

## Review of mining flies of the genus *Aulagromyza* ENDERLEIN (Diptera: Agromyzidae). II

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### Abstract

A species of *Aulagromyza* is described as new to science: *A. arctica* (type-locality: Novaya Zemlya Island). The description, diagnosis and illustration of male genitalia are provided.

**Keywords:** Agromyzidae, *Aulagromyza*, new species, North Russia.

### Introduction

The taxonomy of species currently placed in the genus *Aulagromyza* ENDERLEIN (1936) of highly dramatic history. Originally the genus *Aulagromyza* was erected for *Phytagromyza hamata* HENDEL on the basis of the absence of second cross-vein and the great elongation of the proboscis. The genus *Aulagromyza* was resurrected from synonymy by TSCHIRNHAUS after examination of male terminalia of the type species and he greatly expanded the generic concept. In the past these species were placed in the genera *Paraphytomyza* ENDERLEIN, *Phytagromyza* HENDEL, *Phytomyza* FALLEN, *Rubiomyza* NOWAKOWSKI. According to this definition the genus includes 52 described world species, 40 of them occur in the Palaearctic region. One species is endemic for the Australian region, three are endemic for the Oriental region, and seven for the Nearctic region. The larvae feed in the leaf and stem of following plant families: Brassicaceae, Fabaceae, Rosaceae, Salicaceae, Apocynaceae, Asteraceae, Caprifoliaceae, Dipsacaceae, Oleaceae, and Rubiaceae.

The monophyly of the genus *Aulagromyza* Enderlein is doubtful. This article continues the series dealing with clarification of species composition of the Palaearctic *Aulagromyza* (ZLOBIN, 2007).

## Materials and Methods

The present study is based on the collection of the Zoological Institute of the Russian Academy of Sciences (St.-Petersburg, Russia). The terminology follows SPENCER (1976), and for abbreviations and measurements see SASAKAWA (1961). The male genitalia were macerated with 10% KOH and transferred to distilled water for dissection. After drawings of each essential structure, the genitalia with pregenital abdominal segments were put into a polyethylene tubule with glycerol and the tubule was pinned with the specimen. The type specimen of the new species is deposited in the collection of the Zoological Institute, St.-Petersburg, Russia. In each figure, the scale bar indicates 0.1 mm.

### Systematic account

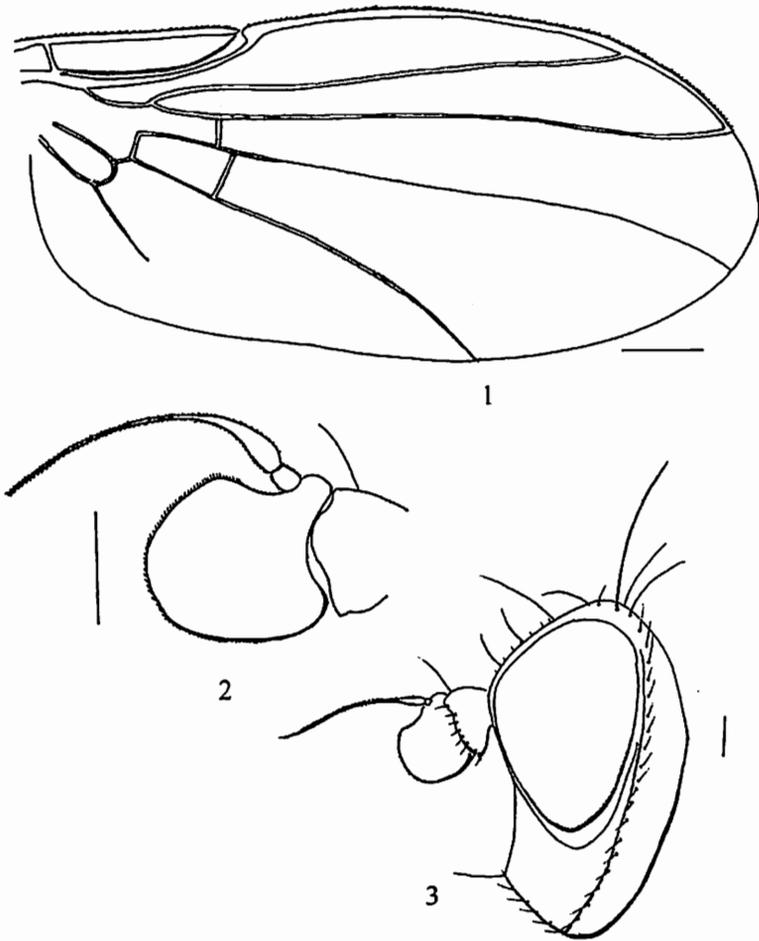
#### *Aulagromyza arctica* sp.nov.

