

Two new trap-door spiders from Thailand (Araneae, Mygalomorphae, Idiopidae)

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Summary

Two new species and a new genus of idiopid trap-door spiders from Thailand are described: *Prothemienops siamensis* n. gen. & n. sp. and *Idiops pylorus* n. sp. The taxonomic position of *Prothemienops* n. gen. is discussed. *I. pylorus* n. sp. is compared with related species, and its peculiar defence mechanism is described. Notes are given on habitat, burrow structure, annual cycle, mating and reproduction.

Introduction

The spider family Idiopidae, recently separated by Raven (1985) from the formerly heterogeneous Ctenizidae, is represented in Asia by three genera: *Idiops* Perty (10 spp.), *Heligmomerus* Simon (2 spp.) and *Scalidognathus* Karsch (3 spp.). No such spiders have hitherto been recorded from Thailand. During 2 years of research in that country I was lucky enough to discover two new idiopid species, which proved to be of great taxonomic and biological interest. The species collected in eastern Thailand occupies an isolated position within the family and cannot be attributed to any of the existing genera. After consulting Dr Raven, I considered it necessary to establish a new genus. The species from the north of the country is biologically noteworthy on account of its sophisticated defence mechanism, not so far recorded for Idiopidae. These remarkable species indicate a rich and fascinating, but still poorly known, spider fauna in Thailand.

Abbreviations: BMNH = British Museum (Natural History), London; MHNG = Muséum d'Histoire naturelle, Genève; NHMW = Naturhistorisches Museum, Wien. AME, ALE, PME, PLE = anterior (posterior) median (lateral) eyes; MOQ = median ocular quadrangle; PMS, PLS = posterior median (lateral) spinnerets. All measurements, if not otherwise indicated, are in mm.

Prothemienops n. gen.

Type-species: Prothemienops siamensis n. sp.

Etymology

Greek: *prothemen*, participium aorist medium of *protithemi* = set in front, place ahead; *ops* = eye; masculine in gender.

Diagnosis

Idiopid spiders with eye groups slightly wider than long, occupying about 1/3 of head width. Eyes arranged in three rows, posterior row widest. ALE close to each other, set on clypeus margin, distinctly in advance of other eyes. Carapace low; fovea slightly recurved or straight. Posterior sternal sigilla present. Scopula present on anterior legs in both sexes.

Prothemienops siamensis n. sp. (Figs. 1-12)

Material examined

Thailand, Khao Kieo: ♂ holotype (matured 20 April 1988; MHNG), 2 ♀ paratypes (MHNG, NHMW), 6 May 1987; leg. Schwendinger.

Diagnosis

Medium-sized spiders with low hirsute carapace and slightly recurved fovea. Eye group in three rows, about 1.3 times wider than long; posterior row widest. Posterior sternal sigilla small and submarginal. Few cuspules only on female maxillae. Anterior legs scopulate; paired tarsal claws with S-shaped row of teeth. Palpal tarsi and leg metatarsi furnished with clavate trichobothria. Vulva with two tubuliform receptacula attached to sclerotised pouches (Fig. 12). Male tarsi pseudosegmented; tibia I with twin coupling spur bearing spines (Figs. 8, 9); palpal tibia with single retrolateral process (Figs. 10, 11). Bulb characterized by moderately extended distal haematodocha, bifurcate paraembolic apophysis and whip-like embolus (Figs. 10, 11).

Male

Total length, including chelicerae, 19.1. Carapace dark brown, 6.8 long, 5.8 wide, hirsute, covered with fine golden hairs, fringed by long black bristles (Fig. 1); pars cephalica low (Fig. 4). Fovea slightly recurved, occupying 1/6 of carapace width at that point. Eye group in three rows, 0.88 long, front width 0.79, back width 1.15, raised on low, dark tubercle, occupying about 1/3 of head width. ALE set in advance of others at anterior carapace margin (Fig. 1). Eye sizes and interdistances: AME 0.22, ALE 0.32, PME 0.14, PLE 0.40; AME-AME 0.19, AME-ALE 0.26, PME-PME 0.42, PME-PLE 0.09, ALE-PLE 0.32. MOQ 0.45 long, front width 0.60, back width 0.68. Sternum reddish brown, 3.5 long, 3.1 wide, with three pairs of small submarginal sigilla. Labio-sternal suture composed of two shallow lateral grooves. Labium 0.6 long, 1.1 wide, maxillae 2.3 long, 1.1 wide; no cuspules or spicules present (Fig. 5). Chelicerae with rastellum on low mound; 8/7 teeth on promargin and 6/6 denticles on retromargin of left/right cheliceral furrow. Legs 4123, reddish brown, except dark brown femora. Two curved processes forming coupling spur on distal prolateral end of tibia I, each bearing two short, stout spines set close together. A long sigmoid spine near base of distal process, a cluster of small spines anterior to proximal one (Figs. 8, 9). Lateral and ventral spines on tibiae, metatarsi and posterior tarsi; patella III with band of short prolateral spines. Filiform trichobothria on tibiae to tarsi; clavate trichobothria on palpal tarsus and distal half of leg metatarsi. Tarsi and metatarsi of legs I, II and tarsus III lightly scopulate. All tarsi slightly curved and pseudosegmented (Fig. 7). Paired tarsal claws armed with S-shaped row of 5-7 teeth (two of them larger than others) on anterior legs, 5-6 on posteriors; unpaired claw unarmed. Measurements:

	I	II	III	IV	Palp
Femur	5.0	4.8	4.2	5.8	2.8
Patella	3.3	3.0	2.4	3.2	1.8
Tibia	3.7	3.5	3.0	5.1	1.8
Metatarsus	4.3	4.0	4.4	6.0	—
Tarsus	2.4	2.2	2.4	3.0	1.0
Total	18.7	17.5	16.4	23.1	7.4

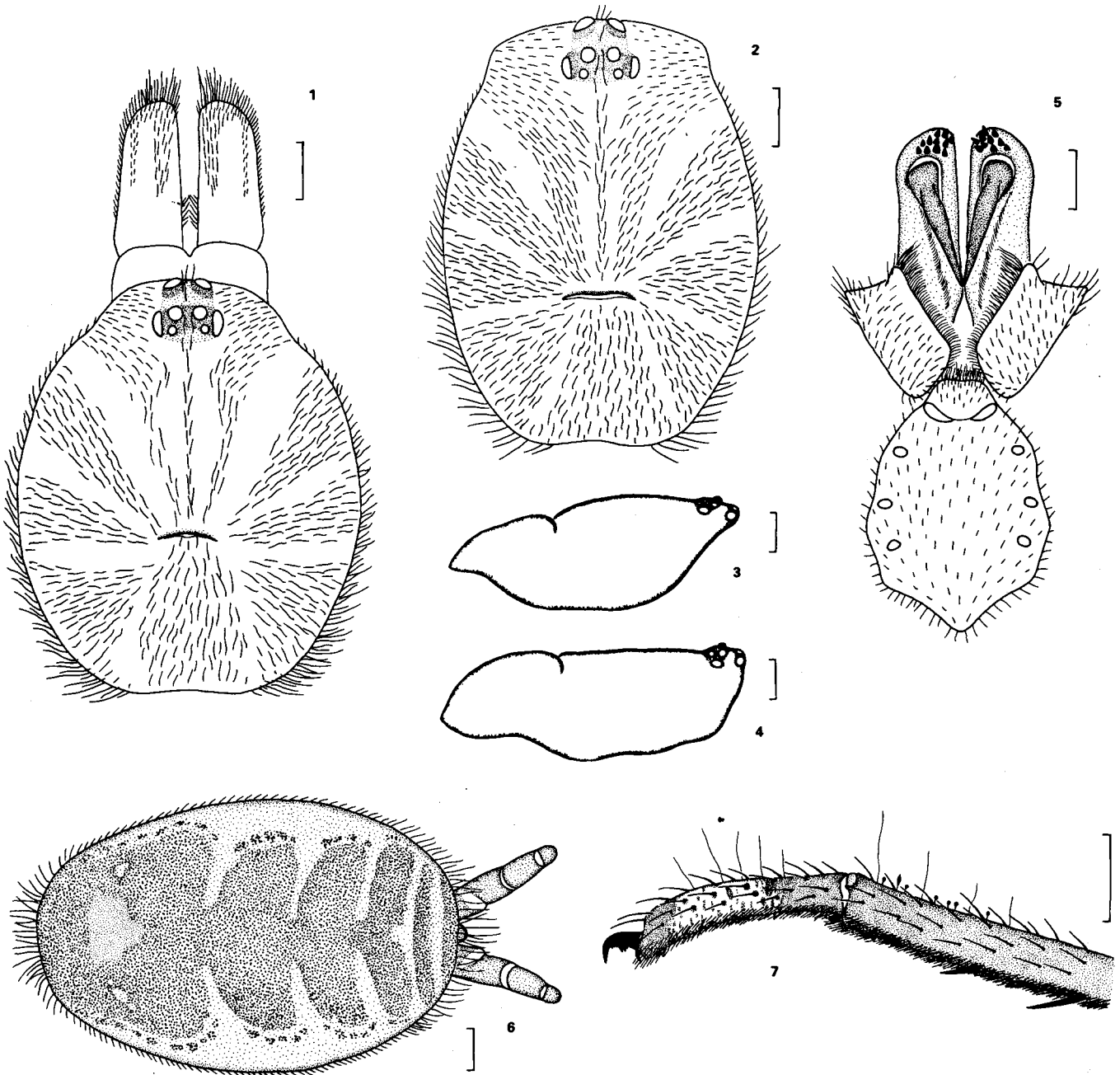
Palp with retrolateral tibial process bearing several small spines. Cymbium terminating in a rounded and a pointed lobe. Distal haematodocha of bulb only moderately extended towards embolus. Bulb with short bifurcate paraembolic apophysis (PA) and long, thin, flexible embolus (E; Figs. 10, 11).

Abdomen light brown, 9.4 long, 6.6 wide; posterior pair of lung plates reddish brown. Integument clothed with long black and short light hairs, ornamented with a faint dark pattern dorsally (Fig. 6). PMS 0.6 long, PLS

2.7 long; PLS apical segment domed, 0.4, median 0.9, basal 1.4.

