

# NEW GENERA OF LEAFHOPPERS OF THE FAMILIES CIXIIDAE AND ISSIDAE (HOMOPTERA, AUCHENORRHYNCHA) IN THE USSR

A. F. YEMEL'YANOV (EMELJANOV)

The generic classification of most of the Palearctic leafhopper families has recently been re-examined and brought considerably closer to a natural system. However, there still remains a need to improve the generic system in the families Cixiidae and Issidae. An attempt is made in the present article to divide the composite genus Oliarius Stal of the family Cixiidae and the composite genera Hysteropterum A. S. and Issus F. of the family Issidae as they occur in the USSR.

## Fam. CIXIIDAE

Palearctic members of the family Cixiidae all belong to the tribe Cixiini; no subfamilies have been distinguished in the family (Muir, 1930; Metcalf, 1936). Without setting ourselves the task of revising the higher categories of the entire family, we should note that the genera grouped around Oliarius Stål (Hyalesthes Sign., Pseudoliarius Hpt.) are a highly individualized group within the Cixiini s. str., and should be regarded as a separate tribe-Pentastirini, trib. n. (type-genus Pentastira Kbm.).

### KEY FOR DISCRIMINATION OF THE TRIBES CIXIINI AND PENTASTIRINI, TRIB. N., AND THE GENERA OF THE TRIBE PENTASTIRINI, TRIB. N.

- 1 (2). Mesonotum with three carinae. Ovipositor well developed; valve I corrugated with fine furrows; branches of valve II adnate. (Tribe Cixiini Spinola, 1839).
- 2 (1). Mesonotum with five carinae. Ovipositor reduced, short or, if long, valve I not corrugated and valve II cleft to the base. (Tribe Pentastirini, trib. n.).
- 3 (10). Areolarcarinae of vertex (halves of the oblique transverse median carina of the vertex) converging at a distinct acute angle. Subapical setae wanting on apical teeth of segments of hind tarsi. (Subtribe Oliarina, subtrib. n.\*).
- 4 (9). Vertex weakly transversely concave, U-shaped, its lateral margins not leaf-shaped, supraocular field narrow, narrower than anteocular field. Pronotal disc not tectiform. Fork of frontal carina occupying no more than 1/3-1/2 the apical width of the frons.
- 5 (8). Postocular carina of pronotum acute, sharper than lateral carina. Clypeus with a median carina. Veins of elytra with setiferous granules.
- 6 (7). Costal vein with granules. Fork of median carina of frons extending approximately 1/4 the length of the frons. Clypeus reaching level of lower margins of antennae. Ovipositor long, not reduced. .... Eumecurus, gen. n. (type-species, E. caudatus, sp. n.)
- 7 (6). Costal vein without granules. Fork of median carina of frons extending practically 1/2 the length of the frons. Clypeus reaching level of upper margins of antennae. Ovipositor short, reduced ..... Pseudoliarius Haupt. (type-species, Oliarius fuscofasciatus Mel.)
- 8 (5). Postocular carina of pronotum not sharp, lateral carina similarly not sharp. Clypeus without a median carina. Veins of elytra without granules, bare ... Oliarellus, gen. n. (type-species, Hyalesthes fulvus Kusnezov).
- 9 (4). Vertex deeply sulciform, transversely V-shaped, its lateral margins leaf-shaped, supraocular field broad, broader than anteocular field. Pronotal disc sharply tectiform. Fork of frontal carina occupying practically entire apical width of frons ..... Oecleopsis, gen. n. (type-species, Oliarius artemisiae Matsumura).
- 10 (3). Areolar carinae of vertex converging at an obtuse angle. Subapical setae present, at least on the 2nd segment of the hind tarsi. (Subtribe Pentastirina, s. str.).
- 11 (16). Frontal carina distinctly forked above.
- 12 (15). Not more than 8 apical teeth on 1st and 2nd segments of hind tarsi.
- 13 (14). Styli asymmetrical, without inner recurrent process ..... Pentastira Kbm. (type-species, P. major Kbm.).
- 14 (13). Styli with inner recurrent process, symmetrical or asymmetrical ..... Reptalus, gen. n. (type-species, Cixius quinquecostatus Dufour).
- 15 (12). More than 10 apical teeth on 1st and 2nd segments of hind tarsi ..... Pentastiridius Kbm. (type-species, Flata pallens Germ.).
- 16 (11). Frontal carina not forked ..... Hyalesthes Sign. (type-species H. obsoletus Sign.) = Pseudylesthes Kusun.

