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## ADDITIONS TO THE ORIBATID MITE FAUNA OF VIETNAM, WITH THE DESCRIPTION OF A NEW SPECIES OF *PELORIBATES* (ACARI, ORIBATIDA)

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This study is based on the oribatid mite material collected from dry litter in a *Shorea* dipterocarp forest in the Daklak Province, Southern Vietnam. Fifty-one species, 37 genera and 23 families have been found; of these, five species and two subspecies are recorded from Vietnam for the first time, and two species from the Oriental region for the first time. A new species of the genus *Peloribates* (Haplozetidae) is described: *P. (Peloribates) parapalawanus* sp. n. A new generic diagnosis of *Peloribates* is presented. An identification key to known representatives of *Peloribates* from Vietnam is provided.

**Keywords:** Southeast Asia, taxonomy, generic diagnosis, morphology, identification key

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Although the oribatid mites (Acari, Oribatida) of Vietnam had previously been insufficiently studied (Ermilov, 2015; Corpuz-Raros, Ermilov, 2020), in recent years this situation is starting to change (e.g., Ermilov, Salavatulin, 2022, 2023; Salavatulin et al., 2022).

This work is based on materials collected from a *Shorea* dipterocarp forest in the Daklak Province, Southern Vietnam. The main goal of the paper is to present a list of all identified taxa, including new records, and to describe one new species belonging to the genus *Peloribates* Berlese 1908 (nominate subgenus).

The genus *Peloribates* was proposed by Berlese (1908), with *Oribata peloptoides* Berlese 1888 as type species. The genus comprises three subgenera and 96 species (*P. (Peloribates)* Berlese 1908 – 92 species), *P. (Aokibates)* Mahunka 1988 – one species) and *P. (Peloribatodes)* Mahunka 2011 – 3 species), which have a worldwide distribution except for the Antarctic region (Subías, 2022, online version 2023; also, see Ermilov et al., 2019, 2021; Ermilov, Stáry, 2020). Prior to this study, 12 species/subspecies of *P. (Peloribates)* and one species of *P. (Aokibates)* have been recorded from Vietnam (Corpuz-Raros, Ermilov, 2020): *P. (P.) barbatus* Aoki 1977, *P. (P.) gressitti* Balogh et Mahunka 1967, *P. (P.) guttatooides* Hammer 1979, *P. (P.) guttatus* Hammer 1979, *P. (P.) kaszabi* Mahunka 1988, *P. (P.) paraguyensis* Balogh et Mahunka 1981, *P. (P.) pseudoporus* Balogh et Mahunka 1967, *P. (P.) rangiroaensis* rangiroaensis Hammer 1972, *P. (P.) ratubakensis* Hammer

1979, *P. (P.) spiniformis* Ermilov et Anichkin 2011, *P. (P.) stellatus* Balogh et Mahunka 1967, *P. (P.) tatyanae* Ermilov et Anichkin 2014, and *P. (A.) yoshii* (Mahunka 1988). The additional goals of the paper are to present a new generic diagnosis of *Peloribates* and to provide an identification key to the known representatives of the aforementioned genus from Vietnam.

### METHODS

Observation and documentation. For measurement and illustration, specimens were mounted in lactic acid on temporary cavity slides; all measurements are in micrometers (μm); 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 in dorsal aspect; setal lengths were measured perpendicular to their long axes, accounting for curvature. 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 DM 2500 transmission light microscope.

Terminology. Morphological terminology used in this paper mostly follows that of papers on *Peloribates* (e.g., Ermilov et al., 2021; Ermilov, Martens, 2024); also, Norton (1977) for leg setal nomenclature

and Norton and Behan-Pelletier (2009) for overview are used.

**A b b r e i v a t i o n s a n d n o t a t i o n s .** *Prodorsum*: *rb* = rostral bulge; *rc* = rostral carina; *lam* = lamella; *slam* = sublamella; *Al* = sublamellar porose area; *tu* = tutorium; *ro*, *le*, *in*, *bs*, *ex* = rostral, lamellar, interlamellar, bothridial, and exobothridial setae, respectively; *D* = dorsophragma; *P* = pleurophragma. *Notogaster*: *c*, *da*, *la*, *dm*, *lm*, *dp*, *lp*, *h*, *p* = notogastral setae; *Sa*, *S1*, *S2*, *S3* = saccules; *ia*, *im*, *ip*, *ih*, *ips* = lyrifissures; *gla* = opisthonotal gland opening. *Gnathosoma*: *a*, *m*, *h* = subcapitular setae; *or* = adoral seta; *acm* = palp seta;  $\omega$  = palp solenidion; *cha*, *chb* = cheliceral setae. *Epimeral and lateral podosomal regions*: *1a*, *1b*, *1c*, *2a*, *3a*, *3b*, *3c*, *4a*, *4b*, *4c* = epimeral setae; *PdI*, *PdII* = pedotecta I and II, respectively; *dis* = discidium; *cir* = circumpedal carina. *Anogenital region*: *g*, *ag*, *an*, *ad* = genital, aggenital, anal, and adanal setae, respectively; *iad* = adanal lyrifissure; *po* = preanal organ. **Legs**: *Tr*, *Fe*, *Ge*, *Ti*, *Ta* = trochanter, femur, genu, tibia, and tarsus, respectively; *pa* = porose area;  $\omega$ ,  $\sigma$ ,  $\varphi$  = solenidia;  $\epsilon$  = famulus; *d*, *l*, *v*, *ev*, *bv*, *ft*, *tc*, *it*, *p*, *u*, *a*, *s*, *pv*, *pl* = setae.

