

## Biological Notes on Threatened Celeuthetine Weevil, *Torishimazo lineatus* (Coleoptera, Curculionidae, Entiminae), Endemic to the Ogasawara Islands, Tokyo, Japan

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**Abstract** The celeuthetine weevil, *Torishimazo lineatus* (KÔNO, 1928), is endemic to the Ogasawara Islands, Tokyo, Japan. The earliest record of adult weevils and their food plants observed on Minamishima Is. in February 2017 along with feeding scars left on leaves of *Scaevola taccada*, *Ipomoea pes-caprae*, *Vitex rotundifolia*, *Tetragonia tetragonioides*, and *Myoporum boninense* were reported here.

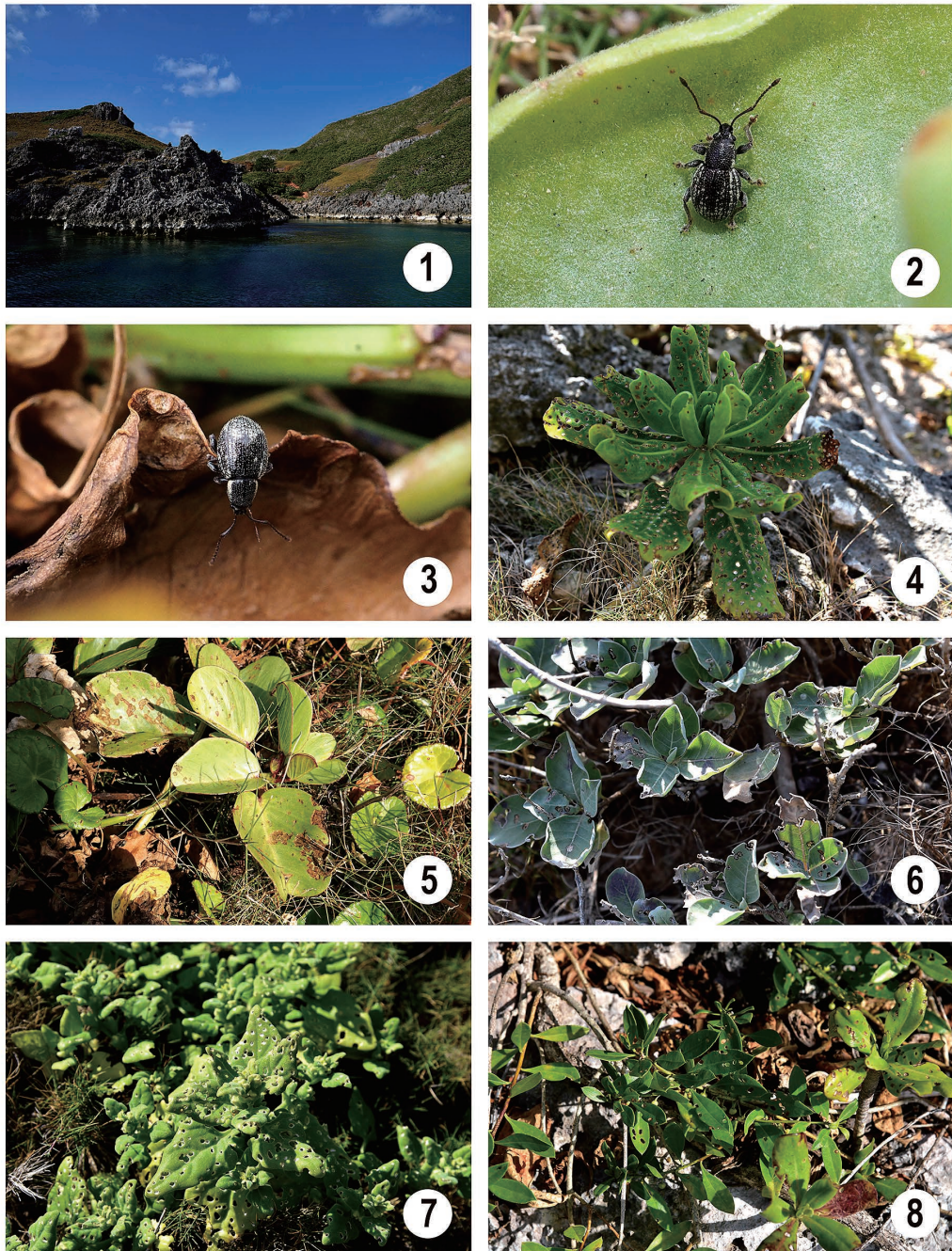
The genus of flightless weevils, *Torishimazo* (Entiminae, Celeuthetini), was established by MORIMOTO (1966) to classify *T. watanabei* found on Izu-Torishima Is., the Izu Islands, Tokyo, Japan and was later treated as a subgenus of *Ogasawarazo* KÔNO, 1942 containing two species, *Ogasawarazo* (*Torishimazo*) *daitoensis* (VOSS, 1971) found on the Daitô Islands and *O. (T.) lineatus* (KÔNO, 1928) found on the Ogasawara Islands (MORIMOTO, 1981). However, in a more recent paper, MORIMOTO (2015) newly treated *Torishimazo* as a full genus and described three species contained therein from the Ogasawara Islands. Today, this genus contains a total of six species from islands on the same tectonic plate, the Philippine Sea Plate: four from the Ogasawara Islands, one from Izu-Torishima Is., and one from the Daito Islands.

