

# Taxonomic Review of the Psocids (Psocoptera) in Korea

Pheophanh Soysouvanh, Geonho Cho<sup>1</sup> and Ki-Jeong Hong\*

Department of Plant Medicine, Suncheon National University, Suncheon 57922, Korea

<sup>1</sup>Department of Agricultural Biotechnology, Seoul National University, Seoul 08826, Korea

## 한국산 다듬이벌레목의 분류학적 정리

페오판 소이수반 · 조건호<sup>1</sup> · 홍기정\*

순천대학교 식물외과과, <sup>1</sup>서울대학교 농생명공학부

**ABSTRACT:** The psocids of Korea are reviewed based on museum collections and recently collected material. To date, only 14 species of 7 families in 3 suborders (Trogiomorpha, Troctomorpha and Psocomorpha) of Psocoptera have been recorded. In the present study, 10 additional species belonging to 2 suborders [Troctomorpha] Amphientomidae: *Ancylentomus macrourus* (Li, 1997); [Psocomorpha] Amphipsocidae: *Amphipsocus japonicus* (Enderlein, 1906), Caeciliusidae: *Valenzuela oyamai* (Enderlein, 1906), *Paracaecilius japonicus* (Enderlein, 1906), Stenopsocidae: *Cubipilis aphidiformis* (Enderlein, 1906), *Stenopsocus immaculatus* (Stephens, 1836), Peripsocidae: *Peripsocus didymus* Roesler, 1939, Psocidae: *Amphigerontia anchorae* Li, 2002, *Psococerastis tokyoensis* (Enderlein, 1906) and *Trichadenopsocus alternatus* Li, 2002, were found to occur in Korea for the first time. Adult morphology, taxonomic diagnosis and photographs of diagnostic characters of the newly recorded species in Korea are provided.

**Key words:** Psocoptera, Taxonomy, New record, Korea

**초록:** 지금까지 한국산 다듬이벌레는 3개 아목(Trogiomorpha, Troctomorpha, Psocomorpha)의 7개 과에서 14종이 알려져 있다. 채집된 재료를 바탕으로 동정을 실시한 결과, 2개 아목에 속하는 다음과 같은 10종을 추가한다: [Troctomorpha] Amphientomidae: *Ancylentomus macrourus* (Li, 1997); [Psocomorpha] Amphipsocidae: *Amphipsocus japonicus* (Enderlein, 1906), Caeciliusidae: *Valenzuela oyamai* (Enderlein, 1906), *Paracaecilius japonicus* (Enderlein, 1906), Stenopsocidae: *Cubipilis aphidiformis* (Enderlein, 1906), *Stenopsocus immaculatus* (Stephens, 1836), Peripsocidae: *Peripsocus didymus* Roesler, 1939, Psocidae: *Amphigerontia anchorae* Li, 2002, *Psococerastis tokyoensis* (Enderlein, 1906), *Trichadenopsocus alternatus* Li, 2002. 이 미기록종들에 대한 성충 및 진단형질의 사진을 제공하였다.

**검색어:** 다듬이벌레목, 분류, 미기록종, 한국

Barklice or Booklice, commonly called psocids, are small and inconspicuous scavenging insects of the order Psocoptera (Mockford, 1989). They feed on fungi, algae, lichen, and organics like detritivore, and some are treated as polyphagous pest of stored food products worldwide (Green and Turner, 2005). The psocids usually overlooked by the researchers despite its relative diversity (Mockford, 1989). Recently many

of them have been described, more than 5,500 species in three suborders (Li, 2002; Lienhard and Smithers, 2002; Yoshizawa, 2002). In Korea, only 14 species have been recorded so far (Hong and Woo, 1992; Park and Lee, 2014).

In this study, specimens from recent field work and material in museum collections were examined to investigate the taxonomy of Korean Psocoptera. This paper reports 10 species new to Korea and provides the checklist of Korean psocoptera with diagnosis and some biological information such as distribution.

\*Corresponding author: [curcul@sunchon.ac.kr](mailto:curcul@sunchon.ac.kr)

Received December 1 2016; Revised February 15 2017

Accepted February 22 2017

## Materials and Methods

Most specimens were collected by beating and were stored in 70% or 95% ethanol after collection for subsequent slide mounting and identification. Each specimen was permanently mounted on microscopic slide following slide mounting methods for psyllids and thrips with some modification (Anonymous, 2009; Hollis, 2004). Material was examined and deposited in Department of Plant Medicine, Suncheon National University, Suncheon, Korea (SCN). The abbreviations used in this study are as follows: CN (Chungnam province), GG (Gyeonggi province), GW (Gangwon province), JJ (Jeju province), JN (Jeonnam province).

The list is arranged alphabetically using the classification of Smithers (1972).

## Results

In this paper, we report 10 species of Psocoptera new to Korea (Table 2) and previously reported 14 species belonging to 3 suborders are also presented (Table 1).

