

Oribatid Mites Collected from Drift Litter on the Beach of Daikoku-jima Island, Hokkaido (Acari: Oribatida)

Jun-ichi AOKI¹⁾

Abstract. Two new oribatid mites, *Hermannia shimanoi* sp. n. and *Liacarus chiebunensis akkeshi* subsp. n., were found from drift litter on the beach of Daikoku-jima Island, North Japan. *H. shimanoi* is distinguishable from the close relatives of the genus by the fewer number of genital setae, the thick adanal setae and the rostral setae often bifurcate. *L. chiebunensis akkeshi* differs from the nominate subspecies in the longer median dent of lamellae and the shorter notogastral setae.

Key words: Oribatida, *Hermannia shimanoi*, *Liacarus chiebunensis akkeshi*, new species, new subspecies, Daikoku-jima Island, drift litter

Daikoku-jima is a small island located off the eastern coast of Hokkaido, North Japan. A natural history survey was done there by the leadership of Prof. Hisatake Okuda. A drift litter sample was collected on the beach by Dr. S. Shimano and sent to the author for extraction and study of oribatid mites. As the result, two species of oribatid mites were found from the sample, representing a new species and a new subspecies, which are described below.

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Hermannia shimanoi sp. n.

(Figs.3 and 4A, B)

Measurement. Body length 750(834)910 μ m, width 400(450)500 μ m.

Prodorsum. Rostral setae very finely roughened, often bifurcate at tip (Fig.3C). Lamellar setae finely roughened, strongly curved inward. Interlamellar setae lanceolate, slender leaf-shaped, narrowing toward tip, nearly half as long as their mutual distance. Sensillus short, clavate, weakly swollen and barbed in distal half (Fig.3B). Dorsal surface covered by distinct network.

Notogaster. Notogaster rather slender, its L/W 1.31-1.40(av.1.35). The anterior half showing a peculiar pattern of network and the posterior half showing longitudinal

lines (Figs.3A and 4B). Notogastral setae (except *ps*-series) comparatively long; their RLN(relative length to notogaster) = 13.5-17.5. Mutual distance $h1-h1 > f1-f1 > e1-e1 > ps1-ps1 > d1-d1 > c1-c1$. Lateroabdominal gland opening(*gla*) situated close and median to seta *f2*. Lyrifissure *im* between setae *d2* and *e2*; *ip* between setae *f2* and *h2*.

Epimeral region. Setal formula of epimerata:3-1-4-6. Setae *3c*, *3d*, *4c*, *4d* and *4e* longer than the remaining setae. Lateroposterior corner of epimeron I well projecting posterolaterally. A small, but conspicuous projection found on the posterolateral corner of epimeron II.

Ano-genital region(Fig.3D). Genital plate covered by network structure, provided with 5-8(usually 7 or 8) genital setae; the result of examination of the number of genital setae on 13 specimens (left-right): 5-8, 6-6, 7-7, 7-7, 7-7, 7-8, 7-8, 7-8, 8-7, 8-7, 8-8, 8-8, 8-8. Three aggenital setae on each side very long, only a little shorter than genital plate, weakly swollen and rounded at tip. Anal plate narrow, surface finely striated longitudinally, with 2 (exceptionally 3) setae in anterior part; a distinct longitudinal ridge separating anal plate into two parts, a darker median part and a lighter lateral part. Pre-anal plate triangular, bifurcate in posterior part. Three adanal setae on each side thorn-like, fairly long, almost as long as width of anal plate. Ventral plate with a prominent rectangular or rounded swelling on each side just behind the insertion of leg IV.

Type-series. Holotype (NSMT-Ac 11658) and 27 paratypes (NSMT-Ac 11659-11669): Daikoku-jima Island, Akkeshi, Hokkaido, 17-X-2005, S. Shimano. From drift litter on the beach. The type series is deposited in the collection of National Science Museum, Tokyo.

¹⁾ Kanagawa Prefectural Museum of Natural History
499 Iryuda, Odawara, Kanagawa 250-0031, Japan
神奈川県立生命の星・地球博物館
〒250-0031 神奈川県小田原市入生田 499
ja-muck@ma.rosenet.ne.jp

Remarks. In the genus *Hermannia* four species have both network anteriorly and longitudinal striae posteriorly on the surface of notogaster. They can be distinguished from one another by the following key.

