

ZOOLOGISCHE MEDEDELINGEN

UITGEGEVEN DOOR HET

RIJKSMUSEUM VAN NATUURLIJKE HISTORIE TE LEIDEN

(MINISTERIE VAN CULTUUR, RECREATIE EN MAATSCHAPPELIJK WERK)

Deel 50 no. 9

25 november 1976

NOTES ON THE SPECIES OF THE GENUS *SCHWIEBEA* DESCRIBED BY OUDEMANS (ACARINA, ASTIGMATA)

by

A. FAIN

Prins Leopold Instituut voor Tropische Geneeskunde, Antwerpen

With 24 text-figures

INTRODUCTION

Oudemans (1916) has erected the genus *Schwiebea*, for the reception of a single species, *S. talpa*. Since that time more than thirty species have been described in or transferred to this genus. Some of these species have been poorly described or are known only from the hypopial nymph and, therefore, their exact taxonomic position remains uncertain. Beside the typical species, Oudemans (1924a, b) has described two other species in the genus *Schwiebea*: *S. scalops* and *S. italica*. Moreover, two other species described by Oudemans in the genus *Tyroglyphus* have been transferred to *Schwiebea* by some authors: *T. novus* Oudemans, 1906, and *T. eurynympha* Oudemans, 1911.

The purpose of this paper is to redescribe these five species of Oudemans and by this way to contribute to a better knowledge of these species as well as of the genus *Schwiebea*.

The description and drawings that are published were made after the typical material in the Rijksmuseum of Leiden.

REMARKS ON SOME ORGANS OF THE HYPOPI OF ACARIDAE

We here use the nomenclature proposed by us for certain organs of the hypopi. We have replaced the term "gnathosoma" by the term "palposoma"

(see Fain, 1968 and 1972). This organ is a cuticular projection bearing two solenidia and one or two pairs of simple hairs. It is not homologous of a gnathosoma but only a sensory organ. We think therefore that the term palposoma is more appropriate than the old term gnathosoma used so far.

We have created the new term "conoid" (= in french "conoïdes") for the two pairs of modified hairs situated in the posterior and lateral regions of the suctorial plate and also for the modified hairs present in some genera on the coxae I, III and IV. These hairs so far had been called "suckers". Actually they are not suckers but conical and soft hairs. Their exact role is not known but it seems highly probable that such structures are not attaching organs. One might surmise that they serve as elastic buffers that aid for the detaching of the hypopi from the skin of insects to which they are fixed (Fain, 1973).

DESCRIPTION OF THE SPECIES OF OUDEMANS

Schwiebea talpa Oudemans, 1916 (figs. 1-6)

This species has been described after a single female specimen.

The specimen has been remounted by K. Samsinak (iii.1959) in "liquido de Swann".

