

## Remarks on *Nematogmus dentimanus* Simon, with comments on the status of related genera (Araneae, Erigonidae)

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### Summary

*Nematogmus dentimanus* Simon is re-described and depicted – the female for the first time – on the basis of all available specimens. *Linyphia javana* Workman is listed as a junior synonym. Since *N. dentimanus* was subsequently transferred to *Sphecozone* O. Pickard-Cambridge by Simon, that genus is diagnosed and its status discussed. The species is here retained in its original combination. The genitalia of *Sphecozone rubescens* O. Pickard-Cambridge are depicted, and *Erigone nigrianus* Keyserling is recognized as its junior synonym. *Sphecozone*, with two species in South America, is compared with *Ceratinopsis* Emerton, which is distributed throughout the New World and Europe, and their preservation as two separate genera is suggested. The synonymy of *Nematogmus* and *Cnephalocotes*, proposed by others, is called in question.

### Introduction

During my earlier studies of the genus *Linyphia* – originally very large, but later reduced to a mere six species – I had to deal with *Linyphia javana* Workman, described in that beautifully illustrated, privately published book *Malaysian spiders* (1896). After some difficulties the original material, which appeared to consist of a single male specimen, was located in the National Museum of Ireland, Dublin. It turned out to be neither a *Linyphia* nor a *Neritene*, and I left it at that. More recently I came across other data concerning this species, re-examined the type-specimen, and now I am able to recognize it as a junior synonym of *Nematogmus dentimanus* Simon and redescribe that species. The female is described here for the first time.

This species has been associated with *Sphecozone*, and it is listed as *Sphecozone dentimanus* (Simon) in

Bonnet's *Bibliographia Araneorum*. That genus is commented upon, but not fully revised, in the second half of the present paper. The status of *Nematogmus* is discussed.

### Genus *Nematogmus* Simon, 1884

*Nematogmus* Simon, 1884: 614; 1894: 672. Bonnet, 1958: 3033. Type-species: *Theridion sanguinolentum* Walckenaer.

When creating the genus, Simon included *Nematogmus sanguinolentus* (Walckenaer) and *Erigone florens* O. Pickard-Cambridge. In 1894 the latter was transferred to *Hypselistes*, where it is still accommodated with a few other species from the Old and New World. *Nematogmus sanguinolentus* was indicated as the type-species of *Nematogmus* by Simon (1894), and the genus has since housed a fluctuating number of species. The most recent additions were made by Oi (1960).

### *Nematogmus dentimanus* Simon (Figs. 1-7)

*Nematogmus dentimanus* Simon, 1886: 155 (reprint p. 21) (descr. ♂, Siam).

*Sphecozone dentimanus*; Simon, 1894: 646, 673; 1896: 264; 1901: 54 (Indo-China, Ceylon, Malaya); 1904: 277 (descr. ♂, Siam).

*Linyphia javana* Workman, 1896: 64 (diag. ♂, Java, Buitenzorg). Syn. nov.

*Sphecozone javana*; Simon, 1905: 60 (remark).

The text of Simon's 1886 paper is identical to that of 1904 as to the description, but by 1904 Simon had created, and transferred this species to, *Sphecozone*; both papers deal with the same material from Siam, collected by M. Pavie between 1879 and 1895, in this case a single male from Chantaboun. His 1896 record again cites the same find, but in 1901 he is able to give a new locality record (Malaya: Perak, Gunong Inas), based on material brought to England by the Skeat Expedition to the Malay Peninsula (1899-1900), while he also mentions Ceylon. Together with the single ♂ specimen (holotype) after which *Linyphia javana* Workman was described, this appears to be the only material mentioned in the literature. In the Pickard-Cambridge collection I came across two unidentified samples of this species, originating, again, from Java and Ceylon, but of importance because both contain females, hitherto undescribed.

Chanthaburi, A. Pavie (Simon, 1886; Paris). 1♀, Malaya: Perak, Gunong Inas (Simon, 1901; Cambridge, U.K.). 1♂, Java: Buitenzorg (Workman, 1896; Dublin). 2♀ 1♂, Java, iv. 1908, A. H. Crook (Oxford).

