

ORIBATID MITES OF DONG NAI BIOSPHERE RESERVE (= CAT TIEN NATIONAL PARK) OF SOUTHERN VIETNAM, WITH DESCRIPTION OF A NEW SPECIES OF *PERGALUMNA* (ACARI, ORIBATIDA, GALUMNIDAE)

S. G. Ermilov¹, W. Niedbała² and A. E. Anichkin³

¹Nizhniy Novgorod Referral Center of the Federal service for Veterinary and Phytosanitary Inspection, Nizhniy Novgorod 603107, Russia; e-mail: ermilovacari@yandex.ru

²Adam Mickiewicz University, Poznań 61-614, Poland

³Institute of Ecology and Evolution, Russian Academy of Sciences, Moscow 119071, Russia; Joint Russian-Vietnamese Research and Technological Center, Southern Branch, Ho Chi Minh, Vietnam

ABSTRACT: An annotated checklist of oribatid mite taxa in Dong Nai Biosphere Reserve (= Cat Tien National Park) with distributions is provided. We have registered 121 species, 84 genera and 45 families, of which 40 species, 27 genera, 12 families were found for the first time in Vietnam, and of which 30 species and one genus were described as are new. A new species of the genus *Pergalumna*, *Pergalumna paraelongata* sp. n., is described.

KEY WORDS: Oribatida, fauna, checklist, Dong Nai Biosphere Reserve, Vietnam, new species, *Pergalumna*

INTRODUCTION

The oribatid mite fauna of Vietnam is poorly studied. The first data on on this fauna was presented by Balogh and Mahunka (1967). Later investigations of oribatid mites of Vietnam had been studied by the some scientists (Rajski and Szudrowicz 1974; Golosova 1983, Mahunka 1987, 1988, 1989; Starý 1992; Krivolutskiy et al. 1997; Niedbała 2000; and other papers). At present, less than 200 species of oribatids are recorded for Vietnam.

In recent years, the oribatid fauna of Vietnam was studied more actively by the authors (Ermilov and Anichkin 2010, 2011 a–j; Ermilov 2011; Ermilov et al. 2011a–c), with a focus on Dong Nai Biosphere Reserve (= Cat Tien National Park) in the southern part of this country. We presented a brief geographical and floristic description of this park (Ermilov and Anichkin 2010). A primary goal of this paper is to present an annotated checklist of oribatid mites of Dong Nai Biosphere Reserve, collected from 2006–2010 and also is to annotate those taxa, which are recorded for the first time for Vietnam. Publications without descriptions, or those documenting findings of a given species of ptyctimous mites are not included, because we have doubts in correctness of these data.

In the course of studies of additional oribatid mite material, collected in 2010, we have found a new species of the genus *Pergalumna* Grandjean, 1936 (Galumnidae). A secondary goal of our paper is to describe this species. At present, the genus *Pergalumna* comprises more than 110 species, four of which were recorded in Dong Nai Biosphere Reserve: *P. cattienica* Ermilov and Anichkin, 2011, *P. indistincta* Ermilov and Anichkin, 2011, *P. margaritata* Mahunka, 1989, *P. yurtaevi*

Ermilov and Anichkin, 2011. Thus, this new species of *Pergalumna* is the fifth recorded from Dong Nai Biosphere Reserve and it is describe below as *Pergalumna paraelongata* sp. n.

MATERIALS AND METHODS

The oribatid mite fauna have been recorded from 11 sites of Dong Nai Biosphere Reserve.

List of collecting sites

CTNP-1: 11°26' N, 107°26' E, 137 m above sea level, in sandy soil of dipterocarp forest, February–March 2009, collected by A.E. Anichkin

CTNP-2: 11°25' N, 107°25' E, 149 m above sea level, in dark loamy soil of *Lagerstroemia* forest, February–March 2009, collected by A.E. Anichkin.

CTNP-3: 11°26' N, 107°25' E, approximately 145 m above sea level, in dark loamy soil of *Lagerstroemia* forest, 20 November 2006, collected by A.E. Anichkin.

CTNP-4: 11°26' N, 107°25' E, approximately 145 m above sea level, in dark loamy soil of *Lagerstroemia* forest, 19 November 2007, collected by A.E. Anichkin.

CTNP-5: 11°26' N, 107°19' E, near Bau Sau village, yellow trail, 150 m above sea level, in dark loamy soil of *Livistona saribus* (Lour.) Merr. ex Chev. forest, 30 April 2010, collected by V.A. Zryanin.

CTNP-6: 11°26' N, 107°19' E, near Bau Sau village, yellow trail, near Tapokh river, 170 m above sea level, in dark loamy soil of dipterocarp forest, 02 May 2010, collected by V.A. Zryanin.

