

Two new genera and species of larval Trombidiinae (Acari, Prostigmata) from a Carrion-Beetle (Coleoptera, Silphidae) from Belgium

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Summary

The larval stages of two new species of mites (Acari, Prostigmata), each representing a new genus in the Trombidiinae are described from a beetle (Silphidae) from Belgium: *Silphitrombium furculigerum* n. g. and n. sp. and *Neosilphitrombium gratum* n. g. and n. sp. A new tribe, Silphitrombiini is erected for these genera.

Key-words: Taxonomy, Acari, Trombidiidae, Silphidae, Belgium.

Résumé:

Les stades larvaires de deux nouvelles espèces d'Acariens (Acari, Prostigmata) représentant chacune un nouveau genre, sont décrits d'un Coleoptère Silphidae de Belgique: *Silphitrombium furculigerum* n. g. et n. sp. et *Neosilphitrombium gratum* n. g. et n. sp. Une nouvelle tribu, Silphitrombiini, est érigée pour contenir ces deux genres.

Mots-clés: Taxonomie, Acari, Trombidiidae, Silphidae, Coleoptera, Belgique.

Introduction

We describe herein two new genera and two new species: *Silphitrombium furculigerum* n. g. and n. sp. and *Neosilphitrombium gratum* n. g. and n. sp., both from a carrion-beetle of the family Silphidae, from Tervuren, Belgium.

These two new genera belong to the Trombidiinae (Trombidiidae) but they differ markedly from all the known genera in this subfamily by some important characters and we erect for them a new tribe, Silphitrombiini.

In this paper we use the terminology and the standard measurements proposed by SOUTHCOFF (1986). For the solenidiotaxy of the legs we follow the modifications proposed recently by FAIN (1992).

All the measurements are in micrometers.

Abbreviations: B.M. = British Museum (Natural History); IMTA = Institut de Médecine Tropicale Antwerpen; IRSNB = Institut royal des Sciences naturelles de Belgique.

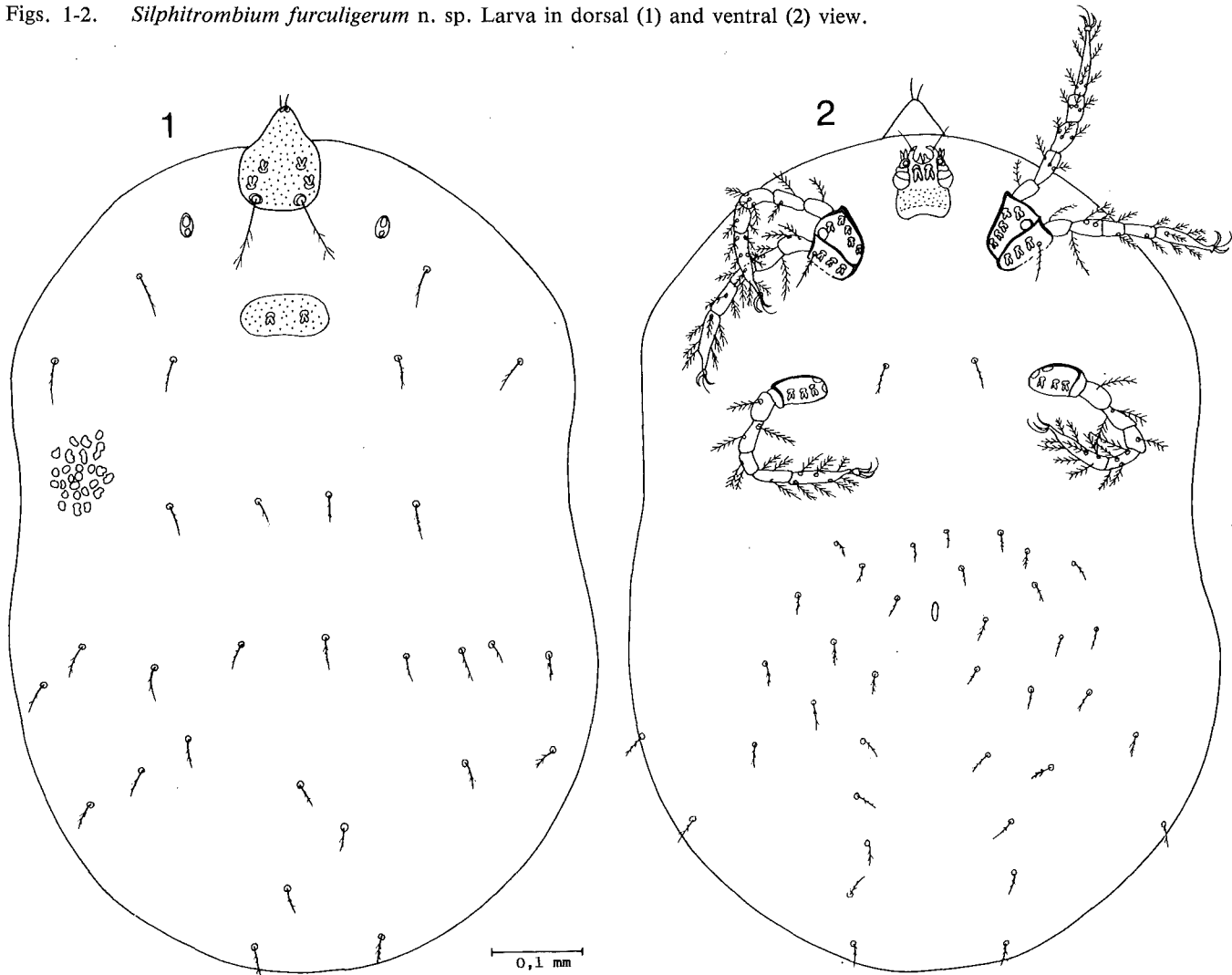
FAMILY TROMBIDIIDAE SUBFAMILY TROMBIDIINAE TRIBE SILPHITROMBIINI NOV. TRIB.