#### The status of *Sphecozone* O. Pickard-Cambridge

Bonnet (1958: 4117) lists four species in *Sphecozone*, viz., (i) *cincta* (Simon, 1894; Ceylon), (ii) *dentimana* (Simon, 1886; now removed), (iii) *nigra* (O. Pickard-Cambridge, 1882; Brazil), and (iv) *rubescens* (O. Pickard-Cambridge, 1870; type-species; Brazil). To my knowledge nothing has been added since.

(i) *Sphecozone cincta*. According to Bonnet this is a nomen nudum, and indeed the species is only mentioned by Simon in his *Histoire naturelle des araignées*, volume 1, p. 646, as a representative of *Sphecozone* in Ceylon. No description of the species has been found, but the specimens which Simon had seen and given this name are present in the collection of the Paris Museum (labelled: 16174, *Sph. cincta* ES., Kandy); the material consists of 2♂ of *Meioneta benoitii*, a species recently described by me from the Seychelles (Van Helsdingen, 1978). The known range of the species is now extended to Ceylon.

(ii) *Sphecozone dentimana* (Simon), = *Nematogmus dentimanus* Simon, as discussed in the present paper.

(iii) *Sphecozone nigra* O. Pickard-Cambridge, 1882; Brazil. I have not seen any material of this species. Judging from the illustrations to the original description it has a long thread-like embolus; the abdomen is attached to the cephalothorax by a conspicuous petiolus. The female is unknown.

(iv) *Sphecozone rubescens* O. Pickard-Cambridge, 1870 (type-species) (Figs. 8-11).

*Sphecozone rubescens* O. Pickard-Cambridge, 1870: 733, Pl. 44 Fig. 3 (descr. ♂, Brazil).

*Erigone nigrianus* Keyserling, 1886: 222, Pl. 19 Fig. 279 (descr. ♀, ♂ depicted only, Rio de Janeiro). *Syn. nov.*

*Ceratinopsis nigrianus*; Simon, 1894: 645 (comb. nov.). Subsequent identical treatment by others. Many records from Brazil, Argentina and Paraguay by Mello-Leitao. Ivie, 1967: 129 (as junior synonym of *Ostearius melanopygius* (O. Pickard-Cambridge)).<sup>1</sup>

I have not examined the original material of

*S. rubescens*, but only two samples from the collection of the Muséum National d'Histoire Naturelle, Paris, apparently identified by Simon and originating from Paraguay and Brazil (Teresopolis), respectively. Both samples consist of males and females of the same species, and they seem to agree with the description and figures of *rubescens* given by Pickard-Cambridge. I was able to examine one female syntype of *Erigone nigrianus* from the collection of the Naturhistorisches Museum, Vienna, which is in agreement with the original description and figure of that species and is also conspecific with the *rubescens* material from Paris. The synonymization proposed here is based on this evidence.

If this synonymy is correct and if we follow Simon (1894) and subsequent authors, it would imply the placing of *Ceratinopsis* Emerton, 1882,<sup>2</sup> as a junior subjective synonym of *Sphecozone* O. Pickard-Cambridge, 1870. However, I have my doubts about this being the correct place for the many *Ceratinopsis* species known at present, although I realize that the following remarks are preliminary and of restricted value. My knowledge of *Ceratinopsis* is restricted to the study by Bishop & Crosby (1930) and other North American relevant literature, while I have also examined material of the Holarctic *Styloctetor romanus* (O. Pickard-Cambridge), currently referred to as a *Ceratinopsis* (see Locket, Millidge & Merrett, 1974: 91). In the following diagnosis of *Sphecozone* the most obvious differences from *Ceratinopsis* are indicated.<sup>2</sup> In view of the following characters and differences from *Ceratinopsis* I suggest the preservation of *Sphecozone* as a separate genus.

In view of the absence of a paracymbium (see diagnosis below), which is quite peculiar for an erigonid, I even have my doubts about the allocation of *Sphecozone rubescens*, the type-species of *Sphecozone*, to this family being correct, though I cannot offer a better solution at the moment. All the more reason to keep *Sphecozone* and *Ceratinopsis* separate and refrain from a simple technical synonymization.