Female

As in male, except for following: Total length, including chelicerae, 22.2. Carapace reddish brown, 7.0 long, 5.3 wide (Fig. 2); pars cephalica slightly arched (Fig. 3). The second female (mutilated during capture) measures: total length 22.7, carapace length 9.0, width 7.1. Fovea occupying about 1/4 of carapace width at that point. Eye group 0.93 long, front width 0.83, back width 1.25, occupying 1/3 of head width. Eye sizes and interdistances: AME 0.19, ALE 0.34, PME 0.15, PLE 0.31; AME-AME 0.20, AME-ALE 0.31, PME-PME 0.45, PME-PLE 0.11, ALE-PLE 0.39. MOQ 0.48 long, front width 0.60, back width 0.72. Sternum 3.8 long,



Figs. 1-7: *Prothemenops siamensis* n. sp. 1 Male carapace, dorsal view; 2 Female carapace, dorsal view; 3 Female carapace, lateral view; 4 Male carapace, lateral view; 5 Male prosoma, ventral view; 6 Male abdomen, dorsal view; 7 Tarsus and metatarsus of male leg I. Scale lines = 1.0 mm.

3.2 wide. Labium 0.7 long, 1.3 wide. Maxillae 2.7 long, 1.4 wide, with few cuspules at prolateral-proximal corner. Left/right cheliceral furrow with 8/8 teeth on promargin and 10/7 denticles on retromargin. Legs 4123, entirely reddish brown. Scopula on tarsi and metatarsi I, II and on tarsus and distal tibia of palp. Clavate trichobothria on leg metatarsi and palpal tarsus. All tarsi integral and armed with spines. Paired tarsal claws with S-shaped row of 5-6 teeth on anterior legs, 5-7 (mostly 6) on posteriors, unpaired claws bare; palpal claw with 4 teeth. Measurements:

	I	II	III	IV	Palp
Femur	4.5	4.2	3.7	5.1	3.5
Patella	3.2	2.9	2.4	3.3	2.4
Tibia	3.0	2.6	2.2	4.2	2.2
Metatarsus	2.5	2.3	2.7	4.2	—
Tarsus	1.5	1.3	1.6	2.0	2.3
Total	14.7	13.3	12.6	18.8	10.4

Abdomen 11.9 long, 8.4 wide. PMS 0.7 long, PLS 2.6 long; PLS apical segment 0.4, median 0.7, basal 1.5.

Vulva wide, short, with two heavily sclerotised lateral pouches (P) leading into a bent, tubuliform receptaculum (R; Fig. 12).

Distribution

Known only from Khao Kieo, 1160 m, in Khao Yai National Park, Nakhon Ratchasima Province, eastern Thailand.

Natural history

The spiders were found in lower montane rain forest, on a vertical earth bank, beside a stream. They lived in horizontal or slightly inclined burrows, lined with a rigid layer of silk. Each burrow had 2 or 3 entrances from which tubes ran together into a main tube about 2 cm below the ground surface. All entrances were closed by trap-doors. Measurements of the largest burrow (of female) in cm: total length 14, diameter 1.5, one trap-door 2.0 long, 2.1 wide, the other 1.3 long, 1.6 wide. The burrow of the smaller female had a third door. When extracted, all spiders were found behind the smaller door, which was well camouflaged and probably served as an emergency exit. Remnants of ants and fragments of exuviae had been deposited at the bottom of the burrows. When the male moulted, it sealed the tube by interweaving the door with the entrance wall.

Discussion

Prothemenops siamensis n. sp. cannot be unequivocally placed within the subfamilies Arbanitinae (Australia, New Zealand) or Genysinae (India, Ceylon, Madagascar, South America). In common with the Arbanitinae it has a characteristic coupling spur, composed of two processes with spines, on male leg I, and a retrolateral process on male palpal tibia (Figs. 8-11). Both structures are, although less well developed, also present in the genysine genus *Genysa* (cf. Raven, 1985: 60; Simon, 1903: figs. 1061, 1062). Moreover, the eye group of *P. siamensis* n. sp. is much narrower than in the Genysinae, where it is more

than twice as wide as long, and the eye arrangement closely resembles that of the arbanitine tribe Aganippini (Figs. 1, 2; cf. Main, 1957: figs. 2, 3, 25; Main, 1985: figs. 17-23). It has in common with the Genysinae a recurved fovea, which Raven (1985: 61) considers to be synapomorphic for this subfamily. However, a clear distinction of the two groups by the shape of the fovea is not always possible – several arbanitine species of different genera also possess a somewhat recurved fovea (cf. Main, 1985: figs. 39, 81, 142, 149). Considering the geographical separation of both subfamilies and in accord with R. J. Raven (pers. comm.) I tentatively place *Prothemenops* n. gen. in the Genysinae, despite its close resemblance to some Arbanitinae. Further discoveries of idiopid spiders in southeast Asia may show whether the Arbanitinae are actually restricted to Australia and New Zealand, as suggested.

Erecting a monotypic genus is controversial. Nevertheless the newly discovered species cannot be attributed to any known idiopid genus without considerably expanding its generic limits. The unique character combination of eye arrangement and recurved fovea, in addition to genital characters, makes it necessary to establish a new genus. *P. siamensis* n. sp. shows a type of vulva (Fig. 12) hitherto not described in Idiopidae; its bulb, with paraembolic apophysis and whip-like embolus (Figs. 10, 11), resembles that of some South American *Neocteniza* species (Platnick & Shadab, 1976; Goloboff, 1987). Furthermore, clavate trichobothria on metatarsi are most extraordinary; in related taxa they occur only on tarsi, if at all (cf. Main, 1985: 9, 10, 17, 23, 39, 42). Pseudosegmented tarsi in the male (Fig. 7) also indicate an exceptional position among the Idiopidae.