### Suborder Troctomorpha

#### Infraorder Amphientometae

### Family Amphientomidae Smithers, 1972 비늘다듬이벌레과 (신칭)

**Table 1.** Checklist of Psocoptera in Korea before the present study

Suborder	Infraorder	Family	Scientific name	Korean name
Trogiomorpha	Atropetae	Trogiidae	1. <i>Lepinotus reticulatus</i> Enderlein, 1905	가루민다듬이벌레
			2. <i>Trogium pulsatorium</i> (Linnaeus, 1758)	분다듬이벌레
Troctomorpha	Nanopsocetae	Liposcelidae	3. <i>Liposcelis divinatoria</i> (Müller, 1776)	책다듬이벌레
			4. <i>Liposcelis entomophila</i> (Enderlein, 1907)	어물다듬이벌레
Psocomorpha	Caeciliusetae	Amphipsocidae	5. <i>Kolbia fusconervosa</i> (Enderlein, 1906)	털다듬이벌레
		Homilopsocidea	Ectopsocidae	6. <i>Ectopsocopsis cryptomeriae</i> (Enderlein, 1907)
	Psocetae	Lachesillidae	7. <i>Lachesilla pedicularia</i> (Linnaeus, 1758)	애기털다듬이벌레
			Pseudocaeciliidae	8. <i>Pseudocaecilius maculosus</i> Enderein, 1907
		Psocidae	9. <i>Amphigerontia contaminata</i> (Stephens, 1836)	검정다듬이벌레
			10. <i>Loensia fasciata</i> (Fabricius, 1787)	얼룩무늬다듬이벌레
			11. <i>Metylophorus nebulosus</i> (Stephens, 1836)	다듬이벌레
			12. <i>Neoblaste papillosa</i> Thornton, 1960	톱니다듬이벌레
	13. <i>Psocus bipunctatus</i> (Linnaeus, 1761)	두점다듬이벌레		
	14. <i>Sigmatoneura kolbei</i> (Enderlein, 1906)	검정수염다듬이벌레		

**Table 2.** Newly recorded species of Psocoptera in the present study

Suborder	Infraorder	Family	Scientific name	Korean name
Troctomorpha	Amphientometae	Amphientomidae	1. <i>Ancylentomus macrourus</i> (Li, 1997)	비늘다듬이벌레
Psocomorpha	Caeciliusetae	Amphipsocidae	2. <i>Amphipsocus japonicus</i> (Enderlein, 1906)	일본털다듬이벌레
			Caeciliusidae	3. <i>Valenzuela oyamai</i> (Enderlein, 1906)
		Stenopsocidae	4. <i>Paracaecilius japonicus</i> (Enderlein, 1906)	깃털다듬이벌레
			5. <i>Cubipilis aphidiformis</i> (Enderlein, 1906)	진디연문다듬이벌레
	Homilopsocidea	Peripsocidae	6. <i>Stenopsocus immaculatus</i> (Stephens, 1836)	투명연문다듬이벌레
			7. <i>Peripsocus didymus</i> Roesler, 1939	창다듬이벌레
	Psocetae	Psocidae	8. <i>Amphigerontia anchorae</i> Li, 1989	목서다듬이벌레
			9. <i>Psococerastis tokyoensis</i> (Enderlein, 1906)	줄다듬이벌레
			10. <i>Trichadenopsocus alternatus</i> Li, 2002	점무늬다듬이벌레

*Ancylentomus macrourus* (Li, 1997) 비늘다듬이벌레(신칭)  
*Ancylpsocus macrourus* Li, 1997: 388. [TL: China]

**Diagnosis.** Body (Fig. 1) dark brown. Head (Fig. 10) brown, antenna 15 segments, lacina with apex divided into a small median and broad tooth. Forewing (Fig. 18) brown, while wing apex light-brown, scale on wing presence. Rs connected to M by across vein. Areola usually long. Cu<sub>2</sub> and 1A end in modulus. Epiproct and paraproct with numerous of setae (Fig. 28).

**Materials examined.** [GG] 2 exs., Anseong, 26.vii.1991, on *Machilus thunbergii*, (K.-J. Hong); [CN] 3 exs., Cheonripo Arboretum, Taean, 6.vii.2016 (K.-J. Hong).

**Distribution.** Korea (new record), China.

**Suborder Psocomorpha**

**Infraorder Caeciliusetae**

**Family Amphipsocidae Mockford, 1978 털다듬이벌레과**

*Amphipsocus japonicus* (Enderlein, 1906) 일본털다듬이벌레(신칭)

*Dasypsocus japonica* Enderlein, 1906: 251. [TL: Japan]

**Diagnosis.** Head and wings are strongly pubescent (Figs. 2 and 11). Forewing (Fig. 19) with pterostigma with strong posterior angle and with a spur vein arising. Vein C thickened in region of pterostigma and anterior margin. Rs an M fused for a short length or meeting in a point, Rs branches long.

