

A new species of *Aulacorthum* Mordvilko (Homoptera, Aphididae) from Japan

by

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Aulacorthum vandenboschi nov. spec.

APTEROUS VIVIPAROUS FEMALE.

Colour in life not known. In mounted specimens body oval, large, 3.40—4.00 mm long. Tergum distinctly sclerotic and somewhat wrinkled, with only the inner apices of the frontal tubercles and the margin of the abdomen just cephalad the siphunculi brownish, remainder pale. Dorsal hairs stiff and blunt, much varying in length; those on head about 0.050 mm long, the spinal ones on the disc of abdomen only about 0.009 mm long, but the marginal hairs on the same segments up to 0.025 mm long, and the 6—8 hairs on tergite VIII up to 0.065 mm long. No marginal or spinal tubercles visible. Head on the innerside of the large, parallel frontal tubercles, and ventrally, scabrous by very short spinules; dorsally quite smooth; frontal furrow about rectangular, its depth about $\frac{1}{3}$ of the distance between antennal bases; median tubercle hardly developed. Antennae about $1\frac{1}{6}$ — $1\frac{2}{7}$ times length of body; segment I very heavily brownish black pigmented; segment II dark brown, like segment I scabrous; segment III with the very base pale, the next $\frac{2}{5}$ — $\frac{3}{5}$ part mostly pitch black and opaque, remainder brownish yellow to brown with black apex, the basal black portion with 6—15 slightly bulging, variably sized rhinaria mostly placed in a row; segment IV—VI pigmented like the lighter distal portion of segment III with the apices of segments IV and V and the apical part of the base of segment VI blackish brown; processus terminalis not much longer than segment III, 5—6 times as long as base of segment III; hairs on segment III stiff and rather thick with only slightly thinner apices, the longest ones $\frac{2}{5}$ of basal diameter of the segment. Rostrum reaching to the hind coxae or just past; last segment normal, about $1\frac{1}{3}$ times as long as second joint of hind tarsi, with about 6—8 hairs besides the 3 subapical pairs. Siphunculi about $\frac{1}{4}$ — $\frac{2}{7}$ of length of body, brownish black with base and often a part on distal half brown, strongly imbricated, cylindrical with expanded base and a rather marked attenuated distal $\frac{1}{7}$ part, thin, half-way distinctly thinner than the middle portion of hind tibiae, 20—25 times as long as their half-way width, with a rather wide flange. Cause pale, elongated conical, blunt, $\frac{1}{2}$ — $\frac{5}{8}$ of the siphunculi, with 7 long hairs, all acute, except in one specimen in which the dorso-apical hair has a furcated apex. Legs long; femora on distal half deep black, basad from the middle lighter to brownish yellow; tibiae brownish yellow with distal $\frac{1}{6}$ part pitch black; dorsal hairs half-way tibiae $\frac{4}{5}$ —1 times local width of the tibiae; first tarsal joints with 3, 3, 3 hairs.

Measurements in mm

No.	Length body	Ant.	Ant. segments				Siph.	Cau.	Rhin. on III
			III	IV	V	VI			
1.	3.83	4.59	1.11	0.91	0.77	(0.25 + 1.13)	0.95	0.50	11 & 11
2.	3.99	5.18	1.20	1.05	0.83	(0.25 + 1.40)	1.00	0.53	8 & 8
3.	3.87	5.09	1.21	1.05	0.80	(0.26 + 1.47)	0.98	0.49	9 & 9
4.	4.03	5.37	1.32	1.02	0.87	(0.26 + 1.47)	1.06	0.60	10 & 15
5.	3.96	5.33	1.28	1.06	0.92	(0.25 + 1.38)	1.03	0.53	10 & 10
6.	3.92	5.37	1.29	1.01	0.92	(0.25 + 1.47)	1.06	0.61	9 & 10
7.	3.79	?	1.18	0.88	0.71	(0.21 + ?)	0.89	0.54	6 & 6
8.	3.44	?	1.12	0.86	0.66	(0.19 + ?)	0.85	0.52	8 & 8

(1—6, from *Cirsium* sp., Mt. Kongo near Osaka, Japan, 29.V.1964, leg. R. VAN DEN BOSCH; 7—8, from *Cirsium* sp., Mt. Iwawaki near Osaka, Japan, 29.V.1960, leg. M. SORIN).

