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Biological and Distributional Notes on Weevils (Coleoptera, Curculionoidea) from the Tokara Islands, the Ryukyus, Southwestern Japan

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Abstract New biological and distributional data are provided for several weevils from the Tokara Islands in the northern Ryukyus, Kagoshima Prefecture. A total of three Brentidae and 13 Curculionidae were treated, of which ten curculionid weevils are new to the fauna of the Tokara Islands, and nine represent the northern- or southernmost records of these species.

The Tokara Islands are an archipelago of the northern Ryukyus in southwestern Japan that are located between Yakushima and Amami-Ôshima Islands. The islands consist of 12 small volcanic islets, five of which are presently uninhabited, that extend over a distance of 160 km from north to south. Since the boundary between the Palaearctic and Oriental biogeographic regions bisects the island chain, the area is a site of major biogeographic importance (e.g. Hikida *et al*., 1992; Hosoya, 2011).

The weevil fauna of the Tokara Islands has only been sporadically studied, and despite having a high potential diversity, relatively little is known about the area (Kojima & Watanabe, 2014). Recently, the senior author initiated a survey of these islands and the adjacent area. In this paper, the authors report new biological and distributional data for several weevils, some of which are considered ecologically and biogeographically important.

All of the specimens treated here are preserved in the Laboratory of Entomology, Tokyo University of Agriculture, Atsugi. Scientific names follow recent catalogues edited by Löbl and Smetana (2011, 2013) and a paper of Notsu (2013) on curculionine weevils. The following abbreviations are used for collector names in the text: HK — Hiroaki Kojima and YF — Yûsuke Fujisawa. The scientific names of weevils that are new to the fauna of the Tokara Islands are marked with an asterisk (*****), and species names representing the northern- or southernmost records of weevils are marked with '+'. All the surveys conducted in the Tokara Islands from 2013 to 2015 were permitted by the Toshima Village Office. This study was supported by the JSPS KAKENHI (No. 15K06937).

Family **Brentidae**

Callipareius (***Callipareius***) ***formosanus*** (Kleine, 1916)

(Figs. 1, 2)

Note. This weevil is known from Japan, Taiwan, Vietnam, the Philippines, Borneo and Java (Sforzi & Bartolozzi, 2004). This species is very rare in Japan and was considered to be restricted to Nakanoshima Is. in the Tokara Islands (Morimoto, 1976, 2008).

Recently, the authors discovered several adults of this species on and under the bark of *Ficus macrocarpa* (Moraceae; Gajyumaru in Japanese) on Akuseki-jima Is. in the Tokara Islands (Fig. 4).

One pair of adults was copulating on the bark during the day, while other individuals were mainly found under the bark during the day and night. Variation in prothorax coloration is known, and both black and reddish brown forms were found on Akuseki-jima Is.

Specimens examined. 2 exs., Ue-shûraku, Akuseki-jima Is., 30.VI.2015, HK; 7 exs., 1.VII.2015, HK.

Distribution. Japan: The Ryukyus: Tokara Islands (Nakanoshima and Akuseki-jima Isls.); Taiwan, Vietnam, Philippines, Borneo and Java. New to Akuseki-jima Is.

Miolispa cruciata SENNA, 1898

(Fig. 3)

Note. The weevil is known from Japan (Yakushima Is., Satsuma-Kuroshima Is., Kuchinoshima and Nakanoshima Isls. of the Tokara Islands, and Ishigaki-jima Is.), Taiwan, the Philippines, Borneo, Sumatra and Java (SFORZI & BARTOLOZZI, 2004; MORIMOTO, 2008, YOSHITAKE *et al*., 2013). This species is considered to be uncommon in nature and nothing is known about the biology of this species (MORIMOTO, 2008).

On Kuchinoshima and Akuseki-jima Isls. of the Tokara Islands, the adults were captured on flowers of *Angelica japonica* (Apiaceae; Hamaudo in Japanese).

Specimens examined. 8 exs., Shûraku, Kuchinoshima Is., 5.VII.2015, YF. 1 ex., Ue-shûraku, Akuseki-jima Is., 30.VI.2015, N. ITO; 13 exs., 4.VII.2015, HK.

Distribution. Japan: Ôsumi Islands (Yakushima and Satsuma-Kuroshima Isls.), the Ryukyus: Tokara Islands (Kuchinoshima, Nakanoshima and Akuseki-jima Isls.) and Sakishima Islands (Ishigaki-jima Is.). New to Akuseki-jima Is.

