

## Two New Species of *Scissuralaelaps* (Acarina, Laelapidae) Associated with Philippine Millipeds

By

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**Abstract** Two new mites of the genus *Scissuralaelaps* belonging to the gamasid family Laelapidae are described under the names of *S. bipartitus* and *S. breviseta*. They are associated with millipeds in the Philippine island, Mindanao.

The genus *Scissuralaelaps* was established by WOMERSLEY in 1945 for *S. novaguinea* collected from a millipede living on orchids on New Guinea, and at the same time, a second species, *S. queenslandica*, was also described. That the sternal shield is longitudinally divided down the middle is the feature most characteristic of the genus. In the present paper, the author is going to describe two new species of the same genus, which were found associated with millipeds in Mindanao Island, the Philippines. The type series used for this study are deposited in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo. Some duplicate specimens are retained in the collection of the Laboratory of Biology, Matsuyama Shinonome Junior College, Matsuyama, and the National Museum of the Philippines, Manila.

Before going further, the author wishes to express his hearty thanks to Dr. Hiroyuki MORIOKA, under whose leadership the expedition was carried out, to Mr. Masaaki TOMOKUNI, Dr. Mamoru OWADA, Professor Yoshiaki NISHIKAWA and Mr. Masahiro SAKAI, who participated in the expedition, and to the staff of the National Museum of the Philippines for conducting the research. Deep gratitude is also due to Professor G. W. KRANTZ, Department of Entomology, Oregon State University, U.S.A., for giving him useful information, to Dr. Shun-Ichi UÉNO for giving him valuable suggestions and criticism, and to Mr. Yoshiteru MURAKAMI, Niihama City, Ehime Pref., for identifying the Philippine millipeds. He is also indebted to Miss Mika SHIRAIISHI for her help in the course of this study.

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*Scissuralaelaps bipartitus* sp. nov.

[Japanese name: Muneaki-yasudedani]

(Fig. 1)

*Type series.* Holotype ♀ (NSMT-Ac 10269) and allotype ♂ (NSMT-Ac 10270): ex *Acladocricus philippinus* WANG, Mindopok, South Cotabato, Mindanao Is., 13–VIII–1985, K. ISHIKAWA. Paratypes: 8 ♀♀, 1 ♂, same data as for holotype.

*Female.* Length of idiosoma av. 860  $\mu\text{m}$ ; width of idiosoma at the level of coxae IV av. 548  $\mu\text{m}$ ; length of dorsal shield with a range of 703–768  $\mu\text{m}$ , av. 723.3  $\mu\text{m}$ , width of dorsal shield at the level of humerals with a range of 440–485  $\mu\text{m}$ , av. 459.0  $\mu\text{m}$ .

*Dorsum.* Dorsal shield entire, weakly reticulated, and provided with sixty to sixty-four pair of short simple setae and eighteen pair of pores. Length of setae (holotype): verticals 10.5  $\mu\text{m}$ , *z1* 7.1  $\mu\text{m}$ , *j2* 11.1  $\mu\text{m}$ , *j6* 6.0  $\mu\text{m}$ , *J1* 7.3  $\mu\text{m}$ , *J6* 15.0  $\mu\text{m}$  and humerals 11.6  $\mu\text{m}$ . The distribution of setae and pores are as shown in Fig. 1 A.

*Venter.* Tritosternum well developed, a pair of pilose laciniae more than twice longer than tritosternal base. Presternal shield absent. Sternal shield divided longitudinally, each shield provided with three simple setae and two lyrifissures. Metasternal shield absent, sternal setae IV and pores situated on unsclerotized cuticle. Epigynial shield tongue-shaped, and provided with a pair of short simple setae. Anal shield bearing a pair of adanal and a postanal setae. Two pair of metapodal shields conspicuous. Interscutal membrane posterior to epigynial shield provided with twelve pair of simple setae excluding lateral ones. Stigmata situated at a position antero-lateral to coxae IV. Peritremes extending antero-lateral to coxae I.

*Gnathosoma.* Epistome with smooth rounded median projection, and with several short spines on either side. Palpal apotele bearing two tines. Fixed digit of chelicera provided with three large and several small teeth, while movable digit (58  $\mu\text{m}$ ) is bidentate and slightly longer than corniculus (52  $\mu\text{m}$ ). Length of anterior hypostomatic seta 63  $\mu\text{m}$ , internal posterior hypostomatic seta 35  $\mu\text{m}$ , external posterior hypostomatic seta 32  $\mu\text{m}$  and deutosternal seta 29  $\mu\text{m}$ .