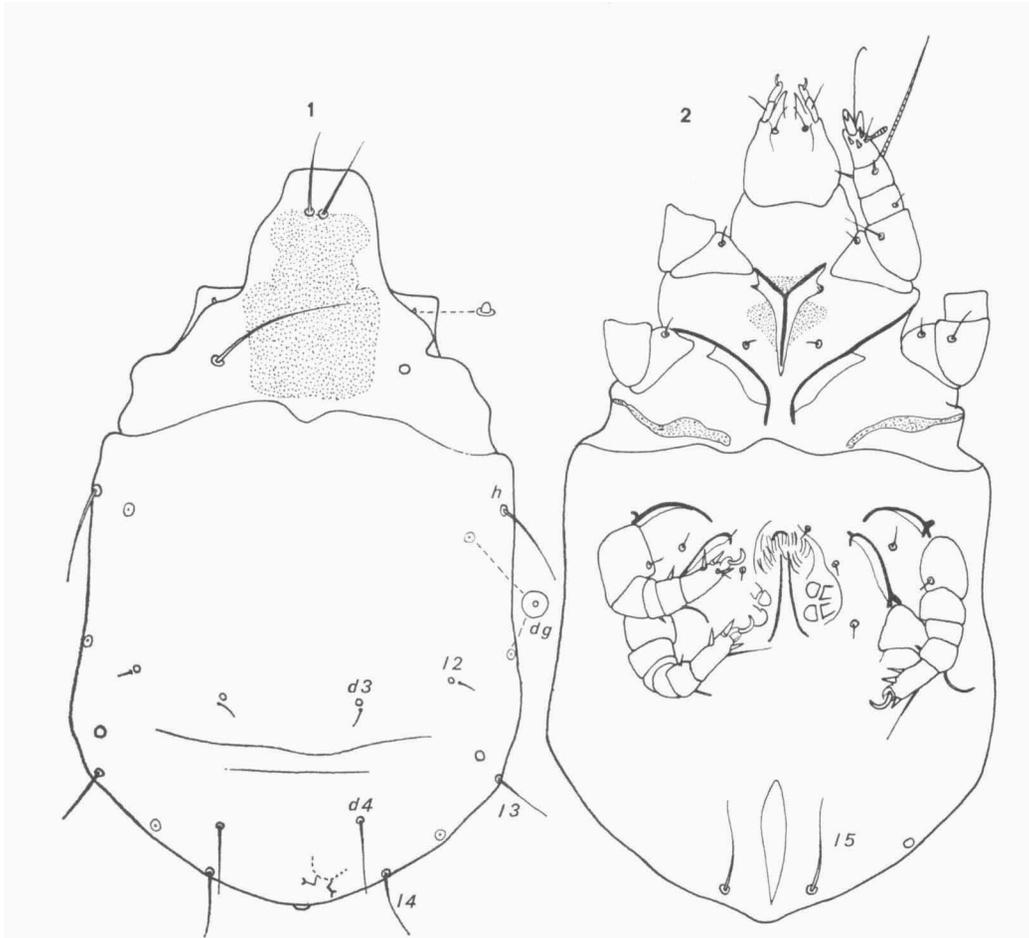
We have examined the specimen and present new drawings of it here (figs. 1-6). The idiosoma is 305 μ long and 189 μ wide (maximum width). Its total length, gnathosoma and palps included, is 350 μ . The gnathosoma alone is 51 μ long and 42 μ wide. The propodosomal shield is well distinct and has a straight posterior border; its maximum width is 57 μ .

Idiosoma chaetotaxy: distance *sc e* - *sc e* 78 μ , *d 3* - *d 3* 57 μ , *d 4* - *d 4* 61 μ , *l 4* - *l 4* 75 μ , *l 5* - *l 5* 36 μ . The *ve*, *sci*, *d 1*, *d 2*, *d 5*, *l 1*, *sh* and anals are lacking. The *scx* are very short, ovoid.

Leg chaetotaxy: the number of spines on the tarsi is difficult to ascertain owing to the dorsal position of the specimen. We have made drawings of the dorsal surface of the legs showing the disposition of the spines in this position.

Solenidiotaxy (figs. 3-6): Leg I: $\omega 1$ is regularly inflated toward apex, its base is thin. There is a thin apical $\omega 3$ and a very thin basal $\omega 2$ completely concealed in lateral view by the $\omega 3$. The *phi* is strong. There is only one *sigma* on genu I. Leg III: the tibial solenidion is rather thin and 15-16 μ long.

Habitat. — The holotype female has been found on decaying leaves, in Bonn, vii.1901.



Figs. 1-2. *Schwiebea talpa* Oudemans. Holotype female in dorsal (fig. 1) and ventral (fig. 2) view (*dg* = dermal glands).

