

*Horstia (Horstia) longa* spec. nov. (*Acari, Acaridae*) from  
house-dust in Poland

*Horstia (Horstia) longa* spec. nov. (*Acari, Acaridae*) z kurzu domowego  
w Polsce

ALEX FAIN<sup>1</sup> and WIT CHMIELEWSKI<sup>2</sup>

<sup>1</sup>Institut royal des Sciences naturelles de Belgique, Rue Vautier 29, B-1040 Bruxelles

<sup>2</sup>Oddział Pszczelnictwa, Instytut Sadownictwa i Kwiaciarnictwa, Kazimierska 2, 24-100 Puławy

ABSTRACT. *Horstia (Horstia) longa* spec. nov. (*Acari, Acaridae*) is described from house-dust in Poland.

#### INTRODUCTION

We describe herein a new species of mites, *Horstia (Horstia) longa* sp. n. collected by W. CH. in house-dust in Poland. The collector succeeded in rearing this mite on an artificial medium. All the specimens studied in this paper are issued from this culture.

FAIN (1984) revising the genus *Horstia* OUDEMANS, 1905, divided this genus into two subgenera: the nominate subgenus and a new subgenus *Amhorstia* FAIN, 1984. The first comprises six species, all confined to the Old World, the second four species endemic for the New World. All these species, except for one, are known only from their deutonymphal nymphs (= hypopus). The only exception is *Horstia (Amhorstia) virginica* BAKER, 1962, which is represented by both hypopi and adults.

It is to be noted that OUDEMANS (1905) included in his new genus *Horstia* the species *Trichotarsus trifilis* CANESTRINI, 1897, also represented by hypopi and adults. This species, however, has been very poorly described and without figures so that it is very difficult to recognize (VITZTHUM, 1919).

The genus *Horstia* differs clearly from all the other genera of the *Acaridae*, in adults, in reduction of the chaetotaxy of the tarsi (tarsi I-II with 8 setae)

and the tibiae (tibiae I-II with one seta), the presence on tarsi of a small apico-ventral furcate sclerite and the bifid aspect of the setae s cx.

Owing to the important differences existing between *Horstia* and the other genera of *Acaridae*, FAIN (1984) has created for this genus a separate subfamily *Horstiinae*.

#### DESCRIPTION OF THE SPECIES

##### *Horstia (Horstia) longa* spec. nov.

Female holotype (Figs 1-6): Maximum length 375  $\mu\text{m}$ , maximum width 138  $\mu\text{m}$  (idiosoma). Measurements in 4 paratypes (length  $\times$  width in  $\mu\text{m}$ ): 370  $\times$  153, 360  $\times$  132, 357  $\times$  135, 350  $\times$  130. There are 4 pairs of lyri-fissures (1 ventral, 2 dorsal and 1 terminal).

