

A REVIEW OF THE SPECIES OF THE GENUS MYCTERODUS SPIN. (HOMOPTERA, ISSIDAE) IN THE FAUNA OF THE USSR

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Among the genera of the fam. Issidae the classification of which requires revision, are Mycterodus Spin. and Conosimus M. R. Both genera are very well represented in the fauna of the USSR, as indicated by the material in the collections of the Zoological Institute of the Academy of Sciences of the USSR, which A. F. Yemel'yanov very kindly made available to us for study, while a number of new species were found in the author's collections. It was not in fact found possible to establish clear boundaries between the genera and at the same time to determine to which of the genera the individual new species belong.

According to the original description of Conosimus Mulsant et Rey, 1855, it is very close to Mycterodus Spinola, 1839, in external morphological characters but differs from the latter in the basic position of the spines of the intermediate carinae of the frons in relation to the anterior margin of the vertex. In representatives of Mycterodus, the intermediate carinae coalesce with one another above and with the median carina before the anterior margin of the vertex, while in species of the genus Conosimus the coalescence of the carinae is directly on the anterior margin of the vertex. As has been shown by the study of over 30 species of these genera, this character, although serving readily to distinguish extreme forms, is transitional in a number of others (Figs. 27-41, 46-51), so that it cannot be used for distinguishing the genera absolutely. Dlabola (1958) has also dealt with the close relationship of these genera and considers the most important distinguishing character for Conosimus to be the simple structure of the aedeagus. This character likewise cannot be used as the basic criterion for distinguishing the genera since in Mycterodus, species occur with a simple aedeagal structure. As regards the remaining morphological structures—the form and characteristics of the structure of the head, pronotum, wing venation, and in the males—the anal tube, the stylus and aedeagus—these are very similar in both genera, the differences being of a specific nature.

We, therefore, believe it most appropriate to consider all the species of this group to be within the limits of the genus Mycterodus, the more so as the species of both genera are very similar ecologically—they are all mesophilous, living on various trees and shrubs. The genus Mycterodus is considered to embrace 40 species, 8 of which are described below for the first time (their types are preserved at the Zoological Institute of the Academy of Sciences of the USSR and at the Institute of Zoology of the Ukrainian SSR).

Within the boundaries of the genus Mycterodus Spin., mainly on the basis of structural features of the copulatory organ, three groups of species are distinguished, which we propose considering as subgenera.

To the subgenus Conosimus Spin., stat. n., are assigned the species characterized by the absence of aedeagal hooks. These are mainly the smallest representatives of the genus with variation in the form of the vertex. There are 7 such species, of which 3 are new. One of these, M. elburasicus, sp. n., because of the development of spherical formations at the base of the aedeagus and a number of other characters, is unique.

The second subgenus—Mycterodus Spin., sens. str.,—comprises a group of 14 species with well developed aedeagal hooks and a relatively simple structure of the apex of the shaft of the aedeagus and the theca. Medium-sized species predominate with the vertex extended forward. Six new species are described in this group.

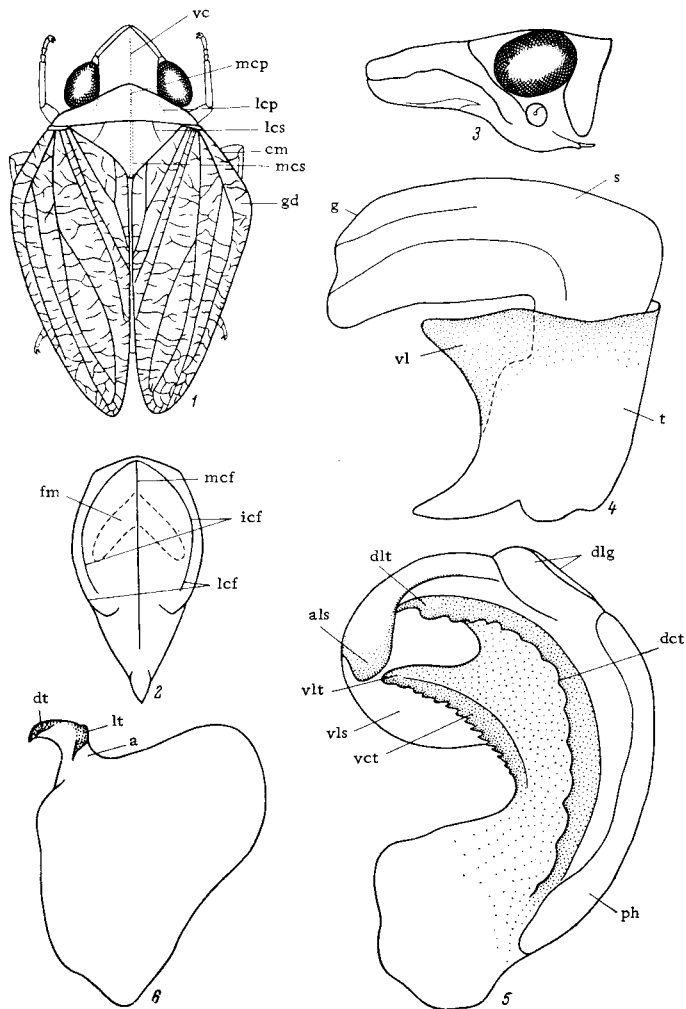
The third subgenus—Comporodus, subgen. n.—differs from the two preceding ones in having the apex of the shaft and theca more or less completely developing into longitudinal lobes recurved outward. This subgenus comprises the five largest species with a transverse vertex, of which M. batumus Dlab., M. mutuus Logv. and M. lobatus Logv. are particularly close to one another and are very difficult to distinguish.

The first two subgenera—Conosimus M. R. and Mycterodus Spin.—are brought close together by the absence of disarticulation in the apex of the aedeagus, while the subgenera Mycterodus Spin. and Comporodus, subgen. n., combine species with well developed aedeagal teeth.

The range of the genus in the Palearctic embraces basically the Western and Eastern Mediterranean, and the North African and the Syrian regions of the Mediterranean. A number of species occur in the Caucasus, in the mountain regions of Central Asia and in northern Iran with individual representatives in the mountains of the Crimea and in the Transcarpathians. M. oshanini Put. was described from Central Asia (Alai), but because of the lack of material of this species, it was not possible to determine its place in the classification of the genus. Conosimus angustipennis Mel., described from the Argentine (Metcalf, 1958), evidently belongs to another genus.

MORPHOLOGICAL CHARACTERIZATION OF THE GENUS MYCTERODUS SPIN.

The genus Mycterodus Spin. comprises medium-sized Issidae (5.0-7.5 mm) with thickset rhomboid bodies. The integuments are uneven, in places rugose, mat, colored in brownish shades without clearly defined continuous markings. The vertex extends forward markedly, variable in form—from pentagonally transverse to



Figs. 1-6. Details of the body structure in the auchenorrhynchous genus Mycterodus Spin.

1—general view from above (M. intricatus Stål): vc—vertical carina, mcp—median carina of pronotum, lcp—lateral carina of pronotum, mcs—median carina of scutellum, lcs—lateral carina of scutellum, gd—angular distension, cm—costal margin; 2—head from below—face (M. mutuus Logv): mcf—median carina of frons, icf—intermediate carina of frons, lcf—lateral carina of frons, fm—frontal macula; 3—head from the side (M. cuniceps Mel.); 4—aegeagus from the side (M. kobachidzei Dlab.): s—shaft, t—theca, vl—ventral lobe of theca, g—gonopore; 5—aegeagus from the side (M. ovifrons Put.): ph—aegeagal hook, dlg—dorsal lobe on side of gonopore, als—apical lobe of shaft, vls—ventral lobes of shaft, dlt—dorsal lobe of theca, vlt—ventral lobe of theca, dct—dorsal crest of theca, vct—ventral crest of theca; 6—stylus (M. kobachidzei Dlab.): a—apex, dt—dorsal tooth, lt—lateral tooth.