(Figs 1-9)

**Material examined.** Holotype male: Russia, Novaya Zemlya Is., Nochuev creek, Matochkin Shar strait, 31.VII.1925 (leg. VAKULENKO).

**Derivatio nominis:** The name refers to the locality of origin.

**Male.** Frons distinctly narrowing anteriorly, at level of front ocellus about twice width of eye. Frontal plate ill differentiated, not projecting anteriorly. Ocelli forming small isoscelent triangle. *oc* long. Frontal vitta narrow (exact width not detectable, as head somewhat shrunk). Orbits broad, at level of front ocellus 2/3 width of frons. 2 *ors*, the lower *ors* long, slightly proclinate; the upper *ors* about twice shorter than lower, directed outwards. 2 incurved *ori*. Orbital setulae sparse, short, upright. Lunule broad, low. Antennal bases approximated. Third antennal segment moderately large, slightly longer than broad, slightly concave above, bluntly angular at upper corner, broadly rounded anteriorly, uniformly covered with short pubescence. Arista short, normal, swollen at base, covered with short pubescence. Face higher than broad. Keel low. Eye oval, vertical, covered with dense whitish pubescence. Cheeks forming narrow ring below eye. Jowls unusually broad, deepest at rear, about 0.6 height of eye. *vi* present, relatively short. Peristomal margin slightly convex, 5-6 short peristomal setulae. Epistoma absent. Mouth margin slightly angular centrally. Palps distinctly broadening apically. Proboscis short, normal. Humerus with 1 strong bristle plus 5-6 setulae. 3+1 strong *dc*. Presutural *dc* as long as 3. *dc. acr* sparse, in 3-4 irregular rows, extending to level of 1. *dc. prsc* absent. Interlar setulae in 3-4 irregular rows, sparse. *ipa* about 2/3 length of *opa*. Scutellum with 4 strong bristles of equal length and at apex with a pair of short setulae. Wing tip with apex midway between terminations of  $R_{4+5}$  and  $M_{1+2}$ . Costa extending to vein  $R_{4+5}$ . Second, third and fourth costal sections in ratio 3.8: 1: 1.15.  $R_{4+5}$  and  $M_{1+2}$  distinctly diverging apically;  $M_{1+2}$  weak beyond second cross-vein. Veins  $R_{4+5}$  and  $M_{1+2}$  diverging apically. Second cross-vein present, slightly oblique. First and second cross-