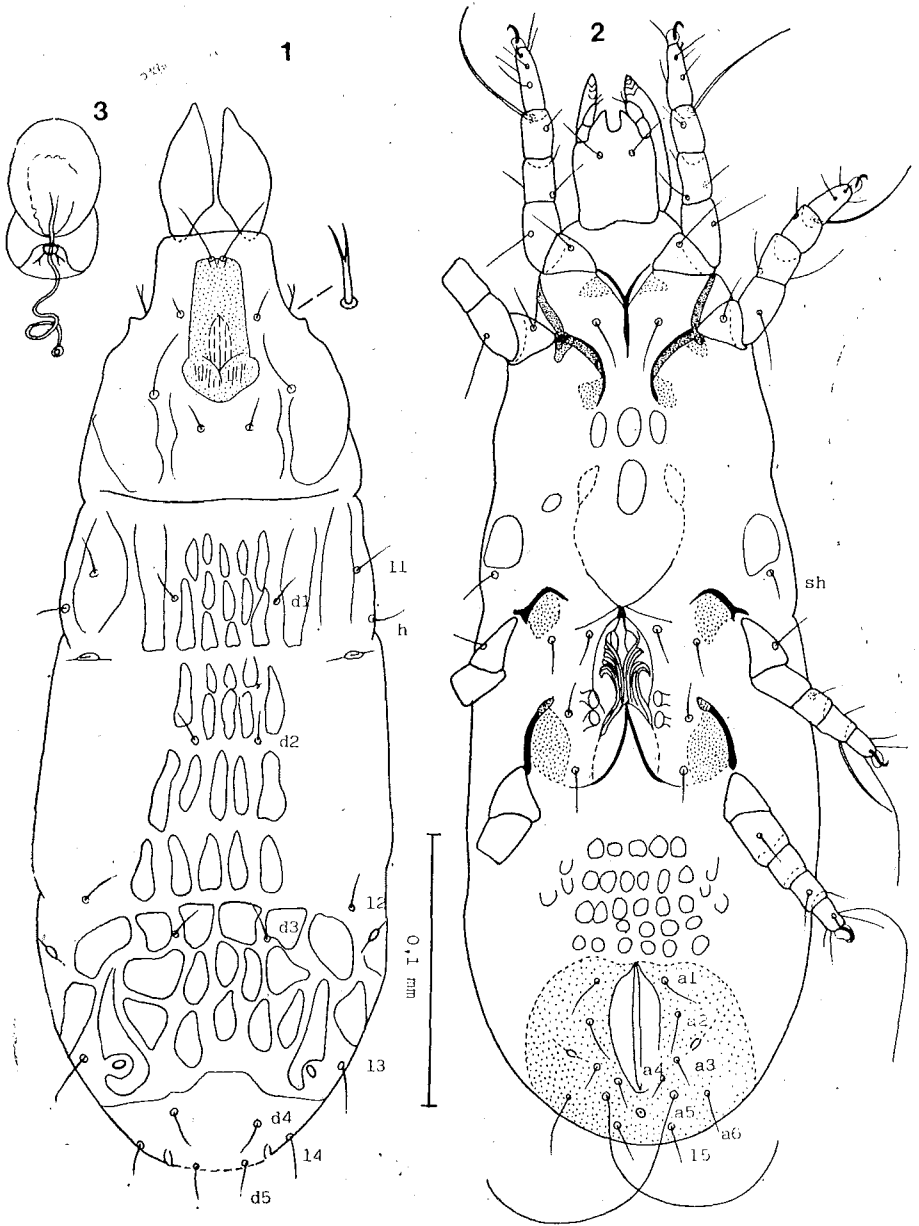
Dorsum: Sejugal furrow distinct but incomplete laterally. Propodonal shield longer than wide and distinctly widened in posterior third. Two pairs of longitudinal sinuous cuticular grooves behind the shield. Hysteronotum with numerous slightly surelevated cuticular grooves behind the shield. Hysteronotum with numerous slightly surelevated cuticular plates longer than wide and placed symmetrically at both sides of the midline.

Venter: A few scaly-like cuticular elevations are present in both propodosomal and opisthosomal areas. Epimera I fused in Y; other epimera free. Vulva situated between coxae III and IV. There are two pairs of small genital suckers. Anus ventral, followed by the copulatory orifice. Bursa copulatrix thin and rather long, ending in a large apparently bilobate spermatheca.

Chelicerae 54  $\mu\text{m}$  long.

Chaetotaxy (length of setae in  $\mu\text{m}$ ): vi - 23; ve - 9; sc i - 10-13; sc e - 42; d<sub>1</sub> to d<sub>3</sub> - 12; d<sub>4</sub> - 15; d<sub>5</sub> - 12; l<sub>1</sub> - 21; l<sub>2</sub> - 22; l<sub>3</sub> - 25; l<sub>4</sub> - 20; l<sub>5</sub> - 25; h - 22; sh - 18; ga, gm and gp - 13-14; a<sub>1</sub> to a<sub>3</sub> - 10-15; a<sub>4</sub> - 8; a<sub>5</sub> - 110; a<sub>6</sub> - 15. All these setae are very thin.