**Materials examined.** [JN] 5 exs., Hwaem temple, Gurye, 6.ix.2015 (K.-J. Hong).

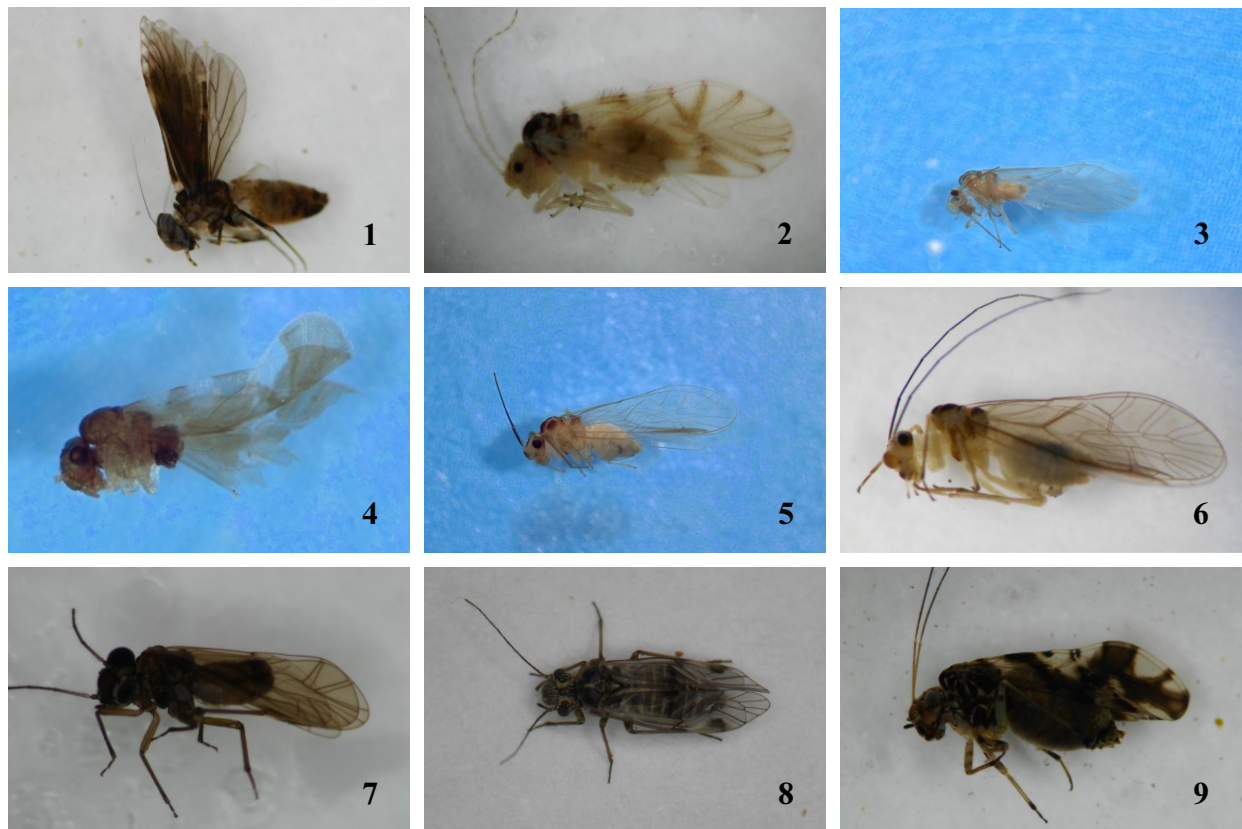
**Distribution.** Korea (new record), Japan.

**Family Caeciliusidae Mockford, 1978 깃털다듬이벌레과(신칭)**

*Valenzuela oyamai* (Enderlein, 1906) 밝은깃털다듬이벌레(신칭)

*Caecilius oyamai* Enderlein, 1906: 252. [TL: Japan]

**Diagnosis.** Body (Fig. 3) including wings are dark brown. Forewing (Fig. 20) length 2.5 mm, with three of white small



**Figs. 1-9.** Barklice bodies. 1: *Ancylentomus macrourus*; 2: *Amphipsocus japonicus*; 3: *Valenzuela oyamai*; 4: *Paracaecilius japonicus*; 5: *Cubipilis aphidiformis*; 6: *Stenopsocus immaculatus*; 7: *Peripsocus didymus*; 8: *Amphigerontia anchorae*; 9: *Psococerastis tokyoensis*.

area, margin and veins setose, the hair of the veins in one low. Areola postica free and pterostigma not connect to Rs. Rs and M fused for a length; Cu<sub>2</sub> without setae.

