

# Two new aphids from Switzerland (Aphididae, Homoptera)

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## Two new aphids from Switzerland (Aphididae, Homoptera)

by

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### Abstract

*Utamphorophora alpicola* sp. n., presumably living on *Asplenium* sp., the first member of the genus known from Europe, is described from Switzerland. *Xenomyzus alpestris* gen. n., living, with ants, on the bark of *Lonicera xylosteum*, sometimes together with *X. corticis* AIZENBERG, is described from Austria, Switzerland and France.

### *Utamphorophora alpicola* sp. n. (fig. 1)

Apterous viviparous female

Colour in life : shiny black. In mounted specimens body about 1.65–1.70 mm long, rather slenderly oval. Head blackish sclerotic, pro- and mesonotum sclerotic, but paler ; metanotum solidly fused with abdominal tergites I–VI to a dark shield which laterally, and spinally between metanotum and tergite I, and between tergites V and VI, shows some perforations. Integumentum dorsally smooth, without pattern. Dorsal hairs sparse, blunt, on tergites I–III only about 0.010–0.015 mm long, the 4 hairs on tergite VIII 0.016–0.026 mm long. Extremely small marginal tubercles irregularly present on tergites II–V, but no spinal tubercles present. Head on underside slightly scabrous. Frontal tubercles very well developed, with parallel or slightly diverging inner sides, apically almost rectangular, slightly scabrous ; frontal furrow wide, with almost flat bottom or with an insignificant median process. Antennae longer than body, in dark specimens as dark as the head, in pale specimens with a large part of segment III pale ; segment I ventrally denticulate ; segment III especially basally distinctly imbricate, on a slightly enlarged part at a considerable distance from base with 1–2 rather large, slightly elevated, sunk rhinaria with flat membrane ; primary rhinaria not larger than secondary rhinaria ; processus terminalis with 1–3 hairs besides the apical ones. Rostrum reaching to just past middle coxae ; last segment about 0.115–0.125 mm long, about

$1\frac{1}{3}$  times as long as second joint of hind tarsi, with 4-6 hairs besides the 3 subapical pairs. Legs rather long and slender; femora rather scabrous, from dark smoky, paler towards base, to rather evenly blackish

