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***Phytomyza camuna* n. sp. (Diptera Agromyzidae)
on *Thalictrum aquilegifolium* (*)**

Abstract - A new species of Agromyzidae, *Phytomyza camuna*, is described. The larva forms large blotch mines on leaves of *Thalictrum aquilegifolium*. A key of *Phytomyza* living on *Thalictrum* sp. in Europe and in North America is given.

Riassunto - *Phytomyza camuna* n. sp. (Diptera Agromyzidae) su *Thalictrum aquilegifolium*.

Viene descritta una nuova specie, *Phytomyza camuna*, le cui larve producono mine a piazzuola su *Thalictrum aquilegifolium* ed è fornita una chiave di determinazione delle specie di *Phytomyza* viventi su *Thalictrum* sia in Europa che in Nord America.

Key words: Agromyzidae, leaf miners, *Phytomyza camuna*, *Thalictrum aquilegifolium*.

During the researches on Agromyzidae living on spontaneous plants in Valle Camonica (Italy, Lombardy) it was possible to obtain from mines on leaves of *Thalictrum aquilegifolium* many adults of a new species, *Phytomyza camuna*, described below.

ADULT

HEAD: frons narrow, equal to width of eye, not projecting above eye in profile; 2 equal ors, 2 ori, the lower about $\frac{1}{2}$ of the other. Third antennal segment small, round (Fig. 1).

MESONOTUM: with 3+1 dc, acr irregularly in 4 rows; second costal section of wing 2 times length of fourth.

COLOUR: frons yellow-brownish, hind-margin of eye and upper orbits black, with

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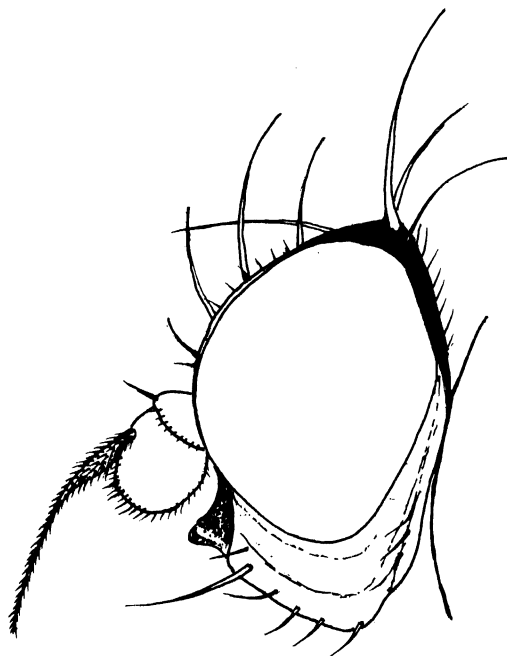


Fig. 1 - *Phytomyza camuna* n. sp.: head.

both vt on black ground. Jowl and face yellow-brown, all antennal segments black, palps black; pronotum mat, mesonotum and scutellum subshining greyish-black, grey; sides of torax subshining black, mesopleura upper with a very thin yellow stripe, with bristles on black ground. Legs black, femour on p1 with yellow knees, p2 and p3 only indistinctly paler. Squamae yellowish, with fringe dark brown.

MALE GENITALIA: aedeagus and distiphallus as in Figs 2 and 3.

MATERIAL EXAMINED: 1 ♂ (holotype) (Ponte di Legno, Lombardia: loc. Val Sozzine, 1200 m/slm; 19.VIII.03); 4 ♂♂, 3 ♀♀ (Ponte di Legno, Lombardia: loc. Val Sozzine 1200 m/slm); 3 ♂♂, 1 ♀ (Edolo, Lombardia: loc. Lares, 800 m/slm; 08.VI.04).

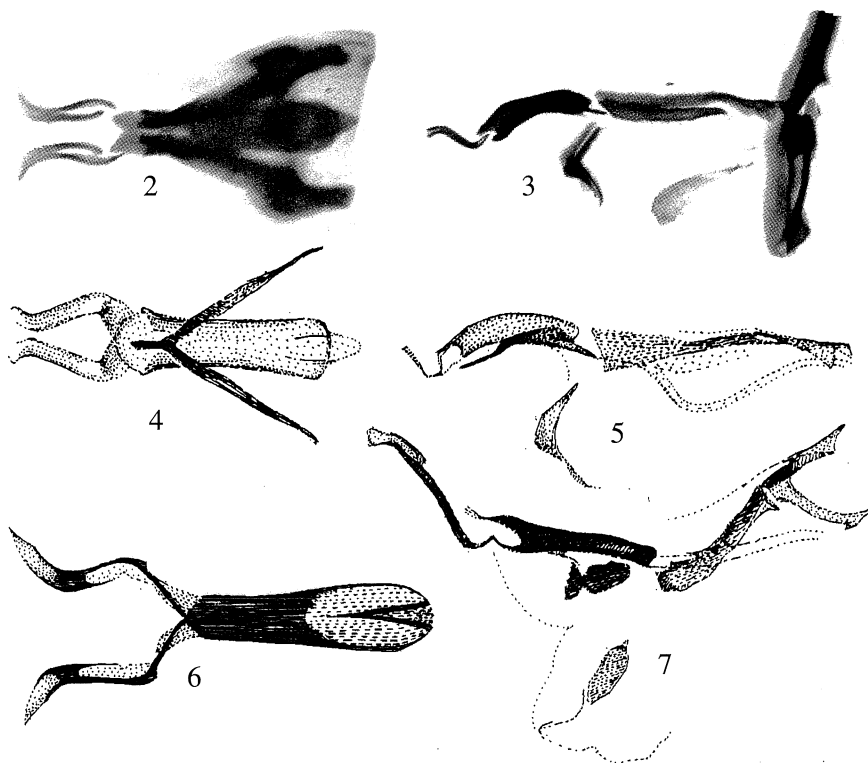
HOST PLANT: *Thalictrum aquilegifolium*. The larva forming a blotch at the apex of a leaf segment (Fig. 8).