*Legs.* Each tarsus provided with claws and pulvilli; short spur absent. Leg II stouter than the others. Lengths of legs in the holotype: I 645  $\mu\text{m}$ , II 562  $\mu\text{m}$ , III 546  $\mu\text{m}$  and IV 617  $\mu\text{m}$ .

*Male.* Length of idiosoma 950  $\mu\text{m}$ , 840  $\mu\text{m}$ ; length of dorsal shield 950  $\mu\text{m}$ , 825  $\mu\text{m}$ ; width of dorsal shield at a level of coxae IV 680  $\mu\text{m}$ , 628  $\mu\text{m}$ .

Dorsal chaetotaxy and ornamentation similar to those of female. Holoventral shield provided with six pair of simple setae, in addition to three perianal setae and two pair of lyrifissures. Genital orifice situated on the anterior margin of holoventral shield. Fixed digit of chelicera provided with a large tooth and a pilus dentilis; movable digit (48  $\mu\text{m}$ ) unidentate, with a developed spermatodactyl. Each tarsus bearing claws and pulvilli. Tarsus II provided with five stout spurs; tibia and genua each with a stout spur; femur with two long stout spurs, a stout spur and a thumb-like apophysis. Lengths of legs in the allotype I 756  $\mu\text{m}$ , II 679  $\mu\text{m}$ , III 662  $\mu\text{m}$  and IV 785  $\mu\text{m}$ .

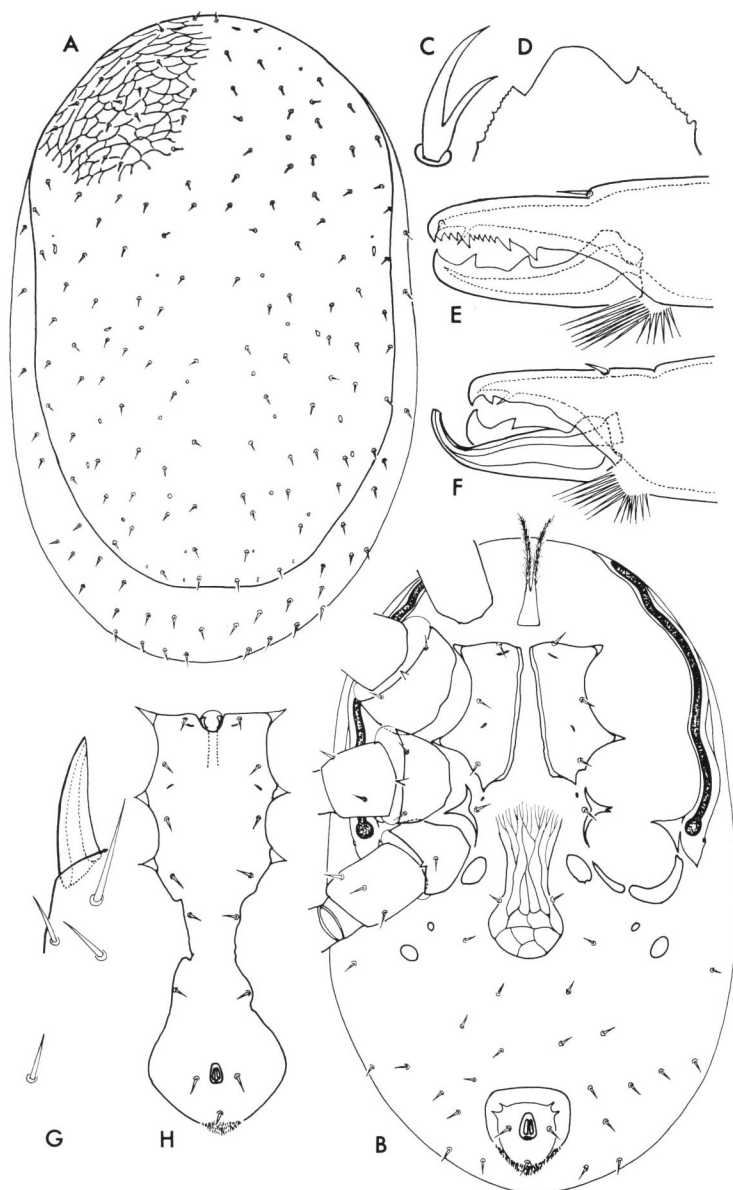


Fig. 1. *Scissuralaelaps bipartitus* sp. nov. (A-E, G, female; F, H, male).— A, Dorsum; B, venter; C, palpal apotele; D, epistome; E-F, chelicera; G, venter of gnathosoma; H, holovenral shield.

