

A New Species of the Genus *Curculio* LINNAEUS (Coleoptera, Curculionidae, Curculioninae) from Tsushima Island, Japan

Yutaka NOTSU

1–33–14 Fujimino, Hiratsuka, Kanagawa, 259–1211 Japan

Abstract A new curculionine species is described from Tsushima Is., Nagasaki Prefecture, Japan as *Curculio katsurai* sp. nov.

Introduction

The *sikkimensis* species-group of the genus *Curculio* in Japan is composed of five species (MORIMOTO, 1960, 1981): *C. robustus* (ROELOFS, 1875), *C. sikkimensis* (HELLER, 1927), *C. dentipes* (ROELOFS, 1875), *C. conjugalis* (FAUST, 1882) and *C. hilgendorfi* (HAROLD, 1878). The adults of this group are known to lay their eggs in acorns of *Quercus* spp., *Castanea* spp., *Lithocarpus* spp. and *Castanopsis* spp. (Fagaceae) (MORIMOTO, 1981; NOTSU, 1983). The mature larvae escape from acorns and immediately get into the soil. After spending one or multi years in the soil, the adults emerge and appear on the ground.

In 2013, Mr. Isao MATOBA asked me to identify the two specimens of curculionine weevils collected from Tsushima Is., Nagasaki Pref., Japan. They were clearly different from all the known Japanese species of the *sikkimensis* species-group. Next year in autumn of 2014, I visited this island, and collected several acorns of *Quercus serrata* and *Castanopsis sieboldii*. After rearing, a total of twelve concerned adults had emerged from the soil on August and September of 2015.

As a result of careful examination of these specimens, I concluded that all of them belong to the same species and they were new to science. By this occasion, I am going to describe it in the following lines, and dedicate the present paper to the late Prof. Dr. Katsura MORIMOTO for his continuous guidance on my taxonomic study of Curculionidae.

Material and Methods

Measurement. Length of body: length from the base of rostrum to the apex of elytra in lateral view. Width of body: length between the both elytral humeri in dorsal view. Length of rostrum: linear length from the base of rostrum to the apex excluding mandibles in lateral view. Length of elytra: length from the base of the 2nd interval to the apex of elytra in dorsal view. All measurements are in mm.

Observation and photography. External characters of specimens were observed with an Olympus SZ61 stereoscopic microscope. Habitus photographs were taken by a Canon EOS 60D digital camera with Canon EF-S 60 mm macro photo lens. Male genitalia was photographed with a Leica MC170HD digital camera attached to a Leica M165C stereoscopic microscope. Male genital organ was observed after a process of 3 % KOH solution.

Type depositary. The holotype, five male and four female paratypes are preserved in the collection of the Ehime University Museum, Matsuyama, Japan. One male and three female paratypes are in the author's private collection, Hiratsuka, Japan. One male paratype is in Isao MATOBA private collection, Yuasa, Japan.

Description

Curculio katsurai sp. nov.

[Japanese name: Tsushima-konara-shigi-zô mushi]

(Figs. 1–7)

Body length: 5.3–6.6 mm excluding rostrum; width: 2.3–3.2 mm.

Male. Body elongate oval, brown to blackish brown. Antennae, rostrum, head, trochanters, base of femora and claws blackish brown.

