

A new genus and two new species of mites (Acari, Histiostomatidae) phoretic on *Traskorchestia traskiana* (Stimpson, 1857) (Crustacea, Amphipoda) from Canada

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A new genus (*Traskorchestianoetus* gen. nov.) represented by two species *T. spiceri* sp. nov. and *T. brevipes* sp. nov. (Acari, Histiostomatidae) are described from the hypopial stage phoretic on the amphipod *Traskorchestia traskiana* (Stimpson, 1857), from Vancouver Island, Canada.

KEYWORDS: Phoretic mites, Acari, *Traskorchestia*, Amphipoda, Canada.

Introduction

Associations of mites with amphipods are rare (cf. reviews by André, 1935; Overstreet, 1983). The examination of almost 800 specimens of the amphipod *Traskorchestia traskiana*, found beneath stones and tidal debris from Vancouver Island, yielded some twelve histiostomatid mite specimens belonging to the genus *Traskorchestianoetus* gen. nov. and two new species, *T. spiceri* sp. nov. and *T. brevipes* sp. nov. To the authors' knowledge, this is the first recorded association between histiostomatid mites and amphipods.

Family Histiostomatidae

Genus *Traskorchestianoetus* gen. nov.

Definition (based on the heteromorphic deutonymph or hypopus): body ellipsoidal. Dorsum: anterior margin membranous, covering the posterior part of the palposoma. Propodonotum short, its length is about one seventh of the total body length. All dorsal setae very short. Setae *ve*, *vi* and *s cx* not observed. Venter: sternum relatively long but not reaching the posterior extremities of the epimera II. Extremities of epimera II and III either fused or contiguous. Epimera IV fused in the midline on a short median sclerite. Genital orifice flanked by one pair of short, poorly sclerotized setae (setae *gm*) and more laterally by a pair of small conoids (setae *gp*), both pairs of setae situated on a transverse punctate shield. Suctorial plate strongly developed bearing 2 pairs of large suckers and 2 pairs of conoids, the most lateral one being situated almost on the same transverse line as the posterior suckers. Palposoma rectangular, longer than wide. Legs: legs I slightly thicker than legs II. On legs I and II the genu is incompletely fused with the femur. All the tarsi ending with a well developed claw and a long tenent hair (with a recurved apex). Most of the setae are spines. Tarsi I and II also bear a thin seta very slightly foliate at the apex. Setae *cx I* and *III* vestigial.

Type species: Traskorchestianoetus spiceri sp. nov.

Remarks: This new genus is close to the monotypic genus *Austranoetus* Fain, 1976 (type species: *Austranoetus kerguelenensis* Fain, 1976), described from halophilic debris and humus, marine algae and soil in Kerguelen Island. Both genera show tenent hairs on the tarsi, an unusual feature in the Histiostomatidae (cf. Hughes and Jackson, 1958; Scheucher, 1959), and a punctate and sclerotized plate which bears the genital orifice and the setae *gp* and *gm*. *Traskorchestianoetus* differs from *Austranoetus* by the vestigial aspect of the setae *cx I* and *III*. In *Austranoetus* these setae are thick and modified into conoids (elastic striated buffers). Moreover, in *Austranoetus* the tarsal claws are thick and short (longer and narrower in the new genus), and the suctorial plate is relatively much smaller and the size of the body distinctly larger. The difference of development of the setae *cx I* and *III* are very important in the Histiostomatidae and are considered as a good generic character. This new genus includes two closely related species.

***Traskorchestianoetus spiceri* sp. nov.**

This species is named after Dr J. I. Spicer, who discovered the infested amphipods. Measurements are in microns.

