



# Article

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## **A new species of *Dugesia* (Platyhelminthes, Tricladida, Dugesiidae) from the Afromontane forest in South Africa, with an overview of freshwater planarians from the African continent**

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### **Abstract**

A new species of the genus *Dugesia* from the Amatola Mountains in the Eastern Province of South Africa is described, including a karyological account and notes on its life cycle and reproductive modes. The new species differs from its congeners in a unique combination of morphological characters of the copulatory apparatus, in particular the central course of the ejaculatory duct with its terminal opening at the tip of the penis papilla, the elongated seminal vesicle, the asymmetrical openings of the oviducts into the bursal canal, and the openings of vasa deferentia at about halfway along the seminal vesicle. In addition, an overview is provided of all freshwater triclad reported from the African continent including karyological information and notes on reproductive modes.

**Key words:** Platyhelminthes, *Dugesia*, taxonomy, karyology, reproduction, distribution, Africa

### **Introduction**

From the African continent three families of freshwater triclad are known viz. Dugesiidae, Dendrocoelidae, and Planariidae. While the north African region harbours all three of the families, for sub-Saharan Africa only three genera of the Dugesiidae have been reported: the genus *Cura* Strand, 1942 is present with only one species, the genus *Neppia* Ball, 1974 with four species, while the widespread genus *Dugesia* Girard, 1850 is the most speciose taxon with 14 species (De Vries, 1988a; Stocchino *et al.*, 2002, 2009; Sluys 2007; Harrath *et al.*, 2012b).

Although several studies have recently contributed to our knowledge of freshwater planarians from Africa (Stocchino *et al.*, 2002, 2004, 2009; Charni *et al.*, 2004; Harrath *et al.*, 2004, 2012a, 2012b; Sluys, 2007), the majority of these publications deals with the Palaearctic section of the African continent, whereas scant data are presently available for sub-Saharan Africa and particularly for South Africa (cf. Sluys, 2007). From the latter area only six species are known: *Cura evelinae* (Marcus, 1955), *Neppia paeta* (Marcus, 1955), *N. tinga* (Marcus, 1955), *N. wimbimba* (Marcus, 1970), *Dugesia monomyoda* Marcus, 1953, and *D. capensis* Sluys, 2007. The low number of records from southernmost Africa suggests that taxonomic richness is here very likely underestimated, as is the case for the entire continent. Several asexual, non-identifiable populations of freshwater planarians, however, have been reported from Angola, (De Beauchamp, 1951a), the Democratic Republic of Congo (De Beauchamp, 1951b; Marcus, 1953, 1955b), Ethiopia, Kenya, Tanzania (Young & Young, 1974), Ghana (Dahm, 1967), Morocco (De Beauchamp, 1932; Deri *et al.*, 1999; Stocchino, unpublished data), Algeria, and Tunisia (cf. Young & Young, 1974; Benazzi & Deri, 1980).

In this paper we describe a new species of the genus *Dugesia* from the Amatola Mountains in the Eastern Province of South Africa, including a karyological account, and notes on its life cycle and reproductive modes. We also provide an overview of all freshwater triclad reported from the African continent.