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**ABSTRACT**

A new species of the genus *Tarsonemus* predacious on eggs of *Schizotetranychus longus* Saito is described in Japan under the name of *Tarsonemus praedatorius*.

Key words: Tarsonemidae, *Tarsonemus praedatorius*, new species, predatory mites, *Schizotetranychus longus*, Japan

**INTRODUCTION**

Smiley and Landwehr (1976) found an unusual species of Tarsonemidae preying on the eggs of the tenuipalpid (*Brevipalpus*) and tetranychid (*Oligonychus*) mites on Monterey pines in California, and named it *Tarsonemus destructor* as a new species. Lindquist and Smiley (1978) established a new genus, *Acaronemus*, for this species, and mentioned another, undescribed species which was found to feed on the eggs of *Brevipalpus wainsteini* on *Pinus pinea* in Italy. Recently, a species of Tarsonemidae feeding on the eggs of *Schizotetranychus longus* Saito in nests of *Sasa senanensis* was discovered by the junior authors in Hokkaido, Japan. After a careful examination, it has become clear that the species is a member of the genus *Tarsonemus* and no doubt new to science. It will be described and illustrated herein under the name of *T. praedatorius*. The details of the predatory habit of this species will be published by Saito et al. in the near future. The terminology is adopted from Lindquist (1986). All measurements are given in micrometers (µm).

**Tarsonemus praedatorius** sp. nov.

(Figs. 1–12)

**DIAGNOSIS**

This species closely resembles *Tarsonemus yoshidai* Ito, 1962 in the shape of femorogenu IV of the male, but it can be distinguished from the latter by the following features: 1) setae *Ge-v’* situated on the broad inner spur-like projection of femorogenu IV in the male; 2) tarsal solenidia on legs I and II similar in size in the male; 3) idiosomal setae e, f and h subequal in

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length in the female; 4) femora of legs I and II each with a flange-like projection ventrally in the female.

DESCRIPTION

Adult male (Figs. 1–6): Body length 154–162, width 88–91 (all measurements from holotype and two paratypes).

Idiosomal dorsum: Gnathosoma 30–32 long, 24–26 wide; dorsal setae are shorter than ventral setae. Two triangular structures located in front of gnathosoma. Dorsal median apodeme extending basally from the union with the circumcapitular apodeme to the level of insertion of dorsal setae. Pharynx 13–14 long, 4–5 wide.

Length of idiosoma 128–138. Prodorsal shield weakly sclerotized, its front margin is arcuate; four pair of setae present; setae $sc_2$ (32–38) inserted laterad of oblique longitudinal alignment with preceding three pairs, slightly longer than setae $v_1$ (28–32) and $v_2$ (29–32); $sc_1$ (69–74), the longest of dorsal idiosomal setae. Tergite CD with three pairs of setae $c_2$, $c_1$ and $d$. Setae $d$ (32–34) slightly longer than $c_2$ (27–32), but shorter than $c_1$ (38–40), in nearly transverse alignment with $c_1$ on posterior third of plate. Subterminal tergite EF with setae $f$ (12–14) shorter than distance between them. Genital capsule subcircular, wider (35–37) than long (24–25), with caudal setae $h$ discernible.

Idiosomal venter: Prosternal apodeme divided into two sections; first one connected with apodeme 1 anteriorly, interrupted at a level slightly posteriad of medial extremities of apodemes 2, not connected with apodemes 2; second one neither connected with apodeme 2, nor joined with sejugal apodeme. A weakly sclerotized line on apodeme 2 nearly reaching anterior end of second section of prosternal apodeme, both lines together with inner ends of apodeme 2 adopting a cup form. Sejugal apodeme well developed. Coxal setae $Ia$ (5–6) and $2a$ (6–8) inserted well behind apodemes 1 and 2, respectively. Apodeme 4 uniting anteriorly with poststernal apodeme and apodeme 3, one section of apodeme 4 separated on anterior fifth of coxal plate IV. Poststernal apodeme bifurcated posteriorly. Coxal setae $3a$ (10–12) inserted behind apodeme 3. Setae $3b$ (7–8) located beyond laterad of apodeme 4.

