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Taxonomic Notes and New Distribution and Host Plant Records for Sawflies and Woodwasps (Hymenoptera, Symphyta) of Japan

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Abstract Taxonomic notes and new distribution and host plant records are given for one species of Argidae, 49 species of Tenthredinidae and one species of Xiphydriidae of Japan. Two new replacement names, five new synonyms and 29 new combinations are proposed. Thirteen species are newly recorded from Hokkaido, one species from Shikoku, new host plant records are given for four species, and three species are excluded from the faunal list of Japan.
Key words: Hymenoptera, Argidae, Tenthredinidae, Xiphydriidae, new replacement names, new synonyms, new combinations.

Introduction

In the course of our recent taxonomic survey of sawflies and woodwasps (Hymenoptera, Symphyta) in Japan, we found a series of taxonomic problems to be solved, new distribution records and new host plants. New findings mainly came from a revision of type material kept in the National Museum of Nature and Science, Tsukuba, and Osaka Prefecture University, Sakai, and collecting of material in Hokkaido in the last several years. Also, a drastic change in the generic concepts in the tenthredinid subfamily Nematinae proposed by Prous *et al.* (2014) necessitated many alterations in nomenclature in Japanese taxa.

Prous *et al.* (2014) published a new generic classification of Nematinae based on molecular phylogenetic analyses and considerably modified concepts of *Euura* Newman, 1837 and *Nematus* Panzer, 1801. In the world catalog of Symphyta, Taeger *et al.* (2010) divided *Nematus* into five subgenera, *Nematus* (*Nematus*), *N*. (*Kontuniemiana*) Lacourt, 1998, *N*. (*Lindqvistia*) Lacourt, 1998, *N*. (*Paranematus*) Zinovjev, 1978 and *N*. (*Pteronidea*) Rohwer, 1911, and some species were not assigned to subgenera. Prous *et al.* (2014) synonymized *Kontuniemiana*, *Lindqvistia* and *Pteronidea* with *Euura* and *Paranematus* with *Nematus*, but placed some species of *N*. (*Nematus*) in *Euura* and some species of *N*. (*Pteronidea*) in *Nematus*. They pointed out difficulties in associating species formerly placed in these two subgenera with *Nematus* or *Euura* due to lack of recent revisions and/or DNA sequence data, and treated only a small number of species. Many taxa occurring in Japan, including those not assigned to subgenera by Taeger *et al.* (2010), were left untouched. In his on-line checklist of Japanese Symphyta, Yoshida (2015) included 16 new combinations in the Japanese Nematinae, but this is not regarded as published, because his work is not registered in the *Official Register of Zoological Nomenclature* (ZooBank) (Article 8.5.3 of the *International Code of Zoological Nomenclature*, International Commission

on Zoological Nomenclature, 2012).

In this paper, we treat one species of Argidae, 49 species of Tenthredinidae and one species of Xiphydriidae. We discuss their taxonomic positions, proposing new replacement names, synonyms and combinations, and give new distributions or host plants records.

Materials and methods

Specimens used in this work are kept in the National Museum of Nature and Science, Tsukuba (NSMT), Osaka Museum of Natural History, Osaka (OMNH) and Osaka Prefecture University, Sakai (OPU).

Results

Argidae

Arge meliosmae Shinohara and Hara, 2011

Material from Shikoku examined. 1 ♀, "(A. Ishida), Irazuyama, Kochi Pref., 8. VIII. 1982" "A. Ishida Collection, June 1985" (OMNH).

Remarks. Shinohara *et al.* (2011) recorded this species from Miyagi, Tochigi, Yamanashi, and Hyogo prefectures, Honshu. The above specimen from Kochi Prefecture represents the first distribution record from Shikoku.

Tenthredinidae

Anafenusa shinoharai Smith, 1981

Material from Hokkaido examined. 1 ♀, Tokachi, Shimizu, Shimizu, coll. larva leaf-mining *Ulmus davidiana* var. *japonica* 25. VII. 2011, mat. 26–29. VII., em. 8. V. 2012, H. Hara (NSMT).

Remarks. This species was described from two females reared from larvae mining leaves of *Ulmus* sp. collected in "Hirao, Nagano", Honshu, Japan (Smith, 1981; probably Nagano Pref., Yamanouchi, Hirao). No other records have been published. The female examined agrees with the original description. This is the first record from Hokkaido. *Ulmus davidiana* Planch. var. *japonica* (Rehder) Nakai is the first definite host plant record of the species. The larva is a solitary leaf miner making a blotch-like mine.

