

Ten new species of coelotine spiders (Araneae, Amaurobiidae) from Thailand

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Ten new species of coelotine spiders (Araneae, Amaurobiidae) from Thailand. - Ten new coelotine spiders of the genera *Coronilla* and *Draconarius* are described from Thailand: *C. lanna* sp. n. (♀), *D. australis* sp. n. (♂), *D. monticola* sp. n. (♀), *D. montis* sp. n. (♂), *D. phuhin* sp. n. (♂, ♀), *D. promontorius* sp. n. (♀), *D. schwendingeri* sp. n. (♂, ♀), *D. silva* sp. n. (♂), *D. silvicola* sp. n. (♀) and *D. tentus* sp. n. (♂). The genus *Coronilla* is recorded from Thailand for the first time. The species *D. australis* sp. n. marks the southernmost distribution of the subfamily Coelotinae.

Keywords: Coelotinae - *Coronilla* - *Draconarius* - new species - taxonomy - zoogeography - Thailand.

INTRODUCTION

The recently published systematic papers on *Draconarius* and *Coelotes* reveal the richness of tropical spiders, particularly those occurring in evergreen forests of Thailand (Dankittipakul & Wang, 2003, 2004). In the first of these papers five *Draconarius* and a single *Coelotes* species were recorded from different mountains of the Dwana-Tenasserim range. All of them correspond with the recent definitions of these genera provided by Wang (2002). In the second paper (Dankittipakul & Wang, 2004) two coelotine species groups were identified: the *lateralis*-group that was established for three species, and the *elatus*-group established for the smallest known coelotine species. Both species groups were then tentatively placed in the genus *Draconarius* to avoid breaking up this species-rich taxon. Further material is required

to confirm their relationship and to prove that they belong to distinct lineages. In the present paper ten additional new species of *Coronilla* and *Draconarius* are described from several parts of the country. *Draconarius australis* sp. n. currently marks the southernmost occurrence within the coelotines.

MATERIAL AND METHODS

All illustrations were made with a Nikon SMZ 800 stereomicroscope equipped with a drawing tube. Body measurements are in millimetres, except when stated otherwise. Measurements of leg segments were taken from the dorsal side, from midpoint of distal to midpoint of proximal margin. Epigynes were drawn in natural and cleared state (after immersing in lactic acid for 10-20 minutes). Male palps were drawn in retrolateral and ventral view. The specimens examined are deposited in the collections of the Muséum d'histoire naturelle, Genève (MHNG) and in Pakawin Dankittipakul's collection (PDC), which will be deposited in the MHNG later.

Abbreviations used in the text and in the figures: A, atrium; AC, atrial carina; ALE, anterior lateral eyes; AME, anterior median eyes; C, conductor; CD, copulatory duct; CL, conductor lamella; DC, dorsal apophysis of conductor (= conductor dorsal apophysis according to Wang, 2002); E, embolus; FD, fertilization duct; LE, lateral eyes; ME, median eyes; MOQ, median ocular quadrangle; PA, patellar apophysis; PLE, posterior lateral eyes; PLS, posterior lateral spinnerets; PME, posterior median eyes; PMS, posterior median spinnerets; RDTA, retrolateral dorsal tibial apophysis (= lateral tibial apophysis according to Wang, 2002); RTA, retrolateral tibial apophysis; SB, spermathecal base; SH, spermathecal head; SS, spermathecal stalk.

TAXONOMY

Coronilla Wang, 1994

Coronilla Wang, 1994: 281. Type species by original designation: *C. gemata* Wang, 1994.

Diagnosis: Females of *Coronilla* can be recognized by the absence of epigynal teeth, the presence of a broad, transverse atrial septum, and the presence of posteriorly expanded epigynal margin; males by the presence of two patellar apophyses and a reduced retrolateral tibial apophysis. The genus *Coronilla* was previously reported from China and Vietnam.

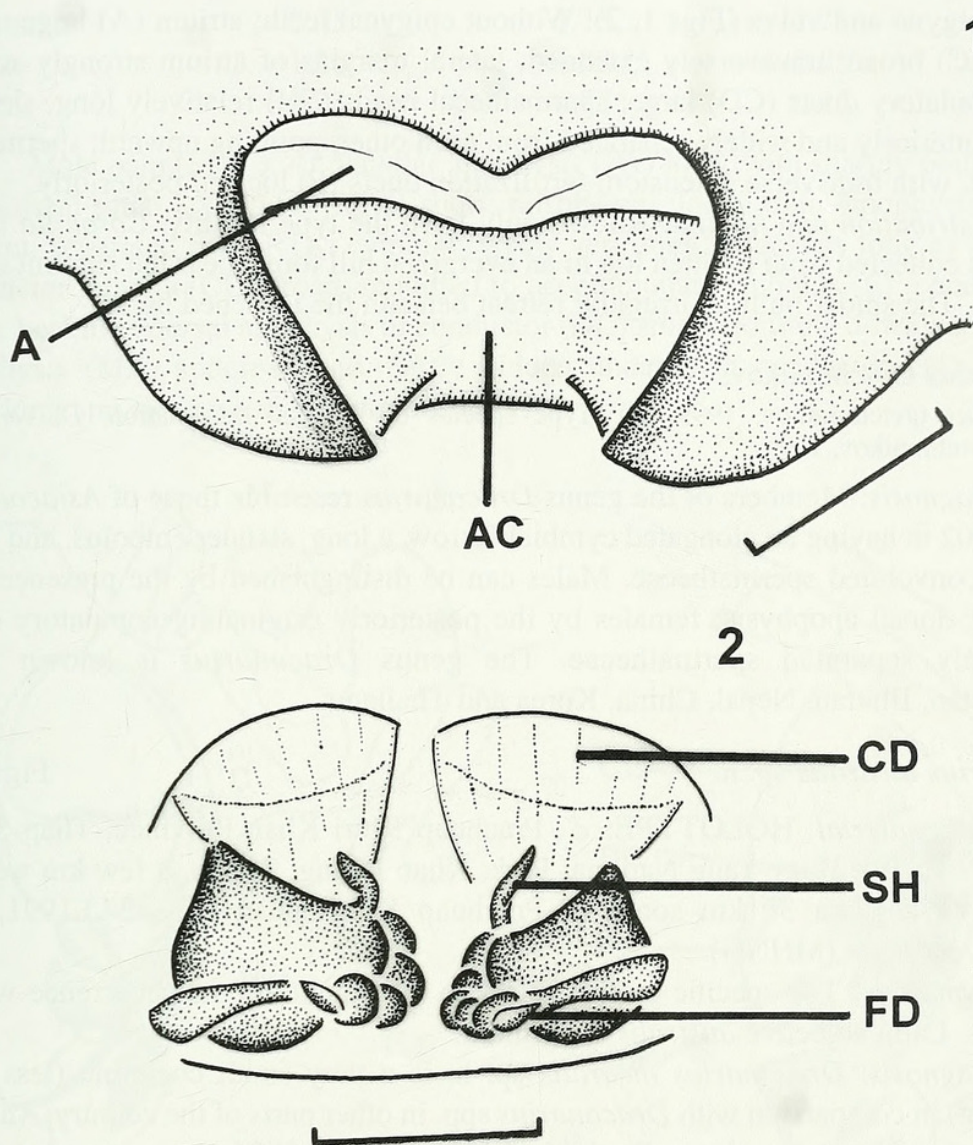
Coronilla lanna sp. n.

Figs 1, 2

Type material: HOLOTYPE: ♀, northern THAILAND, Nan Province, Tha Wang Pha District, Doi (Mt.) Wao (19°08'12.7"N, 100°38'28.8"E), 1380-1550 m, evergreen hill forest near the summit of the mountain, 15.-18.XII.2002, leg. P. J. Schwendinger & P. Dankittipakul (MHNG).

Etymology: The specific epithet refers to the former independent kingdom of Lanna Thai in today's northern Thailand. Noun in apposition.

Diagnosis: The female resembles that of *C. jianhuii* Tang & Yin, 2002 but can be distinguished by: The large copulatory ducts; the broad, laterally expanded spermathecae; and the widely separated spermathecal heads (Figs 1, 2).



FIGS 1-2

Coronilla lanna sp. n., ♀ holotype. Epigyne, ventral view (1). Vulva, dorsal view (2). Abbreviations: A, atrium; AC, atrial carina; CD, copulatory duct; FD, fertilization duct; SH, spermathecal head. Scale lines: 0.5 mm.