## LIST OF IDENTIFIED TAXA

The distribution of the species is mostly taken from Subías (2022, online version 2023); ptyctimous mites are not included.

### Epilohmanniidae

*Epilohmannia minuta pacifica* Aoki 1965: 2 ex. Distribution: Tropical, Southern Palaearctic.

### Malacothriidae

*Malacothrus monodactylus* (Michael 1888): 3 ex. Distribution: Holarctic, Neotropical, Madagascar. New record of the species in the Oriental region.

*Tyrphonothrus repetitus* (Subías 2004): 2 ex. Distribution: Southeast China. New record of the species in Vietnam.

### Crotoniidae

*Platynothrus peltifer* (Koch 1839): 9 ex. Distribution: Semicosmopolitan. New record of the species in Vietnam.

### Trhypochthoniidae

*Trhypochthoniellus longisetus* (Berlese 1904): 1 ex. Distribution: Cosmopolitan.

### Nanhermanniidae

*Nanhermannia* (*Nanhermannia*) *thaiensis* Aoki 1965: 6 ex. Distribution: Oriental.

*Nanhermannia* (*Nippohermannia*) *parallela* Aoki 1961: 2 ex. Distribution: Eastern Palearctic, Caucasus, Oriental. New record of the species in Vietnam.

*Masthermannia mammillaris* (Berlese 1904): 1 ex. Distribution: Tropical.

### Hermanniiidae

*Phyllhermannia similis* Balogh et Mahunka 1967: 2 ex. Distribution: Oriental.

### Hermannelliidae

*Hermannella aristosa* Aoki 1965: 6 ex. Distribution: Eastern Palaearctic, Oriental, Australasian.

*Hermannella thani* Mahunka 1987: 2 ex. Distribution: Vietnam.

### Cepheusidae

*Sadocepheus* sp.: 1 ex.

### Eremulidae

*Mahunkana bifurcata* (Mahunka 1987): 1 ex. Distribution: Vietnam.

### Damaeolidae

*Fosseremus laciniatus* (Berlese 1905): 3 ex. Distribution: Cosmopolitan.

### Oppiidae

*Arcoppia fenestralis orientalis* Balogh et P. Balogh 1986: 1 ex. Distribution: New Guinea, Oriental.

*Arcoppia robustia* (Berlese 1913): 1 ex. Distribution: Oriental.

*Lasiobelba* sp.: 1 ex.

*Oppiella nova* (Oudemans 1902): 4 ex. Distribution: Cosmopolitan.

*Oxyoppia* (*Oxyoppiella*) *polynesia* (Hammer 1972): 4 ex. Distribution: Tropical.

### Suctobelbidae

*Suctobelbella* (*Flagrosuctobelba*) *semiplumosa tahitiensis* (Hammer 1972): 3 ex. Distribution: Oriental, Australasian, Afrotropical. New record of the subspecies in Vietnam.

### Otocepheidae

*Dolicheremaeus baloghi* Aoki 1967: 6 ex. Distribution: Eastern Palaearctic, Oriental.

*Dolicheremaeus dwalteri* Ermilov et Anichkin 2014: 4 ex. Distribution: Vietnam.

*Dolicheremaeus* cf. *oginoi* (Aoki 1965): 2 ex. Distribution: Oriental.

*Otocepheus* (*Acrotocepheus*) *duplicornutus discrepans* (Balogh et Mahunka 1967): 2 ex. Distribution: Vietnam.

### Carabodidae

*Diplobodes* sp.: 6 ex.

*Yoshiobodes nakatamarii* (Aoki 1973): 2 ex. Distribution: Oriental and Eastern Palaearctic.

### Tectocepheidae

*Tectocepheus velatus* (Michael 1880): 6 ex. Distribution: Cosmopolitan.

### Licneremaeidae

*Licneremaeus polygonalis* Hammer 1971: 8 ex. Distribution: Australasian, Vietnam, Madagascar.

**Achipteriidae**

*Parachipteria punctata* (Nicolet 1855): 2 ex. Distribution: Holarctic, Santa Helena. New record of the species in the Oriental region.

**Ceratozetidae**

*Ceratozetes* sp.: 1 ex.

**Haplozetidae**

*Acutozetes* sp.: 2 ex.

*Peloribates kaszabi* Mahunka 1988: 14 ex. Distribution: Oriental.

*Peloribates parapalawanus* sp. n.: 3 ex. Distribution: Vietnam.

*Peloribates rangiroaensis rangiroaensis* Hammer 1972: 1 ex. Distribution: Polynesia, Oriental.

*Peloribates* sp.: 1 ex.

*Perxylobates crassisetosus* Ermilov et Anichkin 2011: 1 ex. Distribution: Vietnam.

*Protoribates paracapucinus* (Mahunka 1988): 26 ex. Distribution: Tropical, Subtropical.

*Rostrozetes ovulum* (Berlese 1908): 11 ex. Distribution: Tropical, Subtropical.

**Scheloribatidae**

*Euscheloribates (Trischeloribates) clavatus* (Mahunka 1988): 17 ex. Distribution: Vietnam.

