

# NEW RECORD OF *POROLOHMANNELLA VIOLACEA* (KRAMER, 1879) (ACARI, HALACARIDAE) FROM JAPAN

BY Hiroshi ABÉ \*

HALACARIDAE  
TAXONOMY  
NEW RECORD  
JAPAN

HALACARIDAE  
TAXONOMIE  
NEUES VERZEICHNIS  
JAPAN

HALACARIDAE  
TAXONOMIE  
RELEVÉ NOUVEAU  
JAPON

ABSTRACT : *Porolohmannella violacea* (KRAMER) is newly recorded from Japan, and is compared with material from England. There is no critical morphological difference between materials from these two localities.

ZUSAMMENFASSUNG : *Porolohmannella violacea* (KRAMER) wird zum erstmal aus Japan verzeichnet, und mit Material aus England verglichen. Der grossen Unterschied zwischen den beiden Materialien wird nicht gefunden.

RÉSUMÉ : *Porolohmannella violacea* (KRAMER) a été récoltée pour la première fois au Japon, et elle est comparée au matériel original d'Angleterre. On n'a pas trouvé de différence morphologique critique entre les animaux de ces deux localités.

## INTRODUCTION

Recently, one *Porolohmannella* species has been discovered from Japan. After detailed examination, this species was identified with *Porolohmannella violacea* (KRAMER) which has been recorded from Europe, North America and Greenland. This is the first record of this species from Asian region.

Terms and the systems of notation for numerical data follow NEWELL (1947, 1967, 1984).

Abbreviations used : *AD*, anterodorsal plate ;

*PD*, posterodorsal plate ; *OC*, ocular plate(s) ; *AE*, anterior epimeral plate ; *PE*, posterior epimeral plate(s) ; *GA*, genitoanal plate ; *ds*, dorsal seta(e) ; *aes-i*, anterior epimeral seta(e) ; *aes-ii-lat (-v)*, lateral (ventral) seta(e) of coxa(e) II ; *pes-iii-lat (-v)*, lateral (ventral) seta(e) of coxa(e) III ; *pes-iv-a (-p)*, anterior (posterior) seta(e) of coxa(e) IV ; *Hal-39*, specimen code of the author's personal system. In the present paper the code is given only to the described specimen.

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Genus *Porolohmannella* Viets, 1933  
(New Japanese name : Nise-lohmann-dani-zoku)

*Porolohmannella violacea* (Kramer, 1879)  
(New Japanese name : Sumire-nise-lohmann-dani)  
(Figs. 1-4)

*Leptognathus violaceus* KRAMER, 1879 : 147, Pl. 8, Figs. 1-4.

*Trouessartella violacea* (Kramer) LOHMANN, 1901 : 303.  
*Lohmanella* [laps.] *violacea* (Kramer) WALTER, 1917 : 421,  
Figs. 12-13.

*Lohmannella violacea* (Kramer) LUNDBLAD, 1920 : 225,  
Figs. 24-28; VIETS, 1924 : 121; VIETS, 1927 : 464,  
Figs. 1-2.

*Porolohmannella violacea* (Kramer) VIETS, 1936 : 530,  
Fig. 627; MARI and MORSELLI, 1985 : 73, Figs. 1-2;  
GREEN and MACQUITTY, 1987 : 144, Fig. 59.

Materials examined. Japanese specimens : 2 females, among detritus in ponds, Uryuu swamp, alt. ca. 900 m, Hokkaido, Japan, 21-vi-1987, H. ABÉ

coll. 1 female, locality as above, 17-vii-1988,  
H. ABÉ coll. English specimens : 2 females, River  
Rothay, England, 24-x-1985, J. GREEN coll.

FEMALE (*Hal-39*) : Idiosoma 483 µm long, 317 µm wide.

