

A NEW WATER MITE SPECIES OF THE GENUS *TIPHYS* (ACARIFORMES, PIONIDAE)

НОВЫЙ ВИД ВОДЯНОГО КЛЕЩА РОДА *TIPHYS* (ACARIFORMES, PIONIDAE)

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Ключевые слова: Pionidae, *Tiphys*, *Acercopsis*, водяной клещ, самка, самец, болото

ABSTRACT

A description of the female and male of a new water mite species, *Tiphys (Acercopsis) gladiator*, is given.

РЕЗЮМЕ

Описание самки и самца нового вида водяного клеща *Tiphys (Acercopsis) gladiator*.

INTRODUCTION

The subgenus *Acercopsis* Viets, 1926 (genus *Tiphys* Koch, 1836) includes two species: European *T. (Acercopsis) pistillifer* (Koenike, 1908) and North American *T. (Acercopsis) vernalis* (Habeeb, 1954). In the fauna of Russia, *T. pistillifer* is found recently in the Upper Volga region [Tuzovsky, 1996]. Another species of the subgenus *Acercopsis* was found by the author in Yaroslavskaia Oblast'. A description of this species is given below.

In the present work, designations of idiosomal setae are given after Tuzovsky [1987]. The following abbreviations are used: ac 1–3, genital acetabula (anterior, median, posterior); P1–5, pedipalp segments (trochanter, femur, genu, tibia and tarsus).

Type material is deposited in the collection of the Institute for Biology of Inland Waters (Borok, Russia). Measurements are given in micrometers.

***Tiphys (Acercopsis) gladiator* Tuzovskij, sp. n.**

Figs. 1–6

Description of female. Body oval (Fig. 1). Integument soft, with very fine wrinkles. Setae Fch long, whip-like, other idiosomal setae filiform (Fig. 1, a). Setae Fp, Oi, and Pi without glandularia, other idiosomal seta with glandularia. Dorsum with rather large anterior medial and small lateral plates. Medial plates elongate, lateral plates transverse.

Anterior and posterior groups of coxae with rather large apodemes (Fig. 1, b). Medial edge of coxae III and IV approximately equal in length, lateral edge of coxae IV twice as long as lateral edges of coxae III. Posteromedial edge of coxae IV oblique, weakly concave or straight. Surface of all coxae with fine pores. Sclerites, bearing ventral idiosomal setae, situated freely on soft cuticle. Genital plate triangular, with 3 acetabula and 11 thin short setae. Lateral margins of genital plates distinctly concave, their internal and posterior margins weakly concave. Acetabula rather large, separated by wide space. Genital opening 1.5 times longer than genital plates.

Capitulum elongate, with large anchoral projection, both pairs of setae equal (Fig. 2, a).

The basal segment of chelicera (Fig. 2, b) with large dorsal hump. Stylet of chelicera moderate in size, without ventral teeth.

Pedipalps (Fig. 2, c) rather short. Trochanter of pedipalp with one dorsodistal seta. Ventral margin of femur and genu of pedipalp straight. Femur with 4 proximal and 2 dorsodistal setae. Genu with 3 setae, external lateral seta longer than two other setae; base of external lateral seta situated proximally to middle of segment. Pedipalpal tibia short, with rather large distolateral spine, 2 ventral and 2–3 dorsal setae. Internal ventral seta on tibia inserted on rather large conic tubercle, the base of external ventral seta is on very small tubercle. Length of distolateral spine of tibia 2.5 times shorter than length of tarsus. Tarsus (Fig. 2, d) with proximal solenidion, 5 thin setae, and 4 thick dorsodistal spines of the different shape and length.

Two anterior pair of legs without swimming setae (Fig. 3, a). Two relatively short swimming

