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Aphids of the genus *Macrosiphoniella* DEL GUERCIO (*Homoptera, Aphididae*) from the Democratic People's Republic of Korea

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[Pl. I–IV and 60 text-figures]

So far only 11 species of *Macrosiphoniella* have been recorded from Southern Korea (PAIK 1965, 1972) and none from the Democratic Poeple's Republic of Korea. The study of a large collection (about 50 samples) made in the D.P.R. of Korea by the author in 1966 and other staff members of the Institute of Zoology of the Polish Academy of Sciences in 1959 (B. PISARSKI and J. PRÓSZYŃSKI), 1965 (M. MROCZKOWSKI and A. RIEDEL) and in 1970 (R. BIELAWSKI and M. MROCZKOWSKI) has increased the number of *Macrosiphoniella* species from the Korean Peninsula to 20.

The present paper contains, besides a key to the Korean species and an annotated Check-List of species from the East Asiatic Province of Palaearctic, descriptions of a new subgenus, 5 new species and 3 new subspecies, redescriptions of 5 little known species and records of two further species of which one, *M. atra latysiphon* HOL. et SZEL., is new to Korea and to the East Asia.

A geographic scheme of the localites mentioned in the paper is given in SZELEGIEWICZ (1974) and more details can be find in MROCZKOWSKI (1972).

The holotypes of the new species and subspecies are deposited in the Institute of Zoology, Polish Academy of Sciences, Warszawa; some of the paratypes also in the collection of Dr. J. HOLMAN.

The autor is deeply indebted to the colleagues from the Institute of Zoology, who collected a part of the material studied in this paper. Thanks are also due to Dr. S. AOKI, Japan, for sending some Japanese material of *Macrosiphoniella* for comparison, and to Dr Jaroslav HOLMAN, Prague, for critical comments and valuable suggestions.

[1] Results of the Korea Expeditions of the Institute of Zoology, Polish Academy of Sciences, Warszawa. Contribution No. 31.

Synopsis and desctriptions of species

Macrosiphoniella (*Asterobium*) *yomenae* (SHINJI, 1922)

(Pl. I; phot. 1, figs. 1–5)

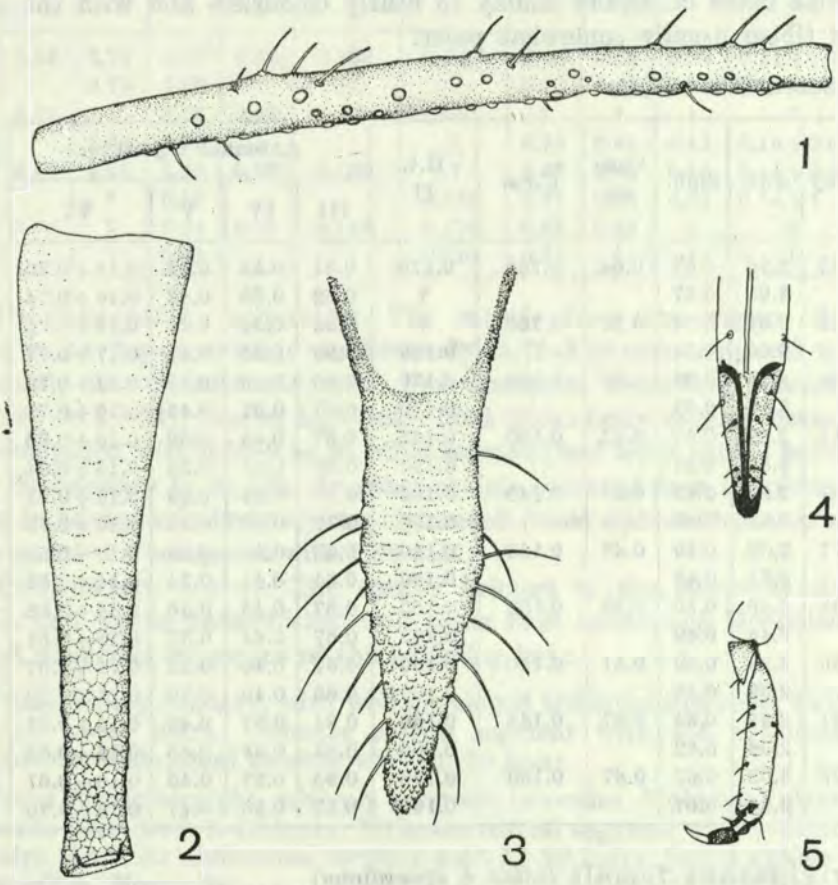
Collections from Korea. Prov. Ch'ŏngjin-si: Ch'ŏngjin, 12. IX. 1966, *Aster hayatae* LEV. et VAN., 4 apt. viv. fem. and one al. viv. fem.; Prov. Hamhŭng-si: Tŏksan-ri, 12 km NE of Hamhŭng, 14. IX. 1966, *A. ageratoides* TURCZ., 9 apt. viv. fem.; Machŏn, 20 km NE of Hamhŭng, 26. IX. 1970, *Aster* sp., 3 apt. viv. fem. Prov. Kangwŏn-do: Ch'ŏnnae, 28 km NW of Wŏnsan, 10. VI. 1965, *Aster* sp., 3 apt. viv. fem.; Ch'ŏnsam-ri, 10 km S of Wŏnsan, 3. IX. 1966, *A. hayatae* LEV. et VAN., 11 apt. and 4 al. viv. fem. Prov. P'yŏngyang-si: Yongaksan, 16 km SW of P'yŏngyang, 25. VIII. 1966, *A. hayatae* LEV. et VAN., 14 apt. viv. fem.

The species is widely distribu.ed in Japan, Korea and China. The existing descrip ions are very inaccurate and somewhat confusing. Therefore, I give a detailed redescription based on the Korean material.

Apterous viviparous female (after 40 specimens)

Morphological characters. Length of body 2.77–3.48 mm. Abdominal dorsum membraneous w.th semilunar antesiphuncular sclerites, a transversal bar on tergite VIII and rather large scleroites at the base of all dorsal hairs; sometimes the scleroites are fused into small plates bearing 2 or 3 hairs. Dorsal ha rs rather stiff, blunt or abruptly acuminate, those on tergite III about 0.050–0.075 mm and 1.2–1.7 times as long as basal diameter of antennal segment III; hairs on posterior tergites slightly longer, those on tergite VIII about 0.075–0.090 mm long. Number of dorsal hairs: 11–17 (usually 12–15) on tergite III, 4–6 on tergite VI between the siphunculi, and 5–7 (rarely 4) on tergite VIII. Ventral hairs resembling the dorsal ones, 0.060–0.085 mm long. Marginal tubercles very small, always present on pronotum. Frons widely concave, antennal tubercles well developed, diverging, each with 2–5 (usually 3) hairs. Frontal hairs resembling the dorsal ones, 0.060–0.085 mm long. Antennae short, about 0.80–0.96 of body lenght. Segment III incrassate on the middle portion that bears the secondary rhinaria. Processus terminalis 3.9–5.0 (usually 4.1–4.6) times as long as the base of segment VI, and 0.78–0.97 of the length of antennal segment III, with 4–9 (+4) short hairs. Antennal hairs thick, blunt to slightly capitate, longest ones on segment III about 0.04–0.05 mm and 0.9–1.3 times as long as the basal diameter of that segment. Secondary rhinaria 21–64, very variable in size but mostly very small, scattered irregularly on the whole length of segment III, except the basal and apical part. Primary rhinaria ciliate. Rostrum reaching to between the middle and posterior coxae. Ultimate rostral segment conical, obtuse, 0.140–0.165 mm, about 0.87–0.99 times as long as hind tarsal segment II, rarely as long as or slightly longer, with 6 subsidiary hairs of which two pairs are very short and one pair nearly 3 times as long as the short apical hairs. Siphunculi strongly tapering, 0.16–0.21 of the body

length, 0.9–1.2 times as long as cauda and 0.7–0.9 of the length of antennal segment III, reticulate on distal 0.36–0.52 (usually 0.4–0.5) part; flange absent. Cauda elongate, constricted at basal third and with tapering distal third, acute, with 19–28 hairs. Genital plate with 2–5 (usually 2) hairs on the anterior half



Figs. 1–5. *M.* (*A.*) *yomenae* (SHINJI), apt. viv. female: 1 – antennal segment III, 2 – siphunculus, 3 – cauda, 4 – ultimate rostral segment, 5 – hind tarsus.

and 8–16 shorter ones along posterior margin. Legs rather long, the hind femora and hind tibiae 0.28–0.32 and 0.5–0.6 of body length respectively. Hind tarsal segment II about 0.145–0.180 mm long, bearing two dorsal hairs apart from the dorsoapical pair. Ventral trochantal hairs usually finely pointed, 0.7–1.0 times as long as diameter of the trochantro-femoral suture. Hairs on femora resembling the antennal ones, the longest about 0.04–0.06 mm long. Tibial hairs thick, abruptly acuminate, those on the middle part of hind tibiae 0.9–1.2 times as long as the middle diameter of the latter. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs a little longer than ½ of the claws.

Colour. In life dark green, almost blackish with black appendages. In cleared

specimens abdominal dorsum nearly colourless with dorsal sclerites and scleroites brown. Head dark brown, pro- and mesonotum brown. Antennae dark brown to blackish. Siphunculi and cauda brown to blackish brown. Genital plate concolorous with the dorsal sclerites or slightly darker. Legs blackish brown with the extreme bases of femora smoky to nearly colourless and with the apical thirds of tibiae usually somewhat paler.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III
1	3.43	2.94	0.67	0.64	0.165	0.175	0.81	0.54	0.42	0.16+0.70	42
		2.98	0.67			?	0.82	0.53	0.42	0.16+0.74	46
2	3.48	2.98	0.74	0.72	0.150	?	0.88	0.54	0.43	0.16+0.75	42
		3.09	0.74			0.160	0.88	0.55	0.45	0.17+0.77	41
3	3.44	3.14	0.66	0.62	0.160	0.170	0.90	0.56	0.45	0.17+0.79	51
		3.12	0.65			0.170	0.87	0.57	0.45	0.16+0.78	39
4	3.16	2.52	0.60	0.52	0.150	0.145	0.67	0.43	0.39	0.15+0.65	21
		2.53	0.61			0.150	0.69	0.41	0.38	0.15+0.64	25
5	3.18	2.82	0.62	0.58	0.140	0.160	0.77	0.49	0.39	0.15+0.75	32
		2.86	0.63			0.160	0.77	0.52	0.40	0.16+0.75	37
6	2.77	2.30	0.49	0.48	0.143	0.140	0.63	0.40	0.35	0.15+0.59	35
		2.31	0.48			0.150	0.64	0.41	0.34	0.14+0.57	37
7	3.02	2.49	0.50	0.52	0.152	0.155	0.67	0.45	0.36	0.14+0.58	42
		2.46	0.49			0.153	0.67	0.44	0.37	0.15+0.61	32
8	2.95	2.36	0.59	0.51	0.150	0.160	0.67	0.40	0.35	0.14+0.57	32
		2.39	0.58			0.160	0.66	0.40	0.35	0.14+0.59	27
9	3.21	2.92	0.64	0.67	0.148	0.160	0.84	0.53	0.43	0.15+0.67	46
		2.96	0.62			0.160	0.84	0.58	0.45	0.15+0.66	50
10	3.28	3.02	0.67	0.67	0.150	0.176	0.85	0.57	0.46	0.16+0.67	54
		2.96	0.67			0.160	0.82	0.56	0.47	0.16+0.70	64

Alate viviparous female (after 4 specimens)

Morphological characters. Length of body 2.49–3.50 mm. Pronotum with small, protruding marginal tubercles. Abdominal dorsum with large marginal sclerites on tergites II–IV and small postsiphuncular ones in addition to the sclerites developed in apterae. The scleroites on tergites I–III and VII usually fuse into small plates and sometimes transversal bars. Abdominal tergite VIII usually with 4, rarely 5 hairs. Antennae 0.93–0.99 of body length. Processus terminalis 4.2–5.1 times as long as base of segment VI. Secondary rhinaria 46–70 on the whole length of segment III and sometimes 3–5 on basal half of segment IV. Ultimate rostral segment with 5 or 6 subsidiary hairs. Cauda with 16–17 hairs only. Other characters as in apterous viviparous female.

Colour. Thorax as dark as head, tibiae throughout blackish; otherwise like apterae.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. chin. on III	IV
1	2.84	2.74	0.50	0.42	0.150	0.160	0.74	0.49	0.39	0.14+0.71	57	0
		2.73	0.50			?	0.73	0.47	0.41	0.15+0.70	61	0
2	2.82	?	0.47	0.43	0.150	0.155	?	?	?	?	?	?
		2.65	0.49			?	0.73	0.45	0.41	0.16+0.67	62	0
3	2.49	2.47	0.45	0.39	0.138	?	0.69	0.38	0.36	0.14+0.68	42	0
		?	0.45			0.135	0.67	0.40	0.34	0.14+?	47	0
4	3.50	?	0.64	0.54	0.140	0.170	0.92	0.59	?	?	69	5
		?	0.64			0.170	0.85	?	?	?	69	3

Intraspecific variation. The sample from the region of Wŏnsan differs in having on average smaller body (2.77–3.18 mm compared with 3.02–3.48 mm), shorter antennae with less numerous secondary rhinaria (21–37 contrary to 37–64), shorter legs (ratio hind tibia: body ranging between 0.51–0.58 compared with 0.58–0.64 in other samples) and fewer caudal hairs (usually 19 or 20 contrary to 21–28). An other sample collected near Hamhŭng slightly differs in having relatively shorter siphunculi (ratio siphunculus: cauda ranging between 0.8–1.0 compared with 0.98–1.17).

Taxonomic notes. The species belongs to the subgenus *Asterobium* H.R.L. and can be distinguished from other East Asiatic and Mongolian species of that subgenus by means of the following key:

1. Frons widely concave, with well developed antennal tubercles. Cauda dark, with 13–28 hairs. Ultimate rostral segment with 4–6 subsidiary hairs. Anterior abdominal tergites with 11–15 hairs 2

—. Frons nearly straight, without antennal tubercles. Siphunculi pale at base, cauda pale, with 9–16 hairs. Ultimate rostral segment with 7–14 subsidiary hairs. Anterior abdominal tergites with 15–23 hairs. Green aphids on *Aster hispidus*. Mongolia . . . . . *M.* (*A.*) *davazhamci* HOL. et SZEL.

2. Dark green or dark brown in life. Siphunculi blackish throughout. Antennal segment III with 12 and more secondary rhinaria. Pronotum usually with distinct but small marginal tubercles. 3

—. Yellowish green in life. Siphunculi usually distinctly paler at base. Antennal segment III with 3–9 secondary rhinaria only. No marginal tubercles present. On *Crepis* spp. Mongolia . . . . *M.* (*A.*) *crepidis* HOL. et SZEL.

3. Abdomen with distinct postsiphuncular sclerites. Antennae with basal half of segment III pale, legs with basal halves of femora and the middle portion of tibiae, pale. Probably dark in life. On *Aster* sp. (?). China. . . . . *M.* (*A.*) *yangi* TAKAHASHI

—. Abdomen without postsiphuncular sclerites. Antennae and legs blackish, except the extreme bases of femora. Dark green in life. On *Aster agreatoides* and *A. hayatae*. East Asia. . . . . *M.* (*A.*) *yomenae* (SHINJI)

Chosoniella **subgen. nov.**

Diagnosis. Dorsum membraneous, without any sclerotization. Distinct marginal tubercles present on prothorax and abdominal segments II–IV. Primary rhinaria ciliate, the secondary ones small, protruding, irregularly scattered on basal half of segment III in apterae and along the whole length of that segment in alatae. Ultimate rostral segment conical, obtuse, with distinctly convex sides and with the subsidiary hairs longer than the apical ones. Siphunculi subcylindrical, a little tapering, with a small flange and a rather small reticulate zone. Genital plate with hairs on the whole surface. Hind tibiae with very short, thick peg-like hairs.

Embryos with very large marginal tubercles distributed as in mature specimens, with only two hairs both on tergite VIII and cauda, and with 5-segmented antennae; segment III being without hairs.

Type species: *Macrosiphoniella myohyangsani* sp. n.

Taxonomic notes. The presence of traces of a stridulating mechanism is unique in the *Macrosiphum*-like genera. Other morphological characters as well as its association with *Artemisia* indicate close relationship with the genus *Macrosiphoniella*. *Chosoniella* differs from other subgenera of this genus by a combination of characters which is unique among the species of that genus. Peg-like hairs are known in some species of *Macrosiphoniella* s. str. (*M. jaroslavi* sp. n.), a dense chaetotaxy of genital plate in *Sinosiphoniella* Tao, and a conical ultimate rostral segment and sometimes also marginal tubercles (at least on pronotum) are known in *Asterobium* H.R.L. The nearest relative of the new subgenus seems to be *Asterobium*.

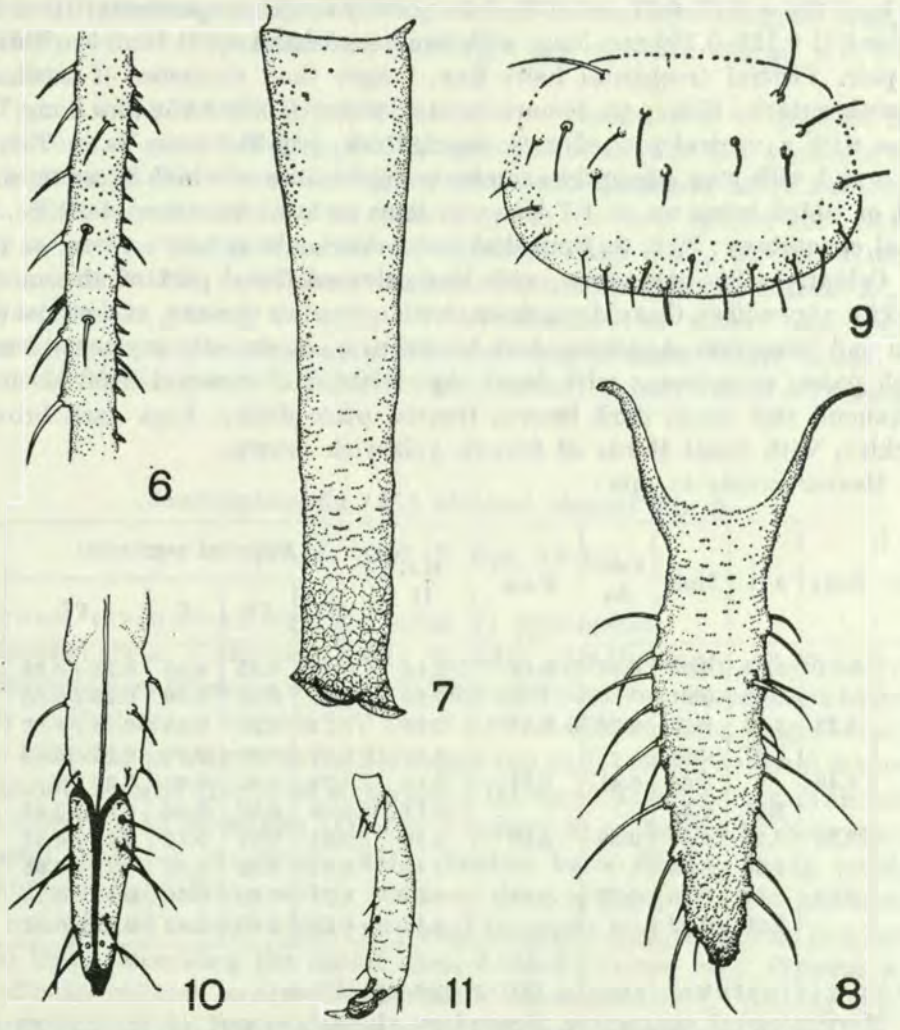
Macrosiphoniella (*Chosoniella*) *myohyangsani* sp. n.