Baryrhynchus* (*Eupsalomimus*) *tokarensis OHBAYASHI et SATO, 1966

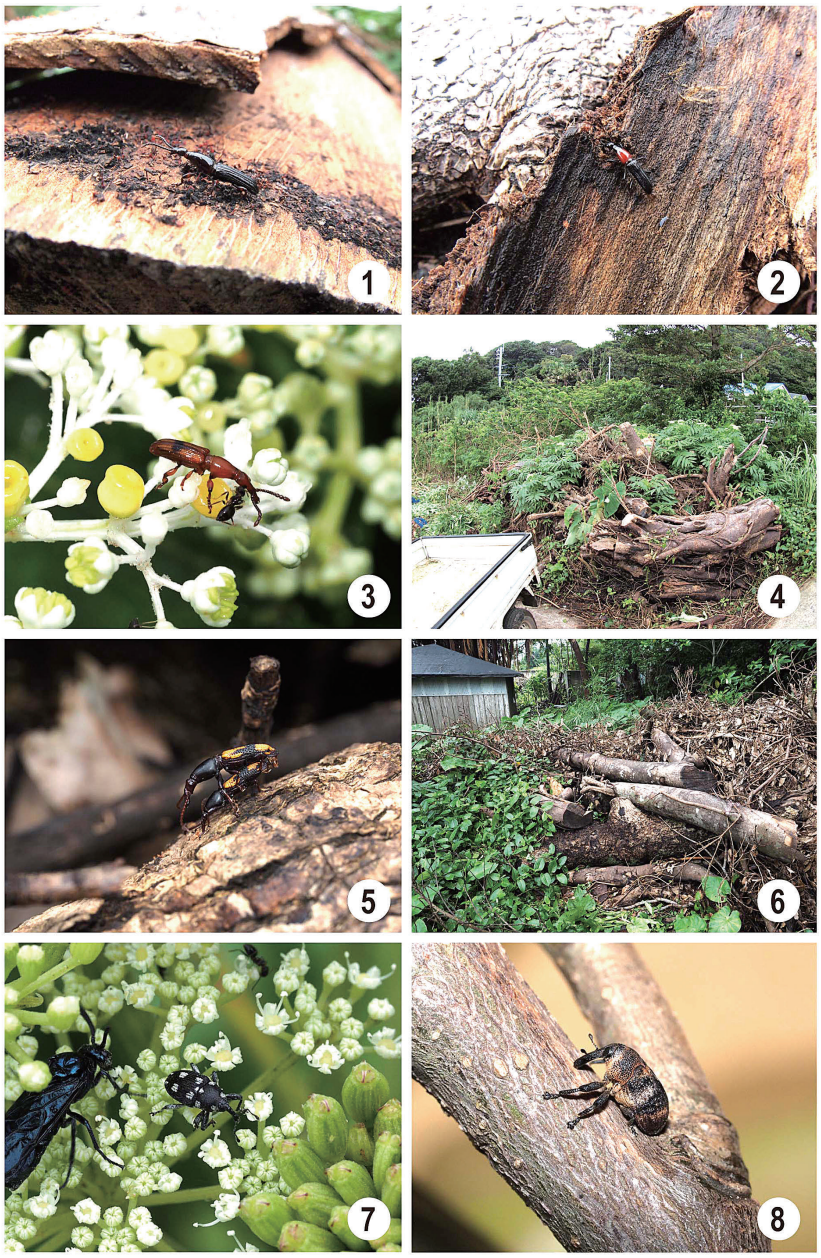
(Fig. 5)

Note. This weevil is endemic to Akuseki-jima and Takara-jima Isls. of the Tokara Islands. This weevil was common until the 1980s, but numbers appear to have decreased in recent years and the species has been included in the Red List of Japan (MORIMOTO, 2008). Little is known about the biology of this species (HOSOYA & KIYOSHI, 2009).

A recent survey by the authors in Ue-shûraku on Akuseki-jima Is. revealed that the weevil was common on felled tree trunks from the end of June to the beginning of July. However, no weevil was discovered outside the village. Weevils were likely attracted by the presence of numerous old trees that had been felled to minimize the risk posed by the trees to houses during typhoons. The weevil appears to prefer trees of *Machilus thunbergii* (Lauraceae; Tabunoki in Japanese) and *Castanopsis siedoldii* (Fagaceae; Sudajii in Japanese), upon which copulation and ovipositing behaviors were frequently observed (Fig. 6). The weevil was rarely found on *Ficus macrocarpa* (Moraceae), which was very common in the village. The weevil was active during the daytime, and was not observed at nighttime, probably because it concealed itself at night.

Although this species is presently designated as data deficient (DD) in the Red List of Kagoshima Prefecture (2003), it is considered that this peculiar and endemic species should be protected in the near future.