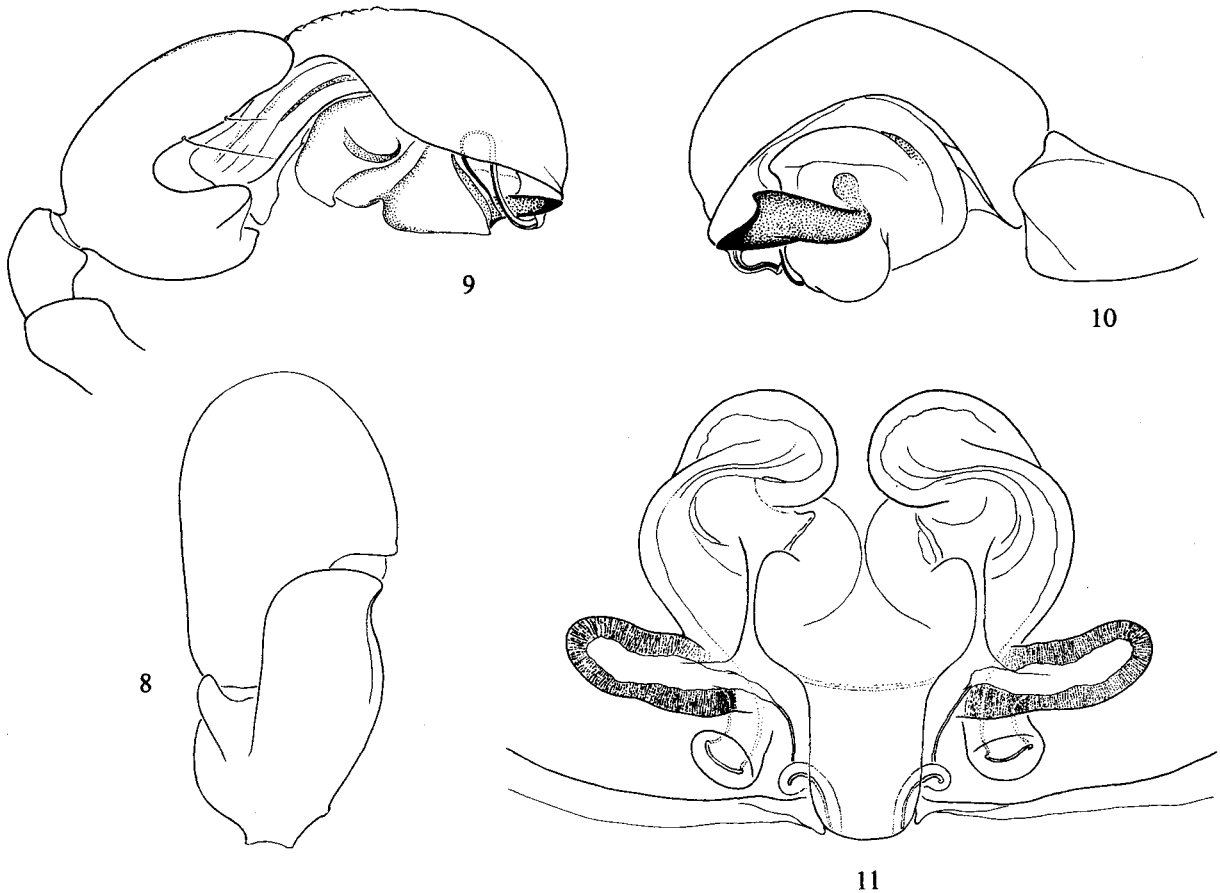
2) It is very difficult to extract a generic diagnosis from the, often very scanty, descriptions of *Ceratinopsis* species, which do not always pay attention to the characters now thought to be of importance for generic delimitation. Also the type-species, *C. interpres* (O. Pickard-Cambridge), is said to deviate from the other members of the genus (cf. Emerton, 1882, p. 36, in generic diagnosis). Characters derived from *C. romana* (Cbr.) are indicated with an asterisk (\*).

1) I don't think the synonymy as suggested by Ivie has a sound basis.