*Notes.* The present species is readily discriminated from *Scissuralaelaps novaguinea* WOMERSLEY, 1945, from a milliped on orchids from New Guinea, by the follow-

ing characteristics: opisthonotal part of dorsal shield provided with twenty to twenty-two pair of short simple setae, instead of about sixteen pairs; presternal shield absent, instead of being present; holovenral shield of male bearing six pair of simple setae excluding perianal setae, instead of ten pairs.

*Scissuralaelaps breviseta* sp. nov.

[Japanese name: Kotoge-muneaki-yasudedani]

(Fig. 2)

*Type specimen.* Holotype ♀ (NSMT-Ac 10271): ex *Trigoniulus* sp., Mindopok, South Cotabato, Mindanao Is., 13-VIII-1985, K. ISHIKAWA.

*Female.* Length of idiosoma av. 541  $\mu\text{m}$ ; width of idiosoma at the level of coxae IV av. 305  $\mu\text{m}$ ; length of dorsal shield with a range of 405–436  $\mu\text{m}$ , av. 425.2  $\mu\text{m}$ ; width of dorsal shield at the level of humerals with a range of 238–270  $\mu\text{m}$ , av. 248.7  $\mu\text{m}$ .

*Dorsum.* Dorsal shield entire, not completely covering dorsum, weakly reticulated, and provided with thirty-two pair of short simple setae and fourteen pair of pores. Length of setae (holotype): verticals 3.8  $\mu\text{m}$ , *z1* 4.0  $\mu\text{m}$ , *j3* 4.6  $\mu\text{m}$ , *j4* 5.0  $\mu\text{m}$ , *J1* 5.1  $\mu\text{m}$ , *J6* 7.0  $\mu\text{m}$  and humerals 8.0  $\mu\text{m}$ . The distribution of setae and pores are as shown in Fig. 2 A.

*Venter.* Tritosternum consisting of rectangular base and a pair of long pilose laciniae. Presternal shield absent. Sternal shield separated longitudinally, each bearing three simple setae and two lyrifissures. Metasternal shield absent, sternal setae IV arising from unsclerotized cuticle. Epigynial shield tongue-shaped, and provided with a short simple setae. Anal shield subtriangular, bearing three perianal setae. Two pair of metapodal shields conspicuous. Interscutal membrane posterior to epigynial shield, provided with five pair of simple setae excluding lateral ones. Stigmata located at a position antero-lateral to coxae IV. Peritremes extending beyond coxae II. Egg relatively large as compared with body size of female; ovoviviparous.

*Gnathosoma.* Epistome with distally pointed median projection, flanked on either side by several small spined protuberances. Palpal apotele with two tines. Fixed digit of chelicera tridentate, while movable digit (33  $\mu\text{m}$ ) is bidentate and approximately equal in length to corniculus (31  $\mu\text{m}$ ). Length of anterior hypostomatic seta 22  $\mu\text{m}$ , internal posterior hypostomatic seta 12  $\mu\text{m}$ , external posterior hypostomatic seta 11  $\mu\text{m}$  and deutosternal seta 10  $\mu\text{m}$ . A stout spur associated with corniculus present.

*Legs.* Each tarsus provided with claws and pulvilli; stout spur absent. Leg II stouter than the others. Lengths of legs in the holotype I 392  $\mu\text{m}$ , II 352  $\mu\text{m}$ , III 315  $\mu\text{m}$  and IV 358  $\mu\text{m}$ .

*Male.* Unknown.

