

To the knowledge of the tribe Melanoplini
(Orthoptera, Acrididae: Catantopinae)
of the Eastern Palearctica

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Abstract

Data on the grasshoppers of the tribe Melanoplini SCUDDER, 1897 (= Podismini JACOBSON, 1905 = Parapodisminae INOUE, 1985, syn. n) of Eastern Palearctica are given. *Podisma kanoi* sp. n. and *Podisma sapporensis ashibetsuensis* ssp. n. from Japan are described. The new synonyms are established: *Rhinopodisma* MISTSHENKO, 1954 = *Aserratus* HUANG, 1981, syn. n., *Sinopodisma* CHANG, 1940 = *Pedopodisma* ZHENG, 1980, syn. n., *Parapodisma* MISTSHENKO, 1947 = *Pseudoparapodisma* INOUE, 1985, syn. n., *Monopterus* FISCHER-WALDHEIM, 1846 = *Bohemanella* RAMME, 1951, syn. n.

Tribe Melanoplini SCUDDER, 1897

Type genus: *Melanoplus* STAL, 1873.

Notes

The tribe Melanoplini was established by S. SCUDDER (1897) as a group Melanopli. JACOBSON (1905) proposed Podismini as a new name for this group. In the most modern classification the position of tribe Melanoplini is following:

MISTSHENKO (1952) considered it as a tribe Podismini of subfamily Catantopinae (Acrididae); UVAROV (1966) as Catantopinae (without division on tribes); DIRSH (1975) as subfamily Podisminae of family Catantopidae; HARZ (1975) as tribe Podismini of subfamily Catantopinae (Acrididae); VICKERY & KEVAN (1983) as subfamily Melanoplineae of family Acrididae with two tribes (Melanoplini and Podismini) and YIN (1984) as subfamily Podisminae of family Oedipodidae. According to VICKERY & KEVAN (1983) tribe Melanoplini divided into subtribes Melanoplina and artificial Dactylotina, and tribe Podismini contained subtribe Podismina. There are no any satisfactory distinctions between Melanoplini and Podismini (sensu VICKERY & KEVAN) in morphology, anatomy and male genitalia (MISTSHENKO 1971; PODGORNAJA 1975). In present paper Melanoplini is considered as a tribe of subfamily Catantopinae (sensu lato) of family Acrididae without division on subtribes. INOUE (1985) established new subfamily Parapodisminae (with two genera: *Parapodisma* and *Pseudoparapodisma*) which is a pure synonym of tribe Melanoplini.

Genus *Podisma* BERTHOLD 1827

Type species: *Gryllus Locusta pedestris* LINNEAUS 1758.

Notes

One new species and one new subspecies of this genus was found in Japan. The redescription and key to species and subspecies of *Podisma* from Japan and adjacent regions are given in order to clarify them relations.

Key to species and subspecies of the genus *Podisma* from Japan, Sakhalin and Kurile Islands

- 1(2) Apterous. Length of prozona 1.7-1.9 times larger than length of metazona. Apices of apical penis valves seen from above broad
P. kanoi . sp. n.
- 2(1) Micropterous: tegmina lateral; hind wing absent. Length of prozona 1.1-1.5 times larger than length of metazona. Apices of apical penis valves seen from above narrow.
- 3(6) Mesosternal lobe in male 1.3-1.4, in female 1.5 times as long as broad. Apices of cingular valves seen from above truncate.
- 4(5) Width of vertex between eyes of male 1.4-1.7 times larger than the width of frontal ridge between antennae. Mesosternal interspace of female 2.3 times as broad as long. Emargination between apices of cingular valves seen from above deep
P. sapporensis sapporensis
- 4(5) Width of vertex between eyes of male 1.1-1.2 times larger than the width of frontal ridge between antennae. Mesosternal interspace of female 1.5-1.7 times as broad as long. Emargination between apices of cingular valves seen from above weak
P. sapporensis krylonensis
- 6(3) Mesosternal lobe in male 1.2-1.3, in female 1.3-1.4 times as long as broad. Apices of cingular valves seen from above pointed.
- 7(8) Tegmen reaching or surpassing the tympanal organ. Width of vertex between eyes of male 1.3 times larger than the width of frontal ridge between antennae. Median joints of antennae 2.0-2.4 times as long as broad. Lophi of epiphallus seen from behind with broadly rounded inner margin
P. sapporensis kurilensis
- 8(7) Tegmen not reaching the tympanal organ. Width of vertex between eyes of male 1.5 times larger than the width of frontal ridge between antennae. Median joints of antennae 2.8-2.9 times as long as broad. Lophi of epiphallus seen from behind with broadly pointed inner margin
P. sapporensis ashibetsuensis . ssp. n.

***Podisma kanoi* STOROZHENKO sp.n.**

Figs. 1-19

Named in honour of Japanese orthopterologist Yasutsugu KANO.

Material:

Holotype - ♂, Japan, Shibu-toge 12.X.1951 (K.MATSUSHIMA);

Paratypes - 2 ♂♂ and 4 ♀♀ with the some labels. Preserved in Nat. Inst. Agro-Env. Sci., Tsukuba, Japan.

Description:

Male:

Body medium sized. Width of vertex between eyes 1.4-1.5 times more than the width of frontal ridge between antennae. Antennae thin, reaching well beyond the posterior margin of pronotum; median joints of antennae 2.0 times as long as broad. Vertical diameter of eyes 1.15-1.2 times larger than subocular furrow. Pronotum subcylindrical; prozona about 1.75-1.9 times as long as metazona; the posterior margin of metazona with weak emargination near the median carina. Completely apterous.

Mesosternal interspace transverse, its maximum width 1.5-1.6 times more than its length; mesosternal lobe 1.2 times as broad as long. Hind femora slender, about 4.5-4.6 times as long as its maximum width. First abdominal tergite with large oval tympanal organ. Last abdominal tergite with short furculae; apex of furculae broadly rounded. Supra anal plate trapezoidal, with a weak median groove and two weak tubercles near the apex; length of plate equal to its maximum width near the base. Cerci straight, in profile conical; about 2.0-2.3 times as long as its greatest width.

Epiphallus bridge-shaped, with broadly rounded ancorae; lophi extending in an almost straight angle, seen from behind obtuse-triangular; posterior projections pointed. Cingulum with long apodemes; rami parallel-sides, almost straight, narrow; zygoma with broadly rounded apex; zygomal plate weak. Apices of cingular valves seen from dorsal view broadened. Basal and apical penis valves connected by a short, curved, unbroken flexure. Apices of apical penis valves seen from dorsal view broad, truncated; in lateral view pointed.