*Sphecozone*

*Total length*: 3.0-3.5 mm (smaller in *Ceratinopsis*). *Cephalothorax*: ca 1.45 times as long as wide, cephalic part slightly elevated in female, more so in male, without pits; height of clypeus 0.22 (♀)-0.24 (♂) of cephalothorax length. *Chelicerae*: with 5 or 6 denticles in dorsal row, 5 in ventral; male chelicerae not modified; no stridulating files. *Sternum*: truncated behind. *Legs*: slender; tibia I 1/d 12 (♀)-14.5 (♂) (slender in *Ceratinopsis interpres*, stouter in others); Mt I/Ta I 1.45, Mt IV/Ta IV 1.8 (lower values in *Ceratinopsis*\*); Tm I 0.3 or slightly less in ♀, 0.3-0.35 in ♂ (ca 0.4 in *Ceratinopsis*); Tm IV present and of same value (absent in *Ceratinopsis*?). *Chaeto-*

*taxy*: all tibiae with one dorsal spine, position on tibia I 0.22. Abdomen without scutum; attachment to prosoma by a heavily sclerotized petiolar structure (not prominent in *Ceratinopsis*). *Male palp* (Figs. 8-10): with conspicuously developed tibia (apparently never so strong in *Ceratinopsis*), cymbium conspicuously curved, paracymbium absent (always present in *Ceratinopsis*, see also my earlier remark), embolic division simple, not spirally coiled, with a weak, thread-like embolus (in *rubescens*; apparently much longer in *nigra*) (twisted in *Ceratinopsis*). *Vulva* (Fig. 11): with lateral receptacula and postero-lateral turning-points (not essentially different from *Ceratinopsis*\*, although obviously more complex, cf. Miller,



Figs. 8-11: *Sphecozone rubescens* O. Pickard-Cambridge. 8 Male palp, dorsal view; 9 Ditto, lateral view; 10 Ditto, meso-ventral view; 11 Vulva, ventral view. 8-10: x 100; 11: x 200.

1947, Pl. 5, fig. 23; Wiehle, 1960, fig. 464 is misleading).

### The status of *Nematogmus*

In Bonnet (1958: 3033) the genus is restricted to its type-species only. Later Oi (1960: 163-167) added two new Japanese species, viz., *N. stylitus* and *N. rutilus*. *Nematogmus dentimanus* Simon, now re-incorporated in its original genus (see above), is listed as a *Sphecozone* in Bonnet (1958: 4118), to which genus it had been transferred by Simon himself.

Recently it has been suggested (Wunderlich, 1970: 408) to unite *Cnephalocotes* Simon and *Nematogmus* Simon into one genus. Millidge (1977: 25) considers this a reasonable proposition, despite minor differences observed in the male palps of the type-species of the two genera, viz., *Cnephalocotes obscurus* (Blackwall) and *Nematogmus sanguinolentus* (Walckenaer). For the time being, i.e. until more sound revisionary work has been carried out for both genera in their full compass, I would refrain from accepting the above synonymy and the necessary new combinations through transfer of *Cnephalocotes* species to *Nematogmus*. Without considering the other species of *Cnephalocotes*, even the two type-species, *C. obscurus* and *N. sanguinolentus*, show several characters that warrant their generic separation. *C. obscurus* is a darkly pigmented spider with rugose sternum and coxae, and with relatively stout legs (Ti I 1/d 7-8); the vulva (cf. Tullgren, 1955, Pl. 5, fig. 156, and Wiehle, 1960, fig. 705) is characterized by a rather membranous twisted, but not spirally coiled duct. In *N. sanguinolentus* the sternum and coxae are normal (not rugose) and the legs are long and slender (Ti I 1/d ca 12); in the vulva (Miller, 1947, Pl. 5, fig. 2, and Wiehle, 1960, fig. 715) the duct is spirally coiled and thick-walled. *N. dentimanus* Simon agrees in these respects, the legs being exceptionally slender. The descriptions of the other species assigned to the two genera do not permit a determination of the state of the above characters, and thus it is at present impossible to form an opinion on the possible distribution of the species concerned around the two distinct nuclei outlined above, which therefore should most conveniently be maintained in separate genera.

