

Taxonomic Studies on Soil Mites (Acari: Oribatei) of Korea*

韓國產 土壤棲息性응애(응애목: 날개응애아목)의 分類에 관한 研究*

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ABSTRACT In the course of the taxonomic study on oribatid mites from Korea, the author obtained one new genus, 5 new species, 1 new subspecies, and 5 species unrecorded in Korea for the first time. They are *Koreoribates foliatus* gen. n., sp. n., *Hermannia neutricha* sp. n., *Xylobates geonjiensis* sp. n., *Defectamerus sungohi* sp. n., *Protoripoda flagellata* sp. n., *Liacarus gammatus coreanus* ssp. n., *Liacarus polychothomus* Wen, 1991, *Tectodamaeus armatus* Aoki, 1984, *T. striatus* Enami et Aoki, 1988, *Oripoda trilabiata* Hammer, 1961, and *Domitorina tuberculata* Aoki, 1984. And keys to the species and subspecies of genera *Liacarus*, *Defectamerus*, and *Protoripoda* are present. All the specimens are deposited at the Lab of Plant Protection, Coll. of Agr., Won Kwang Univ., Iri, Korea.

KEY WORDS Taxonomic, Acari, Oribatei, Korea

초 록 한국산 날개응애류의 분류에 관한 연구중에 1신속 5신종 1신아종과 5종의 한국미기록종이 밝혀졌기에 보고하는 바이다. 신속은 파도날개응애속(*Koreoribates*), 5신종은 한국파도날개응애(*Koreoribates foliatus*), 지리산인왕응애(*Hermannia neutricha*), 건지산도포소태응애(*Xylobates geonjiensis*), 성오민동정응애(*Defectamerus sungohi*), 긴털뚜껍응애(*Protoripoda flagellata*)이며 신아종은 흑달갈응애(*Liacarus gammatus coreanus*)이고 미기록종은 북방달갈응애(*Liacarus polychothomus*), 감웃활엽주응애(*Tectodamaeus armatus*), 등줄활엽주응애(*T. striatus*), 머리뚜껍응애(*Oripoda trilabiata*), 흑팔자지개응애(*Domitorina tuberculata*) 등이다. 아울러 달갈응애속의 한국종, 민동정응애속, 이리뚜껍응애속(신칭)의 검색표를 작성하였고 송산달갈응애의 오기체를 바로잡았다.

검색어 분류, 응애목, 날개응애아목, 한국

Family Unduloribatidae Kunst, 1971 (파도날개응애과: 신칭)

***Koreoribates* gen. n.**
(파도날개응애속)

[**Diagnosis**]. Ten pairs of notogastral setae. Lamellae broad with long and wide cusps. Lamellar setae leaf-shaped. Genital plate with 6 pairs of setae. Epimeral setal formula: 3-1-3-1. Tarsi tridactylous.

Type species. *Koreoribates foliatus* sp. n.

This new genus most closely related to genus *Unduloribates* Balogh, 1943 in the whole shape of body and setae, but the latter is distinguishable from the former by the following characters: ① lamellar

setae whip-like with rather thickness. ② setal formula of epimerata: 2-2-3-2 ③ nine pairs of genital setae arranged on a line along the medial margin on genital plate.

***Koreoribates foliatus* sp.n.(Fig.1)**
(한국파도날개응애)

Material examined. Holotype: Mt. Mai(400 m above the sea level), Jinan-gun Chonbuk, Southwest Korea. 25-VIII-1992, Y. L. Kwon.

Measurement. Body length: 520 μm, width: 350 μm (including pteromorpae).

Description. Prodorsum. Completely hidden beneath lamellae. Rostrum slightly triangular in outline,

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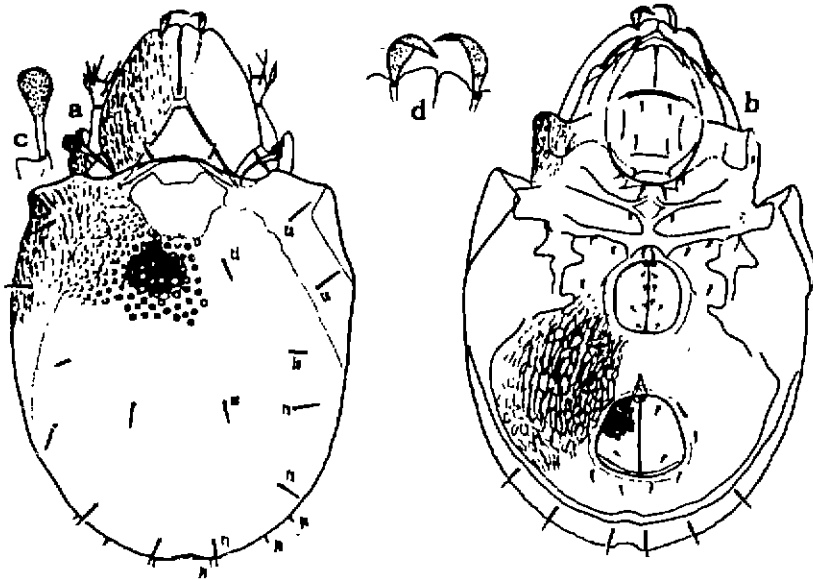


Fig. 1. a-d: *Koreoribates foliatus* gen. n., sp. n., a: Dorsal, b: Ventral, c: Sensillus, d: Rostral setae.