Idiops pylorus n. sp. (Figs. 13, 15, 17, 18, 20-25)

Material examined

Thailand: ♂ holotype, Doi Saket, 450 m, 9 March 1987 (matured 1 June 1987; MHNG); paratypes: 1 ♂, Doi Saket, 450 m, 9 March 1987 (matured 1 June 1987); 1 ♂, Lan Sang National Park, 180 m, 25 July 1987 (matured 27 Nov. 1988); 1 ♀, Doi Saket, 500 m, 17 May 1987; 1 ♀, Mae Hia, 380 m, 7 March 1986; 2 ♀, Mae Taeng, 450 m, 21 Jan. 1987 (one moulted on 4 Aug. 1988 and on 15 Sept. 1989). 12 second instar spiderlings. All specimens leg. Schwendinger; BMNH, MHNG, NHMW.

Etymology

Greek: *pyloros* = gate-keeper; noun in apposition. The specific epithet refers to the mechanism employed by the spiders for plugging their burrows.

Diagnosis

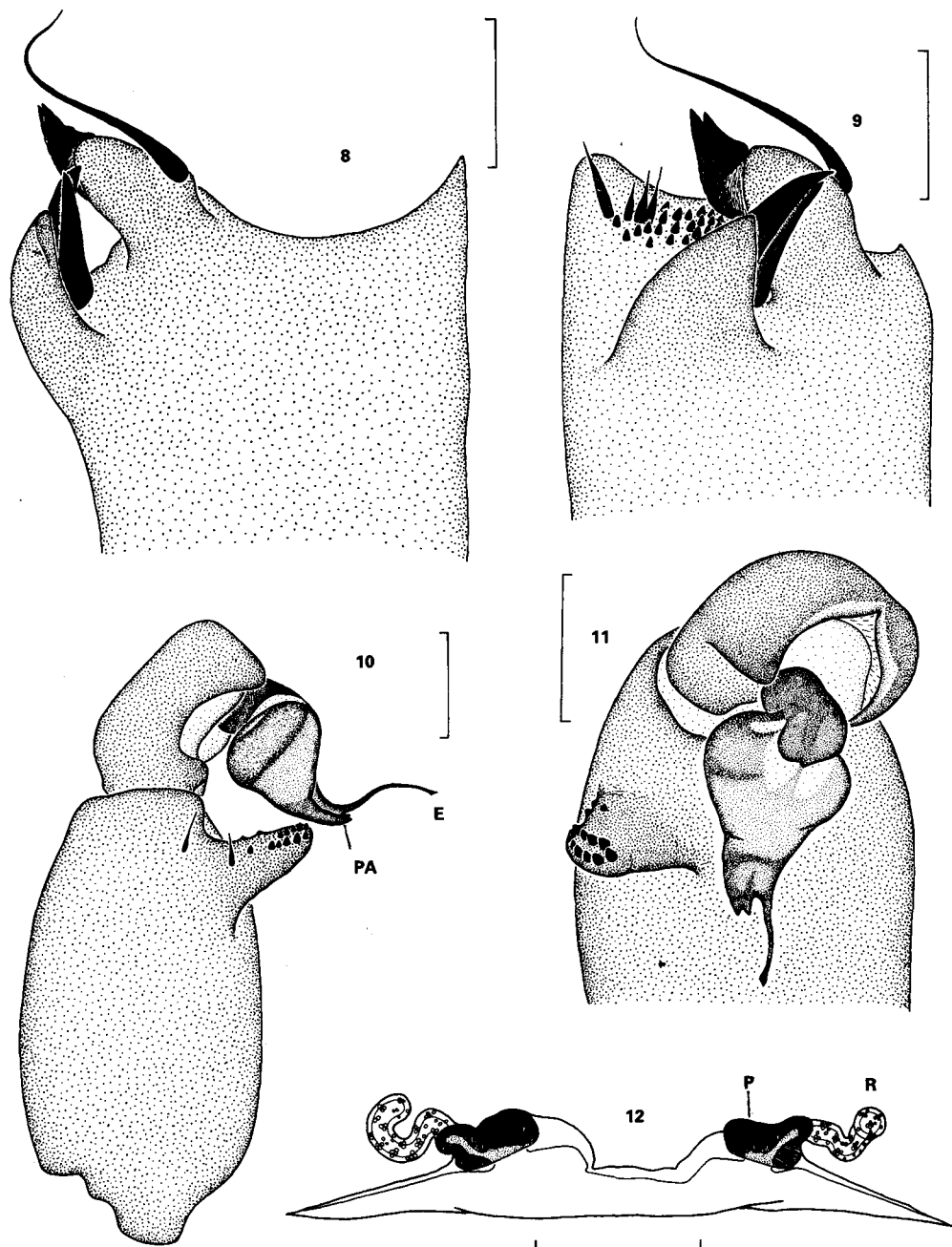
Small spider, distinguished from closely related species by the following characters (see also Discussion): Posterior edge of AME distinctly behind anterior edge of PLE (Fig. 20) and carapace smooth in both sexes. Male tibia I with twin coupling spur bearing

two pointed spines (Figs. 13, 15); metatarsus I with indistinct prolateral process (Fig. 13). Palpal tibia inflated, armed with retrolateral semicircular row of spines (Fig. 18). Vulva with two pyriform, basally sclerotised receptacula on divided genital atrium (Fig. 17).

