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ЧЕТЫРЕ НОВЫХ ОТКЛОНЯЮЩИХСЯ ВИДА ГАЛЛИЦ РОДА Aprionus Kieffer (Diptera , Cecidomyiidae)

ПУШКИНО - PUSHKINO
1997

Four new aberrant species of gall midges of the genus Aprionus Kieffer (Diptera, Cecidomyiidae)

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I continue the series of publications dedicated to ecological problem of biodiversity of forest ecosystems, with special reference to taxonomy of Dipterous Insects - gall midges. I intend to revise gradually my papers published 25-35 years ago, to correct some of them and at the same time to explain my position in taxonomy of Cecidomyiidae. I am very greteful to Dr. A. Zaitzev, well known taxonomist in Mycetophilidae, who consented to help me in this work and to supply the new publications with illustrations.

I should like to explain previously the origin of vicarious and sibling species.

Vicarious species

These species originate from one initial species in connection with geographical isolation. For example, in course of the last glaciation (more than 10 000 years ago) all Palaearctic biocomplexes, including insects, were removed south-wards, possibly upto Hindustan region. When the period of glaciation was over, biocomplexes began to move back. But the high Himalayas split these biocomplexes into two streams. East stream moved along the cost of seas and reached East China, Korea, Japan, Far East of Russia; west stream moved in Caucasus, Europe, West Sibiria. West and east populations of initially one species were isolated with cold region of Central Sibiria and during a period of many thousands years transformed into very similar, but different vicarious species. This transformation advanced more intensive in Japan islands. These vicarious species adapted now to different climate and vegetation and formed different faunistic complexes. These are historical reasons of differences of west and east Palaearctic fauna of insects and the peculiarities of insects of Japan (cf. Mamaev, 1974).

Similar situation with Holarctic species: can we imagine, that Nearctic and Palaearctic populations of the most part of free developing gall midges, isolated with cold Chukotsk and Alaska regions on the east and the Atlantic Ocean on the west, mixed each other in volume, which is enough to be indivisible species with panmixia? Not at all. According to the rules of population genetics, nearly all of them are very similar vicarious species now. Species of gall midges with Holarctic distribution are exception to the rule.

In some cases investigators can not find any morphological differences between these species and identify them as species with Holarctic distribution. Such intermediate position has to be proved in future with better materials, including males, females and immature stages, better methods and equipment. But synonymization previously describing Nearctic species with Palaearctic vicariants without comprehensive investigation is very doubtful. It is necessary to take into consideration: when investigator can not be able to find under simple light microscope any differences in male postabdomen of Nearctic and Palaearctic specimens, this situatuion is not sufficient for conclusion of the identity of these specimens and Holarctic distribution of this species (Mamaev, 1996). At present taxonomist has to be competent in general problems of evolutionary theory, population genetics, zoogeography and morphological terminology.

Sibling species

Sibling species - at present morphologically indistinguishable specimens, existing in the same region, but with different biology and as result - without interbreeding. The most part of gall midges developing in galls belongs to sibling or so called "biological species". These species can be identified according to species of host and peculiarities of gall.

In this respect it is very difficult to investigate free developing gall midges. When investigator collected only netting or trapping materials of free developing gall midges (sometimes only males) he may come to conclusion of seeming identity of spesimens and seeming variability of morphological characters, because actually it is not excluded that he investigated group of similar species.

The problem of sibling species of free developing gall midges and their real variability has to be solved only after investigation of full breeding series, certainly belonging to the same species.

Description of new species

Four species describing below belong to genus Aprionus Kieffer, because they have typical wing venation, long and thin antennal sensoriae of males, tarsal claws with empodium rudimentary and male postabdomen without genital road. In contrast with Aprionus, s. str. males of new species with better developed eye bridge, 5-9 facets broad, with somewhat aberrent male postabdomen without spines of tegmen, and sometimes unusual shape of 9th tergite.

I suppose, that these 4 species may be subjects of new subgenus of the genus Aprionus. A. marginatus Mam. and A. denticulus Ber. belong to another new subgenus of this genus.

Aprionus bifurcatus sp.n. (figs. 1-3)

Holotype: male, Russia, Primorie territory (Far East), upper reaches of the river Bolshoi Shufen, 11.VIII.1962 (leg. N.Swiridova). In B.Mamaev's collection.

