

## The Psilidae (Diptera) from South Korea, with the key to Old World species of *Xenopsila* Buck

### Двукрылые семейства Psilidae (Diptera) Южной Кореи с таблицей для определения видов *Xenopsila* Бук Старого Света

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КЛЮЧЕВЫЕ СЛОВА: Psilidae, Южная Корея, *Chyliza*, *Loxocera*, *Psila*, *Xenopsila*, определительная таблица.

ABSTRACT: In work data on South Korean Psilidae are listed. The list includes 16 species belonging to genera *Chyliza* (6 species), *Loxocera* (*L. achaeta*) and *Psila* s.l. (9 species). The key to Old World species of subgenus *Xenopsila* (*Psila*) is given.

РЕЗЮМЕ: В работе приведён список южнокорейских видов мух семейства Psilidae, включающий 16 видов из родов *Chyliza* (6 видов), *Loxocera* (*L. achaeta*) и *Psila* s.l. (9 видов). Дана таблица для определения видов подрода *Xenopsila* (*Psila*) Старого Света.

The Psilid fauna of the Korean Peninsula is known very poorly. There is only one report about 9 species from North Korea [Iwasa & Kozánek, 1995]. Due to courtesy of Doctor Bernhard Merz (from Muséum d'Histoire naturelle Genève) I could obtain and examine collection of psilid-flies from South Korea. Flies have been collected joint scientific expedition of Yonsei University, Wonju (leader Prof. Ho-Yeon Han) and Muséum d'Histoire naturelle Genève (Dr Bernhard Merz) 12.06.2005–1.07.2005. Gangwon-do Province is bounded on the north by the territories of North Korea. This province represents mountainous area. The surveyed areas are located in a southwest of a province in Wonju County and around of it.

#### *Chyliza* Fallén 1820

The genus *Chyliza* is characterized by an unique combination of characters: enlarged (callus-like) anatergal area of laterotergite, concave occiput, face nearly perpendicular, not retreating, head not triangular in profile, as a rule 3 pairs of scutellar bristles, developed postcoxal bridge, anal cell shorter than 2nd basal.

The North Korean list of *Chyliza* includes 5 species, 3 of them are lack in our list. These are *Chyliza acuta* Iwasa, 1995; *Ch. annulipes* Mcq., 1835, *Ch. zhelochovt-*

*sevi* Shatalkin, 1989. Thus, the general number of *Chyliza*, recorded for fauna of the Korean Peninsula, makes nine species.

#### *Chyliza crinita* Iwasa, 1989

*Chyliza surcularia* Shatalkin, 1989

MATERIAL EXAMINED. 1♂ — S.Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan/11, 20.VI.2005, 37°16.2' N/128°46.5' E, forest, meadow, Merz, Han, Ro, Choi, Lee, Hwang, Suk leg.; 1♀ — S.Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan, 24.VI.2005, 37°16.2' N/128°46.5' E, forest, meadow, Merz, Han, Choi, Lee, Hwang, Suk leg.

#### *Chyliza dictaeta* Shatalkin, 1989

MATERIAL EXAMINED. 2♀♀ — S.Korea, 240 m/4a, Gangwon-do, Wonju Yonsei Univ. Campus, Maeji-ri, meadow, 15.VI.2005; 7♂, 4♀ — 14.VI.2005/2; 9♂, 1♀ — 19.VI.2005/10a; 1♂ — 22.VI.2005/13; 1♀ — 25.VI.2005/166, 37°16.5' N/127°54.0' E, forest, grassland behind institute, meadow, Merz, Byun, Lee leg.; 1♂ — S.Korea, 750–1087 m, Gangwon-do, Wonju-si, Mt. Baegunsan, 14.VI.2005/3, 37°15.0' N/127°57.5' E, Merz, Han, Lee, Hwang leg.