CTNP-7: 11°26' N, 107°19' E, near Bau Sau village, yellow trail, 200 m above sea level, in

dark loamy soil of polydominate forest, 28 April 2010, collected by V.A. Zryanin.

CTNP-8: 11°25' N, 107°25' E, 115 m above sea level, leaves of *Azelia xylocarpa* (Kusz.) Craib. of *Lagerstroemia* forest, 19 May 2010, collected by V.A. Zryanin.

CTNP-9: 11°26' N, 107°26' E, near Dong Nai river, 130 m above sea level, on fern *Asplenium nidus* L. (3 m above soil level) in dipterocarp forest, 24 May 2010, collected by V.A. Zryanin.

CTNP-10: 11°25' N, 107°25' E, near central cordon, 115 m above sea level, on fern *Asplenium nidus* L. (3 m above soil level) in bamboo forest, 24 May 2010, collected by V.A. Zryanin.

CTNP-11: 11°25' N, 107°25' E, approximately 145 m above sea level, in dark loamy soil of *Lagerstroemia* forest, 20–30 September 2010, collected by A.E. Anichkin.

Specimens of the new species described below were studied and illustrated in lactic acid, mounted on temporary cavity slides for the duration of the study. All body measurements are presented in micrometers. Body length was measured in lateral view. Notogastral width refers to the maximum width in dorsal aspect. Formulae for leg setation are given in parentheses according to the sequence trochanter–femur–genu–tibia–tarsus (femulus included). Formulae for leg solenidia are given in square brackets according to the sequence genu–tibia–tarsus.

Terminology used in this paper follows that of F. Grandjean (see Travé and Vachon 1975 for many references).

RESULTS

In the course of studies of oribatid mite fauna of Dong Nai Biosphere Reserve in 2006–2010 we have registered 121 species, 84 genera and 45 families, of which 40 species, 27 genera, 12 families were found for the first time in Vietnam, and of which 30 species and one genus were described as are new. An annotated checklist of recorded oribatid taxa in Dong Nai Biosphere Reserve is presented below. Although we partially presented data about new records of Vietnamese oribatids, when new species were described (for example, see Ermilov and Anichkin 2011 c, f, h), we include these data in the checklist to provide a complete picture.

Checklist of oribatid mites of Dong Nai Biosphere Reserve (materials of 2006–2011)

Hyhochthoniidae. The family is recorded for the first time from Vietnam.

— *Eohypochthonius crassisetiger* Aoki, 1959. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2, CTNP-4

Sphaerochthoniidae. The family is recorded for the first time from Vietnam.

— *Sphaerochthonius splendidus* (Berlese, 1904). The genus and species are recorded for the first time from Vietnam. Locality: CTNP-2

Protolophoridae. The family is recorded for the first time from Vietnam.

— *Arthrophlophora vulpes* Berlese, 1916. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2

Epilohmanniidae

— *Epilohmannia pallida pacifica* Aoki, 1965. The species is recorded for the first time from Vietnam. Locality: CTNP-2

— *Epilohmannia crassisetosa* Ermilov and Anichkin, 2012. Locality: CTNP-2

Lohmanniidae

— *Javacarus kuehnelti* Balogh, 1961. Locality: CTNP-1, CTNP-2

— *Meristacarus sundensis* Hammer, 1979. The species is recorded for the first time from Vietnam. Locality: CTNP-2, CTNP-7, CTNP-9, CTNP-11

— *Mixacarus exilis* Aoki, 1970. The species is recorded for the first time from Vietnam. Locality: CTNP-2

— *Mixacarus foliifer* Golosova, 1984. Locality: CTNP-1, CTNP-2

— *Papillacarus cornutus* Sarkar and Subías, 1984. The species is recorded for the first time from Vietnam. Locality: CTNP-2

— *Papillacarus hirsutus* (Aoki, 1961). Locality: CTNP-1, CTNP-2

— *Papillacarus ramosus* Balogh, 1961. The species is recorded for the first time from Vietnam. Locality: CTNP-1

— *Papillacarus polygonatus* Ermilov and Anichkin, 2011. Locality: CTNP-2

Mesoplophoridae

— *Apoplophora pantotrema* (Berlese, 1913). Locality: CTNP-2, CTNP-11

Oribotritiidae

— *Oribotritia bulbifer* (Mahunka, 1987). The species is recorded for the first time from Vietnam. Locality: CTNP-2

Euphthiracaridae

— *Acrotritia aokii* (Niedbala, 2000). Locality: CTNP-11

— *Acrotritia ardua* (Koch, 1841). Locality: CTNP-11

Steganacaridae

— *Arphthiracarus tubulus* (Hammer, 1972). The species is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2

— *Atropacarus cucullatus* (Ewing, 1909). The species is recorded for the first time from Vietnam. Locality: CTNP-2, CTNP-11

