noctulus* (Wang, Yin, Peng & Xie 1990) **comb. nov.** and *D. uncatus* (Liu & Li 2009) **comb. nov.** The males are described for the first time for *D. capitulatus* Wang 2003, *D. pseudobrunneus* Wang 2003 and *D. pseudocapitulatus* Wang 2003. Significant morphological variation in the epigynum and vulva was found in some relatively widespread species, particularly the *D. incertus* species group, although the males show relatively consistent palpal morphology. Some *Draconarius* species placement remains uncertain, we prefer to leave them in this genus for now. Gaoligongshan Coelotinae is found to have high levels of species diversity and endemism, and is similar to the species from central and southern China, Himalayas and Thailand. In addition to many species with their own unique characteristics, members belonging to seven species groups are recognized from Gaoligongshan, including *Coelotes pseudoterrestris* group species from Yunnan and Thailand; *Draconarius spiralis* group species endemic to Gaoligongshan; *Draconarius incertus* group species from southwestern China; *Draconarius lutulentus* group species from the Himalayas to central and southern China; *Draconarius laticavus* group species from Himalayas and Yunnan; *Draconarius gurkha* group species from Himalayas and Yunnan; and *Draconarius terebratus* group species from Yunnan. But no *Draconarius venustus* group species, which are widespread in East Asia, has been collected from Gaoligongshan. A key to *Draconarius* from Yunnan is provided.

Key words: *Draconarius*, new species, Gaoligongshan Mountains, Biodiversity

Introduction

Coelotine spiders are common in North America west to the Rocky Mountains and north to southern Canada, in Europe north to southern Sweden and Finland, and in Asia north to southern far eastern Russia and south to Nepal, northern Vietnam and Laos, and central Thailand (Muma 1946, 1947; Wang 2002; Dankittipakul *et al.* 2005; Dankittipakul *et al.* 2006; Wang & Jäger 2007; Wang *et al.* 2008; Platnick 2010), with a high level of species diversity in East and Southeast Asia, which comprised 468 (83%) of all 562 coelotine species (Table 1). Possible, cribellate coelotines may occur in western North America (Ubick 2005), that is, *Zanomys* and its relatives, but a recent phylogenetic study using molecular data suggested that these cribellate spiders are not coelotines (Miller *et al.* 2010). The recorded southmost coelotine is *Draconarius australis* Dankittipakul, Sonthichai & Wang 2006 collected from the Nam Tok Huay Yang National Park, Prachuap Khiri Kham of central Thailand.

In this paper we focus on Yunnan, the southwesternmost province of China, and probably the richest in biodiversity in that country. Yunnan is located in the Indo-Burman biodiversity “hotspot” (Myers 1988, 1990, Mittermeier *et al.* 1998, Myers *et al.* 2000). The species richness of Yunnan is legendary: for vertebrates, 54% of China’s fresh water fish species, 45% of its reptiles, 50% of its mammals and 65% of China’s bird species occur in Yunnan; for flowering plants, 50% occur in Yunnan (Ji *et al.* 1999; Yang *et al.* 2004). The invertebrate fauna, while less known, is comparatively diverse. Most of the Coelotinae specimens used in this study were collected from the Gaoligongshan Mountains, which are a mountainous area at the southern end of the Hengduan Mountain Range on the Yunnan/Myanmar border. The coelotine fauna of the Gaoligongshan has been partially surveyed (Wang 2003), based on material (323 specimens) collected on the 1998 and 2000 Sino-American Gaoligongshan expeditions. Since 2000, the survey continued with 10 additional expeditions, yielding another 695 coelotine specimens (Tables 2–4). This paper allows us to describe this large, new collection, associate previously unknown males and females of several species, and the broader focus on Yunnan allows us to put the extraordinary species richness and endemism of the Gaoligongshan into perspective.

A total of 71 coelotine species are recognized from Yunnan and 53 of them were collected during a 10 year inventory of the Gaoligongshan in western Yunnan by the California Academy of Sciences and the Hunan Normal University (Figs 1, 2). Schenkel (1963) is the first who described three coelotines from Yunnan, followed by Wang *et al.* (1990), Zhu & Wang (1991, 1994), Wang (2003), Zhang *et al.* (2003), Zhang *et al.* (2005), Xu & Li (2006a, b), Wang & Jäger (2007, 2010), Liu & Li (2009), and Wang *et al.* (2009). Among them, *Draconarius parabruneus* Wang 2003 has proven to be a junior synonym of *D. incertus* Wang 2003 and *Coelotes amygdaliformis* Zhu & Wang 1991 a junior synonym of *Tegenaria domestica* (Clerck 1757) (Zhang *et al.* 2005; Wang & Jäger 2007). Wang *et al.* (2009) revised the *Coelotes pseudoterrestris* species group and recognized nine species, seven from Yunnan and two from Thailand. The genus *Pireneitega*, with two described and one undescribed species from Yunnan, and the genus *Platocoelotes*, with one undescribed species from Yunnan, will be studied in a subsequent paper.

In this study, we are focusing on the remaining 60 coelotine species from Yunnan. Five of them were newly transferred from *Coelotes* Blackwall 1841 to *Draconarius* Ovtchinnikov 1999: *Draconarius degeneratus* (Liu & Li 2009) **comb. nov.**, *D. introhamatus* (Xu & Li 2006) **comb. nov.**, *D. laohuanglongensis* (Liu & Li 2009) **comb. nov.**, *Draconarius noctulus* (Wang, Yin, Peng & Xie 1990) **comb. nov.** and *D. uncatius* (Liu & Li 2009) **comb. nov.** They are not apparently congeneric with either *Coelotes* or *Draconarius*. Until their placement is conclusively determined, we tentatively treat them as *Draconarius* for now judged by the absence of epigynal teeth or the presence of two teeth on cheliceral retromargin, which is similar to some current *Draconarius* species. Another 55 species are either previously or newly described as *Draconarius*, and many of these are only temporarily listed as *Draconarius* because they are not congeneric to any of the existing genera, as indicated by Wang & Jäger (2007, 2008, 2010) and Wang & Martens (2009). A phylogenetic analysis to include all coelotine species, which is an ongoing study, should be able to reveal the relationships and to place these “*Draconarius*” in their appropriate genera.

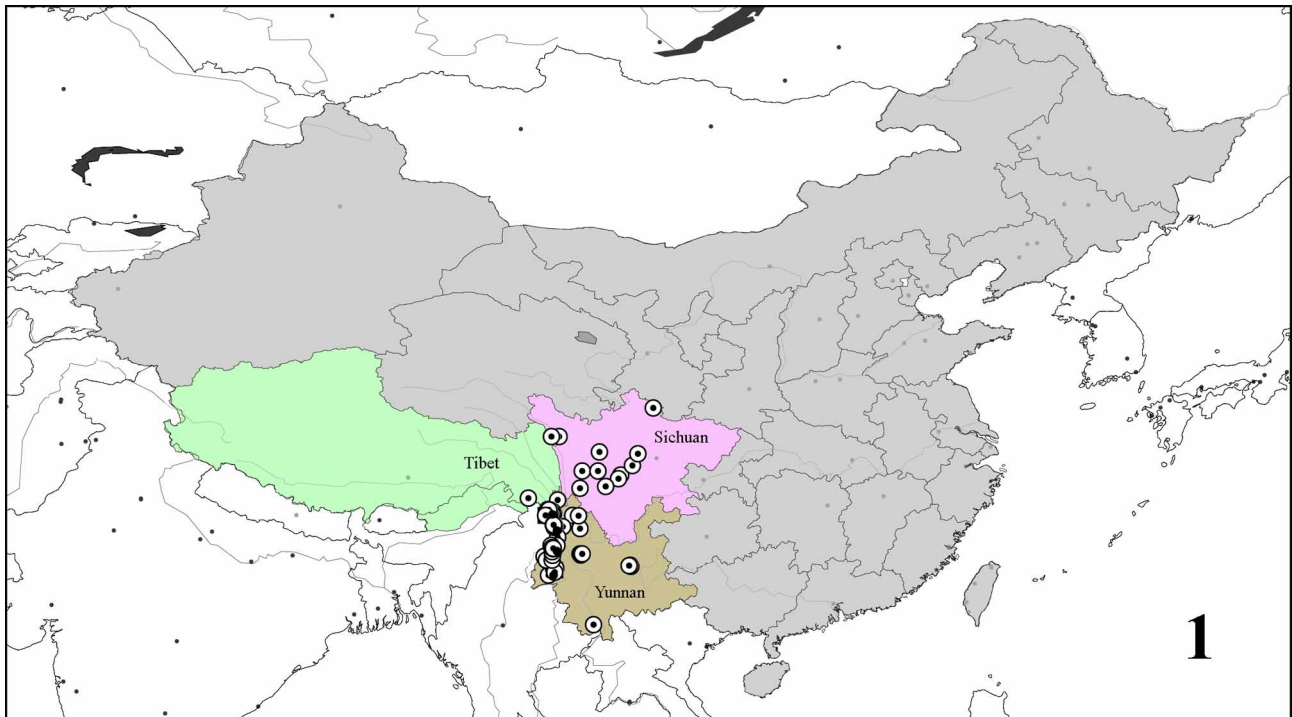


FIGURE 1. Map of China, showing the distribution records of Yunnan Coelotinae. All species are recorded from Yunnan only, except the three species, which are recorded from Sichuan and Yunnan (*Draconarius exilis* Zhang, Zhu & Wang 2005; *D. immensus* Xu & Li 2006; *Draconarius mupingensis* Xu & Li 2006) and another species from Tibet, Sichuan and Yunnan (*Draconarius papillatus* Xu & Li 2006).

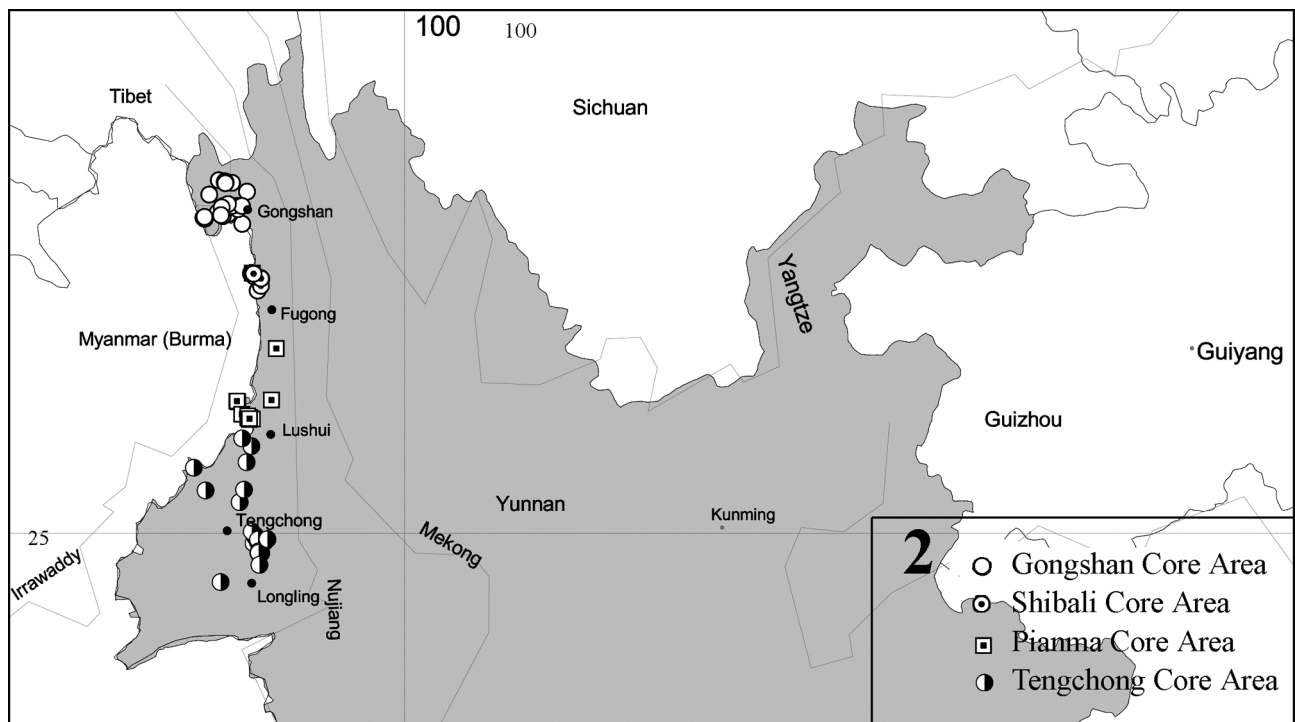


FIGURE 2. Map of northwestern Yunnan, China, showing the four core collection areas in Gaoligongshan of western Yunnan, where Coelotinae were collected from 1998 to 2006.

TABLE 1. Number of Coelotinae species by regions.

Region	Number of Species	
Europe	38	7%
Central Asia	31	6%
Himalayas	67	12%
Southeast Asia	35	6%
East Asia	365	65%
North America	26	5%
Total	562	100%

* As of 01/01/2010. Data from Platnick (2010) and Wang (2010), which did not include the new species described in this study)

Material and methods

All measurements are in millimeters. Scale lines in habitus photos represent a ruler divided into 1 mm increments; scale bars on all other illustrations represent 0.2 mm length. The terminology used in the text and figures follows Wang (2002). In species descriptions, all the genitalic characters are described regardless of whether they are universal in the genus *Draconarius*. Coelotinae genitalia are complex and present numerous diagnostic characters. Informative variation in the male genitalia occurs in the form of the patellar apophysis, retolateral tibial apophysis (RTA), lateral tibial apophysis, cymbial furrow, conductor, conductor dorsal edge, conductor basal lamella, conductor dorsal apophysis, median apophysis, embolus, and in the embolus thread, or filiform part of the embolus (Figs 9–11, 18–19, 31–33). Informative variation in the female genitalia occurs in the presence or absence of epigynal teeth, position of epigynal hoods, in the shape of the epigynal atrium and atrial ridges (Figs 37, 180), and in the shape of the copulatory ducts, spermathecae, spermathecal stalks, and spermathecal heads (Figs 12–13, 16–17, 132–135). We include both drawings and photographs: each provides unique diagnostic information. Photographs are also provided to document intraspecific variation. Male palps depicted are the left unless stated otherwise. More type specimen photos of the species included in this paper can be viewed in Li & Wang (2010). Distribution maps were generated using ArcView GIS (ESRI) software and the specimen files of the studied species are downloadable from Wang (2010). All holotype specimens are deposited at Hunan Normal University (HNU); the remaining specimens are split between the California Academy of Sciences (CAS) and HNU. This is in accordance with conditions agreed to at the beginning of the study and stipulated in our collecting permits. Each Gaoligongshan specimen was assigned an ID that begins with CASENT, regardless of their depository destinations (HNU or CAS). Specimens examined in previous studies are not listed in this study. Specimens newly examined by others are also listed, particularly those deposited at the Institute of Zoology, Chinese Academy of Sciences, Beijing (IZCAS, Shu-Qiang Li), Museum of Hebei University, Baoding (MHBU, Ming-Sheng Zhu), and Senckenberg Museum, Frankfurt am Main (SMF, P. Jäger).

The data listed in the Material Examined sections represents quotes of the label data, particularly the latitudinal and longitudinal coordinators.

To avoid describing the same species twice, the new species described from males only were compared to each species known from females only and described from the same collection area. By focusing on the eyes (size and arrangement), legs (covered with or without black rings), labium shape (length and width ratio), opisthosoma coloration (with or without a color pattern) and body size (medium sized around 5 mm in length or large sized with a length of around 10 mm), we can distinguish or associate the sexes of each species. Photographs of dorsal view of habitus, the eyes and labium are provided, and the length and width ratio of labium (L/W) was measured.

TABLE 2. Gaoiligongshan Coelotinae species list, with number of specimens collected from four core collection areas. Species are listed by their distribution range, from top to the bottom: distributed in all four core areas (four species, highlighted in yellow); in three core areas from Pianma to Gongshan (five species, in green); in two core areas (six species, in grey); and in only one core area (38 species, in purple).

Species (No=53)	Tengchong		Pianma		Shibali		Gongshan		Number of Specimens		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
<i>Draconarius capitulatus</i>		2	15	20	3	7		2	18	31	49
<i>Draconarius incertus</i>	1	3	6	5		5	3	12	10	25	35
<i>Coelotes pseudoyunnanensis</i>	1	6	3	8		8	5	13	9	27	36
<i>Pireneitega luniformis</i>	1	5	9	8		8	1	4	11	17	28
<i>Draconarius dubius</i>			10	13	1	35		6	11	54	65
<i>Draconarius patellabifidus</i>			22	20		13	44	143	66	176	242
<i>Draconarius pseudobrunneus</i>				5	36	9		12	36	26	62
<i>Draconarius pseudocapitulatus</i>				1	9	30		8	9	39	48
<i>Draconarius adnatus</i> sp. nov.				3			1	4	1	7	8
<i>Coelotes acicularis</i>	59	65	3	6					62	71	133
<i>Draconarius pseudoagrestis</i> sp. nov.	2		1						3	0	3
<i>Draconarius catillus</i> sp. nov.			1		1				2	0	2
<i>Draconarius episomos</i>				3		2			0	5	5
<i>Draconarius yani</i> sp. nov.						8		2	0	10	10
<i>Draconarius levyi</i> sp. nov.						3	1	2	1	5	6
<i>Coelotes pseudoterrestris</i>	36	38							36	38	74
<i>Draconarius absentis</i>	11	23							11	23	34
<i>Draconarius agrestis</i>	4								4	0	4
<i>Draconarius anceps</i> sp. nov.		1							0	1	1
<i>Draconarius curiosus</i>	3	18							3	18	21
<i>Draconarius curvius</i> sp. nov.		1							0	1	1
<i>Draconarius duplus</i> sp. nov.		1							0	1	1
<i>Draconarius euryembolus</i> sp. nov.	2								2	0	2
<i>Draconarius gigas</i> sp. nov.	1								1	0	1
<i>Draconarius improprius</i> sp. nov.		3							0	3	3
<i>Draconarius kavanaughii</i> sp. nov.	1								1	0	1

Continued next page

TABLE 2. (continued)

Species (No=53)	Tengchong		Pianma		Shibali		Gongshan		Number of Specimens		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
<i>Draconarius longlinensis</i> sp. nov.	3								3	0	3
<i>Draconarius nudulus</i>	1								1	0	1
<i>Draconarius olorinus</i> sp. nov.		1							0	1	1
<i>Draconarius paraterabratus</i>		1							0	1	1
<i>Draconarius pseudospiralis</i> sp. nov.	33	36							33	36	69
<i>Draconarius pseudowuermlii</i>		1							0	1	1
<i>Draconarius renalis</i> sp. nov.		1							0	1	1
<i>Draconarius rotundus</i>		1							0	1	1
<i>Draconarius simplicidens</i>		3							0	3	3
<i>Draconarius tangi</i> sp. nov.	1								1	0	1
<i>Pireneitega</i> sp.	1								1	0	1
<i>Platocoelotes</i> sp.		2							0	2	2
<i>Draconarius disgregus</i>			3		8				3	8	11
<i>Draconarius exilis</i>			3		3				3	0	3
<i>Draconarius griswoldi</i>			2		3				2	3	5
<i>Draconarius guoi</i> sp. nov.					6				0	6	6
<i>Draconarius paraspiralis</i> sp. nov.			1		1				1	1	2
<i>Draconarius spiralis</i> sp. nov.			1		9				1	9	10
<i>Draconarius tridens</i> sp. nov.			1						1	0	1
<i>Draconarius quattour</i> sp. nov.						1			0	1	1
<i>Draconarius laticavus</i> sp. nov.						3			0	3	3
<i>Draconarius latusincertus</i> sp. nov.						5			3	5	8
<i>Draconarius simplicidens</i>						3			0	3	3
<i>Coelotes pseudoguangxian</i>							1		0	1	1
<i>Coelotes yanhengmei</i>							2		0	2	2
<i>Draconarius mikrommatos</i> sp. nov.							1		0	1	1
<i>Draconarius xuuae</i> sp. nov.							1		0	1	1
Number of Specimens	161	212	81	119	53	124	55	213	350	668	1018

Draconarius from Yunnan that were well described and illustrated in recent publications are not re-described and reillustrated in this paper, but photos of their genitalia, habitus, eyes and labium are provided, if available.

Coelotinae diversity and geography in Gaoligongshan

A total of 53 coelotine species are found from Gaoligongshan (Table 2). A quantitative biodiversity analysis by Miller *et al.* (2009) suggests a high degree of endemism for symphytognathoids in the Gaoligongshan. Coelotines are also found to have high levels of species diversity and endemism (Wang 2003). In this study, we examined 1018 adult specimens (350 males and 668 females) of coelotine spiders from four core collection areas of Gaoligongshan that ranged from 830–4050 meters in elevation. Our core area assignment is similar to Miller *et al.* (2009), but included a larger region (Figs 2–3; Table 3). The northernmost core area (Gongshan core area) is located in Gongshan County, including the following collection localities: Nujiang State Nature Reserve, Danzhu He drainage, Dulong Valley Road, Cikai, Dabadi, Jimudeng, Dulongjiang and Bingzhongluo. South of the Gongshan core area is the Shibali core area, which is located at Fugong County and includes Shibali Forest Station, Maxidi, Shibali Yaping Yakou, Shibali Yaping Pass, Lumadeng, Pihe, Daxinde, and Lishadi. The Pianma core area is located farther south at Lushui County, with the specimens collected from Pianma, Pianma Yakou, Gangfang Sancha Lukou, Feng Xue Yakou, Chang Yan He, Xuatang, Ganfang, and Yaojiaping Forest Station. All the above three core areas are located along the Nujiang River system. The southernmost core area, the Tengchong core area, is widespread from Tengchong County, Longling County to southwest corner of Longyang County along the Longchuanjiang River system, which is on the west side and separated by a mountain range from the Nujiang River. The Tengchong core area includes the following collection sites: Nankang, Luoshuidong, Bawan, Dahaoping, Henghe, Yong-An Bridge, Xiaoheishan, Sancha He, Wuhe (Xiao Di Fang River), Xiao Hei Shan Nature Reserve, Bawan Forest Station, Jietou, Zizhi, Guyong Forestry Center and Zhaobitang Forest Park Station.

TABLE 3. Total number of Gaoligongshan Coelotinae species by core collection areas.

Collection Areas	Elevation	Number of Specimens			Number of Species		
		Male	Female	Total			
Tengchong	830–2890	161	212	373	37%	29	55%
Pianma	920–3200	81	121	202	20%	20	38%
Shibali	1520–3725	53	122	175	17%	14	26%
Gongshan	1527–4050	55	216	268	26%	17	32%
Total		350	668	1018		53	

Most species were collected from the two southernmost core areas and fewer from the two northernmost areas, i.e., 29 (55%) from the Tengchong area, 20 (38%) from the Pianma area, 14 (26%) from the Shibali area, and 17 (32%) from the Gongshan area (Table 3). Shibali area has the lowest number of specimens and species possibly because this area was visited only two times during the summer season (May and August), from which fewer adult coelotines exist compared to the fall season (October and November), particularly the males (Wang *et al.* 2001) (Table 4). An elevation of 2000–3000 m hosts most of the recorded species (82%) (Table 5). Four species are widespread from south to north (*Draconarius capitulatus* Wang 2003, *D. incertus* Wang 2003, *Coelotes pseudoyunnanensis* Wang, Griswold & Ubick 2009 and *Pireneitega luniformis* Zhu & Wang 1994), five species were recorded in central and north areas of Gaoligongshan from Pianma to Gongshan across three core areas (*Draconarius dubius* Wang 2003, *D. patellabifidus* Wang 2003, *D. pseudobrunneus* Wang 2003, *D. pseudocapitulatus* Wang 2003, and *D. adnatus* **sp. nov.**), six species spread across two

core areas (*Coelotes acicularis* Wang, Griswold & Ubick 2009 and *Draconarius pseudoagrestis* **sp. nov.** from Tengchong to Pianma, *D. catillus* **sp. nov.** and *D. episomos* Wang 2003 from Pianma to Shibali, *D. yani* **sp. nov.** and *D. levyi* **sp. nov.** from Shibali to Gongshan), and the rest of the species are limited to only one core collection area, with 23 species from the Tengchong area, seven species from the Pianma area, four species from the Shibali area, and four species from the Gongshan area (Table 2).

TABLE 4. Gaoligongshan Coelotinae species by years and core collection areas.

Collecting Year	Core Area	Collecting Month	Number of Specimens		Number of Species	
			Male	Female	Year & Core Area	Year
1998	Pianma	October	33	55	12	23
1998	Tengchong	October/November	111	108	12	
2000	Gongshan	June/July	3	13	4	4
2002	Pianma	October	13	19	2	12
2002	Gongshan	September/October	24	59	12	
2003	Tengchong	October	46	69	12	12
2004	Gongshan	October/November	3	6	4	14
2004	Shibali	May	50	57	12	
2005	Tengchong	May/June	1	16	9	29
2005	Shibali	May/August	3	66	10	
2005	Pianma	May	35	46	16	
2006	Gongshan	August/September	25	138	6	16
2006	Tengchong	May	3	19	10	
			350	668	53	

TABLE 5. Total number of Gaoligongshan Coelotinae species by elevation ranges.

Collection Site [m altitude]	Specimens		Species	
	Male	Female		
	5	23	3	5%
<1000	0	3	2	4%
1000–1999	23	32	12	22%
2000–2999	216	278	45	82%
3000–3999	100	306	18	33%
>=4000	6	26	2	4%
	350	668	53	

Beta Diversity Analysis. We assessed overlap in the coelotine community between core areas using a modified version of Sørensen's (1948) classic index of community similarity. Overlooked species can be a problem for beta diversity estimation. Genuinely shared species may be missed in samples from either site, or both. Chao *et al.* (2005) have proposed a correction to the Sørensen index. The Chao modification factors in an estimated number of unobserved species shared between two communities. As with other such estimators (Colwell & Coddington 1994), the correction is driven by rare species in one or both communities. Analysis was performed using EstimateS (Colwell 2006) with standard error calculated and multiplied by 1.96 to get the 95% confidence interval (Chao *et al.* 2006). The Coelotinae community in Gongshan, the northernmost core area, is indistinguishable from the two intermediate core areas of Shibali and Pianma. The two intermedi-

ate core areas are statistically distinguishable, but only marginally, indicating the coelotine communities in Shibali and Pianma are quite similar. The Coelotinae community in the southernmost core area of Tengchong is distinct from all three sites, especially the two northernmost sites (Fig. 3). This pattern suggests a latitudinal gradient, with a northern and southern faunal community; Pianma includes elements of both.

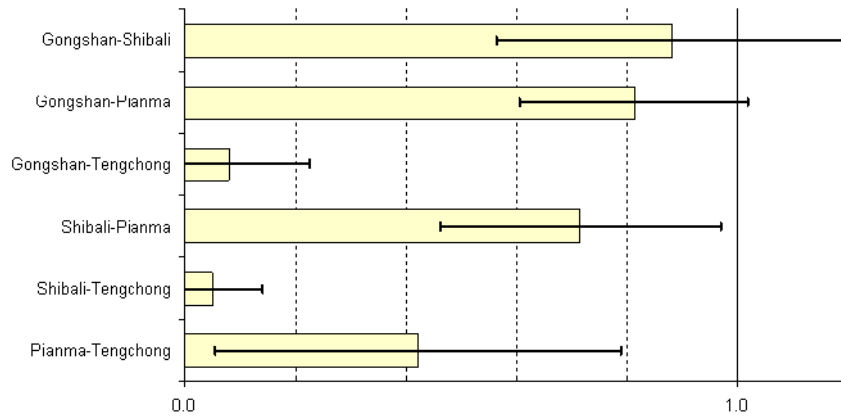


FIGURE 3. Chao-Sørensen estimated community similarity and 95% confidence intervals with each core area compared to the others. 0 on the x axis equals no overlap, one equals identical. A confidence interval crossing the 1.0 mark indicates communities are statistically indistinguishable. Gongshan is indistinguishable from Shibali and Pianma, but all other core area pairs are significantly different.



FIGURES 4–5. Coelotinae habitat, photos from the Guyong Forestry Center, Houqiao, Tengchong County. 4. View from the top of a mountain (the observation tower of Guyong Forestry Center), showing the debris with juvenile coelotine webs; 5. Close view of the coelotine webs in debris.

Relationships of Gaoligongshan coelotines with those from other areas

Seven distinct Coelotinae species groups, based on their genitalic morphology, are found from Yunnan collections. Judging from the species composition, many Gaoligongshan species are similar to the ones from central and southern China, Thailand, and the Himalayas (Nepal, Bhutan and Tibet).

1. *Coelotes pseudoterrestris* species group. Wang *et al.* (2009) revised this group of species, with seven species from Yunnan (five of them are recorded from Gaoligongshan) and two from Thailand. They are simi-

lar to the *exitialis* species group from Japan by having a large patellar apophysis, a short cymbial furrow, a round median apophysis and a short, prolaterally originated embolus in the male, and the short, anteriorly arising epigynal teeth, a slit-shaped atrium, and the elongated spermathecae in the female.

2. *Draconarius spiralis* species group. Three species (*Draconarius spiralis* **sp. nov.**, *D. paraspiralis* **sp. nov.**, and *D. pseudospiralis* **sp. nov.**) collected from the Gaoligongshan, which are recognized by the absence of epigynal teeth, a large atrium, a posteriorly protruding anterior atrial margin, the coiled spermathecae in the female, and a tiny patellar apophysis (absent in *D. paraspiralis* **sp. nov.**), a coiled distal part of conductor, and a simple median apophysis in the male (Figs 322–325, 428–431, 481–484), are endemic to the southern areas of Gaoligongshan (Pianma and Tengchong core areas). Among them, *D. spiralis* **sp. nov.** and *D. paraspiralis* **sp. nov.** have sympatric distribution at Pianma, Lushui County (Figs 544, 549) of the Pianma core area, but *D. pseudospiralis* **sp. nov.** was collected from Lushuidong, Dahaoping and Nankang of Tengchong County, Longjiang of Longling County, and Bawan of Longyang County (Fig. 548), which are located farther south at the Tengchong core area.

3. *Draconarius incertus* species group. Nine species have been described in this group by Zhang *et al.* (2005), Xu & Li (2006b), and Wang & Jäger (2010) from Gaoligongshan, Yunnan, as well as south part of Sichuan: *D. auriculatus* Xu & Li 2006 and *D. falcatus* Xu & Li 2006 from Sichuan; *D. incertus* Wang 2003, *D. pseudobrunneus* Wang 2003 and *D. latusincertus* **sp. nov.** from Yunnan; *D. immensus* Xu & Li 2006, *D. mupingensis* Xu & Li 2006, and *D. exilis* Zhang, Zhu & Wang 2005 from both Sichuan and Yunnan; and *D. papillatus* Xu & Li 2006 from Sichuan, Yunnan and Tibet. They all share the following characters: the male has a bifurcate conductor and a simple median apophysis, the female lacks epigynal teeth, has round or slightly elongate spermathecae, and distinct spermathecal heads, which arise from anterior or anterior part of spermathecae (Figs 146–147, 196–229, 249–266, 361–406).

4. *Draconarius lutulentus* species group. This group of species is found from the Himalayas to central and southern China, and only one species, *D. adnatus* **sp. nov.**, is recorded from Gaoligongshan in Yunnan. The female has short, medially situated, widely separated epigynal teeth, and posteriorly originated, anteriorly extending, coiling (around anterior part of spermathecae) copulatory ducts (Figs 16–17). The male has a patellar apophysis, a large cymbial furrow, a conductor dorsal apophysis, a spoon-shaped, elongated median apophysis, and a long, filiform, distally coiling embolus (Figs 18–19).

5. *Draconarius laticavus* species group. Four species from Nepal and Tibet (*D. contiguus* Wang & Martens 2009, *D. cylindratus* Wang & Martens 2009, *D. semicirculus* Wang & Martens 2009, and *D. tibetensis* Wang 2003) are similar to *D. laticavus* **sp. nov.** from Gaoligongshan in having short, widely separated epigynal teeth, a distinct, less sclerotized anterior atrial margin, long, broad, cylindrical spermathecae and spermathecal heads that arise from the anterior half of spermathecae (Figs 240–245).

6. *Draconarius gurkha* species group. Three Gaoligongshan species, *D. episomos* Wang 2003, *D. mikromatos* **sp. nov.** and *D. yani* **sp. nov.**, are similar to the *gurkha* group species from the Himalayas, and could be closely related to the species *D. subtitanus* (Hu 1992) from Tibet and *D. paraepisomos* Wang & Martens 2009 from Nepal. They share small, distinctly separated epigynal teeth, a small atrium and small copulatory ducts, round spermathecae, and spermathecal heads that arise from the inner sides of the spermathecae (Figs 132–135, 296–297, 512–513).

7. *Draconarius terebratus* species group. The species *D. ornatus* (Wang, Yin, Peng & Xie 1990) and *D. trinus* Wang & Jäger 2007 from Kunming, Yunnan, share the following characters with *D. terebratus* (Peng & Wang 1997) from Sangzhi, Hunan: a large atrium, posteriorly situated epigynal hoods, large, anteriorly extending copulatory ducts, and long, slender, anteriorly extending spermathecal heads (Figs 502–503). Although they are recorded from Kunming of Yunnan and the air distance to the Gaoligongshan is only 500–600 km, no similar species was collected from the Gaoligongshan Mountains.

The *Draconarius venustus* group species occurs from Tajikistan to the Himalayas and East Asia, but no similar species was found from the Gaoligongshan, or other parts of Yunnan.

Two female specimens collected from Longling County (Tengchong core collection area) are identified as a species of the genus *Platocoelotes*, which is widespread in the central part of China, particularly Hunan, Guizhou and Sichuan.

Three *Pireneitega* species are recorded from Yunnan, including two species from the Gaoligongshan collections. *Pireneitega* is recorded from Europe, Middle Asia, and East Asia.

Taxonomy

Agelenidae C.L.Koch 1837

Coelotinae F.O. Pickard-Cambridge 1893

Draconarius Ovtchinnikov 1999

Key to Yunnan *Draconarius* species

Males

- | | | |
|----|--|---------------------------------------|
| 1 | Conductor coiled distally | 2 |
| - | Conductor not coiled..... | 4 |
| 2 | Patellar apophysis present; embolus proximally originated (Figs 430–431)..... | <i>pseudospiralis</i> sp. nov. |
| - | Patellar apophysis absent; embolus prolateral or retrolateral in origin..... | 3 |
| 3 | Cymbial furrow as long as cymbium; embolus retrolateral in origin (Figs 483–484)..... | <i>spiralis</i> sp. nov. |
| - | Cymbial furrow less than half of cymbial length; embolus prolateral in origin (Figs 324–325) | <i>paraspiralis</i> sp. nov. |
| 4 | Patellar apophysis absent | 5 |
| - | Patellar apophysis present..... | 8 |
| 5 | Median apophysis absent; dorsal apophysis of conductor absent; conductor extending posteriorly to distal part of tibia (Figs 493–494)..... | <i>tridens</i> sp. nov. |
| - | Median apophysis present; dorsal apophysis of conductor present; conductor short..... | 6 |
| 6 | RTA half of tibial length; embolus prolateral in origin (Wang 2003: figs 12A–B)..... | <i>argenteus</i> |
| - | RTA more than half of tibial length; embolus proximal in origin | 7 |
| 7 | Cymbial furrow more than $\frac{2}{3}$ of cymbial length; embolus coiled distally (Figs 62–63)..... | <i>catillus</i> sp. nov. |
| - | Cymbial furrow less than half of cymbial length; embolus not coiled (Figs 303–305)..... | <i>nudulus</i> |
| 8 | Median apophysis absent | 9 |
| - | Median apophysis present..... | 13 |
| 9 | Conductor long, extending posteriorly to embolic base | 10 |
| - | Conductor short, not reaching embolic base..... | 11 |
| 10 | Tibial lateral apophysis present; conductor extending retrolaterad; embolus with smooth base (Figs 157–159) .. | <i>flos</i> |
| - | Tibial lateral apophysis absent; conductor extending prolaterad; embolus with base notched (Figs 166–167)..... | <i>gigas</i> sp. nov. |
| 11 | Embolus broad, enlarged distally (Figs 72–74) | <i>curiosus</i> |
| - | Embolus filiform, not enlarged distally | 12 |
| 12 | Conductor slender, slightly bifurcate (Figs 409–410)..... | <i>pseudocapitulatus</i> |
| - | Conductor broad, trifurcate (Figs 9–11)..... | <i>absentis</i> |
| 13 | Median apophysis spoon-shaped | 14 |
| - | Median apophysis simple..... | 26 |
| 14 | Patellar apophysis broad, as wide as long, slightly bifurcate; conductor broad, anteriorly extending (Figs 485–486) | <i>tangi</i> sp. nov. |
| - | Patellar apophysis slender, not bifurcate; conductor in normal size, not anteriorly extending..... | 15 |
| 15 | Embolus prolateral in origin | 16 |
| - | Embolus proximal or between prolateral and proximal in origin | 17 |

16. Embolus with base broad, as long as wide (Figs 275–276)	<i>levyi</i> sp. nov.
- Embolus with base long, twice as long as wide (Liu & Li 2009: fig. 3)	<i>degeneratus</i>
17 Median apophysis elongate along anterior edge (Fig. 18)	18
- Median apophysis not elongate along anterior edge (Figs 138, 232)	23
18 Embolus with triangular base, which promptly narrowed to thread	19
- Embolus with elongate base, which gradually narrowed to thread.....	22
19 Median apophysis broad; patellar apophysis tiny (Figs 177–179)	<i>griswoldi</i>
- Median apophysis slender; patellar apophysis of normal size	20
20. Cymbial furrow about $\frac{2}{3}$ of cymbial length; distal embolus coiled with two loops (Figs 18–19)	<i>adnatus</i> sp. nov.
- Cymbial furrow slightly more than $\frac{1}{2}$ of cymbial length; distal embolus slightly coiled or not coiled	21
21. Patellar apophysis shorter than patellar length (Liu & Li 2009: fig. 23)	<i>lini</i>
- Patellar apophysis as long as patellar length (Liu & Li 2009: fig. 10–12)	<i>uncatus</i>
22 Conductor toothed distally (Figs 352–354)	<i>pseudoagrestis</i> sp. nov.
- Conductor not toothed distally (Figs 31–33)	<i>agrestis</i>
23 Conductor bifurcate distally; median apophysis small (Figs 316–318)	<i>ornatus</i>
- Conductor not bifurcate; median apophysis large	24
24 Embolus prolateral in origin; conductor broad, without a dorsal apophysis (Figs 138–139).....	<i>euryembolus</i> sp. nov.
- Embolus proximal in origin; conductor slender, with a dorsal apophysis	25
25 Conductor long, extending posteriorly (Figs 232–233)	<i>kavanaughi</i> sp. nov.
- Conductor short, extending retrolaterally (Wang 2003: figs 50C–E))	<i>penicillatus</i>
26 Patellar apophysis absent; RTA less than $\frac{1}{5}$ of tibial length (Figs 146–147).....	<i>exilis</i>
- Patellar apophysis present; RTA more than $\frac{1}{5}$ of tibial length.....	27
27 Patellar apophysis bifurcate (Figs 334–336).....	<i>patellabifidus</i>
- Patellar apophysis not bifurcate	28
28 Patellar apophysis at least as long as patella itself.....	29
- Patellar apophysis shorter than patella	30
29 Patellar apophysis long, slender (Figs 99–101)	<i>dubius</i>
- Patellar apophysis broad (Figs 288–289).....	<i>longlingensis</i> sp. nov.
30 Patellar apophysis tiny; RTA less than half of tibial length (Figs 46–47)	<i>capitulatus</i>
- Patellar apophysis small; RTA at least half of tibial length	31
31 Conductor not bifurcate (Figs 87–89).....	<i>disgregus</i>
- Conductor bifurcate (Fig. 203).....	32
32 Conductor broad distally; RTA with macroseta on its base (Figs 251–252).....	<i>latusincertus</i> sp. nov.
- Conductor slender distally; RTA without macroseta	33
33 Dorsal side apophysis of the distally bifurcate conductor about same length as ventral (Xu & Li 2006b: fig. 21)	<i>mupingensis</i>
- Dorsal side apophysis of the distally bifurcate conductor distinctly longer than ventral	34
34 Embolus with thread that starts from posterior margin of embolic base (Xu & Li 2006: fig. 14; Wang & Jäger 2010: figs 6C–D).....	<i>immensus</i>
- Embolus with thread that starts from middle part of embolic base	35
35 Embolus with smooth base (Figs 363–364).....	<i>pseudobrunneus</i>
- Embolus with slightly notched base (Figs 202–204)	<i>incertus</i>

Females

1 Epigynal teeth present.....	2
- Epigynal teeth absent	20
2 Epigynal hoods situated at level posterior to epigynal teeth (Figs 461, 468, 502)	3
- Epigynal hoods situated at level of epigynal teeth (Figs 121, 505) or anterior to epigynal teeth (Figs 16, 296)	7
3 Spermathecal heads arising from middle part of spermathecae; epigynal hoods slightly posterior to epigynal teeth (Figs 240–241).....	<i>laticavus</i> sp. nov.
- Spermathecal heads arising from anterior spermathecae; epigynal hoods distinctly posterior to epigynal teeth.....	4
4 Spermathecae kidney-shaped (Fig. 462)	<i>renalis</i> sp. nov.
- Spermathecae otherwise.....	5
5 Anterior atrial margin strongly protruding posteriorly; copulatory ducts coiled with at least three loops (Liu & Li	

2009: figs 7–8)	<i>laohuanglongensis</i>
- Anterior atrial margin indistinct; copulatory ducts slightly coiled	6
6 Spermathecae elongate, diverging anteriorly; atrium wide and diverging anteriorly, narrow and converging posteriorly (Fig. 503)	<i>trinus</i>
- Spermathecae round; atrium rectangular (Figs 468–469).....	<i>rotundus</i>
7 Copulatory ducts at least as large as spermathecae, distinct.....	8
- Copulatory ducts much smaller than spermathecae, or indistinct	14
8 Spermathecae with slender, medially extending diverticula (Fig. 327).....	<i>paraterebratus</i>
- Spermathecae otherwise.....	9
9 Spermathecae extending laterally (Wang 2003: fig. 50B)	<i>penicillatus</i>
- Spermathecae otherwise.....	10
10 Epigynal hoods situated at level of epigynal teeth; copulatory ducts broad	11
- Epigynal hoods situated anterior to epigynal teeth; copulatory ducts long, slender	13
11 Copulatory ducts cover most of spermathecae (Fig. 506)	<i>xuae sp. nov.</i>
- Copulatory ducts situated anterior to spermathecae	12
12 Epigynal teeth distinctly separated from atrium (Wang 2003: fig. 25A).....	<i>denisi</i>
- Epigynal teeth close to atrial margin (Fig. 121).....	<i>duplus sp. nov.</i>
13 Spermathecae anteriorly diverging, distinctly separated by their width (Fig. 450)	<i>pseudowuermlii</i>
- Spermathecae anteriorly converging, closely set (Fig. 17).....	<i>adnatus sp. nov.</i>
14 Spermathecal heads not visible from dorsal view (Liu & Li 2009: fig. 14)	<i>uncatus</i>
- Spermathecal heads visible from dorsal view	15
15 Spermathecae broad, round, closely set; spermathecal heads arising ventrally from anterior spermathecae, barely visible from dorsal view (Liu & Li 2009: fig. 5)	<i>degeneratus</i>
- Spermathecae more or less elongate; spermathecal heads arising medially or dorsally, distinct	16
16 Spermathecal heads arising from inner sides of spermathecae (Figs 133, 135, 297)	17
- Spermathecal heads arising from dorsal sides of spermathecae (Figs 455, 513).....	18
17 Spermathecae distinctly separated (Fig. 297)	<i>mikrommatos sp. nov.</i>
- Spermathecae closely set (Figs 133, 135).....	<i>episomos</i>
18 Chelicerae with 4 retromarginal teeth; epigynal teeth separated by more than atrial width (Fig. 454).....	<i>quattour sp. nov.</i>
- Chelicerae with 2 retromarginal teeth; epigynal teeth separated by about atrial width	19
19 Atrial anterior margin indistinct (Liu & Li 2009: fig. 25)	<i>lini</i>
- Atrial anterior margin distinct (Fig. 512)	<i>yani sp. nov.</i>
20 Copulatory ducts extending laterally	21
- Copulatory ducts otherwise	23
21 Atrium with distinct anterior margin, indistinct lateral margins (Fig. 6).....	<i>absentis</i>
- Atrium with indistinct anterior margin, distinct lateral margins.....	22
22 Spermathecae coiled (Wang 2003: fig. 23B)	<i>curiosus</i>
- Spermathecae anteriorly converging, not coiled (Wang 2003: fig. 31B).....	<i>griswoldi</i>
23 Copulatory ducts long, extending anterior to spermathecae	24
- Copulatory ducts small, extending between spermathecae.....	26
24 Atrium not distinctly separated from epigastric furrow; copulatory ducts separated (Figs 155–156)	<i>flos</i>
- Atrium separated from epigastric furrow by about its length; copulatory ducts large, fused together.....	25
25 Spermathecae extending posterior to fertilization ducts (Wang & Jäger 2007: fig. 34)	<i>noctulus</i>
- Spermathecae extending anterior to fertilization ducts (Xu & Li 2006a: fig. 19)	<i>introhamatus</i>
26 Anterior atrial margin distinctly protruding anteriorly (Fig. 189)	<i>improprius sp. nov.</i>
- Anterior atrial margin protruding posteriorly or indistinct	27
27 Atrium at least two times longer than wide (Figs 473, 475, 477).....	<i>simplicidens</i>
- Atrium wider than long or as wide as long	28
28 Atrium length and width subequal; spermathecae with large, round bases (Fig. 273–274).....	<i>levyi sp. nov.</i>
- Atrium wider than long; spermathecae not round.....	29
29 Spermathecae at least 4–5 times longer than wide, coiled.....	30
- Spermathecae slightly longer than wide, not coiled	32
30 Spermathecae with diverticula arising from their bases (Fig. 323)	<i>paraspiralis sp. nov.</i>

- Spermathecae without diverticula.....	31
31 Anterior atrial margin extending posteriorly to center of atrium or into posterior half of atrium (Fig. 428).....	<i>pseudospiralis</i> sp. nov.
- Anterior atrial margin extending posteriorly only to anterior half of atrium (Fig. 481).....	<i>spiralis</i> sp. nov.
32 Spermathecal heads arising from posterior half of spermathecae (Wang & Jäger 2010: figs 3A–B).....	<i>wrasei</i>
- Spermathecal heads arising from anterior half of spermathecae.....	33
33 Spermathecal heads arising subdistally from anterior half of spermathecae.....	34
- Spermathecal heads arising distally from anterior spermathecae.....	40
34 Atrium without distinct anterior margin (Fig. 407).....	<i>pseudocapitulatus</i>
- Atrium with distinct anterior margin.....	35
35 Epigynal hoods situated at level anterior to atrium; medium body size (body length approximately 5–8 mm) (Figs 365–366).....	<i>pseudobrunneus</i>
- Epigynal hoods situated at level of anterior atrial margin; large body size (body length approximately 9–13 mm).....	36
36 Spermathecal heads arising from ventral or lateral sides of spermathecae.....	37
- Spermathecal heads arising from inner sides of spermathecae.....	38
37 Atrial ridges extending on anterior half of atrium (Xu & Li 2006b: figs 35–36).....	<i>mupingensis</i>
- Atrial ridges extending on middle or posterior half of atrium (Fig. 249).....	<i>latusincertus</i> sp. nov.
38 Anterior atrial margin indistinct (Zhang <i>et al.</i> 2005: fig. 2).....	<i>exilis</i>
- Anterior atrial margin distinct.....	39
39 Spermathecae relatively long (Xu & Li 2006b: fig. 18; Wang & Jäger 2010: figs 6A–B).....	<i>immensus</i>
- Spermathecae relatively short (Xu & Li 2006b: fig. 29).....	<i>papillatus</i>
40 Spermathecae with length and width subequal, protruding medially or laterally.....	41
- Spermathecae slightly longer than wide, not protruding.....	43
41 Spermathecae closely set, slightly protruding medially (Fig. 45).....	<i>capitulatus</i>
- Spermathecae distinctly separated, slightly protruding laterally.....	42
42 Atrial ridges extending posteriorly close to epigastric furrow (Fig. 180).....	<i>guoi</i> sp. nov.
- Atrial ridges slightly extending posteriorly to anterior half of atrium (Fig. 37).....	<i>anceps</i> sp. nov.
43 Spermathecae anteriorly diverging (Fig. 120).....	<i>dubius</i>
- Spermathecae parallel extending.....	44
44 Atrial ridges indistinct; spermathecal heads large (Figs 85–86).....	<i>disgregus</i>
- Atrial ridges distinct; spermathecal heads small.....	45
45 Atrial ridges extending close to anterior atrial margin (Figs 332, 337–348).....	<i>patellabifidus</i>
- Atrial ridges distinctly separated from anterior atrial margin (Figs 196, 198–199, 206–229).....	<i>incertus</i>

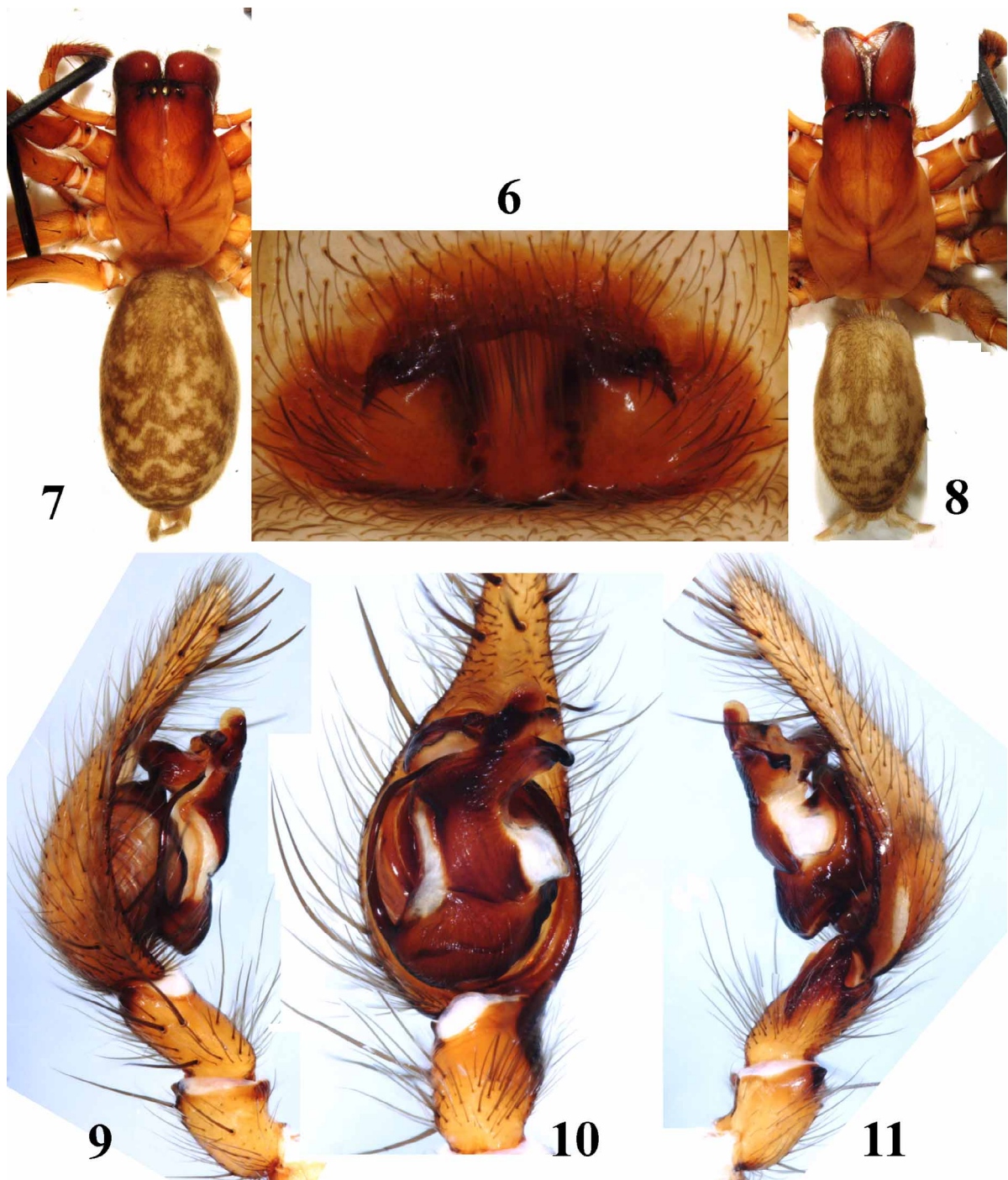
***Draconarius absentis* Wang 2003**

(Figs 6–15, 533)

Draconarius absentis Wang 2003: 517, figs 7A–D (male holotype, male and female paratypes from Baoshan, Yunnan, China, in HNU and CAS, examined).

Additional material examined. CHINA: Yunnan: Longling County: 1♀, Longjiang Township, Xiao Hei Shan Nature Reserve (Gu Cheng Shan), N24.82886°, E098.75917°, 2010 m, in the forest, May 26, 2005, H.M. Yan (HNU, CASENT9025595). **Longyang County:** 1♀, 40 km of the road Bawan-Tengchong, Bawan village, Baoshan City, N24°55459', E98°45309', 2320 m, October 16, 2003, G. Tang (HNU, CASENT9020405); 1♀, 25 km of the road Bawan-Tengchong, Bawan village, Baoshan City, N24°56220', E98°49335', 2380 m, October 14, 2003, G. Tang (CAS, CASENT9020418); 1♀, 39–41 km of the road Bawan-Tengchong, Bawan village, Baoshan City, N24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (HNU, CASENT9020358); 2♀, 22–25 km of the road Bawan-Tengchong, Bawan village, Baoshan City, N24°56220', E98°49335', 2380 m, October 14, 2003, G. Tang (1♀, CAS CASENT9020414; 1♀, HNU, CASENT9020413). **Tengchong County:** 1♀, 51 km of the road Bawan-Tengchong, Dahaoping village, N24°58527', E98°43797', 2018 m, October 17, 2003, G. Tang (CAS, CASENT9020386); 1♀, Yong-An

Bridge, Jietou Township, N25°16212', E98°35567', 1492 m, October 22, 2003, G. Tang (CAS, CASENT9020410).

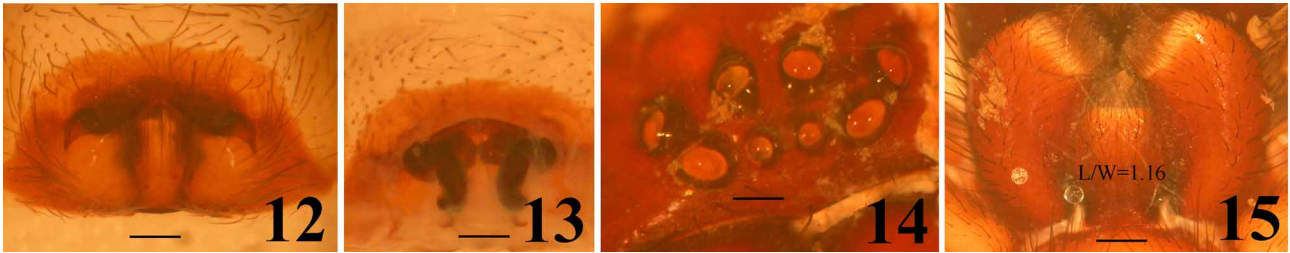


FIGURES 6–11. *Draconarius absentis* Wang 2003, female (6–7) and male (8–11) paratypes from Tengchong County, Luoshuidong (CAS, CASENT9016364). 6. Epigynum, ventral; 7–8. Habitus, dorsal; 9–11. Palp (prolateral, ventral, retrolateral).

Diagnosis: The female of this species can be easily distinguished from other *Draconarius* by the absence of epigynal teeth, the presence of a distinct, continuous, strongly sclerotized anterior atrial margin, the anteriorly and laterally extending copulatory ducts, and the short spermathecae (Figs 6, 12–13). The male is similar to *D. tangi* **sp. nov.** in having a broad, anteriorly extending conductor and prolaterally originating embolus, but can be distinguished by the small patellar apophysis, the slightly trifurcate conductor, the filiform embolus and the absence of a median apophysis (Figs 9–11).

Description: See Wang (2003). Photos of habitus, eyes, labium and genitalia are provided in this study (Figs 6–15).

Distribution: China (Yunnan: Longling, Longyang, Tengchong) (Fig. 533).

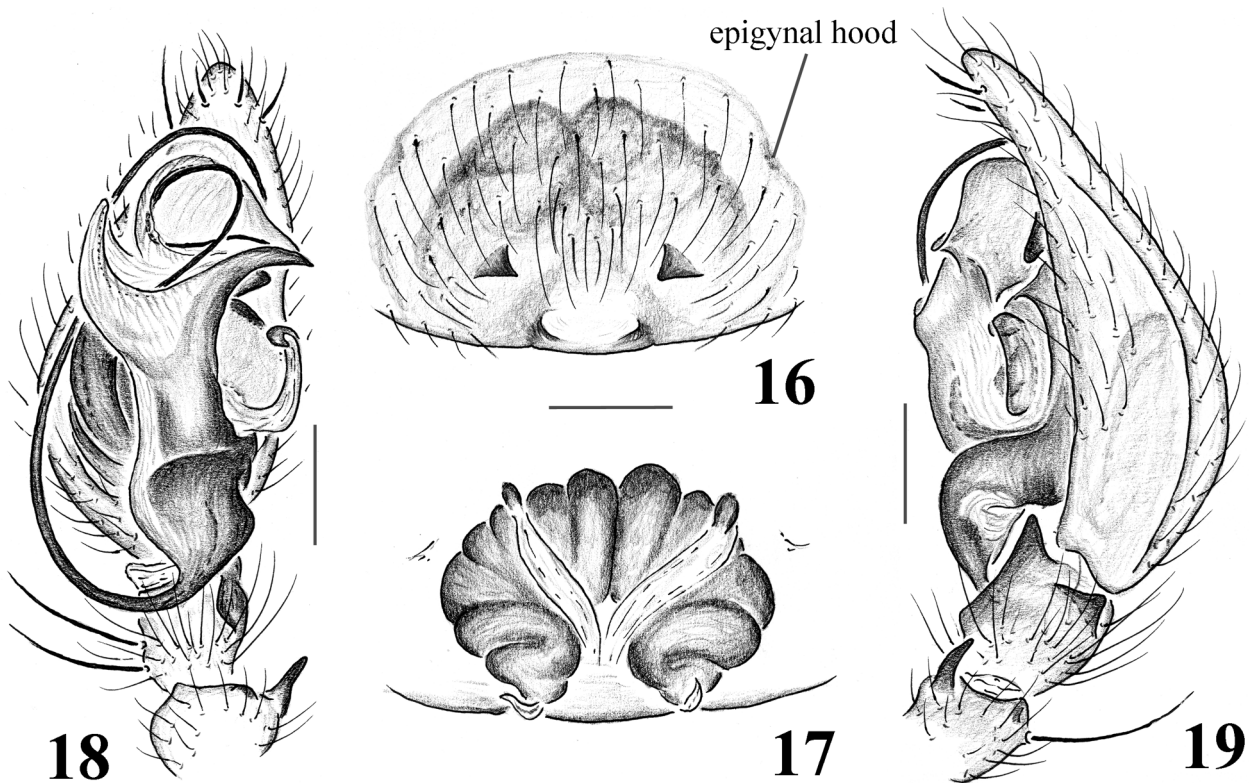


FIGURES 12–15. *Draconarius absentis* Wang 2003, female from Longling County, Longjiang, Xiao Hei Shan Nature Reserve (HNU, CASENT9025595). 12–13. Epigynum (ventral, dorsal); 14. Eyes, fronto-dorsal; 15. Labium, ventral (L/W=1.16). L/W: The length and width ratio of labium.

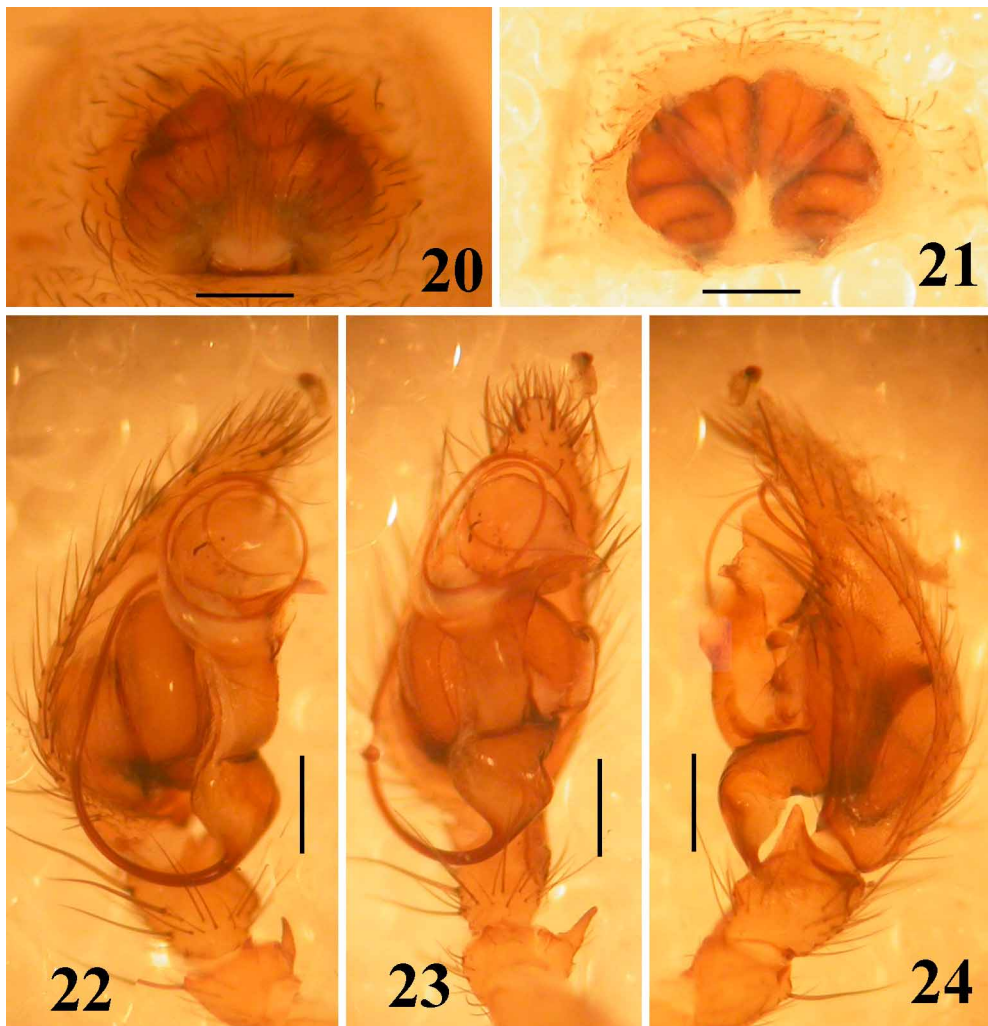
***Draconarius adnatus* sp. nov.**

(Figs 16–30, 533)

Material Examined: *Holotype*. ♀, **CHINA: Yunnan: Gongshan County:** Dulongjiang, Maku ridge, subtropical evergreen broadleaf forest, in webs, N27.67509°, E98.30160°, 1950 m, August 30, 2006, J.A. Miller, D. Kavanaugh (HNU, CASENT9024424).



FIGURES 16–19. *Draconarius adnatus* sp. nov., female holotype (16–17) and male paratype (18–19) from Gongshan County, Dulongjiang, Maku ridge (HNU, CASENT9024424). 16–17. Epigynum (ventral, dorsal); 18–19. Palp (ventral, retrolateral).



FIGURES 20–24. *Draconarius adnatus* sp. nov., female holotype (20–21) and male paratype (22–24) from Gongshan County, Dulongjiang, Maku ridge (HNU, CASENT9024424). 20–21. Epigynum (ventral, dorsal); 22–24. Palp (proateral, ventral, retrolateral).

Paratypes. **CHINA: Yunnan: Gongshan County:** 1♂ 1♀, same data as holotype (HNU, CASENT9024424); 1♀, Dulongjiang, Maku forest, subtropical evergreen broadleaf forest, sifting leaf litter, N27.68847°, E98.30065°, 1870 m, September 3, 2006, J.A. Miller (HNU, CASENT9024340). **Lushui County:** 3♀, Pianma, Chan Yan He, 9.3 km ESE Pianma, N25.99363°, E098.66651°, 2470 m, Mixed broadleaf deciduous and evergreen forest, pitfall traps, May 12–21, 2005, C. Griswold, D. Kavanaugh & K. Guo (CAS, CASENT9023089).

Other material examined. **CHINA: Yunnan: Gongshan County:** 1♀, Dulongjiang Township, Maku ridge, subtropical evergreen broadleaf forest, sifting leaf litter, N27.67446°, E98.30083°, 2000 m, August 29, 2006, J.A. Miller & D. Kavanaugh (CAS, CASENT9025620).

Etymology: The species name is derived from Latin word “adnatus”, which means “jointed to; united with; adherent”, and refers to the closely situated spermathecae; adjective.

Diagnosis: This new species is similar to *D. wudangensis* (Chen & Zhao 1997) and related species in having similar epigynum and palp, but can be distinguished by the small atrium in the female, and by the short distal extension of the cymbium, the short conductor, and the short embolic base in the male (Figs 16–19). The size of this new species (about 4–5 mm in body length) is much smaller than *D. wudangensis*, which is about 10 mm or more in body length.

Description: Female (holotype). Small sized Coelotinae, total length 4.83 (Fig. 25). Dorsal shield of prosoma 2.44 long, 1.60 wide; opisthosoma 2.39 long, 1.73 wide. AME smallest, approximately half the size

of ALE; lateral eyes subequal in size, largest; PME slightly smaller than lateral eyes (AME 0.05, ALE 0.10, PME 0.08, PLE 0.10); AME separated from each other by their diameter or slightly less, from ALE by less than AME diameter; PME separated from each other by slightly less than their diameter, from PLE by PME diameter (AME–AME 0.04, AME–ALE 0.03, PME–PME 0.07, PME–PLE 0.08, AME–PME 0.07) (Fig. 26). Chelicerae with 3 promarginal and 2 retromarginal teeth. Labium slightly longer than wide (L/W=1.05) (Fig. 27). Epigynal teeth small, arising anterolaterally of atrium, separated by more than atrial width; atrium small, slightly wider than long, close to epigastric furrow, without distinct anterior and lateral margins; copulatory ducts long, originating posteriorly between spermathecae, extending and coiling anteriorly across middle part of spermathecae; spermathecal bases distinctly separated by about their width, stalks extending and converging anteriorly beyond spermathecal heads; spermathecal heads small, arising from middle part of spermathecae (Figs 16–17, 20–21).