Dorsum (Fig. 1 A) : Dorsal plates clearly reticulated with panels (Fig. 4 D). Dorsal setae short and fine. *AD* incised with membranous cuticle anterolaterally, furnished with weak areolation posteromedially, a pair of dorsal pores at 0.32. *PD* ornamented with a pair of lateral weak areolation at about 0.30, and a pair of medial weak areolation at about 0.70, furnished with paired marginal dorsal pores (Fig. 4 B) at 0.42 and 0.88, respectively. *OC* furnished with two weak areolations and single cornea, with one dorsal pore and pore-like structure at anterolateral corner.

Chaetotaxy of dorsal region : *ds-i* on *AD* at 0.41; *ds-ii* and *ds-iii* on *OC* at 0.20 and 0.91, respectively; *ds-iv*, *ds-v*, *ds-vi* on *PD* at 0.28, 0.42 and 0.96, respectively.

Venter (Fig. 1 B) : Ventral plates ornamented in

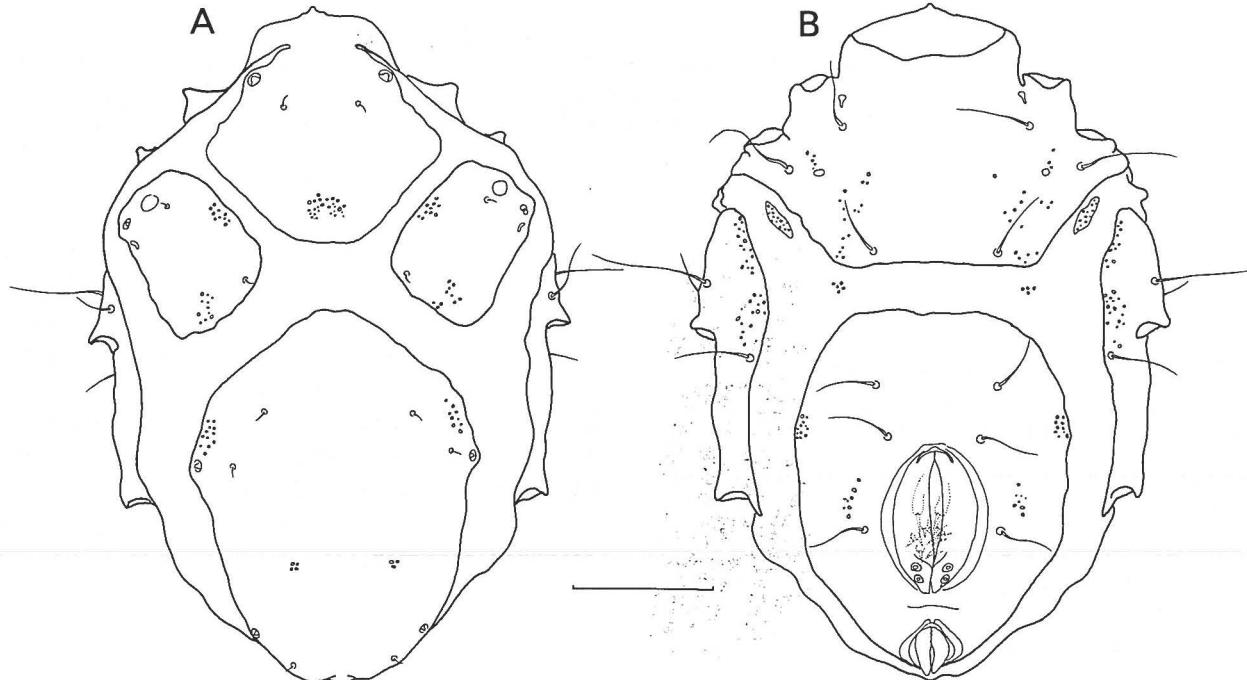


FIG. 1 : *Porolohmannella violacea*, female.  
A. — Idiosoma (dorsum); B. — Idiosoma (venter). Scale bar = 100 µm.

a manner similar to dorsal plates. Ventral setae long and fine. Paired clusters of tiny subsurface pores located on membranous cuticle between *AE* and *GA*. *AE* furnished with a pair of epimeral pores at level slightly posterior to insertion of leg II, and tiny subsurface pores on posterolateral half. *PE* marked with small subsurface pores along anteroventral portion. Small platelet (Fig. 1 B) 24  $\mu\text{m}$  long, 10  $\mu\text{m}$  wide, weakly sclerotized, placed on each side between *AE* and *PE*, ornamented with subsurface pores.

