Elytra, *Tokyo*, **27** (1): 87–94, May 15, 1999

A New *Coeliodes* (Coleoptera, Curculionidae, Ceutorhynchinae) from the Ryukyu Islands, Southwest Japan

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Abstract *Coeliodes* (*Coeliodes*) *amamianus*, a new ceutorhynchine weevil is described from the Ryukyu Islands, Southwest Japan. This new species feeds on the pollen of an evergreen tree, *Castanopsis sieboldii* subsp. *lutchuensis*, and can be separated from the congeners by the characteristic vestiture, mucronate tibiae in the male, and the narrower aedeagus with a pair of sclerites in the internal sac. This species somewhat resembles *Trichocoeliodes excavatus* (HUSTACHE), though it can be easily distinguished from the latter by the structure of each scale in a row of each elytral interval, and the second and fifth ventrites in the male.

Introduction

The ceutorhynchine genus *Coeliodes* SCHOENHERR, 1837 comprises about 50 species of small-sized weevils of oval form distributed throughout the world except for the Australian Region, and is discriminated from its related genera by a combination of the following characters: antennae with seven segments in the funicle; elytral intervals inerm; femora inerm; tibiae flattened, corbel of hind tibia long, ascending anteriorly; and pectoral canal reaching the metasternum. *Coeliodes* weevils are known to associate with the trees of the families Betulaceae and Fagaceae, the larvae grow in the flowers or leaf buds and the adults feed on the soft tissues of the leaf buds, young leaves or the parts of flowers (WAGNER, 1942; HOFFMANN, 1954; DIECKMANN, 1972; MORIMOTO, 1984; KOCH, 1992).

In East Asia, seven species were described by SCHULTZE (1898), HUSTACHE (1916), KÔNO (1935), and VOSS and CHÛJÔ (1960), though *Coeliodes setifer* SCHULTZE was later removed by KOROTYAEV (1996) to a new genus *Conocoeliodes* as the type species. Recently, KOROTYAEV (1997) reviewed the Far Eastern species of this genus with an erection of a new subgenus, descriptions of six new species and new distribution records of two species. As the result, 14 species in total have hitherto been known from the Russian Far East, China, the Korean Peninsula, Japan and Taiwan in three subgenera. However, no species has ever been known until now from the Ryukyu Islands, Southwest Japan.

In this paper, I am going to describe a new species belonging to the nominotypical subgenus of *Coeliodes* from the Ryukyu Islands. They were taken on the flowers of

Castanopsis sieboldii subsp. *lutchuensis* of the family Fagaceae, and the adults are considered to be a pollen feeder of the plant.

Materials and Methods

The materials used in this study were collected by the present author and other entomologists from 1963 to 1997, by beating or net-sweeping on the Islands of Amami-Oshima and Tokunoshima. For dissection, specimens were relaxed in hot water. Then the abdomen was removed from the body, and cleaned in heated 10% KOH solution for half a day to remove the genitalia. The removed genitalia were mounted on slide glasses with glycerol, observed through the optical microscope and sketched with the aid of an attached drawing tube. After examination, the genitalia were preserved in a plastic vial filled with glycerol. External structure was observed and illustrated with a stereoscopic microscope equipped with a drawing tube. Details of some external structures were examined with a scanning electron microscope (PHILIPS XL30/CP) under 80 to 110 magnification. The holotype and some of the paratypes are deposited in the Laboratory of Entomology, Tokyo University of Agriculture, and most of the paratypes are in the following collections: Entomological Laboratory, Ehime University, Matsuyama (ELEU), Entomological Laboratory, Faculty of Agriculture, Kyushu University (ELKU), private collections of H. KOJIMA, Fukuoka (PCHK), H. YOSHITAKE, Tokyo (PCHY) and M. HORIKAWA, Kanagawa (PCMH).

Description

Coeliodes (*Coeliodes*) *amamianus* YOSHITAKE, sp. nov.

(Figs. 1–4)

Male. Reddish brown; head, basal half of rostrum, club, meso- and metasterna, venter except for the depression of apical segment blackish; coxae, femora and tibiae tinged with brown; pronotum blackish except for antero-marginal part; elytra with blackish transverse basal and premedian bands in entire width, which are longitudinally connected by a dark area between the first and fourth intervals, the premedian band being arcuate posteriorly on each side, suture and margins blackish.

