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### Three New Species of Idiocerinae from the Temperate Asia (Insecta, Homoptera, Auchenorrhyncha, Cicadellidae)

With 23 Figures

V V I S A E V

Gorky

**Abstract.** Descriptions of three new species are given: 1) *Metidiocerus ampullipes* sp. n. from the Southern Transbaikalia, the Soviet Maritime Territory and North Mongolia; 2) *Podulmorinus equus* sp. n. from the Soviet Maritime Territory; 3) *Populicerus orientalis* sp. n. from Transbaikalia, South of Khabarovsk Region, Maritime Territory and Mongolia. Comparison of them with allied species; dimensions and ratios of outward and genital structures are widely used for discrimination. The generic range is given to *Podulmorinus* KWON, *Pugnostilus* KWON is considered as synonym of it.

Looking through the materials of Idiocerinae leafhoppers in the collection of Gorky State University I found some new taxons among them, three of which are described below. I am obliged to Dr. G. A. ANUFRIEV (Gorky State University) for guidance of the work and giving the above mentioned materials for study. Below in the text the following abbreviations are used to denote places where the type materials are kept: AC — author's collection; GSU — Gorky State University, Gorky; IZ — Institute of Zoology, Polish Acad. Sci., Warszawa; ZIN — Zoological Institute, Acad. Sci. USSR, Leningrad.

The form and ratios of various structures are important for discrimination of some allied species and genera of Idiocerinae, therefore I introduce the rules for measurements which are cleared by Figs. 1–9. Posture of head when conducting its measurements is shown in Fig. 2. Dimensions of genital structures are made on slides closely covered with cover glass. The ratios are designated by the following way:

head L/h — the ratio of width (Fig. 1, a) to height (Fig. 1, b)

postclypeus h/l — the ratio of height (Fig. 1, d) to width (Fig. 1, c)

head h/ocelli d — the ratio of head height (Fig. 1, b) to distance between centres of ocelli (Fig. 1, f)

stylus L/l — the ratio of style length (Fig. 3, L) to length of the greatest apical seta (Fig. 3, l)

stylus l/d — the ratio between length of the greatest apical seta (Fig. 4, l) and distance from style apex to base of the nearest large seta (Fig. 4, d)

penis L/l — the ratio of penis length (Fig. 5, L) to distance between penis apex and apices of subapical processes (Fig. 5, l)

genital plate L/l — the ratio of genital plate length (Fig. 6, L) to length of apical hairs (Fig. 6, l)

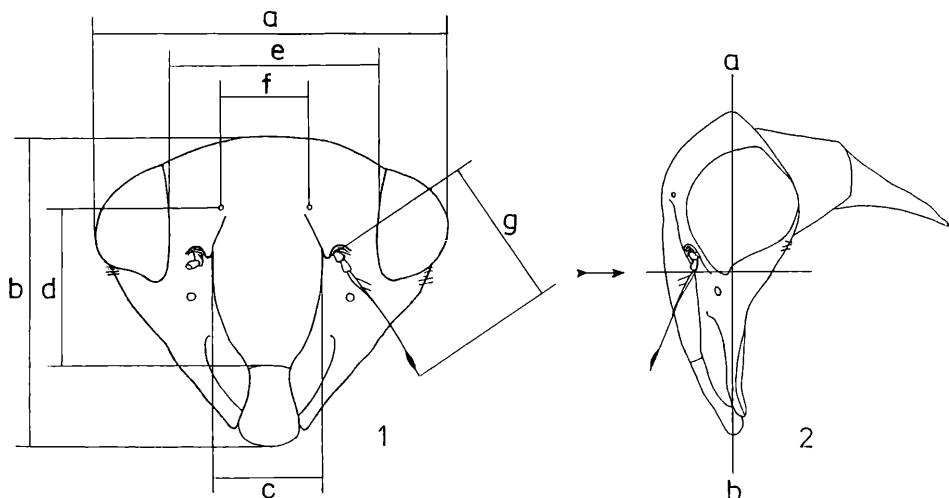
ovipositor L/l — the ratio of length of projecting part (Fig. 7, L) to its width (Fig. 7, l)

the second valve of ovipositor L/l — the ratio of length of apical part (Fig. 8, L) to its width (Fig. 8, l)

the third valve of ovipositor L/l — the ratio of length of apical part (Fig. 9, L) to its width (Fig. 9, l).