Specimens examined. 6 exs., Ue-shûraku, Akuseki-jima Is., 30.VI.2015, YF; 8 exs., 30.VI.2015, HK; 2 exs., 1.VII.2015, YF; 5 exs., 1.VII.2015, HK; 1 ex., 2.VII.2015, YF. Many individuals were



Figs. 1–8. Photographs of adult weevils and their habitats in the Tokara Islands. ——— 1, *Callipareius* (*Callipareius*) *formosanus*, with blackish prothorax on the trunk of *Ficus macrocarpa*; 2, ditto, with reddish brown prothorax; 3, *Miolispa cruciata* on the flower of *Angelica japonica*; 4, habitat of *C. formosanus*, *M. cruciata* and *Colobodes ornatoideus* in Ue-shûraku on Akuseki-jima Is.; note the felled trunks of *Ficus macrocarpa* surrounded by flowering *Angelica japonica* around them; 5, *Baryrhynchus* (*Eupsalomimus*) *tokarensis*, copulating on the trunk of *Castanopsis sieboldii*; note the female digging a hole with her rostrum; 6, habitat of *B. tokarensis*; note the felled trunks of *Machilus thunbergii* and *Castanopsis sieboldii*; 7, *Anthinobaris kiboshi kiboshi* on the flower of *Peucedanum japonicum*; 8, *Merus* (*Nipponomerus*) *masatakai* grasping the stem of *Castanopsis sieboldii*.

observed in nature, but these were not collected.

Distribution. Japan: The Ryukyus: Tokara Islands (Akuseki-jima and Takara-jima Isls.).

Family **Curculionidae**

Indocurculio hirashimai (MORIMOTO, 1981)*+

Note. This weevil is known from the Ryukyus (Okinawa-jima, Kume-jima, Ishigaki-jima, Iriomote-jima and Hatoma-jima Isls.) and Taiwan, and is associated with *Ficus macrocarpa* (Moraceae) (FUJIMOTO, 2011; KOJIMA, 2012 a). An adult of this species was collected on Akuseki-jima Is. near a stand of *Ficus* trees. This is the first record for the Tokara Islands and represents the northernmost record of this species.

Specimen examined. 1 ex., Yudomari, Akuseki-jima Is., 30.VI.2015, HK.

Distribution. Japan: The Ryukyus: Tokara Islands (Akuseki-jima Is.), Okinawa Islands (Okinawa-jima and Kume-jima Isls.) and Sakishima Islands (Ishigaki-jima, Iriomote-jima and Hatoma-jima Isls.); Taiwan. New to the Tokara Islands.

Sphinxis pubescens ROELOFS, 1875*+

Note. This weevil is known from Honshu, Shikoku, Kyushu and Tanegashima Is., and is associated with *Elaeocarpus sylvestris* (Elaeocarpaceae; Horutonoki in Japanese) (KOJIMA & MORIMOTO, 2000; KOJIMA, 2010). An adult of this species was collected on Takara-jima Is. This is the first record for the Tokara Islands and represents the southernmost record of this species.

Specimen examined. 1 ex., Mt. Imakiradake, Takara-jima Is., 9.III.2013, YF.

Distribution. Japan: Honshu, Shikoku, Kyushu Ôsumi Islands (Tanegashima Is.) and the Ryukyus: Tokara Islands (Takara-jima Is.). New to the Tokara Islands.

Anthonomus (***Anthonomus***) ***okumai*** MORIMOTO et MIYAKAWA, 1985*+

Note. This weevil is known from Honshu and the Izu Islands (Sikine-jima, Kôzushima and Mikura-jima Isls.). Adults have been captured on flowering trees, such as *Quercus serrata* and *Castanea crenata* (Fagaceae; Konara and Kuri in Japanese), but the host is unknown (MORIMOTO & MIYAKAWA, 1985; KOJIMA, 2015). In this study, the weevil was collected on Kuchinoshima and Akuseki-jima Isls. On Akuseki-jima Is., the adults were captured on flowers of *Illex integra* (Aquifoliaceae; Mochinoki in Japanese). This is the first record for the Tokara Islands and the Ryukyus, and represents the southernmost record of this species.

Specimens examined. 2 exs., Mt. Yokodake, Kuchinoshima Is., 2.V.2013, HK. 1 ex., Mt. Mitake, Akuseki-jima Is., 5–8.III.2013, HK; 1 ex., Mt. Megamiyama, Akuseki-jima Is., 7.III.2013, N. ITO; 26 exs., 7-8.III.2013, HK; 10 exs., Ue-shûraku, Akuseki-jima Is., 5–9.III.2013, HK.

Distribution. Japan: Honshu, Izu Islands (Shikine-jima, Kôzushima and Mikura-jima Isls.) and the Ryukyus: Tokara Islands (Kuchinoshima and Akuseki-jima Isls.). New to the Tokara Islands and the Ryukyus.

Anthinobaris kiboshi kiboshi (NAKANE, 1963)[+]

(Fig. 7)

Note. This weevil is known from the Ryukyus (Nakanoshima, Amami-Ôshima and Okinoerabu-jima Isls.) (MORIMOTO, 1984), however nothing is known about the biology other than the adults were collected from the flower of an unknown plant (MIYAMOTO *et al*., 1954). The authors found a number of adults on flowers of *Peucedanum japonicum* (Apiaceae; Botanbôfû in Japanese) on Kuchinoshima Is. This occurrence represents the northernmost record of this species.

