

A Taxonomic Guide to the Ant Genus *Orectognathus* (Hymenoptera: Formicidae)

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Abstract

Various computer programs are applied to input data derived from an *Orectognathus* species/character matrix, a species list and a list of the characters with their state descriptions. Output includes keys of several kinds and plain language descriptions of each species, published with an introduction on microfiche. The introduction, input data (comprising coded descriptions of all species), a bracket key and an index to the microfiche are published in printed form. *Orectognathus* was chosen for this pilot study because a recent conventional review (Taylor, R.W., 1977, *Aust. J. Zool.* 25, 581-612) is available for comparison.

Introduction

This paper is experimental in approach and investigates the possibilities for computer generation of taxonomic literature. In this case coded descriptions of all twenty-nine known *Orectognathus* species were prepared using the DELTA (DEscriptive Language for TAXonomy) format devised by my colleague Dr M.J. Dallwitz. These, with a list of the characters used and their state descriptions, were then manipulated using the programs KEY (Dallwitz 1974) and SCRIPT to produce a tabular identification key, a conventional bracket key and expanded plain language descriptions of all species, with indications of their distribution and references, wherever possible, to appropriate modern illustrations of each.

The complete paper, comprising this introduction, the raw input data and the processed output material, is published in microfiche edition prepared automatically using the COM (Computer Output Microfilm) device at the CSIRO Division of Computing Research, Canberra. The introduction, coded input descriptions, list of characters and states and bracket key are also published, with an index to the microfiche edition, in printed form. This is reproduced from computer generated camera-ready copy. The introduction was typed from manuscript directly into a computer console to be edited, formatted and typeset using the programs ED and TYPSET in the course of producing the camera-ready copy reproduced here.

Orectognathus was chosen for this pilot study because a recent conventional review of the genus (Taylor 1977) with a supplement due to appear soon (under the title "New Australian ants of the Genus *Orectognathus*, with Summary Descriptions of the Twenty-nine known species") is available for comparison.

It is not proposed to discuss now the possible significance to taxonomy of the techniques applied here. This will be done elsewhere. Suffice it to say that this paper is the first of a