**Materials examined.** [GW] 3 exs., Chunseong (= Chuncheon), 27.vii.1991 (S.B. Ahn).

**Distribution.** Korea (new record), Japan, China, Taiwan, Russian Far East.

***Paracaecilius japonicus* (Enderlein, 1906) 깃털다듬이벌레 (신칭)**

*Caecilius japonicus* Enderlein, 1906: 254. [TL: Japan]

**Diagnosis.** Body including wings is brownish- yellow (Fig. 4), Head (Fig. 12) brow, eyes dark brown. Forewing (Fig. 21) length 3 mm, pale brownish-yellow; veins brownish-yellow. Pterostigma yellow, hairy, narrow; r<sub>1</sub> is not a corner. Veins and margin with the exception of analis 1 row hairy, hairy only the edge with the exception of Costa in the hind wing.

**Materials examined.** [JJ], 1 ex., Hamdeok, Jocheon, 14.xii. 1995, on Chinese cabbage (J.Y. Choi); 4 exs., Seogwiupo, 25.ix.1998, on leaf of *Citrus unshiu* (K.-J. Hong).

**Distribution.** Korea (new record), China, Japan, Taiwan.

**Family Stenopsocidae Wong et Thornton, 1968 연문다듬이벌레과(신칭)**

***Cubipilis aphidiformis* (Enderlein, 1906) 진디연문다듬이벌레(신칭)**

*Stenopsocus aphidiformis* Enderlein, 1906: 249. [TL: Japan]

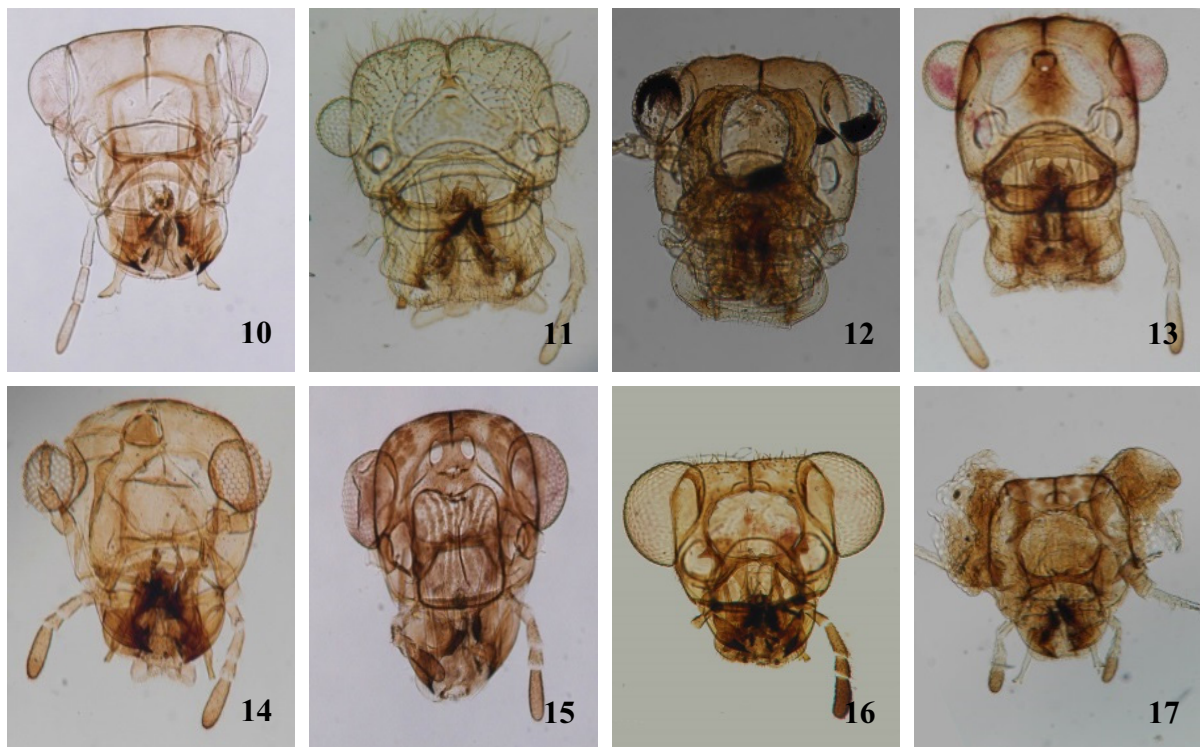
**Diagnosis.** Body in alcohol of this species is characterized by pale yellowish brown (Fig. 5), Head with brown marking around ocelli. Wings transparent. Forewing with pterostigma elongate, little color pattern, Cu<sub>2</sub> with setae (Fig. 22).

**Materials examined.** [GG] 2 exs., Mt. Taehwa, Docheok, Gwangju, 14.vii.1991 (S.B. Ahn); [GW] 3 exs., Chunseong (= Chuncheon), 27.vii.1991 (S.B. Ahn).