DERIVATIO NOMINIS: The name is due to old inhabitants of Valle Camonica.

Specimens are in Süss collection.

DISCUSSION

Eleven species of *Phytomyza* are known on *Thalictrum*; four in Europe (*P. thalictri* Escher-Künding 1912; *P. thalicticola* Hendel 1925; *P. albifrons* Groschke 1957; *P. jonaitisi* Pakalniskis 1996) and three in North America (*P. plumiseta* Fross



Figs 2-7 - Aedeagus of *Phytomyza camuna* n. sp.: ventral view (2); side view (3). Aedeagus of *Phytomyza columbinae*: ventral view (4); side view (5). Aedeagus of *Phytomyza plumiseta*: ventral view (6); side view (7).

1924; *P. thalictrivora* Spencer 1969; *P. thalictrella* Spencer 1981) are restricted to *Thalictrum*. *P. aquilegiae* Robineau-Desvoidy 1851 and *P. minuscula* Goureau 1851 are common on *Aquilegia* and *Thalictrum* in Europe and North America too; *P. aquilegioides* Sehgal 1971 and *P. columbinae* Sehgal 1971, also occurrent on *Aquilegia* and *Thalictrum* only in North America (Spencer, 1969).

The genitalia give an indication that it's possible to distinguish two very different groups. In the first *P. thalictri*, *P. jonaitisi*, *P. minuscula* and *P. thalictrivora* are characterized by a distiphallus in form of a single tubule; Spencer & Steiksal (1986) and Spencer (1990) consider *P. minuscula* and *P. thalictrivora* as "sister species" of *P. aquilegiovora*, widespread in the United States on *Aquilegia*. The others are included in the group of the species characterized by two distal tubules of the distiphallus symmetrically paired. This tubules, in ventral view, are often cup-shape, with different conformation.



Fig. 8 - Blotch mine of *Phytomyza camuna* on leaf of *Thalictum aquilegifolium*.

The genitalia of *Phytomyza camuna* n.sp. are more similar to aedeagus of *P. columbinae* (Figs 4-5) and *P. plumiseta* (Fig. 6-7), both with larvae forming a blotch mine.

With regard to ethological characteristics, the larvae of *P. plumiseta*, *P. columbinae*, *P. thalicticola* and *P. aquilegiae* forming a blotch-mine; the larvae of *P. albifrons*, *P. thalictivora* and *P. minuscula* forming a linear mine; *P. thalictri*, only known in Switzerland, has been found feeding in seed; the larva of *P. jonaitisi* probably feed on young sprouts or leaf axils of *T. aquilegifolium* (Pakalniskis, 1996).

KEY OF PHYTOMYZA SPECIES ON THALICTRUM

- 1 Distiphallus with a single tubule.....2
- Distiphallus with 2 tubules.....5
- 2 Distiphallus short with a membrane not distally amplified3
- Distiphallus long and strong4
- 3 Distiphallus short*P. thalictri*
(Switzerland, in seeds of *T. aquilegifolium*)
- Distiphallus short, with a very large membrane distally enlarged.....*P. jonaitisi*
(Lithuania, probably on young sprouts or leaf axils of *T. aquilegifolium*)
- 4 Distiphallus long, slender and sinuate.....*P. minuscula*
(Europe, North America; larva forming a short, irregular upper surface mine)
- Distiphallus long, slender and sinuate.....*P. thalictivora*
(North America, larva forming a linear upper surface mine)

- 5 Distiphallus, in ventral view, with 2 tubules drawing near at the apex
 *P. columbinae*
 (North America; larva forming a blotch mine)
 - Not so6
- 6 Distiphallus, in ventral view, with 2 tubules upright or highly recurved
 *P. thalictrella*
 (North America; details of leaf mine not available)
 - Not so7
- 7 Distiphallus, in ventral view, with 2 slender tubules, diverging distally
 *P. aquilegiae*
 (Europe; larva forming a large blotch)
 - Not so8
- 8 Distiphallus, in ventral view, with 2 tubules very diverging in the $\frac{2}{3}$ distal
 *P. aquilegioides*
 (North America; larva forming circular, irregular blotch)
 - Not so9
- 9 Distiphallus, in ventral view, with 2 conspicuously broad tubules, very diverging
 from the basis; hind margin of eye and upper orbits black, both vt on black
 ground *P. thalicticola*
 (Europe, Japan; larva for a small blotch near the apex of the leaf)
 - Distiphallus as *P. thalicticola*. vte on black ground and vti at the border between
 black and yellow *P. albifrons*
 (Europe; larva forming a linear mine)
 - Not so10
- 10 Distiphallus, in ventral view, with 2 tubules about $\frac{1}{2}$ of the length, after recurved
 *P. plumiseta*
 (North America; larva forming a large blotch, normally in center of the leaf)
 - Distiphallus, in ventral view, with 2 tubules lightly curved about $\frac{1}{2}$ of the length,
 after incurved, with a general lyre-like *P. camuna* n. sp.
 (Italy, larva forming a blotch at the apex of a leaf)

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