Leaf Beetles (Coleoptera, Chrysomelidae) New for Ou-shima Is. near Kume-jima Is. in the Okinawa Isls., Central Ryukyus, Southwestern Japan

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Ou-shima Is., which belongs to Kumejima-chô, Shimajiri-gun, Okinawa Pref. as administrative division, is located in about 800 m east of Kume-jima Is. in the Okinawa Isls., central Ryukyus, southwestern Japan. This island is very small and flat (area 0.63 km², height 15 m). Vegetation of Ou-shima Is. is rather monotonous than that of Kume-jima Is., mainly composed of a *Imperata cylindrica* var. *koenigii – Miscanthus sinensis* community (Poaceae) and a *Casuarina equisetifolia* plantation (Casuarinaceae) (Biodiversity Center of Japan, 2014). As far as we know, no chrysomelid beetles have been recorded from Ou-shima Is. to date.

In early June, 2018, H. YOSHITAKE (HY, hereafter) and Y. TAMADERA (YT, hereafter) conducted a joint field survey of entomofauna on Ou-shima Is. and collected several chrysomelid beetles, all of which were later identified by H. SHIGETOH (HS, hereafter) to species. In this paper, we record five chrysomelid species in three subfamilies. These specimens are preserved in the Institute for Agro-Environmental Science, NARO, Tsukuba (NIAES) and the private collection of HS. Scientific names follow the recent catalogs by KIPPENBERG (2010) and MOSEYKO and Sprecher-Uebersax (2010), except following Lee *et al.* (2011) for *Haplosomoides ryukyuensis*.

Family Chrysomelidae Latreille, 1802 Subfamily Criocerinae Latreille, 1804

1. *Lilioceris formosana* Heinze, 1943

[Japanese name: Okinawa-kubinaga-hamushi]

Specimen examined. 1 ex., Ou, 6.VI.2018, HY.

Distribution. Japan: the Tokara Isls. (Nakanoshima Is. and Takara-jima Is.), Amami Isls. (Amami-Ôshima Is., Uke-jima Is. and Okinoerabu-jima Is.) and Okinawa Isls. (Okinawa-jima Is., the Kerama Isls., Tonaki-jima Is. and Kume-jima Is.; Ou-shima Is. near Kume-jima Is. — new record); and Taiwan (KIMOTO & TAKIZAWA, 1994; EHIRA, 1995; TAKIZAWA, 2006; KOHAMA, 2013; KANAI & MORIYAMA, 2014; SHIGETOH & YOSHITAKE, 2018; YASUI & UTOO, 2010).

Notes. New to Ou-shima Is. Precise localities of this species in the Tokara Isls. and Kerama Isls. have been unknown, respectively (KIMOTO & TAKIZAWA, 1994; TAKIZAWA, 2006), except that it was recorded from Takara-jima Is. in the Tokara Isls. by Ehira (1995) and by Kanai and Moriyama (2014), respectively.

Subfamily Eumolpinae HOPE, 1840

2. Abirus fortunei (BALY, 1861)

[Japanese name: Tsutsu-saru-hamushi]

Specimens examined. 10 exs., Ou, 6.VI.2018, HY and YT.

Distribution. Japan: the Amami Isls. (Okinoerabu-jima Is.), Okinawa Isls. (Okinawa-jima Is., Hamahiga-jima Is., Senaga-jima Is., Tonaki-jima Is., and Aguni-jima Is.; Ou-shima Is. near Kume-jima Is. — new record), Miyako Isls. (Miyako-jima Is.), and Yaeyama Isls. (Ishigaki-jima Is. and Iriomote-jima Is.); China, Korea, Laos, Myanmar, Taiwan, Thailand, and Vietnam (Yahuso *et al.*, 2002; Takizawa, 2009; Kusui, 2017; Kusui & Miyagi, 2017; Shigetoh, 2019).

Note. New to Ou-shima Is.

3. Pagria ingibbosa Pic, 1999

[Japanese name: Chibi-kibane-saru-hamushi]

Specimen examined. 1 ex., Ou, 6.VI.2018, YT.

Distribution. Japan: Hokkaido, Honshu, the Ogasawara Isls. (Iwo-jima Is.), Shikoku, Kyushu, and the Tokara Isls. (Nakanoshima Is. and Akuseki-jima Is.), Amami Isls. (Tokunoshima Is.), Okinawa Isls. (Aka-jima Is.; Ou-shima Is. near Kume-jima Is. — new record), and Yaeyama Isls. (Ishigaki-jima Is. and Iriomote-jima Is.); China, India, Indonesia, Malaysia, Nepal, Thailand, Vietnam, and the Hawaii Isls. (IMASAKA & MINAMI, 2008; Is-OWA, 2012; SUENAGA *et al.*, 2018).

Notes. New to Ou-shima Is. This is the second record of *P. ingibbosa* from the Okinawa Isls.