(Pl. I: phot. 2, figs. 6–11)

Apterous viviparous female (after 15 specimens)

Morphological characters. Body broadly spindle-shaped, 2.70–3.63 mm long. Abdominal dorsum smooth and membraneous, without any distinct sclerotization; abdomen beneath mostly smooth but sternites VI and VII laterally with a pattern of serrated cuticule. Prothorax and abdominal segments II–IV with rather large, protruding marginal tubercles. Dorsal hairs acuminate, 0.08–0.09 mm long, those on tergite III up to 2.8 times as long as basal diameter of antennal segment III. Number of dorsal hairs: 18–23 on tergite III, 10 on tergite VI between the siphunculi, and 7–9 on tergite VIII. Ventral hairs finely pointed, longer than the dorsal ones. Head smooth, frontal furrow widely concave, with a low median tubercle; antennal tubercles low, each with 3 hairs. Frontal and occipital hairs resembling the dorsal ones, about 2.0–2.2 times as long as the mentioned diameter. Clypeus with 4, mandibular laminae each with

5–7 hairs. Antennae 0.86–1.12 of body length. Processus terminalis 3.2–4.0 times base of segment VI, usually shorter than segment III, with 5–7(+4) short hairs. Antennal hairs blunt, those on segment III 0.030–0.042 mm long,



Figs. 6–11. *M.* (*C.*) *myohyangsani* sp. n., apt. viv. female: 6 – part of hind tibia, 7 – siphunculus, 8 – cauda, 9 – genital plate, 10 – ultimate rostral segment, 11 – hind tarsus.

the longest being a little longer than basal diameter of that segment. Secondary rhinaria rather variable in size, protruding, 9–18 in number, irregularly scattered on basal half of segment III; primary rhinaria ciliated. Rostrum reaching beyond hind coxae. Ultimate rostral segment conical, with convex sides, about 1.2–1.4 times as long as hind tarsal segment II, with 8 subsidiary hairs. Siphunculi subcylindrical, tapering, 0.18–0.21 of body length, 1.5–1.9 times as long

as cauda and 0.75–0.88 times as long as antennal segment III, reticulated on distal 0.16–0.25 part; flange small, distinct. Cauda elongate, acuminate, constricted at basal third, with 22–29 hairs. Genital plate widely oval, with 9–14 hairs on the disc and 9–13 ones along posterior margin. Legs long, hind femora and hind tibiae 0.27–0.31 and 0.53–0.61 of body length respectively. Hind tarsal segment II 0.128–0.150 mm long, with two dorsal hairs apart from the dorsoapical pair. Ventral trochantal hairs fine, longer than diameter of trochantrofemoral suture. Hairs on femora acute, about 0.038–0.068 mm long. Hind tibiae with a ventral row of very short, thick, peg-like hairs as in *Toxoptera* Koch and with long, abruptly acuminate dorsal ones of which those on middle part of tibiae being up to 1.7 times as long as local diameter of tibiae. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs short, about half as long as claws.

Colour. In life pale green, with lead-coloured distal part of abdomen and blackish appendices. Cleared specimens with colourless dorsum, except the dusky head and pronotum. Antennae dark brown to blackish, only segments I and II much paler, concolorous with head. Apical third of rostrum blackish brown. Siphunculi and cauda dark brown. Genital plate dusky. Legs dark brown to blackish, with basal thirds of femora yellowish brown.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments:				Sec. rhin. of III
							III	IV	V	VI	
1	3.51	3.03	0.62	0.37	0.18	0.14	0.80	0.55	0.52	0.24+0.68	10
		3.08	0.61			0.14	0.80	0.60	0.56	0.23+0.65	10
2	3.23	3.23	0.65	0.35	0.17	0.13	0.77	0.58	0.56	0.24+0.86	15
		3.27	0.64			0.13	0.76	0.60	0.60	0.24+0.84	12
3	3.49	?	0.64	0.41	0.17	0.15	0.79	0.60	0.62	0.20+?	15
		3.37	0.64			0.14	0.79	0.60	0.62	0.20+0.93	11
4	3.25	3.25	0.66	0.39	0.18	0.14	0.81	0.57	0.53	0.22+0.88	18
		3.33	0.63			0.13	0.84	0.58	0.60	0.23+0.85	13
5	2.83	2.87	0.56	0.35	0.18	0.13	0.71	0.50	0.50	0.20+0.75	13
		2.96	0.52			0.13	0.73	0.50	0.49	0.21+0.84	12

Alate viviparous female (after one specimen)

Morphological characters. Secondary rhinaria about 45 in number along the whole length of antennal segment III. Wings normal. In other characters not differing from the apterous viviparous female.

Colour. Head dark brown, the thorax a little paler. Antennae uniformly dark brown. Siphunculi with the very bases slightly paler. Legs dark brown, with the very bases of femora pale; otherwise like apterae.

Measurements in mm: Body 2.96, antenna ?, antennal segments III–VI: 0.74 : 0.63 : 0.61 : 0.22+?, siphunculus 0.56, cauda 0.28, ultimate rostral segment 0.18, hind tarsal segment II 0.14.

Host plant: *Artemisia sylvatica* MAXIM.

Bionomy: Unknown. Collected from the lower parts of the stem, not attended by ants.

Type material. Holotype (apterous viviparous female, slide no. 3499/apt. 1): Prov. Hamgyong-namdo, at Sangwon-am in the Myohyangsan Mts., 23. IX. 1966, coll. H. SZELEGIEWICZ. Paratypes (14 apt. and one al. viv. fem.): same data.

Taxonomic notes. Hind tibiae with a ventral row of peg-like hairs are known in *M. jaroslavi* sp. n. and *M. spinipes* BASU. The first species is a typical member of the "*artemisiae*"-group and is not related to *M.* (*C.*) *myohyangsani*. *M. spinipes* resembles in many respects the new species and may be closely related. Judging from its descriptions (BASU 1967, GHOSH, BASU et RAYCHAUDHURI 1969, and BASU et RAYCHAUDHURI 1976) it differs from *M.* (*C.*) *myohyangsani* in having no marginal tubercles, shorter dorsal hairs, longer siphunculi with much longer reticulate zone and a much longer cauda. The embryos of *M. spinipes* have 4 caudal hairs contrary to only two in *M. myohyangsani*.

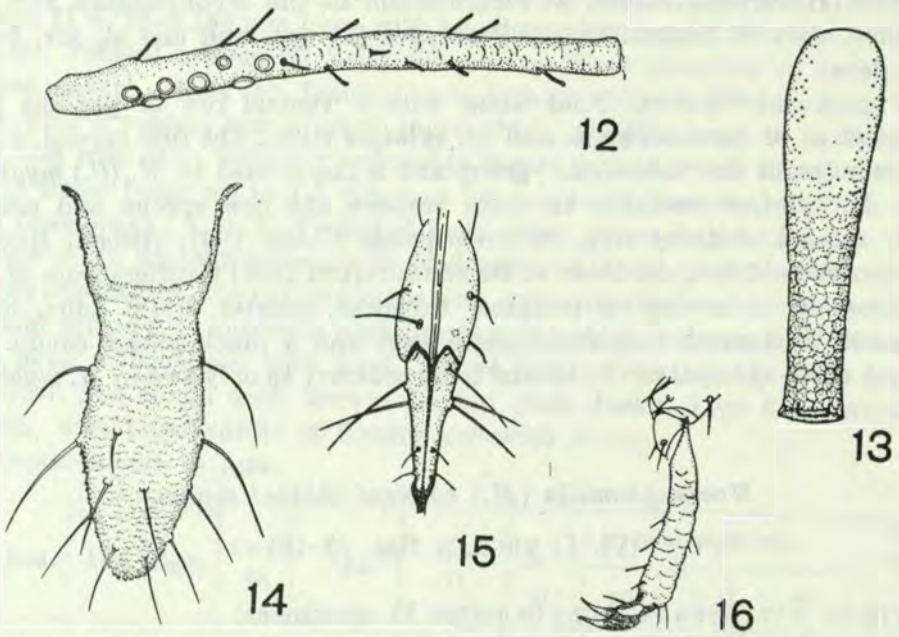
Macrosiphoniella (*M.*) *abrotani chosoni* ssp. n.

(Pl. I: phot. 3, figs. 12–16)

Apterous viviparous female (after 11 specimens)

Morphological characters. Body broadly spindle-shaped, 2.40–2.90 mm long. Dorsum membraneous without distinct sclerotization. Dorsal hairs blunt to slightly spathulate, on tergites I–V about 0.055–0.065 mm long, longest ones on tergite III being as long as to a little longer (up to 1.3 times) as basal diameter of antennal segment III; hairs on tergite VIII up to 0.08 mm long. Number of dorsal hairs: 11–12 on tergite III, 4 or 5 (rarely 6) on tergite VI between the siphunculi, and 4–6 on tergite VIII. Ventral hairs slender, finely pointed, 0.06–0.08 mm long. Frons widely concave; deep of frontal furrow amounting about one fifth of frontal width; antennal tubercles low, each with 3–5 hairs. Frontal hairs resembling the dorsal ones, 0.065–0.075 mm long. Clypeus with 4, mandibular laminae each with 4 or 5 hairs. Antennae 0.97–1.1 of body length. Processus terminalis 3.2–3.6 times as long as the base of segment VI and 1.2–1.3 times as long as segment III, with 8–13 (+4) short hairs. Antennal hairs blunt, the longest on segment III about 0.036–0.045 mm, 1.0–1.3 times as long as basal diameter of that segment. Secondary rhinaria, 4–8 in number, scattered on basal half of segment III. Primary rhinaria ciliate. Rostrum reaching just to the hind coxae. Ultimate rostral segment wedge-shaped, 0.14–0.15 m long, about 0.7–0.86 times as long as hind tarsal segment II, with 6 subsidiary hairs. Siphunculi subcylindrical, a little constricted at base, tapering, thinnest at distal third and very slightly dilated towards apex, 0.10–0.12 of body length,

0.7–0.9 times as long as cauda and 0.45–0.56 of the length of antennal segment III, reticulated at distal 0.5–0.66 part. Cauda elongate, constricted at basal third, bluntish, with 10–16 hairs. Genital plate with 2–4 hairs on anterior half and 8–10 ones along posterior margin. Legs rather long, hind femora and hind



Figs. 12–16. *M.* (*M.*) *abrotani chosoni* ssp. n., apt. viv. female: 12 – antennal segment III, 13 – siphunculus, 14 – cauda, 15 – ultimate rostral segment, 16 – hind tarsus.

tibiae 0.30–0.35 and 0.55–0.62 of body length respectively. Hind tarsal segment II 0.175–0.195 mm long, with two dorsal hairs apart from the dorsoapical pair. Ventral trochantal hairs fine, pointed, 0.06–0.08 mm long, about 0.9–1.1 times as long as the diameter of trochantro-femoral suture. Hairs on femora resembling the antennal ones, at most 0.045–0.060 mm long. Dorsal hairs on middle portion of hind tibiae 0.050–0.065 mm long, a little shorter than diameter of middle part of tibiae. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs about half as long as claws.

Colour. In life green, covered with fine, grey waxy excretion. In cleared specimens with almost colourless body. Antennae brownish, except segment III and sometimes basal third to half of segment IV, which are pale. Apical part of rostrum brown. Siphunculi brown with pale basal third to half. Cauda pale, about concolorous with basal part of siphunculi. Genital plate colourless. Legs very variable coloured, sometimes wholy pale, except apices of tibiae and the tarsi. Femora mostly with basal and ventral parts pale, apically and dorsally dusky to brown. Tibiae dusky to pale, with the very bases and apical parts brownish to brown. Tarsi brown to dark brown.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III
1	2.72	2.74	0.32	0.36	0.138	0.180	0.61	0.52	0.44	0.22+0.72	6
		2.79	0.31			0.190	0.63	0.53	0.47	0.21+0.73	5
2	2.69	2.80	0.33	0.38	0.150	0.195	0.58	0.55	0.46	0.22+0.77	7
		2.78	0.32			0.190	0.58	0.54	0.46	0.22+0.73	8
3	2.71	2.78	0.33	0.38	0.145	0.190	0.63	0.54	0.47	0.21+0.71	8
		2.76	0.34			0.185	0.64	0.50	0.44	0.22+0.73	7
4	2.76	2.77	0.32	0.37	0.155	0.185	0.63	0.52	0.46	0.21+0.73	6
		2.75	0.32			0.180	0.64	0.50	0.44	0.21+0.72	4
5	2.88	2.85	0.33	0.37	0.145	0.185	0.64	0.55	0.48	0.23+0.74	6
		2.82	0.33			0.180	0.62	0.53	0.47	0.22+0.75	4

Alate viviparous female (after 2 specimens)

Morphological characters. Length of body 2.59–2.85 mm. Secondary rhinaria 22–30 in number, covering the whole length of antennal segment III. Siphunculi more slender, almost cylindrical and relatively shorter than in apterae, about 0.08–0.09 of body length. Cauda with 11 or 12 hairs. In other characters not differing from the apterous viviparous females.

Colour. Head and thorax brownish. Antennae brownish, except base of segment III. Legs as in apterae but more intensively pigmented.

Measurements in mm: Body 2.85, antenna 2.85, antennal segments III–VI: 0.64 : 0.55 : 0.48 : 0.21+0.75, siphunculus 0.25, cauda 0.29, ultimate rostral segment 0.14, hind tarsal segment II 0.18. Antennal segments III with 28 and 30 secondary rhinaria.

Host plant: *Artemisia messerschmidtiana* BESS.

Bionomy: Unknown. Collected from terminal shoots.

Type material. Holotypus (one apterous viviparous female, slide no. 2660/apt. 1): P'yŏngyang, 29. V. 1965, coll. M. MROCZKOWSKI and A. RIEDEL. Paratypes (10 apt. and 2 al. viv. fem.): same data.

Taxonomic notes. The Korean ssp. *chosoni* is somewhat intermediate between the Mongolian ssp. *sainshandi* SZEL. and the European *abrotani* s. str. By long antennae and long antennal hairs it resembles the European ssp. *abrotani* s. str. but differs from this subspecies like ssp. *sainshandi* in having distinctly shorter processus terminalis, slightly longer ultimate rostral segment, and longer cauda.

Macrosiphoniella (*M.*) *atra latysiphon* HOLMAN et SZELEGIEWICZ, 1978

(Pl. I: phot. 4)

Collections from Korea. Prov. Ch'ŏngjin-si: Musu-ri, 50 km NW of Ch'ŏngjin, 1. VI. 1965, *Artemisia gmelini* WEB., 2 apt. and 5 al. viv. fem.; Musan-ryŏng, 60 km N of

Ch'ŏngjin, 2. VI. 1965, *A. gmelini* WEB., 15 apt. viv. fem. Prov. Hamgyŏng-pukto: Onp'o-ri, 10. IX. 1966, *A. gmelini* WEB., 6 apt. viv. fem. Prov. Hamhŭng-si: Machŏn, 20 km NE of Hamhŭng, 26. IX. 1970, *Artemisia* sp., 12 apt. viv. fem.; Tŏksan-ri, 12 km N of Hamhŭng, 14. IX. 1966, *A. messerschmidtiana* BESS. var. *discolor* KOM., 7 apt. viv. fem. Prov. P'yŏngan-namdo: T'aesong, 26. V. 1965, *A. gmelini* WEB., 8 apt. viv. fem. attended by ants (!). Prov. P'yongyang-si: Taesong-san, 22. VIII. 1966, *A. messerschmidtiana* BESS. var. *discolor* KOM., 4 apt. viv. fem. Prov. Kangwon-do: Ch'onsam-ri, 10 km W of Wŏnsan, 3. IX. 1966, *A. messerchmidtiana* BESS. var. *discolor* KOM., 14 apt. and 1 al. viv. fem.

Notes. The Korean aphids agree well with the Mongolian type specimens. In spring they live on the underside of the lower leaves and on the lower parts of the stems and are attended by ants, in summer usually on the tips of shoots and in the inflorescences, not attended by ants. The European subspecies *atra* s. str. is monophag on *Artemisia alba* TURRA (= *camphorata*) but the Asiatic one seems to be more oligophagous and is hitherto known from *Artemisia adamsii* BESS., *A. sieversiana* WILLD., *A. gmelini* WEB. and *A. messerschmidtiana* BESS.

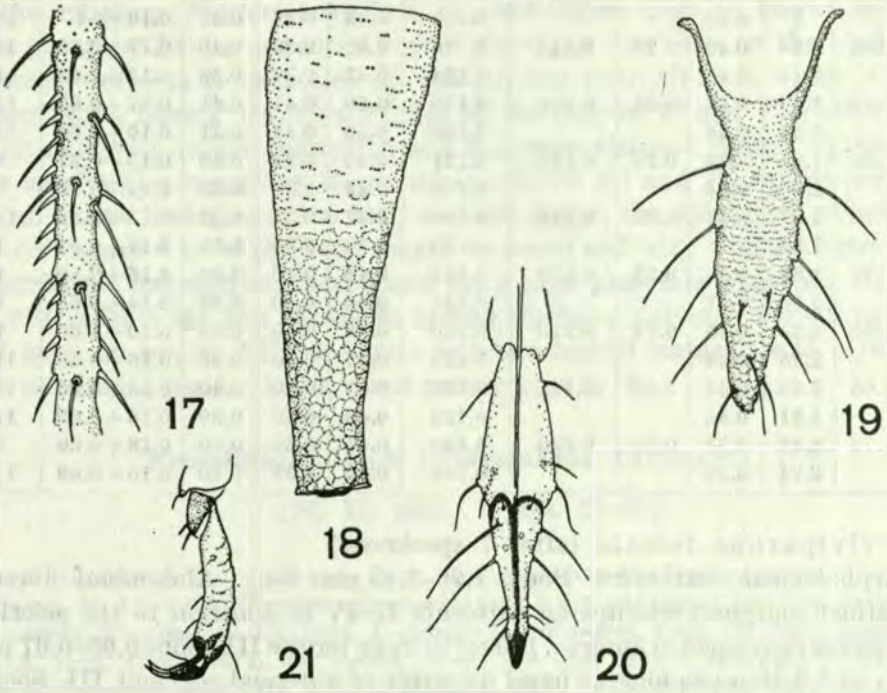
Macrosiphoniella (*M.*) *jaroslavi* **sp. n.**

(Pl. II: 5–6, figs. 17–21)

Apterous viviparous female (after 60 specimens).

Morphological characters. Body spindle-shaped, 1.67–2.28 mm log. Abdominal dorsum mostly membraneous, with distinct antesiphuncular sclerites, a transverse bar on tergite VIII and scleroites at the bases of hairs situated on tergites VII and VI. Dorsal hairs acute, the longest ones about 0.05–0.09 mm long, those on tergite III up to 3.2 times as long as basal diameter of antennal segment III. Number of dorsal hairs: 9–13 on tergite III, 6–8 on tergite VI between the siphunculi, and 6–9 on tergite VIII. Ventral hairs finely pointed, up to 0.09 mm long. Frons widely concave, without median tubercle. Antennal tubercles low, each with 3 hairs. Frontal and occipital hairs resembling the dorsal ones. Clypeus with 4 or 5, mandibular laminae each with 4–6 hairs. Antennae 1.1–1.35 of body length. Processus terminalis 3–4.5 times as long as the base of segment VI and distinctly longer than segment III, with 8–13 (+4) hairs. Antennal hairs blunt, the longest ones on segment III about 0.02–0.04 mm long, 0.8–1.5 times as long as the basal diameter of that segment. Secondary rhinaria rather variable in size, protruding, 6–18 in number, irregularly scattered on 0.6–0.9 part of segment III. Primary rhinaria ciliate. Rostrum rather long, reaching to the abdominal segment III. Ultimate rostral segment elongate wedge-shaped, 0.11–0.13 mm long, about 0.8–1.0 times as long as hind tarsal segment II, with 6 subsidiary hairs. Siphunculi subcylindrical, tapering, 0.19–0.24 of body length, 1.6–2.0 times as long as cauda, and 0.8–1.0 times as long as antennal segment III, reticulated on distal 0.5–0.7 part, with a very small flange. Cauda elongate, acuminate, constricted at basal third, with 12–14,

rarely 16 hairs. Genital plate with 2–5 hairs on the disk and 8–12 ones along the posterior margin. Legs storng, hind femora and hind tibiae 0.29–0.35 and 0.57–0.63 of the body length respectively. Hind tarsal segment II about 0.114–0.148 mm long, with two dorsal hairs apart from the dorsoapical pair. Ventral trochantal hairs fine, distinctly longer than diameter of the trochantro-femoral



Figs. 17–21. *M.* (*M.*) *jaroslavi* sp. n., apt. viv. female: 17 – part of hind tibia, 18 – siphunculus, 19 – cauda, 20 – ultimate rostral segment, 21 – hind tarsus.

suture. Hairs on femora resembling the antennal ones, at most 0.03–0.04 mm long. Dorsal hairs on tibiae longer than the local diameter of tibiae the ventral hairs a little shorter. Hind tibiae with a ventral row of rather short, thick, almost peg-like hairs. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs short, about half as long as the claws.

