A journal of world insect systematics

INSECTA MUNDI

0976

Myzus fataunae Shinji (Hemiptera: Aphididae), *Pilea* aphid, new to North America

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Date of issue: March 3, 2023

Center for Systematic Entomology, Inc., Gainesville, FL

Halbert SE, Allen JS, Moore MR, Fairbanks KEO, Sano M, Miller GL. 2023. *Myzus fataunae* Shinji (Hemiptera: Aphididae), *Pilea* aphid, new to North America. Insecta Mundi 0976: 1–10.

Published on March 3, 2023 by
Center for Systematic Entomology, Inc.
P.O. Box 141874
Gainesville, FL 32614-1874 USA
http://centerforsystematicentomology.org/

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Printed copies (ISSN 0749-6737) annually deposited in libraries

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Electronic copies (Online ISSN 1942-1354) in PDF format

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Abstract. Minute aphids belonging to the species *Myzus fataunae* Shinji (Hemiptera: Aphididae) were found at a nursery in Seminole County, Florida. Morphological and molecular data support this determination. The Florida population only colonized species of *Pilea* Lindl. in our host range experiments. It did not colonize *Fatoua villosa*. Nakai. Likewise, it did not colonize tested common Florida species of Urticaceae other than *Pilea* spp. *Myzus fataunae* is adventive, and it appears to be established in the United States.

Key words. Adventive species, Florida, dish garden ornamentals.

ZooBank registration. urn:lsid:zoobank.org:pub:EA6031BB-3E9E-49E2-871F-3D57E7302F9F

Introduction

Minute aphids (Fig. 1–2) were found by Florida Department of Agriculture and Consumer Services, Division of Plant Industry (DPI) inspector Jesse Krok on aluminum plants (*Pilea cadierei* Gagnep. & Guill. (Urticaceae)) and other species of *Pilea* Lindl. at a nursery that produces plants for dish gardens (USA: FLORIDA, Seminole County, Longwood, 22-VIII-2018, Jesse Krok, *Pilea cadierei*, FSCA# E2018-4544). We determined that the aphids

Figure 1. Adult apterous *Myzus fataunae* Shinji (Hemiptera: Aphididae) on *Pilea*. Photograph by Lyle Buss, University of Florida.

Figure 2. Colony of *Myzus fataunae* Shinji (Hemiptera: Aphididae) on *Pilea*. Photograph by Lyle Buss, University of Florida.

are *Myzus fataunae* Shinji, 1924 (after Takahashi, 1965) (Pilea aphid), a new record for North America. In February 2021, another population was found on the same plant in Warren Co., New York. (USA: NEW YORK, Warren Co., Queensbury, 17-II-2021, Lindsey Christianson, *Pilea cadierei*, FSCA# E2021-685).

Myzus fataunae was named for its presumed host plant, *Fatoua* Gaudich (Moraceae), as "*Fatauna*" (Shinji 1924), but subsequent records from this plant genus are lacking (Blackman and Eastop 2022), and all recent verified records are from *Pilea* or closely related plants in the family Urticaceae. Here we present a synopsis of this species and closely related ones, including comments on previous descriptions, results of a host range study based on plants that occur in Florida, and molecular data on the insects.

Materials and Methods

Curation. Adult aphids were collected into 70% and 95% ethanol for standard preservation and molecular analysis, respectively. Permanent slide mounts were made in Canada balsam. Slides are deposited in the Florida State Collection of Arthropods (FSCA), Gainesville, FL, USA, the National Aphidoidea Collection of the U.S. National Museum of Natural History (USNM), Beltsville, MD, USA, and Hokkaido University (EIHU), Sapporo, Japan.

Host range experiments. The purpose of the host range experiments was to determine if the newly discovered aphids could colonize *Fatoua* (Moraceae), from which the species was named (as *Fatauna*), or various species of Urticaceae that occur in Florida, including *Parietaria floridana* Nutt., *Boehmeria cylindrica* (L.) Sw., *Laportea aestuans* (L.) Chew., and *Pouzolzia zeylanica* (L.) Benn. *Fatoua villosa* (Thunb.) Nakai (Moraceae), which was used in our experiments, is adventive in Florida. Among the tested Urticaceae, the first two plants (*Pa. floridana* and *B. cylindrica*) are native to Florida, and the other two (*L. aestuans* and *Po. zeylanica*) are adventive in the state (Wunderlin et al. 2022).

