

New Collection and Host Plant Records for Six Xiphydriidae (Hymenoptera) from Japan

Akihiko Shinohara

National Museum of Nature and Science,
4–1–1 Amakubo, Tsukuba, Ibaraki 305–0005, Japan
E-mail: shinohar@kahaku.go.jp

(Received 28 February 2022; accepted 23 March 2022)

Abstract New collection records are given for *Hyperxiphia hirashimai* (Okutani, 1965), *Indoxiphia prima* Smith, 2019, *Lissoxiphyda mitai* Shinohara, 2020, *Xiphydria annulitibia* Takeuchi, 1936, and *X. ogasawarai* Matsumura, 1927. *Lissoxiphyda mitai* is recorded from Amami-ôshima Island for the first time. *Xiphydria nagasei* Shinohara, 2019, is new to the fauna of Okayama Prefecture. *Sorbus commixta* Hedl. (Rosaceae) is newly recorded as a host plant of *X. ogasawarai*.

Key words: Symphyta, new collection records, new host plant record, Amami-ôshima Island, Okayama Prefecture, *Sorbus commixta*.

Introduction

After the recent publication of five papers on Japanese Xiphydriidae (Shinohara, 2019, 2020; Shinohara *et al.*, 2020; Shinohara and Smith, 2021; Shinohara and Yamasako, 2020), I was able to study additional material of the species treated in those papers, most of them collected in 2021, through the courtesy of the colleagues enumerated in the acknowledgments. Here I give new collection data for five species of the genera *Hyperxiphia* Maa, 1949, *Indoxiphia* Maa, 1949, *Lissoxiphyda* Smith, 2008, and *Xiphydria* Latreille, 1802, and make a correction about the locality data of a paratype specimen of *X. nagasei* Shinohara, 2019. I also give a new host plant record for *X. ogasawarai* Matsumura, 1927, based on the observation of an ovipositing female in Okayama Prefecture.

Materials and Methods

The specimens used in this work are kept in the National Museum of Nature and Science,

Tsukuba. The photograph in Fig. 1 was taken with a digital camera, Olympus Stylus TG-4 Tough. The digital image was processed with Adobe Photoshop Elements® 15 software.

Results and Discussion

Hyperxiphia hirashimai (Okutani, 1965)

Genaxiphia hirashimai Okutani, 1965: 74;

Hyperxiphia hirashimai: Shinohara and Yamasako, 2020: 405.

See Shinohara and Yamasako (2020) for more references.

Specimens examined. KYUSHU: Kagoshima Pref.: 4 ♂, Ôkuchiaoki, Isa-shi, 4. VIII. 2021, R. Okano; 1 ♂, Amami-ôshima Is., Naze, Koshuku, 28°21'45.0"N 129°27'50.0"E, 270m alt. trail through forest, 3. VII. 2021, J. Okayasu, by sweeping bush; 1 ♂, same data except 7. VII. 2021.

Remarks. This species has been recorded from Miyake-jima Island in the Izu Islands, Shikoku (Ehime Prefecture), Kyushu (Kumamoto and Kagoshima Prefectures), and Kuroshima Island, Yakushima Island, Amami-ôshima Island and Okinawa-jima Island in the Nansei Islands based

on a total of nine female and eight male specimens listed by Shinohara and Yamasako (2020). The six newly acquired specimens, all males, are from the mainland of Kagoshima Prefecture and Amami-ôshima Island.

***Indoxiphia prima* Smith, 2019**

Indoxiphia prima Smith, 2019: 267; Shinohara and Smith, 2021: 1.

Specimens examined. KYUSHU: Kagoshima Pref.: 1 ♀, Amami-ôshima Is., Naze, Koshuku, 28°21'45.0"N 129°27'50.0"E, 270 m alt. trail through forest, 3. VII. 2021, J. Okayasu, yellow pan trap; 2 ♀, same data except 4. VII. 2021.

Remarks. This species was originally described from Taiwan (Smith, 2019) and later recorded from Japan (Shikoku, Tokara Islands, Amami-ôshima Island) based only on three females (Shinohara and Smith, 2021). Males are still unknown. Four of the six known females were collected in yellow pan traps according to the label data (Shinohara and Smith, 2021; present work).

***Lissoxiphya mitai* Shinohara, 2020**

Lissoxiphya mitai Shinohara, 2020: 255.

Specimens examined. KYUSHU: Kagoshima Pref.: 1 ♀, Amami-ôshima Is., Naze, Koshuku, 28°21'45.0"N 129°27'50.0"E, 270 m alt. trail through forest, 7. VII. 2021, J. Okayasu, yellow pan trap.