Male (holotype)

Total length, including chelicerae, 11.7. Carapace light reddish brown, smooth, glabrous, 4.2 long, 3.5 wide (Fig. 20). Pars cephalica arched. Fovea strongly procurved, occupying about 1/5 of carapace width at that point. Eye group in three rows, 0.90 long, front width 0.47, back width 0.96, occupying 1/3 of head width. ALE contiguous, situated on common dark tubercle at front margin of carapace. Remaining eyes

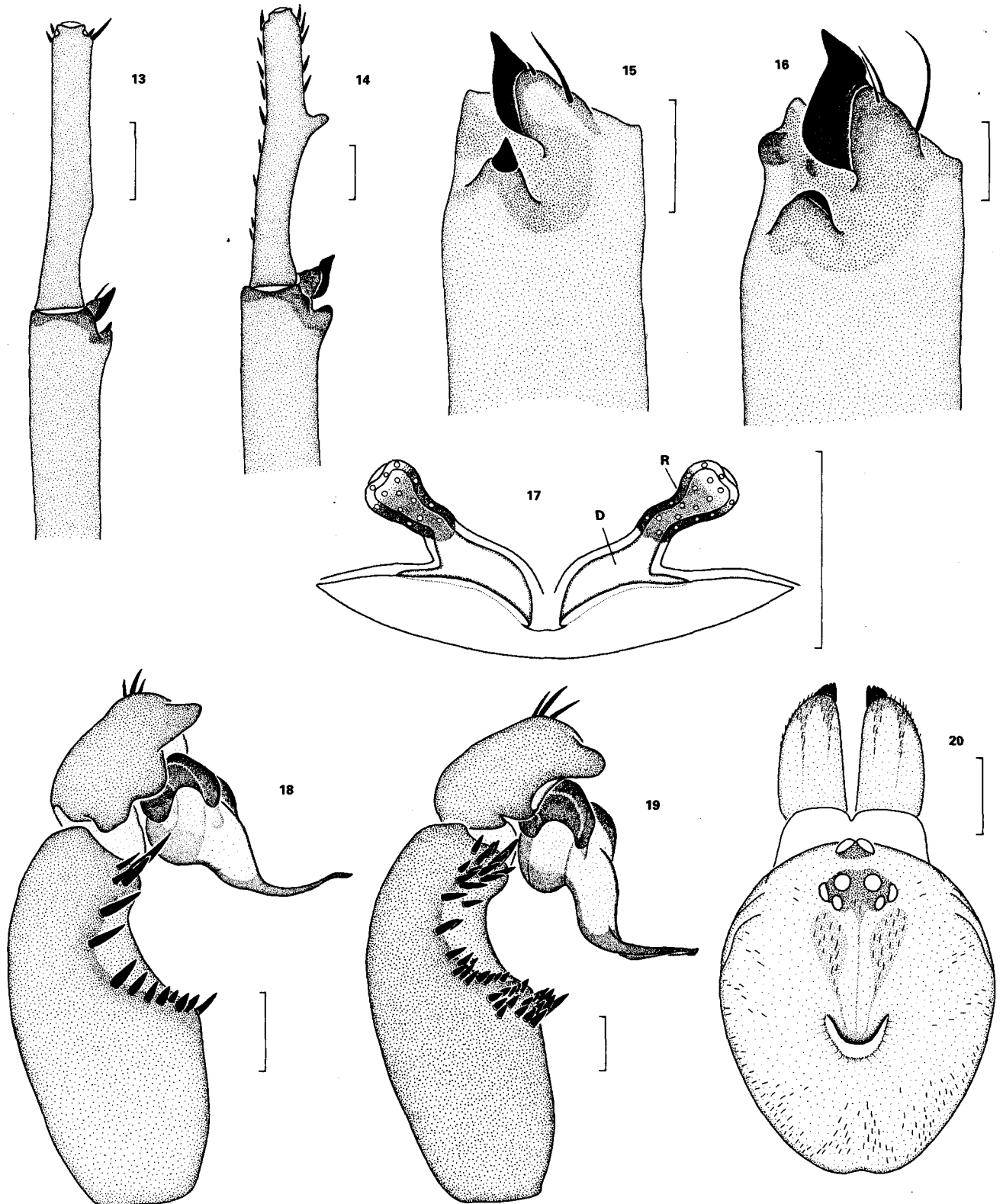
set back, grouped on low mound. PLE situated approximately between centres of AME and PME. Eye sizes and interdistances: AME 0.22, ALE 0.25, PME 0.20, PLE 0.26; AME-AME 0.19, AME-ALE 0.25, PME-PME 0.43, PME-PLE 0.03, ALE-PLE 0.41. MOQ 0.45 long, front width 0.64, back width 0.69. Sternum light brown, 2.4 long, 2.0 wide, posterior sigilla absent. Labio-sternal suture forming a broad band. Labium 0.5 long, 0.8 wide, maxillae 1.5 long, 0.9 wide; both without cuspules. Chelicerae with rastellum raised on distinct mound; furrow with 7/7 teeth on promargin, 4/4 on retromargin and 2/3 intermediate tiny denticles. Legs 4123, light reddish brown above, light brown below. Distal prolateral end of tibia I with two processes, each bearing a short stout spine (Fig. 15). Prolateral process at basal third of metatarsus I