Description of Hypopus (Figs 1–6): Holotype 225 long and 165 wide. Measurements of the paratypes are given in Table 1. Dorsum: propodonotum membranous in its anterior part, its posterior part is punctate and bears a distinct pattern of lines. Hysteronotum very finely punctate without pattern of lines. Dorsal setae 3 to 5 long, *l*₅ slightly longer than (6–10). Venter: epimera III and IV not fused but very close to each other. Suctorial plate 96 wide and 69 long (in a paratype). Diameter of the suckers about 15. Palposoma 23 long and 9 wide bearing a pair of solenidia 40 long and a pair of very short thin setae. Legs: Lengths of tarsi I–IV (including claws) 34–34–40–49; of tarsi plus tibia 54–53–54–64. Lengths of tarsal claws I–II 9, 5; of claws III–IV 10, 5. Leg chaetotaxy: tarsus I with 6 spines (5 ventral and 1 dorsal); one apicodorsal seta (*d*) very narrowly foliate at the apex and 20 long, and a longer tenent hair (*e*) 50–60 long. Tarsus II as tarsus I but the tenent hair is shorter. Tarsus III with 5 spines (of which one is very small), one apical tenent hair and 2 thin setae. Tarsus IV as tarsus III but with only 4 spines, 3 thin setae and a long tenent hair. Tibia I–IV with 2–2–1–1 spines. Genua I and II completely fused with corresponding femora, genua III and IV very short. Femora I–IV with 1–1–0–1 setae. Trochantera I–IV with 1–1–1–0. Leg solenidiotaxy: tarsi I and II with only one solenidion (ω_3 on tarsus I and ω_1 on tarsus II). Tibia I bearing dorso-apically 2 solenidia (ω_1 with apex slightly dilated and about 25 long and φ_1 attenuated apically and about 30–35 long) and a very thin and rather long famulus 18–20 long. Tibiae II–IV with 1–1–1 solenidia, genua I–IV with 1–1–0–0 solenidia.

Host and locality: Holotype and 4 paratypes, all heteromorphic deutonymphs (hypopi), were attached to several amphipods, *Traskorchestia traskiana* (Stimpson, 1857), collected amongst stones and tidal debris at the level of Extreme High Water (Spring Tides), on beaches on Dianna Island (48°53'N, 125°07'W), Dodger Sound, Vancouver Island, British Columbia, Canada (coll. Dr J. I. Spicer, 11 February 1989). Holotype in the British Museum (Natural History), one paratype in the Biosystematics Research Institute (BSRI), Ottawa, Canada, 2 paratypes in the Institute royal des Sciences naturelles de Belgique (IRSNB) and 1 paratype in the collection of M.J.C.

The mites, 2–4 per amphipod (including *T. brevipes* specimens), were located in the ventral groove on the arthrodial membranes between pereon segments 1 and 2, 2 and

