

# A New Record of the Genus *Ectopsocus* McLachlan, 1899 (Psocodea: Ectopsocidae) from South Korea

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## 한국의 미기록속 *Ectopsocus* McLachlan, 1899 (다듬이목: 외다듬이벌레과)의 보고

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**ABSTRACT:** The genus *Ectopsocus* is recorded from Korea for the first time with *E. briggsi* McLachlan, 1899. This species was collected on southern regions, Geoje-si, Jinju-si, Ulsan-si, and Jeju-do, in Korea. In this study, illustration of diagnostic characters of *E. briggsi* is provided.

**Key words:** *Ectopsocus briggsi*, Ectopsocidae, New record, Korea

**초록:** 국내 미기록속인 *Ectopsocus*를 미기록종인 *E. briggsi* McLachlan, 1899 (외다듬이벌레; 신칭)와 함께 보고한다. *E. briggsi*은 한반도의 남부 지역인 거제, 진주, 울산, 제주에서 채집되었다. 이번 연구에서 이 종의 정확한 동정을 위해 외형과 진단형질의 사진을 제공한다.

**검색어:** 외다듬이벌레, 외다듬이벌레과, 미기록종, 한국

The family Ectopsocidae, belonging to the superfamily Homilopsocidea of the suborder Psocomorpha, currently comprises 228 species of six genera in the world (Bess and Lienhald, 2023). This family includes small, generally brown psocids which are sometimes common on foliage and are particularly abundant on dead leaves. This group usually lay eggs in batches on foliage, and nymphs sometimes aggregate under loose webbing (New and Lienhard, 2007).

In Korea, one species, *Ectopsocopsis cryptomeriae* (Enderlein, 1907), has been recorded in this family (Soysouvanh et al.,

2017). In this paper, the genus *Ectopsocus* is newly recorded from South Korea with *Ectopsocus briggsi* McLachlan, 1899. We provide pictures and illustration of diagnostic characters, distribution.

## Materials and Methods

Sixteen specimens of *Ectopsocus briggsi* were collected in Ulsan-si, Geoje-si, Jinju-si, and Jeju-do in 2022. The specimens were divided into microtubes for each individual, immersed in 90% ethanol, and kept in a freezer. After storage, the specimens' entire bodies, wings, and heads were observed using LEICAM205C. Reproductive organs were observed through a LEICADM6B. In order to observe morphological

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characteristics of reproductive organs, after abdominal division, 10% sodium hydroxide solution was treated in, and then preparats were made using Canadian balsam.

Abbreviations of parts measured are as follows: FW, HW: lengths of right fore- and hind- wings, F, T, t1 and t2: lengths of femur, tibia and tarsomeres 1 and 2 of right hind leg, respectively, Mx4: length of IV palpomere, of right maxillary palpus, fl-fn: lengths of flagellomeres 1-n, of right antenna, ctt1: number of ctenidobothria on t1, IO: minimum distance between compound eyes, D: antero-posterior diameter of right compound eye, d: transverse diameter of right compound eye, all in dorsal view of head, PO: D/d

Terminology and morphological characters of adult, wing venation, and terminalia were followed Yoshizawa (2005) and Li (2002).

## Taxonomic Accounts

### Family Ectopsocidae Roesler, 1944

### Genus *Ectopsocus* McLachlan, 1899 외다듬이벌레속(신칭)

*Ectopsocus briggsi* McLachlan, 1899 외다듬이벌레(신칭) (Figs. 1-2)

*Ectopsocus parvulus* Kolbe, 1882: 451-486.

*Ectopsocus briggsi* McLachlan, 1899: 277.