*Euscheloribates (Trischeloribates) payatosensillus* (Corpuz-Raros 1979): 1 ex. Distribution: Philippines. New record of the species in Vietnam.

*Scheloribates (Scheloribates) elegans* Hammer 1958: 1 ex. Distribution: Tropical.

*Scheloribates (Bischeloribates) mahunkai* Subías 2010: 1 ex. Distribution: Oriental.

*Scheloribates (Perscheloribates)* sp. A: 4 ex.

*Scheloribates (Perscheloribates)* sp. B: 2 ex.

**Parakalummidae**

*Neoribates jacoti* (Balogh et Mahunka 1967): 2 ex. Distribution: Oriental.

**Galumnidae**

*Flagellozetes (Cosmogalumna) maolanensis* Hu, Zheng et Yang 2023: 19 ex. Distribution: Southeast China. New record of the species in Vietnam.

*Flagellozetes (Cosmogalumna)* sp.: 5 ex.

*Pergalumna intermedia intermedia* Aoki 1963: 15 ex. Distribution: Southern Palaearctic and Northern Oriental. New record of the species in Vietnam.

*Pergalumna yurtaevi* Ermilov et Anichkin 2011: 8 ex. Distribution: Oriental, Australasian.

*Trichogalumna subnuda* Balogh et Mahunka 1967: 10 ex. Distribution: Vietnam.

**Galumnellidae**

*Galumnella* sp.: 1 ex.

The list includes 51 species/subspecies belonging to 37 genera and 23 families. Of these, five species and two subspecies (*Tyrphonothrus repetitus*, *Platynothrus peltifer*, *Nanhermannia (Nippohermannia) parallela*, *Suctobelbella (Flagrosuctobelba) semiplumosa tahitiensis*, *Euscheloribates (Trischeloribates) payatosensillus*, *Pergalumna intermedia intermedia*, *Flagellozetes (Cosmogalumna) maolanensis*) are recorded for the first time from Vietnam, and two species (*Malaconothrus monodactylus*, *Parachipteria punctata*) are recorded for the first time from the Oriental region. Of the 41 species (except 10 unidentified species), eight species are known only from Vietnam, 10 are Oriental, five are Cosmopolitan/Semicosmopolitan, and 18 have broad distributions (more than one geographical region).

**TAXONOMY****Genus *Peloribates* Berlese 1908**

Type species: *Oribata peloptoides* Berlese 1888.

**Generic diagnosis.** Body size: length about 240–780.

**Integument:** Body frequently with foveolate ornamentation; rarely, body partially reticulate/striate/tuberculate/rugose or without heavy ornamentation/sculpturing. **Prodorsum:** Rostrum narrowly or broadly rounded. Lamella medium-sized, narrow, without distal cusp, submarginal; translamella absent; prolamella absent (rarely present); sublamella and sublamellar porose area present; tutorium ridge-like, without or with small triangular tip. Rostral, lamellar and interlamellar setae well developed, setiform/rod-like/bacilliform/subflagellate/swollen distally/phylliform; *ro* inserted dorsolaterally or laterally on rostrum, *le* on end of lamella, *in* in interbothridial region; bothridial seta clavate/fusiform/lanceolate/globular. Bothridium cup-shaped; lateral scale absent or present. Dorsophragma elongate longitudinally. **Notogaster:** Anterior margin of notogaster distinct, convex medially. Pteromorph large, subtriangular, movable, curved ventrad. Octotaxic system with four pairs of saccules. Fourteen (rarely, thirteen) pairs of short/medium-sized/long (rarely, extremely short or represented by alveoli), setiform/rod-like/bacilliform/subflagellate/swollen distally/phylliform notogastral setae. **Gnathosoma.** Subcapitulum diarthric. Palp with setation: 0–2–1–3–9(+ω); solenidion of palptarsus connected to eupathidium. Axillary saccule absent. Chelicera chelate-dentate, with two setae. **Epimeral and lateral podosomal regions:** Epimeral setal formula: 3–1–3–3(or 2). Pedotecta I and II represented by small lamina. Genal tooth absent. Custodium absent or present. Discidium and circumpedal carina present. Humeral porose areas absent. **Anogenital region:** Four or five pairs of genital, one or three pairs of aggenital, two pairs of anal and three pairs of adanal setae. Adanal lysis located close and lateral to anal plate. Marginal

porose area absent or present. Legs: Mono- or heterotridactylous, or legs I–III monodactylous versus leg IV bidactylous. Tarsi I–IV, tibiae I–IV, femora I–IV, and trochanters III, IV with porose area.

**R e m a r k s.** The subgenus *Peloribates* (*Aokibates*) Mahunka 1988 (type species: *Aokibates yoshii* Mahunka 1988) is characterized by the presence of one claw on legs I–III and two claws on leg IV (see Mahunka, 1988a) (versus all legs monodactylous or tridactylous in *P. (Peloribates)* and tridactylous in *P. (Peloribatodes)*).

The subgenus *P. (Peloribatodes)* Mahunka 2011 (type species: *Peloribates (Peloribatodes) incompatibilis* Mahunka 2011) is characterized by the simultaneous presence of four pairs of genital setae and an anterodorsal tooth on leg tibia II (see Mahunka, 2011) (versus four pairs of genital setae and anterodorsal tooth on leg tibia II simultaneously absent in *P. (Aokibates)* and *P. (Peloribates)*). It must be noted that Ermilov et al. (2019) view its subgeneric status as problematic.

