

Systematic Study of Dolichoderinae (Hymenoptera: Formicidae) in Korea

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ABSTRACT Based on the specimens of the Dolichoderinae collected from South Korea, we identified four species under three genera. In this paper we provided diagnostic descriptions of these four species and list of five unconfirmed species recorded in North Korea.

Key words : Systematics, Formicidae, Dolichoderinae, Korea

It is known that the world fauna of the subfamily Dolichoderinae consists of 250 species of 25 genera under 3 tribes. Generally most of them are found under soil, stones, and fallen trees, but some occur in cavities of plants, on tree branches, and under the barks. Some genera, *Iridomyrmex*, *Azteca*, and *Technomyrmex* show symbiosis with plants. Some feed on liquid or plant nectars, others have food relationships with homopterous insects. There have been some reports that crops are damaged by *Iridomyrmex*, *Tapinoma*, and *Azteca* (Morisita et al., 1992).

Workers of the Subfamily Dolichoderinae have well developed compound eyes, but ocelli are almost absent. Antennae are generally 12 segmented, but some are ten to eleven segmented. Petiole is one segmented, and scale-like to cylindrical. Connection between postpetiole and first tergite is concave. Four segments of gaster are visible viewed from above, and there is circular orifice but a slit through which viscous defensive fluid is passed. Queens are larger than workers, and always have ocellus and large thorax and abdomen. Males have ocellus, well developed thorax, and round petiole. It is strange that *Technomyrmex* do not produce males which have wings.

In Korea *Technomyrmex gibbosus* was recorded for the first time by Teranishi (1940). Since then, *Ochetellus itoi* (Forel) was recorded by Imai and Yosida (1964), *Iridomyrmex glaber* (Mayr), *Tapino-*

ma sinense Emery, *Tapinoma wroughtoni* Forel, and *Technomyrmex albipes* (Smith) by Collingwood (1976), *Iridomyrmex glaber* (Mayr), *Tapinoma geei* Wheeler, and *Bothriomyrmex wroughtoni* by Terayama et al. (1992). The following species, *Tapinoma geei* Wheeler, *Tapinoma sinense* Emery, *Tapinoma wroughtoni* Forel, *Bothriomyrmex wroughtoni* Forel, and *Technomyrmex albipes* were recorded in North Korea (Collingwood, 1976, 1981). Authors were not able to collect them in South Korea. In this study, we provided keys and diagnostic descriptions of four species, which we were able to collect.

MATERIALS AND METHODS

Materials for this study were collected from South Korea between 1981 and 1998. As soon as they were collected, they were fixed in alcoholic Bouin's solution (150 ml of 80% ethanol, 15 ml of formaldehyde, and 1 g of picric acid) for two or three days. They were then moved to 85% ethanol for preservation. They were examined using Wild M8 stereo zoom microscope. Four species available were diagnostically redescribed and five unconfirmed species, which occur in North Korea were cited by the related references. Plates were made based on external diagnostic characters, and keys were made based on the system of Collingwood (1979). All these informations were based on workers.

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