Laboratory colonies were maintained on *Pilea microphylla* (L.) Liebm., a commonly accessible weed. New plants were provided as needed. Experiments were conducted at the DPI Gainesville facility. Culture vouchers (slides) are deposited in the FSCA and the USNM (USA: FLORIDA, Alachua County, Gainesville, FDACS-DPI laboratory colony, 20-V-2020, Susan Halbert, *Pilea microphylla*, FSCA# E2020-1921).

We transferred cohorts of 20 adult *M. fataunae* to three young *F. villosa* plants, using a small paintbrush. This experiment was repeated two more times, because the aphids failed to colonize. Finally, several young *F. villosa* plants were left close to the infested stock colony on *Pilea* for six months and examined regularly for colonization.

Pilea microphylla (9 pots), *Pa. floridana* (3 pots), *B. cylindrica* (3 pots), *L. aestuans* (3 pots), and *Po. zeylanica* (3 Pots) were all established in standard 4-inch pint pots. Plants in the genera *Boehmeria* and *Parietaria* are reported hosts of *M. fataunae* (Blackman and Eastop 2022). All plants were sprayed with a 2% solution of horticultural oil 2-3 weeks prior to the experiment to remove other insects (*Aphis gossypii* Glover, *Phoenacoccus madeirensis* Green). *Pilea microphylla* (9 Pots) were inoculated with *M. fataunae* by draping infested stock plant cuttings (*Pi. microphylla* stems & leaves with >20 aphids) over the foliage of each pot. Aphids were given two days to crawl off infested cut material before cut material was discarded. Plants were monitored for approximately four weeks to confirm adequate infestations on the nine pots of *P. microphylla* plants to be used in the experiment.

Experiments were conducted in three Bugdorm® insect-rearing cages set up in a quarantine laboratory under a grow light (14 hrs./daylight/day) at DPI's Invertebrate Research and Containment Laboratory (IRCL) (BSL 2). At the beginning of the host range experiment 2 pots of infested *Pi. microphylla*, 1 pot of clean *Pa. floridana*, 1 pot of clean *B. cylindrica*, 1 pot of clean *L. aestuans*, and 1 pot of clean *Po. zeylanica* were placed in each of the three rearing cages. Plants were inspected 2–3 times a week and watered twice a week. As no plants became infested by *M. fataunae* two weeks into the experiment, all potential host plants (*Pa. floridana*, *B. cylindrica*, *L. aestuans*, and *Po. zeylanica*) were inoculated by draping infested plant cuttings (*Pi. microphylla* stems and leaves with >20 aphids) over the foliage on 14th day of the experiment. Two days later all the infested *Pi. microphylla* plants and cuttings were removed, leaving only the alatae and any aphids that crawled off the cuttings and remained on potential host plants to produce new colonies. Plants were monitored for another three weeks for colony development.

Molecular experiments. Four *M. fataunae* specimens collected in Florida and New York were targeted for DNA extraction and COI barcoding. The specimens were extracted using the Qiagen DNeasy Blood and Tissue per the manufacturer's recommendations. Each specimen was PCRed using the universal arthropod COI barcoding primers LEPF1/LEPR1 (Herbert et al. 2004) or LCO1490/HCO2198 (Folmer et al. 1994) utilizing the protocols in Talamas et al. (2021). PCR products were purified and sequenced bidirectionally on an ABI SeqStudio platform using BigDye Terminator v3.1 chemistry (Applied Biosystems, Foster City, California, USA). Sequence chromatograms were trimmed and assembled into contigs using Sequencher 5.4.6. All available *Myzus* 5P-COI barcodes with species determinations were datamined from the Barcode of Life Database (Ratnasingham and Hebert 2007) during June of 2022. Sequences were aligned in MEGAX (Kumar et al. 2018) with the default settings of MUSCLE (Edgar 2004). The *M. fataunae* COI distances to other *Myzus* species were calculated using the Kimura 2-parameter model (Kimura 1980) with a 95% site coverage cutoff.