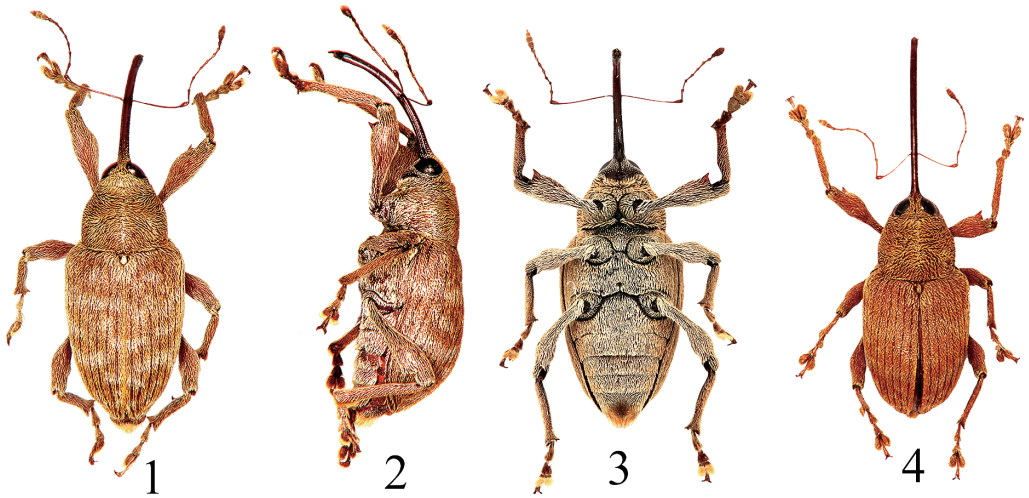
Head including frons somewhat closely clothed with yellowish white and white scales. Rostrum sparsely clothed with yellowish white thin and short scales on base of dorsum. Pronotum mostly clothed with intermixing light brown and white slightly longer scales. Scutellum very closely clothed with white scales. Elytra mostly clothed with light brown scales, scattered with oblique short bands of white scales, and with pale yellowish white scales around scutellum; striae with a row of light brown thin scales except for the white thin scales on white oblique bands; 1st intervals with suberect yellowish brown pointed scales on apical half. Prosternum with dense suberect white and light brown scales; mesepisterna, mesepimera, anterior part of metepisterna, both sides of metasternum with dense somewhat wider white scales; mesosternum before mesosternal process with sparse short white scales; coxae, mesosternal process, posterior part of metepisterna, center of metasternum and abdominal ventrites except 5th ventrite uniformly with white scales; 5th ventrite with different kind of scales as follows: white scales on both sides; suberect white scales and suberect white needle-like somewhat short scales on middle part before middle depression; short erect yellowish brown needle-like scales on middle depression; long yellowish brown bristle-like hairs on apical swellings. Pygidium closely covered with long erect yellowish brown bristles which are curled at tips. Femora uniformly clothed with white thin scales. Tibiae uniformly clothed with yellowish white scales; middle and hind tibiae closely clothed with short erect rusty yellow bristles along edge of apical dilated portions.

Head reticulately and shallowly sculptured; frons 0.6 times as wide as base of rostrum; eyes large, slightly convex and semicircular. Rostrum 0.5 times as long as body, uniformly curved from base to apex, subparallel-sided throughout; dorsum with several rows of shallow punctures from base to a little before antennal insertions; punctures become minute and scattered before antennal insertions. Antennae inserted at middle of rostrum, each with scape almost as long as basal five funicular segments combined; ratio of funicular segments from base to apex = 11 : 9.6 : 7.8 : 5.5 : 6.0 : 4.6 : 4.6; club three times as long as wide, a little longer than 1st funicular segment; 1st club segment longer than wide, longer than 2nd one.

Pronotum 1.3 times as wide as long, slightly convex, sculptured reticulately; sides straightly and gently widened from base to the widest portion at middle, and then roundly narrowed to subapical constriction. Scutellum long tongue shape, 1.7 times as long as wide, keeled.

Elytra elongate, 1.4 times as long as wide, widest at humeri; dorsal contour flat from base to basal one fifth and then somewhat strongly convex toward apex; intervals wide and tiled; striae narrow, shallowly and regularly punctate.

Mesosternal process convex. Metasternum slightly depressed at middle of apical half. Abdomen with 1st ventrite fused with 2nd, but suture between them clear; 1st and 2nd ventrites uniformly and reticulately sculptured, widely and conjointly depressed on middle; 3rd uniformly and shallowly punctate, slightly depressed basally on middle; 4th ventrite the shortest in length, uniformly punctate,



Figs. 1–4. Habitus of *Curculio katsurai* sp. nov. — 1–3, Holotype, male; 4, paratype, female. — 1 & 4, Dorsal view; 2, lateral view; 3, ventral view.



Figs. 5–7. Male genitalia of *Curculio katsurai* sp. nov. — 5, Aedeagus, dorsal view; 6, ditto, lateral view; 7, apex of median lobe, dorsal view. Scale: 1.00 mm.

not depressed; 5th ventrite triangularly and shallowly depressed on middle of apical half, with apical margin gently emarginate or truncate. Pygidium triangular, roughly and closely punctate, shallowly depressed along vertical midline.

