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ОПИСАНИЕ НОВОГО ВИДА  
И ОПРЕДЕЛИТЕЛЬНЫЕ ТАБЛИЦЫ ГАЛЛИЦ РОДА  
*Mycopriona Mamaev* (Diptera, Cecidomyiidae)



Пушкино - Pushkino

1996

Мамаев В., М., Зайцев А. И. Описание нового вида и определительная таблица галлиц рода *Muscopriona* Mamaev (Diptera, Cecidomyiidae). - Пушкино, 1996, 7 стр., 38 рис., библи. 6 назв.

В работе приводятся полные данные по роду галлиц *Muscopriona* Mat.; составлена иллюстрированная определительная таблица видов данного рода, предназначенная для идентификации экземпляров галлиц, отлавливаемых ловушками при изучении биоразнообразия лесных экосистем и при аналогичных исследованиях.

Предназначена для диптерологов - систематиков и экологов, изучающих проблемы биоразнообразия.

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Free developing gall midges are one of the abundant group of insects collecting with window-traps in course of investigation of biological diversity of ecosystems. It is very difficult now to identify this small Diptera, because no special keys had been published. The present publication is the first contribution of the authors to this problem.

Genus *Mycopriona* belongs to the tribe *Xyloprionini* of the subfamily *Lestremiinae* (Mamaev, 1993). Type species of this genus initially was described as *Monardia caucasica* Mam. (Mamaev, 1963) because that time the investigators of gall midges followed the generic conceptions created by F.W.Edwards (1938). According to F.W.Edwards (l.c.) all species had to be referred to genus *Monardia* Kieff. which have the following characters: antennal segments of male with 2+12, palpi with 1+3 or 1+4 segments, flagellar segments of female with "mushroom-shaped" sensoriae, empodium absent or quite narrow, gonostyle with terminal spine, tegmen shield-shaped, genital rod present etc. F.W.Edwards (l.c.) himself put attention, that all species placed in *Monardia* "certainly not nearly related, in fact it is easy to recognize several distinct groups, some of which will be placed in different subgenera and genera." F.W.Edwards (1938) refrained from proposing name for any of these groups because "it is simpler to refer all to *Monardia*".

Thus genus *Monardia* was very heterogeneous taxon. It was actually so, because *Monardia antennata* (Winn.) now is transferred to genus *Antennardia* Mam., *Monardia nigricans* Edw. to genus *Campyloneura* Lgd. (= *Polyardis* Pritch.) etc. All other species, including by F.W.Edwards (l.c.) in the genus *Monardia* Kieff., also

\*The first supplement to publication by Mamaev (1993).

were not congeneric with type species - *M.stirpium* Kieff. because type species is polymorphic, with short antennae of females, consisting of 2+10 segments (male antennae with 2+12 segments), without scales on body, including tarsal segments and with paedogenetic larvae. F.W.Edwards (l.c.) had no possibility to investigate type species of the genus *Monardia*, "which seems in several respects quite different from any of those hitherto found in Britain or America".

Now it is obvious, that two polymorphic genera - *Monardia* Kieff. and *Vulcanardia* Mam. are very aberrant and have to be separated in the tribe *Monardiini*, other genera have to be included in the tribe *Xyloprionini*.

Larvae of *M. caucasica* Mam. also were not congeneric with larvae of *M. stirpium* Kieff. By this reason *M. caucasica* was separated in the genus *Mycopriona* (Mamaev, Krivosheina, 1965).

#### Genus *Mycopriona* Mamaev

Figs. 1-34.

Mamaev, 1965. In: Mamaev and Krivosheina, 1965. The larvae of gall midges. Diptera, Cecidomyiidae : 266.

Type species: *Monardia caucasica* Mamaev, 1963. Entomol. Obozr., 42 (2): 442.

Eye bridge 2 or 4 facets wide dorsally; antennae of male with 2+12 or 2+14(15) segments, each flagellar segment with basal setae in single whorl, median setae in one complete and 1-3 incomplete whorls, distally with plate-shaped sensoriae; antennae of female with 2+16 to 2+25 segments, the number of segments variable, each flagellar segments with 4 irregular plate-shaped sensoriae and median whorl of long setae; palpi with 1+3 (small species) or 1+4 (large species) segments.

Wings densely covered with macrotrichiae. C extending well beyond the tip of  $R_2$ ;  $R_1$  about as long as  $R_2$ ,  $M_2+4$  branched from Cu. Legs densely covered with hairs and scales; claws simple seackle-shaped or bent nearly at right angle, enlarged predistally, sometimes with fine denticulation medially.

Male postabdomen with gonocoxites broadly united below, gonostyles with apical or subapical spine, tegmen shield-shaped; genital rod long, linear; roots of gonocoxites convergent and

united proximally in apodeme. Female with telescopic ovipositor; sclerotized spermathecae two, round or pear-shaped.

Sixteen species, including one species new for sciences, belong to genus *Mycopriona*.