Systematics. Select specimens were cleared and mounted in Canada balsam and initially examined with Leica® DM2500 and Nikon® Eclipse E600 microscopes. Detailed specimen examination, measurements, and photomicrographs were made with the Zeiss Axiocam® using AxioVision® 4.6 imaging software (Zeiss®, Göttingen, Germany) microscope and a Nikon® Eclipse E600 microscope. Apterous and alate vivipara plates were made using the image manipulation program, GIMP® 2.8.22 (GIMP Team 2021). Measurements were recorded in micrometers (μm) with minimum, maximum, range, and mean of specimen characters. Voucher material is deposited in the USNM and FSCA. Photographs of specimens that probably were used in Takahashi's (1965) redescription of *M. fataunae* were taken by us (MS) and sent from Dr. Kazunori Yoshizawa, Hokkaido University, Sapporo, Japan. These were designated as "neotypes" in the paper.

Specimens examined for measurements. USA: FLORIDA, Alachua Co., Gainesville, DPI laboratory culture, 20-V-2020, Susan Halbert, *Pilea microphylla*, FSCA# E2020-1921 (2 apterous viviparae, 2 alate viviparae), USNM; USA: FLORIDA, Seminole Co., Longwood, 29.67827°, −81.44580°, 22-VIII-2018, Jesse Krok, *Pilea cadierei*, FSCA# E2018-4544 (1 apterous vivipara), USNM; USA: FLORIDA, Seminole Co., Longwood, 25-VIII-2018, Jesse Krok, Katherine E.O. Fairbanks, Susan Halbert, *Pilea nummulariifolia*, FSCA# E2018-5105 (1 apterous vivipara), FSCA; USA: FLORIDA, Seminole Co., Longwood, 29-VIII-2018, Jesse Krok, *Pilea cadierei*, FSCA# E2018-4633 (1 apterous vivipara), FSCA; USA: FLORIDA, Seminole Co., Longwood, 1-IX-2018, Jesse Krok, *Pilea cadierei*, FSCA# E2018-4803 (1 apterous vivipara, 2 alatae viviparae), FSCA; USA: NEW YORK, Warren Co., Queensbury, 773 Quaker Rd., 17-II-2021, Lindsey Christianson, *Pilea cadierei*, FSCA# E2021-685 (2 apterous viviparae), USNM.

Results

In life, adult apterae are distinctly bi-colored, with the anterior part much darker than the posterior part of the body. Adult aphids are only about 1 mm long, so they are difficult to see if the infestation is light; however, in high numbers, they can cause significant damage, especially leaf drop and honeydew soiling. Heavy infestations can be observed relatively easily when bi-colored adults feed on the pale stems of the plants.

Host range experiments. No *M. fataunae* colonized the *F. villosa* plants, either after attempts to transfer individual adult aphids to the plants, or after placing *F. villosa* plants next to the thriving stock culture on *Pilea*. We do not believe that *F. villosa* is a host of *M. fataunae*.

No colonization occurred on the Florida Urticaceae except on the *Pi. microphylla*. In Florida, *M. fataunae* appears limited to *Pilea.* At the nursery where *M. fataunae* was found for the first time, several species of *Pilea* were colonized, including *P. cadierei*, *Pilea depressa* (Sw.) Blume, *Pilea microphylla*, and *Pilea nummulariifolia* (Sw.) Weddell. In an infested greenhouse in Alachua County, *M. fataunae* specimens were collected on *Pa. floridana* weed seedlings under the bench that held heavily infested *Pilea* plants (USA: FLORIDA, Alachua Co., Gainesville, 29.79609, −82.38320, 19-III-2020, Sam Hart, *Parietaria floridana*, FSCA# E2020-1152). It is possible that in a nursery situation, *Pa. floridana* plants could be colonized, but it is more likely that the aphids were there only because of the heavy infestation on the plants above them.

