ЗООЛОГИЧЕСКИЙ ЖУРНАЛ, 2021, том 100, № 2, с. 170–185

УДК 595.4

TWO NEW SPECIES OF ORIBATID MITES (ACARI, ORIBATIDA) FROM MALAYSIA

© 2021 S. G. Ermilov[a], *, S. Kalúz[b], **

[a] Tyumen State University, Tyumen, 625003 Russia

[b] Institute of Zoology, Slovak Academy of Sciences, Bratislava, 84506 Slovakia

*e-mail: ermilovacari@yandex.ru

**e-mail: stanislav.kaluz@gmail.com

Received August 28, 2019
Revised January 19, 2020
Accepted February 28, 2020

Two new species of oribatid mites (Acari, Oribatida) are described from Western Malaysia, one each in the genera *Eurhynchoribates* (Rhynchoribatidae) and *Sadocepheus* (Cepheidae). *Eurhynchoribates jendeki* sp. n. differs from *E. excelsior* (Mahunka 1985) in the larger body size; the absence of a triangular tubercle between insertions of the lamellar setae; and the presence of the following characters: thickened lamellar and interlamellar setae, cerotegumental reticulate ornamentation on notogaster, furrows on anal plates and in adanal region, and foveolae in aggenital region. *Sadocepheus sausai* sp. n. differs from *S. yakuensis* Aoki 2006 in the presence of long adanal setae, long posterior notogastral setae p_1–p_3, and some long epimeral setae.

Keywords: oribatid mites, Oriental region, systematics, morphology, *Eurhynchoribates*, *Sadocepheus*

DOI: 10.31857/S0044513420120028

The goal of the paper is to describe and illustrate two new species of oribatid mites (Acari, Oribatida), which were collected from Malaysia. One species belongs to the genus *Eurhynchoribates* Miko 2016 (family Rhynchoribatidae), and the other – to *Sadocepheus* Aoki 1965 (family Cepheidae).

Eurhynchoribates includes two subgenera and 15 species, which are distributed in the Ethiopian and Oriental regions (Subías, 2019). The main morphological diagnostic characteristics of this genus were summarized by Miko (2016) and Miko et al. (2017). *Sadocepheus* includes 14 species and one subspecies, which are distributed in the Oriental, Neotropical and eastern Palaearctic regions, as well as in New Zealand and in the U.S.A. (Subías, 2019; Ermilov, Rybalov, 2019). The main morphological diagnostic characteristics of this genus were summarized by Ermilov and Corpuz-Raros (2017).

Prior to our study, representatives of *Eurhynchoribates* have never been registered in Malaysia, while only one species of *Sadocepheus* has been recorded (Mahunka, 1987).

This work is a part of our ongoing study of oribatid mite fauna of Malaysia (e.g., Ermilov, 2016; Ermilov, Kalúz, 2019, 2019a).

METHODS

Specimens were mounted in lactic acid on temporary cavity slides for measurement and illustration. Body length was measured in lateral view, from the tip of the rostrum to the posterior edge of the notogaster. Notogastral width refers to the maximum width of the notogaster in dorsal view. Lengths of body setae were measured in lateral aspect. All body measurements are presented in micrometers. Formulas for leg setation are given in parentheses according to the sequence trochanter–femur–genu–tibia–tarsus (famulus included). Formulas for leg solenidia are given in square brackets according to the sequence genu–tibia–tarsus.

Drawings were made with a camera lucida using a Leica transmission light microscope "Leica DM 2500". SEM micrographs were made with the aid of a JEOL–JSM-6510LV SEM microscope.

Morphological terminology used in this paper follows that of F. Grandjean: see Travé and Vachon (1975) for references, Norton (1977) for leg setal nomenclature, and Norton and Behan-Pelletier (2009), for overview.

The following abbreviations are used: *ro*, *le*, *in*, *bs*, *ex* – rostral, lamellar, interlamellar, bothridial and exobothridial setae, respectively; *tu* – tutorium; *c*, *la*, *lm*, *lp*, *h*, *p* – notogastral setae; *cr* – crista; *ia*, *im*, *ip*, *ih*, *ips* – notogastral lyrifissures; *gla* – opisthonotal

gland opening; *a*, *m*, *h* – subcapitular setae; *or* – adoral seta; ω – palp and leg solenidion; *cha*, *chb* = cheliceral setae; *Tg* = Trägårdh's organ; *PdI*, *PdII* – pedotecta I, II, respectively; *1a*, *1b*, *1c*, *2a*, *3a*, *3b*, *3c*, *4a*, *4b*, *4c*, *4d*, *4e* – epimeral setae; *dis* – discidium; *g*, *ag*, *an*, *ad* – genital, aggenital, anal and adanal setae, respectively; *iad* – adanal lyrifissure; *po* – preanal organ; *Tr*, *Fe*, *Ge*, *Ti*, *T*a – leg trochanter, femur, genu, tibia, tarsus, respectively; *pa* – leg porose area; σ, φ – leg solenidia; ε – leg famulus.

SYSTEMATICS

Superfamily Trizetoidea

Family Rhynchoribatidae

Genus *Eurhynchoribates* Miko 2016

Subgenus *Eurhynchoribates* (*Eurhynchoribates*) Miko 2016

Type species: *Rhynchoribates borhidii* Mahunka 1986

Eurhynchoribates jendeki Ermilov et Kalúz sp. n. (Figs 1–6)

Material. Holotype (♂) and four paratypes (2♀♀, 2♂♂): Malaysia, Perak District, 50 km NE to Gerik, Titiwangsa, 05°36′17.4″ N, 101°32′34.0″ E, alt. 1100 m, forest complex Belum–Temenggor, litter, 30.III–13.IV.2015 (E. Jendek, O. Šauša).

The holotype is deposited in the collection of the Institute of Zoology, Slovak Academy of Sciences, Bratislava, Slovakia; four paratypes are deposited in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia. All specimens are in ethanol with drop of glycerol.

Diagnosis. Body size: 929–962 × 647–680. Notogastral granulate cerotegument forming partially specific reticulate pattern on notogaster. Anal plates and adanal region with furrows, aggenital region foveolate. Rostrum pointed, with five to seven lateral teeth. Rostral and exobothridial setae short, slightly thickened, barbed, *ro* arch-like. Lamellar and interlamellar setae long, thickened, barbed. Bothridial setae setiform, barbed. Ten pairs of notogastral setae long, thickened, barbed. Epimeral setal formula: 3–1–3–5; *1b*, *3b* and *4a* phylliform, barbed, others setiform, barbed. Genital setae setiform, barbed. Aggenital and adanal setae narrowly phylliform, barbed. Anal setae short, setiform, smooth, inserted in anterior part of anal plates. Adanal lyrifissures diagonal.

Description. *Measurements*. Body length: 929 (holotype), 929–962 (paratypes); notogaster width: 647 (holotype), 647–680 (paratypes). No difference between females and males in body size.

Integument (Figs 1*a*–1*e*; 2*a*; 3*a*–3*d*; 4*a*, 4*c*–4*e*; 5*a*, 5*b*; 6*a*, 6*c*, 6*d*). Color dark reddish brown. Surface densely microtuberculate (diameter or length of tubercles less than 1) and with larger sparse tubercles (their diameter up to 6) (Figs 4*c*–4*e*; 6*a*). Podosomal regions and lateral parts of prodorsum densely macrotuberculate (diameter of tubercles up to 16) (Figs 5*a*, 5*b*). Anal plates with some longitudinal furrows (Figs 2*a*; 4*b*). Adanal region with thickenings bordered by curved furrows (Fig. 4*b*). Oval and elongate foveolae present between genital and anal apertures (Figs 2*a*; 4*b*). All leg femora and trochanters III, IV with concavities forming reticulate pattern (Figs 5*a*; 6*d*). Body and legs covered by distinct layer of granulate cerotegument (Figs 4*a*, 4*c*–4*e*; 5*a*, 5*b*; 6*a*, 6*c*, 6*d*), which partially forming reticulate pattern on notogaster (Figs 4*a*; 5*a*, 5*b*), granules consist of dense microgranules (Figs. 4*c*–4*e*; 6*c*).

Prodorsum (Figs 1*a*–1*c*; 4*a*; 5*a*, 5*b*; 6*a*). Rostrum elongate triangular, pointed, with five to seven small teeth laterally. System of prodorsal ridges well-developed, anterior dorsolateral semi-oval concavities (tectopedial fields) present. Rostral (45–53) and exobothridial (45–49) setae slightly thickened, barbed, *ro* arch-like and directed anteriorly or anteromedially. Lamellar (98–102) and interlamellar (135–143) setae thickened, sometimes slightly swollen distally, barbed, *le* inserted on short separate thickenings. Bothridial setae (209–217) setiform, S-form, barbed. Postbothridial tubercles slightly developed.

Notogaster (Figs 1*a*, 1*d*, 1*e*; 2*b*; 4*a*; 5*a*, 5*b*; 6*b*). Anterior margin convex medially, with one pair of humeral tubercles and one pair of short cristae, located posterior to bothridia. Ten pairs of notogastral setae comparatively long (143–157; up to 169 sometimes), thickened, often slightly swollen distally, barbed. Lateral notogastral porose areas absent. Lyrifissures and opisthonotal gland openings distinct.