General coloration of body olive-green. Antennae yellowish or greenish brown. Pronotum from above with general coloration; lateral lobes of pronotum brownish green, with broad black stripe. Abdomen with narrow black lateral stripes; supra anal plate black, with light brown median stripe. Cerci brown. Anterior and median legs greenish yellow. Hind femur yellowish green, ventral margins yellow; dorsal genicular lobes blackish brown, ventral genicular lobes yellowish brown. Hind tibia greenish blue, spines yellow with black apices.

Female:

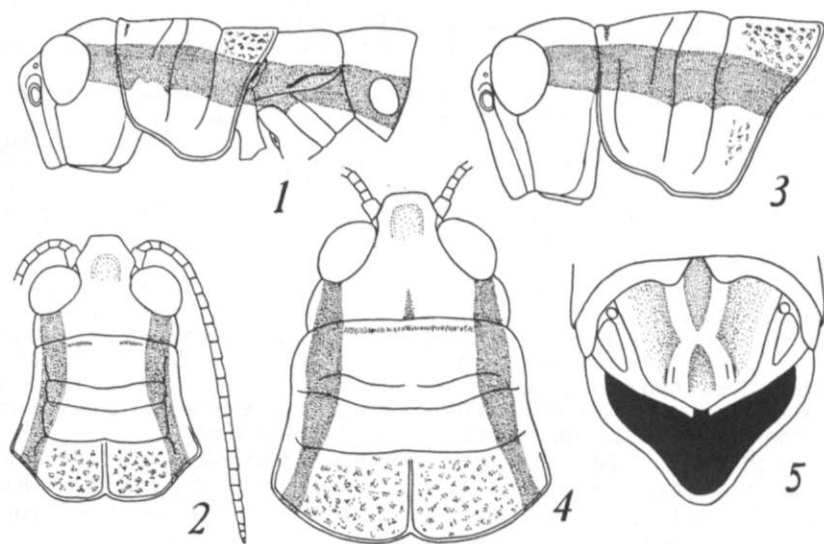
Similar with ♂, but larger. Width of vertex between eyes 1.8 times more than the width of frontal ridge between antennae. Median joints of antennae 2.0 times as long as broad. Vertical diameter of eyes 1.05 times larger than subocular furrow. Length of prozona 1.7 times more than metazona; the posterior margin of metazona as in ♂. Apterous. Mesosternal interspace transverse, its width 2.3 times more than its length; mesosternal lobe 1.5 times as broad as long. Hind femora 4.7 times as long as width. Tympanal organ as in ♂. Supra anal plate

triangular, with weak median longitudinal groove near the base. Cerci as in ♂, 2.0 times as long as width. Subgenital plate elongate; posterior margin triangular on the middle. Lower margin of ventral valves of ovipositor with indistinct serration near the middle.

General coloration as in ♂, but lateral black stripes on abdomen indistinct and dorsal genicular lobes of hind femora brown.

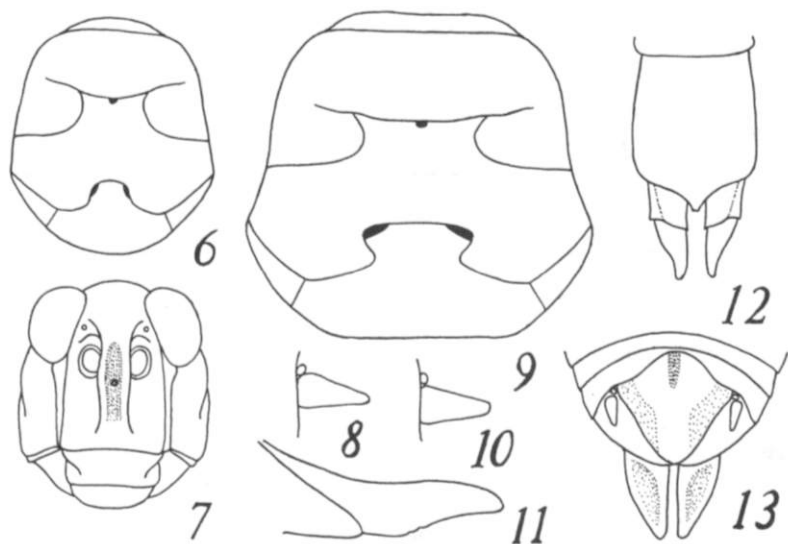
Measurements:

Length of body ♂ 17.1-17.8, female 24.5; length of pronotum ♂ 3.5-3.6, female 4.9; length of hind femora male 9.4-9.7, ♀ 12.6 mm.



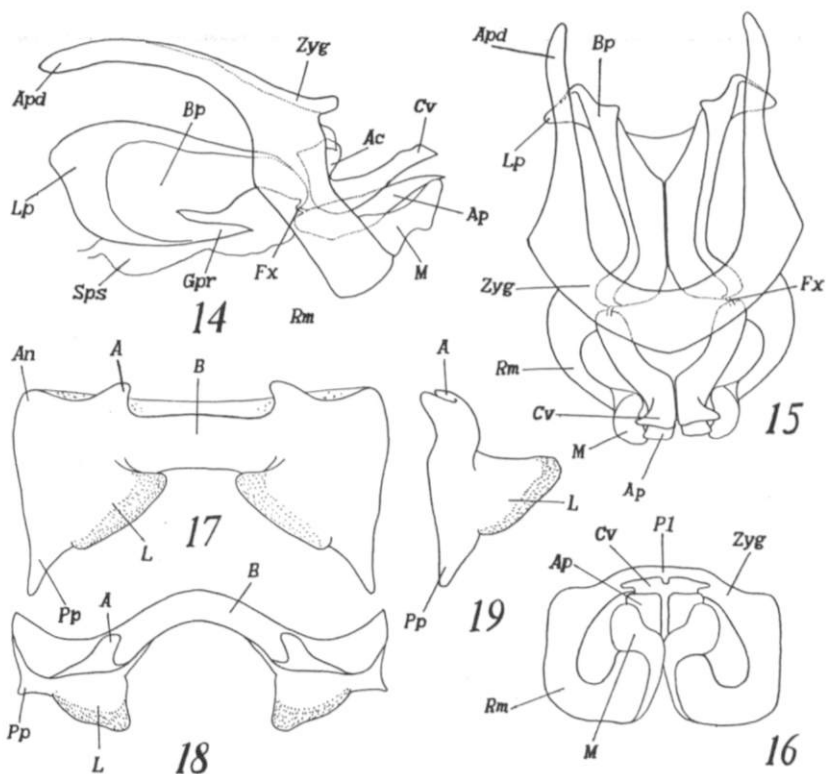
Figs. 1-5: *Podisma kanoi* sp. n.:

1 - head and pronotum of male in lateral view; 2 - do. in dorsal view;
3 - do. female, in lateral view; 4 - do. in dorsal view; 5 - apex of male
abdomen in dorsal view



Figs. 6-13: *Podisma kanoi* sp. n.:

6 - sternum of male in ventral view; 7 - head of male in anterior view; 8 - left cercus of male in lateral view; 9 - sternum of female in ventral view; 10 - left cercus of female in lateral view; 11 - ventral valve of ovipositor in lateral view; 12 - apex of abdomen of female in ventral view; 13 - do. in dorsal view



Figs. 14-19: *Podisma kanoi* sp. n.:

14 - ♂ phallic complex (epiphallus and epiphallic membrane removed) in lateral view; 15 - do. in dorsal view; 16 - do. in posterior view; 17 - epiphallus in dorsal view; 18 - do. in anterior view; 19 - do. in lateral view (A - ancorae; Ac - arch of cingulum; An - anterior projections; Ap - apical valves of penis; Apd - apodems; B - bridge; Bp - basal valves of penis; Cv - valves of cingulum; Fx - flexure; Gpr - gonopore processes; L - lophi; Lp - lateral plates of basal valves of penis; M - membrane; Pl - zygomal plate; Pp - posterior projections; Rm - rami of cingulum; Sps - spermatophore sac; Zyg - zygoma)

Podisma sapporensis sapporensis SHIRAKI 1910

Figs. 20-28

SHIRAKI (1910), Acrididen Japans, Tokyo: 70, 76, tab. II, figs. 5a-c. *Podisma sapporensis*. Syntypes - ♂♂ and ♀♀, Japan: Hokkaido: Ziosankei and Sapporo; in collections of S. MATSUMURA and T. SHIRAKI, now probably in Hokkaido University, Sapporo, Japan.

HEBARD (1924), Trans. Amer. Ent. Soc. 50(3): 221. *Podisma sapporensis*

MISTSHENKO (1951), Locust and grasshoppers USSR, Moscow-Leningrad: 225, fig. 496. *Parapodisma sapporensis*

MISTSHENKO (1952), Fauna USSR. Catantopinae, Moscow-Leningrad: 390, fig. 496. *Parapodisma sapporensis*

HIURA (1978), Coloured illustr.insects Japan, Osaka, 2: 80. *Miramella sapporensis*

INOUE (1979), Proc. Jap. Soc. Syst. Zool. 16: 58. *Miramella sapporensis*

INOUE (1980), La kromosomo, 2(18-19): 526. *Miramella sapporensis*

HIURA et al (1983), Spec. Publ. Osaka Mus. Nat. Hist., 15: 78. *Miramella sapporensis*

STOROZHENKO (1983), Syst. ecol.-faun. rev. insects orders Far East USSR, Vladivostok: 55, 57, fig. 53.

INOUE (1985), Trans. Shikoku Ent. Soc., 17(3): 125, figs. 18,49,80. *Miramella sapporensis*

STOROZHENKO (1986), Key to insects Far East USSR, Leningrad : 295.

Material:

Japan: Hokkaido: Hoheikyo near Sapporo, 30.YI.1958, 1♂, 1 female (H.Hasegawa); Toyahira, Mt. Muine-yama, 21.YII. 1964, 1♂ (S.Ueno); Sapporo, 30.YI.1929, 1 ♀ (H.Yaku).

Description:

Male:

Body medium sized. Width of vertex between eyes 1.4-1.7 times more than the width of frontal ridge between antennae. Antennae thin, reaching well beyond the posterior margin of pronotum; median joints of antennae 2.8-3.0 times as long as broad. Vertical diameter of eyes 1.1-1.2 times larger than subocular furrow. Pronotum subcylindrical; prozona about 1.4-1.5 times as long as metazona; the posterior margin of metazona with weak emargination near the median carina or broadly rounded. Tegmen surpassing the tympanal organ; 3.5-4.6 times as long as broad; its length equal or 1.1-1.15 times less than length of pronotum. Mesosternal interspace transverse, its maximum width 1.4-1.6 times more than its length; mesosternal lobe 1.3-1.4 times as broad as long. Hind femora slender, about 4.7-5.2 times as long as its maximum width. First abdominal tergite with large oval tympanal organ. Last abdominal tergite with relatively large furculae; apex of furculae rounded. Supra anal plate trapezoidal, with a weak median groove and two weak tubercles near the apex; length of plate equal to its maximum width near the base. Cerci straight, in profile conical; about 1.9-2.3 times as long as its greatest width.

Epiphallus bridge-shaped, with pointed ancorae; lophi seen from behind with broadly rounded inner margin; posterior projections pointed. Cingulum with long curved apodems; rami relatively broad; zygoma with triangularly rounded apex; zygomal plate large. Apices of cingular valves seen from dorsal view almost

straight, truncate; with deep emargination between them. Basal and apical penis valves connected by a short, curved, unbroken flexure. Apices of apical penis valves seen from dorsal view narrow; in lateral view truncate.

General coloration of body olive-green. Antennae brown. Pronotum from above with general coloration; lateral lobes of pronotum yellowish brown, with broad black stripe. Abdomen with broad black lateral stripes; supra anal plate black, with yellowish green median stripe. Cerci brown. Tegmen brown. Anterior and median legs greenish yellow. Hind femur greenish yellow, ventral margins yellow; dorsal genicular lobes black, ventral genicular lobes yellowish brown. Hind tibia greenish blue, spines white with black apices.

