

The Coleopteran Family Decliniidae (Elateriformia, Scirtoidea) New to Japan, with Description of its Second Representative

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Abstract A second representative of the family Decliniidae is described from Japan under the name of *Declinia versicolor* sp. nov. Male features of this family are described and illustrated for the first time.

The family Decliniidae belonging to the superfamily Scirtoidea of the series Elateriformia was recently established by NIKITSKY, LAWRENCE, KIREJTSHUK and GRATSHEV (1994), and its phylogenetic position was also discussed in detail by LAWRENCE, NIKITSKY and KIREJTSHUK (1995). It contains only one species, *Declinia relict*a NIKITSKY, LAWRENCE, KIREJTSHUK et GRATSHEV, 1994, which occurs in the Russian Far East. By careful screening of our large collection of undetermined beetles and through the courtesy of our friends, we confirmed the occurrence of a representative of this interesting family in Japan.

Studying external characteristics of the Japanese material, we found some reliable difference for separating Japanese specimens from Russian ones in the proportion of body, antennal configuration and sculpture of metasternum.

It was reported that all the specimens of the type series (11 specimens) of *Declinia relict*a NIKITSKY *et al.* are females, and all the specimens of our original collection of the Japanese *Declinia* are also females. In spite of these facts, we considered that the lack of male *Declinia* was not due to parthenogenesis but could be attributed to insufficiency of collecting, by overlooking behavioral difference between sexes. Our expectation was fulfilled by Mr. Katsumi AKITA, and we were able to examine a male specimen after the completion of the first draft of this paper prepared on female specimens.

Biological information of *Declinia* species is very scarce. According to Mr. H. YOSHITOMI (pers. comm.) who is a collector of some Japanese materials, all

the Hiwada specimens of the beetle were found on the leaves of dwarf bamboo together with a scirtid, *Cyphon sannoides* YOSHITOMI, 1996. The locality is a large open space surrounded by a cold-temperate forest at an altitude of about 1,500 m. The clearing was formed about two years before by an extensive cutting down, and is now covered with growths of a dwarf bamboo, *Sasa senanensis* (FR. et SAV.) REHDER.

In the present paper, the Japanese representative of the family Decliniidae will be described from Honshu and Shikoku as a new addition to science.

The abbreviations employed are as follows: LB—length of body excluding head; WB—width of body.

Declinia versicolor sp. nov.

[Japanese name: Nise-maru-hananomi]

(Figs. 1–11)

Male and female. Length: 3.6–4.3 mm.

Body elongate-elliptical, 2.1 times as long as wide and 1.96 times as long as wide excluding head (in male), 2.0 times as long as wide on an average and 1.92 times as long as wide excluding head (in female), widest behind the middle of elytra, well convex above, especially on elytra; surface shining on dorsum, weakly lustrous on venter. Coloration of body often variegated, usually dark reddish brown, antennae, labrum, both palpi, and legs yellowish brown, elytral suture and humeral portions often diluted with red. One paratype from Hiwada, Gifu Prefecture, has black elytra and nearly black trunk, and the other from the same locality is dark brown on the dorsal surface, while the specimen from Odamiyama, Ehime Prefecture, is concolorously light reddish brown. Pubescence fine, very short, dense and appressed, though apparently sparser on elytra.

Head deflexed, strongly transverse, 1.6 times as long as wide including eyes, gently convex above, abruptly constricted behind eyes, and forming a short neck and distinct tempora which is about 0.23 times as long as longitudinal diameter of an eye; clypeus strongly transverse, about 2.6 times as wide as long; fronto-clypeal suture arcuate, barely discernible (but clearly visible as pigmented line in a light colored specimen), and united at sides with supra-antennal ridges which protrude weakly and conceal a part of antennal insertions as seen from vertex. Punctures on head fine, shallow and sub-umbilicate, sparsest on occiput where the distance between punctures is equal to 0.5 to 1.2 times their diameter, then becoming denser anteriorly and almost contiguous or with the separation less than a half their diameter on frons and clypeus. Eyes longitudinally ovate, moderately developed, not protruding, and separated by twice their vertical diameter. Mandibles short, unidentate (Fig. 3), a little broader than long at base, with a deep excavation for the reception of lateral edge of labrum; mola moderately developed, well pigmented, with a distinct tubercle on apical surface; prostheca roundedly produced,