Gnathosoma (Figs 2*c*–2*e*; 5*a*). Subcapitulum longer than wide (196–200 × 61–69). Subcapitular setae (*a*, 49–53; *m*, 28–32; *h*, 65–69) setiform, barbed, inserted on two long, longitudinal arch-like ridges. Adoral setae absent. Axillary sacculi large, distinctly visible. Palps (length 127–131) with setation 0–2–1–3–8(+ω). Solenidion of palptarsi of medium size, bacilliform, pressed to the surface of palptarsi. Postpalpal setae not observed. Chelicerae (length 176–180) with one setiform, barbed seta (*cha*, 32–36), seta *chb* and Trägårdh's organ not observed.

Epimeral and lateral podosomal regions (Figs 1*e*; 2*a*; 4*b*; 5*a*). Epimeral and ventrosejugal tubercles absent, but unclear thickenings present instead it. Epimeral porose areas not observed. Epimeral setal formula: 3–1–3–5. Setae *1b*, *3b* and *4a* (86–90) narrowly phylli-

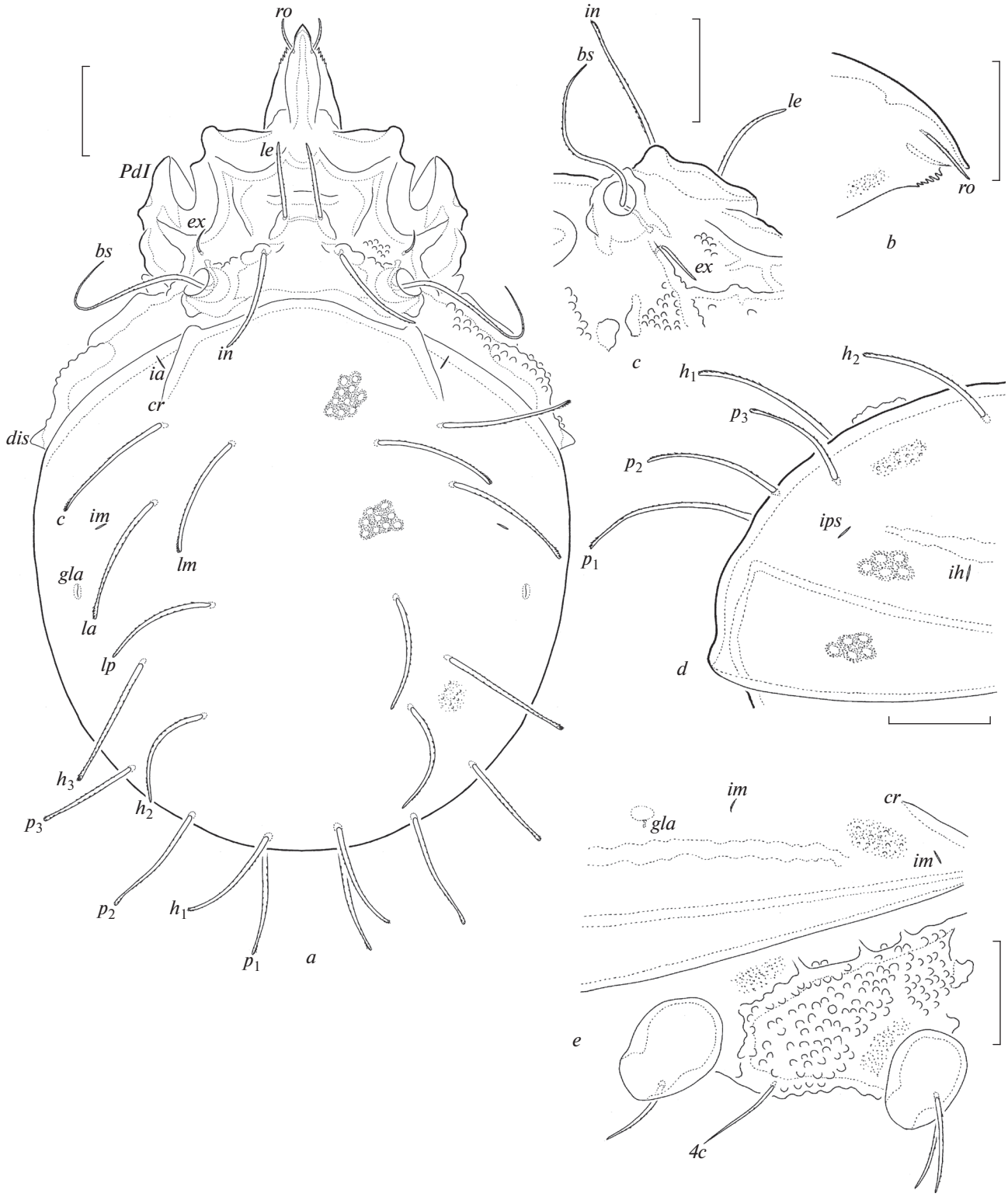

Fig. 1. *Eurhynchoribates jendeki* sp. n., adult: *a* – dorsal view (legs not illustrated); *b* – rostrum, lateral view; *c* – part of prodorsum, lateral view; *d* – part of notogaster, lateral view; *e* – part of notogaster and podosomal region, lateral view. Scale bar: 100 μm.

form, barbed, *1a*, *1c*, *4b* (41–49), and others (77–82) setiform, barbed. Setae *3a*, *4a*, *4b*, *4d*, and *4e* located on strong diagonal ridges, *3c* inserted at base of large ventropodosomal tubercles. Pedotecta I represented by small lamina. Circumpedal ridges indistinct. Discidia triangular.

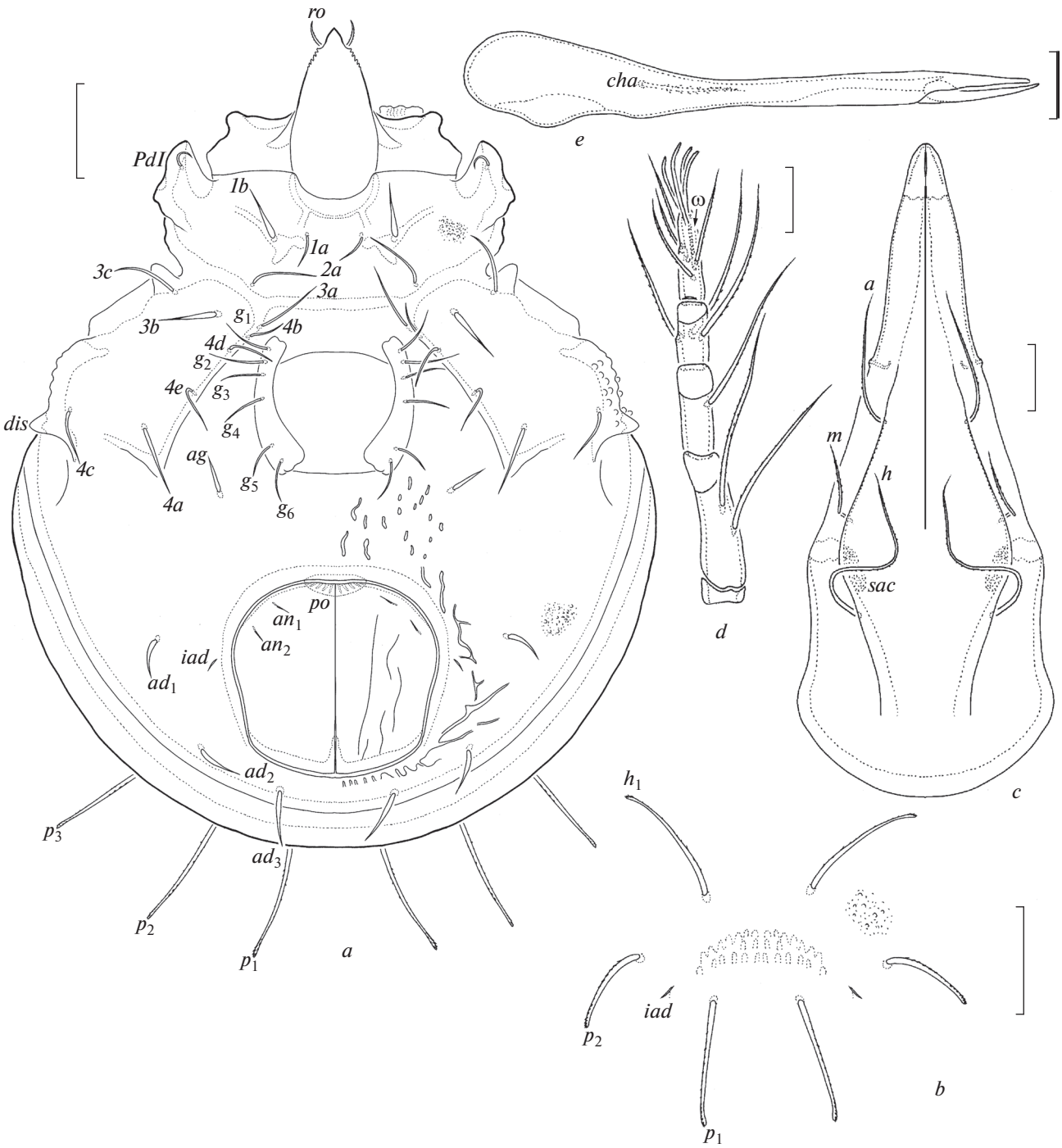

Fig. 2. *Eurhynchoribates jendeki* sp. n., adult: *a* – ventral view (gnathosoma and legs not illustrated); *b* – part of notogaster, posterior view; *c* – subcapitulum, ventral view; *d* – palp, left, ventroparaxial view; *e* – chelicera, right, antiaxial view. Scale bar (μm): *a, b* – 100; *c–e* – 20.