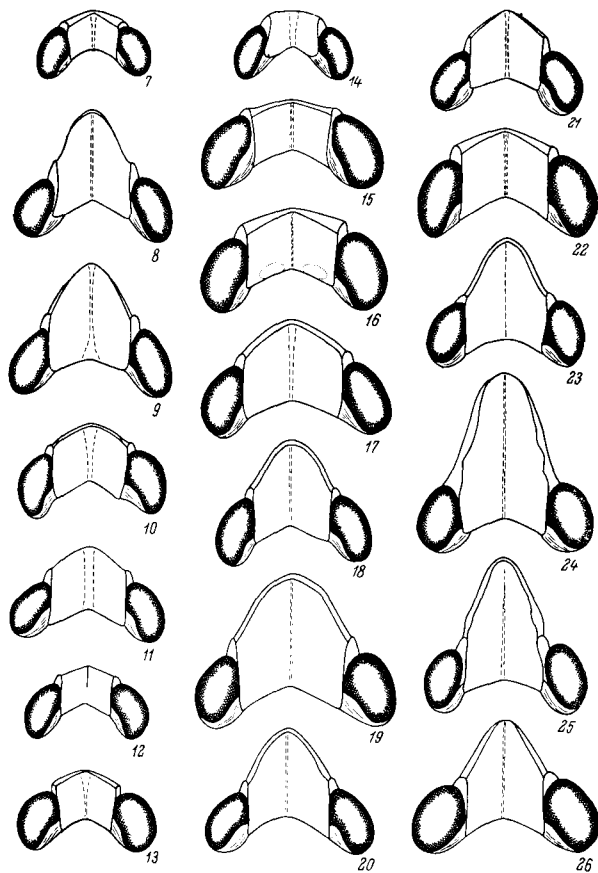
markedly elongate, when its length is twice its maximum breadth. Face at an angle to the vertex, somewhat longer than broad, its surface from flat to roof-shaped, especially in the anterior half. Median longitudinal carina of the frons well developed, sometimes extending onto the clypeus. Intermediate carinae coalescent with one another above at the anterior margin of the vertex or at a short distance from it. Pronotum transverse, broader than the head with the eyes, its anterior margin arciformly convex, its posterior margin virtually flat. Longitudinal carinae of the vertex, pronotum and scutellum vague, partly obliterated, median carina of the pronotum and particularly that of the scutellum, usually replaced by a shallow groove. Elytra strongly sclerotized, coarse, grumose, with carinate longitudinal veins and a sparse network of additional crossveins; angular distension well defined. The submarginal vein along the apical margin of the elytra with the crossveins almost always well developed. Costal margin of the elytra in the anterior third with a narrow ventral lobe. Radial vein branching before the angular distension, medial vein at its level or nearer the middle; cubital vein simple. The true wings rudimentary or completely undeveloped. Tegulae very small, scarcely visible from above. Legs of the usual structure for the family, hind tibia on the outer margin with two teeth in the apical half.

The male genitalia have much in common with those of the closely related genera *Issus* F., *Latilica* Em. and *Agalmatum* Em. etc. Anal tube simple, markedly flattened dorsoventrally. Styli spoon-shaped, more often triangular or rectangular in form, with an attenuated apical process. Aedeagal shaft short, thick, arciformly curved, with a convexity on the dorsal side. Dorsal processes—aeedeagal hooks—not always uniformly developed. The closely adhering theca varies in form. Apex of the shaft and theca more or less developed into lobes, the number, form and character of the distribution of which is of primary importance in the identification of species.

DIAGNOSTIC KEY TO THE SUBGENERA AND SPECIES OF THE GENUS *MYCTERODUS* SPIN.

- 1 (42). Apices of the shaft of the aedeagus and theca simple, not disarticulated, without lamelliform denticulate crests recurved outward (Fig. 4).
- 2 (15). Aedeagal hooks absent on the dorsal side of the shaft (subgenus *Conosimus* M. R.).
- 3 (6). Apical margin of the aedeagal sheath denticulate. Aedeagal shaft laterally with a longitudinal strip of small denticles. Anal tube in the male with a truncate apex.
- 4 (5). Aedeagal shaft at the base with a pair of spherical formations (Figs. 52, 53). Length of frons not more than 1/3 its breadth (Fig. 27). *M. elbursicus*, sp. n.
- 5 (4). Aedeagal shaft simple, without spherical formations at the base (Fig. 57). Length of frons 1.5–2 times its breadth (Fig. 28). *M. alatus* Logv.
- 6 (3). Apical margin of the sheath of the aedeagus and of the aedeagal shaft laterally without denticles. Anal tube in the male with a more or less rounded apex.

- 7 (8). Apical margin of the aedeagal sheath even, lobes of the sheath not developed. Aedeagal shaft bent in the middle at a right angle (Fig. 4). Length of vertex about 1.5 times its breadth, its apex narrowly rounded (Fig. 9). *M. kobachidzei* Dlab.
- 8 (7). Apical margin of the aedeagal sheath with an incision at the side of the shaft or dorsally. Only the ventral lobes of the sheath developed and embracing the shaft from below. Aedeagal shaft smoothly curved.
- 9 (12). Medium-sized species—5.0–5.5 mm. Vertex with rounded apex. Theca with an incision at the side of the shaft.
- 10 (11). Incision in the aedeagal sheath deep, rectangular, ventral lobes broadly rounded at the apices (Fig. 60). Vertex slightly transverse; intermediate carinae of the frons extending beyond its middle (Fig. 10, 30). *M. nuchensis* Logv.
- 11 (10). Incision in aedeagal sheath shallow, obtuse angled, ventral lobes narrowly rounded at the apices (Fig. 62). Length and breadth of vertex identical; intermediate carinae of the frons only extending to its middle (Figs. 11, 33). *M. armeniacus*, sp. n.
- 12 (9). Small species, 4.0–5.0 mm. Vertex projecting forward at an angle. Aedeagal sheath with an incision on the dorsal side; intermediate carinae almost reaching the frontoclypeal suture.
- 13 (14). Apex of the shaft simple. Ventral lobes of the sheath not extending to the level of the lower margin of the gonopore (Fig. 68). . . . *M. goricus* Dlab.
- 14 (13). Apex of the shaft with a deep rounded excavation. Ventral lobes of the aedeagal sheath larger and virtually reaching the level of the lower margin of the gonopore (Fig. 64). . . . *M. sidorskii*, sp. n.
- 15 (2). Aedeagal hooks present on the dorsal side of the shaft (subgenus *Mycterodus* Spin.).
- 16 (17). Aedeagal sheath entirely covering the shaft. Aedeagal hooks with attenuated unguiform apices (Figs. 71–73). Intermediate carinae of the frons obliterated (Fig. 34). . . . *M. tunicatus*, sp. n.
- 17 (16). Aedeagal sheath only partly covering the shaft. Aedeagal hooks different in form. Intermediate carinae of the frons distinct.
- 18 (21). Aedeagus of uniform thickness, its apex not dilated. Vertex transverse, obtuse angled.
- 19 (20). Aedeagus slender. Gonopore oval in form, narrowing toward the apex, its margin denticulate (Figs. 80, 81). Stylus strongly transverse. *M. talyshensis*, sp. n.
- 20 (19). Aedeagus stouter, gonopore cordate in form, its margins smooth, without denticles (Figs. 77, 78). Stylus of equal length and breadth. *M. hyrcanus*, sp. n.
- 21 (18). Aedeagus broadening toward the apex. Vertex in most species extending forward, more rarely (*M. intricatus* Stål, *M. krameri* Dlab.) slightly transverse.

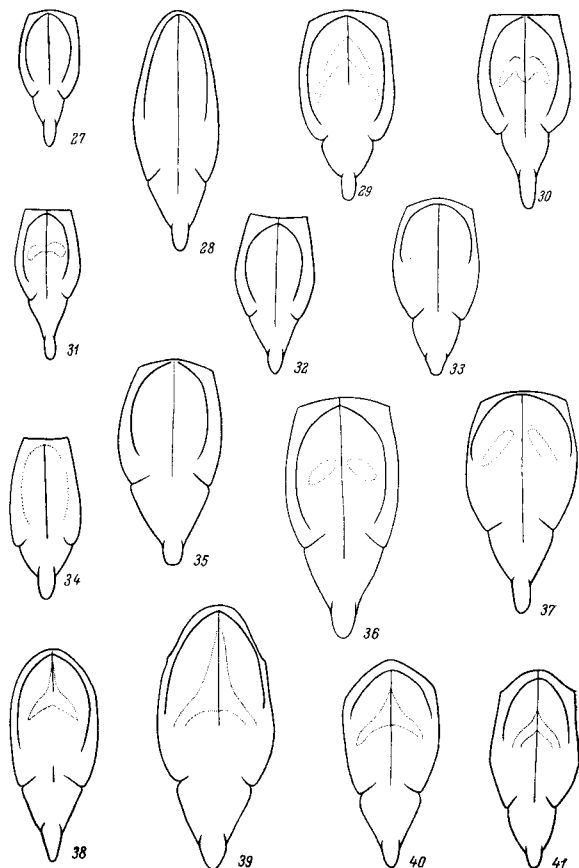


Figs. 7-26. Vertex.