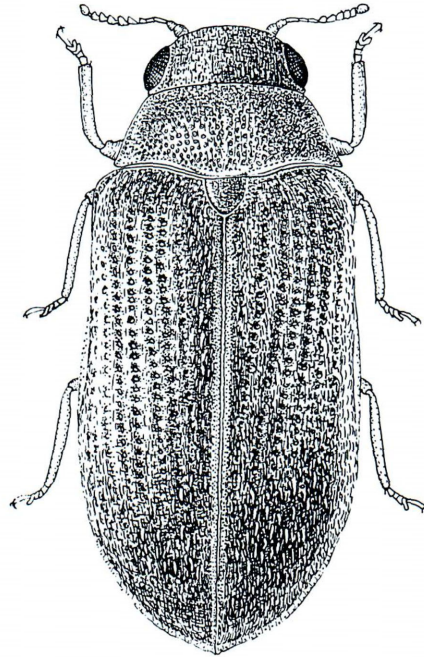


Fig. 1. *Declinia versicolor* sp. nov., male.

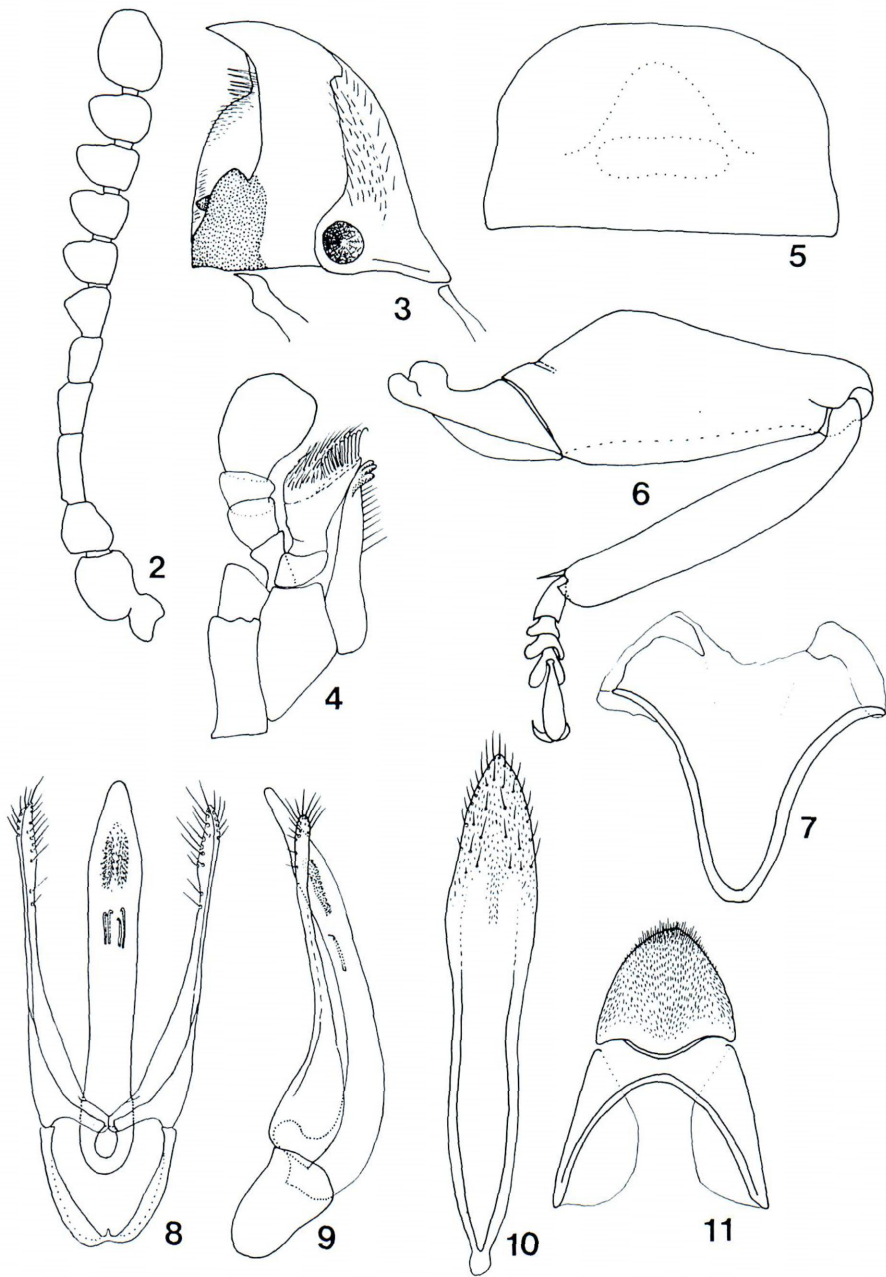
translucent, furnished with a bunch of fine to long setae (penicillus) on inner margin. Antennal grooves very deep, narrowing downwards, and continuing to concavity of pronotal hypomeron. Antennae (Fig. 2) short, 11-segmented, extending posteriorly just beyond base of pronotum; distal 6 segments more or less dilated and forming obscure loose club; scape about 1.3 times as long as wide, feebly dilated apically, pedicel tapered apicad, about 0.8 times as wide as scape, and 1.1 times as long as wide, 3rd to 5th narrow and elongate, 3rd strongly elongate, cylindrical, about 3 times as long as wide, and less than a half as wide as 2nd, 4th about 0.75 times as long as 3rd, feebly dilated apicad, slightly longer than 5th though similar in shape, 6th to 10th approximately equal in length, but progressively more produced inward, 11th oval, about 1.2 times as long as wide, about 1.7 times as long as 10th, with apex broadly rounded. Maxillae (Fig. 4) rather stout; galea with external process near base obscure, basigalea rather large, well pigmented; lacinia with 3 large hooks at apex. Last segment of maxillary palpus elongate-oval, a little shorter than 3 preceding segments combined, subtruncate at apex. Last segment of labial palpus similar in shape to that of maxillary one, but smaller. Mentum (Fig. 5) very well developed, concealing mouthparts from below, about 1.8 times as wide as long, with apical margin gently rounded, and sides faintly constricted at middle; submentum strongly transverse.