Definition (based on larvae): With the main characters of the Trombidiinae as defined by Southcott (1986): eyes 2+2, sessile; two median dorsal shields, the anterior with 8 setae, of which two sensillae, the posterior with 2 setae; legs with 6 segments; tarsi with 3,3,3 normal claws; urstigma oval attached to coxa I; mouth lacking a chitinous ring. This new tribe differs from all the other tribes described in this subfamily by the following characters: setal formula of coxae with either 5-4-3 setae (genus *Silphitrombium*) or 3-4-2 setae (genus *Neosilphitrombium*); all these coxal setae, except one, are short and thick bifid spines, the only exception is the lateral seta of coxa II which is thin and very shortly barbed. Bifid spines are also present on the anterior scutum (one or two pairs) and on posterior scutum (in one genus). Type genus: *Silphitrombium* n. g.

Genus *Silphitrombium* n. g.

Definition:

Body with a light constriction a little in front of the middle. Anterior scutum with posterior half rectangular, the anterior half forming a projecting triangular "nasus". It bears 4 pairs of setae: the AM thin, short and set close to each other at the anterior extremity of the "nasus". Setae AL and PL are short bifid spines with blunt tips. Sensillae long, thin and barbed in their apical half, they are situated behind and slightly inside of the PL. Posterior scutum with one pair of bifid spines as AL and PL. Dorsum with 29 shortly barbed setae 20 to 30 long and disposed in 7 transverse irregular rows (2-4-4-9-7-1-2). Venter with 2 setae between coxae III and 36 setae behind these coxae, all these setae are shortly barbed and from 18 to 27 long. Sternal setae lacking. Uropore small, situated at the level of the second or third opisthogastric row of setae. All coxae with strong bifid spines: 5 on coxa I, 3 on coxa II and 3 on coxa III. Coxa II bears in addition one lateral thin barbed seta, the coxal formula is therefore: 5-4-3. Gnathosoma small, with short palps

Figs. 1-2. *Silphitrombium furculigerum* n. sp. Larva in dorsal (1) and ventral (2) view.

and chelicerae. Mouth without a chitinous ring. Hypostomal setae are short and very thick forked spines similar to the coxal spines. Palpfemur with a dorsal seta. Palptibia ends in a strong deeply bifid spine and bears 2 thin setae. Palptarsus with 5 thin and bare setae, one long barbed seta and an external solenidion.

Type species: Silphitrombium furculigerum n. sp.

Silphitrombium furculigerum n. sp.

Larva (figs. 1-9, table I): Idiosoma in the holotype 980 long and 630 wide. Measurements in 2 paratypes: 816 × 540 and 978 × 635. Anterior scutum finely punctate, devoid of lines, ending in a long "nasus" overhanging the anterior part of the idiosoma. Posterior scutum punctate and bearing very fine longitudinal striations, its anterior margin convex. Legs slender. Tarsi I-III ending in two normal claws and a longer median claw-like empodium. Leg chaetotaxy (number of barbed setae): trochanters 1-1-1; femora 6-4-4; genua 4-2-2; tibiae 6-5-5; tarsi 15-15-13. Tarsus I bears in addition 3 not-

barbed apical setae (eupathidia). Solenida: tarsi 1-1-0; tibiae 2-2-0; genua 2-1-1. Famuli: tarsi 1-1-0; tibiae 1-0-0. Setae *k*: genua 1-0-0.