1. Genital plate with 5-8 (usually 7 or 8) setae; adanal setae rather long and thick; epimerata IV with 6 pairs of setae; rostral setae often bifurcate; body length 750-910 μm*H. shimanoi* sp.n
 – Genital plate with 9 setae; adanal setae short and fine; epimerata IV with 6 or 7 pairs of setae; rostral setae simple.....2
2. Epimerata IV with 7 setae; sensilli short; lateroposterior corner of epimerata I rectangular; body length 940-1130 μm
*H. pseudonodosa* Woas, 1981
 – Epimerata IV with 6 setae; sensilli rather long; lateroposterior corner of epimerata I projecting posteriorly.....3
3. Anal sclerites narrow; body not so elongate; network covering more than anterior half of notogaster; body length 800-860 μm .
*H. polystriata* Woas, 1981
 – Anal sclerites broad; body elongate; network covering only 1/3 of notogaster.; body length 680-750 μm
*H. gracilis* Woas, 1978

Etymology. The new species is named after Dr. Satoshi Shimano, who is an excellent young taxonomist of oribatid mites and collected the drift litter sample containing this interesting new species..

***Liacarus chiebunensis akkeshi* subsp. n.**

(Figs.4C, D and 5)

Measurement. Body length 870(973)1070 μm ; width 520(583)650 μm .

Prodorsum. Rostrum (Fig.5B) consisting of a median swelling and a small sharp dent on each side; the median swelling with a rounded or triangular nodule underneath on each side. Lamellar cusp narrow and tube-like; the median dent between them well developed, but never reaching the tip of cusps, nearly half as long as cusps or a little longer (Figs.4C and 5A). Irregular longitudinal wrinkles found on lamellar surface. Lateral sides of prodorsum densely granulate. Rostral, lamellar and interlamellar setae fairly thick, slightly roughened. The ratio of $ro : le : in = 1.4-1.6 : 2.0 : 2.6-3.0$. Sensillus with a lanceolate head, the tip not so sharply pointed; surface of sensillus almost glabrous, very



Fig.1. The sampling point on Daikoku-jima Island. White arrow: location of Daikoku-jima Island; black arrow: the sampling point.

slightly roughened.

Notogaster. Oval, humeral parts smoothly rounded, the widest part found rather in anterior portion. Eleven pairs of notogastral setae very minute except for the posterior pairs (ps_1). Four pairs of lyrifissures short, but distinct.

Ventral side. Genital plates with 6 pairs of setae; among them setae g_4 located most distant from median margin of the plates; distance $g_4-g_5 = g_5-g_6 > g_3-g_4 > g_2-g_3 > g_1-g_2$. Anal plates with 2 pairs of setae; mutual distance $an_1-an_1 = an_2-an_2$. Three pairs of adanal setae subequal in length; distance $ad_1-ad_2 < ad_2-ad_3$. Adanal fissures iad aligned transversely in most cases. In epimeral region sternal ridge developed in various ways, sometimes complete, sometimes only between $apo.sj$ and $apo.3$. Setal formula of epimerata: 3-1-3-3; all the setae long.



Fig.2. The sampling location on the beach (A) and drift litter(B).