— *Atropacarus hamatus* (Hammer, 1973). Locality: CTNP-3

— *Atropacarus vitrinus* (Berlese, 1913). Locality: CTNP-3

— *Plonaphacarus kugohi* (Aoki, 1959). Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-11

— *Austrophthiracarus pullus* (Niedbała, 1989). The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2, CTNP-11

Phthiracaridae

— *Phthiracarus pygmaeus* Balogh, 1958. The species is recorded for the first time from Vietnam. Locality: CTNP-1,

Trhypochthoniidae

— *Archegozetes longisetosus* Aoki, 1965. Locality: CTNP-1, CTNP-2, CTNP-11

Malacostridae. The family is recorded for the first time from Vietnam

— *Malacostrus geminus* Hammer, 1972. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-2, CTNP-3, CTNP-4

— *Malacostrus dorsofoveolatus* Hammer, 1979. The species is recorded for the first time from Vietnam. Locality: CTNP-2

Nanhermanniidae

— *Cosmohermannia robusta* Aoki, 1994. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-3, CTNP-4, CTNP-11

— *Cyrthermannia vicinicornuta* Aoki, 1965. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1

— *Masthermannia mammillaris* (Berlese, 1904). The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1

— *Nanhermannia thainensis* Aoki, 1965. Locality: CTNP-1, CTNP-2

Hermannidae

— *Phyllhermannia gladiata* Aoki, 1965. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-7, CTNP-11

Neolioididae

— *Neolioides* sp. (not identified). Locality: CTNP-1, CTNP-2, CTNP-11

Licnodamaeidae. The family is recorded for the first time from Vietnam

— *Pedrocortesella* sp. (only one specimen, not identified). The genus is recorded for the first time from Vietnam. Locality: CTNP-1

Gymnodamaeidae. The family is recorded for the first time from Vietnam

— *Arthrodamaeus vietnamicus* Ermilov and Anichkin, 2011. The genus is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-4

Microzetidae

— *Berlesezetes ornativissimus* (Berlese, 1913). Locality: CTNP-1

— *Caucasiozetes frankeae* Ermilov and Anichkin, 2011. The genus is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2

— *Schalleriella vietnamica* Ermilov and Anichkin, 2011. The genus is recorded for the first time from Vietnam. Locality: CTNP-2

Zetorchestidae

— *Zetorchestes saltator* Oudemans, 1915. Locality: CTNP-1, CTNP-2, CTNP-11

Astegistidae

— *Cultroribula bicuspidata* Mahunka, 1978. The species is recorded for the first time from Vietnam. Locality: CTNP-2, CTNP-3

— *Furcoppia cattienica* Ermilov and Anichkin, 2012. Locality: CTNP-2

Amerobelbidae. The family is recorded for the first time from Vietnam

— *Roynortonia vietnamica* Ermilov, 2011. Locality: CTNP-2, CTNP-3

Eremulidae

— *Eremulus avenifer* Berlese, 1913. Locality: CTNP-1, CTNP-3, CTNP-4, CTNP-11

— *Eremulus spinosus* Ermilov and Anichkin, 2011. Locality: CTNP-2

— *Mahunkana japonica* (Aoki and Karasawa, 2007). The species is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-4

Damaeolidae

— *Fosseremus laciniatus* (Berlese, 1905). Locality: CTNP-2

— *Gressittolus marginatus* Balogh, 1970. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1

Eremobelbidae

— *Eremobelba bellicosa* Balogh and Mahunka, 1967. Locality: CTNP-2

— (?) *Eremobelba breviseta* Balogh, 1968¹. The species is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-3, CTNP-4

¹ Our specimens are very similar morphologically with *Eremobelba breviseta*, however it have thickened interlamellar setae (not thickened in *Eremobelba breviseta*).

Arceremaeidae. The family is recorded for the first time from Vietnam

— *Tecteremaeus hauseri* Mahunka, 1982. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2, CTNP-4, CTNP-11

Oppiidae

— *Arcoppia arcualis* (Berlese, 1913). Locality: CTNP-1, CTNP-2

— *Arcoppia hammerae* Rodríguez and Subías, 1984. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-4

— *Lasiobelba kuehnelti* (Csiszár, 1961). Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-4

— *Lineoppia microseta* Ermilov and Anichkin, 2011. The genus is recorded for the first time from Vietnam. Locality: CTNP-2

— *Lyroppia* sp. (only one dissected specimen, not identified). The genus is recorded for the first time from Vietnam. Locality: CTNP-3

— *Multioppia tamdao* Mahunka, 1988. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-4

— *Neoamerioppia vietnamica* (Mahunka, 1988). Locality: CTNP-4

— *Oppiella nova* (Oudemans, 1902). Locality: CTNP-3

— *Oxybrachioppia barbata* (Choi, 1986). The genus and species are recorded for the first time from Vietnam. Locality: CTNP-3, CTNP-4