Pronotum convex, extremely transverse, about 2.5 times as wide as long, about 1.4 times wider than head, widest just before posterior corners, then distinctly

and rectilinearly narrowed anteriorly, with the distance between anterior corners about 0.78 times as wide as that between posterior corners; sides somewhat explanate, and sharply ridged throughout; anterior corners angulate, and slightly acute; posterior corners approximately rectangular, with narrowly rounded apices. Pronotal punctures shallow, distinctly umbilicate, somewhat finer anteriorly, usually larger and sparser than those on head, with the density variable with specimens, sparsest on midline where the distance between punctures is equal to 0.5 to 2.5 times their diameter, and a narrow impunctate line is often detectable; separation at sides usually much less than their diameter. Scutellum rather large, somewhat cordate, 1.3–1.6 times as wide as long, with anterior margin straight, and apex bluntly pointed; surface variably sculptured, finely and clearly punctate, confusedly punctate, or rugose.

Elytra oblong-oval, well convex above, highest and widest at basal $3/5$, 1.69 times as long as wide in male, 1.66 times (on an average) as long as wide in female, 5.2 times as long as pronotum in male, and 5.65 times (on an average) as long as pronotum in female; sides marginate from anterior corner to apices, somewhat sinuate, slightly constricted behind humeri, then gradually diverging to posterior $2/5$, and then more abruptly attenuated toward faintly pointed apices; anterior corner angulate, distinctly explanate, visible from above; each elytron with 12 punctate striae, sutural two striae short and indistinct because of confused and subobsolete arrangement of punctures, the remainings distinct, with punctures rather regularly disposed, though becoming much finer apically; interstices between striae weakly elevated, furnished with minute setigerous punctures which are subseriately arranged. Epipleura entire, extremely widened and deeply concaved at base for the reception of femoral apices, and abruptly narrowing posteriorly to the level of 1st ventrite, then gradually and slightly re-widening to apex, width of re-widening portion/width of narrowest portion = $8/5$.

