

Review of mining flies of the genus *Phytobia* LIOY (Diptera: Agromyzidae). II

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Abstract

Phytobia brevicosta is described as new to science from NE Kazakhstan (type-locality: Ural'sk Prov., Krasnovsk, Pogodaevo).

Keywords: Agromyzidae, *Phytobia*, new species, North East Kazakhstan.

Introduction

The genus *Phytobia* LIOY, 1864 has worldwide distribution and comprises 90 described species. Numerous *Phytobia* species from tropical forests of South America are waiting description as new to science (TSCHIRNHAUS, 1995). Recently ČERNÝ (2001) described the new European species and gave the general review of the genus *Phytobia*. The European fauna includes 9 described species [*aucupariae* KANGAS, *betulivora* SPENCER, *bohemica* ČERNÝ, *cambii* (HENDEL), *carbonaria* (ZETTERSTEDT), *cerasiferae* (KANGAS), *errans* (MEIGEN), *lunulata* (HENDEL), *mallochi* (HENDEL)], but the taxonomic status of some species needs further clarification. The larvae of all *Phytobia* species are cambium borers. The knowledge about East Palaearctic species, especially from the territory of the former USSR, is very poor. The present paper follows ZLOBIN (2007) and it deals with the description of a new European *Phytobia* species.

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 abbreviations and measurements after 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 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

Phytobia brevicosta sp.nov.

(Figs 1-7)

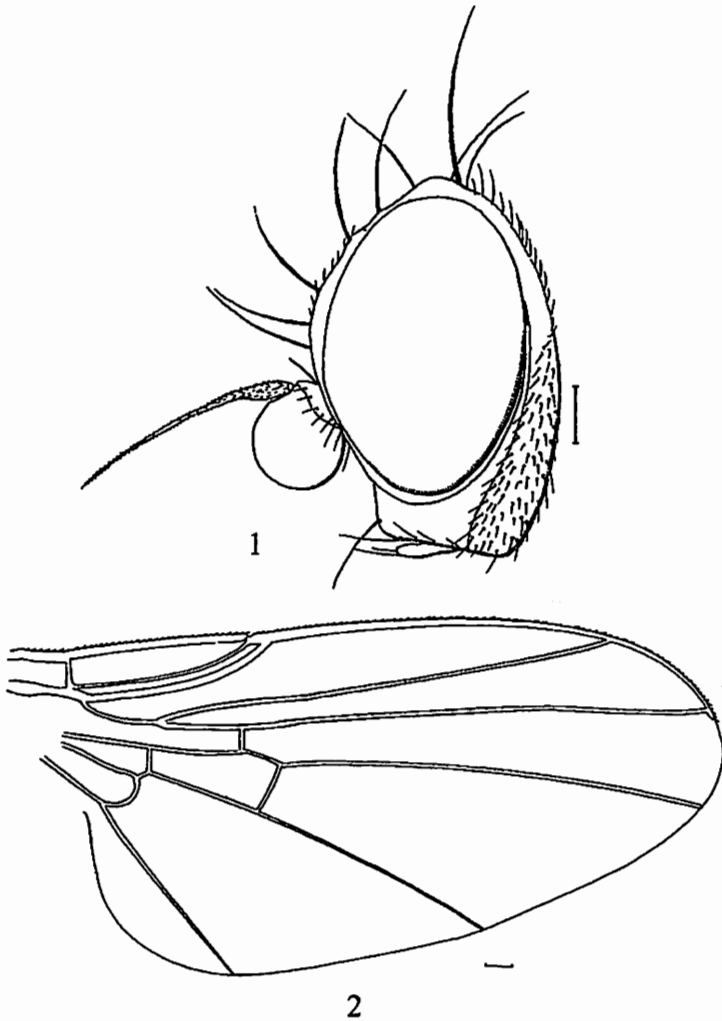
Material examined. Holotype male: Kazakhstan, Ural'sk Prov., Krasnovsk, Pogodaevo, 13.05.1951 (leg. STEINBERG).

Derivatio nominis: The name refers to the partly reduced costal vein.

