

BIOGEOGRAPHICAL RELATIONSHIPS OF SOME SOUTHERN AFRICAN BENTHIC CRUSTACEA

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SUMMARY

A brief discussion of benthic amphipods, isopods, and decapods deals with the distribution of the Atlantic, Indo-Pacific, and endemic components of each group around the southern African coastline. This distribution is related to faunal provinces of the area. It is concluded that for the two peracaridan groups, the South Coast Warm Temperate province was an evolutionary centre. Although there is a considerable number of endemic species in the decapods, recruitment from the Indo-Pacific accounts for the major component of this group.

INTRODUCTION

Although the southern African marine region has received considerable attention from zoogeographers (see Ekman, 1967, and Briggs, 1974, for references), seldom have either the Crustacea as a whole or any section of them been dealt with from a zoogeographical point of view. Ortmann (1896) was one of the exceptions. In his "Grundzüge der marinen Tiergeographie", Ortmann used the Decapod Crustacea as the basis for his ideas. Hartmann-Schröder and Hartmann (1974) have dealt briefly with the zoogeography of southern African Ostracoda. But even K.H. Barnard with his unsurpassed knowledge of the southern African crustacean fauna ventured few opinions on the distribution and affinities of this group. Several of the southern African crustacean groups have reached a point of taxonomic maturity where zoogeographic speculation can begin to have meaning. These groups include the Cumacea, Amphipoda, Isopoda, and Decapoda. I shall concentrate on the latter three groups, the raw data for these being relatively easily accessible.

Data sources and limitations.

Raw data for the gammarid and caprellid Amphipoda used in this paper come from Griffiths (1973, 1974a, 1974b, 1974c, 1975, 1976a, 1976b); for the Isopoda, Kensley (1978); for the Decapoda, Kensley (1981, in press).

In the following discussion, I have limited myself to animals occurring above the 200 m line, so little being known about the fauna beyond that depth. Also, amongst the decapods, the true pelagic forms such as the sergestids, aristeids, and the oplophorids have been excluded.

DISCUSSION

The geographic area under discussion stretches from the Kunene River on the west coast to Vilanculos on the east (Fig. 1) and is dominated by two major current systems. On the west, the Benguela system flows northwards and is characterised by strong upwelling of cold Subantarctic water. On the east coast the Agulhas current sweeps down the Mozambique Channel, at varying distances from the coast depending on the width of the continental shelf.

The question of faunal provinces is a contentious one, but for the purposes of this paper, I shall follow Brown and Jarman (1978). If we superimpose the various faunal provinces of the area on the coastline (Fig. 2) we see that five provinces are involved: (1) Tropical West African (2) Cold Temperate Namaqua (3) Warm Temperate South Coast (4) Subtropical East Coast (5) Tropical East Coast.

The overall composition of the amphipod, isopod, and decapod fauna (as circumscribed above) may be represented in Table 1.