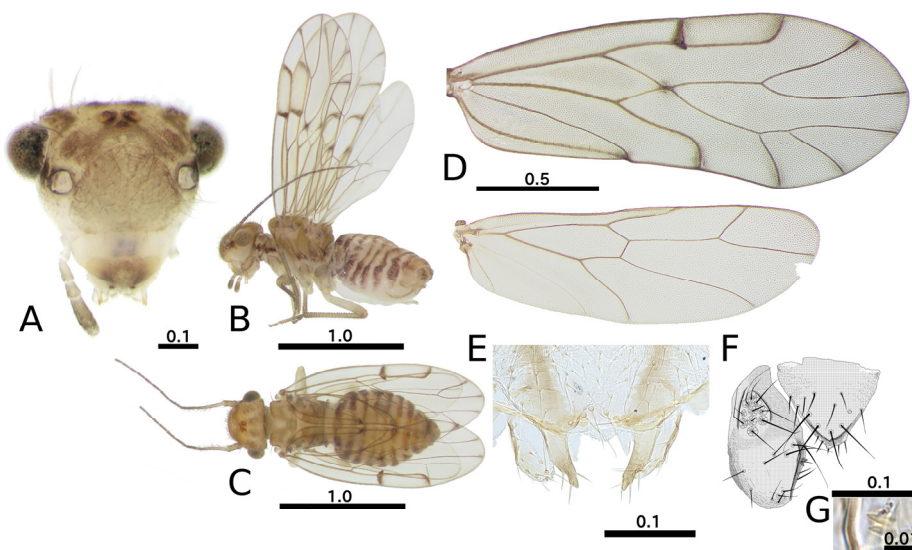
*Ectopsocus limbatus* Navas, 1909: 156.

*Ectopsocus borealis* Harrison, 1916: 134.

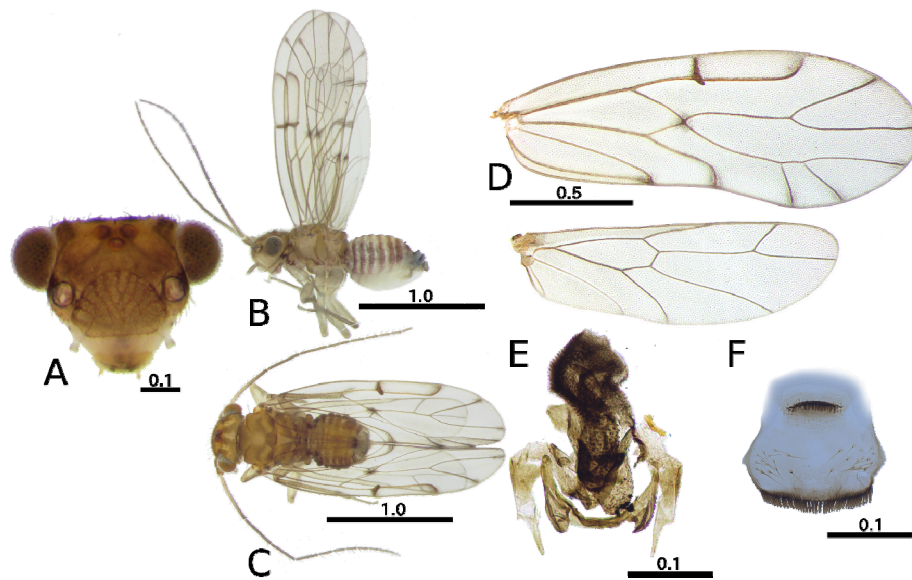
*Ectopsocus punctatus* Thornton and Wong, 1968: 137.

**Description. Female.** The segments of the antenna are a total of 13 nodes. The prothorax has black stripes on both sides. The dorsal view of the abdomen has light brownish stripes, and the ventral view is white (Fig. 1B). The forewings' R-M veins are very short or single point, and the around is dark without Areola postica. The periphery of the edge of each vein is also pale dark (Fig. 1D). The subgenital plate has two lobes, and each lobe is curved inward. Each lobe has a total of three setae, one inward and two outwards, and six long setae between the lobes (Fig. 1E). Marginal spine of paraprocts are symmetric (Fig. 1F, G).

**Male.** The color is similar to the female, but the male is a little darker. The body size is relatively smaller than the female (Fig. 2B, C; Table 1). The clypeus is smaller than the female, but the stripe pattern is clear. Compared to females, rates of IO/d are small (Table. 1). The antennae are longer than females. The clunium is exposed on the dorsal surface of the abdomen. Two prominent areas of black tubercles are present front and back of clunium. The smaller area forms a row which in side view is steep-sided (Fig. 2F).