Anogenital region (Figs 2*a*; 4*b*; 5*a*). Six pairs of genital setae (g_1, g_2, 61–65; g_3–g_6, 49–53) setiform, barbed. One pair of aggenital (65–69) and three pairs of adanal (61–69 up to 90 sometimes) setae narrowly phylliform, barbed. Distance of insertions ad_1–ad_2 distinctly shorter than ad_2–ad_3. Two pairs of anal setae (12–16) setiform, thin, smooth, inserted in anterior part of anal plates. Adanal lyrifissures diagonal, slightly distanced from the anal aperture.

Legs (Figs 3*a*–3*d*; 4*a*, 4*b*; 5*a*; 6*d*). Claw of each leg smooth. Formulas of leg setation and solenidia: I (1–5–2–4–20) [1–2–2], II (1–5–2–4–16) [1–1–2],

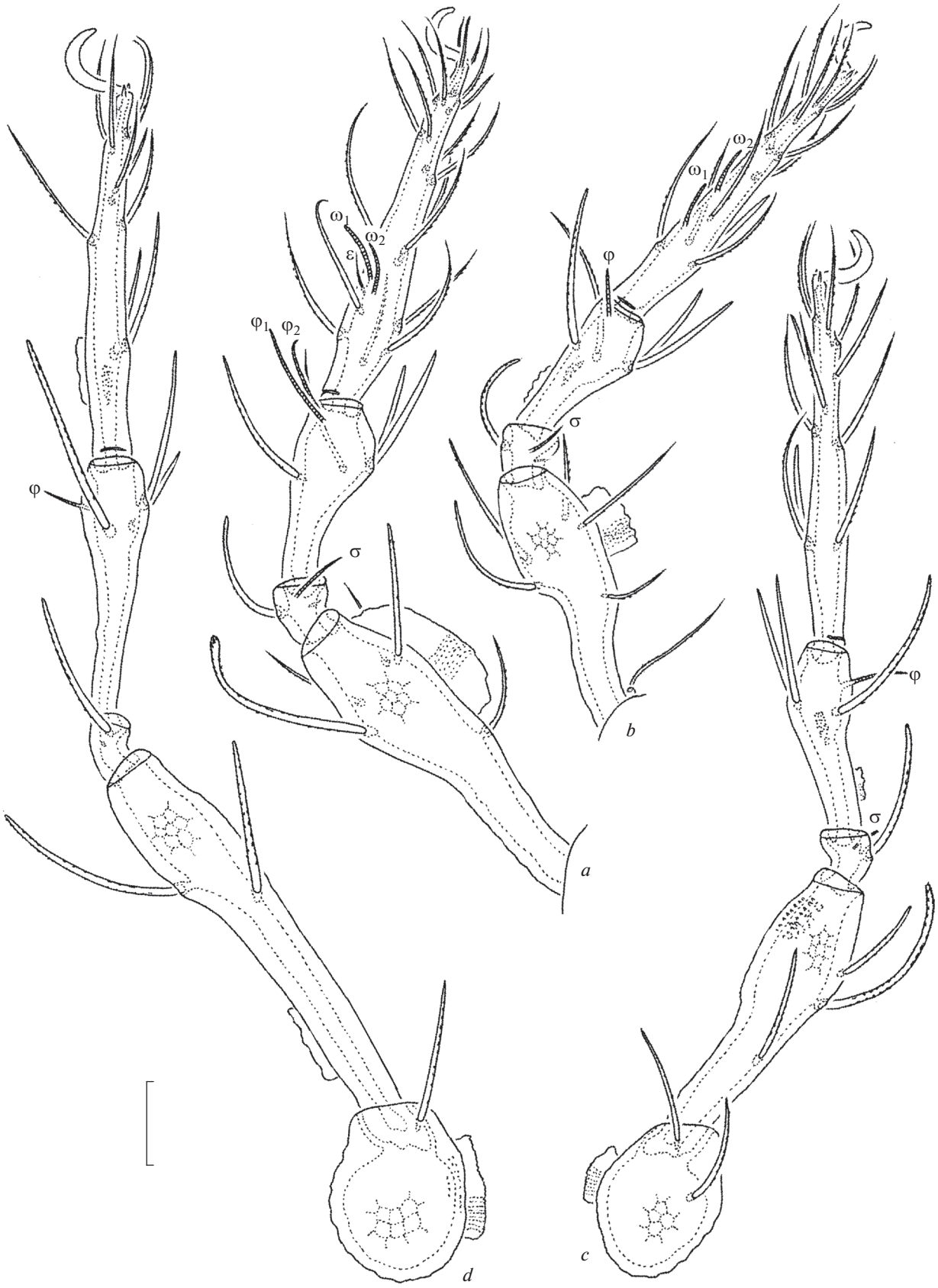

Fig. 3. *Eurhynchoribates jendeki* sp. n., adult: *a* – leg I, without trochanter and basal part of femur, right, antiaxial view; *b* – leg II, without trochanter and basal part of femur, right, antiaxial view; *c* – leg III, right, antiaxial view; *d* – leg IV, left, antiaxial view. Scale bar: 50 μm.

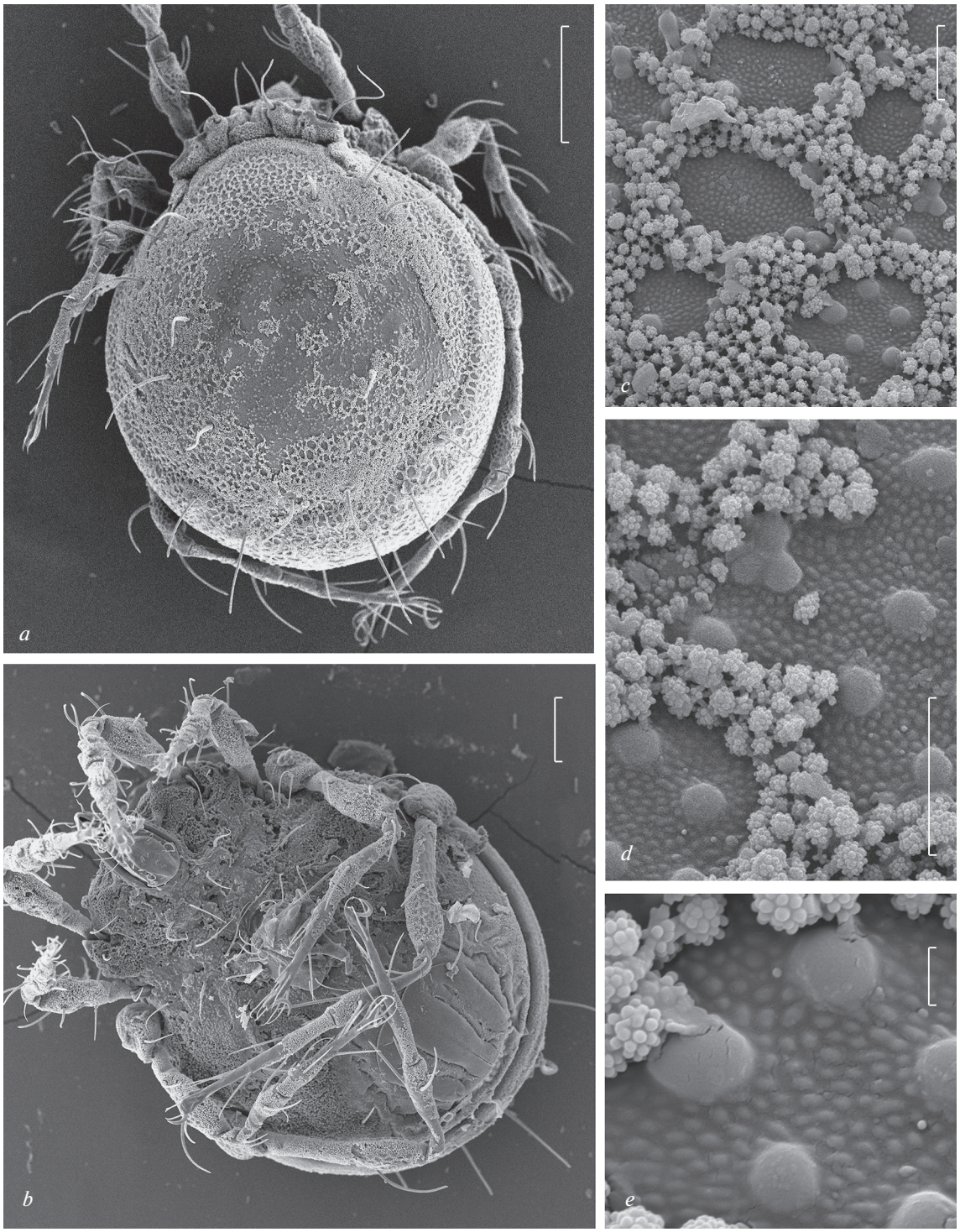

Fig. 4. *Eurhynchoribates jendeki* sp. n., adult, SEM micrographs: *a* – dorsal view; *b* – ventral view; *c*–*e* – part of notogastral surface and cerotegument. Scale bar (μm): *a* – 200; *b* – 100; *c, d* – 10; *e* – 2.