**Metidiocerus** OSSIANILSSON, 1981  
**Metidiocerus ampullipes** sp. n. (Figs. 10–14)

Comparatively large representative of the genus. Head more or less rounded, lateral margin of face mainly convex, near anteclypeus concave. Middle femur of male inflated, its width 1.75 times as big as width of fore femur. Some other outward characters are given in Tab. 1.



Figs. 1-2. Dimensions of the head Idiocerinae leafhoppers. 1 - head, frontal view: a - width, b - height, c - width of postclypeus, d - height of postclypeus, e - distance between eyes at ocellar level, f - distance between centres of ocelli, g - length of antenna; 2 - head, lateral view: a-b - frontal plane of head, the arrow shows direction of looking when measuring the face.

Face and vertex of male orange-yellow, genae whitish. Thyridia black. Small dark-brown patch on vertex near eye. Upper part of face and vertex of female yellowish with marble pattern (of brownish patches) or face unicolorous yellowish-brownish. Pronotum: anterior part whitish with black interflowing patches, posterior part brown with whitish patches. Scutellum lemon-yellow, its basal triangles black, other patches more or less brown. Forewings dull whitish, veins brown; there is one patch at apex of  $A_1$ , another one at apex of clavus, 3-4 patches on Cu and 1-2 others on M. Legs yellowish with brown longitudinal stripes. Thorax and abdomen with black and yellow parts. Pygofer of female brownish, ovipositor black.

Male genital apparatus of typical structure for the genus.

**Host plant** It inhabits apparently balsamic poplars, in particular *Populus suaveolens* FISCH.

**Distribution** USSR: S. Transbaikalia, Primorye Territory; North Mongolia.

**Holotype**, male USSR, Primorye Territory, Sikhote-Aline Reserve, June 22, 1967, ANUFRIEV coll. (ZIN).

**Paratypes** USSR: Primorye Territory, Sikhote-Aline Reserve, June 22, 1967, 3 females, ANUFRIEV coll. (GSU); Primorye Territory, Sututinski Reserve, pass, May 20, 1966, 1 female, ANUFRIEV coll. (ZIN); Tchita Region, Kyra, July 29, 1978, 2 females and 2 larvae, on *Populus suaveolens* FISCH., ISAEV coll. (AC). Mongolia Ara-Khangay aimak, 25 km WSW Ih-Tamir, August 30, 1967, 1 male and 1 female, EMELJANOV coll. (ZIN).

►  
 Figs. 3-9. Dimensions of genital structures in Idiocerinae leafhoppers. 3 - style from side: L - length, l - length of the greatest apical seta; 4 - style apex from side: l - length of the greatest apical seta, d - distance between style apex and base of the nearest large seta; 5 - penis from side: L - length, l - distance between penis apex and apices of subapical processes; 6 - male genital plate from side: L - length, l - length of apical hairs; 7 - apex of female abdomen from side: L - length of projecting part of ovipositor, l - width of projecting part of ovipositor; 8 - the 2nd valve of ovipositor in lateral view: L - length of apical part, l - width of apical part; 9 - the 3rd valve of ovipositor in lateral view: L - length of apical part, l - width of apical part.