**Fig. 1.** *Ectopsocus briggsi*, female. A, Front view of head; B, Lateral view; C, Dorsal view; D, wings; E, Subgenital plate; F, Epiproct & Paraproct; G, Marginal spine of paraproct. Scales in mm.



**Fig. 2.** *Ectopsocus briggsi*, male. A, Front view of head; B, Lateral view; C, Dorsal view; D, wings; E, Phallosome; F, Dorsal view of clunium. Scales in mm.

**Table 1.** The biometric data of *Ectopsocus briggsi* in Korea.

Characters	Body parts	females (n=4)		Males (n=4)	
		Mean (Range)		Mean (Range)	
	FW	1777 (1630-1907)		1785 (1667-1993)	
	HW	1367.5 (1262-1420)		1408.75 (1318-1610)	
	F	445.75 (416-480)		393.25 (321-442)	
	T	632.5 (588-673)		649 (562-729)	
	t1	195 (174-211)		188 (165-228)	
	t2	83.25 (74-92)		88 (84-92)	
	Mx4	111.5 (107-117)		109.5 (104-115)	
Length (μm)	f1	64.5 (53-73)		63.5 (53-77)	
	f2	75.25 (66-84)		76 (67-86)	
	f3	291 (277-313)		342.5 (307-413)	
	f4	193 (169-217)		230.25 (208-290)	
	f5	159.25 (138-177)		192.75 (173-235)	
	f6	120.5 (108-138)		154.75 (136-179)	
	f7	86 (82-91)		104.5 (90-115)	
	f8	81 (72-97)		93 (87-101)	
	f9	73.25 (67-78)		86.5 (81-94)	
	f10	73 (70-79)		83 (77-87)	
	f11	75 (69-78)		78.75 (70-84)	
	f12	69.667 (69-71)		73.25 (67-80)	
	f13	83.667 (74-92)		88 (76-99)	
	IO	366.25 (357-387)		307 (292-329)	
	D	150.25 (140-156)		162.75 (154-170)	
	d	102 (99-107)		109.75 (94-118)	
Ratio	PO	1.473 (1.414-1.530)		1.483 (1.411-1.638)	
	IO/d	3.591 (3.520-3.657)		2.797 (2.542-3.106)	
No. of ctenidobothria on t1	ctt1	14 (14)		14 (14)	

**Specimens examined.** 3♂, 8♀ Gyeongsang National University, Gajwa-dong, Jinju-si, Gyeosangnam-do, Korea, 7. vii. 2022, leg. J.Kim; 1♂, 2♀ 3-8 Bangeo-Dong, Dong-gu, Ulsan-si, Korea, 26. vi. 2022, leg. J.Kim; 1♂ 262-5 Galgot-ri, Nambu-myeon, Geoje-si, Gyeosangnam-do, Korea, 30. vii. 2022; 1♂, 1♀ 2479 Yeon-dong, Jeju-si, Jeju-do, Korea, 1. vii. 2022, leg. J.Kim.

**Host plant.** *Dendropanax trifidus* (Thunb.) Makino ex H. Hara, *Euonymus japonicas* (Thunb.), and *Trachycarpus fortunei* (Hook.) H.Wendl. (in this study). Wide range of trees, shrubs and other microhabitats like leaf litters were known as hostplants (Alexander, 2016).

**Remark.** *E. briggsi* is distinguished from *Ecoprocopsis cryptomeriae* by coloration, female's bilobed subgenital plate, and male's clunial ornamentation.

**Distributions.** Korea (New record), Japan, Russia, Mongolia, England, Bulgaria, Cyprus, Serbia, Iran, Israel, Tunisia, Algeria, Spain, Portugal, Nepal, India, Indonesia, Congo, Kenya, Nigeria, Zimbabwe, USA, Mexico, Chile, Venezuela, Micronesia, Norfolk Island, Australia, Tanzania, New Zealand.

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## Statements for Authorship Position & Contribution

Kim, J.: Gyeongsang National University, Student in undergraduate program; Designed the research, collected specimens, wrote the manuscript and examined specimens

Hong, K.-J.: Sunchon National University, Professor, Ph.D;

Wrote the manuscript and examined specimens  
Lee, W.: Gyeongsang National University, Professor, Ph.D;  
Examined specimens and designed the research

All authors read and approved the manuscript.

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