III (2–3–1–3–15) [1–1–0], IV (1–2–2–3–12) [0–1–0]; homology of setae and solenidia indicated in Table 1. All solenidia of medium size, thickened, blunt-ended. Famulus of tarsi I setiform, inserted posterior to solenidion ω_1. Setae *p* setiform on legs I and thorn-like on legs II–IV.

R e m a r k s. *Eurhynchoribates jendeki* sp. n. is similar to *E. excelsior* (Mahunka 1985) from the Ethiopian region (see Mahunka, 1985) in the presence of: triangular rostrum; long lamellar and interlamellar setae; long, thickened and barbed notogastral setae; narrowly phylliform aggenital and adanal setae. However, the

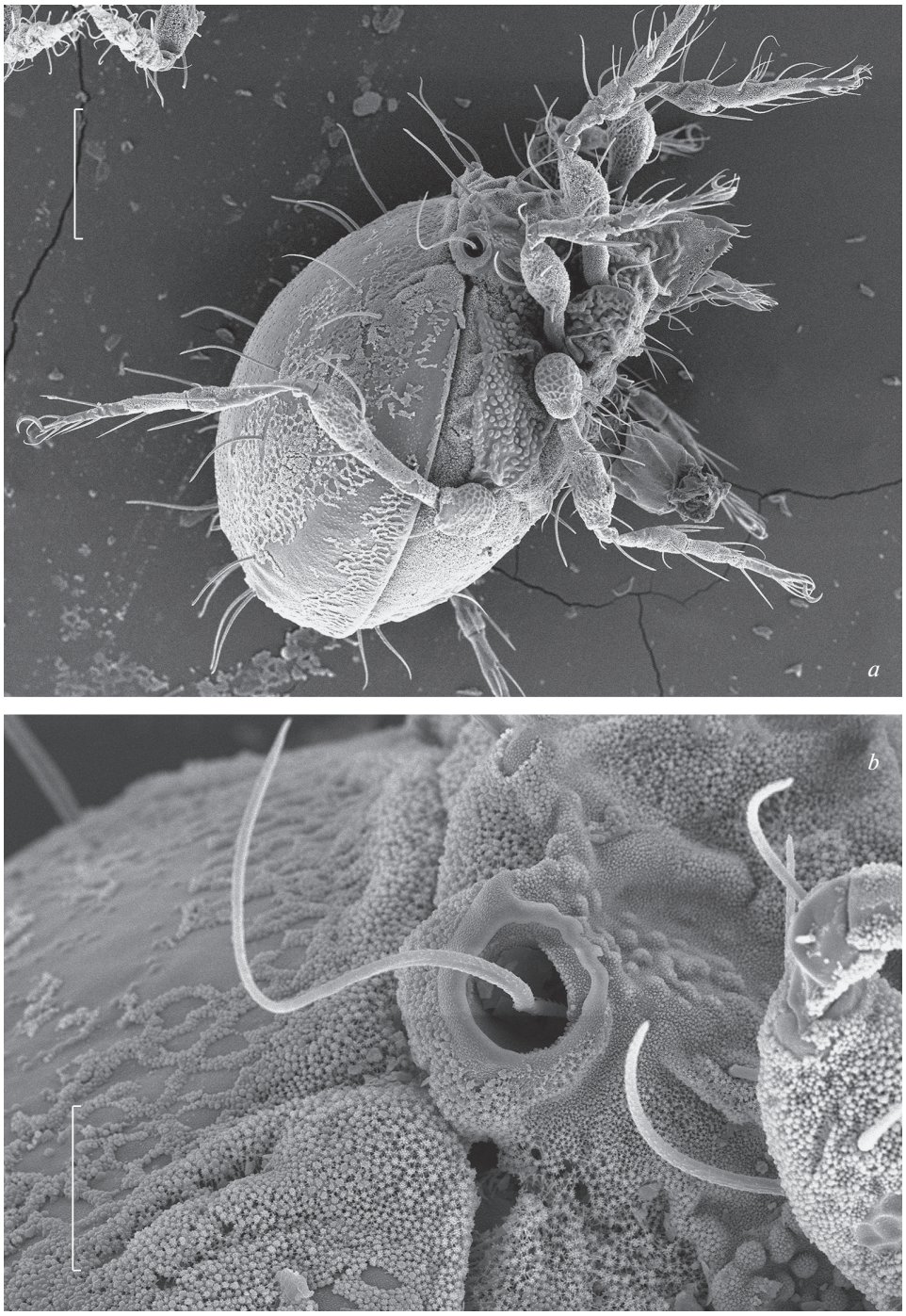

Fig. 5. *Eurhynchoribates jendeki* sp. n., adult, SEM micrographs: *a* – lateral view; *b* – part of prodorsum and notogaster, lateral view. Scale bar (μm): *a* – 200, *b* – 50.

former species differs from the latter in larger body size (929–962 × 647–680 versus 713–852 × 460–582); the absence (versus presence) of triangular tubercle between insertions on lamellar setae; and the presence of the following: thickened (versus setiform) lamellar and interlamellar setae; cerotegumental reticulate ornamentation on notogaster, furrows on anal plates and in adanal region, foveolae in aggenital region.

Etymology. The new species is named after Dr. Eduard Jendek, entomologist from the Slovak Entomological Society, Bratislava, Slovakia.

Superfamily Eutegaeoidea
Family Cepheidae
Genus *Sadocepheus* Aoki 1965
Subgenus *Sadocepheus* (*Sadocepheus*) Aoki 1965
Type species: *Sadocepheus undulatus* Aoki 1965