Molecular experiments. Our *M. fataunae* samples yielded four identical, COI barcodes (GenBank Accessions: ON951648–ON951651). Among other *Myzus* species, *M. cerasi* (Fabricius) had the most similar COI barcode (Table 1), but *M. cerasi* barcodes were greater than five percent different from our *M. fataunae*. The remaining *Myzus* species differed from *M. fataunae* by 6.7 to 10.4 percent (Table 1), suggesting that COI provides a robust identification of *M. fataunae* based on existing data. COI barcodes of the New York and Florida specimens were identical. Additionally, BOLD contained a record of an unidentified aphid from Selangor, Malaysia that differed from our *M. fataunae* barcodes by a single nucleotide substitution (GMMBB789-16; BOLD:ADE2244). The image of the specimen suggests that this record is a *Myzus*. We consider that this BOLD specimen from Malaysia is probably *M. fataunae*, but the aphid will need to be examined to confirm the identification.

Systematics. *Myzus fataunae* was described originally from an alate specimen by Shinji (1924). In a comment, he says that "In Morioka, the same plant is often seen infested with several species, of which the present species is one." In Takahashi's (1965) monograph on *Myzus* of Japan, he redescribed *M. fataunae*. At the end of the description, he remarks, "This species differs in some points from the descriptions, but more answers to them than to *M. moriokae* Shinji and *M. kusaki* Shinji described from the Urticaceae; and this name is adopted."

Choi et al. (2019) published a taxonomic review of *Myzus* in Korea in which they described three new species. None of these are relevant to *M. fataunae*, because they are not on Urticaceae. Under the discussion of *M. fataunae*, they repeat the comments of earlier authors that the morphological characters are problematic.

The aphids from Florida also differ in some respects from both previous descriptions of *M. fataunae*. First, Shinji (1924) described the aptera as "only the claws dusky, the other parts being green." Similarly, Takahashi said, "white in life, with pale antennae, legs, cornicles and cauda." The apterous aphids in Florida are invariably bi-colored, beginning at about the third instar, although this coloration is not retained in mounted specimens. There were other differences, such as the number of rhinaria on the antennae of the alate forms, and some of the ratios given in both descriptions. However, in keys provided in Takahashi (1965) and Miyazaki (1971), most of our specimens easily ran to *M. fataunae*.

Ten slides of *M. fataunae* collected from four localities also were examined from the R. Takahashi Collection of Hokkaido University, Japan. Nine of the slides had label data that agree closely to the specimen data

Table 1. COI Kimura 2-parameter distances for *Myzus fataunae* Shinji (Hemiptera: Aphididae) compared to other *Myzus* species in BOLD.

***Myzus* species COI barcode comparison**	**Range of K2P % distances**
M. fataunae – *M. ascalonicus* Doncaster	9.7–10.4 (n = 15)
M. fataunae – *M. cerasi* (Fabricius)	5.1–6.6 (n = 133)
M. fataunae – *M. hemerocallis* Takahashi	9.5 (n = 7)
M. fataunae – *M. ligustri* (Mosley)	9.5 (n = 3)
M. fataunae – *M. lythri* (Schrank)	6.7–7.3 (n = 66)
M. fataunae – *M. mumecola* (Matsumura)	8.5–10.1 (n = 14)
M. fataunae – *M. mushaensis* Takahashi	8.1 (n = 1)
M. fataunae – *M. ornatus* Laing	7.4 (n = 12)
M. fataunae – *M. padellus* Hille Ris Lambers and Rogerson)	7.5–7.7 (n = 2)
M. fataunae – *M. persicae* (Sulzer)	7.3–9.1 (n = 691)
M. fataunae – *M. philadelphi* Takahashi	11.8 (n = 1)
M. fataunae – *M. polaris* Hille Ris Lambers	8.1 (n = 1)
M. fataunae – *M. siegesbeckiae* Takahashi	6.8 (n = 1)
M. fataunae – *M.* sp. 1 BOLD:ACQ6461	7.8–8.0 (n = 2)
M. fataunae – *M. varians* Davidson	7.2–7.9 (n = 28)