Male (paratype measured). Small sized Coelotinae, total length 4.05 (Fig. 28). Dorsal shield of prosoma 2.05 long, 1.40 wide; opisthosoma 2.00 long, 1.28 wide. AME smallest, half the size of other eyes, which are subequal in size, or with ALE slightly larger (AME 0.05, ALE 0.10, PME 0.08, PLE 0.09); anterior eyes equally separated by about half of AME diameter; posterior eyes equally separated by slightly less than their diameter (AME–AME 0.03, AME–ALE 0.03, PME–PME 0.06, PME–PLE 0.06, AME–PME 0.05) (Fig. 29). Chelicerae with 3 promarginal and 2 retromarginal teeth. Labium slightly wider than long (L/W=0.96) (Fig. 30). Palp with a slender patellar apophysis; RTA more than half of tibial length, with a distinctly protruding distal end; lateral tibial apophysis large, close to RTA; cymbial furrow more than $\frac{2}{3}$ of cymbial length; conductor short, with a sharp apex, a large basal lamella, a broad dorsal edge, and a dorsal apophysis; median apophysis spoon-shaped, distinctly elongate, free-standing along anterior edge; embolus long, filiform, proximal in origin, with thread arising at 6-o'clock-position, running half an oval, extending posteriorly to distal part of tibia and anteriorly coiling beyond distal part of bulb (Figs 18–19, 22–24).

Distribution: China (Yunnan: Gongshan, Lushui) (Fig. 533)

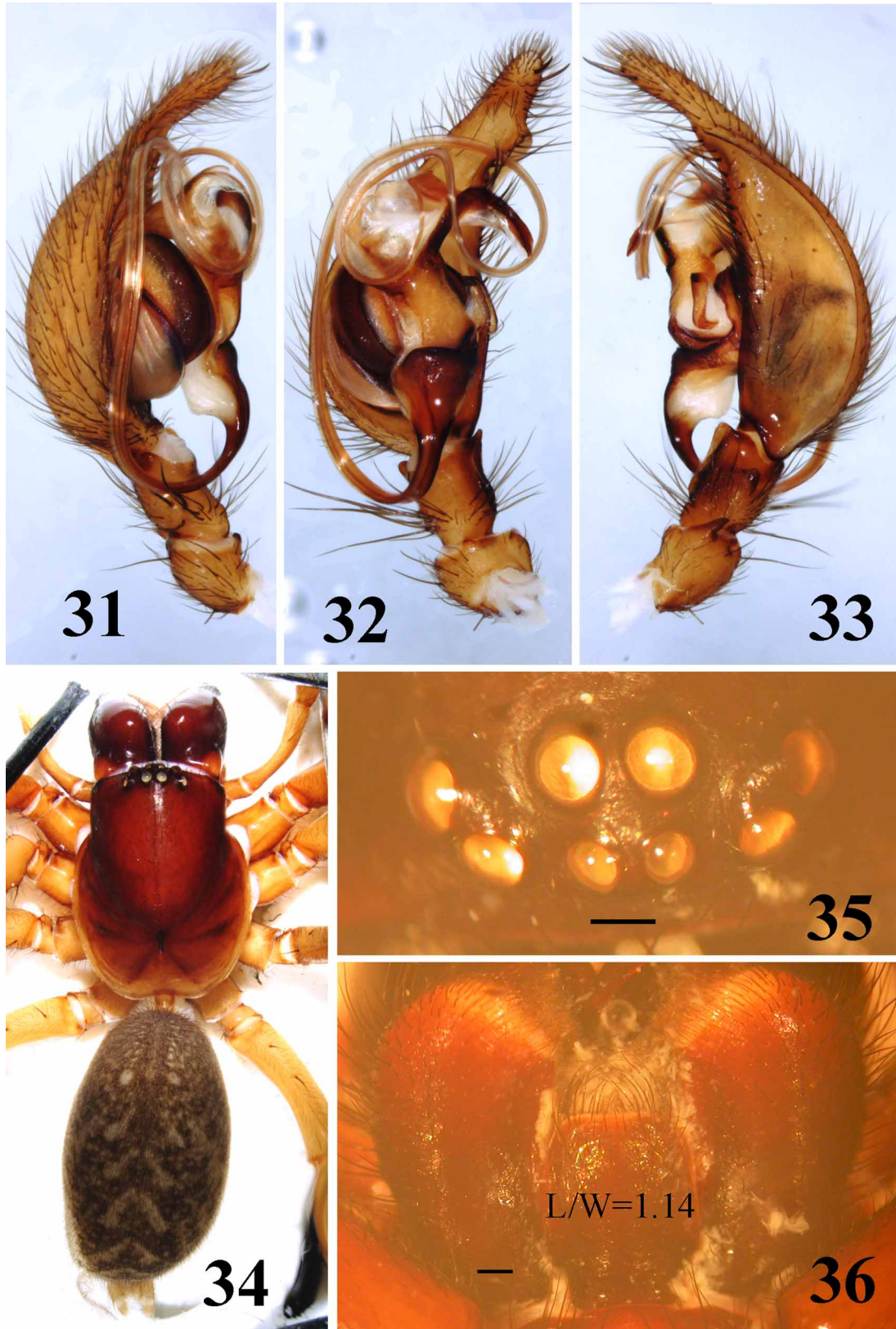


FIGURES 25–30. *Draconarius adnatus* sp. nov., female (25–27) holotype and male (28–30) paratype from Gongshan County, Dulongjiang, Maku ridge (HNU, CASENT9024424). 25, 28. Habitus, dorsal; 26, 29. Eyes, fronto-dorsal; 27, 30. Labium, ventral (L/W: 27=1.05; 30 =0.96). Scale lines in habitus photos represent a ruler divided into 1 mm increments; scale bars on all other illustrations represent 0.2 mm length.

Draconarius agrestis Wang, 2003

(Figs 31–36, 534)

Draconarius agrestis Wang 2003: 519, figs 10A–B (holotype and paratype males from Tengchong, Yunnan, China, in HNU and CAS, examined).



FIGURES 31–36. *Draconarius agrestis* Wang 2003, male (31–34) paratype (CAS, CASENT9016354) from Tengchong County, Luoshuidong and male (35–36) (CAS, CASENT 9022319) from Longyang County, Bawan, Nankang Yakou. 31–33. Palp (prolateral, ventral, retrolateral); 34. Habitus, dorsal; 35. Eyes, fronto-dorsal; 36. Labium, ventral (L/W=1.14).

Additional material examined: CHINA: Yunnan: Longling County: 1♂, Bawan District, Nankang Yakou, 2180 m, N24.83178°, E98.76472°, understory of good forest on E-facing slope; night collecting, May 25, 2005, C. Griswold & D. Kavanaugh (CAS, CASENT9022319).

Diagnosis: This species is similar to *D. pseudoagrestis* **sp. nov.** and differs only in minor features in the male palp: the short, less posteriorly extending conductor and the absence of denticles on distal conductor (Figs 31–33).

Description: Male. See Wang (2003). Photos of male habitus, eyes, labium and palp are provided in this study (Figs 3136).

Female. Unknown.

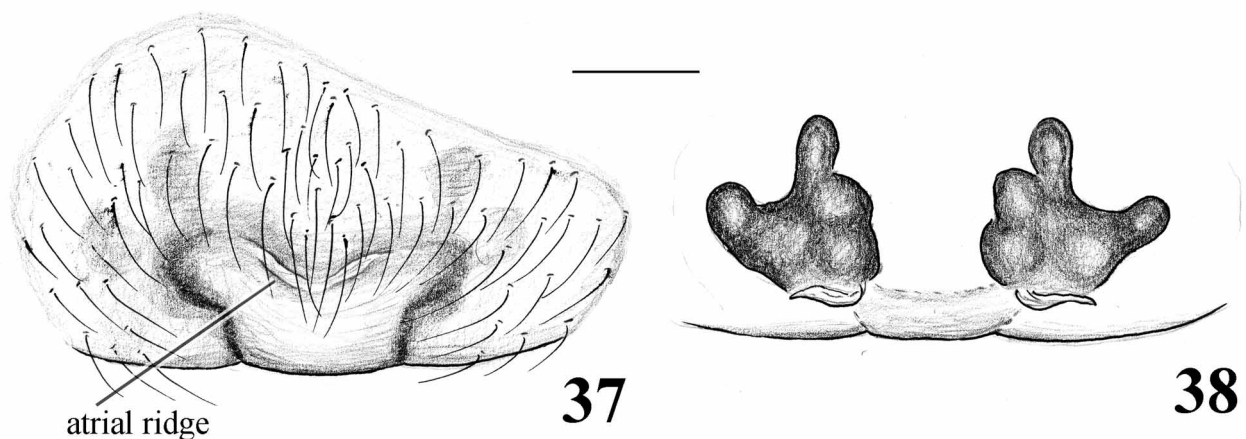
Distribution: China (Yunnan: Longling) (Fig. 534).

***Draconarius anceps* sp. nov.**

(Figs 37–43, 533)

Type material: Holotype. ♀, **CHINA: Yunnan: Tengchong County:** Houqiao, 16 km N of Danzha village at Zhaobitang Forest Park Station, N25.55771, E098.20885, 2500 m, May 29, 2006, D. Kavanaugh, R.L. Brett & D.Z. Dong, deposited in HNU (CASENT9025594).

Etymology: The species name is derived from Latin word “anceps”, which means “two-headed, double”, and refers to the laterally extending diverticula on spermathecae, in addition to the spermathecal heads that extending anteriorly; adjective.



FIGURES 37–38. *Draconarius anceps* **sp. nov.**, female holotype (HNU, CASENT9025594) from Tengchong County, Houqiao, Zhaobitang Forest Park Station. Epigynum (ventral, dorsal).

Diagnosis: This species seems to be similar to *D. guoi* **sp. nov.** in having a similar atrium and triangular spermathecae, differing only in minor features in the female epigynum. This new species has a pair of short atrial ridges that are limited to the anterior part of the atrium (Fig. 37), while the atrial ridges of *D. guoi* **sp. nov.** are long, extending posteriorly to the epigastric furrow (Figs 180–181).

Description: Female (holotype). Medium sized Coelotinae, total length 8.90 (Fig. 41). Dorsal shield of prosoma 4.00 long, 2.20 wide; opisthosoma 4.90 long, 3.75 wide. AME smallest, approximately half the size of other eyes, which are subequal (AME 0.10, ALE 0.18, PME 0.18, PLE 0.17); AME separated from each other by slightly less than their diameter, from ALE by half of AME diameter; PME separated from each other by about $\frac{2}{3}$ of their diameter, from PLE by slightly less than PME diameter (AME–AME 0.08, AME–ALE 0.05, ALE–PLE 0.08, PME–PME 0.12, PME–PLE 0.15, AME–PME 0.14) (Fig. 42). Chelicerae with 3 pro-marginal and 2 retromarginal teeth. Labium with length and width subequal (L/W=1.00) (Fig. 43). Epigynal

teeth absent; atrium small, with anterior atrial margin slightly protruding posteriorly; atrial ridges short, limited to anterior part of atrium; copulatory ducts indistinct from dorsal view; spermathecae short, broad, separated by slightly less than their width, with lateral diverticula; spermathecal heads distinct, arising anteriorly (Figs 37–40).

Male. Unknown.

Distribution: China (Yunnan: Tengchong) (Fig. 533).



FIGURES 39–43. *Draconarius anceps* sp. nov., female holotype (HNU, CASENT9025594) from Tengchong County, Houqiao, Zhaobitang Forest Park Station. 39–40. Epigynum (ventral, dorsal); 41. Habitus, dorsal; 42. Eyes, fronto-dorsal; 43. Labium, ventral (L/W=1.00).

***Draconarius argenteus* (Wang, Yin, Peng & Xie 1990)**

(Fig. 533)

Coelotes argenteus Wang *et al.* 1990: 229, figs 117–119 (male holotype from Jinhong, Yunnan, China, in HNU, examined). Song *et al.* 1999: 374, figs 218C, J.

Draconarius argenteus: Wang, 2003: 521, figs 12A–B.

Diagnosis: The male is similar to *D. nudulus* Wang 2003 in lacking a patellar apophysis and having a short conductor, but can be distinguished by the short RTA (half or less than half of tibial length), the spoon-shaped median apophysis, and the slightly lobed embolic base.

Description: *Male.* See Wang *et al.* (1990) and Wang (2003).

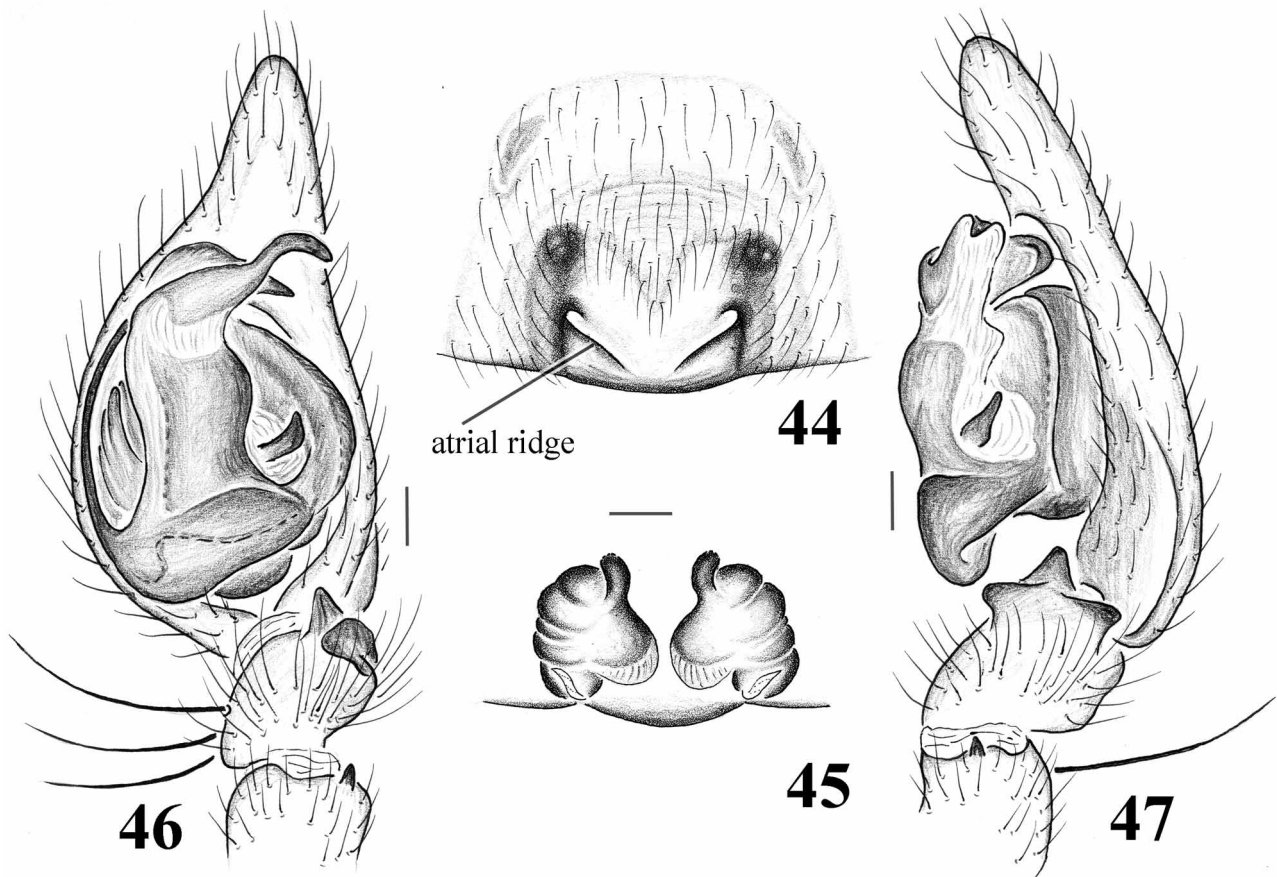
Female. Unknown.

Distribution: China (Yunnan: Jinhong) (Fig. 533).

***Draconarius capitulatus* Wang 2003**

(Figs 44–61, 534)

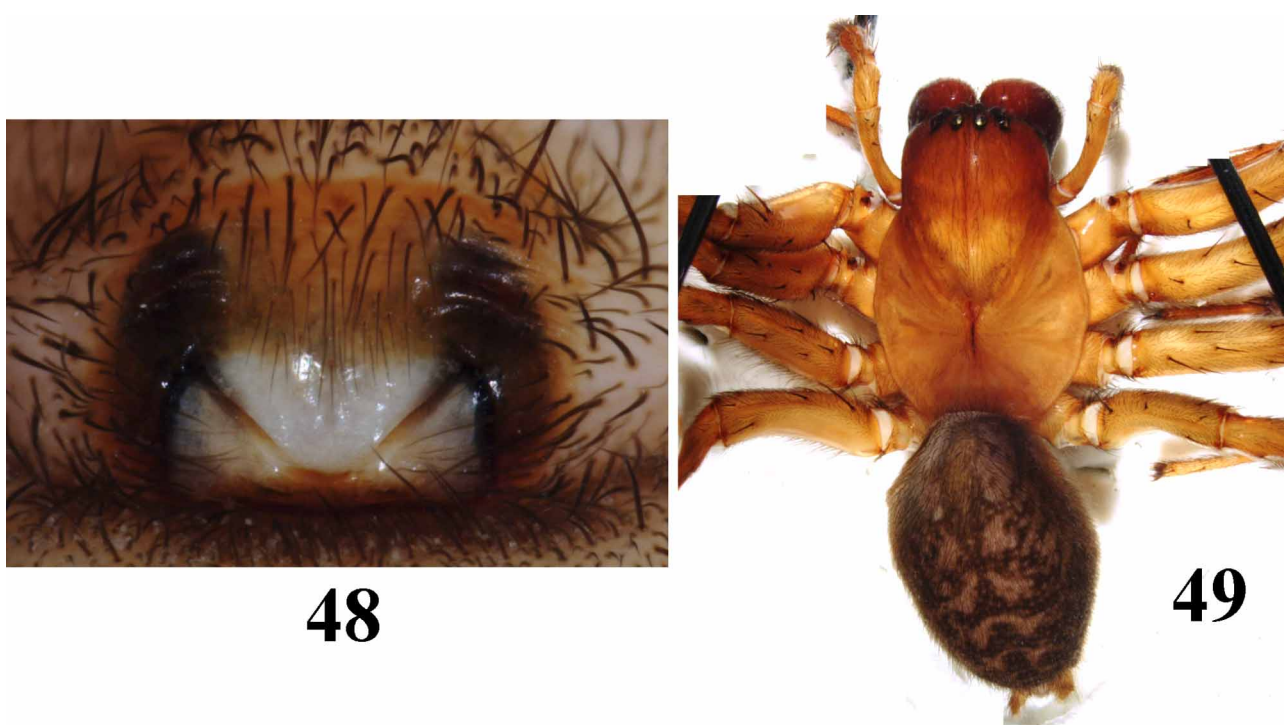
Draconarius capitulatus Wang 2003: 524, figs 18A–B (female holotype from Lushui County, female paratypes from Lushui County and Gongshan County, China, in HNU and CAS, examined).



FIGURES 44–47. *Draconarius capitulatus* Wang 2003, female holotype (44–45) (HNU) from Lushui County, Pianma Yakou, and male (46–47) (HNU, CASENT9020615) from Fugong County, Lishadi. 44–45. Epigynum (ventral, dorsal); 46–47. Palp (ventral, retrolateral).

Additional material examined. CHINA: Yunnan: 2♀, no label (HNU, CASENT9020857). **Tengchong County:** 2♀, Mingguang, Zizhi Village, N25.80894°, E098.62080°, 2890 m, 23 May 2006, X.J. Peng, X.P. Wang and P. Hu (CAS, CASENT9025610). **Fugong County:** 1♀, Gaoligongshan, Shibali Forest Station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020461); 1♀, Lumadeng, Lao Shibali Pass (pass #30) 2 km before the pass, rock cliffs along the road, N27.06427°, E98.75123°, 3265–3060 m, August 13, 2005, P. Paquin (CAS, CASENT9022535); 1♂ 1♀, Pihe, Yueliangtian, N26.56784, E098.90884, 1520 m, August 20/23/24, 2005, G. Tang (CAS, CASENT9025608); 1♂, LiShadi, Gaoligongshan, 12 km from Shibali toward Yaping Yakou, N27.19980°, E98.71375°, 3200 m, May 5, 2004, H. M. Yan (HNU, CASENT9020615); 2♀, Lishadi, Shibali, N27.10520°, E098.77980°, 2530 m, August 4/6/8–10, 2005, G. Tang (HNU, CASENT9025609); 2♀, Lumadeng, Lao Shibali Pass (pass #30) to 2 km before the pass, rock cliffs along the road, N27.06427°, E98.75123°, 3265–3060 m, August 13, 2005, P. Paquin (HNU, CASENT9022534). **Lushui County:** 5♂, Feng Xue Yakou, E. side on Pianma Road, N25.97288°, E98.68336°, 3150 m, night collecting on buildings, cliffs, roadcut, May 17, 2005, C. Griswold (CAS, CASENT9022264); 5♂, Feng Xue Yakou, E side on Pianma Road, N25.97288°, E98.68336°, 3150 m, night collecting on buildings, cliffs, roadcut, May 17, 2005, C. Griswold (HNU, CASENT9022265); 1♂ 1♀, Pianma, Feng Xue Yakou, N25.97814°, E98.67508°, 3088 m, roadside, May 19, 2005, K.J. Guo (CAS, CASENT9022038); 1♂, Pianma, Yaojiaping Forest Station, N25.96911°, E98.70713°, 2586 m, roadside, May 18, 2005, K.J. Guo (HNU, CASENT9022055). 1♀, Feng Xue Yakou, W side on Pianma Road, N25.97288°–25.97410°, E98.67508°–98.67716°, 3120–3150 m, night collecting in stream canyon near *Rhododendron*/bamboo thicket, May 18, 2005, C. Griswold (HNU, CASENT9022271); 4♀, Feng

Xue Yakou, E. side on Pianma Road, N25.97288°, E98.68336°, 3150 m, night collecting on buildings, cliffs, roadcut, May 17, 2005, C. Griswold. (CAS, CASENT9022260); 4♀, Feng Xue Yakou, E side on Pianma Road, N25.97288°, E98.68336°, 3150 m, night collecting on buildings, cliffs, roadcut, May 17, 2005, C. Griswold. (HNU, CASENT9022261); 2♀, Feng Xue Yakou, on Pianma Road, N25.97288°, E98.68336°, 3150 m, hand collecting under rocks, May 11, 2005, C. Griswold & D. Kavanaugh (CAS, CASENT9022192); 2♀, Feng Xue Yakou, on Pianma Road, N25.97288°, E98.68336°, 3150 m, hand collecting under rocks, May 11, 2005, C. Griswold & D. Kavanaugh (HNU, CASENT9022193); 1♀, Pianma, Feng Xue Yakou, N25.97814°, E98.67508°, 3088 m, roadside, May 19, 2005, K. J. Guo. (HNU, CASENT9022039); 1♂, Feng Xue Yakou, E. side on Pianma Road, N25.97288°, E98.68336°, 3150 m, night collecting on buildings, cliffs, roadcut, May 17, 2005, C. Griswold (HNU, CASENT9021381); 2♂, Feng Xue Yakou, E. side on Pianma Road, N25.97288°, E98.68336°, 3150 m, night collecting on buildings, cliffs, roadcut, May 17, 2005, C. Griswold (CAS, CASENT9022266). **Gongshan County:** 1♀, Cikai, 41 km W of Gongshan on Dulong Valley Road at Dabadi both sides, N27°47', E98°31', 3030 m, October 4, 2002, H.M. Yan (CAS, CASENT9020859).

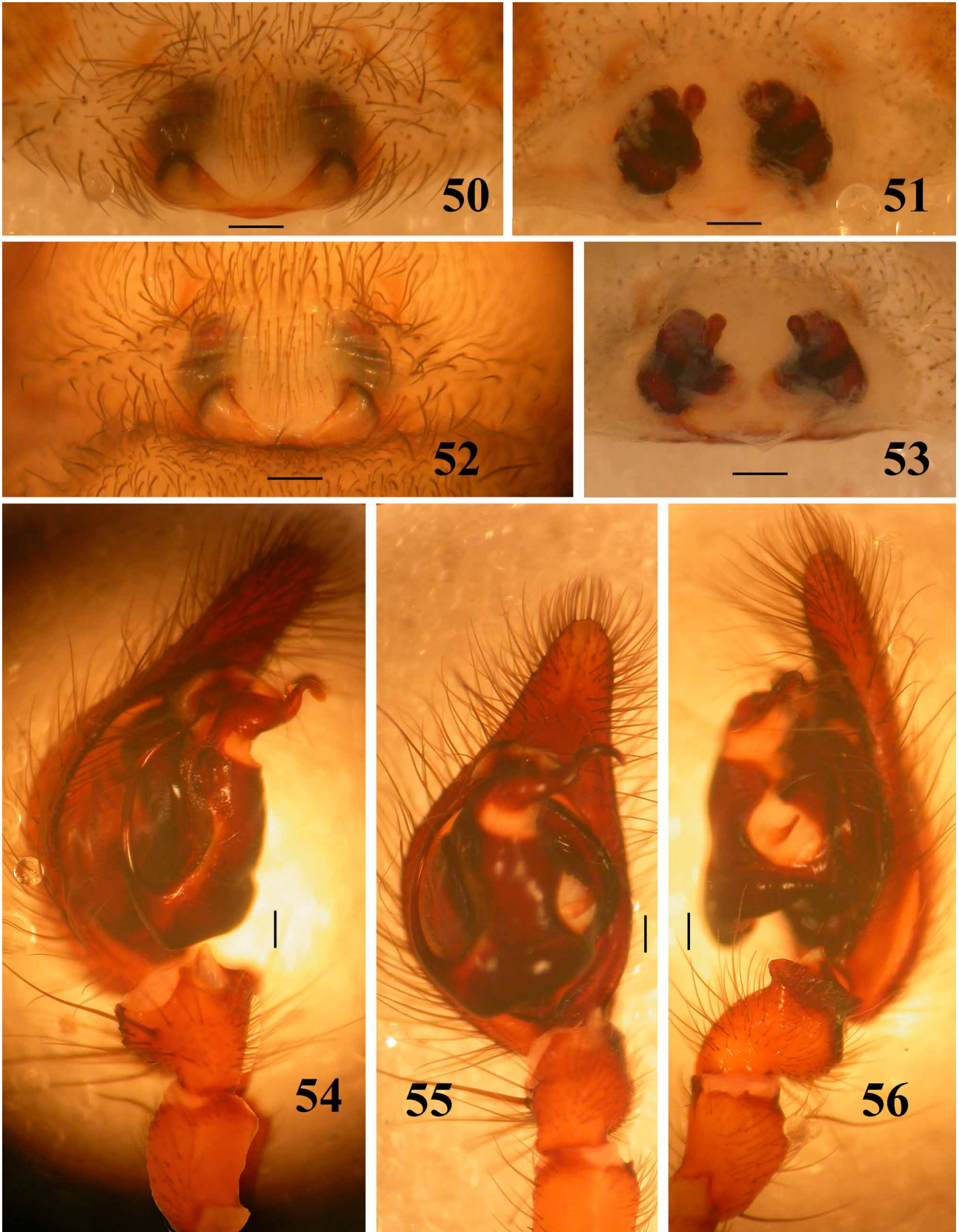


FIGURES 48–49. *Draconarius capitulatus* Wang 2003, female paratype (CAS, CASENT9016356) from Gongshan County, Nujiang, Nujiang State Nature Reserve. 48. Epigynum, ventral; 49. Habitus, dorsal.

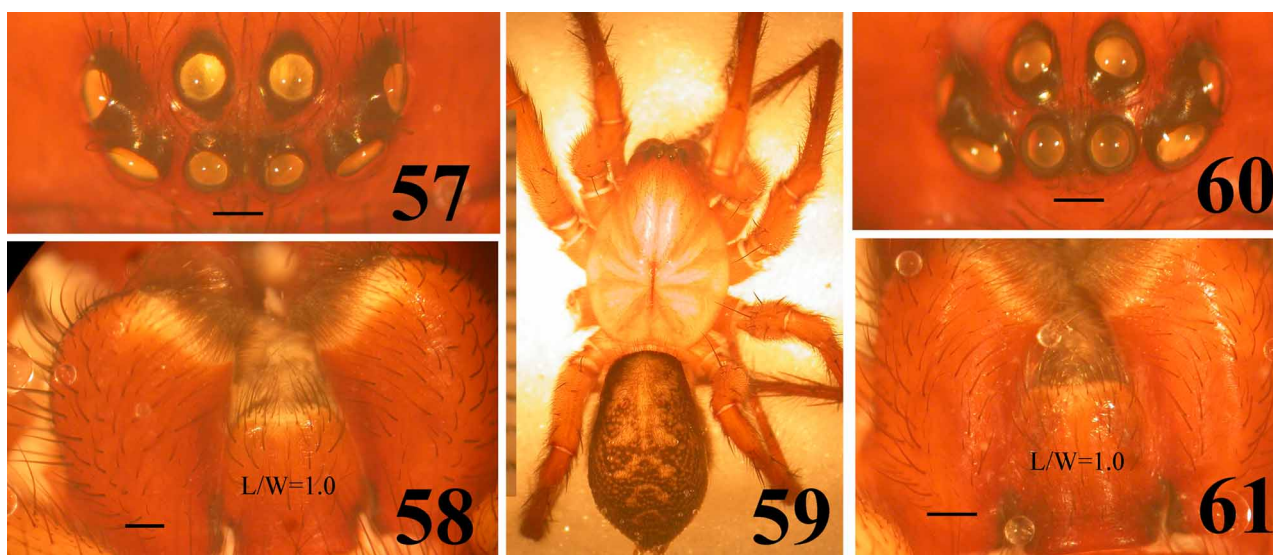
Diagnosis: This species is close to *D. pseudocapitulatus* Wang, 2003 in having similar spermathecae, an anteriorly extending conductor, and in lacking epigynal teeth. The different positions of the atrial ridges (Fig. 44) can distinguish the females. In this species, the atrial ridges extend more or less medially, ending posteriorly anterior of epigastric furrow, forming a triangular median area (Figs 44–45), while the atrial ridges in *D. pseudocapitulatus* extend relatively laterally, ending posteriorly close to the epigastric furrow, forming a rectangular median area (Figs 407–408). The male can be recognized by the presence of a small patellar apophysis, the distinctly curved distal conductor, and the simple median apophysis (Figs 46–47).

Description: *Female.* See Wang (2003). Photos of habitus, eyes, labium and epigynum are provided in this study (Figs 44–45, 48, 50–53, 57–58).

Male (male of CASENT9020615 measured). Male is described for the first time. Large sized coelotine, total length 11.41 (Fig. 59). Dorsal shield of prosoma 5.70 long, 4.05 wide; opisthosoma 5.71 long, 3.45 wide.



FIGURES 50–56. *Draconarius capitulatus* Wang 2003, female (50–51) from Fugong County, Lishadi, Shibali (HNU, CASENT9020609), female (52–53) from Fugong County, Pihe, Yueliangtian (CAS, CASENT9020608) and male (54–56) from Fugong County, Lishadi (HNU, CASENT9020615). 50–53. Epigynum (ventral, dorsal); 54–56. Palp (prolateral, ventral, retrolateral).



FIGURES 57–61. *Draconarius capitulatus* Wang 2003, female (57–58) from Fugong County, Pihe, Yueliangtian (CAS, CASENT9020608) and male (59–61) from Fugong County, Lishadi (HNU, CASENT9020615). 57, 60. Eyes, fronto-dorsal; 59. Habitus, dorsal; 58, 61. Labium, ventral (L/W=1.0).

AME smallest, about $\frac{3}{4}$ of ALE size; lateral eyes largest, PME slightly smaller than lateral eyes (AME 0.16, ALE 0.21, PME 0.18, PLE 0.21); AME separated from each other by half of their diameter, from ALE by less than half of AME diameter; PME separated from each other by slightly less than their diameter, from PLE by about PME diameter; AME and PME separated by slightly less than AME diameter (AME–AME 0.08, AME–ALE 0.06, PME–PME 0.14, PME–PLE 0.19, AME–PME 0.14) (Fig. 60). Chelicerae with 3 promarginal and 2 retromarginal teeth. Labium with length and width subequal (L/W=1.00) (Fig. 61). Palp with a tiny patellar apophysis; RTA less than half of tibial length, with a slightly protruding distal end; lateral tibial apophysis arising distally close to RTA; cymbial furrow less than half of cymbial length; conductor short, slightly extending anteriorly, with a slightly curved apex, a small basal lamella, and a dorsal apophysis; median apophysis simple, not spoon-shaped; embolus short, filiform, prolateral in origin (Figs 46–47, 54–56).

Distribution: China (Yunnan: Tengchong, Lushui, Fugong, Gongshan) (Fig. 534).

***Draconarius catillus* sp. nov.**

(Figs 62–69, 535)

Type material: *Holotype*. ♂, **CHINA: Yunnan: Fugong County:** 1 km E Yaping Pass, turning rocks among dormant bamboo, N27.20854°, E98.20854°, 3506 m, May 6, 2004, C. Griswold (HNU, CASENT 9020765).

Paratype. **CHINA: Yunnan: Lushui County:** 1♂, Feng Xue Yakou, 100 m S of Pianma Road, N25.97288°, E98.68336°, 3150 m, *Rhododendron*/Bamboo thicket, pitfall traps, May 11–21, 2005, C. Griswold, D. Kavanaugh & K.J. Guo (CAS, CASENT9022109).

Etymology: The species name is derived from Latin word “catillus”, which means “small bowl, dish, plate”, and refers to the broad, dish-shaped conductor; noun in apposition.

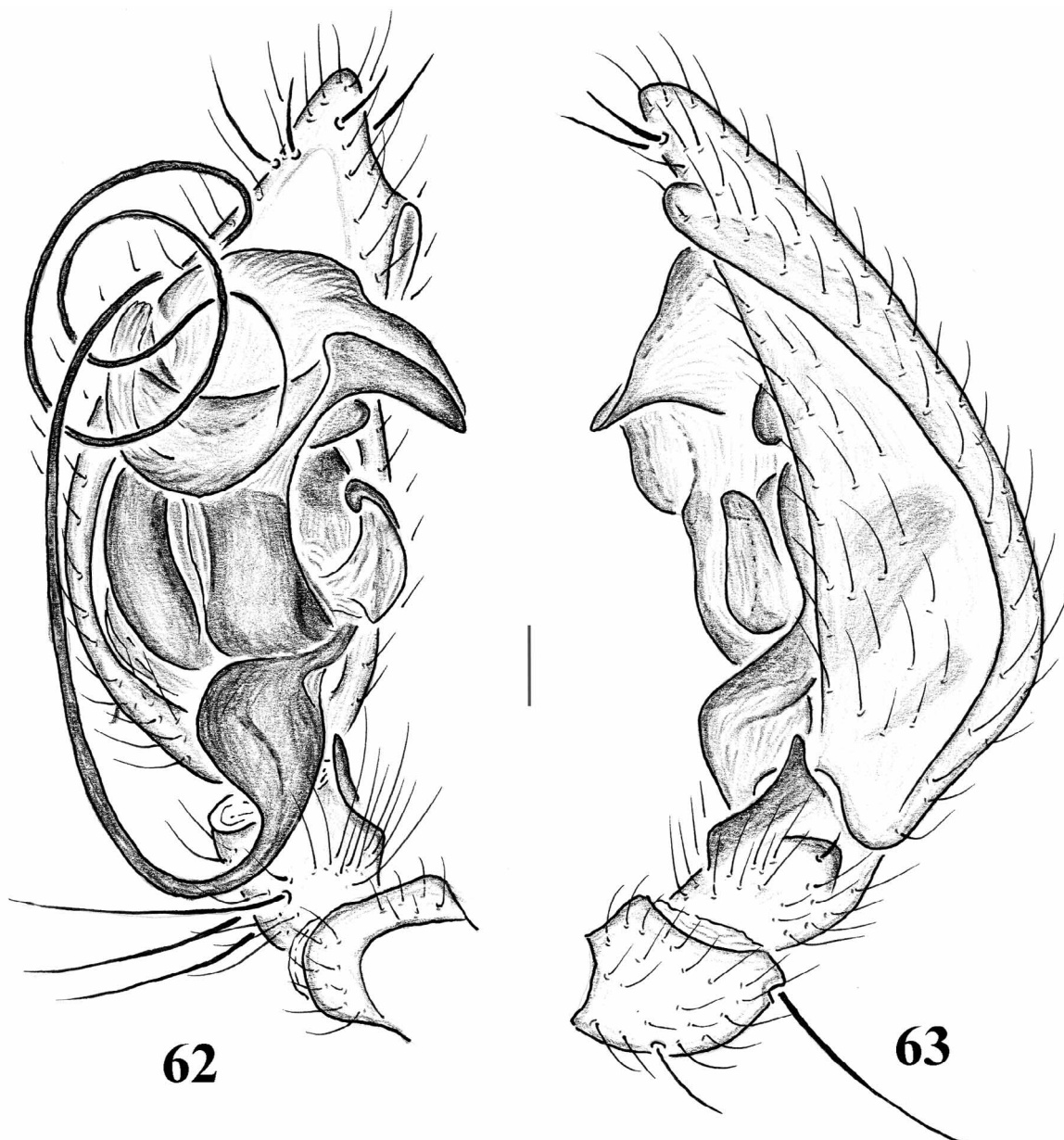
Diagnosis: The male is similar to *D. nudulus* Wang 2003 in having a short conductor, a proximally originating embolus, and in lacking a patellar apophysis, but can be distinguished by the large, distally protruding cymbial furrow and the spoon-shaped median apophysis (Figs 62–63).

Description: *Male (holotype)*. Medium sized Coelotinae, total length 7.45 (Fig. 67). Dorsal shield of prosoma 4.10 long, 2.85 wide; opisthosoma 3.35 long, 2.10 wide. AME smallest, half the size of ALE; ALE

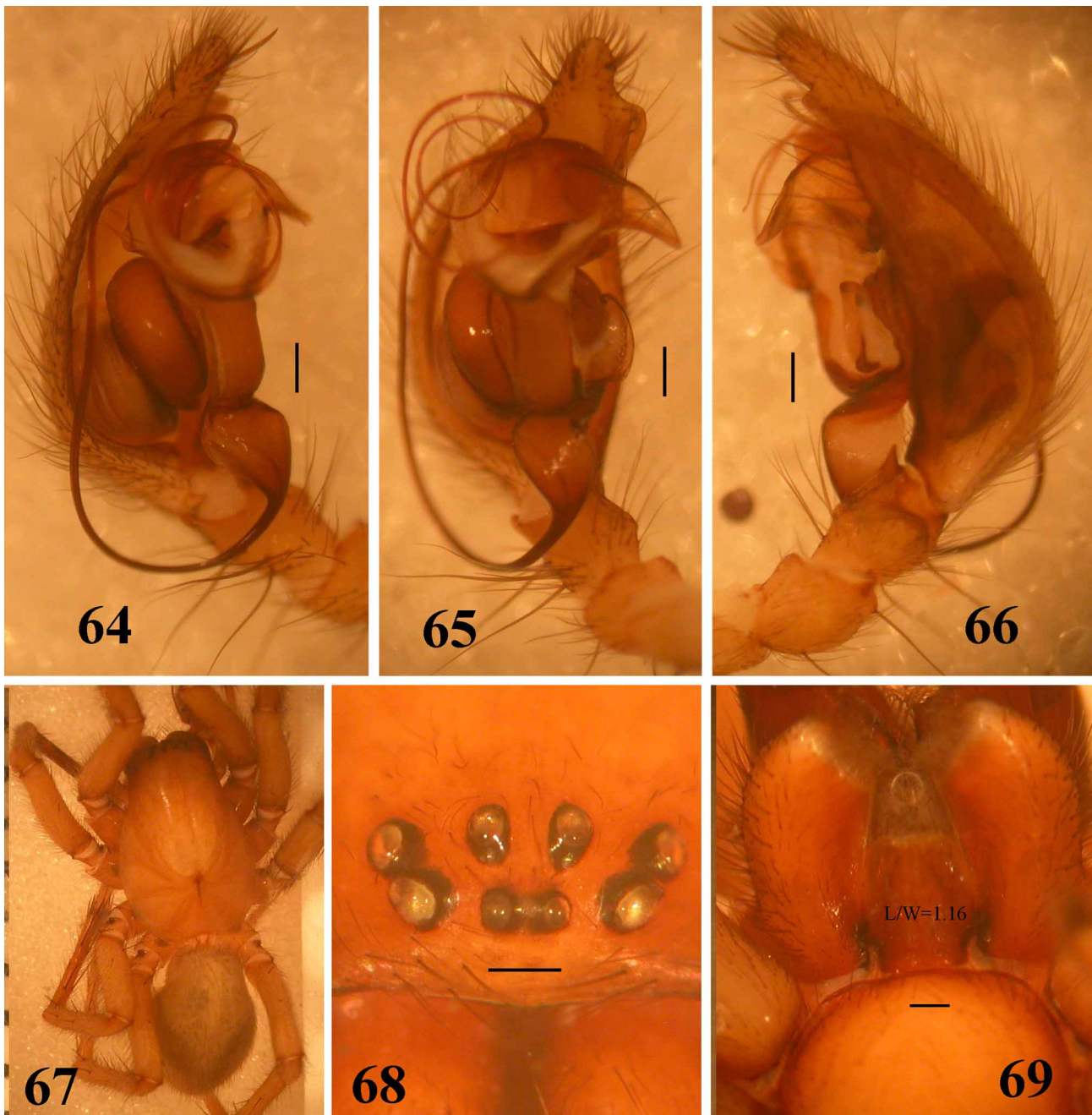
largest; PME slightly larger than AME, PLE slightly smaller than ALE (AME 0.07, ALE 0.14, PME 0.09, PLE 0.12); AME separated from each other by their diameter, from ALE by 1.5 times AME diameter; PME separated from each other by approximately 1.5 times PME diameter, from PLE by slightly less than two times PME diameter (AME–AME 0.07, AME–ALE 0.10, PME–PME 0.12, PME–PLE 0.16, AME–PME 0.12) (Fig. 68). Chelicera with 3 promarginal and 2 retromarginal teeth. Labium longer than wide (L/W=1.16) (Fig. 69). Palp without a patellar apophysis; RTA more than half of tibial length, with a sharply protruding distal end; lateral tibial apophysis broad, close to RTA; cymbial furrow large, slightly less than cymbial length, with distal end slightly protruding beyond cymbium; conductor broad, short, with a large basal lamella and a dorsal apophysis; median apophysis spoon-shaped, elongated, free-standing along anterior edge; embolus long, filiform, proximal in origin, with thread arising at 6-o'clock-position, running half an oval, extending posteriorly to middle part of tibia and anteriorly coiling beyond distal part of bulb (Figs 62–66).

Female. Unknown.

Distribution: China (Yunnan: Lushui, Fugong) (Fig. 535).



FIGURES 62–63. *Draconarius catillus* sp. nov., male holotype from Fugong County, Yaping Pass (HNU, CASENT9016356). Palp (ventral, retrolateral).



FIGURES 64–69. *Draconarius catillus* sp. nov., male holotype from Fugong County, Yaping Pass (HNU, CASENT9016356). 64–66. Palp (prolateral, ventral, retrolateral); 67. Habitus, dorsal; 68. Eyes, fronto-dorsal; 69. Labium, ventral (L/W=1.16).

***Draconarius curiosus* Wang 2003**

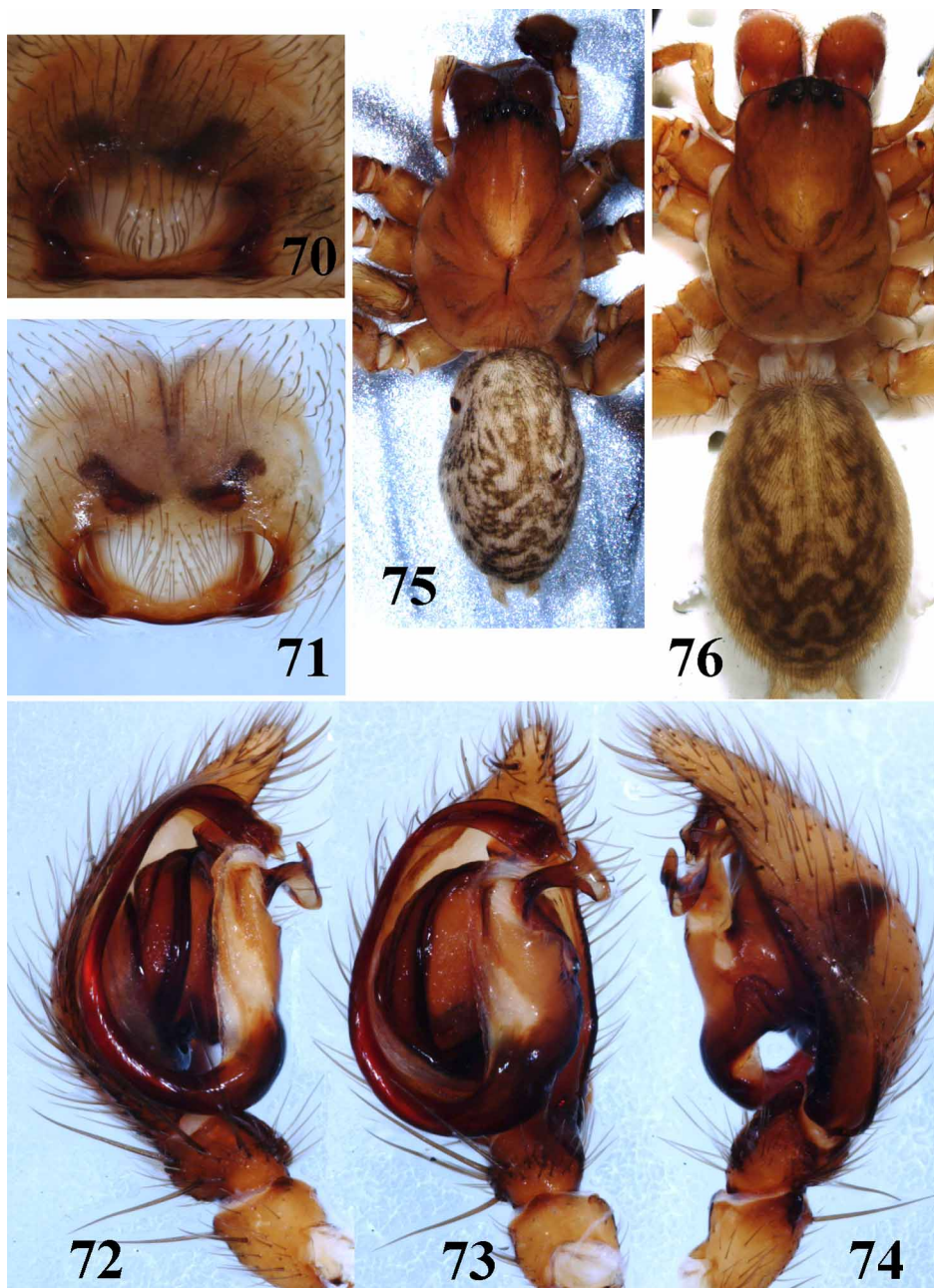
(Figs 70–76, 535)

Draconarius curiosus Wang 2003: 526, figs 23A–D (male holotype, male and female paratypes from Tengchong County, Yunnan, China, in HNU and CAS, examined).

Diagnosis: The female is similar to *D. griswoldi* Wang 2003 by the absence of epigynal teeth and laterally extending copulatory ducts, but can be distinguished by the coiled spermathecae (Figs 70–71; Wang 2003: figs 23A–B). The male can be easily distinguished from all other coelotines by the absence of a median apophysis and the presence of a broad, distally enlarged embolus (Figs 72–74).

Description: See Wang (2003). Photos of habitus, eyes, labium and genitalia are provided in this study (Figs 70–76).

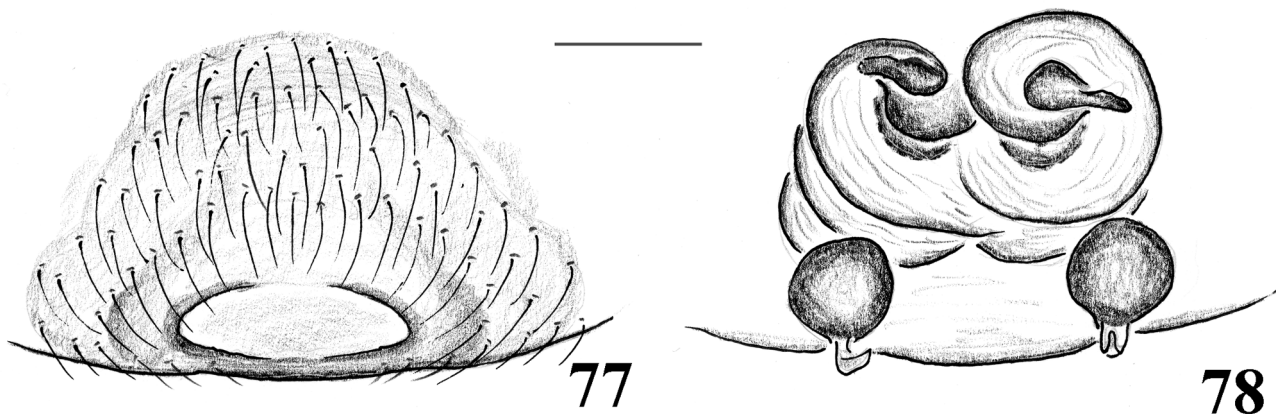
Distribution: China (Yunnan: Tengchong) (Fig. 535).



FIGURES 70–76. *Draconarius curiosus* Wang 2003, male holotype (72–75) (HNU) and female paratype (70–71, 76) (CAS, CASENT9016350) from Tengchong County, Luoshuidong. 70–71. Epigynum, ventral; 72–74. Palp (prolateral, ventral, retrolateral); 75–76. Habitus, dorsal.

***Draconarius curvus* sp. nov.**
(Figs 77–83, 536)

Type material: *Holotype*. ♀, **CHINA: Yunnan: Tengchong County:** Wuhe, Xiao Di Fang River, N24.8486°, E098.75913°, 2040 m, beating along the river, May 23, 2005, H.M. Yan & K.J. Guo (HNU, CASENT9025617).



FIGURES 77–78. *Draconarius curvus* sp. nov., female holotype from Tengchong County, Wuhe, Xiao Di Fang River (HNU, CASENT9025617). Epigynum (ventral, dorsal).



FIGURES 79–83. *Draconarius curvus* sp. nov., female holotype from Tengchong County, Wuhe, Xiao Di Fang River (HNU, CASENT9025617). 79–80. Epigynum (ventral, dorsal); 81. Habitus, dorsal; 82. Eyes, fronto-dorsal; 83. Labium, ventral (L/W=0.88).

Etymology: The species name is derived from Latin word “curvus”, which means “bent”, and refers to the coiled copulatory ducts; adjective.

Diagnosis: The female can be easily recognized by the absence of epigynal teeth, the coiled copulatory ducts, and the widely separated, round spermathecae (Figs 77–78).

Description: *Female (holotype).* Median sized Coelotinae, total length 5.70 (Fig. 81). Dorsal shield of prosoma 2.35 long, 1.95 wide; opisthosoma 3.40 long, 2.75 wide. AME smallest, $\frac{2}{3}$ size of other eyes, which are subequal (AME 0.08, ALE 0.12, PME 0.12, PLE 0.12); anterior eyes close together, separated by half of AME diameter; PME separated from each other by half of their diameter, from PLE by slightly more than half

of their diameter (AME–AME 0.04, AME–ALE 0.04, ALE–PLE 0.04, PME–PME 0.06, PME–PLE 0.08, AME–PME 0.07) (Fig. 82). Chelicera with 3 promarginal and 3 retromarginal teeth. Labium wider than long (L/W=0.88) (Fig. 83). Epigynum without epigynal teeth; atrium small, two times wider than long, close to epigastric furrow; copulatory ducts originating posteriorly, strongly coiled with at least two to three coils; spermathecal bases small, round, widely separated by two times their width; spermathecal stalks slender, anteriorly extending and converging, covered by copulatory ducts in dorsal view; spermathecal heads arising distally, slightly extending laterally (Figs 77–80).

Male. Unknown.

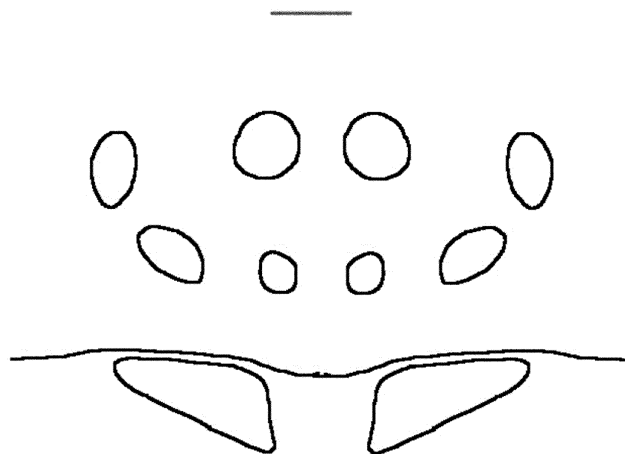
Distribution: China (Yunnan: Tengchong) (Fig. 536).

***Draconarius degeneratus* (Liu & Li 2009) comb. nov.**

(Fig. 536)

Coelotes degeneratus Liu & Li 2009: 666, figs 1–6 (male holotype, male and female paratypes from Jianshui County, Yunnan, in IZCAS, not examined).

Diagnosis: This species is similar to *D. uncatu*s (Liu & Li 2009) in having a long patellar apophysis and a short, slender conductor in the male, and a similar female epigynum, but can be distinguished by the prolaterally originated embolus in the male and the broad epigynal teeth in the female (Liu & Li 2009: figs 1–6).



84

FIGURE 84. *Draconarius denisi* Schenkel 1963, female holotype from Lo Thoei Tong. Eyes, fronto-dorsal.

Description: See Liu & Li (2009).

Distribution: China (Yunnan: Jianshui) (Fig. 536).

***Draconarius denisi* Schenkel 1963**

(Figs 84, 536)

Coelotes denisi Schenkel 1963: 285, fig. 160 (female holotype from Lo Thoei Tong, Yunnan, China, in MNHN, examined). Wang, 2003: 528, figs 25A–B.

Diagnosis: The female can be easily recognized by the small atrium, the widely separated epigynal teeth, and the broad, anteriorly extending copulatory ducts (Wang 2003: figs 25A–B).

Description: *Female.* See Wang (2003).

Male: Unknown.

Distribution: China (Yunnan: Lo Thoei Tong) (Fig. 536).

***Draconarius disgregus* Wang 2003**

(Figs 85–98, 536)

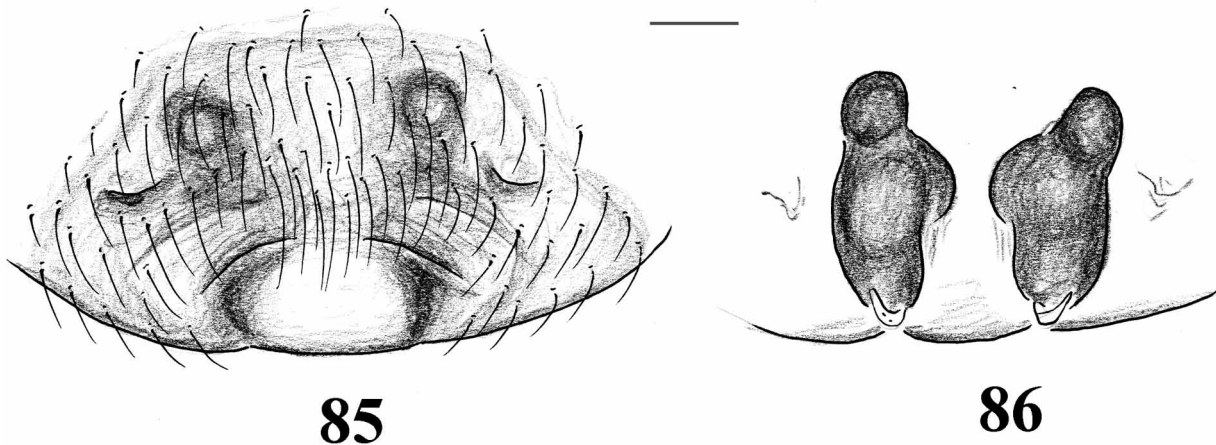
Draconarius disgregus Wang 2003: 528, figs 27A–D (male holotype, male and female paratypes from Lushui County, Yunnan, China, in HNU and CAS, examined).

Additional material examined. CHINA: Yunnan: Lushui County: 1 ♀, Pianma Township, Chang Yan He 9.3 km ESE Pianma, 2470 m, N25.99363°, E98.66651°, mixed broadleaf deciduous and evergreen forest; night collecting, May 13–14, 2005, C. Griswold (CAS, CASENT9022203); 1 ♀, Pianma Township, Chan Yan He, 9.3 km ESE Pianma, 2470 m, N25.99363°, E098.66651°, mixed broadleaf deciduous and evergreen forest, pitfall traps, May 11–21, 2005, C. Griswold, D. Kavanaugh & K. Guo (HNU, CASENT9023091).

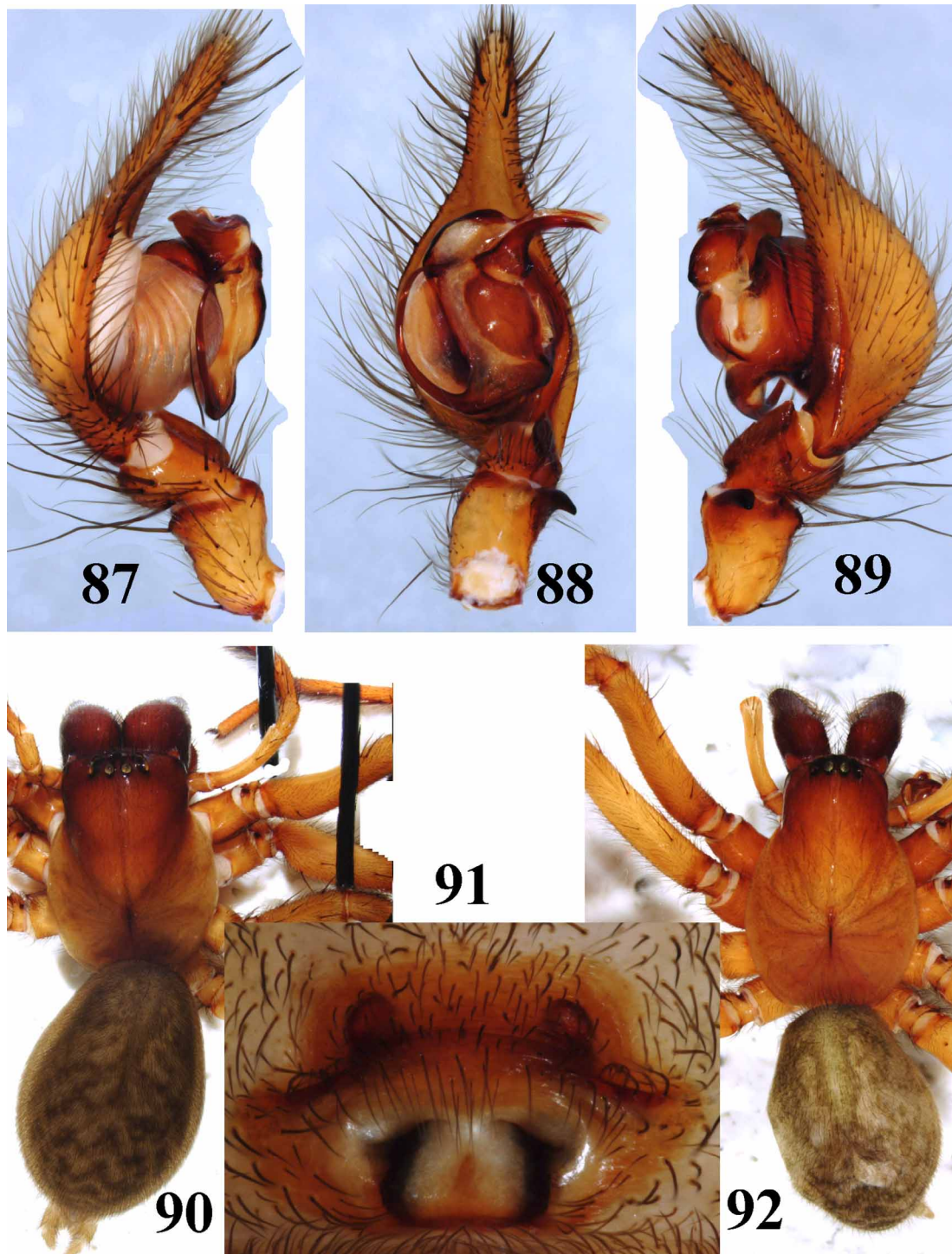
Diagnosis: This species can be easily distinguished from other Coelotinae by the absence of epigynal teeth, the broad spermathecae, the large spermathecal heads in the female, and the short, slightly curved patellar apophysis, the broad conductor apex, and the short, broad, less sclerotized median apophysis in the male (Figs 85–89, 91).

Description: See Wang (2003). Photos of habitus, eyes, labium and genitalia are provided in this study (Figs 85–98).

Distribution: China (Yunnan: Lushui) (Fig. 536).



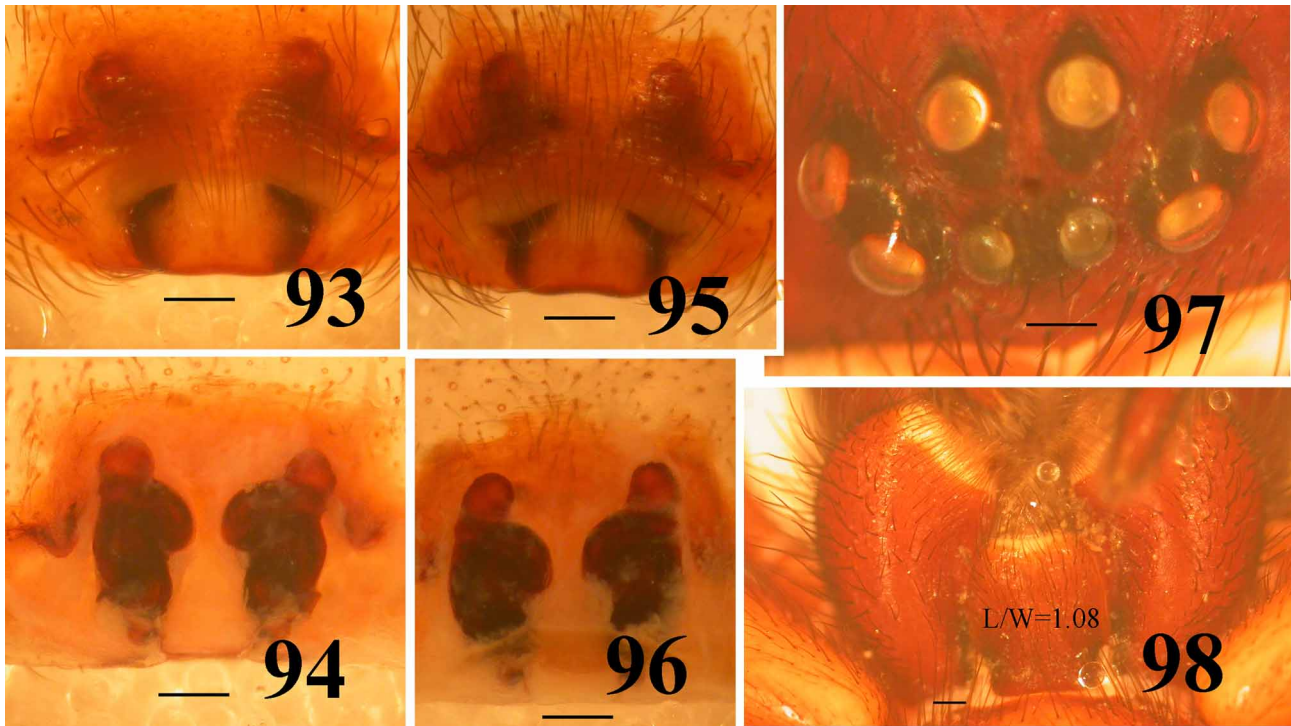
FIGURES 85–86. *Draconarius disgregus* Wang 2003, female from Lushui County, Pianma Township, Chan Yan He (HNU, CASENT9023091). Epigynum (ventral, dorsal), showing variations.



FIGURES 87–92. *Draconarius disgregus* Wang 2003, male (87–89, 92) and female (90–91) paratypes from Lushui County, Nujiang, Pianma (CAS, CASENT9016365). 87–89. Palp (prolateral, ventral, retrolateral); 90, 92. Habitus, dorsal; 91. Epigynum, ventral.

***Draconarius dubius* Wang 2003**
(Figs 99–120, 537)

Draconarius dubius Wang 2003: 530, figs 29A–D (Holotype male, male and female paratypes from Lushui County, Yunnan, China, in NHU and CAS, examined). Wang & Jäger 2008: 2279, fig. 4.



FIGURES 93–98. *Draconarius disgregus* Wang 2003, females (93–94, 97–98) (HNU CASENT9023091) and female (95–96) (HNU CASENT9022203) from Lushui County, Pianma Township, Chan Yan He. 93–96. Epigynum (ventral, dorsal); 97. Eyes, fronto-dorsal; 98. Labium, ventral (L/W=1.08).