Head coarsely and closely reticulate-punctate, clothed with recumbent brownish scales, bearing a shallow depression on forehead between eyes, with subrecumbent scales along inner margin of each eye. Eyes somewhat convex from outline of head. Rostrum 1.10–1.15 times as long as pronotum, weakly and evenly curved. Antennae inserted a little before the middle of rostrum, funicle with first segment as long as second, third a little shorter than second, as long as fourth, fifth to seventh subequal in length to one another, each a little shorter than fourth, seventh almost as long as broad, club oblong-ovate, finely pubescent in apical third.

Prothorax 1.37–1.42 times as wide as long, widest near the base, slightly nar-

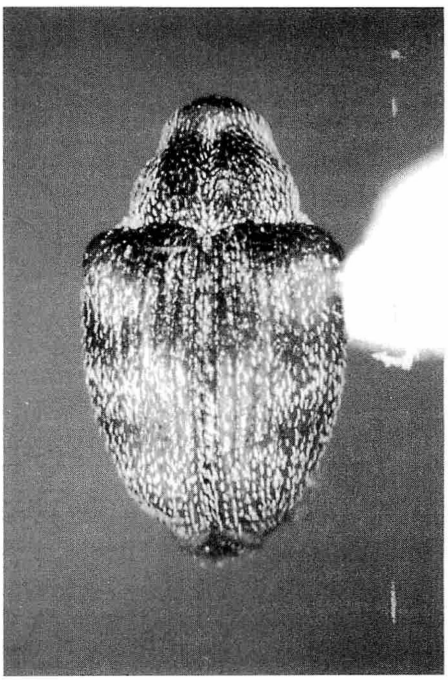


Fig. 1. *Coeliodes* (*Coeliodes*) *amamianus* YOSHITAKE, sp. nov., holotype male.

rowed toward the apical third, thence rapidly narrowed toward weak subapical constriction; dorsum distinctly reticulate, with a shallow subapical median depression, clothed with dense recumbent or subrecumbent yellowish-grey subrectangular scales, which become brownish on median part and bear whitish ovate scales along posterior margin.

Scutellum lanceolate, keeled, with whitish oval ground scales.

Elytra 1.05–1.1 times as long as wide, subparallel-sided in basal halves, then almost straightly narrowed toward subapical calli; dorsum with whitish oblong scales, which form three indefinite bands in subbasal, median and apical parts; each interval with a median row of yellowish grey scales, which are subrecumbent, slender, slightly dilated distad, truncated at the apex and mixed with blackish ones in the dark area.

Pygidium coarsely and sparsely punctate, and thinly clothed with fine recumbent setae.

Legs clothed with whitish recumbent hairy scales; each tibia mucronate at the apex; front tibia slightly dilated outwards in apical fourth, fringed with stout brownish setae at the expansion.

Underside clothed with whitish and yellowish grey oblong scales. Pectoral canal reaching the middle of metasternum. Venter with basal two ventrites depressed in the middle and thinly covered with fine whitish scales, fifth ventrite transversely depressed in the middle, the posterior wall of the depression being fringed with a pair of tufts of long erect brownish setae, which are internally curved.

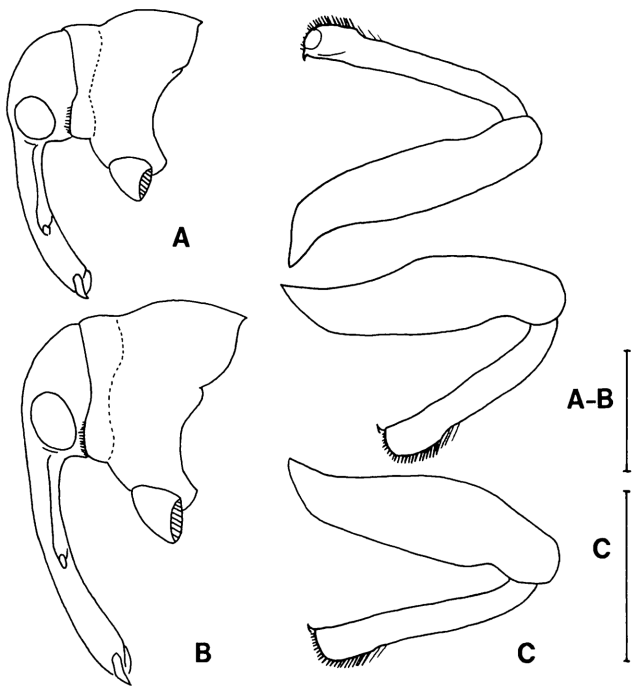


Fig. 2. *Coeliodes amamianus* sp. nov.; A, head and prothorax, lateral view, male; B, ditto, female; C, femora and tibiae, male. Scale line=0. 5mm.