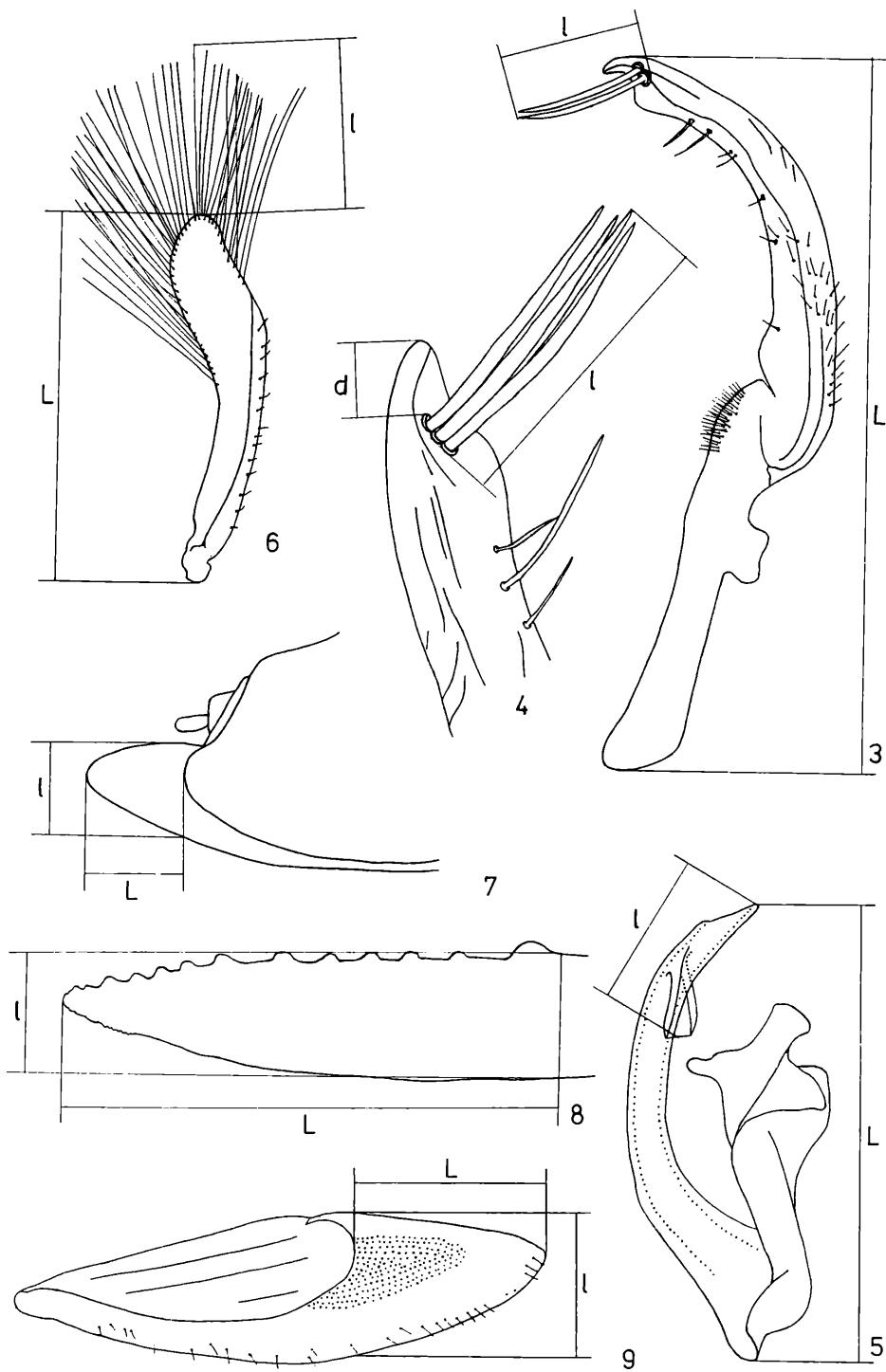


Table 1 Some taxonomical characters of East Asiatic *Metidiocerus* OSS. 1)

		elegans FL.	ampullipes sp. n.	crassipes SHLB.	nigrolineatus KWON
Length of body (mm)	male	5.00-5.50	5.20-5.65	4.95-5.20	4.85-5.00
	female	5.45-5.80	5.35-5.75	4.95-5.10	4.85-5.10
Head L/h	male	1.08-1.09	1.09-1.13	1.15-1.17	1.03-1.09
	female	1.11-1.13	1.09-1.14	1.17-1.19	1.10-1.12
Postclypeus h/l	male	1.20-1.30	1.03-1.11	1.13-1.16	1.12-1.22
	female	1.12-1.20	1.02-1.10	1.09-1.11	1.10-1.11
Head h / ocelli d	male	4.2-4.6	3.6-3.8	3.4-3.5	3.7-3.9
	female	3.8-4.0	3.2-3.4	3.1-3.4	3.4-3.5
Male antennal palette		small, oval	very small, oval	great, more or less rounded	great, oblong-oval
Male middle femur		ordinary	tumid	tumid	ordinary
Ovipositor L/l		0.95-1.05	1.50-1.75	1.25-1.35	1.25-1.35

1) Limits of dimensions are given on the basis of measuring of 2-5 specimens of each sex

Species of *Metidiocerus* OSS. with comparatively similar genital structure mainly differ by different combination of outward characters. The male discriminative complex of characters of *M. ampullipes* is: lateral margin of face mainly convex, near anteclypeus concave; face unicolorous without longitudinal dark stripes; antennal palette very small, oval; middle femur inflated. Comparison of some characters of *M. ampullipes* sp. n. and other East Asiatic species of *Metidiocerus* OSS. is given in Table 1.