### EUMECURUS Emeljanov, gen. n.

Vertex narrow, its length approximately 2.5 times its width, parallel-sided, its anterior margin projecting in a weak arc, areolar carina parabolic as a whole, its ends adjoining the lateral margins of the vertex around the middle, its apex (middle) locking with the anterior margin of the vertex. Vertex longitudinally sulciform, with a longitudinal carina on posterior part. Frons and postclypeus forming a rhomboid figure with rounded lateral margins opposite the antennae; carinae above and below straight or even slightly concave. Median carina of frons and clypeus sharp. Width of frons opposite antennae practically 4 times its width at the vertex. Lora with gently outlined "windows". Postclypeus forming a rounded-trapeziform projection into the frons to the level of the lower margins of the antennae. Median ocellus present. Pronotum with a sharp rectangular notch at rear; postocular carinae sharp, sharper than lateral carinae of pronotum. Scutellum with 5 well developed carinae. Elytra with setiferous granules. Hind tibiae with 5 + 1 apical teeth.

Type-species, Eumecurus caudatus, sp. n.

Eumecurus caudatus Emeljanov, sp. n.

Male unknown.

\*The type-genus of the subtribe, Oliarius Stal (typus generis, Cixius walkeri Stål), is closest to the genus Pseudoliarius Hpt., but is distinguished from it by a number of characters, in particular by the presence of a developed distal segment of the aedeagus.

Head dark brown with lighter yellowish-brownish carinae and supraocular and anteoconular fields. Anterior part of vertex also lightened behind areolar carina. Prothorax brownish above, becoming gradually dark brown on the sides in a downward direction. Scutellum dark brown, with lighter carinae and lighter spaces along outer carinae; apex of scutellum also lightened. Tegulae light. Elytra hyaline, with slightly brownish veins and darker granules on them; on cross veins on upper part of elytra with blurred brown spots.

Abdomen dark brown with light margins on sclerites. Ovipositor long, approximately as long as abdomen or hind tibia. Large transversely reniform wax gland located above ovipositor. Undersurface of body and legs dark brown, with lighter margins on sclerites and lighter carinae.

**Material.** Tadzhikistan, southern slopes of the Hissar (Gissar) Range, Say Du-Oba, 1 ♀, holotype, 14 Aug. 1929 (Ye. Kuznetsova); Kondara, 1100 m, 28 Aug. 1945, 1 ♀ (Gussakovskiy).

#### OLIARELLUS Emeljanov, gen. n.

Vertex moderately elongate, its length practically twice its width, parallel-sided, its anterior margin projecting in a weak arc. Areolar carina consisting of two straight parts converging from the middle of the sides of the vertex to the apex at an acute angle, at the apex the areolar carinae are joined by a transverse carina, in front of which there is a small quadrangular cell. Vertex weakly sulciform, practically flat, with longitudinal carina in posterior half. Frons and postclypeus forming an elongated hexagon with rounded lateral angles opposite the antennae, carinae above and below weakly convex. Frons with a distinct median carina, postclypeus completely non-carinate. Width of frons opposite the antennae approximately twice its width at the vertex. "Windows" on lora imperceptible. Postclypeus projecting into the frons slightly above the level of the upper margins of the antennae. Median ocellus present. Pronotum rather smooth, flat, rather long at the sides, its posterior margin distinctly and deeply concave in the middle in an obtuse angle, roundly projecting at the sides, inward from the tegulae, in an obtuse angle so that the outermost parts of the posterior margin diverge obliquely forward. Postocular carinae of pronotum gently outlined, indistinct, lateral carinae distinct. Scutellum with five weak longitudinal carinae, median carina the weakest. Elytra with smooth veins, without granules.