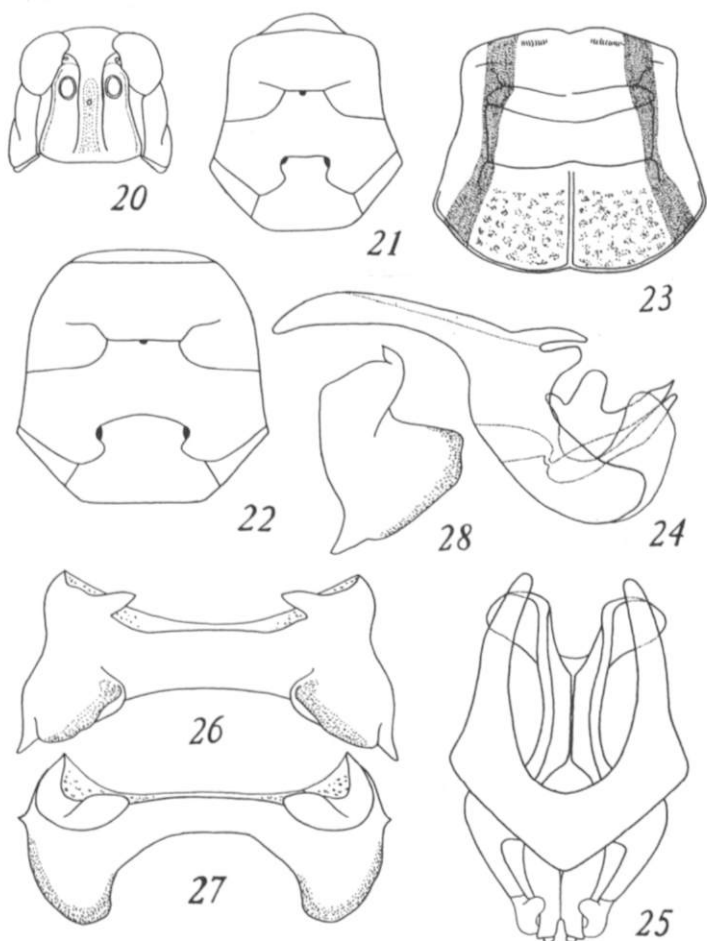
Female:

Similar with ♂, but larger. Width of vertex between eyes 1.4-1.5 times more than the width of frontal ridge between antennae. Median joints of antennae 2.4-2.6 times as long as broad. Vertical diameter of eyes 1.1 times larger than subocular furrow. Length of prozona 1.1-1.2 times more than metazona; the posterior margin of metazona as in ♂. Tegmen as in ♂; 3.2-3.5 times as long as broad; its length 1.4-1.5 times shorter than pronotum. Mesosternal interspace transverse, its width 2.3 times more than its length; mesosternal lobe 1.5 times as broad as long. Hind femora 5.2-6.2 times as long as width. Tympanal organ as in ♂. Supra anal plate triangular, with weak median longitudinal groove near the base. Cerci as in male, 2.4-2.6 times as long as width. Subgenital plate elongate; posterior margin triangular on the middle. Lower margin of ventral valves of ovipositor weakly serrate near the middle.

General coloration of body yellowish or olive green. Antennae greenish brown. Pronotum as in ♂. Abdomen with weak blackish lateral stripes. Tegmen yellowish brown. Legs as in ♂, but dorsal genicular lobes of hind femora brown.

Measurements:

Length of body ♂ 17.0-20.6, ♀ 23.5-27.5; length of pronotum ♂ 4.7-5.0, ♀ 5.3-6.5; length of tegmina ♂ 2.0-4.1, ♀ 2.5-5.2; length of hind femora ♂ 12.0-13.4, ♀ 13.1-15.9 mm.



Figs. 20-28: *Podisma sapporensis sapporensis*:

20 - head of ♂ in anterior view; 21 - sternum of male in ventral view; 22 - do. female; 23 - pronotum of female in dorsal view; 24 - male phallic complex (epiphallus, epiphallic membrane and basal valves of penis removed); 25 - do. in dorsal view; 26 - epiphallus in dorsal view; 27 - do. in anterior view; 28 - do. in lateral view

Podisma sapporensis krylonensis STOROZHENKO 1983

Figs. 29-37

STOROZHENKO (1981), Spiders and insects Far East USSR, Vladivostok: 21. *Podisma kurilensis* (nec. BEY-BIENKO)

STOROZHENKO (1983), Syst. ecol.-faun. rev. insects orders Far East USSR, Vladivostok: 56, 57, figs. 33, 34, 41, 47-52.

Holotype - ♂, Russia: Sakhalin, 10 km south Nevelsk; in Zool. Inst. Russian Acad. Sci. (=ZIN), St. Petersburg, studied.

STOROZHENKO (1986), Key to insects Far East USSR, Leningrad: 295, figs. 148, 12, 13.

Material:

23 specimens from Sakhalin (Nevelsk, Ogonki, Aleksandrovsk-Sakhalinskij) including holotype and paratypes are studied.

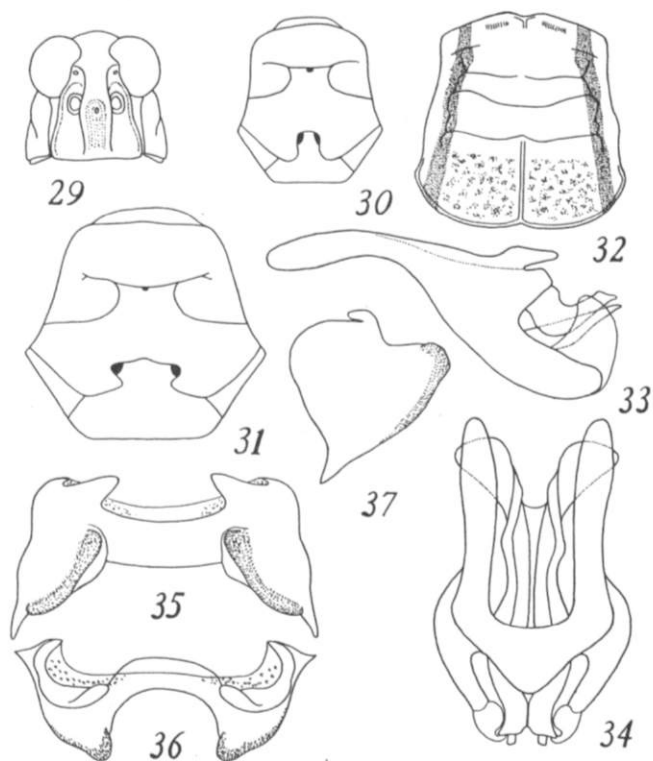
Description:

Male:

Body medium sized. Width of vertex between eyes 1.1-1.2 times more than the width of frontal ridge between antennae. Antennae thin, reaching well beyond the posterior margin of pronotum; median joints of antennae 2.4-2.6 times as long as broad. Vertical diameter of eyes 1.05-1.15 times larger than subocular furrow. Pronotum subcylindrical; prozona about 1.2-1.3 times as long as metazona; the posterior margin of metazona broadly rounded or with weak emargination near the median carina. Tegmen reaching of slightly surpassing the tympanal organ; about 2.7-2.8 times as long as broad; its length 1.4-2.2 times less than length of pronotum. Mesosternal interspace transverse, its maximum width 1.3 times more than its length; mesosternal lobe 1.3 times as broad as long. Hind femora slender, about 4.85-5.5 times as long as its maximum width. First abdominal tergite with large oval tympanal organ. Last abdominal tergite with short furculae; apex of furculae broadly rounded. Supra anal plate trapezoidal, with a weak median groove and two weak tubercles near the apex; length of plate equal to its maximum width near the base. Cerci straight, in profile conical; about 2.5 times as long as its greatest width.