but the edge not clear. Rostral setae relatively thick at basal part, tapering, faintly rough at distal part, slightly incurved, and inserted at the tip of the lateral ridge of prodorsum and the tip of the setae almost extending to the rostral margin. Lamellae broad with long and broad cusp. The cusp well extended beyond rostrum, roundly cut apically, and slightly concaved medially and inner part of them weakly angulated. The slit between lamellar cusps very narrow; some inner part overlapping each other; the bottom of slit drop-shaped. Surface of lamellae distinctly rugose, but not so distinct on the anterior part of cusp. Lamellar setae leaf-like, minutely rough, incurved, and inserted at the bottom of apical concavity of the cusp. Bothridium cup-shaped, some of basal part covered by anterior border of notogaster. Interlamellar setae short, stiff, erect, blunt, rough, and located at the posterolateral corner of triangular area of posterior prodorsum. The tip of triangular area clearly truncated. Sensillus club-shaped with a dense barb, oval head upwards, but pedicel directed anterolaterally.

Notogaster. Humeral part of notogaster a little protruding anteriorly, the posterior margin broadly rounded, but weakly concaved between setae p_1 . The surface of notogaster distinctly bright and smooth ornamented with almost light circular foveo-

lae except the anteromedial area. The surface of pteromorphae well rugose. Ten pairs of notogastral setae short, thick, stiff, blunt at tip, and slightly rough. Fissure *im* aligned transversely and located closer to seta r_3 than to seta *te*.

Ventral side. Gnathic and epimeral surface relatively smooth. Apodemata II and SJ well developed, meeting medially on sternal ridge. Apodemata SJ forming a broad arch in front of genital aperture, setae 3a inserted behind the arch. Apodemata II forming medially a diamond-shaped area. Apo. III and IV short. Setal formula of epimerata 3(2?)-1-3-1(2?). Epimeral setae stiff, erect, blunt at tip, slightly rough, and shorter than notogastral setae, but the setal pore distinct. Pedotecta I well developed. Pedotecta-complexes II-III markedly developed in ventral view and seem to be nearly rectangular. Pedotecta IV small and triangular in ventral view. Surface of anogenital field rugose with irregular reticulation. Genital aperture relatively large, but the length of it longer than the width. Chitinous thickening around genital opening distinct anteriorly but faint posteriorly. Anal aperture far wider posteriorly than anteriorly. Mutual distance between genital aperture and anal one almost equal to or shorter than their length. Six pairs of genital setae very thin, short, and hardly discernable, but only their setal pores

distinct; anterior 4 pairs of setae inserted close to the medial margin, but posterior 2 pairs (g_1 and g_2) at some distance from the margin. A pair of aggenital setae smaller than epimeral ones, located closer to genital aperture than to anal one. And the mutual distance of setae wider than the width of genital aperture but nearly equal to the width of anal one. Anal plates ornamented with a faint irregular foveolae, bearing 2 pairs of small anal setae. Three pairs of adanal setae similar to epimeral ones, 2 pairs of them (ad_1 and ad_2) located on posterior part of anal aperture. Adanal fissure (iad) relatively long, located along the anterolateral margin of anal aperture, and aligned obliquely. All tarsi: tri-dactylous; middle claw stronger than lateral one.

This new genus, *Koreoribates*, is described as the second member of family Undoribatidae Kunst, 1971. Two species, *U. undulatus* (Berlese, 1914) and *U. hebes* Aoki, 1965, were recorded in the type genus *Unduloribates* of the family. The type locality of type species, *U. undulatus* (Berlese, 1914), is 2,300 m above the sea level in Sandrio, Northern Italy and that of the same species found by Hammer, 1977, is 3,500 m above the sea level at alpine area in Northwestern Pakistan. The type locality of *U. hebes* described by Aoki in 1965 is 2,800~3,500 m above the sea level at Himalayas. Therefore, it seems that the species of genus *Unduloribates* are alpine ones.

I wish to express my sincere thanks to Prof. J. Aoki, of Yokohama National University in Japan for his useful advice and reading the manuscript. I am also grateful to Dr. T. Fujikawa (Japan) for providing important literatures concerning this species.

Family Hermannidae Sellnick 1928

Genus *Hermannia* Nicolet, 1855

Hermannia neutricha sp. n. (Fig. 2)

(지리산인왕응애)

Material examined. Holotype: Mt. Jiri, Unbongmyun, Namweon-gun, Chonbuk. Southern Korea. 30-VII-1987. 45 paratypes: the same data as the holotype. by S. S. Choi.

Measurement. Body length; 840(878)976 μ m. wi-

dth; 486(516)592 μ m.

Description. Prodorsum. Rostrum rounded. Rostral setae spiniform, glabrous, and inserted marginally. Lamellar and interlamellar setae bacilliform, blunt at tip, and rough. Transversal chitinous ridge present at the anterior part of lamellar setae. Sensillus lanceolate, glabrous, straight, and blunt at tip. Oblique band-like chitinous ridge at the present anterior part of bothridium. Bothridium outward. The ratio of prodorsal setae $in>le>ro$. Interlamellar and lamellar setae slightly longer than their mutual distance and almost equal to rostral ones.