**Type-species, Hyalesthes fulvus Kusnezov.**

#### OECLEOPSIS Emeljanov, gen. n.

Vertex narrow, its length approximately 2.5 times its width, slightly narrowing forward, its anterior margin projecting in a weak arc, its posterior margin notched in an acute angle. Vertex sulciform, sharply and deeply V-shaped, strongly convex in profile (more convex posteriorly) along upper margins of carinae. Areolar carinae diverging from lateral carinae on posterior third of vertex, straight in plane section, converging at an acute angle toward the apex of the vertex and appearing as a second ridge of the lateral carina diverging slightly toward the apex. Vertex with a longitudinal carina on posterior part. Frons and postclypeus forming an elongate rhomboid figure with rounded lateral angles opposite the bases of the antennae; sides of frons slightly concave above. Median carina of frons and postclypeus sharp. Width of frons opposite antennae approximately 4 times its width at the vertex. Lora without "windows." Postclypeus projecting onto frons at level of lower margins of antennae. Median ocellus indistinct. Pronotum rather sharply tectiform, with a sharp longitudinal median carina, its posterior margin clearly obtusely concave in the middle and convex along the sides. Postocular carinae sharp, arcuate, extending to the lateral carina of the pronotum, which is also sharp behind the junction with the postocular carina. Scutellum with five sharp carinae. Elytra with smooth veins, without granules and pronounced pterostigma.

Pygofer of male with a deep notch below, in which the struts of the styles are situated; the apices of the styles are recurved upward and close the lower part of the pygofer behind, the apices of the styles are flat and bear several tooth-like processes. The anal tube is asymmetrical, with a

downward-recurved rounded apex and notched right margin. Aedeagus with narrow theca bearing an apical tooth on the right; distal segment of aedeagus with three teeth, of which the two to the left are smaller and simple, while the one to the right is larger and bicuspidate.

**Type-species, Oliarus artemisiae Matsumura.**

Oecleus cucullatus (Nouatlier) (= Oliarus cucullatus Nhl.) from Southeast Asia may possibly belong to this genus.

#### REPTALUS Emeljanov, gen. n.

Vertex rather broad, its width in the middle usually equal to its length, less frequently its length 1.5 times its width, its lateral margins approximately parallel anteriorly, diverging posteriorly, its anterior margin weakly arcuate. Areolar carinae projecting forward in an angle or in an arc, joined to the anterior margin of the vertex in the middle by two small and frequently indistinct converged longitudinal carinae. Vertex horizontal behind areolar carinae, longitudinally concave in a shallow groove, with a longitudinal carina behind, strongly canted forward and downward in front of the carinae. Frons and postclypeus forming a longitudinal hexagonal figure with rounded lateral angles opposite the antennae, above carinae slightly convex, straight or slightly concave. Median carina of frons and postclypeus sharp. Width of frons opposite antennae approximately twice its width at vertex. Lora without "windows." Postclypeus forming a rounded-trapeziform projection on the frons up to the level of the antennae. Median ocellus small and distinct. Pronotum with a sharp obtuse-angled notch at rear, postocular carinae sharp, sharper than lateral carinae of pronotum, reaching or practically reaching anterior margin of sides of prosternum beneath eyes. Scutellum with five sharp carinae, the intermediate ones not extending to its anterior margin. Veins of elytra with setiferous granules. Tarsi of hind legs with approximately eight teeth on 1st and 2nd segments, subapical setae present either on both or only on 2nd.

Male genitalia. Anal tube with more or less clearly asymmetrical apical process laterally bounded by blunt or sharp processes. Recurrent process on inner margin of styles. Aedeagus with longer right tooth which is usually double or has a basal tooth, and shorter left tooth.