7—Mycterodus elbursicus, sp.n.; M. alatus Logv.; 9—M. kobachidzei Dlab.; 10—M. nuchensis Logv.; 11—M. armeniacus, sp.n.; 12—M. goricus Dlab.; 13—M. sidorskii, sp.n.; 14—M. tunicatus, sp.n.; 15—M. talyshensis, sp.n.; 16—M. hyrcanus, sp.n.; 17—M. intricatus Stål.; 18—M. sarmaticus Logv.; 19—M. orthocephalus Ferr.; 20—M. rostratulus Em.; 21—M. chorassanicus, sp.n.; 22—M. krameri Dlab.; 23—M. immaculatus F.; 24—M. cuniceps Mel.; 25—M. nasutus H. S.; 26—M. rhynchophysus Logv.

- 22 (23). Apex of the aedeagus slightly broadened due to the descending ventral lobe of the shaft. Dorsal lobes on the sides of the gonopore moderately protruding. Aedeagal hooks with sharply narrowed curved apices (Figs. 82, 83). Breadth of the vertex scarcely exceeding its length (Fig. 17). M. intricatus Stål.
- 23 (22). Apex of the aedeagus appreciably broader than the remaining part of the shaft.
- 24 (27). Lobes on the apex of the aedeagus not separated, not divided by an incision or a depression. Outer margin of the theca denticulate. Vertex projecting forward prominently, its apex rounded. Median carina of the frons obliterated in the posterior half.

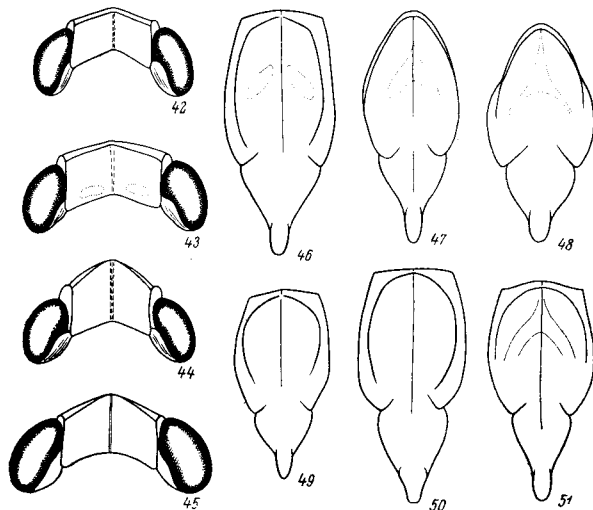
- 25 (26). Aedeagus with a simple, broadly rounded apex. Aedeagal hooks abruptly narrowed before the apices (Figs. 86, 87). Posterior half of the frons concave; intermediate carinae extending beyond the middle of the frons (Fig. 38). . . M. sarmaticus Logv.
- 26 (25). Aedeagus with a broken apical margin. Aedeagal hooks evenly narrowed toward the apices (Fig. 88). Intermediate carinae of the frons extending only to its middle (Fig. 39). M. orthocephalus Ferr.
- 27 (24). Apex of aedeagus with clearly divided lobes, separated by an incision or depression.
- 28 (35). Lobes on the apex of the aedeagus almost uniformly developed and with similar outlines.



Figs. 27-41. Face.

27—*Mycterodus elbursicus*, sp.n.; 28—*M. alatus* Logv.;
 29—*M. kobachidzei* Dlab.; 30—*M. nuchensis* Logv.;
 31—*M. goricus* Dlab.; 32—*M. sidorskii*, sp.n.; 33—*M. armeniacus*, sp.n.; 34—*M. tunicatus*, sp.n.; 35—*M. talyshensis*, sp.n.; 36—*M. hyrcanus*, sp.n.; 37—*M. intricatus* Stål; 38—*M. sarmaticus* Logv.; 39—*M. orthocephalus* Ferr.; 40—*M. rostratulus* Em.; 41—*M. chorassanicus*, sp.n.

- 29 (32). Lobes on the apex of the aedeagus and the dorsal lobes on the sides of the gonopore broadly rounded.
- 30 (31). Anal tube in the male without a tooth laterally. Apex of the theca on the sides of the shaft not developing into lobes. Aedeagal hooks with the apices attenuated and curved outward (Figs. 89-90). Vertex with obliterated angles (Fig. 20). *M. rostratulus* Em.
- 31 (30). Anal tube in the male laterally with a large triangular tooth (Fig. 92). Apex of the theca on the sides of the shaft developing into a dorsal and a ventral lobe (Figs. 93, 94). Aedeagal hooks gradually narrowed toward the apices. Vertex pentagonal. *M. carpathicus*, sp. n.
- 32 (29). Dorsal and ventral lobes of the apex of the aedeagus acute apically. Vertex projecting forward relatively slightly, slightly transverse or its length equal to its breadth.



Figs. 42-51.

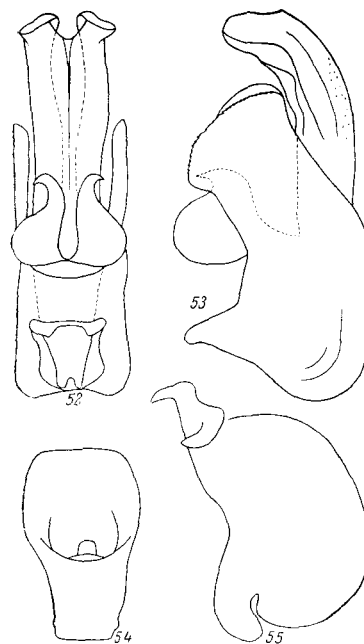
42-45—vertex: 42—*Mycterodus ovifrons* Put., 43—*M. caucasicus* Mel.; 44—*M. lobatus* Logv., 45—*M. mutuus* Logv.; 46-51—face: 46—*M. krameri* Dlab.; 47—*M. immaculatus* F., 48—*M. rhynchophysus* Logv., 49—*M. ovifrons* Put., 50—*M. caucasicus* Mel., 51—*M. lobatus* Logv.

- 33 (34). Anal tube in the male with a triangular tooth on the side (Fig. 98). Lobes of the apex of the aedeagus and the apex of the theca acute; theca not bifurcate laterally, its ventral lobes markedly elongated (Fig. 96). Length of vertex not greater than its breadth (Fig. 21). *M. chorassanicus*, sp.n.
- 34 (33). Anal tube in the male without teeth on the sides. Lobes of the apex of aedeagus with triangular outlines. Theca laterally developing into two virtually identical lobes (Fig. 99). Vertex slightly transverse (Fig. 22). *M. persicus*, sp. n.
- 35 (28). Lobes of the apex of the aedeagus unevenly developed—dorsal lobe broadly rounded at the sides of the gonopore, the ventral one narrowed and less drawn out at the side basally. Apical margin of sheath denticulate.
- 36 (37). Apical margin of the theca parallel to the apical margin of the shaft. Lobes on the side of the gonopore not broad. Lateral process on the ventral lobe of the shaft longer than the apex of the lobe (Fig. 102). *M. immaculatus* F.
- 37 (36). Apical margin of the theca not parallel to the apical margin of the shaft. Aedeagus short, slightly curved. Lobes on the sides of the gonopore broader.
- 38 (41). Length of vertex over 1.5 times its breadth. Bases of the aedeagal hooks approximated on the dorsal side of the shaft, the apices pointed, not bifurcate.
- 39 (40). Ventral lobes of the apex of the aedeagus stylet-like, without lateral processes. Upper margin of the gonopore with a deep incision in the middle (Figs. 103, 104). *M. cuniceps* Mel.

- 40 (39). Ventral lobes of the apex of the aedeagus with lateral processes in the form of more or less developed tubercles. Upper margin of the gonopore shallowly emarginate (Figs. 105, 106). *M. nasutus* H. S.
- 41 (38). Length of the vertex less than 1.5 times its breadth (Fig. 26). Aedeagal hooks short with bifurcate apices, their bases at a distance from one another and slightly displaced onto the lateral surface. Lateral processes of the ventral lobes of the shaft in the form of small tubercles. Upper margin of the gonopore without an incision (Figs. 108, 109). *M. rhynchophysus* Logv.
- 42 (1). Aedeagus has a complex structure—apices of the shaft and theca developing into a row of outwardly turned lamellar crests with denticulate margins (Fig. 5) (subgenus *Comporodus* subgen. n.).
- 43 (46). Theca laterally with not more than two lamellar crests. Vertex transverse.
- 44 (45). Apex of the aedeagus from the side without an incision between the lobes. Dorsal crest of the theca with a macrodont margin, the ventral one with a denticulate margin. Aedeagal hooks broad, rounded at the ends, beginning from the posterior margin of the gonopore. *M. ovifrons* Put.
- 45 (44). Apex of the aedeagus laterally with a deep oval incision between the lobes. Teeth of the dorsal and ventral crests of the theca with similar margins. Aedeagal hooks pointed at the apices (Figs. 110, 111). *M. caucasicus* Mel.
- 46 (43). Shaft of the aedeagus and the theca at the apex with a number of denticulate crests.
- 47 (48). Length of the vertex equal to its breadth between the eyes. Intermediate carinae of the frons reaching to the frontoclypeal suture. *M. batumus* Dlab.
- 48 (47). Vertex transverse, its breadth nearly twice its length in the middle.
- 49 (50). Intermediate carinae of the frons almost attaining the frontoclypeal suture (Fig. 2). Dorsal lobes below the gonopore not broader than the space separating them; ventral lobes of the shaft (from below) spindle-shaped (Figs. 117, 118). *M. mutuus* Logv.
- 50 (49). Intermediate carinae of the frons extending only to its middle (Fig. 51). Dorsal lobes below the gonopore appreciably broader than the space separating them; ventral lobes of the shaft (from below) markedly widened before the apices (Fig. 115, 116). *M. lobatus* Logv.