Description: ♀ (holotype). Total length 10.13. Carapace 4.43 long, 2.96 wide. Abdomen 5.95 long. Promargin of cheliceral groove with 3 teeth, retromargin with 4.

Eye sizes and interdistances: AME 0.16, ALE 0.20, PME 0.16, PLE 0.20; AME-AME 0.10, AME-ALE 0.08, PME-PME 0.16, PME-PL 0.22, ALE-PL 0.06; MOQ 0.56 long, anterior width 0.42, posterior width 0.50. Clypeus height 0.20.

Leg measurements:

	I	II	III	IV
Femur	3.42	3.04	2.56	3.22
Patella + Tibia	4.21	3.72	3.25	4.02
Metatarsus	3.10	2.61	2.40	3.30
Tarsus	1.62	1.45	1.16	1.36
Total	12.35	10.82	9.37	11.90

Epigyne and vulva (Figs 1, 2): Without epigynal teeth; atrium (A) large; atrial carina (AC) broad, transversely extended; lateral margins of atrium strongly sclerotized; copulatory ducts (CD) large; spermathecal heads (SH) relatively long, slender, situated anteriorly and widely separated from each other, pointing upward; spermathecae broad, with transverse extension; fertilization ducts (F) located posteriorly.

Distribution and habitat: Known only from the type locality. *Coronilla lanna* sp. n. was collected from a rotten log in an evergreen hill forest near the summit of the mountain. The spider built an irregular retreat beneath the loosened bark.

***Draconarius* Ovtchinnikov, 1999**

Draconarius Ovtchinnikov, 1999: 70. Type species by original designation, *D. venustus* Ovtchinnikov, 1999.

Diagnosis: Members of the genus *Draconarius* resemble those of *Asiacoelotes* Wang, 2002 in having an elongated cymbial furrow, a long, slender embolus, and long, strongly convoluted spermathecae. Males can be distinguished by the presence of a conductor dorsal apophysis; females by the posteriorly originating copulatory ducts and widely separated spermathecae. The genus *Draconarius* is known from Tadzhikistan, Bhutan, Nepal, China, Korea and Thailand.

***Draconarius australis* sp. n.**

Figs 3, 4

Type material: HOLOTYPE: ♂, Prachuap Khiri Khan Province, Thap Sakae District, Nam Tok Huay Yang National Park, Khao Luang, 750 m, a few km west of Ban Huay Yang, ca 30 km south of Prachuap Khiri Khan City, 27.I.1991, leg. P. J. Schwendinger (MHNG).

Etymology: The specific epithet refers to the southernmost occurrence within this genus. Latin adjective *australis* = southern.

Diagnosis: *Draconarius australis* sp. n. is a very small coelotine (less than 5 mm long) in comparison with *Draconarius* spp. in other parts of the country. Another small-sized species, *D. elatus* Dankittipakul & Wang, 2004, was recorded from northern Thailand. Both species resemble agelenids in somatic appearance but the male palp of *D. australis* sp. n. corresponds well with other *Draconarius* spp. in possessing a patellar apophysis, a dorsal apophysis of the conductor and an elongate lateral cymbial furrow. The male of this new species can be easily distinguished from other members of the genus by: The very long cymbial furrow, which is almost as long as the cymbium; the extremely broad and round conductor base; the short, beaklike conductor; and the extraordinarily elongated embolus (Figs 3, 4).

Description: ♂ (holotype). Total length 3.85. Carapace 2.08 long, 1.73 wide. Abdomen 1.62 long. Promargin of cheliceral groove with 4 teeth, retromargin with 5.

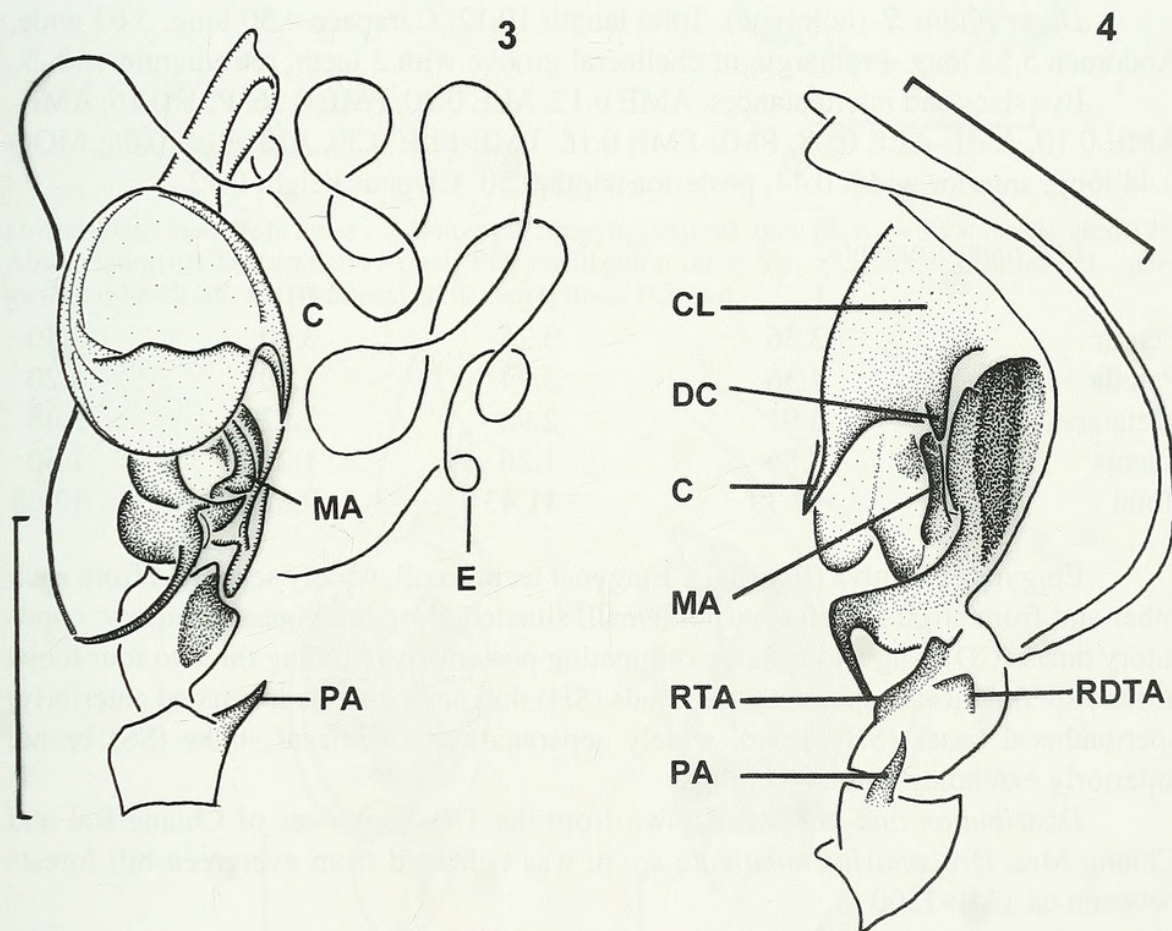
Eye sizes and interdistances: AME 0.04, ALE 0.10, PME 0.12, PLE 0.12; AME-AME 0.04, AME-ALE 0.04, PME-PME 0.08, PME-PLE 0.06, ALE-PLE 0.02; MOQ 0.22 long, anterior width 0.16, posterior width 0.32. Clypeus height 0.10.

Leg measurements:

	I	II	III	IV
Femur	2.08	1.82	1.63	2.13
Patella + Tibia	2.85	2.21	1.97	2.61

Metatarsus	2.03	1.76	1.71	2.35
Tarsus	1.26	1.03	0.85	1.02
Total	8.22	6.82	6.16	8.11

Male palp (Figs 3, 4): Patellar apophysis (PA) long, with sharply pointed apex; retrolateral tibial apophysis (RTA) short; retrolateral dorsal tibial apophysis (RDTA) present, separated from RTA; cymbial furrow very long, almost as long as cymbium; conductor lamella (CL) broad, modified to accommodate embolus (E); conductor (C) short, beaklike; dorsal apophysis of conductor (DC) small, pointing downward; median apophysis (MA) spoon-shaped, partly hidden underneath conductor base; embolus very long and slender, originating posteriorly.