**Type-species, Cixius quinquecostatus Dufour.**

The genus comprises Reptalus panzeri (P. Löw), comb. n. (= Oliarus panzeri P. Löw); R. quinquecostatus (Dufour), comb. n.; R. cuspidistylus (Dlab.), comb. n. (= Oliarus cuspidistylus Dlab.); R. melanochaetus (Fieber), comb. n. (= Oliarus melanochaetus Fieb.); R. arcobogdulus (Dlab.), comb. n. (= Oliarus arcobogdulus (Dlab.); R. figuratus (Dlab.), comb. n. (= Oliarus figuratus Dlab.); R. bitinctus (Dlab.), comb. n. (= Oliarus bitinctus Dlab.); R. cuspidatus (Fieb.), comb. n. (= Oliarus cuspidatus Fieber); R. quadricinctus (Mats.), comb. n. (= Oliarus quadricinctus Mats.).

The genus Reptalus is similar to Pentastira Kbm., from which it is distinguished by the characters given in the key and also by the smaller size of its constituent species.

#### Fam. ISSIDAE

Because of the past broad concept of the genus Issus F., a number of species have been included in it which are not congeneric with the type-species. Some have already been removed, for example Issus caucasicus Mel. = Mycterodus caucasicus (Mel.) and Issus caraganae Dlab. = Phasmena caraganae (Dlab.). It is necessary also to propose an independent genus for Issus tendinosus Spin.

#### LATILICA Emeljanov, gen. n.

Short, relatively narrow with a relatively large transverse head and steeply tectiform folded elytra. Head slightly narrower than pronotum. Width of vertex approximately 1.5 times its length, its anterior margin weakly obtusely convex, its posterior margin slightly more steeply and arcuately concave, surface of vertex concave, median carina wanting, replaced by a weak furrow. Frons slightly convex, its length

approximately equal to its width, its upper margin straight, its lateral margins straight basally from the upper margin, slightly diverging downward and turning steeply inward practically at a right angle below the antennae and thus making the genae strongly convex. Width of postclypeus in upper part approximately half width of frons at level of antennae. On the frons there is a distinct median carina and there are intermediate carinae that form a slightly vertically directed oval area extending from the apex of the head and vanishing near the postclypeus. Clypeus conical, tapering downward, its upper boundary indistinct, projecting in an obtuse angle on to the frons; upper part of clypeus with an indistinct longitudinal carina. Pronotum with a sharply projecting convex anterior margin and straight posterior margin; median carina imperceptible. Side of prosternum with acute lower angle. Epimeron of mesothorax with an oblique sharp carina beneath tegula and opposite base of costa of elytra. Scutellum with distinct lateral carinae but without a median carina. Elytra steeply tectiform when folded, with sharp longitudinal veins and less sharp cross veins; geniculate prominence distinct. Costal margin convex basally, then straight to geniculate prominence, beyond which it is again convex and then straight to the apex. The radius has three branches, of which the anterior branch disappears beyond the geniculate projection, the second branch near the apex, and the third and longest branch going to the apex; the media branches in the first third and its anterior branch divides subapically; the cubitus is unbranched; an irregular marginal vein extends along the apical part of the elytra. Legs short, fore and middle tibiae triquetrous, hind tibiae with two lateral teeth on apical half.

Type-species, *Issus tendinosus* Spin.

The genus is distinguished from *Issus* F. by the shape of the frons, by the presence of a carina on the epimeron of the mesothorax, by the number of branches of the radius and cubitus and by a number of lesser characters.

There is 1 species in the genus.

The genus *Hysteropterum* A. S. is completely artificial as currently treated; it combines different groups (genera) which have little in common apart from superficial external similarity. A complete revision of it is a task for the future in view of the paucity of material of many species and the inaccessibility of this material. An attempt to delineate the genus as it exists in the fauna of the USSR may provide a basis for a subsequent wider revision. The following identification key does not reflect the relationships between genera, but merely juxtaposes their diagnostic differences. The genera *Tshurtshurnella* Kusn. and *Phasmena* Mel., which are regarded as independent, but which are closely allied to the *Hysteropterum* group, have been included in the key; in addition, many species belonging to the genus *Phasmena* have been described in the genus *Hysteropterum*.

