

ANNOTATIONES ZOOLOGICAE JAPONENSES

Volume 55, No. 4—December 1982

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Published by the Zoological Society of Japan

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Discovery of Torridincolidae (Coleoptera) in Japan

*With 21 Text-figures*

Masataka SATÔ

*Biological Laboratory, Nagoya Women's University,  
Nagoya, Aichi 468, Japan*

**ABSTRACT** A new torridincolid beetle belonging to the genus *Delevea* REICHARDT is described and illustrated under the name of *D. kurosawai* M. SATÔ, sp. nov. A redescription of the genus is also given herewith. This is the first record of the family Torridincolidae from Japan.

Since the family Torridincolidae was established by STEFFAN (1964) on the basis of the single species, *Torridincola rhodesiaca* from South Africa, 26 species distributed to 6 genera of the family have been known from Africa, Madagascar and South America. Though none of its members have hitherto been recorded from the Palearctic Region and the other parts of Asia, a torridincolid species was already obtained in 1948 by Dr. Yoshihiko KUROSAWA in Fukushima Prefecture, Northeast Japan. This must have been the first discovery of the family in the world, but the beetle has not been properly described for a long time.

Dr. KUROSAWA kindly gave me the opportunity to study the interesting specimens more than twenty years ago, suggesting that it should not belong to any of the beetle families then known. His opinion was preeminent as was amply proved later by STEFFAN (1964) and REICHARDT (1976), although I was unable to determine its true systematic position at that time. Since then, I have been able to examine many additional torridincolid specimens from Yamagata, Niigata, Ishikawa, Fukui, Hyôgo and Ehime Prefectures through the courtesy of the late Mr. K. SHIRAHATA, Dr. K. BABA, Prof. R. OHGUSHI, Prof. H. SASAJI, Mr. M. SAKAI, Mrs. A. SAKAI (A. ODA) and Mr. Y. NOTSU. Besides, I myself had a good opportunity to collect it and to observe its habitat in Miyagi Prefecture through the kind arrangement of Mr. and Mrs. T. WATANABE. According to my renewed study, all these specimens belong to a new species of the torridincolid genus *Delevea* REICHARDT.

In the present paper, the new Japanese torridincolid will be described under the name of *Delevea kurosawai*, together with a redescription of the genus.

Genus *Delevea* REICHARDT

*Delevea* REICHARDT, 1976, Rev. Zool. afr., 90: 209.

Type-species: *Delevea bertrandi* REICHARDT, 1976, by original designation.

Very small in size. Body oval, well convex, very sparsely covered with fine pubescence. Head small, prolonged anteriorly. Clypeus transverse, front-clypeal suture finely traced. Labrum well defined. Eyes lateral, moderate in size, coarsely faceted. Antennae inserted just in front of the inner sides of eyes, short, 11-segmented with a papilla on the terminal segment, two basal segments stout, the remaining segments clavate and compactly united. Mandibles pronounced, with distinct mola, movable subapical tooth and cutting tooth. Maxillae with single lobe, palpi 3-segmented, with papilla in the terminal segment. Labial palpi minute, 2-segmented. Mentum somewhat large. Gula distinct, elongate. Pronotum broader than long; sides narrowed anteriorly; lateral margins rimmed; surface provided with a median furrow which extends neither to the anterior margin nor to the posterior margin. Scutellum small. Elytra well convex, without stria; lateral margins rimmed. Hind wings reduced, without vein.

Ventral surface almost flattened. Prosternum transverse; anterior margin crenulate with pubescence; process broad with gently rounded apex; lateral carinae well defined. Mesosternum narrow; mesocoxal line well defined; anterior margin slightly emarginate. Metasternum large, bearing a short median longitudinal suture at the posterior portion. Metendosternite simply V-shaped. Epipleuron broad at apical half, abruptly narrowed at the side of 1st abdominal sternite, apical portion