Notogaster. Outline of notogaster ovaliform. Notogastral surface punctate; sixteen pairs of notogaster setae present: their shape bacilliform, blunt at tip, and rough. Setae ps_3 shorter than others. Posterior margin of notogaster slightly protruding, transversal band-like chitinous ridge present, and ps_1 and ps_2 inserted on the ridge.

Ventral side. Apodemes well developed; nodules present on apodemata IV. Epimeral region with neotrichy; epimeres 3 and 4 with 4~7, therefore, the setal formula; 3-1-4-7 (some specimens 8 or 9 on epimerata 4); the setae long, thin, filiform, and flagellate. Nine pairs of genital setae short and minute, two pairs of aggenital setae longer than genital ones. Two pairs of anal setae longer than genital ones but shorter than adanal ones. Three pairs of adanal setae setiform, among them ad_1 stronger than ad_2 or ad_3 . Lyrifissures (iad) located on anterolateral side of anal aperture.

Legs. Reticulation present on the surface of femur of legs. All tarsi monodactylous.

Remarks. The present new species is closely related to *H. convexa* (C. L. Koch, 1840) in the whole shape of body and dorsal setae. However, the former differs from the latter in the following features; ① Body size distinctly large (1,170-1,350 \times 830-900 μ m in *H. convexa*). ② Epimeral setae short, setiform and their formula 3-1-5-5 or 3-1-5-7. ③ Adanal setae distinctly phylliform.

H. hokkaidensis Aoki et Ohnishi, 1974, previously (1987) reported by me in Korea should be regarded as a new species.

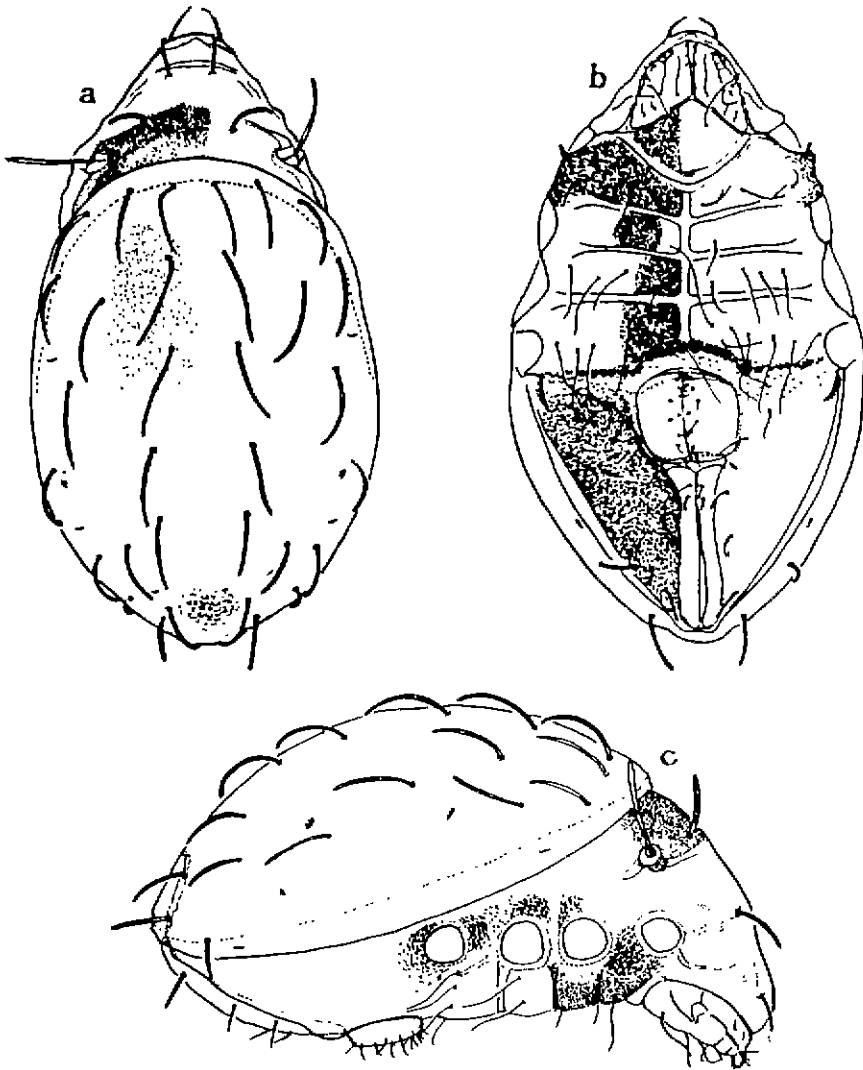


Fig. 2. a-c. *Hermannia neutricha* sp. n., a: Dorsal, b: Ventral, c: Lateral

Family Xylobatidae J. Balogh et P. Balogh, 1984
Genus *Xylobates* Jacot, 1929

Xylobates geonjiensis sp. n. (Fig. 3)
(건지산도포소매응에)

Material examined. Holotype: Mt. Geonji, Chonjoo-shi, Chonbuk. Southern parts of Korea. 25-IV-1993. 2 paratypes: from the same sample.

Measurement. Body length; 404(420)430 μ m, width; 184(192) 200 μ m.