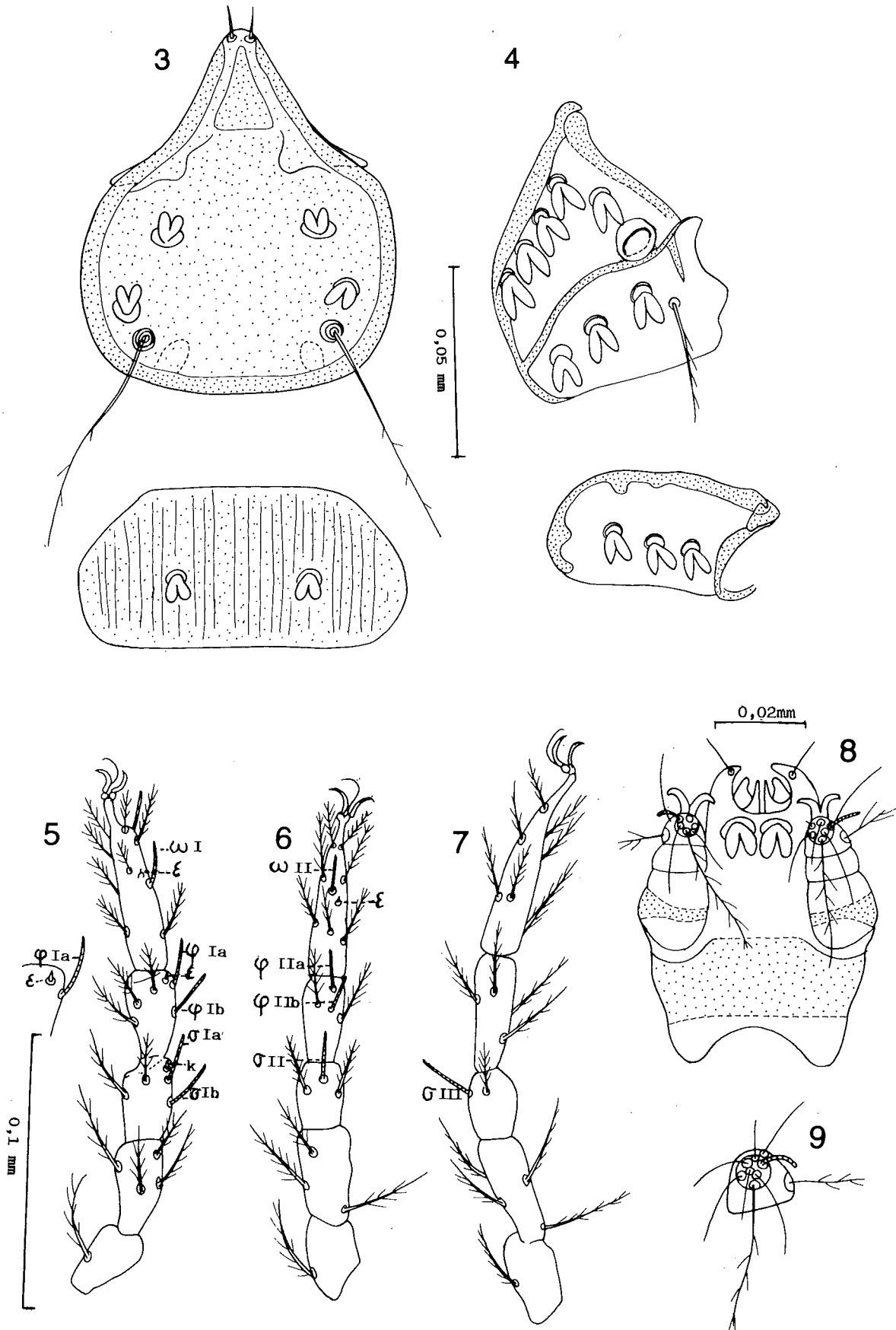
Habitat and locality:

The slides containing the typical series were first deposited in the collections of IMTA. They were labelled "Sur Silphidae, Tervuren, Benoit, May 1972". According to Mr P. Benoit these mites had been collected from an unidentified Carrion-beetle (family Silphidae) from Tervuren, close to the Museum of Central Africa.