Subías (2022, online version 2023) has supported the classification of the fourth subgenus within *Peloribates*, *P. (Tentaculozetes)* Balogh 1970. At the same time, Ermilov et al. (2021) have synonymized this subgenus with *P. (Peloribates)*.

#### *Peloribates (Peloribates) parapalawanus*

Ermilov sp. n.

(Figs 1, 2)

**T y p e m a t e r i a l.** Holotype (♀) and two paratypes (♂♂): Vietnam, Daklak Province, ca. 25 km SSW of Buon Ma Thuot, Dak Linh, 500 m a.s.l., sieved dry litter in a *Shorea* dipterocarp forest, Winkler extraction, 28–29.IV.1986 (L. Medvedev, S. Golovatch et al.).

The holotype is deposited in the collection of the Senckenberg Museum of Natural History, Görlitz, Germany; two paratypes are deposited in the collection of the Tyumen State University Museum of Zoology, Tyumen, Russia. All specimens are preserved in 70% solution of ethanol with a drop of glycerol.

**D i a g n o s i s.** Body length: 525–600. Prodorsum, notogaster, pteromorph, and ventral plate foveolate. Rostrum protruding, narrowly rounded. Tutorium long. Rostral, lamellar, interlamellar and notogastral setae long, rod-like, barbed; bothridial seta long, lanceolate, barbed. All notogastral saccules with elongate pear-shaped channel. Custodium absent. Epimeral and anogenital setae (except medium-sized, rod-like adanal seta  $ad_1$ ) comparatively short, setiform, slightly barbed;  $ad_1$  posterior to  $ad_2$ . All leg tarsi with one claw.

**D e s c r i p t i o n.** Measurements. Species large. Body length: 600 (holotype), 525, 540 (paratypes); notogaster width: 450 (holotype), 420, 435 (paratypes).

**Integument.** Body color dark brown. Body covered by gel-like cerotegument with microgranulate components. Cuticle of prodorsum, notogaster, pteromorph,

ventral plate, leg trochanter III, as well as femora I, II and IV with comparatively large foveolae (distance between foveolae larger than diameter of foveola); genital and anal plates microfoveolate; lateral side of lamella and anterodorsal part of trochanter IV slightly striate.

**Prodorsum.** Rostrum protruding, narrowly round-ed. Lamella about 2/5 length of prodorsum; prolamella absent; sublamella slightly observable; tutorium long, ridge-like, with indistinct distal tooth. Sublamellar porose area rounded (7–11). Rostral (112–1121), lamellar (157–172) and interlamellar (157–172) setae rod-like, barbed; bothridial seta (142–157) with long stalk and short lanceolate head, barbed; exobothridial seta (34–41) setiform, slightly barbed. Dorsosejugal porose area not observable.

**Notogaster.** Anterior notogastral margin convex medially. All setae (142–161) rod-like, barbed, inserted on indistinct tubercles. Four pairs of saccules with small opening and elongate pear-shaped channel. Opisthonal gland opening and all lyrifissures distinct.