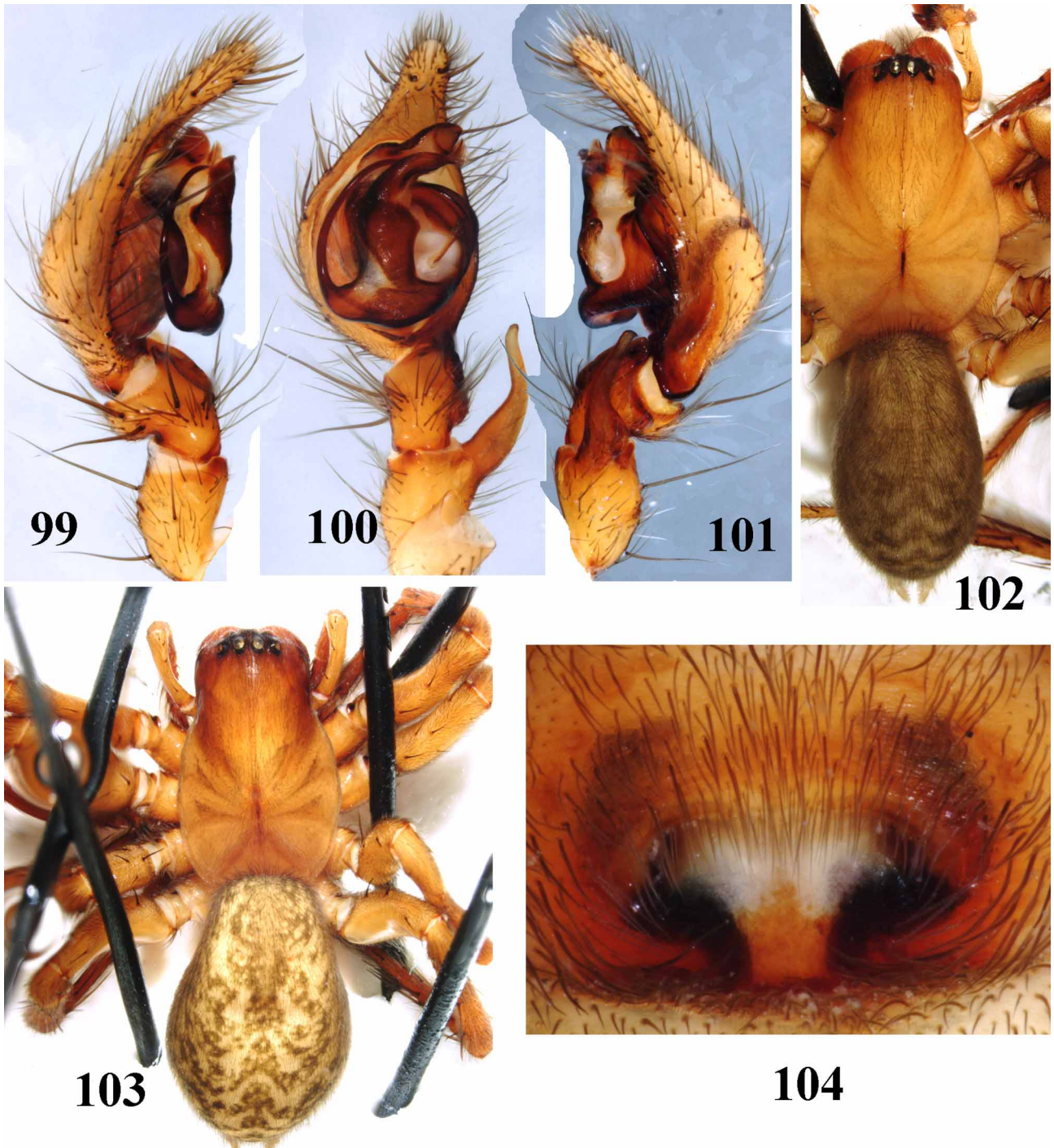
Additional material examined. CHINA: Yunnan: Lushui County: 1 ♀, Feng Xue Yakou, on Pianma Road, N25.97288°, E98.68336°, 3150 m, hand collecting under rocks, May 11, 2005, C. Griswold & D. Kavanaugh (HNU, CASENT9022195); 3 ♂, Feng Xue Yakou, 100 m S of Pianma Road, N25.97288°, E98.68336°, 3150 m, *Rhododendron* /Bamboo thicket, 25 pitfall traps, May 11–21, 2005, C. Griswold, D. Kavanaugh & K.J. Guo (HNU, CASENT9022107); 2 ♂, Feng Xue Yakou, 100 m S of Pianma Road, N25.97288°, E98.68336°, 3150 m, *Rhododendron*/Bamboo thicket, pitfall traps, May 11–21, 2005, C. Griswold, D. Kavanaugh & K.J. Guo (CAS, CASENT9030744); 1 ♀, Feng Xue Yakou, E side on Pianma Road, N25.97288°, E98.68336°, 3150 m, hand collecting under rocks, May 17, 2005, C. Griswold (HNU, CASENT9022252); 2 ♀, Pianma Township, Feng Xue Yakou, N25.97814°, E98.67508°, 3088 m, roadside, May 19, 2005, K.J. Guo (CAS, CASENT9022041); 1 ♀, Pianma Township, Feng Xue Yakou, N26.00949°, E98.61704°, 3142 m, along the road, May 17, 2005, K.J. Guo (HNU, CASENT9022072). **Fugong County:** 1 ♀, Lishadi, Shibali, N27.16650°, E98.77936°, 2537 m, forest, webs on tree trunks, at night, August 5, 2005, P. Paquin, D. Kavanaugh (HNU, CASENT9022570); 1 ♀, Lishadi, Shibali Yaku (pass #31), N27.21230°, E98.69600°, 3604 m, boulder field to bamboo thicket, under rocks, August 5, 2005, P. Paquin (HNU, CASENT9022561); 1 ♀, Gaoligongshan, 7.61 km directly WNN of Shibali, *Rhododendron* thicket, turning rocks amid bamboo, N27.20662°, E98.71773°, 3292 m, May 6, 2004, C. Griswold (CAS, CASENT 9020783); 1 ♀, Gaoligongshan, 1 km E Yaping Pass, turning rocks among dormant bamboo, N27.20854°, E98.20854°, 3506 m, May 6, 2004, C. Griswold (CAS, CASENT9020765); 1 ♀, Yaping subdistrict, Gaoligongshan, Maxidi, 7.2 km above Shibali, N27.16784°, E98.77782°, 3059 m, May 4, 2004, H.M. Yan, G.X. Peng (CAS, CASENT9020581); 1 ♀, Lishadi subdistrict, Gaoligongshan, 12 km above Shibali on Yaping Road, N27.20658°, E98.21782°, 3100–3280 m, May 8, 2004, H.M. Yan (CAS, CASENT9020600); 1 ♀, Gaoligongshan, 7.41 km WNW of Shibali, 36 km NNW of Fugong, beneath objects amidst dormant bamboo, along snowfield and avalanche debris, N27.20629°, E98.72001°, 3336 m, May 8, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9019948); 1 ♀, Gaoligongshan, Shibali Forest Station, in moist stream gully, N27.16894°, E98.72001°, 3336 m, May 8, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9019948).

E98.77205°, 2650 m, May 9, 2004, C. Griswold & H.M. Yan (CAS, CASENT9019910); 2♀, Gaoligongshan, Shibali Forest Station, in moist stream gully, N27.16894°, E98.77205°, 2650m, May 9, 2004, C. Griswold & H.M. Yan (HNU, CASENT9019909); 1♀, Lishadi, Shibali Yaku (pass #31), N27.21230°, E98.69600°, 3604 m, boulder field to bamboo thicket, under rocks, August 5, 2005, P. Paquin (HNU, CASENT9022562); 1♀, Lishadi, 1 km before Shibali Yaku (pass #31), 900 m N of the road, N27.21447°, E98.70064°, 3585 m, August 12, 2005, P. Paquin (HNU, CASENT9022556); 2♀, Lishadi, 500 m W of Shibali, N27.16650°, E98.77936°, 2537 m, deciduous forest litter, August 4, 2005, P. Paquin (HNU, CASENT9022576); 1♀, Lishadi, Shibali, N27.16650°, E98.77936°, 2537 m, forest, webs on tree trunks, at night, August 5, 2005, P. Paquin, D. Kavanaugh (HNU, CASENT9022571); 1♀, Lishadi, 500 m before Shibali Yaku (pass #31), N27.21354°, E98.70021°, 3585 m, stable scree slope on soil, August 7, 2005, P. Paquin (HNU, CASENT9022550); 1♀, Lishadi, 500 m W of Shibali, N27.16650°, E98.77936°, 2537 m, deciduous forest litter, August 4, 2005, P. Paquin (HNU, CASENT9022577); 1♀, Gaoligongshan, 1 km E Yaping Pass turning rocks among dormant bamboo, N27.20854°, E98.20854°, 3506 m, understory of good forest on E-facing slope; night collecting, May 6, 2005, C. Griswold (CAS, CASENT9020767); 1♀, Lishadi, 10.5 km W of Shibali, 100 m N road, N27.20192°, E98.71321°, 3250 m, dead conifer logs in conifer forest with *Rhododendron* patch, August 17, 2005, P. Paquin (CAS, CASENT9022565); 1♀, Lishadi, Shibali Yaku (pass #31), N27.21230°, E98.69600°, 3604 m, boulder field to bamboo thicket, under rocks, August 5, 2005, P. Paquin (CAS, CASENT9022560); 1♀, Lishadi, 10 km W of Shibali, N27.20055°, E98.71399°, 3221 m, mature pine forest with bamboo understory, under rocks & logs, August 6, 2005, P. Paquin (CAS, CASENT9022538); 2♀, Gaoligongshan, 1 km E Yaping Pass, turning rocks among dormant bamboo, N27.20854°, E98.20854°, 3506 m, May 6, 2004, C. Griswold (CAS, CASENT9020766); 1♀, Lishadi subdist, Gaoligongshan, 12 km above Shibali on Yaping Road, N27.20658°, E98.21782°, 3100–3280 m, May 8, 2004, H.M. Yan (CAS, CASENT9020601); 1♀, Gaoligongshan, 10.1–11.5 road km from Shibali on Yaping Road, N27.20049°, E98.71354° to N27.20676°, E98.71763, 3225–3290 m, night collecting along road, May 8, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020035); 1♀, Lishadi subdistrict, Gaoligongshan, Maxidi, 11.5 km above Shibali on Yaping Road, N27.20490°, E98.71480°, 3266 m, May 6, 2004, H.M. Yan (CAS, CASENT9025795); 1♀, Gaoligongshan, 7.61 km directly WNN of Shibali, *Rhododendron* thicket, turning rocks amid bamboo, N27.20662°, E98.71773°, 3292 m, May 6, 1998, C. Griswold (HNU, CASENT9020784); 3♀, Lishadi Township, 8.5 km above Shibali on Shibali Road, North Fork of Yamu He, N27.18416°, E98.72026°, 3100 m, May 9, 2004, D. Kavanaugh & H.B. Liang (HNU, CASENT9023030); 1♀, Gaoligongshan, 1 km E Yaping Pass turning rocks among dormant bamboo, N27.20854°, E98.20854°, 3506 m, May 6, 2004, C. Griswold (HNU, CASENT9020768); 1♀, Pihe Township, Yueliangtian Village, N26.56784°, E98.90884°, 1520 m, August 20/23/24, 2005, G. Tang (CAS, CASENT9025591); 4♀, Lishadi Township, Yakou of Shibali, N27.21234°, E98.69601°, 3615 m, August 5/7, 2005, G. Tang (CAS, CASENT9025583). **Gongshan County:** 1♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi, N27.79655°, E98.50562°, 3000 m, September 27 to October 6, 2002, D. Kavanaugh, P.E. Marek, D.Z. Dong, & X.C. Liang (CAS, CASENT9025832.); 1♀, Cikai Township, 53 km W of Gongshan on Dulong Valley Road, N27.77422°, E98.44716°, 3380m, October 1, 2002, D. Kavanaugh collector (CAS, CASENT9025855); 1♀, Cikai Township, Dabadi to Yakou, tunnel, marshland, N27°27', E98°37', 3000 m, October 5, 2002, H.M. Yan (CAS, CASENT9025858); 1♀, Dulongjiang Township, near San Dui, N27°43'3.6" , E98°25'17" , 2620 m, October 29, 2004, V.F. Lee (HNU, CASENT9023065); 1♀, Dulongjiang Township, near San Dui, N27°43'3.6" , E98°25'17" , 2620 m, October 29, 2004, V.F. Lee (CAS, CASENT9023066).

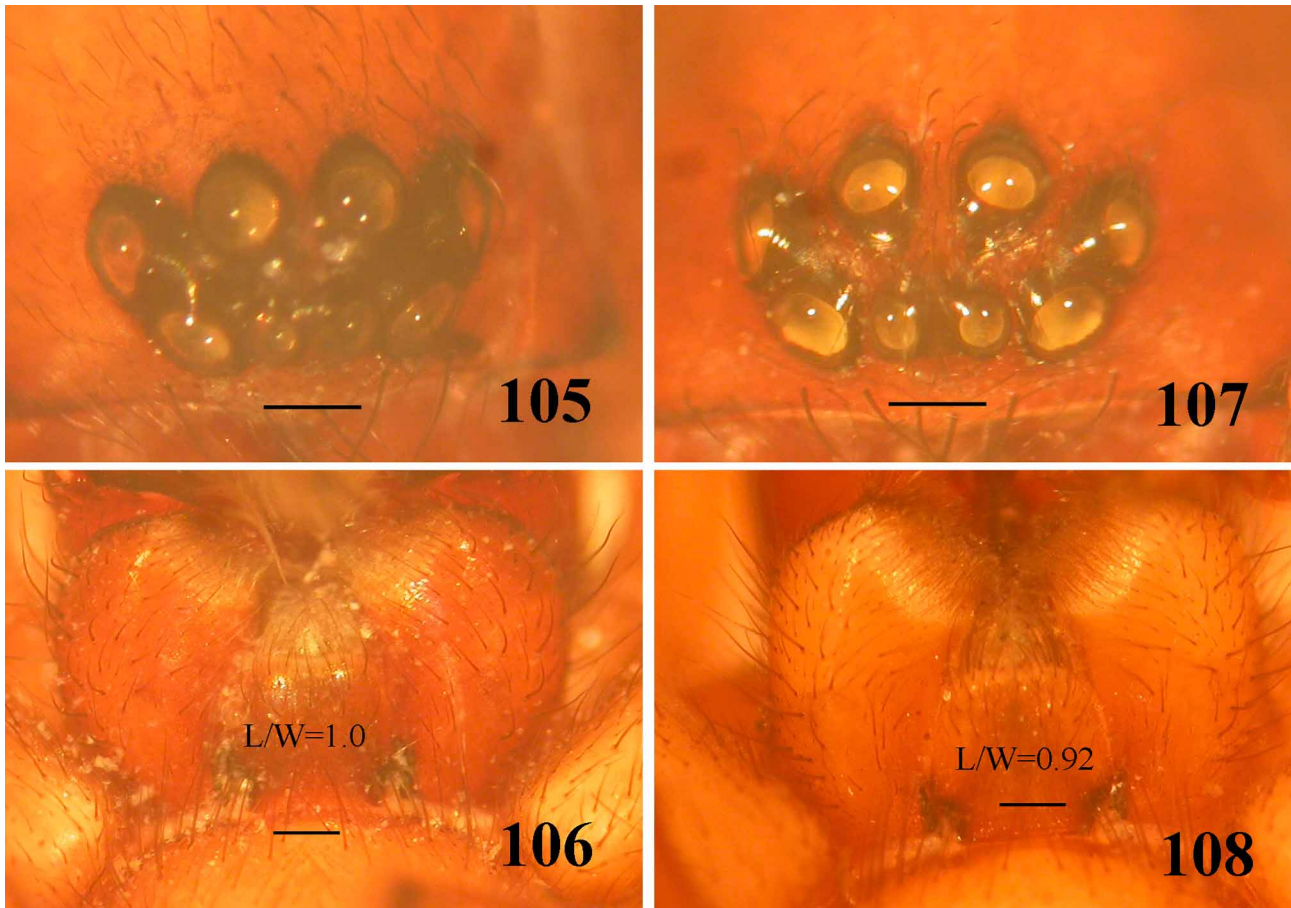
Diagnosis: The female is similar to *D. patellabifidus* Wang 2003 in lacking epigynal teeth and having broad spermathecae, but can be recognized by the absence of atrial ridges and the posteriorly broad, anteriorly less broad, diverging spermathecae (Figs 104, 109–120). The male can be easily recognized by the long patellar apophysis (longer than patellar length), the simple median apophysis, the bifurcate conductor, and the pro-laterally originating embolus (Figs 99–101).

Description: See Wang (2003). Photos of habitus, eyes, labium and genitalia are provided in this study (Figs 99–120).

Distribution: China (Yunnan: Lushui, Fugong, Gongshan) (Fig. 537).



FIGURES 99–104. *Draconarius dubius* Wang 2003, male paratype (99–102) (CAS, CASENT9016362) and female paratype (103,104) (CAS, CASENT9016366) from Lushui County, Nujiang, Pianma. 99–101. Palp (prolateral, ventral, retrolateral); 102–103. Habitus, dorsal; 104. Epigynum, ventral.



FIGURES 105–108. *Draconarius dubius* Wang 2003, male (105–106) (CAS, CASENT9030744) and female (107–108) (CAS, CASENT9022041) from Lushui County, Feng Xue Yakou. 105, 107. Eyes, fronto-dorsal; 106, 108. Labium, ventral (L/W: 106=1.00; 108=0.92).

***Draconarius duplus* sp. nov.**

(Figs 121–127, 537)

Type material: *Holotype*. ♀, **CHINA: Yunnan: Longling County:** Long Jiang Township, Xiao Hei Shan Nature Reserve, N24.83671°, E098.76185°, 2067 m, hand collecting in a big log, May 28, 2005, H.M. Yan & K.J. Guo (HNU, CASENT9025574).

Etymology: The species name came from Latin “duplus”, which means “double”, and refers to its anteriorly originating and extending copulatory ducts; adjective

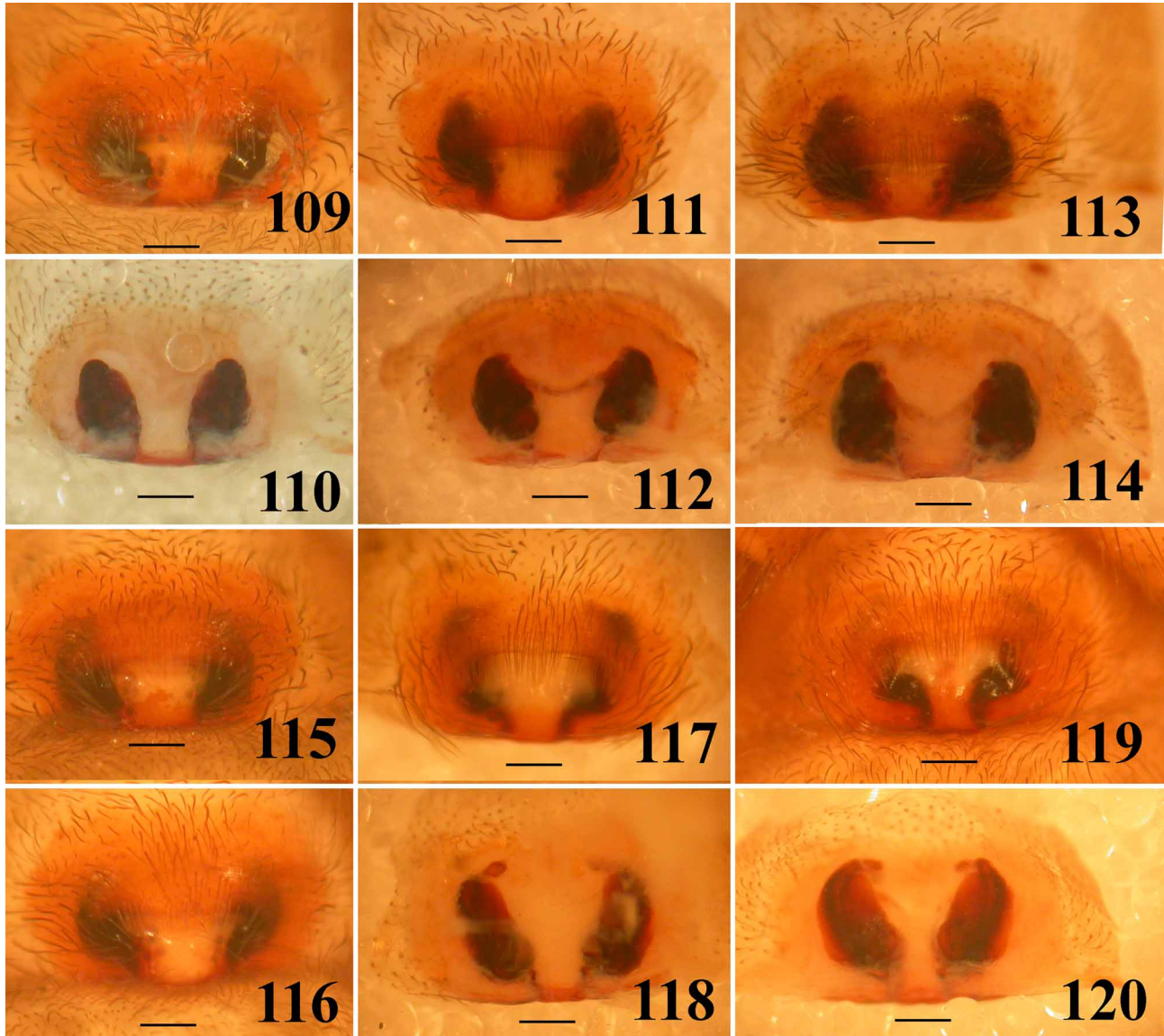
Diagnosis: The female can be easily distinguished from other Coelotinae by the large atrium, the broad, anteriorly extending copulatory ducts, and the small, round, widely separated spermathecae (Figs 121–122).

Description: *Female (holotype)*. Medium sized coelotine, total length 7.35 (Fig. 125). Dorsal shield of prosoma 3.40 long, 2.55 wide, opisthosoma 3.95 long, 2.40 wide. AME smallest, $\frac{2}{3}$ size of other eyes, which are subequal or with slightly larger ALE (AME 0.09, ALE 0.15, PME 0.14, PLE 0.14); AME separated from each other by slightly less than their diameter, from ALE by slightly more than AME diameter; PME close together, separated from each other by $\frac{1}{3}$ of their diameter, widely separated from PLE by more than their diameter (AME–AME 0.08, AME–ALE 0.11, ALE–PLE 0.07, PME–PME 0.05, PME–PLE 0.19, AME–PME 0.11) (Fig. 126). Chelicerae with 3 promarginal and 3 retromarginal teeth. Labium longer than wide (L/W=1.10) (Fig. 127). Epigynal teeth small, arising anterolaterally of atrium, widely separated by at least atrial width; atrium large, as long as wide, with posteriorly extending anterior margin and indistinct lateral margins;

atrial ridges distinct, extending posteriorly, forming a square-shaped middle area; copulatory ducts broad, originating and extending anteriorly, closely set; spermathecae small, slightly elongated, widely separated by approximately their width; spermathecal heads indistinct in examined specimen (Figs 121–124).

Male. Unknown.

Distribution: China (Yunnan: Longling) (Fig. 537).

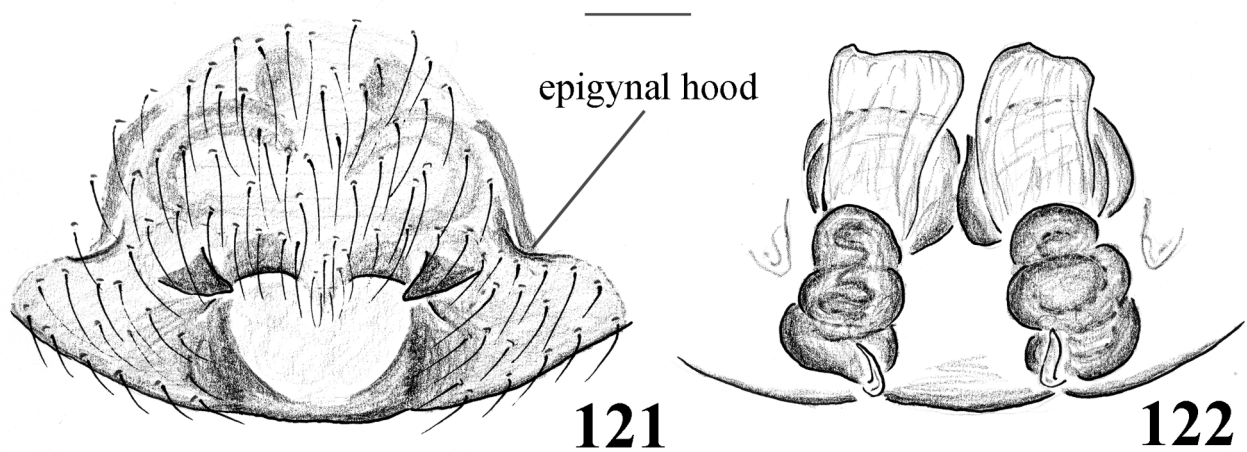


FIGURES 109–120. *Draconarius dubius* Wang 2003, female epigynum. 109–110. From Gaoligongshan, Shibali Forest Station (HNU, CASENT9019909); 111–112. From Fugong County, Lishadi (HNU, CASENT9023030); 113–114. From Fugong County, Lishadi, (CAS, CASENT9025583); 115. From Gaoligongshan, Yaping (CAS, CASENT9020765); 116. From Fugong County, Yaping, Maxidi (CAS, CASENT9020581); 117–118. From Lushui County, Pianma, Feng Xue Yakou (HNU, CASENT9022252); 119–120. From Lushui County, Pianma, Feng Xue Yakou (CAS, CASENT9022041). 109, 111, 113, 115, 116, 117, 119. Ventral; 110, 112, 114, 118, 120. Dorsal.

***Draconarius episomos* Wang 2003**

(Figs 128–137, 538)

Draconarius episomos Wang 2003: 530, figs 30A–B (female holotype and paratype from Lushui County, Yunnan, China, in HNU and CAS, examined).



FIGURES 121–122. *Draconarius duplus* sp. nov., female holotype from Longling County, Longjiang, Xiao Hei Shan Nature Reserve (HNU, CASENT9025574). Epigynum (ventral, dorsal).



FIGURES 123–127. *Draconarius duplus* sp. nov., female holotype from Longling County, Longjiang, Xiao Hei Shan Nature Reserve (HNU, CASENT9025574). 123–124. Epigynum (ventral, dorsal), epigynal teeth highlighted with white lines; 125. Habitus, dorsal; 126. Eyes, fronto-dorsal; 127. Labium, ventral (L/W=1.10).

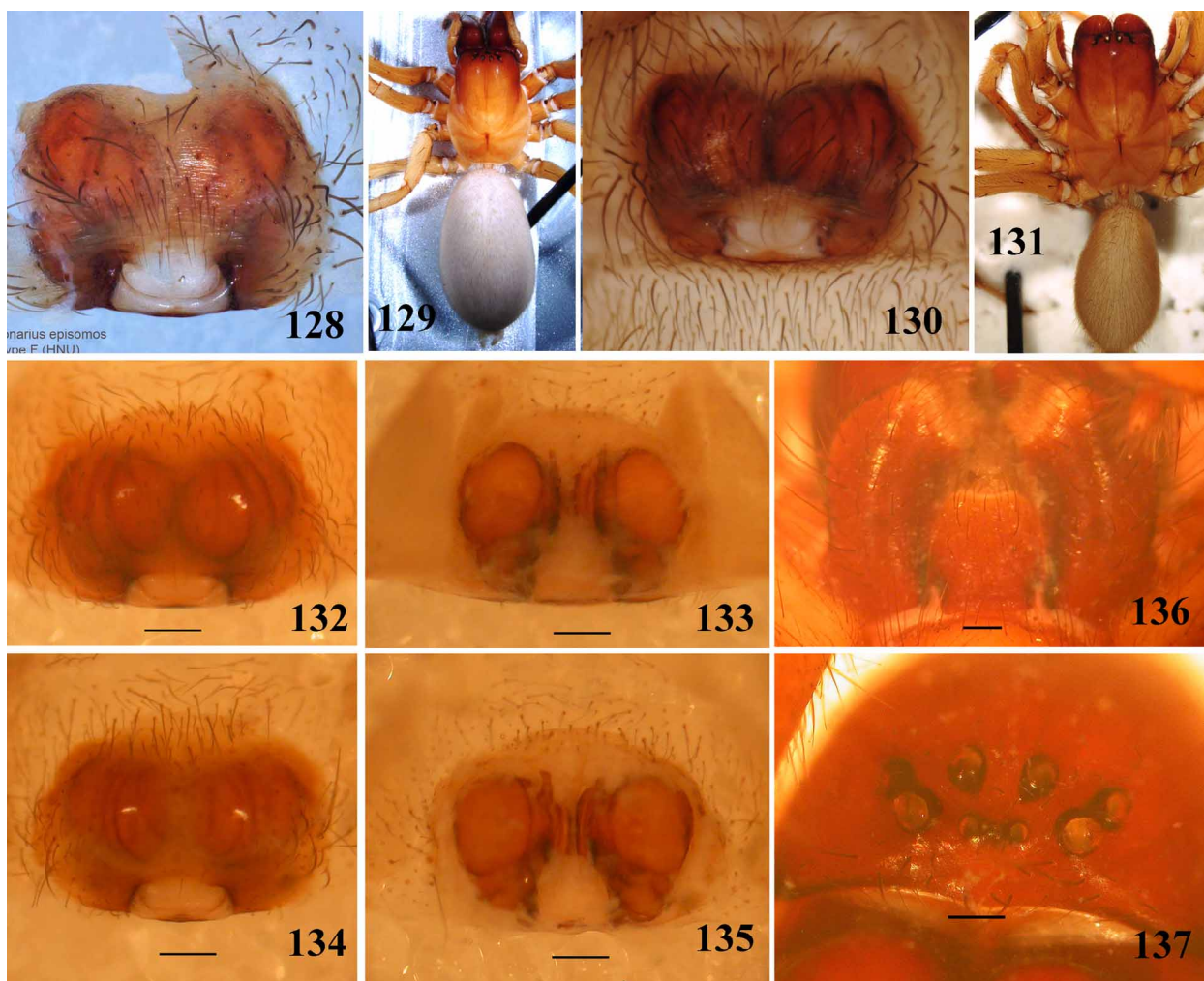
Additional material examined: CHINA: Yunnan: Fugong County: 1♀, Gaoligongshan, 10.1 road km above Shibali, *Rhododendron* thicket, turning rocks amid bamboo, N27.20662°, E98.71773°, 3226 m, May 6, 2004, C. Griswold (HNU, CASENT9020684); 1♀, Lishadi Township, Yakou of Shibali, N27.21234°, E098.69601°, 3615 m, August 5/7, 2005, G. Tang (CAS, CASENT9025584). Lushui County: 1♀, Pianma Township, Feng Xue Yakou, N26.00949°, E98.61704°, 3142 m, along the road, May 17, 2005, K.J. Guo (CAS, CASENT9022071).

Diagnosis: The female is similar to *D. mikrommatos* sp. nov. in having a small, posteriorly situated atrium, the anteriorly broad spermathecae, and the medially arising spermathecal heads, but can be distinguished by the contiguous anterior part of spermathecae (Figs 128, 130, 132–135).

Description: Female. See Wang (2003). Photos of habitus, eyes, labium and epigynum are provided in this study (Figs 128–137).

Male. Unknown.

Distribution: China (Yunnan: Lushui, Fugong) (Fig. 538).



FIGURES 128–137. *Draconarius episomos* Wang 2003, female paratype (128–129) (CAS, CASENT9016355) and holotype (130–131) (HNU) from Lushui County, Pianma Yakou; females, (132–133) (HNU, CASENT9020684), (134–135) (CAS, CASENT9025584) and (136–137) (HNU, CASENT9020684), from Fugong County, Shibali. 128, 130, 132, 134. Epigynum, ventral; 133, 135. Epigynum, dorsal; 129–130. Habitus, dorsal; 136. Labium, ventral (L/W=1.10); 137. Eyes, fronto-dorsal.

***Draconarius euryembolus* sp. nov.**

(Figs 138–145, 538)

Type material: *Holotype.* ♂, **CHINA: Yunnan: Longling County:** Pass over Gaoligongshan, Nankang, 36 km directly SE Tengchong, N24°50', E98°47', 2100 m, native forest, November 4–7, 1998, C. Griswold, D. Kavanaugh, C.L. Long (HNU).

Paratype. **CHINA: Yunnan: Tengchong County:** 1♂, Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55'25", E98°45'15", 2416 m, October 12, 2003, G. Tang (CAS, CASENT9020370).

Etymology: The species name is derived from Greek word “eurys”, which means “broad”, combined with the word “embolus”, and refers to the broad base of embolus; name in apposition.

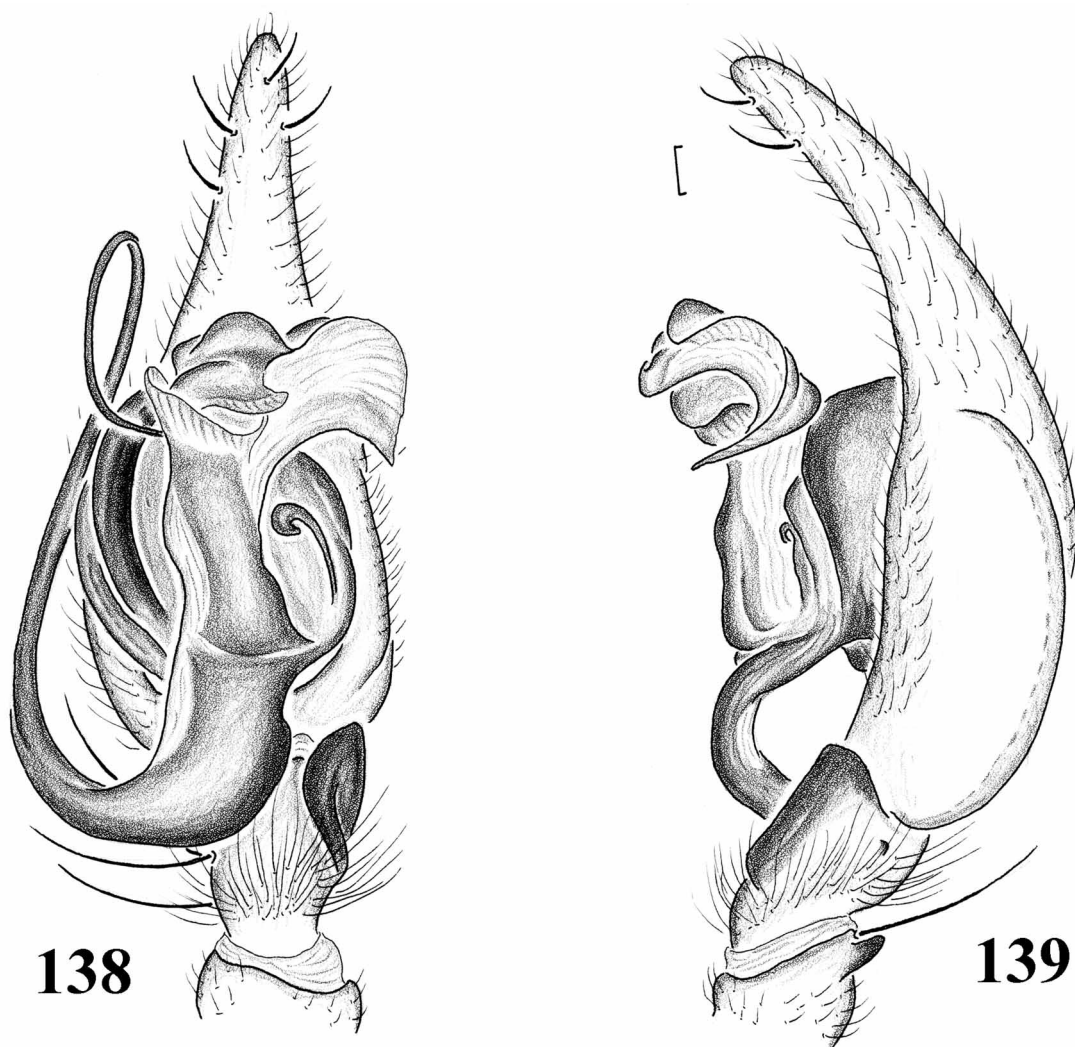
Diagnosis: This new species can be easily distinguished from other *Draconarius* species by the absence of a conductor dorsal apophysis (Figs 138–139). It is similar to the members of the genus *Iwogumoa* Kishida

1955 due to the lack of a conductor dorsal apophysis, but can be easily distinguished from *Iwogumoa* by the presence of a broad conductor, a broad embolus, and the large AME (larger than ALE) (Fig. 144).

Description: *Male (holotype)* Large sized Coelotinae, total length 9.80 (Fig. 143). Dorsal shield of prosoma 5.30 long, 3.80 wide; opisthosoma 4.50 long, 3.60 wide. AME largest; ALE slightly smaller than AME, but larger than posterior eyes, which are subequal (AME 0.29, ALE 0.24, PME 0.21, PLE 0.22); AME separated from each other by slightly less than half of their diameter, slightly separated from ALE; PME separated from each other by about their diameter, from PLE by about 1.5 times PME diameter (AME–AME 0.13, AME–ALE 0.04, PME–PME 0.20, PME–PLE 0.32, AME–PME 0.20) (Fig. 144). Promargin of chelicera with 3 teeth, retromargin with 3. Labium with length and width subequal (L/W=1.00) (Fig. 145). Palpal patellar apophysis small; RTA more than half of tibial length, with blunt, slightly protruding distal end; lateral tibial apophysis tiny, barely visible; cymbial furrow large, slightly more than half of cymbial length; conductor short, broad, with a large lamella, without a dorsal apophysis; median apophysis spoon-shaped, long, not free-standing along anterior edge; embolus originating between prolateral and proximal, with base broad, long, extending posteriorly beyond tibia/tarsus junction to middle part of tibia, thread broad, starting at 9-o'clock-position, running more than one quarter of an oval, distal half filiform, coiling beyond distal part of bulb (Figs 138–142).

Female. Unknown.

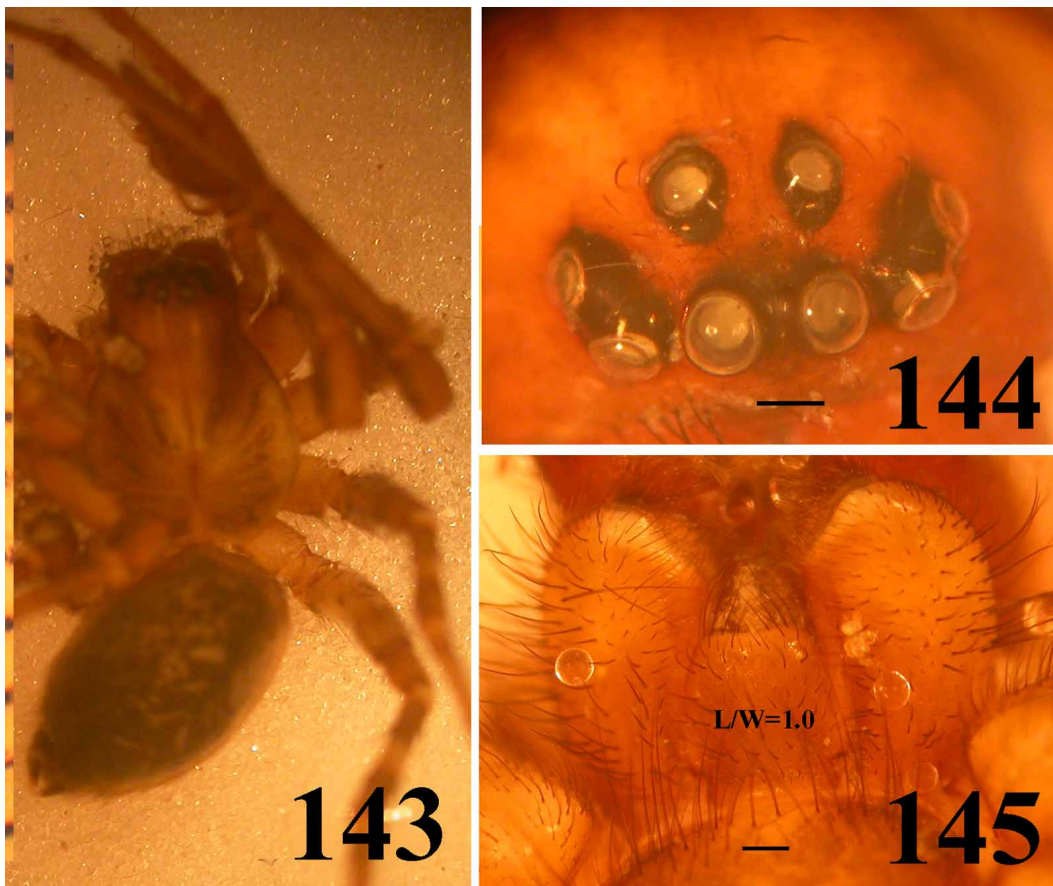
Distribution: China (Yunnan: Tengchong, Longling) (Fig. 538).



FIGURES 138–139. *Draconarius euryembolus* sp. nov., male holotype (HNU) from Tengchong County, Nankang. Palp (ventral, retrolateral).



FIGURES 140–142. *Draconarius euryembolus* sp. nov., male holotype (HNU) from Tengchong County, Nankang. Palp (prolateral, prolatero-ventral, retrolateral).

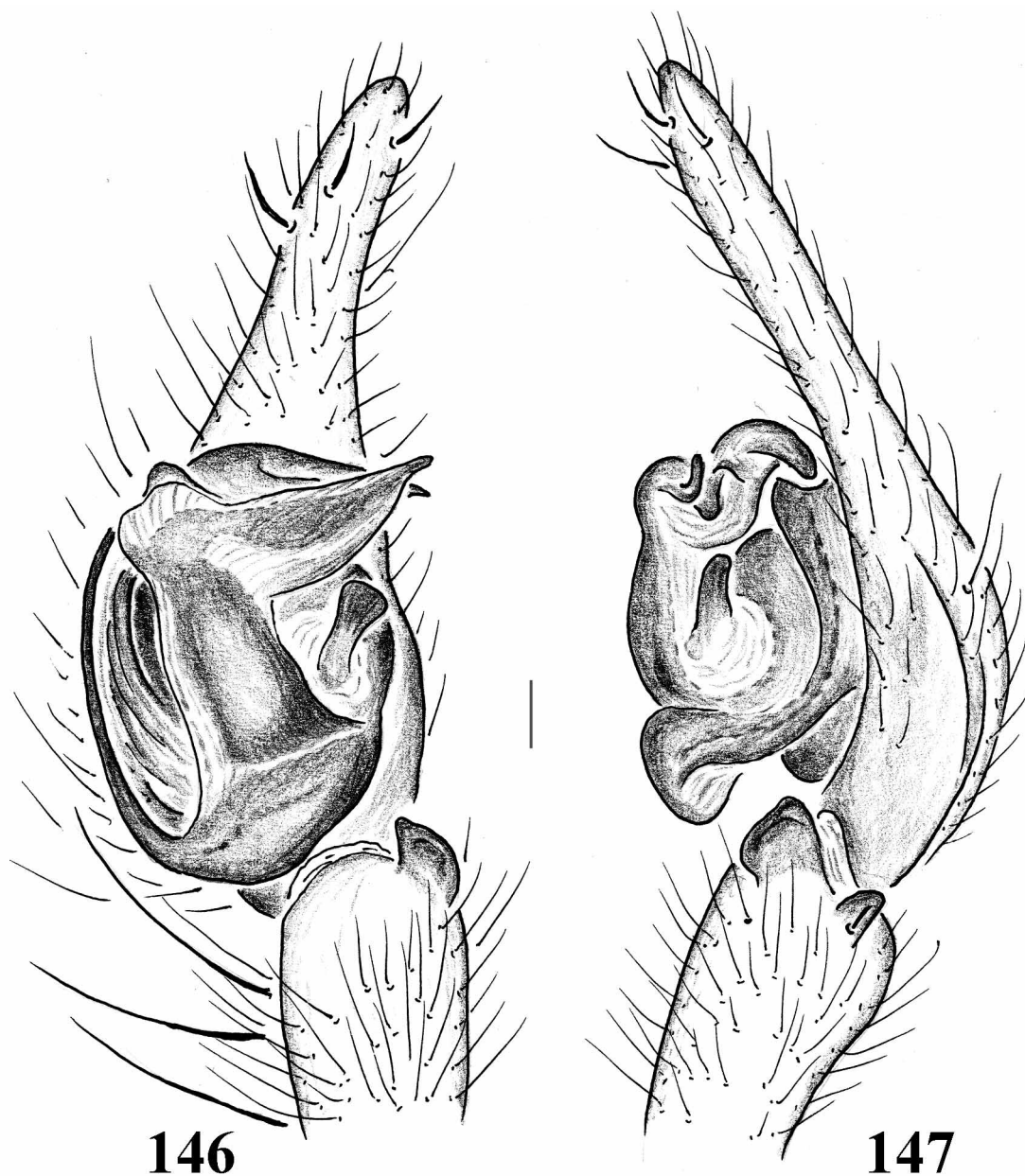


FIGURES 143–145. *Draconarius euryembolus* sp. nov., male holotype from Tengchong County, Nankang (HNU). 143. Habitus, dorsal; 144; Eyes, fronto-dorsal; 145. Labium, ventral (L/W=1.00).

***Draconarius exilis* Zhang, Zhu & Wang 2005**
(Figs 146–154, 539)

Draconarius exilis Zhang *et al.* 2005: 46, figs 1–6 (female holotype, male and female paratypes from Jiuzhaigou, Sichuan, China, in MHB, not examined).

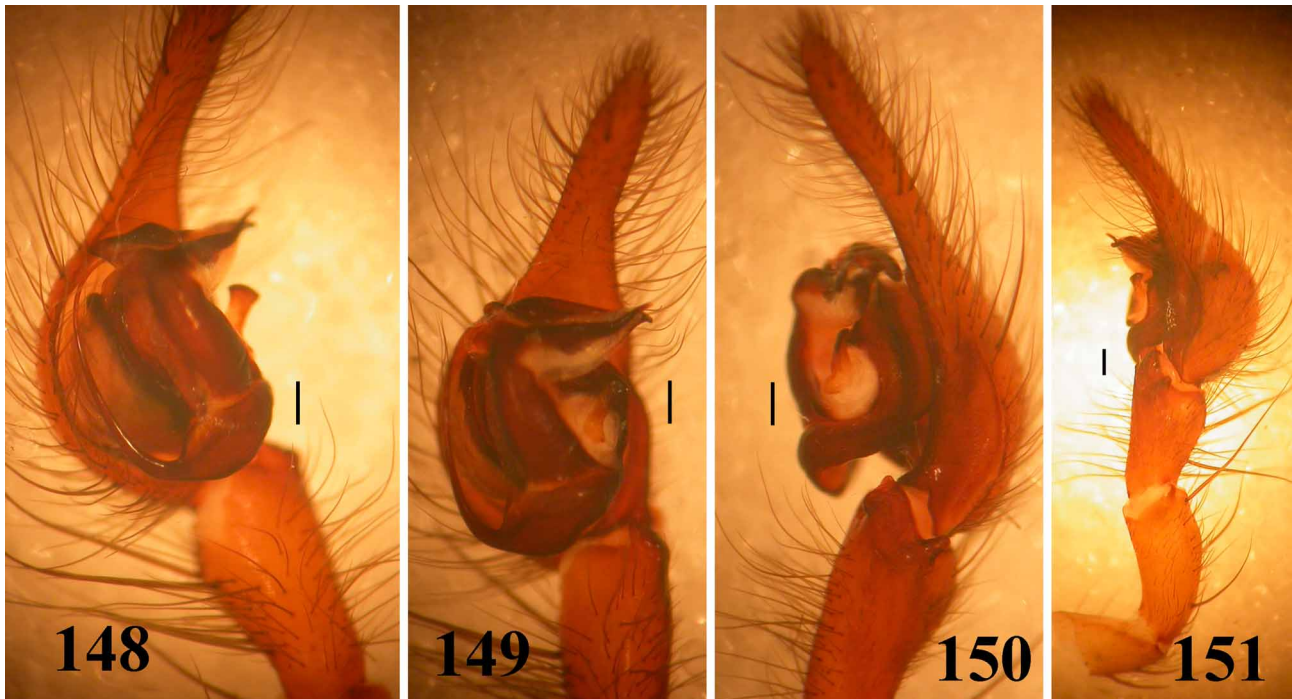
Additional material examined: CHINA: Yunnan: Lushui County: 2♂, Pianma Township, Feng Xue Yakou, 3142 m, N26.00949°, E98.61704°, along the road, May 17, 2005, K.J. Guo (CAS, CASENT9022076); 1♂, Feng Xue Yakou, E. side on Pianma Road, 3150 m, N25.97288°, E98.68336°, night collecting on buildings, cliffs, roadcut, May 17, 2005, C. Griswold (HNU, CASENT9022267).



FIGURES 146–147. *Draconarius exilis* Zhang, Zhu & Wang 2005, male from Lushui County, Pianma, Feng Xue Yakou (CAS, CASENT9022076). Palp (ventral, retrolateral).

Specimens examined and data provided by Xiang Xu at Hunan Normal University. CHINA: Yunnan: Deqin County: 8♂ 1♀, Daxueshan, N28.5°, E98.9°, July 28, 2000, X.D. Yu (IZCAS). **Sichuan: Dege**

County: 1♀, Que-er-shan, west slope, N31.8°, E99.0°, July 7, 1983, C.L. Niu (IZCAS); 1♀, Ma-long-gan-ge-qu, N31.8°, E98.6°, July 10, 1983, S.Y. Ma (IZCAS). **Daofu County:** Gexia 1♀, N31.0°, 101.1°, July 11, 1983, C.L. Niu (IZCAS).



FIGURES 148–151. *Draconarius exilis* Zhang, Zhu & Wang 2005, male from Lushui County, Pianma, Feng Xue Yakou (CAS, CASENT9022076), palp. 148–150. Prolateral, ventral, retrolateral; 151. Retrolateral, showing the elongated patella and tibia.

Diagnosis: The male of this species is similar to *D. incertus* Wang 2003 and related species in having a similar conductor, a prolaterally originating embolus, and a simple median apophysis, but can be easily distinguished by the absence of a patellar apophysis, the short RTA, and the distinctly elongate tibia (Figs 146–147). The female can be recognized by the absence of epigynal teeth, the small atrium and copulatory ducts and the small, round spermathecae (Zhang *et al.* 2005: figs 2–3).

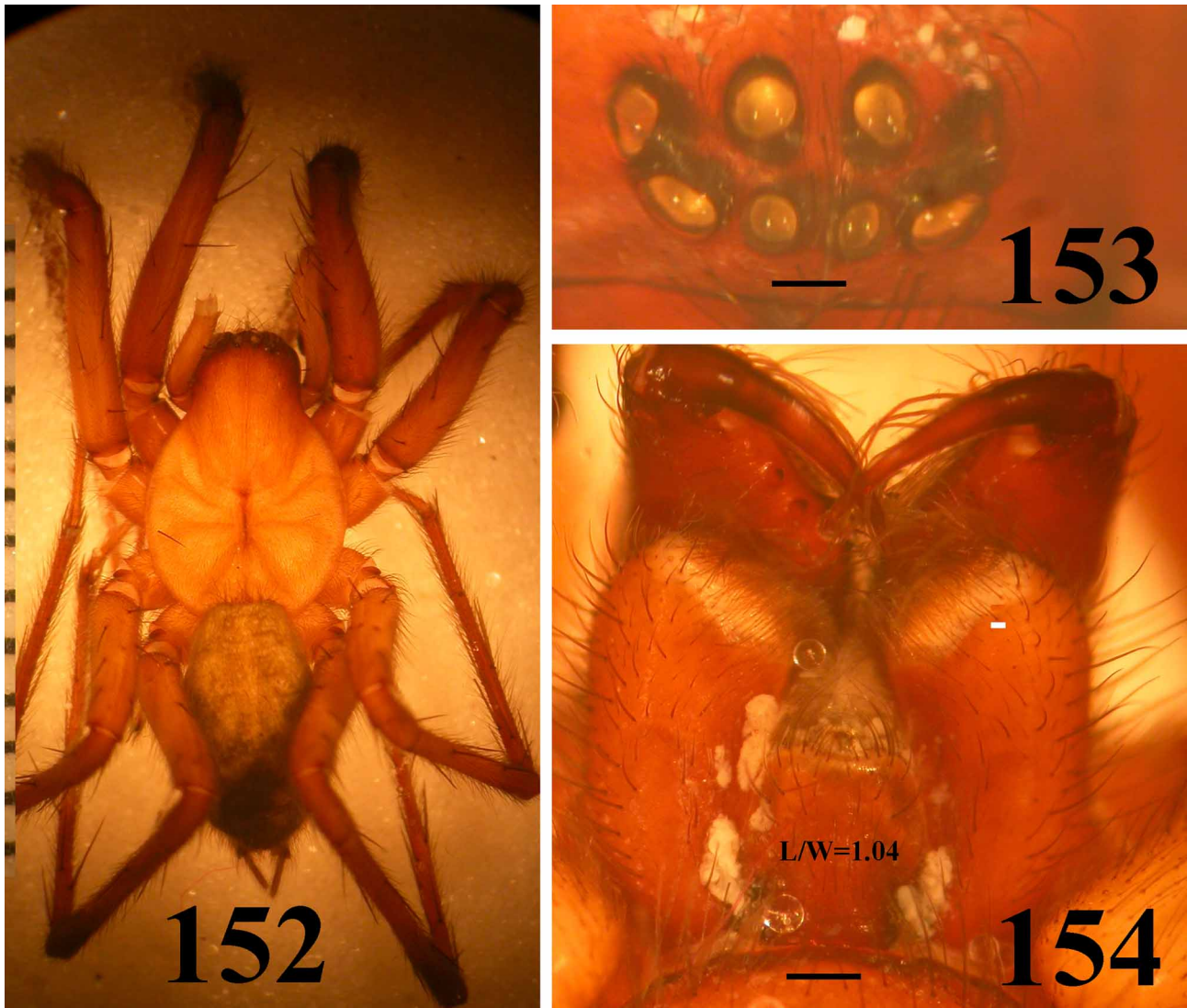
Notes: *D. exilis* was originally collected from Jiuzhaigou in Sichuan Province, which is located in north-west part of Sichuan and far from Yunnan. In addition to the Yunnan specimens examined in this study, Dr. Xiang Xu of HNU also found *D. exilis* specimens from both south part of Sichuan and Yunnan (Deqin County, which is next to Lushui County). The male specimens examined in this study show much smaller AME compared to the large AME (larger than ALE) described by Zhang *et al.* (2005). However, the female paratype of Zhang *et al.* has a similar eye size compared with that of our male specimen. As a result, we suggest that the AME of the male holotype of Zhang *et al.* (2005) might be mis-measured, and that this species is widespread from Sichuan to western Yunnan (Fig. 539).

Redescription: *Male* (one male of CASENT9022076 measured). Large sized Coelotinae, total length 11.58 (Fig. 152). Dorsal shield of prosoma 5.58 long, 4.00 wide; opisthosoma 6.00 long, 2.50 wide. AME smallest; lateral eyes subequal or with ALE slightly larger; PME between AME and PLE in size (AME 0.13, ALE 0.20, PME 0.16, PLE 0.19); AME separated from each other by $\frac{3}{4}$ of their diameter, from ALE by about half of AME diameter; PME separated from each other by $\frac{3}{4}$ of their diameter, from PLE by PME diameter (AME–AME 0.09, AME–ALE 0.07, PME–PME 0.12, PME–PLE 0.17, AME–PME 0.13) (Fig. 153). Promargin of chelicera with 3 teeth, retromargin with 2. Labium with length and width subequal (L/W=1.04) (Fig. 154). Palpal patellar apophysis absent; tibia long, RTA short, less than $\frac{1}{5}$ of tibial length; lateral tibial apoph-

ysis large, distinctly separated from RTA, with a distinct setae at its base; cymbial furrow short, less than half of cymbial length; conductor short, slightly bifurcate and anteriorly extending, with a small basal lamella and a large dorsal apophysis; median apophysis simple, not spoon-shaped; embolus short, filiform, prolateral in origin (Figs 146–151).

Female. See Zhang *et al.* (2005).

Distribution: China (Sichuan: Jiuzhanggou, Dege, Daofu; Yunnan: Lushui, Deqin) (Fig. 539).



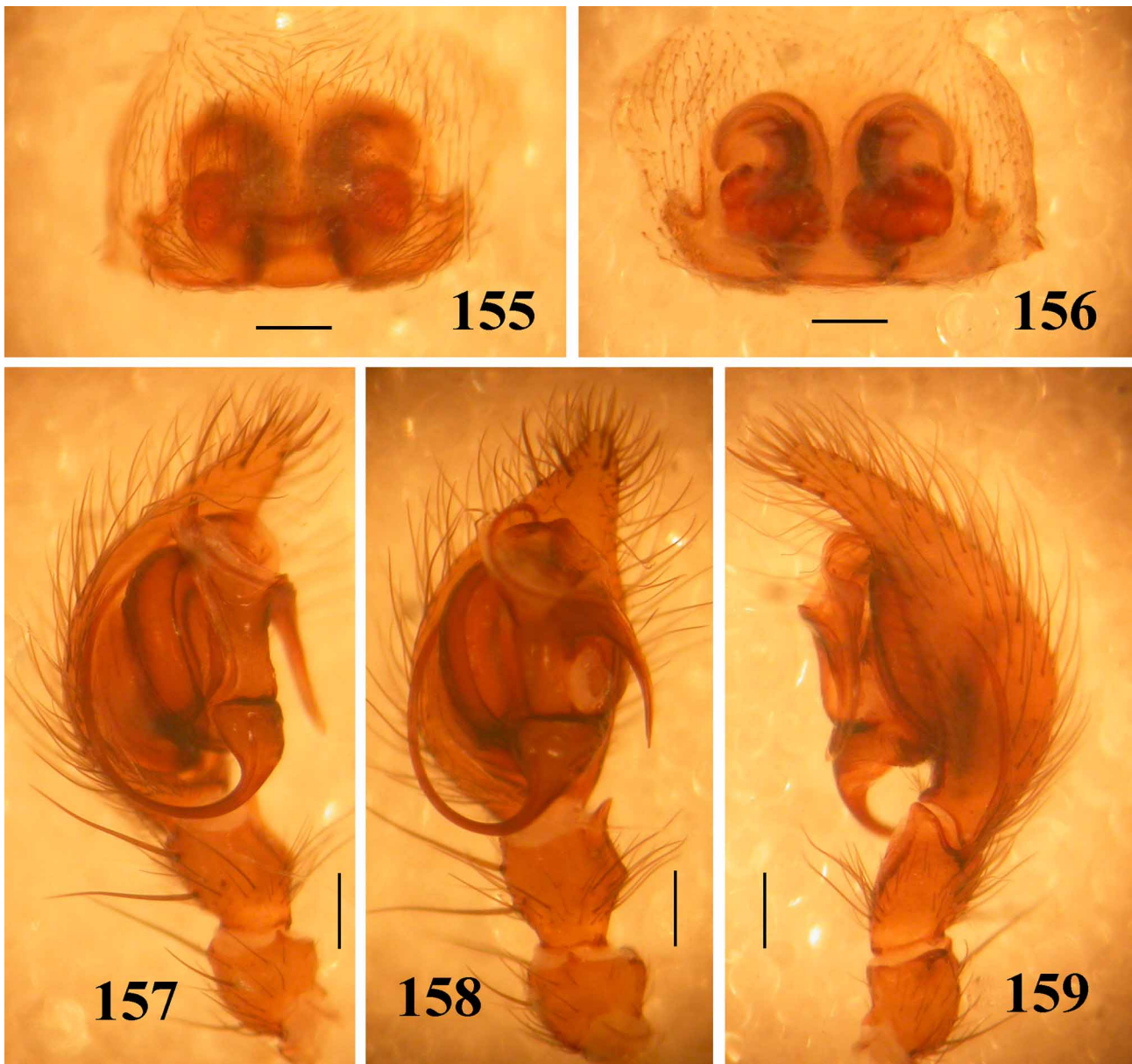
FIGURES 152–154. *Draconarius exilis* Zhang, Zhu & Wang 2005, male from Lushui County, Pianma, Feng Xue Yakou (CAS, CASENT9022076). 152. Habitus, dorsal; 153. Eyes, fronto-dorsal; 154. Labium, ventral (L/W=1.04).

***Draconarius flos* Wang & Jäger 2007**
(Figs 155–165, 539)

Draconarius flos Wang & Jäger 2007: 37, figs 54–61 (male holotype and female paratype from Dali, Yunnan, China, in SMF, examined).

Additional material examined: CHINA: Yunnan: Dali: 1♂ 1♀, Dali Bai Nat. Aut. Pref., Diancang Shan, 3 km W Dali old town, pine forest at “Cloud Road”, right upper chairlift station, N25°41.1', E100°06.085', 2650–2750 m, needle and leaf litter, September 1, 2003, D.W. Wrase (SMF); 2♂ 1♀, Dali Bai Nat. Aut. Pref.,

Diancang Shan, 5 km SSW Dali old town, N25°38.7', E100°08.3', 2800 m, creek valley above cablecar, shrubs, bamboo, moss, old flood debris, August 26, 2003, D.W. Wrase (SMF); 1♂ 1♀, Dali Bai Nat. Aut. Pref., Diancang Shan, 3 km W Dali old town, creek valley at “Cloud Road”, left upper chairlift station, N25°41', E100°07', 2700 m, bamboo, moss, leaf litter, August 28, 2003, D.W. Wrase (SMF).



FIGURES 155–159. *Draconarius flos* Wang & Jäger 2007, female (155–156) and male (157–159) from Dali, Mt. Cangshan (SMF). 155–156. Epigynum (ventral, dorsal); 157–159. Palp (prolateral, ventral, retrolateral).

Diagnosis: The female of this species can be easily recognized by the absence of epigynal teeth and the large, anteriorly extending, coiling copulatory ducts (Figs 155–156). The male is similar to *D. kavanaughi* **sp. nov.** in having a long, posteriorly extending conductor, but can be distinguished by the reduced median apophysis and the proximally originating embolus (Figs 157–159).

Description: See Wang & 2007. Photos of habitus, eyes, labium and genitalia are provided in this study (Figs 155–165).

Distribution: China (Yunnan: Dali) (Fig. 539).



FIGURES 160–165. *Draconarius flos* Wang & Jäger 2007, female (160–162) and male (163–165) from Dali, Mt. Cangshan (SMF). 160, 163. Habitus, dorsal; 161, 164. Eyes, fronto-dorsal; 162, 165, labium, ventral (L/W: 162=1.03; 165=1.00).

***Draconarius gigas* sp. nov.**

(Figs 166–173, 539)

Type material examined: *Holotype*. ♂, **CHINA: Yunnan: Tengchong County:** Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (HNU, CASENT9020367).

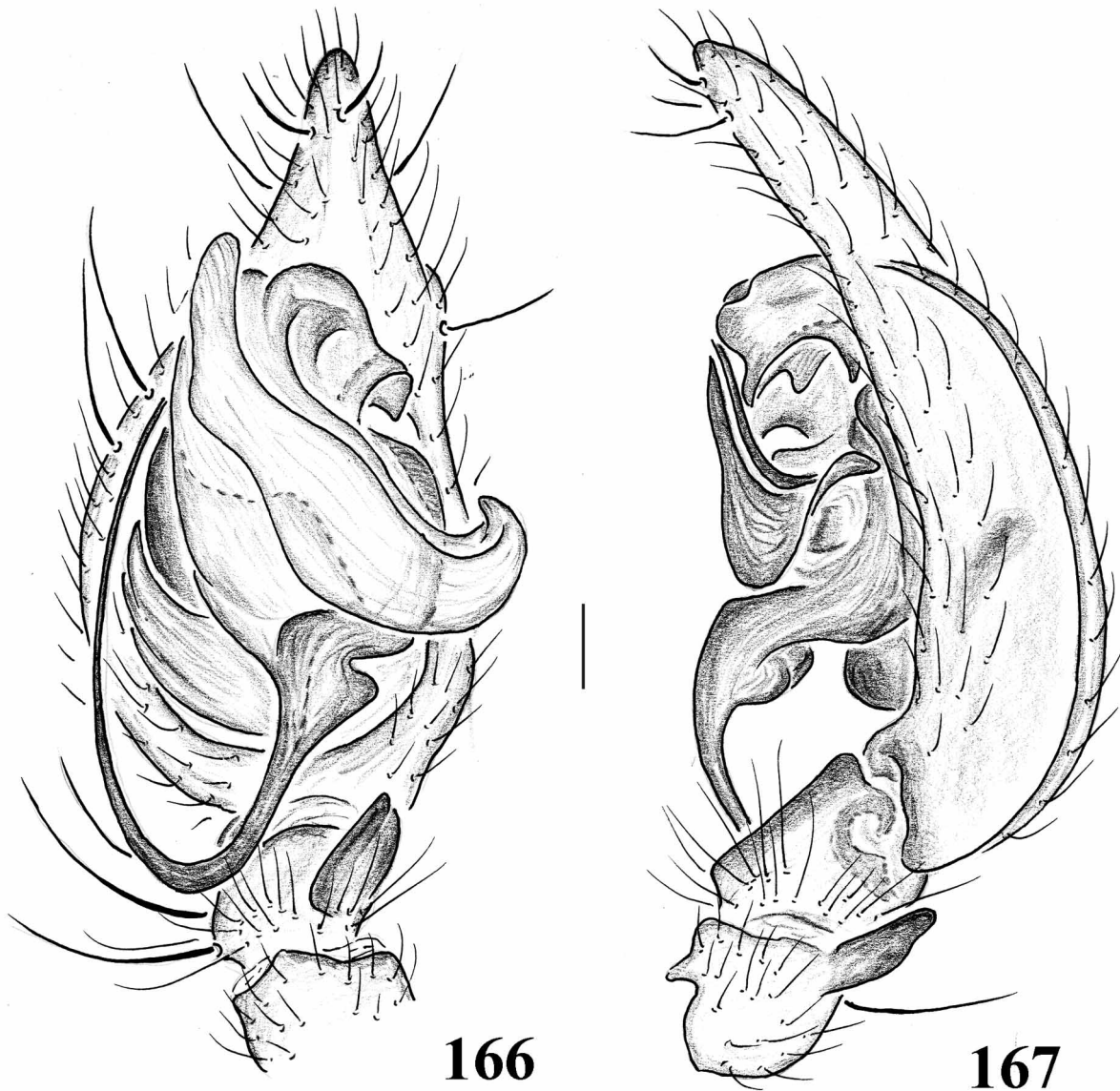
Etymology: The species name came from the Greek “gigas”, which means “giant”, and refers to the large conductor; adjective.

Diagnosis: Male of this new species can be easily recognized by the long patellar apophysis, the long, broad conductor, the absence of a median apophysis, and the distinctly notched embolic base (Figs 166–170).

Description: *Male (holotype)*. Medium sized Coelotinae, total length 7.05 (Fig. 171). Dorsal shield of prosoma 3.75 long, 2.74 wide; opisthosoma 3.30 long, 2.41 wide. AME smallest, half the size of ALE; ALE largest; posterior eyes subequal in size, slightly smaller than ALE (AME 0.08, ALE 0.15, PME 0.13, PLE 0.14); AME separated from each other by their diameter, from ALE by slightly less than AME diameter; PME separated from each other by half of their diameter, from PLE by their diameter (AME–AME 0.07, AME–ALE 0.06, PME–PME 0.06, PME–PLE 0.14, AME–PME 0.11) (Fig. 172). Chelicera with 3 promarginal and 2 retromarginal teeth. Labium longer than wide (L/W=1.20) (Fig. 173). Palp with a long patellar apophysis; RTA more than half of tibial length; lateral tibial apophysis small; cymbial furrow more than $\frac{2}{3}$ of cymbial length; conductor broad, long, extending posteriorly reaching embolic base, with a slightly coiled apex, a large basal lamella, and a broad, modified dorsal apophysis (U-shaped groove); median apophysis absent; embolus long, with base small, distinctly notched, proximal in origin, thread arising at 6-o’clock-position, extending posteriorly to distal part of tibia, running half an oval, anteriorly not coiling beyond distal part of bulb (Figs 166–170).

