

Tortricidae (Lepidoptera) of Korea

INTRODUCTION

Tortricidae is large group comprising more than 2,000 species in the world. Some of them are known to be a notorious pests for the forest and agricultural crops, and often cause considerable injuries to plants of economic importance. The taxonomic status of the family Tortricidae is still in need of revision, with different opinions by recent authors. The family Cochyliidae has been treated as a tribal level within the subfamily Tortricinae (-----, --) on the other hand it is still often placed in the family rank (----,---). In the present study, the author dealt with Tortricidae as three subfamily Tortricinae, Sparganothinae and Olethreutinae. The Cochyliidae was placed under the Tortricinae as tribal level. The subfamily Olethreutinae which has been divided into 3 tribe is subdivided into 7 tribes following recent argument (Razowski, 1983; Kuznetsov, 1987).

The first report on the Korean Tortricidae was made by Walsingham (1900) based on the specimens collected from Gensan(=Wonsan), N. Korea by Leech in 1886. Korean species of the Tortricidae had been poorly explored until the first review of the subfamily Tortricinae by Park and Park (1976), enumerating 33 species from Korea with newly reported 11 species, and the report on Cochyliidae (Park, 1976a, 1976b). After then he (1983a) made a comprehensive work and published a monograph "Illustration Flora and Fauna of Korea, 27 (Insecta IX)", in which he enumerated 158 species of Tortricidae belonging to 69 genera, 6tribes, and 3 subfamilies, with coloured figure of moths, some illustrations of genitalia, and descriptions (in Korean), distribution, all available information on larval host plants, and synonymic list. After these early publication, several short papers reporting unrecorded species from Korea have been continuously followed: Park and Weon (1986) reported 5 unrecorded species of Tortricinae; Park and Kawabe (1986) reported 7 unrecorded species of Olethreutinae; Park and Ahn (1987, 1988) reported 7 and 8 unrecorded species of Olethreutinae; Park and Park (1988) reviewed the genus *Olethreutes* with 3 unrecorded species; Park and Byun (1989, 1990) 8 and 7 unrecorded species of Tortricinae. Recently Park and Razowski (1991) revised the tribe Tortricini with descriptions of 2 new species and 11 unrecorded species from Korea. Park and Byun (1991a) made a revision of the tribe Cnephasiini with descriptions of 3 new species and 2 unrecorded species; Byun and Park (1992a, b) 7 and 9 unrecored species of Tortricidae. Recently Byun and Park (1995) revised 15 species of the Korean *Phalonidia* including 9 unrecorded species, and Byun, Park and Lee (1996a) reviewed the tribe Cochylini in Korea. Also Byun, Park and Lee (1996b) reported 5 species of Tortricinae as new to Korea. Byun, Bae and Lee (1996a, b) reviewed a genus *Zeiraphera* and reported 7 unrecorded species. Recent additional faunistic survey for the Lepidoptera including Tortricidae were being done by various authors: Byun and Lee, 1996; Byun, Kim, and Lee, 1996; Byun, Lee, Kwon and Park, 1993; Byun, Kwon, Lee, Ko and Park, 1994; Byun, Kwon, Jung, Park and Park, 1994; Byun, Kwon and Park, 1995; Kim and Lee, 1991; Kim and Nam, 1985; Kim *et al.*, 1985; Kwon and Byun, 1996; Kyungsannamdo, 1991; Lee and Ko, 1988; Min. of Enivron., 1989; Nam, 1995; Park and Byun, 1993; Park and Han, 1992; Park, Choi and An, 1988; Shin and Park, 1981.

On the other hand, for the fauna of North Korea, Park and Byun (1991b) reported 26 species based on the North Korean materials preserved in the collection of Hungarian Natural History Museum, Budapest; Jaros *et al.* (1992) reported 28 newly reported species from the result of expeditions to the North Korea. For the fauna of Jeju island, a faunistic survey by Park and Byun (1995) was recently carried out, reporting 49 species, and Byun, Park and Jung (1995) reported 70 species of Tortricidae based on the additional material; and then, Byun and Park(1995) made a comprehensive list for the fauna of Jeju

Island with 74 species.

The material studied is based on several collections throughout country: Center for Insect Systematics, Kangwon National University [CIS/KNU], Chuncheon; Forest Research Institute [FRI], Seoul; Agricultural Science and Technology Institute [ASTI], Suwon; Incheon University, Incheon, Korea, with more than 80 localities throughout the Korean peninsula sampled. In abroad, the Natural History Museum [NHM], London, U.K.; Hungarian Natural History Museum, Budapest [HNHM], Hungary, in which preserved a lot of specimens collected from N. Korea were source of materials. Some N Korean material are from Institute of Entomology, Czech Academy of Sciences [IECAS], České Budejovice, Czecho; Institute of Systematics and Evolution of Animals, Academy of Sciences [IESA], Krakow, Poland; and some records for N korean fauna were cited from the recent report by Jaros *et al.* (1992),

Localities of the home country are abbreviated as follows: S: Seoul, GG: Gyonggi-do, GW: Kangwon-do, CB: Chungcheongbuk-do, CN: Chungcheongnam-do, JB: Jeollabuk-do, JN: Jeollanam-do, GB: Gyongsangbuk-do, GN: Gyongsangnam-do, JJ: Jeju-do. Locality reference: (Byun and Lee, 1996; Byun *et al.*, 1996; Byun *et al.*, 1993; Byun *et al.*, 1994a, b; Byun *et al.*, 1995; Kim and Lee, 1991; Kim and Nam, 1985; Kim *et al.*, 1985; Kwon and Byun, 1996; Kyungsannamdo, 1991; Lee and Ko, 1988; Min. of Enivron., 1989; Nam, 1995; Park and Byun, 1993; Park and Han, 1992; Park *et al.*, 1988; Shin and Park, 1981).

In this paper, the authors enumerated 155 species of 38 genera belonging to the subfamily Tortricinae, 1 species of 1 genus belonging to the subfamily Sparganothinae, and 181 species of 54 genera of the subfamily Olethreutinae respectively. Among them, 3 species of the tribe Olethreutini *Olethreutes castaneana* (Walsingham), *Pseudohedya gardana* (Christoph), and *Rudisociaria velutina* (Walsingham); a species of the tribe Eucosmini, *Rhyacionia duplana* (Hübner); and a species of the tribe Grapholitini, *Cydia prismatica* (Meyrick) are remain in uncertainty of their distribution in the Korean peninsula, due to no specimens recognized.

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