Little is known about the biology of members of *Torishimazo* except that *T. karubei* MORIMOTO, 2015 and *T. watanabei* MORIMOTO, 1966 were found on *Boehmeria boninensis* (Urticaeae) and *Vitex* sp. (? *ficifolia*; Vitaceae), respectively; *T. lineatus* (KÔNO, 1928) was collected by sweeping a *Ipomoea pes-caprae* (Convolvulaceae)–*Vitex rotundifolia* (Lamiaceae) community on the beach and also from the leaves of *Hibiscus glaber* (Malvaceae) and *Elaeocarpus photinifolius* (Elaeocarpaceae) (MORIMOTO, 2015); *T. daitoensis* (VOSS, 1971) was found on *Scaevola taccada* (Goodeniaceae) and adult feeding scars were also reported (KOJIMA & MORIMOTO, 2012).

Recently, the senior author on this paper visited Minamishima Is., an uninhabited small islet, just south of Chichijima Is. in February 2017 and found several adult weevils of *T. lineatus*. The weevils were recorded in the Red Data Book as threatened by the Tokyo Metropolitan Government (2014) and the Ministry of the Environment, Japan (2015) categorized as near threatened. However, there is little knowledge of the biology of this weevil, which is crucial for its conservation.

### Materials and Methods

As Minamishima Is. is an uninhabited and protected small islet, the senior author was accompanied by a tour guide authorized by the Tokyo Metropolitan Government on a chartered boat to the islet for a visit on February 28, 2017. The time allotted and walking route on the islet were so restricted that less than an hour was spent observing adult weevils and their associated plants. Observations were made only along the walking route, and the only method for recording them was by taking photographs.



Figs. 1–8. Habitat, habitus and adult feeding scars of *Torishimazo lineatus* (KÔNO, 1928) on Minamishima Is., the Ogasawara Islands. — 1. A view of Minamishima Is.; 2, an adult on a leaf of *Scaevola taccada*; 3, ditto on a leaf of *Ipomoea pes-caprae*; 4, adult feeding scars on leaves of *Scaevola taccada*; 5, ditto on leaves of *Ipomoea pes-caprae*; 6, ditto on leaves of *Vitex rotundifolia*; 7, ditto on leaves of *Tetragonia tetragonioides*; 8, ditto on leaves of *Myoporum boninense*.

