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A new species of *Xylota* Meigen (Diptera: Syrphidae) from the Far East

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Abstract

Xylota danieli Mutin & Ichige **spec. nov.** is proposed as the new name for *Xylota amamiensis* Shiraki sensu Mutin & Gilbert (1999), from the Russian Far East and Japan, which is described and figured. New synonymy is proposed for *Xylota coquilletti* Hervé-Bazin, 1914 (= *X. coquilletti amamiensis* Shiraki, 1968 **syn. nov.**; = *X. vulgaris* Yang & Cheng in Cheng & Yang, 1993 **syn. nov.**).

Key words: hover-flies, synonymy, taxonomy, Russia, Japan

Introduction

Hervé-Bazin (1914) proposed to use the name «*Xylota coquilletti*» for *Xylota cuprina* Coquillett, 1898 preoccupied by Bigot (1885). Coquillett (1898) described *X. cuprina* based on two males from Japan. Mutin & Gilbert (1999) revealed that these two specimens belong to different species of the genus *Xylota* Meigen. The paratype of *X. cuprina* belongs to the species whose male genitalia were drawn by Hippa (1978), as *X. coquilletti* Hervé-Bazin, 1914. For this species Mutin & Gilbert (1999) proposed use of the name *X. amamiensis* Shiraki, 1968. This species is widespread in East Asia. In various collections specimens of this species have been identified as «*Xylota coquilletti*». But Mutin & Gilbert (1999) did not investigate the identity of the holotype of *X. coquilletti amamiensis* Shiraki. More recently, Ichige examined the holotype of *X. coquilletti amamiensis* and found that it is identical with the holotype of *X. cuprina*. So, use of the name *X. amamiensis* cannot be maintained for the species represented by the paratype of *X. cuprina* examined by Mutin & Gilbert (1999). As a result we are describing it as a new species. We also establish new synonyms of *X. coquilletti*.

Results and discussion

Xylota coquilletti Hervé-Bazin, 1914
(figs 1–2, 4)

Xylota cuprina Coquillett, 1898: 327, ♂ holotype, "No 3999 USNM", "Japan Mitsukuri", [National Museum of Natural History, Washington DC], examined, nom. praeocc., nec Bigot (1885).

Xylota coquilletti Hervé-Bazin, 1914: 409, replacement name for *Xylota cuprina* Coquillett, 1898; Mutin & Gilbert (1999: 50, fig. 3); Mutin & Barkalov (1999: 492).

Xylota coquilletti amamiensis Shiraki, 1968: 122, ♂ holotype, "V-15-1953 Ryukyu Is. T. Shiraki", "*[Zelima] coquilletti amamiensis* v. nov. ♂ det. T. Shiraki" [National Institute for Agro-Environmental Sciences, Tsukuba, Japan], examined, **syn. nov.**

Xylota silvicola Mutin, 1988a: 103, ♂ holotype, «Ниж. Амур, р. Горин, верх. кл. Сиутару, 2.VII. [19]85, Мутин» (Russian Far East, Khabarovsky Krai, near Komsomolsk-na-Amure), [Zoological Institute, St. Petersburg], examined. Junior subjective synonym of *Xylota cuprina* Coquillett, 1898 according to Mutin & Gilbert (1999); Mutin, 1988b: 121, the repeated description. Junior primary homonym and objective synonym of *Xylota silvicola* Mutin, 1988a.

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Xylota huangshanensis He & Chu, 1992: 6, figs 11–14, ♂ holotype, Anhui: Huangshan, [Shanghai Agricultural College], not examined. Junior subjective synonym of *Xylota cuprina* Coquillett, 1898 according to Mutin & Gilbert (1999).
Xylota vulgaris Yang & Cheng in Cheng & Yang, 1993: 330, figs 15–16, ♂ holotype, Guizhou: Huishui [Beijing Agricultural University], not examined, **syn. nov.**
Zelima coquilletti: Stackelberg, 1952: 320 (*Zelima*), part.

Remarks. When Coquillett (1898) described *X. cuprina* based on two males from Japan, he wrote in the original description that the "type" has the number 3999. The type specimens of *X. cuprina* were examined by Mutin in the National Museum of Natural History (Washington, DC). The holotype of *X. cuprina* (= *X. coquilletti*) with the label "No. 3999" has genitalia similar to those of the *X. aeneimaculata* species-group *sensu* Hippa (1978). The study of its genitalia established the synonymy of *X. cuprina* and *X. silvicola* (figs 1–2) with *X. coquilletti.* The description of *X. silvicola* was published twice (Mutin, 1988a, 1988b). Based on the male genitalia of *X. huangshanensis* He & Chu, 1992, the latter can also be identified as a junior synonym of *X. coquilletti* (Mutin & Gilbert 1999). According to the figures of the male genitalia in the description of *X. vulgaris* Yang & Cheng, 1993, this name should also be identified as a junior subjective synonym of *X. coquilletti*.