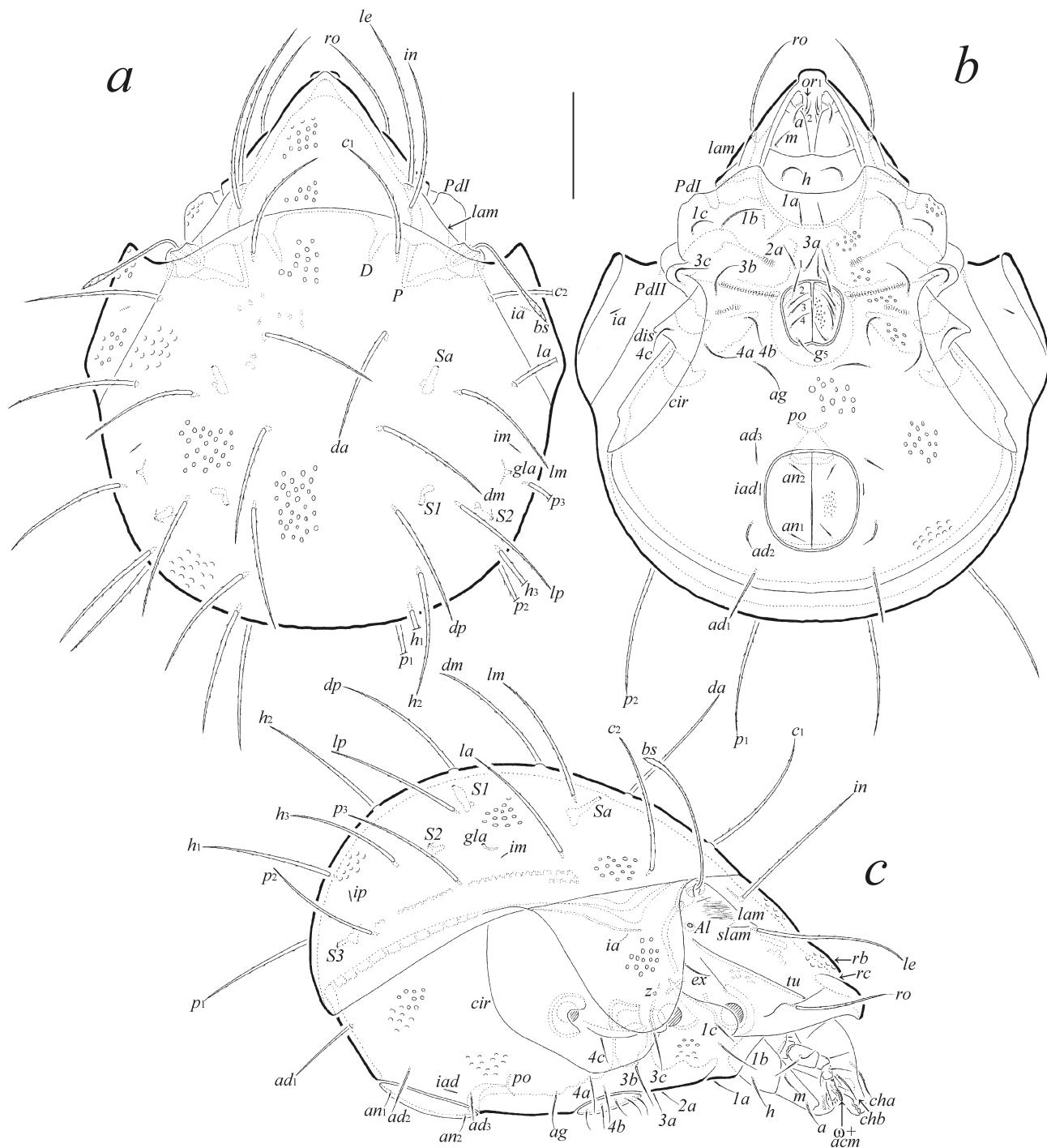
**Gnathosoma.** Subcapitulum size: 131–142 × 90–94; subcapitular setae ( $a, m$ : 22;  $h$ : 26–30) setiform, slightly barbed;  $m$  thinner than  $a$  and  $h$ ; both adoral setae (11) setiform, barbed. Palp length: 86–94; setation: 0–2–1–3–9 (+ $\omega$ ); postpalpal seta (7) spiniform, roughened. Chelicera length: 135–142; setae ( $cha$ : 41–52;  $chb$ : 30–37) setiform, barbed.

**Epimeral and lateral podosomal regions.** Epimeral formula: 3–1–3–3; setae ( $1b, 3b, 3c$ : 49–52;  $1a, 1c, 2a, 3a$ : 37–41;  $4a, 4b, 4c$ : 26–34) setiform, slightly barbed. Pedotectum II rounded distally in ventral view. Custodium absent. Discidium triangular. Circumpedal carina long, directed to pedotectum II.

**Anogenital region.** Anogenital formula: 5–1–2–3; adanal seta  $ad_1$  (86–101) rod-like, slightly barbed, posterior to  $ad_2$ ; genital (26–30), aggenital (37–41), anal (11–15), and adanal ( $ad_2$ : 41–52;  $ad_3$ : 19–22) setae setiform, slightly barbed. Adanal lyrifissure distinct. Marginal porose area not observable.

**Legs.** Monodactylous; claw thick, slightly barbed on dorsal side. Genu I with lateral (antiaxial) tubercle bearing seta  $l''$ ; genu II with dorsal tubercle; ventrodistal part of femur II with slight tooth. Dorsoparaxial porose area on femora I–IV and on trochanters III, IV, ventrodistal porose area on tibiae I–IV and proximoventral porose area on tarsi I–IV well visible. Formulas of leg setation and solenidia: I (1–5–3–4–20) [1–2–2], II (1–5–3–4–15) [1–1–2], 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.