Mycterodus elbursicus Logvinenko, sp.n. (Figs. 7, 27, 52-55).

A relatively small species light yellowish brown in color. Vertex pentagonal, its length equal to its breadth between the eyes, and with an indistinct light longitudinal stripe, in the middle extending onto the pronotum and scutellum. Median and intermediate carinae of the frons thin, distinct throughout the whole length of the frons, extending virtually to the frontoclypeal suture. Frontal spot indistinct, light brown, horseshoe-shaped. Elytra in the male monochromatic, tinged with



Figs. 52-55. *Mycterodus elbursicus*, sp.n., ♂.

52—aedeagus from below; 53—aedeagus from the side; 54—anal tube; 55—stylus.

yellowish brown, those of the female dark, with a band of coalescent dark brown spots. Hind wings undeveloped.

Anal tube in the male obpyriform, with an incised apex. Stylus reniform, with a depression on the outer margin. Aedeagus slender, almost straight, with the apex slightly curving on the ventral side. Lobes on the sides of the gonopore narrow, in the basal part the shaft almost twice as broad as in the apical part, with a pair of massive spherical formations on the ventral side. Aedeagal hooks absent. Theca of the aedeagus broad, its ventral lobes broad, with denticulate margins.

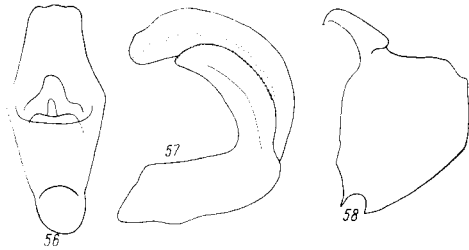
Body length of the female* 4.4-5.1 mm.

Material. Shakh-Kukh-Pain, Iran, southern slope of the El'brus range, 2 July 1914, 1 ♂ (holotype), 5 ♀♀ (A. Kirichenko).

Mycterodus alatus Logvinenko, 1968 (Figs. 8, 28, 56-58).

Characteristic of the species is a complex of persistent characters that distinguish it clearly from the closely related species of the subgenus: anal tube rhombic in form, with a truncate apex; simple aedeagus bearing laterally on the shaft a band of small denticles; theca embracing the shaft from below, attaining the level of the gonopore, its outer margin denticulate.

*In the single male from which the description of the genitalia was made, the head and pronotum were damaged, so that the body measurements are given from the females.



Figs. 56-58. *Mycterodus alatus* Logv., ♂; 56—anal tube; 57—aeedeagus from the side; 58—stylus.

Distribution. Southwestern Georgia.

Mycterodus kobachidzei (Dlabola, 1958) (Figs. 4, 6, 9, 29).

Described in the genus *Conosimus* M. R. Easily distinguishable by the aedeagus being curved at right angles and the almost evenly truncate margin of the theca.

Distribution. Eastern Georgia (vicinity of Tbilisi), Daghestan and the south of the Kursk region.

Mycterodus nuchensis Logvinenko, 1968 (Figs. 10, 30, 59, 60).

This is morphologically very similar to *M. armeniacus*, sp. n., from which it differs in the longer intermediate carinae of the frons extending beyond the middle, the slightly transverse vertex and the deep rectangular incision of the theca at the side of the shaft.

Distribution. Azerbaijan (shores of lake Adzhi-Naur).

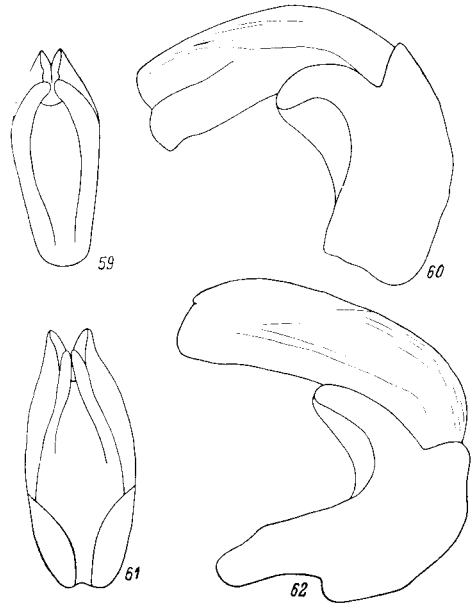
Mycterodus armeniacus Logvinenko, sp. n. (Figs. 11, 33, 61, 62).

Externally very similar to *M. nuchensis* Logv. Length of the vertex equal to its breadth between the eyes, very broadly rounded at the apex, posterior margin obtusely incised. Longitudinal stripe of the vertex broad, diffuse. Frons slightly broadening in the middle, its length exceeding its breadth by about 1/4. Median carina visible throughout the whole length of the frons; intermediate carinae extending only to the middle of the frons. Pronotum and scutellum light brown, thinly spotted with dark speckles. Elytra slightly darkened in the cells, supernumerary cross-veins not sharp.

Anal tube broadly rounded at the apex. Styli weakly prolonged, dorsal process strongly developed. Aedeagal shaft simple, of uniform thickness, most sharply curved medially. Hooks absent on the dorsal side of the shaft. Theca covering a trifle less than half the shaft, laterally obliquely obtusely impressed, ventral lobes narrowly rounded at the apices.

Body length of the male 5.4-5.5 mm.

A number of external morphological features makes this species close to *M. nuchensis*, while the structure of the genitalia in the males confirms their close relationship. *M. armeniacus* differs in the shortened intermediate carinae of the frons, in the



Figs. 59-62.

Fig. 59-60—*Mycterodus nuchensis* Logv., ♂: 59—apex of aedeagus from above, 60—aeedeagus from the side; 61-62—*M. armeniacus*, sp. n., ♂: 61—apex of aedeagus from above, 62—aeedeagus from the side.

vertex being narrower than in *M. nuchensis* Logv. and in the elongate narrowly rounded ventral lobes of the theca of the aedeagus and its obtuse lateral impression.

Material. Armenia, Karmrakar, Akhuryan district, 17 June 1955, 1 ♂ (holotype), 2 ♀♀ (M. Loginova); Kizildat, Kafan district, 17 June 1955, 2 ♀♀ (A. Zagulyayev); Kal'sk, Vorotan river, 6 September 1956, 1 ♀ (V. Tryapitsin).

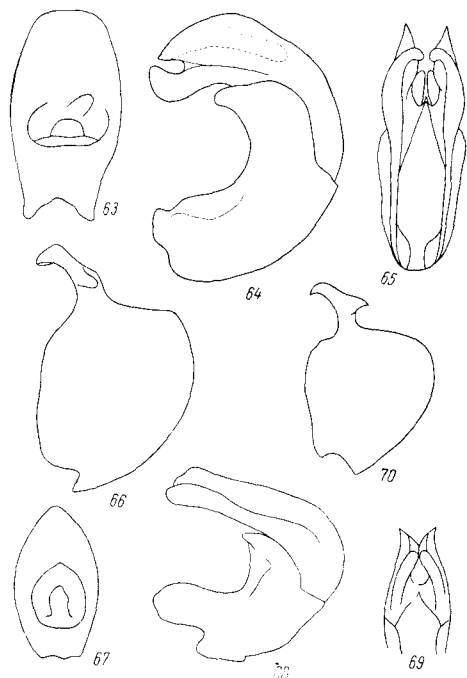
Mycterodus goricus (Dlabola, 1958) (Figs. 12, 31, 67-70).

This was described in the genus *Conosimus* M. R. from material from Central Georgia. A small species, living principally on shrubs in xerophytic habitats, very common on *Astragalus*.