Prosternum short in front of procoxae, less than a half as long as longitudinal diameter of coxa, nearly 3 times as broad as prosternal process, anterior portion folded vertically into head rest which is subtrapezoidal in shape; prosternal process broad, subparallel-sided, and broadly rounded at apex, which is received by a deep concavity on mesosternum. Propleural flange, pleurotrochantin (LAWRENCE, NIKITSKY & KIREJTSHUK, 1995) located in the same manner as in *D. relictus*. Procoxal cavities widely open internally and externally. Mesosternum short, rugosely punctate, about 0.44 times as long as wide, with area in front of coxae about 0.38 times as long as longitudinal diameter of mesocoxal cavity; surface uneven, deeply incised at apex; medio-longitudinal suture disappeared in the bottom of anterior concavity, which is inverted fan-shaped, and surmounted by carina interrupted antero-medially. Metasternum weakly convex, flattened at center, about 0.62 times as long as wide, grooved along anterior transverse carina for reception of apex of middle tibia and tarsus, with medio-longitudinal suture clearly impressed in apical $3/4$; transverse suture short and fine, sometimes



Figs. 2-11. *Declinia versicolor* sp. nov. — 2, Female antenna; 3, mandible; 4, maxilla; 5, mentum; 6, fore leg, internal aspect; 7, 8th abdominal sternite of male; 8, aedeagus, dorsal view; 9, ditto, lateral view; 10, 9th abdominal sternite of male; 11, 9th and 10th abdominal tergites of male.

indefinite, less than $1/3$ as long as width of metasternum; surface shallowly and distinctly punctate, punctures large and confused antero-laterally, becoming finer medially and posteriorly, usually finest at center; anterior intermesocoxal process short and broad, and more or less blunt apically, but with a short median carina which fits into mesosternal apical notch, forming meso-metasternal interlocking device. Metepisternum broad, densely and rather confusedly punctate, concaved for reception of middle femur at base, with exposed portion about 2.6 times as long as wide, widest at base, faintly tapered posteriad.

Legs rather short, clothed with dense and minute pubescence; procoxae strongly transverse, grooved for reception of femoral base; mesocoxae obliquely grooved for reception of trochanter and upper base of femur; metacoxae faintly grooved for reception of trochanter and upper base of femur; metacoxal plates broad mesally, then abruptly tapered at mesal $1/3$, densely and rather confusedly punctate; trochanters rather large, concave for reception of tibial tip and tarsus, and internal edge of concavity carinate; femora stout, finely and densely punctate, impressed for reception of tibiae, external edge forming a sharp carina but internal edge obscure; front and middle femora angularly broadened toward middle; front femora each with a faint sulcus near internal base; tibiae slender, each with dentoid short process at apex; apical spur single, short and sharp; tarsi short, about $1/3$ as long as tibiae, tarsal segment more or less produced beneath, with segments 1st through 4th forming progressively more distinct lobes; claws simple.

Abdomen 1.15 times as long as wide at base, finely and densely punctate, punctures somewhat umbilicate on 2nd ventrite, becoming finer and more convex on 3rd and 4th, then entirely intergrading to granules on 5th; 1st ventrite transversely impressed for reception of hind legs, with intercoxal process coarsely rugose, narrowly produced anteriorly and forming a vertical lamina; 2nd through 4th slightly decreasing in length, 5th about 1.6 times as long as 4th, not modified but simply blunt at apex in both sexes; 1st through 3rd connate, 4th and 5th freely movable; all suture entire; tergites including pygidium normally sclerotized.