KEY FOR DISCRIMINATION OF GENERA PREVIOUSLY INCORPORATED IN THE COMPOSITE GENUS *HYSTEROPTERUM* A. S.

1 (4). Costal margins of elytra with wide expansion on basal half projecting ventrally, perpendicular to the plane of the elytra.

2 (3). Marginal vein of terminal margin of elytra distinct and even. Intermediate frontal carinae not distinct. Apical row of denticles on 1st segment of hind tarsi interrupted ..... *Agalmatium*, gen. n. (type-species, *Cercopis grylloides* F.)

3 (2). Marginal vein indistinct. Intermediate carinae of frons distinct. Apical row of denticles on 1st segment of tarsi continuous ..... *Hysteropterum* A. S. (type-species, *Issus immaculatus* H. S.).

4 (1). Costal margins of elytra without any such expansion.

5 (10). Hooks of aedeagus not externally visible.

6 (7). Sensory pittings wanting. Cubital vein clearly bifurcate in middle. Elytra with a distinct submarginal vein on terminal part ..... *Scorlupella*, gen. n. (type-species, *Issus discolor* Germ.).

7 (6). Sensory pittings present on prothorax and, possibly, on lateral lobes of frons. Cubital vein not branched. Elytra without a distinct submarginal vein.

8 (9). Intermediate carinae of frons imperceptible. Elytra with sharp longitudinal and weak transverse veins; elytra on the whole more or less even. The theca bears a pair of dorsal lobes with a crenulate margin and a basal tooth on the inside. Row of denticles on 1st segment of hind tarsi interrupted ..... *Tshurtshurnella* Kusn. (type-species, *Tshurtshurnella eugeniae* Kusn.).

9 (8). Intermediate carinae of frons distinct. Elytral venation reticulate, rather random. Theca without dorsal lobes. Row of denticles on 1st segment of hind tarsus continuous ..... *Rhissolepus*, gen. n. (type-species, *Issus ergenensis* Beck.).

10 (5). Hooks of aedeagus clearly projecting from theca, recurrent.

11 (16). Theca with one or more pairs of apical teeth. Apical row of denticles on 1st segment of hind tarsus continuous.

12 (15). Theca with more than one pair of teeth or one pair of forked teeth.

13 (14). Theca with a pair of forked processes. Width of vertex no more than 1.5 times its length. Hind tibia with one lateral tooth ..... *Phasmena* Mel. (type-species, *Phasmena telifera* Mel.).

14 (13). Theca with 2-3 pairs of processes or teeth. Width of vertex at least twice its length. Hind tibia with two lateral teeth ..... *Celyphoma*, gen. n. (type-species, *Hysteropterum fruticulinum* Em.).

15 (12). Theca with one pair of simple teeth ..... *Brachyprosopa* Kusn. (type-species, *Brachyprosopa umnovi* Kusn.).

16 (11). Theca without teeth on apical part. Apical row of teeth on 1st segment of hind tarsus interrupted.

17 (18). Theca with one basal pair of teeth. The margin of the elytra, viewed from the side, beyond the apex of the clavus initially extends in the same direction, and then bends smoothly downward ..... *Scorlupaster*, gen. n. (type-species, *Hysteropterum asiaticum* Leth.).

18 (17). Theca without basal teeth. Margin of elytra viewed from the side immediately deflected downward beyond the apex of the clavus ..... *Aeluropsis*, gen. n. (type-species, *Hysteropterum tauricum* Kusn.).

*Hysteropterum* A. S., s. str. is not represented in the USSR, *Tshurtshurnella* Kusn. is monotypic, *Phasmena* Mel. includes *Issus caraganae* Dlab. in addition to the type-species, and *Brachyprosopa* Kusn. includes *Hysteropterum bicornutum* Kusn. in addition to the type-species.

AGALMATIUM Emeljanov, gen. n.