Colour. In life green, covered with fine grey waxy excretion, with blackish legs, antennae, siphunculi and cauda. In alcohol body pale green. In cleared specimens dorsum colourless, with the sclerites and scleroites pale brown. Head brown to dark brown. Antennae dark brown, with the very base of segment III slightly paler. Rostrum uniformly dark brown. Siphunculi and cauda dark brown, genital plate pale brown. Legs blackish, femora with the very bases pale.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III
1	1.92	2.55	0.42	0.24	0.120	0.126	0.49	0.42	0.41	0.17+0.64	13
		2.52	0.41			0.124	0.48	0.39	0.43	0.18+0.62	16
2	1.82	2.42	0.41	0.24	0.122	0.122	0.46	0.37	0.41	0.19+0.81	13
		?	0.42			0.128	0.45	0.37	0.40	0.16+ ?	16
3	1.86	2.16	0.42	0.24	0.116	0.126	0.43	0.36	0.40	0.17+0.65	10
		2.13	0.40			0.124	0.43	0.37	0.38	0.17+0.63	9
4	2.07	2.40	0.48	0.24	0.124	0.130	0.56	0.41	0.41	0.17+0.65	15
		2.34	0.46			0.130	0.50	0.44	0.41	0.16+0.64	18
5	1.80	1.96	0.35	0.20	0.126	0.124	0.40	0.34	0.36	0.13+0.57	8
		2.00	0.34			0.126	0.43	0.35	0.35	0.14+0.59	9
6	1.73	1.87	0.37	0.21	0.114	0.126	0.37	0.33	0.32	0.15+0.52	12
		1.93	?			0.120	0.38	0.35	0.32	0.17+0.54	9
7	1.78	1.83	0.36	0.21	0.120	0.124	0.44	0.40	0.38	0.15+0.80	8
		2.16	0.37			0.124	0.44	0.40	0.37	0.14+0.65	9
8	1.90	2.25	0.43	0.25	0.118	0.126	0.48	0.40	0.39	0.16+0.66	9
		2.25	0.44			0.128	0.47	0.40	0.39	0.16+0.65	11
9	2.05	2.28	0.45	0.24	0.128	0.128	0.51	0.40	0.40	0.15+0.65	11
		2.31	0.44			0.130	0.48	0.40	0.39	0.16+0.65	11
10	1.73	2.24	0.35	0.20	0.130	0.140	0.41	0.38	0.40	0.18+0.69	9
		2.24	0.34			0.140	0.42	0.39	0.40	0.16+0.69	11

Alate viviparous female (after 7 specimens)

Morphological characters. Body 1.96–2.43 mm long. Abdominal dorsum with distinct marginal sclerites on segments II–IV in addition to the sclerites and scleroites developed in apterae. Dorsal hairs on tergite III about 0.05–0.07 mm long, up to 2.3 times as long as basal diameter of antennal segment III. Secondary rhinaria, 22–34 in number, scattered on the whole length of segment III and sometimes 0–3 on segment IV. Ultimate rostral segment a little longer than hind tarsal segment II. Wings normal, with slightly bordered veins. Other characters as in apterae.

Colour. Thorax as dark as the head, otherwise like apterae.

Measurements of one specimen in mm: Body 1.96, antenna 2.54, antennal segments III–VI: 0.57 : 0.46 : 0.44 : 0.18+0.68, siphunculus 0.36, cauda 0.27, ultimate rostral segment 0.14, hind tarsal segment II 0.13. Segment III with 30 and 23, segment IV without secondary rhinaria.

Host plant: *Artemisia messerschmidtiana* Bess. var. *discolor*.

Bionomy: Unknown. In summer living on the tips of shoots and in the inflorescences.

Type material. Holotypus (apterous viviparous female, slide no. 3287/apt. 1): Prov. P'yŏngyang-si: Taesŏng-san, 19.VIII.1966, coll. H. Szelegiewicz. Paratypes: same data, 9 apt. viv. fem. and juv.; same locality, 22.VIII.1966, 16 apt. and 3 al. viv. fem., coll. H. Szelegiewicz; 3) P'yŏngyang, 18.VII.1959,

13 apt. and 4 al. viv. fem., coll. B. PISARSKI and J. PRÓSZYŃSKI; 4) Prov. Hamhŭng-si: Tŏksan-ri, 12 km N of Hamhŭng, 14.IX.1966, 16 apt. viv. fem., coll. H. SZELEGIEWICZ; 5) Prov. Kangwŏn-do: Ch'ŏnsam-ri, 10 km S of Wŏnsan, 3.IX.1966, 6 apt. viv. fem., coll. H. SZELEGIEWICZ.

The species is named after my friend Dr. Jaroslav HOLMAN.

Taxonomic notes. *M. jaroslavi* is a member of the "*artemisiae*"-group of the subgenus *Macrosiphoniella* s. str. but differs from all known species of that group by having a ventral row of short peg-like hairs on the hind tibiae. In many respects it resembles *M. yomogifoliae* (SHINJI) from which it can be separated by having distinct scleroites on the tergites VI and VII, a few caudal hairs, relatively longer siphunculi and a shorter ultimate rostral segment. The new species also resembles *M. artemisiae* (B. DE F.) and *M. hokkaidensis* MIYAZAKI. In the first species the body is much larger, the siphunculi are relatively shorter (about 0.14 of the body length at most) and with a characteristic basal constriction, the rostrum shorter and the genital plate less hairy. *M. hokkaidensis* differs from the new species in having the basal halves of femora pale, only 4–7 hairs on tergite VIII, a longer ultimate rostral segment, and a relatively shorter cauda; beside this it is not pulverulent in life.

Macrosiphoniella (*M.*) *kikungshana* TAKAHASHI, 1937

(Pl. II: phot. 7, figs. 22–26)

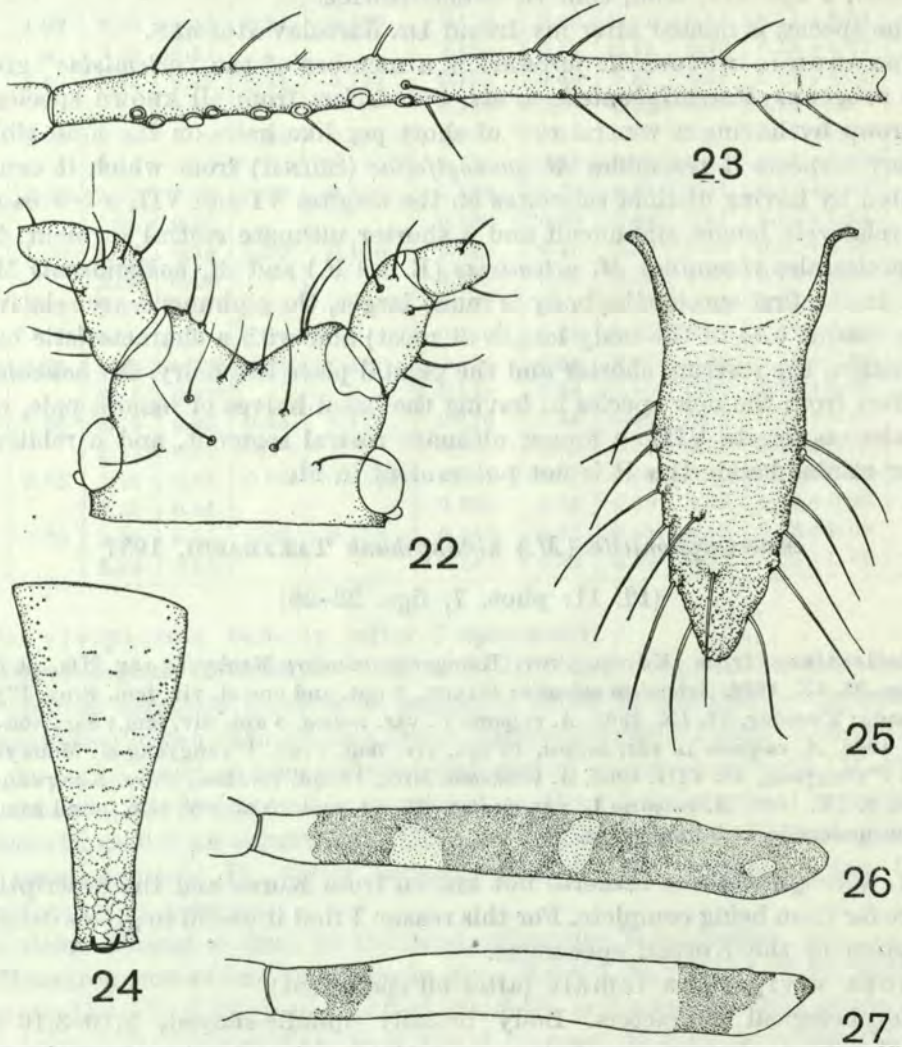
Collections from Korea. Prov. Hamgyŏng-namdo: Myohyang-san Mts. at Sangwŏn-am, 23. IX. 1966, *Artemisia sylvatica* MAXIM., 9 apt. and one al. viv. fem. Prov. P'yŏngan-namdo: T'aesŏng, 19. IX. 1966, *A. vulgaris* L. var. *indica*, 8 apt. viv. fem.; Sangkŏn-am, 25. IX. 1966, *A. vulgaris* L. var. *indica*, 19 apt. viv. fem. Prov. P'yŏngyang-si: Mankyŏngbong at P'yŏngyang, 28. VIII. 1966, *A. keiskeana* MIQ., 13 apt. viv. fem. Prov. Kangwŏn-do: Wŏnsan, 2. IX. 1966, *A. vulgaris* L. var. *indica*, 21 apt. and 10 al. viv. fem. – all samples from the underside of lower leaves.

M. kikungshana was hitherto not known from Korea and the descriptions of it are far from being complete. For this reason I find it useful to give a detailed description of the Korean specimens.

Apterous viviparous female (after 60 specimens).

Morphological characters. Body broadly spindle-shaped, 2.10–3.16 mm long. Abdominal dorsum membraneous, with very large antesiphuncular and small postsiphuncular sclerites and small scleroites at the bases of nearly all dorsal hairs; the scleroites on tergite VIII usually fusing into a transverse bar. Dorsal hairs acuminate, 0.13–0.16 mm long, the longest ones on tergite III 3.7–5 times as long as the basal diameter of antennal segment III; hairs on tergite VIII up to 0.17 mm long. Number of dorsal hairs: 24–32 on tergite III, 8–12 on tergite VI between the siphunculi, and 7–12 on tergite VIII. Ventral hairs much finer and shorter, about 0.120–0.135 mm long. Dorsum of head with 8 hairs beside the frontal ones. Frons deeply sinuate, with well developed,

diverging antennal tubercles. Frontal hairs about 0.120–0.160 mm long. Antennal tubercles each with 3 or 4 hairs. Clypeus with 4, mandibular laminae each with 5–7 hairs. Antennae 1.0–1.3 of body length. Segment I with 9–13



Figs. 22–27. *M.* (*M.*) *kikungshana* Takah., apt. viv. female: 22 – head, 23 – antennal segment III, 24 – siphunculus, 25 – cauda. 26 and 27. hind femur of: 26 – ssp. *kikungshana* s. str., 27 – ssp. *sylvaticae* ssp. n.

hairs, 4–8 of which are situated distally, 2–5 at outer margin and one smaller dorsally at base. Processus terminalis 5.0–6.4 times as long as base of segment VI, longer than segment III, with 7–13 (+4) short hairs. Antennal hairs acuminate, numerous, on segment III up to 25 in number, 0.100–0.125 mm long and 2.5–4 times as long as basal diameter of that segment. Secondary rhinaria rather small, protruding, 6–13 in number, confined to basal half of segment III. Prima-

ry rhinaria surrounded by wide chitinous rims, not ciliate, distinctly protruding. Rostrum reaching just to posterior coxae. Ultimate rostral segment wedge-shaped with somewhat concave sides, 0.140–0.160 mm long, 0.93–1.1 times as long as hind tarsal segment II, with 6 subsidiary hairs. Siphunculi very broad at base, thinnest at apex, 0.10–0.13 of body length, about 0.8–1.1 times as long as cauda and 0.39–0.55 of the length of antennal segment III, reticulated on distal 0.38–0.50 part. Cauda short tongue-shaped, acuminate, sometimes with slight constriction at basal third but usually not constricted at base, with 12–19 hairs. Genital plate with 8–16 hairs on the disc and 10–13 along posterior margin. Legs strong, hind femora and hind tibiae 0.30–0.37 and 0.57–0.69 of body length respectively. Hind tarsal segment II about 0.130–0.160 mm long, with two dorsal hairs apart from the dorsoapical pair. Ventral trochantal hairs fine, 0.090–0.120 mm long, 1.2–1.6 times as long as diameter of the trochantro-femoral suture. Hairs on femora acuminate, dorsally up to 0.140 mm, ventrally 0.080–0.110 mm long. Dorsal hairs on tibiae 0.120–0.150 mm long and 2.2–2.8 times as long as diameter of tibiae. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs about half as long as claws.

Colour. In life shining brown. Cleared specimens brown on head, dorsal sclerites and brownish on dorsal scleroites and genital plate. Antennae dark brown, with pale segment III and basal half of segment IV. Legs dark brown to blackish, with the very bases of hind femora and middle two-thirds of tibiae, pale. Siphunculi and cauda dark brown.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III
1	2.82	3.17	0.34	0.35	0.150	0.150	0.72	0.65	0.53	0.17+0.89	12
		3.17	0.34			0.150	0.68	0.66	0.52	0.17+0.89	9
2	2.71	3.20	0.35	0.38	0.155	0.155	0.72	0.69	0.52	0.15+0.87	12
		3.21	0.36			0.152	0.72	0.65	0.47	0.16+0.90	11
3	2.86	3.32	0.35	0.39	0.155	0.160	0.76	0.68	0.51	0.15+0.96	12
		3.36	0.35			0.150	0.78	0.69	0.51	0.16+0.94	11
4	2.89	3.37	0.34	0.40	0.160	0.150	0.73	0.71	0.51	0.16+0.93	12
		3.28	0.35			0.150	0.77	0.65	0.50	0.15+0.91	13
5	2.42	2.90	0.28	0.30	0.150	0.150	0.66	0.61	0.48	0.15+0.82	9
		?	0.26			0.150	0.65	0.61	?	?	8
6	2.11	?	0.31	0.28	0.140	0.130	0.56	0.50	0.41	0.14+0. ?	7
		2.66	0.29			?	0.55	0.53	0.41	0.14+0.74	8
7	2.16	2.70	0.29	0.28	0.150	0.140	0.61	0.53	0.43	0.15+0.79	9
		2.75	0.30			0.140	0.60	0.55	0.42	0.15+0.77	8
8	2.50	2.90	0.32	0.32	0.145	0.145	0.64	0.62	0.46	0.15+0.78	8
		2.97	0.31			0.140	0.66	0.63	0.47	0.15+0.78	12
9	2.35	2.70	0.28	0.31	0.145	0.140	0.61	0.54	0.42	0.15+0.75	7
		?	0.28			0.140	0.59	0.55	0.40	0.15+ ?	9
10	3.09	3.20	0.31	0.37	0.155	0.150	0.77	0.60	0.45	0.16+0.90	9
		3.17	0.30			0.150	0.77	0.61	0.44	0.16+0.87	12

Alate viviparous female (after 11 specimens).

Morphological characters. Length of body 2.28–2.72 mm. Abdominal dorsum with large marginal scleroites on segments II–IV in addition to the sclerites and scleroites developed in apterae. Secondary rhinaria covering whole length of antennal segment III, 18–24 in number. Siphunculi more cylindrical and relatively shorter than in apterae, about 0.10–0.11 of body length. Cauda usually with 11–13 hairs. Other characters as in apterous viviparous female.

Colour. Head and thorax brown, otherwise as in apterae.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III
1	2.28	2.90	0.27	0.27	0.14	0.14	0.63	0.61	0.46	0.15+0.79	20
		2.90	0.26			0.13	0.65	0.59	0.46	0.15+0.83	20
2	2.61	3.18	0.29	0.28	0.15	0.14	0.74	0.63	0.51	0.17+0.86	20
		3.18	0.28			0.15	0.72	0.65	0.50	0.16+0.88	21
3	2.44	2.95	0.28	0.26	0.15	0.15	0.64	0.61	0.50	0.15+0.78	22
		?	0.28			0.14	0.64	0.59	0.50	0.14+ ?	24
4	2.59	2.95	0.27	0.26	0.14	?	0.68	0.60	0.46	0.15+0.84	22
		?	0.27			0.14	0.71	0.61	?	?	19
5	2.72	?	0.29	0.28	0.15	0.14	0.74	?	?	?	20
		3.16	0.28			?	0.72	0.67	0.50	0.16+0.86	20

Variability among the samples. The samples from *Artemisia vulgaris* and *A. keiskeana* do not differ substantially from each other but the aphids from *A. sylvatica* differ more distinctive. They have relatively shorther dorsal hairs, siphunculi and antennae, shorter ultimate rostral segment and hind tarsal segment II and shorter hind tibiae which are slightly swollen towards base and in some specimens they bear 1–3 small pseudosensoria. Femora of all legs are pale at the very bases and in the middle part; the tarsi and apices of tibiae are much paler than tibial base and sometimes almost colourless. One may suppose that the differences are due to a shift towards characters of oviparous females which in Northern Korea have to appear during the second half of October or later. Now the single alate found together with the apterae exhibits the same pale femora and has dark antennae. Consequently the aphids from *A. sylvatica* should be treated as a separate subspecies characterized by short dorsal hairs and pale femora. I describe it below as:

Macrosiphoniella (*M.*) *kikungshana sylvaticae* ssp. n.

(Pl. II: phot. 8, fig. 27)

Apterous viviparous female (after 9 specimens).

Morphological characters. Body more slender than in the nominate form, 2.54–2.80 mm long. Abdominal dorsum as in *kikungshana* s. str. but usually

without postsiphuncular sclerites and more scleroites. Dorsal hairs on anterior tergites about 0.115–0.150 mm long and 2.2–2.8 times as long as basal diameter of antennal segment III. Antennae 1.04–1.08 of body length. Antennal segment III with 4–10 secondary rhinaria confined to basal half of that segment. Antennal hairs on segment III 0.090–0.110 mm long and 2.2–3 times as long as basal diameter of that segment. Ultimate rostral segment 0.135–0.147 mm long, hind tarsal segment II 0.135–0.145 mm long. Siphunculi relatively short, 0.09–0.10 of body length and 0.8–0.9 times as long as cauda which is distinctly constricted at base and bears 13–21 hairs. Other characters as in the nominate subspecies.

