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Biodiversity and distribution of the southern African sea cucumbers (Echinodermata: Holothuroidea)

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Abstract

The history of the southern African holothuroid fauna south of the tropic of Capricorn, is updated and the biodiversity and distribution of the fauna discussed. All five currently recognized orders are represented, distributed over 24 families, 74 genera and 163 species. As many as 117 species are shelf forms comprising the following faunistic components : 36% Indo-Pacific, 12% West Indian Ocean, 1% Atlantic and 51% endemic. Four faunistic provinces are recognized : tropical Indo-Pacific Province on the east coast, extending to St Lucia in northern KwaZulu-Natal; the Subtropical (Natal) province, from this point to Port St. Johns in the Eastern Cape Province; the Warm Temperate (Agulhas) Province from this point to Cape Point in the Western Cape Province; and the Cold Temperate (Namaqua) from Cape Point to Walvis Bay in Namibia. Vertical distribution of the approximately 90 species collected from more than one locality is also given. The origin of the holothuroid fauna is briefly discussed and reiterated that the Indo-Pacific component moved in from the north mostly by way of the Mozambique-Agulhas Current. The origin of the endemic component is obscure but surmised that it is perhaps also of Indo-Pacific origin with negligible contribution from the Atlantic.

Key words: biogeography, biodiversity, distribution, southern Africa, Echinodermata, Holothuroidea, sea cucumbers

Introduction

The southern African region, here considered, is that part of the southern African subcontinent lying south of the tropic of Capricorn (23.5°S). This is consistent with the boundary selected by Clark & Courtman-Stock (1976) for the other southern African echinoderms. Regrettably their revision excluded the holothuroids with a note in the blurb that this group was treated by other workers. However, at that time, not much was known of the southern African holothuroid fauna and that which was known, did not keep pace with changes in classification and nomenclature.

After the description of the first holothuroid from South Africa by Pallas (1766) there were at first sporadic and then regular additions to the fauna. A short history of the southern African holothuroid fauna was given by Thandar & Samyn (2004) and Thandar (2006) and this is updated here. Thandar's (2006–2008) comprehensive reports on additions to the fauna of southern Africa, were based on collections made by scientists from the South African (SAM) and Natal (NM) museums. They covered collections from the littoral to the deep sea, those from the east coast in the collections of the author himself, and those made by the ecological surveys of the University of the Witwatersrand, from Inhaca Island (southern Mozambique). Of the latter only hitherto undescribed or unrecorded species were included. The above three papers put on record 15 new species and 17 new records for the southern African region. Some of the new records from KwaZulu-Natal (KZN) were included in the checklist of the South African east coast species published by Thandar & Samyn (2004) but this list contained some tentative identifications. Subsequent to Thandar's (2006–2008) papers, Natasen Moodley (2008) described a new species from the west coast of South Africa; Thandar (2009) made several additions to the fauna of the temperate region of southern Africa, based on material from the University of Cape Town; Thandar *et al.* (2010) and Thandar (2013) added to the fauna of Namibia and Angola (not part of the southern African region here considered), Thandar & Arumugam (2011) erected a new family for a new deep-water species from KZN and Thandar & Rambaran (2015) added more records from South Africa.