— *Oxyoppia* sp. (only one specimen, not identified). The genus is recorded for the first time from Vietnam. Locality: CTNP-4,

— *Pulchroppia elegans* Hammer, 1979. The species is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2,

— *Pulchroppia roynortoni* Ermilov and Anichkin, 2011. Locality: CTNP-2, CTNP-3, CTNP-11

— *Ramusella elliptica* (Berlese, 1908). The species is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-4

— *Taiwanoppia hungarorum* (Mahunka, 1988). Locality: CTNP-1, CTNP-2, CTNP-11

Granuloppiidae. The family is recorded for the first time from Vietnam

— *Gigantoppia zryanini* Ermilov and Anichkin, 2011. The genus is recorded for the first time from Vietnam. Locality: CTNP-6

Suctobelbidae

— *Suctobelbella elegantula* (Hammer, 1958). The species is recorded for the first time from Vietnam. Locality: CTNP-2, CTNP3, CTNP-4

— *Suctobelbella latirostris* (Strenzke, 1950). Locality: CTNP-11

— *Suctobelbella semiplumosa* (Balogh and Mahunka, 1967). Locality: CTNP-11

— *Suctobelbella variosetosa* (Hammer, 1961). Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-4, CTNP-11

— *Suctobelbilla multituberculata* Hammer, 1979. The species is recorded for the first time from Vietnam. Locality: CTNP-1

— *Suctobelbilla parallelodentata* Hammer, 1979. The species is recorded for the first time from Vietnam. Locality: CTNP-2

Tetracondylidae

— *Dolicheremaeus aokii* Balogh and Mahunka, 1967². Locality: CTNP-2, CTNP-11

Otocepheidae

— *Eurostocephus aquilinus* Aoki, 1965. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-11

— *Otocephus duplicornutus* Aoki, 1965. Locality: CTNP-1, CTNP-11

— *Otocephus vietnamicus* Ermilov and Anichkin, 2011. Locality: CTNP-2

Tectocephidae

— *Tectocephus velatus* (Michael, 1880). Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-11

Cymbaeremaeidae

— *Scapheremaeus fisheri* Aoki, 1966. The species is recorded for the first time from Vietnam. Locality: CTNP-11

— *Scapheremaeus* sp. (only one dissected specimen, not identified). Locality: CTNP-1

Scutoverticidae. The family is recorded for the first time from Vietnam

— *Arthrovertex* sp. (only one dissected specimen, not identified). The genus is recorded for the first time from Vietnam. Locality: CTNP-3

Oribatellidae

— *Oribatella umaetluisorum* Ermilov and Anichkin, 2012. Locality: CTNP-4

— *Oribatella* sp. (only two dissected specimens, not identified). Locality: CTNP-1, CTNP-2

Mycobatidae

— *Allozetes pusillus* (Berlese, 1913). Locality: CTNP-3

— *Lamellobates molecula* (Berlese, 1916). Locality: CTNP-1, CTNP-2, CTNP-11

— *Paralamellobates misella* (Berlese, 1910). Locality: CTNP-1, CTNP-3

² Some our specimens are similar morphologically to *Dolicheremaeus aokii*, however other specimens have small medial notogastral tubercles, which are located close to lateral notogastral tubercles (medial tubercles are absent in the description of Balogh and Mahunka).

Mochlozetidae

- *Unguizetes asiaticus* Ermilov and Anichkin, 2012. Locality: CTNP-2, CTNP-11
- *Unguizetes cattienensis* Ermilov and Anichkin, 2011. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-5, CTNP-7, CTNP-8, CTNP-11
- *Unguizetes sphaerula* (Berlese, 1905). The species is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2, CTNP-4, CTNP-6, CTNP-11

Oribatulidae

- *Zygoribatula prima* Ermilov and Anichkin, 2011. Locality: CTNP-2

Sellnickiidae. The family is recorded for the first time from Vietnam

- *Sellnickia caudata* Michael, 1898. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2

Caloppiidae. The family is recorded for the first time from Vietnam

- *Zetorchella latior* (Berlese, 1913). The genus and species are recorded for the first time from Vietnam. Locality: CTNP-3, CTNP-4

Scheloribatidae

- *Fijibates aelleni* (Mahunka, 1988). The genus and species are recorded for the first time from Vietnam. Locality: CTNP-11
- *Scheloribates fimbriatus* Thor, 1930. Locality: CTNP-1, CTNP-2
- *Scheloribates latipes* (Koch, 1844). Locality: CTNP-1, CTNP-2, CTNP-11
- *Scheloribates praeincisus* (Berlese, 1910). Locality: CTNP-1, CTNP-2, CTNP-4, CTNP-10, CTNP-11

Oripodidae

- *Brachypripoda foveolata* Balogh, 1970. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1