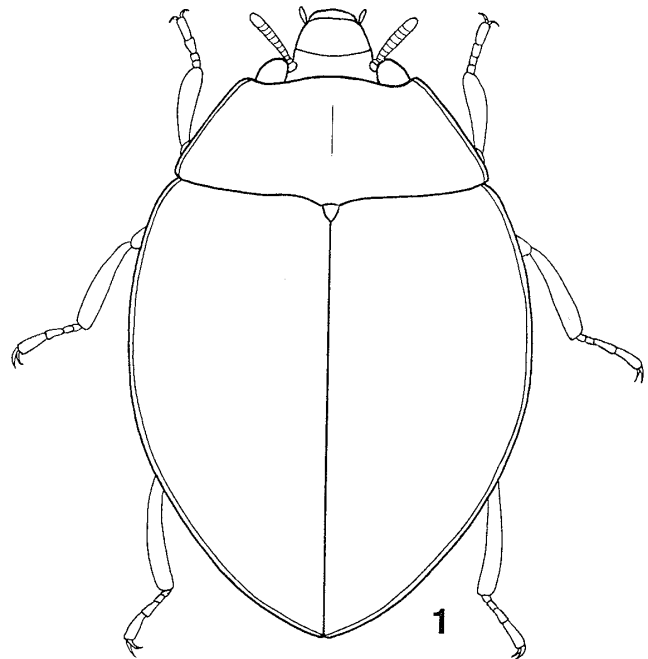
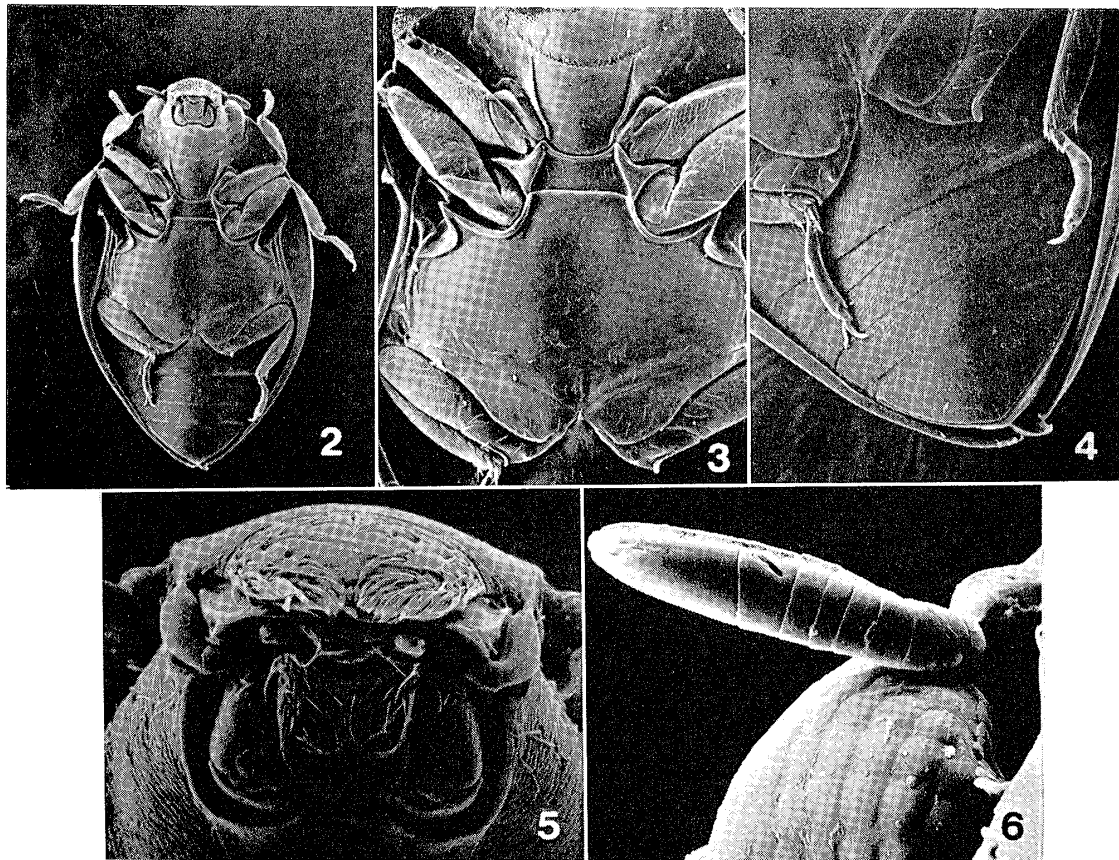


Fig. 1. *Delevea kurosawai*  
M. SATÔ, sp. nov.



Figs. 2-6. *Delevea kurosawai* M. SATÔ, sp. nov. —2, Ventral view of body; 3, close-up of pro-, meso- and metasterna; 4, close-up of abdomen; 5, ventral surface of head; 6, antenna. (Photo by Mr. M. SAKAI.)

depressed for reception of middle leg. Abdomen with 5 visible sternite, 1st sternite large and broader than metasternum, posterior margin of each sternite finely crenulate. Legs rather short, more or less flattened, sparsely pubescent; fore and middle coxae suboval; hind coxae elongate; fore and middle trochanters subtriangular; hind trochanter elongate, toothed at the middle of posterior margin; tibiae provided with some spines near apices and with some rows of setiferous punctures which are longitudinally arranged; tarsal formula 4-4-4; claws simple. Male genitalia of articulate type, provided with phallobase and a pair of parameres with long apical setae. Female genitalia simple, coxites without stylus.

