

THE PHYLOGENY OF EARWIGS (DERMAPTERA): MOLECULAR AND MORPHOLOGICAL EVIDENCE

Karl J. Jarvis¹, Fabian Haas², and Michael F. Whiting¹

¹Department of Integrative Biology, Brigham Young University, 401 WIDB, Provo, UT 84604, USA

²Universität Ulm, Sektion Biosystematische Dokumentation, Hemlholtzstrasse 20, D-89081, Ulm, Germany

Phylogenetic relationships among earwigs are poorly known. Current classification recognizes 12 families distributed among 3 extant suborders: Forficulina, Hemimerina, and Arixeniina. The Forficulina includes the majority of extant earwig diversity, and the Hemimerina and Arixeniina include ectoparasites of giant rats and bats. Molecular sequence data for 18S and 28S rDNA, and Histone-3 protein-coding gene were generated for a wide diversity of exemplar taxa, and 23 morphological characters were included to infer phylogenetic relationships at the subordinal and familial level. These data suggest a phylogenetic topology which is partially congruent with current classification, but which indicates the paraphyly of Pygidicranidae, Anisolabididae (Carcinophoridae), and Spongiphoridae (Labiidae).