Female. Unknown.

Distribution: China (Yunnan: Tengchong) (Fig. 539).



FIGURES 166–167. *Draconarius gigas* sp. nov., male holotype (HNU, CASENT9020367) from Tengchong County, Bawan. Palp (ventral, retrolateral).

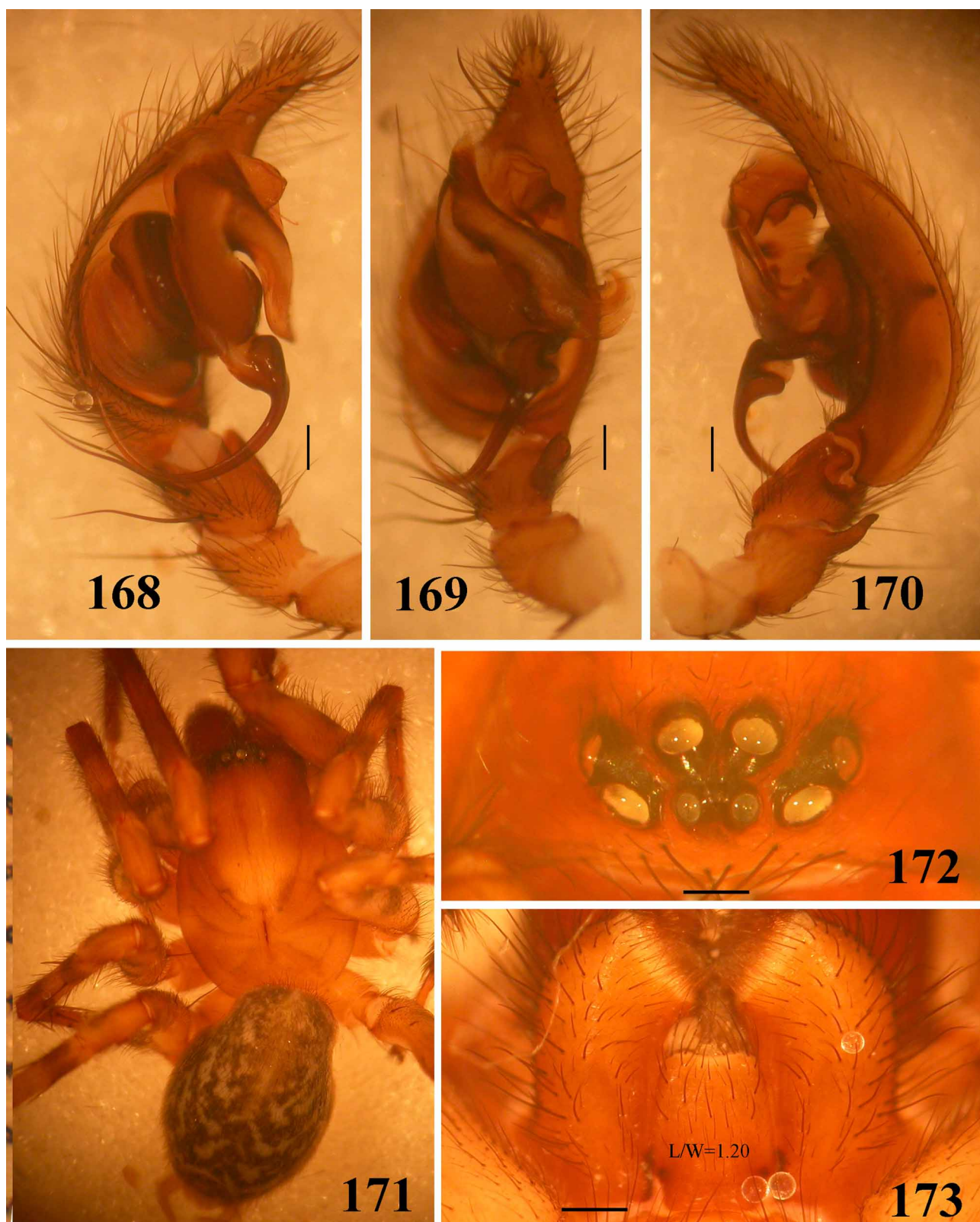
***Draconarius griswoldi* Wang 2003**
(Figs 174–179, 540)

Draconarius griswoldi Wang 2003: 531, figs 31A–D (female holotype, male and female paratypes from Lushui County, Yunnan, China, in HNU and CAS, examined). Wang & Jäger 2008: 2280, fig. 8.

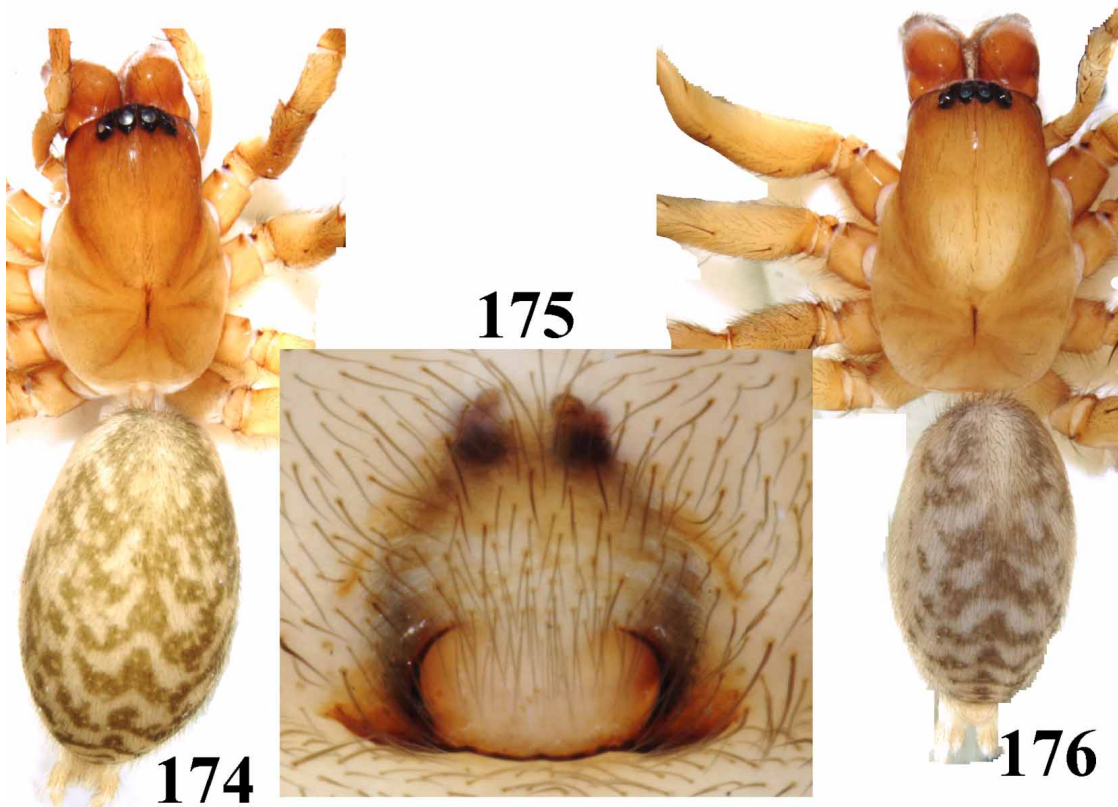
Diagnosis: The female of this species is similar to *D. curiosus* Wang 2003 in having the laterally extending copulatory ducts and absence of epigynal teeth, but can be easily distinguished by the anteriorly situated spermathecal heads and the simple, not coiled spermathecae (Fig. 175; Wang 2003: figs 31A–B). The male is similar to *D. agrestis* Wang 2003 in having a tiny patellar apophysis, an elongated cymbial furrow, and a proximally originated, long embolus, but can be distinguished by the filiform embolus, the sharply pointed conductor apex, and the simple or slightly spoon-shaped median apophysis (Figs 177–179).

Description: See Wang (2003). Photos of habitus and genitalia are provided in this study.

Distribution: China (Yunnan: Lushui) (Fig. 540).



FIGURES 168–173. *Draconarius gigas* sp. nov., male holotype (HNU, CASENT9020367) from Tengchong County, Bawan. 168–170. Palp (prolateral, ventral, retrolateral); 171. Habitus, dorsal; 172. Eyes, fronto-dorsal; 173. Labium, ventral (L/W=1.20).

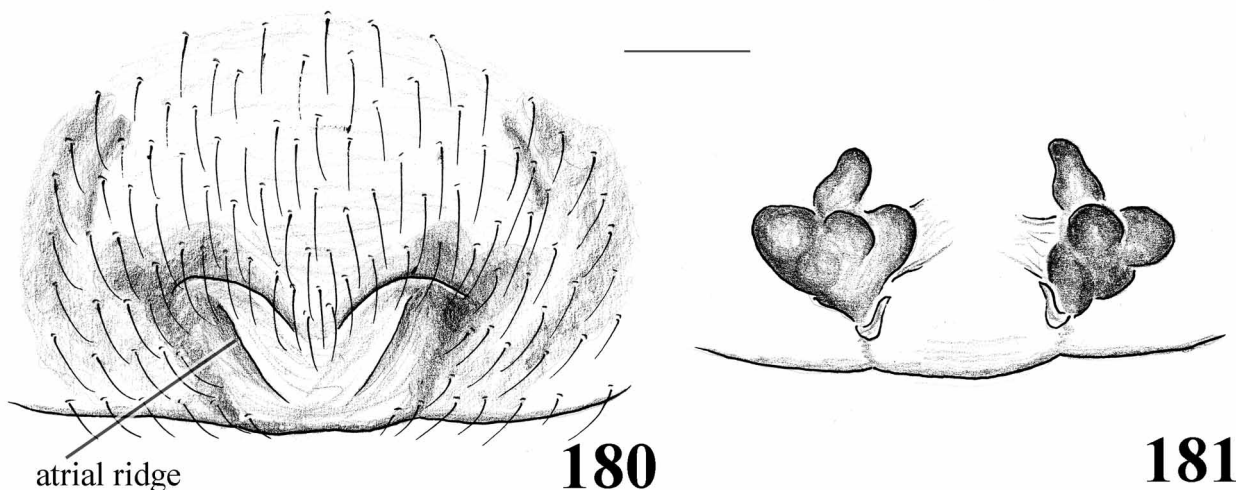


FIGURES 174–179. *Draconarius griswoldi* Wang 2003, female (174–175) (CAS, CASENT9016367) and male (176–179) (CAS, CASENT9016368) paratypes from Lushui County, Nujiang, Pianma. 174, 176. Habitus, dorsal; 175. Epigynum, ventral; 177–179. Palp (prolateral, ventral, retrolateral).

***Draconarius guoi* sp. nov.**

(Figs 180–188, 541)

Type material: *Holotype*. ♀, **China: Yunnan: Lushui County:** Feng Xue Yakou, east side on Pianma Road, N25.97288°, E98.68336°, 3150 m, night collecting on buildings, cliffs, roadcut, May 17, 2005, C. Griswold (HNU, CASNT9022262).



FIGURES 180–181. *Draconarius guoi* sp. nov., female holotype from Lushui County, Feng Xue Yakou (HNU, CASNT9022262). Epigynum (ventral, dorsal).

Paratypes. **CHINA: Yunnan: Lushui County:** 1♀, Feng Xue Yakou, on Pianma Road, N25.97288°, E98.68336°, 3150 m, hand collecting under rocks, May 11, 2005, C. Griswold & D. Kavanaugh (HNU, CASENT9022194); 1♀, Pianma Township, Feng Xue Yakou, N25.97360°, E98.68905°, 3120 m, roadside, May 17, 2005, K.J. Guo (HNU, CASENT9022091); 2♀, Feng Xue Yakou, 100 m S of Pianma Road, N25.97288°, E98.68336°, 3150 m, *Rhododendron*/Bamboo thicket, 25 pitfall traps, May 11–21, 2005, C. Griswold, D. Kavanaugh & K.J. Guo (CAS, CASENT9022110); 1♀, Pianma Township, Chan Yan He, 9.3 km ESE Pianma, N25.99363°, E098.66651°, 2470 m, mixed broadleaf deciduous and evergreen forest, pitfall traps, May 12–21, 2005, C. Griswold, D. Kavanaugh & K. Guo (CAS, CASENT9023092).

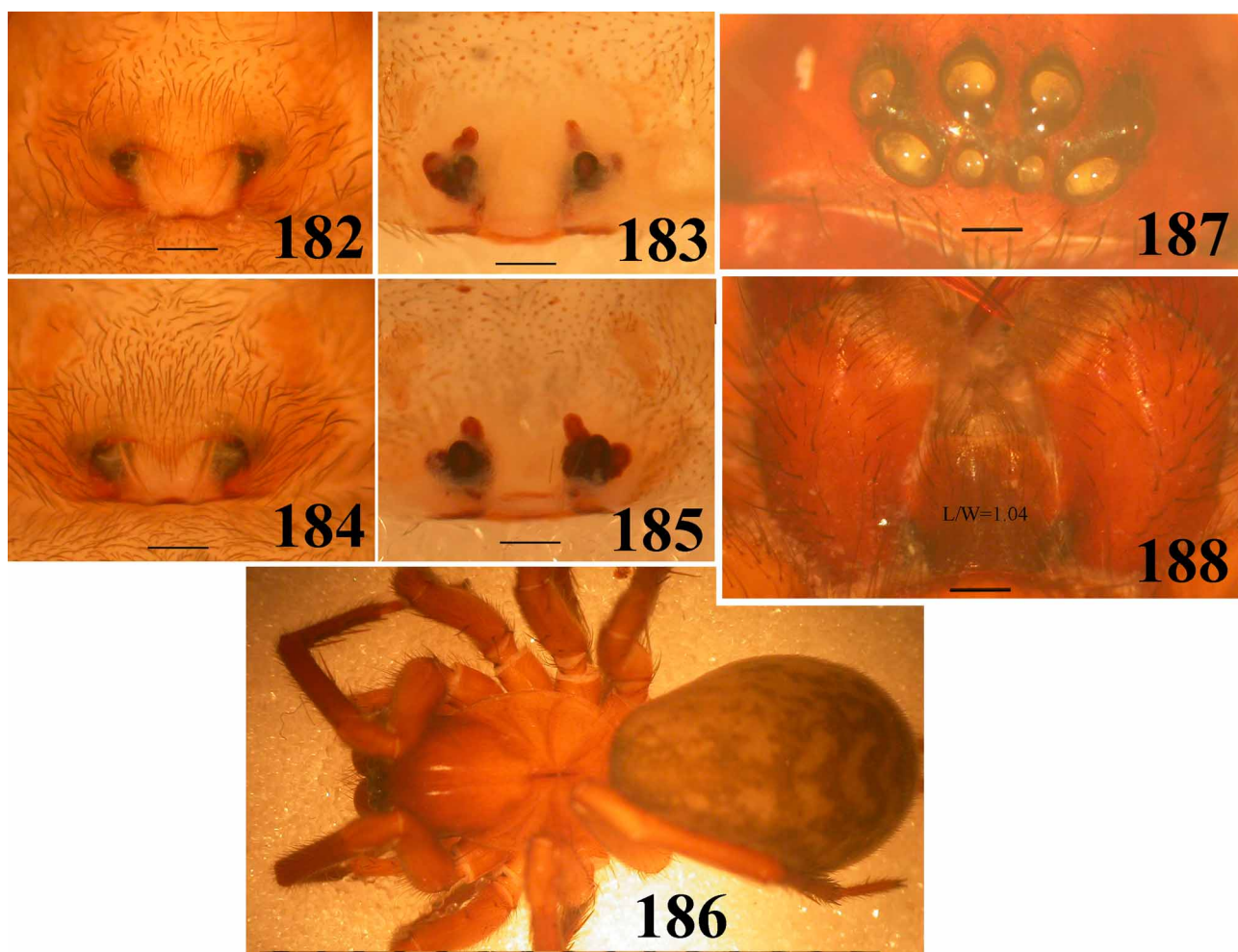
Etymology: The specific name is a patronym in honor of K.J. Guo, one of the collectors of the type series.

Diagnosis: This species is similar to *D. anceps* sp. nov. in having a similar atrium and triangular spermathecae, differing only in minor features in the female epigynum. This new species has a pair of long atrial ridges that extend posteriorly to the epigastric furrow (Fig. 180), while in *D. anceps* sp. nov. the atrial ridges are short and limited to the anterior part of the atrium (Fig. 37).

Description: *Female (holotype)*. Medium sized Coelotinae (Fig. 186). Total length 8.78. Dorsal shield of prosoma 3.95 long, 2.62 wide; opisthosoma 4.83 long, 3.37 wide. AME smallest, approximately half the size of ALE; posterior eyes subequal in size, slightly smaller than ALE (AME 0.09, ALE 0.20, PME 0.17, PLE 0.17); AME separated from each other by their diameter, from ALE by slightly less than half of AME diameter; PME separated from each other by half of their diameter, from PLE by slightly less than PME diameter (AME–AME 0.09, AME–ALE 0.04, PME–PME 0.08, PME–PLE 0.15, AME–PME 0.15) (Fig. 187). Chelicerae with 3 promarginal and 2 retromarginal teeth. Labium with length and width subequal (L/W=1.04) (Fig. 188). Epigynal teeth absent; atrium small, with posteriorly extending anterior atrial margin; atrial ridges extending posteriorly to epigastric furrow; copulatory ducts indistinct from dorsal view; spermathecae short, broad, with slight lateral extensions; spermathecae widely separated by at least their width; spermathecal heads distinct, arising and extending distally (Figs 180–185).

Male. Unknown.

Distribution: China (Yunnan: Lushui) (Fig. 541).



FIGURES 182–188. *Draconarius guoi* sp. nov., female, holotype (182–183, 186–188) from Lushui County, Feng Xue Yakou (HNU, CASNT9022262) and paratype (184–185) from Lushui County, Pianma (CAS, CASENT9023092). 182–185. Epigynum (ventral, dorsal); 186. Habitus, dorsal; 187. Eyes, fronto-dorsal; 188. Labium, ventral (L/W=1.04).

***Draconarius immensus* Xu & Li 2006**

(Fig. 540)

Draconarius immensus Xu & Li 2006b: 782, figs 13–19 (male holotype, male and female paratypes from Jiulong County, Sichuan, China, in IZCAS, not examined).

D. immensus Wang & Jäger 2010: 1182, figs 6–8.

Diagnosis: This species is similar to *D. incertus* Wang 2003 and *D. pseudobrunneus* Wang 2003 in having a similar epigynum, a bifurcate conductor, and a simple median apophysis, but can be distinguished from *D. incertus* by the subdistally arising spermathecal heads, from *D. pseudobrunneus* by the different shapes of atrium in the female, and by the short median apophysis and the embolus with thread starting from posterior margin of embolic base in the male (Xu & Li 2006b: figs 13–19; Wang & Jäger 2010: figs 6–8).

Description: See Xu & Li (2006b) and Wang & Jäger (2010).

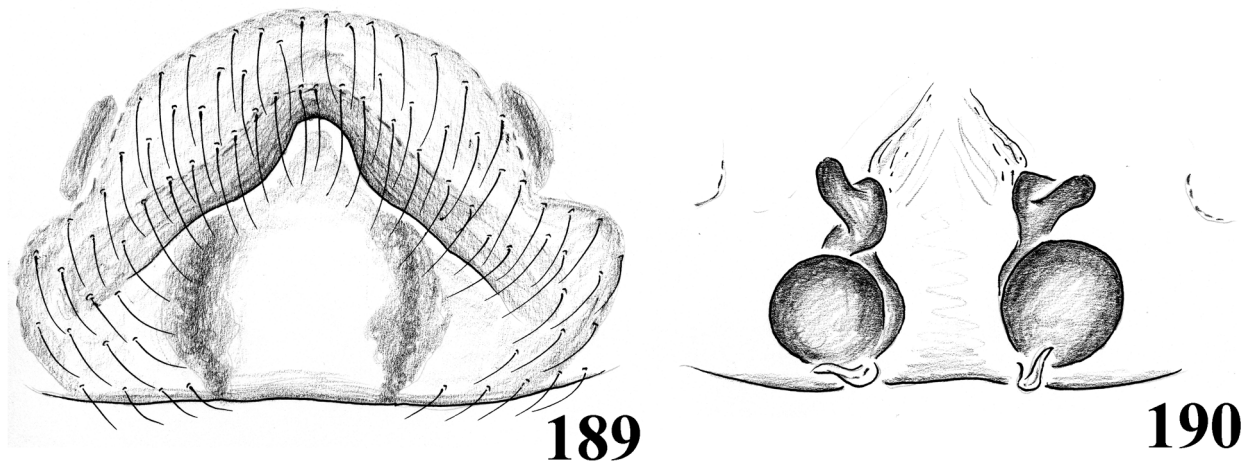
Distribution: China (Sichuan: Jiulong; Yunnan: Zhongdian) (Fig. 540).

***Draconarius improprius* sp. nov.**

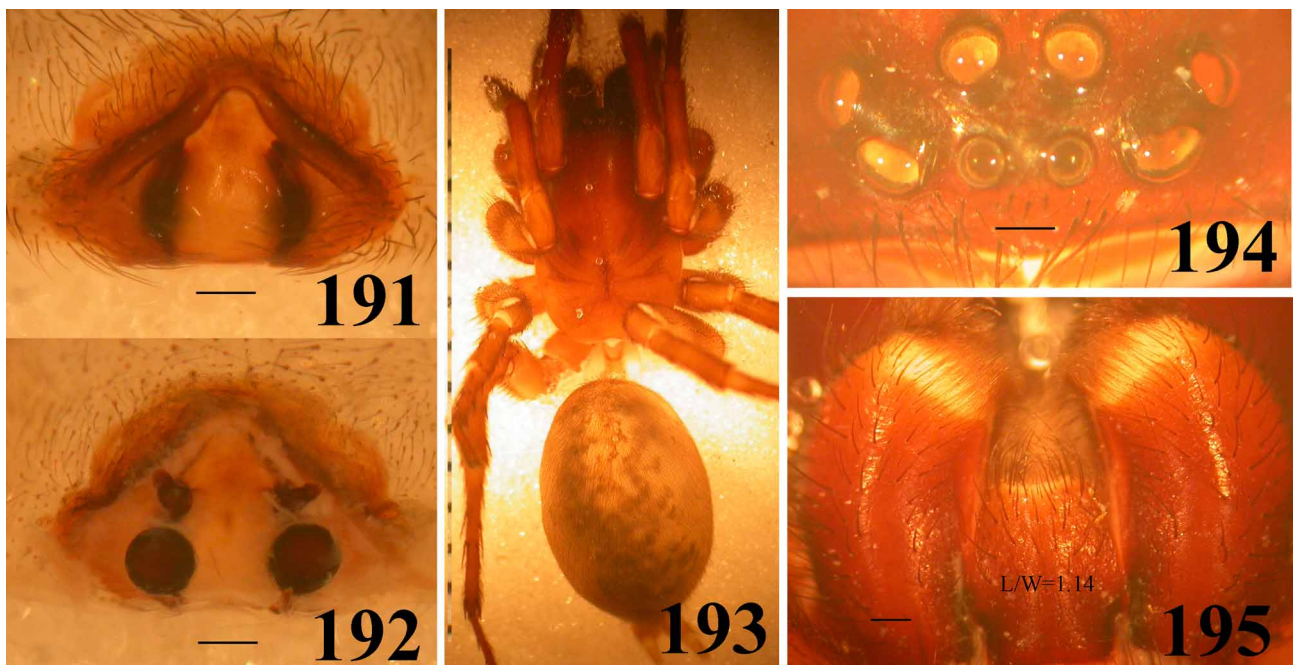
(Figs 189–195, 540)

Type material: *Holotype*. ♀, **CHINA: Yunnan: Tengchong County:** Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55'625", E98°45'155", 2416 m, October 12, 2003, G. Tang (HNU, CASENT9020362).

Paratypes. **CHINA: Yunnan: Tengchong County:** 1♀, same data as holotype (HNU, CASENT9020362); 1♀, Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55'625", E98°45'155", 2416 m, October 12, 2003, G. Tang (CAS, CASENT9020363).



FIGURES 189–190. *Draconarius improprius* sp. nov., female holotype from Tengchong County, Bawan (HNU, CASENT9020362). Epigynum (ventral, dorsal).



FIGURES 191–195. *Draconarius improprius* sp. nov., female holotype from Tengchong County, Bawan (HNU, CASENT9020362). 191–192. Epigynum (ventral, dorsal); 193. Habitus, dorsal; 194. Eyes, fronto-dorsal; 195. Labium, ventral (L/W=1.14).

Etymology: The species name came from Latin “impropius”, which means “improper, unsuitable”, and refers to its provisional generic assignment; adjective.

Diagnosis: The female of this new species can be easily distinguished from other Coelotinae by the absence of epigynal teeth, the anteriorly protruding anterior atrial margin, and the round spermathecae (Figs 189–190).

Description: *Female (holotype)*. Large sized Coelotinae, total length 11.8 (Fig. 193). Dorsal shield of prosoma 5.75 long, 3.80 wide; opisthosoma 6.00 long, 4.18 wide. AME smallest, approximately $\frac{3}{4}$ the size of ALE; ALE largest; posterior eyes subequal in size, slightly smaller than ALE (AME 0.15, ALE 0.21, PME 0.18, PLE 0.18); anterior eyes equally separated from each other by $\frac{2}{3}$ of AME diameter; PME separated from each other by $\frac{2}{3}$ their diameter, widely separated from PLE by more than their diameter (AME–AME 0.11, AME–ALE 0.09, PME–PME 0.12, PME–PLE 0.22, AME–PME 0.15) (Fig. 194). Chelicera with 3 promarginal and 2 retromarginal teeth. Labium longer than wide (L/W=1.14) (Fig. 195). Epigynum without epigynal teeth; atrium large, situated anteriorly, with anterior margin protruding anteriorly to an anteriorly narrow and posteriorly wide atrium; copulatory ducts small, originated anteriorly; spermathecal heads distinct, arising anteriorly, extending laterally; spermathecae large, round, widely separated by slightly less than their width, stalks slightly extending distally (Figs 189–192).

Male. Unknown.

Distribution: China (Yunnan: Tengchong) (Fig. 540).

***Draconarius incertus* Wang 2003**

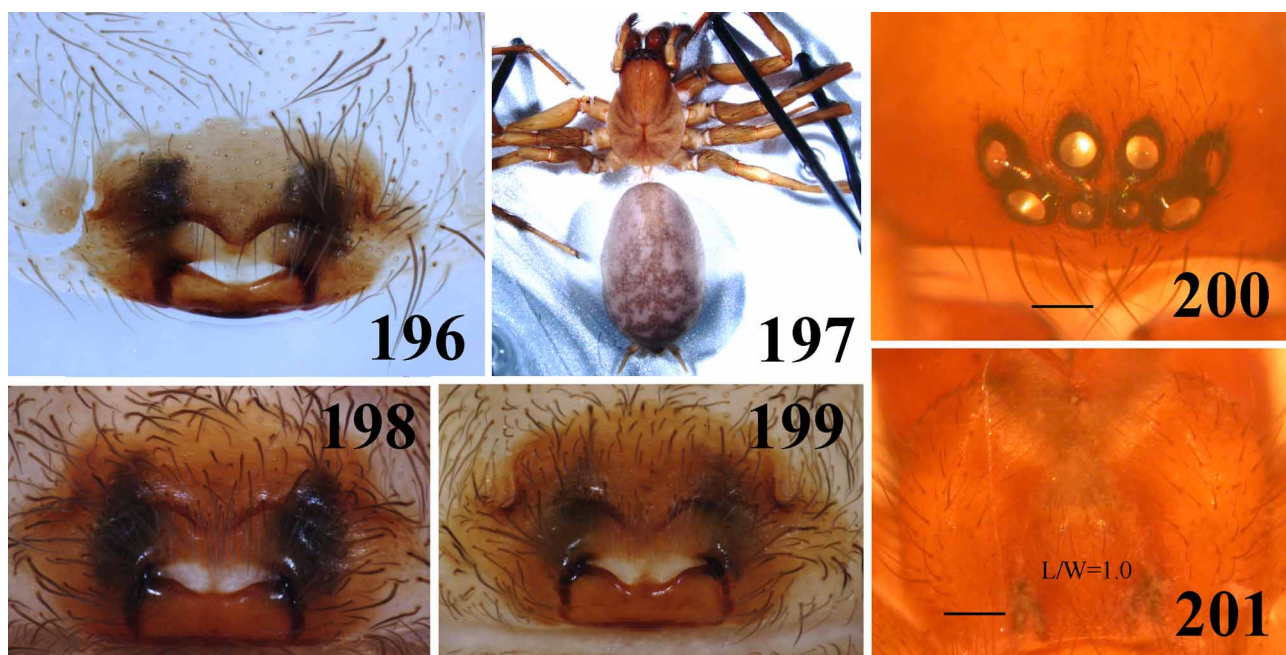
(Figs 196–231, 540)

Draconarius incertus Wang 2003: 535, figs 35A–B (male holotype and paratypes from Lushui County, Yunnan, China, in HNU and CAS, examined). Zhang *et al.* 2005: 48.

Draconarius parabruneus Wang 2003: 541, figs 47A–B, 96E (female holotype and paratypes from Lushui County, Yunnan, China, in HNU and CAS, examined). First synonymized by Zhang *et al.* 2005.

Additional material examined: CHINA: Yunnan: Lushui County: 1♂, Pianma Township, Chan Yan He, 9.3 km ESE Pianma, N25.99363°, E098.66651°, 2470 m, mixed broadleaved deciduous and evergreen forest, pitfall traps, May 12–21, 2005, C. Griswold, D. Kavanaugh & K. Guo (CAS, CASENT9023090). **Tengchong County:** 1♀, Mingguang Township, Zizhi Village, up slope, N25.48351°, E098.37149°, 2880 m; down slope, N25.47531°, E098.37266°, 2756 m, May 19, 2006, C.M. Yin, J.F. Hu and X.H. Yang (HNU, CASENT9025642); 1♂ 2♀, Mingguang Township, Zizhi Village, N25.80894°, E098.62080°, 2890 m, road cut, about 2 miles down from Yakou border station, May 23, 2006, X.J. Peng, X.P. Wang & P. Hu (CAS, CASENT9025592, DNA sample, in same vial with 1♀ *Coelotes pseudoyunnanensis*). **Gongshan County:** 1♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabali, N27.47525°, E98.30121°, 3013 m, November 12, 2004, G. Tang (CAS, CASENT9025791); 1♂, Cikai Township, 53 km W of Gongshan on Dulong Valley Road, 3380 m, N27.77422°, E098.44716°, October 1, 2002, D. Kavanaugh (HNU, CASENT9025835); 2♂ 2♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi, N27.79655°, E098.50562°, 3000 m, October 1–6, 2002, D. Kavanaugh, P.E. Marek (CAS, CASENT9025837); 2♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi, N27.79655°, E098.50562°, 3000 m, September 27 – October 6, 2002, D. Kavanaugh, P.E. Marek, D.Z. Dong, & X.C. Liang (HNU, CASENT9025838); 1♀, Cikai Township, 50 km W of Gongshan on Dulong Valley Road, N27.78447°, E098.46020°, 3370 m, October 3, 2002, D. Kavanaugh, P.E. Marek (HNU, CASENT9025842); 1♀, Dulongjiang Township, Xishaofang, N27.70400°, E98.43864°, 3110 m, October 30, 2004, V.F. Lee (HNU, CASENT9023067); 1♀, Cikai Township, Dabadi troops place along river banks, N27°47', E98°30', 3030–3045 m, October 2–3, 2002, night, October 8–10, 2002, H.M. Yan (CAS, CASENT9025829); 3♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi both sides, N27°47', E98°32', 3100 m, September 30, 2002, H.M. Yan (CAS, CASENT9025830); 1♀, Cikai Township,

52.6 km W of Gongshan on Dulong Valley Road, N27.77032°, E098.44661°, 3360–3380 m, October 1–2, 2002, D. Kavanaugh, P.E. Marek (CAS, CASENT9025831); 2♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi, N27.79655°, E098.50562°, 3000 m, September 27 – October 6, 2002, D. Kavanaugh, P.E. Marek, D.Z. Dong, & X.C. Liang (CAS, CASENT9025833). **Fugong County:** 1♀, Gaoligongshan, 0.5 km radius of Shibali Forest Station, N27.16519°, E98.77891°, 2525 m, searching at night in forest, May 2–5, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020028); 1♀, Gaoligongshan, Shibali Forest Station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020457); 1♀, Lishadi subdistrict, Gaoligongshan, Shibali, N27.17628°, E98.74167°, 2913 m, May 2, 2004, G.X. Peng (HNU, CASENT9020671); 1♀, Yaping subdistrict, Gaoligongshan, Maxidi, 7.2 km above Shibali, N27.16784°, E98.77782°, 3059 m, May 4, 2004, H.M. Yan & G.X. Peng (HNU, CASENT9020582); Gaoligongshan, Shibali Forest Station, May 3–11, 2004, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, C. Griswold & D. Kavanaugh (CAS, CASENT9020458). **Dali:** 1♂ 3♀, Cangshan, 2200–2400 m, riverside of stream, under stones, April 6, 1999, P. Jäger (SMF); 1♂, Cangshan, riverside of stream, in leaf litter and under stones, April 5, 1999, P. Jäger (SMF); 1♀, Cangshan, 2200 m, riverside of stream, in leaf litter and under stones, April 5, 1999, P. Jäger (SMF); 1♀, Cangshan, 2200–2400 m, riverside of stream, under stones, April 6, 1999, P. Jäger (SMF); 1♀, Cangshan, lower canyon, 2500–2700 m, in leaf litter and under stones, April 8, 1999, P. Jäger (SMF).

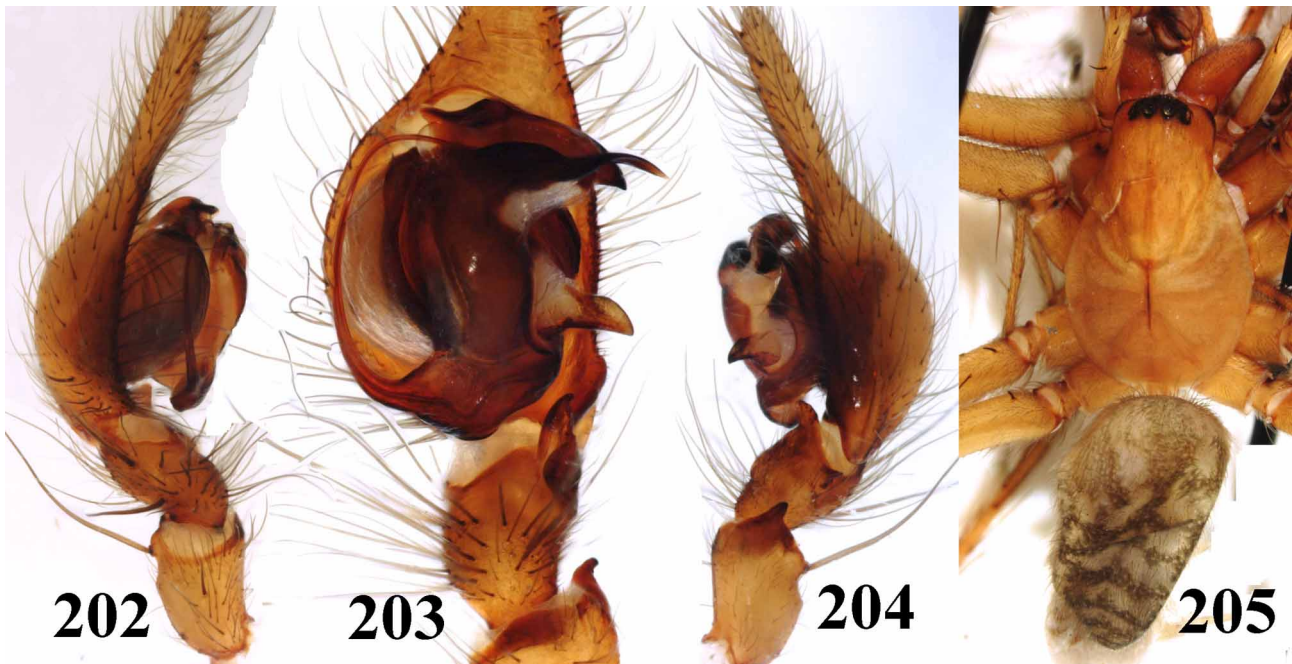


FIGURES 196–201. *Draconarius incertus* Wang 2003, female holotype (196–197) (HNU) and paratype (198–199) (CAS, CASENT9016353) of *D. parabrunneus* Wang 2003 from Lushui County, Nujiang, Pianma, female (200) from Gongshan County, Dulongjiang Township, Xishaofang (HNU, CASENT9023067) and female (201) from Fugong County, Shibali (HNU, CASENT9020671). 196, 198–199. Epigynum, ventral; 197. Habitus, dorsal; 200. Eyes, fronto-dorsal; 201. Labium, ventral (L/W=1.00).

Diagnosis: This species is similar to *D. pseudobrunneus* and *D. latusincertus* **sp. nov.** in having a similar epigynum and palp. The female can be distinguished by the distally arising spermathecal heads (Figs 196, 198–199, 206–229), and the male by the more or less small patellar apophysis and slightly convex posterior margin of embolus (Figs 202–204).

Description: See Wang (2003). Photos of habitus, eyes, labium and genitalia are provided in this study (Figs 196–231).

Distribution: China (Yunnan: Dali, Tengchong, Lushui, Fugong, Gongshan) (Fig. 540).



FIGURES 202–205. *Draconarius incertus* Wang 2003, male paratype from Lushui County, Pianma (CAS, CASENT9016363). 202–204. Palp (prolateral, ventral, retrolateral); 205. Habitus, dorsal.

***Draconarius introhamatus* (Xu & Li 2006) comb. nov.**
(Fig. 540)

Coelotes introhamatus Xu & Li 2006a: 57, figs 17–19, 32–33 (female holotype from Lijiang, Yunnan, China, in IZCAS, not examined).

Diagnosis: The female of this species can be easily distinguished from other coelotines by the absence of epigynal teeth, the large, anteriorly situated atrium and copulatory ducts, and the long, coiled spermathecal tubes (Xu & Li 2006a: figs 18–19).

Description: *Female.* See also Xu & Li (2006a).

Male. Unknown.

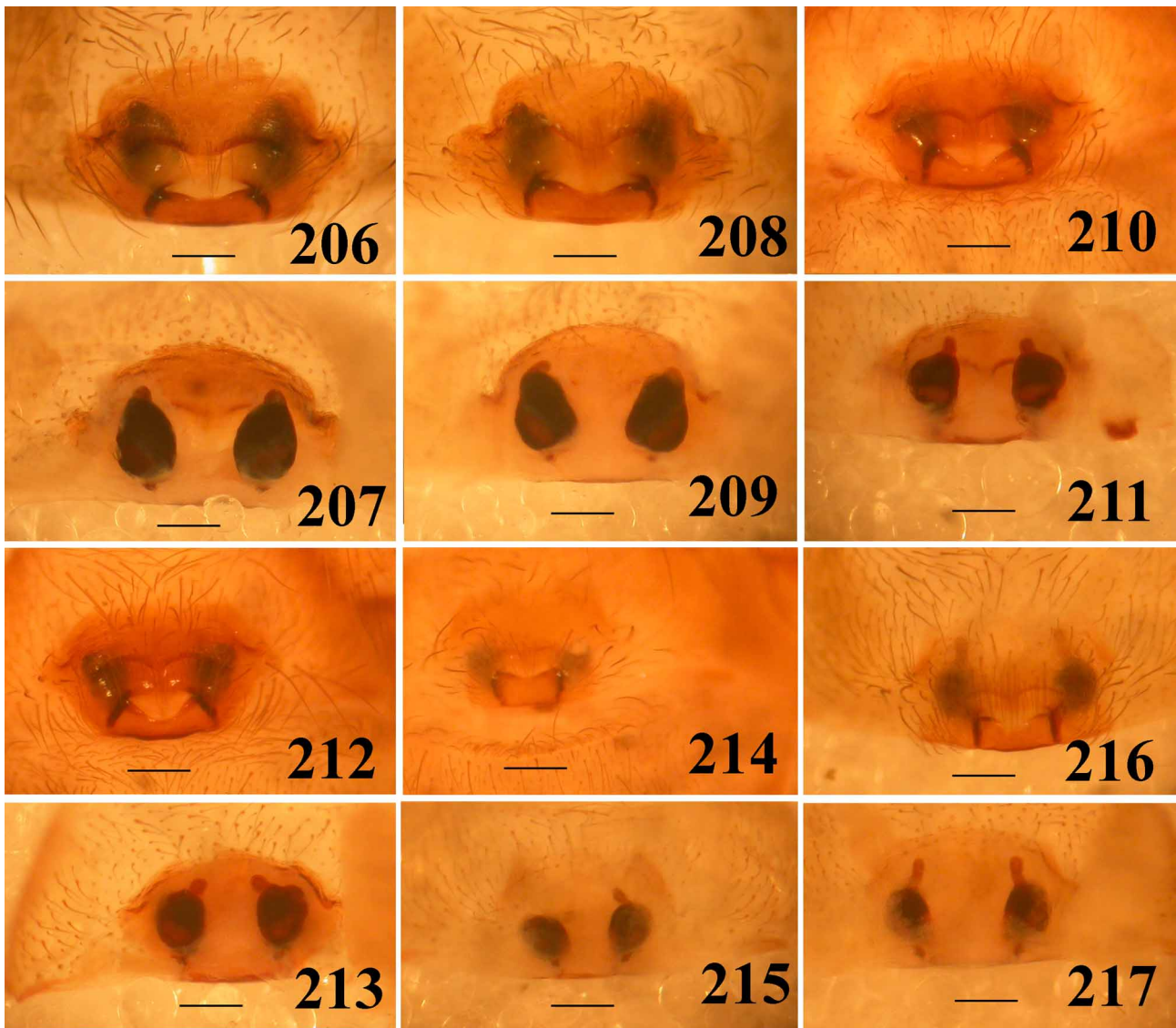
Distribution: China (Yunnan: Lijiang) (Fig. 540).

***Draconarius kavanaughi* sp. nov.**
(Figs 232–239, 540)

Type material: *Holotype.* ♂, **CHINA: Yunnan: Tengchong County:** Jietou Township, 0.4 km N of Dahetou, Lingganjiao at Longtang He, N25.74277°, E98.69691°, 2020 m, May 15–20, 2006, collected in pit-fall traps, D. Kavanaugh (HNU, CASENT9025588).

Etymology: The specific name is a patronym in honor of David Kavanaugh, curator at CAS and the collector of the type specimen; noun in genitive case.

Diagnosis: The male of this new species is similar to *D. agrestis* Wang 2003 and *D. pseudoagrestis* sp. nov. in having a similar palp, but can be distinguished by the large lateral tibial apophysis and the distinct posterior extension of the conductor (Figs 232–233).

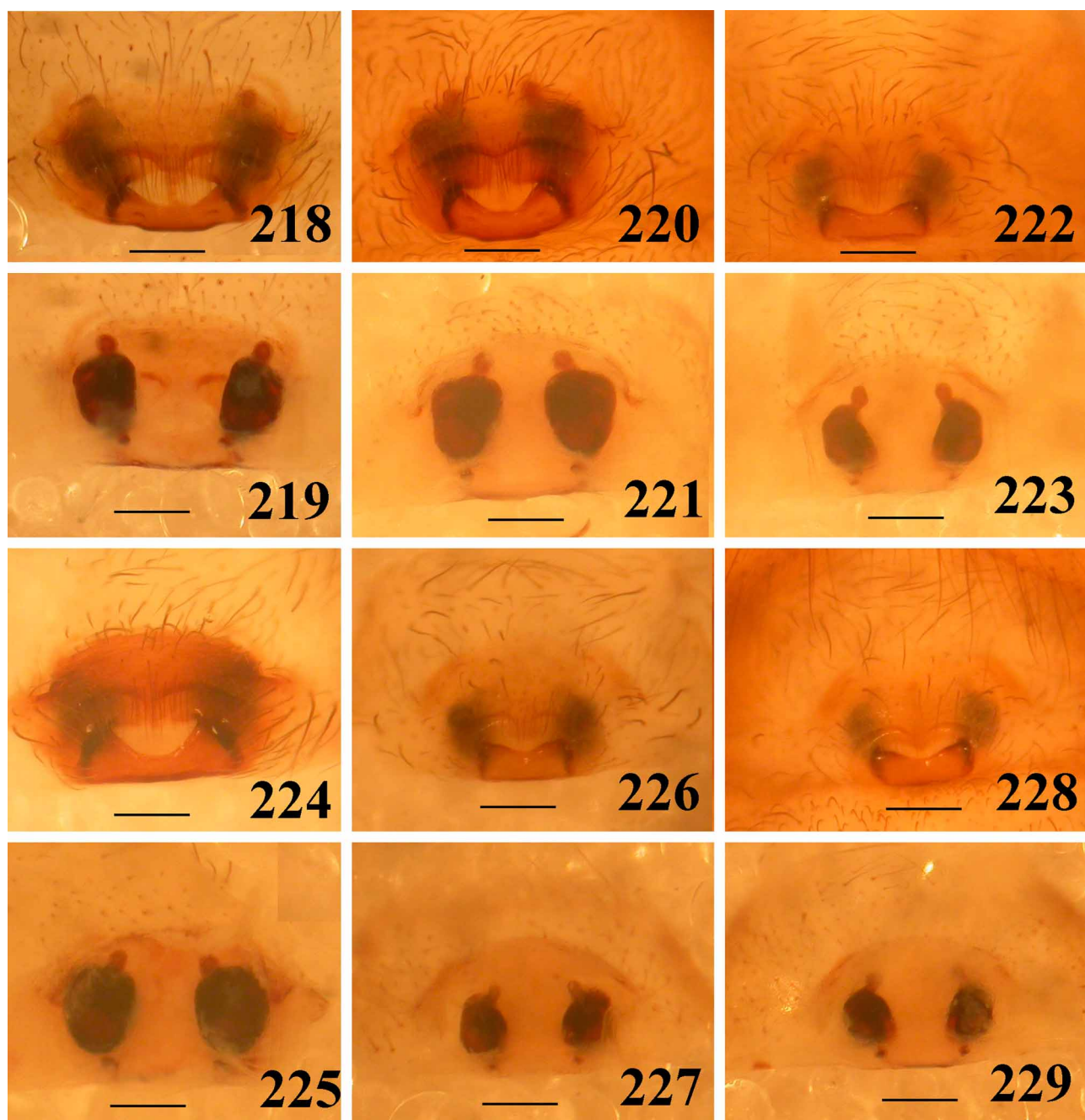


FIGURES 206–217. *Draconarius incertus* Wang 2003, female epigynum, showing variations. 206–207. From Tengchong County, Mingguang, Zizhi Village (CAS, CASENT9025592); 208–209. From Tengchong County, Mingguang (HNU, CASENT9025642); 210–211. From Gongshan County, Cikai (CAS, CASENT9025791); 212–213. From Gongshan County, Cikai (CAS, CASENT9025837); 214–215. From Gaoligongshan, Shibali Forest Station (CAS, CASENT9020457); 216–217. From Fugong County, Yaping, Maxidi (HNU, CASENT9020582). 206, 208, 210, 212, 214, 216. Ventral; 207, 209, 211, 213, 215, 217. Dorsal.

Description: *Male (holotype).* Medium sized Coelotinae, total length 7.17 (Fig. 237). Dorsal shield of prosoma 3.73 long, 2.52 wide; opisthosoma 3.42 long, 2.27 wide. AME smallest, $\frac{2}{3}$ the size of ALE; lateral eyes subequal or with PLE slightly larger; PME slightly smaller than lateral eyes (AME 0.10, ALE 0.16, PME 0.14, PLE 0.17); anterior eyes equally separated by slightly more than half of their diameter; PME separated from each other by slightly less than half of their diameter, from PLE by PLE diameter (AME–AME 0.06, AME–ALE 0.07, PME–PME 0.06, PME–PLE 0.16, AME–PME 0.09) (Fig. 238). Chelicera with 3 promarginal and 2 retromarginal teeth. Labium longer than wide (L/W=1.12) (Fig. 239). Palp with a small patellar apophysis; RTA more than half of tibial length, with a blunt distal end; lateral tibial apophysis distinctly large; cymbial furrow extending more than half of cymbial length; conductor long, slightly coiled, with a well developed basal lamella and a small dorsal apophysis; median apophysis spoon-shaped, not free-standing along anterior edge; embolus long, filiform, proximal in origin, arising at 6-o’clock-position, running half an oval, extending posteriorly to middle part of tibia, and coiling anteriorly beyond distal part of bulb (Figs 232–236).

Female. Unknown.

Distribution: China (Yunnan: Tengchong) (Fig. 540).



FIGURES 218–229. *Draconarius incertus* Wang 2003, female epigynum, showing variations. 218–219. From Gongshan County, Dulongjiang Township, Xishaofang (HNU, CASENT9023067); 220–221. From Gongshan County, Cikai (CAS, CASENT9025829); 222–223. From Gaoligongshan, Shibali Forest Station (HNU, CASENT9020028); 224–225. From Gongshan County, Cikai (CAS, CASENT9025831); 226–227. From Gaoligongshan, Shibali Forest Station (CAS, CASENT9020458); 228–229. From Fugong County, Shibali (HNU, CASENT9020671). 218, 220, 222, 224, 226, 228. Ventral; 219, 221, 223, 225, 227, 229. Dorsal.



FIGURES 230–231. *Draconarius incertus* Wang 2003, habitat. 230. Road cut located about one mile down the mountain from Yakou Border Station at Zhizhi village, Mingguang Town, Tengchong County; 231. A close look at the web on the road cut.

***Draconarius laohuanglongensis* (Liu & Li 2009) comb. nov.**
(Fig. 541)

Coelotes laohuanglongensis Liu & Li 2009: 667, figs 7–9 (female holotype and paratypes from Haoming County, Yunnan, in IZCAS, not examined).

Diagnosis: The female of this species can be easily identified by the posteriorly situated epigynal hoods, the distinctly posteriorly protruding anterior atrial margin, the presence of small epigynal teeth, and the coiled copulatory ducts (with 3 or more loops) (Liu & Li 2009: figs 7–8).

Description: See Liu & Li (2009).

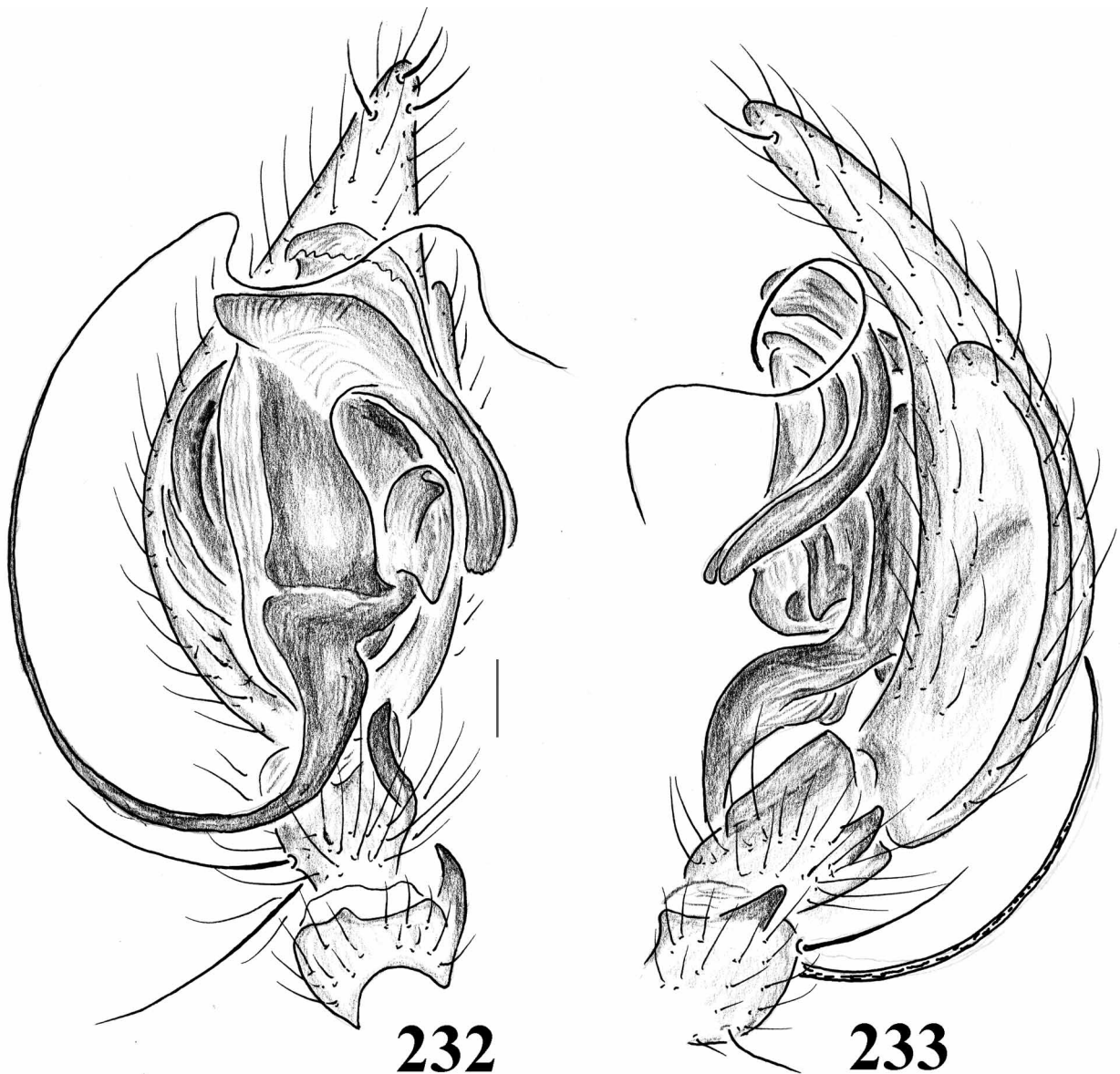
Distribution: China (Yunnan: Haoming) (Fig. 541).

***Draconarius laticavus* sp. nov.**
(Figs 240–248, 541)

Type material: *Holotype.* ♀, **CHINA: Yunnan: Fugong County:** Lishadi Township, Shibali, N27.10520°, E098.77980°, 2530 m, August 4/6/8–10, 2005, G. Tang (HNU, CASENT9025598).

Paratypes. **CHINA: Yunnan: Fugong County:** 1 ♀, Lishadi subdistrict, Gaoligongshan, 3–7 km from Shibali, N27.17750°, E98.75508°, 2820 m, May 3, 2004, H.M. Yan, G.X. Peng (CAS, CASENT9020573); 1 ♀, Gaoligongshan, 4 km W of Shibali Forest Station, N27.17746°, E98.75527°, 2820 m, night collecting along roadcut, May 3, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9019926).

Etymology: The species name is derived from the Latin words “latus” and “cavus”, meaning “broad, wide” and “cavity” separately, and refers to the large, distinct atrial opening; term in apposition.



FIGURES 232–233. *Draconarius kavanaughi* sp. nov., male holotype (HNU) from Tengchong County, Jietou, Dahetou. Palp (ventral, retrolateral).

Diagnosis: The female of this new species is similar to *D. tibetensis* Wang 2003 in having a similar atrium and similar spermathecal tubes, but the epigynal teeth of this new species arise at level anterior to epigynal hoods and distinctly separated from anterior atrial margin (Figs 240–241), while in *D. tibetensis* the epigynal teeth arise at level posterior to epigynal hoods and close to anterior atrial margin.

Description: *Female (holotype)*. Large sized Coelotinae, total length 12.3 (Fig. 246). Dorsal shield of prosoma 6.16 long, 4.24 wide; opisthosoma 6.10 long, 3.92 wide. Eyes subequal in size, with PME slightly smaller (AME 0.22, ALE 0.21, PME 0.18, PLE 0.22); anterior eyes equally separated by half of their size; PME separated from each other by about their diameter, widely separated from PLE by 1.5 times PME diameter (AME–AME 0.10, AME–ALE 0.09, PME–PME 0.20, PME–PLE 0.30, AME–PME 0.25) (Fig. 247). Labium slightly longer than wide (L/W=1.09) (Fig. 248). Chelicera with 3 promarginal and 2 retromarginal teeth. Epigynal teeth short, arising anteriorly at level anterior to epigynal hoods, distinctly separated from anterior atrial margin; atrium large, but shallow, with distinct, continuous anterior margin, but indistinct lateral margins; atrial ridges indistinct; copulatory ducts small, originating and extending medially between sper-

mathecae; spermathecae with bases widely separated by at least their width, stalks extending anteriorly beyond their heads; spermathecal heads distinct, arising from middle part of spermathecae (Figs 240–246).

Male. Unknown.

Distribution: China (Yunnan: Fugong) (Fig. 541).

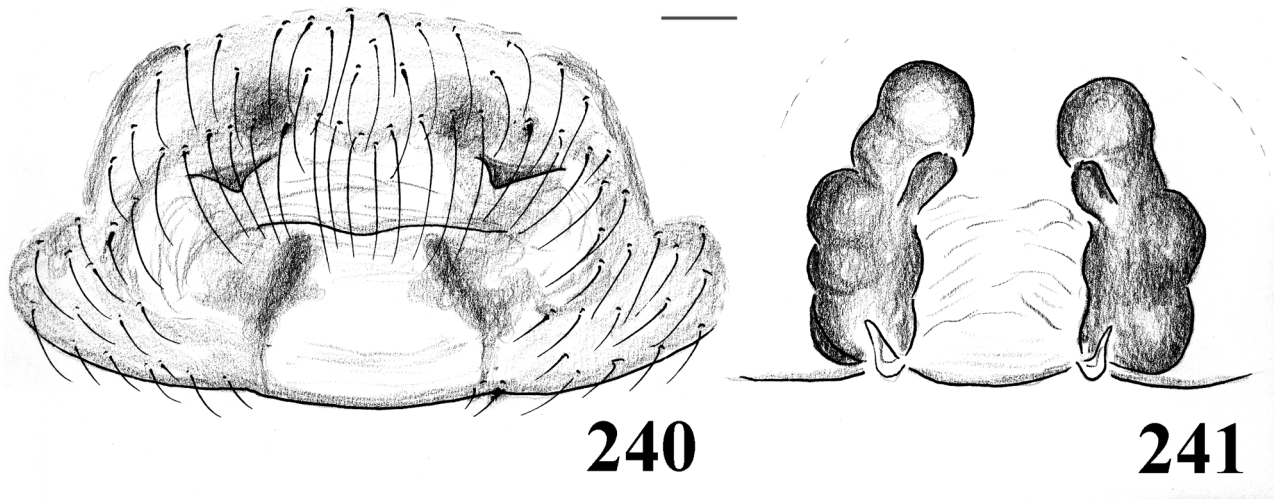


FIGURES 234–239. *Draconarius kavanaughii* sp. nov., male holotype (HNU) from Tengchong County, Jietou, Dahetou. 234–236. Palp (prolateral, ventral, retrolateral); 237. Habitus, dorsal; 238. Eyes, fronto-dorsal; 239. Labium, ventral (L/W=1.12).

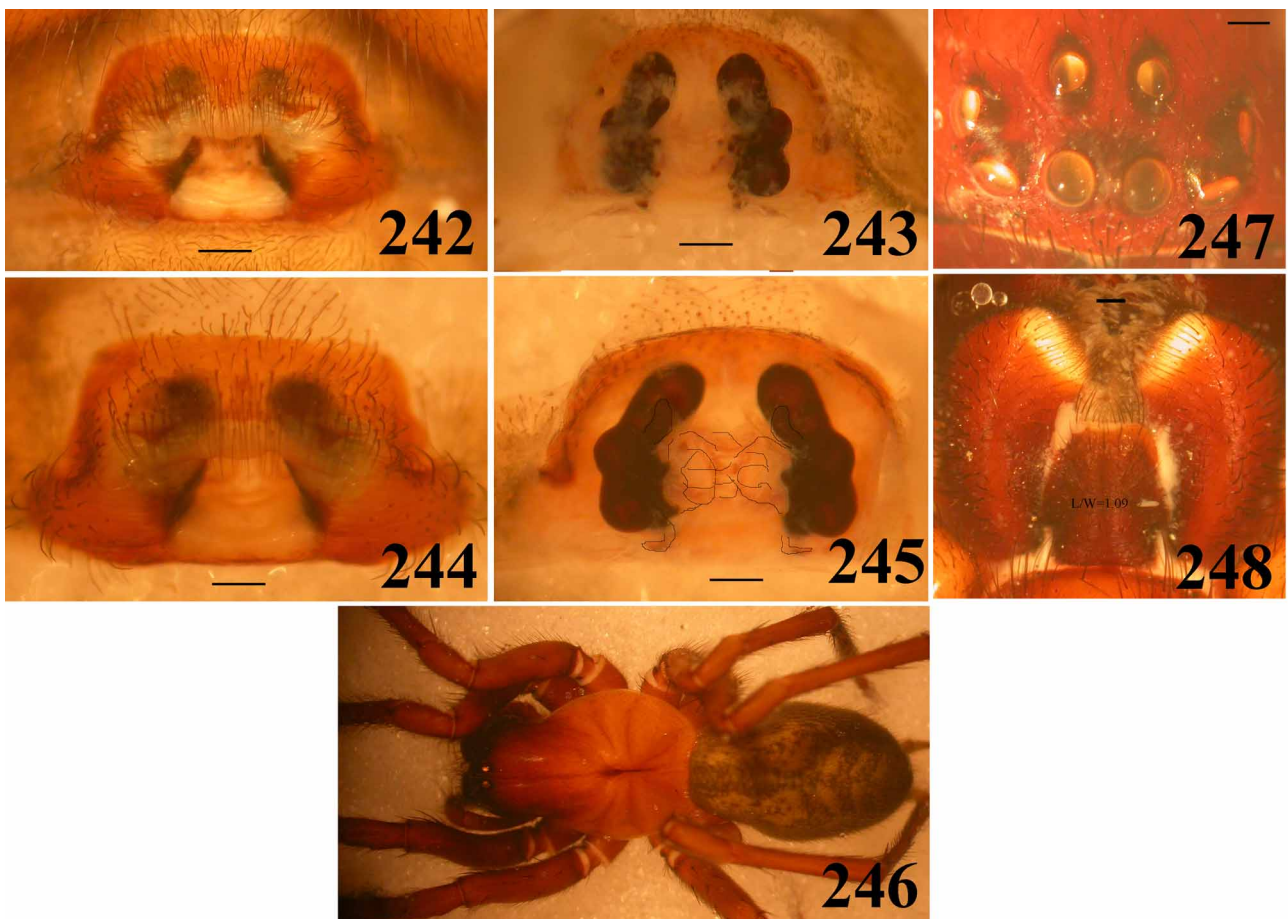
***Draconarius latusincertus* sp. nov.**

(Figs 249–272, 542)

Type material: *Holotype.* ♂, **CHINA: Yunnan: Fugong County:** Gaoligongshan, 0.5 km radius of Shibali Forest Station, N27.16519°, E98.77891°, 2525 m, searching at night in forest, May 2–5, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020025).



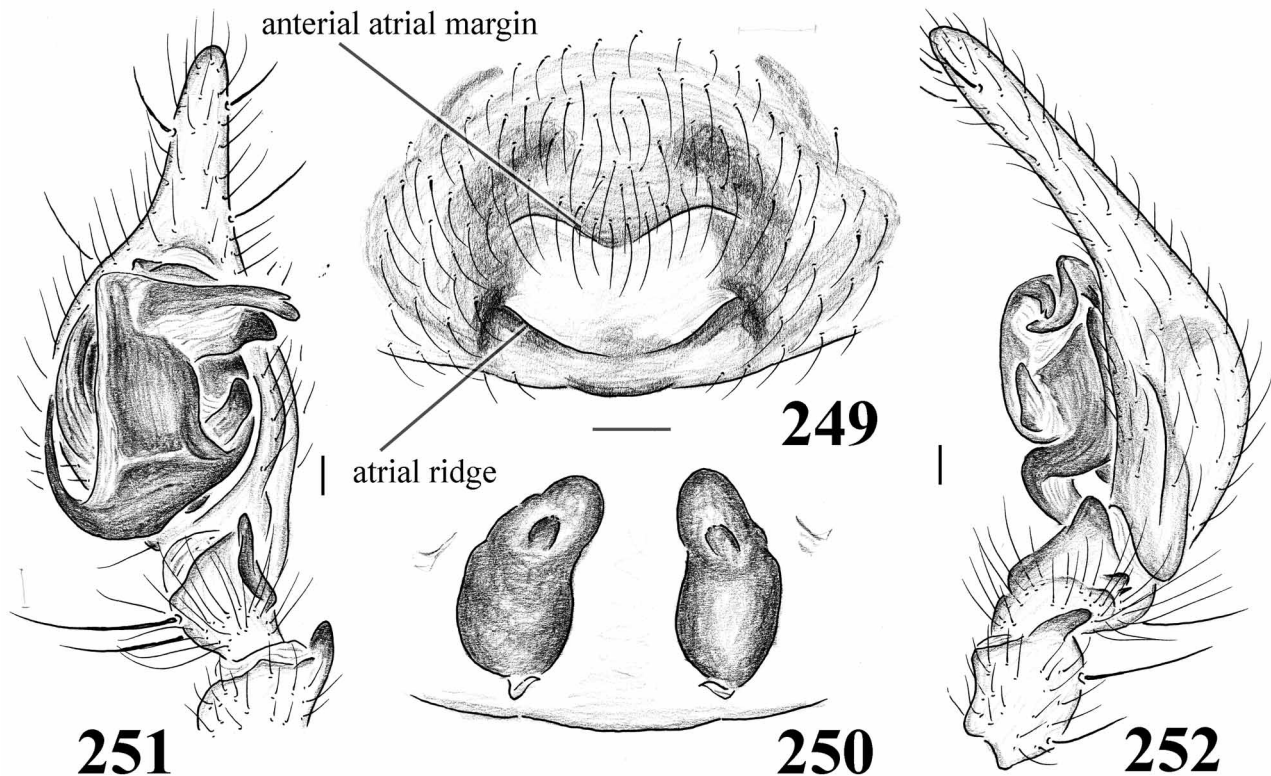
FIGURES 240–241. *Draconarius laticavus* sp. nov., female holotype (HNU, CASENT9025598) from Fugong County, Lishadi, Shibali. Epigynum (ventral, dorsal).