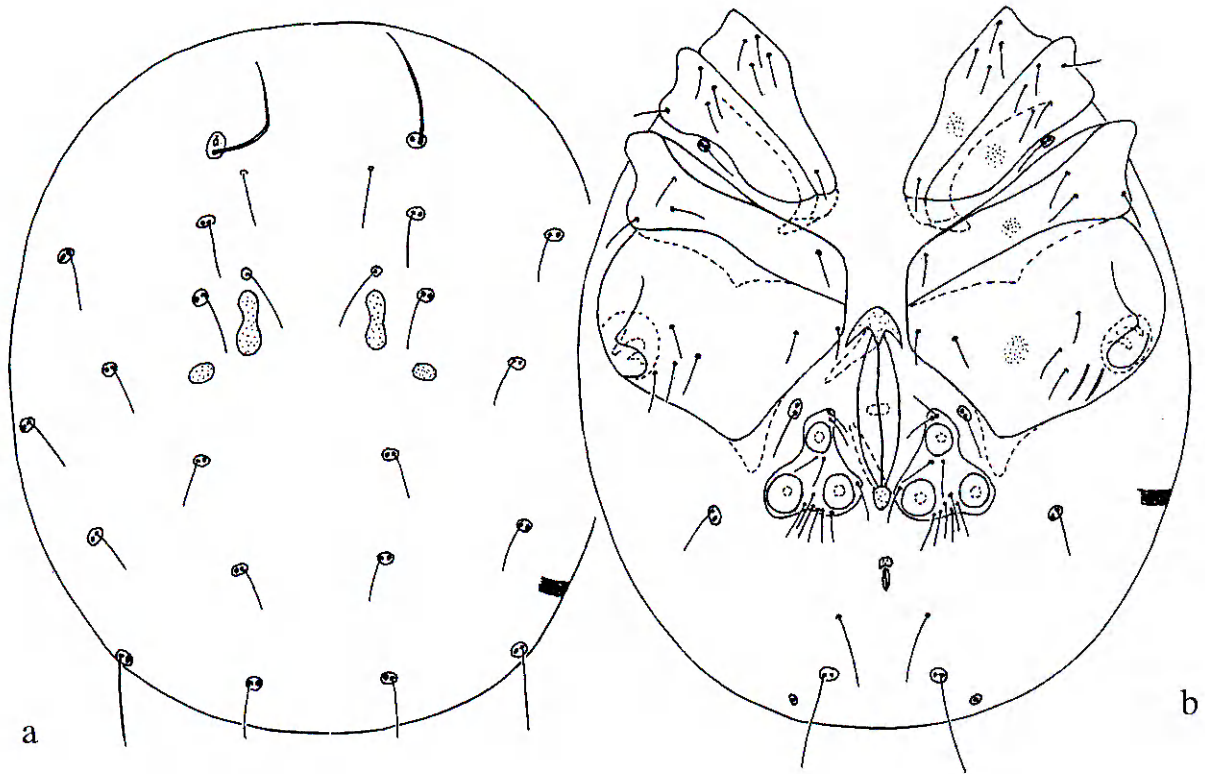


Fig. 1. *Tiphys gladiator*, female: a — dorsal view, b — ventral view.