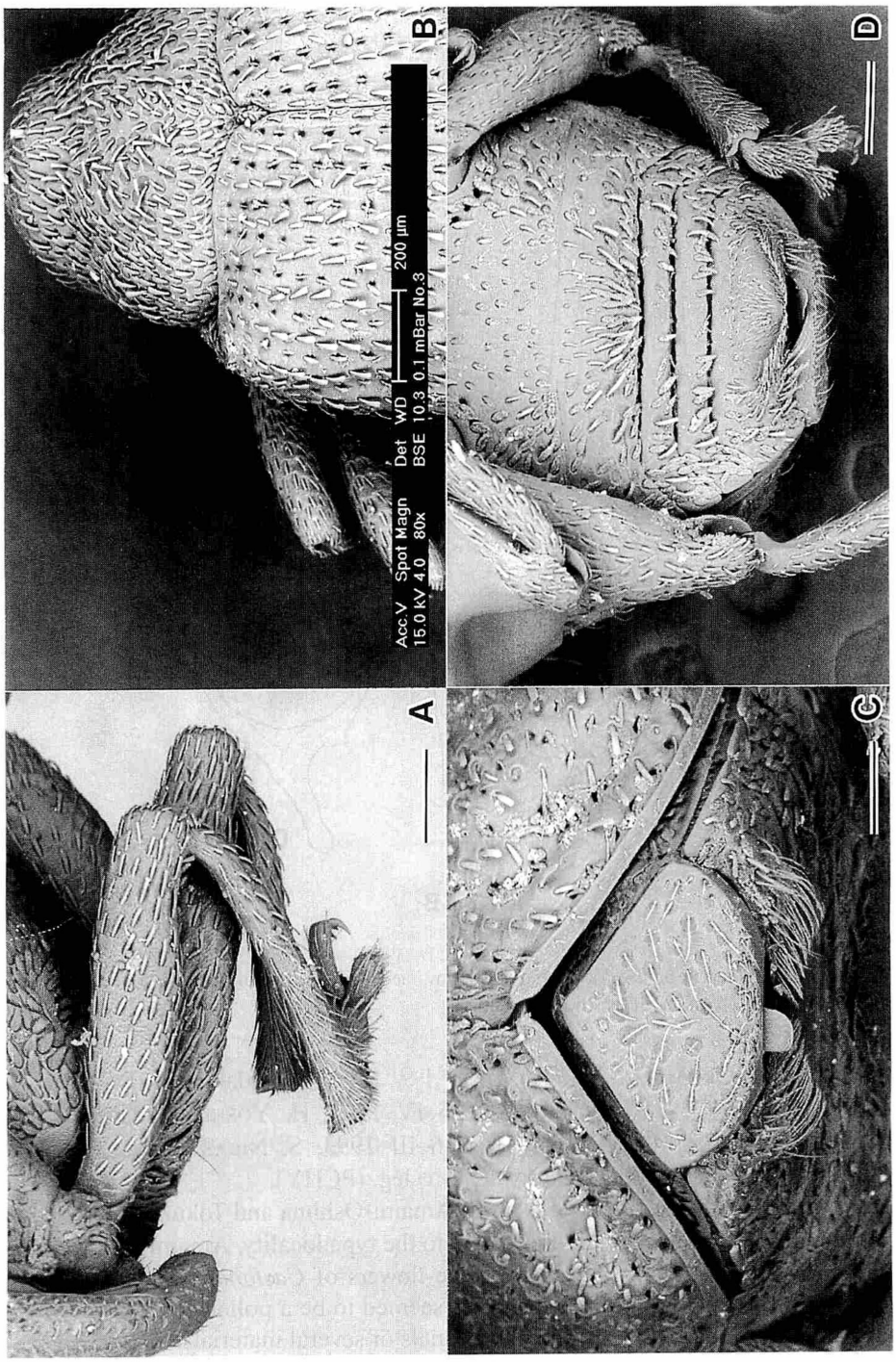
Aedeagal body slender, gradually narrowed apicad, and evenly rounded at the tip; internal sac with a pair of slender sclerites.