FIGURES 242–248. *Draconarius laticavus* sp. nov., female holotype (242,243,246–248) (HNU, CASENT9025598) and paratype (244–245) (CAS, CASENT9020573) from Fugong County, Lishadi, Shibali. 242–245. Epigynum (ventral, dorsal), with copulatory ducts, spermathecal heads and fertilization ducts highlighted in black lines in figure 245; 246. Habitus, dorsal; 247. Eyes, fronto-dorsal; 248. Labium, ventral (L/W=1.09).

Paratypes. **CHINA: Yunnan: Fugong County:** 1♂, Lishadi subdistrict, Gaoligongshan, Shibali, N27.16784°, E98.77782°, 2582 m, May 2, 2004, H.M. Yan, G.X. Peng (CAS, CASENT9020625); 1♀, Gaoligongshan, Shibali Forest Station, N27.16519°, E98.77891°, 2525 m, general collecting, May 1, 2004, C. Gris-

wold & D. Kavanaugh (CAS, CASENT9011586); 1♀, Lishadi subdistrict, Gaoligongshan, Shibali, N27.16515°, E98.77975°, 2527 m, May 4, 2004, H.M. Yan (HNU, CASENT9020590); 1♀, Lishadi subdistrict, Gaoligongshan, Shibali, N27.16784°, E98.77782°, 2582 m, May 2, 2004, H.M. Yan, G.X. Peng (HNU, CASENT9020626); 1♂, Gaoligongshan, Shibali Forest Station, N27.16519°, E98.77891°, 2525 m, general collecting, May 1, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9011585); 1♀, Lishadi, Shibali, N27.16650°, E98.77936°, along road, hand collecting, August 9, 2005, D.Z. Dong (HNU, CASENT9022601); 1♀, Gaoligongshan, 0.5 km radius of Shibali Forest Station, N27.16519°, E98.77891°, 2525 m, general collection in disturbed areas and forest, May 1–11, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9019935).



FIGURES 249–252. *Draconarius latusincertus* sp. nov., male holotype (251–252) (HNU, CASENT9020025) and female paratype (249–250) (CAS, CASENT9011586) from Fugong County, Shibali Forest Station. 249–250. Epigynum (ventral, dorsal); 251–252. Palp (ventral, retrolateral).

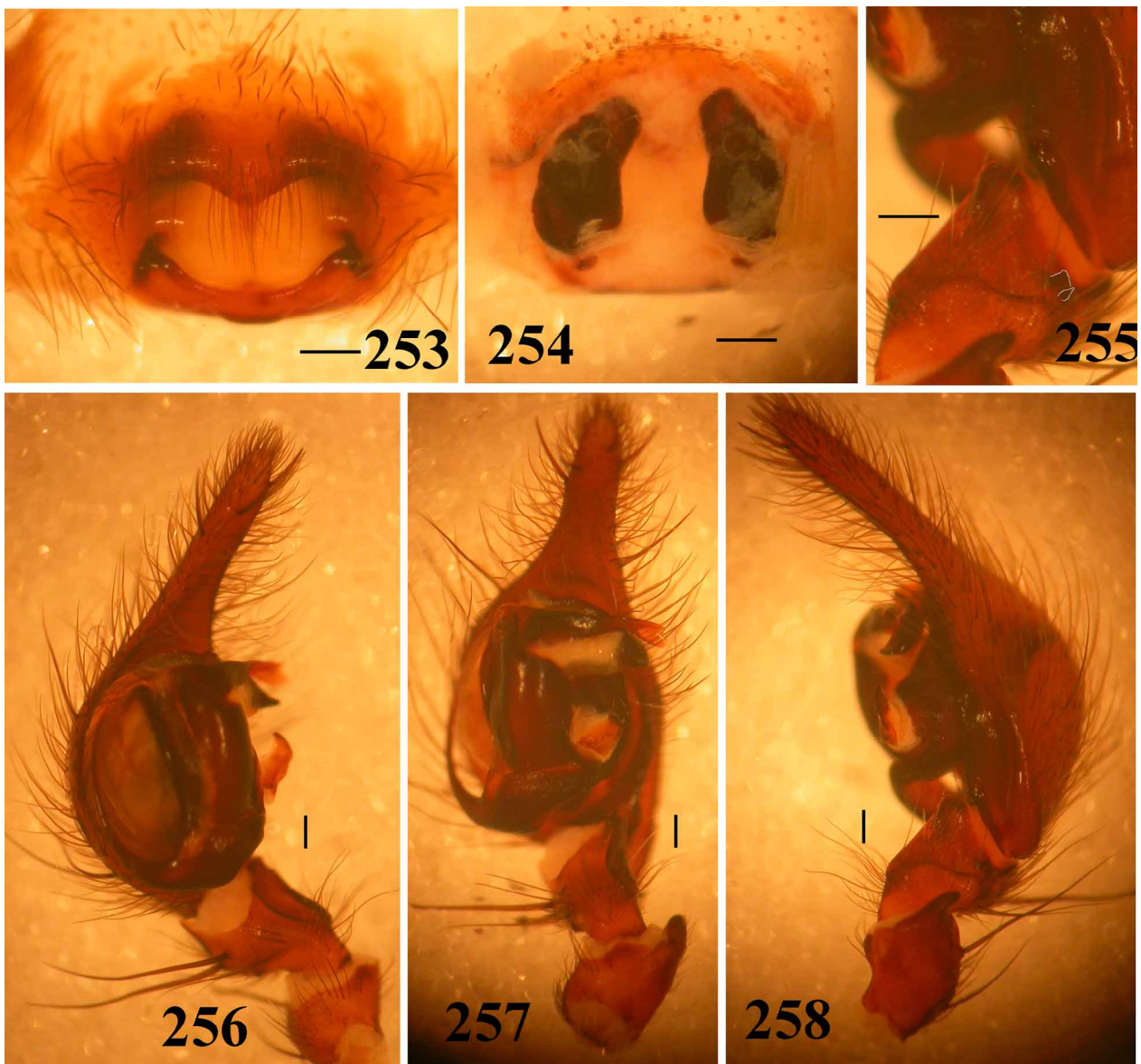
Other material examined: CHINA: Yunnan: Dali: 1♀, Diancang Shan, 3 km W Dali old town, pine forest at “Cloud Road”, right upper chairlift station, N25°41.1', E100°06.085', 2650–2750 m, needle and leaf litter, September 1, 2003, D.W. Wrase (SMF).

Etymology: The species name is derived from the Latin word “latus”, which means “broad”, and refers to the broad conductor compared to other *Draconarius incertus* group species; term in apposition.

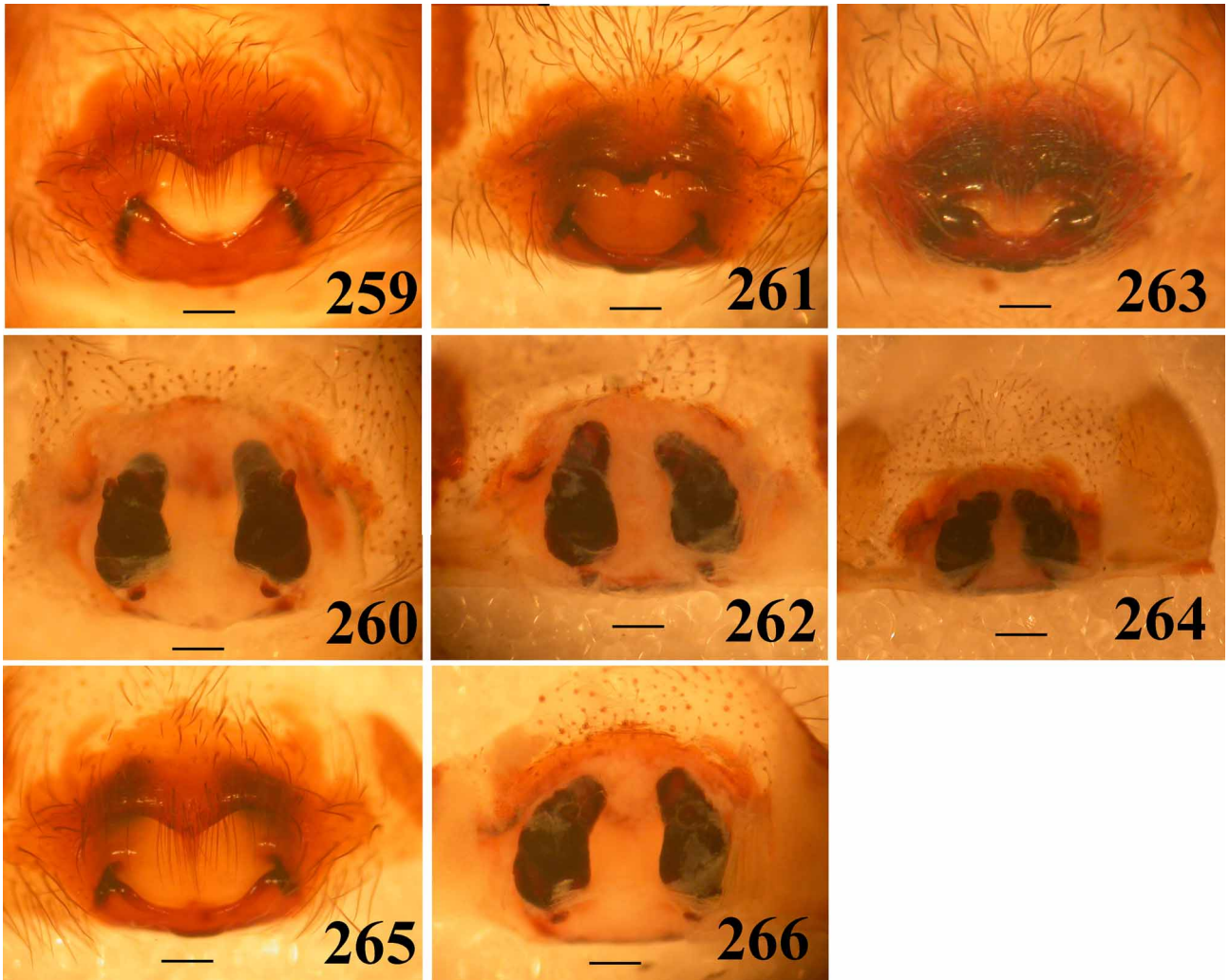
Diagnosis: *D. latusincertus* is similar to *D. pseudobrunneus* Wang 2003 and *D. incertus* Wang 2003 in having a similar epigynum and similar palp, but can be distinguished by the distinctly larger body size, the broad conductor in the male; and the large atrium with atrial ridges extending posteriorly close to the epigastric furrow and the distinct anterior extension of the spermathecae in the female (Figs 249–252).

Notes: The female from Dali, Diancang Shan (SMF) has a similar epigynum as *D. latusincertus* sp. nov., but its atrium is wider than long and the spermathecae are much shorter (Figs 263–264). This specimen is temporarily listed here as *D. latusincertus* sp. nov. Further collection of both males and females from this location is badly needed.

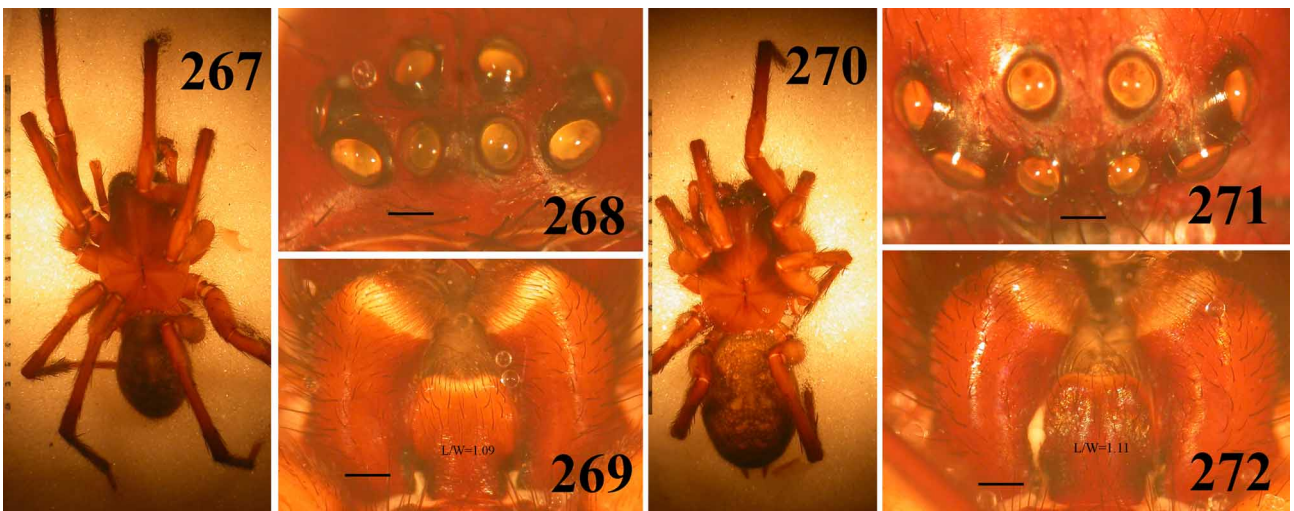
Description: *Male (holotype)*. Large sized Coelotinae, total length 11.11 (Fig. 267). Dorsal shield of prosoma 6.30 long, 4.33 wide; opisthosoma 4.81 long, 3.40 wide. AME smallest, $\frac{3}{4}$ the size of ALE, which are the largest; posterior eyes subequal in size, slightly smaller than ALE (AME 0.17, ALE 0.23, PME 0.19, PLE 0.19); AME separated from each other by their diameter, from ALE by half the size of AME; PME separated from each other by slightly less than their diameter, from PLE by more than their diameter; AME and PME separated by AME diameter (AME–AME 0.16, AME–ALE 0.08, PME–PME 0.17, PME–PLE 0.23, AME–PME 0.16) (Fig. 268). Labium subequal in length and width (L/W=1.09) (Fig. 269). Chelicerae with 3 promarginal and 2 retromarginal teeth. Palp with a short patellar apophysis; RTA more than half of tibial length, with slightly protruding distal end; lateral tibial apophysis distinct, widely separated from RTA; a short macroseta arising near lateral tibial apophysis; cymbial furrow less than half of cymbial length; conductor short, slightly bifurcate, broad, with a slender dorsal apophysis and a small basal lamella; median apophysis simple, not spoon-shaped; embolus short, filiform, prolateral in origin (Figs 251–252, 255–258).



FIGURES 253–258. *Draconarius latusincertus* sp. nov., male holotype (255–258) (HNU, CASENT9020025) and female paratype (253–254) (CAS, CASENT9011586) from Fugong County, Shibali Forest Station. 253–254. Epigynum (ventral, dorsal); 255. Palpal tibia, retrolateral, with lateral tibial apophysis and a macrosetae highlighted in white lines; 256–258. Palp (prolateral, ventral, retrolateral).



FIGURES 259–266. *Draconarius latusincertus* sp. nov., female epigynum. 259–260. Paratype from Fugong County, Shibali (HNU, CASENT9020626); 261–262. Paratype from Fugong County, Shibali (HNU, CASENT9020601); 263–264. From Dali, Mt. Cangshan (SMF); 265–266. From Fugong County, Shibali Forest Station (CAS, CASENT9011586). 259, 261, 263, 265. Ventral; 260, 262, 264, 266. Dorsal.



FIGURES 267–272. *Draconarius latusincertus* sp. nov., male holotype (267–269) (HNU, CASENT9020025) and female paratype (270–272) (CAS, CASENT9011586) from Fugong County, Shibali Forest Station. 267, 270. Habitus, dorsal; 268, 271. Eyes, fronto-dorsal; 269, 272. Labium, ventral (L/W: 269=1.09; 272=1.11).

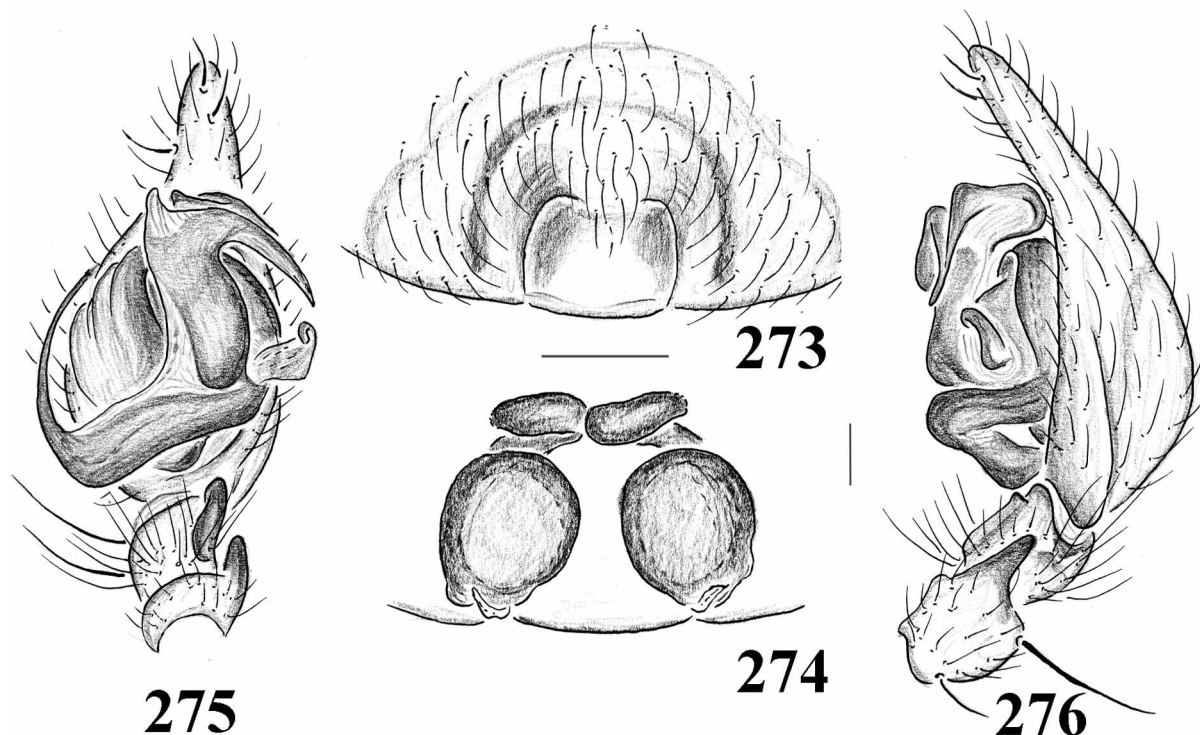
Female (paratype of CASENT9011586 measured). Large sized Coelotinae, total length 12.15 (Fig. 270). Dorsal shield of prosoma 6.00 long, 4.05 wide; opisthosoma 6.15 long, 4.60 wide. AME smallest, $\frac{3}{4}$ the size of ALE, which are the largest; PLE slightly smaller than ALE, PME slightly smaller than PLE (AME 0.18, ALE 0.24, PME 0.20, PLE 0.22); AME separated from each other by their diameter, from PLE by $\frac{2}{3}$ of AME diameter; PME separated from each other by their diameter, from PLE by more than PLE size; AME and PME separated by AME diameter (AME–AME 0.18, AME–ALE 0.12, PME–PME 0.20, PME–PLE 0.25, AME–PME 0.18) (Fig. 271). Labium slightly longer than wide (L/W=1.11) (Fig. 272). Promargin of chelicera with 3, retromargin with 2 teeth. Epigynal teeth absent; atrium large, with distinct, posteriorly protruding anterior margin and indistinct lateral margins; atrial ridges distinct, situated on posterior half of atrium, slightly extending posteriorly, but distinctly separated from epigastric furrow; copulatory ducts short, originating and extending between spermathecae; spermathecae broad, slightly elongated, widely separated, anteriorly extending beyond heads; spermathecal heads arising from distal half of spermathecae (Figs 249–250, 253–254, 259–266).

Distribution: China (Yunnan: Dali, Fugong) (Fig. 542).

***Draconarius levyi* sp. nov.**

(Figs 273–287, 542)

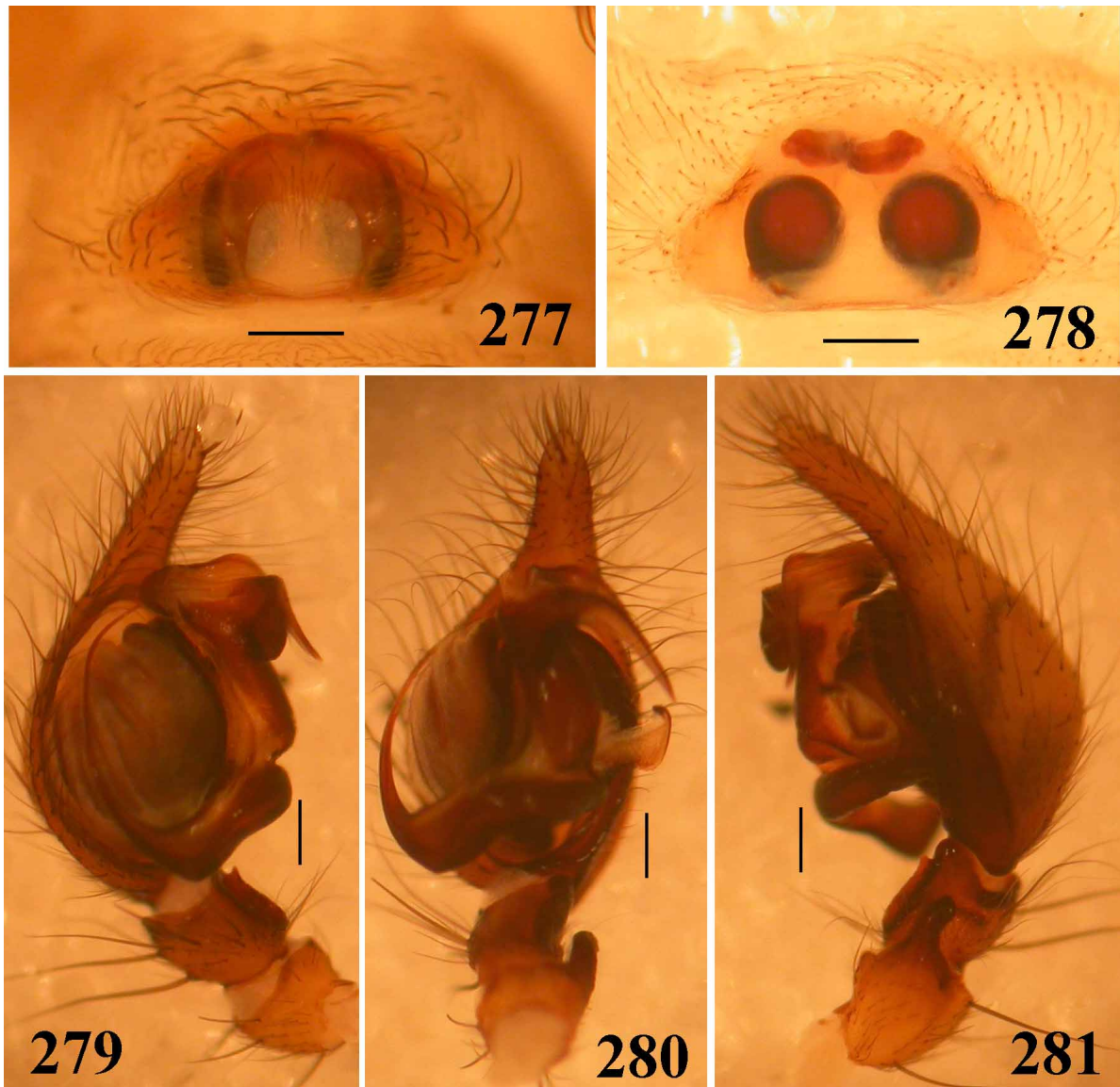
Type material: *Holotype.* ♀, **CHINA: Yunnan: Fugong County:** Gaoligongshan, Shibali forest station, in moist stream gully, N27.16894°, E98.77205°, 2650 m, May 9, 2004, C. Griswold & H.M. Yan (HNU, CASENT9024341).



FIGURES 273–276. *Draconarius levyi* sp. nov., female holotype (273–274) from Fugong County, Shibali Forest Station (HNU, CASENT9024341) and male paratype (275–276) from Gongshan County, Dulongjiang (HNU, CASENT9024333). 273–274. Epigynum (ventral, dorsal); 275–276. Palp (ventral, retrolateral).

Paratypes. **CHINA: Yunnan: Fugong County:** 2♀, same data as holotype (HNU, CASENT9024341). **Gongshan County:** 1♀, Dulongjiang Township, Maku ridge, subtropical evergreen broadleaf forest, in webs,

N27.67509°, E98.30160°, 1950 m, August 30, 2006, J.A. Miller, D. Kavanaugh (CAS , CASENT9024425); 1♀, Dulongjiang Township, along trail from Maku Yakou to Qinlangdang village, sifting leaf litter, tropical evergreen, broadleaf forest, N27.68336°, E98.28869°, 1550 m, September 2, 2006, J.A. Miller, J. Wang (CAS, CASENT9024401); 1♂, Dulongjiang Township, Maku ridge, subtropical evergreen broadleaf forest, sifting leaf litter, N27.67446°, E98.30083°, 2000 m, August 29, 2006, J.A. Miller, D. Kavanaugh (HNU, CASENT9024333).



FIGURES 277–281. *Draconarius levyi* sp. nov., female holotype (277–278) from Fugong County, Shibali Forest Station (HNU, CASENT9024341) and male paratype (279–281) from Gongshan County, Dulongjiang (HNU, CASENT9024333). 277–278. Epigynum (ventral, dorsal); 279–281. Palp (prolateral, ventral, retrolateral).

Etymology: The specific name is in honour of Gershom Levy (1927–2009), who helped the first author on the Near East Coelotinae spiders; noun in genitive case.

Diagnosis: The male of this new species can be easily recognized by the large patellar apophysis, the slender RTA that does not reach the distal tibia, and the long, elongated, prolaterally originating base of the embolus, and the female by the absence of epigynal teeth, the distinct atrium, the large, round spermathecae, and the long, ventrally extending spermathecal tubes (Figs 273–276).



FIGURES 282–287. *Draconarius levyi* sp. nov., female holotype (282–284) from Fugong County, Shibali Forest Station (HNU, CASENT9024341) and male paratype (285–287) from Gongshan County, Dulongjiang (HNU, CASENT9024333). 282, 285. Habitus, dorsal; 283, 286. Eyes, fronto-dorsal; 284, 287. Labium, ventral (L/W=1.00).

Description: *Female (holotype).* Medium sized Coelotinae, total length 5.85 (Fig. 282). Dorsal shield of prosoma 3.10 long, 1.96 wide; opisthosoma 2.75 long, 1.95 wide. AME smallest, less than half the size of ALE; ALE largest; posterior eyes subequal, slightly smaller than ALE (AME 0.06, ALE 0.14, PME 0.12, PLE 0.13); AME separated from each other by slightly more than their diameter, from ALE by slightly less than AME diameter; PME separated from each other and from PLE by $\frac{2}{3}$ of AME diameter (AME–AME 0.08, AME–ALE 0.03, PME–PME 0.08, PME–PLE 0.10, AME–PME 0.10) (Fig. 283). Labium with length and width subequal (Fig. 284). Promargin of chelicera with 3, retromargin with 2 teeth. Epigynal teeth absent; atrium distinct, large, length and width subequal, with indistinct anterior margin and distinct, parallel extending lateral margins; copulatory ducts indistinct from dorsal view; spermathecae large, round, slightly separated, with spermathecal tubes originating posteriorly and extending anteriorly on ventral side of large spermathecal balls, converging and close together anteriorly; spermathecal head distinct, situated distally, extending laterally (Figs 273–274, 277–278).

Male (paratype). Medium sized Coelotinae, total length 5.55 (Fig. 285). Dorsal shield of prosoma 2.80 long, 2.30 wide; opisthosoma 2.75 long, 1.70 wide. AME smallest, half the size of lateral eyes; lateral eyes subequal in size, largest; PME slightly smaller than lateral eyes (AME 0.07, ALE 0.13, PME 0.11, PLE 0.13); AME separated from each other by about their diameter, from ALE by half of AME diameter; PME separated from each other by $\frac{2}{3}$ of their diameter, from PLE by PME diameter (AME–AME 0.06, AME–ALE 0.03, AME–PME 0.10, PME–PME 0.08, PME–PLE 0.10) (Fig. 286). Labium with equal length and width (L/W=1.0) (Fig. 287). Chelicerae with 3 promarginal and 2 retromarginal teeth. Palp with a large patellar apophysis; RTA more than half of tibial length, but relatively small and slender, with distal end not protruding beyond distal tibia; lateral tibial apophysis short, broad; cymbial furrow less than half of cymbial length; conductor long, slender, with a small lamella and a broad dorsal apophysis; median apophysis spoon-shaped, elongate, free-standing along anterior edge; embolus short, filiform, prolateral in origin, with elongated base (Figs 275–276, 279–281).

Distribution: China (Yunnan: Fugong, Gongshan) (Fig. 542).

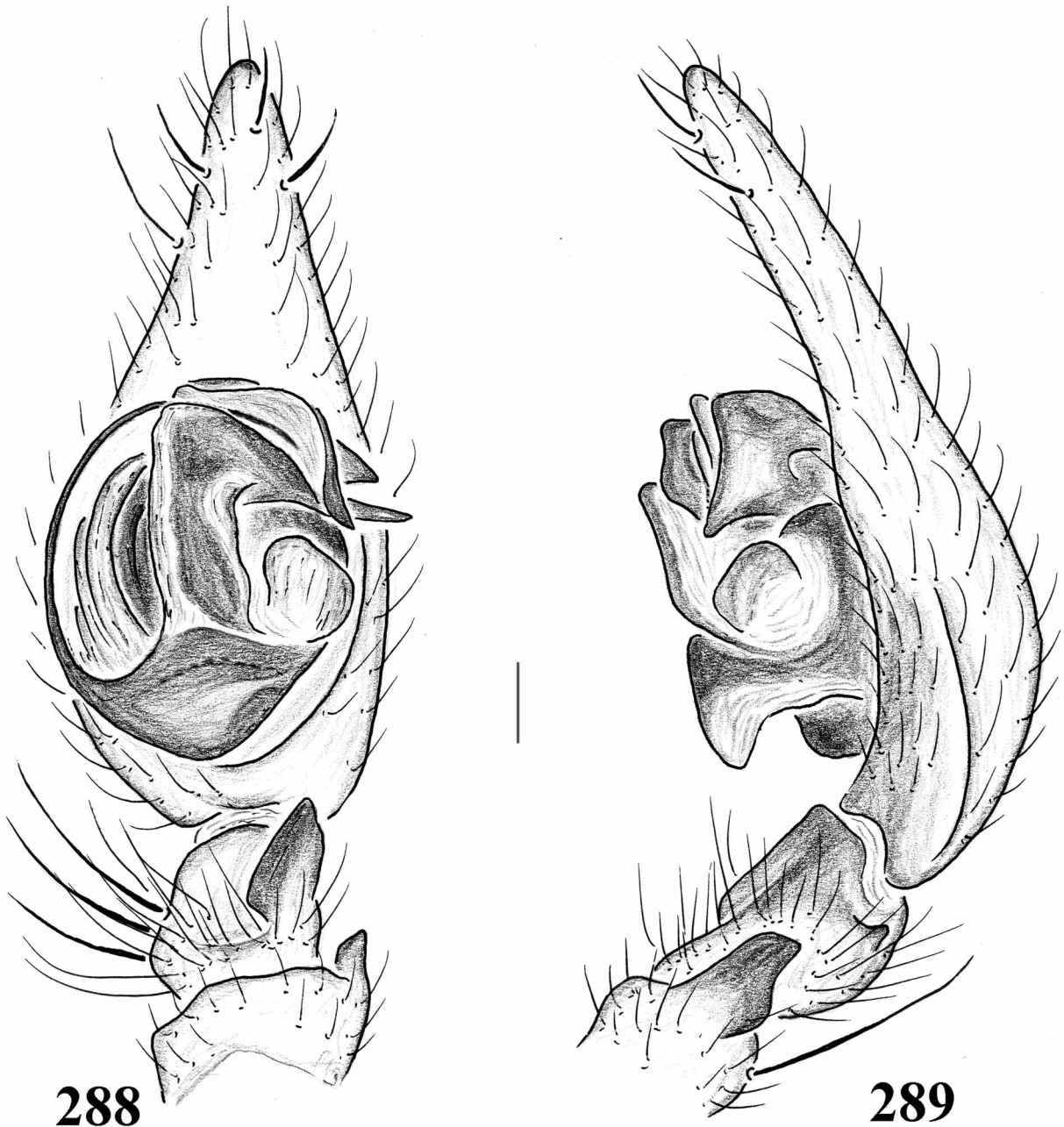
***Draconarius lini* Liu & Li 2009**
(Fig. 541)

Draconarius lini Liu & Li 2009: 674, figs 22–27 (male holotype from Yiliang County, male and female paratypes from Kunming, Yunnan, China, in IZCAS, not examined).

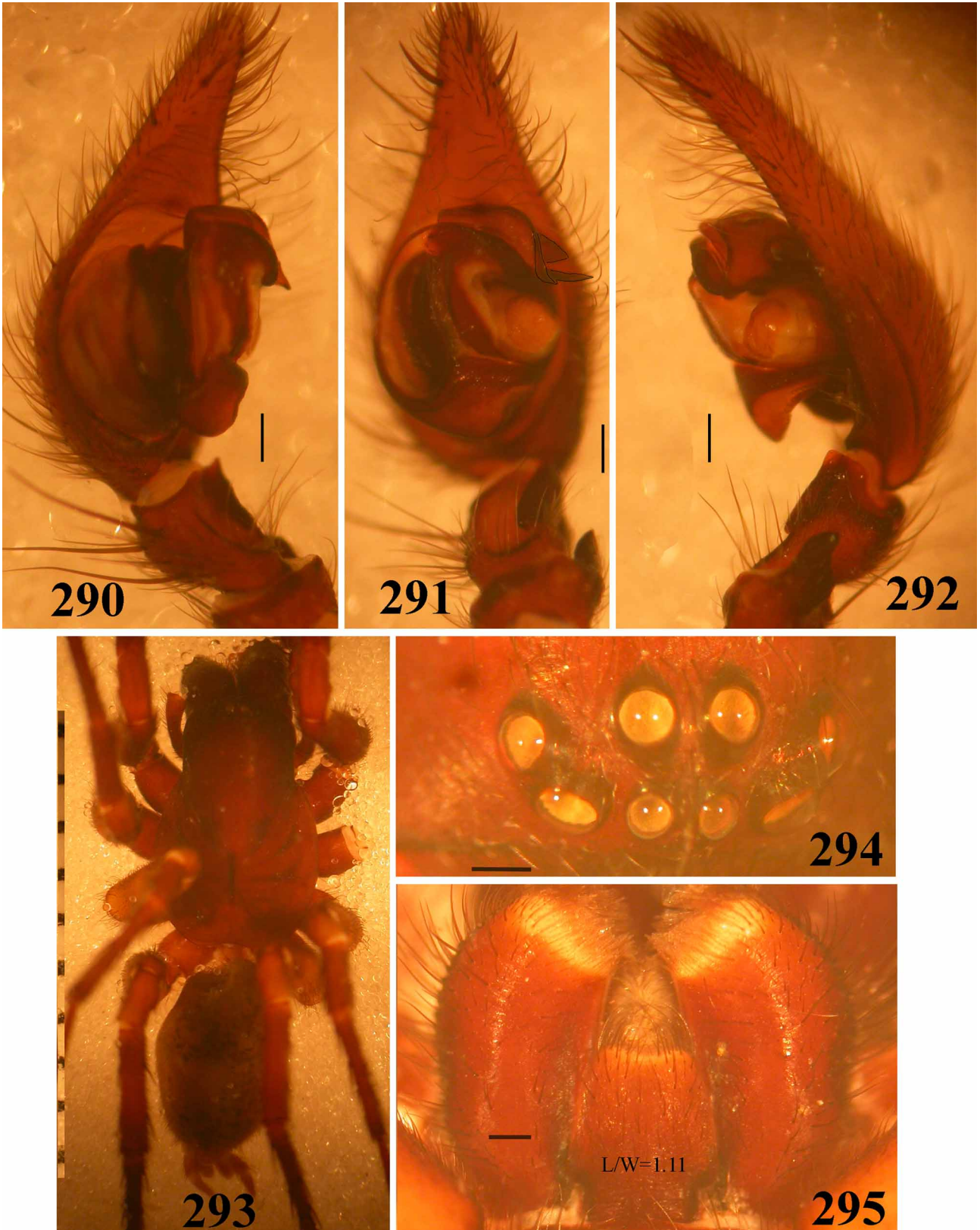
Diagnosis: The male is similar to *D. paraepisomos* Wang & Martens 2009 in having a short conductor and a proximally originating embolus, but can be distinguished by the relatively broad patellar apophysis, the lateral tibial apophysis that is broad and situated close to RTA, and the cymbial furrow that slightly longer than half of cymbial length (Liu & Li 2009: figs 22–24). The female is similar to *D. yani* **sp. nov.** in having a similar epigynum, but the atrium of *D. lini* is round, with indistinct anterior margin (Liu & Li 2009: fig. 25).

Description: See Liu & Li (2009).

Distribution: China (Yunnan: Yiliang, Kunming) (Fig. 541).



FIGURES 288–289. *Draconarius longlingensis* **sp. nov.**, male holotype (HNU, CASENT9020372) from Tengchong County, Bawan village. Palp (ventral, retrolateral).



FIGURES 290–295. *Draconarius longlingensis* sp. nov., male holotype from Tengchong County, Bawan village (HNU, CASENT9020372). 290–292. Palp (prolateral, ventral, retrolateral); 293. Habitus, dorsal; 294. Eyes, fronto-dorsal; 295. Labium, ventral (L/W=1.11).

***Draconarius longlingensis* sp. nov.**

(Figs 288–295, 542)

Type material: *Holotype*. ♂, **CHINA: Yunnan: Tengchong County:** Bawan village, 39–41 km of the road Bawan-Tengchong, N 24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (HNU, CASENT9020372).

Paratypes. **CHINA: Yunnan: Longling County:** 1♂, Xiaoheishan village (National 320 Road), N24°50348', E98°45707', 2106 m, October 29, 2003; G. Tang (HNU, CASENT9020400). **Tengchong County:** 1♂, Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (CAS, CASENT9020373).

Etymology: The specific name is derived from one of the type localities, Longling County, Yunnan, China; adjective.

Diagnosis: Males of this new species can be easily recognized by the long, broad patellar apophysis, the bifurcate conductor, the broad, round, simple median apophysis, and the prolaterally originating embolus (Figs 288–289).

Description: *Male (holotype)*. Medium sized Coelotinae, total length 9.01 (Fig. 293). Dorsal shield of prosoma 5.01 long, 3.36 wide; opisthosoma 4.00 long, 2.50 wide. AME smallest, ALE largest; PME and PLE subequal in size, slightly smaller than ALE (AME 0.14, ALE 0.19, PME 0.16, PLE 0.17); AME separated from each other and from ALE by about half of AME diameter; PME separated from each other by $\frac{2}{3}$ of their diameter, widely separated from PLE by about 1.5 times PME diameter (AME–AME 0.07, AME–ALE 0.08, PME–PME 0.10, PME–PLE 0.22, AME–PME 0.15) (Fig. 294). Labium longer than wide (L/W=1.11) (Fig. 295). Promargin of chelicera with 3 teeth, retromargin 2. Palpal patellar apophysis large, with broad base and slender distal end; RTA more than half of tibial length, with blunt distal end; lateral tibial apophysis distinctly separated from RTA; cymbial furrow less than half of cymbial length; conductor short, slightly bifurcate, with a dorsal apophysis and a small basal lamella; median apophysis broad, round, simple (not spoon-shaped); embolus short, filiform, prolatral in origin (Figs 288–292).

Female. Unknown.

Distribution: China (Yunnan: Tengchong, Longling) (Fig. 542).

***Draconarius mikrommatos* sp. nov.**

(Figs 296–302, 542)

Type material: *Holotype*. ♀, **CHINA: Yunnan: Gongshan County:** Cikai township, 53 km W of Gongshan on Dulong Valley Road, 3380 m, N27.77422°, E098.44716°, October 1, 2002, D. Kavanaugh (HNU, CASENT9025827).

Etymology: The species name is derived from the Greek words “mikro” and “ommatos”, meaning “small” and “eye” separately, and refers to the relatively small eyes; term in apposition.

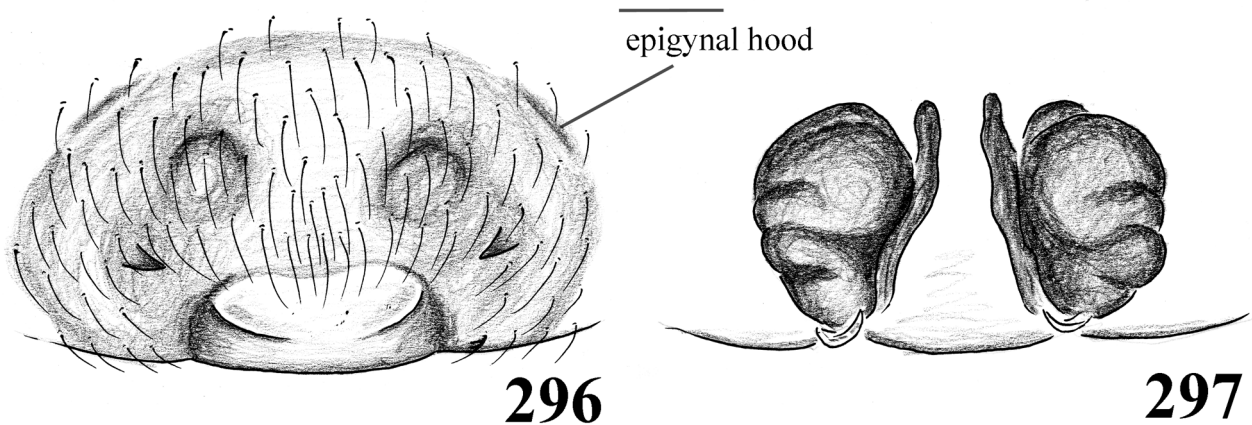
Diagnosis: The female is similar to *D. episomos* Wang 2003 in having a small, posteriorly situated atrium, anteriorly broad, round spermathecae, and medially arising spermathecal heads, but can be distinguished by the broader atrium and the distinctly separated spermathecae (Figs 296–299).

Description: *Female (holotype)*. Large sized Coelotinae, total length likely more than 10.00 (Fig. 300). Dorsal shield of prosoma 5.00 long, 3.48 wide; abdomen damaged. Eyes small and widely separated. Median eyes subequal in size, small; ALE largest, 1.5 times median eyes in size; PLE slightly larger than median eyes (AME 0.09, ALE 0.15, PME 0.08, PLE 0.11); AME separated from each other by more than AME diameter, widely separated from ALE by more than 2 times AME diameter; PME separated from each other by about 2–3 times their diameter, from PLE by 4 times PME diameter (AME–AME 0.12, AME–ALE 0.19, AME–PME 0.16, PME–PME 0.22, PME–PLE 0.31) (Fig. 301). Labium longer than wide (L/W=1.29) (Fig. 302). Chelic-

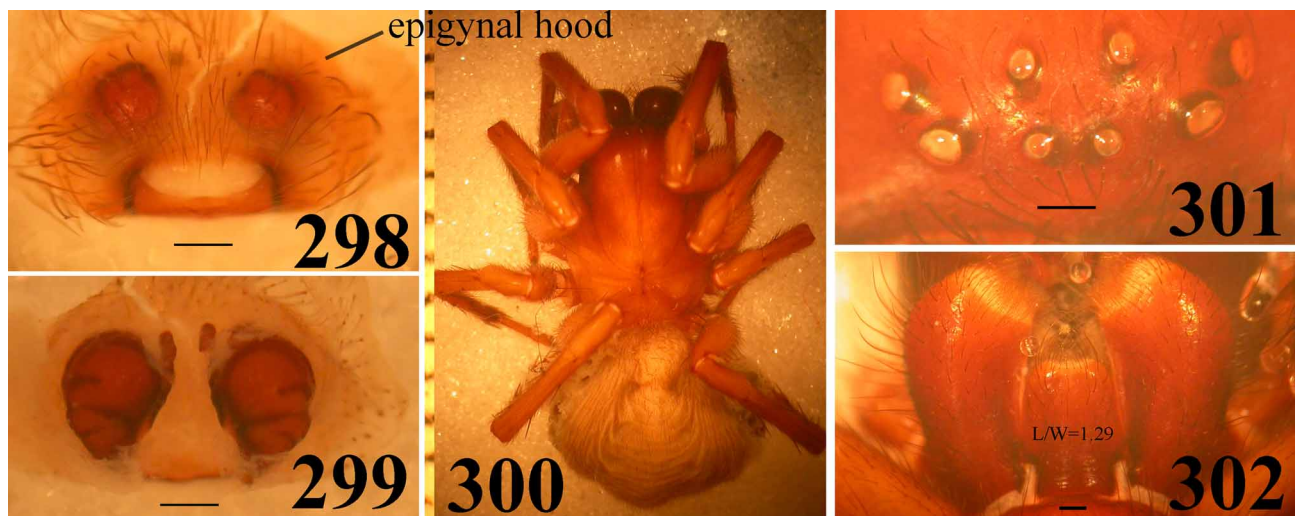
era with 3 promarginal and 2 retromarginal teeth. Epigynal teeth short; atrium small, wider than long, close to epigastric furrow, with distinct atrial ridges; copulatory ducts small, originating medially and posteriorly; spermathecae large, round, bases distinctly separated by about their width, anteriorly converging and slightly separated by less than half of their width; spermathecal heads distinct, situated distally from inner margins of spermathecae (Figs 296–299).

Male. Unknown.

Distribution: China (Yunnan: Gongshan) (Fig. 542).



FIGURES 296–297. *Draconarius mikrommatos* sp. nov., female holotype from Gongshan County, Cikai Township (HNU, CASENT9025827). Epigynum (ventral, dorsal).



FIGURES 298–302. *Draconarius mikrommatos* sp. nov., female holotype from Gongshan County, Cikai Township (HNU, CASENT9025827). 298–299. Epigynum (ventral, dorsal); 300. Habitus, dorsal; 301. Eyes, fronto-dorsal; 302. Labium, ventral (L/W=1.29).

***Draconarius mupingensis* Xu & Li 2006**
(Fig. 543)

Draconarius mupingensis Xu & Li 2006b: 784, figs 20–26 (male holotype, male and female paratypes from Baoxing County and Wenchuan County, Sichuan; female paratype from Weixi County, Yunnan, China, in IZCAS, not examined).

Diagnosis: The male is similar to those of *D. pseudobrunneus* Wang 2003 in having similar epigynum and palp. In *D. mupingensis*, the dorsal branch of the bifurcate conductor is about the same length as the ventral one (distinctly longer in *D. pseudobrunneus*) and the embolus thread starts from the anterior margin of the embolic base (from between anterior and posterior margins in *D. pseudobrunneus*). The female can only be distinguished by the slightly different spermathecae (Xu & Li 2006b: figs 20–26).

Description: See Xu & Li 2006.

Distribution: China (Sichuan: Baoxing, Wenchuan; Yunnan: Weixi) (Fig. 543).

***Draconarius noctulus* (Wang, Yin, Peng & Xie 1990) comb. nov.**

(Fig. 543)

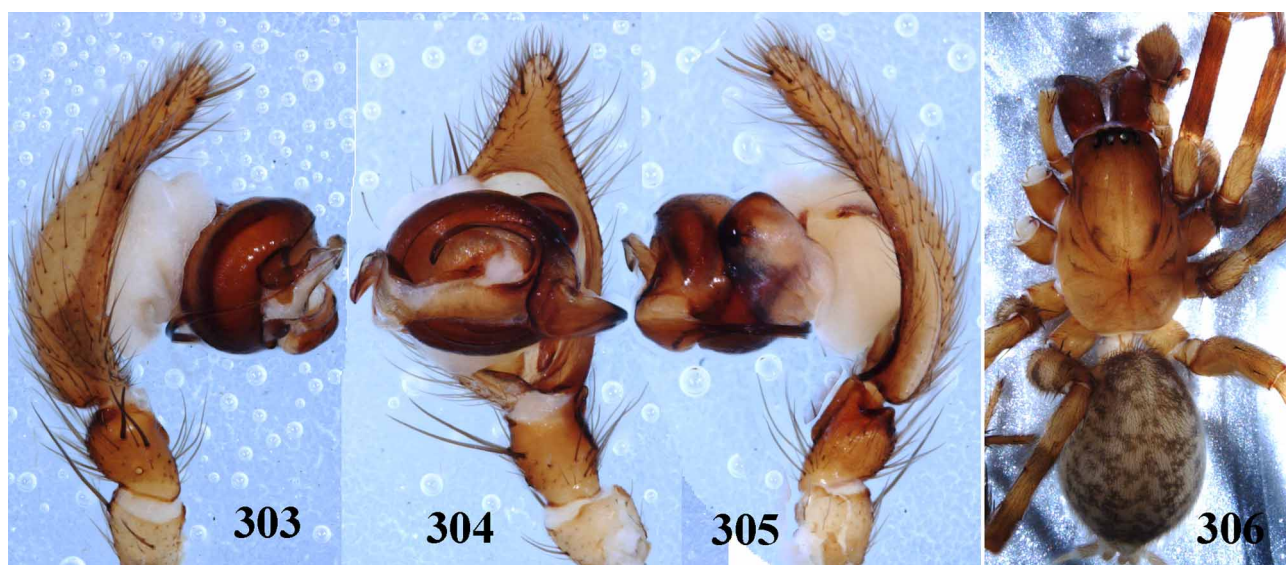
Coelotes noctulus Wang *et al.* 1990: 226, figs 113–114 (female holotype, in HNU, examined). –Song *et al.* 1999: 377, figs 220M–N. Wang & Jäger 2007: 31, figs 33–35.

Diagnosis: The female of this species can be easily recognized by the absence of epigynal teeth, the large, deep, anteriorly situated atrium, and the broad, posteriorly extending spermathecae (Wang & Jäger 2007: figs 33–34). Chelicerae with 4–5 promarginal and 5–6 retromarginal teeth (Wang & Jäger 2007: fig. 35).

Description: *Female.* See Wang & Jäger (2007).

Male. Unknown.

Distribution: China (Yunnan: Jinhong) (Fig. 543).



FIGURES 303–306. *Draconarius nudulus* Wang 2003, male holotype from Tengchong County, Nankang (HNU). 303–305. Palp, expanded (proteral, ventral, retrolateral); 306. Habitus, dorsal.

***Draconarius nudulus* Wang 2003**

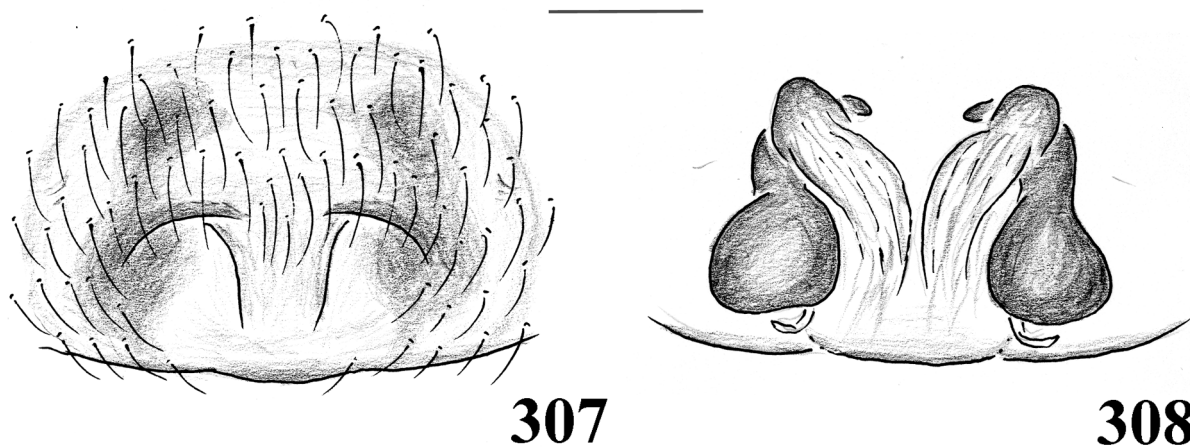
(Figs 303–306, 543)

Draconarius nudulus Wang 2003: 540, figs 45A–B (male holotype from Tengchong County, Yunnan, China, in HNU, examined).

Diagnosis: The male is similar to *D. catillus* sp. nov. in having a short conductor, a proximally originating embolus, and the absence of a patellar apophysis, but can be distinguished by the short cymbial furrow, the slightly spoon-shaped median apophysis, and the short embolus (Figs 303–305).

Description: *Male.* See Wang (2003). Photos of habitus and palp are provided in this study.
Female. Unknown.

Distribution: China (Yunnan: Tengchong) (Fig. 543).



FIGURES 307–308. *Draconarius olorinus* sp. nov., female holotype from Tengchong County, Mingguang, Zizhi (HNU, CASENT9025593). Epigynum (ventral, dorsal).

Draconarius olorinus sp. nov.
 (Figs 307–315, 543)

Type material: *Holotype.* ♀, **CHINA: Yunnan: Tengchong County:** Mingguang Township, Zizhi Village, road cut at Yakou border station, N25.80894°, E098.62080°, 2890 m, May 23, 2006, X.J. Peng, X.P. Wang & P. Hu (HNU, CASENT9025593).



FIGURES 309–313. *Draconarius olorinus* sp. nov., female holotype from Tengchong County, Mingguang, Zizhi (HNU, CASENT9025593). 309–310. Epigynum (ventral, dorsal); 311. Habitus, dorsal; 312. Eyes, fronto-dorsal; 313. Labium, ventral (L/W=1.00).



FIGURES 314–315. Habitat photos from Yakou Border Station of Zhizhi village, Mingguang Town, Tengchong County. 314. Mountain view at 2890 m where *D. olorinus* **sp. nov.** was collected. Drs. H.B. Liang from Institute of Zoology, Beijing (left) and D. Kavanaugh from CAS (right) were measuring the position using the global position systems (GPS); 315. Small web of *D. olorinus* on road cut.

Etymology: The species name came from Latin word “olor”, meaning “swan”, and refers to the swan-shaped vulva; adjective.

Diagnosis: The female of this new species can be easily recognized by the absence of epigynal teeth, the distinctly separated atria, and the long, posteriorly originating, anteriorly diverging copulatory ducts (Figs 307–310).

Description: *Female (holotype).* Medium sized Coelotinae, total length 5.93 (Fig. 311). Dorsal shield of prosoma 2.69 long, 2.45 wide; opisthosoma 3.24 long, 2.26 wide. AME smallest, $\frac{2}{3}$ size of other eyes, which are subequal (AME 0.08, ALE 0.13, PME 0.14, PLE 0.13); anterior eyes equally separated by half of AME diameter; PME close together, separated from each other by $\frac{1}{3}$ of their diameter, from PLE by $\frac{2}{3}$ of PME diameter; PME separated from each other by $\frac{1}{3}$ of their diameter, from PLE by about $\frac{2}{3}$ of PME diameter (AME–AME 0.04, AME–ALE 0.04, PME–PME 0.04, PME–PLE 0.09, AME–PME 0.08) (Fig. 312). Labium length and width subequal (Fig. 313). Cheliceral pro- and retromargins with 2 teeth. Epigynum without epigynal teeth; atria distinctly separated by a broad septum, which is as broad as atrial width; copulatory ducts large, originating medially and posteriorly, anteriorly extending and diverging; spermathecal bases large, round, widely separated by about 1.5 times their width; spermathecal stalks narrow, extending anteriorly; spermathecal heads distinct, arising distally (Figs 307–310).

Male. Unknown.

Notes: The specimen was collected from a small funnel web of a road cut on the mountain top at a border station between China and Myanmar (Figs 314–315).

Distribution: China (Yunnan: Tengchong) (Fig. 543).

***Draconarius ornatus* (Wang, Yin, Peng & Xie 1990)**
(Figs 316–321, 543)

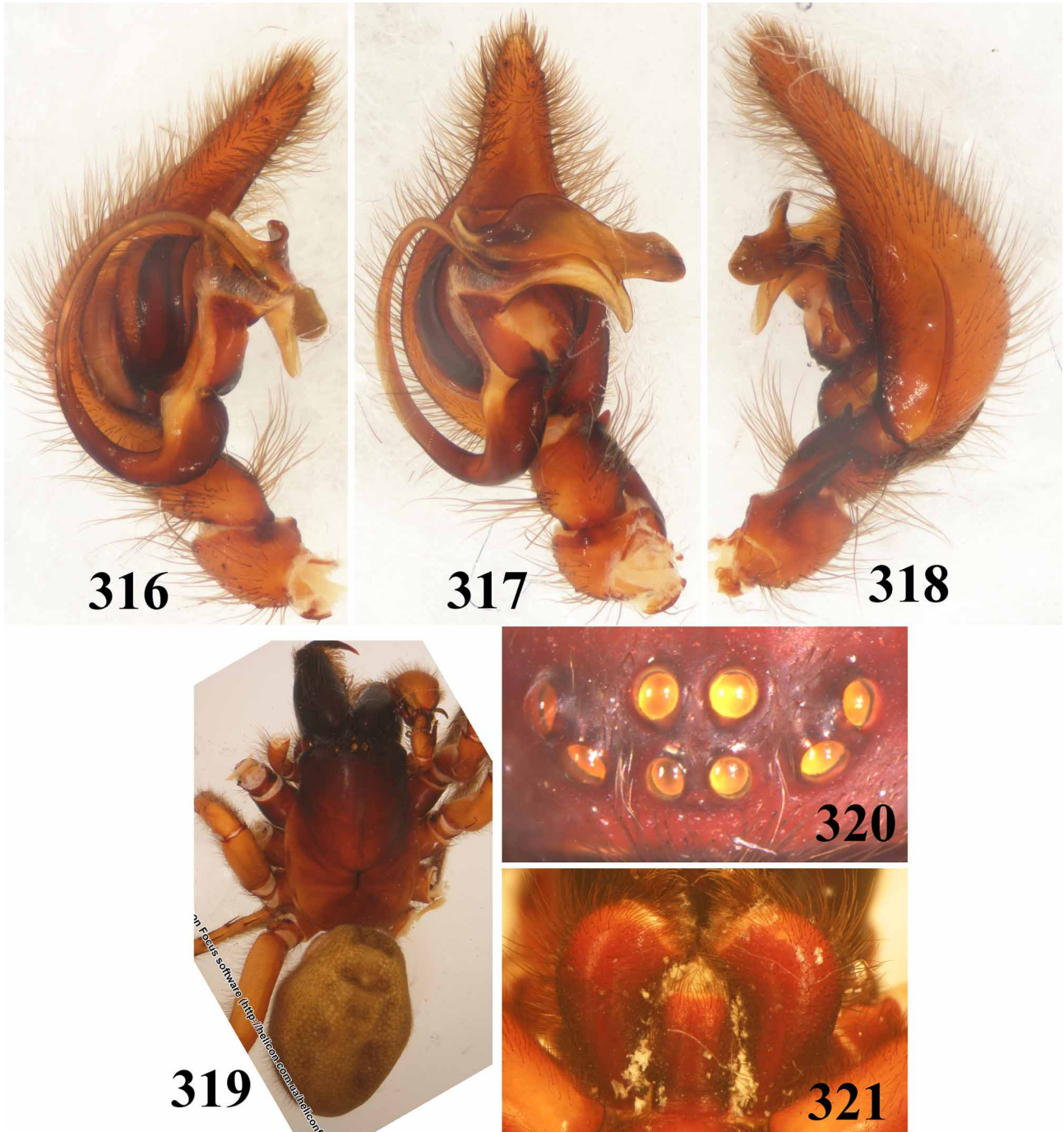
Coelotes ornatus Wang *et al.* 1990: 199, figs 53–54 (female holotype and paratype from Kunming, Yunnan, China, in HNU, not examined). Song *et al.* 1999: 377, figs 221O–P.

Draconarius ornatus: Wang 2003: 541, figs 46A–C, 96A.

Diagnosis: Similar to *D. terebratus* (Peng & Wang 1997) by the absence of epigynal teeth, presence of posteriorly situated epigynal hoods, anteriorly extending copulatory ducts, and long spermathecal heads. The female can be distinguished by the slightly elongated atrium, and the male by the broad, distinctly bifurcate conductor and the broad embolus (Figs 316–318).

Description: See Wang *et al.* (1990) and Wang (2003). Photos of male habitus, eyes, labium and palp are provided in this study.

Distribution: China (Yunnan: Kunming) (Fig. 543).



FIGURES 316–321. *Draconarius ornatus* (Wang, Yin, Peng & Xie 1990), male from Kunming, Xishan (HNU). 316–318. Palp (prolateral, ventral, retrolateral); 319. Habitus, dorsal; 320. Eyes, fronto-dorsal; 321. Labium, ventral (L/W=1.27). Photos by G. Tang & X. Xu at Hunan Normal University.

***Draconarius papillatus* Xu & Li 2006**

(Fig. 544)

Draconarius papillatus Xu & Li 2006b: 786, figs 27–30 (female holotype from Xiangcheng, paratypes from Xiangcheng County and Yajiang County, Sichuan, China, in IZCAS, not examined).

Diagnosis: Similar to *D. latusincertus* **sp. nov.** in having a similar epigynum, but can be distinguished by the short anterior extensions of the spermathecae (Xu & Li 2006b: figs 28–30).

Description: *Female.* See Xu & Li (2006b).

Male. Unknown.

Distribution: China (Sichuan: Xiangcheng, Yajiang, Litang; Yunnan: Zhongdian; Tibet: Zayu) (Fig. 544).

***Draconarius paraspiralis* sp. nov.**

(Figs 322–325, 544)

Type material: *Holotype.* ♀, **CHINA: Yunnan: Lushui County:** native forest in Gaoligongshan at 9.5 road km ESE Pianma, N25°59', E98°40', 2500 m, October 15–18, 1998, C. Griswold, D. Kavanaugh, C.L. Long (HNU).

Paratype. **CHINA: Yunnan: Lushui County:** 1♂, same data as holotype (HNU).

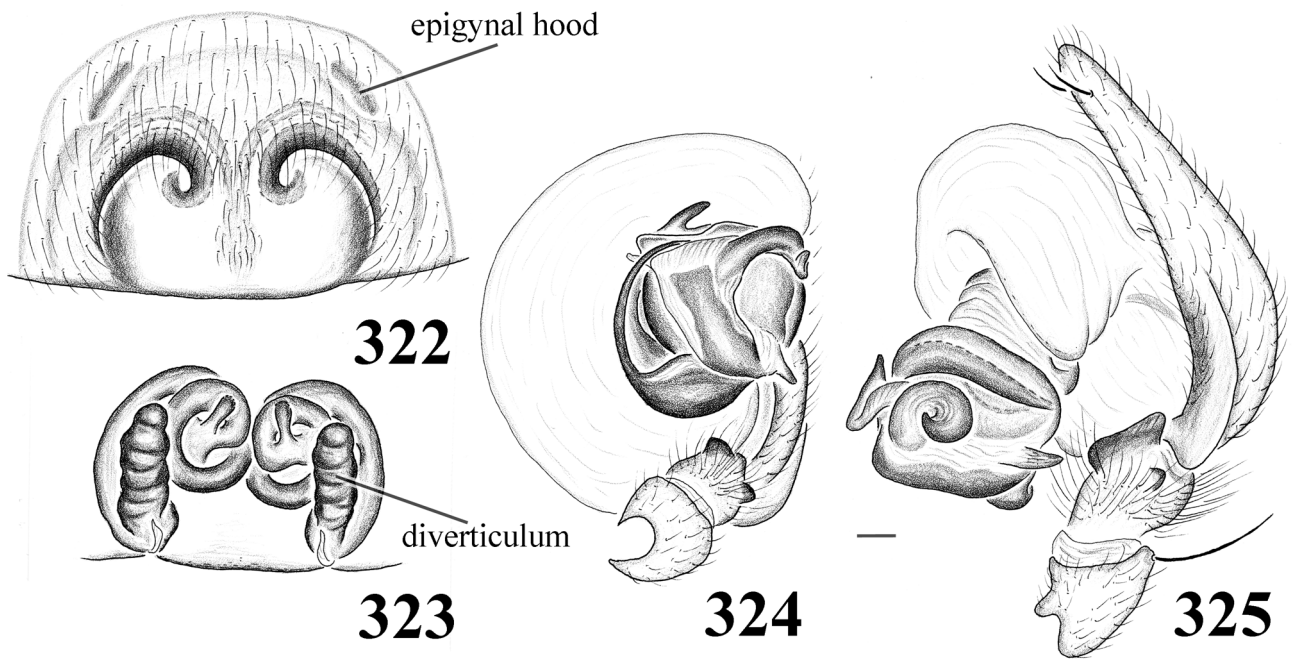
Etymology: The specific name refers to its similarity to *D. spiralis* **sp. nov.**; term in apposition.

Diagnosis: This new species is similar to *D. spiralis* **sp. nov.** and *D. pseudospiralis* **sp. nov.** in having a large atrium, absence of epigynal teeth, coiled spermathecal tubes, distally coiled conductor, and simple median apophysis, but can be distinguished by the absence of patellar apophysis, the small conductor, and the prolaterally originating embolus in the male, and by the presence of diverticula that arise from spermathecal bases in the female (Figs 322–325).

Description: *Female (holotype).* Medium sized Coelotinae, total length 7.20. Dorsal shield of prosoma 3.80 long, 2.60 wide; opisthosoma 3.40 long, 2.40 wide. AME smallest, approximately half the size of ALE; ALE largest; posterior eyes subequal in size, slightly smaller than ALE (AME 0.10, ALE 0.22, PME 0.20, PLE 0.20); AME separated from each other by their diameter, from ALE by slightly less than AME diameter; PME separated from each other by half of their diameter, from PLE by $\frac{3}{4}$ of PME diameter (AME–AME 0.10, AME–ALE 0.07, PME–PME 0.10, PME–PLE 0.16, AME–PME 0.15). Promargin of chelicera with 3 and retromargin with 2 teeth. Epigynal teeth absent; atrium large, but shallow, wider than long, with anterior margin distinctly extending posteriorly to a short septum, which occupies less than half of atrial length; copulatory ducts short, originating anteriorly; spermathecal bases widely separated by about 2 times their width, with long, anteriorly extending diverticula; spermathecal stalks long, anterior and median extending with two coils; spermathecal heads small, but distinct (Figs 322–323).