Colour. Femora with the very base and the middle-part pale, remainder being brown. Tibiae with dark brown base and brownish or dusky to almost colourless apex. Otherwise as in the nominate subspecies.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III
1	2.54	2.75	0.24	0.28	0.140	0.135	0.57	0.49	0.42	0.14+0.78	9
		2.75	0.24			0.140	0.59	0.47	0.42	0.14+0.78	4
2	2.67	?	0.27	0.34	0.135	?	0.66	0.51	0.43	0.15+ ?	7
		2.80	0.27			0.140	0.65	0.52	0.45	0.15+0.77	8
3	2.70	?	0.27	0.32	0.147	0.145	0.65	0.56	0.45	0 ?	10
		2.85	0.27			?	0.65	0.56	0.45	0.15+0.81	8
4	2.80	2.98	0.28	0.32	0.150	0.145	0.68	0.55	0.46	0.15+0.86	9
		?	0.28			?	?	?	?	?	?

Alate viviparous female (after one specimen)

Morphological characters. Abdominal dorsum with large marginal sclerites on tergites I–IV, very large antesiphuncular and postsiphuncular sclerites, a transversal bar on tergite VIII and rather large scleroites at base of all dorsal hairs, those on tergite VII fused into sclerites bearing 2–3 hairs. Dorsal hairs bluntish, up to 0.160 mm long and 4 times as long as basal diameter of antennal segment III. Antennae up to 1.2 of body length, segment III with 18 secondary rhinaria scattered in a row along its whole length. Ultimate rostral segment with 8 subsidiary hairs, about 1.2 times as long as hind tarsal segment II. Siphunculi relatively long, 0.14 of body length and 1.3 times as long as cauda which bear 18 hairs.

Colour. Fore and middle femora with basal thirds, hind femora with basal fourths colorless. Tibiae with the very bases and the apices dark brown to blackish, remainder being dusky to pale brownish. Antennae brown. Otherwise as in apterae.

Measurements of the single specimen: Body 2.87, antenna 3.46, antennal segments III–VI: 0.81 : 0.65 : 61 : 0.18+0.88, siphunculus 0.42, cauda 0.32, ultimate rostral segment 0.160, hind tarsal segment II 0.130 mm.

Host plant: *Artemisia sylvatica* MAXIM.

Bionomy: Unknown. Living on the underside of older leaves.

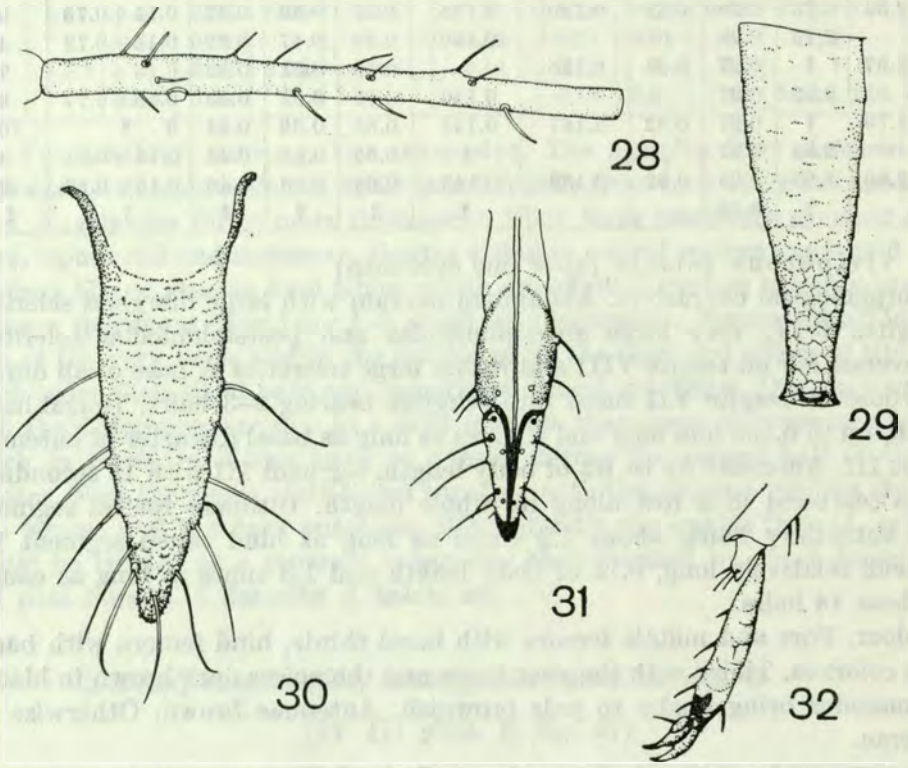
Type material. Holotype (apterous viviparous female, slide no. 3498/apt. 1): Prov. Hamgyŏng-namdo: Myohyang-san Mts., Sangwŏn-am, 23. IX. 1966, coll. H. SZELEGIEWICZ. Paratypes (8 apt. and one al. viv. fem.): same data.

Macrosiphoniella (*M.*) *oronensis* sp. n.

(Pl. III: phot. 9, figs. 28–32)

Apterous viviparous female (after 5 specimens)

Morphological characters. Body spindle-shaped, 2.05–2.37 mm long. Abdominal dorsum membraneous, with distinct antesiphuncular sclerites, a transverse bar on tergite VIII and rather large scleroites at bases of nearly all dorsal hairs. The latter blunt to slightly spathulate, 0.094–0.120 mm long, the longest on tergite III up to 3 times as long as basal diameter of antennal segment III. Number of dorsal hairs: 8 or 9 on tergite III, 4 or 5 on tergite VI between siphun-



Figs. 28–32. *M.* (*M.*) *oronensis* sp. n., apt. viv. female: 28 – antennal segment III, 29 – siphunculus, 30 – cauda, 31 – ultimate rostral segment, 32 – hind tarsus.

culi and 4–7 on tergite VIII. Ventral hairs finely pointed, more slender and shorter than dorsal ones. Frons deeply sinuate, with well developed, diverging antennal tubercles which bear 2 or 3 hairs. Frontal hairs resembling the dorsal ones. Clypeus with 4, mandibular laminae each with 3 or 4 hairs. Antennae 1.3–1.5 of body length. Segment I about 1.3 times as long as hind tarsal segment II and 1.6–1.8 times as long as longitudinal diameter of eye, with 6–9 hairs. Processus terminalis 4.3–5.0 times as long as base of segment VI, distinctly longer than segment III, bearing 6–9 (+4) short hairs. Antennal hairs slightly spathulate, on segment III at most 0.032–0.060 mm long and 0.9–1.5 times as long as basal diameter of that segment. Secondary rhinaria 1 or 2 on basal third of segment III. Primary rhinaria surrounded by wide chitinous rims, nude or indistinctly ciliated, often distinctly protruding. Rostrum reaching to between hind coxae. Ultimate rostral segment wedge-shaped, about 0.7–0.9 times as long as hind tarsal segment II, with 4 or 5 subsidiary hairs. Siphunculi bottle-shaped, thinnest at the apex, 0.15–0.17 of body length, about 0.9–1.1 times as long as cauda and 0.56–0.66 of length of antennal segment III, reticulate on distal 0.36–0.48 part, without flange. Cauda elongate tongue-shaped, acuminate, sometimes with slight constriction at basal third but usually not constricted at base, with 13–15 hairs. Genital plate broadly oval, with 2 or 3 hairs on anterior half and 9–10 ones along posterior margin. Legs rather long and slender, hind femora and hind tibiae 0.35–0.40 and 0.70–0.73 of body length respectively. Hind tarsal segment II about 0.122–0.140 mm long, with two dorsal hairs apart from the dorsoapical pair. Ventral trochantal hairs fine, 1.1–1.6 times as long as diameter of trochantro-femoral suture. Hairs on femora abruptly acuminate to blunt, those on dorsal surface about 0.038–0.062 mm long, on ventral surface up to 0.075 mm long. Dorsal hairs on tibiae up to 1.8 times as long as local diameter of tibiae. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs about half as long as claws.

Colour. In life shining brown. In cleared specimens abdominal dorsum colourless with brown sclerites and scleroites. Head, proand mesonotum brown. Siphunculi and cauda blackish brown. Antennae pale, except the two basal segments which are concolorous with head, the apices of segments III and IV, apical thirds to half of segment V and segment VI which are brown. Legs pale with apical halves of femora, the very base and apical part of tibiae and the whole tarsi, blackish. Genital plate brown.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments:				Sec. rhin. on III
							III	IV	V	VI	
1	2	3	4	5	6	7	8	9	10	11	12
1	2.05	3.17	0.34	0.31	0.10	0.13	0.59	0.52	0.51	0.19+0.98	1
		3.04	0.35			0.13	0.57	0.53	0.51	0.19+0.95	1

1	2	3	4	5	6	7	8	9	10	11	12
2	2.13	?	0.33	0.30	0.10	0.12	0.51	?	?	?	1
		?	0.34			0.12	0.50	0.43	0.42	?	2
3	2.32	3.36	0.41	0.40	0.12	0.14	0.68	0.56	0.56	0.22+1.00	2
		3.41	0.39			0.14	0.67	0.59	0.59	0.23+1.01	2
4	2.37	3.26	0.39	0.40	0.12	0.14	0.69	0.53	0.54	0.20+1.00	1
		3.30	0.39			?	0.66	0.57	0.55	0.22+1.00	1
5	2.36	3.20	0.39	0.42	0.12	0.13	0.61	0.54	0.56	0.20+0.98	2
		3.22	0.39			0.13	0.63	0.56	0.54	0.20+0.98	1

Host plant: *Artemisia japonica* THUNB.

Bionomy: Unknown. In summer living on the underside of older leaves.

Type material. Holotype (apterous viviparous female, slide no. 3459a/apt. 1): Prov. Hamgyŏng-namdo, Oro, 15. IX. 1966, coll. H. SZELEGIEWICZ. Paratypes (4 apt. viv. fem. and one juv.): same data.

Taxonomic notes. Dark and shining body in life and nude primary rhinaria suggest a close relationship with the "*atra*"-group, presumably with the East Asiatic species which are characterized by pale antennae and pale middle part of tibiae. The new species differs from *M. sanborni* (GILL.) in having few secondary rhinaria, shorter ultimate rostral segment and a relatively longer cauda. *M. kikungshana* TAKAH. can be separated from *M. oronensis* by black femora, more numerous secondray rhinaria, a relatively shorter cauda, the long and fine antennal hairs, and by the extremely hairiness of the body. From *M. formosartemisiae* TAKAH., which lives also on *Artemisia japonica*, the new species differs by pale tibiae and basal halves of antennae, the shape of ultimate rostral segment and siphunculi, and by fewer and longer dorsal hairs.

Macrosiphoniella (*M.*) *sanborni* (GILLETTE, 1908)

Collections from Korea. Prov. Ch'ŏngjin-si: Ch'ŏngjin, 13. IX. 1966, *Chrysanthemum* sp. hort., 10 apt. viv. fem.; Prov. P'yŏngan-namdo: Sangkŏn-am, 25. IX. 1966, *Chrysanthemum lavendulaefolium*, 9 apt. viv. fem. Prov. P'yŏngyang-si: Taesŏng-san, 19. VIII. 1966, *Chrysanthemum indicum* L., 4 apt. viv. fem.

The aphids in all respects agree well with European specimens.

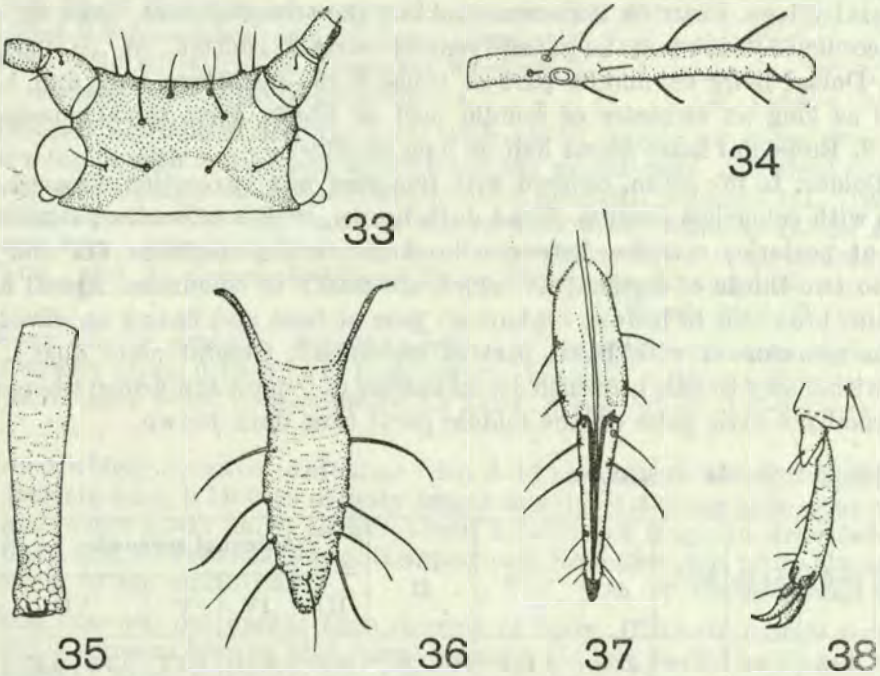
Macrosiphoniella (*M.*) *taesongsanensis* sp. n.

(Pl. III: phot. 10, figs. 33–38)

Apterous viviparous female (after 5 specimens)

Morphological characters. Body broadly oval, 1.71–1.98 mm long. Abdominal dorsum membraneous without any sclerotization. Dorsal hairs blunt, on segments I–IV about 0.075–0.085 mm long, the longest 2.7–3.4 times as long as the basal diameter of antennal segment III, hairs on tergite VIII of variable

length, the longest ones 0.07–0.09 mm long. Numbers of dorsal hairs: 10 or 11 on tergite III, 5 or 6 (rarely 4) on tergite VI between siphunculi and 4 on tergite VIII. Ventral hairs finely pointed, about 0.050–0.070 mm long. Frons slightly concave to nearly straight, antennal tubercles not developed. Frontal



Figs. 33–38. *M.* (*M.*) *taesongsanensis* sp. n., apt. viv. female: 33 – head, 34 – antennal segment III, 35 – siphunculus, 36 – cauda, 37 – ultimate rostral segment, 38 – hind tarsus.

hairs acute, 0.075–0.080 mm long. Clypeus with 4 hairs, mandibular laminae each with 4–6 hairs. Antennae 0.8–0.9 of body length. Processus terminalis 2.4–2.9 times as long as base of segment VI, 1.1–1.4 of the length of segment III, with 7–10 (+4) short hairs. Antennal hairs blunt, the longest on segment III about 0.035–0.050 mm long and 1.4–2.0 times as long as basal diameter of that segment. Secondary rhinaria very variable in size, 1–4 in number, scattered in a row on basal half of segment III. Primary rhinaria ciliate. Rostrum reaching just beyond hind coxae. Ultimate rostral segment stiletto-shaped, very slender, about 0.135–0.165 mm long and 1.1–1.2 times as long as hind tarsal segment II, with 6–7 subsidiary hairs. Siphunculi slightly constricted at very base, tapering, thinnest at distal third and very slightly dilated towards apex, 0.12–0.14 of body length, 0.8–0.9 times as long as cauda and 0.80–0.93 of the length of antennal segment III, reticulate at distal 0.48–0.56 part. Cauda elongate, acute, constricted at basal third, with 9–12 hairs. Genital plate with

2 or 3 hairs on anterior half and 6–9 shorter ones along posterior margin. Legs short and stout, hind femora and hind tibiae 0.26–0.29 and 0.44–0.51 of body length respectively. Hind tarsal segment II about 0.120–0.135 mm long, with two dorsal hairs apart from the dorsoapical pair. Ventral trochantal hairs fine, 0.070–0.095 mm long and 1.3–1.5 times as long diameter of the trochantro-femoral suture. Hairs on femora resembling the antennal ones, those on dorsal surface 0.045–0.050 mm long, on ventral surface shorter, up to 0.045 mm long. Dorsal hairs on middle part of tibiae 0.060–0.070 mm long and 1.7–2.0 times as long as diameter of middle part of tibiae. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs about half as long as claws.

Colour. In life green, covered with fine grey waxy excretion. Cleared specimens with colourless dorsum. Head dark brown, with a colourless, semicircular spot at posterior margin. Antennae brownish, except segment III and basal half to two-thirds of segment IV which are dusky to colourless. Apical half of rostrum brownish to brown. Siphunculi pale at base and brown on distal half. Cauda concolorous with basal part of siphunculi. Genital plate dusky. Legs pale with dusky to pale brownish dorsal surface of femora and brown tibiae which are usually a little paler on the middle part; tarsi dark brown.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments:				Sec. rhin. on III
							III	IV	V	VI	
1	1.86	1.55	0.24	0.28	0.135	0.120	0.33	0.28	0.27	0.15+0.37	1
		1.55	0.24			0.120	0.32	0.29	0.26	0.14+0.39	3
2	1.98	1.70	0.28	0.31	0.150	0.?	0.35	0.31	0.31	0.16+0.41	3
		1.69	0.27			0.130	0.36	0.32	0.30	0.16+0.40	4
3	1.83	1.68	0.24	0.28	0.155	0.130	0.33	0.30	0.29	0.16+0.43	2
		1.63	0.25			?	0.31	0.32	0.27	0.15+0.44	1
4	1.71	1.57	0.23	0.26	0.140	?	0.32	0.27	0.27	0.15+0.37	3
		?	0.23			?	0.32	?	?	?	2
5	1.92	1.70	0.27	0.33	0.165	0.135	0.35	0.33	0.29	0.15+0.42	3
		1.70	0.28			0.135	0.35	0.33	0.29	0.15+0.44	3

Host plant: *Artemisia princeps* PAMP. var. *orientalis* HARA.

Bionomy: Unknown. In summer living on terminal parts of the shoots.

Type material. Holotype (one apterous viviparous female, slide no. 3243/apt. 1): Prov. P'yŏngyang-si: Taesŏng-san, 22.VIII.1966, coll. H. SZELEGIEWICZ. Paratypes (5 apt. viv. fem. and 6 juv.): same data.

Taxonomic notes. *M. taesongsanensis* belongs to the "*pulvera*"-group and seems to be closely related to the Mongolian *M. cegmidi* SZEL. The species of the "*pulvera*"-group can be separated from each other by the following key:

1. Ultimate rostral segment short, at most as long as hind tarsal segment II 2

—. Ultimate rostral segment longer than hind tarsal segment II 3

2. Anterior abdominal tergites each with 14–18 hairs. Processus terminalis with 3–7 hairs apart from the apical ones. Antennal hairs usually shorter than basal diameter of antennal segment III. Ultimate rostral segment 0.95–1.0 times as long as hind tarsal segment II (but in the Mongolian specimens only 0.8–0.9). On *Artemisia maritima* L., *A. monogyna* W. K. and *A. adamsii* BESS. Europe to Mongolia. . . . . *M. pulvera* (WALK.)

—. Anterior abdominal tergites each with 10–13, rarely 14 hairs. Processus terminalis with 8–14 hairs apart from the apical ones. Antennal hairs as long as or longer than basal diameter of antennal segment III. Ultimate rostral segment 0.7–0.9 times as long as hind tarsal segment II. On *Matricaria* spp., *Artemisia abrotanum* L., *A. sieversiana* WILLD., *A. macrocephala* JACQ., and *A. messerschmidtiana* BESS. Europe to Northern Korea. . . . . *M. abrotani* (WALK.) s. l.

3. Frons nearly straight. Antennae with 1–5 secondary rhinaria. Siphunculi relatively short, 0.10–0.14 of body length and 0.8–1.1 times as long as cauda which bears 8–10, exceptionally 12 hairs. Small, about 1.7–2.0 mm long. 4

—. Frons widely concave. Antennae with 8–16 secondary rhinaria. Siphunculi relatively long, 0.14–0.19 of body length and 1.2–1.4 times as long as cauda which bears 12–15 hairs. Larger, about 2.3–2.5 mm long. On *Artemisia alba* TURRA and *A. austriaca* JACQ. Hungary and Roumania but probably spread further to the South-East. . . . . *M. szalaymarzsoi* SZEL.

