



On new taxa and some described armoured scale insects (Hemiptera: Diaspididae) living in the galleries of the ant *Melissotarsus insularis* Santschi (Hymenoptera: Formicidae) in Madagascar

YAIR BEN-DOV

Department of Entomology, Agricultural Research Organization, The Volcani Center, P.O. Box 6, Bet Dagan, 50250 ISRAEL.
E-Mail: yairbd@netvision.net.il

Abstract

Melissoaspis n.gen. is established for two species, namely *Melissoaspis fisheri* n. sp. and *Melissoaspis reticulata* n. sp., and a further new species is also described, *Morganella formicaria* n. sp. all from Madagascar. All the above-mentioned scale insects were collected from galleries of the ant *Melissotarsus insularis* Santschi (Hymenoptera: Formicidae) on the trunk of various species of host plants in Madagascar. New data on the distribution, host plants and life history are given for *Melanaspis madagascariensis* Mamet, and for *Morganella conspicua* (Brain).

Key words: Armoured scale insects, coccoids-ants association

Introduction

The mutual relationships between ants and honeydew-excreting scale insects, such as members of the families Coccidae, Margarodidae, Kerriidae and Pseudococcidae, is a well-known and extensively documented mutualism (Nixon, 1951; Way, 1963; Wilson, 1971; Gullan, 1997). Since the early 1970's, many observations have provided growing evidence that direct relationships also exist between ants and armoured scale insects, family Diaspididae, coccoids which do not eliminate honeydew. These relationships have been recorded so far only in Africa and occur between various species of Diaspididae and several species of ants belonging to the genus *Melissotarsus* Emery (Formicidae, Myrmicinae, Melissotarsini). This association takes place between populations of the armoured scale insects that infest, develop and reproduce within galleries constructed by *Melissotarsus* ants in the live bark of the host plant. The most conspicuous and 'puzzling' characteristic of the diaspidid associates within the ant galleries is the absence of normal diaspidoid scale covers (Delage-Darchen *et al.*, 1972; Prins *et al.*, 1975; Ben-Dov, 1978, 1990; Ben-Dov & Matile-Ferrero, 1984).

Santschi (1911) described the ant species *Melissotarsus insularis* from Madagascar, and stated "...trouvés dans une écorce avec de nombreuses petites galleries!", but he gave no indication to the presence of armoured scale insects. During the current decade, Dr. Brian L. Fisher (Department of Entomology, California Academy of Sciences, San Francisco, California 94103, U.S.A.), extensively surveyed and studied the ants of Madagascar (see Fisher, 2004). In the course of this survey, Dr. Fisher collected about 30 records of Diaspididae species from galleries of *Melissotarsus insularis*, and these armoured scales were sent to me for further study. Five different species of Diaspididae were identified from these Madagascan records, including three new species, and records of two previously-described species.