Haplozetidae

- *Indoribates microsetosus* Ermilov and Anichkin, 2011. Locality: CTNP-2
- *Indoribates vindobonensis* (Willmann, 1935). The species is recorded for the first time from Vietnam. Locality: CTNP-11
- *Peloribates kaszabi* Mahunka, 1988. Locality: CTNP-1, CTNP-2
- *Peloribates rangiroaensis* Hammer, 1972. The species is recorded for the first time from Vietnam. Locality: CTNP-2
- *Peloribates spiniformis* Ermilov and Anichkin, 2011. Locality: CTNP-2, CTNP-3, CTNP-4, CTNP-11

- *Perxylobates crassisetosus* Ermilov and Anichkin, 2011. Locality: CTNP-2

- *Protoribates cattienensis* Ermilov and Anichkin, 2011. Locality: CTNP-2, CTNP-11

- *Protoribates heterodactylus* Ermilov and Anichkin, 2011. Locality: CTNP-1

- *Protoribates maximus* (Mahunka, 1988). Locality: CTNP-1, CTNP-2, CTNP-11

- *Protoribates paracapucinus* (Mahunka, 1988). The species is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-4, CTNP-11

- *Trachyoribates ovulum* Berlese, 1908. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-4, CTNP-6, CTNP-11

Parakalummidae

- *Neoribates jacoti* (Balogh and Mahunka, 1967). Locality: CTNP-1, CTNP-2, CTNP-6, CTNP-11

Galumnidae

- *Galumna acutirostrum* Ermilov and Anichkin, 2010. Locality: CTNP-1, CTNP-2, CTNP-7

- *Galumna flabellifera* Hammer, 1958. Locality: CTNP-3, CTNP-4

- *Galumna khoii* Mahunka, 1989. Locality: CTNP-1, CTNP-2, CTNP-10, CTNP-11

- *Galumna levisensilla* Ermilov and Anichkin, 2010. Locality: CTNP-1, CTNP-2, CTNP-3, CTNP-11

- *Galumna pseudokhoii* Ermilov and Anichkin, 2011. Locality: CTNP-2

- *Leptogalumna ciliata* Balogh, 1960. The genus and species are recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-2

- *Neogalumna seniczaki* Ermilov and Anichkin, 2010. The genus is recorded for the first time from Vietnam. Locality: CTNP-1, CTNP-11

- *Pergalumna cattienica* Ermilov and Anichkin, 2011. Locality: CTNP-1, CTNP-2, CTNP-11

- *Pergalumna indistincta* Ermilov and Anichkin, 2011. Locality: CTNP-2, CTNP-11

- *Pergalumna margaritata* Mahunka, 1989. Locality: CTNP-1, CTNP-11

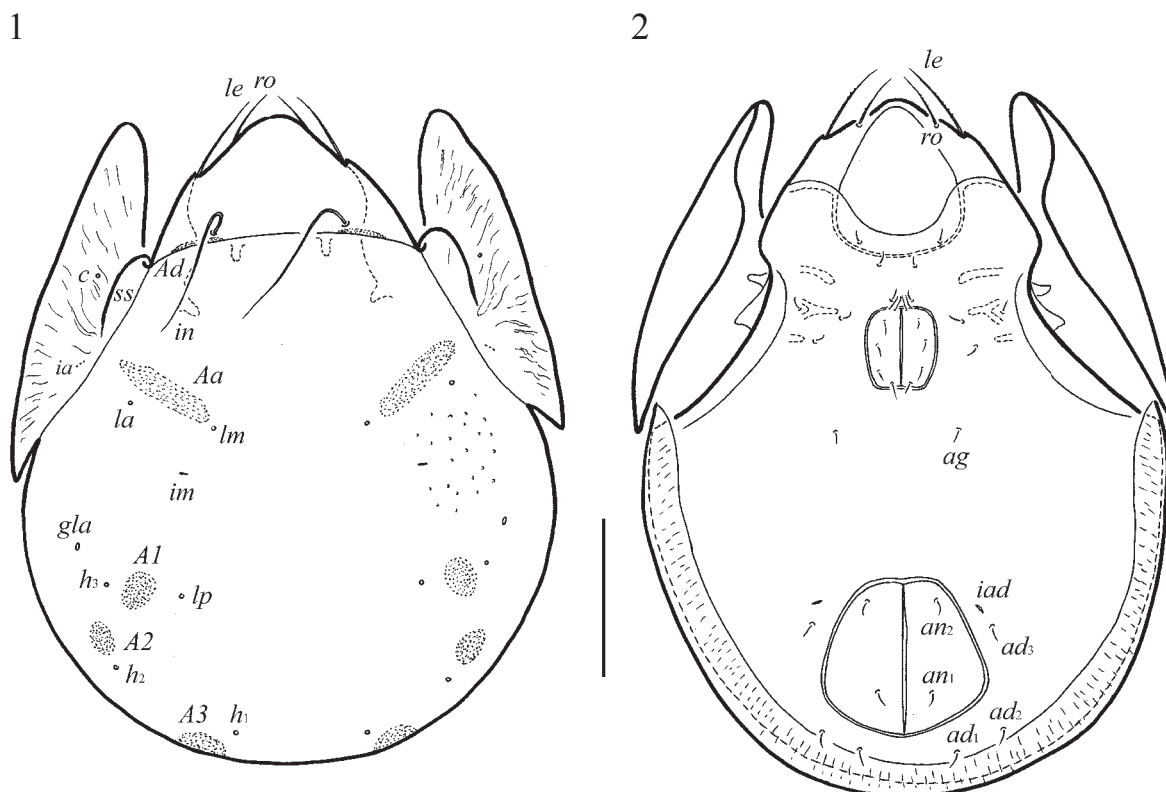
- *Pergalumna paraelongata* sp. n. Locality: CTNP-11