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### References

- BISHOP, S. C. & CROSBY, C. R. 1930: Studies in American spiders: genera *Ceratinopsis*, *Ceratinopsidis* and *Tutaibo*. *Jl N.Y.ent.Soc.* **38**: 15-33.
- BONNET, P. 1958: *Bibliographia Araneorum* **2**(4): 3027-4230. Toulouse.
- CAMBRIDGE, O. Pickard- 1870: On some new genera and species of Araneida. *Proc.zool.Soc.Lond.* **1870**: 728-747.
- CAMBRIDGE, O. Pickard- 1882: On new genera and species of Araneida. *Proc.zool.Soc.Lond.* **1882**: 423-442.
- HELSDINGEN, P. J. van 1978: Contributions à l'étude de la faune terrestre des îles granitiques de l'archipel des Séchelles (Mission P. Benoit-J. J. van Mol, 1972). Araneae-Linyphiidae. *Revue zool.afr.* **92**(4): 889-898.
- IVIE, W. 1967: Some synonyms in American spiders. *Jl N.Y.ent.Soc.* **75**(3): 126-131.
- KEYSERLING, E. 1886: Theridiidae. II. Hälfte. In *Die Spinnen Amerikas* **2**(2): 1-295. Nürnberg.
- LOCKET, G. H., MILLIDGE, A. F. & MERRETT, P. 1974: *British spiders* **3**: 1-314. Ray Society, London.
- MILLER, F. 1947: Pavouči zvířena hadcových stepí u Mohelna. *Mohelno, Brno* **7**: 1-107.
- MILLIDGE, A. F. 1977: The conformation of the male palpal organs of Linyphiid spiders, and its application to the taxonomic and phylogenetic analysis of the family (Araneae: Linyphiidae). *Bull.Br.arachnol.Soc.* **4**(1): 1-60.
- OI, R. 1960: Linyphiid spiders of Japan. *J.Inst.Polytech. Osaka Cy.Univ. D.* **11**: 137-244.
- SIMON, E. 1884: *Les Arachnides de France* **5**(3): 421-885. Paris.
- SIMON, E. 1886: Arachnides recueillis par M. A. Pavie (sous-chef du service des postes au Cambodge) dans le royaume de Siam, au Cambodge et en Cochinchine. *Act.Soc.linn.Bordeaux* **40**: 137-166.
- SIMON, E. 1894: *Histoire naturelle des araignées* **1**(3): 489-760. Paris.

- SIMON, E. 1896: Liste des Arachnides recueillis en Indo-Chine (Cochinchine, Cambodge et Siam) et offerts au Muséum par M. Pavie. *Bull.Mus.Hist.nat.Paris* **1896**: 263-264.
- SIMON, E. 1901: On the Arachnida collected during the "Skeat Expedition" to the Malay Peninsula, 1899-1900. *Proc.zool.Soc.Lond.* **1901**(2): 45-84.
- SIMON, E. 1904: Arachnides recueillis par M. A. Pavie en Indo-Chine. In: *Mission Pavie en Indo-Chine 1879-1895*, **3**: 270-295. Paris.
- SIMON, E. 1905: Arachnides de Java, recueillis par le Prof. K. Kraepelin en 1904. *Mitt.naturh.Mus.Hamb.* **22**: 51-73.
- TULLGREN, A. 1955: Zur Kenntnis schwedischer Erigoniden. *Ark.Zool.* **7**(20): 295-389.
- WIEHLE, H. 1960: Spinnentiere oder Arachnoidea (Araneae). XI. Micryphantidae-Zwergspinnen. *Tierwelt Dtl.* **47**: 1-620.
- WORKMAN, T. 1896: *Malaysian spiders* 1: 25-80. Belfast.
- WUNDERLICH, J. 1970: Zur Synonymie einiger Spinnengattungen und -Arten aus Europa und Nordamerika (Arachnida: Araneae). *Senckenberg. biol.* **51** (5/6): 403-408.
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## Types

Male holotype of *Nematogmus dentimanus* Simon from Siam, Chantaboun (also written Chantaboune, ? = Chantaboon or Chantaburi) in the Muséum National d'Histoire Naturelle, Paris. ♂ holotype of *Linyphia javana* Workman from Java, Buitenzorg, in the National Museum of Ireland, Dublin.

## Redescription

The following redescription is based on all available material.