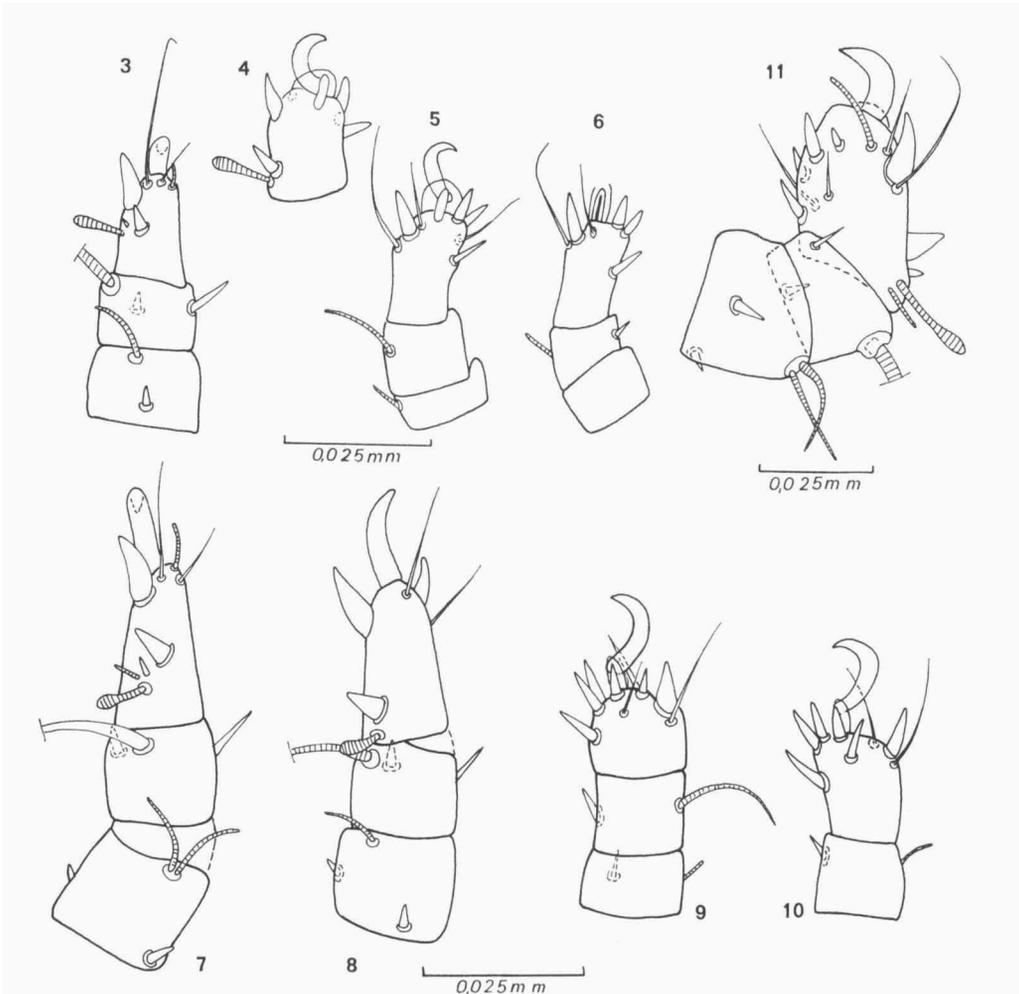
Schwiebea scalops Oudemans, 1924 (figs. 7-10, 12)

This species is represented only by the holotype female (slide nr. 3139).

The specimen has been remounted by K. Samsinak in Swann medium (iii.1959). It is excessively transparent, the dorsal shield is not visible and the epimera are very poorly distinct. In the original drawings of Oudemans the epimera III and IV are separated.

Idiosoma 357 μ long and 195 μ wide (maximum). The chelicerae are 66 μ long. Length of tarsi I-IV: 24 μ - 23 μ - 15 μ - 18 μ .

Chaetotaxy: Length of the setae: *sc e* 65 μ , *h* 30 μ , *l 2* 12 μ , *d 4* 40 μ , *l 4* 36 μ , *l 5* 33 μ . The *ve e*, *sc i*, *d 1*, *d 2*, *d 3*, *d 5*, *l 1* and *a* setae are lacking.



Figs. 3-6. *Schwiebea talpa* Oudemans. Holotype female; tarsus, tibia and genu of leg I (fig. 3), of leg III (fig. 5) and of leg IV (fig. 6); tarsus II (fig. 4). Figs. 7-10. *Schwiebea scalops* Oudemans. Holotype female; tarsus and genu I (fig. 7), II (fig. 8) and III (fig. 9); tibia and tarsus IV (fig. 10). Fig. 11. *Schwiebea italica* Oudemans. Tarsus, tibia and genu I of a paralectotype, female.

Distance between setae: $sc\ e - sc\ e\ 90\ \mu$, $l\ 2 - l\ 2\ 152\ \mu$, $d\ 4 - d\ 4\ 60\ \mu$, $l\ 4 - l\ 4\ 66\ \mu$.

Solenidiotaxy (figs. 7-10): $\omega\ 1$ of tarsi I-II short and flanked with a very strong *ba* seta. The genu I bears 2 slightly unequal and divergent solenidia. The solenidion of tibia III is 22-23 μ long.

Habitat. — On *Bromelia margarethae*, from Colombia and sent to Buitenzorg, Java.

Schwiebea italica Oudemans, 1924 (figs. 11, 13)

This species is represented by 10 females mounted on a single slide (nr. 3117). All are females and nine of them are ovigerous. These specimens have been remounted in Swann medium by K. Samsinak (iii.1959).