The material was collected in 1959-1993 in different zones of Palaearctic by netting over the vegetation and after rearing adults from larvae. The specimens were mounted in Canada balsam.

*Mycopriona acuta* Mamaev et Zaitzev, sp.n.

figs.1-7.

**Holotype:** male, Far East, Ussuriysk reserve, reared from larvae developed in decaying wood of *Abies holophylla* (red rot), 9.X.1968 (B.Mamaev leg.); **paratypes:** 5 male, 4 female, the same series (ARICEF, Mamaev collection; IEE, Zaitzev collection).

**Male.** Light brown, length of body 2.5 mm. Eye bridge 4 facets wide; flagellar segments with stem as long as basal enlargement, which with one complete, 2 incomplete whorls of long hairs and small transparent sensoriae; penultimate segment with long stem and 2 complete whorls of hairs. Palpi with 1+4 segments, first segment globular with sensorial field, third segment as long as second. Tarsal claw sharply bent with subapical dilation.

Gonocoxites broadly united below, round basally; gonostyles with round apex and long acute spine, 9th tergite with excavated margin and broad triangular protuberance; tegmen tapering in distal third; genital rod long; apodeme with 4 dents.

**Female.** Antennae with 2+17(19) segments; antennal segments with very short stem and 4 plate-shaped sensoriae. Ovipositor short, 7th abdominal segment as long as broad; 2 pear-shaped spermathecae.

New species is similar to *M.ornata* Mam., known from Caucasus, and seems to be vicarious species. Male of *M.ornata* with long antennae, stem of middle antennal segments longer than basal enlargement, penultimate and terminal segments elongated, spine of gonostyle situated apically; male of *M.acuta* sp.n. with antennae much shorter, stem of middle antennal segments as long as basal enlargement, penultimate and terminal segments short, spine of gonostyle curved subapically.

Key to Holarctic species of the genus *Mycopriona* Mamaev.

- 1(16) Palpi with 1+4 segments.
- 2(7) Antennae of male with 2+14(15) segments. Gonostyle round, with subapical spine (subgen. *Procnomyia* Mamaev et Zaitzev, subgen.n.; type species - *Mycopriona incerta* Mamaev).
- 3(4) Gonostyle with large dark inner excavation, covered with erected setae (fig. 9). Anterior margin of 9th tergite nearly bisecting by triangular membranous field (fig.8) (holotype, N. America). . . . . *M.lignivora* (Felt) ✓
- 4(3) Gonostyle without inner excavation or with narrow invagination (fig. 11).
- 5(6) Basal part of male postabdomen round, apodeme rectangular basally, 9th tergite with broadly round posterior angles (fig. 10). . . . . *M.lateralis* Mam. ✓
- 6(5) Basal part of male postabdomen straight, apodeme round basally, 9th tergite with nearly rectangular posterior angles (figs. 12,13). . . . . *M.incerta* Mam. ✓
- 7(2) Antennae of male with 2+12 segments. Gonostyles tapering to apex, with apical spine.
- 8(9) Gonostyle 2.5 times as long as broad; tegmen shorter than gonocoxites (fig.15), spermathecae round. *M.caucasica* Mam.
- 9(8) Gonostyle not more than 2 times as long as broad; tegmen as long as gonocoxites; spermathecae pear-shaped.
- 10(13) Margin of 8th tergite round, without broad triangular protuberance (figs. 16,18).
- 11(12) Stem of middle antennal segment of male distinctly shorter than basal enlargement. Gonostyle with terminal spine (fig. 17). Female antennae with 2+24(25) segments. . . . . *M.holoptica* Mam. ✓
- 12(11) Stem of middle antennal segment of male as long as basal enlargement or longer. Gonostyle with spine curved subapically (fig. 18). Female antennae with 2+19(21) segments. . . . . *M.yasumatsui* (Yuk.) ✓
- 13(10) Margin of 8th tergite nearly straight, sinuous, with broad triangular protuberance (fig. 23).
- 14(15) Antennae of male as long as body; stem of middle antennal segments slightly longer than basal enlargement. Gonostyle