#### *Chyliza eoa* Shatalkin, 1989

MATERIAL EXAMINED. 1♀ — S.Korea, 770–900 m, Gangwon-do, Hongcheon-gun, N valley of Mt. Gyebangsan, 23.VI.2005, 37°44.5' N/128°26.2' E, riverbed, ruderal, Merz, Lee leg.; 1♀ — S.Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan, 24.VI.2005, 37°16.2' N/128°46.5' E, open pine forest, ruderal vegetation, small mixed forest, shrubs, unused meadow with isolated trees (*Crataegus*, *Quercus*, *Fraxinus*); ridge of mountain, hilltopping, Merz, Han, Choi, Lee, Hwang, Suk leg.

#### *Chyliza leptogaster* (Panzer, 1798)

MATERIAL EXAMINED. 1♂, 2♀♀ — S.Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan, 24.VI.2005, 37°16.2' N/128°46.5' E, open pine forest, ruderal vegetation, small mixed forest, shrubs, unused meadow with isolated trees (*Crataegus*, *Quercus*, *Fraxinus*); ridge of mountain, hilltopping, Merz, Han, Choi, Lee, Hwang, Suk leg.; 2♀♀ — S.Korea, 770–900 m, Gangwon-do, Hongcheon-gun, N valley, Mt. Gyebangsan/14, 23.VI.2005, 37°44.5' N/128°26.2' E, riverbed, ruderal, Merz, Lee leg.; 2♂♂ — S.Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan/11, 20.VI.2005, 37°16.2' N/128°46.5' E, forest, meadow, Merz, Han, Ro, Choi, Lee, Hwang, Suk leg.; 2♂♂ — S.Korea, 750–900 m, Hongcheon-gun, Mt. Gachilbong, 17.VI.2005,

37°52.0' N/128°28.0' E, forest, hilltop E, Merz, Choi, Lee, Hwang, leg.; 1♀ — S.Korea, 900–1200 m, Hoengseon-gun, Mt. Cheongtaesan, 18.VI.2005, 37°30.4' N/128°18.0' E, mixed, wet forest, dense undergrowing vegetation near peak, bamboo (*Sasa borealis*), Merz, Han, Choi, Lee, Hwang, leg.; 1♀ — S.Korea, 240 m/13, Gangwon-do, Wonju Yonsei Univ. Campus, Maeji-ri. 22.VI.2005, 37°16.5' N/127°54.0' E, dry and wet forest, park behind stud. home, Merz, leg.

***Chyliza takagii* Iwasa, 1989**

*Chyliza abstrusa* Shatalkin, 1989

MATERIAL EXAMINED. 1♂ — S.Korea, 240 m/10a, Gangwon-do, Wonju Yonsei Univ. Campus, Maeji-ri. 19.VI.2005, 37°16.5' N/127°54.0' E, forest, grassland behind institute meadow, Merz, Byun, Lee leg.

***Chyliza trichopoda* Shatalkin, 1989**

MATERIAL EXAMINED. 1♂, 1♀ — S.Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan/15, 24.VI.2005, 37°16.2' N/128°46.5' E, forest, meadow, Merz, Han, Choi, Lee, Hwang, Suk leg.

***Chyliza vittata* Meigen, 1826**

MATERIAL EXAMINED. 1♂, 1♀ — S.Korea, 770–900 m, Gangwon-do, Hongcheon-gun, N valley of Mt. Gyeongbansan, 23.VI.2005, 37°44.5' N/128°26.2' E, 11h15–7h15, alluvial forest, mixed forest, ruderal (near car), on stones in riverbed, Merz, Lee leg.

***Loxocera* Meigen 1803**

Only *Loxocera fulviventrifera* Meigen, 1826 is recorded for fauna of North Korea [Iwasa & Kozánek, 1995]. This species has an extraordinarily wide Eurasian distribution. It is found throughout Europe, temperate Asia, China, Japan. In our list is mentioned second species occurring in East, Japan and China. *Loxocera acheta* forms separate species-group including Nearctic *Loxocera cylindrica* Say, 1823, *L. ignyodactyla* Buck, 2006, *L. ojbwayensis* Buck, 2006, Japanese *L. lutulenta* Iwasa, 1992 and *L. nigrifrons* Macquart, 1835 [see Buck & Marshall, 2006b].