Corymbas aperta (Takeuchi, 1919)

Material from Hokkaido, *Shikoku and Kyushu examined*. HOKKAIDO: 1 ♂, Nukabira, Tokachi, 16–21. VI. 1982, A. Shinohara (NSMT); 1 ♀, Yamada-onsen, 800 m, Tokachi, 28–30. VI. 1995, H. Hara (NSMT); 6 ♂, Yamada-onsen, 1000 m, Tokachi, 21–24. VI. 1997, A. Shinohara (NSMT); 1 ♂, same locality, 20. VI. 2002, A. Shinohara (NSMT); 1 ♂, same locality, 24–25. VI. 2005, A. Shinohara (NSMT); 1 ♂, Horoshika-toge, 1100 m, Tokachi, 21–25. VI. 1997, A. Shinohara (NSMT); 1 ♂, same locality, 23–25. VI. 2005, A. Shinohara (NSMT); 1 ♀, same locality, 27–28. VI. 1999, H. Hara; 1 ♂, same locality, 27. VI. 2012, A. Shinohara (NSMT); 1 ♀, same locality, 28. VI. 2012, A. Shinohara (NSMT); 4 ♂, Asahidake-onsen, 1000 m, Kamikawa, 2. VII. 2000, A. Shinohara (NSMT); 1 ♀, same locality, 25–28. VI. 2001, A. Shinohara (NSMT); 1 ♀3 ♂, same locality, 25–28. VI. 2002, A. Shinohara (NSMT); 1 ♀, same locality, 22–24. VI. 2008, A. Shinohara (NSMT); 1 ♂, same locality, 30. VI. 2013, A. Shinohara (NSMT); 1 ♂, Akadake Ginsendai, Kamikawa, 23. VI. 2005, H. Hara and A. Shinohara (NSMT); 1 ♀, Goshiki-onsen, Niseko, Shiribeshi, 29. VI. 1993, A. Shinohara (NSMT); 1 ♀, Nakayama-toge, Shiribeshi, 30. VI. 1993, A. Shinohara (NSMT); 1 ♀, same locality, 29. VI. 2003, A. Shinohara (NSMT). SHIKOKU: 1 ♀, "1. VI. 1930, Iya (Awa), Takeuchi" (OPU). KYUSHU: 8 ♂, Mt. Gokaharadake, 1000 m, Taradake Mts., Nagasaki Pref., 16. V. 1997, A. Shinohara (NSMT).

Remarks. For the distribution of this species, Takeuchi (1919) first gave Honshu and Kyushu, but the same author (1933, 1937) gave Honshu and Shikoku, not Kyushu, without any comments for the change. We have examined specimens of this species from Hokkaido, Honshu, Shikoku

and Kyushu. This is the first record of *C. aperta* from Hokkaido.

Dineura betulivora Togashi, 1995

Material from Hokkaido examined. 1 ♀, Tokachi, Shimizu, Nissho-toge, 9. VII. 2011, H. Hara (NSMT).

Remarks. This species was described from 17 specimens reared from larvae feeding on *Betula ermanii* Cham. collected at Mt. Shirane-san, Tochigi Prefecture, Honshu, Japan (Togashi, 1995). This is the only collection record. The above female agrees with the original description. This sawfly is recorded from Hokkaido for the first time.

Euura bridgmanii (Cameron, 1883), **n. comb.**

Nematus bridgmanii Cameron, 1883: 193.
Pontania bridgmanii: Okutani, 1967: 92; Abe and Togashi, 1989: 554; Nyman *et al.*, 2010: 5, 7.
Pontania (*Pontania*) *bridgmanii*: Taeger *et al.*, 2010: 446.

Remarks. Prous *et al.* (2014) synonymized *Pontania* Costa, 1852 with *Euura*, but the name combination is used here for the first time.

Euura damnacanti (Takeuchi, 1922), **n. comb.**

Pteronidea damnacanti Takeuchi, 1922: 77, 80; Takeuchi, 1952: 69.
Nematus damnacanti: Okutani, 1967: 93; Abe and Togashi, 1989: 552; Taeger *et al.*, 2010: 429.

Type material examined. Syntypes: 1 ♀, "30, IV, 1921 Katayama Takeuchi" "*Pteronidea damnacanti* Takeu[*sic*] Type" (OPU); 1 ♀ "30, IV, 1921 Katayama Takeuchi" "[Ari-toshi-habachi (in Japanese letters)]" (OPU); 1 ♀ "19, IV, 1920 Gifu Takeuchi" (OPU); 1 ♀ "17, IV, 1920 Minomo Takeuchi" (OPU).

Remarks. Takeuchi (1922) described this species under *Pteronidea*. Takeuchi (1952) retained it in *Pteronidea*, while subsequent authors placed it in *Nematus*. Taeger *et al.* (2010) did not assign this species to a subgenus. In the key by Prous *et al.* (2014), it goes to the second half of the couplet 17 (we did not examine the tangium) that contains part of *Euura* ("*e.g.* most of former *Pachynematus*"), part of *Nematus* ("Formerly *Paranematus*") and *Pristiphora mollis* (Hartig, 1837). It differs from the latter two in having the smooth mesepisternum and the claws with a small inner tooth. We therefore place it in *Euura*.

Euura dolichura (Thomson, 1871), **n. comb.**

Nematus dolichurus Thomson, 1871: 164.
Pontania dolichura: Yukawa and Masuda, 1996: 106; Nyman *et al.*, 2010: 5, 7.
Pontania (*Pontania*) *dolichura*: Taeger *et al.*, 2010: 446.

Remarks. Prous *et al.* (2014) synonymized *Pontania* with *Euura*, but the name combination is used here for the first time.