**Distribution.** Korea (new record), Japan, China, Taiwan, Russian Far East.

***Stenopsocus immaculatus* (Stephens, 1836) 투명연문다듬이벌레(신칭)**

*Psocus immaculatus* Stephens, 1836: 125. [TL: Europe]



**Figs. 10-17.** Barklice heads. 10: *Ancylentomus macrourus*; 11: *Amphipsocus japonicus*; 12: *Paracaecilius japonicus*; 13: *Stenopsocus immaculatus*; 14: *Peripsocus didymus*; 15: *Amphigerontia anchorae*; 16: *Psococerasitis tokyoensis*; 17: *Trichadenopsocus alternatus*.

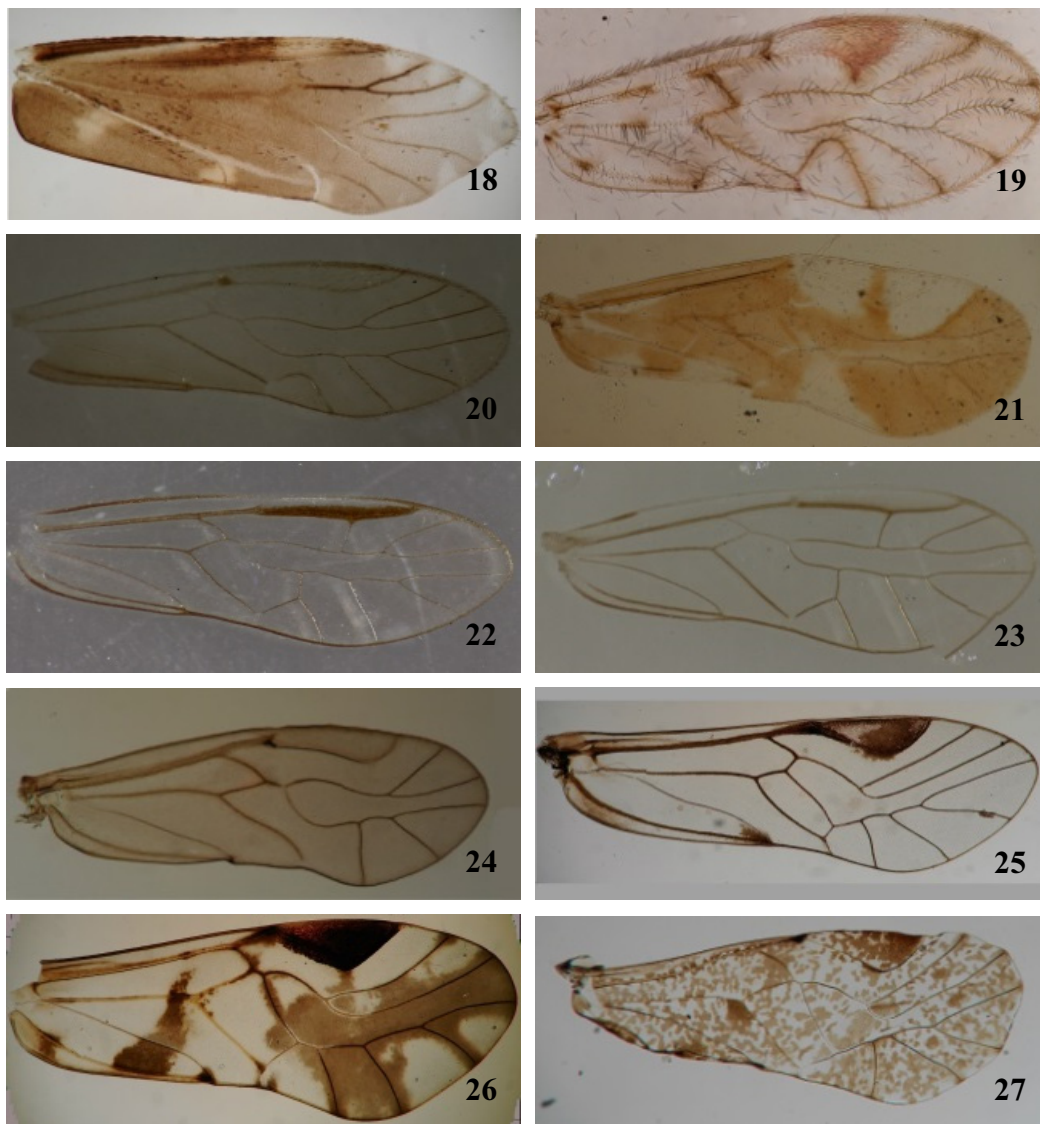
*Psocus rufescens* Stephens, 1836: 125. [TL: Europe]  
*Psocus flavescens* Stephens, 1836: 125. [TL: Europe]  
*Psocus venosus* Stephens, 1836: 121. [TL: Europe]  
*Psocus strigosus* Burmeister, 1839: 776. [TL: Europe]  
*Psocus subfumipennis* Zetterstedt, 1840: 1053. [TL: Europe]  
*Psocus flavicans* Zetterstedt, 1840: 1054. [TL: Europe]