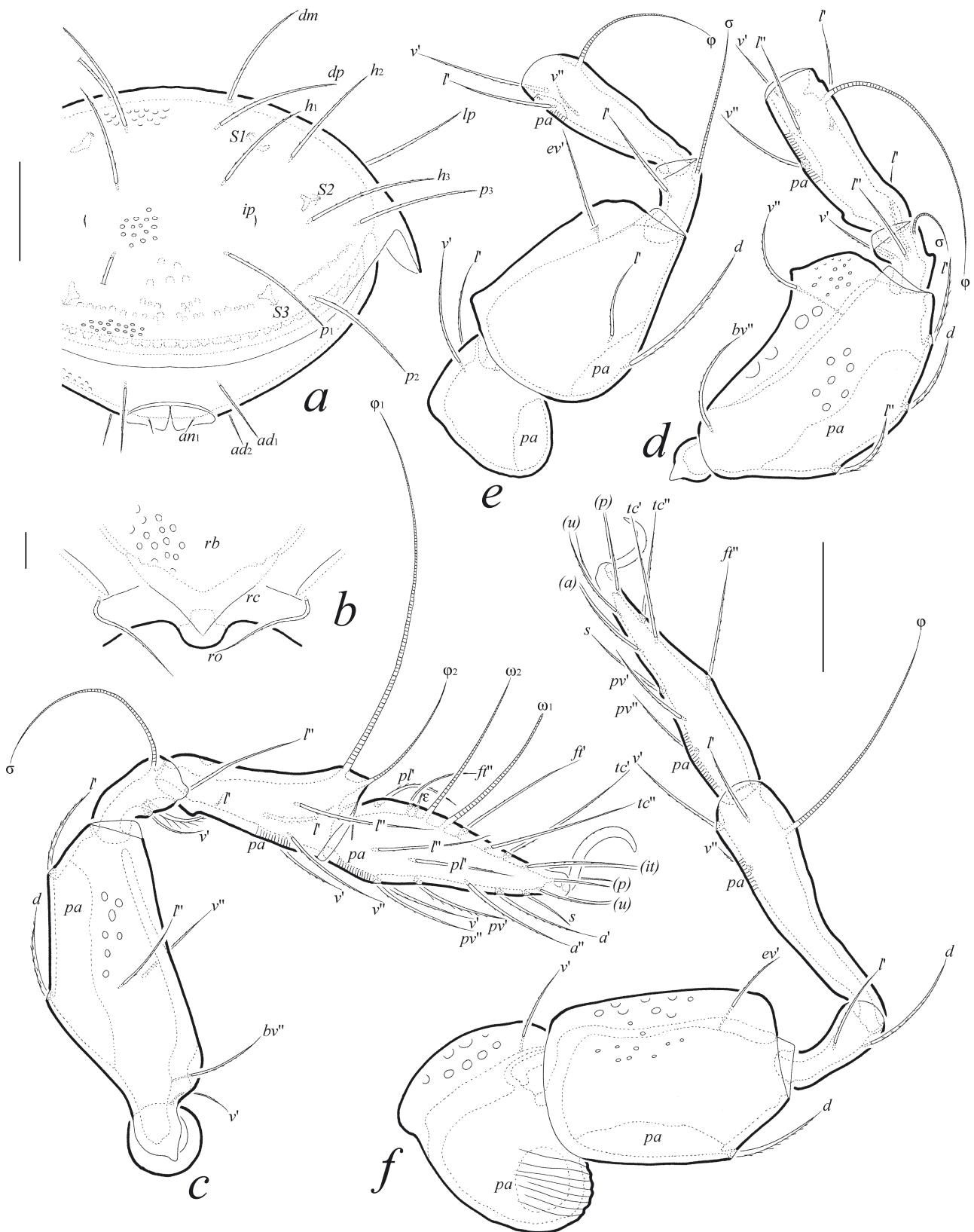
**C o m p a r i s o n.** In the presence of monodactylous legs, rod-like prodorsal and notogastral setae, protruding rostrum, and long, lanceolate bothridial seta, *P. (P.) parapalawanus* sp. n. is similar to *P. (P.) palawanus* Corpuz-Raros 1981 from the Oriental region (see



**Fig. 1.** *Peloribates (Peloribates) parapalawanus* Ermilov sp. n., adult (legs and some notogastral setae not shown): *a* – dorsal view, *b* – ventral view, *c* – right lateral view. Scale bar 100 µm.

Corpuz-Raros, 1981). At the same time, *P. (P.) parapalawanus* sp. n. differs from *P. (P.) palawanus* in the ornamentation of the prodorsum, the pteromorph, and the ventral plate (foveolate versus not foveolate).

**E t y m o l o g y.** The species name *parapalawanus* refers to the similarity between the new species and *Peloribates palawanus* Corpuz-Raros 1981.



**Fig. 2.** *Peloribates (Peloribates) parapalawanus* Ermilov sp. n., adult: *a* – posterior view (part of left half not shown); *b* – anterior part of prodorsum, anterodorsal view; *c* – leg I, right, antiaxial view; *d* – leg II (trochanter and tarsus not shown), left, antiaxial view; *e* – leg III (tarsus not shown), right, antiaxial view; *f* – leg IV, right, antiaxial view. Scale bars,  $\mu\text{m}$ : *a* – 100, *b* – 20, *c–f* – 50.

**Table 1.** Leg setation and solenidia of adult *Peloribates (Peloribates) parapalawanus* Ermilov sp. n.

Leg	Tr	Fe	Ge	Ti	Ta
I	v'	d, (l), bv'', v''	(l), v', σ	(l), (v), φ <sub>1</sub> , φ <sub>2</sub>	(ft), (tc), (it), (p), (u), (a), s, (pv), v', (pl), l'', ε, ω <sub>1</sub> , ω <sub>2</sub>
II	v'	d, (l), bv'', v''	(l), v', σ	(l), (v), φ	(ft), (tc), (it), (p), (u), (a), s, (pv), ω <sub>1</sub> , ω <sub>2</sub>
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)

Notes. Roman letters refer to normal setae; Greek letters refer to solenidia (except ε – famulus); single quotation mark ('') designates setae on the anterior and double quotation ("") setae on the posterior side of a given leg segment; parentheses indicate addition of both members of a pseudosymmetrical pair.

### KEY TO THE KNOWN SPECIES OF PELORIBATES FROM VIETNAM

1 Leg tarsi I–III monodactylous, leg tarsus IV bidactylous; body length: 272–297.....*Peloribates (Aokibates) yoshii* (Mahunka 1988) (see Mahunka, 1988a). Distribution: Oriental, Mexico.

— All leg tarsi monodactylous or tridactylous.....2

2 All leg tarsi monodactylous; body length: 525–600.....*Peloribates (Peloribates) parapalawanus* Ermilov sp. n. Distribution: Vietnam.