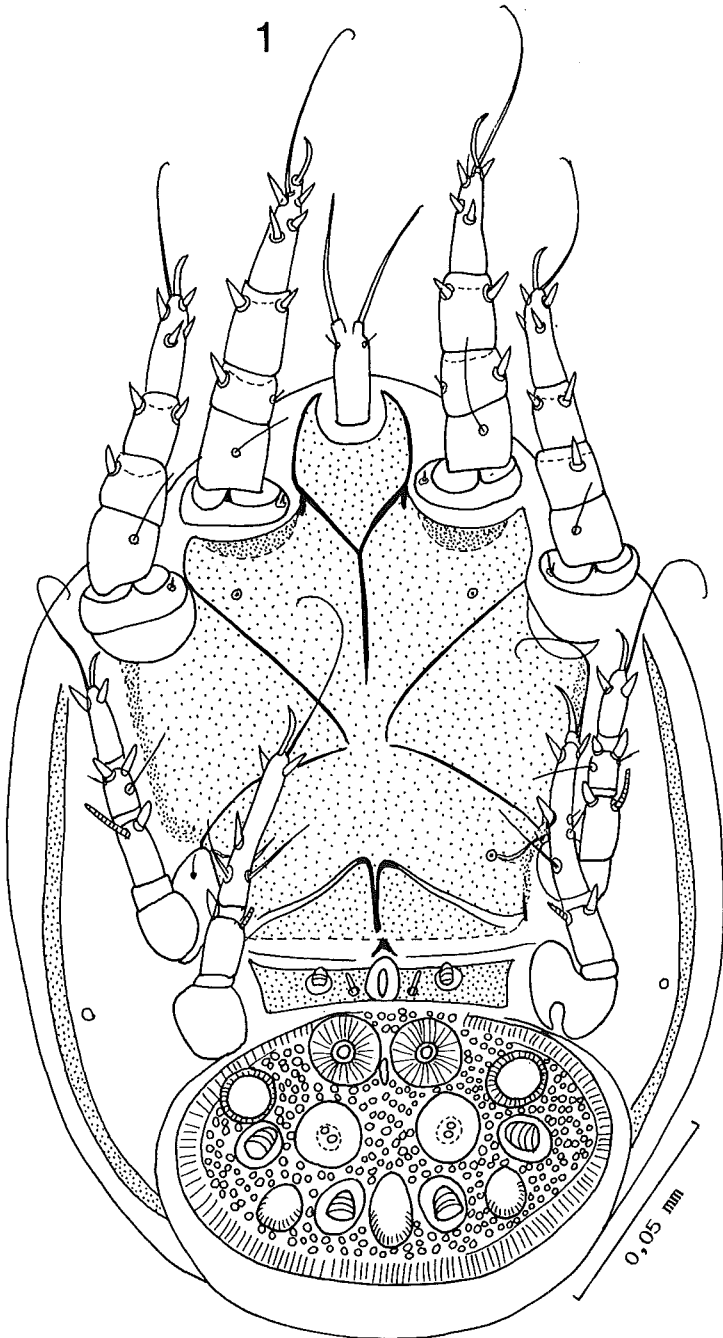
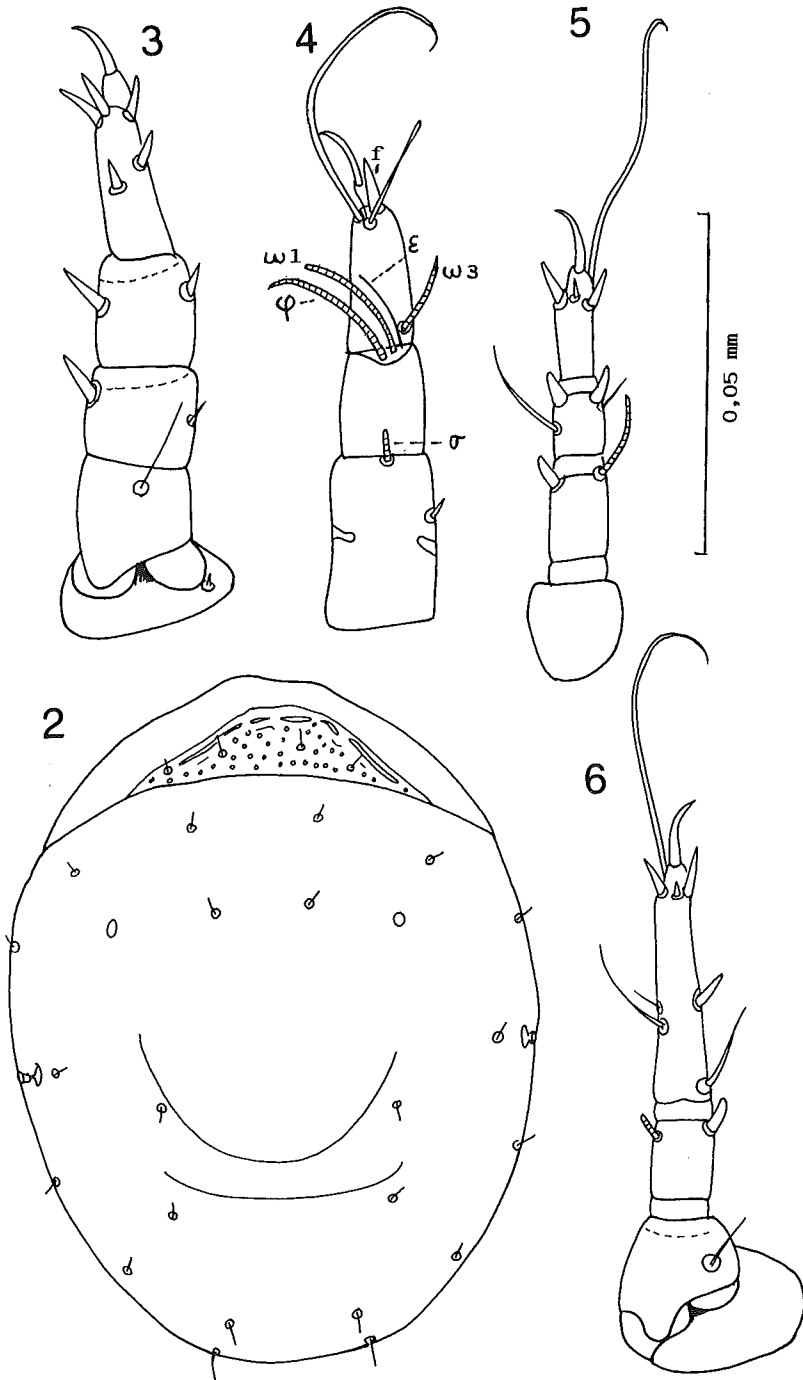
