

## A NEW WATER MITE SPECIES OF THE GENUS *ENCENTRIDOPHORUS* PIERSIG (ACARIFORMES, UNIONICOLIDAE)

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ABSTRACT: A description of the male, female and deutonymph of a new water mite, *Encentridophorus ethiopiensis* from Ethiopia, is given.

KEY WORDS: Unionicolidae, *Encentridophorus ethiopiensis*, water mite, new species

### INTRODUCTION

The genus *Encentridophorus* Piersig, 1897 includes about twenty species (Viets 1987) reported from Asia, the Australian Region and Africa. A new species of the genus *Encentridophorus* was found in the Ethiopian lake Tana. The description of this species is given below.

The nomenclature of idiosomal setae and lyriform organs is given after Tuzovsky (1987). The following abbreviations are used: P1–5, pedipalp segments (trochanter, femur, genu, tibia and tarsus), I Leg. 1–6 — first leg, segments 1–6 (trochanter, basifemur, telofemur, 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.

#### **Subfamily Encentridophorinae Viets, 1935** ***Encentridophorus (Encentridophorus)*** ***ethiopiensis* Tuzovskij, sp.n.**

Figs 1–6

**Description of male.** Body oval, somewhat flattened dorsoventrally, with medial caudal cleft (Fig. 1). Integument soft and smooth. Dorsum (Fig. 1, a) with two pairs of muscle attachment platelets. Anterior pair of platelets very small, transverse; posterior platelets longitudinal and larger than anterior ones. Trichobothria Fp and Oi without glandularia, other dorsal setae with glandularia. All dorsal glandularia and setae separated. The first pair of lyriform organs ( $i_1$ ) located near eyes,  $i_2$ – $i_3$  are placed similarly in front of humeral and scapular rows of setae,  $i_4$  situated on level of internal lumbar setae, and  $i_5$  posterior of sacral row of setae.

Anterior and posterior coxal groups divided by rather wide interspace (Fig. 1, b). Apodeme of first coxal group relatively short and not extending posteriorly to anterior edge of third coxae. Suture line between third and fourth coxae incomplete. Coxae III and IV with subequal medial and lateral margins. External genital organ with 11–12 acetab-

ula on each side, most acetabula situated free in integument. The acetabula arranged in two groups on each side, medial groups with 4–5, lateral groups with 7 acetabula; central acetabulum in these groups larger than other ones. Genital field with 9–10 thin setae on each side and two rows of small curved setae (Fig. 1, c) present on each side at posteromedially; five or six thick setae present on each side at posterior end of body, their bases are fused and forming transverse rows. Setae Pi without glandularia; setae Se, Sce, Pe and Hv with glandularia, these setae and glandularia not separated.

Ejaculatory complex (Fig. 2, a) with almost subequal proximal and distal ramus on each side, proximal chamber rather large with two short horns.

The basal segment of chelicera (Fig. 2, b) large, with straight dorsal side. Cheliceral stylet is rather large, crescent, without teeth.

First three segments of pedipalp (Fig. 2, c) thick, tibia thin and very slender. Trochanter of pedipalp without setae. Pedipalpal femur with one proximal and two dorsodistal setae. Pedipalpal genu with rather long lateral and relatively short dorsodistal setae. Pedipalpal tibia with well developed tubercle near distal end, bearing short peg-like setae, with two ventral and three dorsal thin setae. Pedipalpal tarsus curved dorsoventrally, with long dorsal solenidion, five thin setae, large dorsodistal and small distal spines.

Leg I and II (Fig. 3, a) approximately subequal, their genu with one, tibia with two swimming setae. Tarsus of leg I and II with numerous thin setae, forming longitudinal row. Leg III (Fig. 3, b) shorter than other ones. Basifemur III with 20–24, genu III with 14–15 and tibia III with 7–8 long thick swimming setae. Telofemur of legs IV (Fig. 3, c) with 8, genu IV with 8–10 and tibia with 3 long and relatively thin swimming setae. Tarsus IV with 7 unequal ventral, thin setae and 5–6 relatively thick, short dorsal ones. Distal part of