of the specimens from which "neotypes" were designated by Takahashi (1965). Unfortunately, no clear neotype designation specifically identified any particular specimen as such, but one slide from each locality bore a red mark on the label. Specimens subsequently were photographed in high resolution and were examined digitally. Examination of the high-resolution photographs compared favorably to our North American specimens. The exception is that some of our specimens had six-segmented antennae. It appears that the number of antennal segments is a variable character. Specimens collected in New York all had six-segmented antennae (Fig. 3C) and were generally larger (Table 2) but matched the Florida material otherwise. It is possible that the differences might be due to time of year and/or various physical parameters such as temperature and light regime. Takahashi (1965) provided a detailed description of *M. fataunae* that is not repeated here, but measurements and select associated morphological structures for the North American specimens are provided for further clarity (Fig. 3, Table 2).

In addition to *M. fataunae* there are nine species of Myzini reported from *Pilea* and/or *Boehmeria* (Blackman and Eastop 2022). Additionally, *Micromyzodium kuwakusae* (Uye), was reported from *Fatoua* (Lee et al. 2014). The nine species include three common polyphagous pests (*Myzus ornatus* Laing, *Myzus persicae* (Sulzer), and *Neomyzus circumflexus* (Buckton)), which we ruled out. That left *Kaochiaoja pileophaga* Zhang, *Myzus boehmeriae* Takahashi, *Myzus indicus* R.C. Basu & Raychaudhuri, *Myzus kusaki*, Shinji, *Myzus moriokae* Shinji, and *Myzus pileae* Takahashi. Additionally, another similar species, *Myzus dycei* Carver (Carver 1961) was described from *Urtica incisa* (Urticaceae) in Australia. Our comments about why we ruled out each of these species are listed below:

***Kaochiaoja pileophaga* Zhang.** This species has been synonymized with *M. kuwakusae* according to Favret (2022), based on a Ph.D. dissertation by Su Xiao-mei. The host plants might be confused, because *M. kuwakusae* is on *Fatoua*, and *K. pileophaga* was described from *Pilea*. For illustrations of *M. kuwakusae*, see Su et al. (2012). *Micromyzodium kuwakusae* has much longer setae on the antennae than *M. fataunae*.

***Myzus boehmeriae* Takahashi.** According to Takahashi (1965, Fig. 2), the shapes of the siphunculi and cauda do not match the Florida specimens. Most of the Florida specimens had 5-segmented antennae, while *M. boehmeriae* has 6-segmented ones. In addition, antennal setae are illustrated as sub-equal or longer than associated segment. Our specimens had much shorter setae. Moreover, secondary rhinaria on alatae were more numerous and present on segments III-IV (Shinji 1941). Our specimens had no rhinaria on segment IV. *Myzus boehmeriae* is listed as "white" with darker tarsi and apices of the tibiae, whereas the Florida specimens were bi-colored.

***Myzus dycei* Carver.** This species was described from *Urtica incisa* Poir (Urticaceae). It is similar to *M. fataunae* in having typical myzine features, but the alatae have a well-defined abdominal patch (lacking in *M. fataunae*) and more rhinaria in antennal segment III. The ultimate rostral segment in apterae has 5-7 secondary setae (2 in *M. fataunae*). Additionally, the host is *Urtica*, not *Pilea*.

***Myzus indicus* R.C. Basu and D.N. Raychaudhuri.** Our viviparous apterae specimens of *M. fataunae* were compared with a viviparous aptera paratype of *M. indicus* deposited at the USNM. They did not match, and we have ruled out this species. Notable differences from *M. indicus* include siphunculi with rugulose surface and nearly cylindrical, siphunculi only slightly expanded medially (*M. fataunae* siphunculi are only slightly rugose and are spinulate; siphunculi are noticeably curved and expanded); cauda is rugose (*M. fataunae* cauda is spinulate).

***Myzus kusaki* Shinji.** The status of this species is uncertain. Takahashi (1965) did not see this species and did not include it in his key. It was listed as indeterminate. Eastop and Hille Ris Lambers (1976) listed it as a questionable synonymy with *Aulacorthum solani* (Kaltenbach, 1843). Miyazaki et al. (2016) and Favret (2022) agreed with the synonymy. If the synonymy is correct, *M. kusaki* can be ruled out.