Chaetotaxy of epimeral region : *aes-i* on *AE*, at level just posterior to insertion of leg I; *aes-ii-lat* on *AE*, at posterolateral corners of *AE*; *aes-ii-v* on *AE*, separated from posterior margin by about three alveolar diameters; *pes-iii-lat* on *PE*, placed anterodorsally to insertion of leg III; *pes-iii-v* on *PE*, placed anteroventrally to insertion of leg III; *pes-iv* near ventral margin of *PE*, at level slightly posterior to insertion of leg III.

Genitoanal region (Fig. 1 B) : *GA* furnished with paired cluster of lateral and medial tiny subsurface pores at 0.30 and 0.55, respectively. Genital foramen (Fig. 4 A) furnished with two pairs of round

external genital acetabula on posterior portion of genital sclerites. Ovipositor bearing two long and ten short spiniform structures.

Chaetotaxy of genitoanal region : Three pairs of perigenital setae at 0.19, 0.34 and 0.63, respectively. Subgenital setae lacking. Without setae on anal papilla.

Gnathosoma (Fig. 2 A) : Gnathosomal length/idiosomal length 0.52. Basal portion dorsally ornamented with paired small cluster of panels, laterally and ventrally ornamented with many panels except for a portion of subtriangular pharyngeal plate. Anterior margin of tectum sharply pointed. Rosstrum faintly divided at 0.25 of gnathosoma, with four pairs of fine rostral setae (three distally, one proximally). Chelicera (Fig. 2 B) narrowed at about distal 2/3 portion; movable digit bearing several minute denticles along dorsal edge; fixed digit membranous, extending distally to about half level of movable digit. Palp (Fig. 2 C) divided into four segments; femur about three times as long as other segments; tibiotarsus with two long and one short filiform setae proximally, one short spiniform projection and three minute bacilliform setae distally.