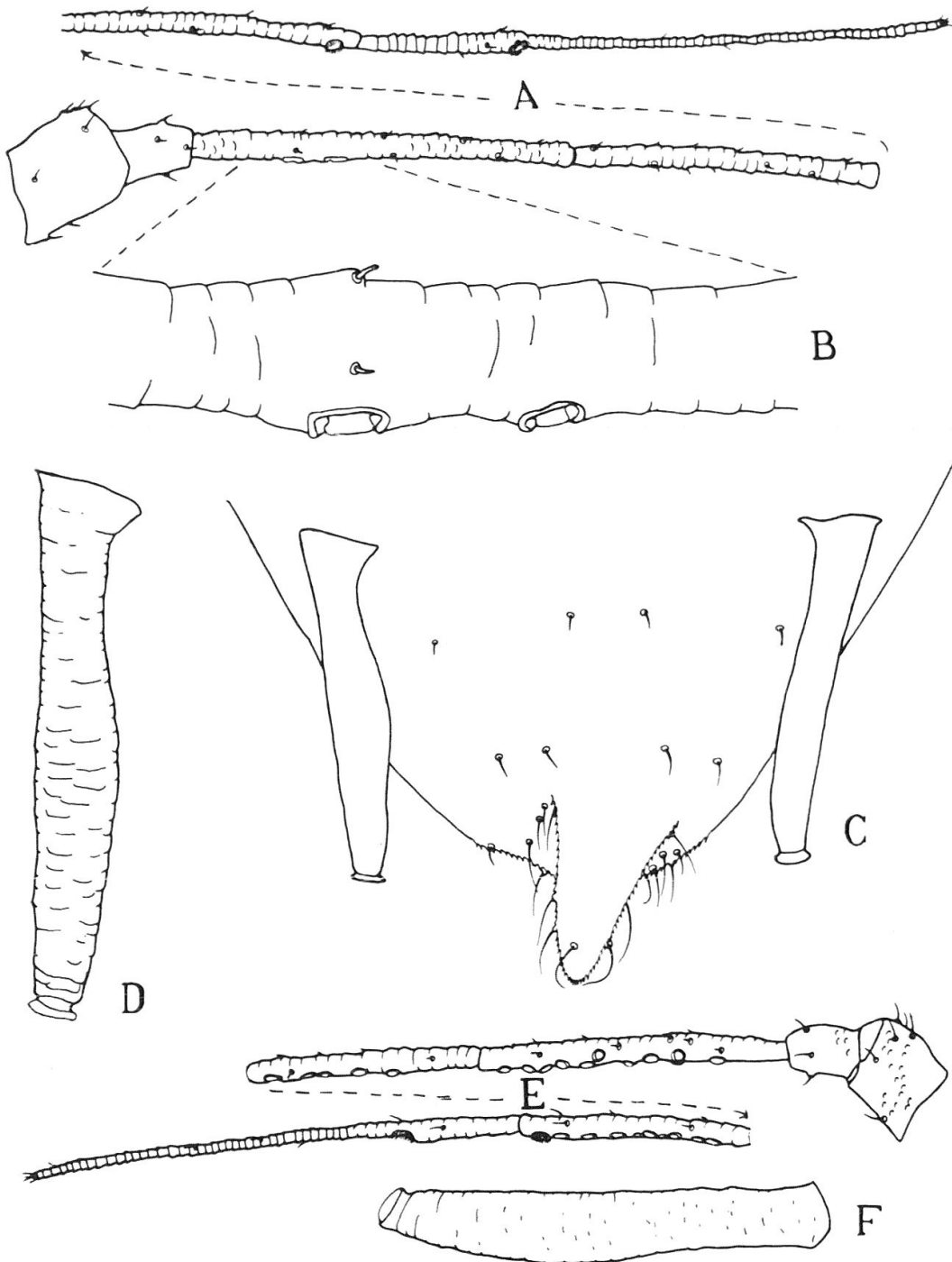


Fig. 1. — *Utamphorophora alpicola* sp. n. Apt. viv. fem.: A. antenna,  $\times 117$ ; B. part of segment III enlarged,  $\times 565$ ; C. hind part of abdomen,  $\times 117$ ; D. left siphunculus,  $\times 175$  Apt. male: E. antenna,  $\times 117$ ; F. siphunculus,  $\times 175$ .

brown; tibiae yellowish to brownish yellow with dark apices and sometimes faintly darker bases, smooth, with sloping, very short, dorsal hairs and longer, pointed, ventral hairs; first tarsal joints with 3, 3, 3 hairs, the middle one just shorter than the lateral ones; second tarsal joints short, with only few imbrications. Stigmal pori of abd. segments IV-VII at about mutually equal distances. Siphunculi dark, about  $\frac{2}{9}$  of length of body, evenly superficially imbricated, swollen, with largest width at or past the middle and  $1\frac{1}{4}$ - $1\frac{4}{9}$  times smallest width more basad, markedly constricted below the small, rather thick flange, and in the constriction only about  $\frac{1}{2}$ - $\frac{3}{5}$  of the smallest diameter on basal half. Cauda  $\frac{3}{7}$ - $\frac{1}{2}$  of the length of the siphunculi, dark, triangular without or with the faintest constriction, bluntish, with 5 curved, normally acute, hairs.

#### Measurements in mm.

No.	Length body	Ant.	Ant. segments				Rhin. on III	Siph.	Cau.
			III	IV	V	VI			
1	1.68	1.80	0.40	0.34	0.31	0.17 + 0.41	2 & 2	0.38	0.17
2	1.69	1.74	0.38	0.31	0.30	0.16 + 0.43	1 & 2	0.35	0.17

(1-2, threshed, Breitlauern above Interlaken, Switzerland, 10.IX.66, leg. D.H.R.L., No. 471).

#### Oviparous female (from one specimen)

Colour in life: blackish. In mounted specimens much like apterae viviparae, but only the head dark sclerotic, the rest membranous, but colourless except for brownish, small and narrow intersegmental sclerites on abdomen. Antennae missing but for the basal segments, and a piece of segment III with one rhinarium. Hind tibiae pigmented like the other tibiae, on the hardly swollen  $\frac{1}{5}$ - $\frac{1}{4}$  part with 12 and 18 pseudosensoria. The rest as in apt. viv. female.

#### Measurements in mm.

Length body	Rhin. on III	Siph.	Cau.
1.62	1 & ?	0.34	0.16

(with the apterae viviparae).