Remarks. This species was recently described on the basis of six female specimens from Miyake-jima Island in the Izu Islands, Kyushu, and Nakanoshima Island of the Tokara Islands (Shinohara, 2020). This is the first distribution record of *L. mitai* from Amami-ôshima Island. Like the preceding species, *I. prima*, part (at least two) of the seven known specimens were collected in yellow pan traps and the males are still unknown. These two species may have some similar biological or ethological traits.

***Xiphydria annulitibia* Takeuchi, 1936**

Xiphydria annulitibia Takeuchi, 1936: 55; Shinohara *et al.*, 2020: 377.

Hyperxiphia leucopoda: Watanabe, 1992: 11. Not Takeuchi, 1938.

See Shinohara *et al.* (2020) for more synonymy and references.

Specimens examined. HONSHU: Hyogo Pref.: 1 ♀, Akasai, 4. VII. 1982, A. Watanabe. Okayama Pref.: 1 ♀, Kurami, Kamo-cho, Tomata-gun, 1. VII. 1989, A. Watanabe (recorded as *Hyperxiphia leucopoda* by Watanabe, 1992).

Remarks. Watanabe (1992) recorded *Hyperxiphia leucopoda* from Okayama Prefecture based on a female specimen from Kurami listed above. I have examined the specimen and confirmed its identity with *X. annulitibia*. Konchu Bukai (2019) gave *X. annulitibia* in the faunal list of Okayama Prefecture, but I was not able to find any published collection data of this species from the prefecture.

***Xiphydria nagasei* Shinohara, 2019**

Xiphydria palaeoarctica: Kondo & Miyake, 1976: 4. Not Semenov-Tian-Shanskij, 1921.

Xiphydria nagasei Shinohara, 2019: 535.

See Shinohara (2019) for more synonyms and references.

Remarks. Kondo & Miyake (1976) recorded *X. palaeoarctica* from Okayama Prefecture based on a male specimen labeled "Mt. Gagyû, 14. V. 1973, A. Watanabe", which is now housed in the Kurashiki Museum of Natural History, Kurashiki. Shinohara (2019) newly described *X. nagasei*, designating this specimen as one of the paratypes, but erroneously recorded the locality as "Mt. Gagyû" in Hiroshima Prefecture, which was a mistake for Mt. Gagyû in Okayama Prefecture. Therefore, correctly, *X. palaeoarctica* is excluded from the fauna of Okayama Prefecture and *X. nagasei* is included therein instead. Konchu Bukai (2019) did not give *X. palaeoarctica* in the faunal list of Okayama Prefecture.



Fig. 1. *Xiphydria ogasawarai*, female, ovipositing on the trunk of *Sorbus commixta*, Darugamine Rindo, Okayama Prefecture, August 2, 2021.

***Xiphydria ogasawarai* Matsumura, 1927**

(Fig. 1)

Xiphydria ogasawarai Matsumura, 1927: 205; Shinohara, 2019: 533.

See Shinohara (2019) for more synonyms and references.

Specimens examined. HONSHU: Hyogo Pref.: 1 ♀, Onzui-keikoku, Onzui, Haga-cho, Shiso-shi, 20. VII. 2021, R. Okano. Okayama Pref.: 2 ♀, Ushiro-yama, Higashiwakura-son, Aidagun, Okayama, 13. VI. 1992, A. Watanabe; 2 ♀, Darugamine Rindo, 1,075 m, 35°12'38"N 134°22'23"E, Ôgaya, Nishiwakura, 2. VIII. 2021, A. Shinohara; 1 ♀, same data except A. Watanabe.

Host plants. Juglandaceae: *Juglans mandshurica* Maxim. var. *sachalinensis* (Komatsu) Kitam., *Pterocarya rhoifolia* Siebold et Zucc. Sapindaceae: *Acer sieboldianum* Miq., *Acer pal-*

matum Thunb., *Aesculus turbinata* Blume. Araliaceae: *Kalopanax septemlobus* (Thunb.) Koidz. (Shinohara & Hara, 2020). Rosaceae: *Sorbus commixta* Hedl. (new record).

Remarks. The female specimen from Onzui-keikoku listed above represents the second published record of this species from Hyogo Prefecture (Naito *et al.*, 2004; Shinohara, 2019). This species is already known from Okayama Prefecture (Konchu Bukai, 2019), but apparently no collection data have been published. Perhaps, the record (Konchu Bukai, 2019) refers to the collection data of "*X. palaeoarctica*" (= *X. nagasei*, see discussion above) by Kondo & Miyake (1976), who used the Japanese name Higejiro-kubinagakibachi. This Japanese name was formerly used for both *X. palaeoarctica* and *X. ogasawarai*, which were once treated as synonyms (Watanabe, 1956).