Male (paratype measured). Medium sized Coelotinae, total length 8.62. Dorsal shield of prosoma 4.42 long, 3.12 wide; opisthosoma 4.20 long, 3.14 wide. AME smallest, approximately $\frac{3}{4}$ the size of other eyes, which are subequal (AME 0.15, ALE 0.21, PME 0.21, PLE 0.20); AME separated from each other by $\frac{2}{3}$ of their diameter, from ALE by $\frac{1}{3}$ of AME diameter; PME separated from each other by half of their diameter, from PLE by slightly less than their diameter (AME–AME 0.11, AME–ALE 0.05, PME–PME 0.10, PME–PLE 0.18, AME–PME 0.18). Promargin of chelicera with 3 and retromargin with 2 teeth. Palp without patellar apophysis; RTA approximately half of tibial length or slightly longer, with distinctly protruding distal end; lateral tibial apophysis small; cymbial furrow short, slightly less than half of cymbial length; conductor short, with a slightly coiling apex, a slender dorsal apophysis, and a small basal lamella; median apophysis simple, not spoon-shaped; embolus filiform, short, prolatral in origin (Figs 324–325).

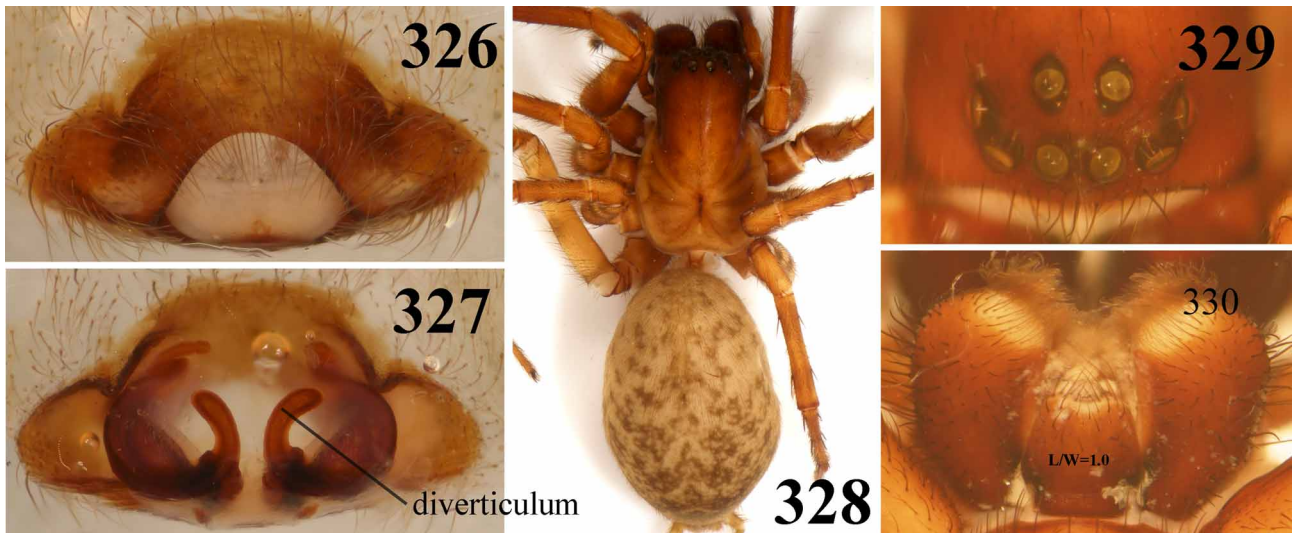
Distribution: China (Yunnan: Lushui) (Fig. 544).



FIGURES 322–325. *Draconarius paraspiralis* sp. nov., female holotype (322–323) and male paratype (324–325) from Lushui County, Pianma (HNU). 322–323. Epigynum (ventral, dorsal); 324–325. Palp (ventral, retrolateral).

***Draconarius paraterebratus* Wang 2003**
(Figs 326–330, 545)

Draconarius paraterebratus Wang 2003: 542, figs 49A–D (female holotype from Tengchong County, Yunnan, China, in HNU, examined).



FIGURES 326–330. *Draconarius paraterebratus* Wang 2003, female holotype from Tengchong County, Luoshuidong (HNU). 326–327. Epigynum (dorsal, ventral); 328. Habitus, dorsal; 329. Eyes, fronto-dorsal; 330, labium, ventral (L/W=1.00). Photos by G. Tang & X. Xu at Hunan Normal University.

Diagnosis: The female of this species can be easily recognized by the large atrium, the posteriorly situated epigynal teeth, and the presence of long diverticula on the spermathecal bases (Figs 326–327).

Description: *Female.* See Wang (2003). Photos of habitus, eyes, labium and epigynum are provided in this study (Figs 326–330).

Male. Unknown.

Distribution: China (Yunnan: Tengchong) (Fig. 545).

***Draconarius patellabifidus* Wang 2003**

(Figs 331–351, 545)

Draconarius patellabifidus Wang 2003: 542, figs 49A–D (male holotype, male and female paratypes from Gongshan County and Lushui County, Yunnan, China, in HNU and CAS, examined).



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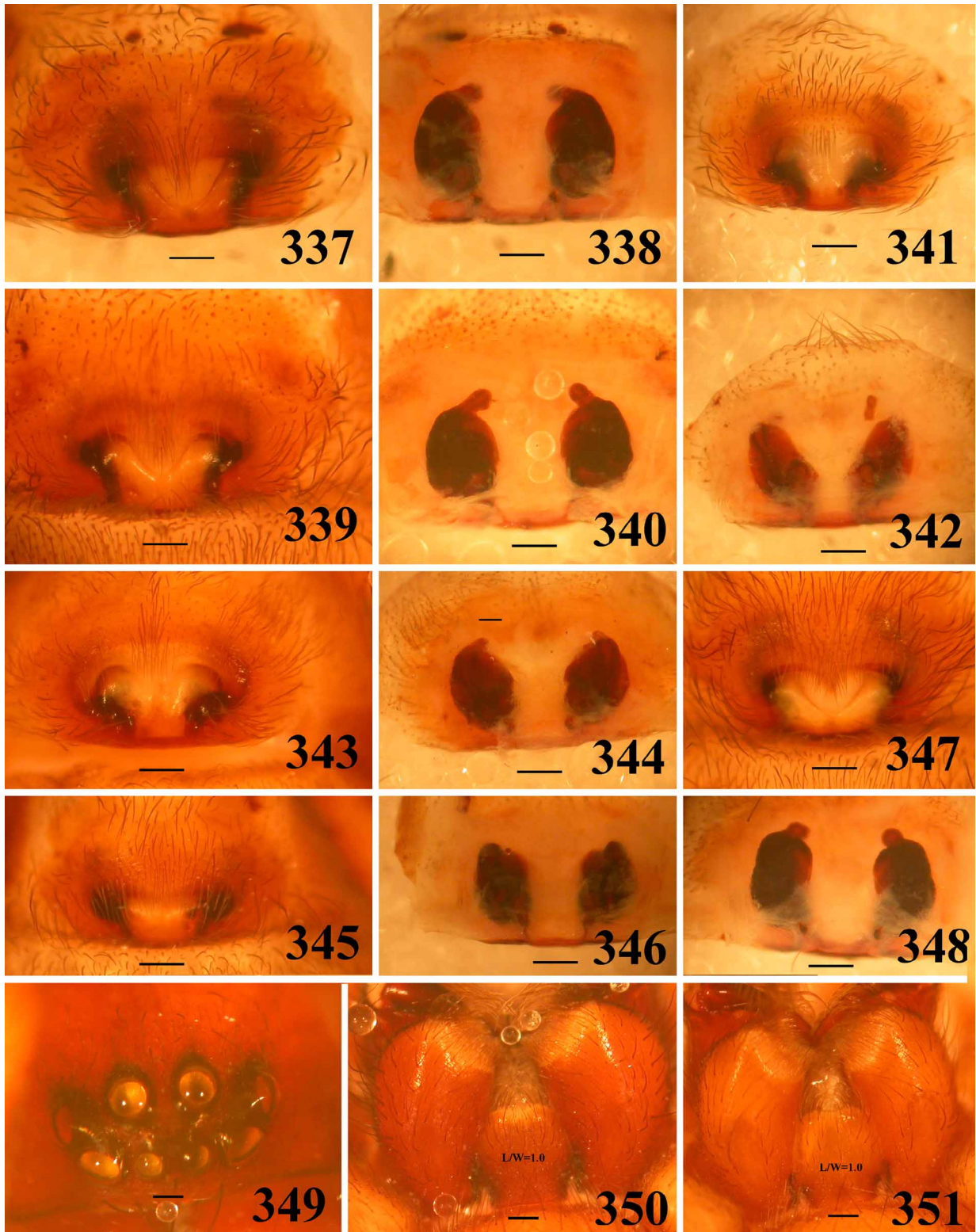


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FIGURES 331–336. *Draconarius patellabifidus* Wang 2003, female (331, 332) and male (333–336) paratypes from Gongshan County, Nujiang State Nature Reserve (CAS, CASENT9016358). 331, 333. Habitus, dorsal; 332. Epigynum, ventral; 334–336. Palp (prolateral, ventral, retrolateral).



FIGURES 337–351. *Draconarius patellabifidus* Wang 2003, female (337–350) and male (351). 337–338. From Fugong County, Lishadi, Shibali (HNU, CASENT9022581); 339–340 from Fugong County, Lishadi, Yakou of Shibali (CAS, CASENT9025580); 341–342. From Gongshan County, Cikai (HNU, CASENT9025849); 343–344. From Gongshan County, 48 km W of Gongshan on Dulong Valley Road (CAS, CASENT 9025613); 345–346. From Gongshan County, Bing Zhong Luo, Chu Kuai (CAS, CASENT9025575); 347–348. From Lushui County, Feng Xue Yakou (CAS, CASENT9022270); 349–351. Paratypes (CAS, CASENT9016358) from Gongshan County, Nujiang State Nature Reserve. 337–348. Epigynum (ventral, dorsal); 349. Eyes, fronto-dorsal; 350–351. Labium, ventral (L/W=1.00).

Additional material examined: CHINA: Yunnan: Gongshan County: 5♂ 22♀, Bingzhongluo Township, Chu Kuai, N27.98139°, E098.48134°, 4000 m, August 20, 2006, Hu Peng (CAS, CASENT9025575); 8♂ 39♀, Bingzhongluo Township, Chu Kuai, N27.98631°, E098.47069°, 3808 m, August 21, 2006, Hu Peng (HNU, CASENT9025576); 3♂ 27♀, Bingzhongluo Township, SW slope of Kawakarpu Shan NNE of Chukuai Lake, 27.98784°N, 98.47319°E, 3920 m, under rocks, running on ground, in webs, August 20, 2006, J.A. Miller, D. Kavanaugh (CAS, CASENT9024465); 2♂ 11♀, Bingzhongluo Township, SW slope of Kawakarpu Shan, 0.3 km NNE of Chukuai Lake, 27.98392°N, 98.47493°E, 3745 m, under rocks, running on ground along stream, August 19, 2006, J.A. Miller, D. Kavanaugh (HNU, CASENT9024467); 1♂, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabali, N27.47525°, E98.30121°, 3013 m, November 12, 2004, G. Tang (HNU, CASENT9025790); 1♂ 1♀, Cikai Township, S side of tunnel between Gongshan and Kongdang, N27.77023°, E98.44648°, 3360 m, October 24, 2004, V.F. Lee, D. Kavanaugh (CAS, CASENT9023062); 1♂, Dulongjiang Township, Kongdang, N27.87961°, E98.33878°, 1527 m, October 25, 2004, G. Tang (HNU, CASENT9025792); 3♀, Bingzhongluo Township, shore of Chukai Lake, N27.97907°, E98.47692°, 3715 m, under rocks, running on ground in meadow and dry stream bed, August 18, 2006, J.A. Miller, D. Kavanaugh (HNU, CASENT9024475); 1♂ 3♀, Bingzhongluo Township, SW slope of Kawakarpu Shan NNE of Chukuai Lake, N27.98784°, E98.47319°, 3920 m, under rocks, running on ground, in webs, August 21, 2006, J.A. Miller, D. Kavanaugh (CAS, CASENT9024459); 2♂ 10♀, Bingzhongluo Township, Chu Kuai, N27.97928°, E098.47389°, 3725 m, August 19, 2006, Hu Peng (HNU, CASENT9025577); 1♂ 3♀, Bingzhongluo Township, SW slope of Kawakarpu Shan NNE of Chukuai Lake, N27.99037°, E98.47441°, 4050 m, under rocks, running on ground, in webs, August 21, 2006, J.A. Miller, D. Kavanaugh (HNU, CASENT9024455); 2♀, Lumadeng Township, S. of Shibali Yakou, N27.20520°, E098.69590°, 3725 m, August 17, 2005, D. Kavanaugh (CAS, CASENT9023087); 1♂ 7♀, Bingzhongluo Township, Chu Kuai, N27.97670°, E098.47810°, 3750 m, August 22, 2006, P. Hu (CAS, CASENT9023087); 1♂, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi both sides, 3100 m, N27°47', E98°32', September 30, 2002, H.M. Yan (HNU, CASENT9025839); 1♂ 1♀, Cikai Township, 50 km W of Gongshan on Dulong Valley Road, N27.78447°, E098.46020°, 3370 m, October 3, 2002, D. Kavanaugh, P.E. Marek (HNU, CASENT9025851); 1♂ 2♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi, N27.79655°, E098.50562°, 3000 m, September 27 – October 6, 2002, D. Kavanaugh, P.E. Marek, D.Z. Dong, & X.C. Liang (CAS, CASENT9025852); 5♂ 2♀, Cikai Township, 52.6 km W of Gongshan on Dulong Valley Road, N27.77032°, E098.44661°, 3360–3380 m, October 1–2, 2002, D. Kavanaugh, P.E. Marek (CAS, CASENT9025850); 1♂, Cikai Township, Dabadi to Yakou tunnel marshland, 3000 m, N27°27', E98°37', October 5, 2002, H.M. Yan (HNU, CASENT9025846); 1♂, Cikai Township, Dabadi to Yakou tunnel marshland, N27°27', E98°37', 3000 m, October 5, 2002, H.M. Yan (CAS, CASENT9025853); 1♂ 6♀, Cikai Township, 53 km W of Gongshan on Dulong Valley Road, 3380 m, N27.77422°, E098.44716°, October 1, 2002, D. Kavanaugh (HNU, CASENT9025849); 4♂ 1♀, Cikai Township, 8.3–13.1 km NW of Gongshan on Dulong Valley Road, N27.75653°, E098.58214° – N27.78982°, E098.52802°, 2620–3000 m, September 23, 2002, D. Kavanaugh, P.E. Marek, D.Z. Dong (HNU, CASENT9025848); 3♂ 1♀, Cikai Township, 48 km W of Gongshan on Dulong Valley Road, N27.78075°, E98.47000°, 3330 m, November 13 2004, D. Kavanaugh (CAS, CASENT 9025613). **Fugong County:** 1♀, Lishadi, 500 m W of Shibali, N27.16650°, E98.77936°, 2537 m, deciduous forest litter, August 4, 2005, P. Paquin (HNU, CASENT9022581); 1♀, Pihe Township, Yueliangtian Village, N26.56784°, E098.90884°, 1520 m, August 20/23/24, 2005, G. Tang (CAS, CASENT9025586); 1♀, Lishadi, 500 m W of Shibali, 2537 m, N27.16650°, E98.77936°, deciduous forest litter, August 4, 2005, P. Paquin (HNU, CASENT9022580); 8♀, Lishadi Township, Yakou of Shibali, N27.21234°, E098.69601°, 3615 m, August 5/7, 2005, G. Tang (CAS, CASENT9025580). **Lushui County:** 1♂, Pianma Township, Feng Xue Yakou, N26.00949°, E98.61704°, 3142 m, along the road, May 17, 2005, K.J. Guo (CAS, CASENT9022075); 2♀, Feng Xue Yakou, W side on Pianma Road, 3120–3150 m, N25.97288°–25.97410°, E98.67508°–98.67716°, night collecting in stream canyon near *Rhododendron*/bamboo thicket, May 19,

2005, C. Griswold (CAS, CASENT9022270); 12♂ 18♀, Lushui County, Pianma Yakou, 58.1 km W of Nu Jiang Road on Pianma Road, N25.97288°, E098.68336°, 3140 m, October 15, 2002, D. Kavanaugh, P.E. Marek, & H.B. Liang (CAS, CASENT9025849).

Diagnosis: The female of this species is similar to *D. dubius* Wang 2003 by lacking epigynal teeth and having broad spermathecae, but can be distinguished by the presence of distinct anteriorly diverging, posteriorly converging atrial ridges and the broad spermathecae (Figs 332, 337–351). The male can be easily recognized by the broad, bifurcate patellar apophysis, the simple median apophysis, and the short, broad, prolaterally originating embolus (Figs 334–336).

Description: See Wang (2003). Photos of habitus, eyes, labium and genitalia are provided in this study.

Distribution: China (Yunnan: Lushui, Fugong, Gongshan) (Fig. 545).

***Draconarius penicillatus* (Wang, Yin, Peng & Xie 1990)**

(Fig. 545)

Coelotes penicillatus Wang *et al.* 1990: 197, figs 48–52 (female holotype and male paratype from Kunming, Yunnan, China, in HNU, examined). Song *et al.* 1999: 377, figs 221U–V, 223A, 224E.

Draconarius penicillatus: Wang 2003: 543, figs 50A–E.

Diagnosis: The female can be easily recognized by the anteriorly situated copulatory ducts and the laterally extending spermathecae, and the male by the long RTA, the round, spoon-shaped median apophysis, and the proximally originated embolus (Wang 2003: figs 50A–E).

Description: See Wang *et al.* (1990) and Wang (2003).

Distribution: China (Yunnan: Kunming) (Fig. 545).

***Draconarius pseudoagrestis* sp. nov.**

(Figs 352–360, 547)

Type material: *Holotype*. ♂, **CHINA: Yunnan: Tengchong County:** Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (HNU, CASENT9025789).

Paratype. **CHINA: Yunnan: Tengchong County:** 1♂, Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (HNU, CASENT9020361). **Lushui County:** 1♂, Feng Xue Yakou, 100 m S of Pianma Road, N25.97288°, E98.68336°, 3150 m, *Rhododendron*/Bamboo thicket, pitfall traps, May 11–21, 2005, C. Griswold, D. Kavanaugh & K.J. Guo (CAS, CASENT9022108).

Etymology: The species name is derived from its similarity to *D. agrestis*; term in apposition.

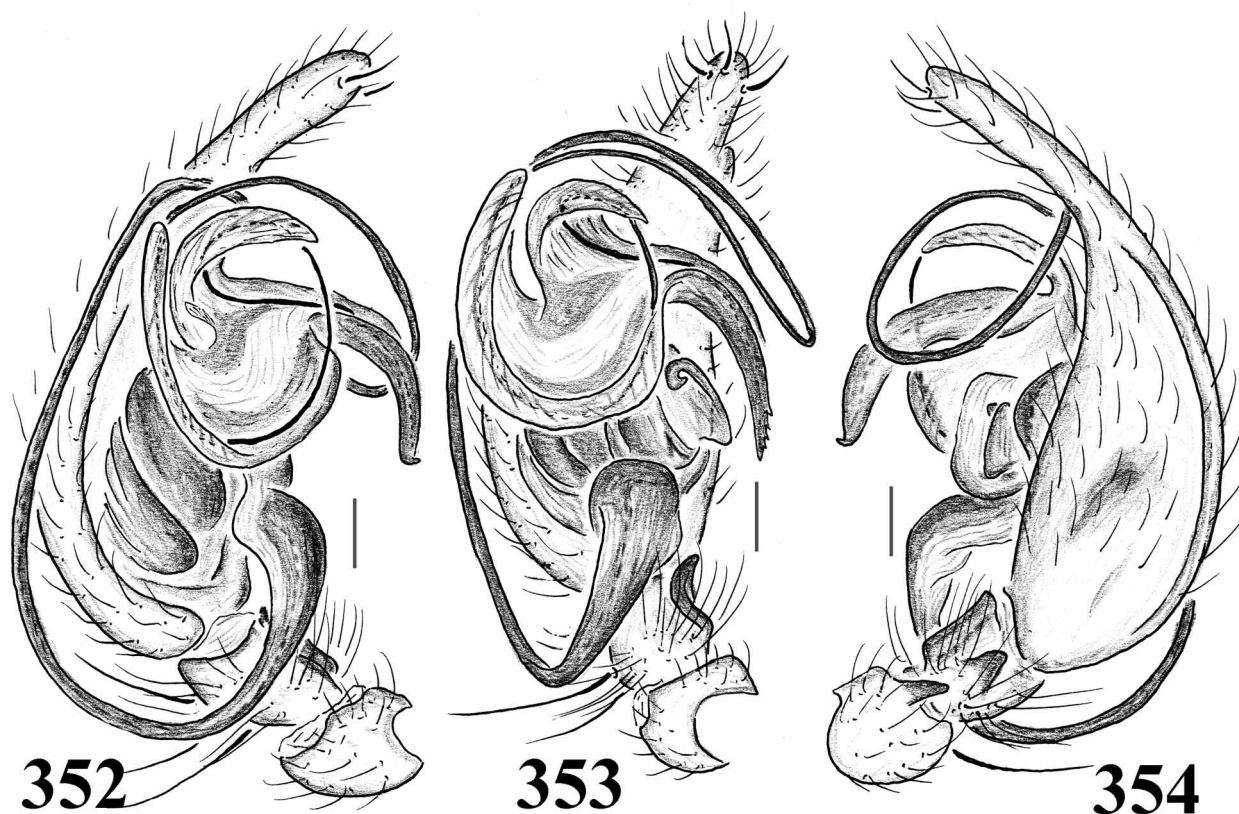
Diagnosis: This species seems to be similar to *D. agrestis* Wang 2003 differing only in minor features in male palp: the long conductor that extends posteriorly near the base of embolus from ventral view, the presence of denticles on distal conductor, and the distinctly large membraneous extension on the dorsal edge of the conductor (Figs 352–357).

Description: *Male (holotype)*. Large sized Coelotinae (Fig. 358). Total length could be more than 10.00. Dorsal shield of prosoma 6.45 long, 4.26 wide; abdomen damaged. AME smallest, about $\frac{3}{4}$ the size of other eyes, which are subequal, or with PLE slightly smaller (AME 0.15, ALE 0.22, PME 0.22, PLE 0.18); AME separated from each other by $\frac{2}{3}$ of their diameter, from ALE by AME diameter; PME separated from each other by about half of their diameter, widely separated from PLE by more than their diameter (AME–AME 0.10, AME–ALE 0.16, ALE–PLE 0.07, PME–PME 0.09, PME–PLE 0.26, AME–PME 0.13) (Fig. 359). Labium longer than wide (L/W=1.25) (Fig. 360). Chelicerae with 3 promarginal and 2 retromarginal teeth.

Palp with a small patellar apophysis; RTA more than half of tibial length, with distinctly protruding distal end; lateral tibial apophysis large, close to RTA; cymbial furrow more than $\frac{2}{3}$ of cymbial length; conductor long, extending posteriorly near base of embolus, with a large basal lamella and a dorsal apophysis; median apophysis spoon-shaped, elongate, free-standing along anterior edge; embolus long, filiform, proximal in origin, arising at 6:30 o'clock-position, running half an oval, extending posteriorly to proximal part of tibia and anteriorly coiling beyond distal part of bulb (Figs 352–357).

Female. Unknown.

Distribution: China (Yunnan: Tengchong, Lushui) (Fig. 547).



FIGURES 352–354. *Draconarius pseudoagrestis* sp. nov., male from Tengchong County, Bawan village (HNU, CASENT9025789). Palp (prolateral, ventral, retrolateral).

***Draconarius pseudobrunneus* Wang 2003**

(Figs 361–406, 548)

Draconarius pseudobrunneus Wang 2003: 544, figs 52A–B (female holotype and paratypes from Gongshan County, Yunnan, China, in HNU and CAS, examined).

Additional material examined: CHINA: Yunnan: Lushui County: 1 ♀, Feng Xue Yakou, E side on Pianma Road, N25.97288°, E98.68336°, 3150 m, night collecting on buildings, cliffs, roadcut, May 17, 2005, C. Griswold (HNU, CASENT9022263); 2 ♀, Pianma Township, Feng Xue Yakou, N26.00949°, E98.61704°, 3142 m, along the road, May 17, 2005, K.J. Guo (CAS, CASENT9022073); 1 ♀, Pianma Township, Yaojiaping Forest Station, N25.96911°, E98.70713°, 2586 m, roadside, May 18, 2005, K.J. Guo (CAS, CASENT9022057); 1 ♀, Pianma Township, Feng Xue Yakou, N25.97814°, E98.67508°, 3088 m, roadside, May 19, 2005, K.J. Guo (HNU, CASENT9022040). **Gongshan County:** 2 ♀, Cikai Township, 41 km W of Gongshan on Dulong Val-

ley Road at Dabadi both sides, 27°27'N, 98°37'E, 3100 m, September 23, 2002, H.M. Yan (CAS, CASENT9025836); 1♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi, N27.79655°, E098.50562°, 3000 m, September 27 to October 6, 2002, D. Kavanaugh, P.E. Marek, D.Z. Dong, & X.C. Liang (HNU, CASENT9025844); 3♀, Cikai Township, Dabadi troops place along river banks, 3030–N27°47', E98°30', 3045 m, October 2–3, 2002, night, October 8–10, 2002, H.M. Yan (CAS, CASENT9025843); 1♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi, N27.79655°, E098.50562°, 3000 m, September 27 – October 6, 2002, D. Kavanaugh, P.E. Marek, D.Z. Dong, & X.C. Liang (HNU, CASENT9025834); 1♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at Dabadi both sides, N27°47', E98°37', 3100 m, September 30, 2002, H.M. Yan (CAS, CASENT9025841). **Fugong County:** 1♀, Lishadi subdistrict, Gaoligongshan, Shibali, N27.16784°, E98.77782°, 2582 m, May 2, 2004, H.M. Yan, G.X. Peng (CAS, CASENT9020627); 1♀, Gaoligongshan, Shibali Forest Station, in moist stream gully, N27.16894°, E98.77205°, 2650 m, May 9, 2004, C. Griswold & H.M. Yan (CAS, CASENT9019906); 1♂, Gaoligongshan, Shibali forest station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020460); 1♂, Gaoligongshan, Shibali Forest Station, in moist stream gully, N27.16894°, E98.77205°, 2650 m, May 9, 2004, C. Griswold & H.M. Yan (HNU, CASENT9019905); 1♀, Gaoligongshan, 0.5 km radius of Shibali Forest Station, N27.16519°, E98.77891°, 2525 m, searching at night in forest, May 2–5, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020026); 1♀, Lishadi subdistrict, Gaoligongshan, Shibali, N27.16784°, E98.77782°, 2582 m, May 2, 2004, H.M. Yan, G.X. Peng (HNU, CASENT9020628); 1♀, Yaping subdistrict, Gaoligongshan, Maxidi, 7.2 km above Shibali, N27.16784°, E98.77782°, 3059 m, May 4, 2004, H.M. Yan, G.X. Peng (CAS, CASENT9020583); 1♀, Gaoligongshan, Shibali Forest Station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020459); 1♀, Gaoligongshan, 0.4 km SSE of Shibali Forest Station, beneath wood in good forest, N27.16337°, E98.78208°, 2475 m, May 5, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9019963); 1♀, Gaoligongshan, 0.4 km SSE of Shibali Forest Station, beneath wood in good forest, N27.16337°, E98.78208°, 2475 m, May 5, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9019964); 10♂, Gaoligongshan, Shibali Forest Station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020464); 1♂, Shibali Forest Station, N27.16636°, E98.77667°, 2563 m, sifting leaf litter in good forest, May 4, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020064); 10♂, Gaoligongshan, Shibali Forest Station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020465); 1♂, Gaoligongshan, Shibali Forest Station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020462); 1♂, Gaoligongshan, 4 km W of Shibali Forest Station, N27.17746°, E98.75527°, 2820 m, night collecting along road-cut, May 3, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9019925); 1♂, Gaoligongshan, 10.1–11.5 road km from Shibali on Yaping Road, N27.20049°, E98.71354° – N27.20676°, E98.71763, 3225–3290m, night collecting along road, May 8, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020034); 4♂, Gaoligongshan, Shibali Forest Station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020466); 3♂, Gaoligongshan, Shibali forest station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020467); 1♂, Gaoligongshan, 0.5 km radius of Shibali Forest Station, N27.16519°, E98.77891°, 2525m, general collection in disturbed areas and forest, May 1–11, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020670); 1♂, Gaoligongshan, 6.18 km W of Shibali, turning rocks in open meadow along stream, N27.18413°, E98.72024°, 3100 m, May 7, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020706); 2♂, Gaoligongshan, Shibali Forest Station, N27.16636°, E98.77667°, 2563 m, pitfall traps in good forest, May 3–11, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020463); 1♀, Gaoligongshan (label missing) (CAS, CASENT9025845).



FIGURES 355–360. *Draconarius pseudoagrestis* **sp. nov.**, male holotype from Tengchong County, Bawan village (HNU, CASENT9025789). 355–357. Palp (prolateral, ventral, retrolateral); 358. Habitus, dorsal; 359. Eyes, fronto-dorsal, with outlines redrawn with black lines; 360. Labium, ventral (L/W=1.25).

Diagnosis: *D. pseudobrunneus* is similar to *D. incertus* Wang 2003 and *D. latusincertus* **sp. nov.** in having similar epigynum and palp, but can be distinguished from *D. latusincertus* **sp. nov.** by the small body size, the small, anteriorly extending conductor in the male (Figs 363–364, 367–369), and the slightly anteriorly extending spermathecae in the female; from *D. incertus* by the more or less long patellar apophysis and the smooth posterior margin of embolus in the male, and anteriorly extending spermathecae in the female (Figs 361–362, 365, 375–406).

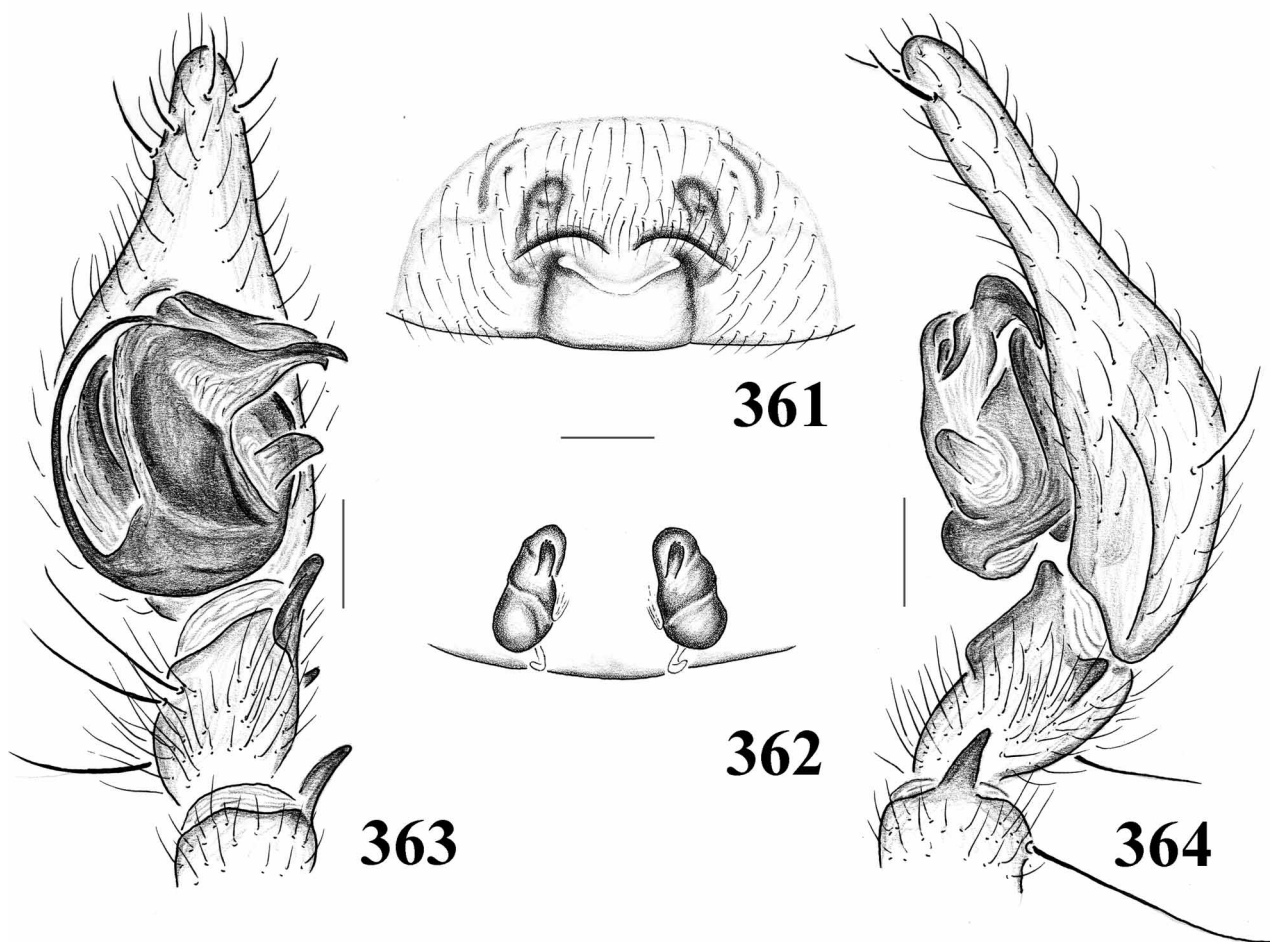
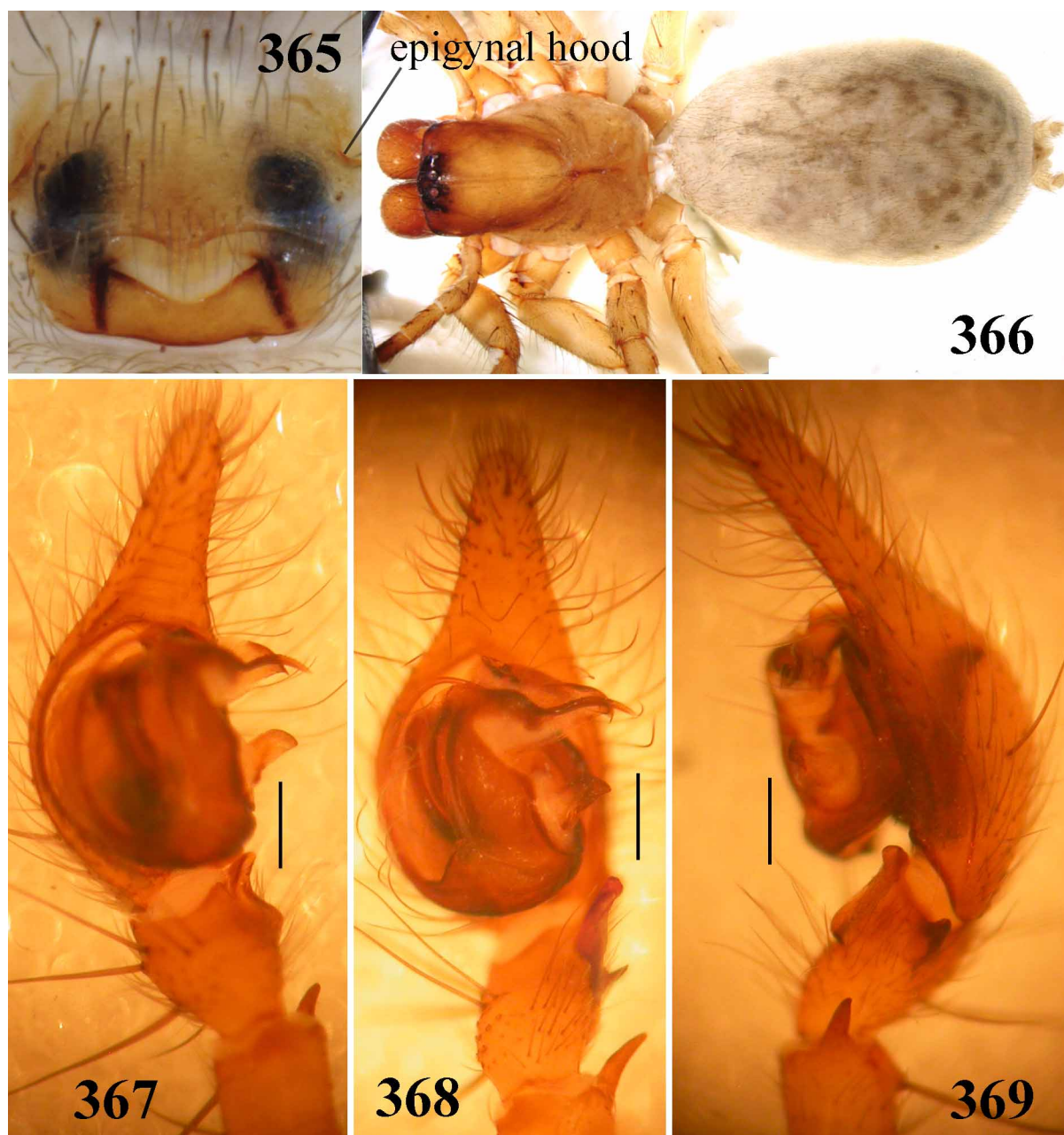


FIGURE 361–364. *Draconarius pseudobrunneus* Wang 2003, female holotype (361–362) from Gongshan County, Danzhu He (HNU) and male (363–364) from Fugong County, Shibali Forest Station (CAS, CASENT9020464). 361–362. Epigynum (ventral, dorsal); 363–364. Palp (ventral, retrolateral).

Description: *Female.* See Wang (2003). Photos of habitus, eyes, labium and epigynum are provided in this study (Figs 365–366, 373–374, 375–406).

Male (one male of CASENT9020464 measured). The male is here described for the first time. Medium sized Coelotinae, total length 6.28 (Fig. 370). Dorsal shield of prosoma 3.28 long, 2.00 wide; opisthosoma 3.00 long, 2.15 wide. AME smallest, half the size of ALE; ALE largest, PLE slightly smaller than ALE, PME slightly smaller than PLE (AME 0.06, ALE 0.14, PME 0.13, PLE 0.11); anterior eyes close together; AME separated from each other by half of their diameter, from ALE by $\frac{1}{3}$ of AME diameter; PME separated from each other by $\frac{1}{3}$ of their diameter, from PLE by half of PME diameter (AME–AME 0.03, AME–ALE 0.02, PME–PME 0.04, PME–PLE 0.07, AME–PME 0.06) (Fig. 371). Labium length and width subequal (L/W=1.0) (Fig. 372). Chelicerae with 3 promarginal and 2 retromarginal teeth. Palp with patellar apophysis moderately long, slender; RTA slightly less than or about half of tibial length, with moderately protruding distal end; lateral tibial apophysis large, distinctly separated from RTA; cymbial furrow small, less than half of cymbial length; conductor moderately long, with a slightly bifurcate apex, a small basal lamella, and a dorsal apophysis; median apophysis simple, not spoon-shaped; embolus short, filiform, prolateral in origin (Figs 363–364, 367–369).

Distribution: China (Yunnan: Lushui, Fugong, Gongshan) (Fig. 548).



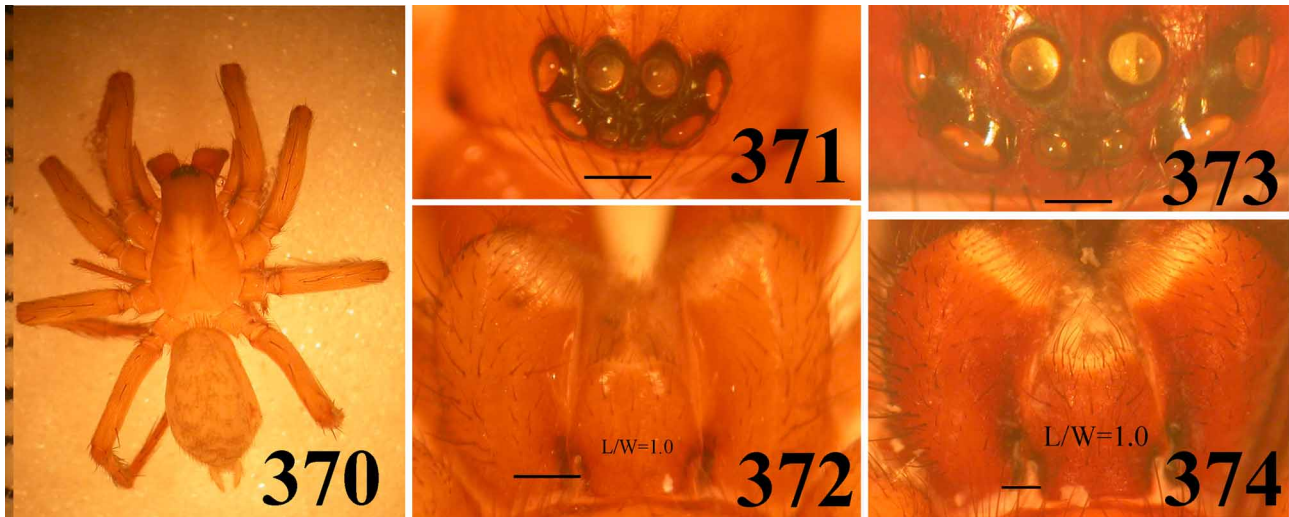
FIGURES 365–369. *Draconarius pseudobrunneus* Wang 2003, female paratype (365–366) from Gongshan County, Danzhu He drainage (CAS, CASENT9016351) and male (367–369) from Fugong County, Shibali Forest Station (CAS, CASENT9020464). 365. Epigynum, ventral; 366. Habitus, dorsal; 367–369. Palp (prolateral, ventral, retrolateral).

***Draconarius pseudocapitulatus* Wang 2003**

(Figs 407–427, 547)

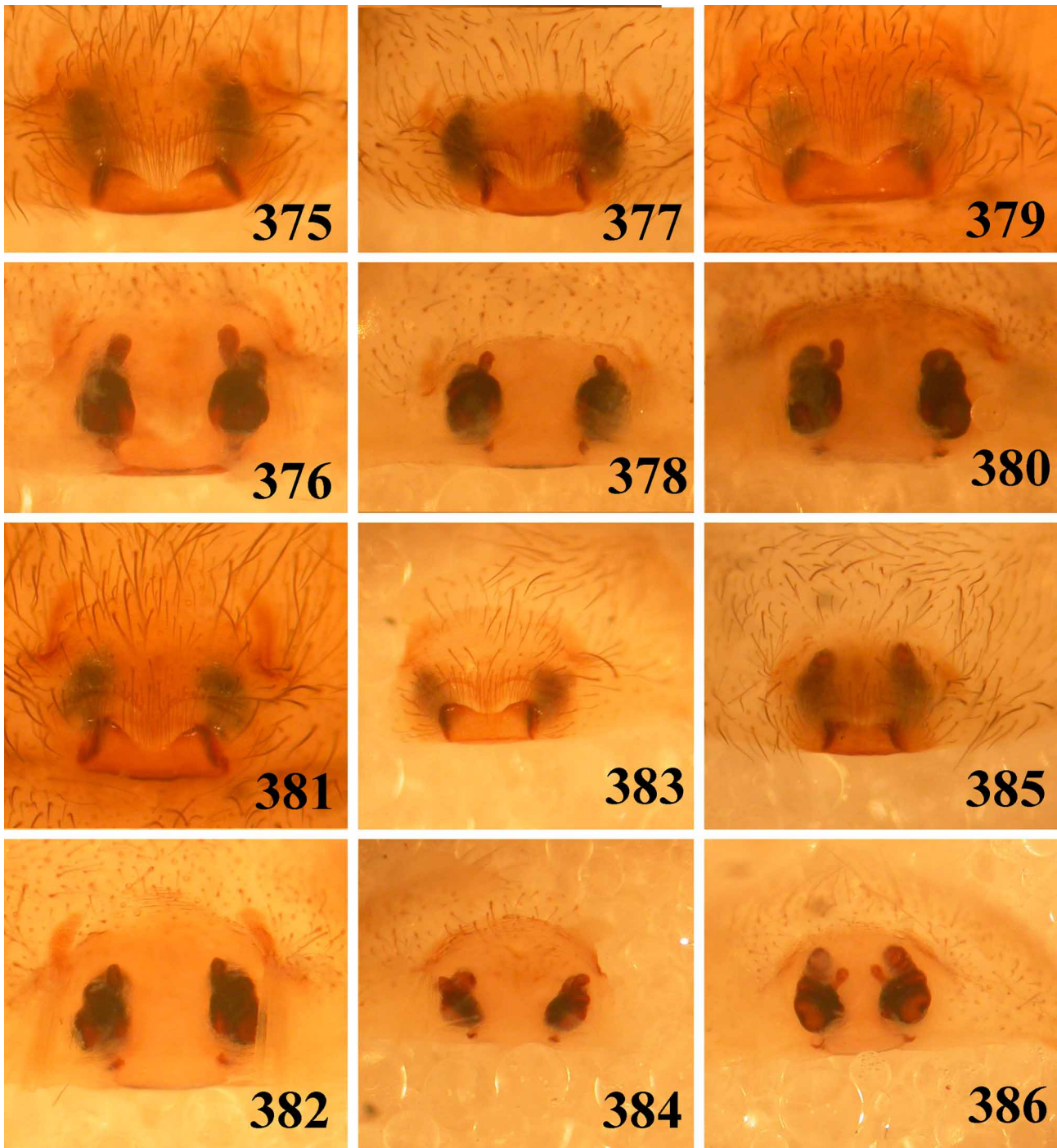
Draconarius pseudocapitulatus Wang 2003: 545, figs 53A–B (female holotype and paratypes from Gongshan County, Yunnan, China, in HNU and CAS, examined).

Additional material examined: CHINA: Yunnan: Gongshan County: 1♀, Cikai Township, Dabadi troops place along river banks, 3030–3045 m, N27°47', E98°30', October 2–3, 2002, night, October 8–10, 2002, H.M. Yan (CAS, CASENT9025828); 1♀, Cikai Township, 41 km W of Gongshan on Dulong Valley Road at



FIGURES 370–374. *Draconarius pseudobrunneus* Wang 2003, male (370–372) (CAS, CASENT9020464) and female (373, 374) (CAS, CASENT9019964) from Fugong County, Shibali Forest Station. 370. Habitus, dorsal; 371, 373. Eyes, fronto-dorsal; 372, 374. Labium, ventral (L/W=1.00).

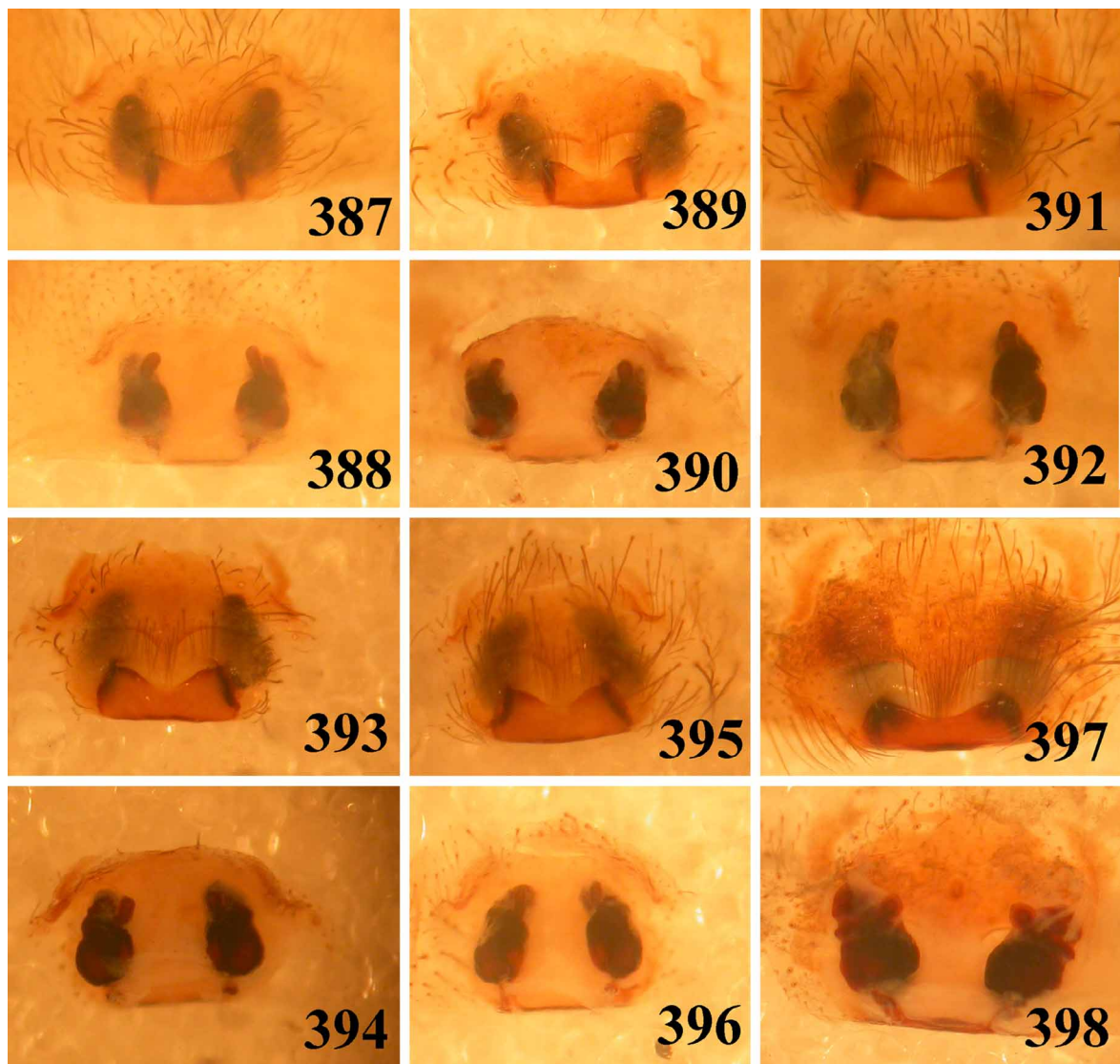
Dabadi both sides, N27°47', E98°32', 3100 m, September 30, 2002, H.M. Yan (HNU, CASENT9025840); 2♀, Bing Zhong Luo Township, Chu Kuai, N27.97928°, E098.47389°, 3725 m, August 19, 2006, P. Hu (CAS, CASENT9025578). **Fugong County:** 1♀, Pihe Township, Yueliangtian Village, N26.56784°, E098.90884°, 1520 m, August 20–24, 2005, G. Tang, (HNU, CASENT9025612); 8♀, Lishadi Township, Yakou of Shibali, N27.21234°, E098.69601°, 3615 m, August 5–7, 2005, G. Tang (CAS, CASENT9025581); 1♀, Lishadi, 1 km before Shibali Yaku (pass #31), 900m N of the road, N27.21447°, E98.70064°, 3585 m, August 12, 2005, P. Paquin (HNU, CASENT9022555); 1♀, Lishadi, 500 m before Shibali Yaku (pass #31), N27.21354°, E98.70021°, 3585 m, stable scree slope on soil, August 7, 2005, P. Paquin (HNU, CASENT9022553); 1♀, Lishadi, Shibali, N27.16650°, E98.77936°, 2537 m, forest, webs on tree trunks at night, August 5, 2005, P. Paquin, D. Kavanaugh (CAS, CASENT9022568); 1♀, Lishadi, 500 m W of Shibali, N27.16650°, E98.77936°, 2537 m, deciduous forest litter, August 4, 2005, P. Paquin (CAS, CASENT9022579); 1♀, Lishadi, 8.5 km W of Shibali, N27.18365°, E98.72002°, 3030 m, along river, on slope 3–10 m away from the river, under rocks in stable portion, August 8, 2005, P. Paquin, D. Kavanaugh (HNU, CASENT9022541); 1♀, Lishadi, 500 m W of Shibali, N27.16650°, E98.77936°, 2537 m, deciduous forest litter, August 4, 2005, P. Paquin (CAS, CASENT9022578); 1♀, Lishadi, 10.5 km W of Shibali, 100 m N road, N27.20192°, E98.71321°, 3250 m, dead conifer logs in conifer forest with rhododendron patch, August 17, 2005, P. Paquin (HNU, CASENT9022566); 1♀, Lishadi, 500 m before Shibali Yaku (pass #31), N27.21354°, E98.70021°, 3585 m, stable scree slope on soil, August 7, 2005, P. Paquin (CAS, CASENT9022552); 2♀, Gaoligongshan, Shibali Forest Station, in moist stream gully, N27.16894°, E98.77205°, 2650 m, May 9, 2004, C. Griswold & H.M. Yan (CAS, CASENT9019907); 4♀, Gaoligongshan, 6.18 km 280° W of Shibali, turning rocks in open meadow along stream, N27.18413°, E98.72024°, 3100 m, May 7, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020708); 4♀, Gaoligongshan, 6.18 km W of Shibali, turning rocks in open meadow along stream, N27.18413°, E98.72024°, 3100 m, May 7, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020707); 1♀, Gaoligongshan, 7.61 km directly WNN of Shibali, *Rhododendron* thicket, turning rocks amid bamboo, N27.20662°, E98.71773°, 3292m, May 6, 2004, C. Griswold (HNU, CASENT9020787); 1♀, Gaoligongshan, 0.5 km radius of Shibali Forest Station, N27.16519°, E98.77891°, 2525 m, searching at night in forest, May 2–5, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020027); 1♀, Gaoligongshan, Shibali Forest Station, in moist stream gully, N27.16894°, E98.77205°, 2650 m, May 9, 2004, C. Griswold & H.M. Yan (HNU, CASENT9019908); 1♀, Gaoligongshan, 7.61 km directly WNN of Shibali, *Rhododendron* thicket, turning



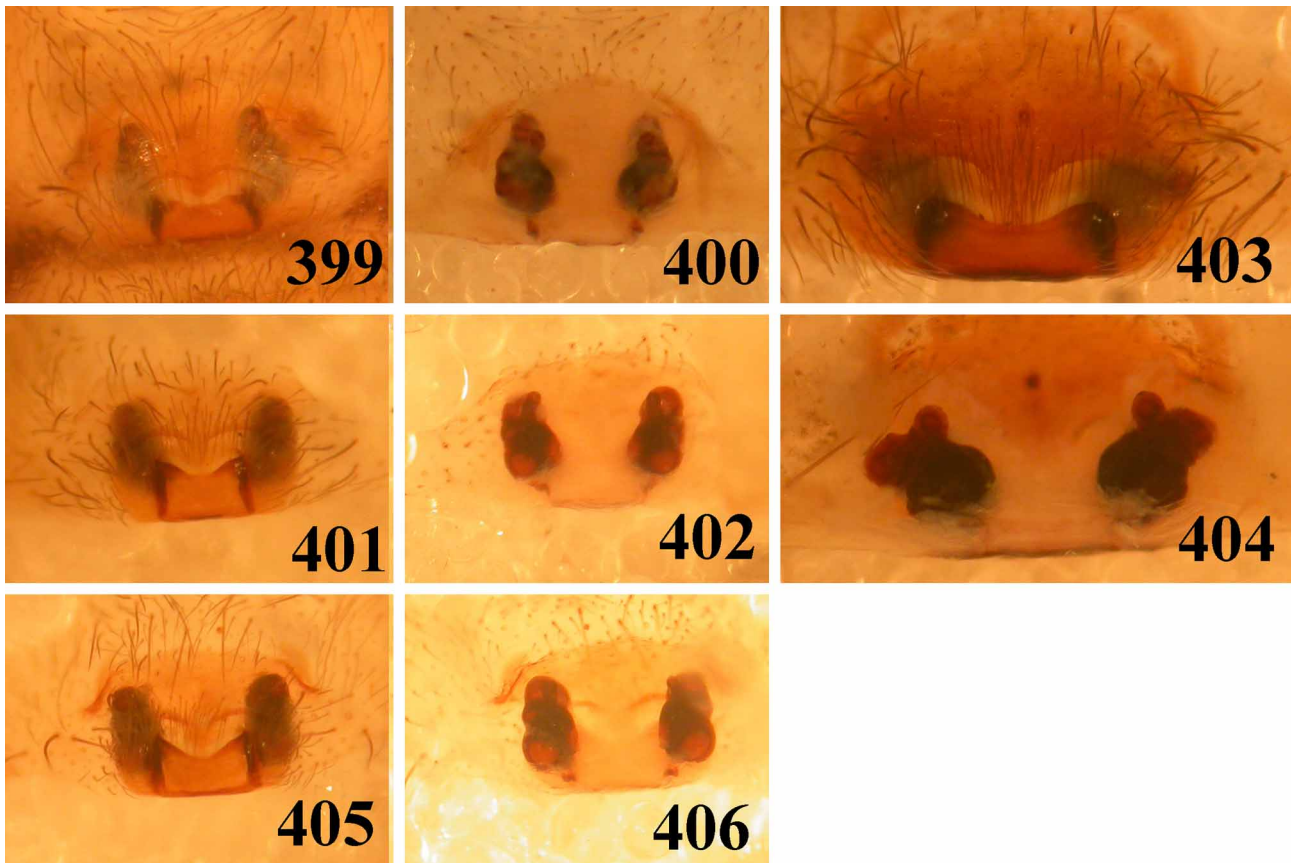
FIGURES 375–386. *Draconarius pseudobrunneus* Wang 2003, female epigynum. 375–376. From Fugong County, Shibali (CAS, CASENT9020627); 377–378. From Gongshan County, Cikai Township (CAS, CASENT9025843); 379–380. From Fugong County, Shibali Forest Station (HNU, CASENT9019963); 381–382. From Fugong County, Shibali Forest Station (HNU, CASENT9019905); 383–384. From Fugong County, Maxidi (CAS, CASENT9020583); 385–386. From Lushui County, Pianma Township, Yaojiaping Forest Station (CAS, CASENT9022057). 375, 377, 379, 381, 383, 385. Ventral; 376, 378, 380, 382, 384, 386. Dorsal.

rocks amid bamboo, N27.20662°, E98.71773°, 3292 m, May 6, 2004, C. Griswold (CAS, CASENT9020786); 1♀, LiShadi subdistrict, Gaoligongshan, 12 km from Shibali toward Yaping Yakou, N27.19980°, E98.71375°, 3200 m, May 5, 2004, H.M. Yan (HNU, CASENT9020616); 1♂ 1♀, Gaoligongshan, 6.18 km W of Shibali, turning rocks in open meadow along stream, N27.18413°, E98.72024°, 3100 m, May 7, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9020658); 1♂, Pihe Township, Yueliangtian Village, N26.56784°,

E098.90884°, 1520 m, August 20–24, 2005, G. Tang (HNU, CASENT9025826); 1♂, Gaoligongshan, Shibali Forest Station, in moist stream gully, N27.16894°, E98.77205°, 2650 m, May 9, 2004, C. Griswold & H.M. Yan (HNU, CASENT9019903); 2♂, Gaoligongshan, 7.41 km 315° WNW of Shibali, 36 km NNW of Fugong, beneath objects amidst dormant bamboo, along snowfield and avalanche debris, N27.20629°, E98.72001°, 3336 m, May 7, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9019946); 1♂, Gaoligongshan, 6.18 km 280° W of Shibali, turning rocks in open meadow along stream, N27.18413°, E98.72024°, 3100 m, May 7, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020705); 1♂, Gaoligongshan, 7.41 km WNW of Shibali, 36 km NNW of Fugong, beneath objects amidst dormant bamboo, along snowfield and avalanche debris, N27.20629°, E98.72001°, 3336 m, May 8, 2004, C. Griswold & D. Kavanaugh. (HNU, CASENT9019947); 1♂, Yaping subdistrict, Gaoligongshan, Maxidi, 7.2 km above Shibali, N27.16784°, E98.77782°, 3059 m, May 4, 2004, H.M. Yan, G.X. Peng (CAS, CASENT9020580); 1♂, Gaoligongshan, 10.1–11.5 road km from Shibali on Yaping Road, N27.20049°, E98.71354° – N27.20676°, E98.71763, 3225–3290 m, night collecting along road, May 8, 2004, C. Griswold & D. Kavanaugh (HNU, CASENT9020032).



FIGURES 387–398. *Draconarius pseudobrunneus* Wang 2003, female epigynum. 387–388. From Gongshan County, Cikai Township (HNU, CASENT9025834); 389–390. From Gongshan County, Cikai Township (CAS, CASENT9025841); 391–392. From Fugong County, Shibali Forest Station (HNU, CASENT9019964); 393–394. From Fugong County, Shibali Forest Station (HNU, CASENT9020459); 395–396. Label missing (CAS, CASENT9020845); 397–398. From Lushui County, Feng Xue Yakou (HNU, CASENT9022263). 387, 389, 391, 393, 395, 397. Ventral; 388, 390, 392, 394, 396, 398. Dorsal.



FIGURES 399–406. *Draconarius pseudobrunneus* Wang 2003, female epigynum. 399–400. From Lushui County, Pianma Township, Feng Xue Yakou (HNU, CASENT9022040); 401–404. From Gongshan County, Cikai Township (CAS, CASENT9025836); 405–406. From Lushui County, Pianma Township, Feng Xue Yakou (CAS, CASENT9020073). 399, 401, 403, 405. Ventral; 400, 402, 404, 406. Dorsal.

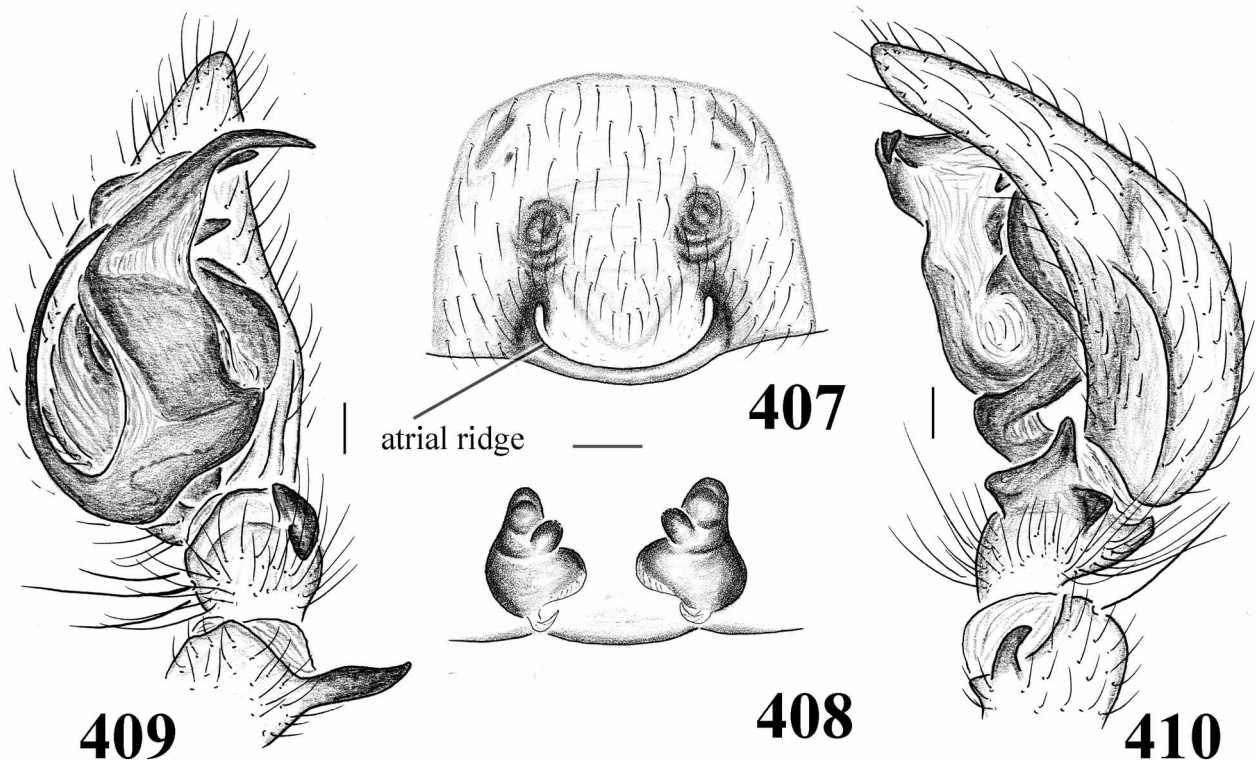
Diagnosis: This species is similar to *D. capitulatus* Wang 2003 in having similar spermathecae, absence of epigynal teeth, and anteriorly extending conductor, and prolaterally originated embolus. The female of this species has the atrial ridges extending laterally, ending posteriorly close to the epigastric furrow, forming a round-shaped median area (Figs 407–408), whereas the atrial ridges of *D. capitulatus* extend relatively medially, ending posteriorly anterior to the epigastric furrow, and forming a triangular-shaped median area (Fig. 44). The male can be recognized by the slender patellar apophysis, the slightly bifurcate, smoothly curving conductor, and the absence of a median apophysis (Figs 409–410).

Description: *Female.* See Wang (2003). Photos of habitus, eyes, labium and epigynum are provided in this study (Figs 411–414, 418–424).

Male (male of CASENT9025826 measured). The male is here described for the first time. Large sized coelotine, total length 12.04 (Fig. 425). Dorsal shield of prosoma 5.41 long, 3.63 wide; opisthosoma 6.63 long, 4.89 wide. AME smallest, half the size of ALE; ALE largest, PLE slightly smaller than ALE, PME slightly smaller than PLE (AME 0.11, ALE 0.19, PME 0.16, PLE 0.18); AME separated from each other by their diameter, from PLE by slightly less than AME diameter; PME separated from each other by slightly less than their diameter, from PLE by slightly more than PLE diameter (AME–AME 0.11, AME–ALE 0.09, PME–PME 0.13, PME–PLE 0.20, AME–PME 0.14) (Fig. 426). Labium length and width subequal ($L/W=1.0$) (Fig. 427). Chelicerae with 3 promarginal and 2 retromarginal teeth. Palp with patellar apophysis long, slender; RTA short, less than or about half of tibial length, with distinctly protruding distal end; lateral tibial apophysis large; cymbial furrow small, less than half of cymbial length; conductor moderately long, anteriorly extend-

ing, with a slightly bifurcate apex, a small basal lamella, and a dorsal apophysis; median apophysis absent; embolus short, filiform, prolateral in origin (Figs 409–410, 415–417).

Distribution: China (Yunnan: Fugong, Gongshan) (Fig. 547).



FIGURES 407–410. *Draconarius pseudocapitulatus* Wang 2003, female holotype (407–408) from Gongshan County, Danzhu He (HNU) and male (409–410) from Fugong County, Shibali Forest Station (CAS, CASENT9025826). 407–408. Epigynum (ventral, dorsal); 409–410. Palp (ventral, retrolateral).