4. Head fuscous, not darker than dorsum of body. Ultimate rostral segment 1.2–1.5 times as long as hind tarsal segment II. Tergite VIII with 5–8 hairs. Antennal hairs distinctly spathulate and short, about as long as basal diameter of antennal segment III, dorsal hairs 2.0–2.5 times as long as the mentioned diameter. Processus terminalis with 3–8 hairs apart from the four apical ones, and mandibular laminae each with 2 hairs. Tibiae pale with only the apices dark. On *Artemisia* sp. Mongolia. . . . . *M. cegmidi* SZEL.

—. Head dark brown in contrast with pale dorsum of body. Ultimate rostral segment 1.1–1.2 times as long as hind tarsal segment II. Tergite VIII with 4 hairs. Antennal hairs blunt, 1.4–2.0 times as long as basal diameter of antennal segment III, dorsal hairs 2.7–3.4 times as long as the mentioned diameter. Procesus terminalis with 7–10 hairs apart from the apical ones and mandibular laminae each with 4–6 hairs. Tibiae dark with slightly paler middle portion. On *Artemisa princeps* PAMP. var. *orientalis*. Korea. . . . . *M. taesongsanensis* sp. n.

Macrosiphoniella (*M.*) *yomogifoliae* (SHINJI, 1922)

(Pl. III: phot. 11, figs. 39–41)

Collections from Korea. Prov. Hamhŭng-si: Machŏn, 26. IX. 1970, *Artemisia* sp., 2 apt. viv. fem. and juv. Prov. P'yŏngan-namdo: T'aesong, 19. IX. 1966, *Artemisia vulgaris* L. var. *indica*, 7 apt. viv. fem.; Sangkŏn-am, 25. IX. 1966, *A. vulgaris* L. var. *indica*,

19 apt. viv. fem. Prov. P'yŏngyang-si: P'yŏgyang, 21. VIII. 1959, *Artemisia* sp., one apt. viv. fem. and juv.; Yongak-san, 25. VIII. 1966, *A. mongolica* FISCH., 8 apt. viv. fem.; Mankyŏngdae, 31. VIII. 1970, *Artemisia* sp., 6 apt. viv. fem. Prov. Kangwŏn-do: Ch'ŏnsam-ri, 10 km S of Wŏnsan, 3. IX. 1966, *A. princeps* PAMP. var. *orientalis*, 15 apt. and 1 al. viv. fem.

Notes. This species is very closely related to the Euro-Siberian *M. artemisiae* (B. DE F.) which with it is often confused. Therefore I find it useful to give a description of the Korean specimens.

Apterous viviparous female (after 40 specimens).

Morphological characters. Body broadly spindle-shaped, 2.68–3.45 mm. long. Dorsum membraneous, usually without any distict sclerotization; rarely with nearly invisible antesiphuncular sclerites and small scleroites at the base of hairs situated on tergite VII, and a transversal bar on tergite VIII. Dorsal hairs blunt to slightly spathulate, longest on tergite III about 0.063–0.080 mm, 1.5–2.0 times as long as basal diameter of antennal segment III; hairs on tergite VIII about 0.090–0.100 mm long. Number of dorsal hairs: 15–18 on tergite III, 4–5 (exceptionally 3 or 6) on tergite VI between the siphunculi and 5–7 (rarely 8) on tergite VIII. Ventral hairs slender, finely pointed, the longest about 0.072–0.085 mm long. Frons moderately sinuate, with low antennal tubercle, each of which bearing 3 or 4 hairs. Frontal hairs acute, 0.075–0.100 mm long. Clypeus with 4, mandibular laminae each with 5–8 (rarely 4 or 9) hairs. Antennae 0.83–1.09 of body length. Segment III incrassate on the basal half bearing the secondary rhinaria. Processus terminalis 2.3–2.9 (rarely up to 3.1) times as long as base of segment VI and about 0.8–1.0 of the length of segment III, with 6–11 (+4) short hairs. Antennal hairs rather thick, distinctly spathulate, the longest on segment III about 0.048–0.065 mm and 1.1–1.5 times as long as basal diameter of that segment. Secondary rhinaria 1–8 confined to basal half of segment III. Primary rhinaria ciliate. Rostrum reaching to posterior coxae. Ultimate rostral segment stiletto-shaped, 0.190–0.250 mm long and 1.1–1.26 (exceptionally up to 1.4) times as long as hind tarsal segment II, with 5–6 subsidiary hairs. Siphunculi expanded at base, tapering, sometimes with slight basal constriction, 0.10–0.13 of body length, about 0.6–0.8 times as long as cauda and 0.42–0.64 of the length of antennal segment III, reticulate on distal 0.48–0.71 part; flange small. Cauda elongate, obtuse, distinctly constricted at basal third, with 20–24 hairs. Genital plate broadly oval, with 2–8 (usually 4–6) hairs on the disc and 8–13 shorter ones along posterior margin. Legs rather long, hind femora and hind tibiae 0.28–0.34 and 0.53–0.63 of body length respectively. Hind tarsal segment II with two dorsal hairs apart from the dorsoapical pair, 0.150–0.175 mm long. Tibiae of all legs slightly but distinctly increassate in basal half. Ventral trochantal hairs pointed, 1.1–1.4 times as long as diameter of trochantro-femoral suture. Hairs on femora blunt or slightly spathulate, the longest on the dorsal surface 0.053–0.070 mm long, on ventral surface a little shorter, up to 0.055 mm long.

Tibial hairs blunt or abruptly acuminate, longest on middle part of hind tibiae about 1.3–1.7 times as long as the middle width of the latter. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs half as long as the claws.

Colour. In life green, covered with a fine, grey waxy excretion and with blackish appendages. In alcohol body dirty green. In cleared specimens body usually almost colourless, rarely with fuscous bar on tergite VIII and faintly pigmented antesiphuncular sclerites and scleroites on tergite VII. Antennae uniformly blackish. Siphunculi and cauda dark brown. Rostrum dark brown in apical, brownish in basal half. Genital plate fuscous. Legs blackish, except the extreme bases of femora which are nearly colourless.

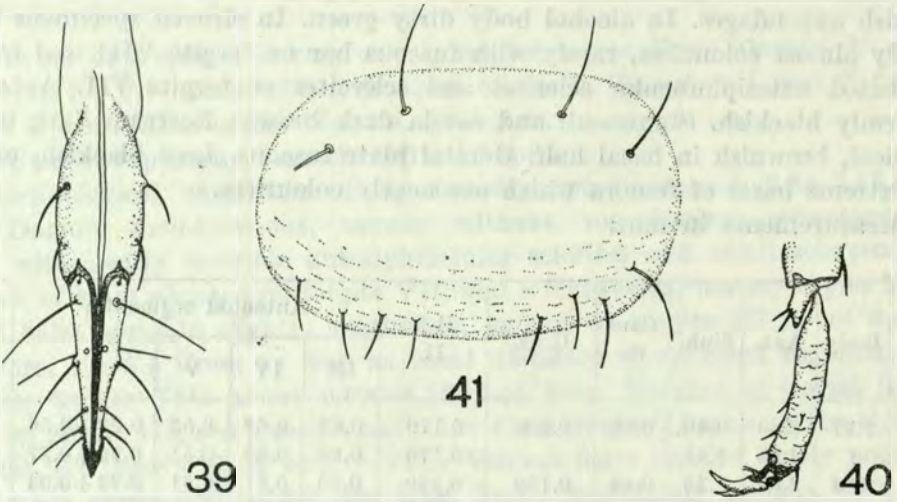
Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III
1	2.97	2.80	0.40	0.50	0.200	0.170	0.62	0.62	0.53	0.22+0.56	3
		2.84	0.41			0.170	0.66	0.63	0.51	0.22+0.57	5
2	2.84	2.89	0.35	0.48	0.190	0.160	0.65	0.61	0.51	0.22+0.63	6
		2.91	0.35			0.160	0.65	0.61	0.52	0.23+0.61	8
3	3.36	2.88	0.34	0.50	0.195	0.160	0.68	0.58	0.50	0.23+0.58	6
		2.79	0.34			0.165	0.65	0.58	0.49	0.23+0.59	4
4	2.76	2.58	0.29	0.48	0.190	0.150	0.60	0.50	0.44	0.19+0.59	6
		2.54	0.30			0.150	0.57	0.50	0.42	0.19+0.60	5
5	2.68	2.77	0.29	0.43	0.190	0.160	0.63	0.57	0.51	0.22+0.61	4
		2.74	0.30			0.160	0.63	0.57	0.52	0.22+0.58	5
6	3.13	2.80	0.35	0.50	0.200	0.170	0.69	0.59	0.51	0.23+0.53	4
		2.87	0.34			0.172	0.67	0.62	0.51	0.24+0.60	4
7	2.95	2.87	0.31	0.47	0.190	0.160	0.65	0.59	0.50	0.22+0.59	4
		2.89	0.34			?	0.66	0.60	0.50	0.22+0.61	3
8	2.75	3.00	0.29	0.48	?	0.160	0.69	0.64	0.54	0.26+0.64	1
		2.93	0.30			?	0.67	0.61	0.53	0.24+0.63	1
9	3.44	3.10	0.37	0.54	0.190	0.170	0.69	0.68	0.53	0.22+0.66	7
		3.05	0.39			0.150	0.67	0.67	0.55	0.22+0.67	4
10	3.10	3.30	0.43	0.56	0.190	0.175	0.75	0.74	0.58	0.24+0.71	8
		3.22	0.42			0.170	0.75	0.74	0.58	0.25+0.62	7

Alate viviparous female (after one specimen)

Morphological characters and colour. Abdominal dorsum membraneous with brownish marginal and transverse spinal sclerites on segments II–IV, a brown transversal bar on tergite VIII, and faintly visible, dusky antesiphuncular sclerite and small scleroites at the base of hairs on tergite VII. Thorax as dark as head. Secondary rhinaria 17–29, scattered on nearly the whole length of segment III. Wings normal with slightly bordered veins; pterostigma with rather long hairs along its posterior margin. Other characters as in apterous viviparous females.

Measurement of the single specimen in mm: Body 3.14, antenna 2.95, antennal segments III–VI: 0.73 : 0.64 : 0.55 : 0.24 + 0.57, siphunculus 0.34, cauda 0.51, ultimate rostral segment 0.20, hind tarsal segment II 0.18.



Figs. 39–41. *M.* (*M.*) *yomogifoliae* (SHINJI), apt. viv. female: 39 – ultimate rostral segment, 40 – hind tarsus, 41 – genital plate.

Systematic position. In most respects the species resembles very closely *M. artemisiae* (B. DE F.) from which it can be distinguished by having a longer ultimate rostral segment (0.99–1.3 times as long as hind tarsal segment II compared with 0.80–0.95), uniformly dark pigmented antennae and more numerous hairs on the disc of genital plate. Cleared specimens of *M. yomogifoliae* resemble in some respects the Japanese *M. hokkaidensis* MIYAZAKI. The latter species differs in having femora with pale basal halves, relatively longer siphunculi (about 0.20 of the body length compared with at most 0.14), and in the colour of living specimens (yellowish green without wax powder).

Macrosiphoniella (*Phalangomyzus*) *antennata takahashii* ssp. n.

(Pl. III: phot. 12, figs. 42–45)

Apterous viviparous female (after 21 specimens).

Morphological characters. Length of body 3.14–4.02 mm. Abdominal dorsum membraneous with a transversal bar on tergite VIII, traces of antesiphuncular sclerites (one or two small scleroites at the base of hairs situated in front of siphunculi) and usually with small scleroites at the base of hairs situated on tergite VII. Dorsal hairs blunt, those on anterior tergites 0.055–0.080 mm long and 0.9–1.0 times as long as basal diameter of antennal segment

III; hairs on tergite VIII mostly acuminate, 0.060–0.095 mm long. Number of dorsal hairs: 10–12 on tergite III, 4 on tergite VI between siphunculi and 4–8 on tergite VIII. Frontal hairs acuminate, 0.060–0.085 mm long. Antennae 1.4–1.6 of body length. Processus terminalis 2.1–2.8 times as long as base of segment VI, 0.61–0.88 of the length of antennal segment III, with 4–9 (+4) short hairs. Segment III with dilated base and 4–12 secondary rhinaria of rather variable size confined to its basal third. Antennal hairs blunt, 0.040–0.053 mm long and 0.6–1.0 times as long as basal diameter of antennal segment III. Rostrum reaching just beyond hind coxae. Siphunculi bottle-shaped, relatively long, 0.19–0.23 of body length, 1.1–1.4 times as long as cauda and 0.5–0.7 of the length of antennal segment III. Cauda without basal constriction, bearing 13–21 hairs. Dorsal hairs on tibiae relatively thick, 0.08–1.0 mm long and about 1.4–1.96 times as long as the middle diameter of tibiae. Other characters as in the nominate subspecies.

Colour. In life pinkish pruinose with dark spot between siphunculi and with dark appendices. In cleared specimens dorsum colourless with dusky to brownish sclerites and scleroites. Antennae dark brown to blackish, the dilated extreme base of segment III always a little paler. Otherwise as in the nominate subspecies.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III
1	3.60	?	0.82	0.61	0.140	0.180	1.23	1.25	0.98	0.36+?	5
		5.13	0.82			0.180	1.24	1.27	0.96	0.36+0.99	4
2	3.29	5.22	0.67	0.58	0.145	0.175	1.34	1.27	1.04	0.40+0.83	8
		5.21	0.68			0.180	1.30	1.29	0.96	0.38+0.93	7
3	3.61	?	0.81	0.65	0.150	0.180	1.29	?	?	?	8
		5.11	0.81			0.170	1.29	1.24	0.96	0.36+1.00	7
4	3.86	5.33	0.84	0.64	0.143	0.175	1.31	1.40	0.97	0.37+0.97	5
		?	0.84			0.170	1.30	1.35	0.98	0.38+?	5
5	3.14	4.95	0.73	0.55	0.150	0.170	1.10	1.27	0.94	0.36+0.97	8
		?	0.68			0.170	?	?	?	?	?
6	3.50	5.03	0.75	0.59	0.140	0.180	1.27	1.19	0.95	0.38+0.97	6
		?	0.72			?	1.27	1.18	0.97	0.40+?	5
7	3.45	5.07	0.79	0.58	0.150	0.180	1.18	1.28	0.95	0.35+0.98	8
		5.05	0.81			0.180	1.19	1.28	0.96	0.37+0.96	6
8	3.92	?	0.83	0.70	0.140	0.180	1.38	1.44	1.03	0.41+?	8
		5.53	0.82			0.180	1.38	1.38	1.03	0.39+1.01	7

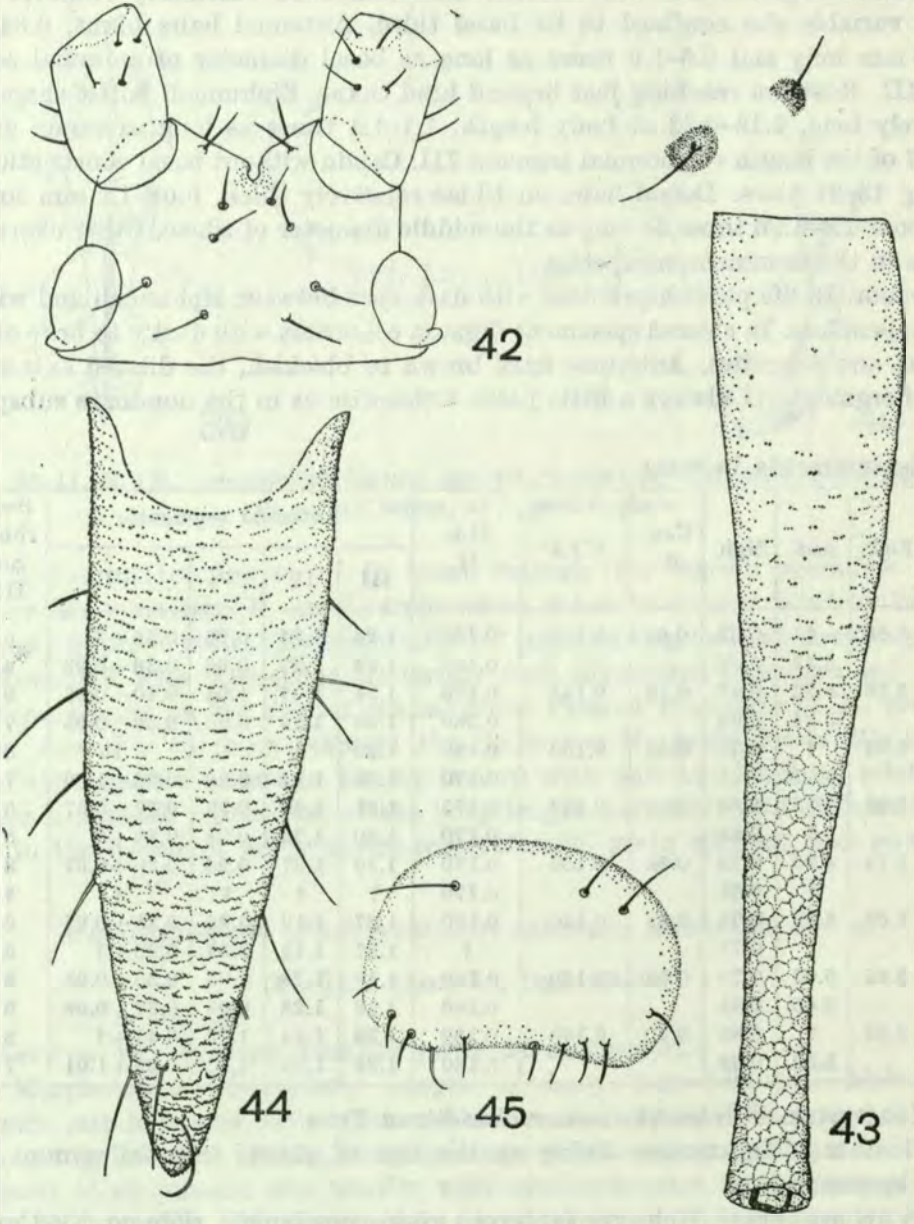
Host plant: *Artemisia messerschmidtiana* BESS.

Bionomy: In summer living on the tips of shoots in small groups of 15–30 specimens.

Type material. Holotype (apterous viviparous female, slide no. 3363/apt. 1): Prov. Kangwŏn-do: Ch'ŏnsam-ri, 10 km S of Wŏnsan, 3. IX. 1966, coll.

H. Szelegiewicz. Paratypes: 1) same data, 15 apt. viv. fem. 2) Prov. Ch'ŏngjin-si: Ch'ŏngjin, 14. VIII. 1959, 5 apt. viv. fem., coll. B. Pisarski and J. Prószyński.

Taxonomic notes. The Korean aphids resemble in most respects the Mongolian *M. antennata* Hol. et Szel. but the differences in the colour of living



Figs. 42–45. *M.* (*P.*) *antennata takahashii* ssp. n., apt. viv. female: 42 – head, 43 – siphunculus, 44 – cauda, 45 – genital plate.

specimens, bionomy, and in some morphological characters are sufficient for establishment of a new subspecies, named in honour of the late Dr. R. TAKAHASHI of Japan. The new subspecies can be separated from the nominate one by means of the following key:

1. Dorsal hairs 1–1.5 times as long as the basal diameter of antennal segment III; tibial hairs up to 1.4 times as long as the diameter of middle part of tibia. Antesiphuncular sclerites distinct. Siphunculi relatively short, 0.13–0.19 of the body length and 0.9–1.2 times as long as cauda. Processus terminalis with 9–14 short hairs apart from the 4 apical ones. Bluish pruinose aphids with black pattern on posterior part of abdomen, living mostly single on the lower side of older leaves of *Artemisia* sp. Mongolia . . . . . *M. antennata antennata* HOL. et SZEL.

