

Scorpionyssus heterometrus gen. n., sp. n.
(Acari, Laelapidae) parasitic on a
scorpion from Sri Lanka

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(With 18 figures)

Abstract

Scorpionyssus heterometrus gen. n., sp. n. (Acari, Laelapidae) is described. The mites were found as parasites hidden under the coxal endite of leg I of two specimens of the scorpion *Heterometrus* aff. *swammerdami* E. Simon, 1872 from Sri Lanka.

Introduction

We describe herein a new laelapid (Mesostigmata) mite found on two scorpions from Sri Lanka.

A few number of mite species have been recorded from scorpions in several parts of the World. They belong to the families Trombiculidae, Erythraeidae, Pterygosomatidae (Prostigmata) and Acaridae (Astigmata). So far no representative of the Mesostigmata has ever been reported from this host.

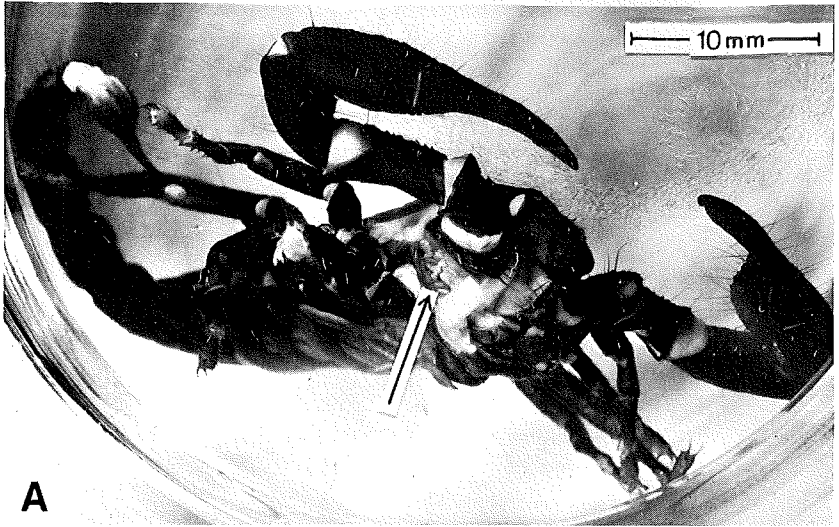
Approximately 100 specimens of this new species were found on each of both scorpions. The mites were located in a depression under the coxal endite of leg I (about 50 mites, females, males, deutonymphs, protonymphs, larvae, at each side). These mites belong to a new genus and a new species of the family Laelapidae.

All the measurements in the description are in microns (μm).

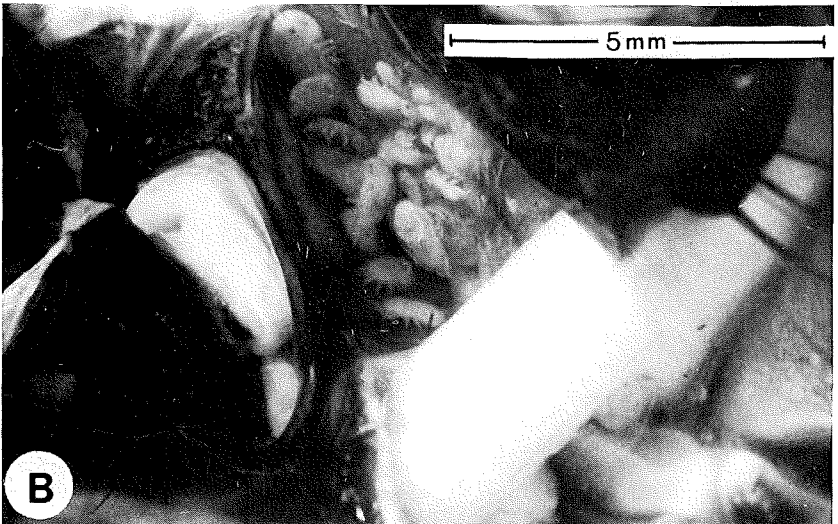
Scorpionyssus gen. n.