**Diagnosis.** A moderately large barklice (5-6 mm) often with green abdomen (Fig. 6). Head brown with round compound eyes, maxillary palpus long and slender, tip of the distal tarsomere gray, eyes dark (Fig. 13). Areola postica joined to

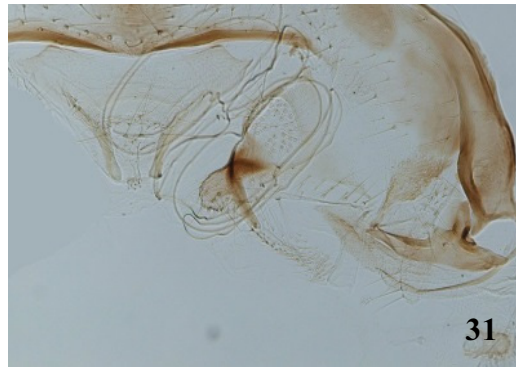
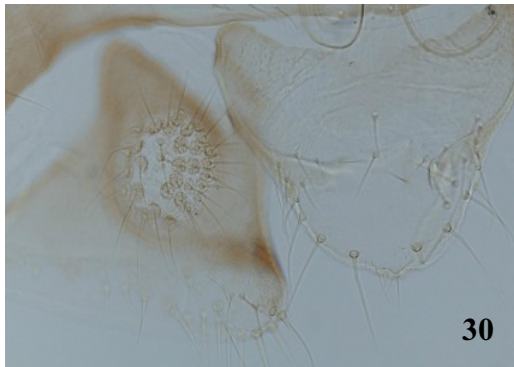
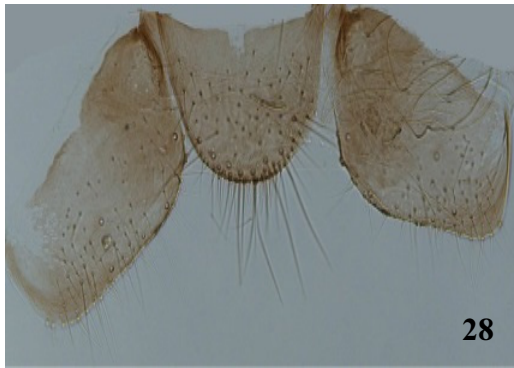
median vein. Forewing without distinct markings. Vein  $Cu_2$  setose with short hairs (setae) along vein. Pterostigma elongate, narrow, expanded slightly at pterostigmal crossvein.  $Cu_{1a}$  to M crossvein long. Fore wing margin obviously setose for whole length to  $Cu_2$  (Fig. 23).

**Materials examined.** [GW] 1 ex., Danmok-ryeong, Mt. Jeombong, Jindong-ri, Girin-myeon, Inje-gun, 15.vii.2015, on light (G. Cho); [GN] 1 ex., Naewon temple, Mt. Wonhyo, Yangsan, 11.x.1991 (S.B. Ahn).

**Distribution.** Korea (new record), Palaearctic.



**Figs. 18-27.** Barklice forewing. 18: *Ancylentomus macrourus*; 19: *Amphipsocus japonicus*; 20: *Valenzuela oyamai*; 21: *Paracaecilius japonicus*; 22: *Cubipilis aphidiformis*; 23: *Stenopsocus immaculatus*; 24: *Peripsocus didymus*; 25: *Amphigerontia anchorae*; 26: *Psococerastis tokyoensis*; 27: *Trichadenopsocus alternatus*.



**Figs. 28-31.** Barklice paraproct and epiproct. 28: *Ancyloentomus macrourus*; 29: *Peripsocus didymus*; 30: *Amphigerontia anchorae*; 31: *Psococeraspis tokyoensis*.

**Infraorder Homilopsocidea**

**Family Peripsocidae Roesler, 1944 창다듬이벌레과(신칭)**

***Peripsocus didymus* Roesler, 1939 창다듬이벌레(신칭)**

*Peripsocus didymus* Roesler, 1939: 170. [TL: Germany]

*Peripsocus didymus truncatus* Badonnel, 1943: 93.

[TL: France]

*Peripsocus didymus silesiaca* Obr, 1948: 2.

[TL: Czechoslovakia (former)]

*Peripsocus truncatus* Badonnel et Pearman 1971: 88. [TL: Great Britain]

**Diagnosis.** A medium size brown barklice (Fig. 7). Head brown and vertex round (Fig. 14). Forewing uniformly pale brown occasionally with dark mark (Fig. 24). Male phallosome with sclerite arms crossing. Female subgenital plate Y shape, the lobe at the apex of the plate narrows very slightly at the end (Fig. 32). Paraproct semicircle shape, epiproct trapezium shape both are with numerous of setae at posterior (Fig. 29).