Specimens examined. 27 exs., Hayase, Kuchinoshima Is., 6.VII.2015, HK; 18 exs., 6.VII.2015, YF.

Distribution. Japan: The Ryukyus: Tokara Islands (Kuchinoshima and Nakanoshima Isls.) and Amami Islands (Amami-Ôshima and Okinoerabu-jima Isls.). New to Kuchinoshima Is.

Coeliodere fulvus (ROELOFS, 1875)*[+]

Note. This weevil is known from Honshu, Shikoku and Kyushu, and to be associated with *Rhododendron* spp. (Ericaceae) (MORIMOTO, 1984). The authors captured adults on *R. eriocarpum* (Marubasatsuki in Japanese) on Akuseki-jima Is. This is the first representative from the Tokara Islands and the Ryukyus, and represents the southernmost record of this species.

Specimens examined. 16 exs., Mt. Mitake, Akuseki-jima Is., 5–8.III.2013, HK; 7 exs., 4.VII.2015, HK; 1 ex., Ue-shûraku, Akuseki-jima Is., 5–9.III.2013, HK; 2 exs., 6.III.2013, D. WATABIKI; 1 ex., Mt. Megamiyama, Akuseki-jima Is., 7.III.2013, N. ITO; 1 ex., 7.III.2013, YF; 4 exs., 2.VII.2015, YF; 1 ex., 3.VII.2015, HK.

Distribution. Japan: Honshu, Shikoku, Kyushu and the Ryukyus: Tokara Islands (Akuseki-jima Is.). New to the Tokara Islands and the Ryukyus.

Podeschrus signatus ROELOFS, 1875*[+]

Note. This weevil is known from Kyushu, where it is rare (MORIMOTO, 1984). The senior author collected an adult on Kuchinoshima Is. in a stand of *Ficus* trees. This represents the first record for the Tokara Islands as well as the Ryukyus, and is the southernmost record of this species.

Specimen examined. 1 ex., Seranma, Kuchinoshima Is., 5.V.2013, HK.

Distribution. Japan: Kyushu and the Ryukyus: Tokara Islands (Kuchinoshima Is.). New to the Tokara Islands and the Ryukyus.

Merus (***Nipponomerus***) ***masatakai*** MORIMOTO et KOJIMA, 2007*[+]

(Fig. 8)

Note. This weevil was described recently based on four specimens from Amami-Ôshima, Ishigaki-jima and Yonaguni-jima Isls. in the Ryukyus, and nothing is known about the biology of the species (MORIMOTO & KOJIMA, 2007). The authors captured several adults on *Castanopsis sieboldii* by beating on Akuseki-jima Is. This species is newly confirmed in the Tokara Islands, and is the northernmost record of this weevil.

Specimens examined. 1 ex., Ue-shûraku, Akuseki-jima Is., 2.VII.2015, YF; 5 exs., Near Mt. Birouyama, Akuseki-jima Is., 3.VII.2015, YF; 1 ex., Ue-shûraku to Mt. Megamiyama, Akuseki-jima Is., 3.VII.2015, HK; 2 exs., 5.VII.2015, HK.

Distribution. Japan: The Ryukyus: Tokara Islands (Akuseki-jima Is.), Amami Islands (Amami-Ôshima Is.) and Sakishima Islands (Ishigaki-jima and Yonaguni-jima Isls.). New to the Tokara Islands.

Colobodes ornatoideus MORIMOTO, 1988

(Fig. 9)

Note. This weevil is known from the Izu Islands and the Ryukyus (Tokara Islands, Amami-Ôshima Is., Tokunoshima Is. and Okinawa-jima Is.). No biological information was known for this weevil, which was relatively uncommon in nature, until KOJIMA *et al*. (2012) collected and reared the weevil from *Mallotus japonicus* (Euphorbiaceae; Akamegashiwa in Japanese) in the Izu Islands.

The authors collected a number of this species on felled trunks of *Ficus macrocarpa* on Akuseki-jima Is. in the Tokara Islands, together with other weevils such as *Simulatacalles*, *Sclerolips* and *Acicnemis* spp. However, the weevil was very rare on trunks as *Machilus thunbergii* and *Castanopsis sieboldii*.

Specimens examined. 85 exs., Satomura, Nakanoshima Is., 13.III.2013, N. ITO; 3 exs., 13.III.2013, N. KANEKO; 1 ex., 13.III.2013, YF; 5 exs., 14.III.2013, YF; 1 ex., Mt. Otake, Nakanoshima Is., 13.III.2013, YF; 1 ex., Yoriki, Nakanoshima Is., 15.III.2013, HK. 11 exs., Ue-shûraku, Akuseki-jima Is., 30.VI.2015, HK; 10 exs., 1.VII.2015, YF; 35 exs., 1.VII.2015, HK; 19 exs., 2.VII.2015, HK; 6 exs., 4.VII.2015, HK; 1 ex., Near Mt. Birouyama, Akuseki-jima Is., 3.VII.2015, YF. 11 exs., Mt. Imakiradake, Takara-jima Is., 9.III.2013, HK (on *Mallotus japonicus*); 1 ex., Mt. Megamiyama, Takara-jima Is., 12.III.2013, YF.