- with terminal spine (fig.24) . . . . . *M.ornata* Mam.
- 15(14) Antennae of male 2/3 as long as body; stem of middle antennal segments slightly shorter than basal enlargement. Gonostyle with acute subapical spine. . . . . *M.acuta* sp.n.
- 16(1) Palpi with 1+3 segments.
- 17(26) Third palpal segment elongated, 1.5-2.0 times as long as second.
- 18(19) Stem of middle antennal segments distinctly shorter than basal enlargement; gonostyle short and thick, terminal spine thick and curved subapically (fig.21). *M.misella* Mam.
- 19(18) Stem of middle antennal segments as long as basal enlargement or longer; terminal spine not curved subapically.
- 20(23) Tegmen broad with parallel sides, broadly round apically; stem of middle antennal segments longer than basal enlargement (figs. 25,27)..
- 21(22) Third palpal segment 2 times as long as second. Genital rod short and thick (fig. 26) . . . . . *M.pediculata* Mam.
- 22(21) Third palpal segment 1.5 times as long as second. Genital rod long and thin (fig. 29) . . . . . *M.recta* Mam.
- 23(20) Tegmen attenuated to apex; stem of middle antennal segments as long as basal enlargement (fig. 32).
- 24(25) Tegmen attenuated from the base, with desclerotized apex; apodeme of gonocoxites with lateral outgrowths (fig. 30); third palpal segment nearly 2 times as long as second. . . . . *M.separata* Mam.
- 25(24) Tegmen attenuated from distal half; apodeme of gonocoxites without lateral outgrowths; third palpal segment 1.5 times as long as second segment. . . . . *M.obsoleta* (Edw.)
- 26(17) Third palpal segment short, nearly as long as second segment.
- 27(30) Stem of middle antennal segments distinctly longer than basal enlargement.
- 28(29) Tegmen attenuated from the base; gonostyle tapering to apex; terminal spine not curved inside. . . *M.ulmaria* (Edw.)
- 29(28) Tegmen attenuated from distal half; gonostyle dilated; terminal spine curved inside (fig.34). . . . . *M.cressicornis* (Mam.)

- 30(27) Stem of middle antennal segment shorter than basal enlargement. . . . . *M.abnormis* (Mam.)

Genus *Furcapriona* Mamaev et Zaitzev, gen.n.

Figs. 35-38.

Type species: *Mycopriona nigrita* Mamaev, 1993: 51.

In contrast to genus *Mycopriona* Mam. new genus with bristle-shaped bifurcated sensoriae of male flagellar segments; gonostyle of male postabdomen without spine. The shape of sensoriae of new genus is similar to those of *Vulcanardia* Mam., but new genus with dense broad scales on tarsal segments. M3+4 branched from Cu under acute angle about 40°. Claws sharply bent, empodium null. Similar sensoriae are present on basal enlargement of male antennal segments of *Bryomyia*, but morphology of male postabdomen of these two genera is quite different.

#### Discussion.

This publication is our first contribution to problem of exact determination of insects in connection with ecological problem concerning the protection of biological diversity. Free developing gall midges now become one of the important bioindicators of this ecological program. Wrong determination and synonymization of species by inexperienced investigators without evaluation of genetic and zoogeographic aspects of speciation will be harmful not only for taxonomy, but for important ecological programs.

We referred one male (Far East, reserve "Kedrovaya Pad", reared from larvae developing in decaying wood of *Chosenia arbutifolia*, 10.V.1967, B.Mamaev leg.) to *M.lignivora* (Felt) previously known from North California (USA)(Pritchard,1947). This species with very distinctive male postabdomen. Type of *M.lignivora* previously was investigated by B.Mamaev.

Other series of breeding gall midges (7 males, 6 females, Far East, reserve "Kedrovaya Pad", reared from larvae developing in fruits bodies of fungi *Hericium* sp., 22.IX.1968, B.Mamaev leg.) was referred to *M.yasumatsui*, previously known from Kyushu (Japan) according to excellent description of this species by J.Yukawa (1967).

It is necessary to control these identifications more carefully, because as a rule Nearctic and Palaearctic species and species from South Japan and Far East of Russia belong to similar, but different species.

#### Acknowledgements.

We wish to thank Prof. G. Müller and Mr. M. Jaschhof for the possibility to investigate of North American types of gall midges.