***Myzus moriokae* Shinji.** Takahashi (1965) did not see this species, but the note says, "Not a *Myzus*, with long setae on body and antennae." If correct, this species can be ruled out. Favret (2022) lists this species as *nomen dubium*.

***Myzus pileae* Takahashi.** The description does not match the Florida specimens: *Myzus pileae* has 6-segmented antennae, siphunculi are not the same shape, cauda is longer than that in Florida specimens, and alatae have many more rhinaria on antennal segments III and IV than do alatae from Florida.

Table 2. Measurements (μm) of representative specimens of *Myzus fataunae* Shinji (Hemiptera: Aphididae) (mean, range).

Structure		Apterous viviparae (5-segmented antennae) (*n* = 6) Florida specimens	Apterous viviparae (6-segmented antennae) (*n* = 2) New York specimens	Alate viviparae (6-segmented antennae) (*n* = 4) Florida specimens
Head	Body length	970 (850–1105)	1293 (1258–1328)	1079 (963–1195)
	Head width (outer) margin of eyes	267 (243–275)	354 (350–358)	285 (278–290)
	Rostrum (IV + V)	82(78–85)	94 (90–98)	85 (78–88)
	Scape	55 (53–58)	73 (70–75)	63 (50–75)
	Pedicel	47 (43–50)	55 (55–55)	53 (50–55)
	Antennal segment III	204 (158–255)	204 (195–213)	237 (203–253)
	Antennal III rhinaria	0	0	7 (6–7)
	Antennal segment IV	82 (65–95)	95 (90–100)	138 (120–150)
	Antennal segment V	—	132 (130–133)	127 (113–138)
	Distal antennal segment, base	82 (75–88)	95 (90–100)	109 (95–125)
	Distal antennal segment, processus terminalis	176 (155–205)	242 (238–245)	327 (280–350)
Prothorax	Coxa	54 (45–63)	74 (73–75	74 (67–88)
	Trochanter	41 (30–45)	53 (53–53)	52 (48–55)
	Femur	162 (125–180)	264 (263–265)	274 (248–295)
	Tibia	292 (265–310)	439 (433–445)	493 (445–563)
	Tarsal-1	20 (15–25)	29 (28–30)	23 (20–23)
	Tarsal-2	51 (40–60)	67 (60–73)	57 (53–60)
Mesothorax	Coxa	72 (63–75)	67 (60–73)	73 (70–75)
	Trochanter	42 (38–45)	50 (50–50)	47 (43–53)
	Femur	187 (168–210)	267 (258–275)	208 (185–225)
	Tibia	304 (265–340)	443 (433–453)	453 (400–500)
	Tarsal-1	21 (20–23)	32 (30–33)	23 (23–23)
	Tarsal-2	59 (53–65)	69 (68–70)	60 (55–63)
Metathorax	Coxa	84 (70–95)	108 (103–113)	72 (63–80)
	Trochanter	42 (38–45)	344 (333–355)	48 (43–55)
	Femur	254 (215–300)	344 (333–355)	268 (220–310)
	Tibia	399 (365–425)	570 (550–590)	523 (445–583)
	Tarsal-1	22 (20–25)	29 (28–30)	23 (20–25)
	Tarsal-2	57 (53–60)	75 (75–75)	60 (55–65)
Wings	Forewing			1612 (1488–1745)
	Hindwing			875(813–925)
Abdomen	Siphunculus	274 (240–295)	325 (325–325)	207 (195–220)
	Cauda	72 (63–85)	103 (100–105)	60 (50–63)
	Caudal setae	2 pairs	2 pairs	2 pairs