All leg tarsi tridactylous.....3

3 All notogastral setae minute, not longer than diameter of bothridium.....4

— All notogastral setae medium-sized or long, distinctly longer than diameter of bothridium.....5

4 Interlamellar seta dilated mediodistally; bothridial seta clavate, rounded distally; prodorsum, notogaster and anogenital region foveolate; body length: 332–348.....*Peloribates (Peloribates) spiniformis* Ermilov et Anichkin 2011 (see Ermilov, Anichkin, 2011). Distribution: Vietnam.

— Interlamellar seta setiform; bothridial seta lanceolate, with setiform apex; prodorsum, notogaster and anogenital region not foveolate; body length: 240.....*Peloribates (Peloribates) pseudoporus* Balogh et Mahunka 1967 (see Balogh, Mahunka, 1967). Distribution: Vietnam.

5 Interlamellar and some notogastral (e.g., *lm*, *lp*, *h*<sub>1</sub>–*h*<sub>3</sub>, *p*<sub>1</sub>) setae subflagellate; notogaster and ventral plate striate; body length: 547–597.....*Peloribates (Peloribates) tatyanae* Ermilov et Anichkin 2014 (see Ermilov, Anichkin, 2014). Distribution: Vietnam.

— Interlamellar and all notogastral setae not subflagellate; notogaster and ventral plate foveolate.....6

6 Interlamellar and all or some notogastral setae with swollen tip.....7

— Interlamellar and all notogastral setae without swollen tip.....8

7 Foveolae of interlamellar region and centrodorsal region of notogaster similar in size; body length: 340.....*Peloribates (Peloribates) guttatoides*

Hammer 1979 (see Hammer, 1979). Distribution: Oriental.

— Foveolae of interlamellar region distinctly smaller than foveolae of centrodorsal region of notogaster; body length: 330.....*Peloribates (Peloribates) guttatus* Hammer 1979 (see Hammer, 1979). Distribution: Oriental.

8 Notogastral setae *da* and *dm* length about half the distance between their insertions.....9

— Notogastral setae *da* and *dm* distinctly longer than the distance between their insertions or about of distance between their insertions.....11

9 Foveolae of interlamellar region distinctly larger than foveolae of centrodorsal region of notogaster; body length: 330–415.....*Peloribates (Peloribates) barbatus* Aoki 1977 (see Aoki, 1977; Kim et al., 2016). Distribution: Eastern Palaearctic, Vietnam.

— Foveolae of interlamellar region not larger than foveolae of centrodorsal region of notogaster .....10

10 Foveolae of interlamellar region and centrodorsal region of notogaster small (distinctly shorter than diameter of bothridium), rounded, sparsely located; body length: 375.....*Peloribates (Peloribates) rangiroaensis* *rangiroaensis* Hammer 1972 (see Hammer, 1972). Distribution: Polynesia, Oriental.

— Foveolae of interlamellar region and centrodorsal region of notogaster medium-sized (about diameter of bothridium or larger), floriform, densely located; body length: 317.....*Peloribates (Peloribates) stellatus* Balogh et Mahunka 1967 (see Balogh, Mahunka, 1967). Distribution: Vietnam.

11 Notogastral setae *da* and *dm* about equal to the distance between their insertions; body length: 544–549 .....*Peloribates (Peloribates) paraguayensis* Balogh et Mahunka 1981 (see Balogh, Mahunka, 1981). Distribution: Neotropical and Oriental.

— Notogastral setae *da* and *dm* distinctly longer than the distance between their insertions.....12

12 Bothridial seta fusiform (head narrowed distally); body length: 342.....*Peloribates (Peloribates)*

*gressitti* Balogh et Mahunka 1967 (see Balogh, Mahunka, 1967). Distribution: Oriental.

— Bothridial seta clavate (head broadly rounded distally).....13

13 Foveolae of centrodorsal region of notogaster sparsely located; body length: 620.....*Peloribates (Peloribates) ratubakensis* Hammer 1979 (see Hammer, 1979). Distribution: Oriental.

— Foveolae of centrodorsal region of notogaster densely located; body length: 280–324 .....*Peloribates (Peloribates) kaszabi* Mahunka 1988 (see Mahunka, 1988). Distribution: Oriental.

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This work does not contain any studies involving human and animal subjects.

#### CONFLICT OF INTEREST

The authors of this work declare that they have no conflicts of interest.