—. Dorsal hairs 0.9–1.0 times as long as the basal diameter of antennal segment III; tibial hairs 1.4–1.9 times as long as the diameter of middle part of tibia. Antesiphuncular sclerites indistinct. Siphunculi relatively long, 0.19–0.23 of the body length and 1.1–1.4 times as long as cauda. Processus terminalis with 4–9 short hairs apart from the 4 apical ones. Pinkish pruinose aphids with dark spot between the siphunculi, living in small groups on the tips of the shoots of *Artemisia messerschmidtiana*. Korea. . . . . *M. antennata takahashii* ssp.n.

Macrosiphoniella (*Phalangomyzus*) *gmelinicola* sp. n.

(Pl. IV: phot. 13, figs. 46–49)

Apterous viviparous female (after 2 specimens).

Morphological characters. Body broadly oval, 3.27–3.32 mm long. Abdominal dorsum membraneous, with transversal bar on tergite VIII and with scleroites at base of hairs situated on tergite VII, between the siphunculi on tergite VI and in front of siphunculi on tergite V (traces of antesiphuncular sclerites), and sometimes also in spinal and marginal row on anterior abdominal tergites. Dorsal hairs blunt, on tergites I–V about 0.055–0.060 mm long and 1.0–1.2 times as long as basal diameter of antennal segment III; hairs on tergite VIII abruptly acuminate, up to 0.085 mm long. Number of dorsal hairs: 12-14 on tergite III, 5 or 6 on tergite VI between siphunculi, and 8 on tergite VIII. Ventral hairs finely pointed, up to 0.085 mm long. Frons sinuate with well developed, diverging antennal tubercles and with indistinct median one. Frontal hairs 0.055–0.065 mm long and up to 1.3 times as long as basal diameter of antennal segment III. Antennal tubercles each with 2 or 3 hairs. Clypeus with 5, mandibular laminae each with 3 or 4 hairs. Antennae 1.0–1.1 of body length. Segment I with 5–7 hairs, slightly longer than hind tarsal segment II and about 1.2 times as long as longitudinal diameter of eye. Processus terminalis 2.3–2.5 times as long as base of segment VI and 0.47–0.50 of the length of antennal segment III, with 3–4 (+4) short hairs. Base of segment VI about 10–13 times

coll. M. Mroczkowski and A. Riedel. Paratypes (one apt. viv. fem. and 2 juv.): same data.

Taxonomic notes. By the dark pigmented antennae, legs, siphunculi and cauda the new species closely resembles *M. antennata* Hol. et Szel. The latter species differs from *M. gmelinicola* in having much slender, elongate spindle-shaped body with longer legs and antennae, a much longer antennal segment IV (usually longer than segment III in comparison to about 0.5–0.6 as long), more hairs on antennal segment I and on processus terminalis. In some respects (indistinct antesiphuncular sclerites, few hairs on processus terminalis and more on the cauda) it resembles more the subsepcies *takahashii* than the nominate *antennata* s. str.

Macrosiphoniella (*Phalangomyzus*) *grandicauda* Takahashi et Moritsu, 1963

(Pl. IV: phot. 14, figs. 50–53)

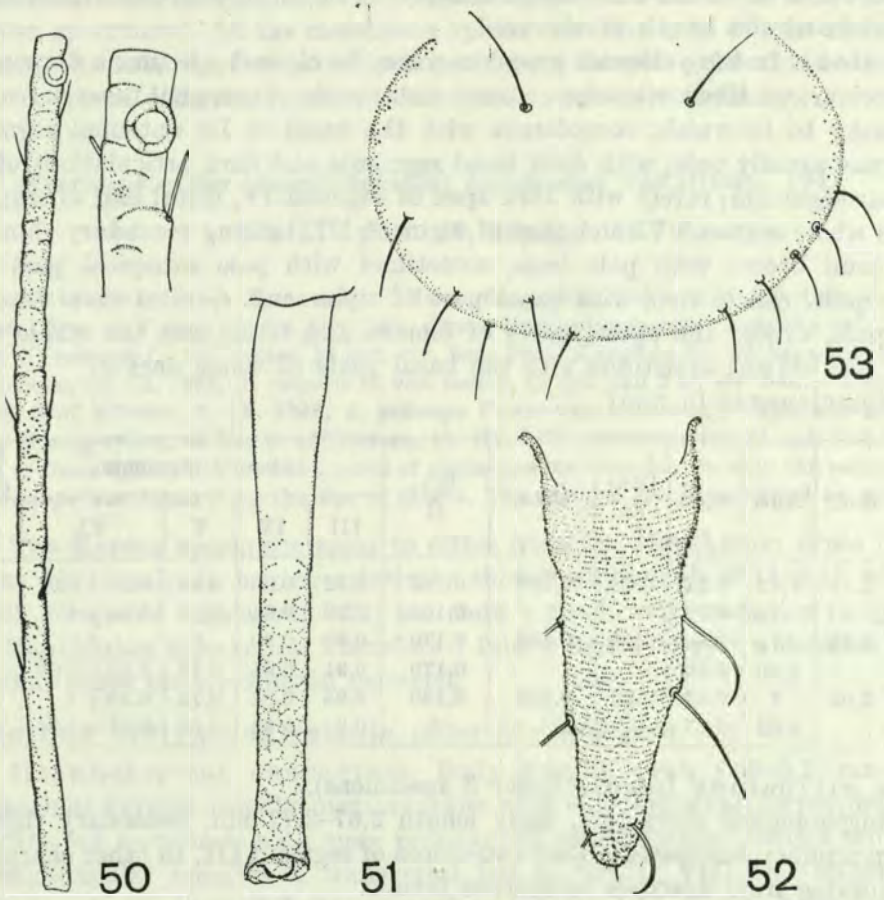
Collection from Korea. Prov. P'yŏngyang-si: Mankyŏngdae, 31. VIII. 1970, *Artemisia princeps* Pamp. var. *orientalis*, 8 apt. and 3 al. viv. females.

The species was hitherto only known from Japan (Hokkaido, Honshu, Amami-oshima, Ryukyu), South Korea and India. As there is very little known about its intraspecific variation, a detailed description of the Korean specimens is given.

Apterous viviparous female (after 8 specimens).

Morphological characters. Body elongate, broadly spindle-shaped about 2.86–3.28 mm long. Abdominal dorsum membraneous, without any distinct sclerotization. Dorsal hairs usually slightly capitate, the longest on tergite III about 0.05–0.06 mm and 1.1–1.4 times as long as the basal diameter of antennal segment III; hairs on tergite VIII blunt to slightly capitate, up to 0.065 mm long. Numbers of dorsal hairs: 7–9 (usually 8) on tergite III, 3 or 4 on tergite VI between the siphunculi, and 3–4 on tergite VIII. Ventral hairs finely produced, slender, about 0.07–0.09 mm long. Frons deeply sinuate, with well developed antennal tubercles and a small median one. Frontal hairs pointed to slightly capitate, about 0.06–0.07 mm long. Each antennal tubercles with 2 or 3 hairs. Clypeus with 4, mandibular laminae each with 2–4 (usually 3) hairs. Antennae 1.2–1.3 of the body length. Segment I with 6–8 hairs, 4–5 of which are situated distally, one (rarely 2) at the outer margin and one smaller dorsally at the base. Processus terminalis 3.2–3.6 times as long as the base of segment VI, 1.1–1.2 times as long as segment III, with 9–13 (+4) hairs. Base of segment VI 8.6–9.8 times as long as its middle width and 1.8–2.1 of the length of hind tarsal segment II, bearing 4 or 5 hairs. Antennal hairs rather stout, slightly capitate, those on segment III at most 0.035–0.050 mm and 0.8–1.2 times as long as basal diameter of that segment. Secondary rhinaria 1–5, con-

fined to basal fourth of segment III. Primary rhinaria nude, a little protruding. Rostrum reaching just beyond middle coxae. Ultimate rostral segment wedge-shaped, acute, 0.130–0.140 mm, about 0.75–0.84 times as long as hind tarsal segment II, with 6 or 5 subsidiary hairs. Siphunculi bottle-shaped, sligthly



Figs. 50–53. *M.* (*P.*) *grandicauda* TAKAH. et MORITSU, apt. viv. female: 50 – primary rhinarium on segment V, 51 – siphunculus, 52 – cauda, 53 – genital plate.

constricted at the expanded base, thinnest at middle part and little dilated towards the flangeless apex, 0.15–0.16 of body length, 1.2–1.38 times as long as cauda and 0.48–0.59 of the length of antennal segment III, reticulate on distal 0.4–0.5 part. Cauda elongate tongue-shaped, obtuse, not constricted at base, bearing 7–11 hairs. Genital plate widely oval, with 2 (rarely 3 or 4) hairs on anterior half and 9–11 shorter ones along posterior margin. Legs long, hind femora and hind tibiae 0.39–0.42 and 0.76–0.84 of body length respectively. Hind tarsal segment II about 0.160–0.172 mm long, with two dorsal and 5 or 6 ventral hairs apart from the apical ones. Ventral trochantal hairs usually finely

pointed, about 0.9–1.1 times as long as diameter of trochantro-femoral suture. Hairs on femora slightly capitate, longest on dorsal surface about 0.055–0.070 mm long, those on ventral surface a little shorter, up to 0.055 mm long. Hairs on tibiae stout and blunt, longest on middle part about 1.2–1.7 times as long as middle width of tibiae. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs about two-thirds of the length of claws.

Colour. In life yellowish green to green. In cleared specimens dorsum almost colourless. Head colourless, except distal parts of antennal tubercles which are dusky to brownish, concolorous with the bases of Ist antennal segment. Antennae usually pale, with dark basal segments and dark articulations of the flagellar segments; rarely with dark apex of segment IV, distal half of segment V, the whole segment VI and part of segment III, bearing secondary rhinaria. Siphunculi brown with pale base, sometimes with pale subapical part too. Cauda pale, concolorous with basal part of siphunculi. Genital plate fuscous. Legs pale, except the apical parts of femora and tibiae and the whole tarsi which are brown; sometimes also the basal parts of tibiae darker.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments:				Sec. rhin. on III
							III	IV	V	VI	
1	3.11	4.13	0.51	0.38	0.130	0.160	0.92	0.86	0.69	0.30+1.07	2
		?	0.51			0.160	0.92	0.84	0.70	0.34+?	2
2	3.28	?	0.54	0.39	0.140	0.170	0.91	0.90	?	?	4
		4.20	0.53			0.170	0.91	0.91	0.72	0.33+1.05	3
3	3.06	?	0.47	0.36	0.135	0.160	0.94	0.84	0.72	0.30+?	2
		4.05	0.47			?	0.94	0.82	0.68	0.31+1.04	4

Alate viviparous female (after 3 specimens).

Morphological characters. Body length 2.67–2.77 mm. Secondary rhinaria 9–14 in number, confined to basal two-thirds of segment III. In other characters not differing from apterous viviparous female.

Colour. Head dark brown, thorax a little paler. Antennae uniformly brown, except extreme base of segment III. Femora with distal thirds to halves and tibiae with base and apices dark; otherwise like apterae.

Measurements of one specimen: Body 2.76, antenna (?), antennal segments III–VI: 0.82 : 0.81 : 0.64 : 0.33+(?), siphunculus 0.41, cauda 0.28, ultimate rostral segment 0.14, hind tarsal segment II 0.17 mm. Segment III with 9 and 13 secondary rhinaria.

Notes on variability. Judging from description (Takahashi et Moritsu 1963) the Japanese types differ from the Korean aphids in having well developed antesiphuncular sclerites and pale scleroites at base of dorsal hairs, relatively longer siphunculi (about 0.2 of the body length and 1.5–1.8 times

as long as cauda compared with up to 0.16 and 1.2–1.4 respectively in Korean specimens), and shorter tibial hairs. The Indian specimens have weakly developed antesiphuncular sclerites but differ from both Japanese and Korean ones in having a relatively shorter processus terminalis (always shorter than antennal segment III and as long as in the Japanese, and 1.1–1.2 times as long in the Korean specimens). All the mentioned aphids have the very characteristic nude primary rhinaria. Further investigations of more samples are desirable to decide whether these differences are constant and season-independent.

Macrosiphoniella (*Sinosiphoniella*) *kuwayamai* TAKAHASHI, 1941

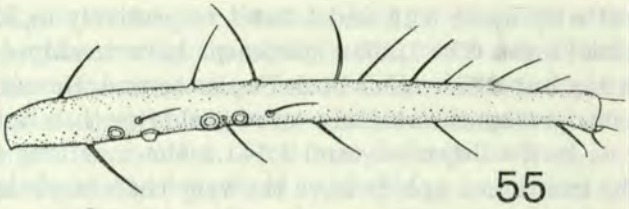
(Pl. IV: phot. 15, 16; figs. 54–60)

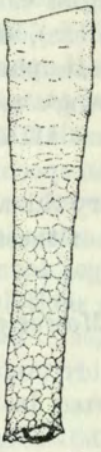
Collections from Korea. Prov. Hamgyŏng-pukto: Onp'o-ri, 10. IX. 1966, *Artemisia feddei* LÉVL. et VANT., 16 apt. viv. fem. Prov. Hamgyŏng-namdo: Sangwŏn-am, 25. IX. 1966, *A. vulgaris* L. var. *indica*, 13 apt. viv. fem. Prov. Kangwŏn-do: Ch'ŏnnae, 28 km NW of Wŏnsan, 10. VI. 1965, *A. vulgaris* L. var. *indica*, 13 apt. and 2 al. viv. fem.; Ch'ŏnsam-ri, 10 km S of Wŏnsan, 3. IX. 1966, *A. princeps* PAMP. var. *orientalis*, 17 apt. and 1 al. viv. fem.; Masing-ryŏng, 34 km W of Wŏnsan, 16. IX. 1970, *Artemisia* sp., 21 apt. viv. fem. — most of these aphids live on basal parts of stems and on lower leaves, only the sample from *A. princeps* was taken from the tips of shoots. The colonies are often visited by ants.

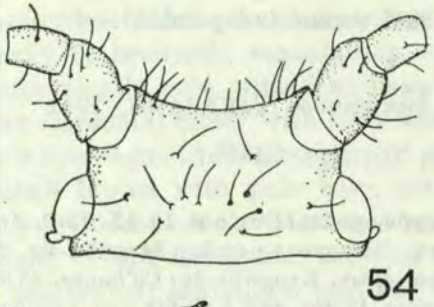
The Korean specimens seem to differ from the Manchurian types (TAKAHASHI 1941) only in having relatively shorter siphunculi (0.11–0.17 of body length compared with about 0.21) but show a much wider variation range than the Manchurian type series. Therefore I find it useful to give a detailed redescription based on my Korean material.

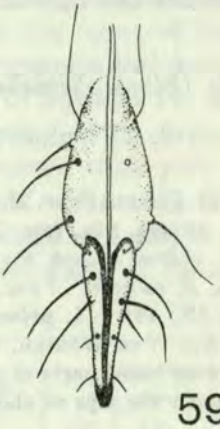
Apterous viviparous female (after 80 specimens)

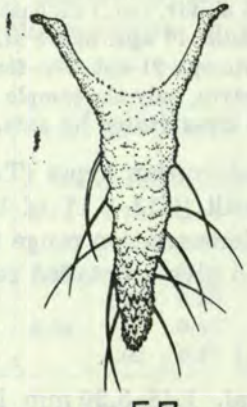
Morphological characters. Body broadly oval, 1.48–3.20 mm long. Abdominal dorsum usually membraneous with only indistinct antesiphuncular sclerites but sometimes with more pronounced sclerotization: distinct semilunar antesiphuncular sclerites, a transversal bar on tergite VIII and rather large scleroites at the base of hairs situated on tergite VII. Dorsal hairs arranged irregularly only on tergites VI–VIII in a transversal row, very fine, long and flexuose, those on tergite III at most 0.075–0.110 mm long and about 1.9–3.3 times as long as basal diameter of antennal segment III, hairs on tergite VIII up to 0.130 mm long. Number of dorsal hairs: 60–75 on tergite III, 8–12 on tergite VI between siphunculi, and 7–12 (rarely 6 or 20) on tergite VIII. Ventral hairs resemble the dorsal ones. Head with 12–20 hairs on the disc apart from the frontal ones. Frons usually widely concave but sometimes nearly straight. Frontal hairs resembling the dorsal ones, about 0.085–0.120 mm long. Clypeus with 6–8 (rarely 10) hairs, mandibula laminae each with 7–12 hairs. Antennae 1.06–1.4 of body length. Processus terminalis 3.7–5.5 (usually 4.1–5.1) times as long as base of segment VI and about 1.2–2.0 of the length of segment III,

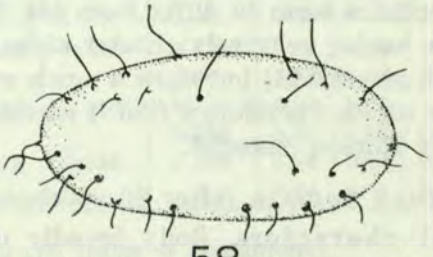










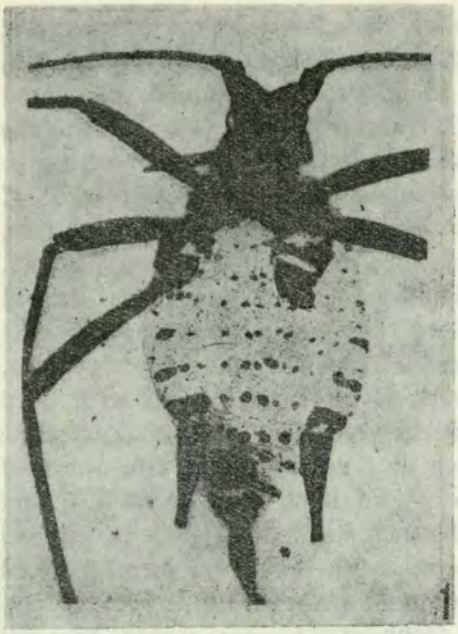


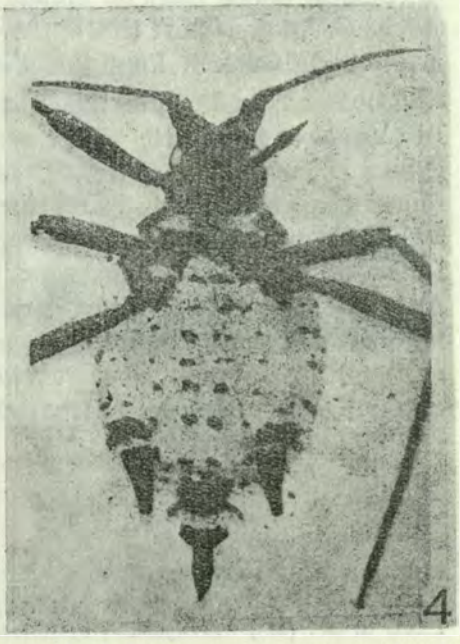
Figs. 54–60. *M.* (*S.*) *kuwayamai* Takah., apt. viv. female: 54 – head, 55 – antennal segment III, 56 – siphunculi, 57 – cauda, 58 – genital plate, 59 – ultimate rostral segment, 60 – hind tarsus.

PLATE I

Phot. 1. *M.* (*A.*) *yomenae* (Shinji), apt. viv. female.
Phot. 2. *M.* (*C.*) *myohyangsani* sp. n., apt. viv. female.
Phot. 3. *M.* (*M.*) *abrotani chosoni* ssp. n., apt. viv. female.
Phot. 4. *M.* (*M.*) *atra latysiphon* Hol. et Szel., apt. viv. female.