FIGS 3-4

Draconarius australis sp. n., ♂ holotype. Male palp, ventral (3) and retrolateral (4) view. Abbreviations: C, conductor; CL, conductor lamella; DC, dorsal apophysis of conductor; E, embolus; MA, median apophysis; PA, patellar apophysis; RDTA, retrolateral dorsal tibial apophysis; RTA, retrolateral tibial apophysis. Scale lines: 1.0 mm.

Distribution and habitat: Known only from the type locality. The spider was collected in a forest on the eastern slope of Khao Luang which is part of a series of mountain ridges running through the peninsular. *Draconarius australis* sp. n. marks the southernmost limit of coelotine distribution.

***Draconarius monticola* sp. n.**

Figs 5-7

Type material: HOLOTYPE: ♀, Chiang Mai Province, Chiang Dao District, Doi Chiang Dao, San Pakia, 1380 m, 27.XII.1990, leg. P. J. Schwendinger (MHNG).

PARATYPES: 1 ♀, from the type locality, Huay Mae Kok, 1500 m, 27.I.1996; 1 ♀, Chiang Rai Province, Mae Sai District, Doi Tung, 1350 m, evergreen hill forest, 30.X.1991. All specimens leg. P. J. Schwendinger (MHNG).

Etymology: The specific epithet refers to the habitat of the spiders examined. Latin: *monticola* = mountain dweller; masculine noun in apposition.

Diagnosis: The female can be distinguished from those of other coelotines by small, widely separated epigynal teeth (Figs 5, 6), strongly looped copulatory ducts (with three to four loops) and anterolaterally situated spermathecal heads (Fig. 7).

Description: ♀ (holotype). Total length 10.12. Carapace 4.50 long, 3.03 wide. Abdomen 5.52 long. Promargin of cheliceral groove with 3 teeth, retromargin with 5.

Eye sizes and interdistances: AME 0.12, ALE 0.20, PME 0.16, PLE 0.16; AME-AME 0.10, AME-ALE 0.08, PME-PME 0.16, PME-PLE 0.30, ALE-PLE 0.08; MOQ 0.44 long, anterior width 0.44, posterior width 0.50. Clypeus height 0.12.

Leg measurements:

	I	II	III	IV
Femur	3.56	3.25	3.00	3.50
Patella + Tibia	4.36	3.94	3.10	4.20
Metatarsus	3.01	2.98	2.52	3.48
Tarsus	1.86	1.26	1.21	1.50
Total	12.79	11.43	9.83	12.68

Epigyne and vulva (Figs 5-7): Epigynal teeth small, widely separated from each other and from atrial margins; atrium small, situated close to epigastric furrow; copulatory ducts (CD) long and slender, originating posteriorly, winding three to four loops around spermathecae; spermathecal heads (SH) thin and elongated, situated anteriorly; spermathecal bases (SB) broad, widely separated; spermathecal stalks (SS) broad, anteriorly extending and converging.

Distribution and habitat: Known from the Thai provinces of Chiang Rai and Chiang Mai. *Draconarius monticola* sp. n. was collected from evergreen hill forests between ca 1350-1500 m.

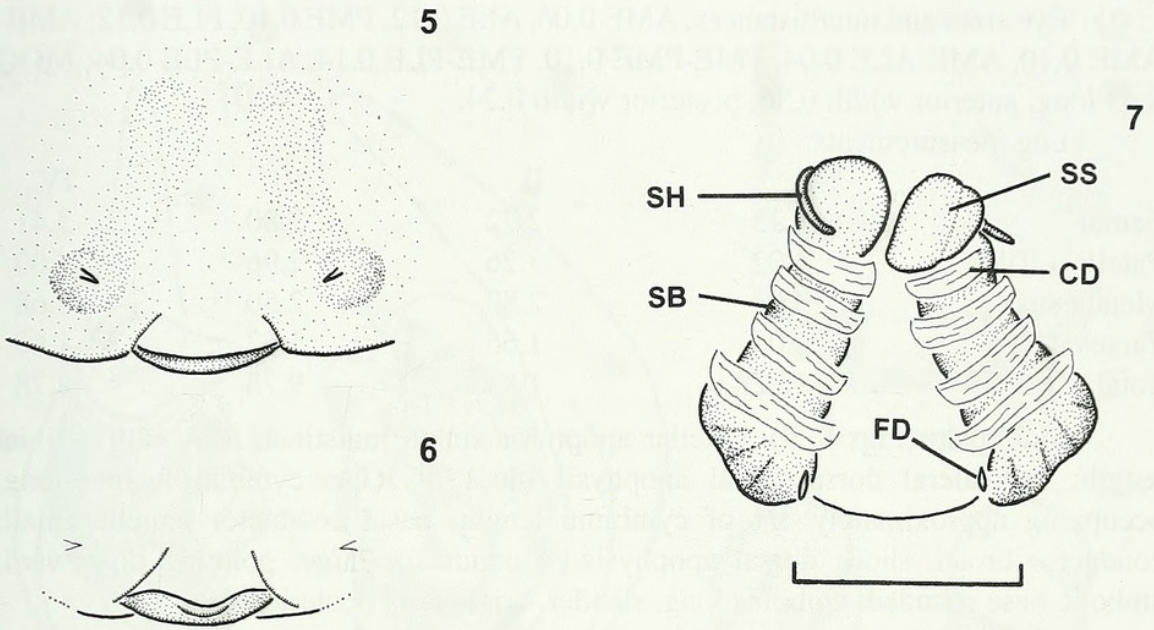
***Draconarius montis* sp. n.**

Figs 8, 9

Type material: HOLOTYPE: ♂, Nakhon Ratchasima Province, Khao Yai National Park, between the mountains near Heo Suwat Waterfall, 580 m, 29.IX.1994, leg. P. J. Schwendinger (MHNG).

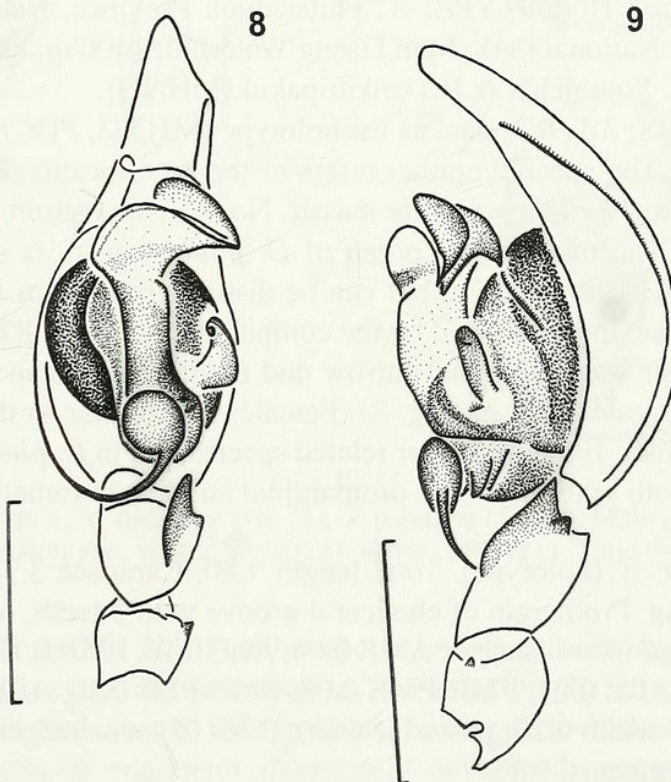
Etymology: The specific epithet refers to the habitat from where the holotype was collected (Latin: *mons*, *montis* = mountain). Noun in apposition (in genitive case).

Diagnosis: *Draconarius montis* sp. n. is similar to *D. anthonyi* Dankittipakul & Wang, 2003 but can be distinguished from the latter species by the presence of a minute patellar apophysis (absent in *D. anthonyi*) and by the round embolic base (Fig. 8).



FIGS 5-7

Draconarius monticola sp. n., ♀ holotype. Epigyne, ventral view (5, 6). Vulva, dorsal view (7). Abbreviations: CD, copulatory duct; FD, fertilization duct; SB, spermathecal base; SH, spermathecal head; SS, spermathecal stalk. Scale lines: 0.5 mm.



FIGS 8-9

Draconarius montis sp. n., ♂ holotype. Male palp, ventral (8) and retrolateral (9) view. Scale lines: 1.0 mm.