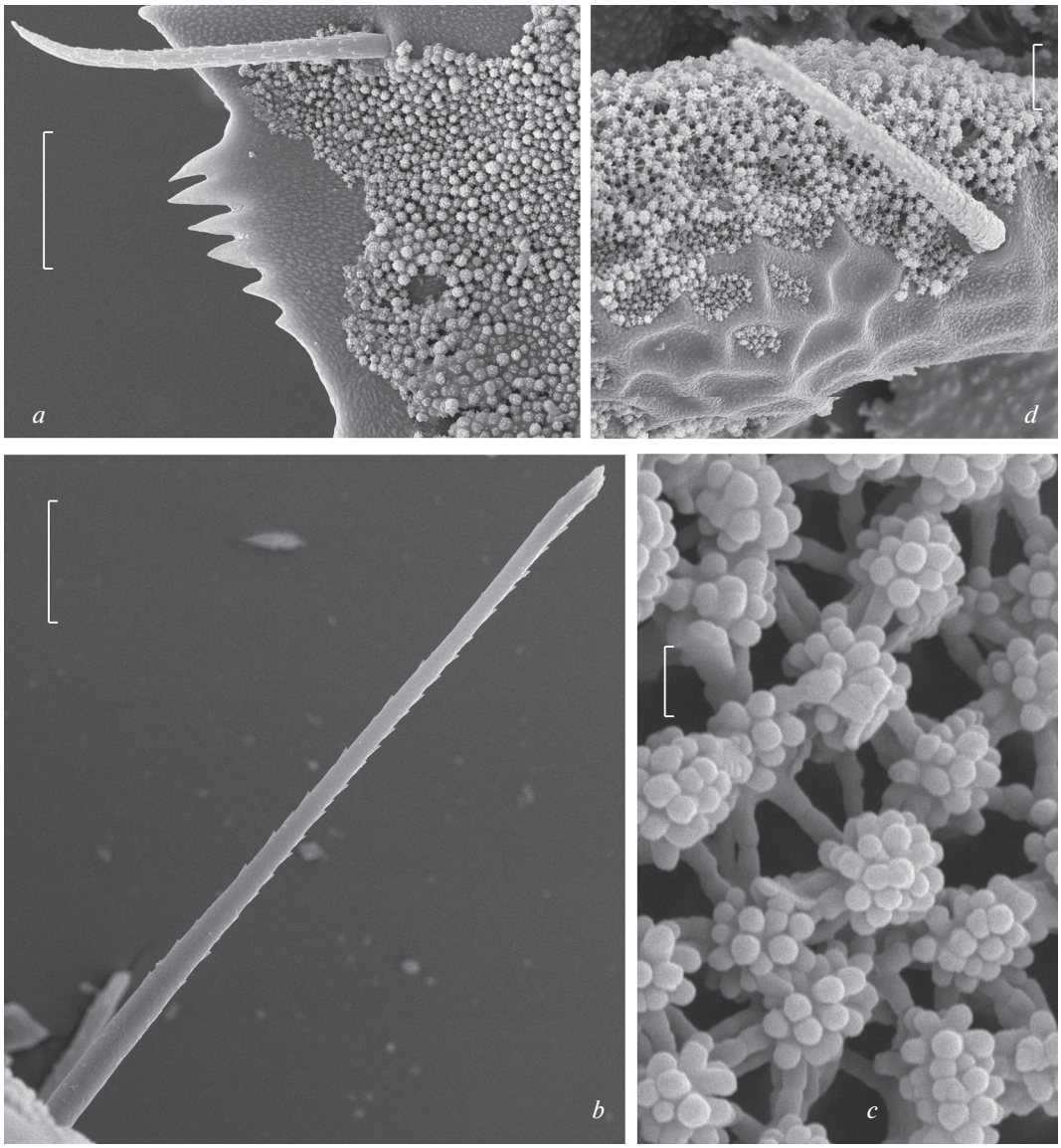

Fig. 6. *Eurhynchoribates jendeki* sp. n., adult, SEM micrographs: *a* – part of rostrum, lateral view; *b* – notogastral seta h_1; *c* – structure of notogastral cerotegumental granules; *d* – part of surface and cerotegument of leg femur II. Scale bar (μm): *a, b* – 20; *c* – 1; *d* – 10.

Sadocepheus sausai Ermilov et Kalúz sp. n.
(Figs 7–12)

M a t e r i a l. Holotype (♂) and 16 paratypes (8♀♀, 8♂♂): Malaysia, Perak District, 50 km NE to Gerik, Titiwangsa, 05°36′17.4″ N, 101°32′34.0″ E, alt. 1100 m, forest complex Belum–Temenggor, litter, 30.III–13.IV.2015 (E. Jendek, O. Šauša).

The holotype is deposited in the collection of the Institute of Zoology, Slovak Academy of Sciences, Bratislava, Slovakia; 14 paratypes are deposited in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia; two paratypes are deposited in the collection of the Senckenberg Institute, Görlitz, Germany. All specimens are in ethanol with drop of glycerol.

D i a g n o s i s. Body size: 680–796 × 514–647. Lamellae with granulate rugae. Lamellae bidentate, with small medial and lateral teeth and slight, semi-oval indentation between them. Rostral and lamellar setae setiform, barbed. Interlamellar setae long, thickened, roughened. Bothridial setae long, with brush-like head. Nine pairs of notogastral setae long, thickened, roughened, dorsal setae located in two parallel dorsolateral rows. Epimeral setal formula: 2–1–3–3. Epimeral and anogenital setae setiform, roughened; adanal setae comparatively long. Leg trochanters III, IV with tooth dorsoanteriorly.

D e s c r i p t i o n. *Measurements*. Body length: 680 (holotype), 680–796 (paratypes); notogaster width: 514 (holotype), 514–647 (paratypes). No clear

Table 1. Leg setation and solenidia of adult *Eurhynchoribates jendeki* sp. n.

Leg	*Tr*	*Fe*	*Ge*	*Ti*	*Ta*
I	*v*'	*d*, (*l*), *bv*", *v*"	(*l*), σ	(*l*), (*v*), φ_1, φ_2	(*ft*), (*tc*), (*it*), (*p*), (*u*), (*a*), *s*, (*pv*), *v*', (*pl*), *l*", ε, ω_1, ω_2
II	*v*'	*d*, (*l*), *bv*", *v*"	(*l*), σ	(*l*), (*v*), φ	(*ft*), (*tc*), (*it*), (*p*), (*u*), (*a*), *s*, (*pv*), *l*", ω_1, ω_2
III	*l*', *v*'	*d*, *l*', *ev*'	*l*', σ	*l*', (*v*), φ	(*ft*), (*tc*), (*it*), (*p*), (*u*), (*a*), *s*, (*pv*)
IV	*v*'	*d*, *ev*'	*d*, *l*'	*l*', (*v*), φ	*ft*", (*tc*), (*p*), (*u*), (*a*), *s*, (*pv*)

Roman letters refer to normal setae, Greek letters – to solenidia (except ε = famulus). Single prime (') marks setae on the anterior and double prime (") – setae on the posterior side of a given leg segment. Parentheses refer to a pair of setae.

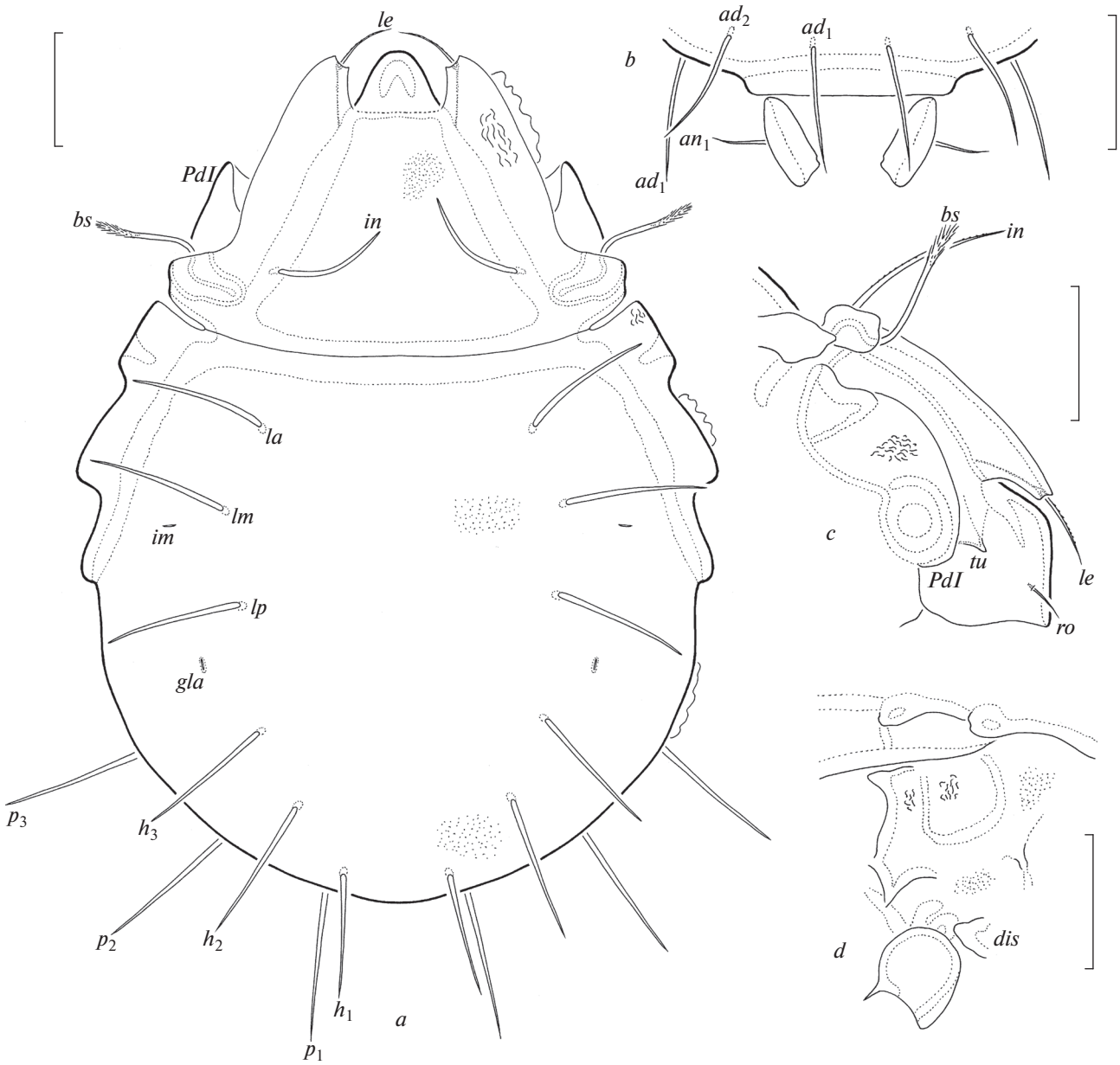

Fig. 7. *Sadocepheus sausai* sp. n., adult: *a* – dorsal view (legs not illustrated); *b* – part of anoadanal region, posterior view; *c* – part of prodorsum, lateral view; *d* – part of notogaster and podosomal region, lateral view. Scale bar: 100 μm.