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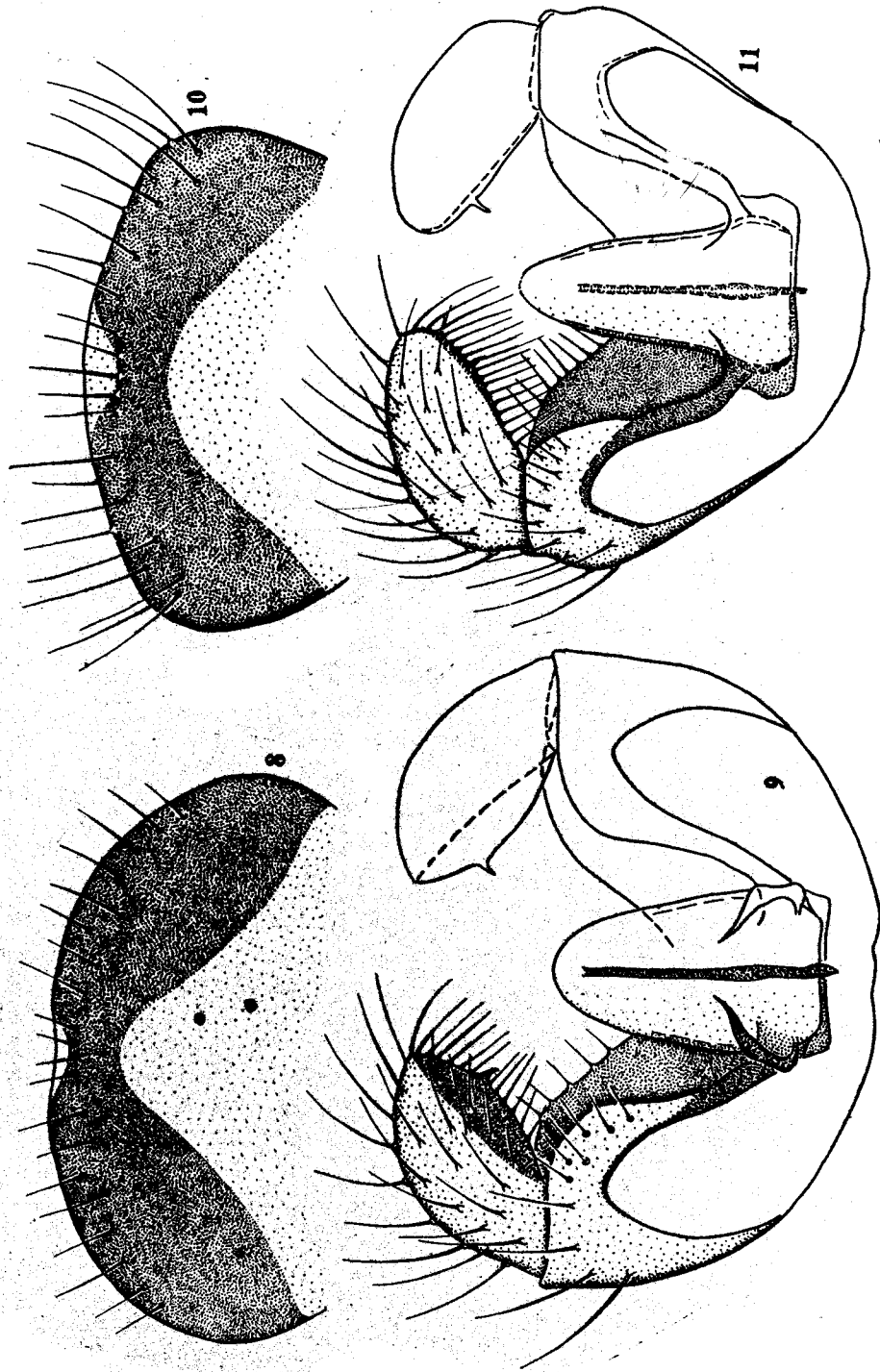
