

**NOTES ON TWO GENERA OF MITES (*VIEDEBANTTIA* AND  
*NANACARUS*) (ACARI: ASTIGMATA) DESCRIBED BY OUDEMANS**

by

**A. FAIN**

Fain, A.: Notes on two genera of mites (*Viedebanttia* and *Nanacarus*) (Acari: Astigmata) described by Oudemans.

Zool. Med. Leiden 59(23), 31-xii-1985: 275-282, figs. 1-12. — ISSN 0024-0672.

*Viedebanttia schmitzi* Oudemans, 1929, the type species of the genus *Viedebanttia* Oudemans, 1929 and *Nanacarus minutus* (Oudemans, 1901), the type species of the genus *Nanacarus* Oudemans, 1902 are redescribed and depicted from the typical material. A lectotype (a female) is designated for *Nanacarus minutus*.

Keywords: Acari, Astigmata; *Viedebanttia*; *Viedebanttia schmitzi*; *Nanacarus*; *Nanacarus minutus*.

A. Fain, Instituut voor Tropische Geneeskunde "Prins Leopold", 155, Nationalestraat, Antwerpen, Belgium.

We give herein a new description and figures of two genera and species described by Oudemans: *Viedebanttia* Oudemans, 1929 (type species *Viedebanttia schmitzi* Oudemans, 1929) and *Nanacarus* Oudemans, 1902 (type species *Hypopus minutus* Oudemans, 1901). These descriptions are based on the typical material deposited in Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands.

During these last years several new species have been described in the genus *Nanacarus* and one new species in the genus *Viedebanttia* and some confusion has arisen concerning the exact status of these taxa caused by lack of adequate descriptions of these species. We think therefore that the present paper will be of some help for those working in these groups.

Acaridae Murray  
**Viedebanttia** Oudemans, 1929

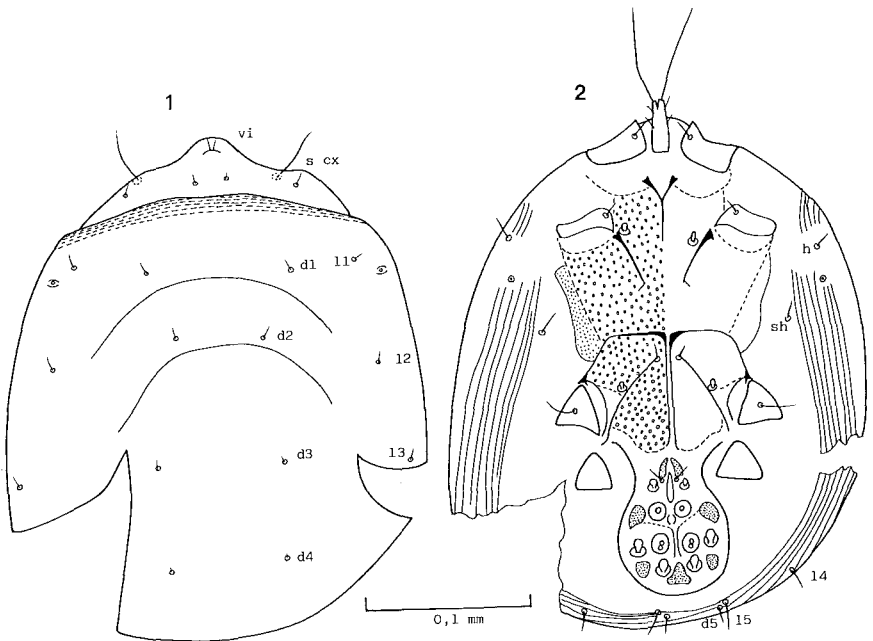
This genus was created for a new species, *Viedebanttia schmitzi* Oudemans, 1929 found in the nest of a mole, in Sittard, The Netherlands. The species was represented only by the deutonymph (hypopus).

The species and genus were briefly described and no figures were provided. Recently we (Fain & Schwan, 1984) had the opportunity to describe a new species of this genus (*V. diamanus* Fain and Schwan, 1984) and to give a new definition of the genus.