Photos by R. Bielawski





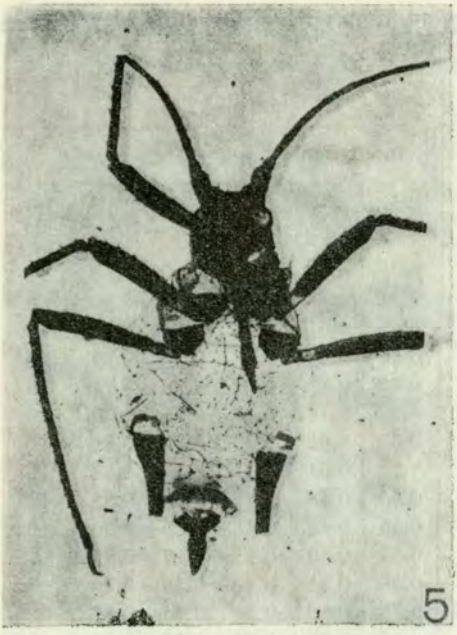
bearing 10–18 (+4) hairs. Antennal hairs very fine, flexuose, on segment III at most 0.060–0.110 mm long and about 2.1–3.1 the basal diameter of that segment. Secondary rhinaria very variable in size, 2–25 in number, scattered usually along basal third to half of segment III, rarely covered two-thirds or the whole length of that segment. Primary rhinaria ciliate. Rostrum reaching to posterior coxae but sometimes (in small specimens) to abdominal segment II or III. Ultimate rostral segment mostly stiletto-shaped, 0.130–0.165 mm, about 0.85–0.98 (exceptionally 1.0) times as long as hind tarsal segment II, with 6 subsidiary hairs. Siphunculi subcylindrical, 0.11–0.17 of body length, 1.1–1.6 times as long as cauda and 0.51–0.75 of the length of antennal segment III, reticulated on apical 0.4–0.6 part, flangeless. Cauda elongate triangular, strongly tapering, obtuse, bearing 9–16 hairs. Genital plate oval, with 8–16 (rarely up to 20) hairs on the disc and 14–19 along posterior margin. Anal plate with a semiglobular median projection which may not be distinct in mounted specimens. Legs relatively long, hind femora and hind tibiae 0.29–0.36 and 0.52–0.65 of body length respectively. Hind tarsal segment II with two dorsal hairs apart from the dorsoapical pair, about 0.140–0.172 mm long. Ventral trochantal hairs fine, flexuose, 0.090–0.110 mm long and 1.4–1.9 (rarely up to 2.4) times as long as diameter of adjacent trochantro-femoral suture. Femoral hairs finely produced, those on dorsal surface at most 0.075–0.110 mm long, the longest on ventral surface about 0.060–0.085 mm long. Tibial hairs partly resembling the femoral ones but those on the ventral surface thick and blunt; the longest dorsal hairs on middle part of hind tibiae about 1.8–2.4 as long as the middle diameter of tibiae, the thicker ventral ones up to 1.1 as long as the mentioned diameter. First tarsal chaetotaxy: 3, 3, 3. Empodial hairs normal.

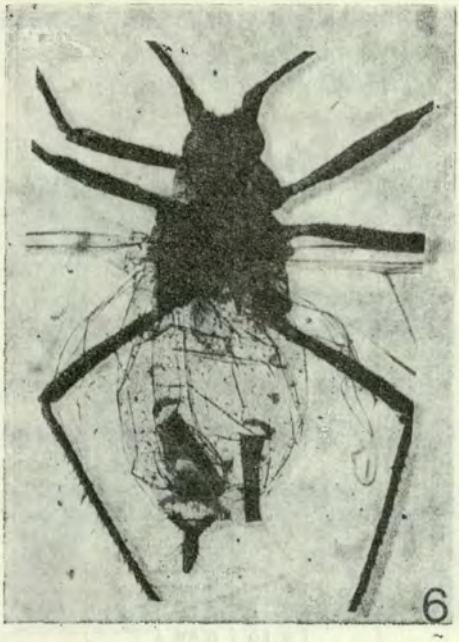
Colour. In life dull black with pinkish head and blackish appendices. In alcohol body pinkish with green spots. In cleared specimens dorsum of abdomen colourless, usually with indistinct, dusky antesiphuncular sclerites but sometimes with brownish antesiphuncular sclerites, transversal bar on tergite VIII and yellowish brown scleroites on tergite VII. Genital plate brownish to brown. Siphunculi dark brown to blackish, cauda brownish to dark brown. Antennae usually uniformly dark brown to blackish, rarely with pale basal half to two-thirds of segment III and IV much paler and with processus terminalis getting gradually paler towards its apex. Legs usually blackish with the extreme bases of femora nearly colourless and sometimes with the apical thirds

PLATE II

Phot 5. *M.* (*M.*) *jaroslavi* sp. n., apt. viv. female.
Phot. 6. *M.* (*M.*) *jaroslavi* sp. n., al. viv. female.
Phot. 7. *M.* (*M.*) *kikungshana kikungshana* Takah., apt. viv. female.
Phot. 8. *M.* (*M.*) *kikungshana sylvaticae* ssp. n., apt. viv. female.

Photos by R. Bielawski





of tibiae slightly paler, brown, but in some specimens with pale, yellowish brown middle portion of tibiae.

Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III
1	2.39	2.57	0.34	0.31	0.165	0.170	0.55	0.45	0.40	0.16+0.80	11
		2.57	0.35			0.168	0.54	0.43	0.40	0.17+0.80	6
2	2.35	2.87	0.39	0.29	0.160	0.165	0.60	0.51	0.43	0.17+0.83	11
		2.80	0.39			0.160	0.60	0.49	0.43	0.17+0.79	10
3	2.29	2.69	0.41	0.26	0.160	0.170	0.62	0.49	0.47	0.19+0.71	16
		2.64	0.41			0.165	0.62	0.46	0.43	0.18+0.73	20
4	2.36	2.76	0.34	0.29	0.155	0.160	0.55	0.52	0.43	0.18+0.86	7
		2.73	0.35			?	0.52	0.51	0.41	0.17+0.88	6
5	2.32	2.65	0.41	0.31	0.163	0.165	0.55	0.48	0.40	0.16+0.88	10
		2.72	0.39			0.170	0.55	0.46	0.43	0.18+0.90	12
6	2.53	2.69	0.36	0.31	0.152	0.170	0.57	0.49	0.42	0.17+0.80	7
		2.70	0.37			0.172	0.56	0.51	0.40	0.18+0.79	8
7	1.67	2.11	0.22	0.21	0.145	0.150	0.39	0.30	0.34	0.14+0.77	3
		2.10	0.22			0.150	0.38	0.33	0.33	0.16+0.77	3
8	1.77	2.26	0.24	0.21	0.140	0.155	0.43	0.32	0.35	0.15+0.82	3
		2.28	0.24			0.150	0.42	0.34	0.34	0.16+0.82	2
9	1.76	2.11	0.20	0.18	0.140	0.142	0.37	0.33	0.34	0.15+0.72	2
		2.09	0.20			0.145	0.38	0.30	0.33	0.15+0.77	2
10	1.91	2.30	0.31	0.22	0.130	0.140	0.49	0.36	0.35	0.16+0.76	3
		2.27	0.31			0.145	0.47	0.36	0.36	0.15+0.75	5

Alate viviparous female (after 3 specimens).

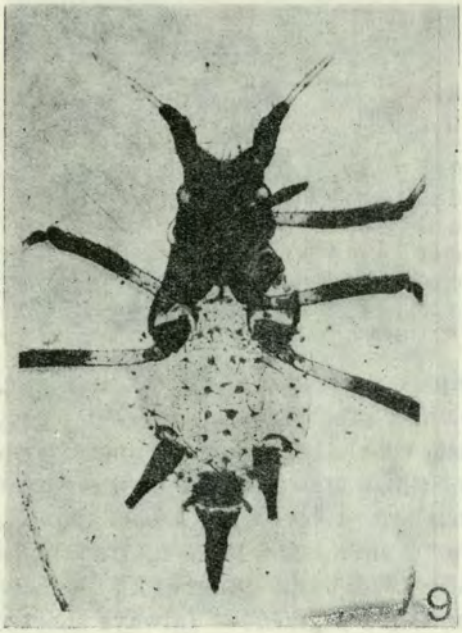
Morphological characters. Length of body 2.21–2.85 mm. Abdominal dorsum membraneous with only traces of antesiphuncular sclerites. Antennae up to 1.1 of body length. Processus terminalis 4.4–4.6 times as long as base of segment VI. Secondary rhinaria 25–29 on the whole length of segment III and 0–5 on middle part of segment IV. In other characters not differing from the apterous viviparous females.

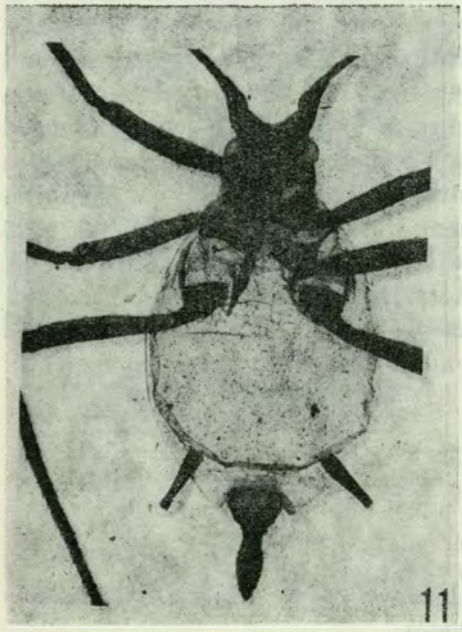
Colour. Thorax as dark as the head, otherwise like apterae.

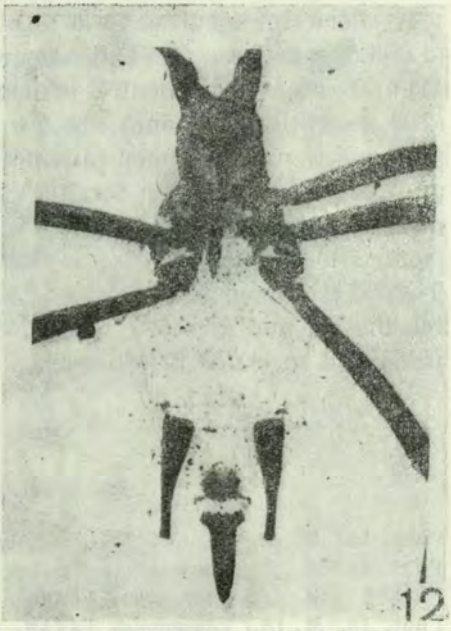
PLATE III

Phot. 9. *M.* (*M.*) *oronensis* sp. n., apt. viv. female.
Phot. 10. *M.* (*M.*) *taesongsanensis* sp. n., apt. viv. female.
Phot. 11. *M.* (*M.*) *yomogifoliae* (Shinji), apt. viv. female.
Phot. 12. *M.* (*P.*) *antennata takahashii* ssp. n., apt. viv. female.

Photos by R. Bielawski







Measurements in mm:

No.	Body	Ant.	Siph.	Cauda	U.r.s.	H.t. II	Antennal segments: III	IV	V	VI	Sec. rhin. on III	IV
1	2.85	2.93	0.37	0.27	0.160	0.170	0.62	0.51	0.50	0.20+0.88	29	2
		?	0.39			0.170	0.62	0.54	0.50	0.19+?	27	5
2	2.76	?	0.37	0.27	0.160	0.165	0.63	0.48	?	?	29	0
		?	0.38			0.165	0.62	0.53	0.45	0.18+?	25	3
3	2.21	2.49	0.31	0.21	0.160	?	0.50	0.45	0.40	0.17+0.78	27	2
		2.45	0.32			0.160	0.50	0.42	0.41	0.17+0.76	26	0

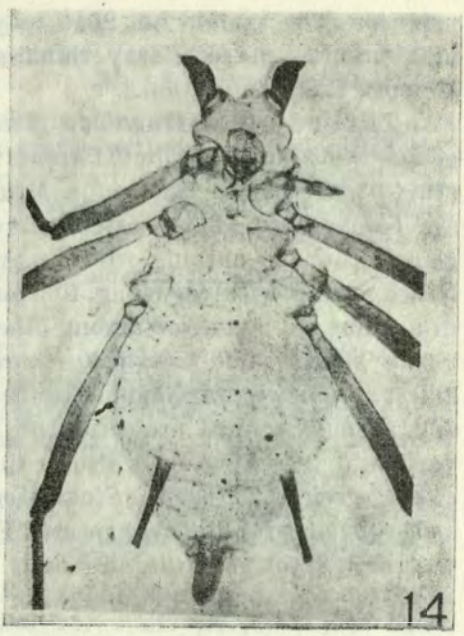
Infraspecific variation. The samples from *Artemisia vulgaris* var. *indica* and *A. princeps* var. *orientalis* do not differ substantially from each other, except sample no. 3534 from Sangwŏn-am which contains specimens with much paler, yellowish brown middle part of tibiae and pale antennal segment III and basal half of IV. All these specimens are rather large (1.94–3.20 mm), have distinctly concave frons, relatively long siphunculi (0.14–0.17 of body length) and short processus terminalis (usually 3.7–5.1 times base of VI), a short rostrum (reaching hind coxae) and short antennal segment V (always shorter than IV), numerous secondary rhinaria (6–25), and caudal hairs (11–16), and a nearly colourless dorsum of abdomen (only indistinct dusky antesiphuncular sclerites present). A sample from *A. feddei*, which may represent dwarfs, differ strongly in having smaller body (1.48–1.82 mm), a nearly straigth frons, relatively short siphunculi (0.11–0.13 of body length) and long processus terminalis (4.8–5.5 times base of VI), longer rostrum (reaching at least abdominal segment II) and antennal segment V (as long or longer than IV), few secondary rhinaria (2–6, exceptionally none) and few caudal hairs (8–11), and a more pronounced pigmentation of abdomen (distinct brownish to brown antesiphuncular sclerites and concolorous bar on tergite VIII, and dusky to yellowish brown scleroites at the base of hairs on tergite VII). Specimens from an other sample (no. 3836 from *Artemisia* sp.) are somewhat intermediate between the discussed above. They share the more sclerotized abdominal dorsum, the relatively long processus terminalis, and the few secondary rhinaria with the dwarfs from *Artemisia feddei* but resemble in other characters the main form from *A. vulgaris* and *A.*

PLATE IV

Phot. 13. *M.* (*P.*) *gmelinicola* sp. n., apt. viv. female.
Phot. 14. *M.* (*P.*) *grandicauda* Takah. et Moritsu, apt. viv. female.
Phot. 15. *M.* (*S.*) *kuwayamai* Takah., apt. viv. female.
Phot. 16. *M.* (*S.*) *kuwayamai* Takah., al. viv. female.

Photos by R. Bielawski


13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15


16

princeps. The sample no. 2610 may consist alatiform apterae but except the high number of secondary rhinaria (8–25) there is nothing else which may support this supposition.

Taxonomic notes. TAO (1963) has errected for this species a separate genus *Sinosiphoniella* but PAIK (1972) and EASTOP et HILLE RIS LAMBERS (1976) placed it in the genus *Metopeurum* MORDV. Besides characters which are common to all ant-attended representatives of the *Macrosiphoniella*-like genera there is nothing which may support this placing. I don't understand how a species with very long, fine and extremely dense body hairs can be placed in a genus characterized among others by a nude tergum of the body? *M. kuwayamai* shows some derivative characters such as increased number of dorsal hairs, a somewhat triangular cauda, slightly concave to almost striaght frons, and a small conical projection on the anal plate. All these characters are in various degree developed also in the East Asian representatives of the "*yomogicola*"-group. Therefore *Sinosiphoniella* TAO can be tentatively maintained as a subgenus for all these species. Further investigations are desirable to decide whether *Sinosiphoniella*, as here understood, constitutes a natural group.

Key to the Korean species of *Macrosiphoniella*

(based on apterae only)

1. Anterior abdominal tergites each with at least 50 hairs arranged irregularly, not in single transverse rows. Head dorsally with 12 and more hairs besides the frontal ones. Often visited by ants. 2

—. Anterior abdominal terrgites each with at most 40 hairs arranged in transversal rows. Head dorsally with only 8 hairs besides the frontal ones. Never visited by ants. 5

2. Body with large postsiphuncular sclerites, redish brown in life. Clypeus with 4 hairs only. Antennae and tibiae partly pale. 3

—. Body without or with very small postsiphuncular sclerites, usually dull black in life. Clypeus with 6–8, rarely more hairs. Antennae and tibiae normally uniformly dark. 4

3. Siphunculi with long hairs. On *Artemisia capillaris*. Not found in the D.P.R. of Korea but recorded from South Korea by PAIK. . . . . *M.* (*S.*) *chaetosiphon* TAKAH. et MORITSU

—. Siphunculi without hairs. On *Artemisia princeps* var. *orientalis*. Not found in the D.P.R. of Korea but recorded from South Korea by PAIK. . . . . *M.* (*S.*) *hikosanensis* MORITSU

4. Siphunculi shorter or as long as cauda which is slightly constricted at basal third and bears 20 and more hairs. Abdominal dorsum with dark transverse bars on anterior tergites which are often reduced to small sclerites or scleroites. Ultimate rostral segment as long as or slightly longer than

hind tarsal segment II. On *Artemisia japonica*. Not found in the D.P.R. of Korea but recorded from South Korea by PAIK. . . . . *M.* (*S.*) *yomogicola* (MATS.)

—. Siphunculi always longer than cauda which is elongate triangular and bears at most 16 hairs. Anterior abdominal tergites without any sclerotization. Ultimate rostral segment usually shorter than hind tarsal segment II. Oligophagous on *Artemisia vulgaris* var. *indica*, *A. princeps* var. *orientalis*, *A. feddei*, *A. asiatica*, *A. keiskeana*. . . . . *M.* (*S.*) *kuwayamai* TAKAH.

5. Hind tibiae with a row of short peg-like hairs besides normal ones. . . . 6

—. Hind tibiae without peg-like hairs. 7

6. Pronotum and abdominal segments II–IV with distinct marginal tubercles. Ultimate rostral segment conical with convex sides, obtuse, always longer than hind tarsal segment II, bearing 8 subsidiary hairs. Cauda with 22–29 hairs. Pale green, not pruinose, living on lower parts of stem of *Artemisia sylvatica*. . . . . *M.* (*C.*) *myohyangsani* SZEL.

—. Body without marginal tubercles. Ultimate rostral segment elongate wedge-shaped, acute, shorter than or as long as hind tarsal segment II, bearing 6 subsidiary hairs. Cauda with 12 –16 hairs. Dirty green, covered with grey waxy excretion, living on tips of shoots and in inflorescences of *Artemisia messerschmidtiana* var. *discolor*. . . . *M.* (*M.*) *jaroslavi* SZEL.

7. Siphunculi and cauda uniformly dark. Abdomen usually with some sclerotized dark areas. 8

—. Siphunculi at least with pale base, cauda pale. Abdomen without any distinct sclerotization. 17

8. Tibiae uniformly dark, exceptionally with apical thirds somewhat paler but never concolorous with body. 9

—. Tibiae with middle part pale, concolorous with body. 14

9. Ultimate rostral segment stiletto- or wedge-shaped, acute. Antennal segment III with at most 15 secondary rhinaria. On *Artemisia* spp. . . . 10

—. Ultimate rostral segment conical with somewhat convex sides, obtuse. Antennal segment III with 20–60 secondary rhinaria. Very dark green, living on terminal parts of *Aster* spp. . . . . *M.* (*A.*) *yomenae* (SHINJI)

10. Primary rhinaria nude. In life shining brown to black. Cleared specimens with dark scleroites on anterior abdominal tergites. 11

—. Primary rhinaria ciliate. In life pale, often pruinose. Cleared specimens without dark scleroites anterior to siphunculi. 12

11. Ultimate rostral segment elongate wedge-shaped, longer than hind tarsal segment II. Antennal segment III with 2–6 secondary rhinaria (if with more than they are scattered over the whole length of segment); hairs on that segment up to 1.5 as long as its basal diameter. Siphunculi subcylindrical, relatively long, about 0.21–0.24 of body length. Shining black in life, living on terminal parts of *Artemisia capilaris*, *A. japonica*, *A. keiskeana*, *A. princeps* var. *orientalis* and *A. scoparia*. Not found in the D.P.R. of Korea but recorded from South Korea by PAIK. . . . . *M.* (*M.*) *formosartemisiae* TAKAH.