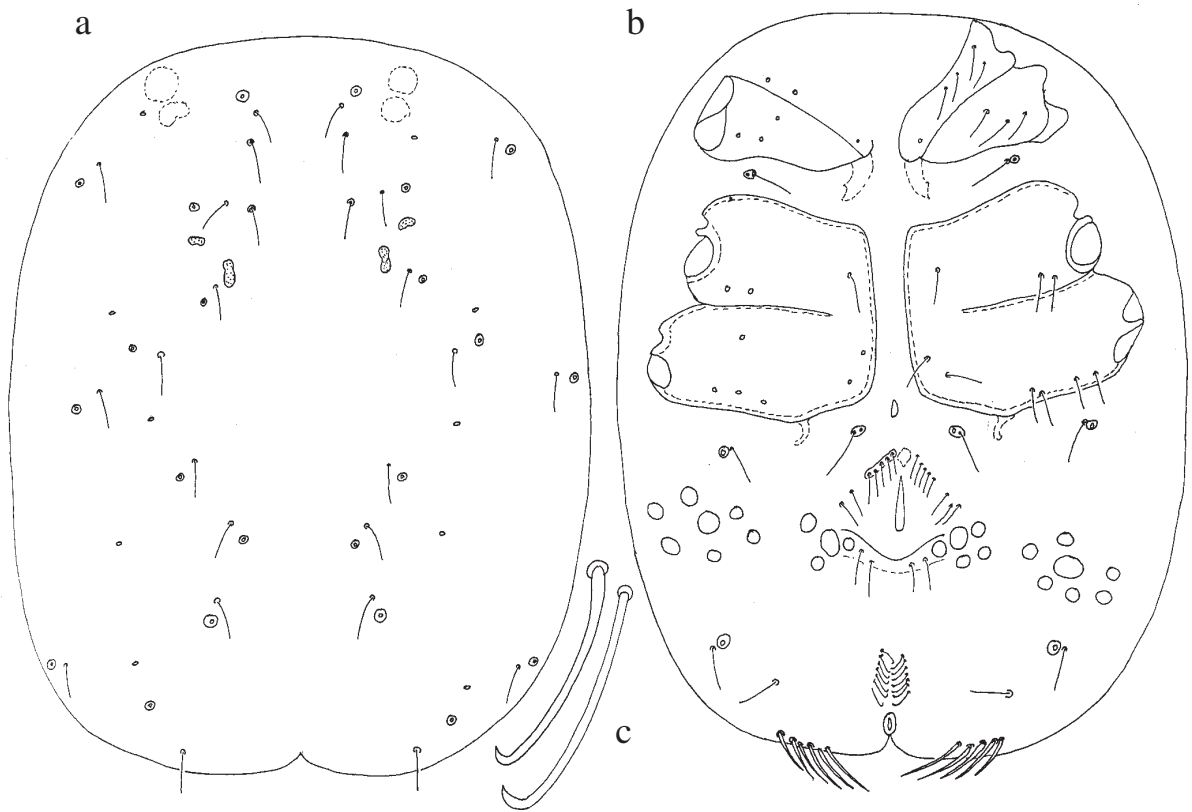


Fig. 1. *Encentridophorus ethiopiensis*, male: a — dorsal view, b — ventral view, c — curved setae.