Definition:

F e m a l e: Body broadly oval, opisthosoma distinctly inflated laterally. Dorsum covered by a large shield arriving close to the posterior margin of the body and bearing 19 pairs of setae, the central ones very short and thin, the laterals relatively long, thick and curved or sinuous. A pair of small spines and 1 or 2 curved spinous setae in front of the shield. Tectum convex, smooth or with one or two small teeth. - **Venter:** Sternal shield small and irregular, bearing the first pair of sternal setae; second and



A



B

Table I: *Heterometrus* aff. *swammerdami* E. Simon, 1872 with a colony of mite, *Scorpionyssus heterometrus* sp. n., under the coxal endite of leg I. Coxal endite spread and held out through a small piece of wood. General ventral view (A) and detail (B). Photos H.Strümpel.

third pair of sternal setae on soft cuticle. Metasternal setae lacking in 20 % of specimens. Only the anterior pair of lyrifissures is present. Genital shield relatively small, without setae, the genital setae situated out of the shield. Inseminating organ typically laelapoid consisting of two thin canalicles arising from posterior margin of coxae III and ending in a median maturation pouch. A spermiduct and a spermatheca have not been observed (see Fain 1963). Anal shield subterminal bearing 3 setae. Metapodal shields long and very narrow. Peritreme reaching the posterior third of coxa I; peritrematic shield fused posteriorly with the podal shield of coxa IV. Soft cuticle of opisthosoma with 15 pairs of setae (13 spinous and strong and 2 or 3 pairs very small), the soft cuticle of lateral surfaces of idiosoma with 6 pairs of strong spinous and slightly sinuous setae. Legs short and thick ending in large suckers and poorly sclerotized claws. Tritosternum with a large base and 2 rather short lacinae. Gnathosoma small, with 4 pairs of ventral setae, the anterior pair being much longer and stronger than the other ones. Corniculi sclerotized, narrow, relatively long. Deutosternal groove with a single file of 6 small denticles, except the first which is generally duplicate. Chelicerae long, with a fixed digit reduced and a moveable digit flattened and toothless and much longer than the fixed digit

Chaetotaxy of pedipalps (from trochanter to tibia) 1-4-4-12.

Chaetotaxy of legs: Coxae 2-2-2-1; Trochanters 4-5-5-5; Femora ($2 \frac{3}{4} 1$) - ($1 \frac{4}{2} 1$) - ($1 \frac{4}{2} 1$) - ($1 \frac{3}{3} 1$); Genua ($1 \frac{2}{1} \frac{2}{1} 1$) - ($1 \frac{2}{1} \frac{2}{1} 1$) - ($1 \frac{2}{1} \frac{2}{0} 0$); Tibiae ($1 \frac{2}{1} \frac{2}{1} 1$) - ($1 \frac{1}{1} \frac{2}{1} 1$) - ($1 \frac{1}{1} \frac{2}{1} 1$) - ($1 \frac{1}{1} \frac{1}{1} 1$); Tarsi II-IV 17 setae.

M a l e: Dorsum, legs and gnathosoma as in female. - Venter: Sterniventral shield short arriving at the level of posterior margin of coxa IV and bearing 3 pairs of setae and a more posterior single seta. Chelicerae: Shorter than in female. Fixed digit very short and narrow; moveable digit about twice as long as the fixed one and much thicker; spermatodactyl fused with moveable digit except in its apical part which is free.

D e u t o n y m p h: With a very narrow sterniventral shield not reaching posterior margin of coxa IV and bearing one pair of short setae in its anterior part.

P r o t o n y m p h: Differs from deutonymphs by the shape of the dorsal shield which is splitted into 4 shields (2 large median and 2 small lateral), the reduction of the chaetotaxy on idiosoma and legs, the shorter peritreme and chelicerae.

L a r v a: Absence of dorsal or ventral shields. Chelicerae as in female but shorter. Hypostome with only 2 pairs of setae. No deutosternal teeth. Dorsum with 12 pairs of

short setae, venter with 8 pairs (including sternal and anal setae). Leg chaetotaxy: Coxae 2-2-2; Trochanters 4-4-4; Femora 10-7-5 (or 4); Genua 8-6-6; Tibiae 8-7-7. Chaetotaxy of palps (trochanter to tibia) 0-4-4-12.