Description: ♂ (holotype). Total length 7.12. Carapace 3.71 long, 2.52 wide. Abdomen 3.08 long. Clypeus height 0.20. Promargin of cheliceral groove with 5 teeth, retromargin with 5.

Eye sizes and interdistances: AME 0.06, ALE 0.12, PME 0.10, PLE 0.12; AME-AME 0.10, AME-ALE 0.04, PME-PME 0.10, PME-PLE 0.14, ALE-PLE 0.04; MOQ 0.43 long, anterior width 0.36, posterior width 0.24.

Leg measurements:

	I	II	III	IV
Femur	3.15	2.72	2.80	3.41
Patella + Tibia	4.02	3.26	2.96	4.09
Metatarsus	3.01	2.80	2.50	3.68
Tarsus	2.05	1.65	1.52	1.60
Total	12.23	10.43	9.78	2.78

Male palp (Figs 8, 9): Patellar apophysis small, indistinct; RTA half of tibial length; retrolateral dorsal tibial apophysis close to RTA; cymbial furrow long, occupying approximately 3/4 of cymbium length; basal conductor lamella small; conductor broad, short; dorsal apophysis of conductor large, pointing downward; embolic base rounded; embolus long, slender, originating posteriorly.

Distribution and habitat: Known only from the type locality. *Draconarius montis* sp. n. is the first coelotine spider recorded from northeastern Thailand.

***Draconarius phuhin* sp. n.**

Figs 10-14

Type material: HOLOTYPE: ♂, Phitsanulok Province, Nakhon Thai District, Phu Hin Rong Kla National Park, Man Daeng Waterfall, 1400 m, evergreen hill forest, 15.IX.2002, leg. S. Sonthichai & P. Dankittipakul (MHNG).

PARATYPES: 3♂, 6♀, data as for holotype (MHNG, PDC).

Etymology: The specific epithet refers to the type locality, Phu Hin Rong Kla National Park. Thai: *Phu Hin* = granite massif. Noun in apposition.

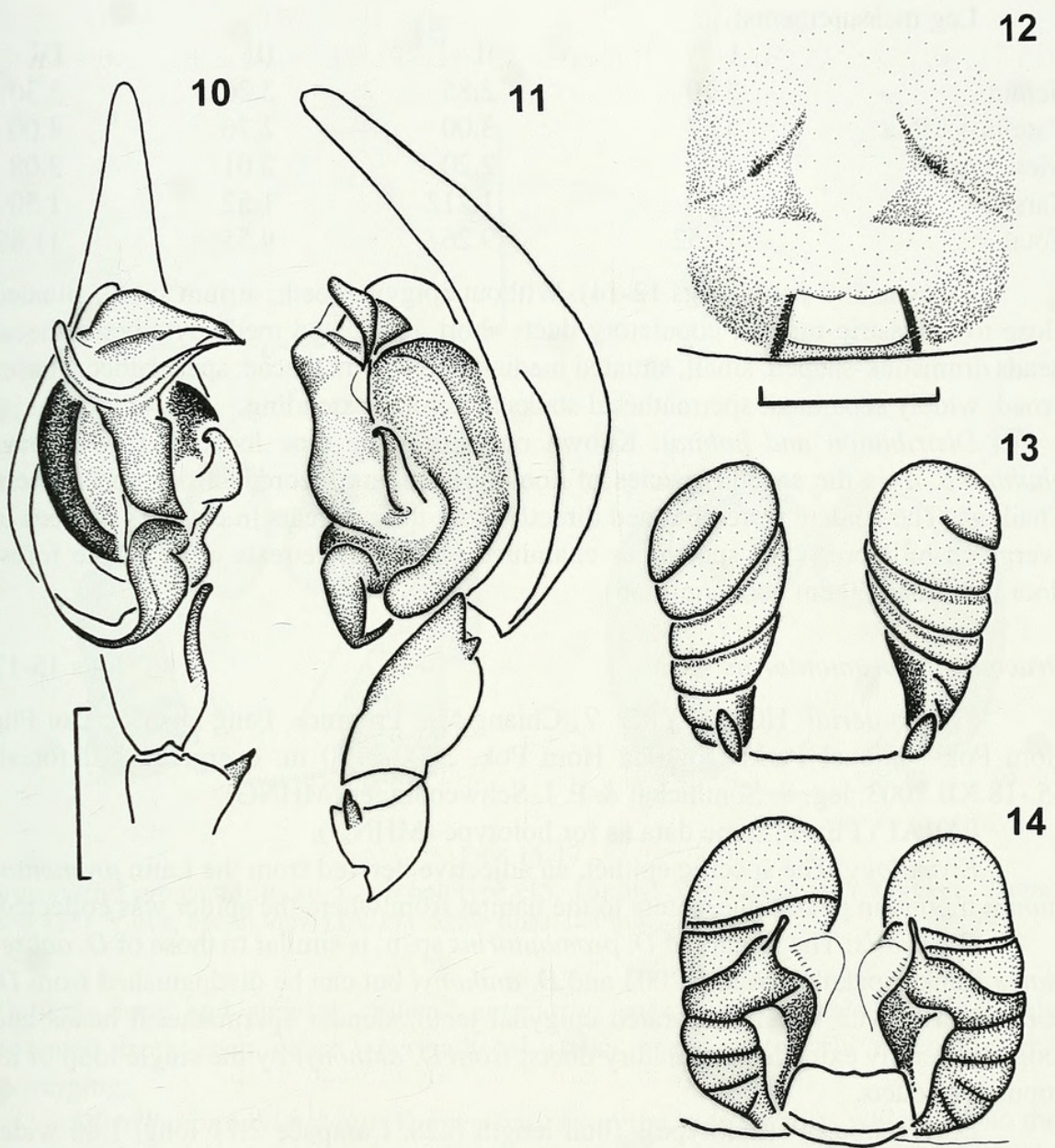
Diagnosis: The male palpal organ of *D. phuhin* sp. n. is similar to those of *D. anthonyi* and *D. australis* sp. n. but can be distinguished from *D. anthonyi* by the presence of a patellar apophysis and by the comparatively longer RTA; from *D. montis* sp. n. by the shorter lateral cymbial furrow and the different shapes of their embolic bases (round in *D. montis* sp. n., Fig. 8). Females are similar to those of *D. wudanensis* (Chen & Zhao, 1997) and other related species, but in *D. phuhin* sp. n. epigynal teeth are absent. Both sexes have five promarginal and five retromarginal teeth on their cheliceral groove.

Description: ♂ (holotype). Total length 7.80. Carapace 3.76 long, 2.58 wide. Abdomen 3.61 long. Promargin of cheliceral groove with 5 teeth, retromargin with 5.

Eye sizes and interdistances: AME 0.04, ALE 0.16, PME 0.12, PLE 0.12; AME-AME 0.06, AME-ALE 0.04, PME-PME 0.08, PME-PLE 0.10, ALE-PLE 0.04; MOQ 0.36 long, anterior width 0.20, posterior width 0.36. Clypeus height 0.10.

Leg measurements:

	I	II	III	IV
Femur	3.02	2.71	2.38	3.48
Patella + Tibia	3.76	2.90	2.81	3.96
Metatarsus	2.95	2.25	2.13	3.35
Tarsus	2.00	1.45	1.34	1.78
Total	11.73	9.31	8.66	12.57



FIGS 10-14

Draconarius phuhin sp. n., ♂ holotype (10, 11), ♀ paratype (12-14). Male palp, ventral (10) and retrolateral (11) view. Epigyne, ventral view (12). Vulva, ventral (13) and dorsal (14) view. Scale lines: 0.5 mm.

Male palp (Figs 10, 11): Patellar apophysis short, with slightly indented tip; RTA relatively long, occupying more than half of tibial length; retrolateral dorsal tibial apophysis small, situated close to RTA; cymbial furrow narrow, about half of cymbium length; basal lamella of conductor moderately developed; conductor short; dorsal apophysis of conductor triangular; embolus long and slender, originating posteriorly.

♀. Total length 9.25. Carapace 4.08 long, 2.83 wide. Abdomen 4.96 long. Promargin of cheliceral groove with 5 teeth, retromargin with 5.

Eye sizes and interdistances: AME 0.06, ALE 0.14, PME 0.14, PLE 0.16; AME-AME 0.10, AME-ALE 0.06, PME-PME 0.10, PME-PLE 0.12, ALE-PLE 0.06; MOQ 0.38 long, anterior width 0.28, posterior width 0.42. Clypeus height 0.16.