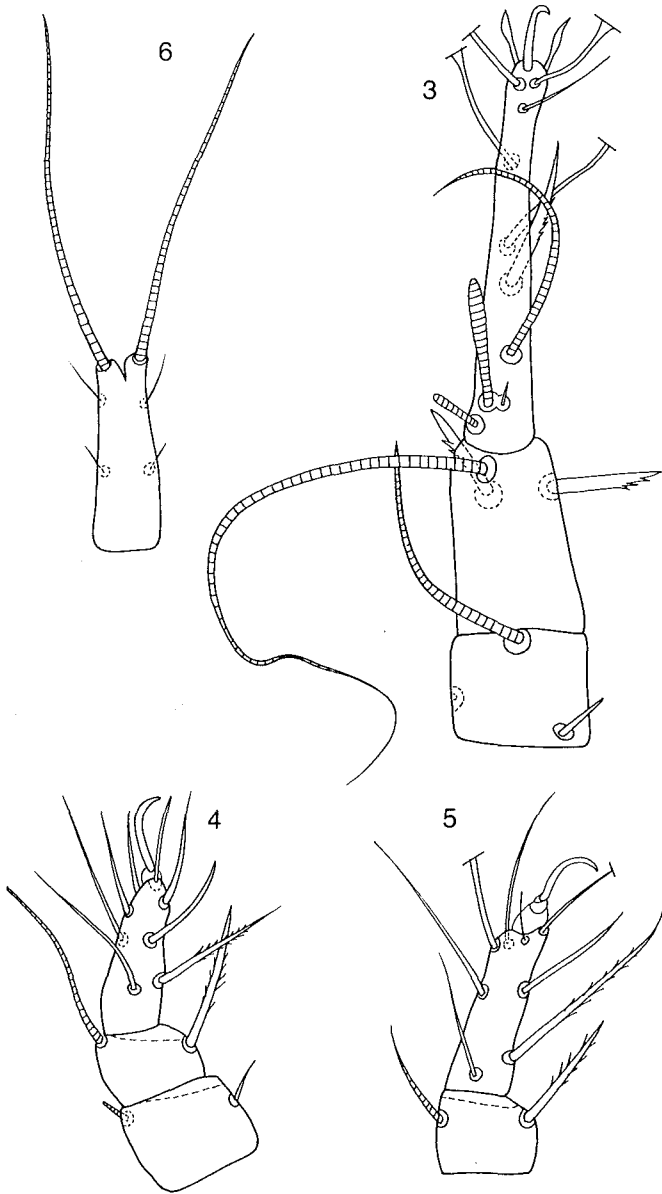
In this paper we give a more complete description, and the first figures of the species described by Oudemans (1929).

**Viedebanttia schmitzi** Oudemans, 1929  
 (figs. 1-6)

This species is represented only by the holotype.



Figs. 1-2. *Viedebanttia schmitzi* Oudemans. Hypopus in dorsal (1) and ventral view (holotype)



Figs. 3-6. *Viedebanttia schmitzi* Oudemans. Hypopus (holotype): Leg I (3), leg III (4) and leg IV (5); palposoma (6).