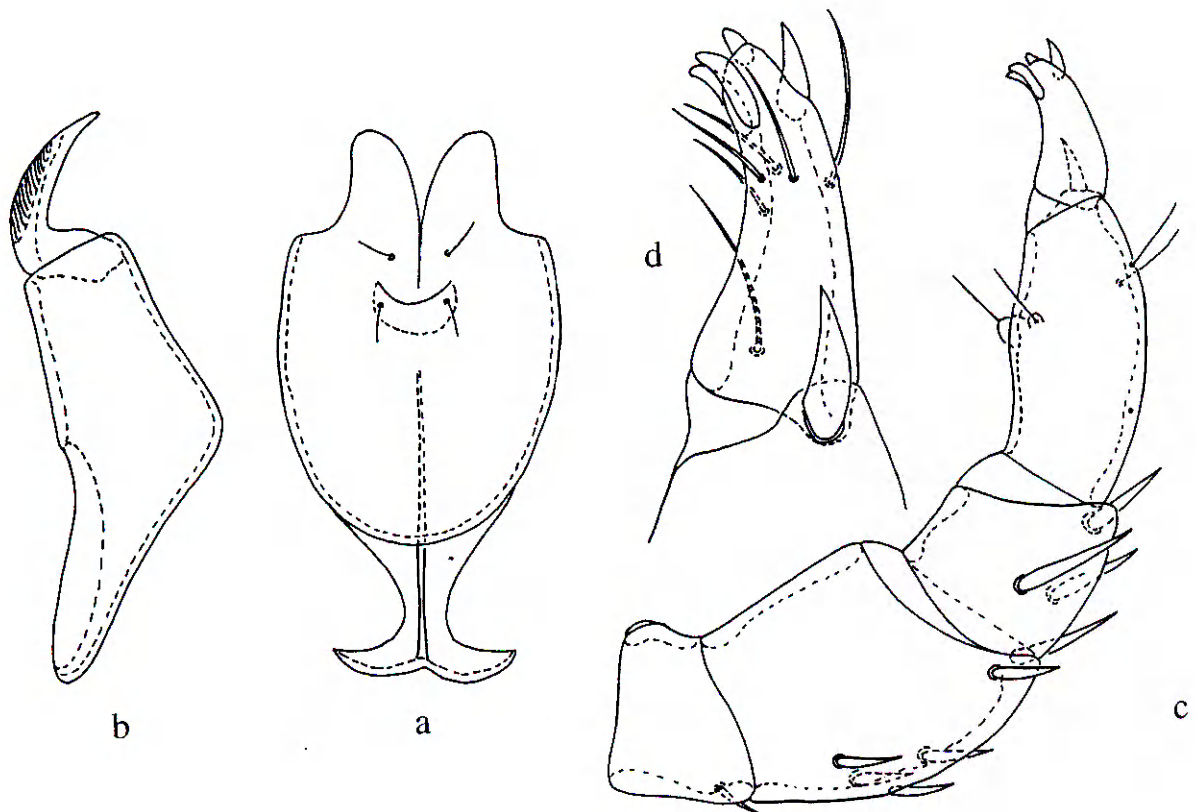


Fig. 2. *Tiphys gladiator*, female: a — capitulum, ventral view, b — chelicera, lateral view, c — pedipalp, lateral view, d — pedipalp tarsus and distal part of tibia.