*Notes.* The present species is apparently distinguished from *Scissuralaelaps*

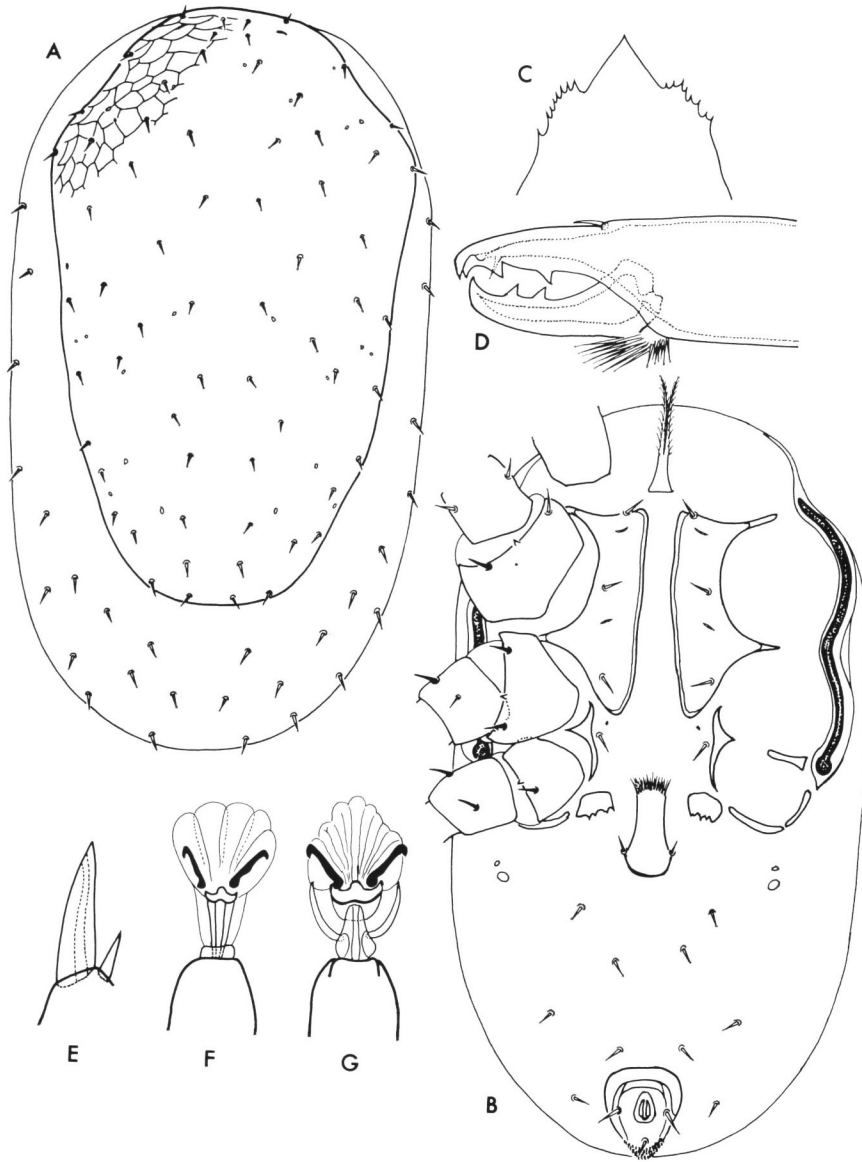


Fig. 2. *Scissuralaelaps breviseta* sp. nov., female. — A, Dorsum; B, venter; C, epistome; D, chelicera; E, corniculus and stout spur; F, claws and pulvillus of leg I; G, claws and pulvillus of leg II.

*bipartitus*, ex *Acladocricus philippinus* WANG, Mindopok, South Cotabato, Mindanao Is., by the following points: dorsal shield provided with thirty-two pair of short simple setae, instead of sixty to sixty-four pairs; a stout spur associated with corniculus absent,

instead of being present; epistome with distally pointed median projection, instead of rounded median projection; fixed digit of chelicera provided with three large teeth, instead of three large and eight small ones. So far as known up to now, the genus *Scissuralaelaps* has not been recorded from Asia; the Philippine species show a strong affinity to the New Guinean form.

### References

- ISHIKAWA, K., 1986. Gamasid mites (Acarina) associated with Japanese millipeds. *Rept. Res. Matsuyama Shinonome Jr. Coll.*, 17: 165-177.
- RYKE, P. A. J., 1959. A revision of the hypoaspid mites associated with Myriapoda with descriptions of three new species of the subgenus *Julolaelaps* BERL. (Acarina: Laelapidae). *Parasitology, New York*, 49: 6-22.
- WOMERSLEY, H., 1945. An interesting and primitive new genus of Laelaptidae (Acarina) from Australia and New Guinea. *Rec. S. Aust. Mus.*, 8: 225-228.