—. Ultimate rostral segment stiletto-shaped, shorter than hind tarsal segment II. Antennal segment III with 5–14 secondary rhinaria confined to its basal half; hairs on that segment up to 1.3 times as long as its basal diameter. Siphunculi widely conical, relatively short, about 0.10–0.16 of body length. Shining black in life, living on terminal parts of *Artemisia gmelini* and *A. messerschmidtiana*. . . . . *M.* (*M.*) *atra latysiphon* Holm. et Szel.

12. Ultimate rostral segment distinctly shorter than hind tarsal segment II, bearing 6–8 subsidiary hairs. Siphunculi bottle-shaped, relatively long, about 0.17–0.23 of body length and 1.1–1.4 times as long as the tongue-shaped cauda which bears maximally 21 hairs. Legs relatively long, the hind femora about 0.34–0.50 of body length. 13

—. Ultimate rostral segment usually longer than hind tarsal segment II, bearing 5–6 subsidiary hairs. Siphunculi subcylindrical, relatively short, about 0.10–0.13 of body length and 0.6–0.8 times as long as cauda which is distinctly constricted at basal third and bears 20–24 hairs. Legs relatively short, the hind femora about 0.28–0.34 of body length. Dirty green, covered with grey waxy excretion, living on terminal parts of many *Artemisia* spp. (*A. asiatica*, *A. capillaris*, *A. gigantea*, *A. messerschmidtiana* var. *viridis*, *A. mongolica*, *A. princeps* var. *orientalis* and *A. vulgaris* var. *indica*). . . . . *M.* (*M.*) *yomogifoliae* (Shinji)

13. Body broadly oval with relatively short legs, hind tibiae at most up to 0.7 of body length. Antennal segment I with 5–7, processus terminalis with 3–4 (+4) hairs. Base of segment VI at most 12 times as long as its middle width and up to 1.6 times as long as hind tarsal segment II. Antennal segment IV about 0.5–0.6 times as long as segment III. The longest hairs on middle part of hind tibiae as long as the middle diameter of tibiae. On *Artemisia gmelinicola*, probably on lower parts of stem and older leaves. . . . . *M.* (*P.*) *gmelinicola* Szel.

—. Body more slender, spindle-shaped with relatively longer legs, hind tibiae about 0.8–1.0 of body length. Antennal segment I with 9–13, processus terminalis with 4–9 (+4) hairs. Base of segment VI longer, about 16–20 times as long as its middle width and about twice as long as hind tarsal segment II. Antennal segment IV usually longer than segment III. Longest hairs on middle part of hind tibiae 1.4–1.9 as long as middle diameter of tibiae. Pinkish pruinose with dark spot between the siphunculi, living on terminal parts of *Artemisia messerschmidtiana* var. *discolor*. . . . . *M.* (*P.*) *antennata takahashii* Szel.

14. Primary rhinaria nude. In life shining brown; cleared specimens usually with dark scleroites at base of some dorsal hairs. Cauda with 12–20 hairs. 15

—. Primary rhinaria ciliate. In life green; cleared specimens without scleroites at base of dorsal hairs. Cauda with 9–13 hairs. On terminal parts of *Artemisia princeps* var. *orientalis*. Not found in the D.P.R. of Korea but recorded from South Korea by Paik. . . . . *M.* (*M.*) *pseudoartemisiae* Shinji

15. Anterior abdominal tergites each with maximally 15 hairs. Antennal hairs maximally up 1.5 times as long as basal diameter of segment III. . . . 16

—. Anterior abdominal tergites each with 24 and more hairs. Antennal hairs

very long, 2.5 and more times as long as basal diameter of segment III. . . . . *M.* (*M.*) *kikungshana* TAKAH.

a) Dorsal hairs on anterior abdominal tergites about 3.7–5 times as long as basal diameter of antennal segment III. Femora dark with the extreme bases pale. On underside of older leaves of *Artemisia keiskeana* and *A. vulgaris* var. *indica*. . . . . ssp. *kikungshana* s. str.

b) Dorsal hairs on anterior abdominal tergites much shorter, up to 2.8 times as long as basal diameter of segment III. Femora mostly pale with only small rings at basal thirds and the apical part darker. On underside of older leaves of *Artemisia sylvatica*. . . . . ssp. *sylvaticae* SZEL.

16. Ultimate rostral segment longer than hind tarsal segment II, bearing 6 subsidiary hairs. Antennal segment III with 10 and more secondary rhinaria over its whole length. Abdominal dorsum without or with only small scleroites at base of some dorsal hairs. Cauda with distinct constriction at base, 1.2–1.5 times as long as siphunculi, bearing 17–21 hairs. Redish brown, living on terminal parts of *Chrysanthemum* spp. . . . . *M.* (*M.*) *sanborni* (GILL.)

—. Ultimate rostral segment shorter than hind tarsal segment II, bearing 4 subsidiary hairs. Antennal segment III with 1 or 2 secondary rhinaria on basal third. Abdominal dorsum with rather large scleroites at base of nearly all hairs. Cauda tongue-shaped, usually without constriction at base, 0.9–1.1 times as long as siphunculi, bearing 13–15 hairs. Probably dark brown or blackish, living on older leaves of *Artemisia japonica*. . . . . *M.* (*M.*) *oronensis* SZEL.

17. Antennae usually shorter than body. Frons moderately concave to nearly straight. Siphunculi subcylindrical, relatively short, 0.10–0.14 of body length. Cauda longer than siphunculi, distinctly constricted at basal third. Legs relatively short, hind tibiae 0.4–0.6 of body length. Green, covered with grey waxy excretion, living on terminal shoots. 18

—. Antennae always longer than body. Frons deeply sinuate. Siphunculi bottle-shaped, relatively longer, about 0.15–0.20 of body length. Cauda distinctly shorter than siphunculi, tongue-shaped, without basal constriction. Legs longer, the hind tibiae 0.8 to as long as body. Pale green, not pruinose, living on older leaves. 19

18. Ultimate rostral segment shorter than hind tarsal segment II. Processus terminalis 3.2–3.6 times as long as base of segment VI. Antennal segment III with 4–8 secondary rhinaria and hairs which are about 1.0–1.3 times as long as its basal diameter. Siphunculi short, 0.10–0.12 of body length and 0.4–0.8 times as long as antennal segment III. Cauda with bluntish apex, bearing 13–16 hairs. Legs relatively long, hind tibiae about 0.55–0.62 of body length. Hairs on middle part of hind tibiae at most as long as middle diameter of tibiae. On *Artemisia messerschmidtiana* var. *discolor*. . . . . *M.* (*M.*) *abrotani chosoni* SZEL.

—. Ultimate rostral segment distinctly longer than hind tarsal segment II. Processus terminalis 2.4–2.9 times as long as base of segment VI. Antennal segment III with 1–4 secondary rhinaria and with hairs which are 1.4 to twice as long as its basal diameter. Siphunculi relatively longer, 0.12–0.14 of body length and 0.8–0.9 times as long as antennal segment III. Cauda

with somewhat acute apex, bearing 9–12 hairs. Legs relatively short, hind tibiae only about 0.4–0.5 of body length. Longest hairs on middle part of hind tibiae 1.7 to twice as long as middle diameter of tibiae. On *Artemisia princeps* var. *orientalis*. . . . . *M.* (*M.*) *taesonsanensis* SZEL.

19. Primary rhinaria nude. Antennal segment III with 1–5 secondary rhinaria and rather short hairs which are about 0.8–1.2 times as long as its basal diameter. Mandibular laminae each with 2–4 hairs. Body with maximally up to 9 hairs on each of the anterior abdominal tergites and with 3–6 hairs on tergite VIII. Cauda bearing 7–15 hairs. On *Artemisia princeps* var. *orientalis*. . . . . *M.* (*P.*) *grandicauda* TAKAH. et MORITSU

—. Primary rhinaria ciliate. Antennal segment III with 4–8 secondary rhinaria and with long hairs which are up to twice as long as its basal diameter. Mandibular laminae each with 5–8 hairs. Body with 10–14 hairs on each of the anterior abdominal tergites and with 6–11 hairs on tergite VIII. Cauda bearing 20–30 hairs. On *Artemisia princeps*. Not found in the D.P.R. of Korea but recorded by PAIK from South Korea. . . . . *M.* (*P.*) *hidaensis* TAKAH. et MORITSU

Macrosiphoniella species from the East Asiatic Province

An annotated Check-List

The East Asiatic or Manchurian Province of the Palaearctic Region as delimited here comprises the Far East of the U.S.S.R. (the river-basin of the Lower Amur in the Khabarowsk Territory, the Maritime Territory and the Southern Sakhalin and South Kurile Is.), China (excluding the extreme West and South), the Korean Peninsula and the Japanese Archipelago (excluding Ryukyu Is.). The aphids faunas of Japan and Korea are relatively well known, those of China only poorly explored and that of Russian Far East not investigated at all.

Genus: ***Macrosiphoniella*** DEL GUERCIO, 1911

Type species: *Siphonophora atra* FERRARI, 1872

Subgenus: *Macrosiphoniella* s. str.

1. ***M. (M.) abrotani*** (WALKER, 1852).
   a) ssp. *chosoni* SZELEGIEWICZ, 1980.
   Host plant: *Artemisia messerschmidtiana* BESS. var. *discolor*
   Distribution: Korea.

2. ***M. (M.) atra*** (FERRARI, 1872).
   a) ssp. *latysiphon* HOLMAN et SZELEGIEWICZ, 1978.
   Host plants: *Artemisia gmelini* WEB. ex STECHM., *A. messerschmidtiana* BESS. var. *discolor*.
   Distribution: Korea; [Mongolia].

3. ***M. (M.) cayratiae*** TSENG et TAO, 1936.
Host plant: *Cayratia japonica.*
Distribution: China: Shantung.

4. ***M. (M.) formosartemisiae*** TAKAHASHI, 1921.
Syn.: *Macrosiphoniella japonica* SHINJI, 1942.
Host plants: *Artemisia capillaris* THUNB., *A. japonica* THUNB., *A. keiskeana* MIQ., *A. princeps* PAMP. var. *orientalis*, *A. scoparia* WALDST. et KIT.
Distribution: China: Fukien, Szechuan; Korea; Japan: Honshu, Kyushi; [Mongolia, Taiwan, India].

5. ***M. (M.) hokkaidensis*** MIYAZAKI, 1971.
Host plant: *Artemisia montana* SCHLECHT.
Distribution: Japan: Hokkaido.

6. ***M. (M.) jaroslavi*** SZELEGIEWICZ, 1980.
Host plant: *Artemisia messerschmidtiana* BESS. var. *discolor.*
Distribution: Korea.

7. ***M. (M.) kikungshana*** TAKAHASHI, 1937.
a) ssp. *kikungshana* s. str.
Host plants: *Artemisia keiskeana* MIQ., *A. vulgaris* L. var. *indica.*
Distribution: China: Honan, Szechuan, Chekiang; Korea; [Sikkim].

b) ssp. *sylvaticae* SZELEGIEWICZ, 1980.
Host plant: *Artemisia sylvatica* MAXIM.
Distribution: Korea.

8. ***M. (M.) oronensis*** SZELEGIEWICZ, 1980.
Host plant: *Artemisia japonica* THUNB.
Distribution: Korea.

9. ***M. (M.) pseudoartemisiae*** SHINJI, 1933.
Host plants: *Artemisia annua* L., *A. princeps* PAMP. var. *orientalis.*
Distribution: China: Shantung, Szechuan, Sikong; Korea; Japan: Honshu, Kyushu; [India].

10. ***M. (M.) sanborni*** (GILLETTE, 1908).
Syn.: *Macrosiphum nishigahara* ESSIG et KUWANA, 1918.
Host plants: *Chrysanthemum* spp. hort.
Distribution: Cosmopolitan.

11. ***M. (M.) taesongsanensis*** SZELEGIEWICZ, 1980.
Host plant: *Artemisia princeps* PAMP. var. *orientalis*
Distribution: Korea.

12. ***M. (M.) yomogifoliae*** (SHINJI, 1922).
Host plants: *Artemisia asiatica* NAKAI, *A. capillaris* THUNB., *A. gigantea*

KITAM., *A. messerschmidtiana* BESS., *A. mongolica* FISCH., *A. montana* SCHLECHT., *A. princeps* PAMP., *A. schmidtiana* MAXIM., *A. vulgaris* L. var. *indica*.

Distribution: U.S.S.R.: Maritime Territory; China: Fukien, Chekiang, Szechuan, Shensi; Korea; Japan: Hokkaido, Honshu, Shikoku, Kyushu, Amami-oshima; [Taiwan, Vietnam, Malaya, India].

Subgenus: *Asterobium* HILLE RIS LAMBERS, 1938.

Type species: *Aphis asteris* WALKER, 1849

13. ***M. (A.) yangi*** TAKAHASHI, 1937.
Host plant: ?*Aster* sp.
Distribution: China: Fukien.

14. ***M. (A.) yomenae*** (SHINJI, 1922).
Syn.: *Macrosiphum yomenafoliae* SHINJI, 1922.
Macrosiphum moriokae SHINJI, 1924.
Macrosiphoniella astericola OKAMOTO et TAKAHASHI, 1927.
Host plants: *Aster ageratoides* TURCZ., *A. hayatae* LEVL. et VANT., *A.* (*Kalimeris*) *yomena*.
Distribution: U.S.S.R.: Maritime Territory; China: Szechuan; Korea; Japan: Hokkaido, Honshu, Kyushu.

Subgenus: *Chosoniella* SZELEGIEWICZ, 1980

Type species: *Macrosiphoniella myohyangsani* SZELEGIEWICZ, 1980

15. ***M. (C.) myohyangsani*** SZELEGIEWICZ, 1980.
Host plant: *Artemisia sylvatica* MAXIM.
Distribution: Korea.

Subgenus: *Phalangomyzus* BÖRNER, 1939

Type species: *Siphonophora oblonga* MORDVILKO, 1901.

16. ***M. (P.) antennata*** HOLMAN et SZELEGIEWICZ, 1978.
a) ssp. *takahashii* SZELEGIEWICZ, 1980.
Host plant: *Artemisia messerschmidtiana* BESS. var. *discolor*.
Distribution: Korea.

17. ***M. (P.) gmelinicola*** SZELEGIEWICZ, 1980.
Host plant: *Artemisia gmelini* WEB. ex STECHM.
Distribution: Korea.

18. ***M. (P.) gradicauda*** TAKAHASHI et MORITSU, 1963.
Syn.: *Dactynotus macrocaudus* TAO, 1964.
Host plants: *Artemisia montana* SCHLECHT., *A. princeps* PAMP.

Distribution: Korea; Japan: Hokkaido, Honshu, Amami-oshima; [Ryukyu, India].

19. ***M. (P.) hidaensis*** TAKAHASHI et MORITSU, 1963.
Syn.: *M. oblonga hidaensis* TAKAHASHI et MORITSU, 1963.
Host plants: *Artemisia montana* SCHLECHT., *A. princeps* PAMP.
Distribution: Korea; Japan: Hokkaido, Honshu, Kyushu, Amami-oshima.

Subgenus: *Sinosiphoniella* TAO, 1963

Type specimens: *Macrosiphoniella kuwayamai* TAKAHASHI, 1941.

20. ***M. (S.) chaetosiphon*** TAKAHASHI et MORITSU, 1963.
Host plants: *Artemisia capillaris* THUNB., *A. princeps* PAMP.
Distribution: Korea; Japan: Honshu.

21. ***M. (S.) hikosanensis*** MORITSU, 1949.
Host plants: *Artemisia montana* SCHLECHT., *A. princeps* PAMP.
Distribution: Korea; Japan: Hokkaido, Honshu, Kyushu; [India].

22. ***M. (S.) kuwayamai*** TAKAHASHI, 1941.
Host plants: *Artemisia asiatica* NAKAI, *A. feddei* LÉVL. et VANT., *A. keiskeana* MIQ., *A. princeps* PAMP. var. *orientalis*, *A. vulgaris* L. var. *indica*.
Distribution: China: Liaoning (= Manchuria); Korea; Japan: Honshu, Shikoku, Kyushu.

23. ***M. (S.) yomogicola*** (MATSUMURA, 1917).
Syn.: *Macrosiphum parvum* SHINJI, 1922.
Macrosiphoniella fulvicola SHINJI, 1933.
Host plants: *Artemisia japonica* THUNB., *A. montana* SCHLECHT., *A. princeps* PAMP., *A. schmidtiana* MAXIM., *A. vulgaris* L. var. *indica*.
Distribution: U.S.S.R.: Kurile Is.; China: Szechuan; Korea; Japan: Hokkaido, Honshu, Shikoku.

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STRESZCZENIE

[Tytuł: Mszyce rodzaju *Macrosiphoniella* del Gu. (*Homoptera, Aphididae*) z Koreańskiej Republiki Ludowo-Demokratycznej]

Praca omawia wyniki opracowania materiałów mszyc z rodzaju *Macrosiphoniella* del Gu. zebranych w Korei w latach 1959–1970. Zawiera ona opisy nowego rodzaju (*Chosoniella*), 5 nowych gatunków (*M. myohyangsani*, *M. jaroslavi*, *M. oronensis*, *M. taesongsanensis*, *M. gmelinicola*), 3 nowych podgatunków (*M. abrotani chosoni*, *M. kikungshana sylvaticae*, *M. antennata takahashii*) oraz redeskrypcje 5 mało znanych gatunków (*M. yomenae*, *M. kikingshana*, *M. yomogifoliae*, *M. grandicauda*, *M. kuwayamai*), a także dane o dalszych dwóch ga-

tunkach, z których jeden, *M. atra latysiphon*, nie był dotąd znany z Dalekiego Wschodu. Ponadto w pracy zamieszczono klucz do oznaczania wszystkich koreańskich gatunków tego rodzaju oraz skrócony katalog gatunków *Macrosiphoniella* Mandżurskiej Prowincji Palearktyki, a także klucze do oznaczania palearktycznych gatunków z grupy "*pulvera*" oraz wschodnioazjatyckich gatunków podrodzaju *Asterobium* H.R.L.

РЕЗЮМЕ

[Заглавие: Тли рода *Macrosiphoniella* DEL Gu. (*Homoptera, Aphididae*) из Корейской Народно-Демократической Республики]

В работе обсуждены результаты обработки материалов тлей из рода *Macrosiphoniella* DEL Gu., собранных в Кореи в 1959–1970 г. г. Она содержит описание нового подрода *Chosoniella*, 5 новых видов (*M. myohyangsani*, *M. jaroslavi*, *M. oronensis*, *M. taesongsanensis*, *M. gmelinicola*), 3 новых подвидов (*M. abrotani chosoni*, *M. kikungshana sylvaticae*, *M. antennata takahashii*) и переописание 5 малоизвестных видов (*M. yomenae*, *M. kikungshana*, *M. yomogifoliae*, *M. grandicauda* и *M. kuwayamai*), а также данные по еще двум видам, один из которых, *M. atra latysiphon*, не был до настоящего времени известен с Дальнего Востока. Кроме того в работе имеется ключ для определения всех видов из рода *Macrosiphoniella*, встречающихся в Кореи, краткий каталог видов этого рода из Манджурской провинции, а также ключи для определения палеарктических видов из группы „*pulvera*" и восточно-азиатских видов подрода *Asterobium* H. R. L.

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