Male. Brown; length of wing 1,5 mm. Eye bridge 6 facets broad. Stem of middle flagellar segments 0,6 times as long as basal enlargement. Basal enlargement with 1 complete, 4 incomplete crenulate whorls and 4 bifurcated sensoriae. Tarsal claws sharply bent in middle, with subapical dilation.

Gonocoxites thick, with very deep incision between them ventrally. Gonostyles 0,5 times as long as gonocoxites, with small apical dent. 9th tergite round, with large median truncate lobe. Anterior arms of apodeme very thick and well sclerotized. Tegmen conical.

Female. Unknown.

Aprionus lobatus sp.n. (figs. 4,5)

Holotype: male, Russia, Far East, natural reserve Kedrovaya Pad, 28.VIII.1962 (leg. N.Swiridova). In B.Mamaev's collection.

Male. Dark brown; length of wing 1,6 mm. Eye bridge 8 facets

times
broad. Stem of middle flagellar segments 0,4 as long as basal enlargement. Basal enlargement with 1 complete and 4 incomlete crenulate whorls and with 4-5 long, thin, simple sensoriae. Tarsal claws sharply bent, with small dents in middle.

Gonocoxites thick, with deep round excavation between them ventrally. Gonostyles nearly 0,5 times as long as gonocoxites, with beak-shaped apical part. 9th tergite with 2 large round lobes. Tegmen finger-shaped, round apically.

Female. Unknown.

Aprionus aciculatus sp.n. (figs. 6,7)

Holotype: male, Russia, Far East, Khasan region, Zanadvornaya, 27.VII.1985; paratype: 1 male, the same place, 28.VII.1985 (leg. Z. Berest). In B.Mamaev's collection.

Male. Yellowish-brown; length of wing 1,4 mm. Eye bridge 6 facets broad. Stem of middle flagellar segments nearly as long as basal enlargement. Basal enlargement with 1 complete, 4 incomplete crenulate whorls and 4 bristle-shaped sensoriae. Tarsal claws sharply bent, without denticulation in middle.

Gonocoxites thick, with deep median excavation ventrally. Gonostyles 0,5 times as long as gonocoxites, with acute apex. 9th tergite with 2 lobes on caudal margin. Tegmen bottle-shaped, with acute apex.

Female. Unknown.

Aprionus ellipticus sp.n. (figs. 8,9)

Holotype: male, Russia, Primorie territory (Far East), upper reaches of the river Bolshoi Shufan, 13.VIII.1962 (leg. N.Swiridova); paratype: 1 male, the same region, natural reserve Kedrovaya Pad, 24.VIII.1962 (leg. O.Kovalev). In B.Mamaev's collection.

Male. Brown; length of wing 1,5 mm. Eye bridge 8-9 facets broad. Stem of middle antennal segments 0,8 times as long as basal enlargement. Basal enlargement with 1 complete, 4 incomplete crenulate whorls and 4 bristle-shaped sensoriae. Tarsal claws sharply bent, with small dents in middle.

Gonocoxites thick, with deep round emargination between them. Gonostyles 0,8 times as long as gonocoxites, tapering to apex,

with numerous short bristles inside. 9th tergite round, without lobes. Anterior arms of apodeme very thick. Tegmen conical, with round apex.

Female. Unknown.

Remark. In Sweden I had collected 2 males of new species, possibly belonging to this group (fig. 10). However, eye bridge of this species only 3 facets broad.

Key to the species

of the genus Aprionus, group A. bifurcatus.

1(2) Sensoriae bifurcated (fig. 1). 9th tergite with median truncate lobe (fig. 2) . . . . . A. bifurcatus sp.n.

2(1) Sensoriae simple. 9th tergite with round caudal margin (fig. 8) or bilobed (fig. 4,7).

3(6) 9th tergite with 2 round lobes on caudal margin (fig. 4,7).

4(5) Stem of middle flagellar segments 0,4 times as long as basal enlargement. Tegmen with round apex (fig. 5). . . . . A. lobatus sp.n.

5(4) Stem of middle flagellar segments nearly as long as basal enlargement. Tegmen with acute, needle-shaped apex (fig. 6) . . . . . A. aciculatus sp.n.

6(3) 9th tergite with round caudal margin (fig. 8) . . . . . A. ellipticus sp.n.

Acknowledgements

I am very grateful to Z.Berest, O.Kovalev, N.Swiridova for gall midges material for my investigation.