- *Pergalumna yurtaevi* Ermilov and Anichkin, 2011. Locality: CTNP-10

- *Trichogalumna nipponica* (Aoki, 1966). The species is recorded for the first time from Vietnam. Locality: CTNP-3

Galumnellidae

- *Galumnella microporosa* Ermilov and Anichkin, 2011. Locality: CTNP-3



Figs. 1–2. *Pergalumna paraelongata* sp. n., adult: 1 — dorsal view; 2 — ventral view, gnathosoma and legs not shown. Scale bar 200 μ m.

**Description of *Pergalumna paraelongata*
Ermilov et Anichkin sp. n.**

Figs. 1–6

With typical diagnostic characters of the genus *Pergalumna* as we have listed earlier (Ermilov and Anichkin 2011 g).

Diagnosis. *Pergalumna paraelongata* sp. n. is characterized by the combination of following character states: body size 830–898 \times 630–680; rostrum rounded; prodorsal setae long, setiform, slightly barbed; sensilli long, setiform, with poorly developed and visible lanceolate head; dorsosejugal suture complete; four pairs of porose areas: *Aa* transversely oriented, oblong oval, others oval; pteromorphs with wrinkles; median pore and post-anal porose area absent.

Description. Measurements. Body length 898 (holotype), 830–898 (mean 875; seven paratypes); body width 672 (holotype), 630–680 (mean 656).

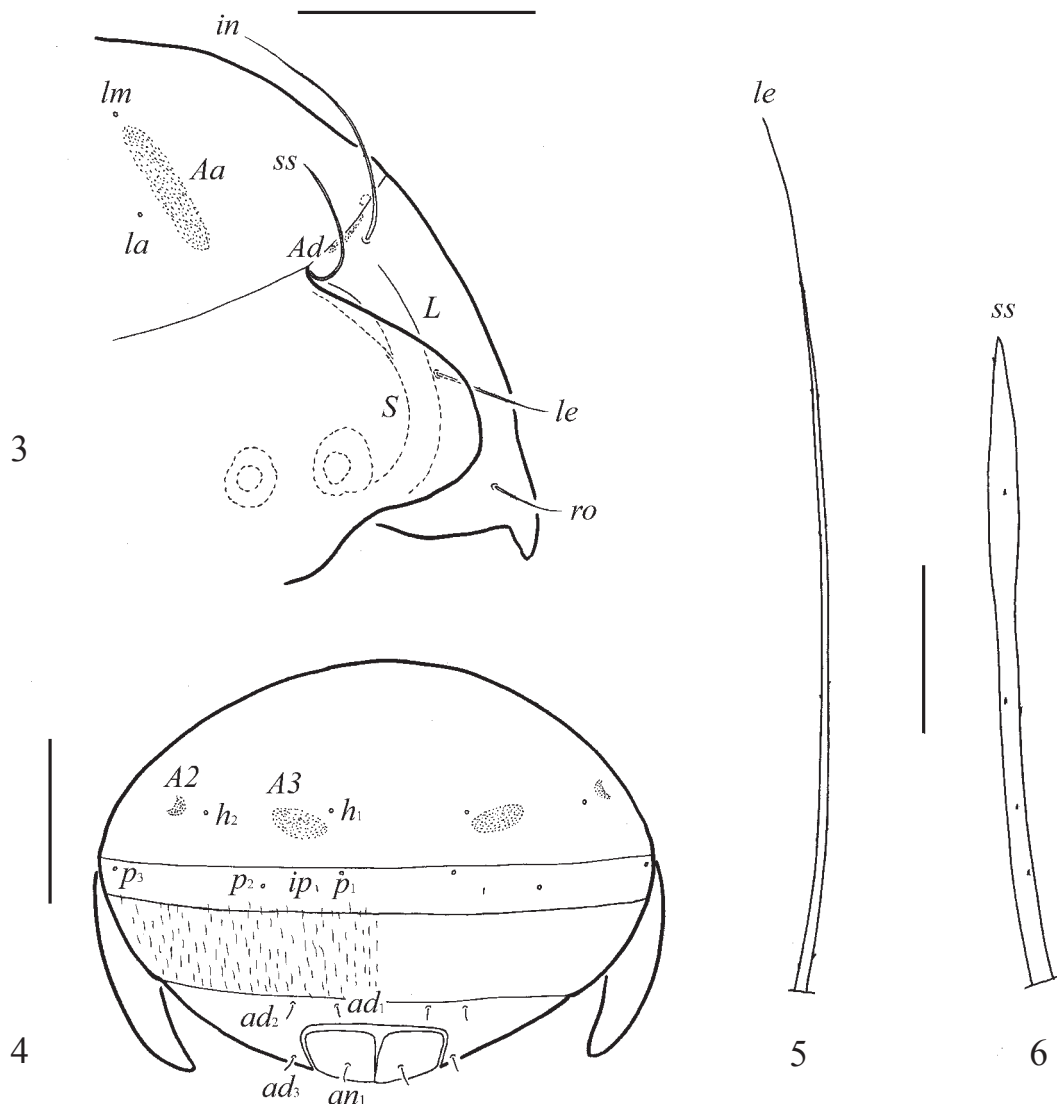
Integument. Body color light brown to brown. Surface of body smooth (dorso-lateral parts of notogaster with indistinct ornament; posterior part of notogaster with short longitudinal wrinkles).