Hypopus (figs. 1-6): Holotype 295  $\mu\text{m}$  long and 240  $\mu\text{m}$  wide (idiosoma). This specimen is in a rather poor condition and partly crushed. Dorsum: Anterior margin covering the base of palposoma. Setae *vi* very short; *ve* absent; *s cx* 33  $\mu\text{m}$ ; *sc i* slightly shorter (5  $\mu\text{m}$ ) than *sc e* (7,5  $\mu\text{m}$ ); *d 1* to *d 4* and *l 1* to *l 4* less than 10  $\mu\text{m}$  long. Venter: Epimera I fused in a thin sternum. Epimera II free. Coxal fields I-IV punctate and with numerous very small clear rounded spots. Coxal fields III and IV separated in the midline. Orifice of the oil gland situated behind seta *h*. Suctorial plate 63  $\mu\text{m}$  wide. Anterior suckers slightly smaller than posterior suckers. Lateral conoids situated on the same transverse line as the posterior suckers. Setae *cx I* and *cx III* and *gp* modified into conoids. Setae *ga*, *gm*, *d 5* and *l 5* thin and short. Palposoma 33  $\mu\text{m}$  long, 11  $\mu\text{m}$  wide; solenidia alpha 53  $\mu\text{m}$ . Legs: length of tarsi I-IV (in  $\mu\text{m}$ ); 60-48-22-26; length of tibiae 30-21-12-12. Tibia I longer than wide (30  $\times$  21  $\mu\text{m}$ ); genu I wider than long (24  $\times$  18). Tarsi I with eight setae (four foliate but incomplete, two relatively strong and long but broken apically, one thin seta and one thick barbed spine). Tarsus II with nine setae (one additional spine). Tarsi III-IV with eight setae, some of them being narrowly foliate. Tibiae I-II with two thick barbed spines, the tibiae III-IV with only one barbed spine. Genu I with one short dorsal seta, the second ventral is broken at its base. Solenidiotaxy: Tarsus I with a thick almost cylindrical  $\omega 1$ , 24  $\mu\text{m}$  long; a long  $\omega 3$  (48  $\mu\text{m}$ ) situated not far from  $\omega 1$ ; a relatively long  $\omega 2$  (10  $\mu\text{m}$ ) more basal. Solenidion of tibia I very long (about 100  $\mu\text{m}$ ). Genu I with only one solenidion.

Habitat. — The holotype was collected from the nest of a mole, *Talpa europea* L. 1758, from Sittard, The Netherlands, in 1916.

In Belgium this species is common in the litter of forest areas. We have collected numerous specimens from several localities. In these specimens the tarsi I-II bear 5 foliate setae and 1 spoonlike seta and the tarsi III-IV bear 3 or 4 narrowly foliate setae and other either thin or more or less expanded setae.