Epiphallus bridge-shaped, with rounded ancorae; lophi seen from behind with broadly pointed inner margin; posterior projections long, pointed. Cingulum with straight apodemes; rami relatively narrow; zygoma with triangularly rounded apex; zygomal plate large. Apices of cingular valves seen from dorsal view truncate, distinctly broadened; with weak emargination between them. Basal and apical penis valves connected by a short, curved, unbroken flexure. Apices of apical penis valves seen from dorsal view narrow, truncated; in lateral view pointed.

General coloration of body yellowish green. Antennae greenish brown. Pronotum from above with general coloration; lateral lobes of pronotum brownish green, with broad black stripe. Abdomen with narrow black lateral stripes; supra anal plate black, with broad green median stripe. Cerci white. Tegmen brown. Anterior and median legs yellowish green. Hind femur yellowish green, ventral and inner margins yellow; dorsal genicular lobes black, ventral genicular lobes yellow. Hind tibia greenish blue, spines white with black apices.



Figs. 29-37: *Podisma sapporensis krylonensis*:
 29 - head of male in anterior view; 30 - sternum of male in ventral view;
 31 - do. female; 32 - pronotum of female in dorsal view; 33 - male phallic
 complex (epiphallus, epiphallic membrane and basal valves of penis
 removed); 34 - do. in dorsal view; 35 - epiphallus in dorsal view; 36 - do.
 in anterior view; 37 - do. in lateral view

Female:

Similar with ♂, but larger. Width of vertex between eyes 1.4-1.5 times more than the width of frontal ridge between antennae. Median joints of antennae 2.3-2.4 times as long as broad. Vertical diameter of eyes 0.9-1.05 times larger than subocular furrow. Length of prozona 1.3-1.4 times more than metazona; the posterior margin of metazona as in ♂. Tegmen as in ♂; 2.7-2.8 times as long as broad; its length 1.7-2.0 times less than length of pronotum. Mesosternal interspace transverse, its width 1.5-1.7 times more than its length; mesosternal lobe 1.5 times as broad as long. Hind femora 5.0-6.1 times as long as width. Tympanal organ as in ♂. Supra anal plate triangular, with pointed apex and broad median longitudinal groove near the base. Cerci as in ♂, 1.8-2.0 times as long as width. Subgenital plate elongate; posterior margin strongly triangular on the middle. Lower margin of ventral valves of ovipositor with numerous blunt teeth near the middle. General coloration as in male, but lateral black stripes on abdomen indistinct.

Measurements:

Length of body ♂ 17.2-20.0, ♀ 24.0-30.0; length of pronotum ♂ 4.5-4.8, ♀ 5.0-6.5; length of tegmina ♂ 2.2-3.2, ♀ 2.8-4.5; length of hind femora ♂ 10.5-11.6, ♀ 13.5-14.7 mm.

Podisma sapporensis kurilensis BEY-BIENKO 1949

Figs. 38-45

BEY-BIENKO (1949), Entom. Obozr., 30: 316, fig. 7. *Podisma kurilensis* Holotype - ♂, Russia: Kunashir isl., Mt. Mendeleev (=Shimanobori); in ZIN, St. Petersburg, studied.

MISTSHENKO (1951), Locust and grasshoppers USSR, Moscow-Leningrad: 230.

Podisma kurilensis

MISTSHENKO (1952), Fauna USSR. Catantopinae, Moscow-Leningrad: 412.

Podisma kurilensis

BEY-BIENKO (1966), Forests entom. Kuril. Kamtsch. Magadan reg., Moscow - Leningrad: 5. *Podisma kurilensis*

KUWAYAMA (1967), Insects fauna South. Kurile isl., Sapporo: 49. *Podisma (Podisma) kurilensis*

KUWAYAMA (1967), Loc. cit.: 49. *Podisma (Podisma) aberrans*. (nec. IKONNIKOV)

STOROZHENKO (1983), Syst. ecol.-faun. rev. insects orders Far East USSR, Vladivostok: 56, 57, figs. 39, 40, 45, 46.

STOROZHENKO (1986), Key to insects Far East USSR, Leningrad: 295, figs. 148, 14-16.

Material:

41 specimens from Kunashir island including holotype and two paratypes are studied.

Description:

Male:

Body medium sized. Width of vertex between eyes 1.3 times more than the width of frontal ridge between antennae. Antennae thin, reaching slightly beyond the posterior margin of pronotum; median joints of antennae 2.0-2.4 times as long as broad. Vertical diameter of eyes 1.05-1.1 times larger than subocular furrow. Pronotum subcylindrical; prozona about 1.3-1.5 times as long as metazona; the posterior margin of metazona broadly rounded. Tegmen reaching of slightly surpassing the tympanal organ; about 3.0-3.6 times as long as broad; its length 1.5-2.0 times less than length of pronotum. Mesosternal interspace transverse, its maximum width 1.2-1.3 times more than its length; mesosternal lobe 1.2 times as broad as long. Hind femora slender, about 4.4-4.6 times as long as its maximum width. First abdominal tergite with large oval tympanal organ. Last abdominal tergite with short furculae; apex of furculae broadly rounded. Supra anal plate trapezoidal, with a weak median groove and two weak tubercles near the apex; length of plate equal to its maximum width near the base. Cerci straight, in profile conical; about 1.8-2.2 times as long as its greatest width.

Epiphallus bridge-shaped, with pointed ancorae; lophi seen from behind with broadly rounded inner margin; posterior projections truncately rounded. Cingulum with long curved apodemes; rami broad; zygoma with triangularly rounded apex; zygomal plate relatively large. Apices of cingular valves seen from dorsal view pointed, distinctly broadened; with deep narrow emargination between them. Basal and apical penis valves connected by a short, curved, unbroken flexure. Apices of apical penis valves seen from dorsal view narrow; in lateral view truncate.

General coloration of body olive-green. Antennae greenish brown. Pronotum olive-green; lateral lobes with broad black stripe. Abdomen with broad black lateral stripes; supra anal plate black, with olive-green median stripe. Cerci greenish brown. Tegmen brown. Anterior and median legs greenish yellow. Hind femur brownish yellow, ventral and inner margins yellow; dorsal genicular lobes black, ventral genicular lobes yellow. Hind tibia greenish blue, spines white with black apices.