#### Apterous male (from one specimen)

Colour in life: shiny black. In mounted specimen body much narrower than in apterae viviparae. Head blackish sclerotic, but sclerotisation of thorax reduced, and abdomen with mutually quite free, rather narrow, often broken, darkish, spino-pleural bars. Frontal tubercles rather low. Antennae blackish; segment III with 17 rhinaria similar to those in apt. viv. fem., irregularly grouped along one side, the most basal one rather conspicuously far from base of segment;

rhinaria on segments IV and V almost in single file. One hind tibia with a pseudosensorium. Siphunculi shorter and not more slender than in apt. viv. fem. Cauda more fingertip-shaped, very blunt. Genitalia normal. Other characters as in apt. viv. fem.

#### Measurements in mm.

Length body	Ant.	Ant. segments				Rhin. on segments			Siph.	Cau.
		III	IV	V	VI	III	IV	V		
1.21	1.45	0.33	0.23	0.23	0.13 + 0.37	17 & 17	6 & 8	9 & 9	0.27	0.12

(with the apterous females).

### Discussion

The specimens described above were threshed off the low vegetation on a stone wall near the railway station Breitlauern above Interlaken. The vegetation consisted of grasses, *Alchemilla* and *Asplenium* spp. In a tube they refused grasses and *Alchemilla*. *Asplenium* was overlooked as a potential host. This was very stupid because the similar, but pale *U. filicis* MIYAZAKI from Japan lives on ferns, and MORDVILKO (1929) mentions a "*Myzodes*" *osmundae* n. sp. from Ferns. It is known from MORDVILKO'S (1914) book that he included also species with rhinaria in apterae in his genus *Myzodes* (*Myzus* subgen. *Nectarosiphon* SCHOUTEDEN), e.g., *M. prokovskajae* MORDV. Unfortunately Dr. SHAPOSHNIKOV, Leningrad, could not find a trace of "*Myzodes*" *osmundae* or *M. prokovskajae* in the MORDVILKO collection. *Myzodes osmundae* MORDV. is a nomen nudum, possibly for *Utamphorophora filicis* MYAZAKI, because MORDVILKO writes that *Atarsos orientalis*, a synonym of *Shinjia pterydifoliae* SHINJI, occurs on the same host in the same area.

*U. alpicola* differs from all described aphids belonging in *Utamphorophora* by its blackish or black colour, and the extensive sclerotisation of the apterae viviparae. Evidently it has no host alternation.

Types. Holotype: apterous viviparous female (no. 1 of measurements), threshed from unidentified plant on a wall at the Breitlauern stop of the Schynige Platte railway above Interlaken, Switzerland, 10.IX.1966, leg. D. H. R. L., no. 471, in the company of Dr. W. MEIER. Paratypes: aptera vivipara, ovipara and male with collecting data as for holotype. In the author's collection.

### ***Xenomyzus alpestris* sp. n. (fig. 2, 3, 4)**

#### Fundatrix

Colour in life: dirty blackish brown, very dull, with whitish siphunculi; body very swollen, ventrally flattened; in alcohol some turn orange-brown, others, especially smaller specimens, olive-green. Mounted specimens much like later apterae viviparae, but body larger and broader than in viviparae. Antennae comparatively little shorter,

but processus terminalis only  $2-2\frac{1}{4}$  times as long as base of segment VI. In one specimen hind tibiae on distal half dorsally with some long and fine hairs. Siphunculi less attenuated in middle, nearly cylindrical. Cauda thick and blunt, more or less fingertip-shaped.