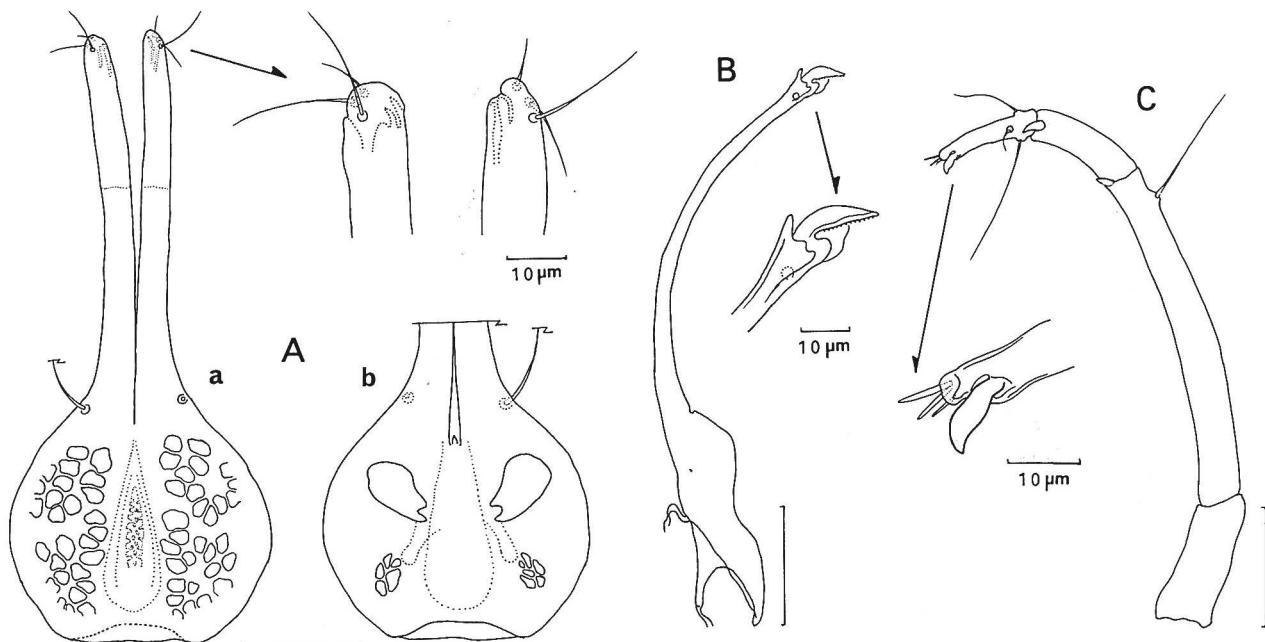


FIG. 2 : *Porolohmannella violacea*, female.

A. — Gnathosoma (a — venter, b — dorsum); B. — Chelicera (right); C. — Palp (right). Scale bars = 50  $\mu\text{m}$ , unless otherwise indicated.

Legs (Fig. 3 A-D) : All segments ornamented with faint reticulations. Tibia is longer than the other segments. Lateral claw with accessory tooth and fine comb (Fig. 4 F). Median claw lacking. Parambulacral setae single euphatidial. Leg chaetotaxy as follows : Trochanters I-IV, 1-1-1-0 ; basifemora, 2-2-2-2 ; telofemora, 4-4-3-3 ; genua, 6-6-3-3 ; tibiae, 8-8-7-6. As regards strongly pectinated setae (Fig. 4 C) as follows : Genua I-IV, 1-1-

0-0 ; tibiae, 2-2-2-2. Tarsus I with three dorsal filiform setae, one dorsal papilliform structure (Fig. 4 E), two parambulacral setae, and one bacilliform solenidion. Famulus indistinct. Tarsus II with three dorsal filiform setae, one bacilliform solenidion, and two parambulacral setae. Tarsus III with four dorsal filiform setae and two parambulacral setae. Tarsus IV with three dorsal filiform setae and two parambulacral setae.