Examined material. Holotype of *X. silvicola* Mutin, ♂, RUSSIA: Khabarovsky Krai, lower reaches of Gorin river, the headwater of Siutaru stream, 2.VII.1985, leg. V. Mutin, [Zoological Institute of the Russian Academy of Sciences, St.-Petersburg, Russia (ZIN)]. Paratypes of *X. silvicola* Mutin: ♂, same data as holotype; ♂, Primorsky Krai, 30 km N from Terney, 13.VIII.1982, leg. V. Mutin, [Amurskii Humanitarian-Pedagogical State University (AmHPSU)]. Holotype of *X. coquilletti amamiensis* Shiraki, ♂, JAPAN: Ryukyu Is., Amami, Shinokawa, 15.V.1953, leg. T. Shiraki, [National Institute for Agro-Environmental Sciences, Tsukuba, Japan (NIAES)]. Other material: ♂, RUSSIA: Khabarovsky Krai, Myaochan mountains, 19.VIII.1996, leg. D. Gritskevich, [AmHPSU]; ♂, JAPAN: Honshu, Tottori Prefecture, Mt. Daisen, 6.VII.1966, leg. T. Okadome, [Institute of Systematics and Ecology of Animals, Novosibirsk, Russia (ISEA)].

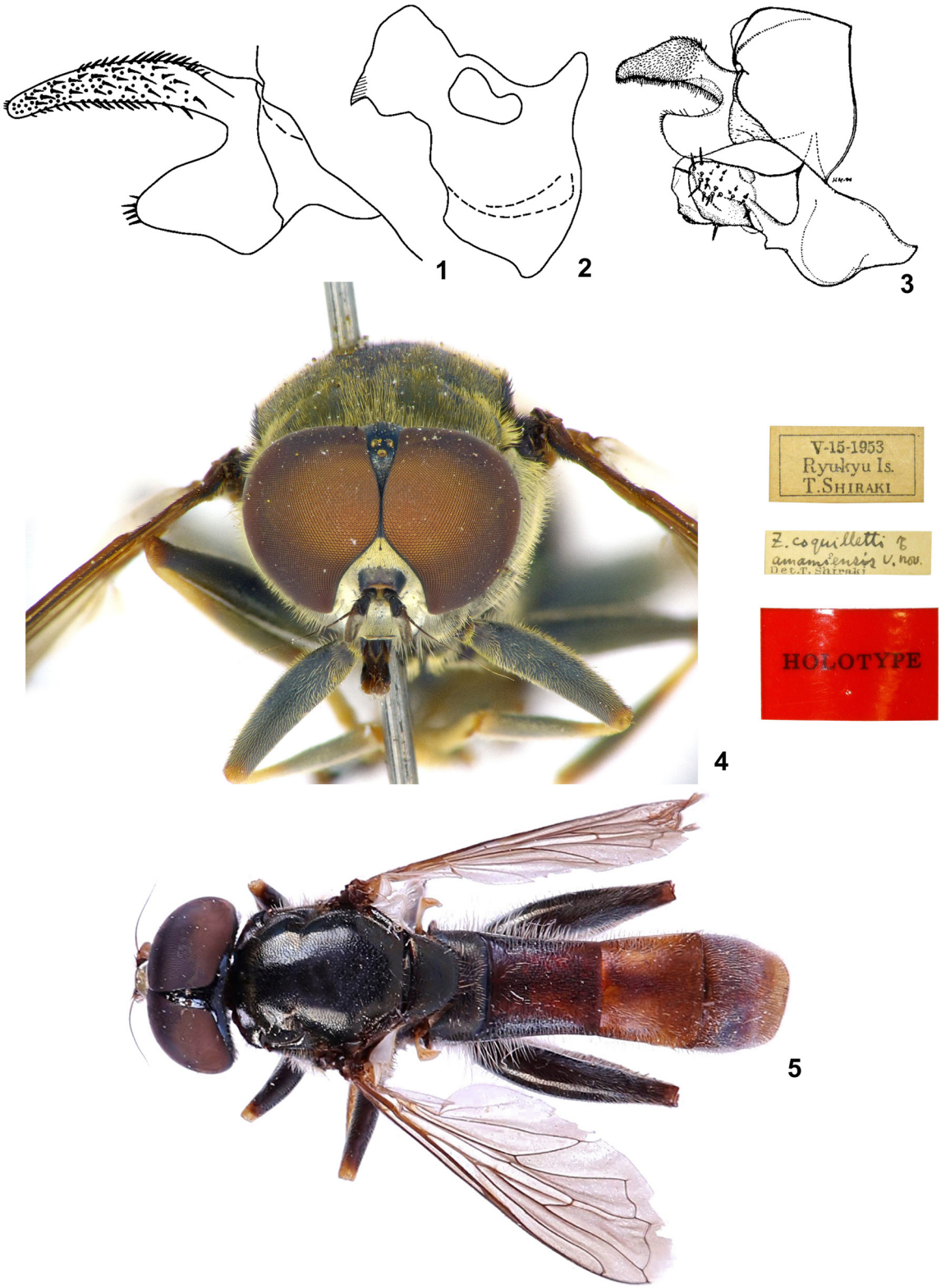
Distribution. Russia: Primorsky Krai, southern part of Khabarovsky Krai; Japan: Hokkaido, Honshu, Ryukyu Islands; China (Guizhou).