Subfamily Chrysomelinae Latreille, 1802

4. *Chalcolampra octodecimguttata* (FABRICIUS, 1775)

[Japanese name: Hamagou-hamushi]

Specimens examined. 24 exs., Ou, 6.VI.2018, YT.

Distribution. Japan: Honshu, Shikoku, Kyushu, and the Ôsumi Isls. (Yaku-shima Is. and Tanegashima Is.), Tokara Isls. (Takara-jima Is.), Amami Isls. (Amami-Ôshima Is., Kikai-jima Is., Yoro-jima Is., Tokunoshima Is., and Okinoerabu-jima Is.), Okinawa Isls. (Okinawa-jima Is., Iheya-jima Is., Noho-jima Is., Tonaki-jima Is., and Yakabi-jima Is.; Ou-shima Is. near Kume-jima Is. — new record), Miyako Isls. (Tarama-jima Is.) and Yaeyama Isls. (Ishigaki-jima Is., Iriomote-jima Is., Hateruma-jima Is., and Yonaguni-jima Is.); Australia, China, India, Malaysia, Myanmar, Philippines, Sri Lanka, Taiwan, and Vietnam (Nakane & Kimoto, 1961; Kimoto, 1964; Kimoto & Gressitt, 1966; Azuma & Kimoto, 1981; Reid, 2006; Shiyake, 2012; Kamezawa, 2015; Shigetoh & Yoshitake, 2018; Suenaga et al., 2018).

Note. New to Ou-shima Is.

Subfamily Galerucinae Latreille, 1802

5. Haplosomoides ryukyuensis Lee, Bezdek et Staines, 2011

[Japanese name: Hoso-sesuji-hamushi]

Specimen examined. 1 ex., Ou, 6.VI.2018, YT.

Distribution. Japan: the Amami Isls. (Amami-Ôshima Is.), Okinawa Isls. (Okinawa-jima Is. and Ou-shima Is. near Kume-jima Is. — new record), and Yaeyama Isls. (Ishigaki-jima Is., Iriomote-jima Is., and Yonaguni-jima Is.) (Lee *et al.*, 2011; Takizawa, 2011).

Notes. New to Ou-shima Is. This is the second record of *H. ryukyuensis* from the Okinawa Isls. This species had been known from the Ryukyus as *Haplosomoides costatus* BALY, 1878, but LEE *et al.* (2011) described it as a new species, *H. ryukyuensis*, in their revision of Taiwanese and Japanese species of the genus.