#### Genus *Podulmorus* KWON, 1985 stat. n.

*Idiocerus* (*Podulmorus* KWON, 1985); = *Idiocerus* (*Pugnostilus* KWON, 1985) syn. n.

Y. KWON (1985) described among others two subgenera of *Idiocerus* LEWIS — *Podulmorus* KWON (type species *Idiocerus vitticollis* MATSUMURA) and *Pugnostilus* KWON (type species *Idiocerus latistylus* VILBASTE). In my opinion *Podulmorus* KWON differs from *Idiocerus* LEWIS sensu DLABOLA, 1974 as much as, for example, *Tautocerus* ANUFRIEV. On the other hand, a widened style apex of *Idiocerus latistylus* VILBASTE is not sufficient for description of new subgenus for it.

Table 2: Some taxonomical characters of females of *Podulmorus* KWON 1)

	chanucus DLAB.	latistylus VILB.	opacus ANUFR.	consimilis VILB.	equus sp. n.
Length of body (mm)	5.65-6.35	6.30-6.70	7.00	5.90-6.30	7.10
Ovipositor L/l	0.90		0.77	0.90	1.13
The 2nd valve L/l	3.17	3.21-3.33	3.86	3.00	5.00
Teeth of the 2nd valve	12-13 of identical small	16-18, the basal one is great	18 of identical small	11-13, the basal one is great	17-19, the basal two are great
The 3rd valve L/l	1.5	1.3-1.5	1.4-1.5	1.4-1.5	1.7-1.8

1) Dimensions are given on the basis of examination of 1-5 specimens

Table 3: Some taxonomical characters of Asiatic *Populicerus* DLAB. 1)

	confusus FL.	ikumae MATS.	orientalis sp. n.	ambigenus DUB.	albicans KBM.
M a l e s					
Length of body (mm)	5.55 $\pm$ 0.25	5.90 $\pm$ 0.25	6.25 $\pm$ 0.25	5.65 $\pm$ 0.45	5.60 $\pm$ 0.40
Style L/l	7.60 $\pm$ 0.45	8.95 $\pm$ 0.60	11.75 $\pm$ 1.55	6.40 $\pm$ 0.45	6.50 $\pm$ 0.20
Arms of style apex <sup>2</sup> )	4 + 1-2	2 + 2-6	1 + 1-2	2 + 1	5-7 + 1-2
Penis L/l	3.14 $\pm$ 0.12	3.08 $\pm$ 0.14	2.96 $\pm$ 0.12	1.80 $\pm$ 0.06	2.32 $\pm$ 0.17
F e m a l e s					
Length of body (mm)	6.45 $\pm$ 0.30	6.75 $\pm$ 0.35	7.10 $\pm$ 0.35	6.70 $\pm$ 0.40	6.50 $\pm$ 0.40
Ovipositor L/l	1.52 $\pm$ 0.11	1.26 $\pm$ 0.06	1.20 $\pm$ 0.08	1.39 $\pm$ 0.13	0.80 $\pm$ 0.07
The 2nd valve L/l	4.69 $\pm$ 0.22	4.50 $\pm$ 0.25	3.94 $\pm$ 0.21	4.20 $\pm$ 0.27	2.91 $\pm$ 0.12

<sup>1)</sup> Measuring characters:  $\bar{x} \pm 2S_x$ , n = 12-56

<sup>2)</sup> Great setae of subapical group + additional great dorsal setae

#### *Podulmorinus equus* sp. n. (Figs. 15-16)

Comparatively large representative of *Podulmorinus*. Head L/h 1.24, postclypeus h/l 1.00, head h/ocelli d 2.45.

Coloration typical for the genus. Face light-yellow, external margins of genae brownish. Postclypeus with pattern of dark-brown patches, external suture of postclypeus, under-antennal pits, external margins of anteclypeus and underocellar patches black. Big trapeziform dark-grey patch occupies anterior part of vertex and upper part of frons, big round dark-brown patch disposed near each eye. Thyridia black. Ocelli light-yellow. The third antennal segment brown. Pronotum light-yellow with brown and black patches in front and grey ones posteriorly. Scutellum more or less yellow, basal triangles and other patches black or brown. Forewings brownish, especially clavus, semihyaline, veins dark-brown; light patches with white veins at apex of A<sub>1</sub>, as well as at apex of clavus and on M and Cu opposite it. Legs light-yellow with black longitudinal stripes. Thorax and abdomen with black and light parts.