Description. Prodorsum. Rostrum rounded, but its middle weakly protrudent from anterior margin

of prodorsum. Rostral setae thin, smooth, inserted on the dorsal surface far laterally, and shorter than their mutual distance. Lamellar setae short, thin, and inserted at some distance anterior area of lamellar tip. Interlamellar setae rather thick, long and distinctly barbed. The ratio of prodorsal setae $in > ro > le$. Sensillus typically long reclinate stalk, dilated head tapering. The half distal part of stalk and the head bear with strong and short bristles. The lamella broad proximally, tapering, and connected with weak transversal line. The surface of prodorsum sparsely punctate, but none at posterior part

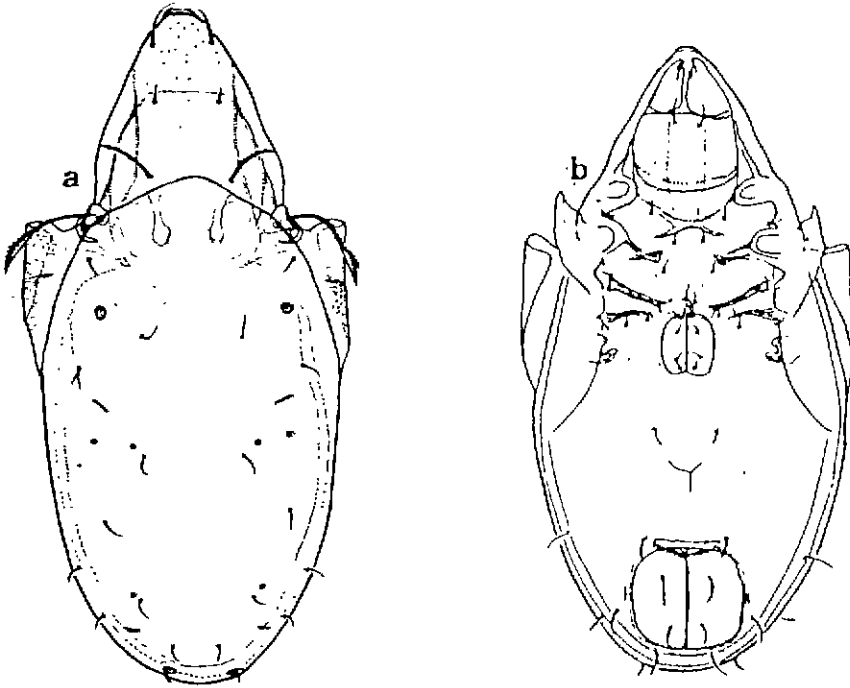


Fig. 3. a, b: *Xylobates geonjiensis* sp. n., a: Dorsal, b: Ventral.

Notogaster. Dorsosejugal suture slightly convex medially, but very thin. Anterior border of pteromorphae weak incision laterally to bothridium. Ten pairs of notogastral setae very thin and short. Four pairs of area porosae present; A_a round and much larger than the others, A_1 and A_2 almost equal, and A_3 larger than A_1 . Their mutual distance of A_1-A_1 and A_2-A_2 about the same, but shorter than that of A_a-A_a . The distance of setae $ti-ti$, $ms-ms$, and r_2-r_2 approximately equal

Ventral side. Epimeral plate smooth and sparsely punctate. Sejugal apodemata well developed, long, and reaching near to the anterolateral corner of genital aperture. Epimeral setae formula: 3-1-3-2(3?), all the setae thin and short. Anogenital setal formula: 5-1-2-3, all the setae smooth. Fissure iad located parallel to the lateral side of anal aperture. All legs monodactylous.

Remarks. The new species is similar to *X. paracapucinus* Mahunka, 1988 but differs from the latter by ① Their mutual distance of area porosae A_1-A_1 shorter than that of A_2-A_2 ② The size of area poro-

sae A_3 almost equal to that of A_1 and A_2 . ③ Notogastral setae minute. ④ Adanal seta ad_3 distinctly shorter than ad_1 and ad_2

Family Ameridae Grandjean, 1965
Genus *Defectamerus* Aoki, 1984

***Defectamerus sungohi* sp.n. (Fig.4)**

(성오민동정응애)

Material examined. Holotype: Mt. Kubong, Jangseong-gun, Chonnam, Southern Korea. 23-V-1987. by Sung-oh Yoo. 6 paratypes: the same data as the holotype. 11 paratypes: Mt Seolak Kangweondo. 10-X-1933.

Measurement. Body length; 664-688 μm . width; 424-432 μm .

Description. Prodorsum. Rostrum typically in the genus tripartite; the median projection larger than lateral ones. Rostral setae long, whip-like, glabrous, and weakly incurved. Lamellar and interlamellar setae thick, straight, and slightly rough. Bothridium directed laterad, with a lateroposterior projection, and