***Loxocera acheta* Shatalkin, 1989**

MATERIAL EXAMINED. 4♂♂, 4♀♀ — S.Korea, 240 m/4a, Gangwon-do, Wonju Yonsei Univ. Campus, Maeji-ri, 15.VI.2005; 2♀♀ — 19.VI.2005, 37°16.5' N/127°54.0' E, forest, grassland behind institute meadow, Merz, Byun, Lee leg.; 1♀ — S.Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan, 20.VI.2005, 37°16.2' N/128°46.5' E, open pine forest, ruderal vegetation, small mixed forest, shrubs, unused meadow with isolated trees (*Crataegus*, *Quercus*, *Fraxinus*); ridge of mountain, hilltopping, Merz, Han, Ro, Choi Lee, Hwang, Suk leg.

***Psila* Meigen, 1803**

Three species are mentioned in the North Korean list: *Psila (Chamaepsila) amurensis* Shatalkin, 1986, *P. (Chamaepsila) shatalkini* Iwasa, 1995, *P. (Chamaepsila) tenebrica* Shatalkin, 1986. Last species is found out also in materials from South Korea.

The genus is very polymorphic and breaks up to a number of groups which are sometimes considered as separate genera. Species of *Chamaepsila* Hendel, 1917 dominate over Europe. On the Far East this group is replaced by other subgenera which in Europe either are

absent (*Synaphopsila* Hendel, 1934, *Xenopsila* Buck, 2006), or are represented by solitary and rare species (*Freyopsila* Shatalkin, 1986 with single European species *sibirica* Frey, 1925). This replacement is especially noticeable at movement from the north on the south. It is interesting to mention that there turned out to be no species *Psila* s.str. in Korean materials. East of the Urals a single species *Psila magna* Shatalkin, 1983 from Kuril Islands was mentioned. A few species are known from mountain regions of West China. It follows that *Psila* s.str. has disjunctive distribution.

***Psila (Chamaepsila) tenebrica* Shatalkin, 1986**

MATERIAL EXAMINED. 11♂♂, 10♀♀ — S. Korea, 770–900 m, Gangwon-do, Hongcheon-gun, N valley of Mt. Gyeongbansan, 23.VI.2005, 37°44.5' N/128°26.2' E, riverbed, ruderal, Merz, Lee leg.; 8♂♂ — S. Korea, 750–1087 m, Gangwon-do, Wonju-si, Mt. Baegunsan, 14.VI.2005/3 37°15.0' N/127°57.5' E, Merz, Han, Lee, Hwang leg.; 1♀ — S. Korea, 1100 m, Gangwon-do, Hongcheon-gun, Unduryeong (pass)/7, 17.VI.2005, 37°42.3' N/128°26.4' E, riverbed, ruderal, Merz, Choi, Lee, Hwang leg.

***Psila (Chamaepsila) melanocera* (Shatalkin, 1983)**

*Chamaepsila melanocera* Shatalkin, 1983

MATERIAL EXAMINED. 1♂, 10♀♀ — S. Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan/11, 20.VI.2005, 37°16.2' N/128°46.5' E, forest, meadow, Merz, Han, Ro, Choi, Lee, Hwang, Suk leg.; 1♀ — S. Korea, 900–1200 m, Hoengseon-gun, Mt. Cheongtaesan/9, 18.VI.2005, 37°30.4' N/128°18.0' E, forest, hilltop, Merz, Han, Choi, Lee, Hwang, leg.; 3♀♀ — S. Korea, 750–1087 m, Gangwon-do, Wonju-si, Mt. Baegunsan, 14.VI.2005/3; 1♂, 4♀♀ — 21.VI.2005/12, 37°15.0' N/127°57.5' E, Merz, Han, Lee, Hwang leg.

***Psila (Freyopsila) nigriseta* Iwasa, 1991**

MATERIAL EXAMINED. 1♂ — S. Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan/11, 20.VI.2005, 37°16.2' N/128°46.5' E, forest, meadow, Merz, Han, Ro, Choi, Lee, Hwang, Suk leg.

***Psila (Freyopsila) nitida* Iwasa, 1991**

MATERIAL EXAMINED. 1♀ — S. Korea, 750–900 m, Hongcheon-gun, Mt. Gachilbong/6, 17.VI.2005, 37°52.0' N/128°28.0' E, forest, hilltop, Merz, Choi, Lee, Hwang, leg.