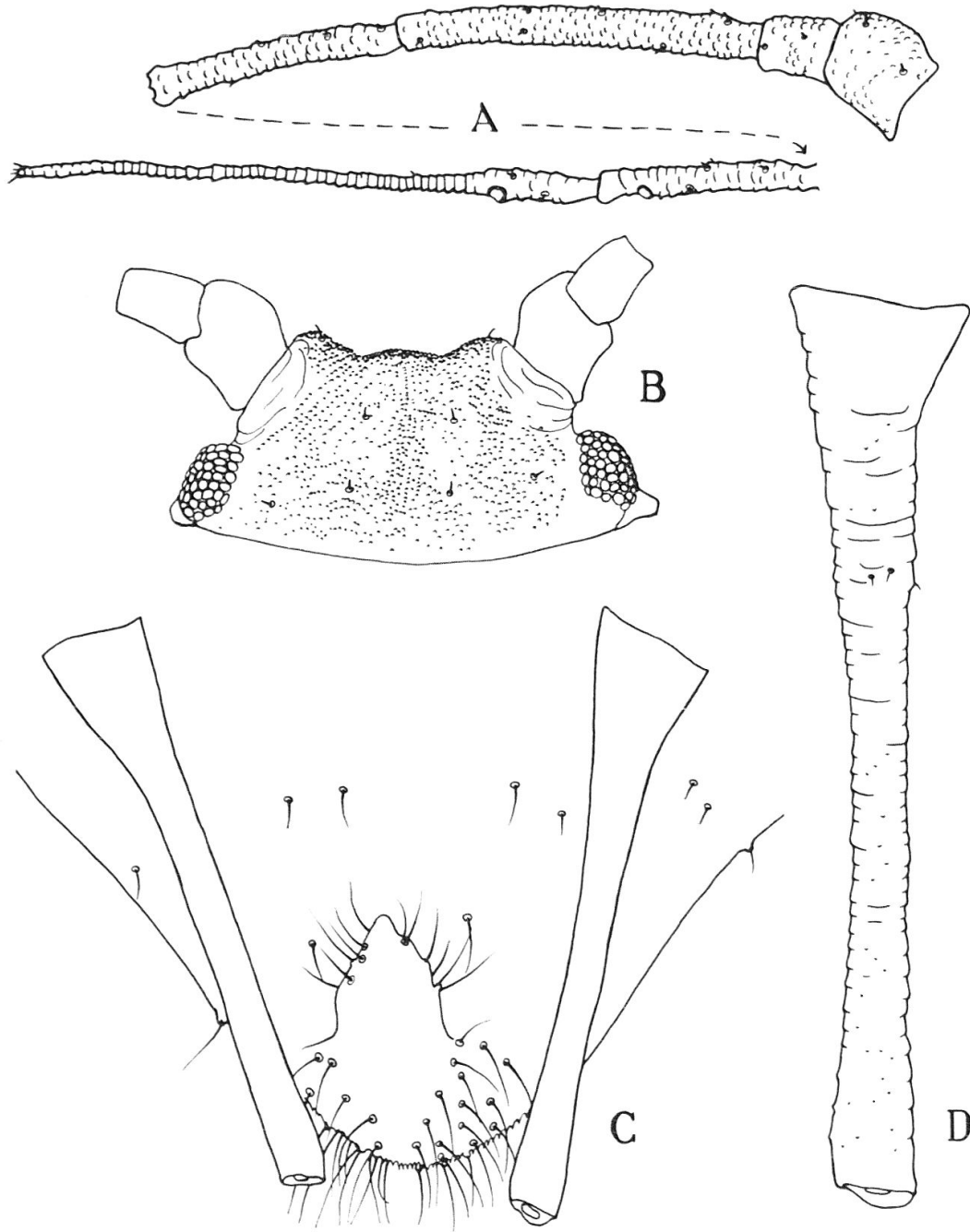


Fig. 2. — *Xenomyzus alpestris* sp. n. Apt. viv. fem. : A. antenna,  $\times 112$  ; B. head,  $\times 112$  ; C. hind part of abdomen,  $\times 112$  ; D. right siphunculus,  $\times 170$ .

## Measurements in mm.

No.	Length body	Ant.	Ant. segments				Siph.	Cau.
			III	IV	V	VI		
1	2.70	1.65	0.41	0.32	0.26	0.15 + 0.32	0.65	0.19
2	2.78	1.64	0.37	0.32	0.28	0.14 + 0.34	0.69	0.18

(1-2, from *Lonicera xylosteum*, Zeneggen über Visp, 27.V.50, leg. D.H.R.L. 214-50).