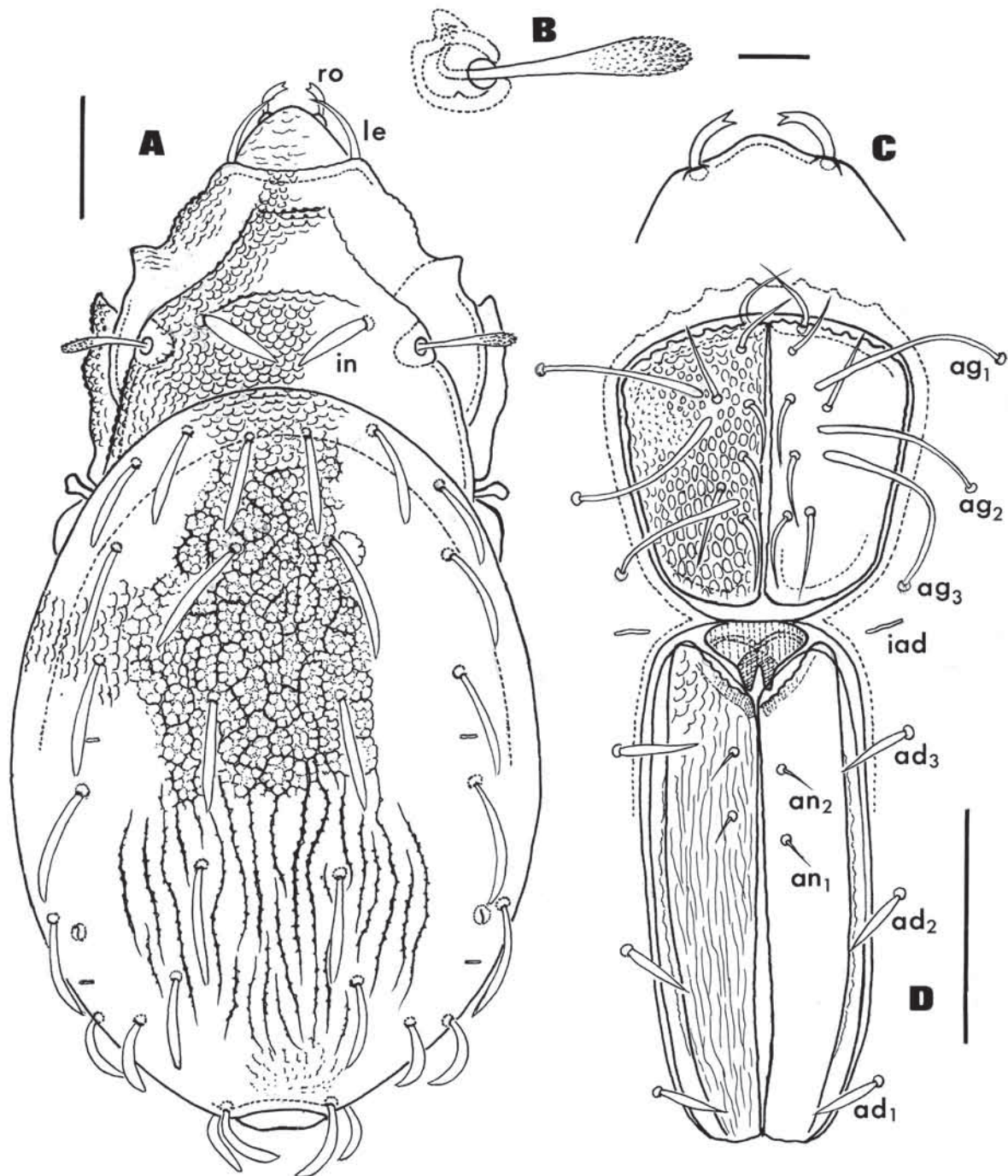


Fig.3. *Hermannia shimanoi* sp. n. A: Dorsal aspect of body. B: Sensillus. C: Rostrum with bifurcate rostral setae. D: Ano-genital region. Scale bars: 100 μ m for A and D, 20 μ m for B and C.

Type-series: Holotype (NSMT-Ac 11529) and 11 paratypes (NSMT-Ac 11530-11531, 11633-11635): Daikoku-jima Island, Akkeshi, Hokkaido, 17-X-2005, S. Shimano. From drift litter on the beach.

Remarks. *Liacarus chiebunensis* was described from Nayoro City of Hokkaido by Fujita and Fujikawa(1984). The nominate subspecies, *L. chiebunensis chiebunensis*, differs from the new subspecies, *L. chiebunensis akkeshi*, in (1) the shorter median dent between lamellar cusps, (2) the adanal fissures *iad*

aligned obliquely, (3) the sensilli more sharply pointed at tip and more distinctly roughened, and (4) the longer notogastral setae.