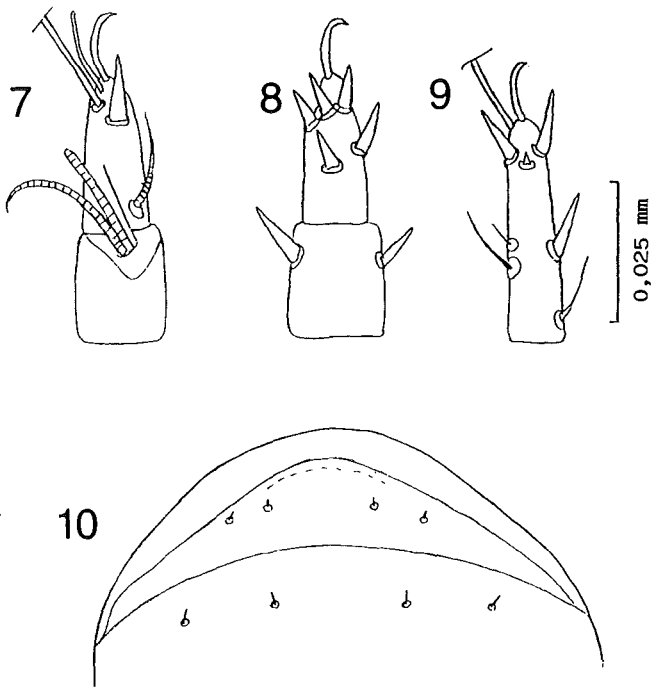