## Apterous viviparous female

Colour in life : brown. In mounted specimens body about 1.70–2.20 mm long, broadly oval, bloated. Tergum membranous, colourless, especially marginally covered with a dense zig-zag pattern of fine acute ridges ; small, faintly brownish, pleural intersegmental sclerites sometimes present. Dorsal hairs very inconspicuous, very short, only 0.004 mm long, blunt, but on tergite VIII 0.016–0.045 mm long and sometimes with thin apices ; also ventral hairs mostly quite short, about 0.020–0.030 mm long, but sometimes, especially caudad, a few longer and fine hairs present of up to 0.045 mm long. Spinal or marginal tubercles absent. Head rough by rows of fine spinules, faintly brownish. Front low w-shaped, the frontal tubercles about twice as high as the median process, diverging, but rather rounded on innerside. Antennae  $\frac{3}{4}$ – $\frac{4}{5}$  of length of body, with most of segment III pale, rest of flagellum dark to blackish brown ; flagellum rather sharply imbricated with scales that are quite small on segment III, not more numerous but broader on more distal segments ; segment III without rhinaria ; processus terminalis sometimes with one hair near base besides those at apex ; hairs on segment III blunt with faintly swollen apex, up to 0.006 mm long, about  $\frac{1}{6}$  of basal diameter of segment. Rostrum nearly reaching hind coxae ; last segment about 0.15–0.17 mm long, normal, about  $1\frac{1}{3}$ – $1\frac{3}{8}$  times second joint of hind tarsi, with 3–6 hairs besides the 3 subapical pairs. Legs pale with brownish apices to the tibiae ; tibiae at least on basal half with very short hairs like those on dorsum, on distal half sometimes with some long and fine hairs ; first tarsal joints with 3, 3, 3 hairs, of which the middle hair may be longer (French specimens) or shorter (Swiss fundatrices) than the lateral hairs. Siphunculi thinnest in the middle and often as thin as middle portion of hind tibiae, from where they gradually widen to base and apex, at the very apex tapering, pale,  $\frac{1}{4}$ – $\frac{2}{7}$  of length of body ; dorsally very indistinctly and superficially, bluntly, imbricate ; ventrally with a few more or less distinct spinulose imbrications, with 1–7 very short, easily overlooked, apically incrassate hairs on dorsal and outer side on basal  $\frac{3}{5}$  part, without a trace of a flange. Cauda brownish, only  $\frac{1}{5}$ – $\frac{1}{4}$  of the siphunculi, with basal half more or less cylindrical, apical half more conical and rather acute, with about 9–13 strongly curved, acute hairs. Subgenital plate with rather numerous long or short hairs, especially laterally and caudally.

## Measurements in mm.

No.	Length body	Ant.	Ant. segments			Siph.	Cau.	
			III	IV	V			
1	2.15	1.82	0.44	0.35	0.27	0.12 + 0.47	0.60	0.14
2	2.05	1.57	0.36	0.26	0.22	0.11 + 0.47	0.57	0.13
3	1.80	1.47	0.28	0.22	0.22	0.11 + 0.48	0.53	0.11
4	1.77	1.41	0.30	0.20	0.21	0.12 + 0.43	0.45	0.11
5	1.87	1.42	0.30	0.21	0.24	0.12 + 0.40	0.52	0.12
6	2.19	1.49	0.39	0.34	0.31	0.12 + 0.53	0.64	0.14

(All from *Lonicera xylosteum*; 1-2, Johannisberg, Austria, 15.VII.56, leg. H. FRANZ No. 37; 3-6, Villeneuve, Hautes Alpes, France, 2.IX.66, leg. G. REMAUDIÈRE).

Alate viviparous female (from one specimen)