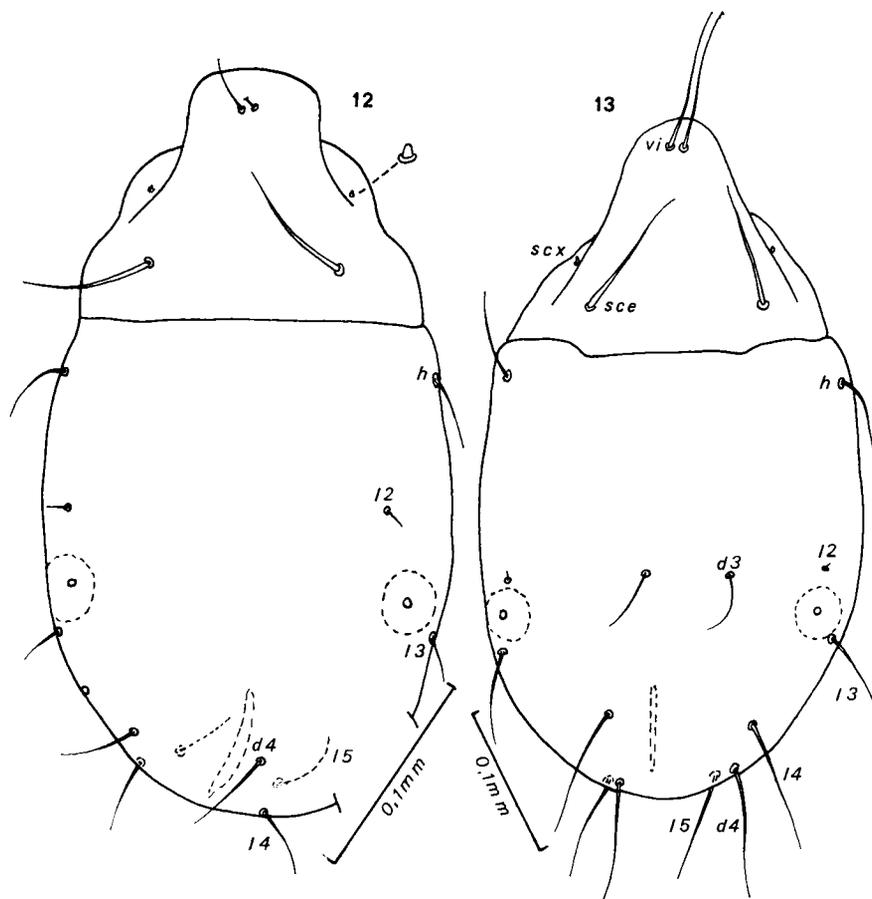


Fig. 12. *Schwiebea scalops* Oudemans. Holotype female; dorsal surface.

Fig. 13. *Schwiebea italica* Oudemans. Lectotype and paralectotype, female; dorsal surface.

The specimens are excessively cleared and difficult to study. The size of the specimens (idiosoma) varies from $405 \mu \times 216 \mu$ minimum to $495 \mu \times 270 \mu$ maximum. Samsinak has designated a lectotype amongst these specimens. It is 425μ long and 255μ wide (idiosoma).

The specimens may be divided into two groups according to the length of

the d_3 setae. In 4 specimens these setae are 6-12 μ long, while in the 6 other specimens the d_3 setae are 28 to 45 μ long.

In most of the specimens of the second group (with long d_3) we have observed one pair of very small l_2 setae (5 μ long). These l_2 setae have not been observed in the specimens of the first group. The difference in length of the d_3 setae does not correspond with the size of the body, for both the smallest and the largest specimens belong to the second group. The lectotype belongs to the second group.

The epimera are not visible but in the original drawings of Oudemans, the epimera III and IV are separated.

Chaetotaxy: The ve , sci , d_1 , d_2 , d_5 , l_1 , sh and a setae are lacking. Length of setae: vi 70-75 μ , $sc e$ 80-90 μ , h 60 μ , d_3 6 to 45 μ , d_4 70-80 μ , l_2 5 μ , l_3 50 μ , l_4 75 μ , l_5 60-70 μ . In many specimens the cuticle is folded, therefore the distance between the setae is not measurable.

Solenidiotaxy (fig. 11): as in *S. scalops* except that ω_1 , ω_2 and ω_3 are relatively longer.

Habitat. — On bulbs of *Dahlia variabilis*, Instituut voor Plantenziekten, Buitenzorg, Java. These bulbs originated from Palermo, Italy.