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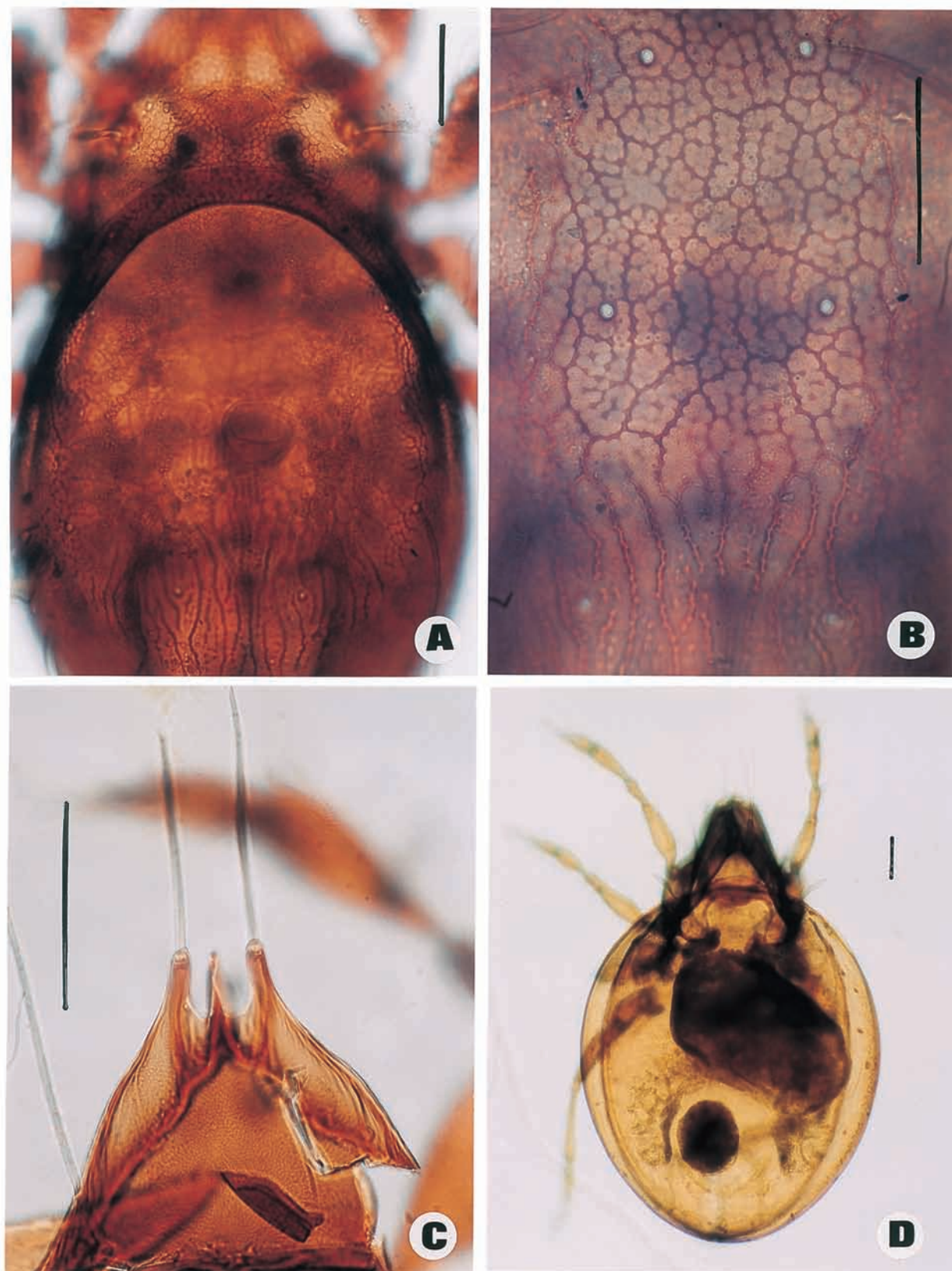


Fig.4. *Hermannia shimanoi* sp. n. (A, B) and *Liacarus chiebungensis akkeshi* subsp.n.(C,D). A: Dorsal side. B: An enlarged photo of notogastral surface, showing a peculiar pattern of network. C: Lamellae and lamellar setae. D: Dorsal side. Scale bars: 100 μm.