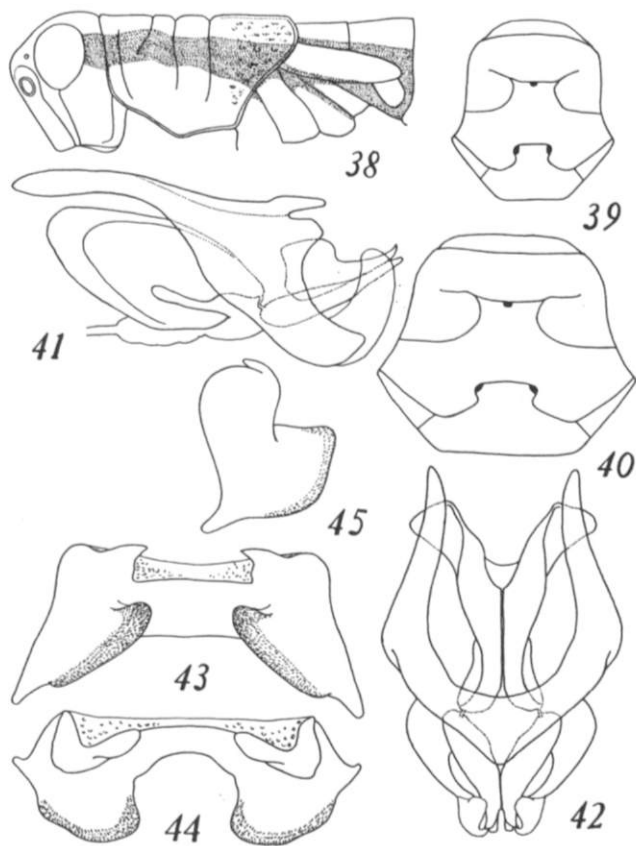
Female:

Similar with ♂, but larger. Width of vertex between eyes 1.4-1.5 times more than the width of frontal ridge between antennae. Median joints of antennae 2.0-2.4 times as long as broad. Vertical diameter of eyes 1.05 times larger than subocular furrow. Length of prozona 1.3-1.4 times more than metazona; the posterior margin of metazona without emargination near the median carina. Tegmen as in male; 3.1-3.6 times as long as broad; its length 1.5-1.7 times less than length of pronotum. Mesosternal interspace transverse, its width 1.6-2.0 times more than its length; mesosternal lobe 1.4 times as broad as long. Hind femora 4.6-4.8 times as long as width. Tympanal organ as in male. Supra anal plate triangular. Cerci as in male, 1.8-2.2 times as long as width. Subgenital plate elongate; posterior margin triangular on the middle. Lower margin of ventral valves of ovipositor with numerous pointed teeth near the middle.

General coloration as in male, but lateral black stripes on abdomen indistinct, dorsal genicular lobes of hind femora brown and ventral genicular lobes greenish brown.

Measurements:

Length of body ♂ 17.8-20.5, female 21.8 - 27.0; length of pronotum ♂ 4.1-4.9, female 5.2-6.3; length of tegmina male 2.1-3.2, ♀ 3.0-4.2; length of hind femora ♂ 10.2-11.9, ♀ 12.5-14.9 mm.



Figs. 38-45: *Podisma sapporensis kurilensis*:

38 - head, pronotum and base of abdomen of male in lateral view; 39 - sternum of male in ventral view; 40 - do. female; 41 - male phallic complex (epiphallus and epiphallic membrane removed); 42 - do. in dorsal view; 43 - epiphallus in dorsal view; 44 - do. in anterior view; 45 - do. in lateral view

Podisma sapporensis ashibetsuensis . STOROZHENKO, ssp. n.

Figs. 46-61

Material:

Holotype - ♂, Japan: Hokkaido, Shikaribetsu, 21.VIII.1955 (S.Kato), preserved in Nat. Inst. Agro-Env. Sci., Tsukuba, Japan. Paratype - ♀, Japan: Hokkaido, Mt. Ashibetsu, 24.VII.1964 (S.Ueno), preserved in Nat. Sci. Mus.(Nat.Hist.), Tokyo, Japan.

Description:

Male:

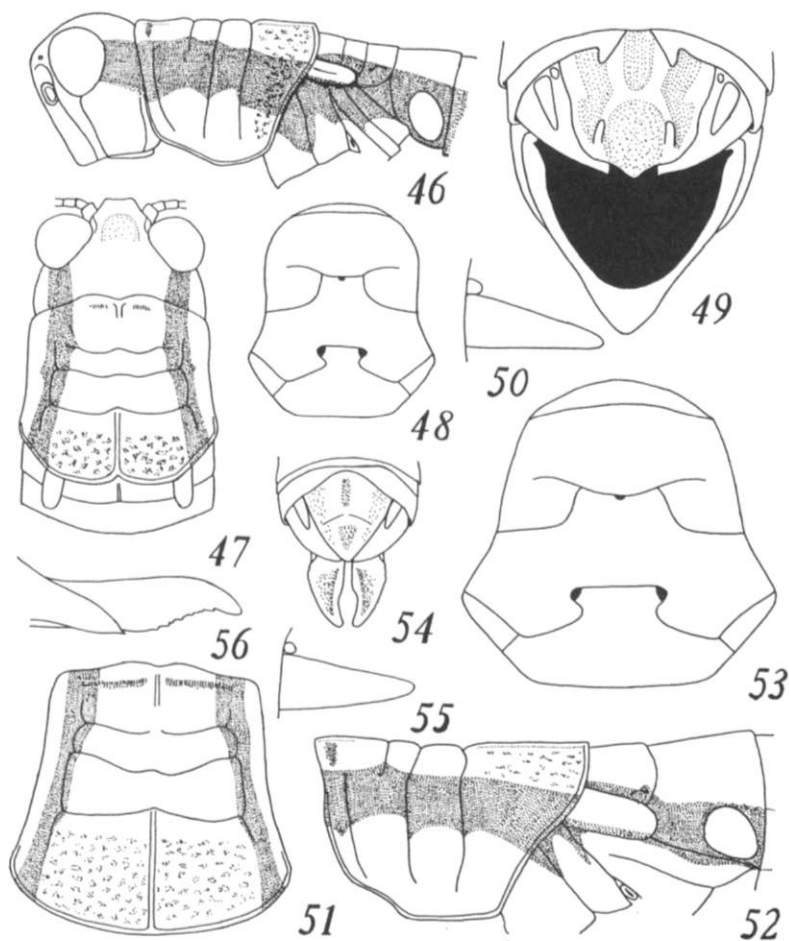
Body medium sized. Width of vertex between eyes 1.5 times more than the width of frontal ridge between antennae. Antennae thin, reaching well beyond the posterior margin of pronotum; median joints of antennae 2.9 times as long as broad. Vertical diameter of eyes equal to length of subocular furrow. Pronotum subcylindrical; prozona 1.5 times as long as metazona; the posterior margin of metazona with weak emargination near the median carina. Tegmen surpassing the hind margin of mesonotum; 1.5 times as long as broad; its length 3.9 times less than length of pronotum. Mesosternal interspace transverse, its maximum width 1.3 times more than its length; mesosternal lobe 1.2 times as broad as long. Hind femora slender, 4.9 times as long as its maximum width. First abdominal tergite with large oval tympanal organ. Last abdominal tergite with short furculae; apex of furculae narrowly rounded. Supra anal plate trapezoidal, with a broad median groove and two weak tubercles near the apex; maximum width of plate near the base 1.1 times more than its length. Cerci straight, in profile conical; about 2.1 times as long as its greatest width.