#### REFERENCES

- Aoki J., 1977. Two new *Peloribates* species (Acari, Oribatida) collected from lichens growing on tombstones in Ichihara-shi, Central Japan // Annotations Zoologicae Japonenses. V. 50. P. 187–190.
- Balogh J., Mahunka S., 1967. New oribatids (Acari) from Vietnam // Acta Zoologica Academiae Scientiarum Hungaricae. V. 13. P. 39–74.
- Balogh J., Mahunka S., 1981. New data to the knowledge of the oribatid fauna of the Neogaea, VI. (Acari) // Acta Zoologica Academiae Scientiarum Hungaricae. V. 27. P. 49–102.
- Berlese A., 1908. Elenco di generi e specie nuove di Acari // Redia. V. 5. P. 1–15.
- Corpuz-Raros L.A., 1981. Philippine Oribatei (Acarina). IV. The genus *Peloribates* Berlese (Oribatuloidea, Haplozetidae) // The Philippine Entomologist. V. 4. P. 435–456.
- Corpuz-Raros L., Ermilov S.G., 2020. Catalogue of oribatid mites (Acari: Oribatida) from Continental Southeast Asia // Zootaxa. V. 4893. P. 1–216.
- Ermilov S.G., 2015. A list of oribatid mites (Acari, Oribatida) of Vietnam // ZooKeys. № 546. P. 61–85.
- Ermilov S.G., Anichkin A.E., 2011. Two new species of Oripodoidea (Acari: Oribatida) from Vietnam // Acarologia. V. 51. P. 143–154.
- Ermilov S.G., Anichkin A.E., 2014. Taxonomic study of oribatid mites (Acari, Oribatida) of Bi Dup–Nui Ba National Park (southern Vietnam) // Zootaxa. V. 3834. P. 1–86.
- Ermilov S.G., Martens J., 2024. Two new species of Oripodoidea (Acari, Oribatida) from Nepal // Systematic and Applied Acarology. V. 29. P. 294–304.
- Ermilov S.G., Salavatulin V.A., 2022. Oribatid mites of the genus *Eremaeozetes* (Acari, Oribatida, Eremaeozetidae) from trees in Cat Tien National Park, Vietnam // International Journal of Acarology. V. 48. P. 510–522.
- Ermilov S.G., Salavatulin V.M., 2023. New arboreal mite species of Oribatulidae and Oripodidae (Acari, Oribatida, Oripodoidea) from Vietnam // International Journal of Acarology. V. 49. P. 283–291.
- Ermilov S.G., Stary J., 2020. Two new species of Haplozetidae (Acari: Oribatida) from Madagascar // International Journal of Acarology. V. 46. P. 146–154.
- Ermilov S.G., Shtanchaeva U.Ya., Subias L.S., 2019. *Peloribates roynortoni* (Acari, Oribatida, Haplozetidae), a new species of oribatid mites from the USA // Acarina. V. 27. P. 3–9.
- Ermilov S.G., Subias L.S., Shtanchaeva U.Ya., Friedrich S., 2021. New sacculonotic Oripodoidea (Acari: Oribatida) from Peru // Zootaxa. V. 5048. P. 422–434.
- Hammer M., 1972. Tahiti. Investigation on the oribatid fauna of Tahiti, and on some oribatids found on the atoll Rangiroa // Det Kongelige Danske Videnskabernes Selskab Biologiske Skrifter. V. 19. P. 1–66.
- Hammer M., 1979. Investigations on the oribatid fauna of Java // Det Kongelige Danske Videnskabernes Selskab Biologiske Skrifter. V. 22. P. 1–78.
- Kim J., Bayartogtokh B., Jung C., 2016. A new record of *Peloribates barbatus* Aoki, 1977 (Oribatida: Haplozetidae) from Korea // Journal of Species Research. V. 5. P. 364–367.
- Mahunka S., 1988. A survey of the Oribatid Fauna (Acari) of Vietnam, II // Acta Zoologica Hungarica. V. 34. P. 215–246.
- Mahunka S., 1988a. New and interesting mites from the Geneva Museum LXI. Oribatids from Sabah (East Malaysia) III (Acari: Oribatida) // Revue suisse de Zoologie. V. 95. P. 817–888.
- Mahunka S., 2011. New and little known oribatid mites from Madagascar (Acari: Oribatida), III // Opuscula Zoologica Budapest. V. 42. P. 43–66.

- 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. Biology 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.
- Salavatulin V.M.*, *Ermilov S.G.*, *Kudrin A.A.*, *Nguyen T.D.*, 2022. Initial data on arboreal oribatid mites (Acari, Oribatida) from Vietnam // Acarina. V. 30. P. 103–108.
- Subías L.S.*, 2022. Listado sistemático, sinonímico y biogeográfico de los ácaros oribátidos (Acariformes: Oribatida) del mundo (excepto fósiles) // Monografías Electrónicas Sociedad Entomológica Aragonesa. № 12. P. 1–538.
- Subías L.S.*, 2023. Listado sistemático, sinonímico y biogeográfico de los ácaros oribátidos (Acariformes: Oribatida) del mundo (excepto fósiles), 18<sup>a</sup> actualización. P. 1–540. Available from: [http://bba.bioucm.es/cont/docs/RO\\_1.pdf](http://bba.bioucm.es/cont/docs/RO_1.pdf) (accessed February 2023).

## ДОПОЛНЕНИЯ К ФАУНЕ ПАНЦИРНЫХ КЛЕЩЕЙ (ACARI, ORIBATIDA) ВЬЕТНАМА, С ОПИСАНИЕМ НОВОГО ВИДА РОДА *PELORIBATES*

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Исследование базируется на орбатологическом материале, собранном в сухой подстилке в диптерокарповом лесу в провинции Да克拉克, южный Вьетнам. Представлен перечень из 51 вида, относящегося к 37 родам и 23 семействам; из них 5 видов и 2 подвида отмечены для Вьетнама впервые и два вида отмечены для Ориентальной области впервые. Описан новый вид рода *Peloribates* (Haplozetidae), *Peloribates (Peloribates) parapalawanus* sp. n. Представлены новый родовой диагноз и идентификационный ключ к известным видам рода *Peloribates* из Вьетнама.

**Ключевые слова:** Юго-Восточная Азия, *Peloribates*, родовой диагноз, морфология, идентификационный ключ