Euura fallax (Serville, 1823) and ***E. stenogaster*** (Förster, 1854)

Remarks. *Euura stenogaster* (Förster, 1854) was recorded from Japan by Takeuchi (1952) and Togashi (1965b, 2002) under the name of "*Amauronematus fallax* (Lepeletier, 1824[*sic*])" or "*Amauronematus fallax* Lepeletier", which is correctly *A. fallax* (Serville, 1823) (originally *Nematus fallax* Serville, 1823) (Blank and Taeger, 1998). Lacourt (1999) showed that *N. fallax* Serville, 1823 is a different species from "*A. fallax*" of many authors including Takeuchi (1952), and used "*Pachynematus fallax* (Serville, 1823)" for the former species (now *Euura fallax*; see Prous *et al.*, 2014) and "*A. stenogaster* (Förster, 1854)" for the latter (now *E. stenogaster*). Takeuchi's (1952) and Togashi's (1965b, 2002) specimens are regarded as *E. stenogaster*, not *E. fallax*. We exclude *E. fallax* from the faunal list of Japan.

Euura fasciata (Konow, 1897), **n. comb.**

Amauronematus fasciatus Konow, 1897: 177; Togashi, 2002: 9.
Amauronematus (*Amauronematus*) *fasciatus*: Taeger *et al.*, 2010: 383.

Remarks. Prous *et al.* (2014) synonymized *Amauronematus* Konow, 1890 with *Euura*, but the name combination is used here for the first time.

Euura fujiense (Zinovjev, 1993), **n. comb.**

Pikonema fujiense Zinovjev, 1993: 22; Taeger *et al.*, 2010: 444.

Remarks. Prous *et al.* (2014) synonymized *Pikonema* Ross, 1937 with *Euura*, but the name combination is used here for the first time.

Euura hayachinensis (Haris and Zsolnai, 2007), **n. comb.**

Pachynematus (*Pachynematus*) *hayachinensis* Haris and Zsolnai, 2007: 139; Taeger *et al.*, 2010: 436.

Remarks. Prous *et al.* (2014) synonymized *Pachynematus* with *Euura*, but the name combination is used here for the first time.

Euura hypoxantha (Förster, 1854), **n. comb.**

Nematus hypoxanthus Förster, 1854: 313; Togashi, 1965b: 252; Abe and Togashi, 1989: 552.
Pteronidea hypoxantha: Takeuchi, 1952: 69.
Nematus (*Pteronidea*) *hypoxanthus*: Taeger *et al.*, 2010: 423.

Remarks. This species certainly belongs to *Euura*, judging from the molecular phylogenetic analysis by Nyman *et al.* (2010: figs. 3, 4). However, the name combination is used here for the first time.

Euura imperfecta (Zaddach, 1876)

Material from Hokkaido examined. 1 ♀, Tokachi, Shintoku, Shintoku, 8. V. 2012, H. Hara (NSMT); 1 ♀, Iburi, Hayakita, coll. cocoon in litter under *Larix kaempferi*, 30. IV. 1987, em. 25. V. 1987, H. Hara (NSMT).

Remarks. This species was recorded from Nagano Prefecture, Honshu, Japan by Ito (1959) as a sawfly feeding on *Larix kaempferi* (Lamb.) Carrière under the name of "*Pachynematus imperfectus*" [= *Euura imperfecta* according to Prous *et al.*, 2014]. Okutani's (1967) host plant record is probably based on Ito (1959). Here we record this species from Hokkaido for the first time.

Euura itoi (Okutani, 1955), **n. comb.**

Pachynematus itoi Okutani, 1955: 98.
Nematus (*Larinematus*) *itoi*: Zhelochovtsev, 1988: 169.
Pachynematus (*Larinematus*) *itoi*: Taeger *et al.*, 2010: 438.

Remarks. Prous *et al.* (2014) synonymized *Pachynematus* and *Nematus* (*Larinematus*) Zhelochovtsev, 1988, with *Euura*. However, the name combination is used here for the first time.

Euura longa (Takeuchi, 1952), **n. comb.**

Decanematus longus Takeuchi, 1952: 67.
Amauronematus (*Brachycoluma*) *longus*: Taeger *et al.*, 2010: 388.

Material examined. Paratypes: 1 ♀ "1, VIII, 1932, mt. Hakuba, Takeuchi" (OPU); 1 ♀ "17, VIII, 1936, mt. Yari, Takeuchi" (OPU); 1 ♀ 4 ♂ "28, VIII, 1940, Kumonotaira, [Kurobe-genryu (in Japanese letters)], Takeuchi" (OPU).

Remarks. Prous *et al.* (2014) synonymized *Brachycoluma* Strand, 1929 and *Decanematus* Malaise, 1931 with *Euura*. However, the name combination is used for the first time here. Indeed, this species runs to the second half of couplet 15 in the key by Prous *et al.* (2014) (we examined the valviceps, but not the tangium) that contains part of *Euura*, *Nescianeura* Lacourt, 2006, part of *Nematus* ("Formerly *Paranematus*") and part of *Nematus* ("the *N. erythrogaster* group, including *N. lucens* (Enslin, 1918) and *N. umbratus* Thomson, 1871"), and differs from the latter three in having the widely yellow head and yellow stigma.

Euura miliaris (Panzer, 1797), **n. comb.**

Tenthredo miliaris Panzer, 1797: 13.
Nematus (*Pteronidea*) *miliaris*: Schmidt *et al.*, 1998: 281;

Taeger *et al.*, 2010: 424.
Nematus capreae: Togashi, 2002: 9. [Not Linné, 1758.]