Type species: *Scorpionyssus heterometrus* sp. n.

Remarks on genus *Scorpionyssus*: *Scorpionyssus* is close to genus *Ljunghia* Oudemans, 1932, whose type species, *L. selenocosmia* Oudemans, 1932 was described from a spider *Selenocosmia* (Theraphosidae) in Sumatra. Three other species have been included in this genus, all from spiders, especially mygalomorphs, from Southern Australia (Domrow 1975).

Actually, *Scorpionyssus* is closer to the Australian species of *Ljunghia* than to the type species of this genus, as shown by the table I, given below.

Table I: Comparative characters between females of genera *Ljunghia* Oud. and *Scorpionyssus*

	<i>Ljunghia</i>		<i>Scorpionyssus</i>
	Type species (<i>L.selenocosmia</i>)	Three Australian species	Type species
Metasternal setae	+	0	+ or 0
Sternal shield	normal	normal	strongly reduced
Pairs of scutal setae	32	15 to 25	18 to 20
Cheliceral digits	subequal	very unequal	very unequal
Leg chaetotaxy (compared with <i>Laelapinae</i>)	not reduced	slightly reduced	distinctly reduced
Shape of legs	long, slender	long, slender	short and thick
Peritrematic and podal IV shields	separate	separate	fused

Scorpionyssus heterometrus sp. n.

Female (figs 1-9): Length and width of holotype (idiosoma) 765 x 534 (maximum width of opisthosoma). Length and width in 5 paratypes: 870 x 630; 810 x 600; 750 x 540; 750 x 498; 732 x 480. Dorsal shield with 18 to 20 pairs of setae (generally 19 pairs), the laterals being strong and 60-90 long while the centrals very short and thin (5-10 long). Venter: with 13 pairs of posterior or posterolateral setae strong and long (45 to 115 long) and 3 pairs of anterior or paramedian setae much smaller. Lateral surfaces of idiosoma with 6-7 pairs of spinous setae 30-115 long. Leg I 225 long (5 distal articles) and 60 wide (genu). Chelicerae 180 long, fixed digit included, the latter 28 long; moveable digit 60 long. A pilus dentilis has not been observed.