Epiphallus bridge-shaped, with weakly pointed ancorae; lophi seen from behind with broadly pointed inner margin; posterior projections short, pointed. Cingulum with long curved apodemes; rami relatively narrow; zygoma with triangularly rounded apex; zygomal plate relatively large. Apices of cingular valves seen from dorsal view pointed; with deep broad emargination between them. Basal and apical penis valves connected by a short, curved, unbroken flexure. Apices of apical penis valves seen from dorsal view relatively broad; in lateral view truncate.

General coloration of body olive-green. Antennae brown. Pronotum from above with general coloration; lateral lobes of pronotum brownish green, with broad black stripe. Abdomen with narrow black lateral stripes; supra anal plate black, with broad median brown stripe. Cerci brown. Tegmen brown. Anterior and median legs yellowish green. Hind femur olive-green, ventral and inner margins yellow; dorsal genicular lobes black, ventral genicular lobes yellow. Hind tibia greenish blue, spines white with black apices.

Female:

Similar with ♂, but larger. Width of vertex between eyes 1.4 times more than the width of frontal ridge between antennae. Median joints of antennae 2.8 times as long as broad. Vertical diameter of eyes 1.05 times shorter than subocular furrow. Length of prozona 1.25 times more than metazona; the posterior margin of metazona broadly rounded without emargination. Tegmen as in ♂; 1.3 times as long as broad; its length 3.0 times less than length of pronotum. Mesosternal interspace transverse, its width 2.0 times more than its length; mesosternal lobe



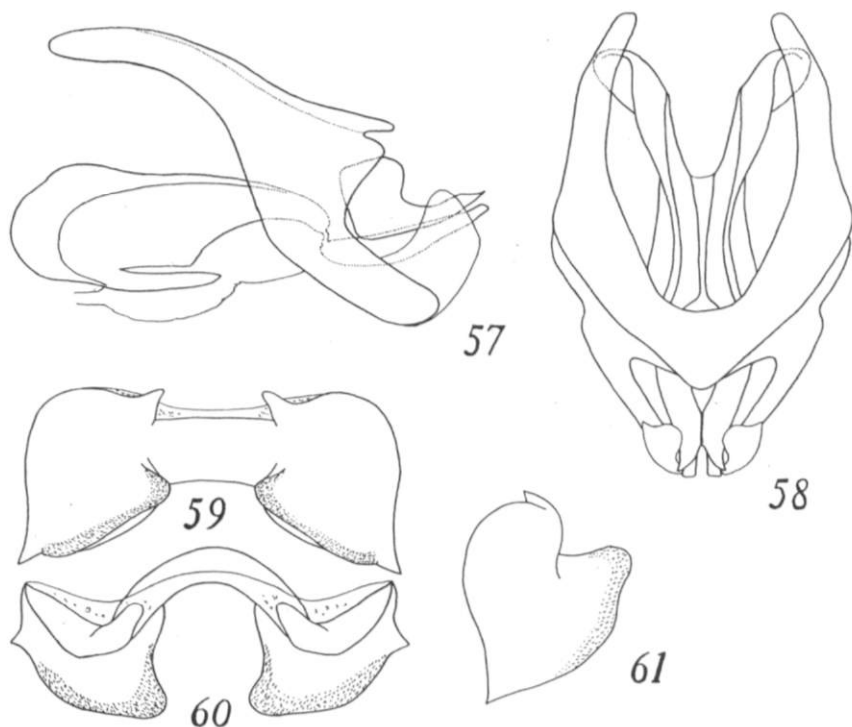
Figs. 46-56: *Podisma sapporensis ashibetsuensis* ssp. n.:

46 - head, pronotum and base of abdomen of ♂ in lateral view; 47 - do. in dorsal view; 48 - sternum of ♂ in ventral view; 49 - apex of abdomen of ♂ in dorsal view; 50 - left cercus of ♂ in lateral view; 51 - pronotum of ♀ in dorsal view; 52 - pronotum and base of abdomen of ♀ in lateral view; 53 - sternum of ♀ in ventral view; 54 - apex of abdomen of ♀ in dorsal view; 55 - left cercus of female in lateral view; 56 - ventral valve of ovipositor in lateral view

1.3 times as broad as long. Hind femora 5.1 times as long as width. Tympanal organ as in ♂. Supra anal plate triangular, with weak median longitudinal groove near the base. Cerci as in ♂, 2.0 times as long as width. Subgenital plate elongate; posterior margin triangular on the middle. Lower margin of ventral valves of ovipositor with numerous blunt teeth near the middle. General coloration as in ♂, but antennae yellowish brown and lateral black stripes on abdomen indistinct.

Measurements:

Length of body ♂ 20.8, ♀ 25.2; length of pronotum ♂ 4.3, ♀ 6.3; length of tegmina ♂ 1.1, ♀ 2.1; length of hind femora ♂ 11.8, ♀ 14.7 mm.



Figs. 57-61: *Podisma sapporensis ashibetsuensis* ssp. n.:

57 - ♂ phallic complex (epiphallus and epiphallic membrane removed) in lateral view; 58 - do. in dorsal view; 59 - epiphallus in dorsal view; 60 - do. in anterior view; 61 - do. in lateral view

Genus *Rhinopodisma* MISTSHENKO, 1954

Type species: *Podisma assama* (UVAROV, 1930), by original designation.

MISTSHENKO (1954), Proc.Zool.Inst.USSR Acad.Sci., 15 : 30.

HUANG (1981), Zool.Res., 2(1) : 63. *Aserratus*, syn. n.

YIN (1984), Grasshop.Locusts Qinghai-Xizang Plat.China :72. *Aserratus*.