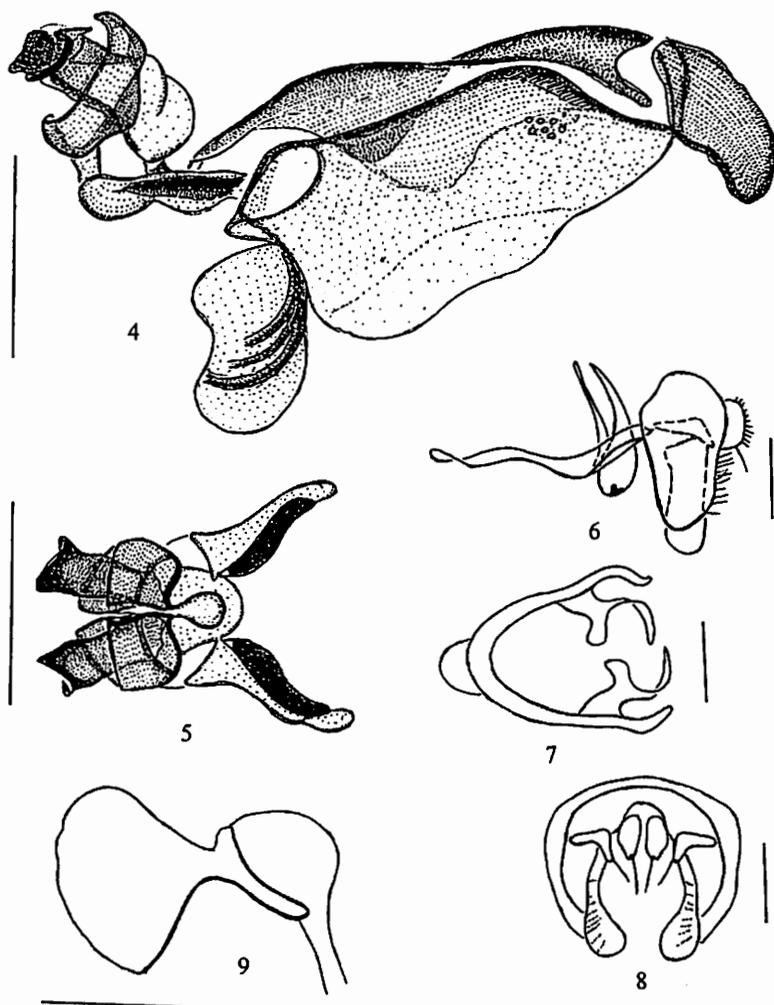


Figs 1-3. *Aulagromyza arctica* sp. nov. male. 1, wing; 2, third antennal segment; 3, head, lateral view.

veins approximated for distance shorter than length of first cross-vein. Last section of vein  $M_{3+4}$  3.6 times longer than penultimate. Wing length 2.7 mm. Remnant of 8 tergite well developed. 6 tergite as long as 5 tergite.

Hind margin of eye black, both  $v$  on dark ground. Orbits dark brown, mat. Frontal vitta paler, yellowish. Third antennal segment black, second antennal segment slightly yellowish above.

Lunule yellowish, face dark brown. Jowls yellowish. Palps black. Thorax entirely black, densely grey dusted, mat. Legs black, all knees narrowly yellow. Abdomen entirely dark brown. Wings hyaline, veins brownish. Halter



Figs 4-9. *Aulagromyza arctica* sp. nov. male. 4, aedeagus, lateral view; 5, distiphallus, ventral view; 6, 9<sup>th</sup> segment, lateral view; 7, hypandrium, dorsal view; 8, epandrium, anterior view; 9, ejaculatory apodeme.

entirely yellowish white. Squamae yellowish, margin and fringe brownish.

Epandrium narrow (lateral view), hind margin covered with setulae. Cerci short, oval, at apex with a long setula. Bacilliform sclerites broadly separated, vertical, at hind corner each with a long bristle. Surstyli long, distinctly projecting below ventral margin of epandrium in profile, bearing numerous setulae. Hypandrium V-shaped, side arms narrow, apically with small rounded apodeme. Projection of pregonite extending to apex of postgonite. Postgonite

moderately long, broadening at basal 2/3, tapering apically, ventral margin with shallow incision. Basiphallus consists of a pair of broad sclerites, entirely separated from each other. Hypophallus present. Sclerites of paramesophalli converging distally. Distiphallus bifid distally, at base with characteristic cup-shaped sclerite. Ejaculatory apodeme with narrow base and broadened blade; pump hyaline, without trace of sclerotization.

**Diagnosis:** The structure of male genitalia clearly indicates *Aulagromyza arctica* sp.n. belongs to the *spenceri*-group (ZLOBIN, 2007) which larvae are Caprifoliaceae-feeders. The male genitalia generally resemble those of other species in the group but are distinctively different in detail. The shape of aedeagus characterized by presence of cup- or bell-shaped sclerite at base of distiphallus. Among Palaearctic species *Aulagromyza paramushirensis* IWASAKI (2000) is most closely related to *A. arctica* sp.n. The former described from Kuril Islands differs by notopleura dark white, jowls 0.28 height of eye, 4 pairs of postsutural *dc*, last section of vein  $M_{3+4}$  5.7 times longer than penultimate and wing length 1.96 mm.

**Female unknown.**

**Host plant unknown** but almost certainly larva feeds as leaf miner on Caprifoliaceae.

**Distribution.** Northeast Europe.

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#### References

- IWASAKI A., 2000. - Agromyzidae (Insecta: Diptera) of Kuril Islands. *Natural History Research, Special Issue*, 7: 141-162.
- SASAKAWA M., 1961. - A study of the Japanese Agromyzidae (Diptera). Part 2.- *Pacific Insects*, 3(2/3): 307-472.
- SPENCER K.A., 1976. - The Agromyzidae (Diptera) of Fennoscandia and Denmark. *Fauna entomologica Scandinavica*, 5(1): 1-304.
- ZLOBIN V.V. 2007. - Review of mining flies of the genus *Aulagromyza* ENDERLEIN (Diptera: Agromyzidae). I. *An International Journal of Dipterological Research*, 18(2): 119-123.

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