

Collection Records of *Darumazo distinctus* (Coleoptera, Curculionidae) from Galls Induced by *Asteralobia sasakii* (Diptera, Cecidomyiidae) on the Izu Islands, Japan

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Abstract *Darumazo distinctus* MORIMOTO et MIYAKAWA has been collected from several localities in Japan but its bionomics was unknown. We found three adults of *D. distinctus* from axillary bud galls induced by *Asteralobia sasakii* (MONZEN) on *Ilex crenata* var. *hachijoensis* on Oshima and Hachijojima Islands, Tokyo, Japan.

Darumazo distinctus MORIMOTO et MIYAKAWA, 1985 (Coleoptera, Curculionidae, Molytinae) was described based on specimens collected from the Izu Islands (Oshima, Shikinejima, Kozushima, Miyakejima, Mikurajima, Hachijojima, and Aogashima Isls.), Nagasaki Pref., Kagoshima Pref. (Akusekijima Is.), and Okinawa Pref. (Iriomotejima and Yonagunijima Isls.) (MORIMOTO et MIYAKAWA, 1985). Later, NARUKAWA *et al.* (1989), ICHIHASHI *et al.* (1991), UENO (1992) and NOHIRA (2009) recorded this species from Mie Pref. (Togashima Is. and Hirakura), Fukui Pref. (Ongamijima and Ubeshima Isls.) and Gifu Pref. (Mino), respectively. Despite intensive faunal studies of Japanese weevils, the bionomics of *D. distinctus* has been unknown.

During the course of field survey of gall-inducing insects on the Izu Islands (TOKUDA *et al.*, 2012a, b), we found three adults of *D. distinctus* from axillary bud galls induced by *Asteralobia sasakii* (MONZEN) (Diptera, Cecidomyiidae, Cecidomyiinae) on *Ilex crenata* THUMB. var. *hachijoensis* NAKAI (Aquifoliaceae) (Fig. 1) on Oshima and Hachijojima Islands. In this paper, we report *D. distinctus* collected from the gall and summarize the collection records of this weevil.

Material and Methods

Axillary bud galls induced by *A. sasakii* on *I. crenata* var. *hachijoensis* were collected by MT and KM from Hachijojima Island in April 2011 (TOKUDA *et al.*, 2012a) and by TF from Oshima and Hachijojima Islands in April and May 2012. These galls were separately reared in plastic bags for obtaining adults of *A. sasakii* and its parasitoids until October and then dissected under a stereoscopic microscope to examine inhabitants of the larval chambers by TF. The weevil specimens obtained from the gall were identified by HY and are preserved in the National Institute for Agro-Environmental Sciences, Tsukuba, Japan (NIAES).

Darumazo distinctus MORIMOTO et MIYAKAWA, 1985

[Japanese name: Daruma-kuchikakushi-zoumushi]

MORIMOTO & MIYAKAWA, 1985, 60 (type locality: "Sabigahama, Miyake I."; distribution: Izu Isls., Kyushu, Nansei Isls.). – MORIMOTO, 1989, 520 (distribution: Izu Isls., Kyushu, Nansei Isls., Taiwan). – NARUKAWA *et al.*, 1989, 135 (Hirakura, Mie Pref.). – ICHIHASHI *et al.*, 1991, 42 (Togashima Is., Mie Pref.). – UENO, 1992, 54 (Onkamijima Is. & Ubeshima Is., Fukui Pref.). – KOJIMA & MORIMOTO, 2004, 139 (catalogued). – NOHIRA, 2009, 62 (Mino, Gifu Pref.).

Specimens examined. JAPAN: IZU ISLS. 1 ex. (Specimen No. 24-0462607, NIAES), Hachijojima Is., 33°04'44"N, 139°47'39"E, 7–IV–2011, M. TOKUDA & K. MATSUO leg. 1 ex. (Specimen No. 24-0475501, NIAES), 33°08'27"N, 139°45'54"E, Hachijojima Is., 30–IV–2012, T. FUJII leg. 1 ex. (Specimen No. 24-0475502, NIAES), 34°46'17"N, 139°21'24"E, Oshima Is., 10–V–2012, T. FUJII leg.

Distribution. Japan: Honshu (Fukui Pref., Gifu Pref., Mie Pref.), Izu Isls. (Oshima Is., Shikinejima Is., Miyakejima Is., Kozushima Is., Mikurajima Is., Hachijojima Is., Aogashima Is.), Kyushu (Nagasaki Pref.), Nansei Isls. (Akusekijima Is., Iriomotejima Is., Yonagunijima Is.); Taiwan.

Biological notes. Sixty-six axillary bud galls induced by *A. sasakii* on *I. crenata* var. *hachijoensis* were collected from Hachijojima Island on 7 April 2011 and dissected on 20 October 2011. At this time an adult of *D. distinctus* had been found dead in a tunnel-like larval chamber of the gall. In 2012, two adults of *D. distinctus* were collected from Oshima and Hachijojima Islands. One living adult of this weevil was obtained on 10 May 2012 from a plastic bag containing axillary bud galls induced by *A. sasakii* that had been collected from Oshima Island. The other adult was found to be dead on 23 July 2012 in a plastic bag containing an axillary bud gall collected from Hachijojima Island. Because each axillary bud gall was separately maintained in the plastic bag, the weevil found in the bag is considered to have departed from the gall.

Remarks. As far as we know, only 35 specimens of *D. distinctus* have been obtained previously (MORIMOTO & MIYAKAWA, 1985; MORIMOTO, 1989; NARUKAWA *et al.*, 1989; ICHIHASHI *et al.*, 1991; UENO, 1992; KOJIMA & MORIMOTO, 2004; NOHIRA, 2009). Through our two-year survey, however, three individuals of *D. distinctus* were additionally found in or near axillary bud galls induced by *A. sasakii* on *I. crenata* var. *hachijoensis*. This finding strongly suggests that *D. distinctus* use the galls for some purpose, though its detailed ecology including feeding habit, larval habitat and life cycle are still unclear. Further studies such as dissections of galls in different seasons are needed to elucidate the biology of this little-known species.



Fig. 1. Axillary bud galls induced by *Asterolobia sasakii* (MONZEN) on *Ilex crenata* THUMB. var. *hachijoensis* NAKAI.

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