Description: Male. Frons broader than high (30: 25), about twice as broad as eye at level of anterior ocellus, slightly narrowing anteriorly. Ocellar triangle small, isosceles, its anterior corner not exceeding level of upper *ors*. Frontal plate small, rounded in front. Orbits narrow, each in middle about 1/5 width of frons, becoming narrower anteriorly, as uniformly broad ring above eye in profile. Lunule distinctly lower than semicircle, broadly rounded above. 3 strong *ors*, all about equal length, two upper reclinate, the lower *ors* reclinate and both *ori* up- and inward, but *ori* more incurved at apices. Orbital hairs reclinate, short, sparse, in 2 irregular rows. Ocellar, postvertical, outer and inner vertical bristles normal. Anterior edge of frontal vitta without fine hairs above the lunule. Antennae separated distinctly at base by keel-like carina. Third antennal segment rounded, about as long as wide, microscopically pilose. Arista about 4/5 vertical height of eye, distinctly swollen at base, microscopically pubescent. Eye bare, oval, slightly slanting, 1.4 times higher than broad. Facial keel narrow and low. Cheeks forming narrow ring below eye. Jowls deepest at rear, about 0.25 vertical height of eye. Peristomal margin straight, bearing a few setulae. Vibrissa well developed. Mouth margin rounded, with a small blunt notch centrally. Epistoma narrow. Palps short, normal.

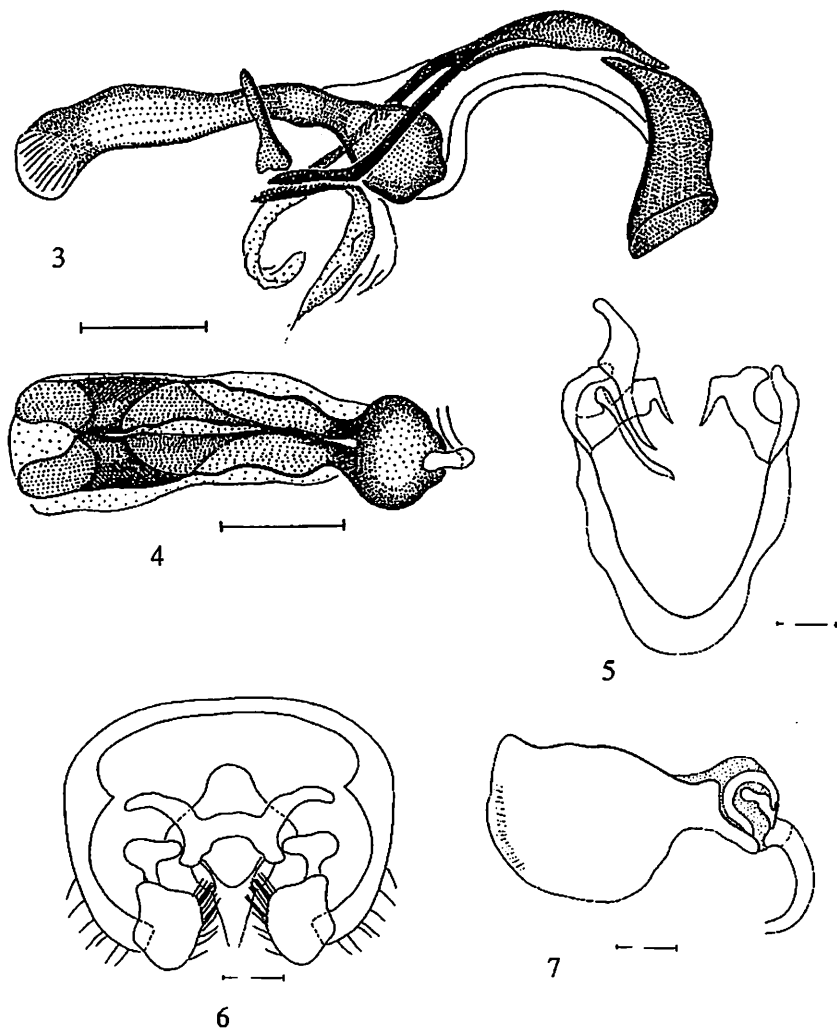
Mesonotum with 3+1 *dc*, third and fourth *dc* of subequal length and twice shorter than first *dc*. *acr* in 8-9 irregular rows and reaching line of first pair of *dc* in 6 rows. Prescutellars moderately long. Humerus with 7-8 setae and one strong bristle. Interals setulae in 5-6 irregular rows beyond suture. Inner postalar bristle about as long as outer postalar. Scutellum without fine tiny hairs. Basal and apical scutellar bristles equal, as long as 1st *dc*. Fore and mid tibiae without postero-dorsal bristles (possibly missing). Wing 2.6 mm long. Wing with costa slightly extending beyond termination of R_{4+5} . Wing tip midway between veins R_{4+5} and M_{1+2} . Costal sections in proportion of 26: 10: 8. First cross-vein in distal third of discal cell. Last section of vein M_{3+4} 2.2 times longer than penultimate.