***Psila (Freyopsila) sibirica* Frey, 1925**

*Psila problematica* Hennig, 1941

[This species is related to and may turn out Nearctic *Psila levis* Loew, 1869]

MATERIAL EXAMINED. 1♂ — S. Korea, 750–900 m, Hongcheon-gun, Mt. Gachilbong/6, 17.VI.2005, 37°52.0' N/128°28.0' E, forest, hilltop, Merz, Choi, Lee, Hwang, leg.; 1♀ — S. Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan/11, 20.VI.2005, 37°16.2' N/128°46.5' E, forest, meadow, Merz, Han, Ro, Choi, Lee, Hwang, Suk leg.

***Psila (Freyopsila) stackelbergi* Shatalkin, 1986**

MATERIAL EXAMINED. 1♂, 10♀♀ — S.Korea, 900–1200 m, Hoengseon-gun, Mt. Cheongtaesan/9, 18.VI.2005, 37°30.4' N/128°18.0' E, forest, hilltop, Merz, Han, Choi, Lee, Hwang, leg.

***Psila (Xenopsila) nemoralis* Shatalkin, 1986**

*Psila (Pseudopsila) nemoralis* Shatalkin, 1986

MATERIAL EXAMINED. 3♀♀ — S.Korea, 770–900 m, Gangwon-do, Hongcheon-gun, N valley, Mt. Gyeongbansan/14, 23.VI.2005, 37°44.5' N/128°26.2' E, riverbed, ruderal, Merz, Lee leg.; 2♀♀ — S.Korea, 750–1087 m, Gangwon-do, Wonju-si, Mt. Baegunsan, 14.VI.2005/3 37°15.0' N/127°57.5' E, Merz, Han, Lee, Hwang leg.

***Psila (Xenopsila) nigrohumera* (Wang & Yang, 1996)**

*Chamaepsila (Tetrapsila) nigrohumera* Wang et Yang, 1996  
 MATERIAL EXAMINED. 4♂♂, 3♀♀ — S. Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan, 20.VI.2005. 37°16.2' N/128°46.5' E, forest, meadow 11h45-17h20, open pine forest, ruderal vegetation, small mixed forest, shrubs, unused meadow with isolated trees (*Crataegus*, *Quercus*, *Fraxinus*); ridge of mountain, hilltopping, Merz, Han, Ro, Choi Lee, Hwang, Suk leg.

This species is described from central China, (Hubei Prov., Mt. Wudang to the west of Province) Flies are caught at height of 1100 m.

***Psila (Xenopsila) tetrachaeta* (Shatalkin, 1983)**

*Chamaepsila tetrachaeta* Shatalkin, 1983  
 MATERIAL EXAMINED. 11♂♂, 23♀♀ — S. Korea, 900–1120 m, Gangwon-do, Jeongseon-gun, Mt. Mindungsan/11, 20.VI.2005; 3♂♂, 3♀♀ — 24.VI.2005, 37°16.2' N/128°46.5' E, forest, meadow, Merz, Han, Ro, Choi Lee, Hwang, Suk leg; 1♀ — S. Korea, 750–1087 m, Gangwon-do, Wonju-si, Mt. Baegunsan, 14.VI.2005/3, 37°15.0' N/127°57.5' E, Merz, Han, Lee, Hwang leg; 1♂, 3♀♀ — S.Korea, 770–900 m, Gangwon-du, Hongcheon-gun, N valley, Mt. Gyeongbansan/14, 23.VI.2005, 37°44.5' N/128°26.2' E, riverbed, ruderal, Merz, Lee leg.

**Subgenus *Xenopsila* Buck 2006**

M. Buck and S. Marshall [2006a] have found out, that Nearctic *Pseudopsila fallax* (Loew, 1869), designated as type species of *Pseudopsila* Johnson, 1920 is closer to members of *Psila*, than to other species *Pseudopsila* – *Pseudopsila collaris* Lw., 1869, *P. bivittata* Lw., 1869, *P. lateralis* Lw., 1860 They have suggested separate subgenus *Xenopsila* for these flies together with Palearctic *Pseudopsila*.