YIN (1984), Loc. cit.: 74. *Altifrons* (nomen nudum)

Notes

Genus *Rhinopodisma* was established by L.MISTSHENKO (1954) for a single species described by B.UVAROV (1930) from North India (Assam) as *Podisma assama*. More latter C.HUANG (1981) described monotypic genus *Aserratus* with type-species *A. emenifrontus* HUANG from West China (Tibet). A full redescription of *Aserratus emenifrontus* was made by X.YIN (1984 : 72, figs. 158-164), for which a name *Altifrons rufipes* YIN, gen. et sp. n. was mentioned as nomen nudum (YIN, 1984 : 74). The comparisons of *Rhinopodisma* and *Aserratus* shown that both this genera must be regards as a single genus *Rhinopodisma*, with two species:

Rh. assama (UVAROV, 1930) and *Rh. emenifrontus* (HUANG, 1981), comb. n.

Genus *Rhinopodisma* belongs to the tribe Melanoplini (Orthoptera: Acrididae: Catantopinae) and closely related to the genus *Micropodisma* DOV.-ZAP., but well distinguished from it as well as from all other genera of Melanoplini by the shape of head which is very similar this the same of the genus *Traulia* STAL of the tribe Trauliini (Orthoptera: Acrididae: Catantopinae).

Genus *Sinopodisma* CHANG, 1940

Type species: *Indopodisma* (*Sinopodisma*) *pieli* CHANG, 1940, by original designation.

CHANG (1940) : 40. *Indopodisma* subgenus *Sinopodisma*.

MISTSHENKO (1951), Locust and grasshoppers USSR, Moscow-Leningrad : 239. *Sinopodisma* (pro genus)

ZHENG (1980), Entomotaxonomia, 2(4) : 336, 347. *Pedopodisma*, syn. n.

Notes

CHANG (1940) described *Sinopodisma* as a subgenus of *Indopodisma* DOVNAR-ZAPOLSKY, 1933. Latter MISTSHENKO (1951) consider it as a distinct genus. ZHENG (1980) erected a new genus *Pedopodisma* (with a type species *Pedopodisma microptera* ZHENG, 1980, by original designation) based only on subapterous or completely apterous species. The degree of reduction of tegmen from micropterous to apterous condition is not to be satisfactory for generic distinction in the tribe Melanopolini as seen by representatives of the genus *Podisma* and other genera, therefore a new synonymy is established above. The following 24 species of genus *Sinopodisma* are known from China, Taiwan and South Japan: *S. bidentata* LIANG, 1989; *S. dolichopyga* (HUANG, 1988), comb. n.; *S. epacroptera* (HUANG, 1988), comb. n.; *S. formosana* (SHIRAKI, 1910); *S. guizhonensis* ZHENG, 1981; *S. houshana* HUANG, 1982; *S. jiuilishana* HUANG,

1982; *S. kawakamii* (SHIRAKI, 1910); *S. kellogi* (CHANG, 1940); *S. kodamae* (SHIRAKI, 1910); *S. lofaoshana* (TINKHAM, 1936); *S. microptera* (ZHENG, 1980), comb. n.; *S. pieii* (CHANG, 1940); *S. protrocula* (ZHENG, 1980), comb. n.; *S. punctata* MISTSHENKO, 1954; *S. rostellocerca* YOU, 1985; *S. shirakii* (TINKHAM, 1936); *S. spinocera* ZHENG et LIAN, 1986; *S. splendida* (TINKHAM, 1936); *S. tsaii* (CHANG, 1940); *S. tsinlingensis* ZHENG, 1974; *S. wuyishana* ZHENG, LIANG et XI, 1985; *S. yingdensis* LIANG, 1988; *S. yunnana* ZHENG, 1977.

Genus *Parapodisma* MISTSHENKO, 1947

Type species: *Pezotettix micado* I.BOLIVAR, 1890, by original designation.

MISTSHENKO (1947), Proc.R.Ent.Soc.London, 16(1-2) : 10.

INOUE (1985), Trans.Shikoku Ent.Soc., 17(3) : 130. *Pseudoparapodisma*, syn.n.

Notes

M.INOUE (1985) described genus *Pseudoparapodisma* (with *Parapodisma niihamensis* INOUE, 1979 as a type species by original designation) based only on brachypterous condition of this species (tegmina are relatively large, extending beyond the middle of the body). There are some degrees of reduction of tegmen in the genus *Parapodisma*: brachypterous (*P. niihamensis* INOUE, 1979, *P. hiurai* TOMINAGA et KANO, 1987), subbrachypterous (*P. micado* I.BOLIVAR, 1890, *P. subastris* HUANG, 1983 and other), micropterous (*P. dairisama* SCUDDER, 1895, *P. tenryuensis* KOBAYASHI, 1983 and other) and subapterous (*P. subaptera* HEBARD, 1924). All species of genus *Parapodisma* may be grouped into at least four group based on male genitalia, especially the shape of cingular valves and apical valves of penis. Within this groups the different degrees of reduction of tegmen are mentioned but anyone group have not generic or subgeneric status. Therefore a new synonymy is established.

Genus *Monopterus* Fischer-Waldheim, 1846

Type species: *Monopterus gracilis* FISCHER-WALDHEIM, 1846 (= *Gryllus frigidus* BOHEMAN, 1846), by monotypy.

FISCHER-WALDHEIM (1846), Orth.Imp.Ross. 252.

MISTSHENKO (1951), Locust and grasshoppers USSR, Moscow-Leningrad : 232. *Melanoplus* (partim)

RAMME (1951), Mitt.Zool.Mus.Berlin, 27: 16-18, 56. *Bohemanella*, syn. n.

MISTSHENKO (1952), Fauna USSR. Catantopinae, Moscow-Leningrad 419. *Melanoplus* (partim)

REHN & Randell (1963), Proc. Acad. Nat. Sci. Philad., 115(1): 7,8,10. *Bohemanella*

VICKERY & KEVAN (1983), Monogr. Orth. insects Canada, Quebec 2: 754. *Melanoplus* (partim)

Notes

Where are two syntypes of *Monopterus gracilis* in Zoological Institute (St.Petersburg): a ♀ is *Bohmanella frigida* (MISTSHENKO, 1951: 232) and a ♂ is *Chrysochraon dispar dispar* (MISTSHENKO, 1986 : 34). It seems to be more preferable to designate a lectotype of *Monopterus gracilis* F.-W. 1846 as ♀: Russia: Orenburg distr.; preserved in ZIN, St.Petersburg; here designate. RAMME (1951) established genus *Bohmanella* for a single species, *B. frigida* (BOHEMAN, 1846). Therefore *Monopterus* FISCHER-WALDHEIM, 1846 = *Bohmanella* RAMME, 1951, syn. nov. In this case the old generic name *Chrysochraon* is conserved and taxonomic changes is minimal.

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