Schwiebea eurynympha (Oudemans, 1911) (figs. 14-19)

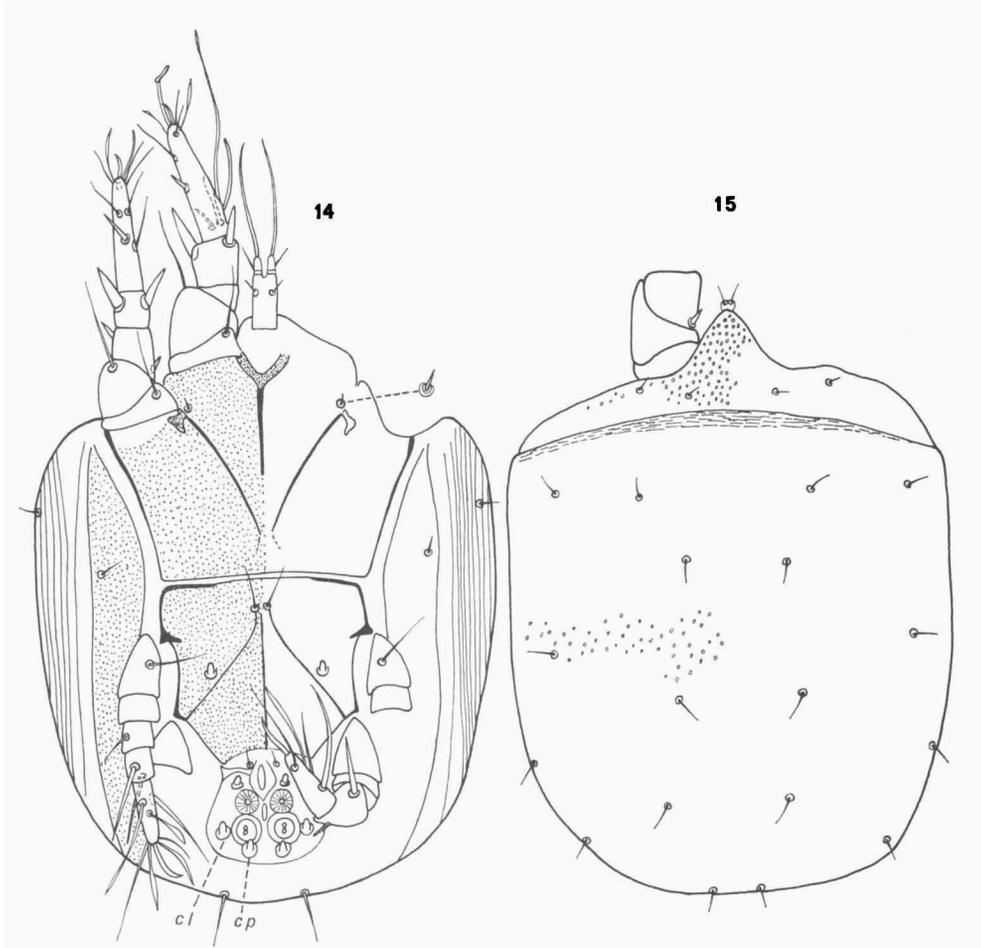
Tyroglyphus eurynympha Oudemans, 1911: 189.

Acotyledon eurynympha; Zachvatkin, 1941: 207.

Schwiebea eurynympha; Turk & Turk, 1957: 129 (= *S. eurynymphae*); Cooreman, 1963: 18; Woodring, 1966: 106.

This species is represented in the Oudemans collection only by one hypopus (holotype) (slide nr. 1147). We here give a new description and new figures of this specimen.

The length of the idiosoma is 225 μ , the width 171 μ . Anterior border of the propodosoma with a median conical projection 40 μ wide and 25 μ long. Ventral surface with 4 large punctated areas, two median and two laterals, separated by three narrow groves. The anteromedian area is formed by the coxae I and II, the posteromedian area by the coxae III and IV. Palposoma long and narrow, bearing two apical solenidia and 2 pairs of simple hairs. Tarsi I-II much longer than tarsi III and IV. Claws III and IV twice as long as claws I-II. Tarsi I ending in a seta with an apical saucer-like or spoon-like formation and bearing 5 narrowly leaf-like setae. Tarsi II without saucer-like seta. Tibiae I-II with 2 very strong ventrolateral spines. The solenidion ω_3 of tarsi I is longer than half the length of the tarsus. The ω_1 of tarsus I is nearly as long as half the length of the tarsus. The coxal I