Remarks. Schmidt *et al.* (1998) synonymized *Tenthredo capreae* Linné, 1758 with "*Nematus salicis* (Linné, 1758)" (= *Euura salicis* (Linné, 1758), **n. comb.**) and stated, "The name *Nematus* (*Pteronidea*) *miliaris* (Panzer, 1797), which had been in general use for more than 100 years, is to be reestablished for the species currently known as *N. capreae*". We regard Togashi's "*N. capreae*" as *N. miliaris*.

Prous *et al.* (2014) showed that both "*N. miliaris*" and "*N. salicis*" belonged to *Euura* in fig. 3, although they did not use these name combinations.

Euura myosotidis (Fabricius, 1804), **n. comb.**

Tenthredo Myosotidis [*sic*] Fabricius, 1804: 41.
Nematus myosotidis: Togashi, 2002: 9.
Nematus (*Pteronidea*) *myosotidis*: Taeger *et al.*, 2010: 424.

Remarks. Prous *et al.* (2014) showed that this species belonged to *Euura* in fig. 3, although they did not use the name combination.

Euura nigerrima (Konow, 1903), **n. comb.**

Pachynematus nigerrimus Konow, 1903: 381.
Pachynematus (*Polynematus*) *nigerrimus*: Taeger *et al.*, 2010: 439.
Pachynematus penegalensis: Takeuchi, 1934: 23.

Remarks. This species was recorded from Hokkaido, Japan by Takeuchi (1934) as *Pachynematus penegalensis* Enslin, 1911 (a junior synonym of this species, *cf.* Taeger *et al.*, 2010). Prous *et al.* (2014) synonymized *Pachynematus* and *Nematus* (*Polynematus*) Zhelochovtsev, 1988 with *Euura*. However, the name combination is used here for the first time.

Euura nigricornis (Serville, 1823), **n. comb.**

Nematus nigricornis Serville, 1823: 65.
Nematus nigricornis Lepeletier, 1823: 63; Togashi, 1966: 4.
Nematus (*Pteronidea*) *nigricornis*: Taeger *et al.*, 2010: 424.

Remarks. Prous *et al.* (2014) showed that this species belonged to *Euura* in fig. 3, although they did not use the name combination.

Euura nipponica (Haris and Zsolnai, 2007), **n. comb.**

Pontania (*Eupontania*) *nipponica* Haris and Zsolnai, 2007: 143; Taeger *et al.*, 2010: 449.

Remarks. Prous *et al.* (2014) synonymized *Pontania* (*Eupontania*) Zinovjev, 1985 with *Euura*, but the name combination is used here for the first time.

Euura obducta (Hartig, 1837), **n. comb.**

Nematus obductus Hartig, 1837: 201.
Pachynematus obductus: Takeuchi, 1936a: 102.
Pachynematus (*Pachynematus*) *obductus*: Taeger *et al.*, 2010: 449.

Remarks. Takeuchi (1936a) included Hokkaido, Japan, in the distribution of this species, but Takeuchi (1952) did not refer to its occurrence in Japan. Takeuchi's (1936a) record was probably based on misidentification and we suggest that this species should be excluded from the Japanese fauna.

This species belongs to *Euura*, judging from the molecular phylogenetic analysis by Nyman *et al.* (2010: figs. 3–4). However, the name combination has not been proposed for this species.

Euura okutanii (Togashi, 1965), **n. comb.**

Nematus okutanii Togashi, 1965a: 3; Taeger *et al.* 2010: 431.

Remarks. Taeger *et al.* (2010) did not assign this species to a subgenus. This species has the claws with a minute medial tooth, but all the known species of *Nematus* have the claws with a large subapical tooth (*cf.* Prous *et al.*, 2014). Togashi (1965a) stated, "This species is closely allied to *N. stichi* Enslin in Europe". The latter species belongs to *Euura*, judging from the molecular phylogenetic analysis by Nyman *et al.*

(2010: figs. 3–4) (*Euura stichi* (Enslin, 1913), **n. comb.**; the name combination has not been proposed). We therefore place this species in *Euura*.

Euura papillosus (Retzius, 1783), **n. comb.**

Tenthredo papillosa Retzius, 1783: 72.
Pteronidea melanaspis: Takeuchi, 1952: 69.
Nematus melanaspis: Togashi, 2002: 9.
Nematus (*Pteronidea*) *papillosus*: Taeger *et al.*, 2010: 425.

Remarks. This species was first recorded from Japan by Takeuchi (1952) as *Pteronidea melanaspis* (a junior synonym of Retzius' species according to Taeger *et al.* 2010). Prous *et al.* (2014) showed that it belonged to *Euura* in fig. 3 (as "*Nematus melanaspis*"), although they did not use the name combination.

Euura soboensis Haris and Zsolnai, 2007

Material from Hokkaido examined. 1 ♀, Otaru, Boyodai, coll. gall on *Salix integra* 27. VIII. 2013, em. 29. IV. 2014, H. Hara (NSMT).

Remarks. This species was recently described from Kyushu, Japan, based on a single female (Haris and Zsolnai, 2007). The above reared female agrees with the original description. This is the first distribution record from Hokkaido and the first host plant record. The sawfly is a gall-maker on a leaf of *Salix integra* Thunb. The gall was pale green, nearly oval and located by the main vein near the middle of the leaf.