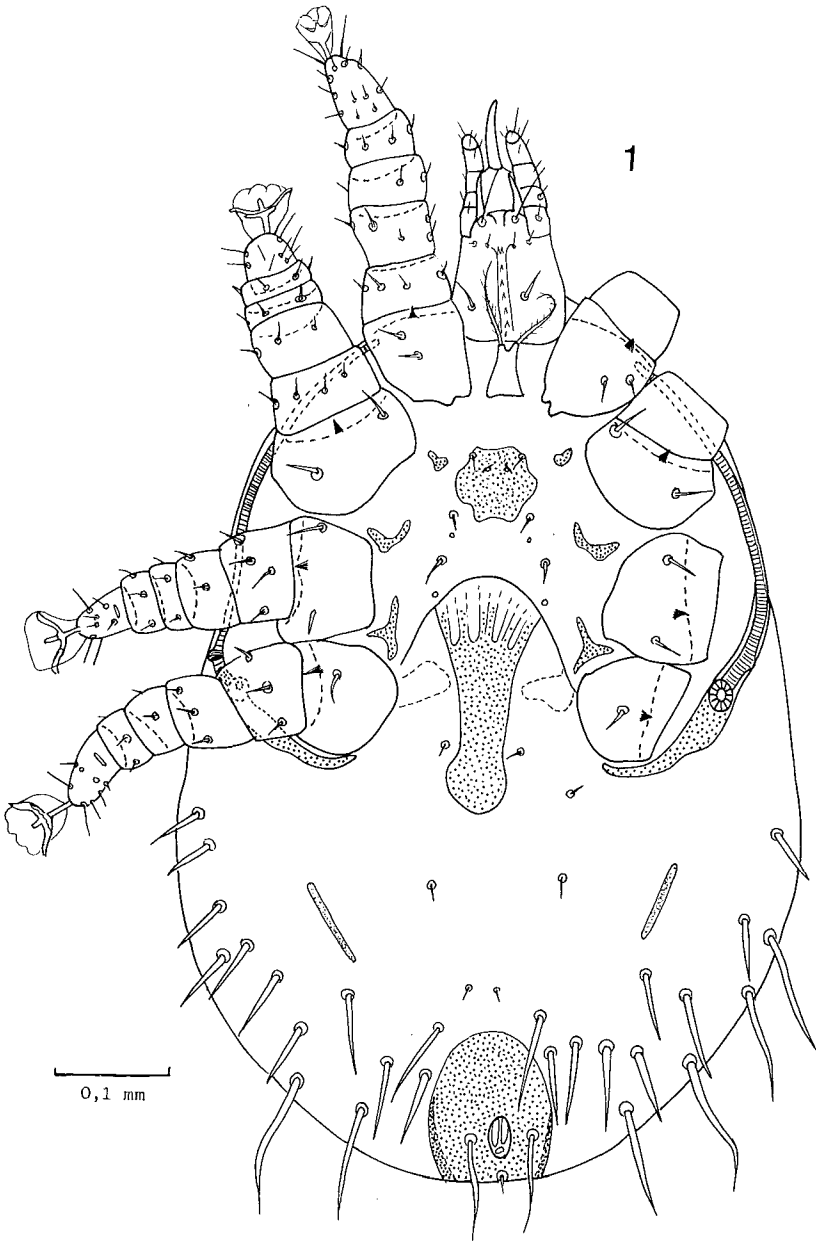


Fig. 1: *Scorpionyssus heterometrus* sp. n. Holotype female: in ventral view.

