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A survey of Trichoptera from the Tributaries of the Doring and mainstream Olifants Rivers, Cedarberg, South Africa with implications for conservation

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Abstract

The tributaries of the Olifants River draining the Cedarberg Mountains in the Western Cape are well known for their diverse fauna of endemic freshwater fish. Aquatic ecosystems in the region have also been identified as being particularly important in terms of ecosystem conservation. Recent surveys of aquatic macroinvertebrates have indicated that the region is rich in Trichoptera, with a number of regional endemic species, some of which are not recognizable as known described species. The distribution of certain species appears to be confined to either the arid east-flowing tributaries of the Doring River or else the wetter west-flowing tributaries of the mainstream Olifants River.

Key words: Caddisflies, Western Cape, Cape Floral Kingdom, aquatic biodiversity, distribution patterns, endemic fish, endemic invertebrates

Introduction

The fynbos biome in the Western Cape (Fig. 1), which has been designated by Takhtajan (1986) as the Cape Floral Kingdom (CFK), is recognized for its great diversity of species. More than 9000 vascular plant species have been recorded in the region, of which 68.7% are endemic (Goldblatt & Manning 2002). The freshwater fish fauna of the CFK is not very diverse in terms of species numbers, but contains 16 out of the 19 indigenous species endemic to the region (Impson *et al*. 2002). The tributaries of the Olifants River (within the CFK biome) harbour the highest percentage of endemic fish species in South Africa. The greatest regional species diversity and highest degree of endemism for Trichoptera in South Africa is also found in this region, which was considered a distinct hydrobiological region by Harrison (1959). The Trichoptera of the CFK have been studied in some detail and are considered to be reasonably well known (Barnard 1934, 1940; de Moor 1993, 1997, 1999, 2007; de Moor & Scott 2003; Harrison & Elsworth 1958; Harrison & Agnew 1962; King 1981, 1983; Scott 1955, 1958, 1961, 1983; Scott & de Moor 1993). Recent surveys have, however, revealed a considerable number of new distribution records including some of undescribed species (de Moor 2007). There is evidence that many of the species occurring in the CFK have temperate Gondwana origins, which suggests that these species are relict survivors of a once-widespread temperate southern fauna dating back about 140 million years prior to the breakup of Gondwana (Scott & de Moor 1993).

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