Prodorsum (Figs. 1, 3, 5, 6). Rostrum rounded in dorsal view. Lamellar (*L*) and sublamellar (*S*) lines well developed, parallel. Rostral (*ro*, 57–69), lamellar (*le*, 110–123), interlamellar (*in*, 184–205)

setae setiform, thin, with very small and sparse barbs. Rostral and lamellar setae more or less straight, directed anteriorly. Lamellar setae inserted very close to lamellar lines. Interlamellar setae often directed upwards in proximal part and backwards in medio-distal part. Sensilli (*ss*, 131–139) setiform, with poorly developed (visible under high magnification) lanceolate head and very small, sparse barbs. Exobothridial setae not observed. A pair of oblong and narrow porose areas *Ad* present posterior to interlamellar setae.

Notogaster (Figs. 1, 3, 4). Dorsosejugal suture complete. Notogastral setae represented by 10 pairs of alveoli. Four pairs of porose areas developed: *Aa* transversely oriented, oblong oval, 123–147 \times 32–36; others oval, *A1* 57–61 \times 36–41, *A2* 41–57 \times 28–32, *A3* 65–69 \times 32–41. All porose areas poorly visible in light brown specimens. Median pore absent. Pteromorphs with wrinkles. Lyrifissures *im* transversely oriented, located between *Aa* and *A1*.

Gnathosoma. Typical for *Pergalumna* (for example, see Engelbrecht 1972; Ermilov and Anichkin 2011g, h). Subcapitulum longer than wide: 180 \times 164. Hypostomal setae setiform, slightly barbed; *a* and *m* (both 28–32) little longer than *h* (24–28). Two pairs of hook-like, slightly barbed



Figs. 3–6. *Pergalumna paraelongata* sp. n., adult: 3 — posterior view; 4 — lateral view; 5 — medio-distal part of lamellar seta; 6 — medio-distal part of sensillum. Scale bar 200 μ m (3, 4); 10 μ m (5, 6).

adoral setae (20–24). Length of palp 139. Length of chelicera 213 (length 237); cheliceral setae long, setiform, barbed: *cha* (69) longer, than *chb* (49).

Epimeral region (Fig. 2). Six pairs of setiform, slightly barbed epimeral setae (24–28) observed. Epimeral setal formula: 2–0–2–2.

Anogenital region (Figs. 2, 4). Six pairs of genital (24–28), one pair of aggenital, three pairs of adanal and two pairs of anal (all three 28–32), setae setiform, slightly barbed. Anterior part of genital plates with two setae (g_1 , g_2). Lyrifissures *iad* paranal or inverse apoanal (sometimes asymmetrically), located in front of setae ad_3 , not close to anal plates. Postanal porose area absent.

Legs. Morphology of leg segments, setae and solenidia typical for *Pergalumna* (for example, see Engelbrecht 1972; Ermilov and Anichkin 2011 g, h). Formulae of leg setation and solenidia: I

(1–4–3–4–20) [1–2–2], II (1–4–3–4–15) [1–1–2], III (1–2–1–3–15) [1–1–0], IV (1–2–2–3–12) [0–1–0]; homology of setae and solenidia indicated in Table 1.