Leg measurements:				
	I	II	III	IV
Femur	3.10	2.85	3.26	3.30
Patella + Tibia	3.87	3.00	2.76	4.00
Metatarsus	2.65	2.20	2.01	3.08
Tarsus	1.90	1.212	1.52	1.50
Total	11.52	9.26	9.55	11.88

Epigyne and vulva (Figs 12-14): Without epigynal teeth; atrium small, situated close to epigastric furrow; copulatory ducts short, originated medially; spermathecal heads drumstick-shaped, small, situated medially on spermathecae; spermathecal bases broad, widely separated; spermathecal stalks anteriorly extending.

Distribution and habitat: Known only from the type locality. *Draconarius phuhin* sp. n. is the second species of coelotine spiders recorded from northeastern Thailand. The spiders were obtained directly from their retreats in crevices of trees in evergreen hill forest. All specimens examined built their retreats close to the forest floor (less than 50 cm above ground).

Draconarius promontorius sp. n.

Figs 15-17

Type material: HOLOTYPE: ♀, Chiang Mai Province, Fang District, Doi Pha Hom Pok National Park, Doi Pha Hom Pok, 2000-2100 m, evergreen hill forest, 15.-18.XII.2003, leg. S. Sonthichai & P. J. Schwendinger (MHNG).

PARATYPE: ♀, same data as for holotype (MHNG).

Etymology: The specific epithet, an adjective derived from the Latin *promontorium* = mountain peak/ridge, refers to the habitat from where the spider was collected.

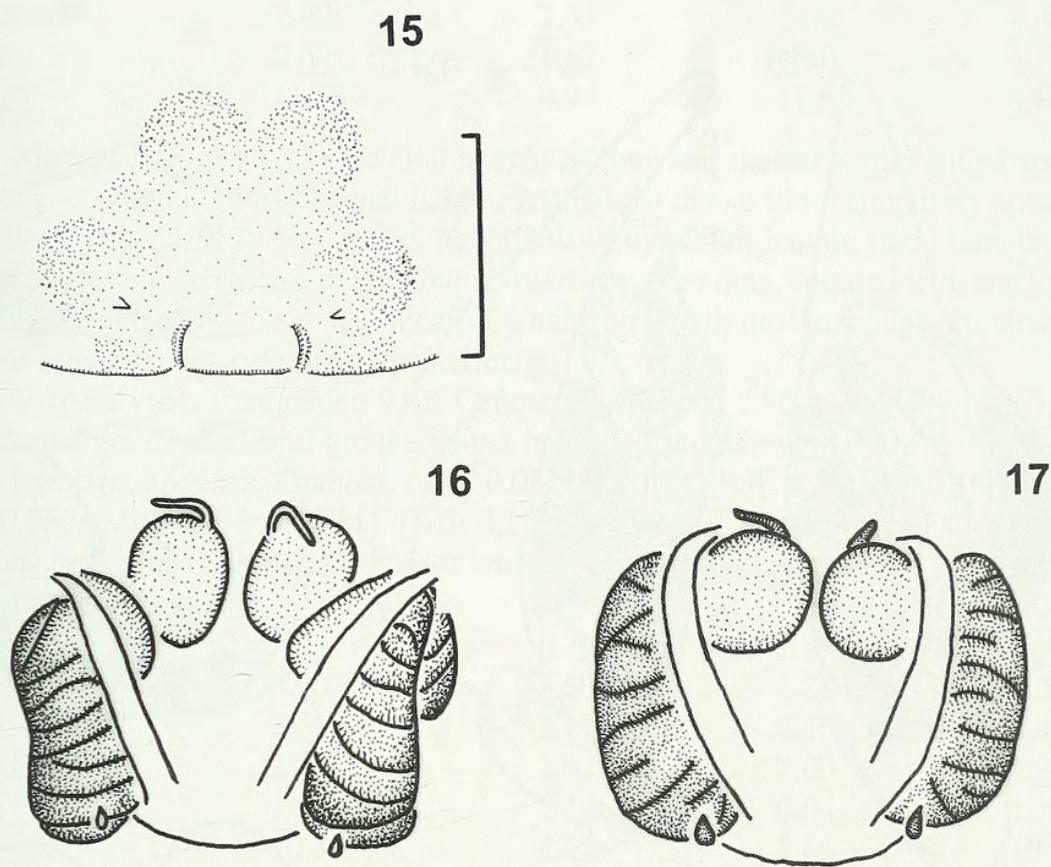
Diagnosis: The female of *D. promontorius* sp. n. is similar to those of *D. abbreviatus* Dankittipakul & Wang, 2003 and *D. anthonyi* but can be distinguished from *D. abbreviatus* by its widely separated epigynal teeth, slender spermathecal heads and looped, laterally extended copulatory ducts; from *D. anthonyi* by the single loop of its copulatory ducts.

Description: ♀ (holotype). Total length 6.28. Carapace 2.71 long, 1.86 wide. Abdomen 3.12 long. Promargin of cheliceral groove with 4 teeth, retromargin with 5.

Eye sizes and interdistances: AME 0.12, ALE 0.12, PME 0.10, PLE 0.14; AME-AME 0.08, AME-ALE 0.06, PME-PME 0.10, PME-PLE 0.14, ALE-PLE 0.06; MOQ 0.40 long, anterior width 0.36, posterior width 0.38. Clypeus height 0.10.

Leg measurements:				
	I	II	III	IV
Femur	2.31	2.00	1.86	2.54
Patella + Tibia	2.72	2.21	1.92	2.76
Metatarsus	1.75	1.45	1.51	2.01
Tarsus	1.02	0.98	0.79	1.00
Total	7.80	6.64	6.08	8.31

Epigyne and vulva (Figs 15-17): Epigynal teeth short, widely separated from each other and from atrial margins; atrium small; copulatory ducts long and slender, originating posteriorly, looped around distal part of spermathecae; spermathecal heads



FIGS 15-17

Draconarius promontorius sp. n., ♀ holotype (15, 16) and ♀ paratype (17). Epigyne, ventral view (15). Vulva, dorsal view (16, 17). Scale lines: 0.5 mm.

relatively long and slender, situated anteriorly; spermathecal bases broad, widely separated from each other; spermathecal stalks broad, anteriorly extending and converging.

Distribution and habitat: Known only from the type locality, which is also the type locality of *D. silvicola* sp. n. Doi Pha Hom Pok is the second highest mountain (2285 m) of Thailand. The specimens were collected from their retreats in a large crevice near the base of a tree in an evergreen hill forest.