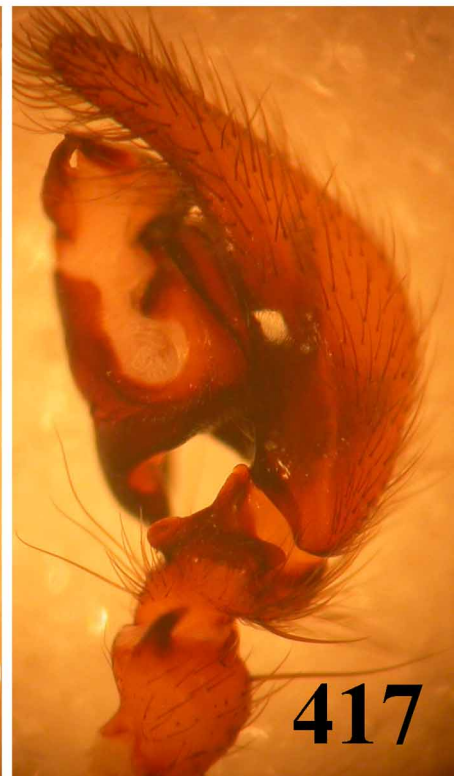
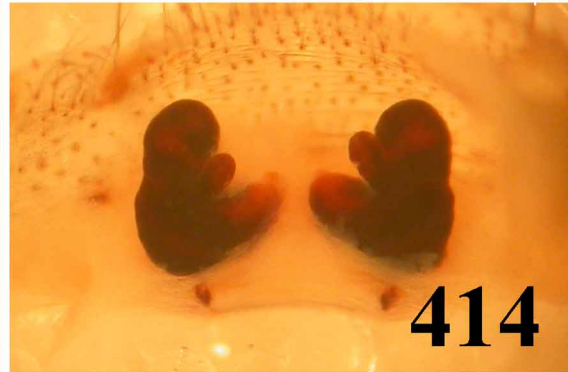
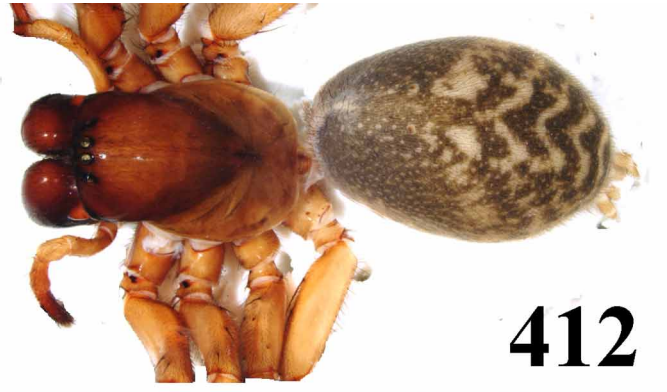
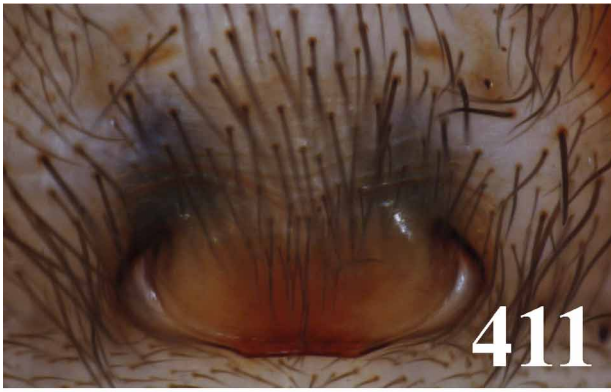
***Draconarius pseudospiralis* sp. nov.**

(Figs 428–448, 548)

Type material: *Holotype.* ♂, **CHINA: Yunnan: Tengchong County:** Luoshuidong, 28 km directly E TengChong, N24°57', E98°45', native forest, 2300 m, October 26–31, 1998, C. Griswold, D. Kavanaugh, C.L. Long (HNU).

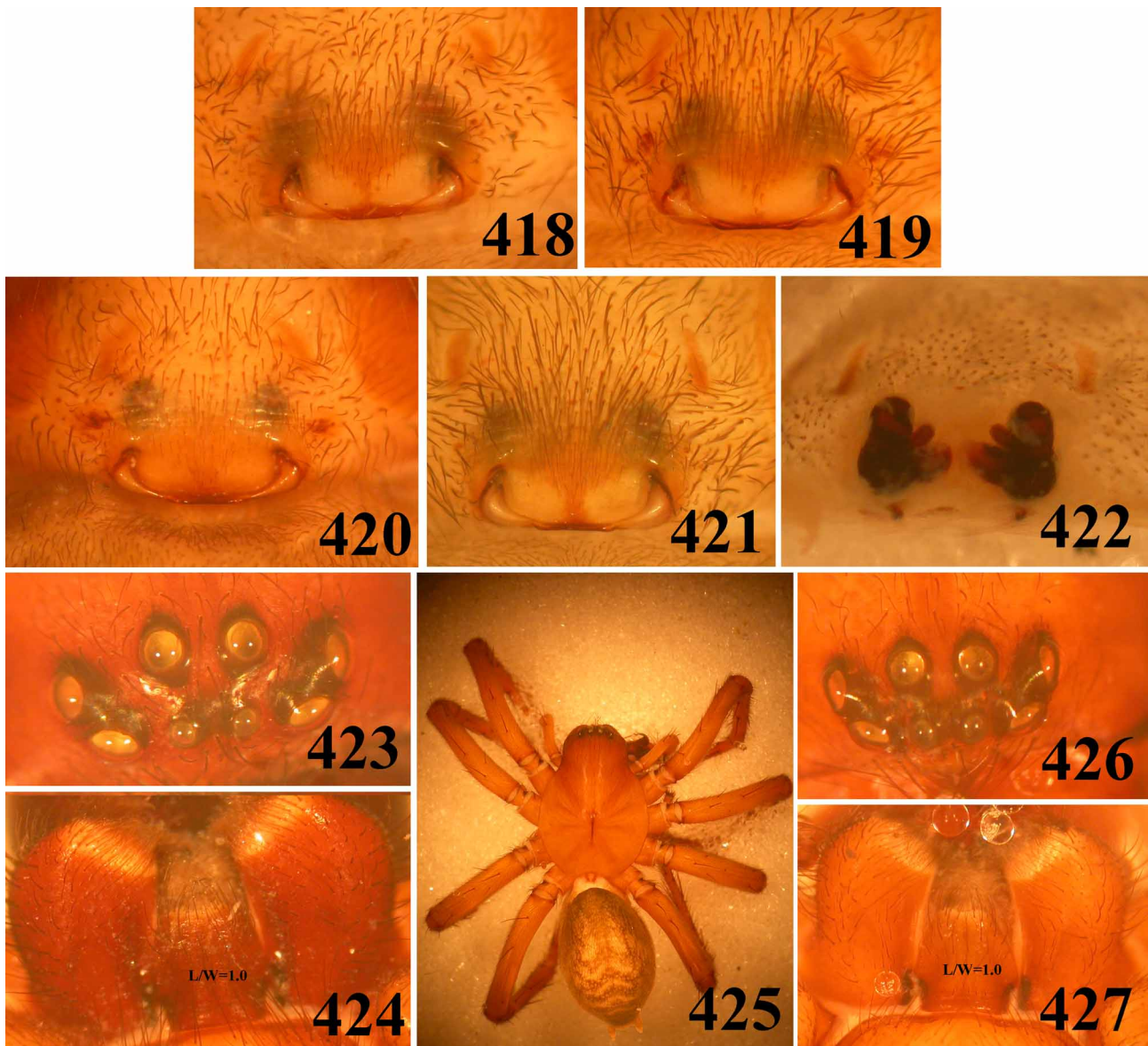
Paratypes. **CHINA: Yunnan: Tengchong County:** 13♂ 8♀, same data as holotype (HNU); 1♂ 2♀, Bawan village, 22–25 km of the road Bawan-Tengchong, N24°56220', E98°49335', 2380 m, October 14, 2003, G. Tang (CAS, CASENT9020411); 1♂ 1♀, Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (HNU, CASENT9020375); 1♂ 1♀, Bawan village, 25 km of the road Bawan-Tengchong, N24°56220', E98°49335', 2380 m, October 14, 2003, G. Tang (CAS, CASENT9020412). **Longling County:** 12♂ 12♀, Pass over Gaoligongshan at 2100 m, Nankang, 36 km SE TengChong, N24°50', E98°47', native forest, November 4–7, 1998, C. Griswold, D. Kavanaugh, C.L. Long (CAS);

Other material examined. **CHINA: Yunnan: Longling County:** 1♀, Nankang (National 320 Road), Yakou, N24°43717', E98°46054', 2186 m, October 27, 2003, G. Tang (HNU, CASENT9020407); 1♀, Nankang (National 320 Road), Yakou, N24°43717', E98°46054', 2186 m, October 27, 2003, G. Tang (HNU, CASENT9020408); 1♀, Nankang (National 320 Road), Yakou, N24°43717', E98°46054', 2186 m, October 30, 2003, G. Tang (HNU, CASENT9020424); 1♂, Nankang (National 320 Road), Yakou, N24°43717',



FIGURES 411–417. *Draconarius pseudocapitulatus* Wang 2003, female paratype (411–412) from Fugong County, Pihe, Yueliangtian (CAS, CASENT9016352), female (413–414) and male (415–416) from Fugong County, Shibali (CAS, CASENT9020658). 411. Epigynum, ventral; 412. Habitus, dorsal; 413–414; Epigynum (ventral, dorsal); 415–417. Palp (prolateral, ventral, retrolateral).

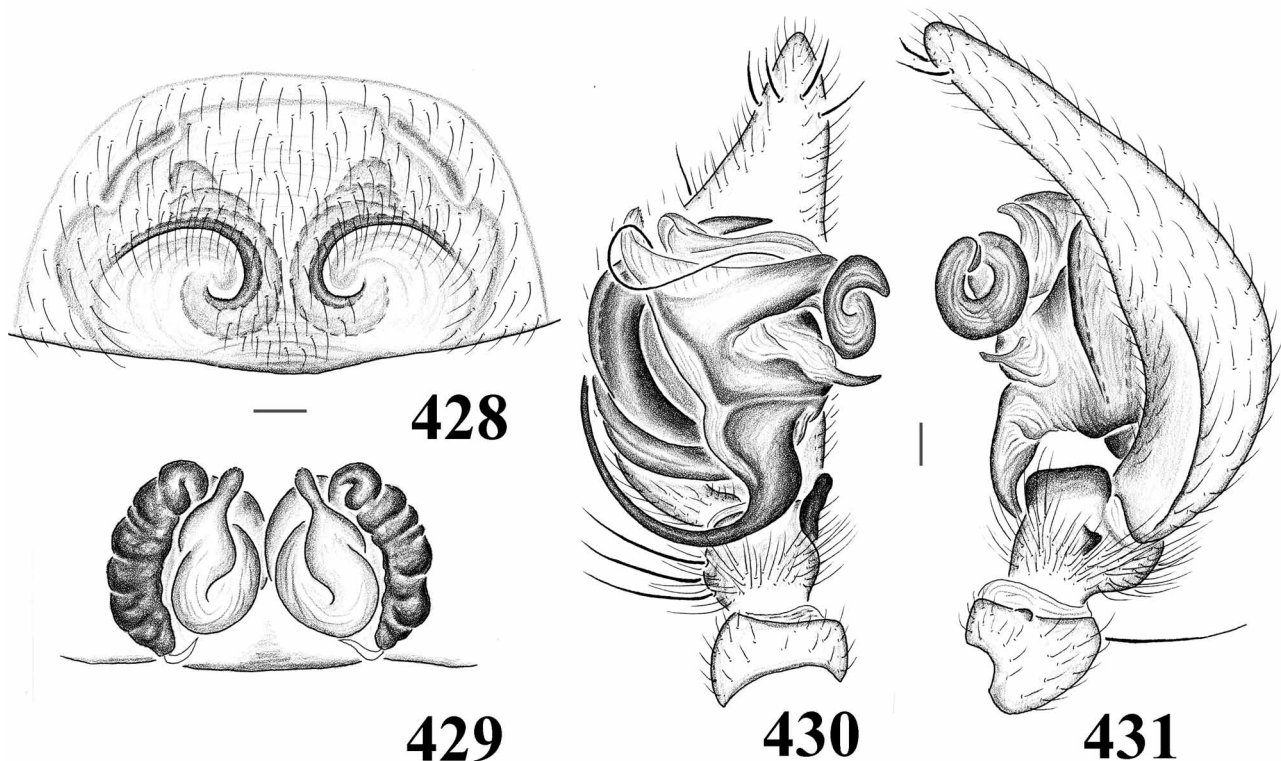
E98°46054', 2186 m, October 30, 2003, G. Tang (HNU, CASENT9020422); 1♀, Nankang (National 320 Road), Yakou, N24°43717', E98°46054', 2186 m, October 30, 2003, G. Tang (CAS, CASENT9020423); 1♀, Nankang (National 320 Road), Yakou, N24°43717', E98°46054', 2186 m, October 31, 2003, G. Tang (CAS,



FIGURES 418–427. *Draconarius pseudocapitulatus* Wang 2003, females (418–420) from Fugong County, Lishadi, Yakou of Shibali (CAS, CASENT9025581), female (421–422) from Fugong County, Pihe, Yueliangtian (HNU, CASENT9025612), female (423–424) and male (425–427) from Fugong County, Shibali (CAS, CASENT9020658). 418–421. Epigynum, ventral; 422. Epigynum, dorsal; 423, 426. Eyes, fronto-dorsal; 425. Habitus, dorsal; 424, 427. Labium, ventral (L/W=1.00).

CASENT9020392); 3♀, Longjiang Township, Xiaoheishan Nature Reserve, N24.83671°, E098.76185°, 2067 m, hand collecting in a big log, May 28, 2005, H.M. Yan & K.J. Guo (CAS, CASENT9025572). **Longyang County:** 1♀, 40 km of the road Bawan-Tengchong, Bawan village, Baoshan City, N24°55459', E98°45309', 2320 m, October 16, 2003, G. Tang (HNU, CASENT9020404); 1♀, Bawan Township, Bawan Forest Station, N24.95184°, E098.83474°, 830 m, along road near Bawan Forestry Station, May 31, 2005, H.M. Yan & K.J. Guo (CAS, CASENT9025616). **Tengchong County:** 1♀, 39–41 km of the road Bawan-Tengchong, Bawan village, N24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (HNU, CASENT9020360); 1♂, Henghe village, 39–41 km of the road Bawan-Tengchong, N25°00843', E98°42072', 1594 m, October 19, 2003, G. Tang (HNU, CASENT9025796); 1♀, Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (CAS, CASENT9020374); 1♀, Bawan village, 41–42 km of the road Bawan-Tengchong (Yakou), N24°55625', E98°45155', 2416 m, October 13, 2003, G. Tang (CAS,

CASENT9020391); 1♂, Bawan village, 39–41 km of the road Bawan-Tengchong, N24°55625', E98°45155', 2416 m, October 12, 2003, G. Tang (CAS, CASENT9020369). **Luxi County:** 1♂, Dahaoping village, 51 km of the road Bawan-Tengchong, N24°58527', E98°43797', 2018 m, October 1998, C. Griswold (CAS, CASENT9025639).

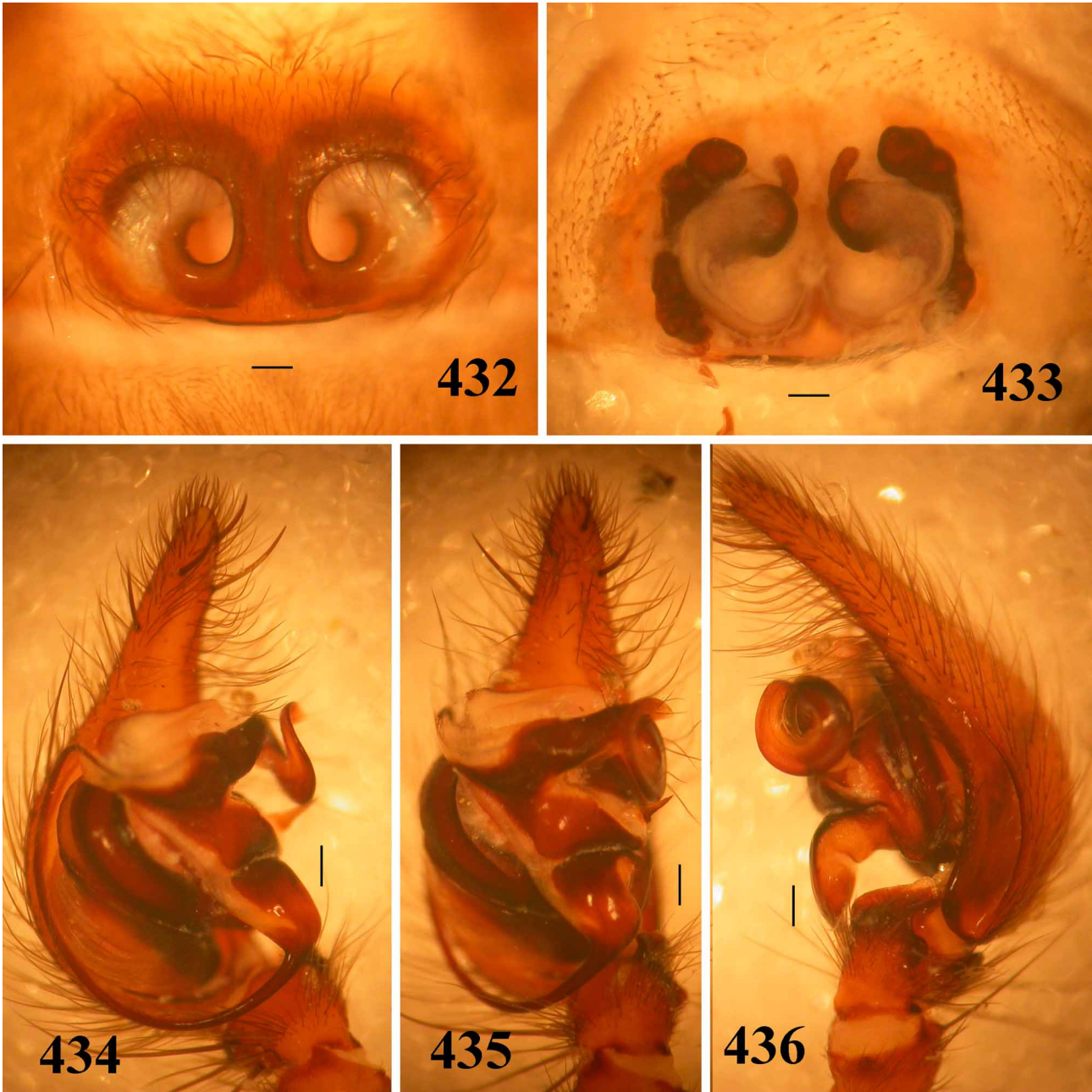


FIGURES 428–431. *Draconarius pseudospiralis* sp. nov., male holotype (430–431) and female paratype (428–429) from Tengchong County, Luoshuidong (HNU). 428–429. Epigynum (ventral, dorsal); 430–431. Palp (ventral, retrolateral).

Etymology: The specific name refers to its similarity to *D. spiralis*; name in apposition.

Diagnosis: This new species is similar to *D. spiralis* sp. nov. and *D. paraspiralis* sp. nov. in having coiled spermathecal tubes, a large atrium, the absence of epigynal teeth, a distally coiled conductor, and a simple median apophysis, but can be distinguished by the distally broad conductor and the proximally originating embolus in the male, and by the anterior atrial margin that extends posteriorly to at least half of the atrial length and the broad copulatory ducts in the female (Figs 428–431).

Description: *Male (holotype).* Large sized Coelotinae (Fig. 444). Total length 10.2. Dorsal shield of prosoma 5.00 long, 3.14 wide; opisthosoma 5.20 long, 3.60 wide. AME smallest, $\frac{2}{3}$ size of ALE; ALE largest; PLE slightly smaller than ALE, PME slightly smaller than PLE (AME 0.20, ALE 0.28, PME 0.24, PLE 0.26); anterior eyes equally separated by half of AME diameter; PME separated from each other by slightly more than half of PME diameter, from PLE by $\frac{4}{5}$ of PME diameter (AME–AME 0.10, AME–ALE 0.09, PME–PME 0.13, PME–PLE 0.20, AME–PME 0.15) (Fig. 445). Labium slightly longer than wide (L/W=1.09) (Fig. 446). Promargin of chelicera with 3, retromargin with 2 teeth. Palpal patellar apophysis tiny, barely visible; RTA approximately half of tibial length or slightly longer; lateral tibial apophysis present; cymbial furrow less than half of cymbial length; conductor broad, with a distinctly coiled apex, a well developed basal lamella, and a slender dorsal apophysis; median apophysis simple, not spoon-shaped; embolus filiform, long, proximal in origin, arising at 6-o'clock-position, running half an oval, extending posteriorly to distal part of tibia and anteriorly coiling beyond distal part of bulb (Figs 430–431, 434–436).

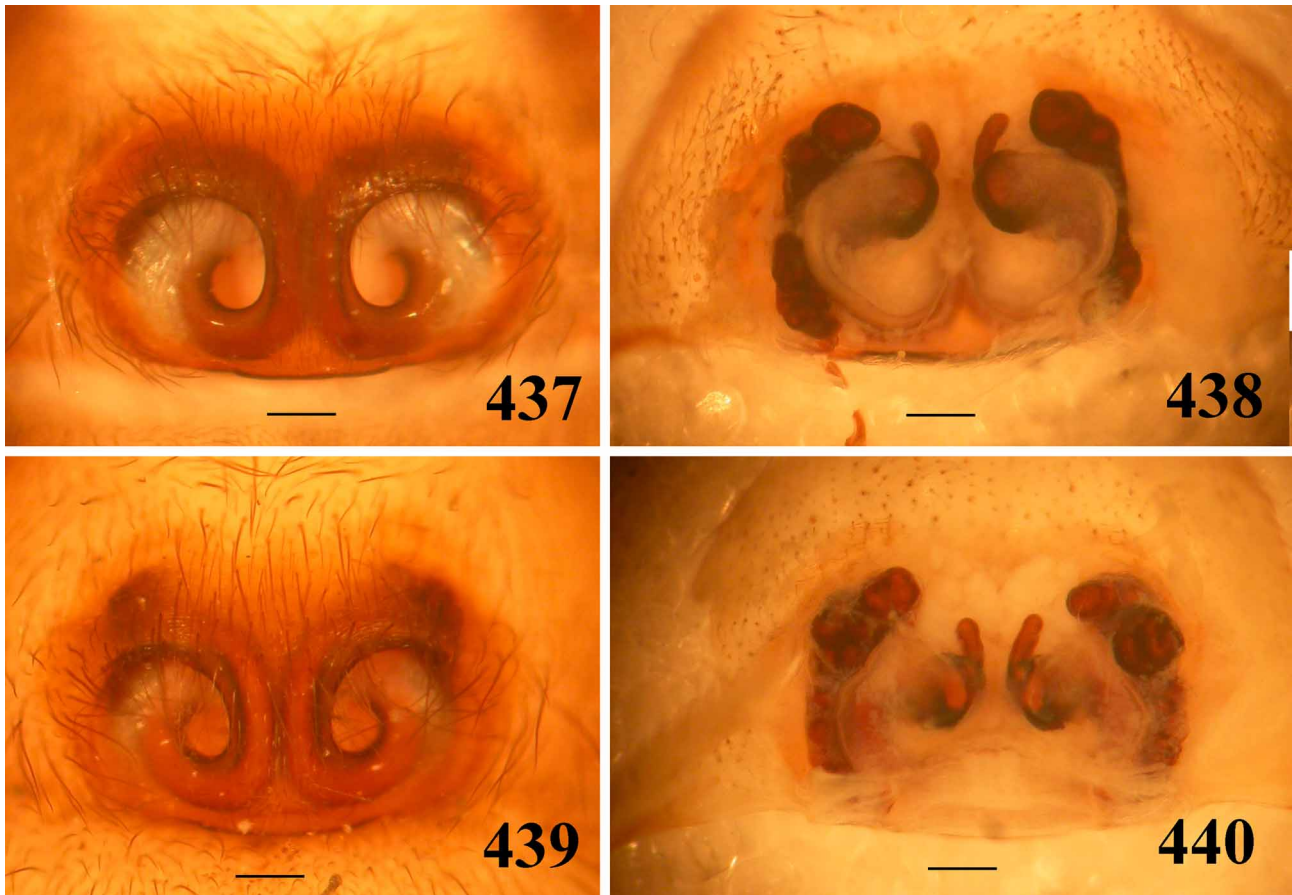


FIGURES 432–436. *Draconarius pseudospiralis* **sp. nov.**, male (434–436) and female (432–433) paratypes from Tengchong County, Bawan (HNU, CASENT9020375). 432–433. Epigynum (ventral, dorsal); 434–436. Palp (prolateral, ventral, retrolateral).

Female (paratype measured). Large sized Coelotinae, total length 10.8 (Fig. 441). Dorsal shield of prosoma 5.20 long, 3.80 wide; opisthosoma 5.60 long, 4.00 wide. AME smallest, $\frac{4}{5}$ size of ALE; ALE largest; posterior eyes subequal in size, slightly smaller than ALE (AME 0.19, ALE 0.25, PME 0.23, PLE 0.24); AME separated from each other by $\frac{3}{4}$ of their diameter, from ALE by half of AME diameter; PME separated from each other by half of their diameter, widely separated from PLE by slightly more than PME diameter (AME–AME 0.15, AME–ALE 0.09, PME–PME 0.12, PME–PLE 0.28, AME–PME 0.20) (Fig. 442). Labium slightly longer than wide ($L/W=1.06$) (Fig. 443). Promargin of chelicera with 3, retromargin with 2 teeth. Epigynal teeth absent; atrium large, but shallow, with anterior margin extending posteriorly to a septum that extends half or more than half of atrial length; copulatory ducts large, originating anteriorly, extending posteriorly and then curving back anteriorly; spermathecae with bases widely separated by more than two times their width,

stalks long, anteriorly extending and slightly converging; spermathecal heads arising distally (Figs 428–429, 432–433, 437–440).

Distribution: China (Yunnan: Tengchong, Longling, Longyang, Luxi) (Fig. 548).



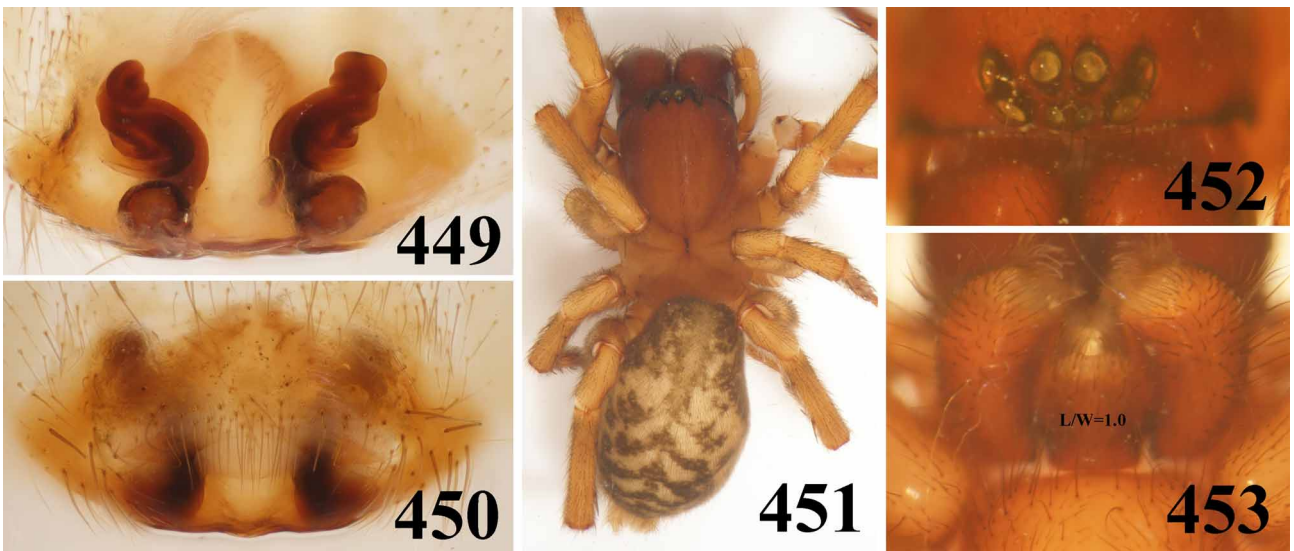
FIGURES 437–440. *Draconarius pseudospiralis* sp. nov., females from Tengchong County, Nankang, Yakou (437–438) (CAS, CASENT9020407) and (439–440) (HNU, CASENT9020424). Epigynum (ventral, dorsal), showing variations.



FIGURES 441–446. *Draconarius pseudospiralis* sp. nov., female (441–443) and male (444–446) paratypes from Tengchong County, Bawan (HNU, CASENT9020375). 441, 444. Habitus, dorsal; 442, 445. Eyes, fronto-dorsal; 443, 446. Labium, ventral (L/W: 443=1.06; 446=1.00).



FIGURES 447–448. *Draconarius pseudospiralis* sp. nov., male from Tengchong County, Dahaoping (CAS, CASENT9025639). 447. Web entrance; 448. Habitus, dorsal. Photos by C. Griswold at CAS.



FIGURES 449–453. *Draconarius pseudowuermlii* Wang 2003, female holotype from Tengchong County, Luoshuidong (HNU). 449–450. Epigynum (ventral, dorsal); 451. Habitus, dorsal; 452. Eyes, fronto-dorsal; 453. Labium, ventral (L/W=1.00). Photos by G. Tang & X. Xu at HNU.

***Draconarius pseudowuermlii* Wang 2003**
(Figs 449–453, 546)

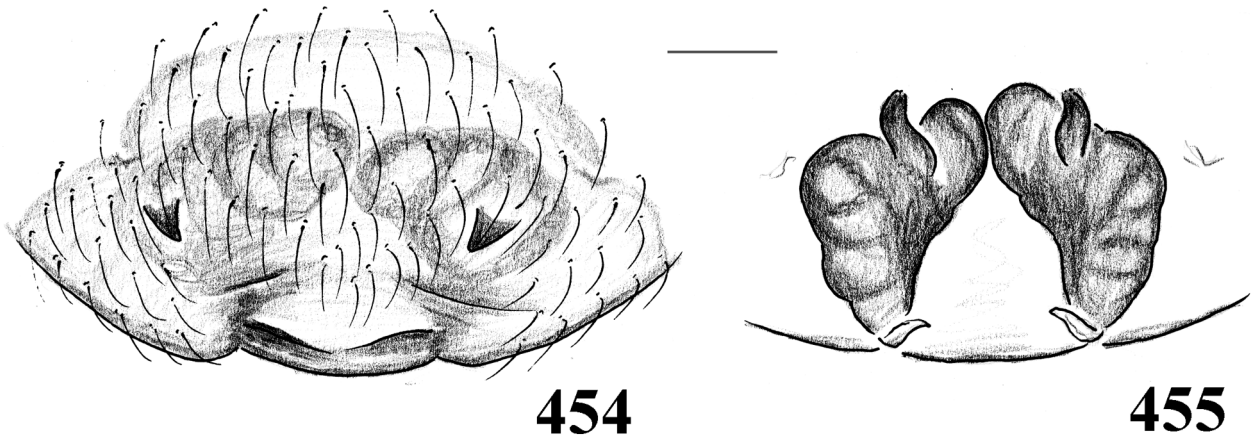
Draconarius pseudowuermlii Wang 2003: 546, figs 54A–B (female holotype from Tengchong, Yunnan, China, in HNU, examined).

Diagnosis: The female can be easily recognized by the presence of a tongue-shaped, weakly sclerotized median piece that arises from the anterior half of atrium, the large, anteriorly extending copulatory ducts, and the broad, long spermathecae (Figs 449–450).

Description: *Female.* See Wang (2003). Photos of habitus, eyes, labium and epigynum are provided in this study (Figs 449–453).

Male. Unknown.

Distribution: China (Yunnan) (Fig. 546).



FIGURES 454–455. *Draconarius quattour* sp. nov., female holotype (HNU, CASENT9025619) from Lushui County, Daxinde Township, Walayaku Cave. Epigynum (ventral, dorsal).



FIGURES 456–460. *Draconarius quattour* sp. nov., female holotype from Lushui County, Daxinde Township, Walayaku Cave (HNU, CASENT9025619). 456–457. Epigynum (ventral, dorsal); 458. Habitus, dorsal; 459. Eyes, fronto-dorsal; 460. Labium, ventral (L/W=1.10).

***Draconarius quattour* sp. nov.**
(Figs 454–460, 548)

Type material: *Holotype.* ♀, **CHINA: Yunnan: Lushui County:** Daxinde Township, Walayaku Cave, N26.13190°, E098.86928°, 920 m, August 3, 2005, G. Tang (HNU, CASENT9025619).

Etymology: The species name came from Latin “quattour”, which means “the fourth”, and refers to the presence of four retromarginal cheliceral teeth; adjective.

Diagnosis: The female of this new species is similar to *D. yani sp. nov.* in having epigynal teeth that are widely separated from each other and from the atrial margins, and spermathecae that extend anteriorly beyond the spermathecal heads, but can be distinguished by the indistinct anterior atrial margin and the relatively small spermathecae (Figs 454–455). The chelicerae have four retromarginal teeth in this new species, but two in *D. yani sp. nov.*

Description: *Female (holotype).* Medium sized Coelotinae (Fig. 458). Total length 7.30. Dorsal shield of prosoma 3.80 long, 2.48 wide; opisthosoma 3.50 long, 2.40 wide. Median eyes subequal in size, slightly smaller than lateral eyes, which are subequal (AME 0.14, ALE 0.16, PME 0.14, PLE 0.17); AME separated from each other by $\frac{2}{3}$ of AME diameter, from ALE by slightly less than $\frac{1}{2}$ of AME diameter; PME separated from each other by slightly less than their diameter, from PLE by PLE diameter (AME–AME 0.09, AME–ALE 0.06, PME–PME 0.12, PME–PLE 0.16, AME–PME 0.16) (Fig. 459). Labium slightly longer than wide (L/W=1.10) (Fig. 460). Chelicera with 3 promarginal and 4 retromarginal teeth. Epigynal teeth short, arising anterolaterally of atrium, distinctly separated from atrial margins, widely separated from each other by at least atrial width; atrium small, close to epigastric furrow, without distinct anterior margin and lateral margins; copulatory ducts small, originating posteriorly; spermathecae with bases widely separated by at least their width, stalks broad, anteriorly extending and converging anterior of heads; spermathecal heads distinct, arising from anterior half of spermathecae (Figs 454–457).

Male. Unknown.

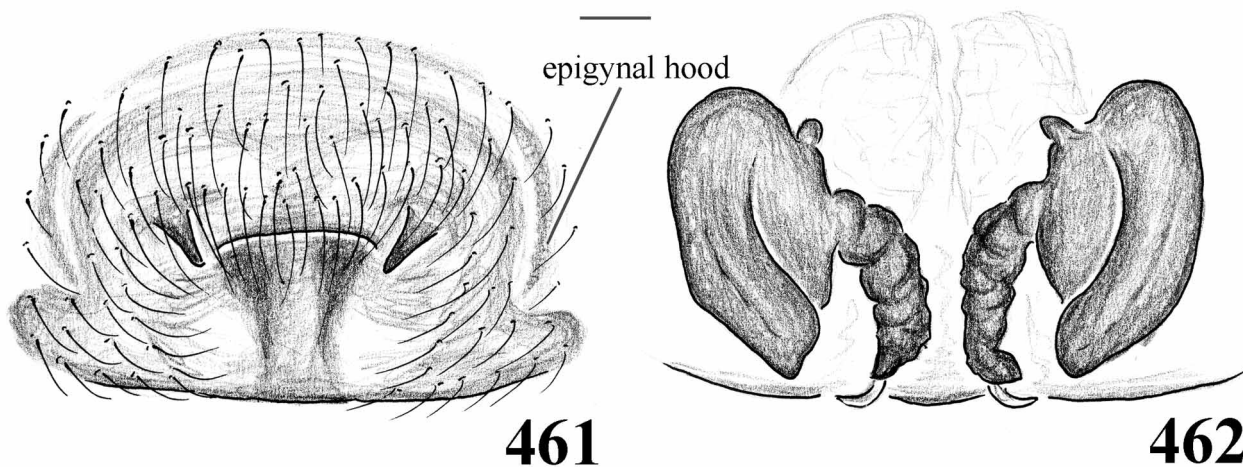
Distribution: China (Yunnan: Lushui) (Fig. 548).

Draconarius renalis sp. nov.

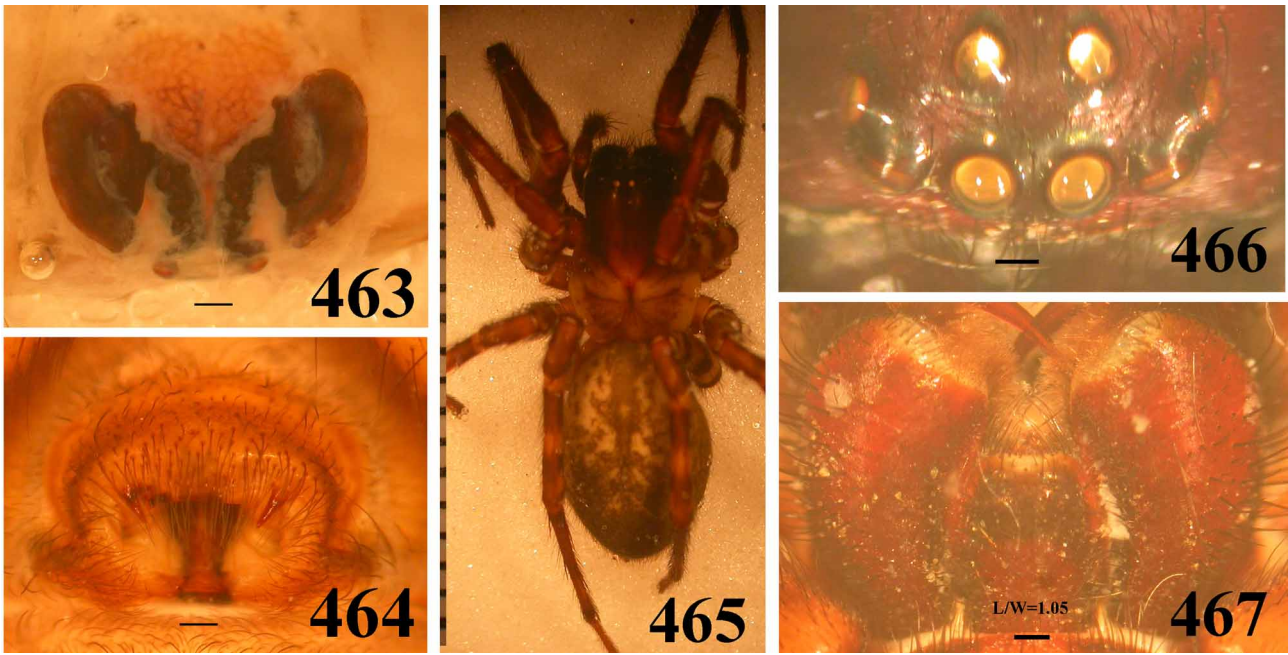
(Figs 461–467, 548)

Type material: *Holotype.* ♀, **CHINA: Yunnan: Tengchong County:** Jietou Township, Zhongping Village, Lijiazhai Group, N25.22180°, E098.41884°, 1820 m, May 24, 2006, C.M. Yin, J.F. Hu and X.H. Yang (HNU, CASENT9025623).

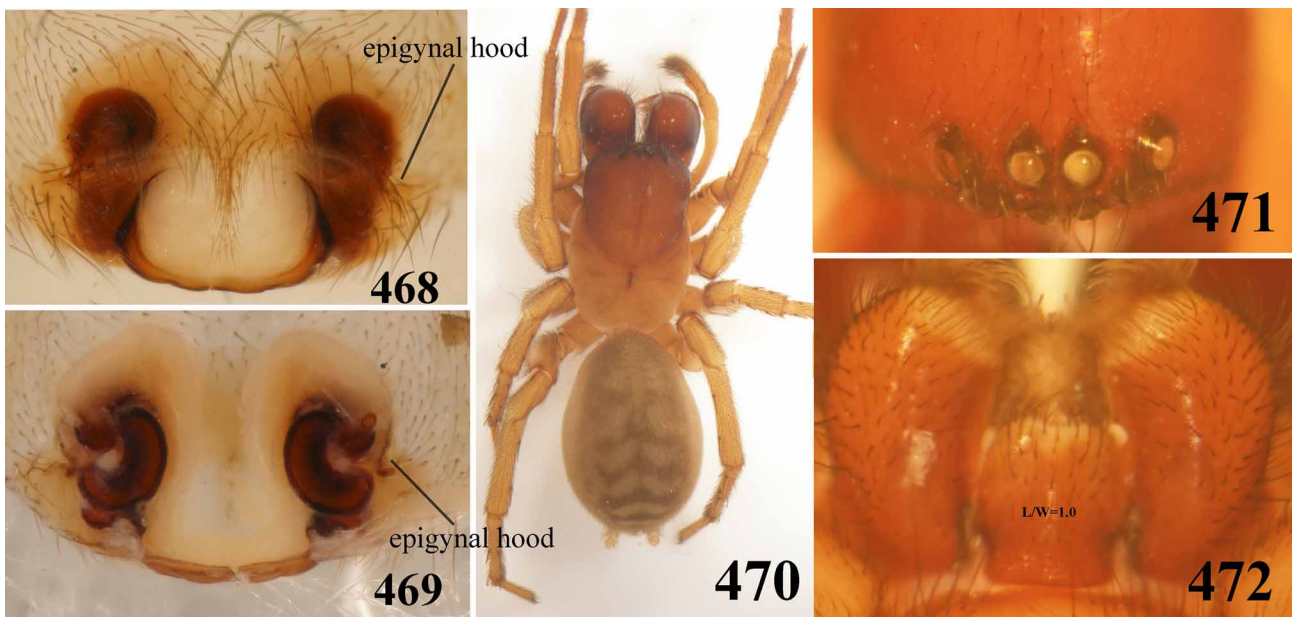
Etymology: The species name came from Latin “renalis”, which means “of the kidneys”, and refers to the kidney-shaped spermathecal tubes; adjective.



FIGURES 461–462. *Draconarius renalis sp. nov.*, female holotype from Tengchong County, Jietou, Zhongping (HNU, CASENT9025623). Epigynum (ventral, dorsal).



FIGURES 463–467. *Draconarius renalis* sp. nov., female holotype from Tengchong County, Jietou, Zhongping (HNU, CASENT9025623). 463–464. Epigynum (ventral, dorsal); 465. Habitus, dorsal; 466. Eyes, fronto-dorsal; 467. Labium, ventral (L/W=1.05).



FIGURES 468–472. *Draconarius rotundus* Wang 2003, female holotype from Tengchong County, Luoshuidong (HNU). 468–469. Epigynum (ventral, dorsal); 470. Habitus, dorsal; 471. Eyes, fronto-dorsal; 472. Labium, ventral (L/W=1.00). Photos by G. Tang & X. Xu at HNU.

Diagnosis: The female of this new species can be easily distinguished from other Coelotinae by the laterally extending and expanding, kidney-shaped spermathecae (Figs 461–462). Both cheliceral pro- and retro-margins have three teeth.

Description: *Female (holotype).* Large sized Coelotinae (Fig. 465). Total length 13.5. Dorsal shield of prosoma 6.25 long, 4.27 wide; opisthosoma 7.26 long, 4.95 wide. AME largest; ALE slightly smaller than AME; posterior eyes subequal, slightly smaller than ALE (AME 0.19, ALE 0.17, PME 0.16, PLE 0.16); ante-

rior eyes equally separated by about half of AME diameter; PME separated from each other by their diameter, widely separated from PLE by 1.5 times PME diameter (AME–AME 0.08, AME–ALE 0.09, PME–PME 0.17, PME–PLE 0.25, AME–PME 0.19) (Fig. 466). Labium slightly longer than wide (Fig. 467). Chelicera with 3 promarginal and 3 retromarginal teeth. Epigynal teeth long, situated anterolaterally of atrium, widely separated from each other by more than atrial width; atrium large, but shallow, longer than wide, with distinct, continuous anterior margin, but indistinct lateral margins; epigynal hoods distinct, situated at level posterior to epigynal teeth; copulatory ducts large, originating anteriorly, closely set; spermathecae with small, slightly separated bases and long, slender, anteriorly extending, laterally diverging and enlarged stalks, which are broad, kidney-shaped; spermathecal heads small, arising from distal half of spermathecae (Figs 461–464).

Male. Unknown.

Distribution: China (Yunnan: Tengchong) (Fig. 548).

Draconarius rotundus Wang 2003

(Figs 468–472, 549)

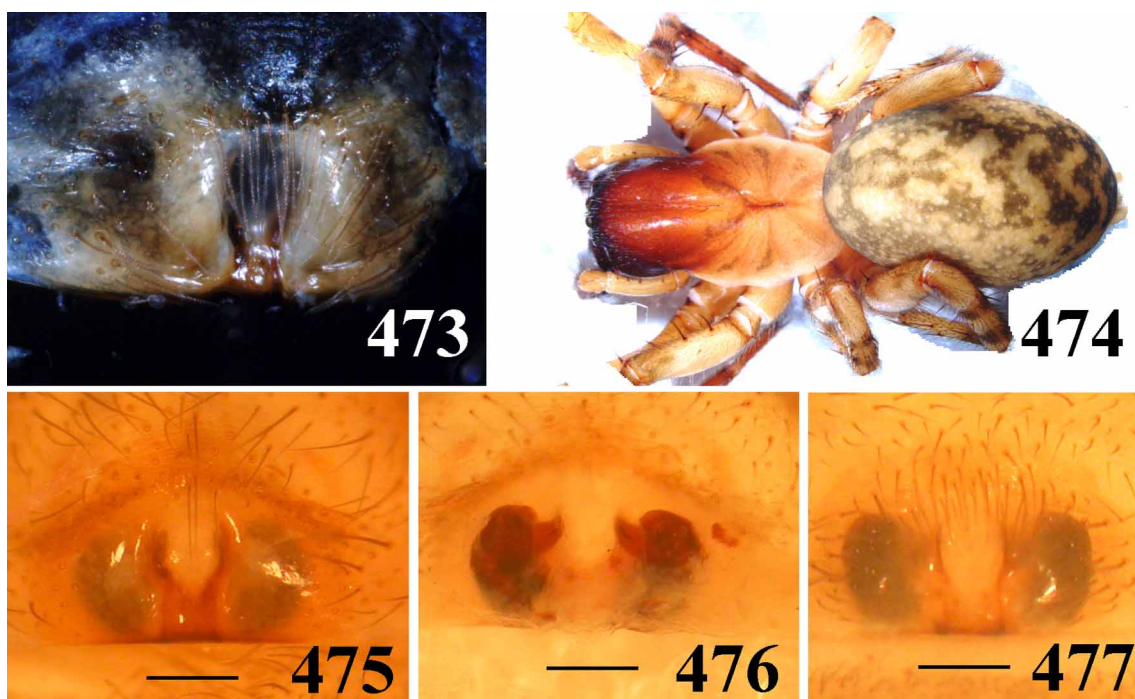
Draconarius rotundus Wang 2003: 547, figs 56A–B (female holotype from Tengchong County, Yunnan, China, in HNU, examined).

Diagnosis: The female of this new species can be easily recognized by the epigynal hoods that are situated relatively posteriorly at a level posterior to the epigynal teeth and the copulatory ducts that originate posteriorly between spermathecae, extending and coiling anteriorly and laterally (Figs 468–469).

Description: *Female.* See Wang (2003). Photos of habitus, eyes, labium and epigynum are provided in this study (Figs 468–472).

Male. Unknown.

Distribution: China (Yunnan: Tengchong) (Fig. 549).



FIGURES 473–477. *Draconarius simplicidens* Wang 2003 female holotype (473–474) from Tengchong County, Luoshuidong (HNU), female (475–476) from Tengchong County, Houqiao, Guyong Forestry Center (CAS, CASENT9025600), female (477) from Fugong County, Shibali Forest Station (CAS, CASENT9019962). 473, 475, 477. Epigynum, ventral; 474. Habitus, dorsal; 476. Epigynum, dorsal.



FIGURES 478–480. *Draconarius simplicidens* Wang 2003, female from Fugong County, Shibali Forest Station (CAS, CASENT9019962). 478. Habitus, dorsal; 479. Eyes, fronto-dorsal; 480. Labium, ventral (L/W=1.07).

***Draconarius simplicidens* Wang 2003**
(Figs 473–480, 550)

Draconarius simplicidens Wang 2003: 548, figs 59A–B (female holotype from Tengchong County, Yunnan, China, in HNU, examined).

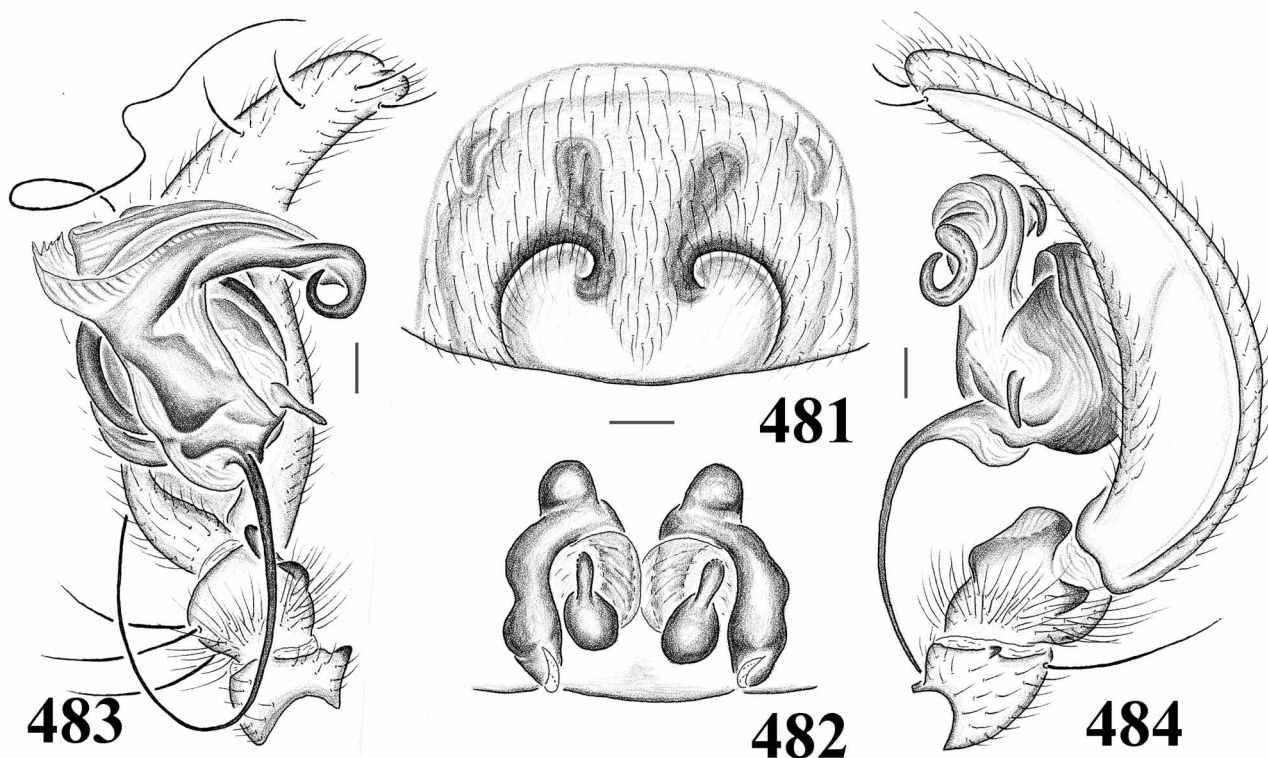
Additional material examined: China: Yunnan: Tengchong County: 1♀, Jietou Township, Datang Village, Daheling Ganjiao, N25.46400°, E098.42290°, 2430 m, May 17, 2006, X.J. Peng, X.P. Wang & P. Hu (HNU, CASENT9025638); 1♀, Houqiao Township, Guyong Forestry center, N25.39573°, E098.31228°, 2583 m, May 27, 2006, X.P. Wang & P. Hu (CAS, CASENT9025600). **Fugong County:** 1♀, Gaoligongshan, 0.4 km SSE of Shibali Forest Station, beneath wood in good forest, N27.16337°, E98.78208°, 2475 m, May 5, 2004, C. Griswold & D. Kavanaugh (CAS, CASENT9019962); 1♀, Lishadi, 3 km w of Shibali (first fall), 3019 m, N27.17312°, E98.76764°, screen slope & moist ravine with rocky cliffs, August 9, 2005, P. Paquin, D. Kavanaugh (CAS, CASENT9022590).

Diagnosis: The female can be easily recognized by the absence of epigynal teeth, the presence of broad spermathecae, the long atrium, and the subdistally arising spermathecal heads (Figs 473, 475–477).

Description: *Female.* See Wang (2003). Photos of habitus, eyes, labium and epigynum are provided in this study (Figs 473–480).

Male. Unknown.

Distribution: China (Yunnan: Tengchong, Fugong) (Fig. 550).



FIGURES 481–484. *Draconarius spiralis* sp. nov., female holotype (481–482) (HNU) and male paratype (483–484) (CAS) from Lushui County, Pianma. 481–482. Epigynum (ventral, dorsal); 483–484. Palp (ventral, retrolateral).

***Draconarius spiralis* sp. nov.**

(Figs 481–484, 549)

Type material: *Holotype.* ♂, **CHINA: Yunnan: Lushui County:** native forest in Gaoligongshan at 9.5 road km ESE of Pianma, N25°59', E98°40', 2500 m, October 15–18, 1998, C. Griswold, D. Kavanaugh, C.L. Long (HNU).

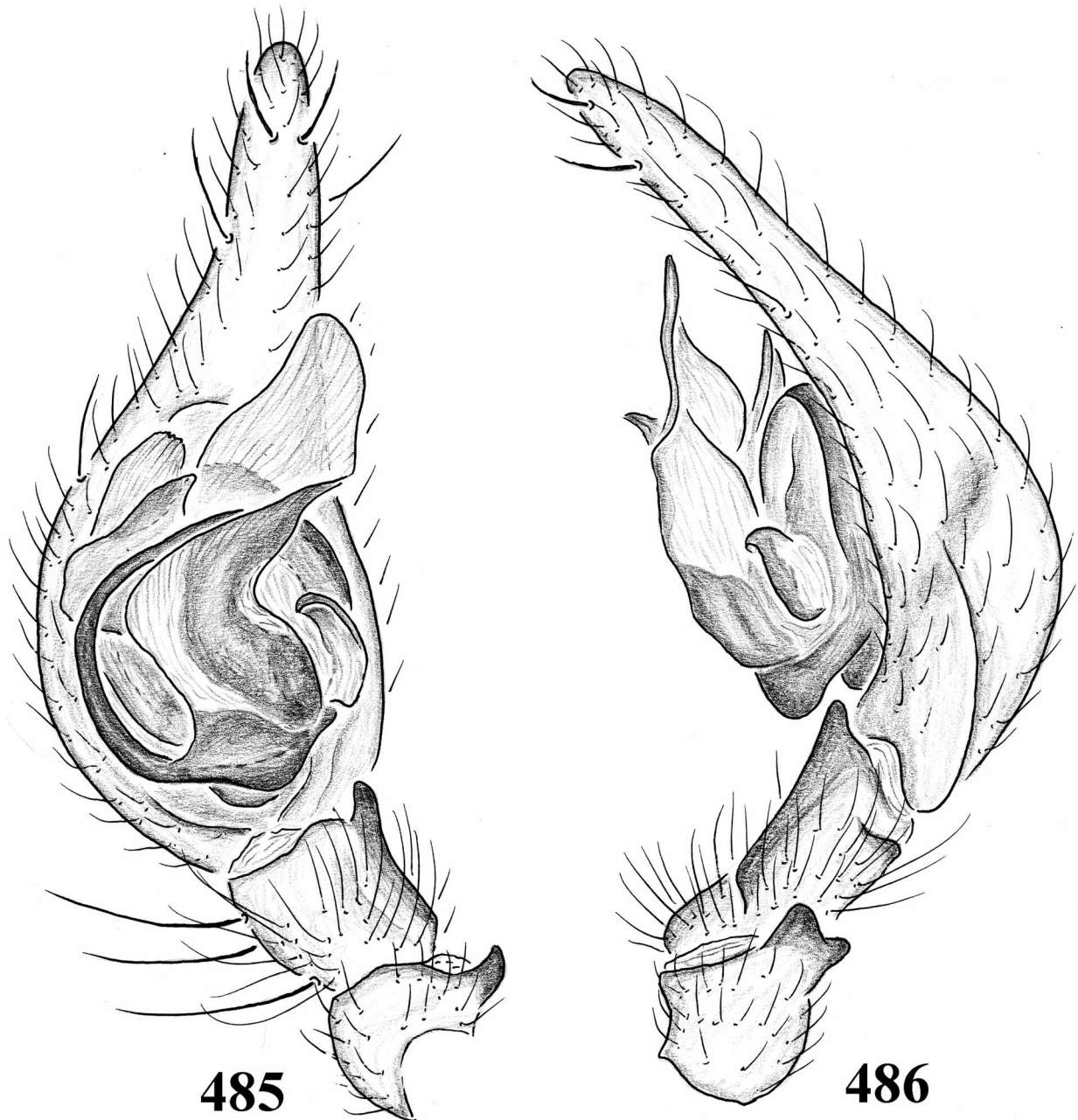
Paratype. **CHINA: Yunnan: Lushui County:** 1♀, same data as holotype (HNU); 4♂, native forest in Gaoligongshan at 9.5 road km ESE of Pianma, N25°59', E98°40', 2500 m, October 15–18, 1998; C. Griswold, D. Kavanaugh, C.L. Long (CAS); 4♂, native forest in Gaoligongshan at 9.5 road km ESE of Pianma, N25°59', E98°40', 2500 m, October 15–18, 1998; C. Griswold, D. Kavanaugh, C.L. Long (HNU).

Etymology: The specific name refers to the coiled conductor apex and spermathecal tubes; adjective.

Diagnosis: This species is similar to *C. pseudospiralis* sp. nov. and *C. paraspiralis* sp. nov. The female can be distinguished from *C. pseudospiralis* by the slightly protruding anterior atrial margin and from *C. paraspiralis* sp. nov. by the presence of broad diverticula on the anterior spermathecae and the less coiled spermathecae; the male by the long cymbial furrow, which is almost as long as the cymbium, the slender conductor apex, and the extremely long, slender embolus (Figs 481–484).

Description: *Male (holotype).* Medium sized Coelotinae, total length 8.40. Dorsal shield of prosoma 4.00 long, 3.00 wide, opisthosoma 4.40 long, 3.00 wide. AME smallest, about $\frac{3}{4}$ of the other eyes, which are about equal in size (AME 0.14, ALE 0.23, PME 0.20, PLE 0.20); AME separated from each other by half of their

diameter, from PLE by about $\frac{1}{3}$ of AME diameter; PME separated from each other by slightly less than their diameter, from PLE by about $\frac{3}{4}$ of PME diameter (AME–AME 0.07, AME–ALE 0.04, AME–PME 0.14, PME–PME 0.08, PME–PLE 0.15). Promargin of chelicera with 3, retromargin with 2 teeth. Palp with a tiny patellar apophysis; RTA slightly longer than half of tibial length, with broad, distinctly protruding distal end; lateral tibial apophysis large; cymbial furrow long, almost reaching distal cymbium; conductor broad, long, with a coiled, slender apex, a large basal lamella, and a slender dorsal apophysis; median apophysis simple, not spoon-shaped; embolus filiform, long, proximal in origin, arising at 6-o'clock-position, running half an oval, extending posteriorly to patella, and coiling anteriorly beyond distal part of bulb; embolus with a small base (Figs 483–484).



FIGURES 485–486. *Draconarius tangi* sp. nov., male holotype from Tengchong County, Nankang, Yakou (HNU, CASENT9020426). Palp (ventral, retrolateral).

Female (paratype). Large sized Coelotinae, total length 11.4. Dorsal shield of prosoma 5.60 long, 3.50 wide, opisthosoma 5.80 long, 4.20 wide. AME smallest, 3/5 size of lateral eyes, which are subequal and the largest; PME slightly smaller than lateral eyes (AME 0.15, ALE 0.25, PME 0.21, PLE 0.26); AME separated from each other by slightly less than AME diameter, from ALE by half of AME diameter; PME separated from each other and from PLE by approximately AME diameter (AME–AME 0.13, AME–ALE 0.07, AME–PME 0.20, PME–PME 0.22, PME–PLE 0.20). Promargin of chelicera with 3, retromargin with 2 teeth. Epigynal teeth absent; atrium large, but shallow, with anterior margin extending posteriorly to less than half of atrial length; lateral atrial margins distinct, extending posteriorly and reaching epigastric furrow; copulatory ducts large, originating and extending medially; spermathecae with bases widely separated, stalks long, anteriorly extending and converging, then curved posteriorly and formed ring-shaped vulva; anterior portion of spermathecae slightly expanded to broad diverticula; spermathecal heads distinct, arising distally from posterior part of epigynum (Figs 481–482).

Distribution: China (Yunnan: Lushui) (Fig. 549).

***Draconarius tangi* sp. nov.**

(Figs 485–492, 550)

Type material: *Holotype*. ♂, **CHINA: Yunnan: Longling County:** Nankang (National 320 Road), Yakou, N24°43'17", E98°46'05.4", 2186 m, October 30, 2003, G. Tang (HNU, CASENT9020426).

Etymology: The specific name is in honour of Guo Tang at HNU who collected the specimen; noun in genitive case.

Diagnosis: Males of this new species can be easily recognized by the broad, distally extending conductor, the broad, slightly bifurcate patellar apophysis, and the slightly spoon-shaped median apophysis (Figs 485–489).

Description: *Male (holotype)*. Medium sized Coelotinae (Fig. 490). Total length 9.15. Dorsal shield of prosoma 4.65 long, 3.26 wide; opisthosoma 4.50 long, 2.96 wide. Anterior eyes subequal in size, largest; PLE slightly smaller, PME slightly smaller than PLE (AME 0.17, ALE 0.17, PME 0.12, PLE 0.14); anterior eyes equally separated by about 1/3 of their diameter; PME separated from each other by their diameter, from PLE by about 1.5 times PME diameter (AME–AME 0.05, AME–ALE 0.04, PME–PME 0.13, PME–PLE 0.20, AME–PME 0.17) (Fig. 491). Labium slightly longer than wide (L/W=1.08) (Fig. 492). Promargin of chelicera with 3, retromargin with 2 teeth. Palp with a broad, slightly bifurcate patellar apophysis; RTA almost as long as tibia, with distinctly protruding distal end; lateral tibial apophysis large, close to RTA; cymbial furrow short, 1/3 of cymbial length; conductor broad, extending distally, with a small apophysis on dorsal edge, a less developed lamella, and a large dorsal apophysis; median apophysis simple, slightly spoon-shaped; embolus short, more or less broad, prolateral in origin (Figs 485–489).

Female. Unknown.

Distribution: China (Yunnan: Longling) (Fig. 550).

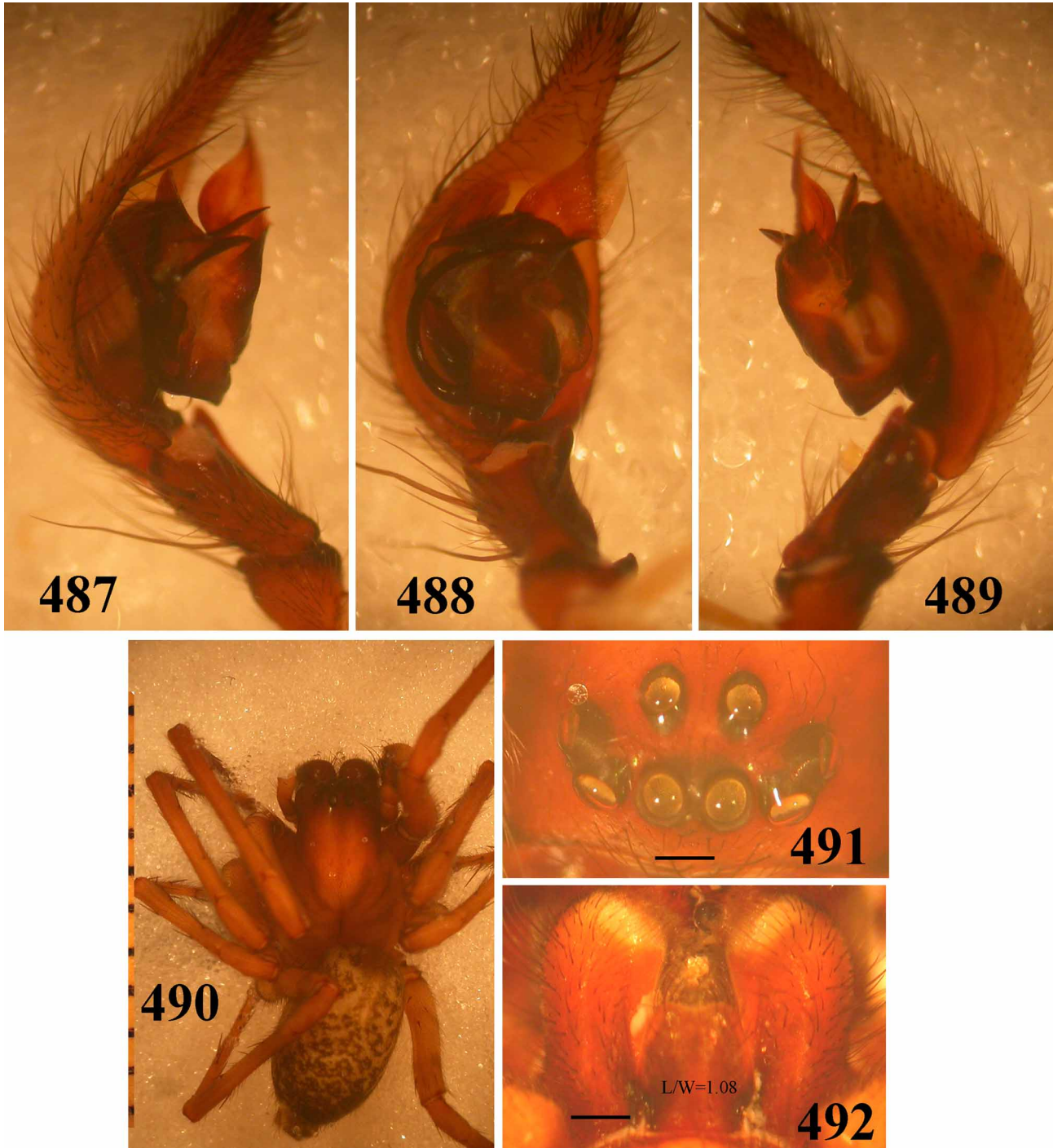
***Draconarius tridens* sp. nov.**

(Figs 493–500, 550)

Type material: *Holotype*. ♂, **CHINA: Yunnan: Lushui County:** Pianma Township, Chang Yan He 9.3 km ESE Pianma, N25.99363°, E98.66651°, 2470 m, mixed broadleaf deciduous and evergreen forest, beating understory vegetation, May 14, 2005, C. Griswold (HNU, CASENT9022231).