**Measurements** (in mm): Female: total length 2.2-3.2; cephalothorax length 0.85-1.17; abdomen length 1.30-2.10. Male: total length 2.2-2.55; cephalothorax length 1.07-1.17; abdomen length 1.0-1.5.

**Coloration:** Cephalothorax light orange-brown, grading into light yellow-brown on the cephalic part; chelicerae, gnathocoxae, coxae, basal third of femora of legs I-III and basal half of femur of leg IV of the same light yellow-brown colour; sternum bright light orange-brown. Remainder of legs, palps and abdomen dark grey to blackish, the legs, especially the femora, a grade darker than the abdomen.

**Cephalothorax** (Figs. 1, 2): Length 1.15-1.25 times width; cephalic part distinctly raised in the male (Fig. 1), the raised part bearing the PME; cephalic pits present postero-dorsad of PLE; anterior surface with a few minute setae. Diameter of AME 0.06 mm, about 2/3 of their diameter apart and 1 2/3 diam. from ALE; PME barely larger but separated by nearly two diam.; lateral eyes touching and larger than other eyes. In the female AME very small (0.05 mm) and only one-half diam. apart; size of PME and lateral eyes as in male, median eyes separated by their diameter and at a slightly larger distance from the PLE. In the female the cephalic part is moderately raised (Fig. 2).

**Chelicerae:** Rather robust. Dorsal margin with 4 teeth (♂) or 4-6 (♀), ventral margin with 3 denticles (♂) or 5 (♀). Stridulating files not discernible in the male, faintly so in the female, ridges 0.012 mm apart, giving them a coarse appearance.

**Legs:** Long and slender, femur I slightly more than 1.3-1.4 times as long as cephalothorax in male, 1.3-1.5 times in female; length tibia I ca 14 diams of segment in either sex. Measurements (in mm, of two specimens from Java, Oxford collection):

	♂				
	I	II	III	IV	palp
Fe	1.57	1.50	1.17	1.55	0.62
Pa	0.32	0.30	0.28	0.30	0.25
Ti	1.45	1.32	0.97	1.35	0.28
Mt	1.42	1.32	1.00	1.30	—
Ta	0.80	0.75	0.55	0.65	0.70

	♀			
	I	II	III	IV
Fe	1.72	1.62	1.27	1.70
Pa	0.35	0.32	0.30	0.32
Ti	1.52	1.47	1.05	1.42
Mt	1.45	1.37	1.07	1.30
Ta	0.85	0.75	0.55	0.62

**Chaetotaxy:** All tibiae with a single, short dorsal spine, very difficult to discern being much shorter than the diameter of the segment; position of this spine on tibia I 0.24 (1♂) and around 0.34 (♀). No other spines. Tm I 0.27-0.31. Tm IV absent.