Short and tall, moderately compressed laterally, with a broad, short head. All integuments smooth and slightly shiny. Width of vertex 3-4 times its length in the middle, anterior margin of vertex convex, weakly curved in an arc or slightly undate, posterior margin more markedly concave in an obtuse angle, so that the vertex is perceptibly shorter in the middle than at the eyes, lateral margins of vertex straight, perceptibly converging caudad; surface of vertex concave, median carina imperceptible. Frons smooth, median carina distinct, intermediate carinae not expressed as raised lines, sometimes indicated by markings forming a vertically extended oval with truncate ends (like the outline of a barrel). Frons weakly convex transversely, practically flat or slightly convexly folded longitudinally at the level of the middle of the eyes. Length of frons slightly greater than its width. Upper margin of frons straight, lateral margins moderately convex from above for the greater part of their extent, more sharply convex and convergent below; frons widest in the middle. Width of postclypeus above approximately half width of frons; postclypeus projecting onto frons in an obtuse angle, almost a right angle, its boundary in the central part indistinct.

Pronotum with a convex anterior margin and straight posterior margin; carinae imperceptible. Scutellum with indistinct lateral carinae and a groove on the site of median carina in anterior half; scutellum concave from the margins in posterior half, 2 round pits evident at the sides of the groove. Elytra with distinct longitudinal veins and indistinct network of cross veins and with a distinct and rather even submarginal vein along apical margin. Radial and median veins branching at approximately the same level before the geniculate projection, anterior branch of radial vein passing across the projection, posterior branch along its upper margin. Anterior branch of median vein bifurcated at the middle, cubital vein simple. Costal margin of elytra with a broad ventral lobe basally. Legs of normal structure, row of denticles on 1st segment of hind tarsus interrupted.

Type-species, *Cercopis grylloides* F.

In addition to the type-species the genus includes *Hysteropterum bilobum* Fieb.

#### SCORLUPELLA Emeljanov, gen. n.

Short and tall, moderately laterally compressed, with a broad, short head. All integuments smooth and weakly shiny. Width of vertex 3-4 times its length in the middle, its anterior margin forming a weak convex arc, its posterior margin noticeably more arcuate or obtusely convex so that the vertex is perceptibly shorter in the middle than around the eyes, lateral margins of vertex straight, converging caudad, surface of vertex concave, median carina indicated or its site occupied by a furrow. Frons smooth, median carina distinct, intermediate carinae not present as raised lines but indicated by the markings and forming a rather regular circle. Frons weakly convex transversely, clearly convex longitudinally, more strongly convex in the upper part, where a transverse gentle elevation may be seen on a level with the middle of the eyes. Width of frons greater than its length in the middle or its length equal to its width. Upper margin of frons straight, lateral margins straight above the level of the lower margins of the eyes, parallel or slightly converging upward, rather steeply convexly curved below, converging downward toward the postclypeus. Postclypeus extending rather deeply onto frons, but its boundary with the frons is not apparent for the greater part of its extent. Pronotum with convex anterior margin and straight posterior margin, median carina sharp. Scutellum with a sharp median carina and clear but short lateral carinae strongly diverging laterad and caudad; intermediate carinae indicated between lateral carinae and median carina and indistinct longitudinal elevations. Elytra with sharp longitudinal veins and less sharp and less numerous cross veins, largely on the apical half. A not entirely even, but distinct submarginal vein present along apical margin of elytra. Geniculate projection distinct. The radial vein branches before the geniculate projection and both its branches pass through it. The median vein branches on the level of the geniculate projection and both its branches are frequently also apically branched; the posterior branch slightly before the anterior branch. The cubital vein branches in the middle or in the apical third. Costal margin basally steeply convexly curved, not strongly drawn out in a leaf shape and recurved outward. Legs of the usual structure.

Type-species, *Issus discolor* Germ.

In addition to the type-species the genus includes *Hysteropterum montanum* Fieb. — *S. montana* (Fieb.), comb. n.