Distribution. Japan: Izu Islands (Hachijô-jima Is.) and the Ryukyus: Tokara Islands (Kuchinoshima, Nakanoshima, Akuseki-jima and Takara-jima Isls.), Amami Islands (Amami-Ôshima and Tokunoshima Isls.) and Okinawa Islands (Okinawa-jima Is.). New to Nakanoshima and Takara-jima Isls.

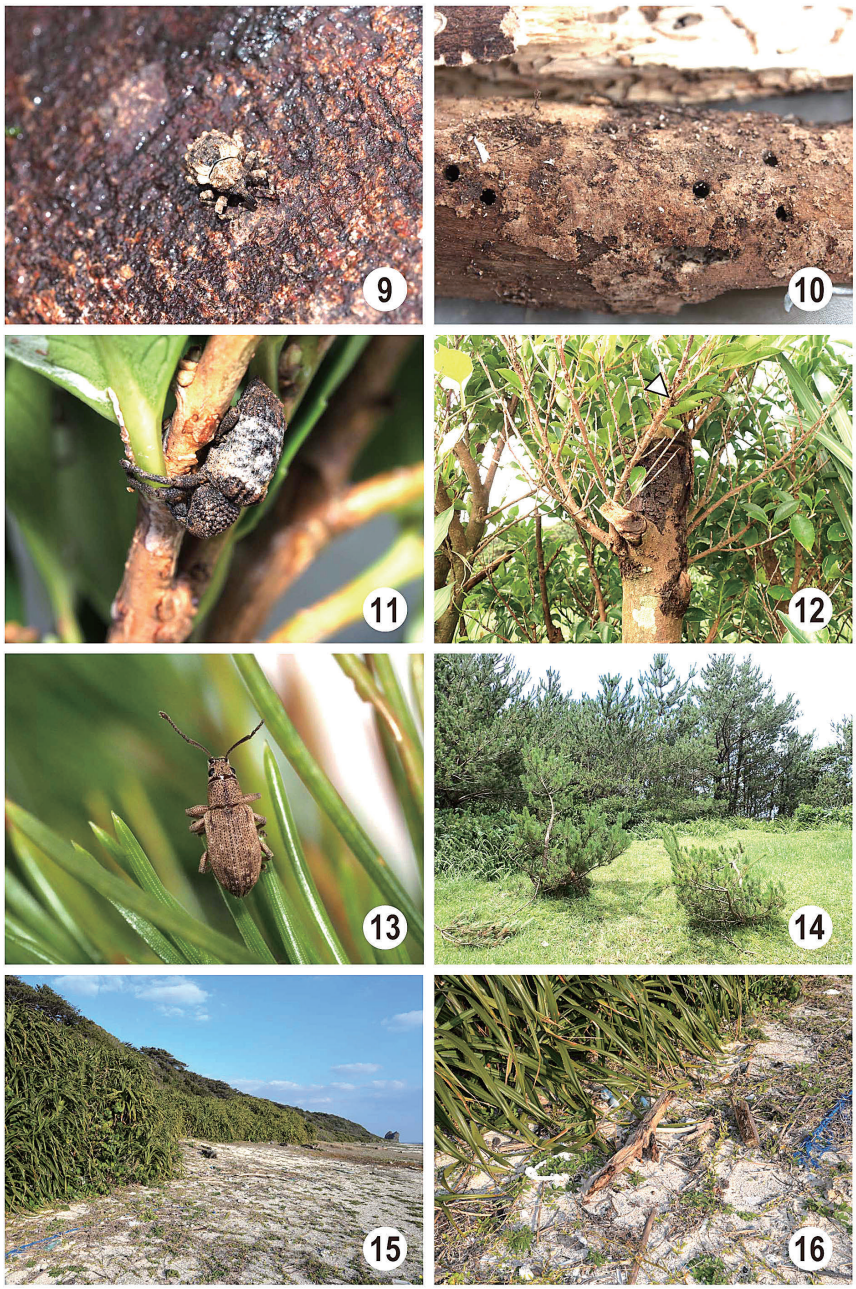
Styanax kuwanoi CHÛJÔ et VOSS, 1960*[+]

(Figs. 11, 12)

Note. This weevil is known from Honshu and Kyushu where it is relatively uncommon in nature (MORIMOTO, 1984). Occurrence of this species from the Tokara Islands is confirmed here for the first time, and represents the southernmost record of this species. The weevil was found on *Eurya japonica* (Theaceae; Hisakaki in Japanese), which is widely used for hedgerows around houses and agricultural fields on Kuchinoshima Is., and also on *Rhaphiolepis indica var*. *umbellata* (Rosaceae; Sharinbai in Japanese) on Akuseki-jima Is. These trees appeared somewhat stressed, probably due to infection by this weevil. As the weevil clasps strongly to the branches of the host, collection by beating and sweeping is less effective than by visual inspection. The integument of freshly caught, living specimens is covered with white and brown powdery substances that are easily abraded and seldom fully present in museum specimens.