Leg: Formula of setae and solenidia on segments of legs: Leg I: 4–4–6(2$\phi$)–7(1$\omega$); Leg II: 3–3–4–4(1$\omega$); Leg III: 1–3–4–3; leg IV: 1+2–1(1$\phi$)–3. Tarsi I, II and III with spinelike unguinal seta $u'$. Leg I: tarsal solenidion (7–8) fusiform, inserted on basal fifth of segment, much longer than tibial solenida $\phi$. Leg II: tarsal solenida $\omega$ (8) inserted at the base of segment. Leg IV: femorogenu very strong; setae $Ge$–$v'$ (16) situated on the broad inner spur-like projection, longer than setae $l''G$ (8–10) and $v'F$ (5–6), tibia with tactile seta $v'Ti$ (72–76) and solenidion $\phi$ (3–4), tarsus with three small setae and one strong claw.

Adult female (Figs. 7–12): Body length 202–226, width 104–126. (all measurements are from three paratypes).

Dorsal side: Prodorsal shield transversely elliptical, connected with anteromedian hoodlike extension covering entire gnathosoma, setae $v_1$ (26–30) inserted on midlength of the shield, shorter than the distance between them. Stigmata opening on anterolateral margins of prodorsal shield. Scapular setae (58–68) inserted slightly posteriad of bothridial setae. Bothridial setae capitate (14–16 long, 6–7 wide), covered by prodorsum. Tergite C with two pairs of setae; $c_2$ (20–23) longer than $c_1$ (12–18), the latter situated in front of tergite
D. Tergite D with a pair of setae \(d\) (9–11), which are shorter than setae \(c_1\). Tergite EF with two pairs of setae \(e\) and \(f\), which are in nearly transverse alignment on posterior fourth of the
tergite, subequal in length (10–11). Cupules \textit{ih} located between setae \textit{h} (9–11).

Ventral side: gnathosomal capsule slightly longer than wide, dorsal median apodeme extending basally from union to the level of base of dorsal setae. Dorsal and ventral setae
subequal in length. Pharynx 18–22 long, 6–8 wide. Prosternal apodeme connected with apodeme 1 at anterior end, weakly joined with sejugal apodeme at posterior end. Medial end of apodeme 2 not joined with prosternal apodeme. Sejugal apodeme well developed, without interruption medially. Coxal setae 1a (8) inserted behind apodemes 1. Coxal setae 2a (10) situated closely behind apodemes 2. Poststernal apodeme bifurcated anteriorly, joined with apodeme 4 at anterior third of its length. Anterior part of apodeme 3 curved backwards, its posterior end united with anterior end of trochanter 3. Coxal setae 3a (11–12) situated in front of anterior end of apodemes 3, setae 3b (8) inserted laterad of posterior end of apodeme 4. Tegula wider than long. Pseudanal plate with the pair of setae ps (6–7) slender.

Legs: Formula of setae and solenidia on segments of legs: Leg I: 4–4–5(2φ)+7(1ω); Leg II: 3–3–4–5(1ω); Leg III: 1+3–4–4. Tarsi I, II and III with spinelike unguinal seta u'. Inner lateriad of femora I and II with a flange-like projection ventrally. Leg I: tarsal solenidion ω (6–7) fusiform, inserted on midlength of the segment, longer than Tibial solenida φ. Leg II: tarsal solenida ω (4–5) inserted at the base of segment, Leg IV: femorogen with femoral seta v'F (6–9) and genual seta v'G (13–14), former shorter than distance between setae v'F and v'G; tibiotarsus with tibial seta relatively short (28–32) and reduced tarsal seta (66–72).

Material type
Holotype male, four paratype males and eighteen females collected from the nest of Schizotetranychus longus Saito on Sasa senanensis (Franch et Sav.), Sapporo, Hokkaido, Japan, 27 June and 10 July, 2001, by Y. Saito; deposited in the Museum of Hokkaido University, Sapporo 060–8589, Japan.

Etymology: This species is named for its predatory behavior.

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