#### Hemisarcoptidae Oudemans

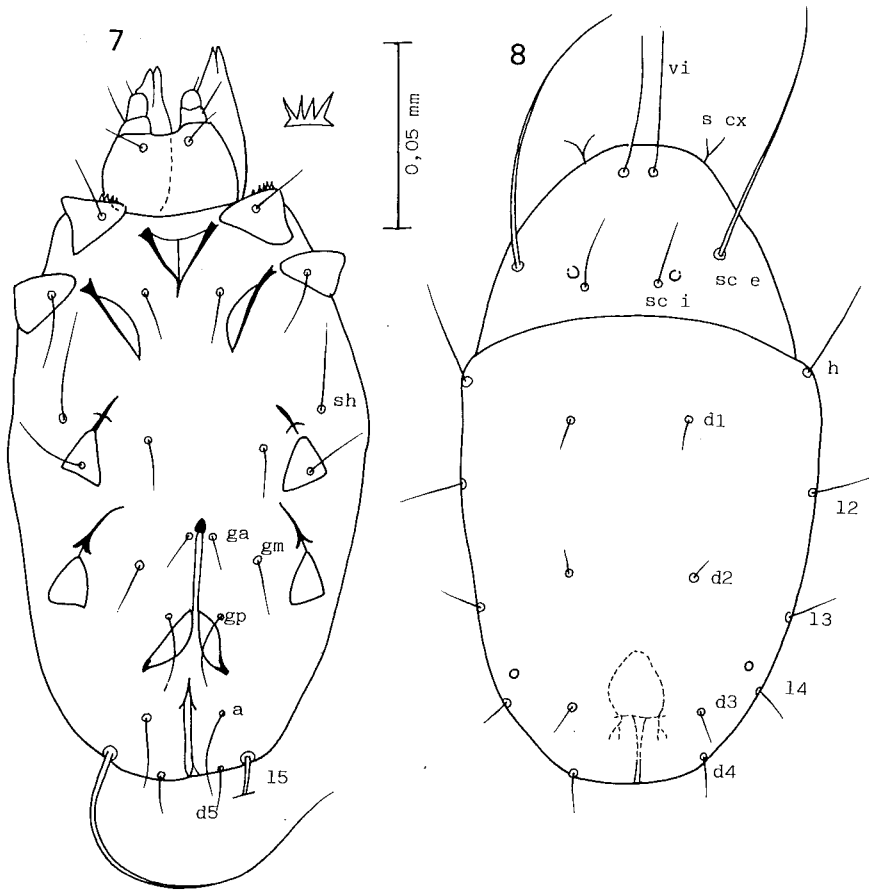
#### **Nanacarus** Oudemans, 1902

*Nanacarus* Oudemans belongs to a small group of four related genera forming the family Hemisarcoptidae Oudemans, 1904 (syn. Nanacaridae Oudemans, 1923): *Hemisarcoptes* Lignières, 1893, *Nanacarus* Oudemans, 1902, *Congovidia* Fain and Elsen, 1971 and *Sapracarus* Fain and Philips, 1978.

Since 1966, several new species have been described in the genus *Nanacarus* but obviously some of them belong to one of the other genera. This is the case

for *Nanacarus manus* Purvis and Evans, 1982, which belongs to the genus *Sapracarus*. Moreover, according to Oconnor (1984) the genus *Nanacaroides* Volgin and Mironov, 1979 is a synonym of *Congovidia*.

Due to lack of an adequate description of *Nanacarus minutus* it remains difficult to recognize with certainty if a species does or does not belong to the genus *Nanacarus*. We think therefore that a new description of the type species has become necessary.



Figs. 7-8. *Nanacarus minutus* (Oudemans). Lectotype female in ventral (7) and dorsal view (8).

**Nanacarus minutus** (Oudemans, 1901)

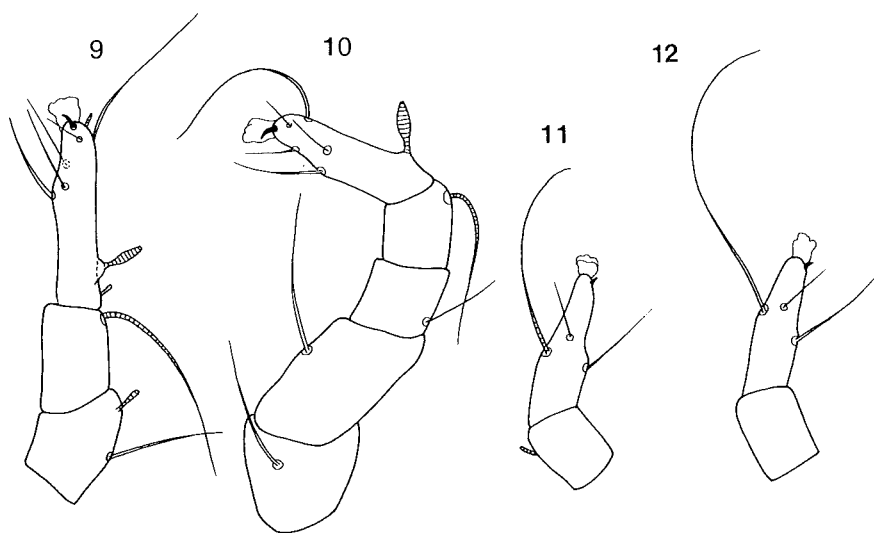
(figs. 7-12)

The nymph was described under the name *Hypopus minutus* Oudemans, 1901. It was found on the bee *Xylocopa* (*Koptorthosoma*) *tenuiscapa*, from Java. Another specimen was found on the bat *Eptesicus serotinus* (= *Vesperugo serotinus*) from Germany.

Oudemans (1902) described the genus *Nanacarus* with *Hypopus minutus* as type species. In 1903, he described again *Nanacarus* Oudemans, n.g. and he mentioned the discovery of two new specimens, a male and a female, from *Sorex vulgaris* from Bremen in Germany. He redescribed the species and gave figures of the adults which were fairly good for that time. We redescribe herein the female of this species and designate a lectotype.