Figs. 8-12: *Prothemenops siamensis* n. sp. **8** Coupling spur on distal end of male tibia I, ventral view; **9** Ditto, prolateral view; **10** Male palp, proventral view; **11** Ditto, retroventral view; **12** Vulva. Abbreviations: E = embolus, P = sclerotised pouch, PA = paraembolic apophysis, R = receptaculum. Scale lines = 0.5 mm. Hairs omitted.

low, indistinct (Fig. 13). All tarsi scopulate and armed with ventrolateral spines, additional ventral spines on tibiae and metatarsi. Filiform trichobothria on tibiae of tarsi. Paired tarsal claws with teeth on medial keel: 4-6/4-5 on pro/retroclaw of anterior legs, 5/4 on posterior legs; unpaired claws bare. Measurements:

	I	II	III	IV	Palp
Femur	4.5	3.5	2.7	4.0	2.3
Patella	2.2	1.6	1.6	2.0	1.3
Tibia	3.2	2.4	1.8	3.5	2.3
Metatarsus	3.4	2.9	3.0	4.1	—
Tarsus	1.8	1.4	1.5	1.8	1.0
Total	15.1	11.8	10.6	15.4	6.9



Figs. 13-20: **13, 15, 17, 18, 20** *Idiops pylorus* n. sp. **14, 16, 19** *Idiops constructor* (Pocock). **13, 14** Tibia and metatarsus of male leg I, dorsal view; **15, 16** Coupling spur on distal end of male tibia I, proventral view; **17** Vulva; **18, 19** Male palp, retrolateral view; **20** Male carapace, dorsal view. Abbreviations: D = funnel-shaped duct, R = receptaculum. Scale lines = 1.0 mm (13, 14, 20), 0.5 mm (15-19). Hairs on legs and palps omitted.

Palpal tibia inflated. Its distal retroventral concavity bordered dorsally by a semicircular row of spines, occupying less than half length of palpal tibia. Distal haematodocha of bulb extending down to base of slender embolus (Fig. 18).

Abdomen uniformly greyish brown, 5.2 long, 3.3 wide. Genital region, pulmonary plates and spinnerets light brown. PMS 0.4 long, PLS 1.2 long; PLS apical segment domed, 0.2, median 0.3, basal 0.7.

Female

As in male, except for following: Total length, including chelicerae, 11.6. Body uniformly light brown. Carapace 4.2 long, 3.3 wide, with a few long, black bristles on and behind eye tubercle. Fovea occupying about 1/4 of carapace width at that point. Eye group 1.00 long, front width 0.42, back width 0.98. Eye sizes and interdistances: AME 0.17, ALE 0.20, PME 0.16, PLE 0.25; AME-AME 0.16, AME-ALE 0.42, PME-PME 0.33, PME-PLE 0.09, ALE-PLE 0.58. MOQ 0.41 long, front width 0.50, back width 0.56. Sternum 2.6 long, 2.1 wide. Labium 0.6 long, 0.9 wide, with few anterior cuspules. Maxillae 1.7 long, 1.0 wide, with broad band of cuspules along prolateral edge. Left/right chelicerae with 4/5 teeth on promargin, 7/8 on retromargin and with 3/4 intermediate denticles. Legs 4123, not scopulate. Strong ventrolateral rows of spines on tibiae to tarsi of anterior legs and palp, irregularly arranged on posterior legs; dorsolateral spines on tibia and metatarsus III and on posterior patellae; dorsal spines on all femora. Paired tarsal claws with one long, and occasionally with an additional small basal tooth (all claws on leg III with 2 teeth), unpaired claws bare; palpal claws with 2 teeth. Measurements:

	I	II	III	IV	Palp
Femur	2.7	2.3	1.8	2.5	2.3
Patella	1.5	1.5	1.5	1.8	1.5
Tibia	1.5	1.3	1.0	1.9	1.5
Metatarsus	1.3	1.2	1.5	2.0	—
Tarsus	0.8	0.8	1.1	1.1	1.6
Total	7.8	7.1	6.9	9.3	6.9

Abdomen greyish brown, 4.9 long, 3.4 wide. PMS 0.5 long, PLS 1.1 long; PLS apical segment domed, 0.1, median 0.3, basal 0.7.

Vulva with divided genital atrium; each half with a funnel-shaped duct (D) running into a pyriform receptaculum (R), which is covered with pores and sclerotised in its basal 2/3 (Fig. 17).

Variation

Carapace length/width in males 4.1-4.3/3.5-3.7 ($n=3$), in reproductive females 3.9-5.0/3.2-4.4 ($n=3$).

Distribution

Known from three localities in Chiang Mai Province, northern Thailand, and from the Lan Sang National Park, Tak Province, northwestern Thailand. The species appears to be widely distributed but is scattered in occurrence.

Natural history

Habitat: *Idiops pylorus* n. sp. lives in open woodland at low altitude, i.e. deciduous dipterocarp-oak savanna and teak plantations, with little or no ground vegetation. The spiders occur on sloping ground or vertical earth banks and road sides. They make their burrows in loamy soil, which hardens to a compact surface in the dry season. During this period, from about November to April, rainfall is sparse, humidity of the atmosphere low (down to 20% RH) and temperature high (up to 40°C in March and April). Towards the end of the dry season forest fires are common.