*Range of distribution so far known:* South Africa and Japan.

Although the genus was erected for an African species, the Japanese torridicolid apparently falls in it as described above. It is distinguished from all the other described genera of the family by the 9-segmented antennae, the unstriated elytra and the pubescent body. Besides, it is characterized by the 5-segmented abdomen and the absence of plastron on the venter, which seem to be the indication of its primitiveness. This was already pointed out by REICHARDT (1976) in his original

description of the genus.

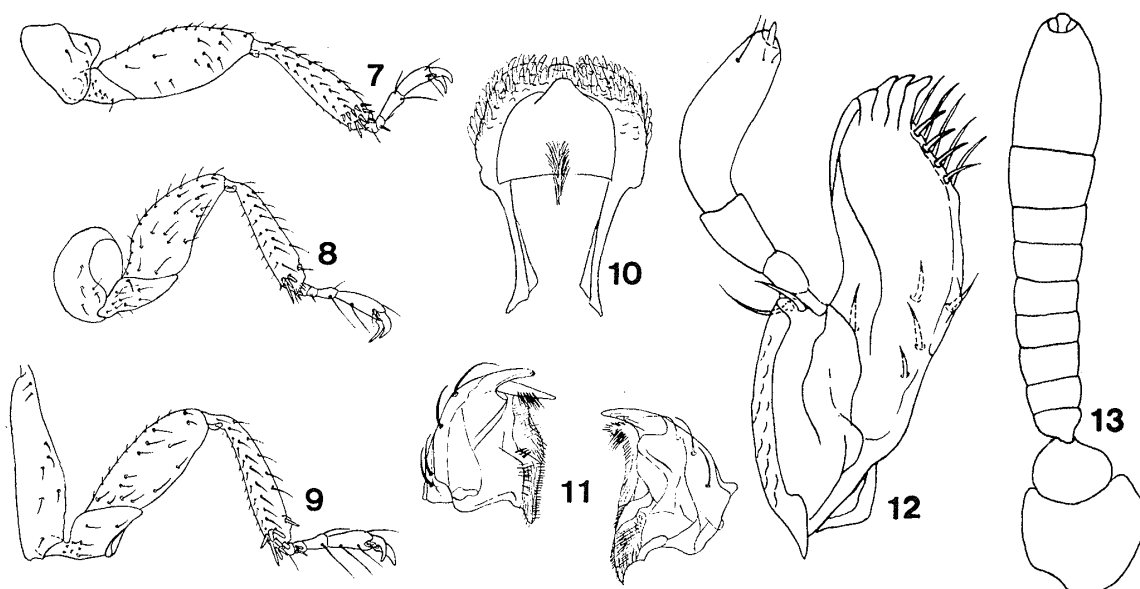
Until now, the genus has been recorded only from the Cape Province in South Africa. It has been regarded as one of the examples of Gondwana origin. The occurrence of its member in Japan is very interesting from the zoogeographical viewpoint, as the generic distribution now known becomes very widely discontinuous. This may not suggest that the Japanese fauna is directly related to the African one; more probable explanation is that the relicts of an old fauna are preserved both in Japan and in South Africa. It is, however, possible that certain representatives of the genus may be found in Southeast Asia by future investigations. Because of the extremely small size of the insects, they may have escaped from collectors' eyes up to the present.

*Delevea kurosawai* M. SATÔ, sp. nov.

(Figs. 1–20)

Dorsal surface, antennae, tibiae and tarsi blackish brown; ventral surface and appendages brown. Body ovate, somewhat shining, very sparsely covered with fine white pubescence all over, distinctly convex above, flattened beneath; dorsal surface almost entirely microreticulate.