One of the females from Darugamine Rindo listed above was ovipositing on a tree of *Sorbus commixta* (Fig. 1), when I found it on August 2, 2021. The female was found on the trunk at about 1.5m above the ground of the half dead tree of about five meters high and with some dead and shriveled leaves. This is the first record of *Sorbus commixta* as the host plant of *X. ogasawarai*.

Acknowledgements

I thank K. Konishi (Ehime University, Matsuyama), K. Kuroda (Ehime University, Matsuyama), R. Okano (Moriguchi), J. Okayasu (Hokkaido University, Sapporo), Y. Okushima (Kurashiki Museum of Natural History, Kurashiki) and A. Watanabe (Kurashiki) for their gift or loan of the material for study. Special thanks are due to A. Watanabe for providing helpful information and assistance in access to the collection site. I also thank D. R. Smith (U. S. Department of Agriculture, Washington, D. C.) for his careful review of the manuscript.

References

- Konchu Bukai [=Insect Section], 2019. [Insects.] In [Research Group of Wildlife of Okayama Prefecture] (ed.): [Catalog of Fauna and Flora of Okayama Prefecture 2019 ver.1.2.] Available from: <http://www.pref.okayama.jp/page/602836.html> (in Japanese, accessed 14 February 2022).
- Kondo, T. and M. Miyake 1976. [Symphyta of Okayama Prefecture 2.] Suzumushi, Kurashiki (113): 1–13 (in Japanese).
- Matsumura, S. 1927. Summary of the Japanese *Xiphydria*-species. *Insecta Matsumurana* 1: 202–206.
- Naito, T., H. Yoshida, H. Nakamine, T. Morita, T. Ikeda, H. Suzuki and A. Nakanishi 2004. Species diversity of sawflies in Hyogo Prefecture, central Japan. *Museum of Nature and Human Activities, Hyogo, Monograph of Natural History and Environmental Science* (1), [1–2] + [pls. 1–10] + 1–85 (in Japanese).
- Okutani, T. 1965. Sawflies and horntails from the Ryukyus. *Kontyû* 33: 73–84.
- Semenov-Tian-Shanskij, A. 1921. Praecursoriae Siricidarum novorum diagnoses (Hymenoptera). *Russkoe Entomologicheskoe Obozrenie, Petrograd* 17[1917]: 81–95.
- Shinohara, A. 2019. The *Xiphydria palaeoarctica* group from Japan (Hymenoptera, Xiphydriidae). *Zootaxa* 4608: 531–542.
- Shinohara, A. 2020. *Lissoxiphyda mitai* n. sp. (Hymenoptera, Xiphydriidae): Discovery of a primarily Oceanian woodwasp genus in Japan. *Japanese Journal of Systematic Entomology* 26: 255–260.
- Shinohara, A. and H. Hara 2020. Taxonomic notes and new distribution and host plant records for sawflies and woodwasps (Hymenoptera, Symphyta) of Japan V. *Bulletin of the National Museum of Nature and Science, Series A* 46: 183–202.
- Shinohara, A., H. Hara and D. R. Smith 2020. The *Xiphydria annulitibia* group in northeastern Asia (Hymenoptera, Xiphydriidae). *Zootaxa* 4755: 375–389.
- Shinohara, A. and D. R. Smith 2021. *Indoxiphia prima* (Hymenoptera, Xiphydriidae): Discovery of a Taiwanese woodwasp in southern Japan. *Bulletin of the National Museum of Nature and Science, Series A* 47: 1–5.
- Shinohara, A. and J. Yamasako 2020. *Hyperxiphia hirashimai*, comb. n. (Hymenoptera, Xiphydriidae) from southern Japan: remarkable sexual dimorphism revealed by DNA barcodes and new distribution records. *Zootaxa* 4822: 405–415.
- Smith, D. R. 2019. Five new species of xiphydriid woodwasps (Hymenoptera: Xiphydriidae) from Taiwan, with new records and a key to species. *Proceedings of the Entomological Society of Washington* 121: 265–278.
- Takeuchi, K. 1936. Tenthredinoidea of Saghalien (Hymenoptera). *Tenthredo* 1: 53–108.
- Takeuchi, K. 1938. A systematic study on the suborder Symphyta (Hymenoptera) of the Japanese Empire (1). *Tenthredo* 2: 173–229.
- Watanabe, A. 1992. [A collection record of *Hyperxiphia leucopoda*.] *Suzumushi, Kurashiki* (127): 11 (in Japanese).
- Watanabe, C. 1956. Notes on Xiphydriidae of Japan (Hymenoptera, Symphyta). *Insecta Matsumurana* 20: 6–10.