***Draconarius schwendingeri* sp. n.**

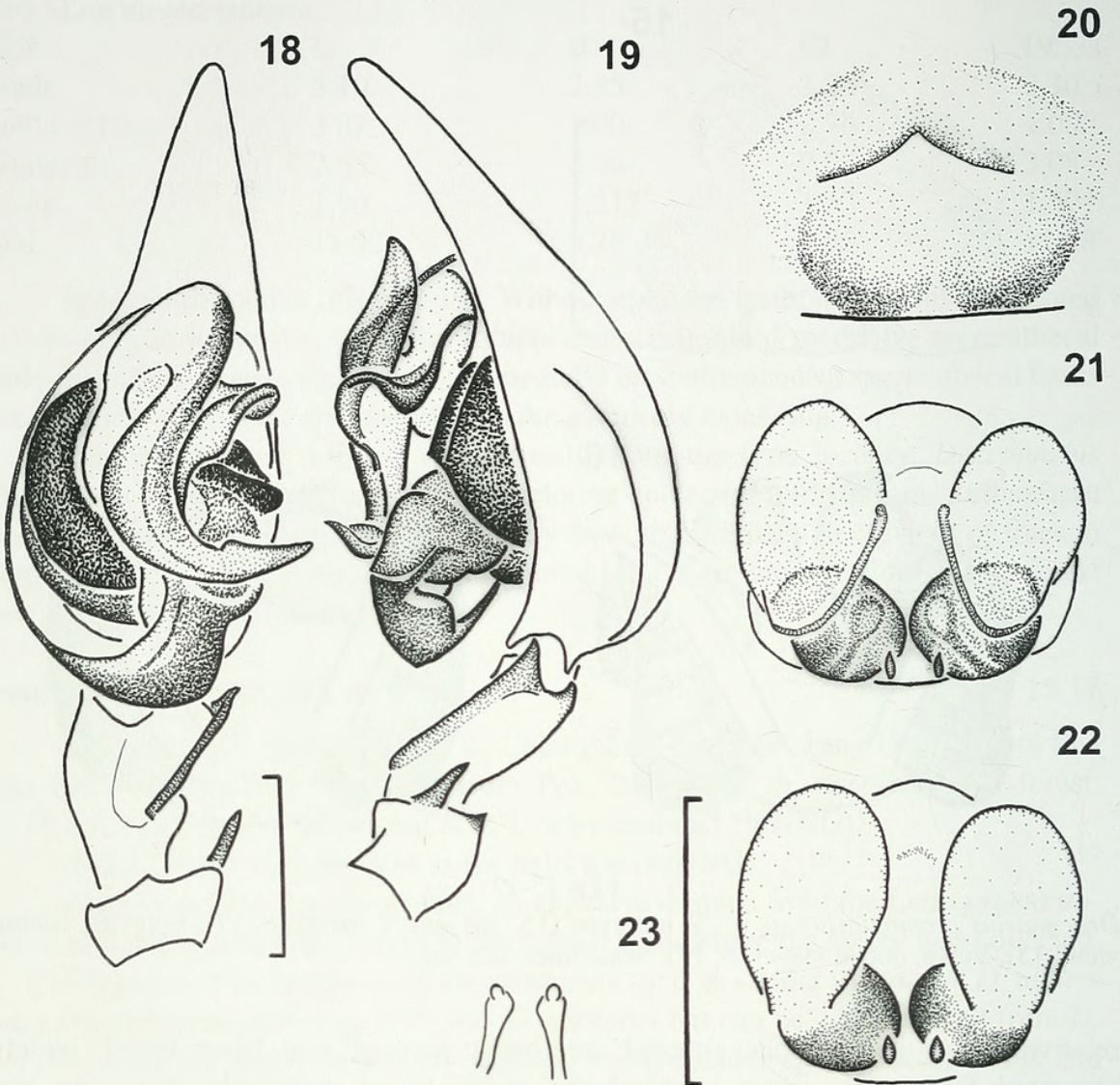
Figs 18-23

Type material: HOLOTYPE: ♂, Nan Province, Tha Wang Pha District, Doi Wao (19°08'12.7"N, 100°38'28.8"E), 1380-1550 m, evergreen hill forest near the summit of the mountain, 15-18.XII.2002, leg. P. J. Schwendinger & S. Sonthichai (MHNG).

PARATYPES: 5♂, 8♀, data as for holotype (MHNG, PDC).

Etymology: The species is named in honor of Dr P. J. Schwendinger (Geneva) who collected the type specimens.

Diagnosis: Females can be recognized by the absence of epigynal teeth, by their large copulatory ducts, rounded spermathecae (Figs 21, 22) and long, slender sper-



FIGS 18-23

Draconarius schwendingeri sp. n., ♂ holotype (18, 19), ♀ paratype (20-23). Male palp, ventral (18) and retrolateral (19) view. Epigyne, ventral view (20). Vulva, dorsal view (21, 22). Tip of spermathecal head (23) Scale lines: 0.5 mm.

mathecal heads (Figs 21, 23). Males can be identified by their long, spiraled, posteriorly extending conductor (Fig. 18).

Description: ♂ (holotype). Total length 6.56. Carapace 3.92 long, 2.73 wide. Abdomen 2.84 long. Promargin of cheliceral groove with 5 teeth, retromargin with 5.

Eye sizes and interdistances: AME 0.04, ALE 0.14, PME 0.15, PLE 0.12; AME-AME 0.06, AME-ALE 0.08, PME-PME 0.10, PME-PL 0.12, ALE-PL 0.04; MOQ 0.34 long, anterior width 0.20, posterior width 0.38. Clypeus height 0.06.

Leg measurements:

	I	II	III	IV
Femur	3.12	2.72	3.40	4.13
Patella + Tibia	3.28	3.10	3.70	4.94

Metatarsus	2.90	2.45	3.02	4.46
Tarsus	2.06	1.67	1.50	1.86
Total	11.36	9.94	11.62	15.39

Male palp (Figs 18, 19): Patellar apophysis long and slender, with pointed apex; RTA long, occupying most of tibial length; retrolateral dorsal tibial apophysis present but indistinct; cymbial furrow broad, about half of cymbium length; basal lamella of conductor present; conductor broad, long, posteriorly extending, spiraled with one loop and with slender apex; dorsal apophysis of conductor small; median apophysis absent; embolus long, slender, originating posteriorly.

♀ (paratype). Total length 9.21. Carapace 4.06 long, 2.90 wide. Abdomen 5.02 long. Promargin of cheliceral groove with 5 teeth, retromargin with 6.

Eye sizes and interdistances: AME 0.06, ALE 0.12, PME 0.14, PLE 0.16; AME-AME 0.06, AME-ALE 0.08, PME-PME 0.10, PME-PLE 0.12, ALE-PLE 0.06; MOQ 0.36 long, anterior width 0.22, posterior width 0.44. Clypeus height 0.12.

Leg measurements:

	I	II	III	IV
Femur	2.90	2.50	2.26	3.00
Patella + Tibia	3.61	2.84	2.45	3.42
Metatarsus	2.53	2.02	2.00	2.86
Tarsus	1.78	1.26	0.94	1.18
Total	10.82	8.62	7.65	10.46

Epigyne and vulva (Figs 20-23): Without epigynal teeth; atrium short and shallow, anteriorly situated; copulatory ducts large, anteriorly extending; spermathecal heads long, slender (Fig. 23); spermathecae broad, rounded, without lateral extension.

Distribution and habitat: Known only from the type locality. The specimens were collected from a road bank in an evergreen hill forest near the summit of the mountain. This is also the type locality for *C. lanna* sp. n. and *D. tentus* sp. n.

Draconarius silva sp. n.

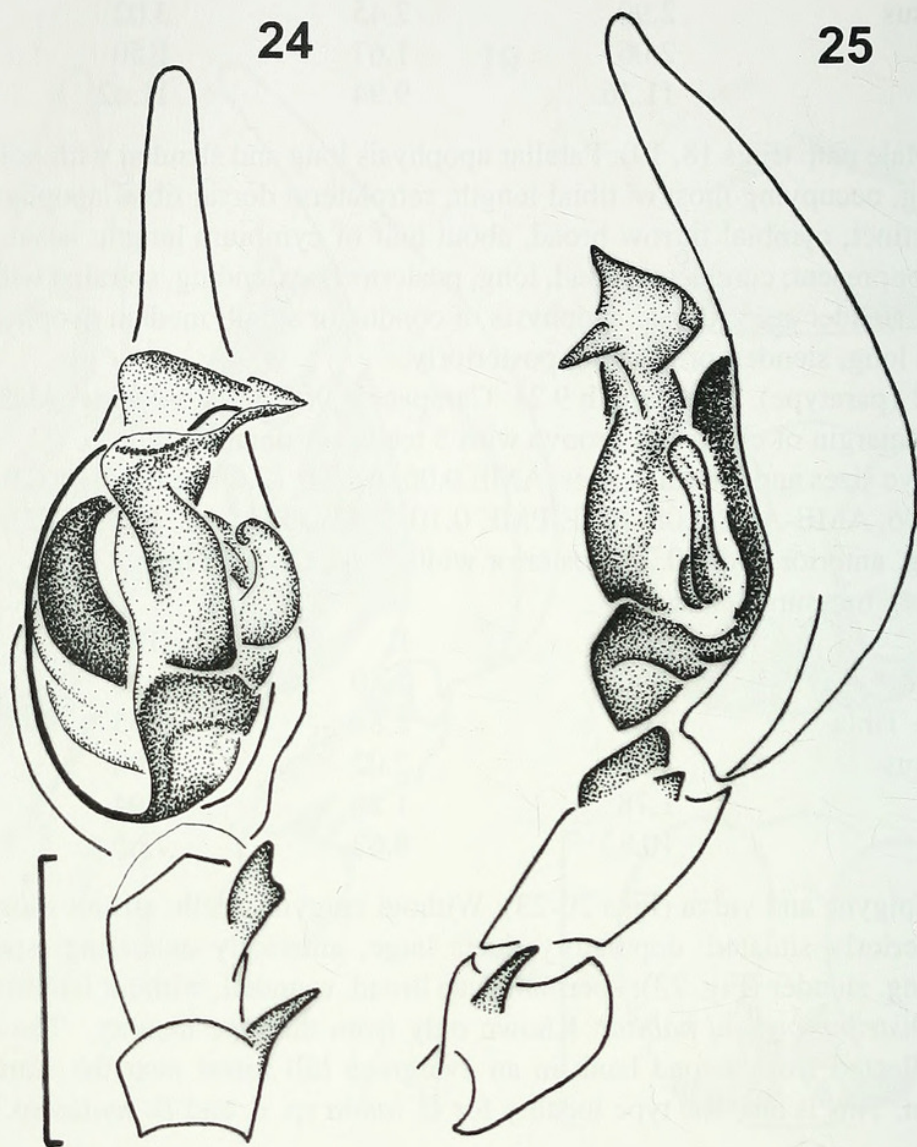
Figs 24, 25

Type material: HOLOTYPE: ♂, Kamphaeng Phet Province, Khlong Lan District, near Khlong Lan Waterfall (16°07'50.8"N, 99°16'41.0"E), 280 m, secondary forest, 11./12.XII.2003, leg. P. J. Schwendinger (MHNG TH-03/18).