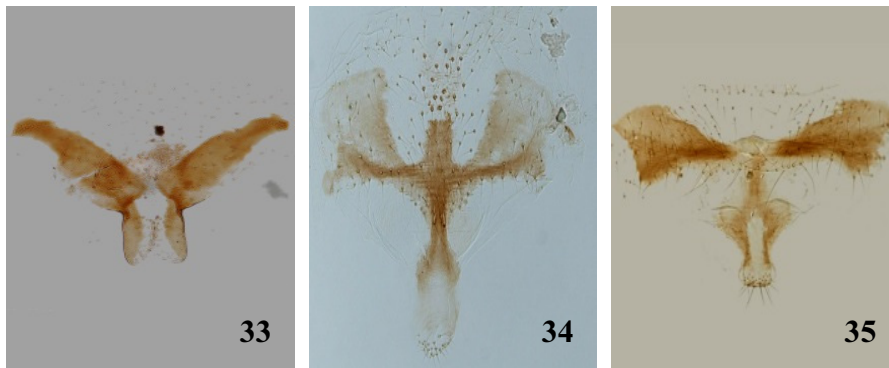
**Materials examined.** [GG] 12 exs., Sorae Wetlands Ecological Park, Nonhyeon-dong, Namdong-gu, Incheon-si, 03.vii.2015, on *Suaeda japonica* (G. Cho); [JN] 9 exs., SNU Experiment



**Fig. 32.** Phallosome of *Peripsocus didymus*, male.

Forest, Chusan-ri, Oknyong-myeon, Gwangyang-si (35°01'55.99"N 127°36'17.82"E, 200 m), 19.vi.2015, on *Albizia julibrissin* (G. Cho).

**Distribution.** Korea (new record), Japan.



**Figs. 33-35.** Barklice subgenital plates. 33: *Peripsocus didymus*; 34: *Amphigerontia anchonae*; 35: *Psococerastis tokyoensis*.

#### Infraorder Psocetae

#### Family Psocidae Hagen, 1865 다듬이벌레과

#### *Amphigerontia anchonae* Li, 1989 목서다듬이벌레(신칭)

*Amphigerontia anchonae* Li, 1989: 44. [TL: China]

**Diagnosis.** This barklouse is large body size (Fig. 8). Head and compound eyes (Fig. 15) round with brown color. Forewing (Fig. 25) with Rs and M joined by a well-developed cross vein. Discoidal cell narrow, sides nearly paralleled but a little convergent towards distal end. Apex of areola postica longer than the first section of  $Cu_1$  between  $R_{2+3}$  and  $R_{4+5}$ . Paraproct subtriangular, posterior setae present, epiproct triangular, longer than wide, with setae along sides posterior (Fig. 30). Subgenital plate (Fig. 34) the apex of lobe with setae.

**Materials examined.** [JN] 13 exs., Gurye, 18.v.2016, on *Osmanthus fragrans* (K.-J. Hong).

**Distribution.** Korea (new record), China.

#### *Psococerastis tokyoensis* (Enderlein, 1906) 줄다듬이벌레(신칭)

*Psocus tokyoensis* Enderlein, 1906: 245. [TL: Japan]

**Diagnosis.** Body (Fig. 9) dark brown, head (Fig. 26) shortly pubescent. Antennae a little longer than fore wing. Forewing (Figs. 2, 3) with basal Sc ending free. Rs and M fused for a length. Paraproct (Fig. 31) short pubescent. Subgenital plate shape T like, lobe at the apex with long setae (Fig. 35).

**Materials examined.** [CN] 10 exs., Chollipo Arboretum, Taean, 6.vii.2016 (K.-J. Hong); [JB] 1 ex., Mt. Naejang, Jeongeup, 7.ix.2015, on light (K.-J. Hong).

**Distribution.** Korea (new record), Japan, Taiwan.

#### *Trichadenopsocus alternatus* Li, 2002 점무늬다듬이벌레(신칭)

*Trichadenopsocus alternatus* Li, 2002: 1491. [TL: China]

**Diagnosis.** Body and head brown with large eyes (Fig. 17), Antenna not much longer than forewing. Forewing (Fig. 27) strongly patterned. Areola postica almost triangular shape. Rs and M fused for some distance.

**Materials examined.** [GG] 1 ex., Gwangreung (Korea National Arboretum), Pocheon, 12.viii.2014 (K.-J. Hong).

**Distribution.** Korea (new record), China.

**Remarks.** This species could not support habitus photo, because we found only one specimen and body was damaged.

### Acknowledgment

We would like to express extreme gratitude to Desley Tree (Department of Agriculture and Fisheries, Australia) for supported technique of slide mounting. This research was carried out through “The Survey of Korean Indigenous Species” supported by National Institute of Biological Resources (NIBR, 2015).

### Literature Cited

- Anonymous, 2009. World Thysanoptera. [http://anic.ento.csiro.au/thrips/field\\_lab/index.html](http://anic.ento.csiro.au/thrips/field_lab/index.html) [Accessed on: 17<sup>th</sup> November 2016].  
Badonnel, A., 1943. Psocoptères. Faune de France 42, 1-164, 375 fig.