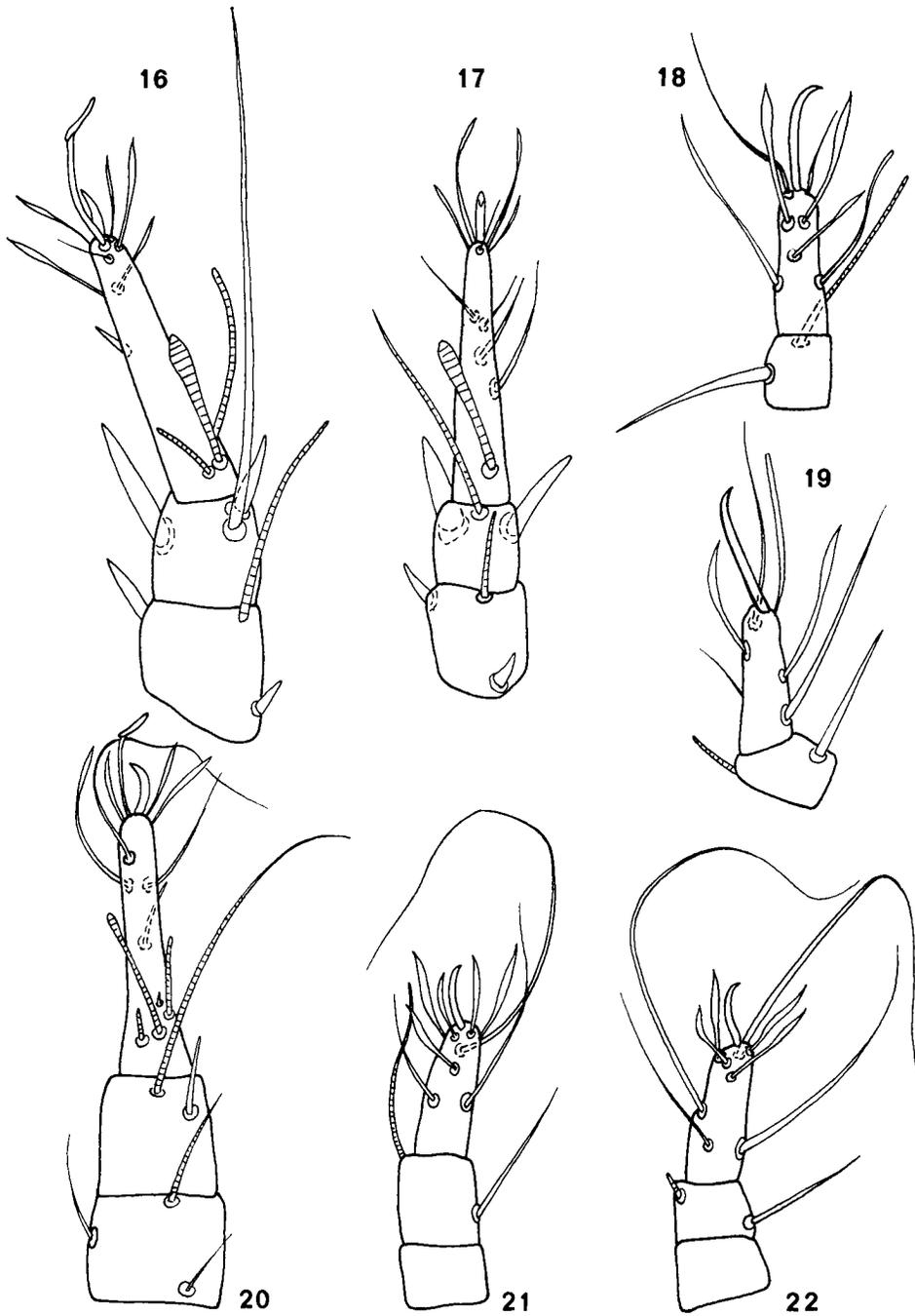
Figs. 14-15. *Schwiebea eurynympha* (Oudemans). Holotype hypopus in ventral (fig. 14) and dorsal view (fig. 15) (*cp* = paramedian conoids; *cl* = lateral conoids).

setae are thin and very lateral, the coxal III setae are thick and conical (= conoids).

Most of these characters are encountered in the hypopi of *Rhizoglyphinae* and we think that this species should be placed in this subfamily. It is more difficult to determine its exact generic position. The following arguments prove that it does not belong to the genus *Rhizoglyphus*.