Characteristics of ovipositor are given in Table 2.

**H o l o t y p e**, female. USSR: Primorye Territory, Sikhote-Aline Reserve, Terney – Ust-Serebryany, August 29, 1967, KOPLOVA coll. (ZIN).

Comparison of *P. equus* sp. n. with other species of *Podulmorinus* KWON are given in Table 2.

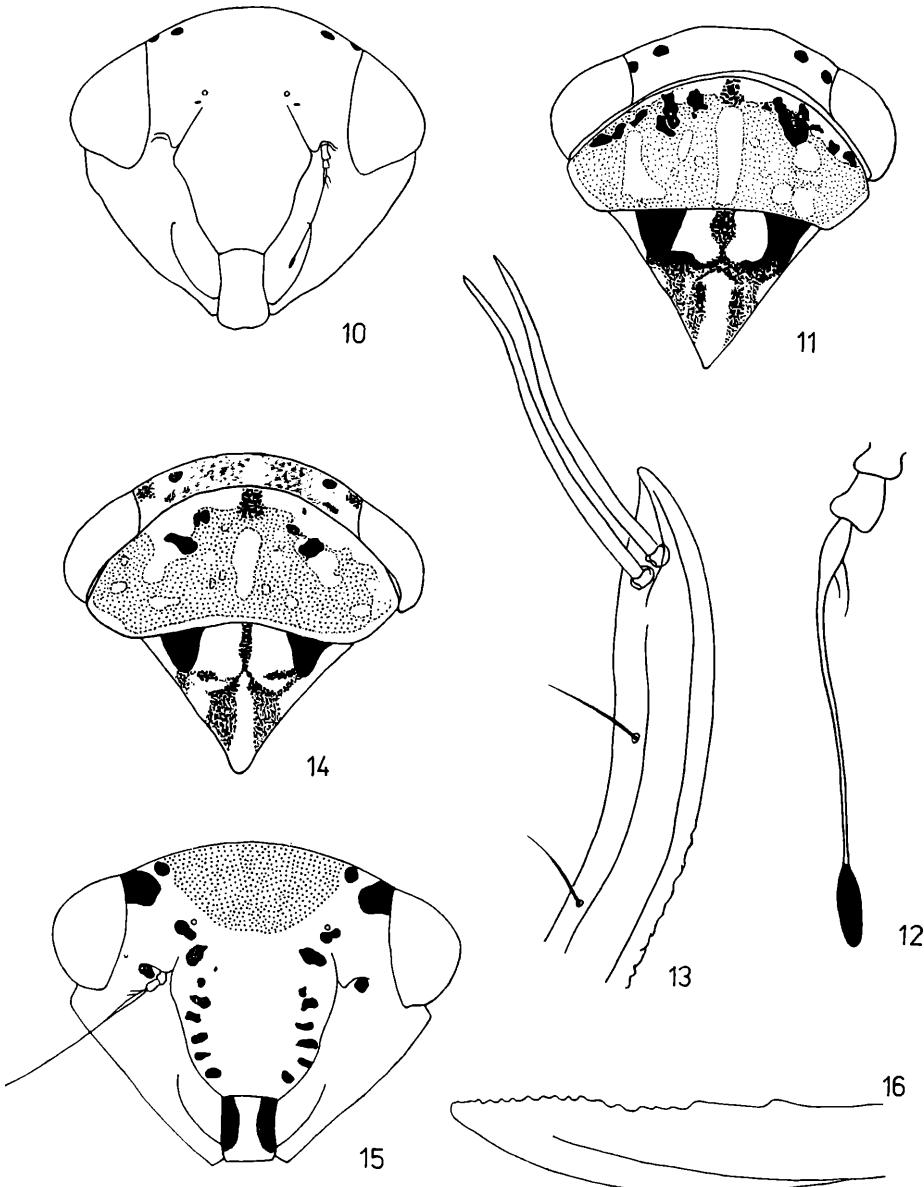
#### *Populicerus* DLABOLA, 1974 *Populicerus orientalis* sp. n. (Figs. 17-23)

*Idiocerus confusus*: VILBASTE, 1968, partim; ANUFRIEV, 1978, partim.