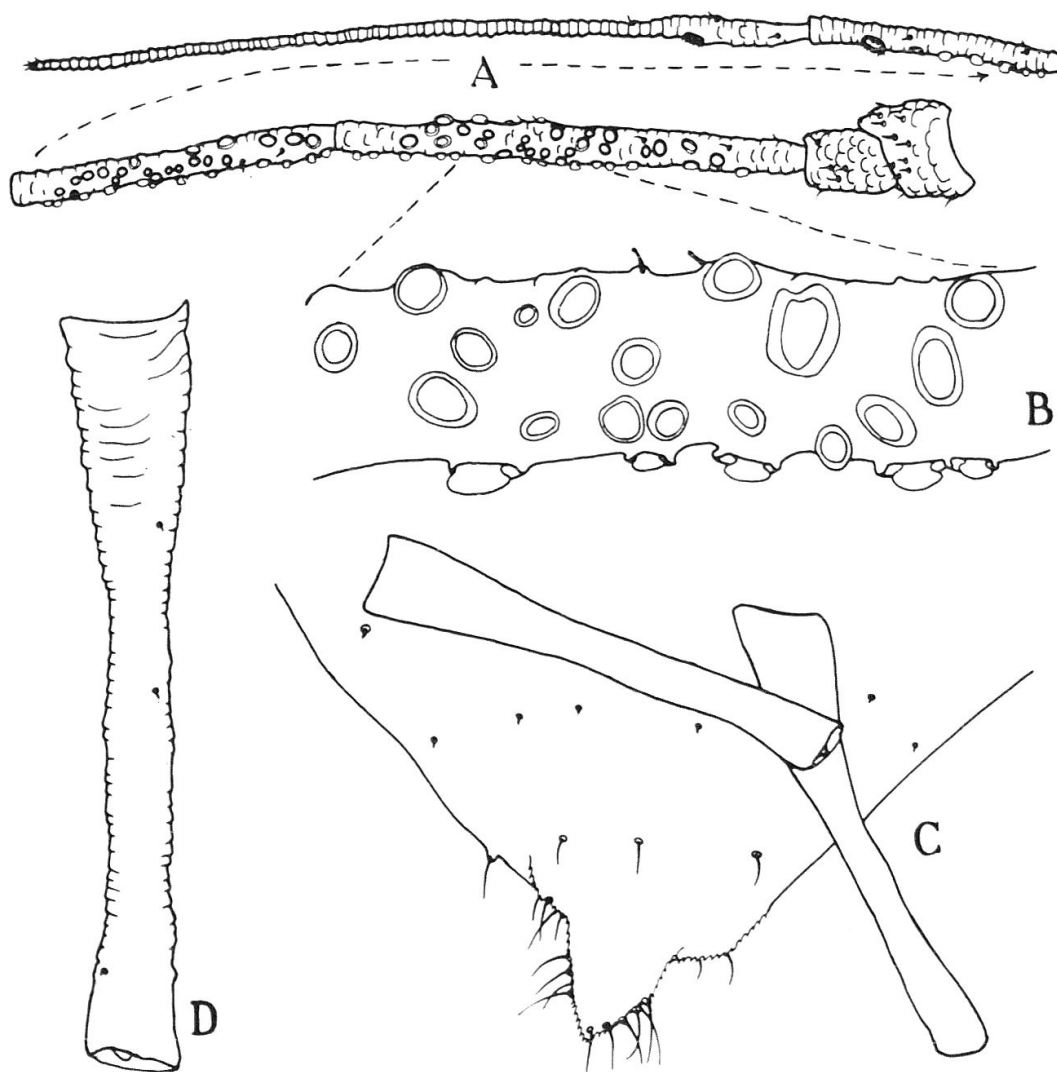


Fig. 3. — *Xenomyzus alpestris* sp. n. Al. viv. fem.: A. antenna,  $\times 112$ ; B. part of segment III enlarged,  $\times 550$ ; C. hind part of abdomen,  $\times 112$ ; D. left siphunculus,  $\times 175$ .



Colour in life not known. In mounted specimens head and thorax blackish sclerotic. Abdomen membranous with small pale brownish marginal sclerites. Antennae dark; segment III only near base with small rough scales, the rest with normal, faint, imbrications; rhinaria scattered, slightly elevated, with strongly bulging membranes, mostly very small, with very few normal sized ones with an outer diameter of 0.017 mm; primary rhinarium on segment V conspicuously far from apex of segment, apparently without hairy fringe. Wings evenly smoky through small scales, with rather heavy brown veins and brownish grey stigma; venation normal. Legs dark like antennae with pale femoral bases, and slightly lighter middle portions of tibiae. Siphunculi with smoky apical part. Other characters about as in apterous viviparous females.

#### Measurements in mm.

No.	Length body	Ant. III	Ant. segments			VI	Rhin. on segments			Siph.	Cau.
			IV	V			III	IV	V		
1	1.77	1.78	0.41	0.29	0.25	0.11 + 0.58	55 & 61	41 & 33	6 & 8	0.44	0.12

(with apterae Nos. 1-2).

#### Oviparous female

Colour in life like apterous viviparous female. In mounted specimens very much like apterae viviparae, but antennae, distal half of siphunculi and cauda darker, to blackish brown. Femora dark to blackish brown with paler base; fore and middle tibiae brownish yellow with blackish brown apex, but hind tibiae with basal  $\frac{2}{5}$  part quite dark, just perceptible swollen on basal  $\frac{1}{3}$  part and there, on innerside, with 8-15 round to oval pseudosensoria; more distal portion pigmented like fore tibiae, with blackish brown apex.

#### Measurements in mm.

No.	Length body	Ant.	Ant. segments			VI	Siph.	Cau.
			III	IV	V			
1	2.09	1.59	0.35	0.27	0.27	0.11 + 0.43	0.53	0.14
2	1.91	1.60	0.36	0.31	0.24	0.11 + 0.42	0.55	0.12
3	1.90	1.48	0.30	0.26	0.23	0.10 + 0.44	0.54	0.12
4	1.84	1.38	0.27	0.22	0.22	0.11 + 0.42	0.51	0.12
5	1.81	1.32	0.25	0.21	0.21	0.11 + 0.40	0.49	0.11

(with apterae viviparae Nos. 3-6).