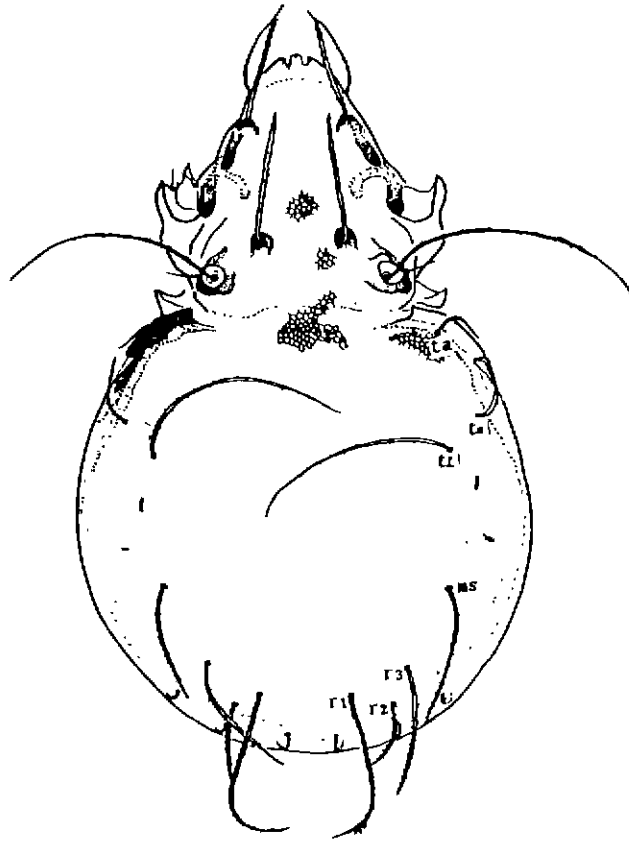


Fig. 4. *Defectamerus sungohi* sp. n.

located at far distance from each other. Surface between interlamellar setae and bothridium faintly reticulate (medial and posterior part of prodorsum faintly reticulate). Sensillus long, whip-like, slightly rough, and stretchy outwards.

Notogaster. Dorsosejugal suture lacking, invalid line. Humeral projection distinct. Anterior and humeral part of notogaster faintly reticulate. Ten pairs of notogastral setae distinct, various in length, among them 5 pairs (*ti*, *ms*, *r*₁, *r*₂, *r*₃) markedly longer, thicker than others and slightly barbed. The posterior setae downwards

Ventral side. Epimeral plate smooth and all apodemes indistinct. Epimeral setae relatively long, smooth, and setiform; their formula: 3-1-3-3. Anogenital plate smooth. Six pairs of genital setae present, anteriormost one the longest among them, but shorter than the epimeral one. One pair of aggenital,

2 pairs of anal, and 3 pairs of adanal setae present. Adanal setae much longer than anal ones. Adanal fissure aligned parallel to the margin of anal aperture. All tarsi monodactylous

Remarks. The genus *Defectamerus* was elected by Aoki, 1984, on the basis of *D. crassisetiger* from Japan. The new species is the fourth member of the genus. Only type species was described from Japan, and the others were reported from Korea. The distinguishing character of the species is the number of notogastral setae.

I dedicate the new species to Dr. Sung-oh Yoo, Professor of Won Kwang University, In, Korea, for providing the materials.

Keys to the species and subspecies of genus *Defectamerus*

1. Eight pairs of notogastral setae 2

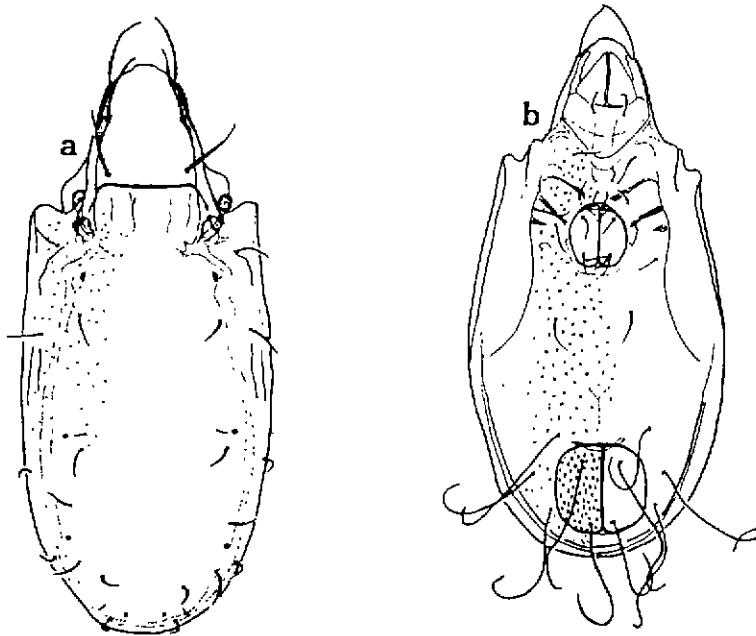


Fig. 5. a, b: *Protoripoda flagellata* sp. n., a: Dorsal, b: Ventral.

- More than 8 pairs of notogastral setae.....3
- 2. Notogastral setae *ti* much shorter than the length of notogaster. 610-660×380-450 μm. Japan, Korea.....*crassisetiger* Aoki, 1984
- Notogastral setae *ti* longer than or almost equal to length of the notogaster. 510-570×310-350 μm. (large form 660-700×410-460 μm.) Korea.....*crassisetiger coreanus* Choi et Aoki 1985.
- 3. Nine pairs of notogastral setae. 560-620×380-420 μm. Korea, China.....*soonkii* Choi et Aoki, 1985.
- Ten pairs of notogastral setae. 664-688×424-432 μm Korea.....*sungohi* sp.n.

Family Oripodidae Jacot, 1925
Genus *Protoripoda* J. Balogh, 1970

***Protoripoda flagellata* sp.n. (Fig.5)**
 (긴털뚜껑응애)

Material examined. Holotype: Mt. Mai, Maryungmyun, Jinan-gun, Chonbuk, Southern parts of Korea. 26-IV-1992 One paratype: from the same sample. by S. S. Choi.

Measurement. Body length; 488 μm, 440 μm. width, 223 μm, 166 μm.