Distribution. Southeastern Georgia (valley of the Adzharis-Tskali river), Talysh (Lerik, Kosmol'yan, Zuvand), Nagornyy Karabakh (Stepanakert, Lachin), slopes of the Zangezur range, mountain region of Nakhichevan (V. Logvinenko).

Mycterodus sidorskii Logvinenko, sp. n. (Figs. 13, 32, 63-66).

Small, densely mottled with dark brown speckles. Vertex pentagonal, slightly widening anteriorly, its length almost equal to its breadth. Face flat, somewhat bevelled at the anterior angles. Median carina of the frons visible throughout the whole length of the frons; intermediate carinae smoothly curved and extending almost to the frontoclypeal suture. Frontal macula light, sagittal in form, the remaining surface of the face with numerous small brown speckles. Pronotum projecting forward strongly, its length in the middle 3 times its length behind the eyes. Scutellum like the pronotum also with obliterated carinae, monochromatic, brownish. Elytra with small dark brown speckles sometimes coalescing into maculae; hind wings undeveloped.



Figs. 63-70.

63-66—*Mycterodus sidorskii*, sp.n., ♂: 63—anal tube, 64—aeedeagus from the side, 65—aeedeagus from above, 66—stylus; 67-70—*M. goricus* Dlab., ♂: 67—anal tube, 68—aeedeagus from the side, 69—apex of aeedeagus from dorsal side, 70—stylus.

Anal tube in the male oval, its apex broadly rounded. Stylus weakly prolonged. Aeedeagal shaft very slightly curved. Lobes on the apex of the aeedeagus deeply articulated; hooks absent. Ventral lobes of the sheath broad, embracing 2/3 of the shaft and extending to the level of the posterior margin of the gonopore.

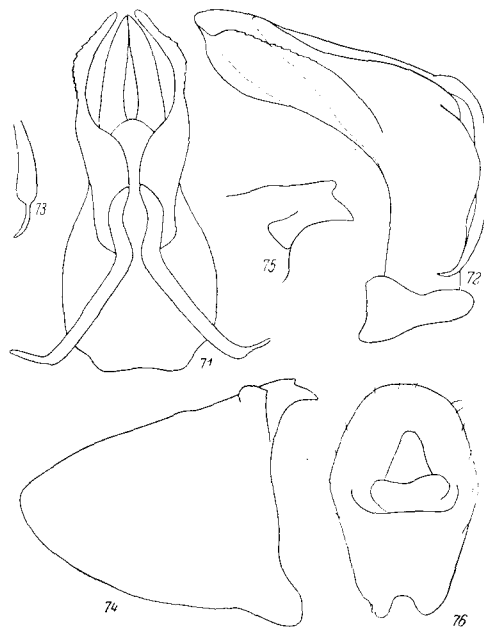
Body length of the male 4.0 mm, that of the female 5.3-5.5 mm.

In habitus very similar to *M. goricus* (Dlab.). From that closely related species and from *M. armeniacus*, sp.n., it is clearly distinguished by the presence of a deep oval incision on the apex of the aeedeagus dividing the lobes of the shaft. From *M. armeniacus* it differs also in its small body size and the normally developed lateral carinae of the frons extending, in contrast with that species, far beyond its middle.

Material. Daghestan—Khodzha-Makhi, 19 June 1925, 4 ♂♂ (including the holotype), 2 ♀♀ (A. Kirichenko); same provenance, 20 June 1944, 1 ♀ (Ryabov); Tsudakhar, 18 June 1925, 3 ♀♀ (A. Kirichenko); Sergokala, 6 June 1964, 7 ♂♂, 3 ♀♀ (S. Medvedev).

Mycterodus tunicatus Logvinenko, sp.n. (Figs. 14, 34, 71-76).

In habitus, very close to *M. hyrcanus*, sp.n., but much lighter in color, the head remaining darker.



Figs. 71-76. *Mycterodus tunicatus*, sp.n., ♂.

71—aeedeagus from above, 72—aeedeagus from the side, 73—apex of aeedeagal hook, 74—stylus, 75—apex of stylus from above, 76—anal tube.

Vertex slightly transverse, its anterior margin very broadly rounded. Frons about 1.5 times longer than broad. Median carina distinct, extending onto the clypeus; intermediate carinae obliterated, only discernible as dark narrow lines. Pronotum of the same length as the vertex; scutellum with a longitudinal groove in the middle, lateral carinae distinct. Elytra light brown, with equally light slightly elevated veins, cells here and there diffusely edged with brown. Lower wings undeveloped. The venter of the abdomen and the legs yellowish brown, monochromatic.

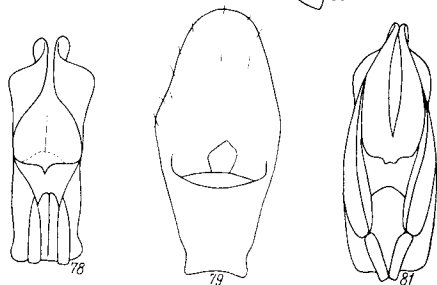
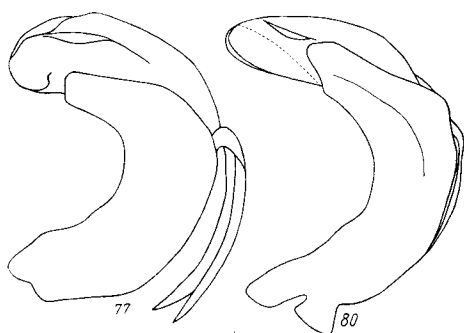
Anal tube ovate in form, broadly rounded at the apex. Stylus strongly transverse, triangular in form its dorsal protuberance massive, slightly prolonged. Aeedeagal shaft completely covered by the theca, gradually narrowing toward the apex. Aeedeagal hooks extending almost to the base of the shaft with abruptly narrowed and elongate apices. Theca in the apical half broad, its dorsal crests with denticulate margins.

Body length of the male 4.65-4.95 mm. Female unknown.

Within the boundaries of the genus *M. tunicatus*, occupies an isolated position. In contrast with the known representatives of this genus, the intermediate carinae are obliterated and in the genital block of the male the structure of the aeedeagus is peculiar, the shaft being entirely covered by the theca, which broadens apically.

Material. Tadzhikistan, Nazar-Aylyakh, 2400 m above sea level, 10 August 1962, 2 ♂♂ (including the holotype) (V. Zaytsev).

Mycterodus talyshensis Logvinenko, sp.n. (Figs. 15, 35, 80, 81).



Figs. 77-81.

77-79—*Mycterodus hyrcanus*, sp. n., ♂: 77— aedeagus from the side, 78— aedeagus from above, 79— anal tube; 80-81— *M. talyshensis*, sp. n., ♂: 80— aedeagus from the side, 81— aedeagus from above.

Light brown with dense dark speckles.

Vertex transverse (two-thirds as long as broad), obtuse angled anteriorly, concave in the middle, with a light longitudinal stripe. Frons slightly widened below, its carinae distinct; intermediate carinae extending far beyond the middle of the frons. Frontal macula not apparent; clypeus with a broad yellow spot in the middle. Pronotum and scutellum brownish yellow with small coalescent speckles. Elytra with light convex veins, thinly edged with brown; costal margin more broadly darkened. Lower wings developed normally, fumose, with darker veins.

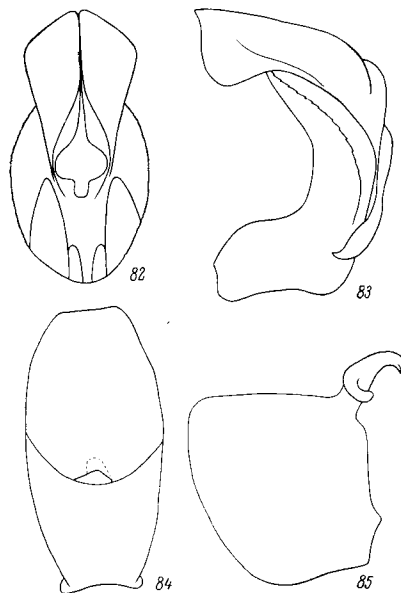
Anal tube in the male oval, with an appreciable dilation before the middle. Stylus transverse, with a strongly protruding upper inner angle. Aedeagus slender, curved in the middle, its apex laterally with a pair of narrow lobes. Gonopore large, oval, gradually narrowing toward the apex. Aedeagal hooks thin, extending over approximately the middle third of the shaft; theca covering 2/3 of the shaft.

Body length of the male 5.6 mm, that of the female 5.75 mm.

Externally very similar to the other new species from Talysh, *M. hyrcanus*, sp. n., from which it differs clearly in the transverse form of the stylus, the more slender aedeagus and the oval gonopore with fine denticles along the margin.

