

# Notes on the status of the family Microchaetidae

(Oligochaeta)

Jadwiga Danuta Plisko

**Abstract.** Short historical overview of the variable taxonomic rank of the family Microchaetidae is given. The dispersal of the South African endemic taxa based on paleo-geological evidence is noted. Present familial status and the generic composition are outlined. A correlation between specific features and the species distribution is indicated. Selected familial and generic diagnostic characters and their plesiomorphic and apomorphic conditions are discussed. The possible relationship between Microchaetidae and other families *sensu* various authors is marked out.

**Key words.** Microchaetidae, *Microchaetus*, *Geogenia*, *Tritogenia*, *Michalakus*, *Proandricus*, *Kazimierzus*, South Africa, endemic, biogeography.

## Introduction

This paper incorporates recent knowledge on the origin of the earthworm fauna and the dispersal directions of the southern African megadrile species accredited to the indigenous family Microchaetidae. With the lack of the fossil earthworm material the most hypotheses on the evolutionary process within Oligochaeta rely on the speculative timing of the tectonic movements and the actual earthworm distribution. The major hypothesis on the creation of the phylogenetic earthworm lineages and the geographical distribution of the ancestral megadrile was discussed by MICHAELSEN (1903, 1922) as the parallel process to the continental drift. In the light of the theory of plate tectonics, the possible evolutionary development and area of origin of Oligochaeta might be similar to that proposed by OMODEO (2000), who suspected that the evolutionary steps began from the most primitive taxa among limicolous/terrestrial forms of the Lumbricoidea, what supposedly took place in the middle of Cretaceous. The ancient Lumbricoidea occurrence may be seen in the area corresponding to the northern and eastern territories of Pangaea. According to OMODEO (2000) the most primitive taxa among Lumbricoidea were limicolous forms and their distribution is noted over a broad territory corresponding to the northern and central regions of the Early Triassic Pangaea. The dispersal might took place over a broad territory to the northern and central regions of the Early Triassic Pangaea as it is shown on the map drawn by OMODEO (2000) (see Fig. 1).

The subsequent evolutionary development and dispersal of the southern African megadrile fauna possibly took place in accordance with the other continental changes. The evolution of the Lumbricoidea appears to have a line in specialization of oesophageal and intestinal regions, development of nephridial bladders, and a modification of the reproductive organs.