Abdomen longer than broad. Abdominal tergites with marginal bristles on lateral side longer than those on median part. 5th sternite wider than long, emarginated on posterior 1/3. Remnant of 8th sternite well developed,



Figs 1-2. *Phytobia brevicosta* sp.nov. male. 1, head; 2, wing.

symmetrical, separated from 6th tergite by suture. Cercus short, about 1/3 as long as epandrium, covered with numerous setulae, at apex with a curved setula almost as long as cercus. Surstylus large, lobate, densely setose, separated from epandrium by suture; its inner side extending to lateral margin of bacilliform sclerite. Bacilliform sclerites arched centrally, its hind projections short, without marginal setulae. Phallopore elongated. Basiphallus long, in apical half bifurcate. Hypophallus largely membranous but well developed. Mesophallus small, more or less pear-shaped in ventral view. Distiphallus symmetrical, divided into 2 tubules distally. Hypandrium



Figs 3-7. *Phytobia brevicosta* sp. nov. male. 3, aedeagus, lateral view; 4, distiphallus, ventral view; 5, hypandrium, dorsal view; 6, epandrium, anterior view; 7, ejaculatory apodeme, lateral view.

V-shaped, with moderately broad side-arms, without hypandrial apodeme. Each pregonite with long projection. Postgonite moderately long but not extending to apex of aedeagal hood, ventral margin with very small incision. Ejaculatory apodeme very large, almost as long as hypandrium; pump with hind wall bearing small Y-shaped sclerotized plate and ring-like hardening.

Body colour uniformly black. Frontal vitta mat, orbits weakly shining.

Lunule faintly grayish-white pruinose. Epistoma pale yellowish. Antennae and palps deep black. Thorax black, mesonotum dusted with gray. Legs entirely black. Abdomen entirely black, moderately shining. Wings hyaline, veins black, paler at wing base. Halter stalk dark brown, knob yellowish. Squamae grayish white, margin and fringe blackish.

Female. Unknown.

Host plant. Unknown.

Distribution. Europe, NE Kazakhstan.

Discussion. The species generally resembles *P. lunulata* HENDEL, 1931, known Austria, Germany, Czech Republic and France, in having costal vein extending to R_{4+5} only. The structure of male genitalia suggests close relationships between both species as well. But the characteristic features of *P. lunulata* are the large size, shorter ultimate section of vein M_{3+4} , shining mesonotum. These differences cannot be ascribed to the intraspecific variation. In Nearctic region there are seven *Phytobia* species having the shortened costal vein (*confessa* SPENCER, *coylesi* SPENCER, *indecora* MALLOCH, *powelli* SPENCER, *pruni* GROSSENBACHER, *prunivora* SPENCER, *vanduzeei* SPENCER) but their male genitalia of different type or combination of diagnostic characters is different too (cf. SPENCER & STEYSKAL, 1986).

The new species correctly runs to couplet 2 of ČERNÝ's (2001) key to European *Phytobia* species, which should be amended as follows:

- 2 Costa ending at R_{4+5} 2a
 - Costa continuing to M_{1+2} 3
- 2a Larger species, wing length in male 3.3 mm. Mesonotum deep black, shiny. Frons twice width of eye. Last section of vein M_{3+4} 1.25 times length of penultimate
 *lunulata* HENDEL
- Small species, wing length in male 2.6 mm. Mesonotum black, grayish dusted. Frons 1.6 times wider than eye. Last section of vein M_{3+4} 2.2 times length of penultimate
 *brevicosta* sp.n.

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