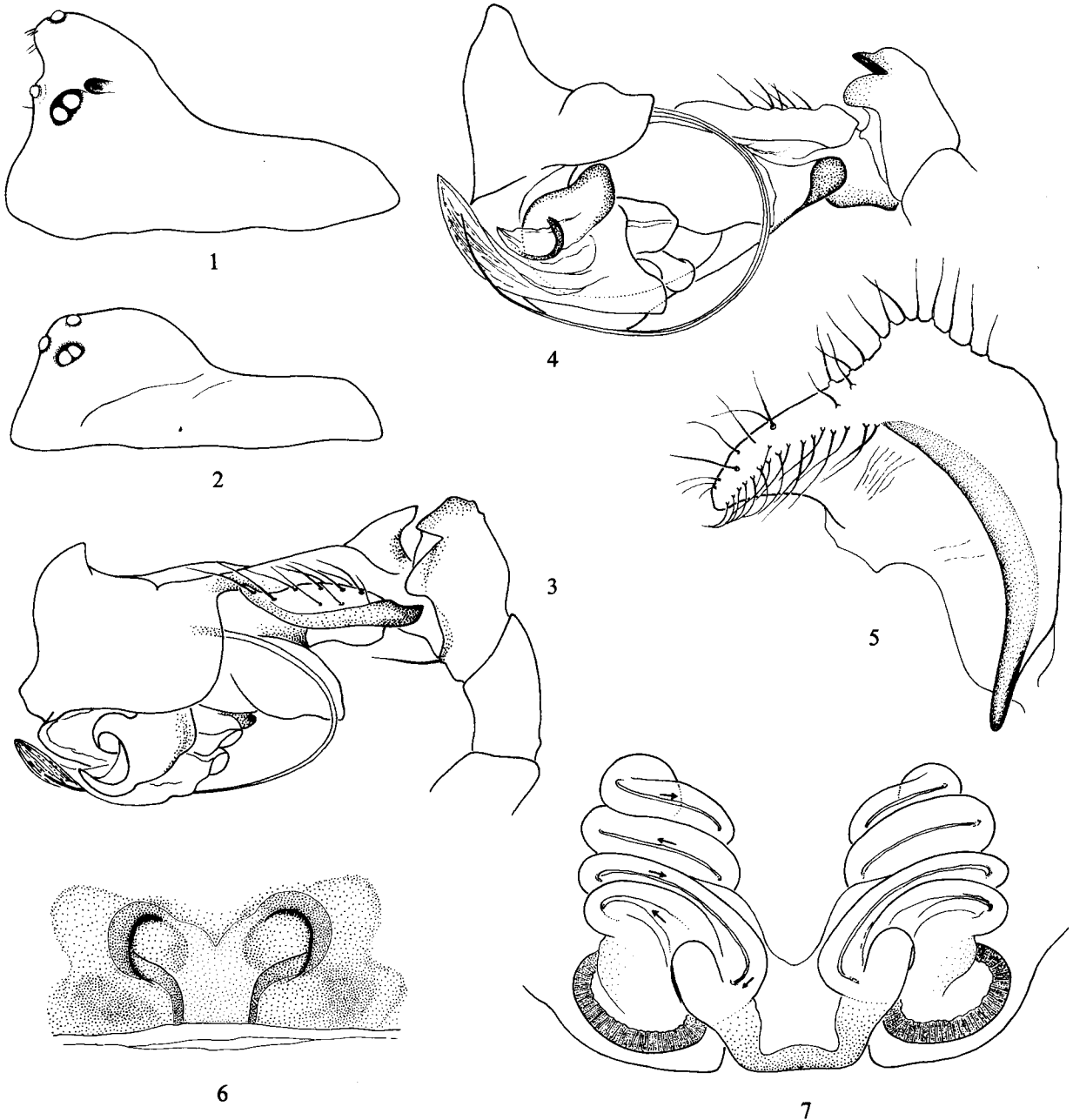
**Abdomen:** Subglobular in female, slightly more cylindrical in male.

**Male palp** (Figs. 3-5): Patella and tibia without spines. Tibia hardly longer than patella, its antero-lateral border produced into a lateral, more or less triangular lamella and a latero-dorsal extension, the anterior border deeply incised in between (Figs. 3, 4); the antero-mesal border produced into a rounded, ridge-like projection, ventro-mesal in position. Cymbium of peculiar shape (Figs. 3-5), with a conspicuous outwardly curved tip (Figs. 4, 5); there is a short basal spur which forms the proximal end of an evenly curved ridge, running along the dorsal side of the cymbium and passing into a row of minute warts each bearing a seta; the ridge can be regarded as a continuation of the meso-dorsal surface of the cymbium and with its meso-lateral surface forms a kind of gutter (Fig. 5). Other elements as depicted. Embolus long and thin.

**Epigyne and vulva** (Figs. 6, 7): Epigyne hardly protruding from ventral surface, reddish-brown. Bow-shaped entrances giving access to spirally coiled, thick-walled tube, one-and-a-half coils in anterior direction, then turning around and running backwards, parallel with first part of duct, to posteriorly situated receptacula seminis.

**Distribution:** SE Asia, Siam, Malaya, Java.

**Material examined:** 1♀, Ceylon: Kandy (Simon, 1901; Paris). 2♀, Ceylon (Oxford). 1♂, Siam:



Figs. 1-7: *Nematogmus dentimanus* Simon. 1 Male cephalothorax; 2 Female cephalothorax; 3 Male palp, lateral view; 4 Ditto, ventral view; 5 Cymbium, dorsal view; 6 Epigyne; 7 Vulva, ventral view. 1,2: x 50; 3-5 x 100; 6: x 150; 7: x 200.