Female. Similar to male, with the exception of the following features: rostrum much longer, 1.30 to 1. 35 times as long as pronotum; antennae inserted at the middle of rostrum; each tibia without mucro at the apex; pectoral canal reaching the posterior margin of metasternum; venter with basal two ventrites slightly inflated, fifth ventrite devoid of depression.

Length: 2.0–2.3 mm.

Holotype ♂, Japan [Ryukyu Islands]: Mt. Kouchiyama, Amami-Oshima Is., 23~26–IV–1997, H. YOSHITAKE leg. Paratypes. Japan [Ryukyu Islands]: 〈Amami-Oshima Is.〉 1 ♀, same data as the holotype; 2 ♂♂, 2 ♀♀, Mt. Yuidake, 23~26–IV–1997, H. YOSHITAKE leg. (PCHY); 3 ♂♂, 17 ♀♀, Nangawa-rindou, 20–III–1990, H. KOJIMA leg. (PCHK); 1 ♀, same locality, 4–III–1993, S. NIRASAWA leg. (PCMH); 1 ♀, Hatsuno, 3–IV–1963, Y. ARITA leg. (ELEU); 1 ♀, same locality, 12–IV–1971, M. SAKAI leg. (ELEU); 1 ♀, Naze, 21–IV–1971, M. SAKAI leg. (ELEU); 2 ♂♂, 1 ♀, Fureainomori,

Fig. 3. Male of *Coeliodes amamianus* sp. nov.; A, left front tibiae; B, pronotum and elytra; C, pygidium; D, venter. Scale line=145 μm for A, 123 μm for C, and 200 μm for D.


A
B
C
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Acc.V Spot Magn Det WD 200 µm
15.0 kV 4.0 80x BSE 10.3 0.1 mBar No.3

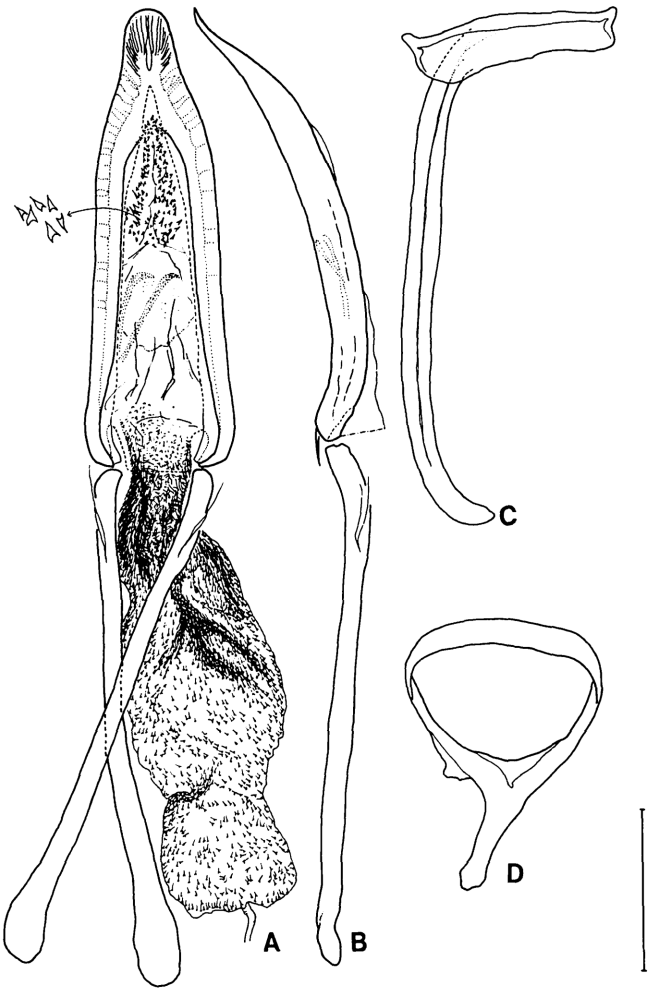

Fig. 4. Male genitalia of *Coeliodes amamianus* sp. nov.; aedeagus, A, dorsal view; B, ditto, lateral view; C, 9th sternite; D, tegmen. Scale line=0. 2 mm.

28–III–1990, Y. OKUSHIMA leg. (PCHK); 1 ♀, Mt. Yuwandake, 25–IV–1993, K. TOYODA leg. (PCHY); 1 ♀, Imazato, 23~26–IV–1997, H. YOSHITAKE leg. (ELKU); 〈Tokunoshima Is.〉 1 ♂, 1 ♀, Mikyou, 15~16–III–1993, S. NIRASAWA leg. (PCMH); Hagedake-rindou, 16–III–1993, K. MATSUMOTO leg. (PCHY).