They have also reduced the generic name *Pseudopsila* in synonyms to *Psila*. In my opinion this last decision is hasty. It would be better to leave this name for *P. fallax* group (including *P. angustata* Cresson, 1919 and *P. perpolita* Johnson, 1920). *P. fallax* represents good Nearctic monophyletic group which differs from *Psila* s.str. and *Chamaepsila* in having a white arista and 4 scutellars. It is necessary to check up relationships of this group with Burmese “*Pseudopsila*” and with “*Chyliza gracilis*” Lw., 1854 from Turkey. These last also are characterized by a white arista and “*Chyliza gracilis*”, besides has four scutellars.

Subgenus *Xenopsila* contains for sure four Palearctic species. We have removed from subgenus two Burmese species (*maculipennis*, Frey, 1955 and *nigricollis* Frey, 1955; both are described as *Pseudopsila*) and a number of the Chinese species (for example *Chamaepsila maculatata* Wang & Yang, 1996, *Chamaepsila unicolor* Wang & Yang, 1996). They differ from *Psila* s.str. and *Chamaepsila* by a white arista and from *Xenopsila* in possessing more slender body and a pair of scutellars. Burmese and Chinese species, probably, form separate group inside *Psila* s.l.; “*Chyliza gracilis*” shows the greater relationship with *Loxocera* than with *Psila* in my opinion.

Very much can be, that the Chinese *Oxyopsila unistripta* Wang & Yang, 1996 also belongs to *Xenopsila*. This species is known only on single female and is distinguished by presence 3 vt, 2 (pairs of) scutellars, 1 npl, black middle mesonotal stripe; dorsocentrals lack. It is impossible to exclude, that in this species we have independent subgenus, united some more Chinese species, in particular *Oxyopsila altusfronsa* Wang & Yang, 1996, *Oxyopsila nigricorpa* Wang & Yang, 1996.

Members of *Xenopsila* are more thickset with curved (not straight) dorsal outline [see Figs 4–5 in Buck, Marshall,

2006a]; arista white, scutellum with four bristles, 2 vt, poc, 1 dc. As it has been told Old World *Xenopsila* includes four species occurring Far East (Russia), Korea, China and Japan. These are distinguished on the base of the following key.

**A KEY TO THE OLD WORLD SPECIES OF *XENOPSILA***

1. Body entirely yellow. Antennae yellow, 3rd segment black apically. 3.0–4.0. — Far East, Amur district (on the north up to the mountain ridge Tukuringra). — Japan, S.Korea ..... *P. (Xenopsila) tetrachaeta* Shatalkin, 1983  
 — Abdomen black, thorax yellow with black pleural spots and mesonotal stripes ..... 2
2. Mesonotum yellow, with pair of narrow black stripes reaching level of posterior margin of black hummeri. 3.0–3.6. — China, S.Korea .....  
 ..... *P. (Xenopsila) nigrohumera* Wang & Yang, 1996  
 — Mesonotum yellow, with pair of wide black stripes reaching anterior margin and flowing together between yellow humeral calli ..... 3
3. 3rd antennal segment yellow, dark on upper margin. Mesopleuron entirely black. 3.80–4.4. — Far East — China, S.Korea ..... *P. (Xenopsila) nemoralis* Shatalkin, 1986  
 — 3rd antennal segment yellow, blackish in apical half. Mesopleuron yellow with narrow black stripes in upper half. 3.50–3.9. — Far East, Amur district — Japan, China .....  
 ..... *P. (Xenopsila) arbustorum* Shatalkin, 1986  
 (*Chamaepsila maculadora* Wang & Yang, 1996)

*Xenopsila arbustorum* is similar to *Xenopsila nemoralis* and was described as subspecies of latter. On our data *X. arbustorum* settles the open territories covered with bushes whereas *X. nemoralis* is met in woods more often. *X. arbustorum* has more a wide distribution, especially on the west where this species has area extended on the West up-stream Amur-river almost up to Blagoveshchensk. It is in the consent with the Chinese data. *Ch. maculadora* is most likely synonymous with *X. arbustorum* and is described from Ningxia Hui Autonomous Region.

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