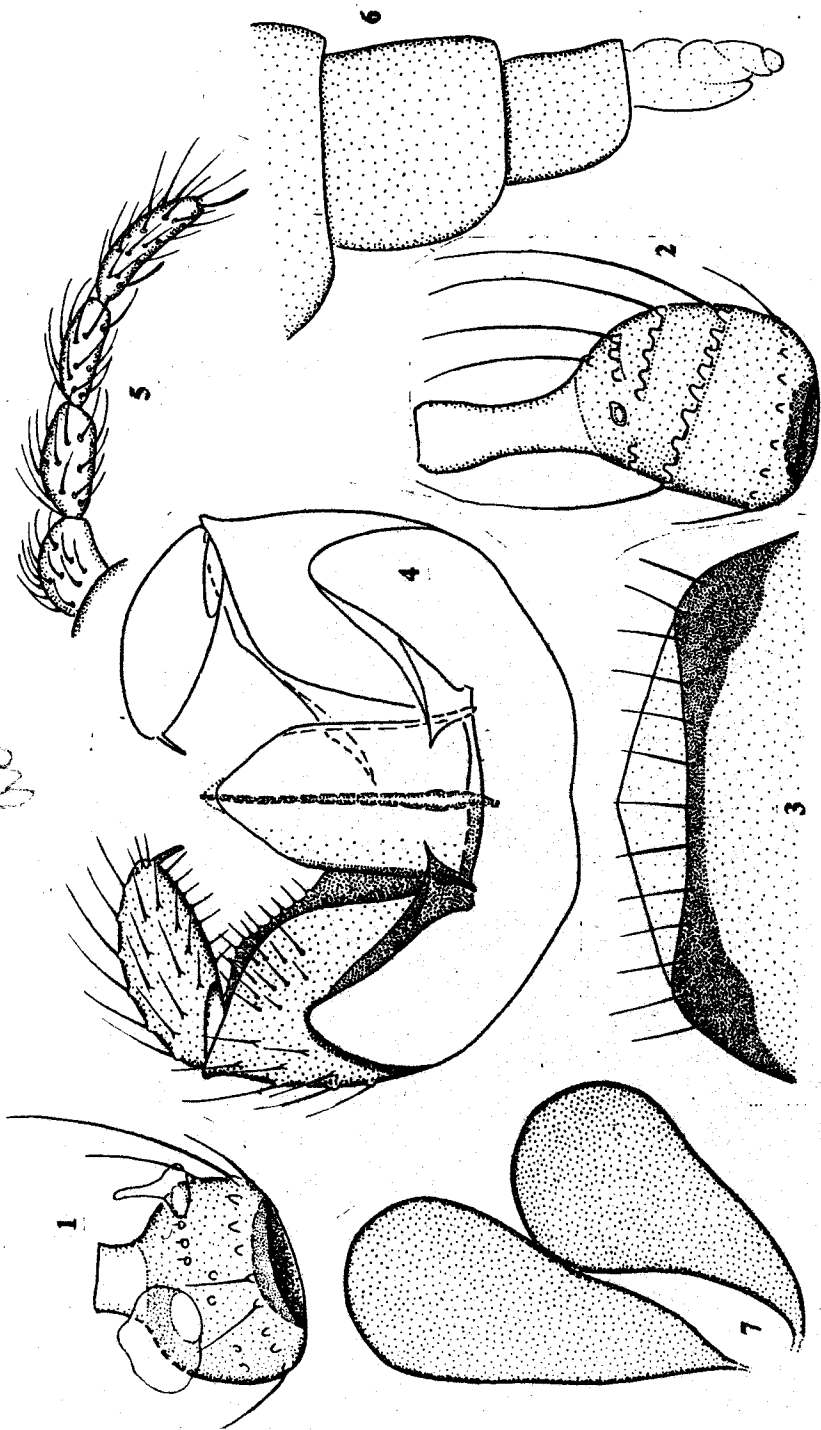
#### Explanation to figures