Etymology: The specific epithet refers to the habitat of the spider. Latin: *silva* = forest; noun in apposition.

Diagnosis: *Draconarius silva* sp. n. is closely related to *D. abbreviatus*, which was collected from evergreen hill forests of Doi Inthanon National Park, northern Thailand. They share similar characters including short retrolateral tibial apophysis, long patellar apophysis and small conductor lamella. *Draconarius silva* sp. n. can be distinguished from *D. abbreviatus* by the shorter cymbial furrow, the broader conductor, a different shape of the median apophysis and the hooked dorsal apophysis of its conductor.

Description: ♂ (holotype). Total length 7.31. Carapace 4.02 long, 2.51 wide. Abdomen 3.25 long. Promargin of cheliceral groove with 3 teeth, retromargin with 5.



FIGS 24-25

Draconarius silva sp. n., ♂ holotype. Male palp, ventral (24) and retrolateral (25) view. Scale lines: 1.0 mm.

Eye sizes and interdistances: AME 0.10, ALE 0.18, PME 0.16, PLE 0.12; AME-AME 0.08, AME-ALE 0.06, PME-PME 0.10, PME-PL 0.14, ALE-PL 0.04; MOQ 0.46 long, anterior width 0.32, posterior width 0.46. Clypeus height 0.18.

Leg measurements:

	I	II	III	IV
Femur	4.12	3.65	3.10	4.03
Patella + Tibia	5.03	4.46	3.21	4.76
Metatarsus	4.01	3.54	3.25	4.50
Tarsus	2.18	1.85	1.73	2.00
Total	15.34	13.50	11.29	15.29

Male palp (Figs 24, 25): Patellar apophysis long, with pointed apex; RTA very short, less than half of tibial length; retrolateral dorsal tibial apophysis triangular; cymbial furrow narrow and short, occupying about 1/4 of cymbium length; basal conductor lamella relatively small; conductor broad, with point apex; dorsal apophysis of conductor triangular; median apophysis long, spoon-shaped; embolus relatively short, originating posteriorly.

Distribution and habitat: Known only from the type locality. *Draconarius silva* sp. n. is the first coelotine spider recorded from western Thailand. Most coelotine spiders in Thailand were collected from evergreen forests on the upper slopes of mountains that provide constantly low temperature and high humidity all year round. *Draconarius silva* sp. n. surprisingly lives in a secondary lowland forest with an annual rainfall of less than 1000 mm; the mean annual temperature of the type locality is relatively high.

***Draconarius silvicola* sp. n.**

Figs 26, 27

Type material: HOLOTYPE: ♀, Chiang Mai Province, Fang District, Doi Pha Hom Pok National Park, Doi Pha Hom Pok, 2000-2100 m, evergreen hill forest, 15.-18.XII.2003, leg. S. Sonthichai, P. J. Schwendinger & P. Dankittipakul (MHNG).

Etymology: The specific epithet refers to the habitat of the spider. Latin: *silvicola* = forest dweller; masculine noun in apposition.

Diagnosis: Somatic characters of *D. silvicola* sp. n. correspond well with the recent definition of the subfamily Coelotinae by Wang (2002). The species possesses long PLS and cylindrical gland spigots on PLS and PMS (see Wang, 2002). However, its epigyne is intermediate between those of coelotines and other amaurobiids. The atrium is relatively large. Though copulatory ducts are present or visible, its spermathecal stalks and spermathecal heads are indistinct. *Draconarius silvicola* sp. n. is recognized by the absence of epigynal teeth, by its anteriorly originating, posteriorly extending and anteriorly looped copulatory ducts, and the broad, anteriorly elongated spermathecae (Figs 26, 27).

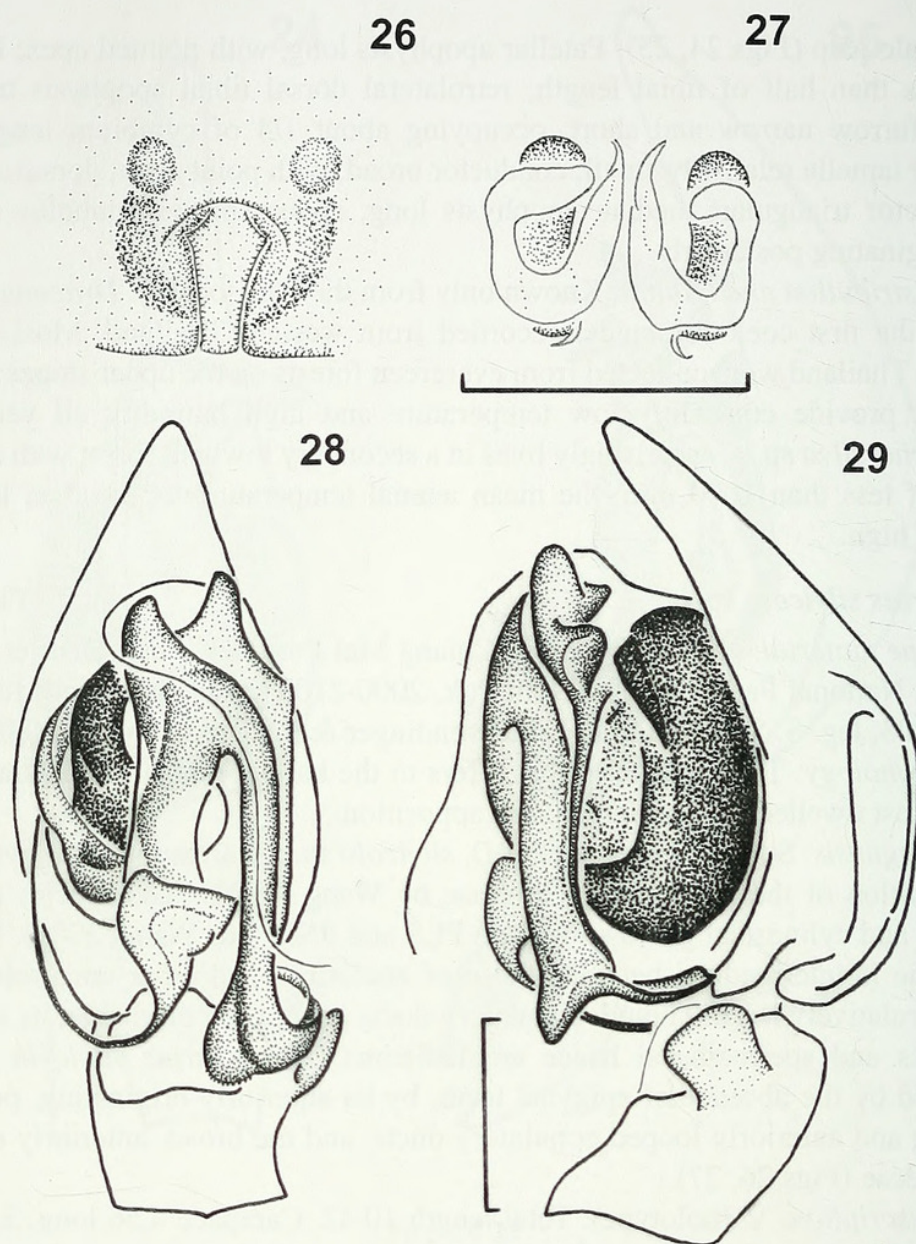
Description: ♀ (holotype). Total length 10.42. Carapace 4.56 long, 3.10 wide. Abdomen 5.83 long. Promargin of cheliceral groove with 3 teeth, retromargin with 2.