Legs short and narrow. Length of tarsi I-IV (in  $\mu\text{m}$ ): 22-17-13-13. All the tarsi end in a shortly pedunculate claw (short pretarsus). Claws I-II 7  $\mu\text{m}$  long. The tarsi bear apicoventrally a small median bifid process. Chaetotaxy of legs: Tarsi I-II with 4 very thin median setae, 2 thin dorso-apical setae (f and e), 1 thin apicoventral spine (p) and 1 small apicoventral seta (s). The setae q, u, v, d and aa are lacking. Tarsi III-IV as tarsi I-II but seta d is present as a short spine, seta p is absent and the seta s is inconspicuous or absent. Tibiae I-IV with 1-1-1-1 setae. Genua 2-2-1-0. Femora 1-1-0-1. Solenidia: Tarsus I:  $\omega_1$  is basal and  $\omega_3$  apical;  $\omega_2$  is lacking. Tibiae I-IV with 1 solenidion each. Genu I with 2 short slightly unequal solenidia.



1-3. *Horstia (Horstia) longa* sp. n. — Female in dorsal (1) and ventral (2) view; bursa and spermatheca (3)

Male (Figs 7-12): Length and width in 2 paratypes (in  $\mu\text{m}$ ):  $309 \times 132$  and  $315 \times 129$ . Dorsum as in female.

Venter: propodogaster as in female.

Hysterogaster: Genital sclerite  $27 \mu\text{m}$  long, situated slightly behind the coxae IV, it is flanked by 2 pairs of small genital suckers. Anus long, with two adanal suckers.

Legs I-III as in female. Length of tarsi (in  $\mu\text{m}$ ):  $21-18-15-12$ . Setae of legs as in female except tarsus IV which bears 4 thin setae and 2 dorsal suckers.

Tritonymph: Length and width of idiosoma in 2 paratypes (in  $\mu\text{m}$ ):  $315 \times 130$  and  $290 \times 120$ . Cuticular plates less marked than in female.

Protonymph: Two specimens measure (length  $\times$  width of idiosoma in  $\mu\text{m}$ ):  $210 \times 100$  and  $190 \times 78$ . With one pair of genital suckers.

Larva: Length and width of idiosoma (in  $\mu\text{m}$ ) of 3 specimens:  $138 \times 70$ ,  $144 \times 72$  and  $160 \times 75$ . Claparede organs well developed ( $9 \mu\text{m}$  long). The cuticle bears numerous very small rugosities, more abundant dorsally than ventrally.

Deutonymph (hypopus): unknown.

Habitat: Holotype and 15 paratypes female, 15 paratypes male, numerous immatures all from a culture obtained from mites collected in the dust of a house in Poznań, Poland (May 1985). The true habitat of these mites is probably not the house-dust but the nest of a bee or a wasp. Holotype in the Institut royal des Sciences naturelles de Belgique, à Bruxelles. Paratypes in the authors collections.