Material. Talysh, Astara district, Paleton, 18 July 1922 (holotype), 2 ♀♀ (Znoyko).

Mycterodus hyrcanus Logvinenko, sp. n. (Figs. 16, 36, 77-79).



Figs. 82-85. *Mycterodus intricatus* Stal. ♂.

82— aedeagus from above, 83— aedeagus from the side, 84— anal tube, 85— stylus.

Brown, with coalescent dark brown speckles, forming small spots in the anterior part of the body.

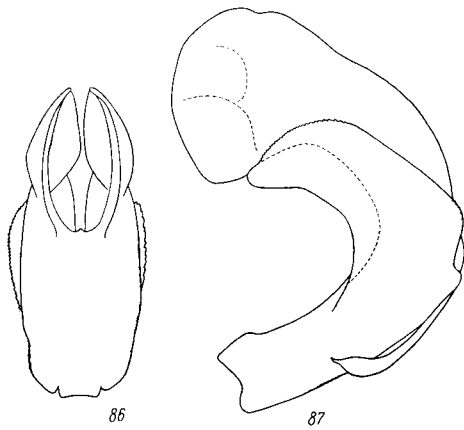
Vertex transverse, two-thirds as long as broad, anteriorly obtuse angled, with a light longitudinal stripe in the middle and a pair of oval spots on the posterior margin. Frons slightly widened below, median carina distinct, the intermediate ones extending almost to the frontoclypeal suture. Frons between the intermediate and the lateral carinae dark brown, mottled with light speckles, frontal macula poorly defined. Elytra brown, with prominent veins edged with dark brown. At the base of the wing and around the apex of the clavus abundant dark brown spots. Lower wings developed normally, fumose.

Anal tube slightly widened medially, its apex broadly rounded. Stylus almost as long as broad. Aedeagus thickest, curving most steeply in the middle part, the thickness of the shaft the same throughout its length. Aedeagal hooks thin, often weakly sclerotized, varying greatly from short and rudimentary to normal length, approximately half as long as the shaft. Shaft apex with a small narrow lobe on each side; gonopore cordiform with a smooth margin. Theca on the ventral side covering 2/3 of the shaft.

Body length of the male 5.3-5.4, that of the female 5.5-5.6 mm.

Close to *M. talyshensis*, sp. n., but differing from it in the more thickset aedeagus, the cordiform gonopore without denticles and the quadrate stylus.

Material. Talysh, Lerik, Lenkoran district, 12-14 May 1909, 7 ♂♂ (including the holotype), 1 ♀ and Astanalay, 27 May 1909, 1 ♀ (A. Kirichenko); Zuvant, Lenkoran, 2 August 1932, 1 ♀ (Zoyko); Lerik district, Oran-Chaya area, 9 May 1966, 1 ♂, 1 ♀ and Yardymly,



Figs. 86-87. Mycterodus sarmaticus Logv., ♂.
86— aedeagus from above, 87— aedeagus from the side.

slopes with shrubs, 11-12 June 1967, 15 ♂♂, 12 ♀♀ (V. Logvinenko).

Mycterodus intricatus Škal, 1861 (= Mycterodus jalticus Dlabola, 1958) (Fig. 1, 17, 37, 82-85).

A species probably endemic to the Crimea, widespread in forests on the slopes and occurring on various kinds of trees and shrubs. The report of this species from the Caucasus (Horvath) is doubtful and requires verification.

Mycterodus sarmaticus Logvinenko, 1967 (Fig. 18, 38, 86, 87).

Characteristic of the structure of the male genitalia of this species are the markedly widened and broadly rounded apex of the aedeagus and the aedeagal hooks, which narrow abruptly at the apices.

Distribution. The northwestern spurs of the Greater Caucasus (Tuapse, Gelendzhik, Solntsedar, Goryachiy Klyuch).

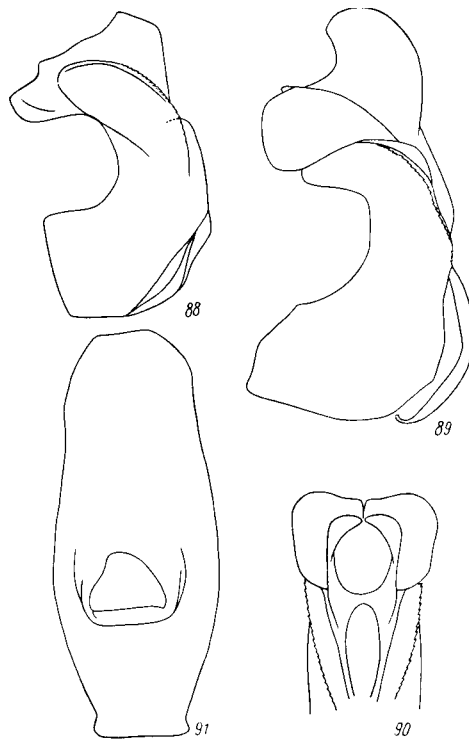
Mycterodus orthocephalus Ferrari, 1892 (Figs. 19, 39, 88).

According to the literature summarized by Oshanin (1906), this species is known from Italy, the Tyrol, Rumania, the south of the European part of the USSR, and the Crimea. Collections during the last decades, however, have not confirmed the occurrence of this species in the USSR. M. orthocephalus Ferr. is known reliably from Serbia only (collection of the Zoological Institute).

Mycterodus rostratulus Emeljanov, 1964 (Figs. 20, 40, 89-91).

From the closely related M. carpathicus, sp. n., it differs in the basic structure of the anal tube, which lacks the triangular denticle on the lateral margin, and the entire, nonfurcate margin of the theca. Characteristic of M. rostratulus Em. are also apically strongly attenuated aedeagal hooks.

Distribution. The Black-Sea part of the Northwest Caucasus (Novorossiysk, Gelendzhik, Kabardinka) (V. Logvinenko).



Figs. 88-91.

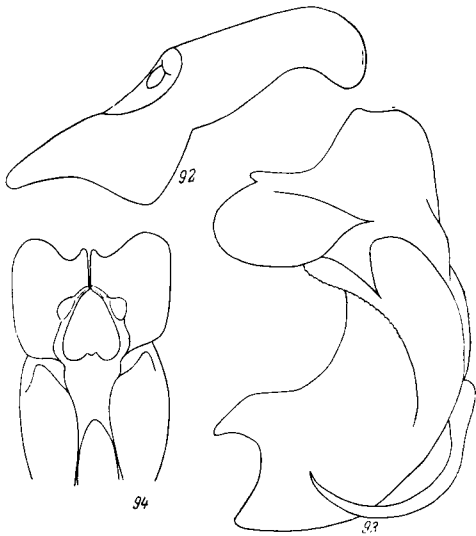
88— Mycterodus orthocephalus Ferr., ♂, aedeagus from side; 89-91— M. rostratulus Em., ♂: 89— aedeagus from the side, 90— apex of aedeagus from above, 91— anal tube.

Mycterodus carpathicus Logvinenko, sp. n. (Figs. 92-94).

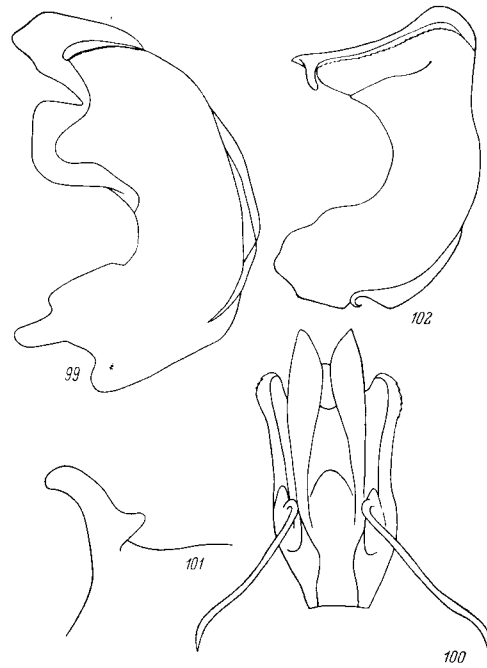
Brown, with continuous mottling with small light speckles.

Vertex pentagonal in form, projecting forward strongly, lateral carinae slightly undulate before the apex. Length of the vertex a trifle greater than its breadth. Frons broad, of virtually equal length and breadth, in the apical third roof-like; the remaining part of the face slightly convex. Median and intermediate carinae of the frons not quite extending to its middle. Frontal macula in the form of a narrow dart. Clypeus convex, without a carina. Elytra brown, with prominent brown longitudinal veins; crossveins in the cells forming a dense network, lighter, whitish in places. Hind wings undeveloped.