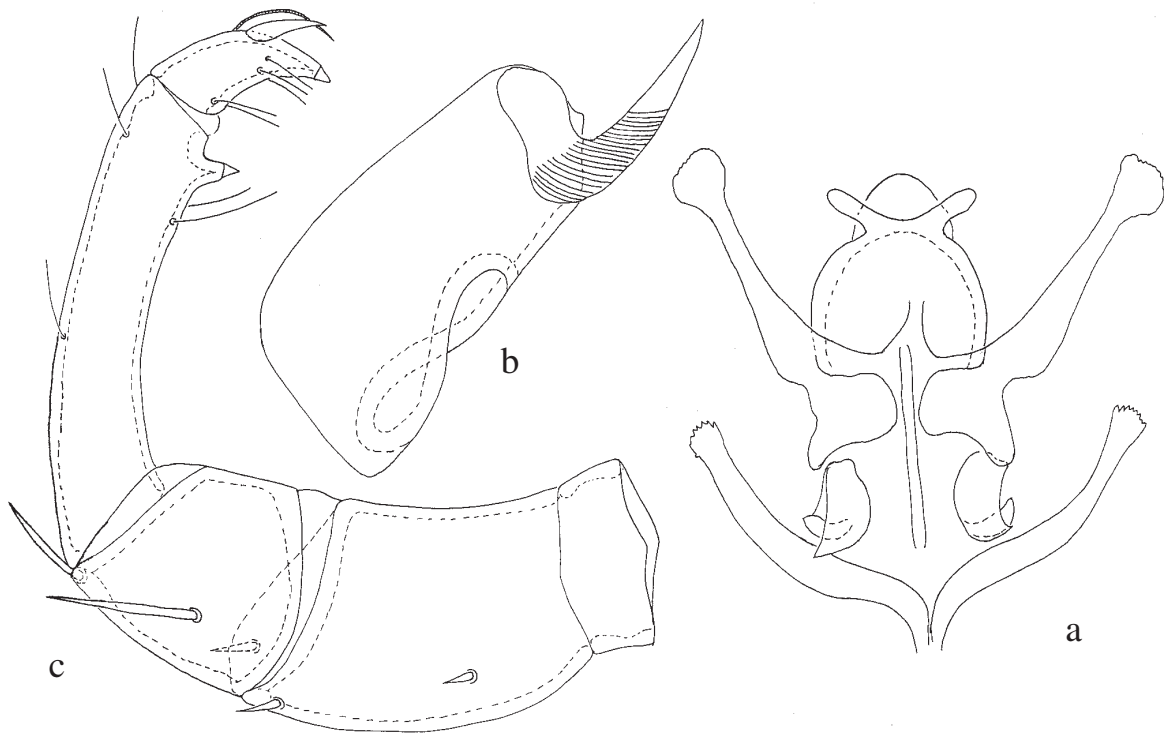


Fig. 2. *Encentridophorus ethiopiensis*, male: a — ejaculatory complex, b — chelicera, c — pedipalp.

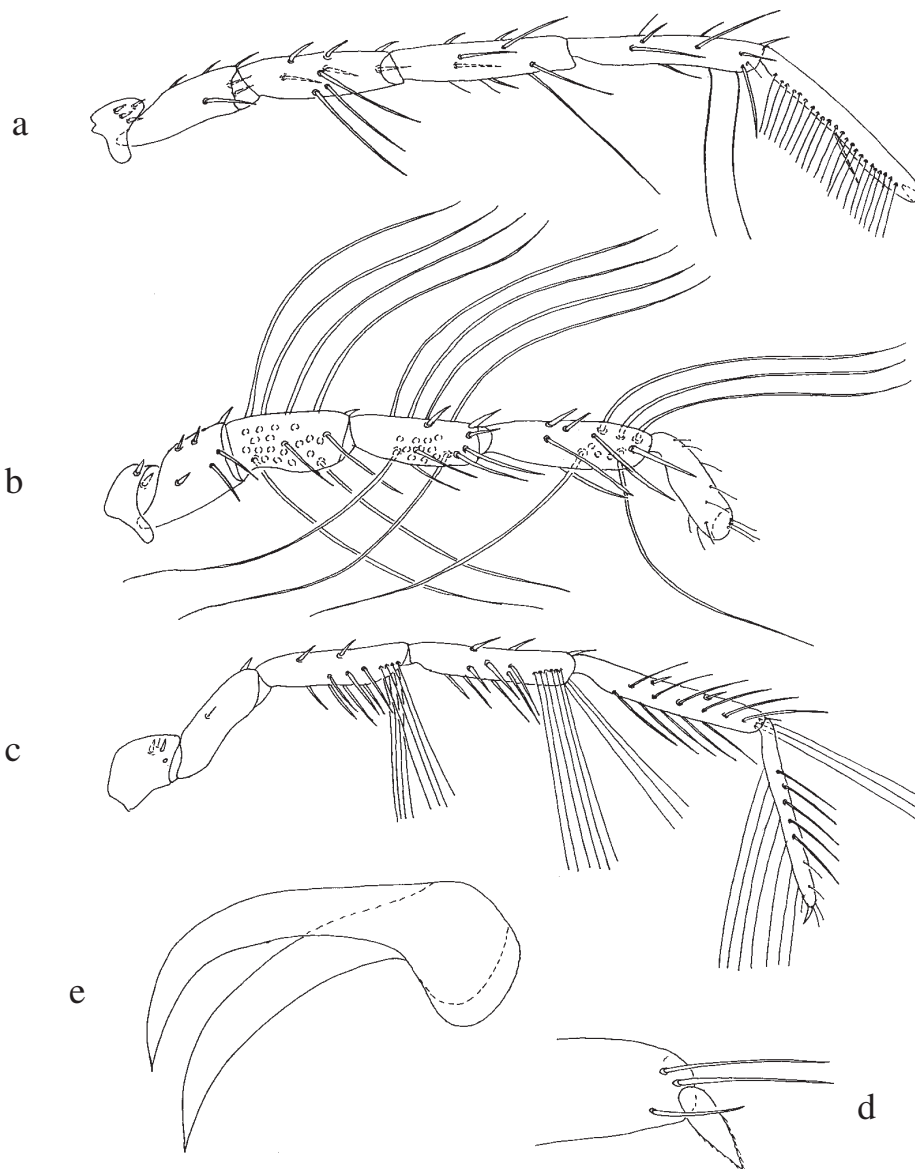


Fig. 3. *Encentridophorus ethiopiensis*, male: a — leg II, b — leg III, c — leg IV, d — terminal part of tarsus IV, e — claws.