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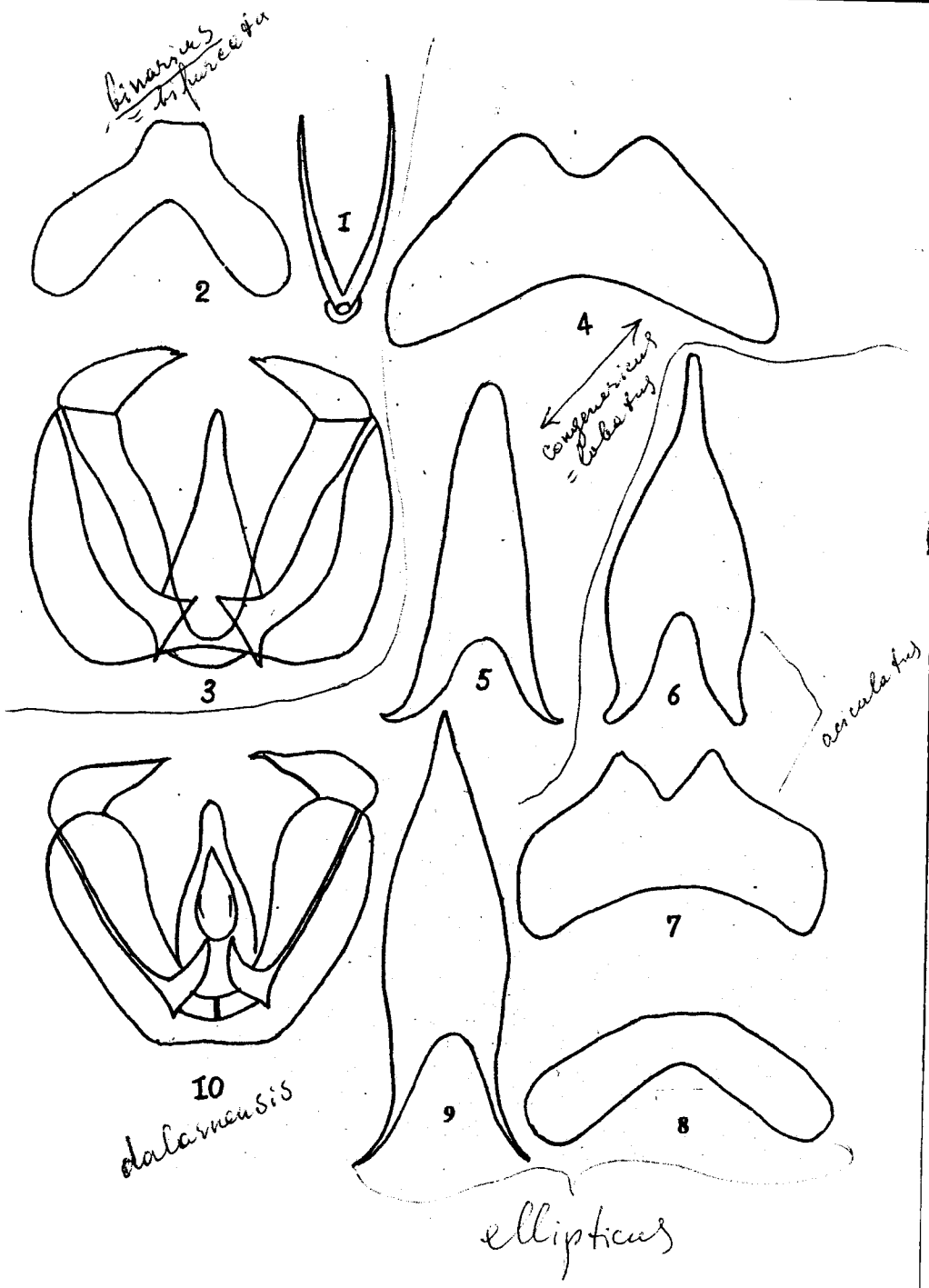
Explanation to figures

1-3- Aprionus bifurcatus sp.n.; 4,5 - A. lobatus sp.n.; 6,7 - A. aciculatus sp.n.; 8,9 - A. ellipticus sp.n.; 10 - undescribed new species from Sweden.

1 - antennal sensoriae of male; 2,4,7,8, - 9th tergite; 3,10 - postabdomen of male; 5,6,9,- tegmen. Postabdomen with 9th tergite removed.



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Четыре новых отклоняющихся вида галлиц рода **Aprionus Kieffer** (**Diptera, Cecidomyiidae**)

Подписано в печать: I8 февраля I997г.
Тираж I00 экз. Цена доворная

ЮМУ ВИПКПХ. Пушкино Московской обл., I997г.