Material examined. Holotype (female) and seven paratypes (six females and one male): CTNP-11.

Type deposition. The holotype is deposited in the collection of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia; four paratypes are deposited in the collection of the Siberian Zoological Museum, Novosibirsk, Russia; three paratypes are in the personal collection of the first author.

Etymology. The prefix *para* is Latin meaning “near” and refers the similarity between the new species and *Pergalumna elongata* Engelbrecht, 1972.

Table 1. Leg setation and solenidia of *Pergalumna paraelongata* sp. n.

| Leg | Trochanter | Femur | Genu | Tibia | Tarsus |
|-----|------------|---------------------|-------------------|---|---|
| I | <i>v'</i> | <i>d, (l), bv''</i> | <i>(l), v', σ</i> | <i>(l), (v), φ₁, φ₂</i> | <i>(ft), (tc), (it), (p), (u), (a), s, (pv), v', (pl), l'', e, ω₁, ω₂</i> |
| II | <i>v'</i> | <i>d, (l), bv''</i> | <i>(l), v', σ</i> | <i>(l), (v), φ</i> | <i>(ft), (tc), (it), (p), (u), (a), s, (pv), ω₁, ω₂</i> |
| III | <i>v'</i> | <i>d, ev'</i> | <i>l', σ</i> | <i>l', (v), φ</i> | <i>(ft), (tc), (it), (p), (u), (a), s, (pv)</i> |
| IV | <i>v'</i> | <i>d, ev'</i> | <i>d, l'</i> | <i>l', (v), φ</i> | <i>ft'', (tc), (p), (u), (a), s, (pv)</i> |

Roman letters refer to normal setae (*e* — famulus), Greek letters refer to solenidia. One apostrophe (') marks setae on anterior and double apostrophe (") setae on posterior side of the given leg segment.

Remarks. In having the combination of long interlamellar setae, sensillus setiform or with poorly developed head, four pairs of porose areas and *Aa* transversely oriented, oblong oval, complete dorsosejugal suture, *Pergalumna paraelongata* sp. n. is most similar to *Pergalumna elongata* Engelbrecht, 1972 from South Africa (see Engelbrecht 1972), but differs by the larger body size (830–898 × 630–680 versus 648 × 444 in *P. elongata*), poorly developed lanceolate sensillar head (versus setiform sensilli in *P. elongata*), pteromorphs with wrinkles (versus without wrinkles in *P. elongata*), absence of postanal porose area (versus present in *P. elongata*), lyrifissures *iad* located anteriorly to setae *ad*₃ (versus *iad* located laterally to setae *ad*₃ and very close to anal plates in *P. elongata*).

Pergalumna paraelongata sp. n. in listed morphological characters similar to *Pergalumna amamiensis* Aoki, 1984 from Japan (see Aoki 1984) and *Pergalumna taprobanica* P. Balogh, 1988 from the Oriental region (see Balogh 1988), but it differs from both by the larger body size (830–898 × 630–680 versus 540 × 390 in *P. amamiensis*, 623 × 533 in *P. taprobanica*), oblong, oval porose areas *Aa* (versus *Aa* traingular *P. amamiensis* and *P. taprobanica*) and slightly barbed sensilli (versus smooth sensilli in *P. amamiensis* and *P. taprobanica*). Also *Pergalumna paraelongata* sp. n. similar to *Pergalumna aokii* Nakatamari, 1982 from Japan (see Nakatamari 1982) and *Pergalumna hastata* Aoki, 1987 from Japan (see Aoki 1987), but it differs from both by the larger body size (830–898 × 630–680 versus 590–610 × 500–510 in *P. aokii*, 734 × 613 in *P. hastata*) and poorly developed and visible sensillar head (versus well developed and visible in *P. aokii* and *P. hastata*).

Key to species of *Pergalumna* from Dong Nai Biosphere Reserve

1. Notogaster with four pairs of porose areas 2
- Notogaster with three pairs of porose areas ... 3

2. Dorsosejugal suture complete; rostrum rounded; adanal setae short, similar in length *P. paraelongata* sp. n.
- Dorsosejugal suture incomplete; rostrum pointed; adanal setae *ad*₁ and *ad*₂ much longer than *ad*₃ *P. cattienica* Ermilov and Anichkin
3. Dorsosejugal suture incomplete; rostrum rounded; notogastral porose areas oblonged *P. indistincta* Ermilov and Anichkin
- Dorsosejugal suture complete; rostrum pointed; notogastral porose areas rounded 4
4. Sensilli setiform; dorsosejugal suture specific (presented by the small tubercles); interlamellar and lamellar setae similar in length *P. margaritata* Mahunka
- Sensilli with dilated head; dorsosejugal suture not specific; interlamellar setae longer than lamellar setae *P. yurtaevi* Ermilov and Anichkin

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