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PAULACARELLUS FAINI SP. N., A NEW SPECIES OF ACARID MITE (ACARIFORMES: ACARIDAE) FROM THE RUSSIAN FAR EAST

BY P. B. KLIMOV *

SUMMARY: A new species, Paulacarellus faini sp. n. (Acariiformes, Acaridae), collected in supralittoral zone of Bol’shoy Pelis Is. (Sea of Japan, Far Eastern Marine Reserve, Russia), is described.

Up to now, the genus Paulacarellus Fain, 1977 has been known from a single species, P. insularis Fain, 1977, collected on seaweeds in the littoral zone of Saint Paul Is. (Indian Ocean) (FAIN, 1977). During an expedition to the Far Eastern Marine Reserve (Sea of Japan, Russia), a second species of this genus has been collected in a similar biotope. The description of new species is provided below. The terms for body parts and leg chaeto- and solenidiotaxy follow GRIFFITHS (1970); nomenclature for the idiosomal chaetotaxy follows GRIFFITHS et al. (1990); measurements of male tarsus IV follow ZACHVATKIN (1941). Measurements of the holotype are given in micrometers (μm), followed by those of the paratype in parenthesis.

Family Acaridae Latreille, 1802
Subfamily Tyrophaginae Oudemans, 1923
Genus Paulacarellus Fain, 1977

Paulacarellus faini sp. n.
(Figs 1–13)

MALE: Total length with opisthosomal lobe 417 (442). Chelicera 67–69 (68–69). Infракapitulum 64 × 32 (at level of tarsal setae)–52 (maximal width at posterior part) (67 × 28–52), with 5 pairs of comparatively long setae. Palpi 3-segmented, with weakly separated femoral palpomere (border between

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Figs. 1–6. Paulacarellus faini sp. n. (male)
1. — Ventral view. 2. — Infracapitulum, ventral view. 3. — Anal region, ventral view. 4. — Penis. 5. — Leg II, dorsal view. 6. — Tarsus II, ventral view. (Figs 1–3, 5–6, holotype; 4 paratype.)
Figs. 7–13: *Paulacarellus faini* sp. n. (holotype male)
femur-genu weakly visible). Gnathosomal setae: anterior 10–13 (12), lateromedial 13 (13), dorsomedial 19–21 (17) and posterior ones (e after HAMMEN, 1982) 12–19 (–). Sclerotized wall of pharynx comparatively long, 49 × 15 (36 × 12). Idiosoma 372 × 242 (395 × 245). Ve short, 3 (3) times shorter than vi, smooth, placed at anterior angles of weakly visible propodosomal shield. si 4 (4) times shorter than se, placed slightly anteriorly to latter. scx 15–16 (15), short, needle-like, smooth. Grandjean’s organ simple, not toothed. Length of idiosomal setae: vi 38 (32–35), ve 10–11 (10–13), si 47–49 (47), se 187 (177–187), c1 31 (29–30), c2 40 (40–44), c3 17–18 (26), cp 156–172 (199), d1 44–46 (45–46), d2 48–50 (44), e1 219–321 (222–228), e2 42 (41–44), f2 91–92 (–108), h1 67–68 (185), h2 221–230 (242), p1 19–20 × 3 (16 × 5), p2 10 (11–12), Ia 20–24 (21–23), 3a 17–18, 3b 22 (24), 4a 20 (23), g 14 (10). All idiosomal setae smooth. Longest hysterosomal setae are: cp, ci, h1 and occasionally h1 (paratype) (length of h1 variable). Bases of e1 and f2 close to each other. Distance between bases of other setae as follows: vi–vi 10 (9), vi–vi 27 (27), ve–se 78 (76), c1–c1 47 (48), d1–d1 37 (41), e1–e1 60 (68), h1–h1 70 (78); distance between levels of bases: c1–d1 36 (33–38), d1–e1 35–37 (39–42). p1 flat, lanceolate, simple. Distinct opisthosomal shield absent. Sticklike median sclerite placed at level of h1 bases. Setae h1 and p1 modified into opisthosomal lobe (Fig. 3). Opisthosomal lobe 23–25 × 37–39 (24–25 × 43–43), complicated, supported by several sclerites, incorporated with anal suckers (Fig. 3), and divided onto 2 lobes. Each lobe bearing 4 groups of setae-like processes (2 groups correspond 1 seta); measurements of these groups of setae (from inner to outer): 16–17 × 7–8 (15–17 × 7–9), 15 × 7–8 (15–17 × 7), 9–10 × 10–12 (10–11 × 10–12). Genital papillae 7 × 5 (anterior), 5 × 4 (posterior). Genital apparatus 59 × 51. Penis 67 (67), protruding from anterior edge of genital apparatus, with slightly but abruptly widened tip and characteristic concentric rings at base (seen ventrally); distal diameter of penis 3 and at end and just posteriorly, respectively (3, 5), proximal diameter 10 (8). Channel of penis near ventral side along distal 3/4 of penis length; located approximately at middle in proximal 1/4; penis narrowed proximally and distally, but distal end abruptly widened (Fig. 4). Anal suckers 25–30 × 22–23 (31 × 23–25), contiguous. Sternum 26 (29), epimerites II 52–53 (54–55), epimeres II–IV 49 (48–49), 52–53 (54), 57–59 (57–58), respectively. Proximal ends of epimeres III and IV contiguous.


Variations. Additional internal solenidion (length 6) is developed on left genu of paraphyle type male.

FEMALES AND HYPOPI: Unknown.
DIAGNOSIS: *Paulacarellus faini* sp. n. is closely related to *Paulacarellus insularis* Fain, 1977 but differ as follows (characters of *P. insularis* in parenthesis):

1) ve short, 10–13, 2.6–3.4 times shorter than vi (longer, 18, vi/ve 2.2); 2) c2 short, 17–26; clearly shorter than anterior edge of coxa III (longer, 34–32, longer than anterior edge of coxa III); 3) sR II short, 22, not or almost reaching posterior edge of coxae III (longer, 35–37, protruding from posterior edge of coxae III); 4) 1 and touching each other (remote, distance between them approximately equal to length of ); 5) c1 slightly longer than distance between levels of c2 and d1, c1-d1/c1 = 1.1–1.3 (shorter or almost equal, c1-d1/c1=0.9–1.0); 6) d1 protruding from bases of e1, d1/l(e1-e1)= 1.1–1.3 (not protruding, d1/l(e1-e1)=0.6–0.8); 7) On tarsus I, aa and ba placed on same transverse level (ba placed distally of aa, approximately at level of la). Characters 5–7 should be verified when more material is available.

**TYPES:** Holotype (marked by ink arrow): Λ – Primorskiy kray, Far Eastern Marine Reserve, Rimskogo-Korsakova Is., Bol’shoy Pelis Is., sea debris (mainly Zostera), leaves of *Quercus mongolica* Fischer ex Turczaninow and *Q. dentata* Thunberg (Fagales, Fagaceae), 5 Jun. 1999 (P. Klimov leg.); Paratype: Λ – on same slide as holotype. Holotype and paratype are deposited in the Institute of Biology and Pedology (Vladivostok, Russia).

**ETYMOLOGY:** The specific name is dedicated to Dr A. Fain (Antwerp, Belgium), who described the genus *Paulacarellus*.

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