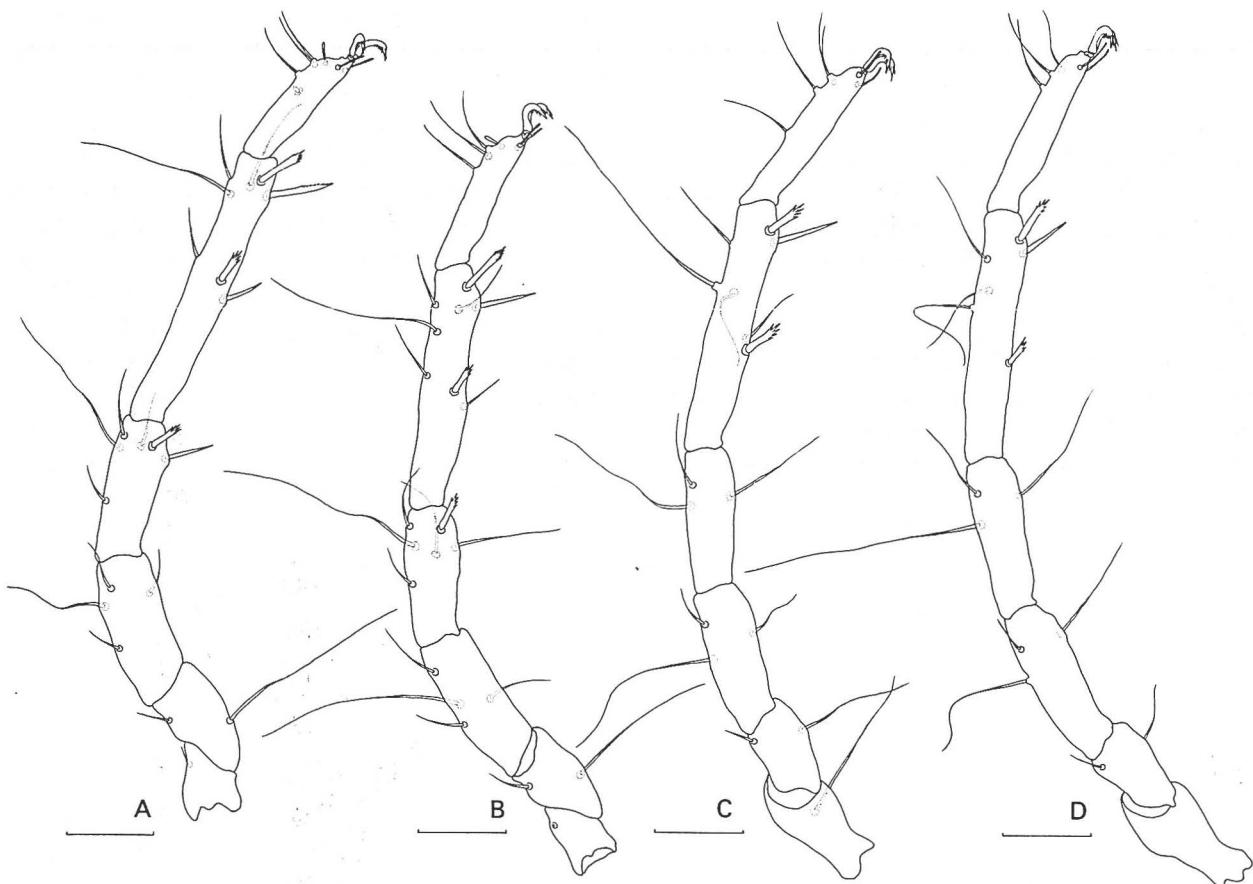


FIG. 3 : *Porolohmannella violacea*, female.

A. — Leg I (left); B. — Leg II (left); C. — Leg III (right); D. — Leg IV (right). Scale bars = 50  $\mu\text{m}$ .

Morphological variation : Among four specimens studied here, one Japanese specimen without setae on trochanter of leg I, and one English specimen with one additional seta on tibia IV. English specimens without strongly pectinated setae on leg IV.

Distribution : Nearly holarctic ; Europe (including

western part of U.S.S.R.), Greenland, North America, Japan.

#### REMARKS

Whereas GREEN and MACQUITTY (1987) noted that the present species from England has "claws

with no comb ", both Japanese and English materials of the present study have combed claws. SVENONIUS (1951) has also clearly shown the presence of combs on lateral claws in the present species.

The present specimens have small platelets between the anterior and the posterior epimeral plates. MARI and MORSELLI (1985) also observed the presence of these platelets in the present species. However, there has been no reference to such platelets in other *Porolohmannella* species. These platelets are tiny and very weakly sclerotized so that they might have been overlooked.

MARI and MORSELLI (1985) noted the presence of a unique papilliform structure (Fig. 4 E) on the

dorsomedial side of each tarsus of the first legs. The present SEM observation shows that this structure has a morphology specific to the chemosensory organs. Since such structure has not been recorded in other halacarid species, the presence of this structure might be a generic or specific character.

ANGELIER (1953) made re-description of the present species on the basis of the specimens from the Corsican coast in France, in which he figured one pair of dorsal setae on membranous cuticle, and five pairs of perigenital setae on the genitoanal plate. Since conditions of these characters do not accord with the present materials, he probably described a different species.