Large representative of *Populicerus*. Head L/h 1.05-1.07 (1.11-1.13)<sup>1)</sup>, postclypeus h/l 1.55-1.60 (1.40-1.44), head h/ocelli d 3.45-3.83 (3.21-3.45), distance between eyes at level of ocelli 2.28-2.39 (2.33-2.34) times as large as distance between centres of ocelli.

**M a l e**. Antennal palette of medium size, oblongly-oval, roundish-oval or expanded at apex; its apical hair of medium size or absent. Face whitish, yellow (from lemon-yellow to deep-yellow) or brownish-yellow; clypeus and area between ocelli from lemon-yellow to orange, usually orangish-yellow; base of antenna yellow or orange; thyridia are not distin-

<sup>1)</sup> In brackets are values of coefficients for females.



Figs. 10–16. 10–14 *Metidiocerus ampullipes* sp. n. 10: male, head, frontal view – 11: male, anterior part of body from above – 12: male antenna – 13: style apex from side – 14: female, anterior part of body from above. 15–16: *Podulmorinus equus* sp. n., female. 15: head, frontal view – 16: the 2nd valve of ovipositor from side.

guishable. Vertex from whitish-greenish to orangish-yellow or to brownish-yellow. Pronotum unicolorous greenish, yellow-white, orangish-greenish-yellow or greenish with yellow antero-lateral border. Scutellum yellowish-white, lemon-yellow, greenish-yellow or deep yellow, its basal triangles may be distinguishable, from lemon-yellow to deep-yellow, rarely dark-brown. Forewings lustrous, hyaline or dull, usually colourless; costal area may be yellow or orange-yellow; apical part brownish. Forewing veins greenish, green-yellow,