Euura togashii Hara and Shinohara, **n. name**

Nematus lindqvisti Togashi, 1964: 480; Taeger *et al.*, 2010: 430.

Remarks. Taeger *et al.* (2010) did not assign *Nematus lindqvisti* Togashi, 1964, to a subgenus. Togashi (1964) stated, "This new species is very closely allied to *N. melanaspis* Hartig [= *Euura papillosus* (Retzius, 1783)] in the general appearance". We therefore place this species in *Euura*. However, the name combination, *Euura lindqvisti* (Togashi, 1964), is a junior secondary homonym of *Euura lindqvisti* (Hellén, 1951), **n. comb.** (= *Amauronematus lindqvisti* Hellén, 1951), because Prous *et al.* (2014) synonymized *Amauronematus* with *Euura* (they did not propose the name combination). No other names are available for Togashi's species. *Nematus lindqvisti* Togashi, 1964, is therefore replaced with the new name *Euura togashii*, which is dedicated to Ichiji Togashi.

Euura tsunekii (Togashi, 1965), **n. comb.**

Nematus tsunekii Togashi, 1965a: 1; Taeger *et al.* 2010: 432.

Remarks. Taeger *et al.* (2010) did not assign this species to a subgenus. Togashi (1965a) stated, "This new species is closely allied to *N. fuscomaculatus* Förster in Europe". Taeger *et al.* (2010) placed *N. fuscomaculatus* in *Nematus* (*Pteronidea*). Prous *et al.* (2014) did not refer to *N. fuscomaculatus*, and its generic position is uncertain. On the other hand, the tarsal claws have a minute medial tooth in Togashi's species, while the tarsal claws have a large subapical tooth in the species of *Nematus* (*cf*. Prous *et al.*, 2014). We place Togashi's species in *Euura*.

Euura ulmicola (Togashi, 1998), **n. comb.**

Nematus (*Pteronidea*) *ulmicola* Togashi, 1998a: 21; Taeger *et al.*, 2010: 427.

Material examined. 1 ♂, Japan, Honshu, Tochigi Pref., Nakagawa, Koisago, on *Ulmus davidiana* Planch. var. *japonica* (Rehder) Nakai, 13. V. 2012, S. Ibuki (NSMT); 1 ♀, *do.*, but 27. VII. 2012 (NSMT).

Remarks. In the key by Prous *et al.* (2014), our specimens run to the second half of the couplet 15 (we examined the tangium and the valviceps) consisting of part of *Euura*, *Nescianeura*, part of *Nematus* ("Formerly *Paranematus*") and part of *Nematus* ("About six species of the *N. erythrogaster* group, including *N. lucens* and *N. umbratus*"). They do not fit the latter three groups in having the almost entirely black body and the apically concave ovipositor sheath in dorsal

view. We place this species in *Euura*.

Hemichroa australis (Serville, 1823)

Material from Hokkaido examined. 1♀, Tokachi, Shikaoi, Yamada-onsen, 6. VII. 2012, H. Hara (NSMT).

Remarks. Takeuchi (1952) first recorded this species from Japan, but did not state the locality. Togashi (1965b) and Abe and Togashi (1989) gave Honshu as the locality. Togashi (1990b) listed the specimens from Iwate, Nagano and Ishikawa prefectures, Honshu. This is the first record of this species from Hokkaido.

Heterarthrus alnivorus Togashi, 1992

Material from Hokkaido examined. 1♀, Tokachi, Kamishihoro, Horoshika-toge, coll. larva leaf-mining *Alnus hirsuta* 8. IX. 2012, em. 26. V. 2013, H. Hara (NSMT).

Remarks. This species was described from one female and one male reared from larvae mining leaves of *Alnus matsumurae* Callier collected on Mt. Haku-san, Ishikawa Prefecture, Honshu, Japan (Togashi, 1992). No other collection record has been published. This is the first record from Hokkaido. *Alnus hirsuta* (Spach) Turcz. ex Rupr. var. *hirsuta* is newly recorded as the host plant.

Hoplocampa alpina (Zetterstedt, 1838)

Material from Hokkaido examined. 1♀, Tokachi, Shimizu, Nissho-toge, 25. VI. 2013, A. Shinohara (NSMT).

Remarks. This species is known from Japan (Takeuchi, 1952). Abe and Togashi (1989) stated Honshu as the locality. This is the first record from Hokkaido.

Mesoneura macroptera Takeuchi, 1936

Material from Hokkaido examined. 1♀, Kamikawa, Sounkyo, 24. VI. 2014, A. Shinohara (NSMT).

Remarks. This species is known from Honshu, Sadogashima Is., Shikoku and Kyushu, Japan (Takeuchi, 1936b; Togashi, 1965b). It is recorded here from Hokkaido for the first time.

Monsoma pallipes (Matsumura, 1912)

Poecilosoma pallipes Matsumura, 1912: 61.
Periclista tokachiensis Togashi, 1999: 35. **N. syn.**
Monsoma pallipes: Prous *et al.*, 2011: 355.

Type material examined. Holotype of *Periclista tokachiensis* Togashi, 1999: ♀, "Yamada spa, Tokachi, Hokkaido, Japan, 9. VII. 1980, A. Shinohara" "NSMT-HYM 62269" "Holotype, *Periclista tokachiensis* sp. nov." (NSMT).