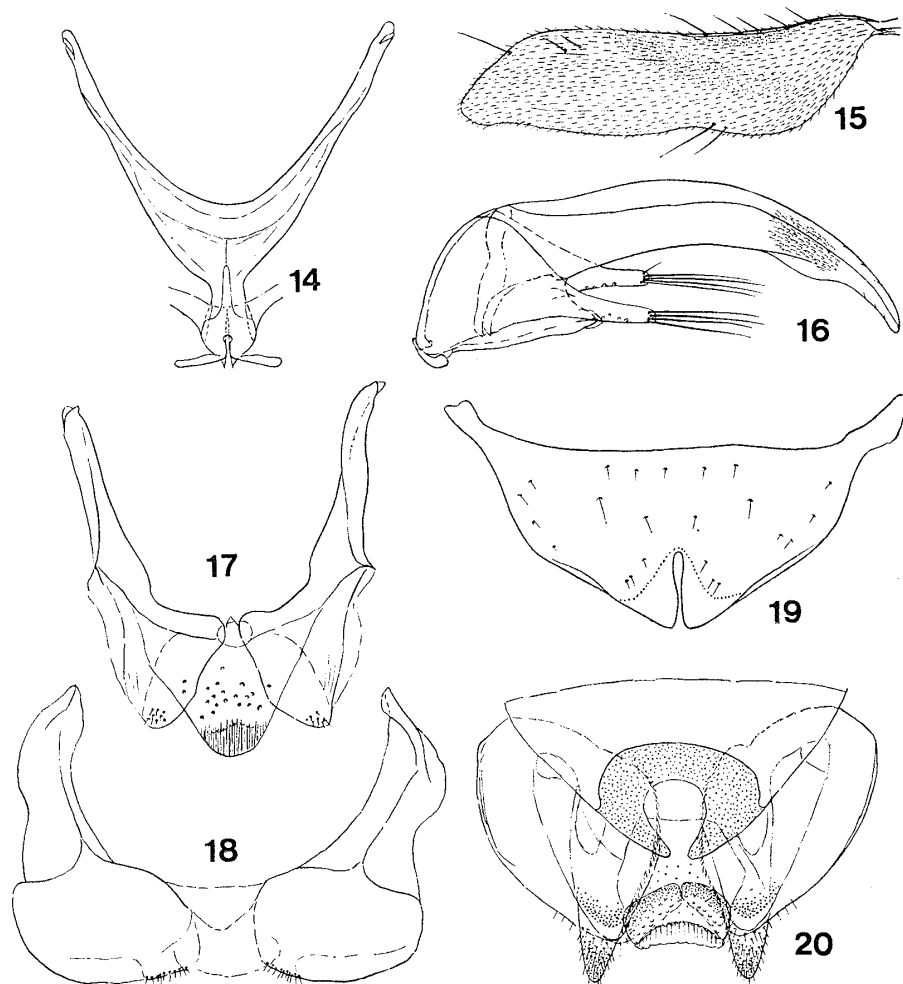
Head produced anteriorly, scattered with minute punctures. Clypeus about 2.6 times as broad as long. Labrum about 3 times as broad as long, provided with stiff hairs along the anterior area and with a distinct pore at the apex. Eyes moderate, the distance between them about 3.6 times as broad as the width of each eye. Antennae short, 1st segment robust, 2nd stout, 3rd to 10th transverse, 11th the



Figs. 7–13. *Delevea kurosawai* M. SATÔ, sp. nov.—7, Front leg; 8, middle leg; 9, hind leg; 10, labrum; 11, mandibles; 12, maxillary palpus; 13, antenna.

longest, about a half as long as the 3rd to 10th taken together and bearing a papilla at apex, 10th and 11th each provided with an elongate sensory pore. Maxillary palpi short, 1st segment the shortest, 3rd the longest and about twice as long as the 1st and 2nd taken together, provided with several setae and a papilla at apex. Labial palpi very short, 1st segment long, 2nd very small. Mentum a little longer than broad, provided with sparse pubescence; anterior margin emarginate; integument microreticulate.

Pronotum about 1.5 times as broad as long, broadest at the base which is about 1.6 times as broad as the anterior breadth; sides narrowed anteriorly; anterior and posterior margins slightly sinuate; disc scattered with minute punctures and furnished with a short median furrow. Elytra about 1.3 times as broad as pronotum, about 1.1 times as long as broad, broadest at basal two-fifths, thence gently nar-



Figs. 14–20. *Delevea kurosawai* M. SATÔ, sp. nov.—14, Metendosternite; 15, hind wing; 16, male genitalia; 17, 9th tergite with paraprocts of male; 18, 8th sternite of male; 19, 8th tergite of male; 20, female genitalia with abdominal segments.

rowed anteriad and moderately so posteriad; disc scattered with shallow minute punctures. Hind wings reduced, provided with many pubescence and some setae, and devoid of vein.