Distribution. Japan (Ryukyu Islands: Amami-Oshima and Tokunoshima).

Etymology. The specific epithet refers to the type locality, Amami-Oshima.

Biology. The adults were taken on the flowers of *Castanopsis sieboldii* subsp. *lutchuensis* in March and April. The species seemed to be a pollen-feeder, since many pollen grains were found in the alimentary canals of several materials.

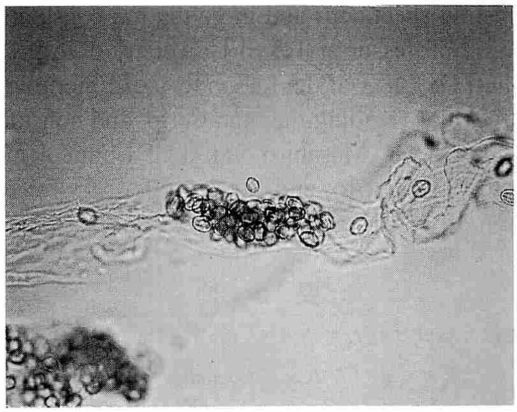

Fig. 5. Pollen grains found in the alimentary canal of *Coeliodes amamianus* sp. nov.

Remarks

The body color of this new species varies from reddish brown to blackish. The rostrum except for the base and the pronotum except for the median part often become reddish brown. The basal and the premedian blackish bands of the elytra sometimes diminish to a reverse subtriangular patch. The elytral vestiture can be fallen out, so that the elytra sometimes become glabrous with the exception of a scale row on each interval.

The nominotypical subgenus of *Coeliodes* is characterized by the presence of two or three scaly bands of the elytra, and contains seven species known from East Asia. Because of having three whitish scaly bands on its elytra, *C. amamianus* sp. nov. is considered to be a member of the subgenus, and is distinctive enough not to be confused with any other species from East Asia. This species possesses a median row of subrecumbent scales on each elytral interval, a mucro at the apex of the front tibia in the male, the slender aedeagal body, and a pair of slender sclerites in the internal sac. These structures are not present in any other species from the region. In having a median scaly row on each elytral interval and a mucro at each tibial apex, this species somewhat resembles *Trichocoeliodes excavatus* (HUSTACHE), whose systematic position is not definitely settled, though it can be easily distinguished from the latter by the following points: each scale in a row subrecumbent, not suberect; depression of second ventrite in the male without blackish spine; fifth ventrite with a transverse depression fringed with long erect setae.

Acknowledgment

I am deeply indebted to Dr. Katsura MORIMOTO, emeritus professor at Kyushu

University, and Dr. Hiroaki KOJIMA of Kyushu University for their kindness in supplying me with the interesting specimens and in giving me constant guidance, and to Dr. Shun-Ichi UÉNO, visiting professor at Tokyo University of Agriculture, Prof. Yasuaki WATANABE and Dr. Shûji OKAJIMA of the Laboratory of Entomology, Tokyo University of Agriculture for their kindly reading the manuscript and constant guidance. My special thanks are also due to Dr. Masahiro SAKAI of Ehime University, Mr. Masami HORIKAWA, Dr. Kouichi MATSUMOTO, and Mr. Kôji TOYODA for their kind offer of invaluable specimens.

要　　約

吉武　啓：琉球列島から発見されたアカサルゾウムシ属の1新種．—— 琉球列島の奄美大島と徳之島から発見されたアカサルゾウムシ属*Coeliodes*の1新種を，*C. amamianus*と命名して記載した．本種は，狭義の*Coeliodes*亜属の他種とは以下の3点で明確に識別される．1)上翅の各間室に1列の細長い鱗片を装う．2)雄の各脛節は先端に棘状突起を有する．3)雄交尾器は細長く，内袋に1対の細長い交尾片を有する．本種はまた，1および2の点において*Trichocoeliodes excavatus*に似ているが，列を構成している鱗片の直立の度合いがより低いこと，雄の第2腹節の凹みが黒色の太短い剛毛に覆われないこと，および末端節が横に幅広く凹み，その後縁は直立した長い刺毛によって縁取られることなどによって容易に区別できる．なお，奄美大島において早春にリュウキュウジイの花から採集されていることやいくつかの個体の消化管内に多数の花粉粒が認められたことから，本種の成虫は花粉食であろうと考えられる．

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