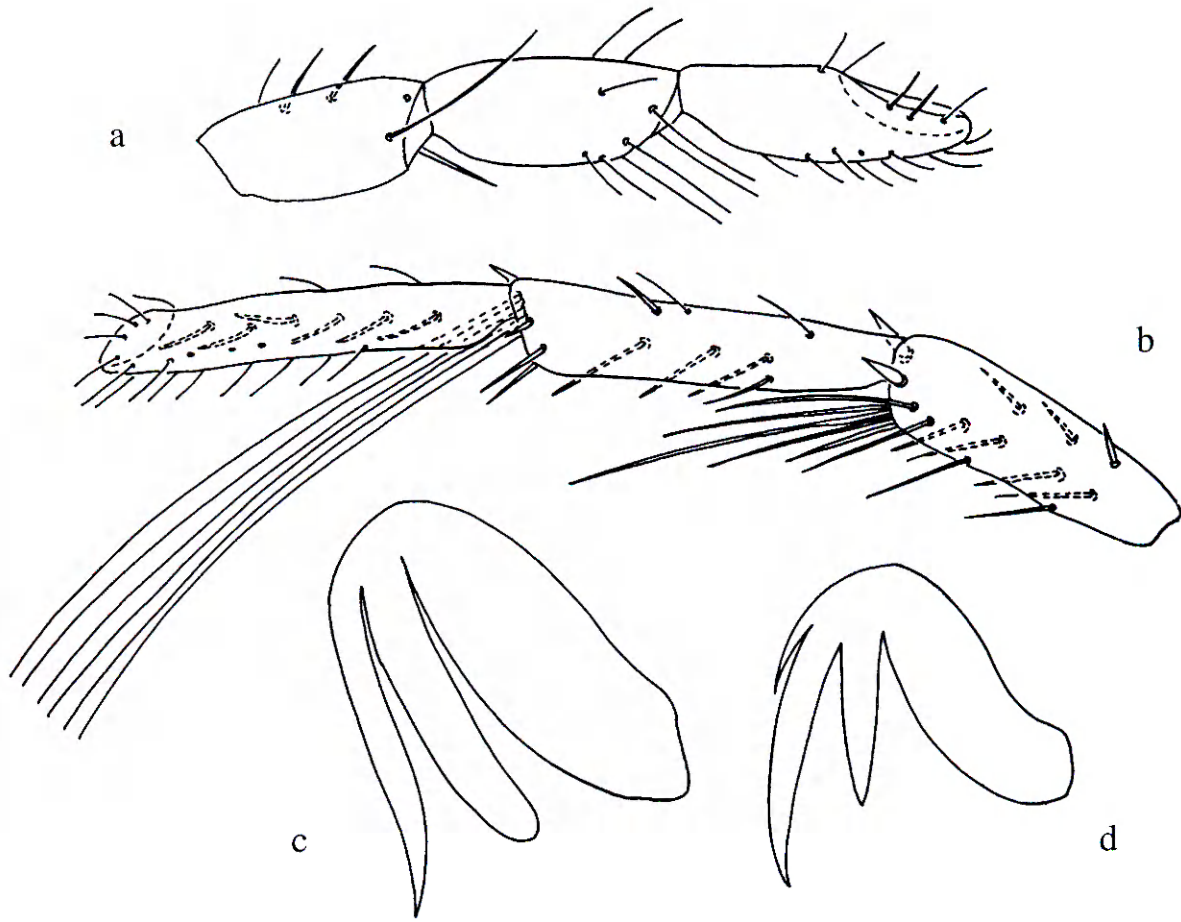


Fig. 3. *Tiphys gladiator*, female: a — genu, tibia, and tarsus of leg I, b — genu, tibia and tarsus of leg IV, c — claw of tarsus I, d — claw of tarsus IV.

setae present on genu III, 3 on genu IV, 4 long swimming setae on tibia III, and 5–6 on tibia IV (Fig. 3, b). Claws I–III larger than claws IV. Internal denticle of claws I–III wide, with rounded tip, external denticle thin and pointed (Fig. 3, c). Claws IV with short internal and long external denticles, latter with short spur (Fig. 3, d).

Measurements. Length of body 610, length of seta Fch 115; length of genital opening 135; length of genital plate 90, its width 77; length of genital acetabula (ac. 1–3): 25, 30, 30; length of capitulum with anchoral projection 185; length of basal segment of chelicera 125; length of chelicera stylet 55; length of pedipalpal segments (P 1–5): 33, 90, 57, 90, 45; length of leg segments: I — 55, 80, 80, 105, 125, 140; II — 55, 85, 80, 105, 130, 155; III — 75, 80, 75, 105, 145, 145; IV — 105, 80, 105, 165, 185, 205.

Description of male. Dorsal surface, coxae of leg I and II (Fig. 4, a) similar to female. Anterior apodemes large, posterior apodemes not developed. Coxae IV large, their length exceeding total length of coxae I–III. Medial edge of coxae III 1.6

times shorter than length of medial edge of coxae IV. Lateral edge of coxa IV 3 times longer than length of lateral edges of coxae III. Posteromedial edge of coxae IV oblique and forming cavity in which external genital organ situated; lateral edge of these coxae convex. Genital plates fused by anterior and posterior ends, acetabula arranged on arched line. Anterior acetabula oval, median and posterior acetabula rounded. Distance between anterior and median acetabula twice more than distance between median and posterior acetabula. Lateral edges of genital plate weakly concave; posterior edges converge under blunt angle and form narrow fissure in middle. Genital setae clustered in 4 groups. Two anterior groups have few setae and located as two rows in anterior part of plate; two posterior groups with numerous setae. All sclerites, bearing ventral idiosomal setae, situated on soft cuticle. Anal opening with tiny anterior sclerite.

Basifemur of legs II (Fig. 4, b) with large ventrodistal hump, tibia with sword-shaped seta