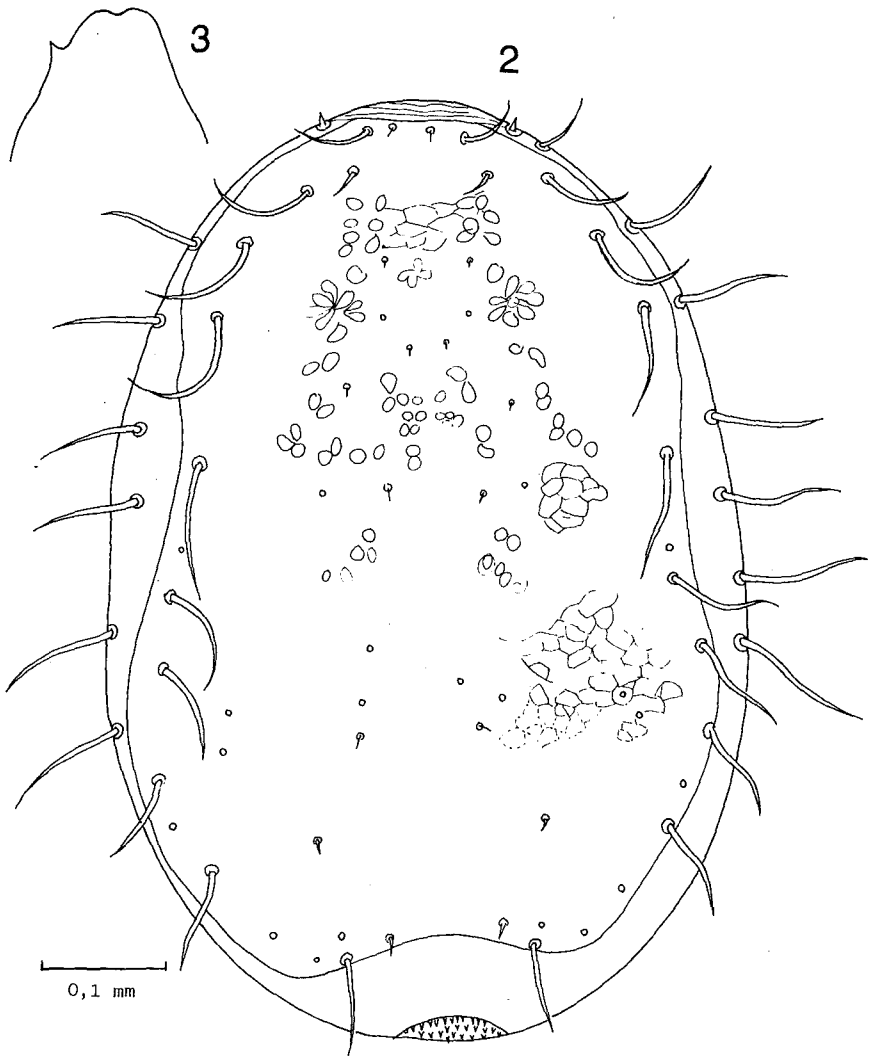
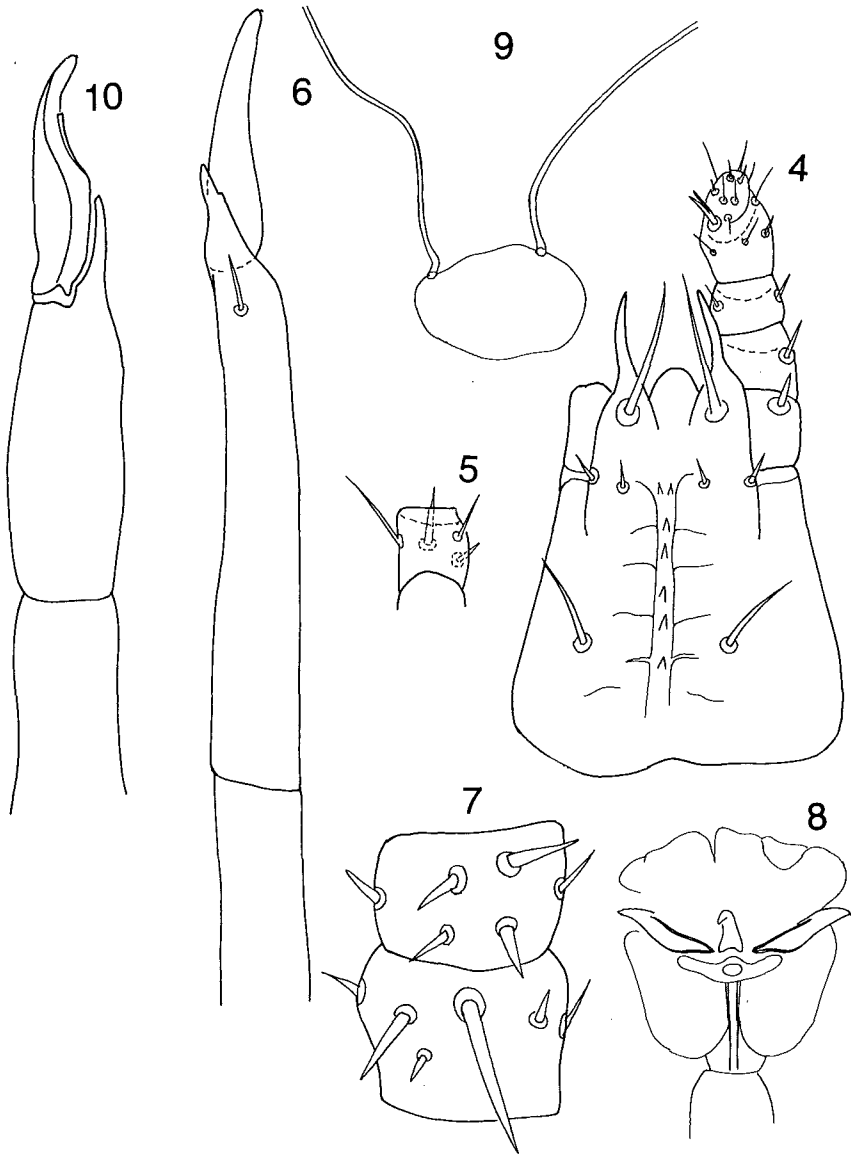
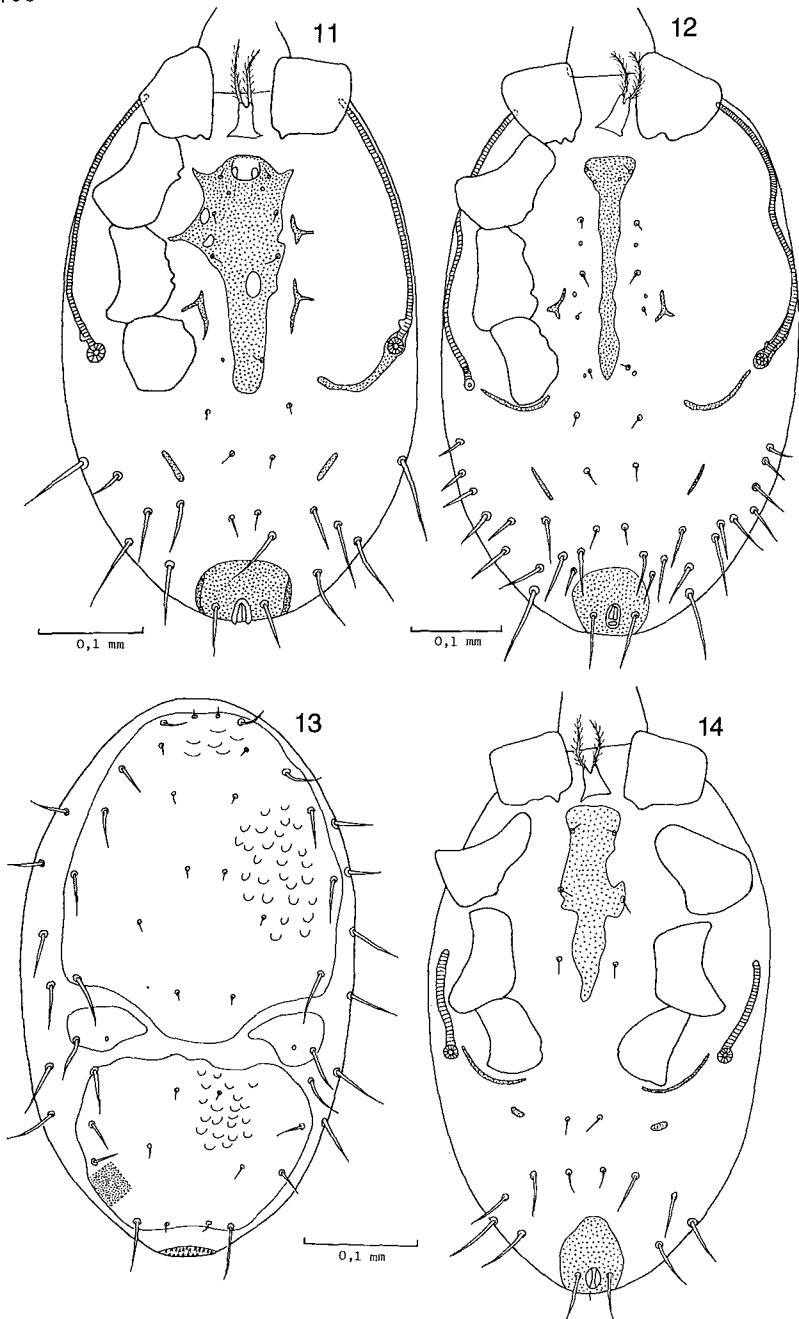