#### RHISSOLEPUS Emeljanov, gen. n.

Short and tall, moderately laterally compressed, with a broad, short head. All integuments coarse, rugose and roughened. Width of vertex approximately 2.5 times its length, its anterior margin forming a gentle convex arc, its posterior margin forming a slightly steeper concave arc; surface of vertex concave, margins distinct. There is no median carina as such; its place is occupied by a furrow at the sides of which there are frequently indistinct wedge-shaped elevations. Frons practically flat, its width approximately equal to its length, upper margin straight, lateral margins straight between eyes, practically parallel or slightly converging upward, convex below, converging downward. The intermediate carinae of the frons, which are

usually poorly apparent, outline a practically regular circle and merge above with the fronto-vertical carina near the apex of the median carina. The postclypeus protrudes onto the frons in a weakly obtuse angle, almost a right angle. Pronotum with strongly convex anterior and weakly concave posterior margin, median carina indistinct. Scutellum with distinct lateral carinae and a pair of longitudinal cariniform elevations along the median line, parallel in front and diverging behind; gentle depressions present around the apex of the scutellum at the side of the carinae and between them behind. Elytra coarsely rugose, with sharply elevated longitudinal veins and less prominent cross veins. Geniculate projections distinct. The radius gives rise to one branch in front on the geniculate projection and two indistinct branches behind it; the media branches on the level of the geniculate projection, a distinct cross vein extends from the anterior branch of media in the posterior third of the wing toward the radius; the cubitus is simple. Along the inner claval vein the clavus is curved roof-like. Costal margin steeply convex at the base, margin slightly extended outward in the shape of a leaf. Legs of the usual structure.

Type-species, *Hysteropterum ergenense* Fieb.

There is 1 species in the genus.

#### CELYPHOMA Emeljanov, gen. n.

Short and tall, moderately laterally compressed, with a broad or narrow short head. All integuments rather coarse, rugose or roughened. Width of vertex 1.5-2.5 times its length, anterior margin of vertex forming a gentle convex arc or practically straight, posterior margin concave, obtuse-angled or more strongly arcuate than anterior margin. Lateral margins of vertex approximately parallel. Surface of vertex concave, its margins sharp, median carina wanting, its site occupied by a poorly apparent furrow. Frons transversely weakly convex or flat, longitudinally weakly convex or practically straight, its length slightly greater than its width, its upper margin distinctly or even rather strongly arcuate, its lateral margins convex, converging upward and downward, its width at the clypeus slightly less than its apical width. Intermediate carinae of frons not apparent as raised lines, median carina sharp. Postclypeus extending onto the frons in an obtuse angle; median carina usually apparent on it from above. Pronotum with strongly projecting obtuse-angled or arcuate anterior margin and straight posterior margin; median carina distinct or vanishing. Scutellum with distinct lateral carinae and a pair of median carinae which converge in front and diverge to the rear. Elytra coarsely sculptured with strongly elevated longitudinal veins and rather prominent cross veins. Geniculate prominences distinct. The radial vein branches near the base; its anterior branch extends across the geniculate projection and its posterior branch behind it; both extend to the apical margin of the wing; the anterior branch, which falls slightly short of the apex, enters the costal margin. The median vein is branched in the middle; its anterior branch frequently branches again apically. Cubital vein simple. Costal margin only slightly steeper, convexly arcuate at base, only slightly drawn out leaf-like and recurved outward. Legs of the usual structure, 1-2 lateral teeth, sometimes wanting.

Type-species *Hysteropterum fruticulinum* Em.

A considerable number of new species from Eastern Kazakhstan and the mountains of Soviet Central Asia belong to this genus.

#### SCORLUPASTER Emeljanov, gen. n.

Short and tall, moderately laterally compressed, with a broad, short head. All integuments smooth and mat. Width of vertex approximately 3 times its length in the middle; anterior margin of vertex slightly convex, posterior margin concave in a noticeably stronger arc so that the vertex is perceptibly shorter in the middle than around the eyes, its width approximately 3 times its length in the middle, lateral margins of vertex straight, slightly converging caudad, surface of vertex concave, its margins sharp, median carina distinct. Frons smooth, without distinct median and intermediate carinae, straight transversely, slightly convex longitudinally from above. Length of frons approximately