Anal tube of the male elongate in form, its apex rounded, lateral walls each bearing a large triangular tooth before the middle. Stylus with a protruding, very broadly rounded apical angle, dorsal process attenuated, thin. Aedeagus thick, stocky. Lobes on the sides of the gonopore strongly protruding; ventral lobes broadly rounded. Theca covering about 2/3 of the shaft, its apex on the sides of the shaft deeply incised, ventral crest denticulate. Aedeagal hooks gradually narrowing apically.

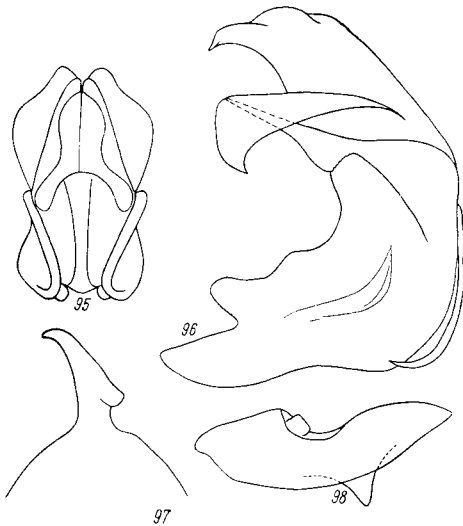


Figs. 92-94. *Mycterodus carpathicus*, sp. n. ♂.
92—anal tube, 93—aedeagus from the side, 94—apex of aedeagus from above.



Figs. 99-102.

99-101—*Mycterodus krameri* Dlab., ♂: 99—aedeagus from the side, 100—apex of aedeagus from above, 101—apex of stylus; 102—*M. immaculatus* F., ♂, aedeagus from the side.



Figs. 95-98. *Mycterodus chorassanicus*, sp. n. ♂.
95—apex of aedeagus from above, 96—aedeagus from the side, 97—apex of stylus, 98—anal tube from the side.

Body length of the male 6.9-7.0 mm, that of the female 7.0-7.4 mm.

The species is close to the North Caucasian *M. rostratulus* Em. It differs from it in the distinct

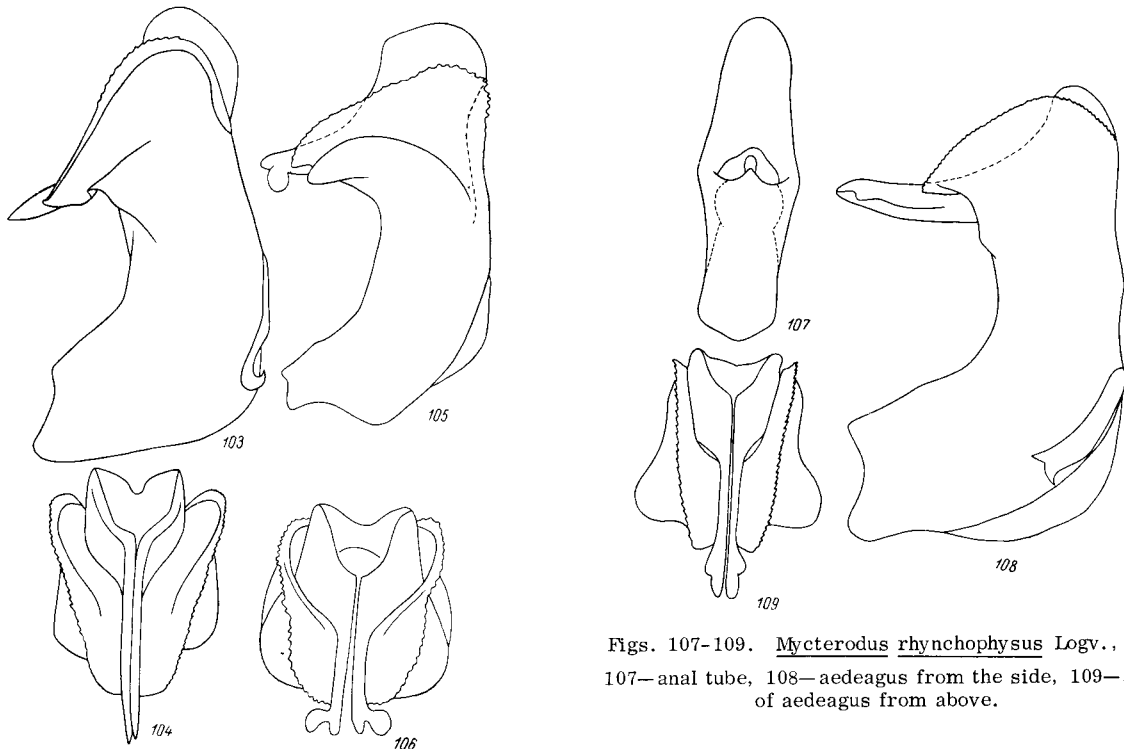
pentagonal form of the vertex, the thicker aedeagal shaft, the furcate apex of the theca on the sides of the shaft and also in the presence of a triangular tooth on each side of the anal tube.

Material. Transcarpathian region, Vinogradovo, southern slopes of the Chernaya Gora, in dewberry thickets and in areas with motley-grass cover (*Matricaria* sp., *Origanum vulgare* L. etc.), 14 June 1959, 8 ♂♂ (including the holotype) and 15 ♀♀ (V. Logvinenko); same provenance, 9 June 1969, 1 ♂ (Shkreba).

Mycterodus chroassanicus Logvinenko, sp. n. (Figs. 21, 41, 95-98).

Medium size, brown, with darker markings and coarse venation of the elytra.

Vertex of equal length and breadth, anteriorly protruding slightly at an angle. Surface of the vertex slightly concave, brown, mottled with small yellowish spots transverse in form; a light longitudinal stripe in the middle. Frons brown, mottled with small coalescent speckles; clypeus yellowish. Median carina high, extending to the clypeus; intermediate carinae distinct, reaching to the middle of the frons. Frontal macula sagittate, clear. Pronotum 1/8 shorter than the vertex strongly depressed in the centre, yellowish with dark



Figs. 103-106.

103-104—*Mycterodus cuniceps* Mel., ♂: 103—aegeagus from the side, 104—apex of aedeagus from above; 105-106—*M. nasutus* H. S., ♂: 105—aegeagus from the side, 106—apex of aedeagus from above.

brown speckles coalescent in the middle and on the sides. Scutellum of the same length as the vertex. Upper wings brown, veins protruding markedly, yellowish, edged with dark brown; with dark speckles in the cells. Legs and abdomen light brown, with interrupted dark stripes.

Anal tube broadly rounded at the apex, with a triangular tooth near the middle on each side. Stylus with rounded outlines; dorsal tooth with slightly developed lobes. Aedeagus short, stocky, with a pointed apex; ventral lobes strongly recurved toward the base. Aedeagal hooks begin from the middle of the dorsal side of the shaft and taper gradually to their apices. Lower and lateral margins of the gonopore convex. Theca covering a trifle more than half the shaft, its ventral lobes tapering strongly and also recurving toward the base.

Body length of the male 5.2-5.4 mm, that of the female 6.0-6.2 mm.

From the closely related *M. chorassanicus*, sp. n., this is easily distinguishable by the presence of a triangular tooth at each side of the anal tube, by the pointed apex of the aedeagus and the ventral lobes of the apex of the aedeagus, and by the theca being recurved towards the base.

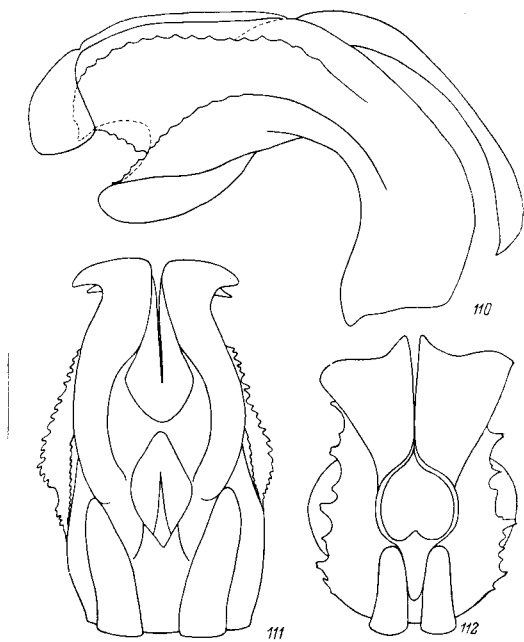
Figs. 107-109. *Mycterodus rhynchophysus* Logv., ♂. 107—anal tube, 108—aegeagus from the side, 109—apex of aedeagus from above.