***Xylota danieli* Mutin & Ichige spec. nov.**
(figs 3, 5)

Xylota cuprina Coquillett, 1898: 327, ♂ paratype, "Japan Mitsukuri" [National Museum of Natural History, Washington DC] examined. Note: The holotype and paratype of *X. cuprina* Coquillett belong to different species.
Xylota coquilletti auct. nec Hervé-Bazin, 1914: Hippa, 1978: 71, fig. 32A; Stackelberg, 1952: 320 (*Zelima*), part; Violovitsh, 1983: 143, fig. 221.
Xylota amamiensis auct. nec Shiraki, 1968: Mutin & Gilbert, 1999: 47, new name for *X. coquilletti* sensu Hippa, 1978; Mutin & Barkalov, 1999: 492.

Diagnosis. A new species similar to *X. coquilletti* and *X. fo* Hull, 1944 (which also inhabit East Asia) in having the metatibia with a basoventral range of setulae, but differing from the former by having an entirely pollinose frons, a rather uniformly pilose mesonotum and a thin, acute spike on the metatrochanter, as well as in features of the male genitalia. *Xylota fo* has a very long curved spike on the metatrochanter, a sharply concave apical fourth of tergum IV (lateral view), the metafemur with an anterior row of 12–14 strong setae and a posterior row of 9–10 strong setae and also differs in features of the male genitalia (Hippa 1978). The male genitalia of *X. fo* figured by Huo *et al.* (2007) belong to "*X. coquilletti*" in their sense.

Description. Male. Body length 8.2–10.5 mm, wing length 6–7 mm. **Head.** Face and frons entirely densely silvery-white pollinose. Vertex and occiput shining black dorsally, with bluish glow and scattered, erect white pile. Antenna brown, with darker basal 2 segments, basoflagellomere sometimes reddish ventrally. Eyes holoptic. **Thorax.** Postpronotum shining black laterally and dense white pollinose from within. Mesonotum shining back, with short, erect, pale pile. Scutellum shining black, pale pilose, sulcate, with long pale pile dorsoapically. Thorax more or less pollinose laterally, with denser pale pilosity on posterior anepisternum and katepisternum. **Legs.** Pro- and mesofemur mainly black except at the extreme apex, which is yellow, pale pilose. Pro- and mesotibia mainly yellow except for a more or less visible dark annulus at the middle. Pro- and mesotarsus mainly yellow except for the apical 2 tarsomeres, which are black. Metatrochanter with a short, thin, curved spike, its length shorter than the ventral setae on the metafemur. Metafemur black, mainly pale pilose except apical 1/6 with black pile, with an anterior row of 10–12 strong setae and a



FIGURES 1–5. 1) Theca of hypandrium of *Xylota coquilletti* (from Mutin 1988a). 2) Surstylus of *Xylota coquilletti* (from Mutin 1988a). 3) Male genitalia in lateral view of *Xylota danieli* **spec. nov.** (from Hippa 1978). 4) Male holotype and labels of *Xylota coquilletti amamiensis*. Photo by K. Ichige. 5) Male holotype of *Xylota danieli* **spec. nov.** Photo by V. Loktionov.