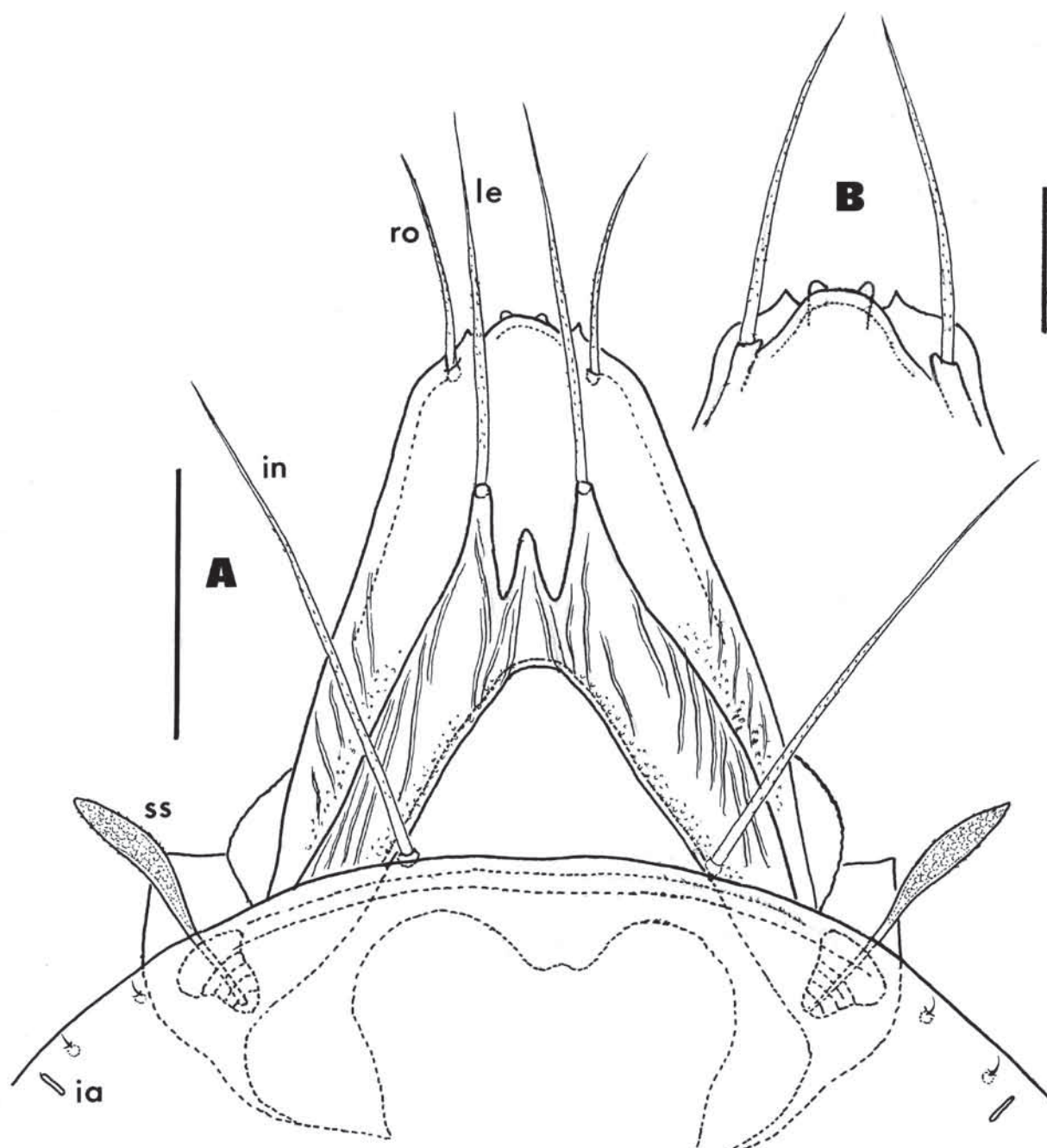


Fig.5. *Liacarus chiebunensis akkeshi* subsp. n. A: Prodorsum and the anterior part of notogaster. B: Rostrum. Scale bars: 100 μ m for A and 50 μ m for B.

摘 要

J.Aoki, 2006. Oribatid Mites Collected from Drift Litter on the Beach of Daikoku-jima Island, Hokkaido (Acari: Oribatida). *Bull. Kanagawa prefect. Mus. (Nat. Sci.)*, (35): 61-65. (青木淳一, 2006. 北海道大黒島海岸の打上げ漂着物から見出されたササラダニ類. 神奈川県立博物館研究報告(自然科学), (35): 61-65.)

北海道厚岸沖の大黒島において、海岸に漂着した植物破片や海藻などが島野智之博士(宮城教育大学環境教育実践研究センター助教授)によって採取され、ササラダニ類の研究のために筆者に送付された。この試料をツルグレン装置にかけてダニ類の分離抽出をはかったところ、2種のササラダニ類が多数個体得られ、それらの分類学的研究の結果、1新種および1新亜種とすべきものであることがわかった。本報告ではこれらをシマノニオウダニ *Hermannia shimanoi* sp. n. (ニオウダニ科) およびアッケシツヤタマゴダニ *Liacarus chiebunensis akkeshi* subsp. n. (ツヤタマゴダニ科) として記載した。

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