Description. Prodorsum. Sparsely punctuated on whole surface. Rostrum rounded, its middle slightly protruded. Rostral, lamellar and interlamellar setae rather long, setiform, and barbed. Lamella narrow, marginally located. Sensillus short, fusiform and its apex round, rough, and partly covered by anterior margin of pteromorphae.

Notogaster. Elongate, the length about 1.5 times as long as the width. Surface sparsely punctuated. Dorsosejugal suture straight, an arcuate incision (above sensillus) between pteromorphae and dorsosejugal suture. Ten pairs of notogastral setae very fine. Four pairs of sacculi found on notogaster; Sa elongate and a little larger than the others.

Ventral side. Sculpture of ventral surface sparsely punctuated. Anogenital setal formula: 4-1-2-3. Adanal and anal setae very long and flagellate. Anal plate finely punctuated. All tarsi tridactylous.

Remarks. The new species is closely related to *P. insulis* Balogh, 1970 from New Guinea, however, the latter differs from the former by the shape of rostrum(narrow, rounded, projecting) and the posi-

tion of notogastral setae *ti*.

Keys to the species of genus *Protoripoda*

1. Anal and adanal setae long, thin, and flagellate.....2
 - Anal and adanal setae setiform and not flagellate.....3
2. Rostrum narrow, rounded, and projecting. Notogastral seta *ti* inserted at a level between *ta* and *te*. 352.8×186.2 μm, New Guinea.....
 - insularis* Balogh, 1970.
 - Rostrum rounded, its middle slightly projecting. Notogastral seta *ti* located nearer to *te* than to *ta*. Notogaster distinctly elongate. 440×160 μm. Korea..... *flagellata* sp.n.
3. Notogastral surface smooth, interlamellar setae simple and setiform. Notogastral surface without a polygonal pattern.....4
 - Notogastral surface covered by polygonal pattern of secretion granules. Interlamellar setae thick.....5
4. Lamella broad, running along marginally, without translamella. Epimeral region with longitudinal creases. Prodorsal setae distinctly barbed. 445-475×223-267 μm. Seychelles.....
 - lineta* Mahunka, 1988
 - Lamellae narrow, connected by a liner translamella at cuspides. Prodorsal setae setiform. Epimeral region without longitudinal creases. 421×265 μm. New Guinea.....
 - woolleyi* Balogh, 1970.
5. Interlamellar setae phylliformly broad toward distal apex and ciliated in longitudinal rows. 396-431×203-243 μm. Seychelles.....
 - tuberculata* Mahunka, 1988.
 - Interlamellar setae thick, distinctly barbed, and blunt at tip. 396×212 μm. Kenya... *ornata* Mahunka, 1986.

Family Liacaridae Sellnick, 1928

Genus *Liacarus* Michael, 1898

Liacarus gammatus coreanus sp.n. (Fig.6a,b)
(흑달갈응애)

Material examined. Holotype: Mt. Naejang, Jeongeup-gun, Chonbuk, Southern parts of Korea 3-X-1985. Three paratypes: the same data as the ho-

lotype and 27-I-1992 One paratype; Mt. Gubong, Jangseong-gun, Chonnam, Southern Korea. 23-III-1986. One paratype; Around Temple Donghak, Daejeon, 21-II-1986. by S. S. Choi

Measurement. Body length: 695-750 μm

Distinguishing character. By the original description of nominate species, *Liacarus gammatus* Aoki, 1967, in Japan, the shape of sensillus short and spindle-shaped, its pointed apex distinctly shorter than the swollen portion. However, the sensillus of new subspecies spindle-shaped, its apical slender portion distinctly barbed and shorter than or almost equal to the swollen portion in length. *Liacarus gammatus* Aoki, 1967, previously (1987) reported by me from Korea, should now be regarded as the new subspecies.

Keys to the species and subspecies of genus *Liacarus* from Korea.

1. With a median mucro between lamellar cusps.2
 - Without a median mucro between lamellar cusps.6
2. Mucro large, distinctly longer than lamellar cusps.3
 - Mucro small, much shorter than lamellar cusps.5
3. Sensillus clavate and very short. 890-1,145×560-700 μm. Japan, Korea..... *breviclavatus* Aoki, 1970.
 - Sensillus rather long and thin.4
4. Sensillus with clavate-lanceolate. 857-1,057×543(586)643 μm. Japan, Korea..... *acutidens* Aoki, 1965.
 - Sensillus with thin stalk, swollen middle, and pectinate, setiform distal tips. 1,071×685 μm. Japan, Korea..... *nitens* (Gervais, 1844)
5. Sensillus with clavate-lanceolate. 832-1,000×536-552 μm. China. Korea..... *polychothomus* Wen, 1988.
 - Sensillus with spindle-shaped; the apical slender portion of sensillus longer than the exposed portion of peduncle. 760(843)910×515(545)806 μm. Japan, Korea..... *yayeyamensis* Aoki, 1973.
6. Lamellar truncate at tip. Sensillus spindle-shaped, its apical slender portion longer than the