FIG. 1. *Traskorchestianoetus spiceri* sp. nov. Hypopus in ventral view.



FIGS 2-6. *Traskorchestianoetus spiceri* sp. nov. Hypopus in dorsal view (2), leg I in ventral view (3), and in dorsal view (4), leg III in ventral view (5), leg IV in ventral view (6).



FIGS 7-10. *Traskorchestianoetus brevipes* sp. nov. Hypopus. Tarsus and tibia I in dorsal view (7), and in ventral view (8), tarsus IV in ventral view (9), propodonotum in dorsal view (10).

Table 1. Measurements of the body, legs and spine *f* of *Traskorchestianoetus spiceri* and *T. brevipes*. Measurements in microns.

| | Length and width of idiosoma | Length of tarsi + tibiae (including claw) | | | | Length of tarsi (including claw) | | | | Length of spine <i>f</i> on tarsus I |
|--------------------|------------------------------|---|----|-----|----|----------------------------------|----|-----|----|--------------------------------------|
| | | I | II | III | IV | I | II | III | IV | |
| <i>T. spiceri</i> | | | | | | | | | | |
| Holotype | 225 × 165 | 54 | 53 | 54 | 64 | 34 | 34 | 40 | 49 | 7.2 |
| Paratype 1 | 231 × 168 | 52 | 52 | 58 | 67 | 35 | 36 | 42 | 53 | 8.0 |
| Paratype 2 | 219 × 157 | 52 | 52 | 56 | 66 | 34 | 36 | 42 | 49 | 7.2 |
| Paratype 3 | 217 × 165 | 51 | 51 | 56 | 62 | 34 | 35 | 39 | 51 | 7.5 |
| Paratype 4 | 228 × 165 | 50 | 49 | 52 | 59 | 33 | 33 | 38 | 45 | 7.0 |
| <i>T. brevipes</i> | | | | | | | | | | |
| Holotype | 270 × 204 | 47 | 48 | 48 | 55 | 31 | 34 | 36 | 41 | 11.0 |
| Paratype 1 | 249 × 186 | 46 | 47 | 48 | 54 | 30 | 34 | 35 | 39 | 9.5 |
| Paratype 2 | 240 × 190 | 43 | 45 | 44 | 49 | 28 | 31 | 31 | 37 | 9.6 |
| Paratype 3 | 240 × 171 | 46 | 47 | 48 | 53 | 30 | 32 | 35 | 40 | 9.5 |
| Paratype 4 | 231 × 174 | 45 | 46 | 43 | 48 | 29 | 32 | 29 | 36 | 10.0 |
| Paratype 5 | 252 × 182 | 45 | 48 | 46 | 53 | 30 | 33 | 33 | 40 | 9.3 |
| Paratype 6 | 249 × 183 | 45 | 48 | 47 | 52 | 30 | 32 | 32 | 39 | 9.3 |

3, and occasionally 3 and 4. This membrane is fully protected by the overlap of the peraeon segments when the amphipods curl up.

***Traskorchestianoetus brevipes* sp. nov.**

This species is represented only by the deutonymph (hypopus) stage. It was found together with *T. spiceri*.

Description of Hypopus (Figs 7–10): The holotype is 270 long and 204 wide. Measurements of the paratypes are given in Table 1. Dorsum: as in *T. spiceri* except the pattern of lines on the propodosoma is indistinct or absent. Venter: as in *T. spiceri*. Legs: distinctly shorter than in *T. spiceri*, especially the tarsi and tibiae (see Table 1). The long tenent hairs on the tarsi are complete only in tarsi I. In some paratypes they are complete on all the legs. Tarsi I and II with spine *f* 11 long. Claws of tarsi I and II are 10 long, the claws of tarsi III and VI are 12 long. Solenidia of legs as in *T. spiceri*. Suctorial plate 100 wide. Diameter of suckers 15. Other characters as in *T. spiceri*.

Host and locality: Holotype and six paratypes, all hypopi, with the same host and locality data as *T. spiceri*. Holotype in British Museum (Natural History), 2 paratypes in BSRI, 2 paratypes in IRSNB, and 2 paratypes in the collection of M.J.C.

Remarks: *T. brevipes* is very close to *T. spiceri* in most of the characters and at first inspection it could be confused with it. However a careful, comparative study of the specimens revealed constant differences in the following characters:

1. Body longer and wider in *T. brevipes*, except for one paratype, which is wider but not longer.
2. Legs, especially the tarsi and tibiae I–IV, distinctly shorter in *T. brevipes*.
3. Apical spine *f* of tarsi I and II distinctly thicker and longer in *T. brevipes*.
4. In *T. brevipes* the pattern of the oblique lines on the propodonotum is poorly developed or completely absent whilst in *T. spiceri* this pattern is distinct and constant.

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