- Badonnel, A., 1951. Psocoptères. In P.-P. Grasse. Traite de Zoologie. Paris. Psocoptera. Vol. 10, fasc. 2, pp. 1301-1340, figs. 1135-1170.
- Badonnel, A., Pearman, J.V., 1971. *Mascaropsocus*, nouveau genre d'Ectopsocinae des îles Mascareignes (Psocoptera: Peripsocidae). Bulletin du Museum national d'Histoire naturelle (2)42(5), 857-863, 10 figs.
- Burmeister, H., 1839. Handbuch der Entomologie. 2. Band. Berlin. I-XII, 1-1050. (Psocoptera: 772-782).
- Enderlein, G., 1906. Die Copeognathen-Fauna Japans. Zoologische Jahrbücher (Abteilung Systematik) 23, 243-256, pls. 10, 11.
- Green, P.W.C., Turner, B.D., 2005. Food-selection by the booklouse, *Liposcelis bostrychophila* Badonnel (Psocoptera: Liposcelidae). J. Stored Products Research 41(1), 103-113.
- Hagen, H., 1865. Synopsis of the Psocina without ocelli. Entomologist's Monthly Magazine 2, 121-124.
- Hollis, D., 2004. Australian Psylloidea. Jumping plantlice and leap insects. Australian Biological Resources Study, Canberra, Australia. 216 pp.
- Hong, K.J., Woo, K.S., 1992. Taxonomic Study on the Family Psocidae (Psocoptera) in Korea. Korean J. Entomol. 22(3), 215-220.
- Li, F., 1997. Psocoptera: Psyllipsocidae, Amphientomidae, Pachytroctidae, Caeciliidae, Stenopsocidae, Amphipsocidae, Dasydemellidae, Lachesillidae, Ectopsocidae, Peripsocidae, Pseudocaeciliidae, Philotarsidae, Elipsocidae, Hemipsocidae and Psocidae. (pp. 385-530). In: Yang Xingke (ed). Insects of the three Gorge Reservoir area of Yangtze river. Part 1. Chongqing Publishing House, Chongqing. XX+974pp. (in Chinese)
- Li, F., 2002. Psocoptera of China (2 Volumes). National Natural Science Foundation of China. Science Press, Beijing, 1976 pp.
- Li, F., 1989. Eighteen new species of psocids from Shaanxi, China (Psocoptera: Stenopsocidae, Psocidae). Entomotaxonomia 11(1-2), 31-60, 19 figs. (in Chinese, with English summary).
- Lienhard, C., Smithers, C.N., 2002. Psocoptera. World Catalogue & Bibliography. Instrumenta Biodiversitatis V, Muséum d'histoire naturelle, Genève, xli+205-411 pp.
- Mockford, E.L., 1978. A generic classification of family Amphipsocidae (Psocoptera: Caecilietae). Transactions of the American Entomological Society 104. 139-190, 109 figs.
- Mockford, E.L., 1989. Psocoptera (Insecta) from Bermuda. Journal of Natural History, 23: 5, 1177-1193.
- Obr, S., 1948. A la connaissance des Psocopteres de Moravie (Tchecoslovaquie). Spisy vydavane Prirodovedeckou Fakultou Masarykovy University M2306, 108 pp., 196 figs.
- Park, S., Lee, H.A., 2014. National list of species of Korea insect "Microcorryphia, Zygentoma, Grylloblattodea, Dictyoptera, Embioptera, Dermaptera, Orthoptera, Phasmida, Psocoptera, Phthiraptera, Thysanoptera, Neuroptera, Strepsiptera, Mecoptera, Siphonaptera", 1-195 pp.
- Roesler, R., 1939. Beitrage zur Kenntnis der Copeognathenfauna Deutschlands. Zoologischer Anzeiger 125(7/8), 157-176, 16 figs.
- Roesler, R., 1944. Die Gattungen der Copeognathen. Stettiner Entomologische Zeitung 105, 117-166.
- Smithers, C.N., 1972. The classification and phylogeny of the Psocoptera. Australian Museum Memoirs 14, 1-349, illustr.
- Stephens, F., 1836. Illustrations of British Entomology, or a Synopsis of Indigenous Insects etc. London, 1827-1846. (Psocids: Pt 6, pp. 115-129).
- Wong, S.K., Thornton, I.W.B., 1966. Chromosome numbers of some psocid genera. Nature 211 (5045), 214-215, 1 fig.
- Yoshizawa, K., 2002. Phylogeny and higher classification of suborder Psocomorpha (Insecta: Psocodea: 'Psocoptera'). Zoological Journal of the Linnean Society 136, 371-400.
- Zetterstedt, J.W., 1840. Insecta Lapponica descripta. Lipsiae., 1839-1840. (Psocids: Sectio 5, pp. 1052-1054).