Etymology: The species name is derived from the Latin words “tri” and “dens”, meaning “three” and “tooth” respectively, and refers to the presence of three promarginal and three retromarginal cheliceral teeth; term in apposition.

Diagnosis: This new species can be easily recognized by the absence of a patellar apophysis, the short RTA, the absence of a lateral tibial apophysis, the long conductor, and the absence of a median apophysis (Figs 493–497). Both the cheliceral promargin and retromargin have 3 teeth.

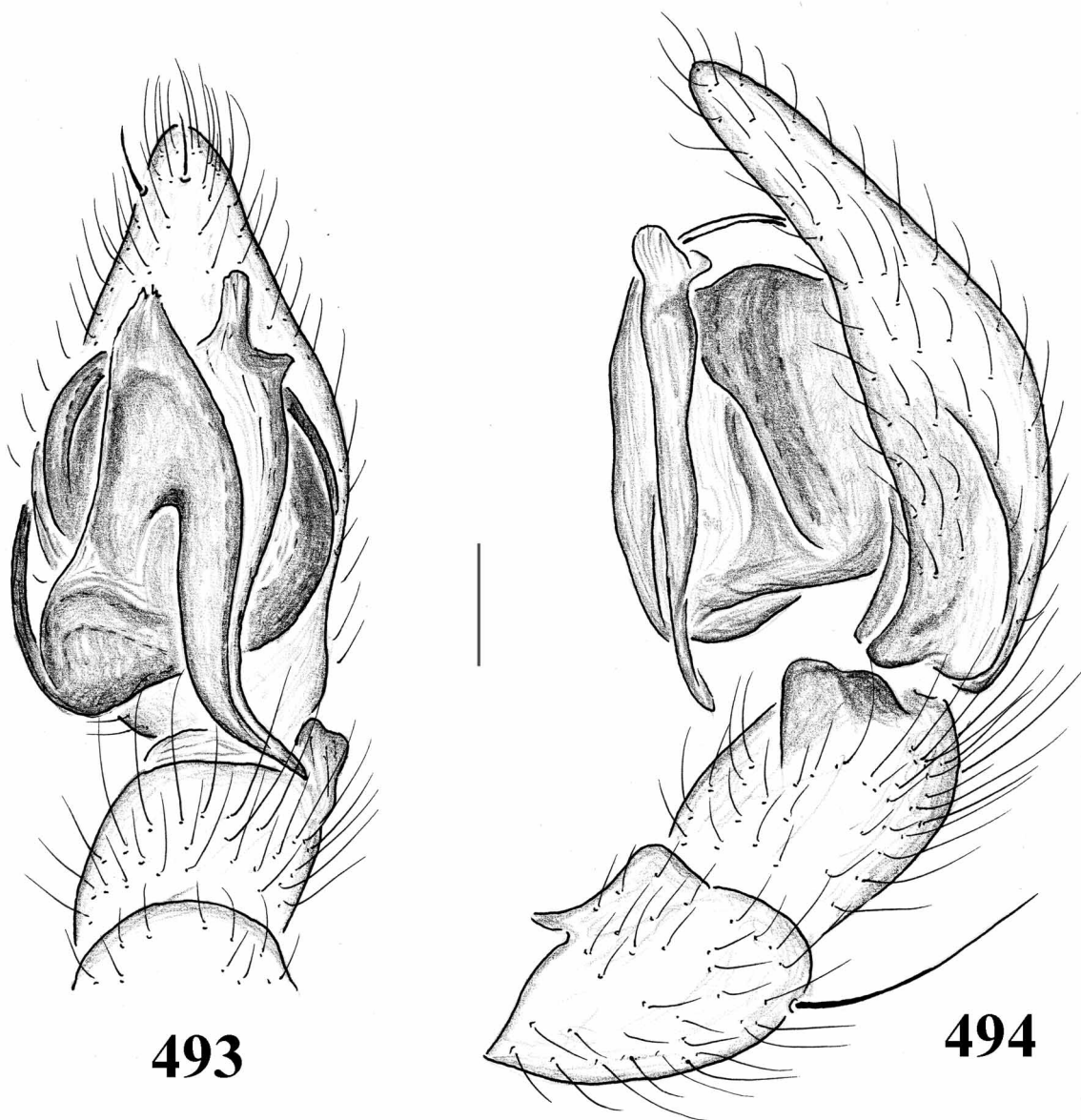


FIGURES 487–492. *Draconarius tangi* sp. nov., male holotype from Tengchong County, Nankang, Yakou (HNU, CASENT9020426). 487–489. Palp (prolateral, ventral, retrolateral); 490. Habitus, dorsal; 491. Eyes, fronto-dorsal; 492. Labium, ventral (L/W=1.08).

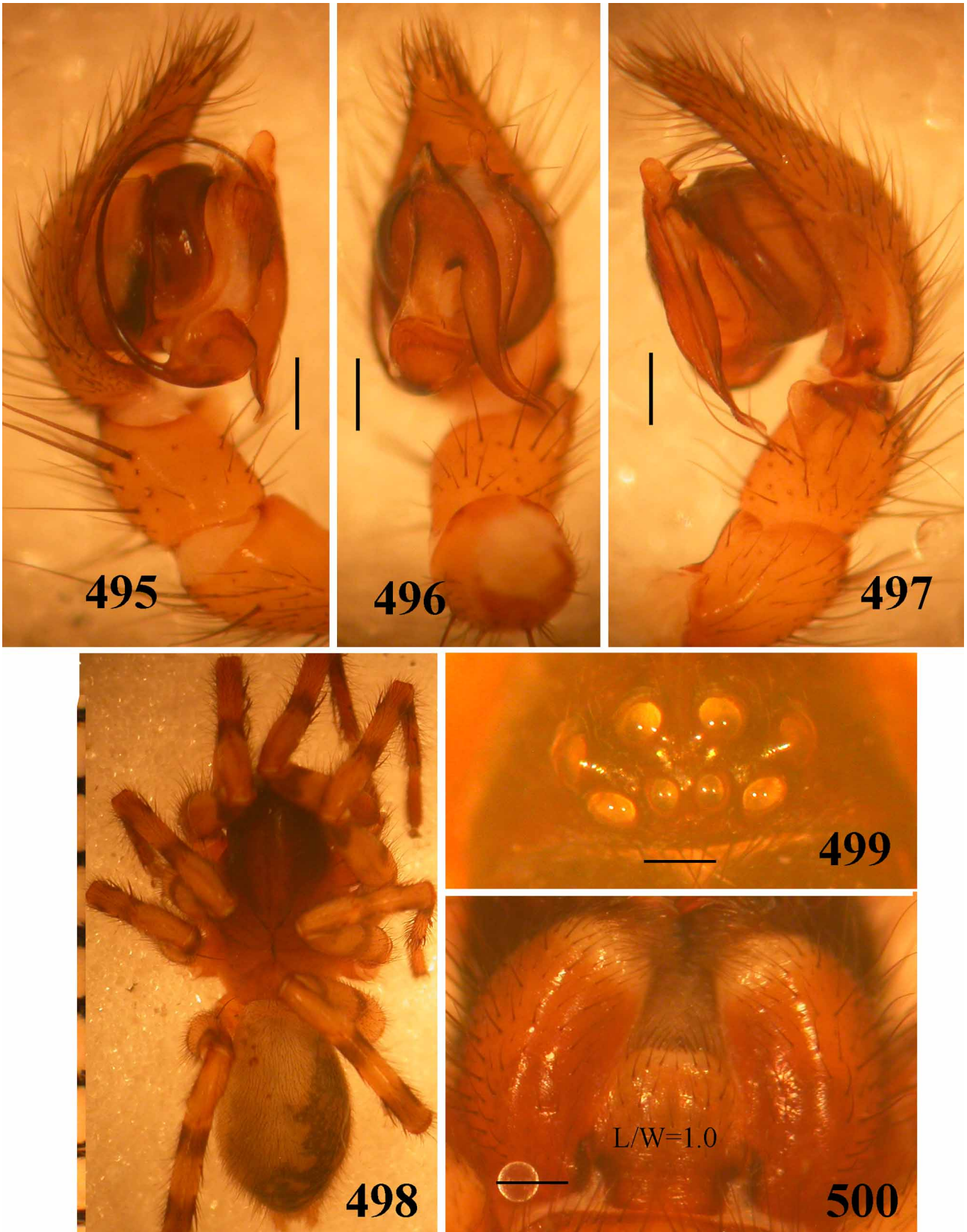
Description: *Male (holotype)*. Medium sized Coelotinae (Fig. 498). Total length 6.15. Dorsal shield of prosoma 3.15 long, 1.82 wide; opisthosoma 3.00 long, 1.87 wide. AME smallest, about $\frac{2}{3}$ size of other eyes, which are subequal (AME 0.08, ALE 0.12, PME 0.12, PLE 0.12); anterior eyes equally separated by half of AME diameter; posterior eyes equally separated by slightly less than their diameter (AME–AME 0.04, AME–ALE 0.04, PME–PME 0.09, PME–PLE 0.09, AME–PME 0.10) (Fig. 499). Labium length and width subequal (L/W=1.0) (Fig. 500). Cheliceral pro- and retromargins with 3 teeth. Palp without patellar apophysis; RTA short, less than half of tibial length; lateral tibial apophysis absent; cymbial furrow short, less than half of cymbial length; conductor long, extending posteriorly to distal tibia, with a small basal lamella; conductor dorsal apophysis absent; median apophysis absent; embolus short, filiform, prolateral in origin (Figs 493–497).

Female. Unknown.

Distribution: China (Yunnan: Lushui) (Fig. 550).



FIGURES 493–494. *Draconarius tridens* sp. nov., male holotype from Lushui County, Pianma, Chang Yan He (HNU, CASENT9022231). Palp (ventral, retrolateral).



FIGURES 495–500. *Draconarius tridens* sp. nov., male holotype from Lushui County, Pianma, Chang Yan He (HNU, CASENT9022231). 495–497. Palp (prolateral, ventral, retrolateral); 498. Habitus, dorsal; 499. Eyes, fronto-dorsal; 500. Labium, dorsal (L/W=1.00).

***Draconarius trinus* Wang & Jäger 2007**

(Figs 501–504, 550)

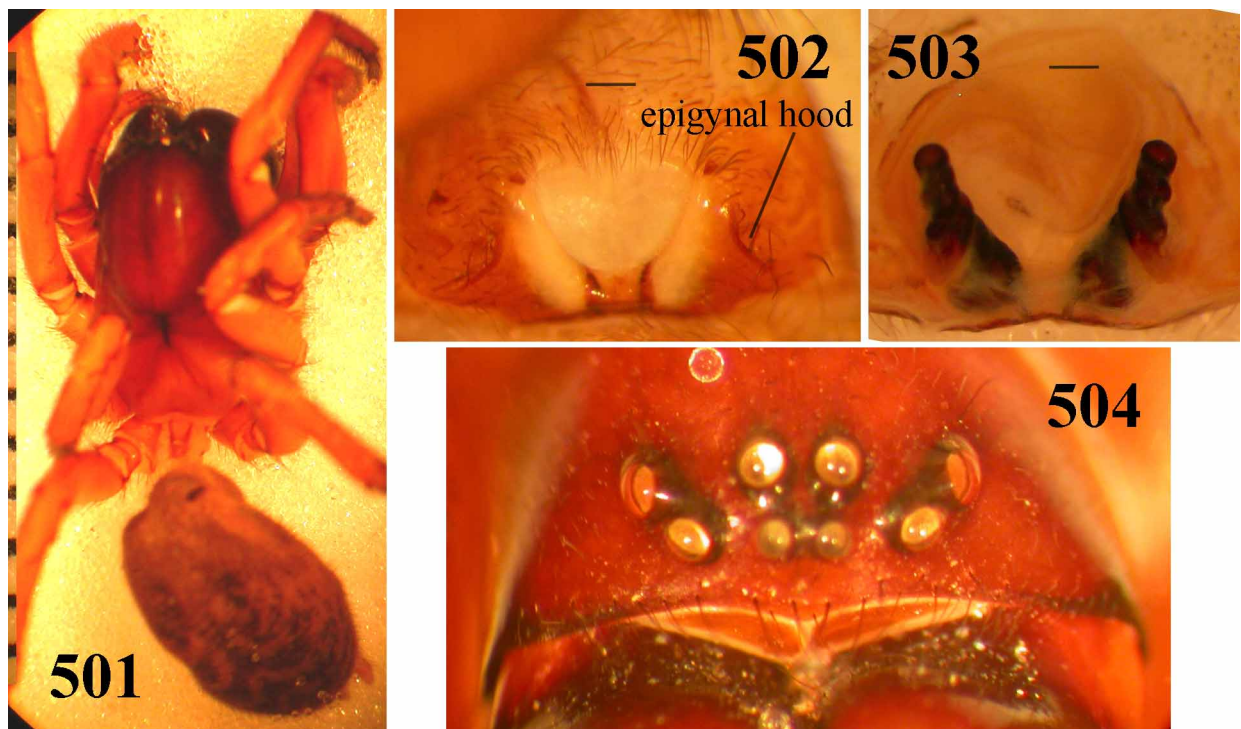
Draconarius trinus Wang & Jäger 2007: 41, figs 77–80 (female holotype from Kunming, Yunnan, China, in SMF, examined).

Diagnosis: The female is similar to *D. ornatus* (Wang, Yin, Peng & Xie 1990) in having a large atrium and broad copulatory ducts, but this species has epigynal teeth and epigynal hoods that are posteriorly situated close to the epigastric furrow (Figs 502–503).

Description: *Female.* See Wang & Jäger (2007). Photos of habitus, eyes and epigynum are provided in this study (Figs 501–504).

Male. Unknown.

Distribution: China (Yunnan: Kunming) (Fig. 550).



FIGURES 501–504. *Draconarius trinus* Wang & Jäger 2007, female holotype from Kunming, Xishan (SMF). 501. Habitus, dorsal; 502–503. Epigynum (ventral, dorsal); 504. Eyes, fronto-dorsal.

***Draconarius uncatatus* (Liu & Li 2009) comb. nov.**

(Fig. 549)

Coelotes uncatatus Liu & Li 2009: 669, figs 10–15 (male holotype, female paratypes from Luoping County, Yunnan, in IZCAS, not examined).

Diagnosis: This species is similar to *D. degeneratus* (Liu & Li 2009) in having a long patellar apophysis and a short, slender conductor in the male, and a similar female epigynum, but can be distinguished by the proximally originated embolus in the male and the slender epigynal teeth in the female (Liu & Li 2009: figs 10–14).

Description: See Liu & Li (2009).

Distribution: China (Yunnan: Luoping) (Fig. 549).

***Draconarius wrasei* Wang & Jäger 2010**
(Fig. 550)

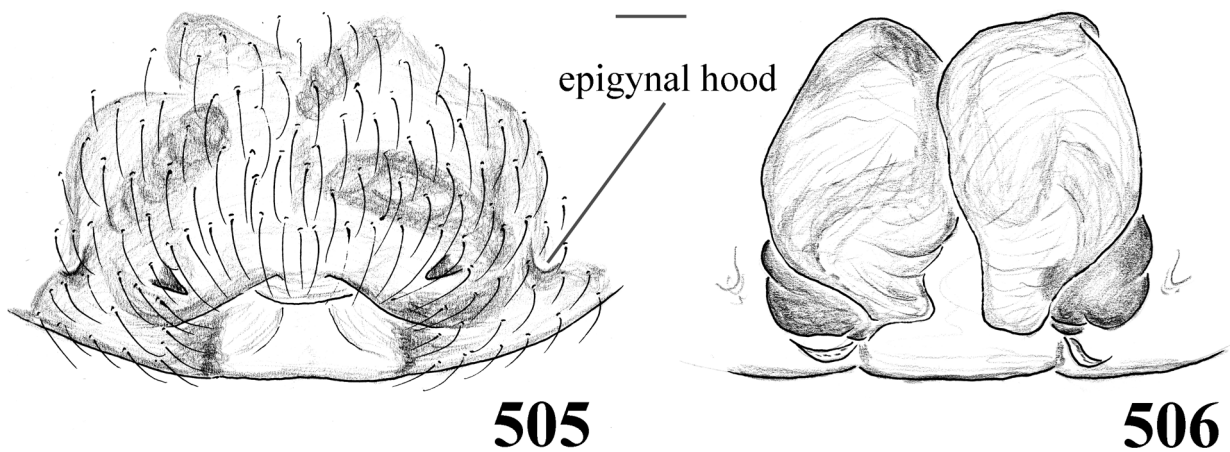
Draconarius wrasei Wang & Jäger 2010: 1180, figs 3–5 (female holotype from Zhongdian County, Yunnan, China, in SMF, examined).

Diagnosis: The female of this species has a similar epigynum to *D. incertus* Wang 2003 and related species, but can be easily distinguished by the posteriorly arising spermathecal heads (Wang & Jäger 2010: figs 3–5).

Description: *Female.* See Wang & Jäger (2010).

Male. Unknown.

Distribution: China (Yunnan: Zhongdian) (Fig. 550).



FIGURES 505–506. *Draconarius xuae* sp. nov., female holotype from Gongshan County, along Dulong Valley Road (HNU, CASENT9025808). Epigynum (ventral, dorsal).



FIGURES 507–511. *Draconarius xuae* sp. nov., female holotype from Gongshan County, along Dulong Valley Road (HNU, CASENT9025808). 507–508. Epigynum (ventral, dorsal); 509. Habitus, dorsal; 510. Eyes, fronto-dorsal; 511. Labium, ventral (L/W=1.10).

***Draconarius xuae* sp. nov.**

(Figs 505–511, 550)

Type material: *Holotype*. ♀, **CHINA: Yunnan: Gongshan County:** along Dulong Valley Road about 38–41 km, N27°47'8", E98°31'41.5", 2800–2900 m, September 23, 2002, X. Xu & C.M. Yin (HNU, CASENT9025808).

Etymology: The specific name is in honour of Xiang Xu at HNU who collected the holotype specimen; noun in genitive case.

Diagnosis: Females can be easily recognized by the posteriorly situated epigynal hoods, the distinct atrium, and the broad, closely set copulatory ducts that cover most of the spermathecal tubes in dorsal view (Figs 505–508).

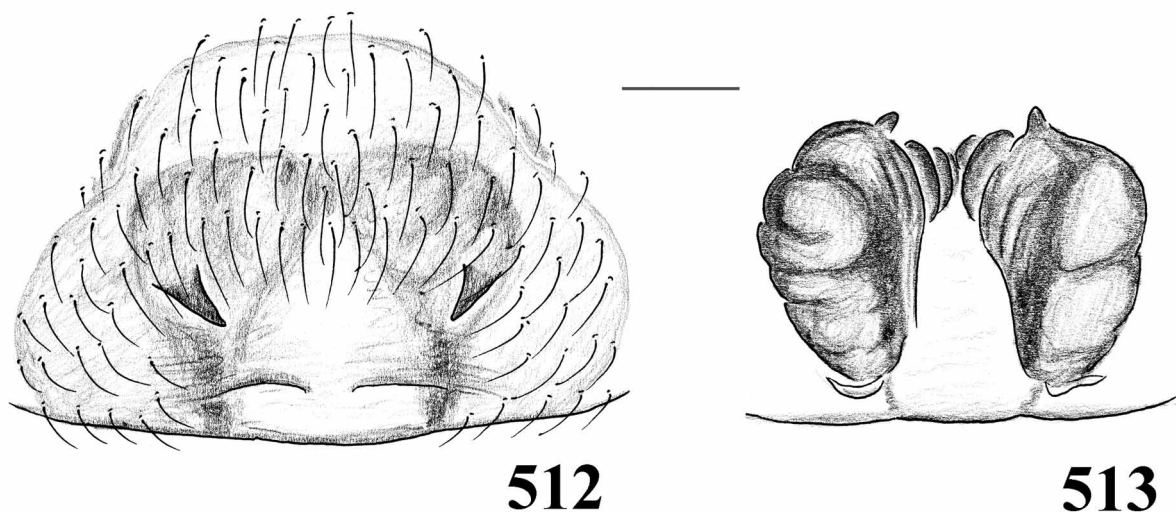
Description: *Female (holotype)*. Large sized Coelotinae (Fig. 509). Total length 12.45. Dorsal shield of prosoma 6.25 long, 4.60 wide; opisthosoma 6.20 long, 4.50 wide. Eyes subequal in size, with AME and PME slightly smaller than lateral eyes (AME 0.20, ALE 0.22, PME 0.19, PLE 0.22); anterior eyes equally separated by slightly more than half of AME diameter; PME separated from each other by approximately their diameter, widely separated from PLE by about 1.5 times PME diameter (AME–AME 0.13, AME–ALE 0.13, PME–PME 0.20, PME–PLE 0.32, AME–PME 0.22) (Fig. 510). Labium slightly longer than wide (L/W=1.10) (Fig. 511). Promargin of chelicera with 3 teeth, retromargin with 2. Epigynal teeth short, arising anterolaterally of atrium and widely separated from each other by slightly more than atrial width; atrium small, but distinct, wider than long, with a small tongue-shaped piece in anterior part of atrium; anterior atrial margin distinct; epigynal hoods situated posteriorly close to epigastric furrow, at same level as anterior atrial margin and epigynal teeth; copulatory ducts broad, originating posteriorly between spermathecae, extending anteriorly and covering most of spermathecae in dorsal view; spermathecae with small, round bases, which are widely separated by at least their width; spermathecal stalks extending, converging, and closely set anteriorly; spermathecal head arising anteriorly and extending laterally (Figs 505–508).

Male. Unknown.

Distribution: China (Yunnan: Gongshan) (Fig. 550).

***Draconarius yani* sp. nov.**

(Figs 512–532, 549)



FIGURES 512–513. *Draconarius yani* sp. nov., female holotype from Fugong County, Shibali Forest Station (HNU, CASENT9019904). Epigynum (ventral, dorsal).



FIGURES 514–518. *Draconarius yani* **sp. nov.**, female holotype from Fugong County, Shibali Forest Station (HNU, CASENT9019904). 514–515. Epigynum (ventral, dorsal); 516. Habitus, dorsal; 517. Eyes, fronto-dorsal; 518. Labium, ventral (L/W=1.18).

Type material: *Holotype.* ♀, **CHINA: Yunnan: Fugong County:** Gaoligongshan, Shibali forest station, in moist stream gully, N27.16894°, E98.77205°, 2650 m, May 9, 2004; C. Griswold & H.M. Yan (HNU, CASENT9019904).

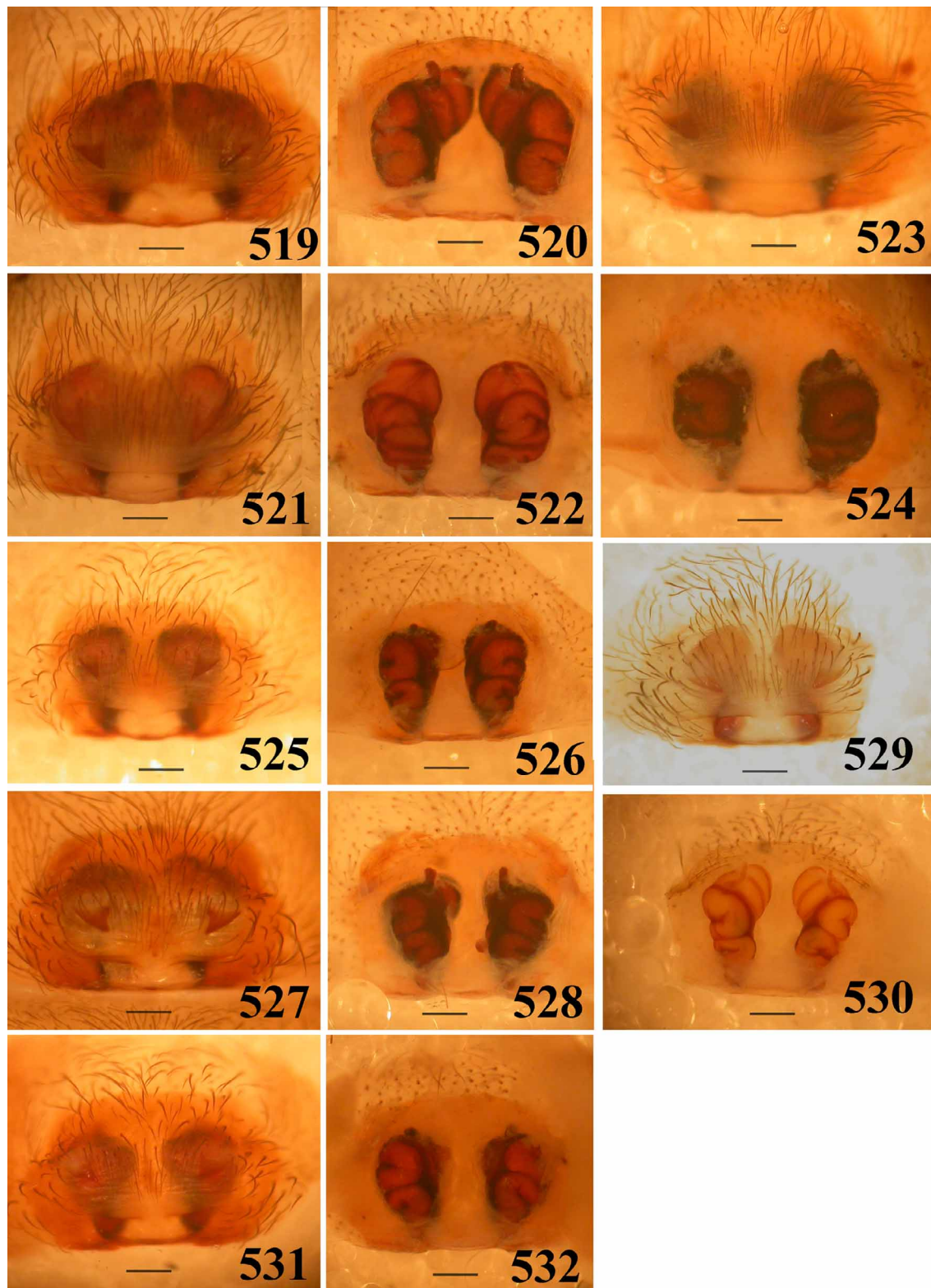
Paratypes. **CHINA: Yunnan: Gongshan County:** 1♀, Bing Zhong Luo Township, Chu Kuai, N27.97928°, E098.47389°, 3725 m, August 19, 2006, Hu Peng (CAS, CASENT9025579); 1♀, Bingzhongluo Township, SW slope of Kawakarpu Shan NNE of Chukuai Lake, N27.99037°, E98.47441°, 4050 m, under rocks, running on ground, in webs, August 21, 2006; J.A. Miller, D. Kavanaugh (HNU, CASENT9024454). **Fugong County:** 2♀, Lishadi Township, Yakou of Shibali, N27.21234°, E098.69601°, 3615 m, August 5/7, 2005, G. Tang (CAS, CASENT9025582); 1♀, Lumadeng, Lao Shibali Pass (pass #30) to 2 km before the pass, rock cliffs along the road, N27.06427°, E98.75123°, 3265–3060 m, August 13, 2005, P. Paquin (HNU, CASENT9022545); 1♀, Lishadi, 500 m before Shibali Yaku (pass #31), N27.21354°, E98.70021°, 3585 m, stable scree slope on soil, August 7, 2005, P. Paquin (CAS, CASENT9022551); 1♀, Gaoligongshan, 7.61 km directly WNN of Shibali, *Rhododendron* thicket, turning rocks amid bamboo, N27.20662°, E98.71773°, 3292 m, May 6, 2004, C. Griswold. (HNU, CASENT9020785).

Additional material examined: **China: Yunnan: Fugong County:** 1♀, Lishadi, Shibali, 2537 m, N27.16650°, E98.77936°, forest, webs on tree trunks at night, August 5, 2005, P. Paquin, D. Kavanaugh. (CAS, CASENT9022569).

Notes: The female specimen CASENT9022569 (Figs 529–530) has a similar epigynum in ventral view, but very different spermathecal tubes. Due to the limited number of specimens examined, we temporarily list it here as *D. yani* **sp. nov.**

Etymology: The specific name is a patronym in honor of one of the collectors of the type specimen, Hengmei Yan at HNU; noun in genitive case.

Diagnosis: The female of this new species is similar to *D. quattour* **sp. nov.** in having epigynal teeth that are widely separated from each other and from the atrial margin, and spermathecae that extend anteriorly of the spermathecal heads, but can be distinguished by the presence of a distinct anterior atrial margin and atrial ridges (Figs 512–515).



FIGURES 519–532. *Draconarius yani* sp. nov., female epigynum. 519–520. From Fugong County, Lumadeng (HNU, CASENT9022545); 521–522. From Gongshan County, Bing Zhong Luo, Chu Kuai (CAS, CASENT9025579); 523–524. From Fugong County, Lishadi, Shibali Yaku (CAS, CASENT9022551); 525–526. Paratype from Fugong County, Lishadi Township, Yakou of Shibali (CAS, CASENT9025582); 527–528. Paratype from Gongshan County, Bingzhongluo Township (CAS, CASENT9024454); 529–530. From Fugong County, Lishadi, Shibali (CAS, CASENT9022569); 531–532. From Fugong County, Shibali (CAS, CASENT9020785). 519, 521, 523, 527, 529, 531. Ventral; 520, 522, 524, 528, 530, 532. Dorsal.

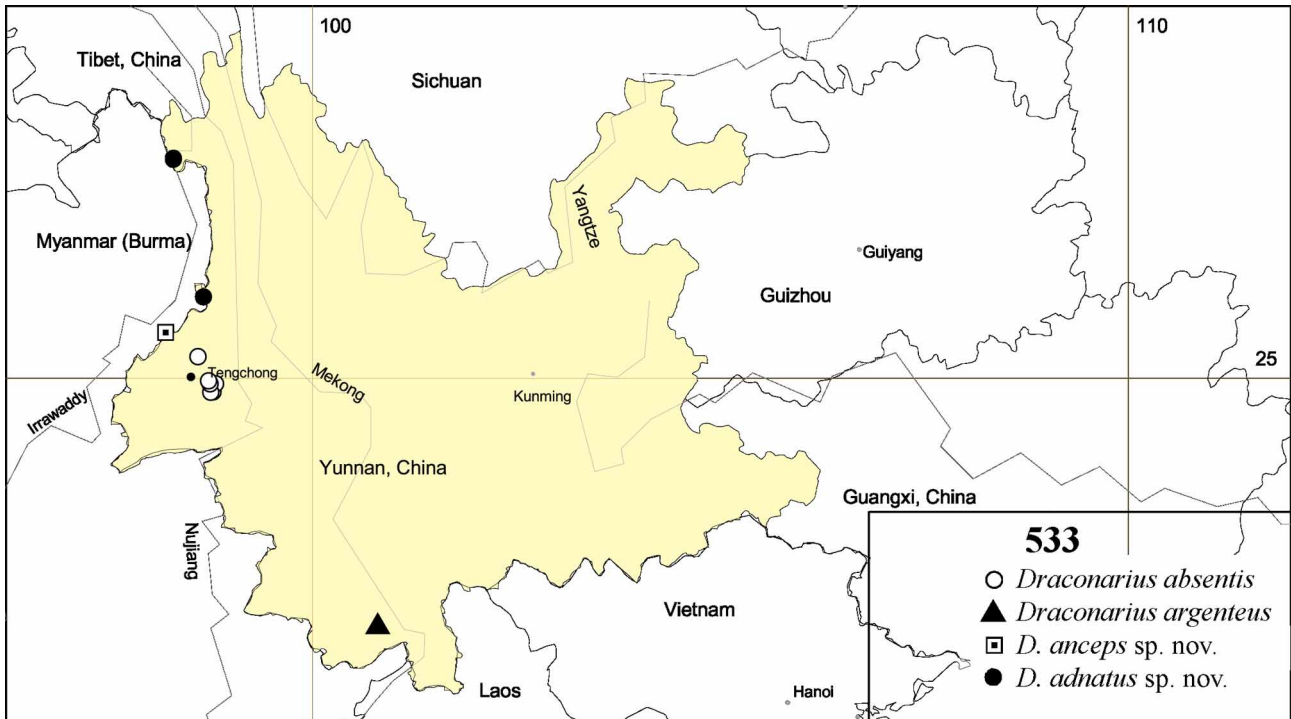


FIGURE 533. Distribution records of *Draconarius adnatus* sp. nov., *D. anceps* sp. nov., *D. argenteus* (Wang, Yin, Peng & Xie 1990), and *D. absentis* Wang 2003.



FIGURE 534. Distribution records of *Draconarius agrestis* Wang 2003 and *D. capitulatus* Wang 2003.

Description: *Female (holotype).* Medium sized Coelotinae, total length 9.46 (Fig. 516). Dorsal shield of prosoma 4.26 long, 3.00 wide; opisthosoma 5.20 long, 3.50 wide. AME smallest, half the size of ALE; ALE largest; PME subequal to AME in size, PLE slightly larger than PME (AME 0.11, ALE 0.20, PME 0.12, PLE 0.14); AME separated from each other by slightly more than their diameter, from ALE by AME diameter;

PME separated from each other by slightly more than their diameter, widely separated from PLE by about 2 times PME diameter (AME–AME 0.14, AME–ALE 0.12, PME–PME 0.15, PME–PLE 0.22, AME–PME 0.12) (Fig. 517). Labium longer than wide (L/W=1.20) (Fig. 518). Promargin of chelicera with 3, retromargin with 2 teeth. Epigynal teeth short, widely separated from each other by about atrial width, situated anteriorly of atrium and distinctly separated from anterior atrial margin; atrium small, wider than long, close to epigastric furrow, with anterior margin slightly extending posteriorly; copulatory ducts small, originating posteriorly between spermathecae; spermathecae broad, with bases distinctly separated, anteriorly extending and closely set; spermathecal heads small, arising from distal half of spermathecae, with spermathecae extending anterior to their heads (Figs 512–515, 519–532).

Male. Unknown.

Distribution: China (Yunnan: Fugong, Gongshan) (Fig. 549).



FIGURE 535. Distribution records of *Draconarius catillus* sp. nov. and *D. curiosus* Wang 2003.

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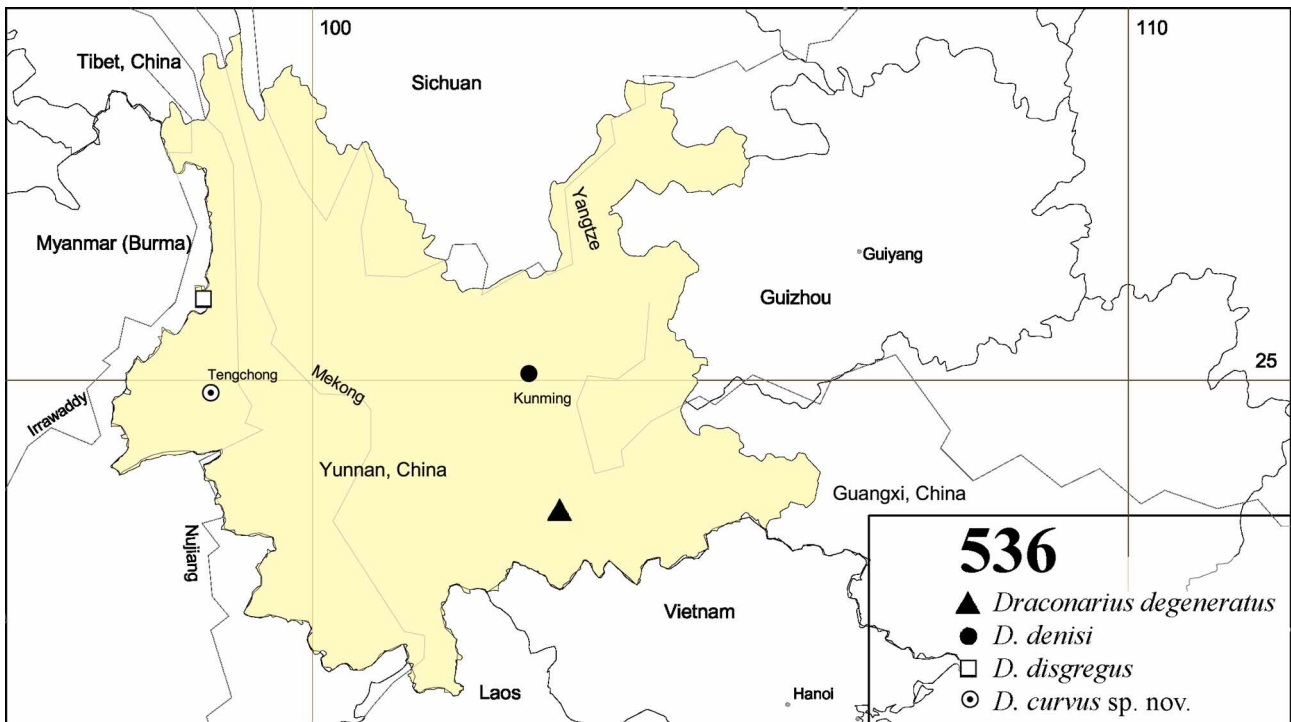


FIGURE 536. Distribution records of *Draconarius degeneratus* (Liu & Li 2009), *D. curvus* sp. nov., *D. denisi* (Schenkel 1963) and *D. disgregus* Wang 2003.



FIGURE 537. Distribution records of *Draconarius dubius* Wang 2003 and *D. duplus* sp. nov.



FIGURE 538. Distribution records of *Draconarius episomos* Wang 2003 and *D. euryemboles* sp. nov.

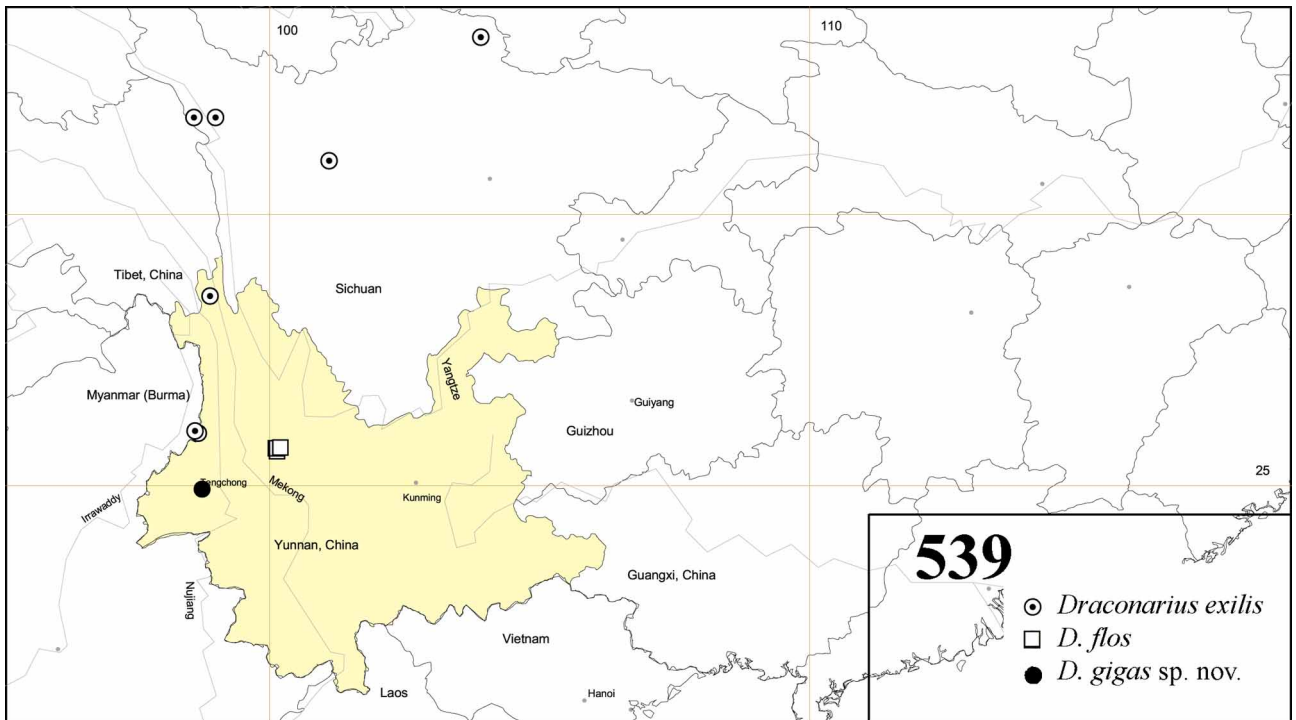


FIGURE 539. Distribution records of *Draconarius exilis* Zhang, Zhu & Wang 2005, *D. flos* Wang & Jäger 2007 and *D. gigas* sp. nov.

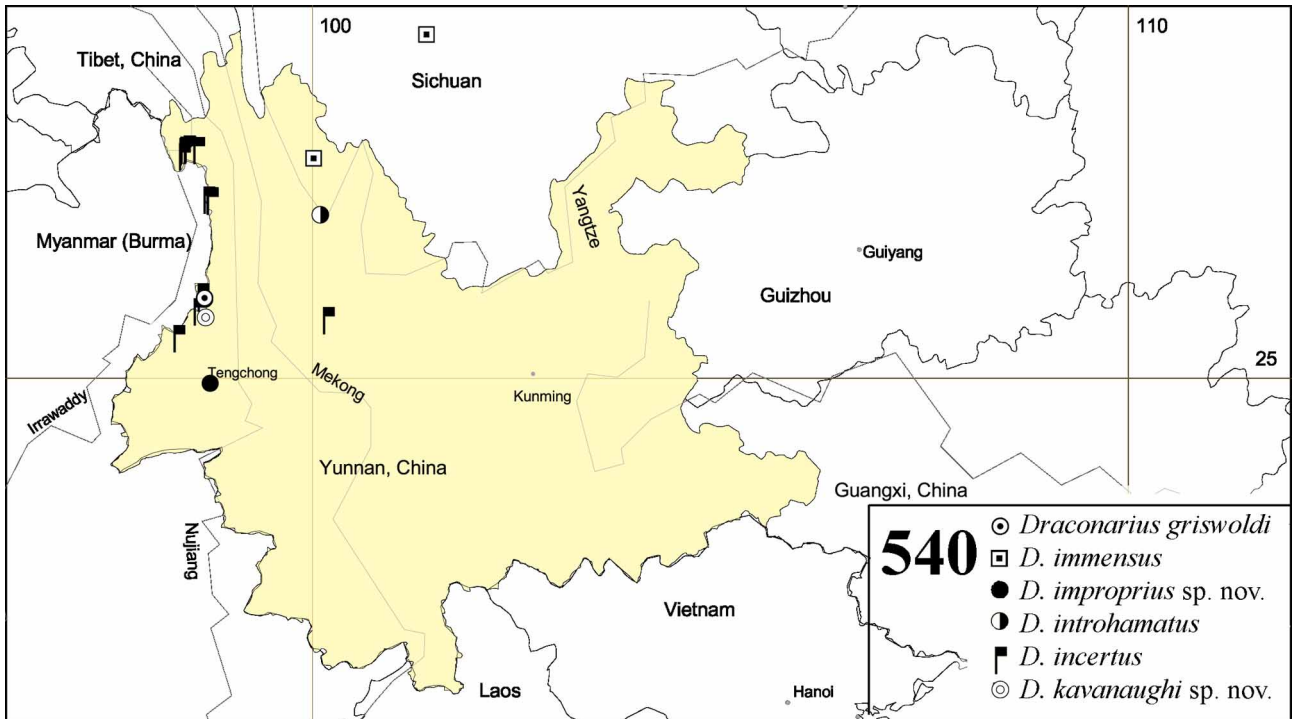


FIGURE 540. Distribution records of *Draconarius griswoldi* Wang 2003, *D. immensus* Xu & Li 2006, *D. improprius* sp. nov., *D. incertus* Wang 2003, *D. introhamatus* (Xu & Li 2006) and *D. kavanaughi* sp. nov.

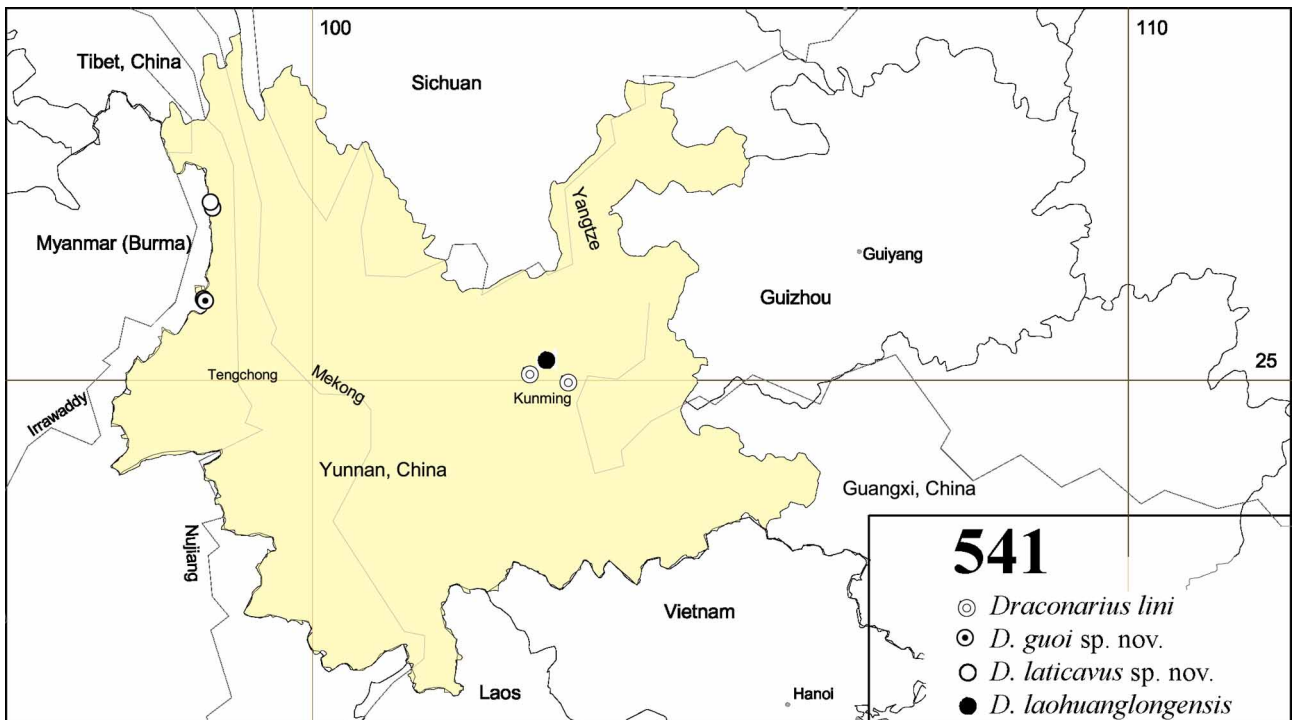


FIGURE 541. Distribution records of *Draconarius lini* Liu & Li 2009, *D. guoi* sp. nov., *D. laticavus* sp. nov. and *D. laohuanglongensis* (Liu & Li 2009).

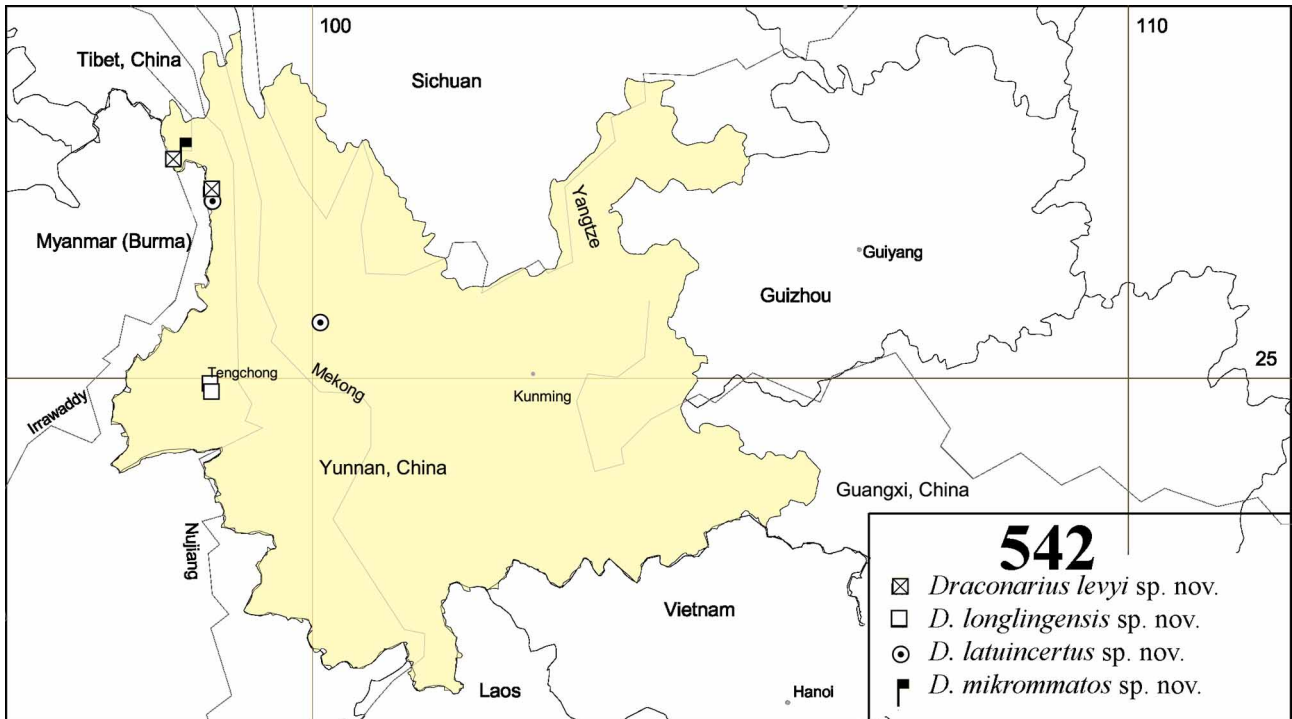


FIGURE 542. Distribution records of *Draconarius latusincertus* sp. nov., *D. levyi* sp. nov., *D. longlingensis* sp. nov. and *D. mikrommatos* sp. nov.

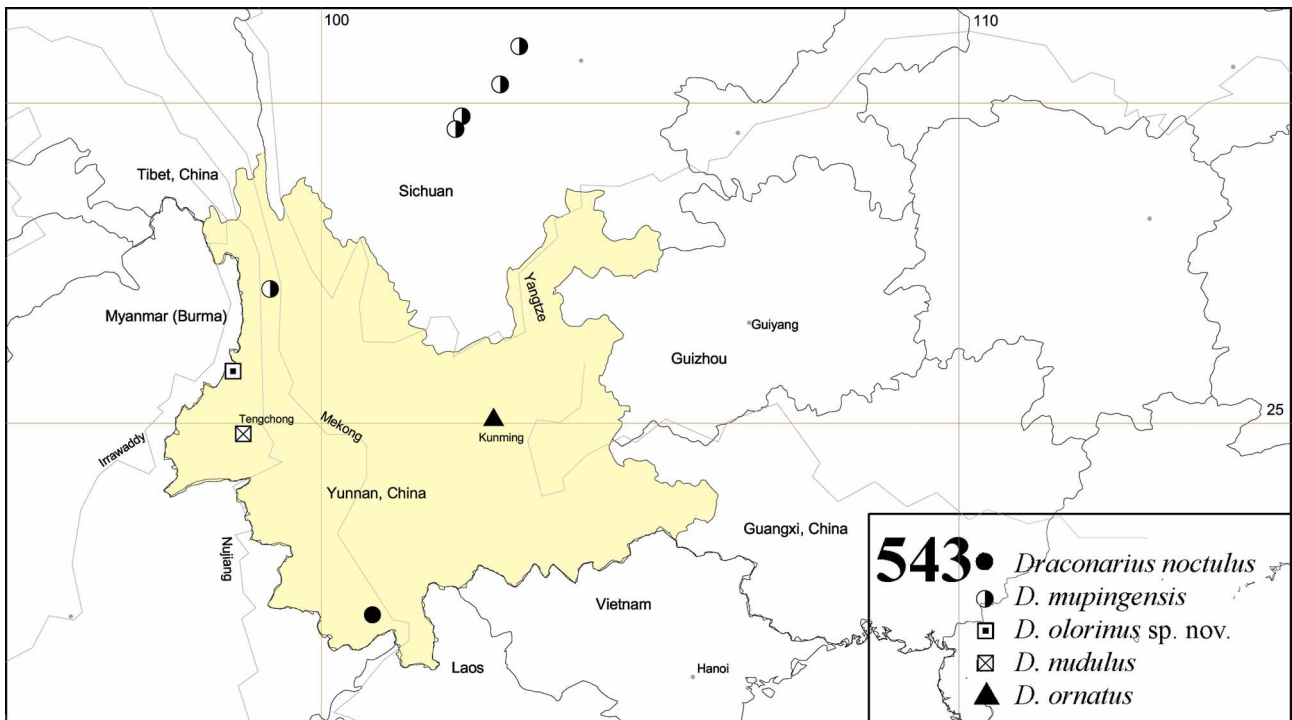


FIGURE 543. Distribution records of *Draconarius mupingensis* Xu & Li 2006, *D. noctulus* (Wang, Yin, Peng & Xie 1990), *D. nudulus* Wang 2003, *D. olorinus* sp. nov. and *D. ornatus* (Wang, Yin, Peng & Xie 1990).



FIGURE 544. Distribution records of *Draconarius papillatus* Xu & Li 2006 and *D. paraspiralis* sp. nov.

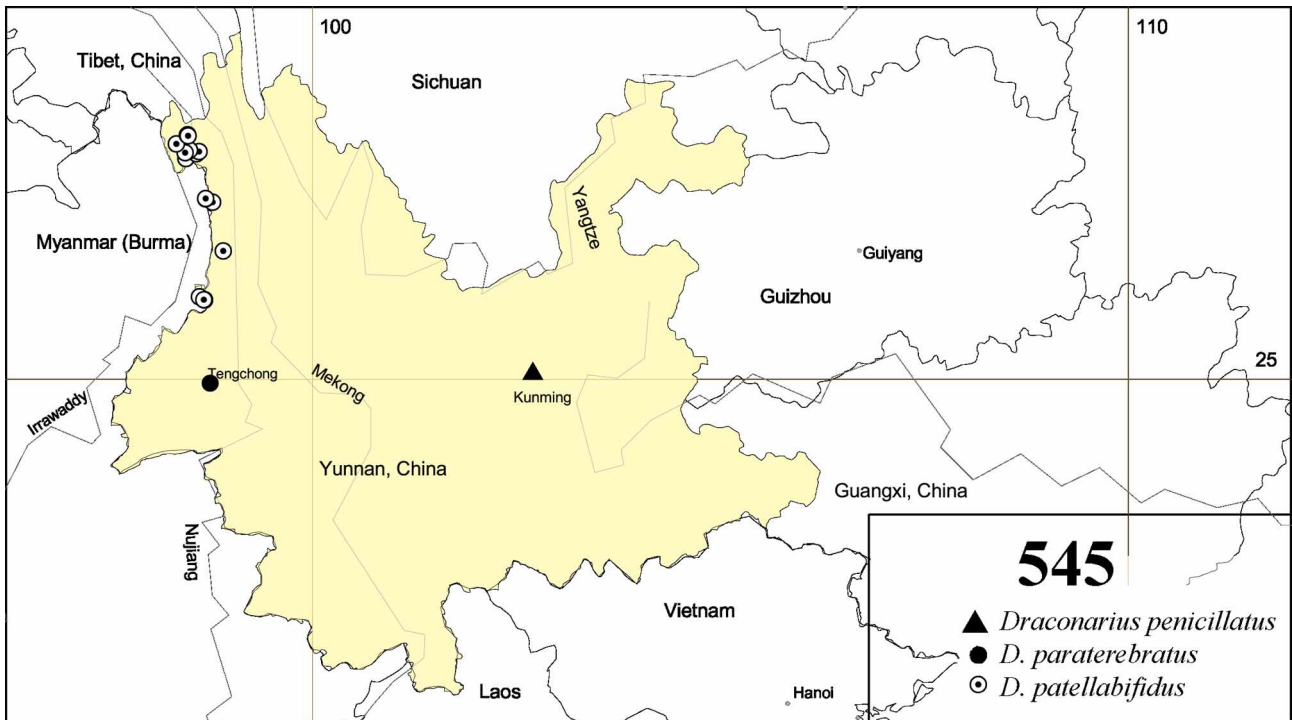


FIGURE 545. Distribution records of *Draconarius paraterebratus* Wang 2003, *D. patellabifidus* Wang 2003 and *D. penicillatus* (Wang, Yin, Peng & Xie 1990)

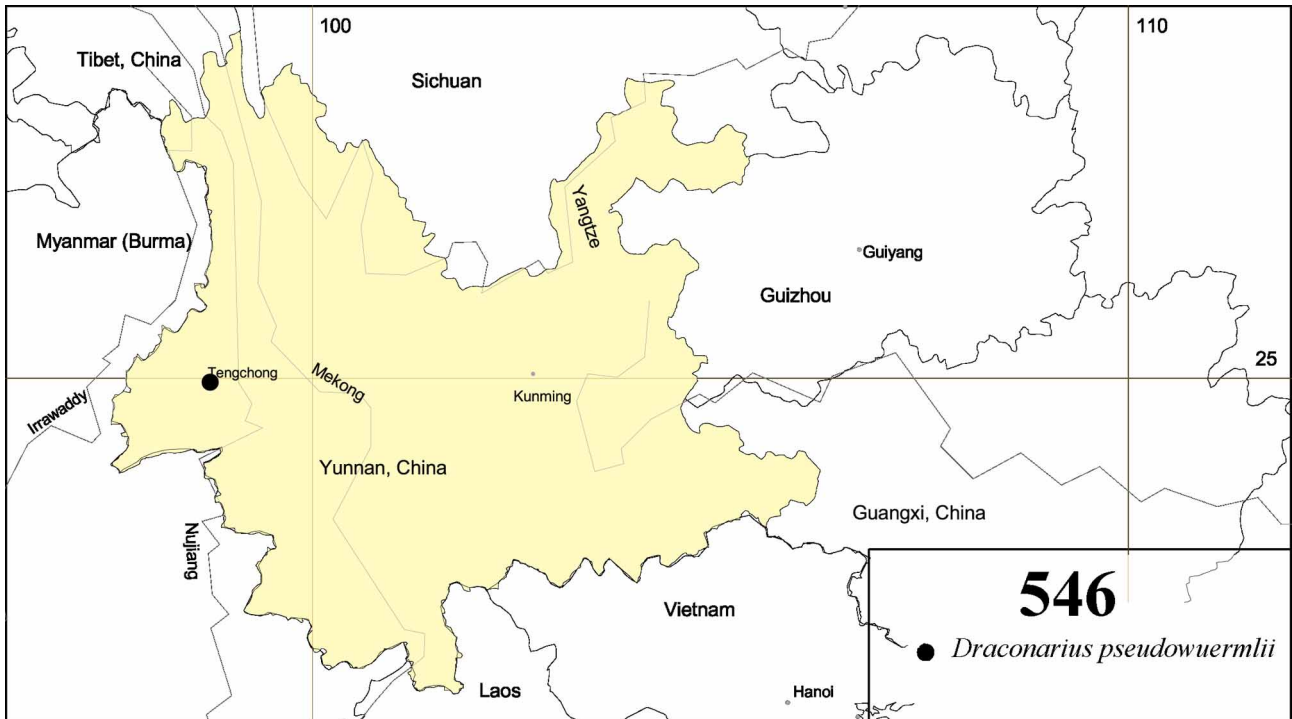


FIGURE 546. Distribution records of *Draconarius pseudowuermlii* Wang 2003.



FIGURE 547. Distribution records of *Draconarius pseudoagrestis* sp. nov. and *D. pseudocapitulatus* Wang 2003.

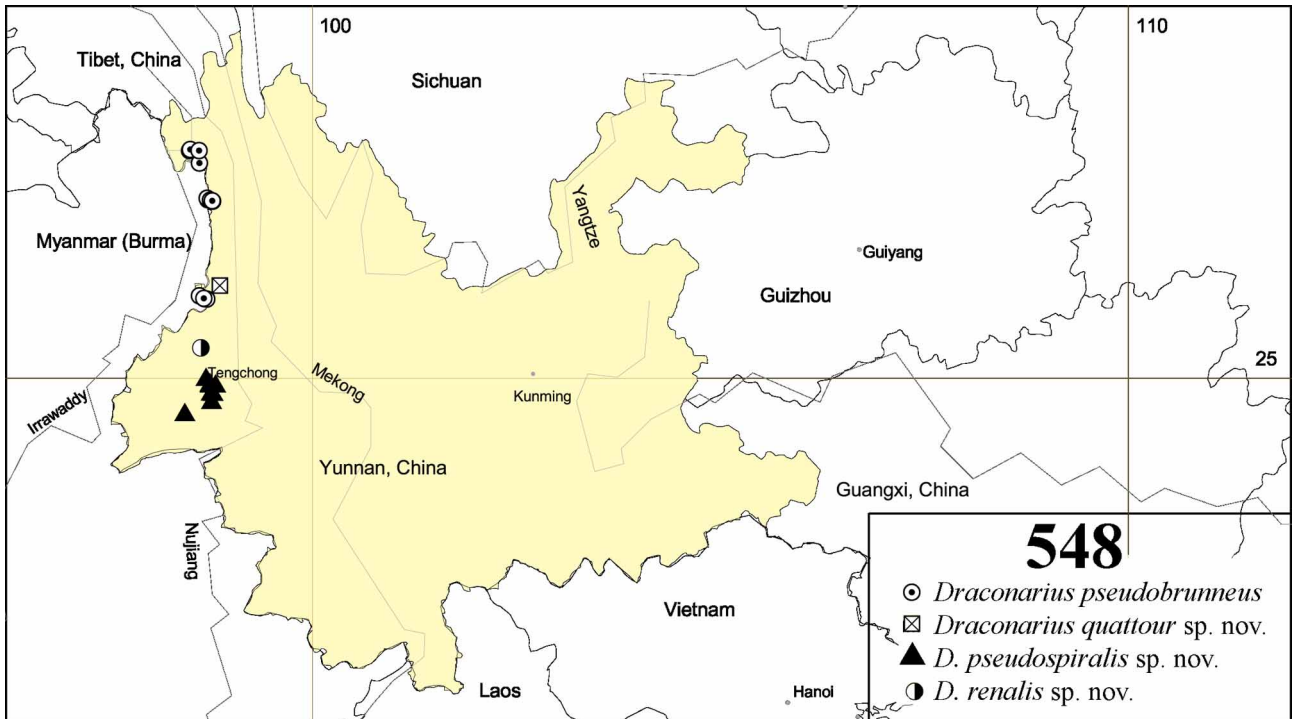


FIGURE 548. Distribution records of *Draconarius pseudobrunneus* Wang 2003, *D. pseudospiralis* sp. nov., *D. quattour* sp. nov. and *D. renalis* sp. nov.



FIGURE 549. Distribution records of *Draconarius rotundus* Wang 2003, *D. spiralis* sp. nov., *D. yani* sp. nov. and *D. uncatus* (Liu & Li 2009).

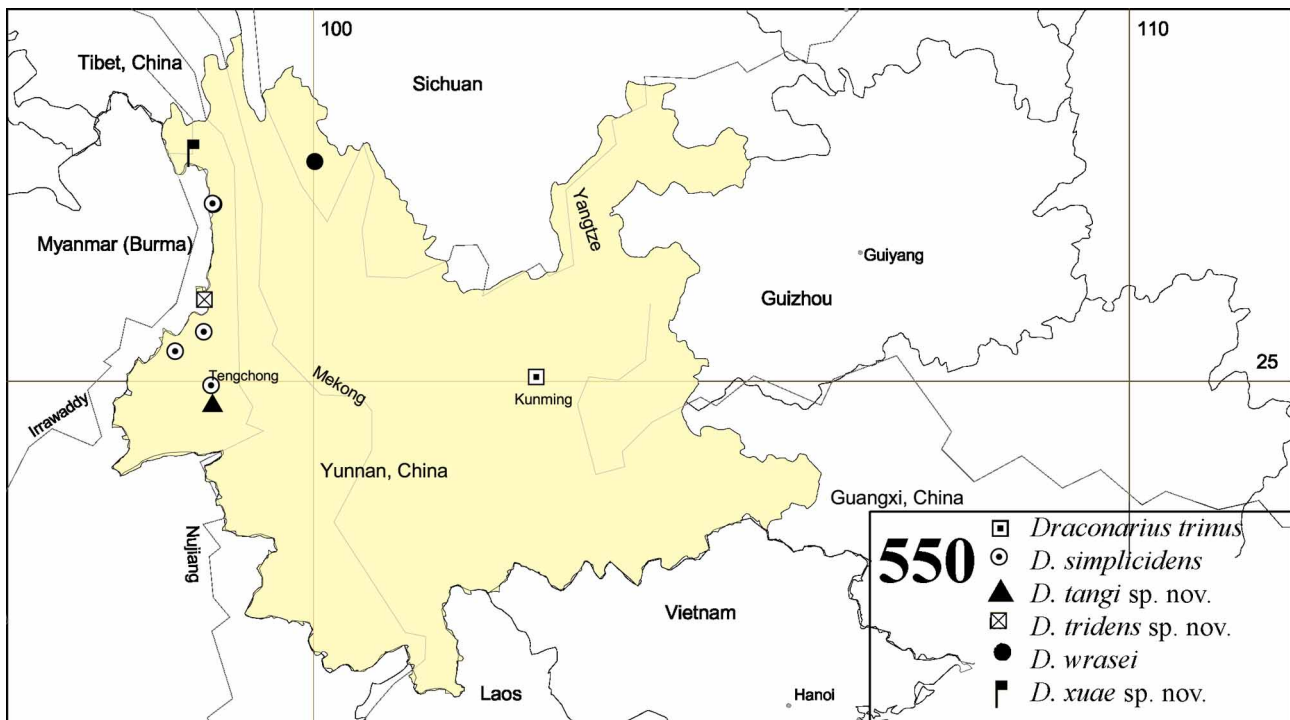


FIGURE 550. Distribution records of *Draconarius simplicidens* Wang 2003, *D. tangi* sp. nov., *D. tridens* sp. nov., *D. trinus* Wang & Jäger 2007, *D. wrasei* Wang & Jäger 2010 and *D. xuae* sp. nov.

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