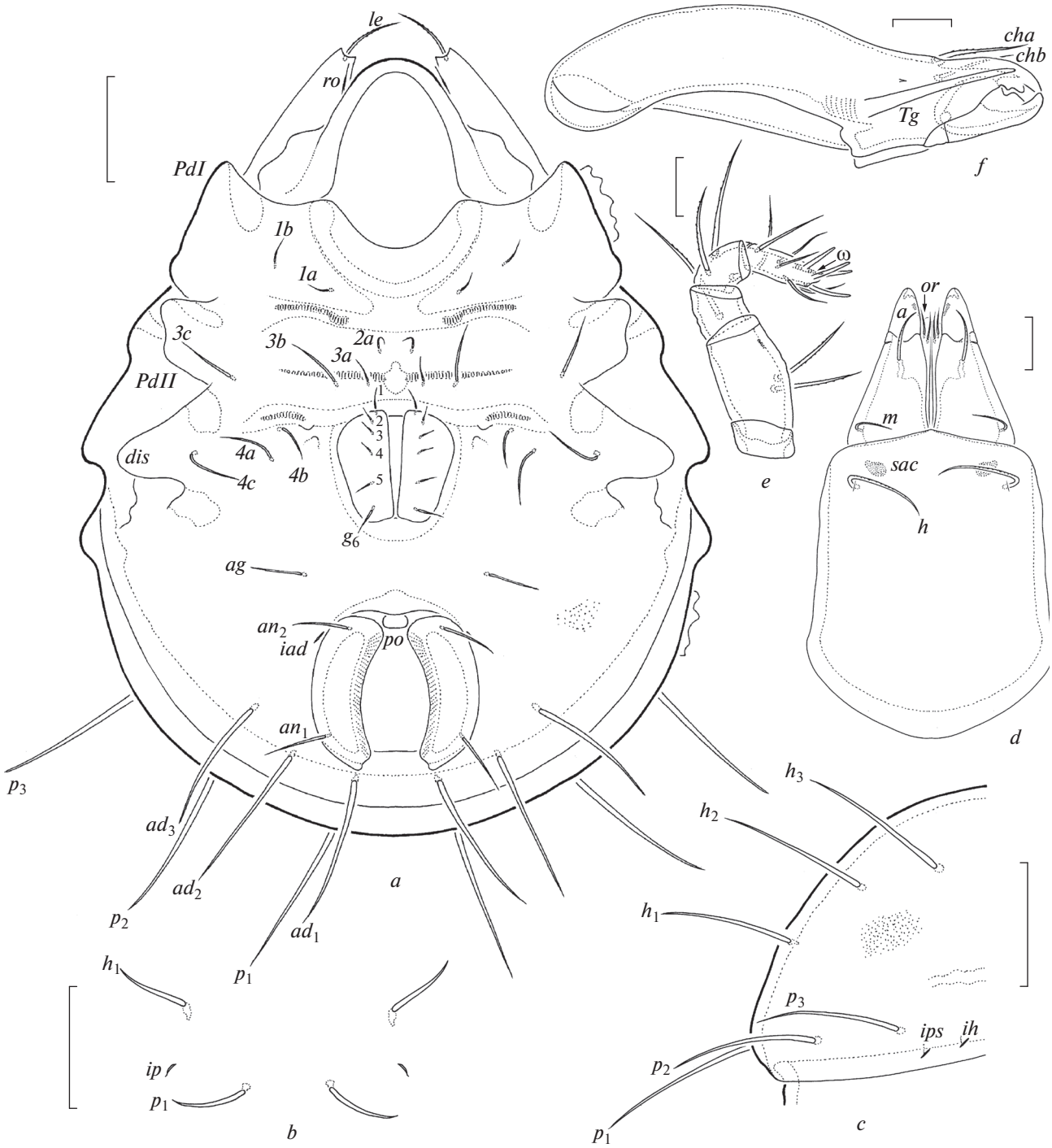

Fig. 8. *Sadocepheus sausai* sp. n., adult: *a* – ventral view (gnathosoma and legs not illustrated); *b* – part of notogaster, posterior view; *c* – part of notogaster, lateral view; *d* – subcapitulum, ventral view; *e* – palp, left, paraxial view; *f* – chelicera, left, paraxial view. Scale bar (μm): *a–c* – 100; *d–f* – 20.

difference between females and males in body size, but females usually larger.

Integument (Figs 7*a*; 8*a*; 10*a*–10*e*; 11*a*, 11*b*; 12*a*). Color dark brown. Surface densely microtuberculate and microrugose (diameter or length of tubercles and rugae less than 1) (Fig. 10*e*). Lamellae, podosomal regions and lateral parts of prodorsum additionally with larger granules which are consist from microgranules; granules sometimes forming rugae (Figs 10*a*–10*d*, 11*a*, 11*b*). Body covered by thick, block-like layer of cerotegument (Figs 10*a*–10*e*, 11*a*, 11*b*, 12*a*).

Prodorsum (Figs 7*a*, 7*c*; 8*a*; 10*a*–10*c*; 11*a*, 11*b*; 12*b*). Rostrum rounded. Rostral region hump-like. Lamellae bidentate, with small medial and lateral

Fig. 9. *Sadocepheus sausai* sp. n., adult: *a* – leg I, right, antiaxial view; *b* – leg II, without trochanter and basal part of femur, right, antiaxial view; *c* – leg III, left, antiaxial view; *d* – leg IV, left, antiaxial view. Scale bar: 50 μm.

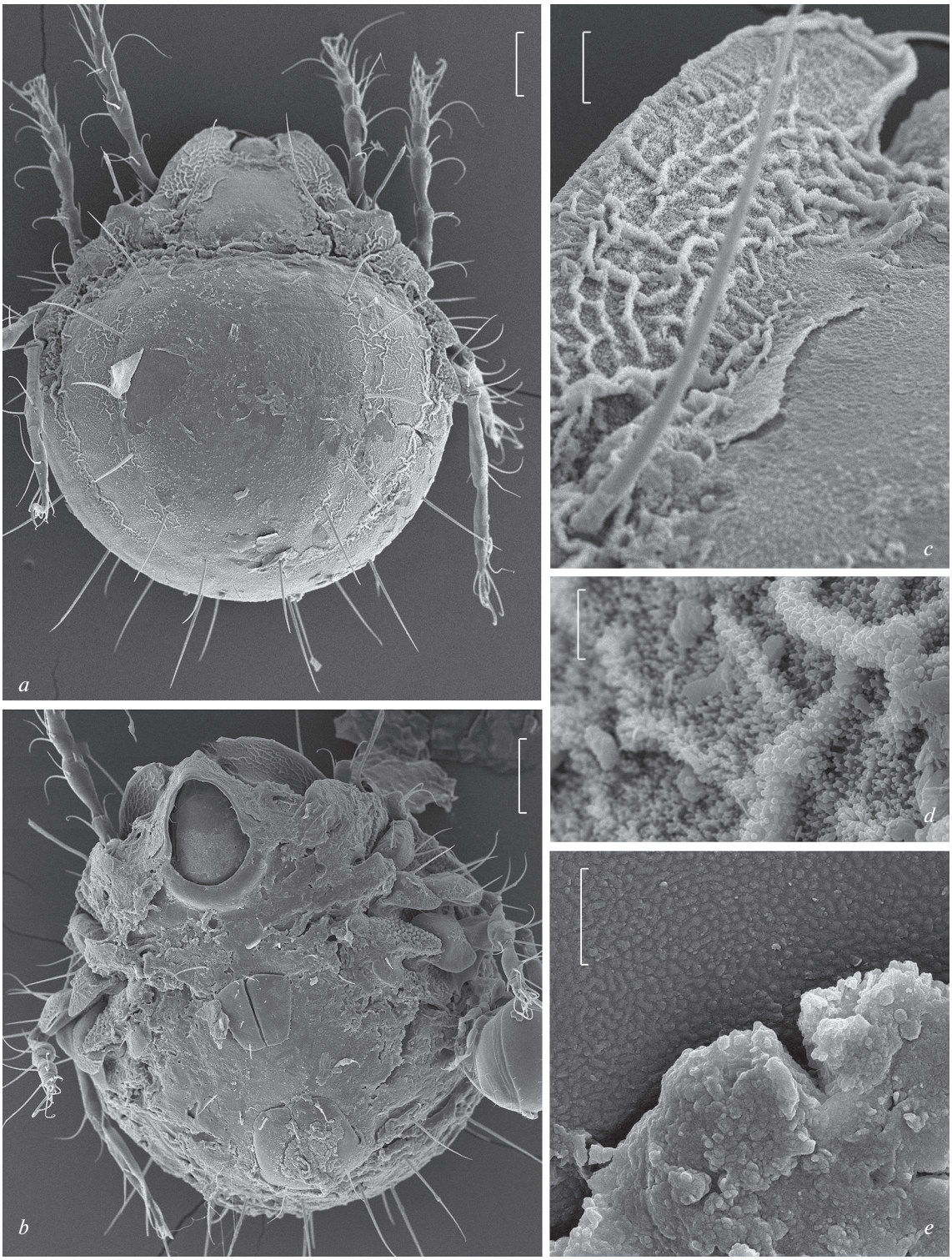

Fig. 10. *Sadocepheus sausai* sp. n., adult, SEM micrographs: *a* – dorsal view; *b* – ventral view; *c, d* – part of prodorsal surface and cerotegument; *e* – part of notogastral surface and cerotegument. Scale bar (μm): *a*, *b* – 100; *c* – 20; *d* – 5; *e* – 10.

teeth and slight, semi-oval indentation between them. Translamella thin, slightly developed, or not observed. Rostral (28–32) and lamellar (61–65) setae setiform, barbed. Interlamellar setae (147–155) thickened, roughened. Bothridial setae (123–131) with long stalk and short, brush-like head. Exobothridial setae and their alveoli absent. Tutoria slightly developed, triangular distally.

