



Biodiversity of the Family Gelechiidae in the Korean Peninsula

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Editorial

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Abstract

The family Gelechiidae (Lepidoptera, Gelechioidea) is a poorly known group of microlepidoptera, even though it is one of the highly diverse groups containing more than 5,000 known species worldwide. In this article, the family in the Korean Peninsula is reviewed, with a total of 215 known species, belonging 67 genera and four subfamilies.

Keywords: Lepidoptera; Gelechiidae; Review; Taxonomy; Korean Peninsula

Introduction

The family Gelechiidae is one of the largest and least known families of micromoths, comprising more than 5,000 known species, belonging to about 500 genera in the world. Adults are usually small to medium size (wingspan of 8–25 mm) and the family are recognized as gelechiid by their scaled proboscis, strongly recurved labial palpus, and the hindwing with sharply produced apex. Larvae of the family have a wide diversity of feeding habits, as leaf-rollers, leaf-miners or feed within seeds and stem galls, including well-known agricultural pests, *S. cerealella* Oliver and *P. gossypiella* Saunders. Since Meyrick [1] proposed the suprageneric classification of Gelechiidae, dividing the family into nine genus-groups, which later acquired subfamily rank, various attempts have been made to obtain the comprehensive phylogeny of Gelechiidae, mainly in unifying or dividing the existing subfamilies. Hodges [2] proposed three subfamilies: Gelechiinae, Dichomeridinae and Pexicopiinae, and subsequently he [3] added a new subfamily Physoptilinae. On the other hand, Ponomarenko [4] proposed four subfamilies: Anomologinae Gelechiinae, Anacamptinae,

and Dichomeridinae. However, the classification of the family is still far from resolved, due to their morphological complexities: the extremely diverse genital structures among genera or species and the inconspicuous external appearance of adults have made the phylogenetic analysis extremely difficult.

In Korea, the first species of the family described was *Bryotropha sevenssoni* Park [5] and followed by *Parachronistis jiriensis* Park and *P. sellaris* Park [6]. Since a comprehensive review of the family in the Korean Peninsula, enumerating a total of 172 species, was published by Park et al. [7], Park [8,9] reported a total of 181 species of the family in the series of the "Insect fauna of Korea". After these publications, additional 34 species have been added by following authors, including Park et al. [10], Bae et al. [11], Park et al. [12], Park et al. [13], Kim et al. [14], Park et al. [15], Lee et al. [16], and Lee et al. [17]. Consequently, the total number of the species of Gelechiidae in the Korean Peninsula is recognized with 215 known species (Table 1).

Table 1: The number of the known species of Gelechiidae in Korean Peninsula.

Subfamily/genus	No. of species
Subfamily Anomologinae	
<i>Deltophora</i> Janse, 1950	2
<i>Metzneria</i> Zeller, 1839	3
<i>Argolamprotes</i> Benander, 1945	1
<i>Monochroa</i> Heinemann, 1870	8
<i>Euramprotes</i> Bradley, 1971	1
<i>Daltopora</i> Povolný 1979	1
<i>Chrysoesthia</i> Hübner, 1825	2
<i>Caulastrocecis</i> Chretien, 1931	1
<i>Stegasta</i> Meyrick, 1904	1
<i>Aristotelia</i> Hübner, 1825	2
<i>Thiotricha</i> Meyrick, 1886	10
<i>Palumbina</i> Rondani, 1876	1
<i>Tenupalpa</i> Lee et Li, 2021	2
<i>Pulchrara</i> Lee et Li, 2021	1
<i>Xystophora</i> Wocke, [1876]	1
<i>Photodotis</i> Meyrick, 1911	2
<i>Bryotropha</i> Heinemann, 1870	2
<i>Pexicopia</i> Common, 1958	1
<i>Pectinophora</i> Busk, 1917	1
<i>Sitotroga</i> Heinemann, 1870	3
<i>Megacraspedus</i> Zeller, 1839	1
* <i>Sitotrogoides</i> Sohn, Ponomarenko, Sakamaki, 2019	1
Subfamily Gelechiinae	
<i>Gelechia</i> Hübner [1825]	2
<i>Psoricoptera</i> Stainton, 1854	2
<i>Chionodes</i> Hübner [1825]	2
<i>Aroga</i> Busk, 1914	3
<i>Athrips</i> Bilberg, 1820	2
<i>Evippe</i> Chambers, 1873	2
<i>Trichembola</i> Meyrick, 1918	1
<i>Gnorimoschema</i> Busk, 1900	3
<i>Scrobipalpa</i> Janse, 1951	7
<i>Euscrobipalpa</i> Povolný 1970	1
<i>Phthorimaea</i> Meyrick, 1902	1
<i>Hedma</i> Dumont, 1932	1
<i>Caryocolum</i> Gregor & Povolny, 1954	2
<i>Recurvaria</i> Haworth, 1828	1

<i>Nuntia</i> Omelko, 1995	1
<i>Stenolechia</i> Meyrick, 1894	5
<i>Parastenolechia</i> Kanazawa, 1985	7
<i>Angustialata</i> Omelko, 1988	1
<i>Parachronistis</i> Meyrick, 1925	4
<i>Protoparachronistis</i> Omelko, 1986	2
<i>Chorivalva</i> Omelko, 1988	4
<i>Teleiodes</i> Sattler, 1960	12
<i>Carpatolechia</i> Capuse, 1964	12
<i>Teleiopsis</i> Sattler, 1960	1
<i>Pseudotelphusa</i> Janse, 1958	1
<i>Concubina</i> Omelko & Omelko, 2004	1
<i>Altenia</i> Sattler, 1960	1
<i>Aulidiotis</i> Meyrick, 1925	1
Subfamily Anacampsinae	
<i>Syncopacma</i> Meyrick, 1925	1
<i>Aproaerema</i> Durrant, 1897	1
<i>Anacampsis</i> Curtis, 1827	3
<i>Prolita</i> Leraut, 1993	1
<i>Mesophleps</i> Hübner, [1825]	3
Subfamily Dichomeridinae	
<i>Helcystogramma</i> Zeller, 1877	6
<i>Paralida</i> Clarke, 1958	1
<i>Dichomeris</i> Hübner, 1818	28
<i>Acanthophila</i> Heinemann, 1870	1
<i>Neofaculta</i> Gozmány, 1955	1
<i>Encolapta</i> Meyrick, 1913	4
<i>Hypatima</i> Hübner, [1825]	3
<i>Tornodoxa</i> Meyrick, 1921	3
<i>Faristenia</i> Ponomarenko, 1991	9
<i>Dendrophilia</i> Ponomarenko, 1993	4
<i>Bagdadia</i> Amsel, 1949	4
<i>Anarsia</i> Zeller, 1839	11
Total	215 species

The subfamily rank of *Sitotrogoides* (with *) is uncertain and tentatively placed in Anomologinae.

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