The hypopus of *S. eurynympha* is distinguished from that of *Rhizoglyphus echinopus* (sensu Van Eynhoven) by the following characters:

- (1) the coxal fields I-II and III-IV are not divided by a longitudinal median groove, unlike in *R. echinopus*;



Figs. 16-19. *Schwiebea eurynympha* (Oudemans). Holotype hypopus; tarsus, tibia and genu of legs I (fig. 16), II (fig. 17); tarsus and tibia of legs III (fig. 18) and IV (fig. 19). Figs. 20-22. *Troupeania nova* (Oudemans). Holotype hypopus; tarsus, tibia and genu I (fig. 20), III (fig. 21) and IV (fig. 22).

- (2) the(?) absence of the *ve* setae; these setae are present in *R. echinopus*;
- (3) the coxal I setae are simple hairs; in *R. echinopus* they are conoids;
- (4) there is no saucer-like hair on the apex of tarsus II, while in *R. echinopus* both the tarsi I and II bear such hairs;
- (5) the propodosoma is much shorter dorsally;
- (6) the claws III and IV are twice as long as the claws I-II, while in *R. echinopus* all the claws are subequal.

Some of these characters are sufficient to separate these two kinds of hypopi at the generic level. However, it does not prove that *eurynympha* belongs to *Schwiebea*. Actually we lack a good description of an hypopus of this genus, and it is even not certain if the type species of the genus (*S. talpa*) possesses an hypopial stage.

In this paper we will maintain provisionally the species *eurynympha* in the genus *Schwiebea*.

Habitat. — In decaying leaves, Den Haag, 1910 (Nederland).

Troupeauia nova (Oudemans, 1906) (figs. 20-24)

Tyroglyphus novus; Oudemans, 1906: 122; Oudemans, in Poppe, 1907.

Troupeauia nova; Zachvatkin, 1941: 301.

Schiebea nova; Turk & Turk, 1957: 131; Cooreman, 1963: 23; Woodring, 1966: 108.

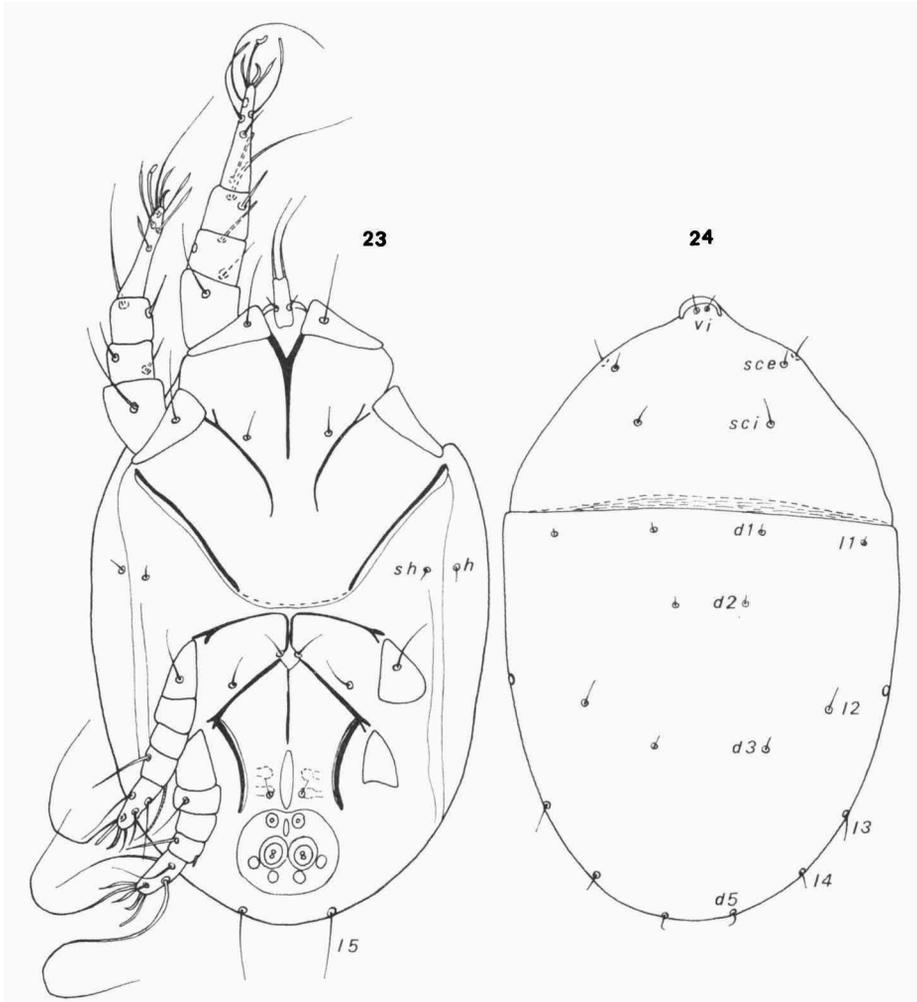
We have examined the holotype hypopus of this species. This specimen was rather opaque and we have remounted it. The idiosoma is 228 μ long and 151 μ wide. The propodosoma is relatively long (78 μ , dorsally). Anterior extremity of propodosoma rounded. Other parts of the body and legs poorly sclerotized. Dorsal setae short and thin. Epimera II free. Epimerae III and IV fused in the midline with a thin longitudinal sclerite. Suctorial plate rather small, a little wider than long. Legs slender. Tarsi I-II long and narrow. All claws are subequal. The setae of coxae I and III are thin. The setae of the legs are hair-like, except a few which are modified into narrow spines. Tarsi I and II bear one saucer-like seta and five narrow leaf-like hairs. Tarsus III with eight hairs among which five are leaf-like. Tarsi IV with eight hairs of which four are leaf-like. The tibiae I-II bear only one narrow and rather long spine. Solenidia very thin. The solenidion of tibia III is relatively very long.