The typical series consists of the holotype and 2 paratypes. The holotype and 1 paratype are deposited in the IRSNB. One paratype in the BM (Natural History).

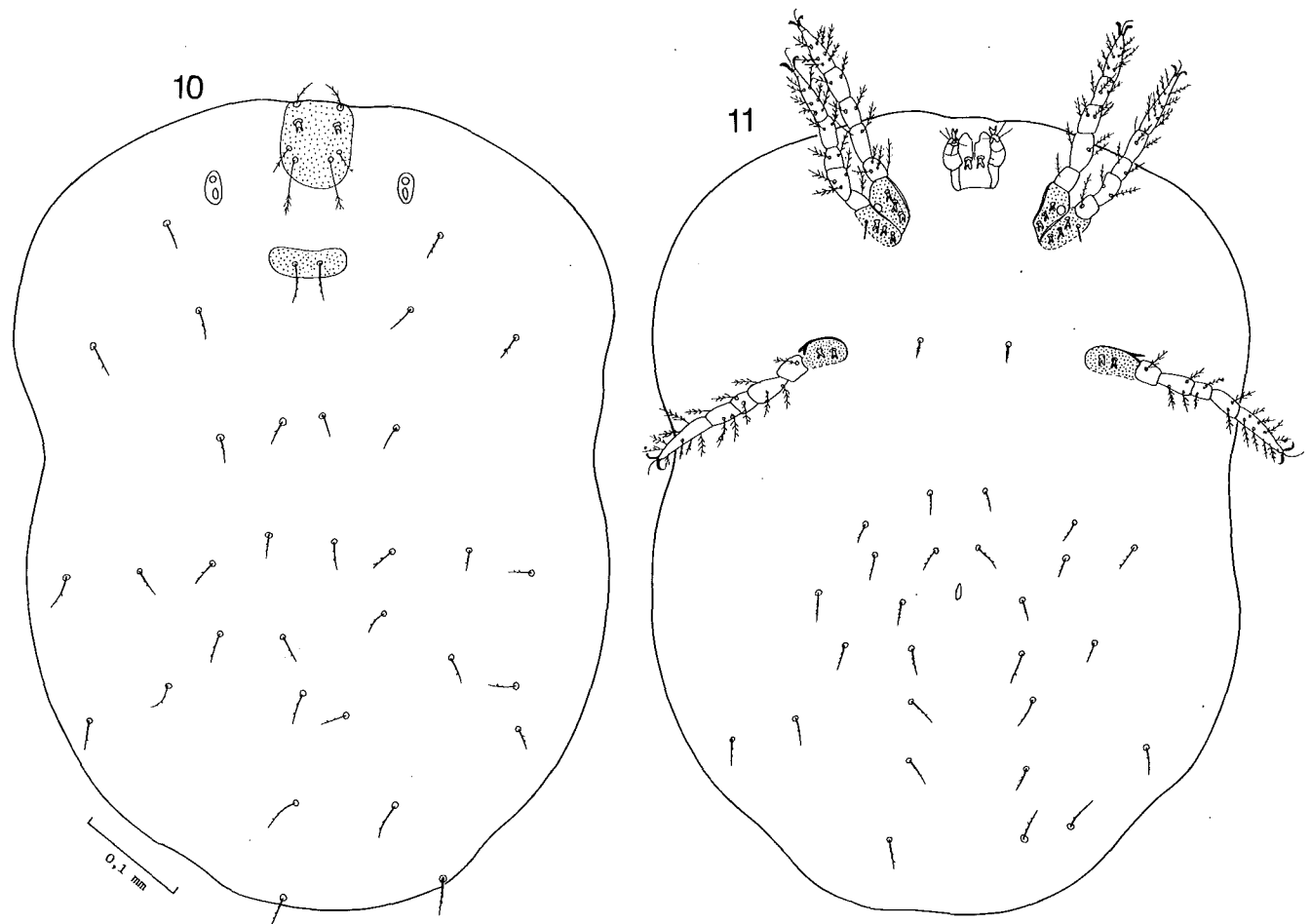
Genus *Neosilphitrombium* n. g.

Definition (larva): Resembles *Silphitrombium* by the following characters: eyes 2+2, sessile; two median prodorsal idiosomal shields, the anterior with 8 setae, the posterior with 2 setae; leg segments 6-6-6; urstigma oval



Figs. 3-4. *Silphitrombium furculigerum* n. sp. Larva: dorsal shields (3) and coxae I-III (4).