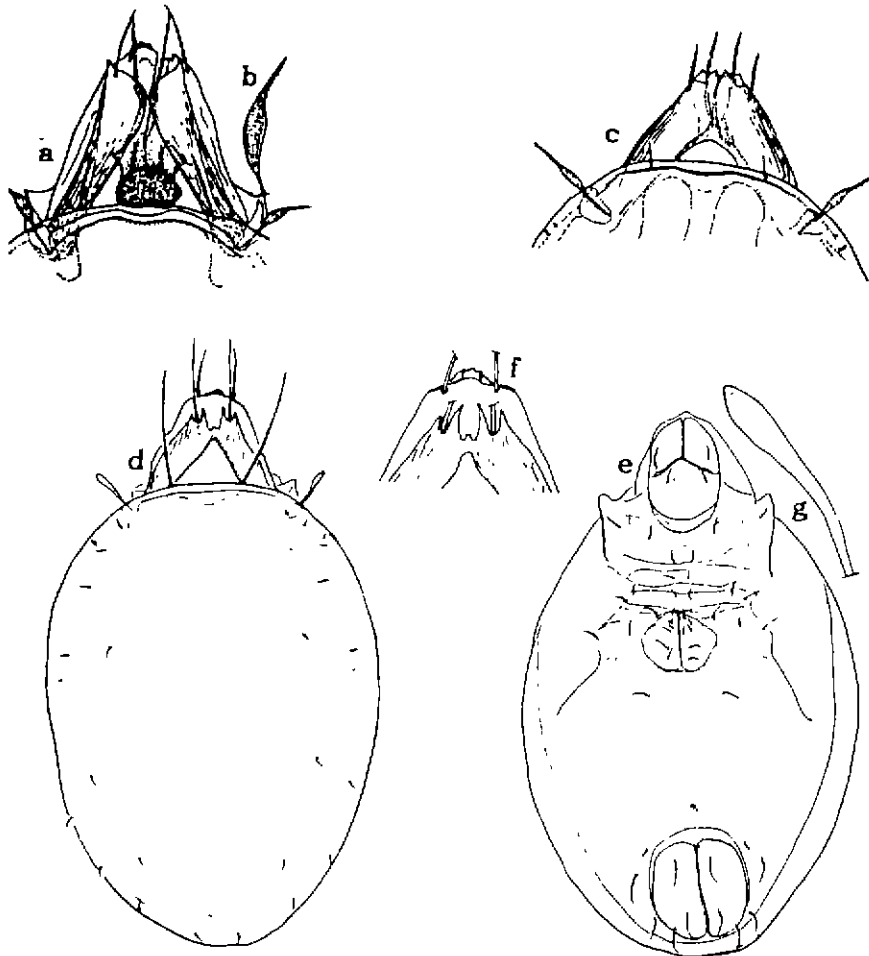


Fig. 6. a, b: *Liacarus gammatus coreanus* ssp. n., a: Prodorsum, b: Sensillus, c: *Liacarus kilchimi* Choi, d-g. *L. polychothomus* Wen, d: Dorsal, e: Ventral, f: Anterior part of prodorsum, g: Sensillus.

swollen portion on the postero-median part of prodorsum, rounded protuberance found, and the surface finely foveolated. 695-750 μ m. Korea.....*gammatus coreanus* ssp.n.
 - On the postero-median part of prodorsum smooth. Lamellar cusp without truncation...7
 7. Lamellar cusp rather short, cylindrical, and rounded at tip without a tooth. Sensillus clavate-lanceolate with a short peduncle 875-960 μ m. Japan, Korea.....*indentatus* (Aoki, 1973)
 - Lamellar cusp with a tooth. Sensillus spindle-shaped... ..8
 8. Tip of each cusp with a small tooth on each

side.....9
 - Tip of each cusp with a small inner tooth...10
 9. Interspace between lamellar cusps rather wide. 670 \times 450 μ m. Japan, Korea.....*flammeus* Aoki, 1967.
 - Interspace between lamellar cusps slited.....*kilchimi* Choi, 1985.
 10. Tip of each lamellar cusp bears an inner dens. Swollen portion of sensillus shorter than the setiform distal tip. 529(603)714 \times 286(345)400 μ m. Japan, Korea.....*contiguus* Aoki, 1968.
 - Near the base of lamellar seta(or on the inner side of each lamellar cusp) bears a small ang-

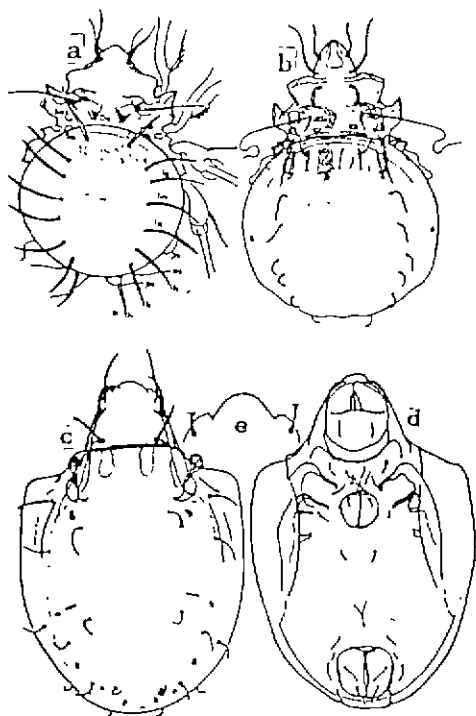


Fig. 7. a: *Tectodamaeus armatus* Aoki, b: *T. striatus* Enami et Aoki, c-e: *Oripoda trilabiata* Hammer, c: Dorsal, d: Ventral, e: Rostral margin. (a: after Aoki, b: after Enami et Aoki)

led structure. Sensillus thin and spindle-shaped. 850-930×540-590 μm.....*orthogonios* Aoki, 1959

***Liacarus polychothomus* Wen (Fig.6d-g)**

(북방달갈응애; 신칭)

Liacarus polychothomus Wen, 1991, p.4, figs.1-5.