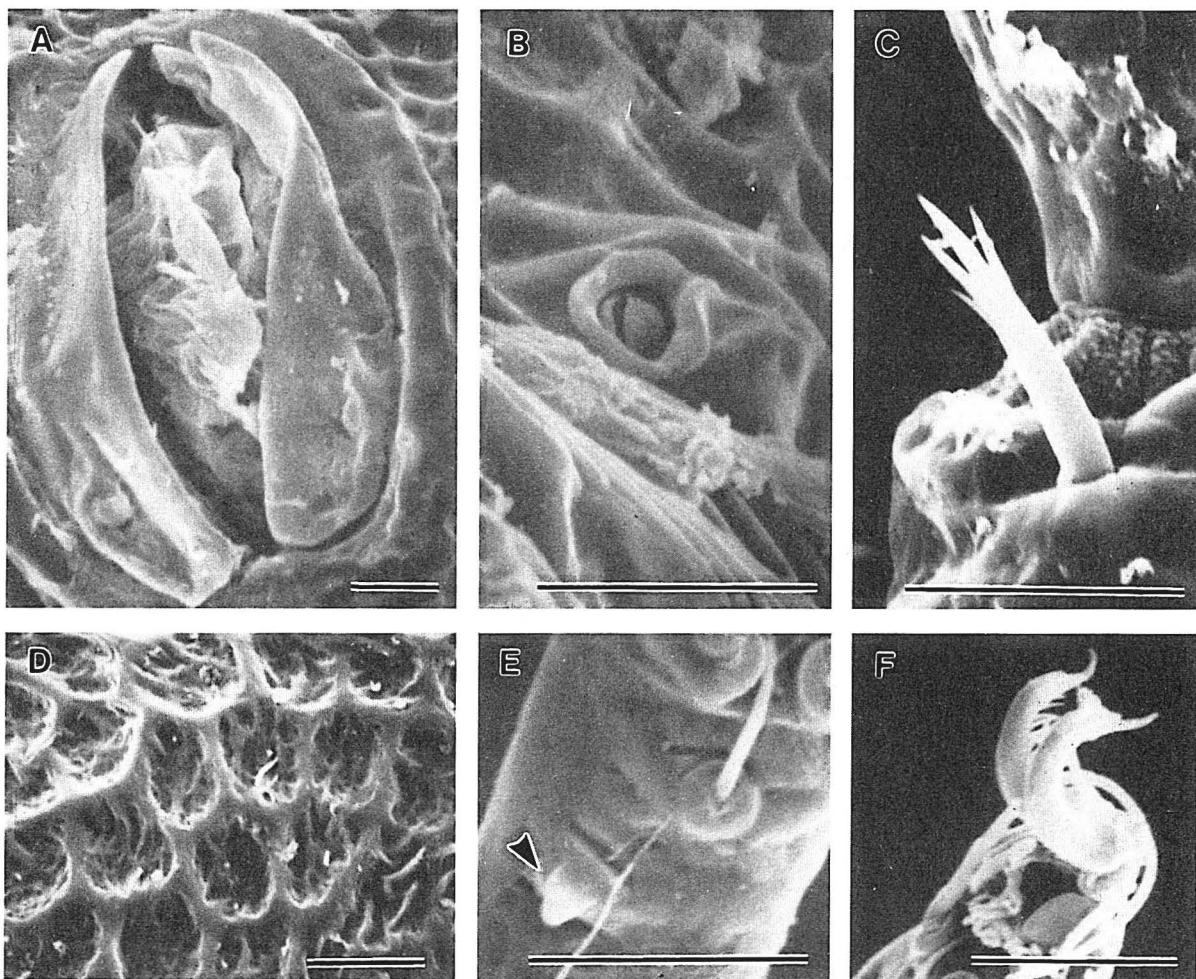


FIG. 4 : *Porolohmannella violacea*, female.

A. — Genital foramen ; B. — Dorsal pore on anterior left of PD ; C. — Strongly pectinated seta on telofemur I ; D. — Surface structure on PD ; E. — Papilliform structure on dorsum of tarsus I (indicated by arrow) ; F. — Claws on tarsus I. Scale bars = 10  $\mu$ m.

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