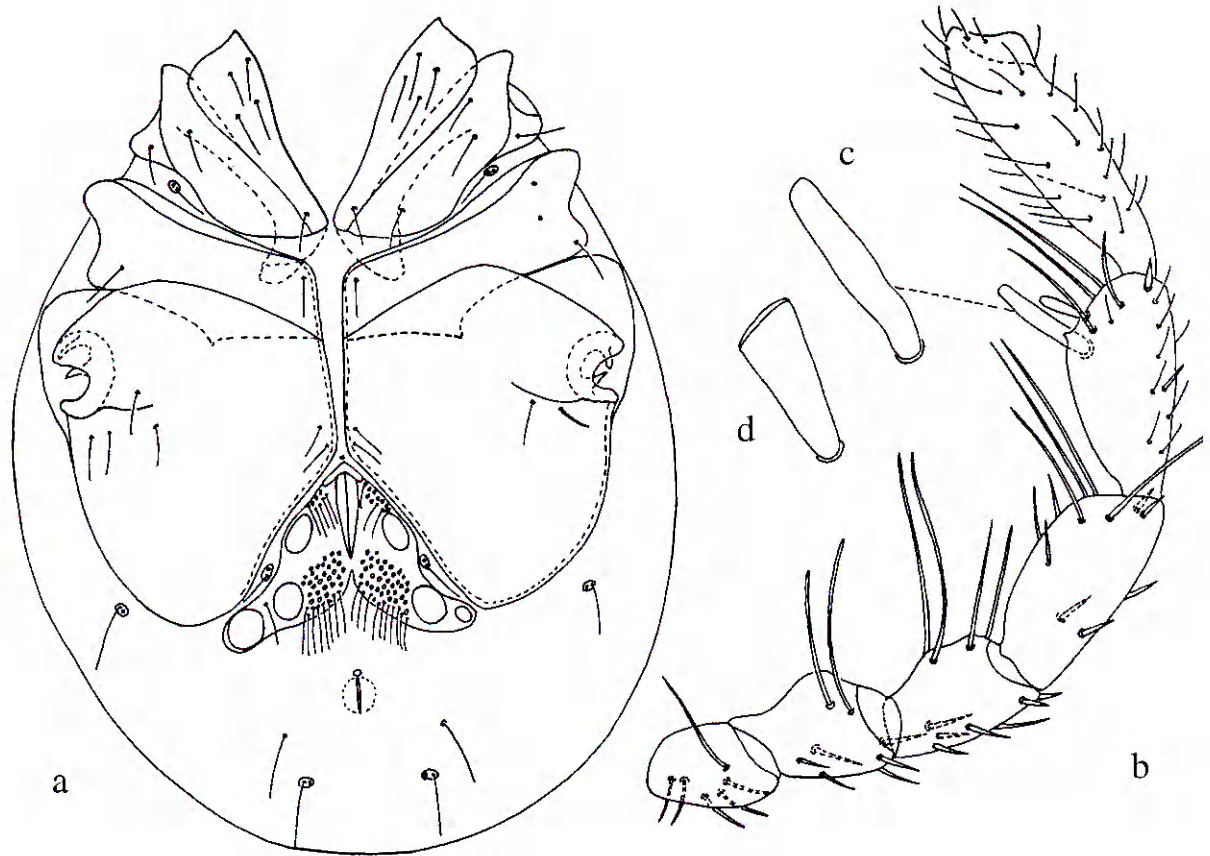


Fig. 4. *Tiphys gladiator*, male: a — ventral view, b — leg II, c — sword-shaped seta. *Tiphys pistillifer*, male: d — spatulate seta on tibia of leg II.