Burrow: The spider burrows are up to 10 (penultimate ♂: 6-9) cm long and up to 0.9 (p. ♂: 0.4-0.6) cm in diameter, narrower behind the entrance than at the bottom. Fragments of exuviae and prey remnants mixed with soil particles and silk are stored in several layers underneath the bottom of the tube, whereas faeces are sprayed out at the entrance. Burrows are closed by a trap-door, up to 1.0 cm long and wide (p. ♂: 0.6-0.7 long, 0.7-0.9 wide), and lined with a thin, white film of silk, which, in contrast to the thick tapeta of ctenizids, cannot be removed from the soil in one piece. Occasionally the old trap-door remains loosely attached on top of a new one. About 1-2 cm behind the entrance a helmet-shaped pellet, made of saliva and soil, 0.7 cm long and wide, 0.5 cm high (p. ♂: 0.4-0.6 cm), attached to a loose collapsible collar of rigid silk, rests in a chamber in the wall (Figs. 21-23). It serves as a defence mechanism, enabling the spider to plug the passage and to retreat behind the pellet when threatened (Fig. 22; cf. Schwendinger, 1988). A similar mechanism, but operating with a pear-shaped pellet, is employed by the large Australian nemesiid *Stanwellia nebulosa* (Rainbow & Pulleine) (cf. Main, 1967: 45; 1976: 61, 62). Burrows of *I. barkudensis* from eastern India do not possess any comparable structure (cf. Gravely, 1921: pl. 17, fig. 4, pl. 18, fig. 9).

Egg sac and early instars: Lenticular egg sacs, 1.0-1.1 cm long, 0.7-0.8 cm wide, 0.4-0.5 cm thick ($n=3$), were suspended by broad attachment bands from the lateral walls near the bottom of the burrow (Fig. 24). They contained 19, 28 (in the field), and 79 (in captivity) eggs of 0.8 mm diameter. Each female constructed only one egg sac per reproductive period. The offspring emerged through a slit on top of the silken cradle, probably scratched open by the mother. Second instar spiderlings measure: carapace 1.01-1.05 long, 0.88-0.93 wide ($n=12$). They resemble mature females but differ by less pronounced spines, by fovea not so strongly procurved and by cuspules absent on labium.

Annual cycle: Observations in the field and in captivity showed that males mature at the beginning of June and mate in June and July. Females with developing yellow eggs shining through the cuticle of the swollen abdomen can be seen from October onward; they oviposit in February. The spiderlings hatch in early April and leave the maternal tube to build their own tiny burrows at the beginning of the

rainy season in May, when the soil becomes moist and soft enough to allow burrow construction. The first burrows are equipped with trap-doors of 1.5 mm diameter. In captivity a delay in egg development, probably due to low temperature, was observed: copulation in mid-July, oviposition in late April of the following year, offspring hatching in late May. The spiderlings remained in the maternal tube for a few weeks and then emerged to build their own burrows. The female subsequently moulted at the beginning of August. A surprisingly long period of 8-9 months elapses between mating and egg laying. As females moult after the dispersal of their offspring, they may not be ready for the ensuing mating season and hence probably do not reproduce annually. One female built egg sacs in two consecutive years, but the first one was exceptionally small and contained no eggs. Maturation of one male (from Lan Sang) in late November was probably caused by rearing in Austria. Females are long-lived, one is still alive three years after having reproduced. Males refuse prey and die within 2-3 months after maturation.

Behaviour and mating: The spiders usually lurk at the burrow entrance (Fig. 21) to ambush small arthropods that pass by. If the captured prey does not prove tasty or struggles too much, it is pushed away vigorously. In the latter case a second attack is often more successful. If one tries to open the burrow, the occupant first holds the door shut and then retreats to pull the pellet into the tube and keeps it closed from behind (Fig. 22). The pellet can be brought back to its original position with a hooked needle, while the spider clings to it with all its strength. Without a tool, one has to dig along the sides or right through the compact soil plug to reach the spider. Thus the soil plug may effectively prevent attacks from enemies such as centipedes and parasitic wasps.

Mating was observed in captivity in mid-July. A male, placed in a box containing a female with burrow, soon actively started to examine the ground with his long first pair of legs, while keeping his palps raised

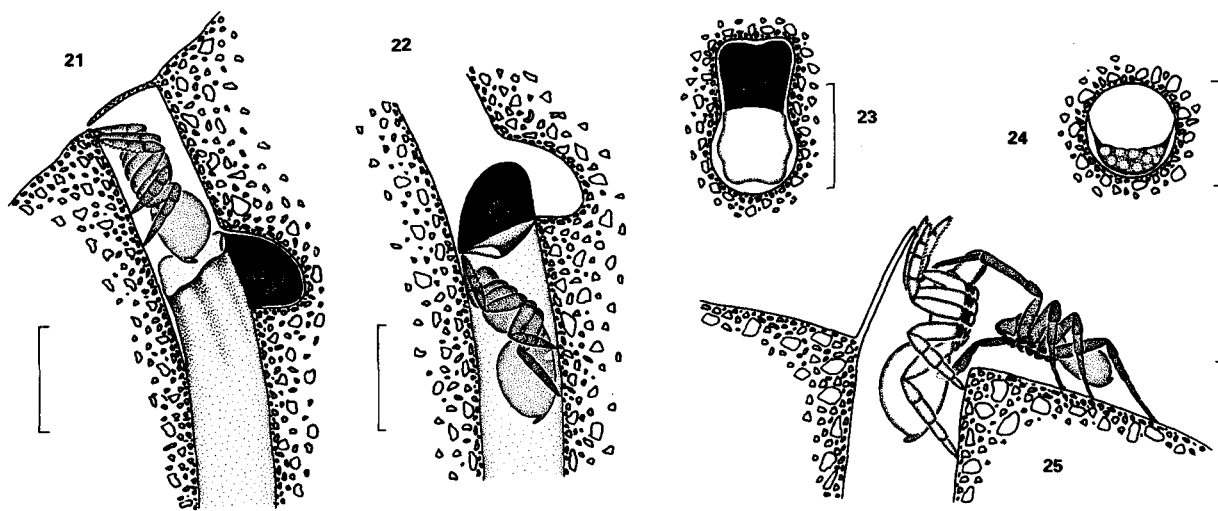
high above his head. The female then opened her trap-door, stretched forth the tips of her anterior legs and made forward strokes, as in prey capture, but without seizing the male. Now aware of the female, the male started tapping her trap-door and legs with his first pair of legs, then placed them at the outside of her chelicerae and hooked the coupling spurs to the base of her fangs. Then he pushed forwards and lifted her prosoma out of the burrow into an upright position (Fig. 25), alternately inserted his bulbs (each one 2-3 times) for a total of about 10 minutes and then quickly withdrew. Nine months later the female successfully reproduced.