ALATE VIVIPAROUS FEMALE

The single specimen after mounting with the head light brown, with the frontal tubercles and an area around the lateral ocelli blackish brown, thorax brown, abdomen membranous with the usual *Aulacorthum* sclerotic pattern of brown marginal sclerites, and large pleural intersegmental sclerites which on tergite III are connected by a thin sclerotic bar, which on tergite II is fragmented. Antennae similarly pigmented as in apterae, but much darker and with segment III completely blackish, with the rhinaria in a nearly single row up to near apex. Siphunculi not black but dark brown and not much darker than the cauda which is more slender and slightly more acute than in apterae. Legs with the femora over at least distal $\frac{3}{4}$ part black, the tibiae yellowish brown with black distal part. Wings with normal venation, the veins rather pale brown, especially the basal one distinctly but diluted bordered. Other characters as in apterae.

Measurements in mm

Length body	Ant.	Ant. segments				Siph.	Cau.	Rhin. on III
		III	IV	V	VI			
4.00	5.35	1.17	1.10	0.87	(0.26 + 1.55)	0.93	0.47	26 & 27

(With apterae no. 1—6).

DISCUSSION. This gigantic *Aulacorthum* in life apparently looks like a *Dactynotus* for one of my colleagues mistook it in the field for *D. giganteus* Mats. The single alate helps to confirm that the species really belongs in *Aulacorthum* Mordv.

Recently the late Dr. TAKAHASHI (1965) published a key to the species of *Aulacorthum* known to him, after having presented me with material of nearly all species mentioned in that key. With the key one arrives at *Aulacorthum circicola* (Takahashi, 1923), originally described in *Macrosiphum* Passerini, later

(1931) transferred to *Acyrtosiphon* Mordv. Indeed most characters mentioned by TAKAHASHI (1965) hold for our specimens.

Dr. SORIN identified some specimens that I sent him as *Aulacorthum circicola* Tak., and when I doubted this determination, he sent me a slide of the same species collected on the same data as mine but 4 years earlier on *Cirsium*, Mt. Iwawaki near Osaka by Dr. SORIN and identified by Dr. TAKAHASHI as *Aulacorthum circicola*. This still did not convince me, for years ago I had received a slide of a quite different *Aulacorthum circicola* Tak. identified by Dr. TAKAHASHI. The specimens in the latter slide agree with the original description, but the specimens described here as *Aulacorthum vandenboschi* do not agree with that description.

The following differences are present (characters of true *circicola* between brackets):

1. Antennae less than 1.3 times the length of the body (1.6—1.7 times).
2. Processus terminalis 1—1.2 times the length of antennal segment III (1.6—1.8 times).
3. Antennal segment III in apterae with 6—15 rhinaria (4—8 rhinaria).
4. Last rostral segment 1.3 times second joint of hind tarsi (1.4—1.5 times).
5. Siphunculi 20—25 times as long as their diameter half-way their length (10—12 times).
6. Siphunculi blackish brown with the very base paler (siphunculi pale with the very apex dusky).

Some of the differences might be caused by my specimens being fundatrices, but this is excluded because of the measurements of the alata which belongs to the same generation as the apterae.

One first instar larva is available. Antennae of 5 segments with 3 hairs on segment III, 2 long and 2 short ones on base of V; hairs on vertex to 0.065 mm long, with fine apices, on abdominal dorsum much shorter and rather blunt; first tarsal joints with 3, 3, 3 hairs; last rostral segment with 4 hairs besides the 3 sub-apical pairs; no spinules on hind tibiae.

The species is named for my friend and colleague Dr. Robert VAN DEN BOSCH, Berkeley, California who collected this and many other aphids in Japan for me.

TYPES. Holotype: Apterous viviparous female (measurements no. 1), from *Cirsium* sp., Mt. Kongo near Osaka, 29.V.1964, leg. R. VAN DEN BOSCH no. J-64-V-29c. Paratypes: Apteræ viviparæ and one alata vivipara with data as for holotype; two apterae viviparæ from *Cirsium* sp., Mt. Iwawaki near Osaka, 29.V.1960, leg. M. SORIN, identified by R. TAKAHASHI as *Aulacorthum circicola* Tak.

References

- TAKAHASHI, R., 1923, Aphididae of Formosa, part. 2. *Dept. Agric. Formosa Report* 4: 1—173.
- , 1931, Aphididae of Formosa, part 6. *Dept. Agric. Formosa Report* 53: 1—127.
- , 1965, Some species of *Aulacorthum* from Japan (Aphididae, Homoptera). *Insecta Matsumurana* 27: 99—113.