Prosternum microreticulate, process broad with its apical margin moderately arcuate. Mesosternum small, microreticulate; anterior margin receding for reception of prosternal process; lateral sides strongly ridged. Metasternum wide, smooth, scattered with minute punctures. Metendosternite V-shaped; furcal arms long; ventral longitudinal flange short. Epipleuron broad in anterior half, narrow in posterior half; base strongly depressed for reception of middle leg. Abdomen microreticulate, scattered with minute punctures on sternites; 1st sternite large, about as long as the 2nd to 4th taken together and a little longer than 5th; 8th sternite in male subdivided; 8th tergite in male longitudinally cleft at apex; 9th tergite in male rounded at apex, with distinct paraproct; 8th tergite in female deeply emarginate at apex. Legs sparsely pubescent; femora stout; tibiae furnished with 4 rows of setiferous punctures; tarsi short, 1st segment the shortest, 2nd almost the same as 1st, 3rd about twice as long as 2nd, 4th stout, about twice as long as 3rd; claws slightly dilated at the base.

Male genitalia slender; median lobe gently tapered, slightly expanded ventrad before apex, and blunt at the tip; lateral lobe subtriangular, furnished with 4 long apical setae; phallobase somewhat large. Female genitalia simple; coxites elongate, pubescent, with rounded apex; vulva more or less sclerotized, ring-shaped.

Length: 1.40–1.65 mm; breadth: 0.90–1.05 mm.

Holotype: ♂, Mt. Maya-san, Yamagata Pref., 24. VIII. 1959, Y. KUROSAWA leg.

Paratypes: 131 exs., same data as the holotype; 75 exs., same locality as the holotype, 24. VIII. 1961, Y. KUROSAWA leg.; 64 exs., Koesawa, Atsumi-chô, Yamagata Pref., 13. VIII. 1960, K. SHIRAHATA leg.; 41 exs., Yakurai Onsen, Miyagi Pref., 21. VIII. 1978, M. SATÔ leg.; 1 ex., Momogawa-tôge, Niigata Pref., 2. X. 1960, K. BABA leg.; 6 exs., Ashinohara, Egawa V., Minami-Aizu, Fukushima Pref., 18. VII. 1948, Y. KUROSAWA leg.; 5 exs., Hebi-dani, Mt. Hakusan, Ishikawa Pref., 27. VII. 1977, R. OHGUSHI leg., 25 exs., Satsura, Izumi-mura, Fukui Pref., 13. VI. 1982, 24. VII. 1982, H. SASAJI leg.; 3 exs., Yumesaki-chô, Hyôgo Pref., 18. XI. 1978, M. SAKAI leg.; 7 exs., Namerikawa, Ehime Pref., 29. VI. 1975, A. ODA leg.; 11 exs., ditto, Y. NOTSU leg.

All the specimens were collected on the wet surfaces of rocks, on which waters coming from small seepages flowed down. One of the habitats in Yamagata Prefecture is shown by a photograph (Fig. 21).

The holotype and most of the paratypes are preserved in the collection of the National Science Museum (Nat. Hist.), Tokyo. The remaining paratypes are distributed to the collection of the following institutions: British Museum (Nat. Hist.), Ehime Univ., Fukui Univ., Kyushu Univ., Nagoya Women's Univ., Naturhistorisches Museum Basel, and Smithsonian Institution.

As was mentioned in the introduction of this paper, this remarkable new



Fig. 21. A habitat of *Delevea kurosawai* M. SATÔ, sp. nov., at Koesawa of Atsumi-chô in Yamagata Prefecture. (Photo by the late Mr. K. SHIRAHATA, May 1973.)

torridincolid is the second species of the genus *Delevea*. It is distinguished from the type-species, *D. bertrandi* REICHARDT, by the general form of body, which is ovate and evidently broader than in the South African species, and the male genitalia which are stout and have 4 long apical setae on each lateral lobe.

The larva of this new species is found in the same habitats as adults. It is of dryopoid type as is usual for torridincolids. Its detailed description will be given at another opportunity.

This interesting species is dedicated to Dr. Y. KUROSAWA, who is the first discoverer of torridincolid in the world and gave me very useful suggestion about the species.

#### ACKNOWLEDGEMENT

I wish to express my hearty thanks to Dr. Y. KUROSAWA and some other entomologists mentioned in the introduction of this paper for their kindness in giving me the opportunity to study the interesting material. My hearty thanks are also due to Dr. S.-I. UÉNO for his kindness in reading the original manuscript, Mr. M. SAKAI for the excellent photographs by scanning electron microscope and the late Mr. K. SHIRAHATA for taking the photograph of a habitat of the torridincolid.

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