posterior row of 7–9 similar setae. Metatibia yellow on basal 2/5, with black setulae ventrally, and black on apical 3/5. Metatarsus entirely dark. **Wing.** Membrane hyaline, with brownish stigma; mainly microtrichose except for a small bare patch on the basal medial (bm) and posterior cubital (cup) cells, antero-basally. **Abdomen.** Visibly constricted in the middle, near connection between terga II and III. Tergum I usually black, tergum II black or dark brown, sometimes with a pair of diffuse reddish maculae; tergum III, as a rule, brown or reddish, usually paler basally; tergum IV brown or reddish, paler apically. Abdominal pile mainly pale except for areas of adpressed, very short, black pile on tergum II medially, tergum III postero-medially and tergum IV antero-medially. Sterna 7 and 8 pilose. Genitalia as in fig. 3. **Female.** Not reliably distinguishable from the related species *X. fo*.

Examined material. Holotype ♂, RUSSIA: Primorsky Krai, Bolshaya Ussurka river, Krutoy Yar village, 19.VI.1995, leg. V. Mutin, [Institute of Biology and Soil Science, Vladivostok, Russia (IBSS)]. Paratypes: RUSSIA: 11 ♂, same locality, 19–21.VI.1995, leg. V. Mutin, [6 ♂ IBSS; 5 ♂ Amurskii Humanitarian-Pedagogical State University (AmHPSU)]; 4 ♂, Primorsky Krai, 30 km N from Terney, Sichote-Alin reserve, 4.VIII.1982, leg. V. Mutin, [3 ♂ IBSS; ♂ AmHPSU]; ♂, Amurskaya Oblast, Malyi Khingan, Kundur, 19.VII.1988, leg. V. Makarkin, [IBSS]; ♂, Khabarovsky Krai, lower reaches of Gorin river, Tikhaya anabranch, 18.VI.1988, leg. V. Mutin, [AmHPSU], 4 ♂; Khabarovsky Krai, Pivan village, 19.–20.VI.1993, leg. V. Mutin, [AmHPSU]; ♂, same data except 20.VI.1992, [AmHPSU]; ♂, Bolshekhekhzyrsky reserve, environs of Bychikha village, 22.VI.1982, leg. V. Mutin, [AmHPSU]; ♂, Komsomolsk-na-Amure, Silinsky park, 31.VII.1996, leg. V. Mutin, [AmHPSU]; ♂, 25 km SW from Komsomolsk-na-Amure, environs of Molodezhny, 17.VII.1993, leg. V. Mutin, [AmHPSU]; JAPAN: 7♂, Hokkaido, Tomakomai C., Misawa, 21.VII.2006, leg. K. Ichige, [Katsuyoshi Ichige personal collection, (KIPC)]; ♂, Akita Pref., Ohmagari, 7.VI.1953, leg. N. Fukuhara, [National Institute for Agro-Environmental Sciences, Tsukuba, Japan (NIAES)]; ♂, Tochigi Pref., Nikko, 9.VIII.1953, leg. I. Hattori, [NIAES]; 2♂, Ibaraki Pref., Mt. Yamizo, 29.V.2007, leg. K. Ichige; 4♂, Ibaraki Pref., Gozen-yama, 2.V.2009, leg. K. Ichige, [KIPC]; ♂, Tokyo, Mt. Takao, 17.X.1965, leg. J. Minamikawa, [NIAES]; ♂, Gifu Pref., Takayama C., Hirayu, 3.VIII.2013, leg. K. Ichige, [KIPC]; ♂, Tokushima Pref., Mt. Nakatsumine, 20.VIII.1954, leg. M. Hirai, [NIAES]; ♂, Tsushima Is., Oboshiyama, 4.VIII.1974, leg. Y. Ikezaki, [NIAES]; 2 ♂, Ryukyu Is., Amami-Shinokawa, 11.V.1953, leg. T. Shiraki, [NIAES]; 2 ♂, Ryukyu Is., Amami-Oshima, Mt. Yuwan, 3.V.1953, leg. T. Shiraki, [NIAES].

Etymology. The specific name is dedicated to Daniel William Coquillett (1856–1911), the famous American dipterist.

Distribution. Russia: south of Khabarovsky Krai, Jewish Autonomous Oblast, south of Amurskaya Oblast, Primorsky Krai, Sakhalin Oblast, Japan: Hokkaido, Honshu, Shikoku, Kyushu, Ryukyu Islands.

Natural history. The larva is unknown. Feeding adults were observed on the inflorescences of *Senecio cannabifolius*; frequently adults collect pollen from the leaves of flowering plants. Males are associated with freshly sawn tree trunks. It is a common species of *Xylota* in the urban territories of the Russian Far East.

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