Material. Turkmenia, Kara-Kala, station of the All-Union scientific research Institute for Plant Breeding, on *Zygophyllum*, 27 May 1964, 2 ♂♂, 3 ♀♀ (♂—holotype); same provenance, Aydere area, 17 May 1964, 1 ♂, 2 ♀♀, 4 nymphs (M. Loginova); same provenance, Igdedzhik, 21 May 1952, 1 ♀ (O. Kryzhanovskiy); same provenance, Kara-Kala, 13-15 May 1960, 2 ♂♂, 1 ♀; same provenance, Aydere, 27 May 1965, 4 ♂♂, 4 ♀♀ (V. Puchkov); Bakharden district, Archman, 28 April 1953, 1 ♀ (D. Shteinberg); Kosha-Goi, 1800 m, B. Balkhany, 23 June 1934, 1 ♀ (V. Popov); Western Kopetdagh, Syunt town, 21 June 1953, 1 ♂ (O. Kryzhanovskiy); same provenance, 13 May 1953, 1 ♂ (Osinova).

Mycterodus krameri Dlabola, 1974 (Figs. 22, 46, 99-101).

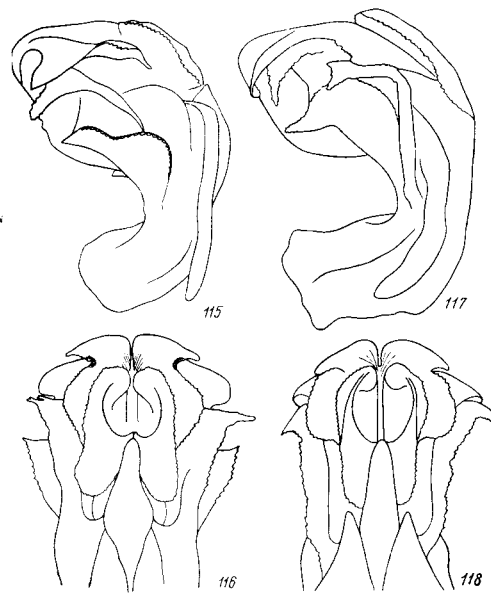
Large, of a dirty brown shade, with dense coalescent dark brown speckles. Breadth of vertex 1.5 times its length, its anterior margin obtusely angled, a pair of light oval spots occurring at the posterior margin. Face flat, frons decidedly elongate, widening downward. Intermediate carinae of the frons distinct, curved, extending nearly to the frontoclypeal suture; median suture light yellow; frontal macula with indistinct outlines. Along each lateral carina there is a row of large dark speckles. Length of the pronotum the same as that of the vertex, its middle depressed, anterior and posterior margins darker. The scutellum not longer than the pronotum, its lateral carinae light, weakly apparent. Fore wings with lighter, protruding basal veins, the supernumerary crossveins less sharp. Hind wings not developed.

Anal tube elongate oval in form, without teeth laterally, its apex broadly rounded. Stylus with rounded outlines, strongly convex. Aedeagus stocky, with the



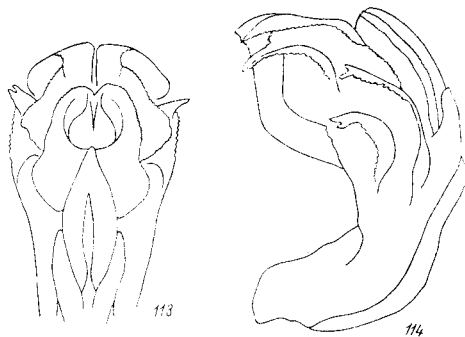
Figs. 110-112.

110-111—*Mycterodus caucasicus* Mel., ♂: 110—
aedeagus from the side, 111—apex of aedeagus from
above; 112—*M. ovifrons* Put., ♂, apex of aedeagus
from above.



Figs. 115-118.

115-116—*Mycterodus lobatus* Logv., ♂: 115—
aedeagus from the side, 116—apex of aedeagus from
above; 117—*M. mutuus* Logv., ♂: 117—
aedeagus from the side, 118—
apex of aedeagus from above.



Figs. 113-114. *Mycterodus batumus* Dlab., ♂.

113—apex of aedeagus from above, 114—
aedeagus from the side.

sharpest flexure in the basal part. Apex of shaft deeply divided into 2 pairs of lobes with obtuse-angled or rounded outlines, ventral lobes somewhat smaller than the dorsal ones. Aedeagal hooks long, thin, with pointed apices, their bases lying in the apical third of the shaft, their apices extending almost to the base of the shaft. Lower margin of the gonopore protrudes in the form of a tongue. Theca divided laterally into two almost identical lobes that do not extend to the level of the apical end of the shaft.

Body length of the male 5.8-6.0 mm, that of the female 7.25 mm.

In the structure of the male genitalia this species is close to *M. chorassanicus*, sp. n., from which it differs in its greater size, in features of the structure of the head, and in particular, in the more strongly obliterated supernumerary crossveins of the elytra. In the males, the triangular tooth on the lateral margin of the anal tube is absent, while the lobes of the apex of the aedeagus and the theca have rounded outlines.

Material. Iran, Astrabad, 20, 26 April 1914, 4 ♂♂, 2 ♀♀, 2 May 1914, 1 ♂ (A. Kirichenko); Rastem-Abad, Gilyan, 19 May 1904, 1 ♀ (Zarudnyy).

Mycterodus immaculatus Fabricius, 1794 (Figs. 23, 47, 102).

One of the most widespread species. Known from Southern and Central Europe, in the USSR from the south (Moldavia, Vinitsa region) and from some of the central regions of the European part.

Mycterodus cuniceps Melichar, 1906 (= *Mycterodus longivertex* Grucev, 1970) (Figs. 3, 24, 103, 104).

In the group of species with the vertex markedly elongated anteriorly (its length 1.5-2 times its breadth) it is clearly distinguishable by the parallel apical margins of the shaft of the aedeagus and of the theca (viewed from the side).

Distribution: Yugoslavia, Hungary, Bulgaria. In the USSR, not noted so far.

Mycterodus nasutus Herrich-Schaeffer, 1834 (Figs. 25, 105, 106).

Distribution. Austria, Hungary, Bulgaria, Greece, Asia Minor. According to the literature (Oshanin, 1906), it is known from Southern Russia and the Caucasus; however, reliable data confirming the occurrence of this species in the USSR are lacking. There are only a few females from Moldavia that possibly belong to M. nasutus H.-S.

Mycterodus rhynchophysus Logvinenko, 1967 (Figs. 26, 48, 107-109).

From species with unevenly developed lobes of the apex of the aedeagus and a vertex relatively slightly narrowed anteriorly (length less than 1.5 times its breadth) it is clearly distinguished by the bifurcate apices of the aedeagal hooks and the lateral position of their bases.

Distribution. Moldavia and southwestern Ukraine—Odessa and Vinitsa regions (V. Logvinenko).

Mycterodus ovifrons Puton, 1890 (Figs. 5, 42, 49, 112).

In the structure of the male genitalia closest to M. caucasicus Mel., from which it differs mainly in the different size of the teeth of the dorsal and ventral crests of the theca.

Distribution. Caucasus—Black Sea littoral from Tuapse to Batumi, slopes of the Greater and Lesser Caucasus with an extension to the Caspian coast in the Kizlyar-Derbent district.

Mycterodus caucasicus (Melichar, 1906) (Figs. 43, 50, 110, 111).

Characterized by the uniformly developed teeth of the dorsal and ventral crests of the theca in contrast to the closely related M. ovifrons Put., in which the dorsal crest is macro- and the ventral one microdont.

Distribution. Transcaucasia—Ajaria and Tana-Tal'.

Mycterodus batumus Dlabola, 1958 (Figs. 113-114).

Very close to M. mutuus Logv. and M. lobatus Logv., from which it differs in its distribution and in fine details of the structure of the lobes of the theca and the aedeagal shaft.

Distribution. Georgia—vicinity of Batumi and Kobuleti (V. Logvinenko).

Mycterodus mutuus Logvinenko, 1967 (Figs. 2, 45, 117, 118).

So far, only 1 ♂ is known from Krasnodar.

Mycterodus lobatus Logvinenko, 1967 (Figs. 44, 51, 115, 116).

From the closely related M. batumus Dlab. and M. mutuus Logv., it differs in a number of features of the structure of the lobes of the apex of the aedeagus and theca, which are difficult to detect at first glance.

Distribution. Ajaria—valley of the Adzharis-Tskali river (V. Logvinenko).

SUMMARY

The genus Mycterodus Spinola 1939 comprises 40 species, of which 8 are described in this paper as new.

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