Eye sizes and interdistances: AME 0.12, ALE 0.20, PME 0.20, PLE 0.16; AME-AME 0.10, AME-ALE 0.10, PME-PME 0.10, PME-PL 0.20, ALE-PL 0.08; MOQ 0.54 long, anterior width 0.36, posterior width 0.44. Clypeus height 0.10.

Leg measurements:

	I	II	III	IV
Femur	3.56	3.01	2.71	3.61
Patella + Tibia	3.42	3.55	2.96	4.08
Metatarsus	3.00	2.27	2.10	3.10
Tarsus	1.82	1.53	1.32	1.86
Total	11.80	10.36	9.09	12.65

Epigyne and vulva (Figs 26, 27): Without epigynal teeth; atrium large, with distinct median carina; copulatory ducts large, originating anteriorly, extending posteriorly and looped anteriorly; spermathecal heads indistinct; spermathecae broad, longitudinally elongated, widely separated.



FIGS 26-29

Draconarius silvicola sp. n. (26, 27), ♀ holotype. Epigyne, ventral view (26). Vulva, dorsal view (27). *Draconarius tentus* sp. n. (28, 29), ♂ holotype. Male palp, ventral (28) and retrolateral (29) view. Scale lines: 0.5 mm.

Distribution and habitat: Known only from the type locality, which is also the type locality of *D. promontorius* sp. n.

Draconarius tentus sp. n.

Figs 28, 29

Type material: HOLOTYPE: ♂, Nan Province, Tha Wang Pha District, Doi Wao (19°08'12.7"N, 100°38'28.8"E), 1380-1550 m, evergreen hill forest near the summit of the mountain, 15.-18.XII.2002, leg. P. J. Schwendinger & S. Sonthichai (MHNG).

Etymology: The specific epithet refers to the unusually long and twisted conductor. Latin: *tentus* (or *tensus*) is the participle of *tendere* = to extend, to stretch.

Diagnosis: The male of *D. tentus* sp. n. can be distinguished from those of other coelotines by its extremely long, posteriorly extending conductor, its strongly elevated RTA, the absence of a patellar apophysis, the absence of a retrolateral dorsal tibial apophysis, and the absence of a median apophysis (Figs 28, 29). The male can be easily recognized by the dark brown pars cephalica of the carapace and by the long ventral hairs on the femora of the anterior legs.

Description: ♂ (holotype). Total length 8.64. Carapace 4.70 long, 3.00 wide. Abdomen 4.06 long. Promargin of cheliceral groove with 3 teeth, retromargin with 3.

Eye sizes and interdistances: AME 0.12, ALE 0.16, PME 0.18, PLE 0.20; AME-AME 0.10, AME-ALE 0.06, PME-PME 0.12, PME-PLE 0.10, ALE-PLE 0.06; MOQ 0.44 long, anterior width 0.32, posterior width 0.50. Clypeus height 0.08.

Leg measurements:

	I	II	III	IV
Femur	3.64	3.00	2.63	3.48
Patella + Tibia	4.12	3.74	2.36	4.02
Metatarsus	3.02	2.25	2.00	3.00
Tarsus	1.46	1.35	1.10	1.20
Total	12.24	10.34	8.09	11.70

Male palp (Figs 28, 29): Without patellar apophysis; RTA short, blunt conspicuously projecting away from tibia; retrolateral dorsal tibial apophysis absent; cymbial furrow deep and narrow, occupying approximately half of cymbium length; basal conductor lamella relatively large; conductor elongate, strongly extending posteriorly and reaching the level of the tibia, with grooved, spoon-like, anteriorly bent apex; dorsal apophysis of conductor small; median apophysis absent; embolus long, slender, originating posteriorly.

Distribution and habitat: Known only from the type locality, which is also the type locality of *C. lanna* sp. n. and *D. schwendingeri* sp. n.

DISCUSSION

The inventory of Thai coelotine spiders has increased mainly through the discovery of several *Draconarius* species in the northern part of the country (Dankittipakul & Wang, 2003, 2004). A recent excursion organized by Chiang Mai University in 2002 surprisingly led to the discovery of an additional genus, *Caronilla*, from the province of Nan. The genus *Coronilla* was originally established for coelotine spiders described from eastern China (Wang, 1994). The only *Coronilla* species previously reported from Southeast Asia, *C. gemata* Wang, 1994, is based on a single male specimen from Vietnam (Wang, 2002). *Coronilla lanna* sp. n. was collected from an evergreen hill forest and corresponds well with the current interpretation of the genus by the absence of epigynal teeth and by the presence of a broad, transverse atrial septum and of a posteriorly expanded posterior epigynal margin. The discovery of *C. lanna* sp. n. in northern Thailand considerably expands the known distribution of the genus *Coronilla* towards the south.

The species *Draconarius tentus* sp. n. from the province of Nan corresponds with other coelotine species in the presence of a lateral cymbial furrow, of a conductor lamella and of the usual tegular sclerites of males, despite the presence of a distinctly erected RTA instead of one stretched along the tibia as found in other coelotines. It is not a surprise to discover more *Draconarius* species in the northern part of Thailand considering the very wide distributional range of this genus. However, the occurrence of *D. montis* sp. n. in the province of Nakhon Ratchasima, northeastern Thailand, *D. silva* sp. n. in the province of Kamphaeng Phet, western Thailand, and especially *D. australis* sp. n. in the province of Prachuap Khiri Khan, southern Thailand was definitely unexpected. This paper therefore probably records the southernmost occurrence of coelotine spiders.

At present most of the known species of coelotines are confined to mountain ranges, which make up a minor part of the country's land area. From the numbers of species in this and previous studies (Dankittipakul & Wang, 2003, 2004), we estimate that probably less than half of the coelotine spiders present in Thailand are known. It is likely that additional coelotine genera and species, at least those with broad geographical ranges (e.g. *Paracoelotes* Brignoli), occur in Thailand and other Southeast Asian countries as well. With an estimated 40-50 species present, Thailand has probably the richest coelotine fauna in Southeast Asia. Together with the ten new species described in this paper, three coelotine genera comprising twenty nominal species are recently known from the kingdom.

LIST OF COELOTINE SPECIES KNOWN FROM THAILAND

Coelotes Blackwall, 1841

1. *Coelotes thailandensis* Dankittipakul & Wang, 2003

Coronilla Wang, 1994

2. *Coronilla lanna* sp. n.

Draconarius Ovtchinnikov, 1999

3. *Draconarius abbreviatus* Dankittipakul & Wang, 2003
4. *Draconarius anthonyi* Dankittipakul & Wang, 2003
5. *Draconarius australis* sp. n.
6. *Draconarius elatus* Dankittipakul & Wang, 2004
7. *Draconarius inthanonensis* Dankittipakul & Wang, 2003
8. *Draconarius lateralis* Dankittipakul & Wang, 2004
9. *Draconarius monticola* sp. n.
10. *Draconarius montis* sp. n.
11. *Draconarius paralateralis* Dankittipakul & Wang, 2004
12. *Draconarius phuhin* sp. n.
13. *Draconarius promontorius* sp. n.
14. *Draconarius pseudolateralis* Dankittipakul & Wang, 2004
15. *Draconarius schwendingeri* sp. n.
16. *Draconarius siamensis* Dankittipakul & Wang, 2003
17. *Draconarius silva* sp. n.
18. *Draconarius silvicola* sp. n.
19. *Draconarius subulatus* Dankittipakul & Wang, 2003
20. *Draconarius tentus* sp. n.

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Note added in proof

The name *Draconarius monticola* had already been mentioned in Dankittipakul, Chami-Kranon & Wang 2005: 8, figs 13-15. Due to delay in print setting, the corresponding formal description is given here.

- DANKITTIPAKUL, P., CHAMI-KRANON, T. & WANG, X.-P. 2005. New and poorly known species of coelotine spiders (Araneae, Amaurobiidae) from Thailand. *Zootaxa* 970: 1-11.



Dankittipakul, Pakawin, Sonthichai, S, and Wang, Xin Ping. 2006. "Ten new species of coelotine spiders (Araneae, Amaurobiidae) from Thailand." *Revue suisse de zoologie* 113, 3–21. <https://doi.org/10.5962/bhl.part.80337>.

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