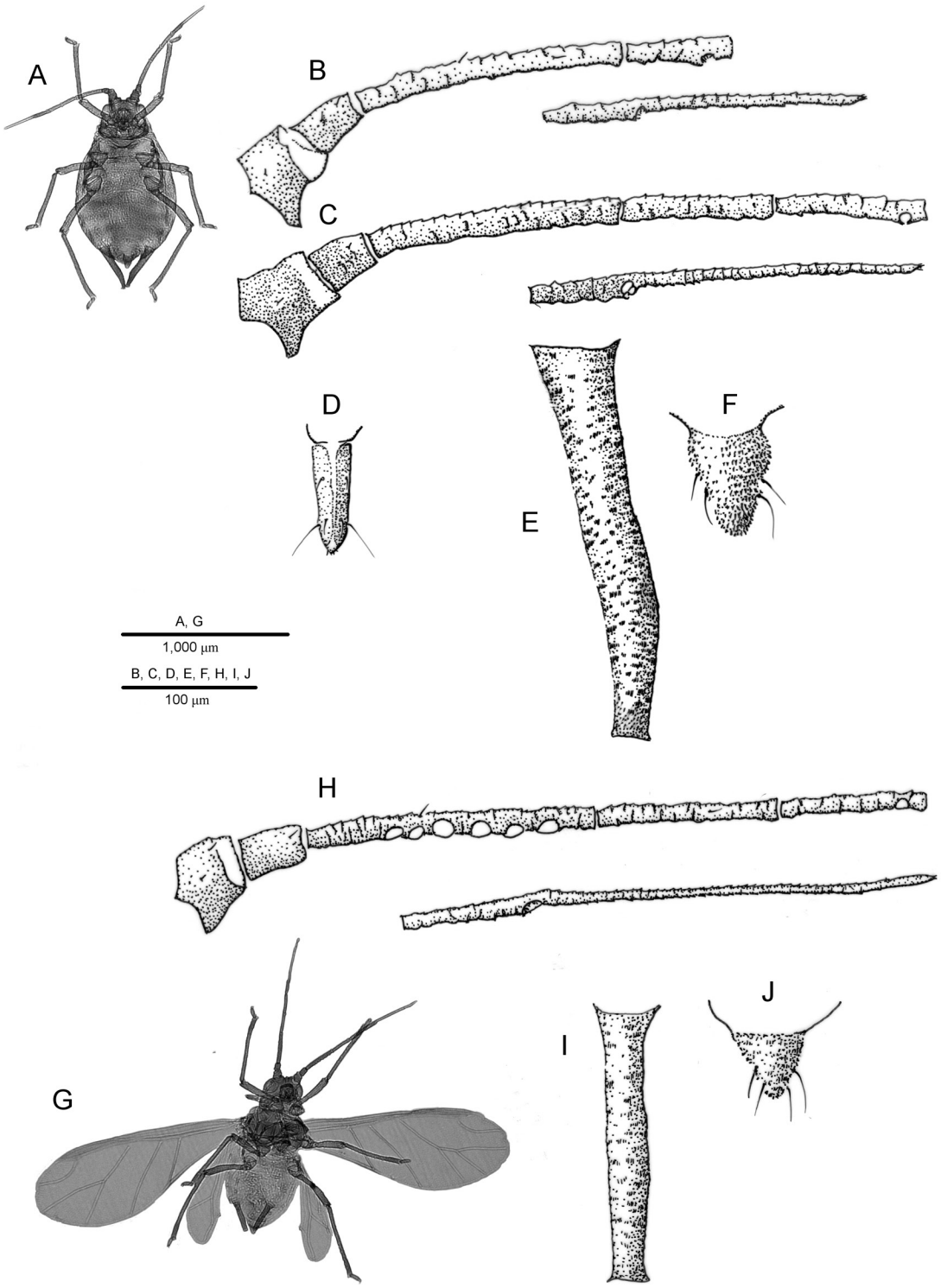

Figure 3. *Myzus fataunae* Shinji (Hemiptera: Aphididae). **A)** Apterous vivipara photomicrograph with 5-segmented antennae. **B)** Antennal segments of 5-segmented specimen (apterous vivipara). **C)** Antennal segments of 6-segmented specimen (apterous vivipara). **D)** Rostral segment IV+V (apterous vivipara). **E)** Siphunculus (apterous vivipara). **F)** Cauda (apterous vivipara). **G)** Alate vivipara photomicrograph. **H)** Antennal segments of 6-segmented specimen (alate vivipara). **I)** Siphunculus (alate vivipara). **J)** Cauda (alate vivipara). Drawings by Gary L. Miller, USDA, ARS, Systematic Entomology Laboratory.