Legs moderately stout; femora each with a tooth beneath, of which profemur is the largest, and mesofemur is the smallest; metafemora just reach to apex of elytra; tibiae with medium-sized mucrones; pro- and mesotibiae straight dorsally and weakly swollen beneath near basal third; metatibiae slightly sinuate.

Male genitalia as shown in Figs. 5–7; median lobe slender, apex pointed in lateral view; apical projection in dorsal view short.

F e m a l e. Different from the male in the following points: rostrum 0.7 times as long as body; antennae inserted near basal third of rostrum; scapes a little shorter than basal three funicular segments combined; 1st abdominal ventrite flattened on middle and descend posteriorly; 2nd ventrite flattened on middle of base; 5th ventrite roundly and shallowly depressed on middle of apical half, gently rounded at apical margin; pygidium with posterior margin linear.

Type series. Holotype: ♂, Mt. Eboshidake, Toyotama Town, Tsushima Is., Nagasaki Pref., Japan, collected as larvae in acorn of *Quercus serrata* on 22.IX.2015, emerged on 13.VIII.2016, S. MATSUO leg. Paratypes (7 ♂♂, 7 ♀♀): 5 ♂♂, 5 ♀♀, same locality as the holotype, collected as larvae in acorn of *Quercus serrata* on 25–26.IX.2014, emerged on IX.2015, Y. NOTSU leg.; 2 ♀♀, same locality as the holotype, collected as larvae in acorn of *Castanopsis sieboldii* on 25–26.IX.2014, emerged on VIII.2015, Y. NOTSU leg.; 2 ♂♂, same locality as the holotype, 18.IX.1992, M. TANIDA leg. Three male paratypes have dissected and each of their ventrites, pygidia, 9th sternites and aedeagi are preserved in a glass tube, respectively.

Distribution. Japan (Tsushima Is.).

Etymology. The specific name of the new species is dedicated to the memory of the late Dr. Katsura MORIMOTO.

Host plants. *Quercus serrata* [Japanese name: Konara]; *Castanopsis sieboldii* [Japanese name: Sudajii].

Biology. According to my observation, the females lay eggs in the acorns of host plants until September, and mature larvae stay at least one year in the soil, then the adults emerge next year.

Diagnosis. This new species is similar to the other member of the *sikkimensis* species-group, especially to *Curculio sikkimensis* (HELLER) or small individuals of *C. hilgendorfi* (HAROLD). However, it is easily distinguishable from *C. sikkimensis* by the front femora furnished with short scales ventrally in both sexes, second segment of antennal club shorter than wide in male, and rostrum as long as elytra in female, as well as from *C. hilgendorfi* by the antennae inserted at the middle of rostrum and 5th abdominal ventrite triangularly and shallowly depressed on the middle of apical half in male, and the 5th ventrite gently rounded at the apical margin in female.

Acknowledgements

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要 約

野津 裕：対馬産シギゾウムシ属（鞘翅目ゾウムシ科）の1新種。——長崎県対馬市豊玉町烏帽子岳で採集されたシギゾウムシ属 *Curculio* の不明種を新種と認め、ツシマコナラシギゾウムシ *Curculio katsurai* sp. nov. と命名し記載した。本種は体型がクリシギゾウムシに、背面斑紋が小型のシイシギゾウムシに酷似するが、オスは交尾器形状の違いはもちろん前腿節下面の立鱗毛が腿節歯の高さより短いことで前者と、触角付着点が口吻のほぼ中央であることで後者と区別できる。またメスは前者とは口吻が上翅とほぼ同長であることで、後者とは第5腹板先端が尖らずに緩やかに丸まることでそれぞれ区別できる。

なお、本新種名は、昨年他界されたゾウムシ研究の世界的大家、故森本 桂先生に献名したものである。

References

- MORIMOTO, K., 1960. Revision of the subfamily Curculioninae from Japan I (Coleoptera). *Mushi, Fukuoka*, **33**: 89–104.
MORIMOTO, K., 1981. On some Japanese Curculioninae (Coleoptera: Curculionidae). *Esakia, Fukuoka*, (17): 109–130.
NOTSU, Y., 1983. [Ecological notes on curculionine weevils.] *Sukashiba, Matsue*, (20): 21–23. (In Japanese.)

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