Male genital segments:— Eighth sternite (Fig. 7) faintly pigmented laterally, membranous apically and medially, emarginate at apical margin, and V-shaped posteriorly; 9th sternite (Fig. 10) elongate, ring-like basally, and forming sclerotized setose plate in apical half; 9th and 10th tergites (Fig. 11) fused, 9th bisinuate and deeply emarginate at apex, 10th broadly rounded at apex, finely and densely setose. Aedeagus (Figs. 8–9) of typical and simple tri-lobed type, gently curved; basal lobe short, about 0.2 times as long as median lobe; lateral lobes elongate, symmetrical, furnished with several setae in apical $1/3$; median lobe gently curved ventrad, somewhat thickened at base, parallel-sided in median $1/2$, then abruptly tapered toward blunt apex in dorsal view, provided with four elongate hook-like armatures and clumps of short spines and scales in endophallus.

External sexual dimorphism quite uncertain even in the configuration of antennae, palpi, and 5th ventrite, but the body shape of female is seemingly

roundish (LB/WB=1.92 on an average).

Distribution. Japan (Honshu, Shikoku).

Type series. Holotype: ♂, Kitazawa-tôge Pass, 1,900–2,100 m alt., Hase Village, Nagano Pref., 21–VII–1992, K. AKITA leg. Paratypes: 3 ♀♀, Hiwada, Takane-mura, Gifu Pref., 28–VI–1994, H. YOSHITOMI leg.; 1 ♀, do., 16–VII–1995, H. YOSHITOMI leg.; 1 ♀, Sengendaru-kôgen, 1,500–1,700 m alt., Takane Village, Gifu Pref., 23–VII–1993, K. AKITA leg.; 1 ♀, Odamiyama, Ehime Pref., 19–V–1985, E. YAMAMOTO leg.

Type depository. Most specimens of the type series including the holotype are preserved in the Entomological Laboratory, College of Agriculture, Ehime University, Matsuyama.

Remarks. External difference between the new species and *Declinia relicta*

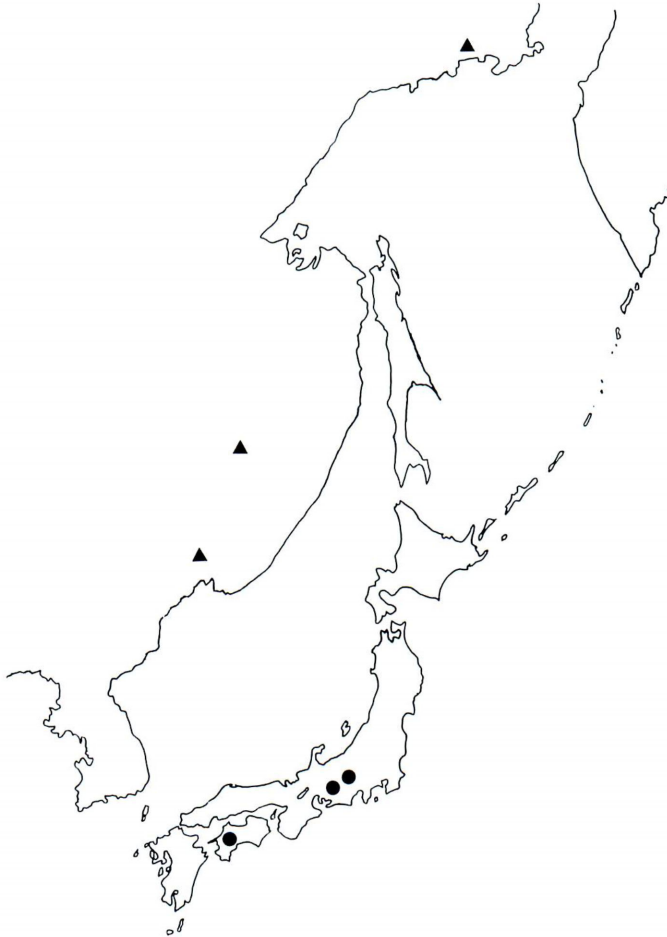


Fig. 12. Distribution of *Declinia versicolor* (circles) and *Declinia relicta* (triangles).