tarsus IV without claw, but with leaf-like seta (Fig. 3, d). Claws of legs I–III enlarged and extending distally (Fig. 3, e).

**Measurements.** Length of the body 875, width 700; length of anterior dorsal platelets 12–13, their width 19–21; length of posterior dorsal platelets 31–33, their width 19–21; length of coxae III+IV 225, their width 275; length of basal segments of chelicera 120, length of cheliceral stylet 70; length of the pedipalpal segments (P1–5) — 25, 125, 80, 162, 50; length of leg segments: I Leg. 1–6 — 65, 160, 175, 185, 200, 210; II Leg. 1–6 — 65, 150, 180, 210, 210, 230, 250; III Leg. 1–6 — 75, 125, 150, 160, 185, 140; IV Leg. 1–6 — 100, 110, 180, 185, 235, 230.

**Female.** Mouthparts similar to male. Dorsum similar to male, but without medial cleft on poste-

rior end of body. Anterior and posterior group coxae separated by wide interspace (Fig. 4). Apodeme of first coxal groups not extending posteriorly to anterior edge of third coxae. Suture line between third and fourth coxae complete. Medial margin of coxae III slightly shorter than medial margin of coxae IV. Genital opening long, acetabula (16–17) on each side lying free in the integument, pre- and postgenital sclerites small and subequal in sizes. Genital field with 3 anterior and 5 posterior thin setae, in addition still one seta is closely together to any anteromedial acetabulum on each side.

Leg II (Fig. 5, a) with enlarged telofemur, tibia with ventral ledge near middle, genu with 1–2 swimming setae. Leg I, III and IV unmodified. Swimming setae present on following segments of

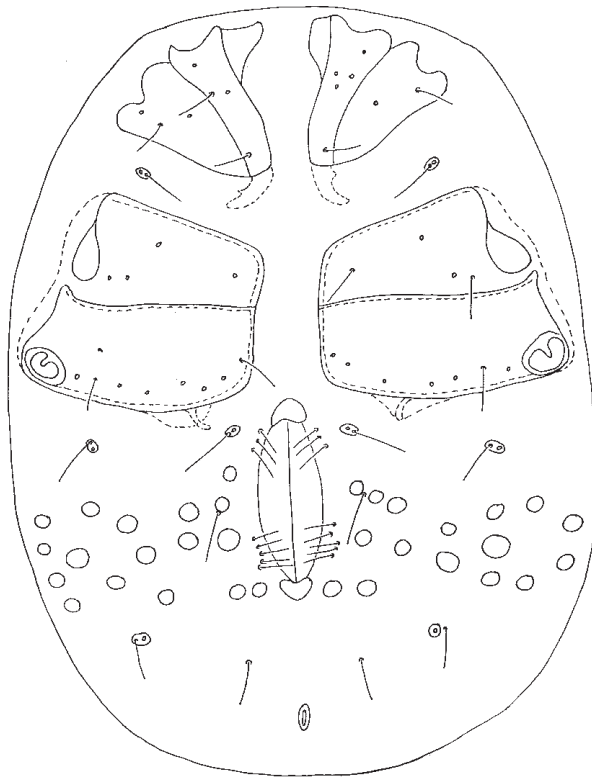


Fig. 4. *Encentridophorus ethiopiensis*, female: ventral view.

legs III–IV (Fig. 5, b, c): two on telofemur III; five on genu III and telofemur IV, four on tibia III and IV, seven on genu IV. Tarsus of legs IV with 6 unequal ventral and 4 relatively short lateral setae. Claws of legs I–III hook-like (Fig. 5, d).