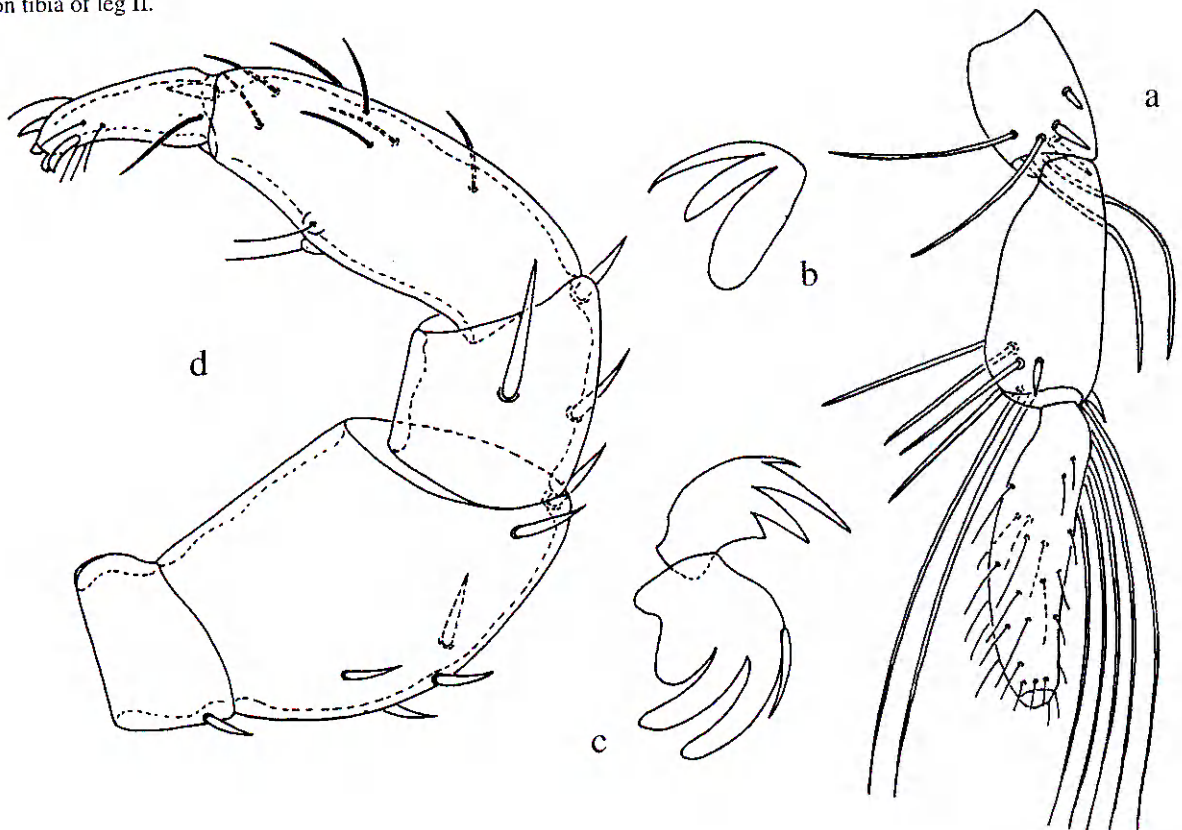


Fig. 5. *Tiphys gladiator*, male: a — genu, tibia, and tarsus of leg III, b — claw of tarsus I, c — claws of tarsus III, d — pedipalp.

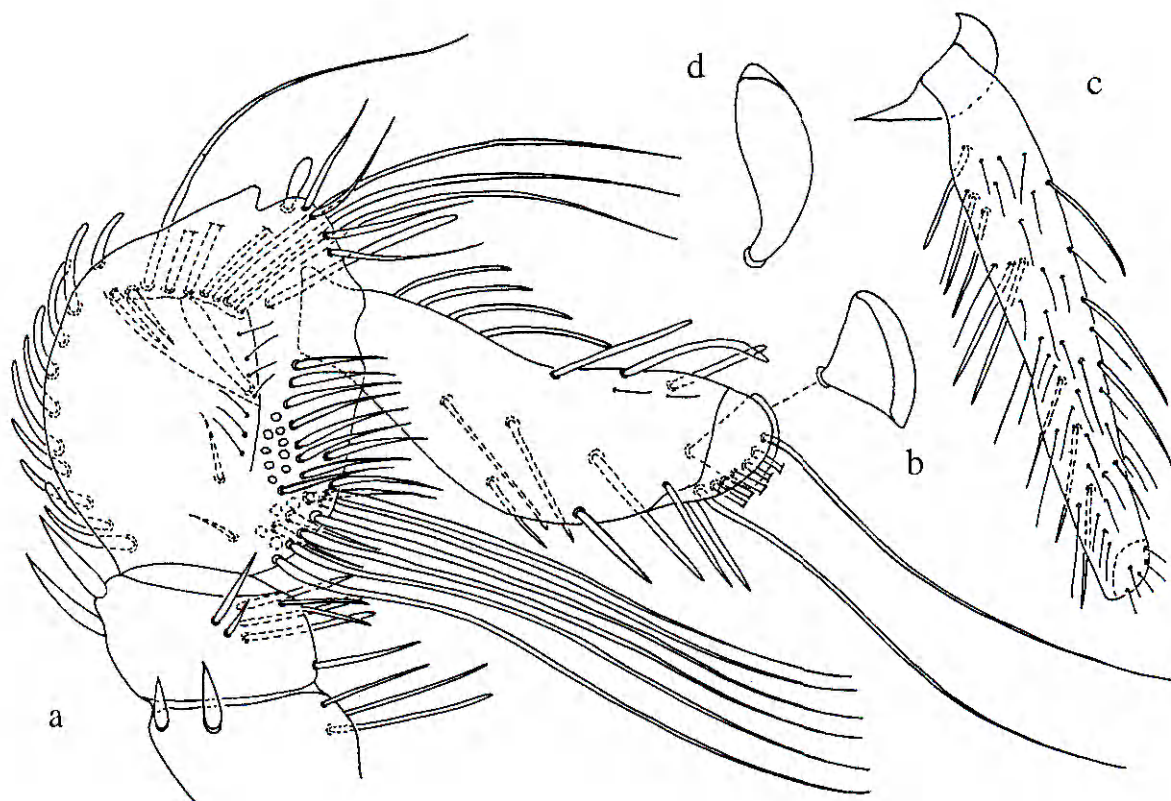


Fig. 6. *Tiphys gladiator*, male: a — basifemur, telofemur, genu and tibia of leg IV, b — fan-shaped seta, c — tarsus of leg IV. *Tiphys pistillifer*, male: d — leaf-like seta on tibia of leg IV.