NIKITSKY *et al.* is not sufficiently large to be convinced without direct comparison, but the following features of the new species may be diagnostic: body more roundish, especially in the proportion of elytra, metasternal transverse suture not always distinct, external process near base of galea very obscure, proportion of antennal segments more or less different, punctate striae of elytra more regularly disposed, and elytral epipleuron not notably re-widening behind the level of 1st ventrite.

It is readily surmised that this species is a relict of the latest Glacial Age because of its restricted distribution at higher elevations of Honshu and Shikoku. Its occurrence not only in Honshu but also in Shikoku suggests that the ancestor of this species must have widespread in Japan during the Glacial Age. If a *Declinia* is found in Hokkaido in the future, invasion route of *Declinia* into Japan will be elucidated, namely, whether by the route through Sakhalin and Hokkaido or by the route through the Korean Peninsula. At all events, it is apparent that *Declinia* should be distributed in the Chinese Continent.

Acknowledgments

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要 約

酒井雅博・佐藤正孝：日本から初めて記録されるニセマルハナノミ科（新称）甲虫と第2番目の種の記載。—— Decliniidaeニセマルハナノミ科は最近，NIKITSKY *et al.* (1994)によって，極東ロシアから新属新種で記載された *Declinia relict*aに基づいて設立された科で，LAWRENCE, NIKITSKY & KIREJTSHUK (1995)はさっそく詳細な研究を行い，その系統学的位置を明らかにした。筆者らは未同定標本や友人らから研究を委ねられている標本を慎重に再調査したところ，長野県，岐阜県，愛媛県で採集された7頭の *Declinia*属甲虫の標本を見いだした。これらの標本は，記載から判断するかぎり *Declinia relict*aにきわめてよく似ていたが，詳しく比較検討した結果，種を分かちに足りうるいくつかの標徴を見いだしたので，新種と判断し，*Declinia versicolor*と命名して記載した。なお，*Declinia relict*aはこれまで♀しか発見されておらず，この科の♂個体の発見，記載は今回はじめてなされるものである。

本種は本州，四国の高標高地に隔離分布し，最終氷期の遺存種であることが明らかである。また形態的類似度から判断して，*Declinia relict*aを直接の祖先としていることも間違いないであろう。

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Elytra, Tokyo, **24** (1): 111–112, May 15, 1996

The True Identity of a Japanese Species of the Genus *Pteroloma* (Coleoptera, Agyrtidae)

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In the present brief note, I am going to record *Pteroloma sibiricum* SZÉKESSY, which has previously been recorded by several authors under the name *P. forsstroemi* (GYLLENHAL). This species was synonymized with the latter by SCHAWALLER (1985), and was revived by the same author (1991) as an independent species. Through the courtesy of Mr. Nobuki YASUDA, I had an opportunity to examine a *Pteroloma* species, which was obtained from the Daisetsu-zan Mountains, and considered it identical with the present species by the shape of male genitalia.

Pteroloma sibiricum SZÉKESSY, 1935

Pteroloma sibiricum SZÉKESSY, 1935, Koleopt. Rdsch., **21**, pp. 175–177, figs. 3–4; type area: Sibirien (Quellgebiet des Irkut). — HLISNIKOVSKÝ, 1962, Folia ent. hung., (s. n.), **15**, p. 461; 1963, Ent. Bl. Biol. Syst. Käfer, **59**, p. 81. — EMETZ, 1975, Ins. Mongolia, **3**, p. 100. — LAFER, 1989, Opred. Nasek. Dal'nego Vostoka SSSR, **3** (1), p. 333, figs. 204, 1–3. — SCHAWALLER, 1991, Stuttg. Beitr. Naturk., (A), (468), p. 21.

Pteroloma forsstroemi: SCHAWALLER, 1985, Stuttg. Beitr. Naturk., (A), (377), pp. 3, 5, fig. 3