**Measurements.** Length of the body 940, width 810; length of anterior dorsal platelets 12–13, their width 19–21; length of posterior dorsal platelets 38–40, their width 19–21; length of coxae III+IV 260, their width 300; length of basal segments of chelicera 150, length of cheliceral stylet 80; length of the pedipalpal segments (P1–5) — 25, 155, 87, 200, 65; length of leg segments: I Leg. 1–6 — 70, 175, 180, 210, 225, 190; II Leg. 1–6 — 75, 145, 190, 210, 235, 175; III Leg. 1–6 — 75, 135, 165, 185, 235, 240; IV Leg. 1–6 — 145, 145, 195, 210, 260, 240.

**Deutonymph.** Dorsum similar to female. Genital organ with large acetabulum and one thin seta on each side (Fig. 6, a). Genital sclerites with 2 pairs of setae. Trochanter of pedipalp (Fig. 6, b) without setae, femur with two short dorsodistal setae, genu with long lateral and relatively short dorsodistal setae. Pedipalpal tibia slender, with ventral tubercle near distal end, bearing short peg-like seta, with two ventral and two dorsal thin setae. Pedipalpal tarsus curved, with single long solenidion, three

thin setae, large dorsodistal and short distal spines. Leg I and II (Fig. 6, c) approximately subequal, without swimming setae. Genu and tibia of leg III (Fig. 6, d) with two; telofemur and tibia of legs IV (Fig. 6, e) with two, genu IV with three long swimming setae. Tarsus IV with three rather long lateral setae.

**Measurements.** Length of the body 625, width 500; length of coxae III+IV 135, their width 150; length of basal segments of chelicera 90, length of cheliceral stylet 48; length of the pedipalpal segments (P1–5) — 23, 95, 50, 130, 43; length of leg segments: I Leg. 1–6 — 40, 85, 110, 130, 150, 125; II Leg. 1–6 — 45, 90, 115, 135, 155, 135; III Leg. 1–6 — 45, 80, 100, 115, 155, 135; IV Leg. 1–6 — 75, 80, 120, 145, 175, 165.

**Type material.** Holotype: male, slide 9404; Ethiopia, Tana lake, 16.11.2006. Paratypes (1 female, 1 deutonymph) collected together with holotype, 16.11.2006 (coll. A. Zhokhov).

#### DIFFERENTIAL DIAGNOSIS

The new species is closely related to *Encentridophorus vietsi* Bader, 1981. Adults mites of *E. ethiopiensis* differ from *E. vietsi* by the following characters (character states of *E. vietsi* follow Bader 1981 and given in parenthesis): the integument is smooth (with strips); dorsum with two pairs of platelets (without platelets); telofemur of leg II of the female is enlarged (not enlarged); the genital field of the male with 11–12 pairs of acetabula (with 14–18 pairs); in male, there are five-six thick ventral setae forming a transverse row on each side of the posterior end of the body (these setae forming two groups on each side: one dorsally and five caudally).

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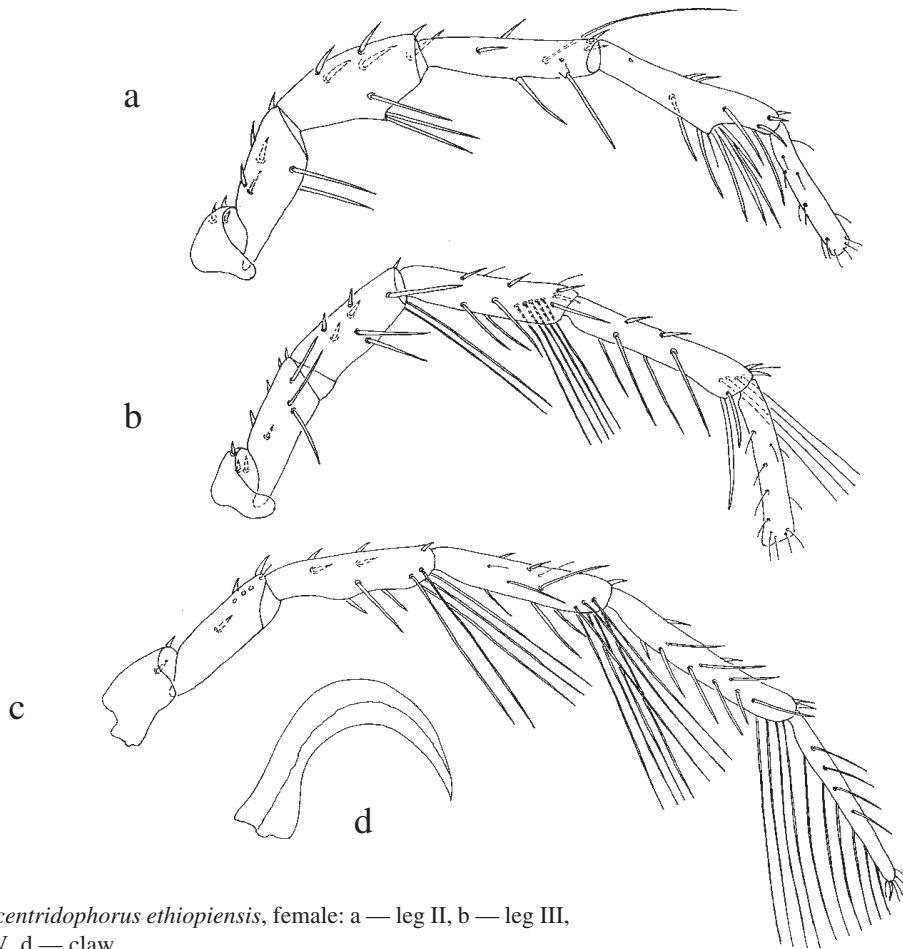