#### Apterous male (from one specimen)

Colour in life not known. Body much narrower than in apterous females, with quite the same sclerotisation or lack of it. Extremities pigmented as in oviparae but all tibiae the same. Rhinaria as in alate female but imbrication of ant. segment III as in apterous viviparous

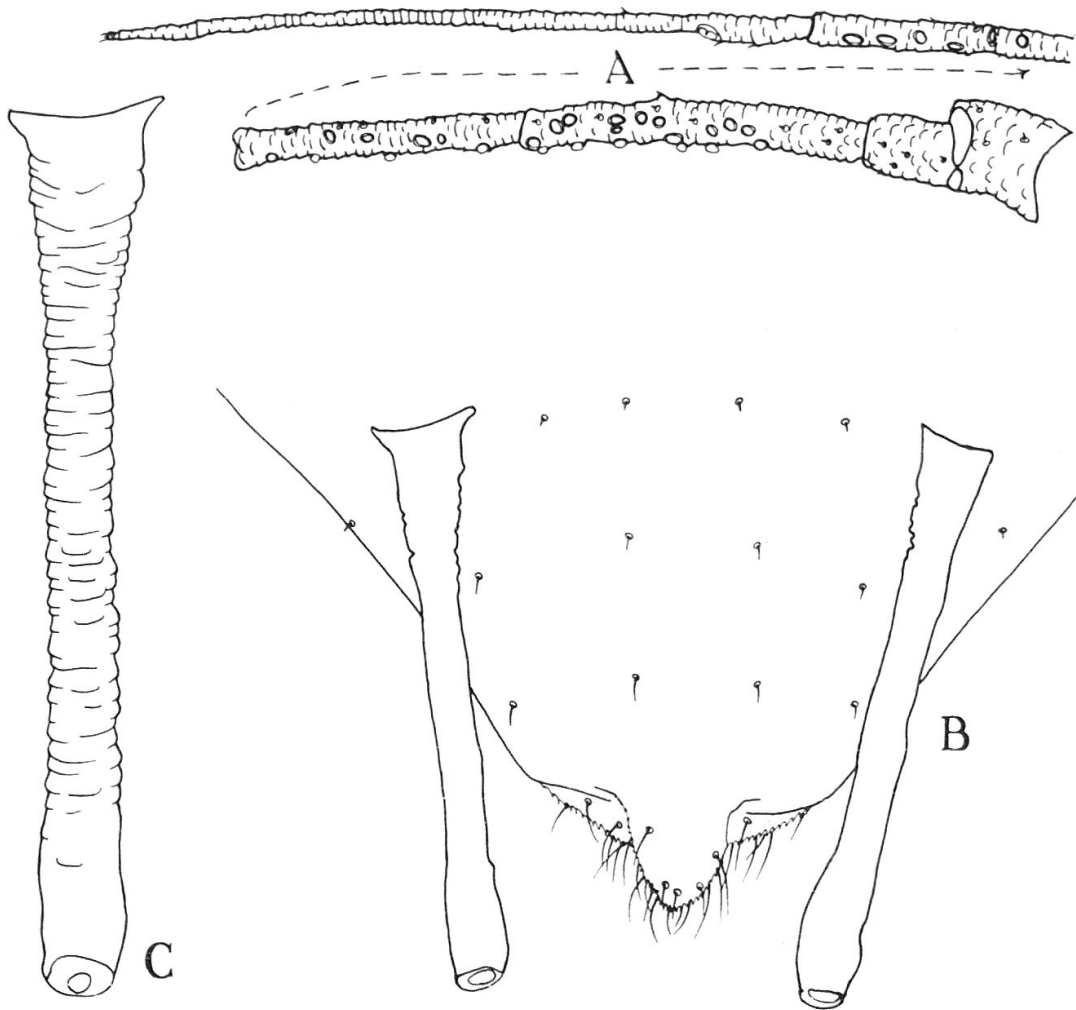


Fig. 4. — *Xenomyzus alpestris* sp. n. Apt. male: A. antenna,  $\times 117$ ; B. hind part of abdomen,  $\times 117$ ; C. left siphunculus,  $\times 175$ .

female. Siphunculi apparently without hairs. Cauda on distal half with convex sides, rather blunt, shorter than its basal width. Genitalia normal.