Specimens examined. 28 exs., Shûraku, Kuchinoshima Is., 2–4.V.2013, HK; 2 exs., 5.V.2013, HK; 1 ex., Near Shûraku, Kuchinoshima Is., 5.VII.2015, YF; 5 exs., 7.VII.2015, HK. 8 exs., Yudomari, Akuseki-jima Is., 30.VI.2015, YF; 15 exs., 30.VI.2015, N. ITO; 1 ex., 1.VII.2015, HK.

Distribution. Japan: Honshu, Kyushu and the Ryukyus: Tokara Islands (Kuchinoshima and Akuseki-jima Isls.). New to the Tokara Islands.



Figs. 9–16. Photographs of adult weevils and their habitats in the Tokara Islands. ——— 9, *Colobodes ornatoideus* on the trunk of *Ficus macrocarpa*; 10, emergence holes of *Parempleurus femoratus* on *Eurya japonica*; 11, *Styanax kuwanoi* grasping the stem of *Eurya japonica*; 12, stressed stand of *Eurya japonica* (triangular mark indicates an adult of *S. kuwanoi* grasping the stem); 13, *Nothomyllocerus pini* on needles of *Pinus thunbergii*; 14, habitat of *N. pini* near Mt. Moedake on Kuchinoshima Is.; 15, habitat of *Isodryotribus squamosus* in Ôma-domari, Takara-jima Is.; note the shrubs of *Pandanus odoratissimus*; 16, driftwood pieces from which adults of *I. squamosus* were extracted.

Viticis aeratus (MORIMOTO, 1983)*+

Note. This odd-looking weevil is known from Irabu-jima Is. of the Miyako Islands, Ishigaki-jima and Iriomote-jima Isls. of the Sakishima Islands in the Ryukyus, and to associate with *Ficus* (Moraceae) (KOJIMA, 1991, 2006; KOJIMA & FUJISAWA, 2012). Occurrence of this weevil in the Tokara Islands is confirmed here for the first time. This is the northernmost record of not only this species, but also of this tribe, which is widely distributed in the Pacific Islands; consequently, this is an important biogeographic discovery.

Specimens examined. 1 ex., Yoriki, Nakanoshima Is., 15.III.2013, HK; 1 ex., 15.III.2013, YF; 1 ex., 17.III.2013, HK. 5 exs., Yudomari, Akuseki-jima Is., 5–9.III.2013, HK; 1 ex., 6.III.2013, YF; 1 ex., 9.III.2013, YF. 1 ex., Kodakara-jima I., 3.V.2013, HK.

Distribution. Japan: The Ryukyus: Tokara Islands (Nakanoshima, Akuseki-jima, and Kodakara-jima Isls.), Miyako Islands (Irabu-jima Is.) and Sakishima Islands (Ishigaki-jima and Iriomote-jima Isls.). New to the Tokara Islands.

Parempleurus femoratus MORIMOTO et MIYAKAWA, 1985*

Note. This weevil is known from Honshu (Wakayama: Kii-Ôshima Is.), the Izu Islands (Mikura-jima Is.) and the Ryukyus (Amami-Ôshima and Okinawa-jima Isls.). Little is known about the biology of this species, except that some adults were reared from *Illex integra* (Aquifoliaceae), which stands decayed (MATOBA, 1999). The authors collected a number of dead adults from felled trunks of *Eurya japonica* (Theaceae) and decaying stands of *Rhaphiolepis indica* var. *umbellata* (Rosaceae) on Akuseki-jima Is. (Fig. 10). This is the first record for the Tokara Islands.

Specimens examined. 4 exs., Mt. Mitake, Akuseki-jima Is., 5.III.2013, YF; 4 exs., 7.III.2013, YF; 1 ex., 7.III.2013, HK; 3 exs., 5.III.2013, YF (emerged from dead branches of *Eurya japonica* and found on 10.IX.2013); 2 exs., Yudomari, Akuseki-jima Is., 8.III.2013, YF (extracted from decaying stands of *Rhaphiolepis indica* var. *umbellata*); 1 ex., Mt. Megamiyama, Akuseki-jima Is., 3.VII.2015, HK.

Distribution. Japan: Honshu, Izu Islands (Mikura-jima Is.) and the Ryukyus: Tokara Islands (Akuseki-jima Is.), Amami Islands (Amami-Ôshima Is.) and Okinawa Islands (Okinawa-jima Is.). New to the Tokara Islands.