Genera *Mycopriona* Mam. and *Furcapriona* gen.n.

1-7 - *M. acuta* sp.n., 8-9 - *M. lignivora* (Felt), 10-11 - *M. lateralis* Mam., 12-13 - *M. incerta* Mam., 14-15 - *M. caucasica* (Mam.), 16-17 - *M. holoptica* Mam., 18-19 - *M. yasumatsui* (Yuk.), 20-22 - *M. misella* Mam., 23-24 - *M. ornata*, 25-26 - *M. pediculata* Mam., 27-29 - *M. recta* Mam., 30-32 - *M. separata* Mam., 33-34 - *M. crassicornis* (Mam.), 35-38 - *F. nigrita* (Mam.).

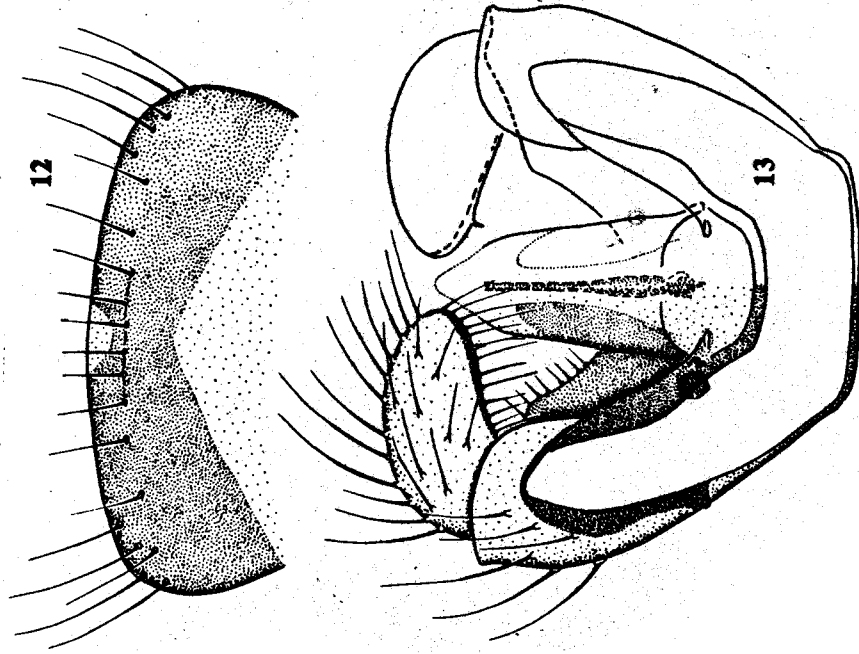
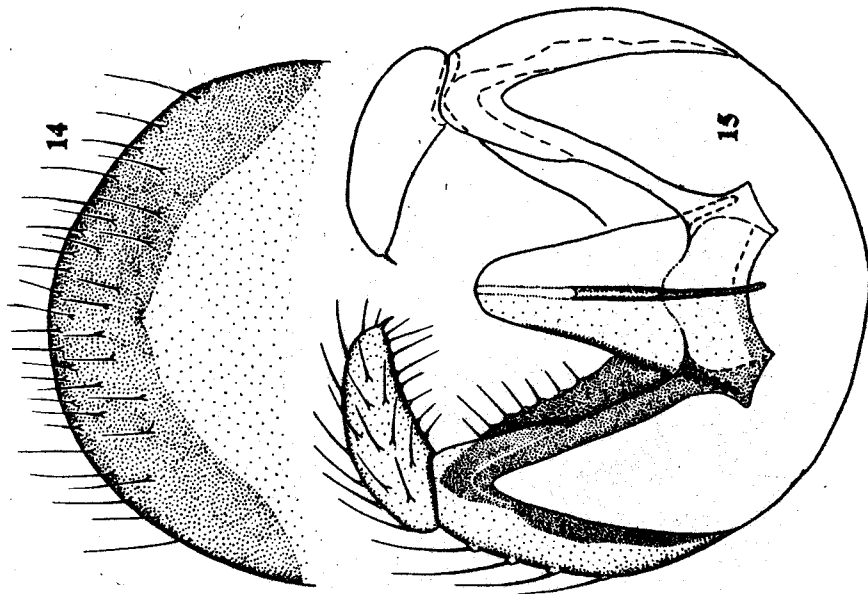
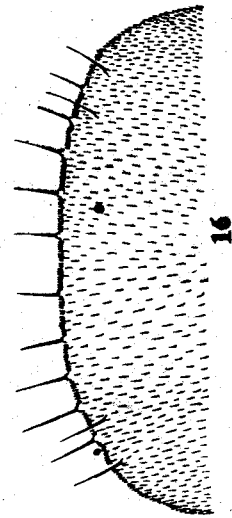
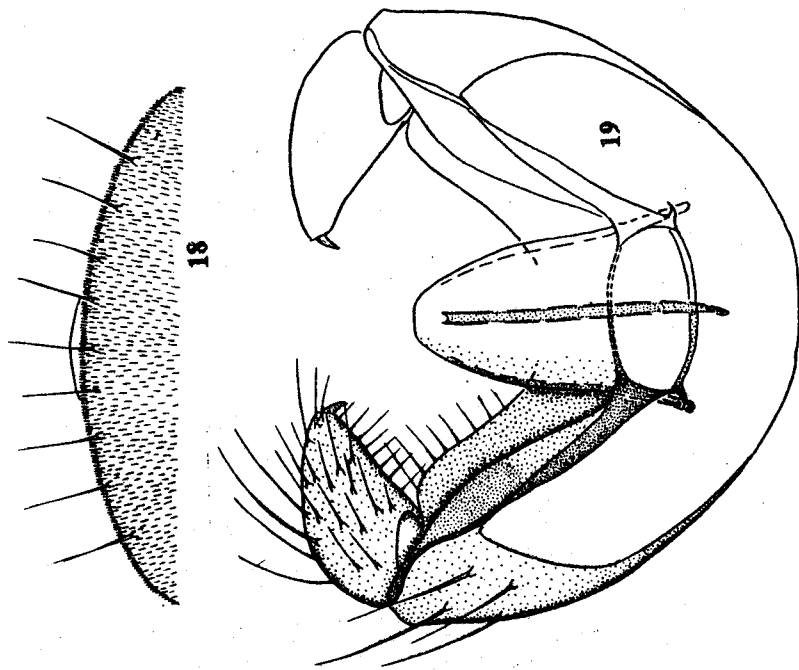
- 1 - 10th flagellar segment of female.
- 2, 22, 25, 27, 32 - 7th flagellar segment of male.
- 3, 8, 10, 12, 14, 16, 18, 20, 23, 28, 33, 36 - 9th tergite of male postabdomen.
- 4, 9, 11, 13, 15, 17, 19, 21, 24, 26, 29, 30, 34, 38 - male postabdomen (9th tergite removed).
- 5 - palpi.
- 6 - ovipositor.
- 7 - spermathecae.
- 31 - gonostyle.
- 35 - 3d flagellar segment of male.