Even given the 6-segmented antennae on some Florida specimens, and on the specimens from New York, the closest match is *M. fataunae*. Our specimens also agreed in all respects, except for the 6-segmented antennae on some of them, with photos of specimens designated as "neotypes" by Takahashi (1965).

Some of these species listed above might be synonyms of each other. A more thorough investigation is needed to determine that. However, based on literature and accessible specimens, we think that *M. fataunae* is the best name for the aphids found recently on *Pilea* in Florida and New York nurseries.

Discussion. Prior to its discovery in Florida, *M. fataunae* was known only from eastern Asia in Japan and Korea. The original nursery received all its plants from local establishments, so the source of the infestation is unclear. The most likely source of the aphids is weedy *Pilea* plants accompanying other plants from Asia. *Pilea pumila* var. *hamaoi* (Makino) C. J. Chen, native to Asia, is used as a vegetable. *Pilea pumila* (L.) A. Gray is native to North America, but it is not used for food. A photograph of the plant from Japan probably shows two of the aphids on the plant (http://flowers.la.coocan.jp/Urticaceae/Pilea%20pumila%20hamaoi/DSC08663.JPG). Imported *P. pumila* plants for culinary purposes represent a possible pathway for the introduction of the aphids, but this plant is not eaten commonly and likely not cultivated. Its status is that of an edible wild plant. Thus, this pathway is unlikely.

For over 1.5 years, no *Pilea* aphids were found outside of the original nursery. In March 2020, however, the aphids were found at a nursery in Alachua County (USA: FLORIDA, Alachua County, Gainesville, 16-III-2020, Sam Hart, *Pilea cadierei*, FSCA# E2020-1072), indicating that they might be more widespread than detections indicate. Subsequently, in February 2021, the aphids were found in New York. The small size and cryptic nature of these aphids makes scouting a challenge.

At the three sites where *M. fataunae* has been found, they were only on plants in greenhouses, not on outdoor nursery stock or weeds. Thus, the aphids would seem to be moving in trade and not widespread in the environment yet.

The host range of *M. fataunae* in Florida so far is restricted to species of *Pilea*, with the possible exception of *Pa. floridana* weeds in the second nursery.

The aphid supposedly was described from *Fatoua* (Moraceae, as "*Fatauna*"), but the original identification of the plant could be in error. There have not been known subsequent records on *Fatoua* (Blackman and Eastop 2022). Moreover, the Florida population of *M. fataunae* did not colonize *Fatoua*, a common weed. *Fatoua* and some species of *Pilea* are similar in appearance and could be confused easily.

Pilea cultivars are an important component of dish gardens, providing color, leaf texture, and relatively slow, compact growth. They are easy to propagate. This aphid could become a nuisance pest in ornamental dish garden cultivation, but it is not likely to become a pest of major crops due to its limited host associations.

Acknowledgments

We are grateful to Kazunori Yoshizawa (Hokkaido University, Sapporo, Japan) for locating the Takahashi specimens of *M. fataunae* and providing us with numerous photomicrographs for morphological comparisons. We thank Colin Favret (University of Montreal, Canada) for providing access to the Shinji (1941) and Su et al. (2012) papers. We thank Lyle Buss, University of Florida for the photographs of live aphids. We thank Andrew S. Jensen, Northwest Potato Research Consortium, Christopher L. Owen, USDA, ARS, and Paul E. Skelley, DPI, for reviewing the paper. We thank the Florida Department of Agriculture and Consumer Services, Division of Plant Industry for support of this work. Mention of trade names or commercial products in this publication is solely for providing specific information and does not imply recommendation or endorsement by the USDA. USDA is an equal opportunity provider and employer.

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Received October 7, 2022; accepted January 23, 2023.
Review editor Joe Eger.