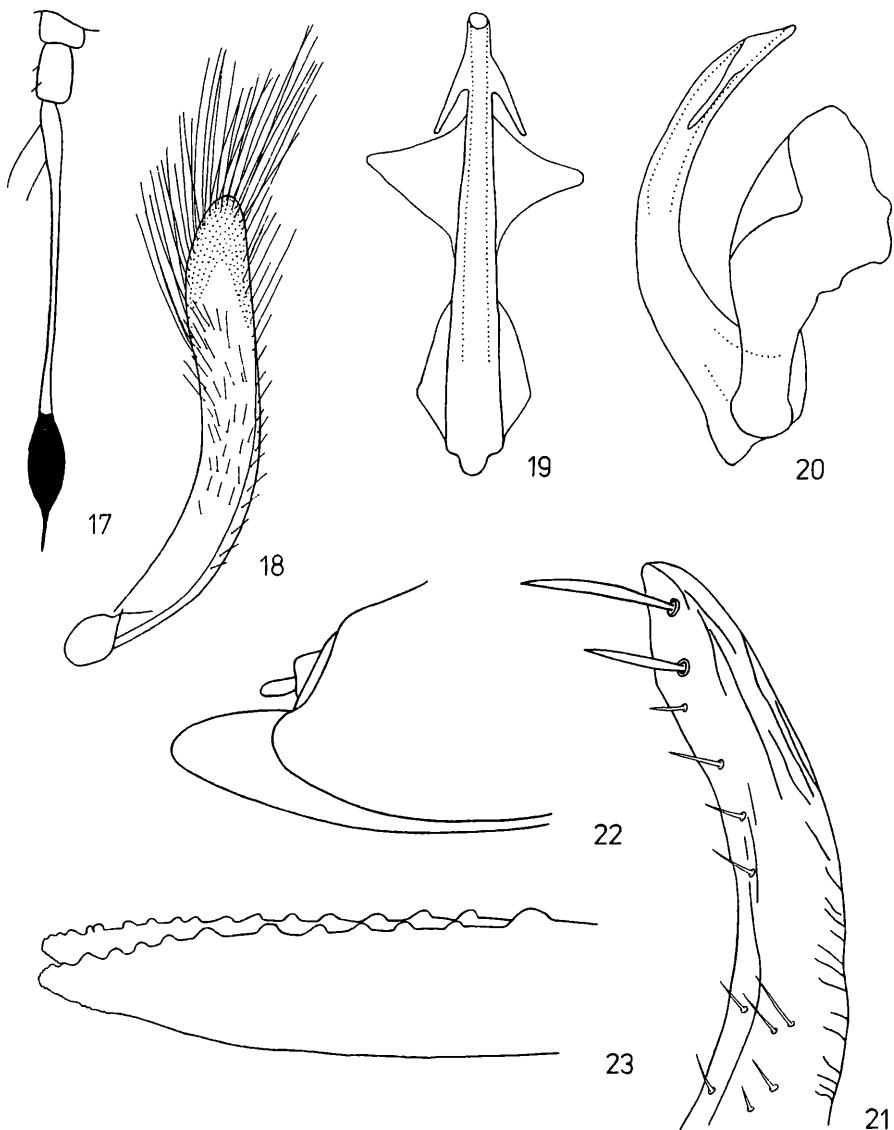


Fig. 17-23: *Populicerus orientalis* sp. n. 17: antenna of male - 18: male, genital plate from side - 19: penis from above - 20: the same from side - 21: style apex from side - 22: female, apex of abdomen from side - 23: the 2nd valve of ovipositor from side.

lemon-yellow, yellow or orange-yellow, apically brownish; interior margin of clavus usually green, C commonly orangish-yellow. Legs from whitish to orange. Abdomen yellow with black tergites. Pygofer yellow or orangish-yellow

Ventral margin of genital plate before apex slightly concave or straight. Processes of penis parallel to shaft or slightly directed to ventral or dorsal side. Style with one short subapical seta (rarely one of styles with two setae) and 1-2 additional great setae.

**F e m a l e** Face unicolorous cream-yellow or yellowish, or genae and lower part of anteclypeus greenish, but postclypeus and the rest part greenish-yellowish, lemon-yellow or yellow; base of antenna usually yellow; thyridia are not distinguishable. Vertex yellowish-white or brownish-yellow. Pronotum unicolorous yellowish-white, or greenish with yellow

antero-lateral border. Scutellum unicolorous yellowish, or cream with yellow basal triangles; they are from imperceptible to yellow with brown bases; sometimes triangles with green border and scutellum with two longitudinal greenish stripes. Forewings usually hyaline, colourless with brownish apices. Forewing veins whitish, green or yellow, at apex brownish. Thorax usually yellow. Legs greenish-yellow, yellow or brownish-yellow. Abdomen greenish, lemon-yellow or yellow; its tergites with black central parts or completely yellow. Pygofer usually yellow. Ovipositor lemon-yellow or yellow.

Characteristics of ovipositor are given in Table 3.

**Host plant** It inhabits *Salix schwerinii* E. WOLF. On this willow it lives together with *P. confusus* (FL.).

**Distribution** USSR Transbaikalia, S. Khabarovsk Territory, Primorye Territory; Mongolia.

**Holotype**, male. USSR: Tchita Region, Kyra, July 29, 1978, on *Salix schwerinii* E. WOLF., ISAEV coll. (ZIN).

**Paratypes** USSR: Tchita Region, Kyra, August 2, 1978, 9 males and 8 females, on *Salix* sp., ISAEV coll. (ZIN, AC); Tchita Region, Shumunda, July 28, 1978, 4 males and 3 females, on *Salix schwerinii* E. WOLF., ISAEV coll. (AC); Tchita Region, Ukurey, August 6, 1977, 3 males and 1 female, KOVALYOV and ZHERIKHIN coll. (GSU); Buryat ASSR, near Novoselenginsk, July 19, 1974, 14 males and 16 females, on *Salix* spp., ANUFRIEV and SMIRNOV coll. (ZIN, GSU); Primorye Territory, Popovka, July 16, 1964, 8 males and 5 females, on *Salix* spp., ANUFRIEV coll. (GSU); Khabarovsk Territory, near Khabarovsk, August 22, 1979, 2 females, ANUFRIEV coll. (GSU). Mongolia: Samar, August 6, 1963, 1 female, BURAKOWSKI and SZELEGIEWICZ coll. (IZ); Zaisan, 1200–1600 m, August 11, 1963, 1 female, BURAKOWSKI and SZELEGIEWICZ coll. (IZ).

It differs from the well known species of *Populicerus* DLAB. by the structure of the style: the style has only one subapical seta. Some specimens of *P. orientalis* sp. n. are difficult to distinguish from *P. confusus* (FL.) and especially from *P. ikumae* (MATS.).

Comparison of *P. orientalis* sp. n. with allied and outwardly similar species of *Populicerus* is given in Table 3.

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