Antenna

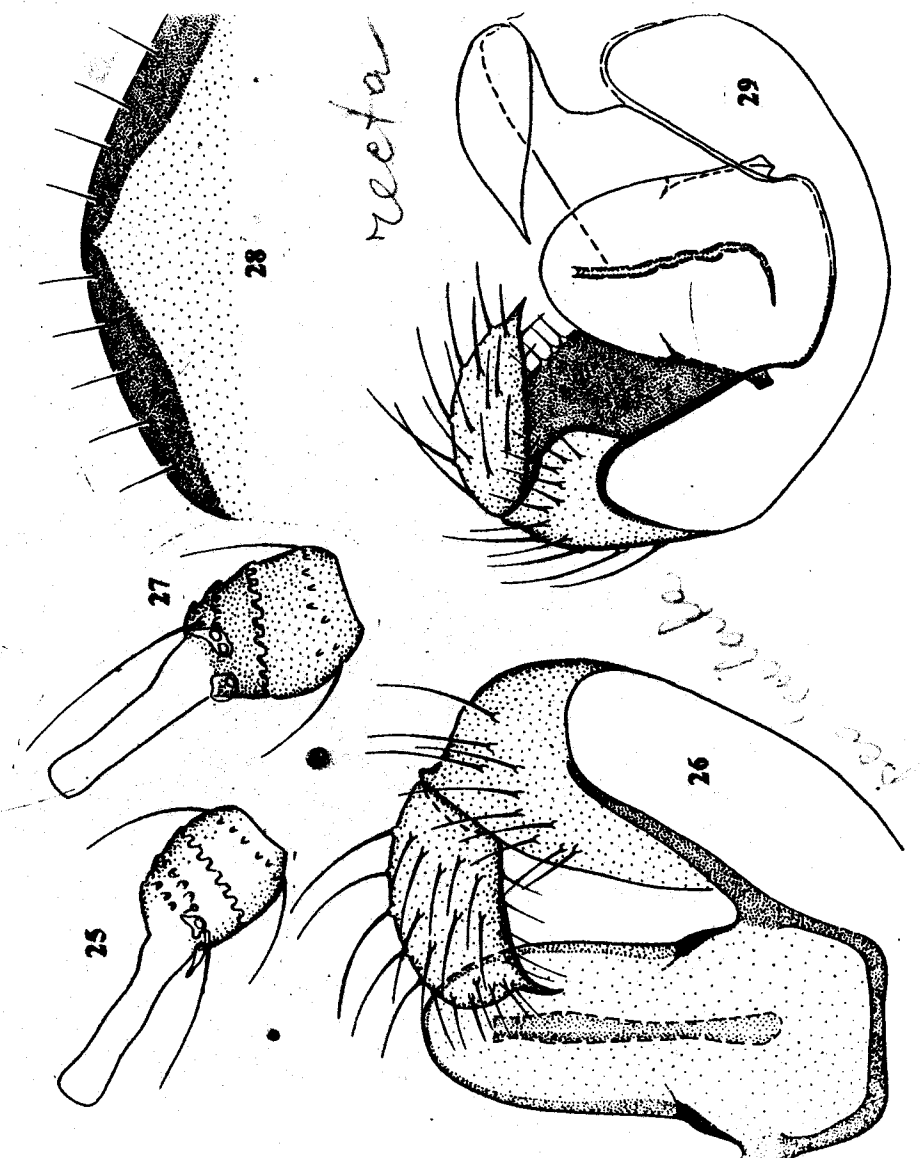
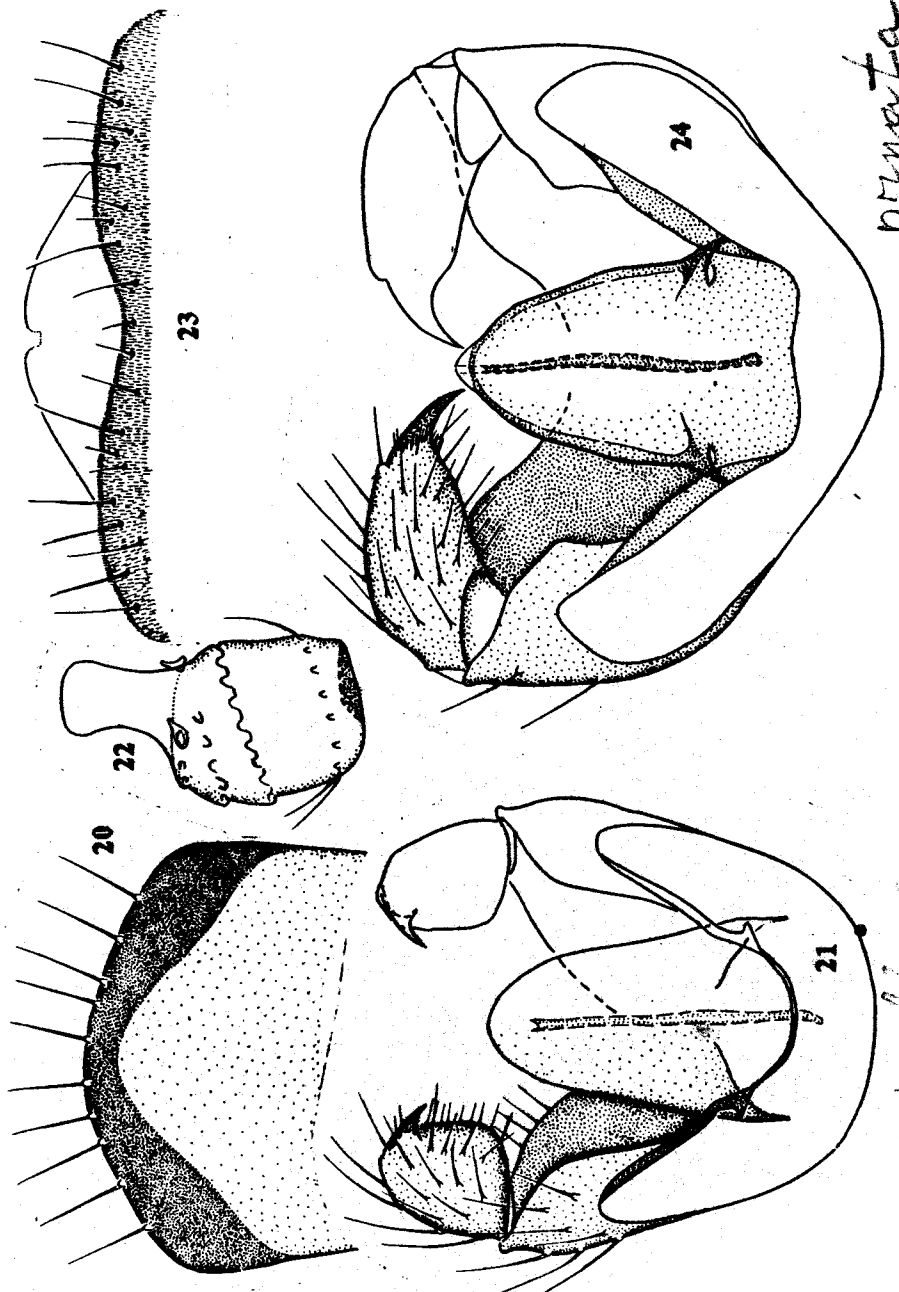