Female lectotype (figs. 7-12): Oudemans (1901) described and depicted the nymph of this species. This specimen is at present in very bad condition and most of its characters are not observable. In his original description Oudemans mentioned another specimen of the same species collected by Poppe on *Eptesicus serotinus*. Actually this specimen is a syntype female and we designate it as the lectotype. This specimen is in a rather good condition. The idiosoma is 177  $\mu\text{m}$  long and 103  $\mu\text{m}$  wide. *Dorsum*: Sejugal furrow well developed. A pair of globulous transparent eyes are present close to the setae *sc i*. Length of setae (in  $\mu\text{m}$ ): *vi* 39; *sc i* 18; *sc e* 85; *s cx* is forked and situated far in front, close to the gnathosoma.; *d 1* to *d 4* 10-13; *l 2* 13; *l 3* and *l 4* 10; *h* 35. The *ve* and *l l* are lacking. Orifice of oil glands between *l 3* and *l 4*. *Venter*: Epimera I fused in a short sternum, the other epimera free. Epimera III shorter than epimera IV. Vulva situated at the level of coxae IV or a little more behind. The genital suckers have not been observed (specimen not clear enough). There is only one pair of anal setae. Length of setae (in  $\mu\text{m}$ ): *sh* 25; *cx I* and *cx III* 15; *gm* 13; *gp* 18; *a* 18-20; *d 5* 10-15; *l 5* 100-120. Chelicerae 46  $\mu\text{m}$  long. Legs: Tarsi (length in  $\mu\text{m}$ ) 27-21-18-20. All tarsi end in a sucker without a claw. Anterior surface of trochanters I bearing a comb of five small teeth directed anteriorly. Tarsus I-II with a distinct recurved apicoventral spine and five thin setae all situated in the apical half of the tarsi. Tarsi III-IV with a very small ventroapical spine and three thin setae situated in the median third of these tarsi. All tibiae devoid of setae. Genua I-II with 1 seta, other genua bare. Femora 1-1-0-1. Solenidiotaxy: Tarsus I with  $\omega 1$  club-shaped,  $\omega 2$  basal and very small,  $\omega 3$  apical and very small. Tarsus II with a larger club-shaped  $\omega 1$ . Tibiae I-III with a solenidion. Genu I with one small solenidion, other genua without solenidia.

Habitat of the specimens of the Oudemans collection. — 1. Lectotype



Figs. 9-12. *Nanacarus minutus* (Oudemans). Lectotype female: Leg I (9), leg II (10), leg III (11) and leg IV (12).

female: from *Eptesicus serotinus* (Schreber, 1774), from Osterholz, near Bremen, Germany (5.VIII.1898)

2. Nymph: described and depicted in the original description. It was collected from a bee *Xylocopa (Koptorthosoma) tenuiscapa* (Westwood, 1840), from Java (XII.1898)

3. A female from *Pipistrellus pipistrellus* (Schreber, 1774), from Lemförde, near Bremen, Germany (30.VI.1898)

4. A male and a female from *Sorex araneus* L., 1758, from Vegesack, near Bremen (II.1898)

#### ACKNOWLEDGEMENTS

We are grateful to Dr. L. van der Hammen, who kindly sent us the original material for study.

#### REFERENCES

- Fain, A. & Schwan, T.G., 1984. Three new hypopial nymphs (Acari, Acaridae) phoretic on fleas parasitic on rodents in California, U.S.A. — Bull. Ann. Soc. belge Ent. 120: 91-97.
- Oconnor, B.M., 1984. Acarine-fungal relationships: The evolution of Symbiotic associations. In Wheeler, Q. & M. Blackwell (eds.) 1984. Fungus-Insect relationships: Perspectives in Ecology and Evolution: 354-381. New York.

- Oudemans, A.C., 1901. Notes on Acari. Third series — Tijds. Ned. Dierk. Ver. (2), VII, n°2: 50-88.
- Oudemans, A.C., 1902. Acar. Aanteek. — Ent. Ber. 7: 42-45.
- Oudemans, A.C., 1903. Notes on Acari — Tijds. v. Ent. n°1: 1-24.
- Oudemans, A.C., 1929. Acar. Aanteek. 98 — Ent. Ber. 168: 485.