



A taxonomic review of the southern African millipede genus, *Bicoxidens* Attems, 1928 (Diplopoda: Spirostreptida: Spirostreptidae), with the description of three new species and a tentative phylogeny

¹TAROMBERA MWABVU, ²MICHELLE L. HAMER & ¹ROBERT H. SLOTOW

¹*School of Biological & Conservation Sciences, University of KwaZulu-Natal, Howard College, Durban 4041, South Africa*
mwabvut@ukzn.ac.za, Slotow.DbnPO3.NuDbn@ukzn.ac.za

²*School of Biological & Conservation Sciences, University of KwaZulu-Natal, P. Bag X01, Scottsville 3209, South Africa*
hamerm@ukzn.ac.za

Abstract

The eight species of *Bicoxidens* were studied in order to verify their taxonomic validity and determine the status of new material. Two new synonymies are established: *B. grandis* Lawrence, 1965 = *B. matabele* (Schubart, 1966) and *B. flavicollis* Attems, 1928 = *B. nasti* Mwabvu, 2000. *B. polyptychus*, incorrectly placed in *Bicoxidens*, on the basis of morphological characters, including gonopods, is moved to *Brevitibius* Attems, 1950. Three new species, *B. matopoensis* Mwabvu, *B. nyathi* Mwabvu and *B. gokwensis* Mwabvu are described. An identification key to the species, a phylogenetic analysis based on gonopod morphology and distribution data for each species are also presented.

Key words: gonopod, telocoxite, telopodite, lateral leaf, median leaf

Introduction

According to Hamer (2000) southern Africa has a rich millipede fauna with 71 genera and 552 species recorded. However, many species from inaccessible or unsurveyed areas remain unknown to science. Some described species are invalid or poorly defined and need revision. Thus our knowledge of diversity and distribution of many millipede taxa in southern Africa is poor. Although representatives of the Spirostreptida are familiar and conspicuous in southern Africa, only one genus, *Doratogonus* Attems, 1914 has recently been revised (Hamer, 2000), and information on the other genera including *Bicoxidens* Attems, 1928 is incomplete.

Members of the genus *Bicoxidens* occur in southern Africa. They have been collected in savanna woodland, *Brachystegia* sp. or *Acacia* sp. dominated habitats, riverine vegetation and mountain forests. The present known distribution suggests a species hotspot south of the Zambezi River (assuming unbiased sampling). Only one species, *B. polyptychus* Kraus, 1958 has been recorded north of Zambezi River but it probably belongs to another genus (see below). However, the probability of finding un-described species in regions and habitats that have not been surveyed is high especially in remote areas such as the eastern highlands along the Mozambique-Zimbabwe border.

Bicoxidens is defined by a characteristic gonopod telopodite which has no femoral process or torsion of the femur but has one or two lobes just before the bend after the femur (Figs. 1a, 2a, 3a, 4a, 5a, 6a, 7a, 8a). The genus includes medium to large species that exhibit intra-specific differences (possibly a result of adaptations to different habitats) in body colour and number of body rings. Shades of black or brown are the common body colours although orange-yellow specimens have been collected in the eastern highlands of Zimbabwe.