lateralis

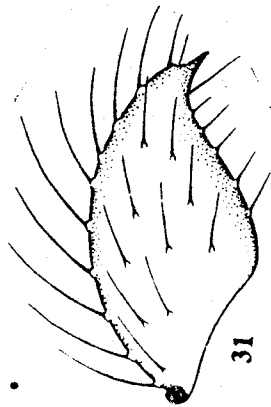
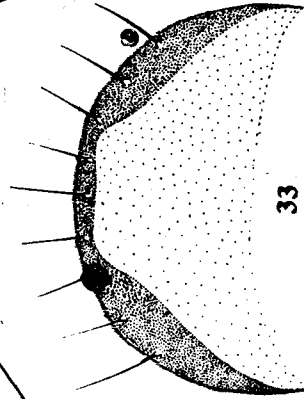
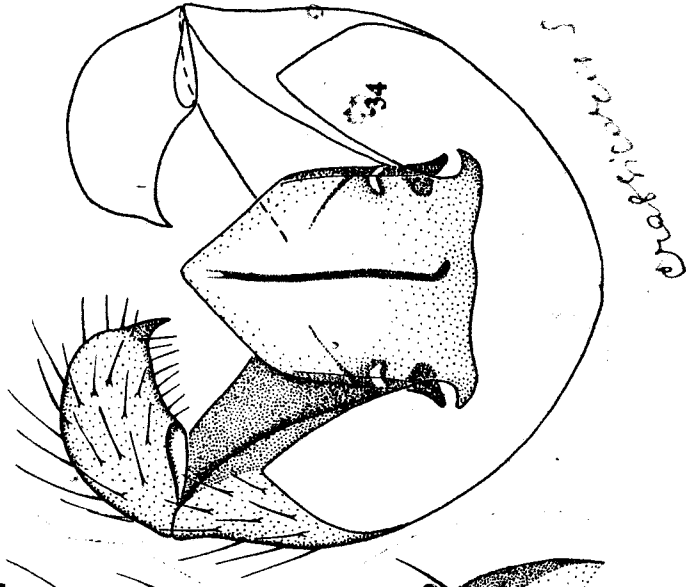
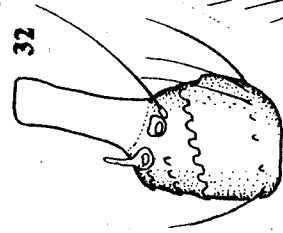
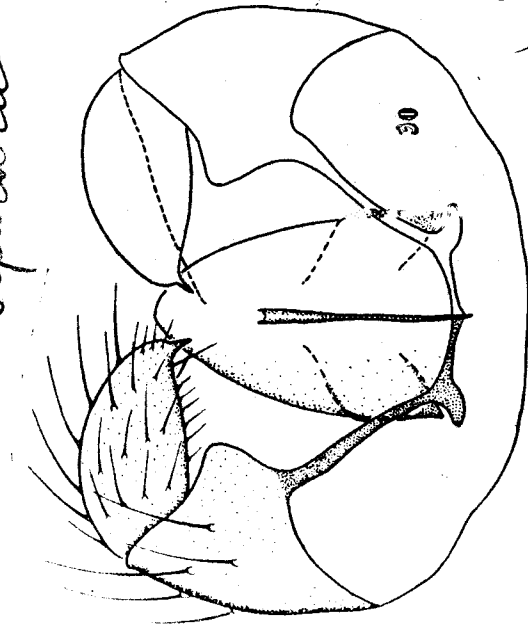
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*incerta**caucasica**holoptica**yasni*





*separata*



16

*Falcaphrone*