These characters do not correspond with the genus *Schwiebea*. Zachvatkin (1941) had erected for this species the new genus *Troupeauia*.

We think that this species should be maintained in this genus until the corresponding adults are discovered.

The drawings given by Turk & Turk (1957, fig. 85) of the hypopus of *Schwiebia nova* (Oudemans) are inaccurate and one might surmise that these authors actually had another species before them.

Habitat. — Near Bremen (Coll. Poppe, 1905).



Figs. 23-24. *Troupeauia nova* (Oudemans). Holotype hypopus in ventral (fig. 23) and dorsal view (fig. 24).

ACKNOWLEDGEMENTS

We thank Dr. L. Van der Hammen, who kindly sent us the original material of Oudemans for study.

BIBLIOGRAPHY

- COOREMAN, J., 1963. Notes et observations sur quelques acariens inféodés aux coléoptères scolytides de la faune belge. — Bull. Inst. r. Sci. nat. Belg. 39 (30): 1-48.
- FAIN, A. 1968. Un Hypope de la famille Hypoderidae Murray 1877 vivant sous la peau d'un rongeur (Hypoderidae: Sarcoptiformes). — Acarologia 10 (1): 111-115.
- , 1972. Notes sur les hypopes des Saproglyphidae (Acarina: Sarcoptiformes). II. Redéfinition des genres. — Acarologia 14 (2): 225-249.
- , 1973. Notes sur les hypopes des Saproglyphidae (Acarina: Sarcoptiformes). III. Le genre *Crabrovidia* Zachvatkin, 1941. Description de 8 espèces nouvelles symphorétiques sur les Sphecidae (Hyménoptères). — Bull. Ann. Soc. r. Belg. Ent. 109: 153-189.
- OUDEMANS, A. C., 1906. Acarologische aantekeningen xxv. — Ent. Ber. 2: 121-123.
- , 1907. In: Poppe, Nachtrag zur Milbenfauna der Umgegend Bremens. — Abh. Naturw. Ver. Bremen 19: 47-67.
- , 1911. Acarologische aantekeningen xxxviii. — Ent. Ber. 3: 183-191.
- , 1916. Acari verzameld bij Bonn. — Ent. Ber. 4: 250-251, 261-266.
- , 1924a. Acarologische aantekeningen lxxv. — Ent. Ber. 6: 265-274.
- , 1924b. Acarologische aantekeningen lxxvii. — Ent. Ber. 6: 317-336.
- TURK, E., & F. TURK, 1957. In: Stammer, Beiträge zur Syst. ü. Ökol. Mitteleurop. Acarina. Teil I: Tyroglyphiden: 1-231.
- WOODRING, J. P., 1966. North American Tyroglyphidae (Acari): II The genus *Schwiebia*, with description of four new species. — Proc. Louisiana Acad. Sci. 29: 85-112.
- ZACHVATKIN, A. A., 1941. Fauna of U. S. S. R. Arachnoidea Vol. VI. Tyroglyphoidea (English translation).