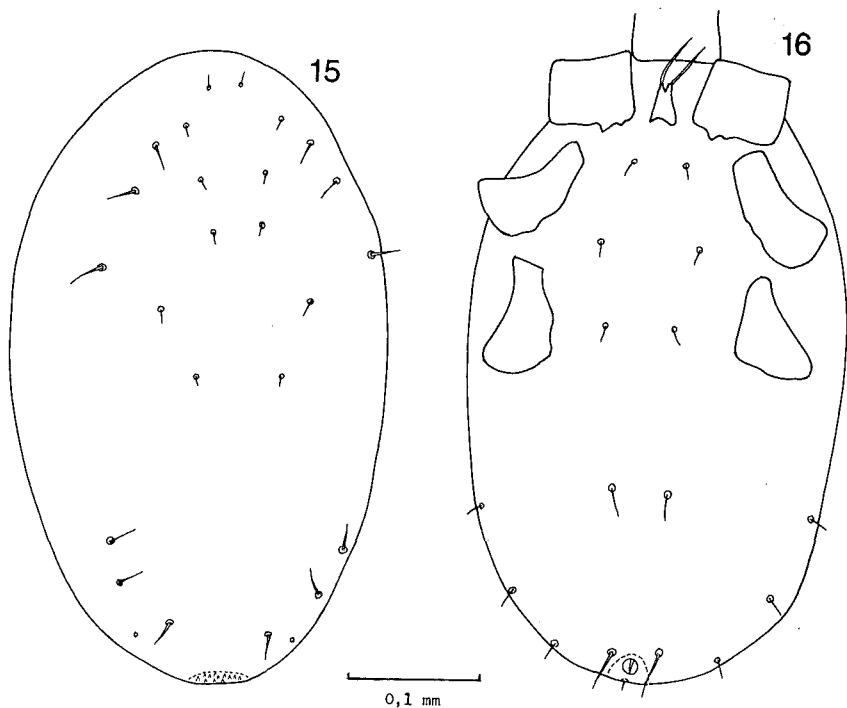
Fig. 2-3: *Scorpionyssus heterometrus* sp. n. Holotype female: in dorsal view (2); tectum (3).