Remarks. *Periclista tokachiensis* was described from one female, which actually belongs to *Monsoma pallipes* (Matsumura, 1912), not to *Periclista*. Here we synonymize *Periclista tokachiensis* Togashi, 1999, with *Monsoma pallipes* (Matsumura, 1912).

Nematus daisetsusanus Togashi, 1998

Nematus daisetsusanus Togashi, 1998b: 43; Taeger *et al.*, 2010: 429.

Type material examined. Holotype: ♀, "Asahi-Dake 1600–1700 m 17/VIII, 1993 Y. Nishijima" (NSMT).

Remarks. Taeger *et al.* (2010) did not assign this species to a subgenus. Togashi (1998b) stated, "This new species runs to *N. wahlbergi* Thomson in Konow's (1895) and Vikberg's (1972) key". *Nematus wahlbergi* and its relatives, or the species of the former *Nematus* (*Paranematus*), belong to *Nematus* (Prous *et al.*, 2014). In the key by Prous *et al.* (2014), this species goes to the second half of couplet 17 (we have not examined the tangium) that contains part of *Euura* ("*e.g.* most of former *Pachynematus*"), part of *Nematus* ("Formerly *Paranematus*") and *Pristiphora mollis*. This species differs from these in having a truncate clypeus, a rather rough mesepisternum and claws with a large subapical tooth. We retain *N. daisetsusanus* in *Nematus*.

Nematus hakusanus Togashi, 2000

Nematus hakusanus Togashi, 2000: 122; Taeger *et al.*, 2010: 430.

Type material examined. Holotype: ♀, "Mt. Hakusan 2500 m ([Uka (in Japanese letters, meaning emerged)]) Ishikawa Pref. 12. III. 1990 I. Togashi" "Food plant: *Alnus maximowiczii*" (NSMT).

Remarks. Taeger *et al.* (2010) did not assign this species to a subgenus. Togashi (2000) stated, "This new species closely resembles *N. umbratus* Thomson". The latter species was formerly assigned to *Nematus* (*Pteronidea*) in Taeger *et al.* (2010), but was placed in *Nematus* by Prous *et al.* (2014). In the key by Prous *et al.* (2014), *N. hakusanus* goes to the second half of couplet 15 (we have not examined the tangium), which contains part of *Euura*, *Nescianeura*, part of *Nematus* ("Formerly *Paranematus*") and part of *Nematus* ("About six species of the *N. erythrogaster* group, including *N. lucens* and *N. umbratus*"). This species agrees with the last group. We retain *N. hakusanus* in *Nematus*.

Nematus inornatus (Takeuchi, 1936)

Holcocneme inornata Takeuchi, 1936b: 162.
Nematus (*Nematus*) *inornatus*: Taeger *et al.*, 2010: 415.

Type material examined. Holotype: ♀, "10, V, 1919 Gifu Takeuchi" (OPU). Allotype: ♂, "4, V, 1933 Kyoto Takeuchi" (OPU).

Other material examined. 1 ♀, Japan, Hokkaido, Kamishihoro, Horoshika-toge, 26. VI. 2013, H. Hara (NSMT).

Remarks. In the key by Prous *et al.* (2014), this species runs to the second half of couplet 17 (we examined the tangium) that contains part of *Euura* ("*e.g.* most of former *Pachynematus*"), part of *Nematus* ("Formerly *Paranematus*") and *Pristiphora mollis*. It differs from the former *Pachynematus* in having the claws with a large preapical tooth and does not agree with the latter two. Although Prous *et al.* (2014) synonymized *Holcocneme* Konow, 1890 with *Euura*, we consider this species a close relative of *N. princeps* Zaddach, 1876, whose generic position was confirmed by Prous *et al.* (2014). These two species share the dorsally concave or flattened tibiae. This character is unique to these two species in the Nematinae and probably even in the Tenthredinidae. We retain this species in *Nematus*.

Nematus japonicus (Takeuchi, 1921), **n. comb.**

Croesus [*sic*] *Japonicus* [*sic*] Takeuchi, 1921: 398.
Craesus japonicus: Taeger *et al.*, 2010: 398.

Remarks. Prous *et al.* (2014) synonymized *Craesus* Leach, 1817 with *Nematus*, but the name combination is used here for the first time.

Nematus kondoi (Togashi, 2007), **n. comb.**

Craesus kondoi Togashi, 2007d: 909; Taeger *et al.*, 2010: 398.

Material from Hokkaido examined. 1 ♀, Tokachi, Shintoku, Shintoku, coll. 7 gregarious larvae on *Juglans mandschurica* var. *sachalinensis*, 2. VIII. 2011, coc. 6–8. VIII., em. 26. VIII. 2011, H. Hara (NSMT).

Remarks. This species was described from Honshu, Japan under *Craesus* (Togashi, 2007d). Prous *et al.* (2014) synonymized *Craesus* with *Nematus*, but they did not propose a new name combination for this taxon. We here record this sawfly from Hokkaido for the first time.

Nematus morimotoi (Togashi, 1963), **n. comb.**

Croesus [*sic*] *morimotoi* Togashi, 1963: 146; Taeger *et al.*, 2010: 398.

Remarks. Prous *et al.* (2014) synonymized *Craesus* with *Nematus*, but the name combination is used here for the first time.