Remarks

The catalogues of Roewer (1942), Bonnet (1957, 1958, 1959) and Brignoli (1983) list 94 species and one subspecies of *Idiops* Perty, including representatives of genera placed in synonymy, i.e. *Acanthodon* Guérin, *Juambeltzia* Mello-Leitão, *Pachyidiops* Simon, *Pseudidiops* Simon and *Titanidiops* Simon. The genus is widely distributed in South America, Africa and continental Asia. From the latter region 10 species are described: India: *I. barkudensis* (Gravely), *I. biharicus* Gravely, *I. constructor* (Pocock), *I. designatus* O. P.-Cambridge, *I. fortis* (Pocock), *I. fossor* (Pocock), *I. garoensis* (Tikader), *I. madrasensis* (Tikader), *I. opifex* (Pocock); Burma: *I. crassus* Simon. The newly described species marks the most eastern occurrence of the genus.

Comparative material examined

Two species from India were examined for comparison: *Idiops fossor*, ♂ holotype, Deccan, western India (BMNH 1989.8.17.1); *Idiops constructor*, 1 ♂, 1 ♀ syntypes, Chingleput, south-eastern India (BMNH 1898.10.1.1-2) and 1 ♀, 1 juv. ♂, without locality (BMNH; Figs. 14, 16, 19).



Figs. 21-25: *Idiops pylorus* n. sp. **21** Spider in ambush behind the trap-door; collar and pellet in an open position; **22** Spider plugging its burrow with pellet; **23** Section through upper portion of burrow with pellet; **24** Section through lower portion of burrow with egg sac; **25** Mating pair; male dark, female light. Scale lines = 10 mm.

Discussion

I. pylorus n. sp. closely resembles *I. constructor*, but the male differs by a pointed spine on the proximal process of tibia I, by an indistinct prolateral process on metatarsus I, by fewer spines on retrolateral palpal tibia and by the shape of the embolus (Figs. 13, 15, 18; cf. Figs. 14, 16, 19). A similar inflated palpal tibia, as in these two species, occurs also in *I. barkudensis* and *I. garoensis* (cf. Gravely, 1921: fig. 1c; Tikader, 1977: fig. 4), whereas in *I. fossor* and *I. designatus* it is slender and almost cylindrical, bearing only a short band of retrolateral spines (cf. Cambridge, 1885: pl. 1, fig. 1c). A distinct prolateral process on male metatarsus I as in *I. constructor* is evident only in *I. fossor*, whereas in *I. barkudensis*, *I. biharicus* (cf. Gravely, 1915: 262), *I. pylorus* n. sp. and *I. designatus* it is either lacking or is indicated only by a low hump. *I. constructor* females differ from *I. pylorus* n. sp. by AME entirely in front of PLE (posterior edge of AME on a level with the anterior edge of PLE) and by a median band of spinules on ventral coxa IV (Pocock, 1900: 163). Moreover, there is sexual dimorphism in the carapace sculpture of *I. constructor*. As in *I. biharicus* and *I. garoensis* small wart-like tubercles (also found in the type of *I. fossor* but not mentioned in the original description) are present; the female carapace is smooth. The vulva of *I. pylorus* n. sp. (Fig. 17) is similar to that of *I. madrasensis* but differs by receptacula sclerotised in their basal portion (cf. Tikader, 1977: fig. 10).

Finally it should be mentioned that the *Idiops* specimens examined do not correspond to the key character "... eye group much longer than wide ..." given by Raven (1985: 138) for the subfamily Idiopinae. The eye group in *I. fossor* is only slightly longer than wide (length: width = 1:0.90), whereas in the other species it is slightly wider than long or equal: *I. constructor* 1:1.11/1.03, *I. pylorus* n. sp. 1:1.00-1.09. A similar eye arrangement occurs also in other *Idiops* spp. (cf. Tikader, 1977: figs. 1, 6; Cambridge, 1885: pl. I, fig. 1b).

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Note added in proof

A second species of *Prothemienops* n. gen., recently discovered in Thailand, indicates generic significance also in the characters: palpal tarsi and leg metatarsi with clavate trichobothria; paired tarsal claws with S-shaped row of teeth.