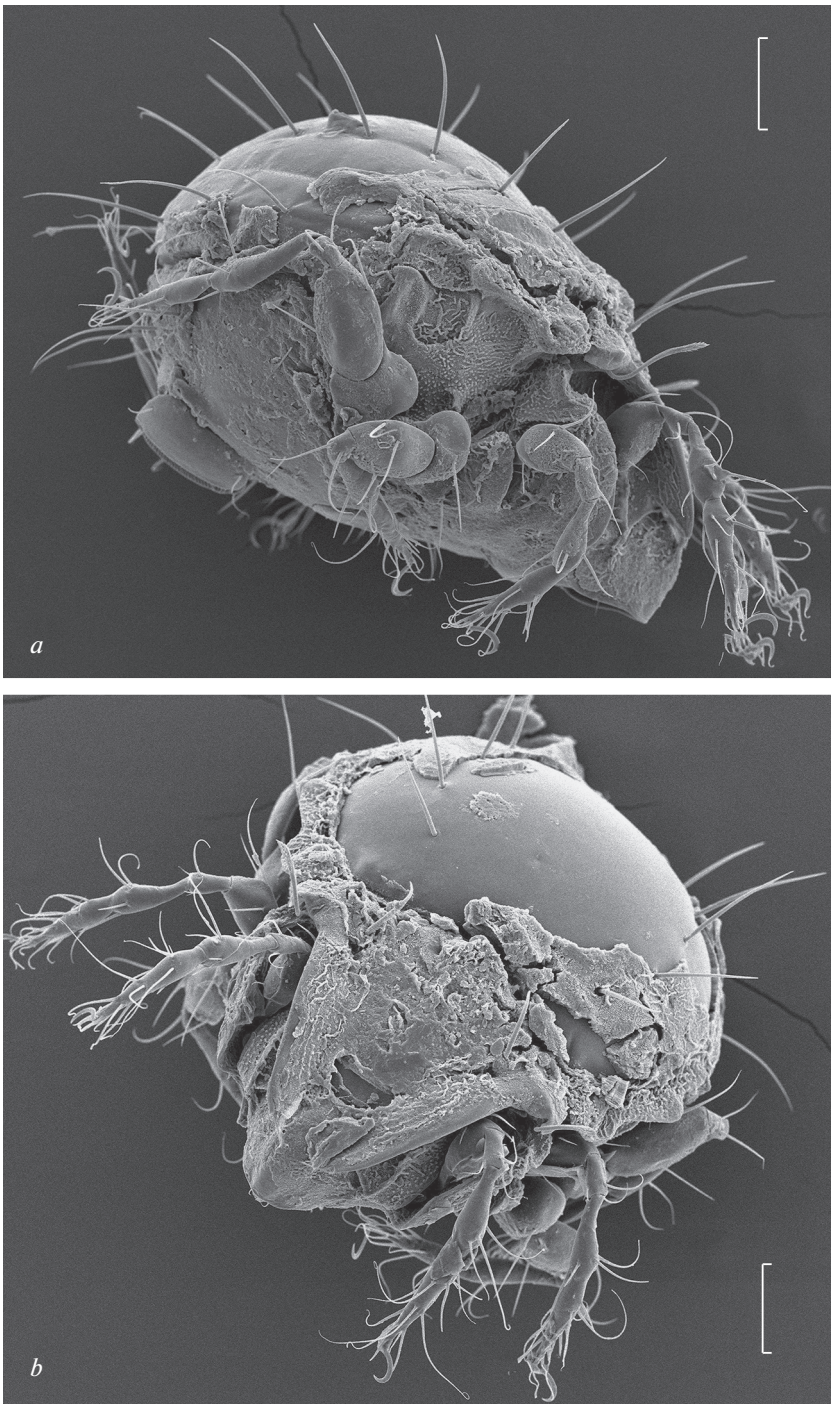

Fig. 11. *Sadocepheus sausai* sp. n., adult, SEM micrographs: *a* – lateral view; *b* – dorsofrontal view. Scale bar: 100 μm.

Notogaster (Figs 7*a*; 8*a*–8*c*; 10*a*; 11*a*; 12*a*, 12*c*). Anterior margin of notogaster slightly concave medially. Humeral regions triangular. Nine pairs of notogastral setae (139–155) thickened, roughened, inserted on the notogastral surface, dorsal setae located in two parallel dorsolateral rows. Lyrifissures and opisthonotal gland openings distinct.

Gnathosoma (Figs 8*d*–8*f*). Subcapitulum longer than wide (184–188 × 110–123). Subcapitular setae (*a*, 24–28; *m*, 16–20; *h*, 45–53) setiform, barbed. Adoral setae (14–16) setiform, smooth. Palps (length 102–110) with typical setation 0–2–1–3–9(+ω). Solenidion of palptarsi of medium size, bacilliform, pressed to the surface of palptarsi. Postpalpal setae (8)

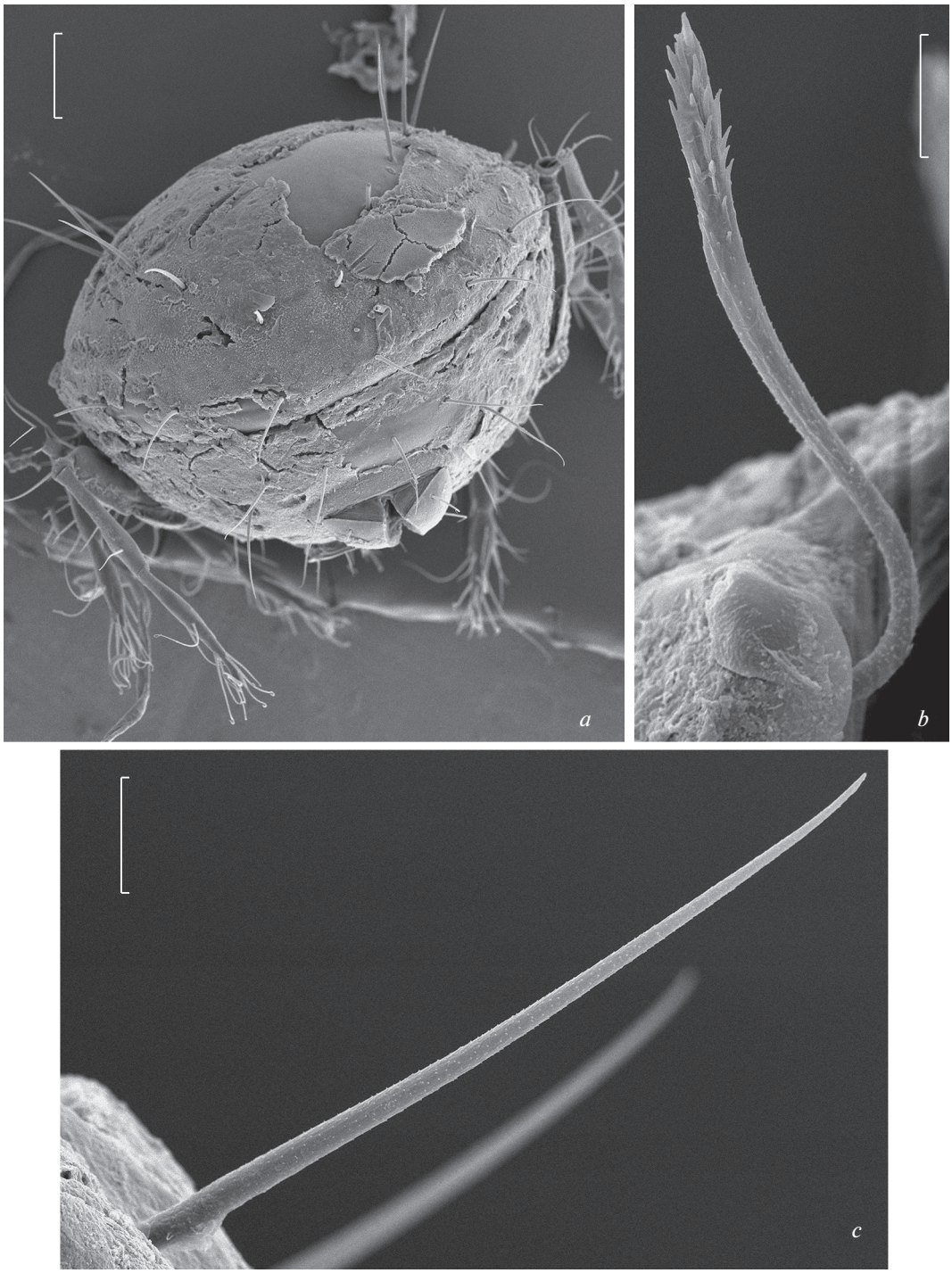

Fig. 12. *Sadocepheus sausai* sp. n., adult, SEM micrographs: *a* – posterior view; *b* – bothridial seta; *c* – notogastral seta h_1. Scale bar (μm): *a* – 100; *b*, *c* – 20.

spiniform, smooth. Axillary sacculi large, distinctly visible. Chelicerae (length 164–172) with two setiform, barbed setae (28–32). Trägårdh's organ of chelicerae tapered.