Nematus platycaryae (Togashi, 1997), **n. comb.**

Craesus platycaryae Togashi, 1997: 70; Taeger *et al.*, 2010: 399.

Remarks. Prous *et al.* (2014) synonymized *Craesus* with *Nematus*, but the name combination is used here for the first time.

Nematus rotundiformis (Togashi, 1997), **n. comb.**

Craesus rotundiformis Togashi, 1997: 71; Taeger *et al.*, 2010: 399.

Remarks. Prous *et al.* (2014) synonymized *Craesus* with *Nematus*, but the name combination is used here for the first time.

Nematus shinoharai (Beneš, 1990), **n. comb.**

Croesus [*sic*] *shinoharai* Beneš, 1990: 390; Taeger *et al.*, 2010: 399.

Remarks. Prous *et al.* (2014) synonymized *Craesus* with *Nematus*, but the name combination is used here for the first time.

Nematus tiliae Zinovjev, 1998

Nematus tiliae Zinovjev, 1998: 23; Taeger *et al.*, 2010: 399.

Type material examined. Holotype: ♀, "43°00.82′N140°53.89′E Meiji, Akaigawa Hokkaido. JAPAN. 11-IX-1996 M. Ōhara, hand pick" "A social sawfly Host: *Tilia maximowicziana* [Tiliaceae]" (NSMT).

Remarks. Zinovjev (1998) stated, "Relationships of this new species with other species of *Nematus* are unclear". Taeger *et al.* (2010) did not assign it to a subgenus. In the key by Prous *et al.* (2014), this species runs to the second half of the couplet 15 (we examined the tangium) that contains part of *Euura*, *Nescianeura*, part of *Nematus* ("Formerly *Paranematus*") and part of *Nematus* ("About six species of the *N. erythrogaster* group, including *N. lucens* and *N. umbratus*"). It differs from them as well as other nematine sawflies in having the unique claws (fig. 2 in Zinovjev, 1998). We retain this species in *Nematus*.

Nematus togashii Hara and Shinohara, **n. name**

Craesus betulae Togashi, 1997: 67; Taeger *et al.*, 2010: 398.

Remarks. Prous *et al.* (2014) synonymized *Craesus* with *Nematus*. However, the name combination *Nematus betulae* (Togashi, 1997) is a junior secondary homonym of *Nematus betulae* Hartig, 1837 [= *Pristiphora testacea* (Jurine, 1807)]. No other names are available for this species, and we herewith propose the new replacement name *Nematus togashii* for *Craesus betulae* Togashi, 1997. The new specific epithet is dedicated to Ichiji Togashi.

Parna kamijoi Togashi, 1980

Parna kamijoi Togashi, 1980: 213.
Fenusella shiritakana Togashi, 2007b: 19. **N. syn.**

Type material examined. Holotype of *Fenusella shiritakana*: ♀, "Mt. Shiritaka, Tsurugi-machi, Ishikawa Pref., 19. IV. 1989, I. Togashi" "Holotype, *Fenusella shiritakana* sp. nov." "NSMT-I-HYM 62198" (NSMT). Paratypes: 1 ♀, "Mt. Shiritaka, Tsurugi-machi, Ishikawa Pref., 4. V. 1993, I. Togashi" "NSMT-I-HYM 62199" (NSMT); 1 ♀, same data, "NSMT-I-HYM 62200" (NSMT).

Remarks. The holotype and two paratypes of *F. shiritakana* examined run to *Parna* in the key to world genera of the Fenusini by Smith (1976) and to *P. kamijoi* in the key to Japanese species of *Parna* by Togashi (1990a). They agree well with the original description of *P. kamijoi* Togashi, 1980. Contrary to the description by Togashi (2007b), "prepectus" (= epicnemium) is present in these specimens. Here we propose to treat *F. shiritakana* as a new junior synonym of *P. kamijoi*.

Perineura kamikochiana Togashi, 1993

Material from Hokkaido examined. 1 ♀, Shintoku, Tokachi, 24. VI. 2012, H. Hara (NSMT).

Remarks. This species was described from a female from Kamikochi, Nagano Prefecture, Honshu, Japan (Togashi, 1993), and no other records have been published. This is the first record of *P. kamikochiana* from Hokkaido.

Perineura pictipennis Takeuchi, 1959

Perineura pictipennis Takeuchi, 1959: 71.

Perineura nozakai Togashi, 2007a: 14. **N. syn.**

Type material examined. Holotype of *Perineura nozakai*: ♀, "[JAPAN: Fukui] Tanimachi M-178, Katayama city, 4 May 1995, C. Nozaka leg." "NSMT-HYM 62203" "Holotype, *Perineura nozakai* sp. nov." (NSMT).

Material from Hokkaido examined. 1 ♀, Yamada-onsen, 800 m, Tokachi, 20–21. VI. 1996, A. Shinohara (NSMT); 3 ♀, Yamada-onsen, 1000 m, Tokachi, 21–24. VI. 1997, A. Shinohara (NSMT); 1 ♀, Nissho-toge, Hidaka, 17. VI. 1984, A. Shinohara (NSMT); 1 ♀, Hitsujigaoka, Sapporo, Malaise trap, 7–21. V. 2003, K. Konishi (NSMT); 1 ♀, Hitsujigaoka, Sapporo, Malaise trap, 28. V.–4. VI. 2003, K. Konishi (NSMT).