Table 1. Adult food plants of *Torishimazo lineatus*.

| Adult food plant (Family)                          | Reference                      |
|--|--------------------------------|
| <i>Elaeocarpus photinifolius</i> (Elaeocarpaceae)† | MORIMOTO (2015)                |
| <i>Hibiscus glaber</i> (Malvaceae)*                | KARUBE <i>et al.</i> (2004)    |
| <i>Ipomoea pes-caprae</i> (Convolvulaceae)*        | MORIMOTO (2015); present study |
| <i>Myoporum boninense</i> (Myoporaceae)*           | present study                  |
| <i>Scaevola taccada</i> (Goodeniaceae)*            | present study                  |
| <i>Tetragonia tetragonoides</i> (Aizoaceae)*       | present study                  |
| <i>Vitex rotundifolia</i> (Lamiaceae)*             | MORIMOTO (2015); present study |

\*Plants with adult feeding scars in this study.  
†Endemic species to the Ogasawara Islands.

***Torishimazo lineatus* (KÔNO, 1928)**

(Figs. 1–8)

*Ogasawarazo lineatus*: SUDA & HINAKURA, 2014: 467 (categorized as near threatened); KOJIMA & TAKAKUWA, 2014: 410 (categorized as near threatened).

*Torishimazo lineatus*: MORIMOTO, 2015: 249 (revision).

See MORIMOTO (2015) for other synonymy and redescription.

**Distribution.** Japan: Ogasawara Islands (Mukojima, Chichijima, Nishijima, Minamishima, Hahajima, Mukohjima, and Meijima Islands).

**Remarks.** This species is known to commonly inhabit the neighboring islets of the Chichijima and Hahajima Islands such as Nishijima, Minamishima and Mukohjima Islands. However, it is threatened on Chichijima and Hahajima Islands due to active predation of an introduced lizard, the green anole (SUDA & HINAKURA, 2014; KOJIMA & TAKAKUWA, 2015).

**Results**

A total of three adults of *T. lineatus* were observed during the field survey on Minamishima Is.; two were found under dead leaves of *Ipomoea pes-caprae* and the other was found inside the yet unrolled new leaf of *Scaevola taccada*. According to a previous report, adults of this species have been found from April to December (MORIMOTO, 2015). This observation of adults in February is the earliest record of this species, suggesting their year-round presence on the islet.

Unique adult feeding scars were observed as on the congener, *T. daitoensis*, on the Daito Islands (KOJIMA & MORIMOTO, 2012) and on several species of leaves with an appearance of spotty holes. Such feeding scars were commonly found on *Scaevola taccada* (Fig. 4), which is the predominant plant on this islet. Among the other plants, scars were found on *Ipomoea pes-caprae* (Fig. 5), *Vitex rotundifolia* (Fig. 6), *Tetragonia tetragonoides* (Fig. 7; Aizoaceae), and *Myoporum boninense* (Fig. 8; Myoporaceae). Thus, *T. lineatus* adults are polyphagous, as is typical of other entimine weevils (Table 1). Other plants may be found to also be utilized as adult food resources if an inclusive survey is conducted on this islet and in other localities.

Since this species is endemic to the Ogasawara Islands and is designated as a threatened species due to active predation by the green anole on the main islands, such as Chichijima and Hahajima Islands, and it is very important to conserve habitats and populations on neighboring islands.

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### 要 約

小島弘昭・永野 裕：絶滅の恐れがある小笠原固有種スジヒメカタゾウムシ（鞘翅目ゾウムシ科クチブトゾウムシ亜科）の生態的知見。——父島の南に位置する無人島の南島に2月に上陸調査した際、生態的知見が乏しいスジヒメカタゾウムシの成虫ならびに成虫の食害痕を確認した。本種成虫はこれまで4月から12月に採集されていて、2月の成虫観察例は最も早い記録となり、本種成虫が周年で発生している可能性が示唆された。また、成虫の加害植物についても不明な点が多かったが、クサトベラを中心に、グンバイヒルガオやハマゴウ、ツルナ、コハマジンチョウに特徴的な成虫の食害痕が見られたため、成虫の加害植物として記録した。

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