equal to its width; upper margin straight, lateral margins basally slightly convex, approximately parallel, more sharply convex below, converging toward the postclypeus. Postclypeus extending onto frons in an acute angle, suture not apparent medially. Pronotum with convex anterior margin and straight posterior margin, without a median carina and with a pair of depressions medially. Scutellum with a weak median carina and indistinct lateral carinae, with a V-shaped carinate elevation medially the distal end of which points forward; a pair of punctate impressions in front of the ends of the elevation. Elytra with distinct longitudinal veins and a few less distinct cross veins; geniculate projections distinct. Radius biramosa, with the branch before the geniculate swelling; the anterior branch deviates from the straight base costally to pass across the geniculate swelling and then turns parallel to the costa and the second branch of the radius and extends to the apical portion of the elytra. The media branches in the central part of the wing and the anterior branch branches again in the posterior fourth. Cubitus simple, extending parallel to the claval suture. Costal margin basally steeply convex, drawn out leaf-like in the anterior half and recurved outward. Legs of the usual structure.

Type-species, *Hysteropterum asiaticum* Leth.

There is 1 species in the genus.

AELUROPSIS Emeljanov, gen. n.

Short and tall, moderately laterally compressed, with a broad, short head. All integuments rather coarse, rugose and roughened. Width of vertex 2.5–3 times its length, anterior margin of vertex straight, posterior margin concave. Lateral margins of vertex approximately parallel. Surface of vertex concave, its margins distinct, anterior angle slightly extended, or lateral margins slightly drawn out, median carina wanting. Frons flat or weakly convex transversely, gently convex longitudinally, its length approximately equal to its width, its upper margin concave in a deep arc, an obtuse angle or a trapezium, its lateral margins practically straight for the greater part of their length, slightly converging upward and steeply convexly curved below, converging on the postclypeus, or straight and parallel in the upper half and convex and converging more steeply at the postclypeus in the lower half. Intermediate carinae of frons sharp or weak but apparent, extending from the margin of the vertex above, moving away from the median carina in a regular manner and vanishing near the postclypeus below to outline an elongate oval. Median carina sharp, continued onto upper part of postclypeus. Postclypeus extending onto frons in an obtuse angle, its suture distinct throughout its length. Pronotum with rounded-trapeziform or arcuate convex anterior margin and straight posterior margin. Median carina present, but not sharp. Carinae on scutellum

ranging from sharp to indistinct; lateral carinae and a pair of median carinae diverging caudad toward the sides. Elytra coarsely structured, with sharp longitudinal veins and a few sharp cross veins mainly along the periphery of the wing. There is a more or less distinct (even) submarginal vein. Geniculate swelling sharp. The radial vein bifurcates near the base or in front of the geniculate swelling and the anterior branch extends across the swelling with the posterior branch behind it. The median vein branches near the base and the anterior branch frequently branches again subapically. The cubital vein is simple. The costal margin is slightly or steeply curved at the base, scarcely broadened and not extended. The legs are of the usual structure with two lateral teeth.

Type-species, *Hysteropterum tauricum* Kusn.

In addition to the type-species, the genus includes *Hysteropterum transcaasicum* Mel. — *Ae. transcaasica* (Mel.), comb. n.

#### SUMMARY

Some of the composite genera of the families Cixiidae and Issidae found in the Soviet Union are re-examined in the article and certain slight additions are made.

In the family Cixiidae a new tribe, Pentastirini, is distinguished with two subtribes, the nominate subtribe and Oliarina, subtrib. n. and a number of new genera belonging to it—*Eumecurus*, *Oliarellus*, *Oecleopsis* and *Reptalus*. New interpretations are given of the genera *Pentastira* Kbm. and *Pentastiridius* Kbm., which were previously regarded as synonyms of *Oliarus* Stål.

A number of new genera, the species of which were previously placed in the composite genera *Issus* F. and *Hysteropterum* A. S., are described in the family Issidae: *Latilica*, *Agalmatium*, *Scorlupella*, *Rhissolepus*, *Celyphoma*, *Scorlupaster* and *Aeluropsis*.

It is essential that the generic system of the families Cixiidae and Issidae should be re-examined in the Palearctic fauna as a whole and even more widely.

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