(Fig. 4, c). Lateral margins of sword-shaped seta parallel to each other and not expanded distally. Tibia of leg III (Fig. 5, a) with 7 long swimming setae. Genu of leg IV (Fig. 6, a) expanded dorsoventrally, with convex dorsal surface bearing 10 short, bent setae with round tips. Ventral surface of genu straight, with long swimming setae and numerous short pointed setae. In addition, swimming setae present in distolateral part of genu. Distal edge of genu with small notch and short clavate seta. Tibia IV slightly thickened near middle, with concave dorsal and convex ventral sides; with 7 dorsal, 7 ventrolateral setae, 6–7 long swimming setae, and distolateral fan-shaped seta (Fig. 6, b). Tarsus IV (Fig. 6, c) with numerous thin and thick setae. Claw I and II approximately equal in length, with wide internal and narrow external denticles (Fig. 5, b). Claws III asymmetric (Fig. 5, c).

Pedipalp (Fig. 5, d) similar to female, but tibia with more numerous dorsal setae.

Measurements. Length of body 660, length of seta Fch 130; length of genital opening 70; length of genital plate 145; its width 195; length (or diameter) of genital acetabula (ac. 1–3): 38,

32, 32; length of capitulum with anchoral projection 185; length of basal segment of chelicera 115; length of chelicera stylet 50; length of pedipalpal segments (P 1–5): 33, 90, 57, 95, 45; length of leg segments: I — 55, 85, 90, 120, 145, 170; II — 65, 90, 90, 120, 135, 185; III — 75, 90, 65, 75, 120, 155; IV — 130, 105, 75, 155, 190, 240; length of medial margin of coxae III 55; length of lateral margin of coxae III 85–90; length of medial margin of length IV 90; length of lateral margin of coxae IV 265; length of sword-shaped seta on tibia of legs II 120; its width 24; length fan-shaped seta on tibia of legs IV 32; its width 52–55.

Type material. Holotype: male, slide 9102, sedge-sphagnum bog near settlement Borok, Nekouzskiy Rayon, Yaroslavskaya Oblast', Russia, 22.08.1974. Paratype: 1 female is found in the same bog as the holotype, 28.08.1974.

DIFFERENTIAL DIAGNOSIS

The new species is similar to *T. pistillifer* [see Koenike, 1909; Viets, 1936; Lundblad, 1962; Bes-seling, 1964; Szalay, 1964; Davids, 1979]. A comparison of the new species with Yaroslavl specimens of *T. pistillifer* is given below.

The dorsum of adult mites of *T. pistillifer* with three pairs of plates, seta Fch relatively short (100–105); sclerites with setae Hv are fused with the posteromedial margin of coxae II; sclerites, bearing setae Pe, are fused with the posteromedial margin of coxae IV; tibia II of the male with a spatulate seta (ratio length/width = 2.3) (Fig. 4, d); tibia IV of the male with a distolateral leaf-shaped seta (ratio length/width = 2.5) (Fig. 6, d); anterior and posterior genital sclerites of female are large. In contrast, the dorsum of adults of *T. gladiator* with two pairs of plates; setae Fch rather long (115–130); all sclerites that bear idiosomal setae are situated freely on soft cuticle; tibia II of the male with a sword-shaped seta (ratio length/width = 5), tibia IV of the male with a distolateral fan-shaped setae (ratio length/width = 0.6); anterior and posterior genital sclerites of female are small.

K.O. Viets [1955] gave an interesting description of leg IV and tibia of leg II of a male of *Acercopsis* which he has identified as *T. pistillifer*. In this specimen, tibia II has a sword-shaped seta as in *T. gladiator*; but genu IV is strongly bent, its ventral edge is distinctly concave, the distal part is oriented at the right angle to the longitudinal axis of this segment. The genu IV of the male of *T. gladiator* is weakly bent, with straight ventral edge; the distal part is oriented at a sharp angle to the longitudinal axis of this segment.

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