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Aphid Fauna of the Korean Peninsula (Sterrnorhyncha: Aphididae) 한반도의 진딧물상(진딧물아목:진딧물과)

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The aphid is one of the most important insect groups, making serious damage on various crops by direct sucking the liquid sap at the phloem of their host plants and transmitting numerous plant diseases, mostly viruses. The superfamily Aphidoidea including Adelgidae, Phylloxeridae, and Aphididae, is predominant in the Northern hemisphere, especially the temperate regions. More than 98% of world aphid species are endemic to the Northern hemisphere, whereas very few species, only 1-2%, are endemic to the Southern hemisphere. For example, there are 156 aphid species known from Australia, among which only 20 species are endemic to the region. It is because the equatorial tropical zones have played as the barrier of aphid migration. Particularly, the Eastern Asia including Korea, China, Japan, and Far East Russia, is the only area where all the major groups within the Aphidoidea are well represented. The aphid fauna of Korean peninsula had been studied by some Japanese workers, Okamoto & Takahashi (1927), Saito(1931, 1941), Takahashi (1933), Shinji (1941), and Shiraki (1952) till 1950's and followed by Paik (1965-1972) for the South Korea and by a Polish aphidologist, Szelegiewicz and his colleague (1974-1981) for the North Korean territory. The recent paper, "Check list of Insect from Korea (Anonymous, 1994)" summarizes 326 aphid species on the base of mostly Paik (1972) and a few recent publication (Lee & Seo, 1990, 1992a and 1992b; Lee et al., 1993 and 1994), missing 29 species recorded by Szelegiewicz and Quednau from the Northern Part of Korean Peninsula. At any rate, the aphid fauna of Korean Peninsula has not been completely studied and needs many additions. Relatively, the North Korean aphid fauna has been poorly worked in prior to our study. Since 1999, the authors have conducted a cooperative study between the National Institute of Agricultural Sciences and Technology (NIAST, Suwon, Korea) and the Institute of Entomology, Czech Academy of Science (IECAS, Ceske Budejovice, Czech Republic) on the aphid fauna of the whole Korean Peninsula. For this study, we have examined a total of ca. 38,000 aphid specimens from the South Korea collected during the project throughout the South Korean territory and stored in NIAST. Additionally, for the North Korean samples, about 24,000 aphid specimens were available from the IECAS collection, which had been collected by Jan Havelka when he visited North Korea in 1985, 1987, and 1988 and stored in the IECAS. As a conclusive result, we report 485 species from the Korean Peninsula including the previous records; 429 species from the South Korean Territory, 207 species from the North Korea and 149 species from both regions. It includes 27 species new to science, 95 species new to the Korean Peninsula, and 1 new genus (*Codonopsimyzus* Lee, 2002). Parts of the results of our research have been already reported in the separate articles (Lee & Havelka, 2001a; Lee & Havelka, 2001b; Lee & Kim, 2002; Lee & Quenau, 2001; Lee, 2001; Lee, 2002a; Lee 2002b; Lee, 2002c; Lee, Holman & Havelka, 2001a; Lee, Holman & Havelka, 2001b; Lee, Holman & Havelka, 2002a; Lee, Holman & Havelka, 2002b; Lee, Holman & Havelka, 2002c). This result indicates that the aphid fauna of the Korean Peninsula is composed of mostly the temperate palaeartic species. However, many species collected from Baektu-san are cold tundra species reported from the Northern Europe, Siberia, or the northern Canada (*Muscaphis* spp. and *Glyphina* sp. etc). On the other way, many subtropical oriental species (*Nipponaphis* spp, *Macromyzus woodwardiae*, etc.) are known from Jeju Island. It was observed that some exotic species, such as *Uroleucon (Lambersius) erigeronense* (Thomas, 1878) and *Aphis oenotherae* Oestlund, 1887, had been introduced recently and already spread nationwide.