#### Measurements in mm.

Length body	Ant.	Ant. segments				Rhin. on segments			Siph.	Cau.
		III	IV	V	VI	III	IV	V		
1.69	1.52	0.30	0.25	0.22	0.11 + 0.49	20 & 23	10 & 13	5 & 4	0.49	0.10

(with apterae viviparae Nos. 3-6).

#### Discussion

In 1950 I collected *Xenomyzus* on the bark of *Lonicera xylosteum* near Zeneggen, Switzerland, and these fundatrices appeared to be a mixture of two forms: one with very long and fine hairs on antennal

III and the legs, the others with quite short and blunt hairs. I had co-types of the long-haired *X. carpathicus* KNECHTEL & MANOLACHE, but it was not clear which hairs *X. corticis* AIZENBERG had. Dr. AIZENBERG did not reply to letters. Later Prof. H. FRANZ, Vienna sent for identification an alate and some apterae of the short-haired aphid, and it was also sent by Dr. G. REMAUDIÈRE, Paris. Description was not possible until Dr. J. HOLMAN, Prague, most kindly examined AIZENBERG's types in Moscow and wrote to me that his *corticis* was the long-haired species.

The generic name should first be discussed. *Acanthulipes* BÖRNER, 1952, type-species *Alphitoaphis carpathica* KNECHTEL & MANOLACHE, 1942, is a full synonym of *Xenomyzus* AIZENBERG, 1936, type-species *Xenomyzus corticis* AIZENBERG, 1936, by identity of type-species. But BÖRNER (1952) in the Addenda to his book (p. 271) declared that *Acanthulipes* was a synonym of *Trichosiphonaphis* TAKAHASHI, 1922, typus generis *Myzus polygoniformosanus* TAKAHASHI, 1921. That would mean that also *Xenomyzus* AIZENBERG would become a synonym of *Trichosiphonaphis* TAKAHASHI.

But TAKAHASHI (1961) did not agree with this synonymy. He erected two genera, *Metaphorodon* gen. nov., type-species *Phorodon ishimikawae* SHINJI, 1941, and *Aphorodon* gen. nov., type-species *Myzus polygonifoliae* SHINJI, 1944, for aphids that are very similar to *Trichosiphonaphis* but that have, like *Xenomyzus corticis*, no flange to the siphunculi. The differences between *Metaphorodon* and *Aphorodon* that TAKAHASHI mentions are not very important, and not quite correct as to the sensoriation of the alata's antennae (alate *Aphorodon polygoniphaga* TAKAHASHI, 1961 has rhinaria on ant. segments III-V, and not only on III as they should have). Consequently, if TAKAHASHI (1961) is followed, *Metaphorodon* TAKAHASHI, 1961, and *Aphorodon* TAKAHASHI, 1961, become synonyms of *Xenomyzus* AIZENBERG, 1936, but *Xenomyzus* can be maintained as a taxon separate from *Trichosiphonaphis* TAK.

*Xenomyzus alpestris* sp. n. differs from *X. corticis* AIZENBERG only in length of hairs. They live on the same host specimens attended by *Lasius fuliginosus*, have in life the same colour, and, in everything but the hairs, the same structure. Of both species fundatrices, apterae viviparae and the sexuales were compared. I have not seen alate viviparae of *X. corticis* AIZENBERG.

I could study specimens of *X. corticis* from the Moscow area of Russia, from Poland, Romania, Czechoslovakia, Austria and Switzerland. *X. alpestris* has only been found in Austria, Switzerland and the French Alps.

I am much obliged to Dr. G. REMAUDIÈRE for permitting me to describe also material sent for identification by him, including the sexuals of which I had no other specimens.

Types. All from *Lonicera xylosteum*. Holotype : apterous viviparous female (no. 1 of measurement), Johannisberg, Austria, 15.VIII.1956,

leg. H. FRANZ no. 37, in the author's collection. Paratypes : apterous and alate viviparous females and oviparae from Villeneuve (Hautes Alpes), France, 2.IX.1966, leg. G. REMAUDIÈRE ; fundatrices from Zeneggen über Visp, Switzerland, 27.V.1950, leg. D. H. R. L. 214-1950 ; in the collection of the author, and that of Dr. G. REMAUDIÈRE, Paris.

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