Isodryotribus squamosus KONISHI, 1962

Note. Other than the original description based on a single specimen, nothing is known about this weevil (MORIMOTO, 1985). The authors collected this rare weevil by sifting sands under the shrubs of *Pandanus odoratissimus* (Pandanaceae; Adan in Japanese) and from pieces of driftwood on the seashore of the type locality on Takara-jima Is. (Figs. 13, 14). The weevil was also found on Kodakara-jima Is. for the first time.

Specimens examined. 2 exs., Near Ôike, Takara-jima Is., 10.III.2013, HK; 3 exs., Ômadomari, Takara-jima Is., 10.III.2013, HK; 7 exs., 12.III.2013, YF; 3 exs., Kodakara-jima Is., 23.III.2013, HK.

Distribution. Japan: The Ryukyus: Tokara Islands (Kodakara-jima and Takara-jima Isls.). New to Kodakara-jima Is.

Nothomyllocerus pini KOJIMA et MORIMOTO, 2006*

(Fig. 15)

Note. This weevil is known from Yakushima Is. and the Ryukyus (Amami-Ôshima, Okinawa-jima, Tokashiki-jima, Zamami-jima, Aka-jima, Kume-jima and Miyako-jima Isls.), and to associate with *Pinus luchuensis* (Pinaecae; Ryûkyûmatsu in Japanese) (MORIMOTO *et al*., 2006; KOJIMA, 2012 b; KOJIMA & FUJISAWA, 2012). The occurrence of this weevil on Kuchinoshima and Nakanoshima Isls. represents the first record for the Tokara Islands (Fig. 16), and adults were found on *P. thunbergii* (Kuromatsu in Japanese).

Specimens examined. 17 exs., Near Mt. Moedake, Kuchinoshima Is., 7.VII.2015, HK; 6 exs., 7.VII.2015, YF. 1 ex., Siizaki, Nakanoshima Is., 15.III.2013, YF; 1 ex., 15.III.2013, HK.

Distribution. Japan: Ôsumi Islands (Yakushima Is.) and the Ryukyus: Tokara Islands (Kuchinoshima and Nakanoshima Isls.), Amami Islands (Amami-Ôshima Is.), Okinawa Islands (Okinawa-jima, Tokashiki-jima, Zamami-jima, Aka-jima and Kume-jima Isls.) and Miyako Islands (Miyako-jima Is.). New to the Tokara Islands.

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要　　約

小島弘昭・藤澤侑典：トカラ列島産ゾウムシ類（鞘翅目ゾウムシ上科）の生態ならびに分布記録．――トカラ列島産ゾウムシ上科甲虫計16種（ミツギリゾウムシ科3種，ゾウムシ科13種）について生態ならびに分布上の新知見を報告した．このうちゾウムシ科の10種はトカラ列島初記録種で，13種のうち9種は分布の南限もしくは北限の記録となる．

References

FUJIMOTO, H., 2011. A check list of Japanese Curculionini with the degree of collecting difficulty. *Nature and Insects*, *Tokyo*, **46**(5): 28–33. (In Japanese with English title.)

HIKIDA, H., H. OTA & M. TOYAMA, 1992. Herpetofauna of an encounter zone of Oriental and Palearctic elements: Amphibians and reptiles of the Tokara Group and adjacent islands in the northern Ryukyus, Japan. *Biological Magazine Okinawa*, (30): 29–43.

HOSOYA, T., 2011. Insect biogeography in the Tokara Islands. *Nature and Insects*, *Tokyo*, **48**(8): 5–8. (In Japanese with English title.)

HOSOYA, T., & T. KIYOSHI, 2009. Records of the genus *Baryrhynchus* (Brentidae, Arrhenodini) on Akuseki Island of the Tokara Islands, Japan. *Elytra*, *Tokyo*, **37**: 51–52.

Kagoshima Prefecture (ed.), 2003. Kagoshima Red Data Book, Animals. 642 pp. The foundation of Kagoshima Environmental Research and Service, Kagoshima. (In Japanese.)

KOJIMA, H., 1991. Records of two viticine speceis. *Coleopterisis' News*, *Tokyo*, (93): 6. (In Japanese.)

KOJIMA, H., 2006. Association of Viticiini (Coleoptera: Curculionidae: Cyclominae) with *Ficus* (Moraceae). *Coleopterists Bulletin*, *Washington DC*, **60**: 42.

KOJIMA, H., 2010. Record of some weevils (Coleoptera, Curculionoidea) new to the fauna of Tanegashima, Japan. *Elytra*, *Tokyo*, **38**: 161–163.

KOJIMA, H., 2012 a. Record of some weevils new to the fauna of Kumejima and Oujima Islands, the Ryukyus, Southwest Japan. *Elytra*, *Tokyo*, (n. ser.), **2**: 3–5.

