

ANALYSIS OF INDIVIDUAL OIL GLAND SECRETION PROFILES IN ORIBATID MITES (ACARI: ORIBATIDA)

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ABSTRACT - Oil glands are paired opisthosomal sac-like glands that characterize the so-called “glandulate Oribatida” (Parhyposomata, Mixonomata, Desmonomata, Brachypyliina, Astigmata). Among glandulate groups, a novel pool of characters for phylogenetic analyses was recently introduced by investigations into the chemistry of oil gland secretions. Secretion profiles appear to be species-specific, and moreover, reveal a clear evolutionary trend from early-derivative glandulate groups to late-derivative brachypyliines. Due to limited secretion volumes, gas chromatographic-mass spectrometric studies thus far have mainly relied on pooled extracts from multiple individuals. Herein we present an extended approach to analyse individual profiles, using two model species. In *Archezogozetes longisetosus* Aoki (Trhypochthoniidae), derived from a laboratory culture, oil gland secretions were homogenous among individuals and yielded ca. 325ng of secretion per individual. In strong contrast, between zero and 7000ng of secretion was extracted from individuals of *Collohmanna gigantea* Sellnick (Collohmanniidae) collected from nature, and several distinct sub-profiles were detected. Such detailed data regarding intraspecific variation of secretion profiles both within and among populations are expected to serve as novel tools to study poorly-known population relationships in Oribatida.

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