Epimeral and lateral podosomal regions (Figs 7*d*; 8*a*; 10*b*; 11*a*). Epimere IV with two pairs of slight, opposite tubercles located near to genital aperture. Epimeral setal formula: 2–1–3–3; setae *1c* and their alveoli absent. Setae setiform, roughened, *1a* and *2a* (16) shorter than *1b*, *3a* (20–24) and others (57–69). Pedotecta I represented by large lamina, pedotecta II represented by small, rectangular (in ventral aspect) lamina. Circumpedal ridges not observed. Discidia elongate triangular, rounded distally.

Table 2. Leg setation and solenidia of adult *Sadocepheus sausai* sp. n.

Leg	*Tr*	*Fe*	*Ge*	*Ti*	*Ta*
I	*v'*	*d*, (*l*), *bv''*	(*l*), *v'*, σ	(*l*), (*v*), φ_1, φ_2	(*ft*), (*tc*), (*it*), (*p*), (*u*), (*a*), *s*, (*pv*), (*pl*), *l''*, ε, ω_1, ω_2
II	*v'*	*d*, (*l*), *bv''*	(*l*), *v'*, σ	(*l*), (*v*), φ	(*ft*), (*tc*), (*it*), (*p*), (*u*), (*a*), *s*, (*pv*), *l''*, ω_1, ω_2
III	*l'*, *v'*	*d*, *l'*, *ev'*	*l'*, *v'*, σ	*l'*, (*v*), φ	(*ft*), (*tc*), (*it*), (*p*), (*u*), (*a*), *s*, (*pv*)
IV	*v'*	*d*, *ev'*	*d*, *l'*	*l'*, (*v*), φ	*ft''*, (*tc*), (*p*), (*u*), (*a*), *s*, (*pv*)

See Table 1 for explanations.

Anogenital region (Figs 7*b*; 8*a*; 10*b*; 11*a*; 12*a*). Six pairs of genital (g_1, g_6, 32, g_2–g_4, 20; g_5, 24), one pair of aggenital (53–65), three pairs of adanal (110–131 up to 151 in some specimens), and two pairs of anal (53–65) setae setiform, roughened. Adanal setae inserted in posterolateral position to anal plates, equal distanced from each other. Adanal lyrifissures diagonal, located close to anal aperture.

Legs (Figs 9*a*–9*d*; 10*a*, 10*b*; 11*a*, 11*b*; 12*a*). Claw of each leg slightly barbed on dorsal side. Trochanters III, IV with strong tooth dorsoanteriorly. Porose areas on all femora and on trochanters III, IV distinctly visible. Formulas of leg setation and solenidia: I (1–4–3–4–19) [1–2–2], II (1–4–3–4–16) [1–1–2], III (2–3–2–3–15) [1–1–0], IV (1–2–2–3–12) [0–1–0]; homology of setae and solenidia indicated in Table 2. Solenidion on all tibiae and on genua I-III setiform, solenidia on tarsi I, II thickened, blunt-ended. Famulus of tarsi I straight, slightly truncate and swollen distally, inserted posterior to solenidion ω_1.

Remarks. *Sadocepheus sausai* sp. n. is similar to *S. yakuensis* Aoki 2006 from Japan (see Aoki, 2006) in the presence of: long interlamellar setae; slightly developed, brush-like bothridial heads; as well as long, thickened dorsal notogastral setae, located in two dorsolateral rows. However, the former species differs from the latter in the presence of long (versus short) adanal setae, posterior notogastral setae p_1–p_3, and some epimeral setae.

Etymology. The new species is named after Dr. Ondrej Šauša, entomologist from the Slovak Entomological Society, Bratislava, Slovakia.

ACKNOWLEDGEMENTS

We cordially thank Drs. E. Jendek and O. Šauša who collected the oribatid mites; Dr. Denis V. Sharapov (Tyumen State University, Tyumen, Russia) for English language editing; A.A. Gubin for SEM micrographs; and the Institute of Zoology, Slovak Academy of Sciences, Bratislava, Slovakia, which kindly provided material for our study. This paper was partially supported by the project VEGA 2/0139/17.

REFERENCES

Aoki J., 2006. New and newly recorded oribatid mites (Arachnida, Acari, Oribatida) from the Ryukyu Islands, Japan // Bulletin of the National Museum of Natural Science, Tokyo, Serie A. V. 32. № 3. P. 105–124.

Ermilov S.G., 2016. Additions to the oribatid mite fauna of Malaysia, with description of a new species of the genus *Lohmannia* (Acari, Oribatida, Lohmanniidae) // Acarina. V. 24. № 2. P. 159–165.

Ermilov S.G., Kalúz S., 2019. *Meristacarus bochkovi* (Acari, Oribatida, Lohmanniidae), a new species of oribatid mites from Malaysia // Acarina. V. 27. № 2. P. 175–182.

Ermilov S.G., Kalúz S., 2019a. New and interesting galumnoid mites (Acari, Oribatida, Galumnoidea) from Malaysia // Systematic and Applied Acarology. V. 24. № 9. P. 1711–1723.

Ermilov S.G., Rybalov L.B., 2019. Oribatid mites from the vicinities of Dhati-Walal National Park, Ethiopia (Acari, Oribatida) //Spixiana. 42. № 2. P. 235–252.

Mahunka S., 1985. Description and redescription of Ethiopian oribatids (Acari, Oribatida), II // Annales Historico-Naturales Musei Nationalis Hungarici. V. 77. P. 233–249.

Mahunka S., 1987. Neue und interessante Milben aus dem Genfer Museum LX. Oribatids from Sabah (East Malaysia) II. (Acari: Oribatida) // Revue Suisse de Zoologie. V. 94. № 4. P. 765–817.

Miko L., 2016. Oribatid mites (Acarina, Oribatida) from French Guyana: review of the genus *Rhynchoribates* and description of three new species // Zootaxa. V. 4061. № 2. P. 131–145.

Miko L., Ermilov S.G., Corpuz-Raros L., 2017. A new subgenus and two new species of the oribatid mite genus *Eurhynchoribates* (Acari, Oribatida, Rhynchoribatidae) from the Philippines // Systematic and Applied Acarology. V. 22. № 1. P. 125–134.

Norton R.A., 1977. A review of F. Grandjean's system of leg chaetotaxy in the Oribatei (Acari) and its application to the family Damaeidae // In: Dindal D.L., editor. Biol-

ogy of oribatid mites. Syracuse, SUNY College of Environmental Science and Forestry. P. 33–61.

Norton R.A., Behan-Pelletier V.M., 2009. Oribatida // A Manual of Acarology (TX): Lubbock, Texas Tech University Press. P. 430–564.

Subías L.S., 2019. Listado sistemático, sinonímico y biogeográfico de los ácaros oribátidos (Acariformes: Oribatida) del mundo (excepto fósiles). Online version accessed in March 2019. 536 p.

Travé J., Vachon M., 1975. François Grandjean. 1882–1975 (Notice biographique et bibliographique) // Acarologia. V. 17. № 1. P. 1–19.

ДВА НОВЫХ ВИДА ПАНЦИРНЫХ КЛЕЩЕЙ (ACARI, ORIBATIDA) ИЗ МАЛАЙЗИИ

С. Г. Ермилов[1, *], С. Калуз[2, **]

[1]*Тюменский государственный университет, Тюмень, 625003 Россия*

[2]*Институт зоологии, Словацкая академия наук, Братислава, 84506 Словакия*

**e-mail: ermilovacari@yandex.ru*

***e-mail: stanislav.kaluz@gmail.com*

Описаны два новых вида панцирных клещей (Acari, Oribatida) родов *Eurhynchoribates* (Rhynchoribatidae) и *Sadocepheus* (Cepheidae) из западной части Малайзии. *Eurhynchoribates jendeki* sp. n. отличается от *E. excelsior* (Mahunka 1985) более крупными размерами тела, наличием утолщенных ламеллярных и межламеллярных щетинок, ячеистого церотегумента на нотогастре, борозд на анальных крышках и в аданальной области, ямок в аггенитальной области и отсутствием треугольной туберкулы между ламеллярными щетинками. *Sadocepheus sausai* sp. n. отличается от *S. yakuensis* Aoki 2006 присутствием длинных аданальных и задних нотогастральных щетинок p_1–p_3 и некоторых эпимеральных щетинок.

Ключевые слова: панцирные клещи, Ориентальная область, систематика, морфология, *Eurhynchoribates*, *Sadocepheus*