KOJIMA, H., 2012 b. Weevils new to the fauna of the Kerama Islands, the Ryukyus, Southwest Japan (Coleoptera, Curculionoidea). *Elytra*, *Tokyo*, (n. ser.), **2**: 141–143.

KOJIMA, H., 2015. A preliminary checklist of the superfamily Curculionoidea (Insecta, Coleoptera) (excepting Scolytidae and Platypodidae) from Mikura-jima Is., the Izu Islands, Japan. *Mikurensis*, *Tokyo*, **4**: 17–44. (In Japanses with English title.)

KOJIMA, H., & K. MORIMOTO, 2000. Systematics of the genus *Sphinxis* ROELOFS (Coleoptera, Curculionidae). *Entomological Science*, **3**: 529–556.

KOJIMA, H., & Y. FUJISAWA, 2012. Weevils new to the fauna of Miyako-jima and its adjacent islands, the Ryukyus, Southwest Japan. *Sayabane*, *Tokyo*, (n. ser.), (8): 11–16. (In Japanese with English title and summary.)

KOJIMA, H., J. KURIHARA & C. ZHANG, 2012. Host record of *Colobodes ornatoideus* MORIMOTO (Coleoptera, Curculionidae, Molytinae). *Elytra*, *Tokyo*, (n. ser.), **2**: 139–140.

KOJIMA, H., & M. WATANABE, 2014. Weevil fauna of the Ryukyu Islands, Southwest Japan. *Nature and Insects*, *Tokyo*, **49**(5): 5–9. (In Japanese with English title.)

LÖBL, I., & A. SMETANA (eds.), 2011. Catalogue of Palaearctic Coleoptera, **7**. Curculionoidea I. 373 pp. Apollo Books, Stenstrup.

LÖBL, I., & A. SMETANA (eds.), 2013. Catalogue of Palaearctic Coleoptera, **8**. Curculionoidea II. 700 pp. Brill, Leiden.

MATOBA, I., 1999. A check list of the family Curculionidae from Wakayama Prefecture. *Bulletin of Wakayama Prefectural Museum of Natural History*, *Kainan*, (17): 29–51.

MIYAMOTO, S., T. NAKANE & S. UÉNO, 1954. Collecting record of Tokara. *Shinkontyû*, *Tokyo*, **7**(2): 28–34. (In Japanese.)

MORIMOTO, K., 1976. On the Japanese species of the family Brentidae (Coleoptera). *Kontyû*, *Tokyo*, **44**: 267–282.

MORIMOTO, K., 1984. Curculionidae. Pp. 269–345, pls. 53–68. *In* HAYASHI, M., K. MORIMOTO & S. KIMOTO (eds.), *The Coleoptera of Japan in Color*, **4**. 438 pp. Hoikusha, Osaka. (In Japanese with English title.)

MORIMOTO, K., 1985. Introduction to the studies on the weevil subfamilies Cossoninae, Dryophthoridae and tribe Stromboscerini. III. Cossoninae. Part 2. *Kaoku-gaichû*, *Yokohama*, (23/24): 19–28. (In Japanese with English title.)

MORIMOTO, K., 2008. An introduction to the study of Brentidae (1) Japanese species. *Gekkan-Mushi*, *Tokyo*, (443): 4–16. (In Japanese with English title.)

MORIMOTO, K., & H. KOJIMA, 2007. Taxonomic notes on the tribe Mecysolobini (Coleoptera, Curculionidae), with descriptions of three new taxa from Japan. *Elytra*, *Tokyo*, **35**: 226–237.

MORIMOTO, K., H. KOJIMA & S. MIYAKAWA, 2006. Curculionoidea: General introduction and Curculionidae: Entiminae (Part 1). Phyllobiini, Polydrusini and Cyphicerini (Coleoptera). *The Insects of Japan*, **3**. iv+406 pp. Touka Shobo, Fukuoka. (In English and Japanese.)

MORIMOTO, K., & S. MIYAKAWA, 1985. Weevil fauna of Izu Islands, Japan (Coleoptera). *Mushi*, *Fukuoka*, **50**(3): 19–85.

NOTSU, Y., 2013. Three new species of curculionine weevils from Taiwan, with a list of all the known Taiwanese species (Coleoptera, Curculionidae). *Japanese Journal of Systematic Entomology*, *Matsuyama*, **19**: 289–308.

SFORZI, A., & L. BARTOLOZZI (eds.), 2004. Brentidae of the World (Coleoptera, Curculionoidea). *Monografie Museo Regionale di Scienze Naturali*, *Torino*, **39**. 976 pp.

YOSHITAKE, H., Y. NAKATANI, S. YOSHIMATSU & E. TANAKA, 2013. A list of specimens of the Japanese Brentidae (Insecta: Coleoptera) preserved in the Insect Museum of the National Institute for Agro-Environmental Sciences. *Bulletin of National Institute for Agro-Environmental Sciences*, *Tsukuba*, (32): 1–10. (In Japanese with English title and summary.)

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