Material examined. 4 exs., Mt. Mai, Maryungmyun, Jinan-gun, Chonbuk, Southern Korea. 26-IV-1993. by S. S. Choi.

Measurement. Body length: 832(902)1,000 μm, width; 536(546)552 μm.

Distribution. China, Korea.

Description. Prodorsum. Rostral margin small notch on each side and undulate at anterior edge; median portion almost rectangular; lateral part triangulate at tip. Lamella typical shape of the genus; cusp with two dens; inner tooth longer than outer ones and distinctly sharp. Rostral, lamellar, and interlamellar setae slightly rough and their ratio in le-

ngth: $in > le > ro$. Sensillus club-shaped and weakly rough on the swollen portion.

Notogaster. Whole shape of the notogaster oval, but the anterior margin almost straight. Ten pairs of notogastral setae minute.

Ventral side. Epimeral setal formula; 3-1-3-3 Anogenital setal formula; 6-1-2-3. All tarsi tridactylous.

Remarks. The characteristics of this species: ① a small median mucro, ② inner tooth of lamellar cusp longer than outer ones, and ③ sensillus club-shaped.

***Tectodamaeus armatus* Aoki (Fig.7a)**

(갑옷빨염주응애; 신칭)

Tectodamaeus armatus Aoki. 1984. p.110, fig.5.

Material examined. 2 exs., Mt Bakseok, Namweon, Southern Korea. 27-I-1992. by S. S. Choi.

Measurement. Body length: 870(943)1,051 μm, width: 610(650)715 μm

Distribution. Japan, Korea

***Tectodamaeus striatus* Enami et Aoki (Fig.7b)**

(등줄빨염주응애; 신칭)

Tectodamaeus striatus Enami et Aoki. 1988, p.33, figs. 1,2.

Material examined. 8 exs., Mt. Bakseok, Namweon, Southern parts of Korea. 21-I-1992. by S. S. Choi 2 exs., Mt. Hanla, Cheju-do, Korea. 6-V-1989. by S. S. Choi.

Measurement. Body length: 624(664)792 μm, width: 416(448)524 μm

Distribution. Japan, Korea.

***Oripoda trilabiata* Hammer (Fig.7c-e)**

(머리뚜평응애; 신칭)

Oripoda trilabiata Hammer, 1961, p.111, fig. 106

Material examined. 3 exs., Mt. Mai, Maryungmyun, Jinan-gun, Chonbuk, Southern Korea. 26-IV-1992. by S. S. Choi.

Measurement. Body length: 312(320)325 μm, width: 144(177)210 μm.

Distribution. Peru, Korea

***Domatorina tuberculata* Aoki (Fig.8)**

(흑팔자지계응애; 신칭)

Domatorina tuberculata Aoki, 1984, p.140. fig.

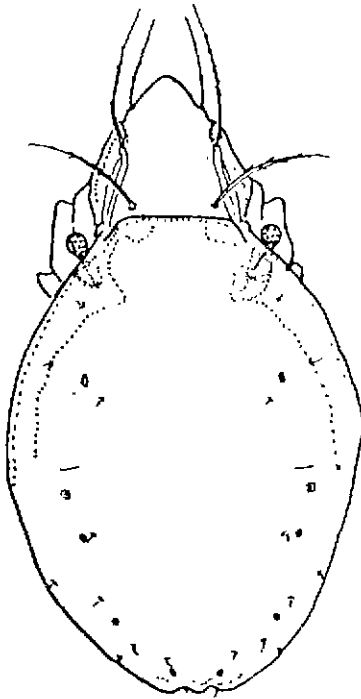


Fig. 8. *Dometorina tuberculata* Aoki

14.

Material examined. 2 exs., Area of Backyang-temple, Jangseong-gun, Chonnam Southern Korea. 27-I-1992. by S. S. Choi.

Measurement. Body length: 400 μ m, 420 μ m, width: 248 μ m, 280 μ m

Distribution. Japan. Korea.

Remarks. In original descriptions, the shape and several features of the type species from Japan are closely similar to Korean specimens. but the latter are larger than the former.

***Liacarus kilchini* Choi (Fig.6c)**

(송산달걀응애)

Liacarus kilchini Choi. 1985, p.68, fig.3.

Material examined. Six exs. Mt. Mai, Maryung-myun, Jinan-gun, Chonbuk. 29-V-1992. Seven exs. Mt. Daedun, Unjoo-myun, Wanjo-gun, Chonbuk 17-V-1992. Eleven exs. Mt. Naejang, Jeongeup-gun, Chonbuk. 27-I-1992. by S.S. Choi.

Measurement. Body length: 720 μ m, width: 464 μ m.

Remarks. I described a new species *Liacarus kilchini* from Korea in 1985. In the original description 'Interlamellar setae lacking' was misexamined by me. Recently, I reexamined the holotype and other specimens in detail. In fact, I found a pair of inter lamellar setae are inserted on the basal part of lamella, which is thin, simple, and short in shape.

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