Figs. 5-9. *Silphitrombium furculigerum* n. sp. Larva: legs I (5), II (6), III (7) in dorsal or dorsolateral view; gnathosoma in ventral view (8); palptarsus and palptibia enlarged (9).



Figs 10-11. *Neosilphitrombium gratum* n. sp. Larva in dorsal (10) and ventral (11) view.

attached to coxa I; tarsal claws 3-3-3; presence of thick bifid spines on coxae I-III and on anterior scutum; same number of setae on legs; mouth lacking a chitinous ring; uropore present. This new genus differs from *Silphitrombium* by the following characters: anterior shield not prolonged by a "nasus", presence of only one pair of bifid spines on anterior scutum; posterior scutum with normal setae; coxa I to III with only 3-4-2 setae all being short bifid spines except the lateral seta of coxa II which is a thin seta.

Type species: Neosilphitrombium gratum n. sp.

Neosilphitrombium gratum n. sp.

Larva (figs. 10-17, table I): Anterior scutum punctate, lacking a "nasus" and bearing 8 setae: AM thin, barbed, AL are short forked spines, PL are thin shortly barbed, sensillae situated behind and inside the PL. Posterior scutum punctate, not striate, with QL long and shortly barbed. Dorsum: with 32 very shortly barbed setae 20 to 30 long of which 6 situated on propodonotum on 2 rows (2-4) and 26 on hysteronotum on 6 rows

(4-8-8-2-2-2). Venter: sternal setae lacking. With one pair of short setae between coxae III. Opisthogaster with 26 thin and very shortly barbed setae 8 to 29 long.

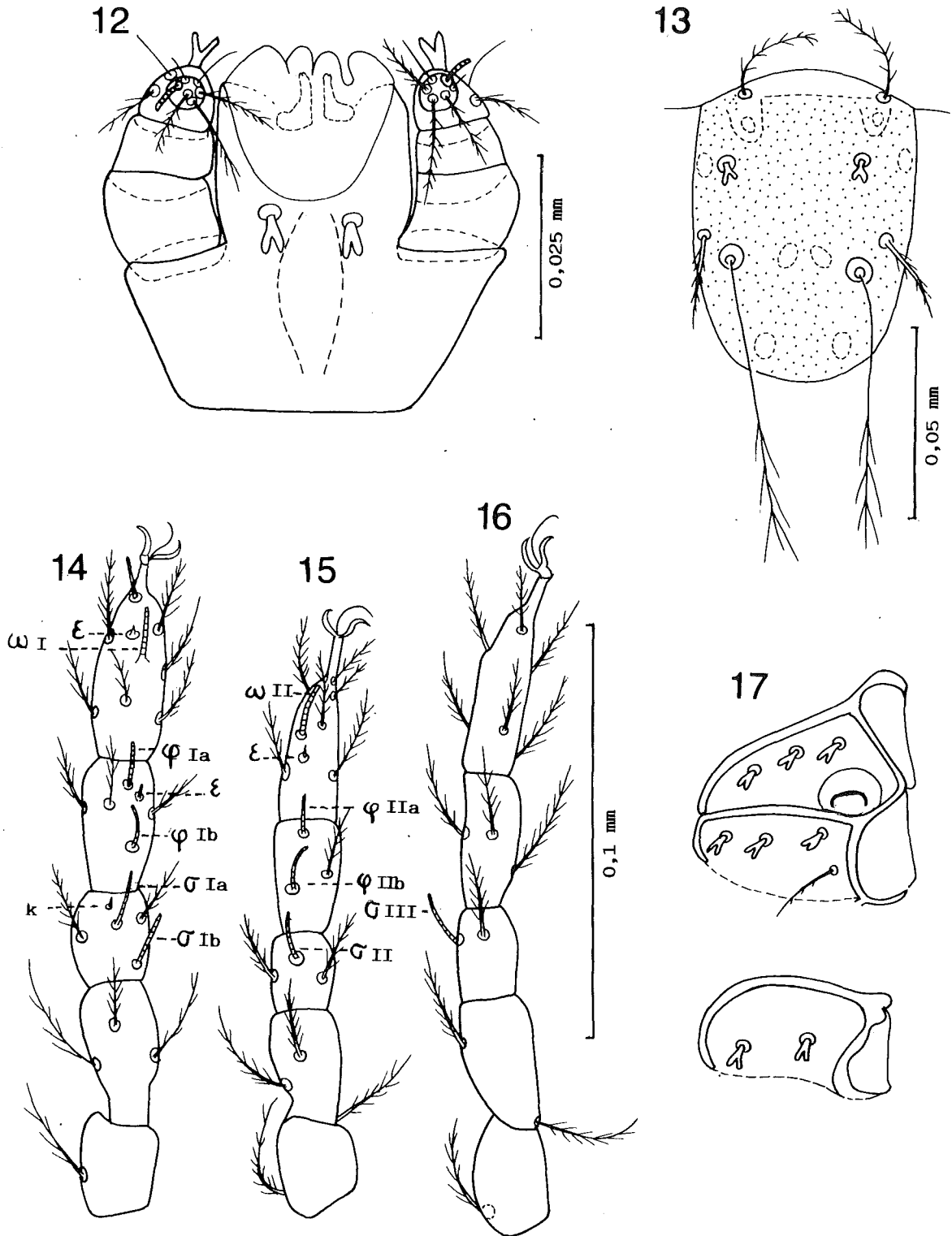
Host and locality:

Holotype and 11 paratypes larvae. Same data as for *Silphitrombium furculigerum*.

Holotype and 9 paratypes in the IRSNB. One paratype in the BM (Natural History) and 1 paratype in the South Australian Museum.

References

- FAIN, A., 1992. A new larval trombidiid, *Paputrombidium grootaerti* n. g. and n. sp. (Acari, Trombidiidae), parasitic on *Cymatopus* spp. from Papua New Guinea. Bulletin de l'Institut royal des Sciences naturelles de Belgique. Entomologie, 62.
- SOUTHCOTT, R.V., 1986. Studies on the Taxonomy and Biology of the Subfamily Trombidiinae (Acarina: Trombidiidae) with a critical Revision of the Genera. Australian Journal of Zoology. Supplementary Series n° 123: 1-116.



Figs. 12-17. *Neosilphitrombium gratum* n. sp. Larva: gnathosoma ventrally (12); anterior dorsal shield (13); legs I (14), II (15) and III (16) in dorsal or dorsolateral view; coxae I-III (17).

Table I: Standard data (in micrometers) for the larvae

	<i>Neosilphitrombium gratum</i>			<i>Silphitrombium furculigerum</i>			
	Holotype	Paratype n° 1	Paratype n° 2	Paratype n° 3	Holotype	Paratype n° 1	Paratype n° 2
<i>Anterior shield</i>							
AM	26	25	27	26	11	10	10
AL	6	6	6	5	9	9	9
PL	19	15	19	20	9	9	9
SENS	54	45	55	51	60	—	65
AMB	39	36	35	30	5	5	5
AW	33	38	31	30	34	36	33
PW	42	34	42	40	51	54	52
MA	30	—	22	27	48	51	—
AP	16	18	21	18	18	21	19
SA	30	27	27	25	27	30	29
SP	13	11	9	8	10	12	12
SB	30	33	29	30	47	48	48
L	89	—	80	75	92	100	—
W	59	68	60	57	84	81	85
LN	5	—	6	3	0	2	0
ASB	63	—	59	60	70	84	—
PSB	25	22	25	21	15	14	12
<i>Posterior shield</i>							
PSW	57	58	52	57	84	86	84
PSL	24	24	30	27	45	42	45
QW	27	23	24	21	34	34	33
QL	39	36	34	39	8	8	7
<i>Leg lengths</i>							
Tal	45	43	42	45	51	53	54
Ta2	36	36	36	37	46	46	48
Ta3	46	45	42	44	59	59	57
Ti1	29	30	30	27	31	30	33
Ti2	29	28	26	27	33	30	33
Ti3	34	36	34	36	39	37	39
Gel	26	25	24	26	27	26	28
Ge2	18	20	20	18	22	22	23
Ge3	23	23	23	21	24	27	27
Fe1	34	36	36	38	39	40	41
Fe2	29	31	30	30	36	37	38
Fe3	37	36	34	37	39	35	37
<i>Solenidia</i>							
ωI	12	12	12	13	13	12	13
ωII	12	13	13	13	14	14	14
φI apic.	12	13	11	10	18	16	16
φI bas.	14	15	13	14	17	16	—
φII apic.	10	10	9	10	15	14	14
φII bas.	13	13	11	12	15	15	17
σI apic.	14	14	15	14	17	16	17
σI bas.	15	15	17	15	18	16	—
σII	14	15	14	13	22	19	22
σIII	16	16	15	14	24	22	22
<i>Idiosoma</i>							
Length	720	725	738	765	980	816	978
Width	490	440	540	504	630	540	635