Remarks. Togashi (2007a) separated *P. nozakai* from *P. pictipennis* by the coloration of the head and thorax and the shape of the radial crossvein of the forewing. Examination of long series of *P. pictipennis* from all parts of its range has shown that *P. pictipennis* is very variable in color pattern and the variation range includes all the "differences" cited by Togashi (2007a). The shape of the radial crossvein is also unstable. We therefore regard the two taxa as conspecific and place *P. nozakai* in synonymy with *P. pictipennis*. This species has been recorded from Honshu, Shikoku and Kyushu (Takeuchi, 1959) and is first recorded here from Hokkaido.

Pristiphora cincta Newman, 1837

Pristophora [*sic*] *cincta* Newman, 1837: 259.
Pristiphora quercus: Takeuchi, 1936a: 103.
Pristiphora cincta: Taeger *et al.*, 2010: 453.

Remarks. Takeuchi (1936a) recorded this species from Honshu, Japan, as *Pristiphora quercus* (Hartig, 1837) (a junior synonym of this species, *cf*. Taeger *et al.*, 2010), but Takeuchi (1952) did not refer to its occurrence in Japan. Takeuchi's (1936a) record is probably based on a misidentification, and this species should be excluded from the faunal list of Japan.

Profenusa thomsoni (Konow, 1886)

Material from Hokkaido examined. 1 ♀, Tokachi, Shimizu, Shimizu, coll. larva leaf-mining *Betula platyphylla* var. *japonica* 31. VII. 2011, em. 26. VIII. 2011, H. Hara (NSMT).

Remarks. This species was recorded from Honshu, Japan by Togashi (1960, 1981). No other records have been published. This is the first record from Hokkaido. *Betula platyphylla* Sukaczev var. *japonica* (Miq.) H. Hara is newly recorded here as the host plant.

Tenthredo ferruginea Schrank, 1776

Tenthredo ferruginea Schrank, 1776: 84.
Perineura sawai Togashi, 2007a: 16. **N. syn.**

Type material examined. Holotype of *Perineura sawai*: ♀, "Manzai daira, Mt. Hakusan, Ishikawa Pref., 10. VIII. 2006, I. Togashi" "NSMT-I-HYM 62202" "Holotype, *Perineura sawai* n. sp." (NSMT).

Remarks. *Perineura sawai* Togashi, 2007, was described from a single female. There is some difference between the collecting data given in the original description (10. VIII. 2006, Mt Hakusan (alt. 2,000 m), Ishikawa Prefecture, Y. Sawa leg.) and those on the label pinned with the specimen (see above). The specimen, also bearing Togashi's handwritten type label, is doubtless the holotype. It is a specimen of *Tenthredo ferruginea*, not a *Perineura* species, and here we synonymize the two taxa.

Xiphydriidae

Lataxiphyda tabunokii (Togashi, 2007), **n. comb.**

Hyperxiphia tabunokii Togashi, 2007c: 436.
Lataxiphyda makiharai Togashi, 2009: 145. **N. syn.**

Type material examined. Holotype of *Hyperxiphia tabunokii*: ♀, "Mt. Yui, Amami-Oshima, Kagoshima Pref. 13. V. 2005 H. Makihara" "Food plant: *Machilus thunbergii* Sieb. et Zucc." "NSMT-HYM 62281" "Holotype, *Hyperxiphia tabunokii* sp. nov." (NSMT). Paratypes of *Hyper-*

xiphia tabunokii: 1 ♂, "Mt. Yui, Amami-Oshima, Kagoshima Pref., 6. V. 2005, H. Makihara" "Food plant: *Machilus thunbergii* Sieb. et Zucc." "NSMT-HYM 62282" "Paratype, *Hyperxiphia tabunokii* sp. nov." (NSMT); 1 ♂, "Mt. Yui, Amami-Oshima, Kagoshima Pref., 28. VII. 2004, H. Makihara" "Food plant: *Machilus thunbergii* Sieb. et Zucc." "NSMT-HYM 62283" "Paratype, *Hyperxiphia tabunokii* sp. nov." (NSMT).

Holotype of *Lataxiphyda makiharai*: ♀, "Mt. Yuidake, Amami-Oshima Is., Kagoshima Pref., Japan, collected dead plants, 17. VII. 2004, H. Makihara leg." "Mokutachibana, *Ardisia sieboldii* Miq. x. 2004" "NSMT-HYM 37086" "Holotype, *Lataxiphyda makiharai* sp. nov." (NSMT).

Remarks. *Hyperxiphia tabunokii* Togashi, 2007, was described from two females and three males which emerged from *Machilus thunbergii* Sieb. et Zucc. (Lauraceae) and *Ardisia sieboldii* Miq. (Myrsinaceae) collected by H. Makihara on Mt. Yui [= Yuidake] in Amami-oshima Island in 2004 and 2005. *Lataxiphyda makiharai* Togashi, 2009, was described from one female which emerged from *Ardisia sieboldii* obtained by the same collector in the same locality in 2004.

A direct comparison of the holotypes of the two taxa has revealed no significant differences between them. Here we propose to treat them as synonyms and propose a new combination, *Lataxiphyda tabunokii* (Togashi, 2007). This species agrees with the diagnosis of the genus *Lataxiphyda* by Smith (2008).

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