Figs 4-10: *Scorpionyssus heterometrus* sp. n. Holotype female: gnathosoma (4); palp femur dorsally (5); chelicera (6); femur and genu I in dorsal view (7); tarsal sucker of leg IV (ventral view) (8); inseminating apparatus (9). Paratype male: chelicera (10).



Figs 11-14: *Scorpionyssus heterometrus* sp. n. Male in ventral view (11); deutonymph in ventral view (12); protonymph in dorsal (13) and in ventral view (14).



Figs 15-16: *Scorpionyssus heterometrus* sp. n. Larva in dorsal (15) and in ventral view (16).

Male (figs 10-11): Length and width (maximum) in 4 paratypes 555 x 345; 545 x 330; 540 x 339; 525 x 330. Opisthogaster with 3 pairs of small anterior or paramedian setae and 6 pairs posterior or postero-lateral setae longer and stronger. Chelicerae 130 long (including fixed digit); length of fixed digit 18, moveable digit (including spermatodactyl) 48.

Deutonymph (fig. 12): Length and width of 4 paratypes: 630 x 375; 609 x 363; 555 x 336; 570 x 324. Opisthogaster with 4 pairs of small anterior or paramedian setae and 13 pairs of longer and stronger posterior or postero-lateral setae.

Protonymph (figs 13-14): Length of 4 paratypes: 498 x 291; 450 x 270; 420 x 255; 399 x 258. Dorsum with 4 shields, the antero-median bears 11 pairs of setae, the postero-median bears 6 pairs of setae and the two smaller postero-lateral either bear one seta each or are devoid of setae.

Larva (figs 15-16): Length and width of 3 paratypes: 452 x 285; 428 x 270; 426 x 255. Absence of dorsal or ventral shields. Dorsum with 12 pairs of setae, venter with 8 pairs of setae (including the two anterior anal setae). The postero-median anal seta is inconstant.

Habitat: Holotype female from a scorpion *Heterometrus* aff. *swammerdami* E. Simon, 1872 from a caoutchouc plantation in Hiniduma, Sri Lanka, 11. IX. 1981, Dreyer leg.

Paratypes: 30 females, 18 males, 20 deutonymph, 14 protonymphs, 6 larvae, with the same data as the holotype. Additional material, mounted and in alcohol, from the same host specimen and from the second scorpion of the same locality, caught one day later, 12. IX. 1981, by Dreyer.

Deposition of types: Holotype female and paratypes (19 females, 11 males, 11 deutonymphs, 7 protonymphs and 4 larvae) as well as additional material in the Zoological Museum of the University of Hamburg. Other paratypes: 10 females, 6 males, 8 deutonymphs, 6 protonymphs and 2 larvae in the Institut royal des Sciences naturelles de Belgique, Bruxelles; one female, one male, one deutonymph and one protonymph in the British Museum (Natural History), London.

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