Fig. 5. *Encentridophorus ethiopiensis*, female: a — leg II, b — leg III, c — leg IV, d — claw.

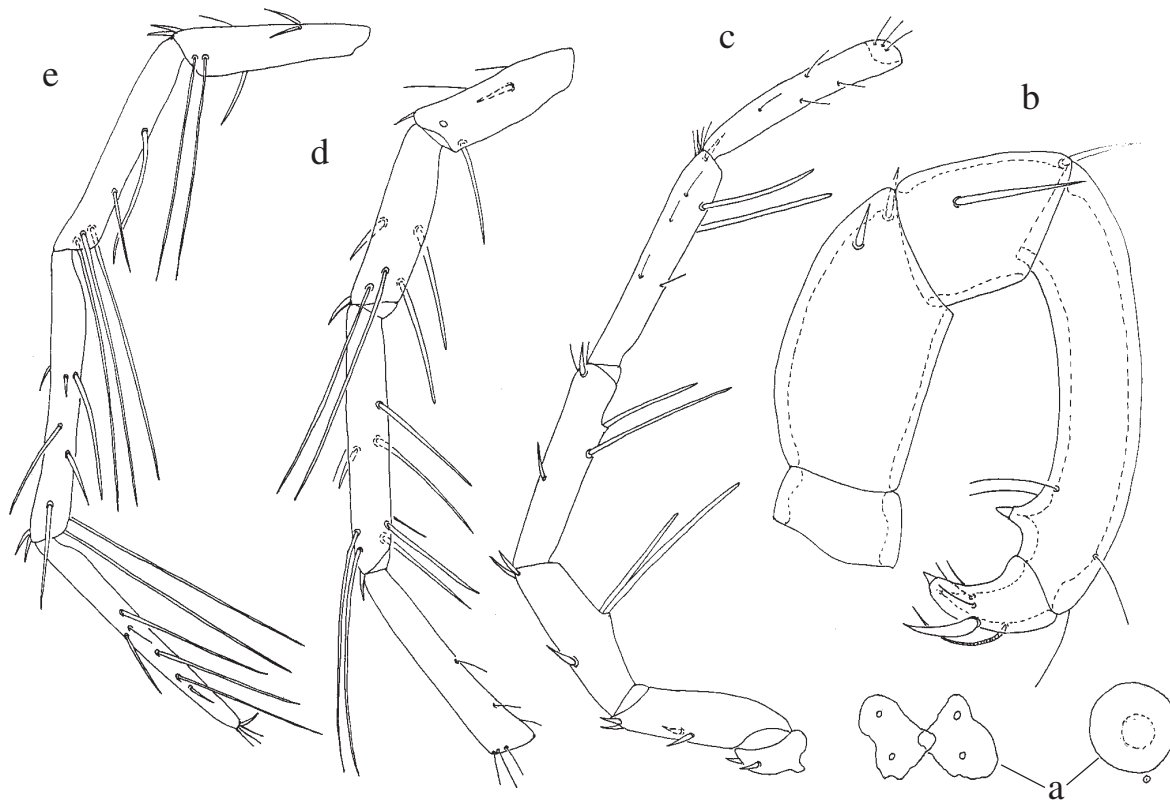


Fig. 6. *Encentridophorus ethiopiensis*, deutonymph: a — genital sclerites and acetabulum (left side), b — pedipalp, lateral view, c — leg II, d — telofemur, genu, tibia and tarsus of leg III, e — telofemur, genu, tibia and tarsus of leg IV.