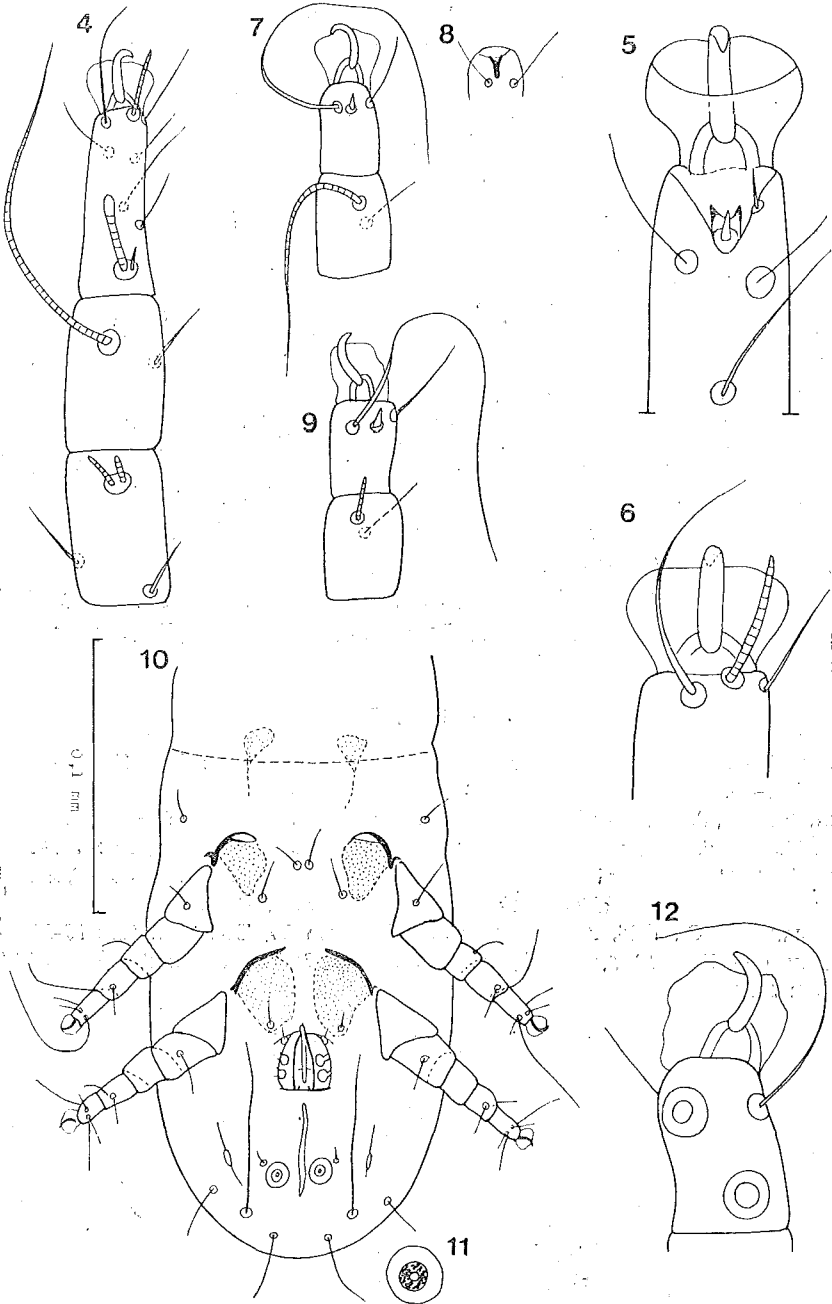
#### REMARKS

This new species presents all the main characters of *Horstia* (*Amhorstia*) *virginica* BAKER, 1962, described from the nest of a North American xylocopid bee. The characteristic aspect of the tarsi in this species has been depicted by FAIN (1984).

*H. (Horstia) longa* differs from the species of BAKER in the more elongated shape of the idiosoma, the presence of cuticular plates on the dorsal and

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4-12. *Horstia (Horstia) longa* sp. n. — Female: leg I (apical segments) in dorsal view (4); apex of tarsus I ventrally (5) and dorsally (6); apical segments of leg III dorsally (7); apex of tarsus III ventrally (8); apical segments of leg IV dorsally (9). Male: hysterogaster (10); adanal sucker (11); tarsus IV dorsally (12)



ventral surfaces of the body, the more posterior situation of the vulva and the penis, the much shorter chaetotaxy, the shorter legs.

The New World species of genus *Horstia* have been separated in a distinct subgenus, *Amhorstia*, on the basis of the morphology of the hypopi. In this subgenus the dorsal setae are distinctly longer than in the Old World species. The comparison of the adults in both subgenera has shown that this character of the length of the dorsal setae is also present in the adults of both subgenera.

#### Evolution of the genus *Horstia*:

The greater length of the idiosomal setae in the New World species of *Horstia* indicates that these species are more primitive (less regressed) than the species of the Old World. As the evolution of the parasites is parallel to that of their hosts one can surmise that the *Hymenoptera* (especially the *Xylocopidae*) of the New World are more primitive than those of the Old World.

It is interesting to note that a similar situation exists for the hypopi of the genus *Sennertia* OUDEMANS, another group of mites parasitizing xylocopid bees. Here also the species living on American xylocopids have distinctly longer setae than those from Old World hymenopterans (FAIN, 1981).

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