References

- AZUMA, S., & S. KIMOTO, 1981. A list of the Chrysomelidae (Coleoptera) from the detached islands in Okinawa. *Science Bulletin of the Faculty of Agriculture, University of the Ryukyus*, *Naha*, (28): 49–55.
- Biodiversity Center of Japan, 2014. Okinawa 18: Kumejima. Actual Vegetation Maps Based on the 3rd National Survey on the Natural Environment (Vegetation) [online]. Available from: http://gis.biodic.go.jp/webgis/files/vg/jpg/veg50k_47_kumejima 03.jp g (accessed on 27 January 2019).
- EHIRA, K., 1995. Insects of Takara-jima, Toshima-mura, Kagosima Prefecture, surveyed in November, 1994. *Bulletin of the Kagoshima Prefectural Museum, Kagoshima*, (14): 43–49. (In Japanese, with English title.)
- IMASAKA, S., & M. MINAMI, 2008. [Notes on the genus *Pagria* (Coleoptera, Chrysomelidae, Eumolpinae) from Japan, with records of some Southwest Asian species.] *Saga-no-konchû*, *Ogi*, (44): 253–363. (In Japanese.)
- Isowa, R., 2012. Geographical distribution of genus *Pagria* in Japan (Chrysomelidae, Eumolpinae). *Sayabane*, *Tokyo*, (n. ser.), (7): 13–17. (In Japanese, with English title.)
- KAMEZAWA, H., 2015. [Occurrence of *Chalcolampra octodecimguttata* (FABRICIUS) in the southern part of the Bôsô-hantô Peninsula.] *Gekkan-Mushi*, *Tokyo*, (533): 52–54. (In Japanese.)
- KANAI, K., & T. MORIYAMA, 2014. The recorded insects of Takara-jima (Tokara Islands) in April and October 2012. Bulletin of the Kagoshima Prefectural Museum, Kagoshima, (33): 39–44.
- KIMOTO, S., 1964. The Chrysomelidae of Japan and the Ryukyu Islands, V (Subfamily Chrysomelinae). *Journal of the Faculty of Agriculture, Kyushu University*, Fukuoka, 13: 263–286.
- KIMOTO, S., & J. L. GRESSITT, 1966. The Chrysomelidae of the Ryukyu archipelago. Pacific Insects, Honolulu, 8: 467-577.
- KIMOTO, S., & H. TAKIZAWA, 1994. Leaf Beetles (Chrysomelidae) of Japan. 539 pp. Tokai University Press, Tokyo. (In Japanese, with English keys and synonym list.)
- KIPPENBERG, H., 2010. Chrysomelinae. Pp. 390–442. In LÖBL, I., & A. SMETANA (eds.), Catalogue of Palaearctic Coleoptera, 6. 924 pp. Apollo Books, Stenstrup.
- Kusui, Y., 2017. [List of Coleoptera of Senaga-jima Is. (Okinawa, Tomigusuku) (1987–2007).] Ryukyu-no-Konchû, Naha, (41): 25–32. (In Japanese.)
- Kusui, Y., & A. Miyagi, 2017. [List of Coleoptera of Hamahiga-jima Is. (Uruma)]. Ryukyu-no-konchû, Naha, (41): 39–49. (In Japanese.)
- KOHAMA, T., 2013. [New distribution and host record of *Lilioceris formosana* from Tonaki-jima Is. and Kume-jima Is.] *Pulex*, *Fukuoka*, (92): 614–615. (In Japanese.)
- LEE, C.-F., J. BEZDEK & C. L. STAINES, 2011. A review of the genus *Haplosomoides* DUVIVIER, 1890 in Taiwan and Japan (Coleoptera: Chrysomelidae: Galerucinae). *Zoological Studies*, *Taipei*, 50: 118–138.
- Moseyko, A. G., & E. Sprecher-Uebersax, 2010. Eumolpinae. Pp. 619–642. In Löbl, I., & A. Smetana (eds.), Catalogue of Palaearctic Coleoptera, 6. 924 pp. Apollo Books, Stenstrup.
- NAKANE, T., & S. KIMOTO, 1961. Entomological results from the scientific survey of the Tokara Islands, Coleoptera, Chrysomelidae. *Bulletin of the Osaka Museum of Natural History, Osaka*, (13): 72–79.
- REID, C. A. M., 1993. Description of the *Constricta* species-group of the genus *Chalcolampra* BLANCHARD (Coleoptera: Chrysomelidae: Chrysomelinae). *Journal of the Australian Entomological Society*, *Brisbane*, 32: 253–263.
- Sasaki, T., M. Kimura & F. Kawamura, 2002. Coleoptera. Pp. 157–284. In Azuma, S., M. Yafuso, M. Kinjô, M. Hayashi, T. Kohama, T. Sasaki, M. Kimura & F. Kawamura (eds.), Check List of the Insect of the Ryukyu Islands. Flora and Fauna in Okinawa, (1) (2nd ed.). xxiv + 570 pp. The Biological Society of Okinawa, Nishihara. (In Japanese, with English book title.)
- SHIGETOH, H., & H. YOSHITAKE, 2018 a. Leaf beetles (Coleoptera, Chrysomelidae) collected in winter on Uke-jima Island, the Amami Islands, central Ryukyus, southwestern Japan. *Sayabane*, *Tokyo*, (n. ser.), (29): 17–19. (In Japanese, with English title and summary.)

- SHIGETOH, H., & H. YOSHITAKE, 2018 b. Leaf beetles (Coleoptera, Chrysomelidae) collected in winter on Yoro-jima Island, the Amami Islands, central Ryukyus, southwestern Japan. *Gekkan-Mushi*, *Tokyo*, (568): 34–37. (In Japanese, with English title and summary.)
- SHIGETOH, H., 2019. New distribution records of chrysomelid beetles (Coleoptera, Chrysomelidae) from Tonaki-jima Is., the Okinawa Isls., central Ryukyus, southwestern Japan. *Sayabane*, *Tokyo*, (n. ser.), (33): 20–24. (In Japanese, with English title and summary.)
- SHIYAKE, S., 2012. Specimen list of Coleoptera in the insect collection of the Osaka Museum of Natural History (Part 2). Special Publications from the Osaka Museum of Natural History, 44. 372 pp. Osaka Museum of Natural History, Osaka. (In Japanese, with English book title and summary.)
- SUENAGA, H., H. SHIGETOH & H. YOSHITAKE, 2018. Distribution records of leaf beetles (Coleoptera, Chrysomelidae) from Tokunoshima Is., the Amami Isls., central Ryukyus, southwestern Japan (I). Elytra, Tokyo, (n. ser.), 8: 103–113.
- Takizawa, H., 2006. [Biological notes on Japanese species of the family Chrysomelidae (1).] *Kanagawa-Chûhô*, *Odawara*, (156): 1–8. (In Japanese.)
- Takizawa, H., 2009. [Biological notes on Japanese species of the family Chrysomelidae (4).] *Kanagawa-Chûhô*, *Odawara*, (168): 1–11. (In Japanese.)
- Takizawa, H., 2011. [Biological notes on Japanese species of the family Chrysomelidae (5).] *Kanagawa-Chûhô*, *Odawara*, (173): 35–51. (In Japanese.)
- YASUI, M., & R. UTOO, 2010. [Beetles collected in early spring from Nakanoshima Is., the Tokara Isls.] *Nature Study, Osaka*, **56** (5): 4–5. (In Japanese.)

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