

The Benthic Copepoda of the Sinai Mangrove

by

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Abstract

The benthic copepod fauna of the Sinai mangal is analysed. This is a mangrove of the type of hard bottom and high-salinity mangroves. The predominant copepod species are those of mixed bottoms, of sediment covered phytal and of metahaline waters.

Résumé

Les copepodes benthiques du mangal du Sinai ont été étudiés. Le mangrove du Sinai représente un type d'association qui est installée sur des fonds durs et à des salinités élevées - metahalines. En conséquence les groupes dominants des copepodes sont ceux des fonds mixtes, du phytal couvert de sediment et des eaux metahalines.

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The mangrove environments of Sinai have been investigated only recently (POR and DOR, 1975a; POR, DOR and AMIR, in press). The mangrove communities, also called "mangal" (MacNAE, 1968), are tropical intertidal soft bottom communities. GERLACH (1958) compared the meiofauna of the Brazilian mangal with the intertidal mud flats of the temperate zone, namely the North Sea. GERLACH indicated preliminarily some genera of Nematoda, Harpacticoida, Ostracoda and Polychaeta which are common to the muddy intertidal of the tropical and temperate shores. These are species of brackish benthic environments.

As shown by POR and DOR (op. cit.), the five mangrove thickets of Sinai grow under environmental conditions different from those usually associated with mangrove. In Sinai the mangal develops on hard bottoms with relatively little mud accumulation, and at salinities higher than those of the open Red Sea, i.e. of 40-47‰.

Different types of sedimentary bottoms in the Sinai mangal have been studied for their benthic Copepod fauna, during 1969-1976, and the preliminary data are presented here.

The sedimentary bottoms range from sea-grass bottoms (covered with *Halodule uninervis* and *Halophila stipulacea*); sandy muds and muds of mangrove lagoons (to maximum 1.5 m depth); shallow channels in the mangrove thickets; intertidal and infralittoral shores of coarse sand mixed with mud on wave battered shores of mangrove lagoons open to the sea. A total of 19 species are discussed.

Salinity is lowest (40-430/00) on the sea-grass bottoms and highest among the mangrove aerial roots and in the mangrove channels (up to 470/00).

Four ecological groups of species have been found: Eurytopic phytal species; Indo-Pacific shallow mud species; Metahaline mixed-bottom species; shallow-water coarse bottom species. Besides the last group - the species of the first three groups are frequently found together in different combinations. However, each group becomes dominant or exclusive under environmental conditions to which it is peculiar, i.e. plant covered bottoms, clean muddy lagoon bottoms, high salinity backwaters.

The group of *phytal species* is large. In order of frequency it comprises of the following species: *Orthopsyllus linearis* (Claus), *Metis ignea* Philippi, *Lourinia armata* (Claus), *Amphiascopsis cinctus* (Claus), *Peltidium hawaiiense* Pesta, *Dactylopodia tisboides* (Claus). Of all these species, only the occurrence of *Peltidium hawaiiense* is unexpected. *Orthopsyllus linearis* is reported as the dominant species also from the algal bottoms of a metahaline waterbody in Sinai, Di Zahav pool (POR, 1974; POR and DOR, 1975b), where salinities may reach 600/00. *Amphiascopsis cinctus* and *Dactylopodia tisboides* are also present, but rare in Di Zahav pool.

The *muddy-bottom species* are the most specific group of species in the Sinai mangal. In the representative samples - those taken in the mangrove lagoons, this group of species includes the following: *Canuellina insignis* (Gurney), *Scottolana inopinata* (Sewell), *Rhyncholagena josaphatis* Por, *Stenhelia longifurca* Sewell and *Stenhelia* aff. *inopinata* A. Scott. It is interesting that the Cletodiidae - mud living species - are represented only by rare specimens of *Enhydrosoma vicinum* Por, and by a yet unidentified species of *Cletodes*.

The third group is formed of a few very euryhaline species known from all the metahaline lagoons around Sinai (POR, 1973; POR and DOR, 1975b). These are *Neocyclops salinarum* (Gurney), *Robertsonia salsa* (Gurney) and *Heterolaophonte quinquespinosa* (Sewell); they become dominant at salinities above 450/00.

These three species are found also on the gravelly intertidal bottoms together with massive populations of *Phyllopodopsyllus* sp., not fully identified as yet.

As shown by POR and DOR (1975a), the Sinai mangrove is a peculiar uninvestigated type of mangal. It is suggested that the combination of metahaline species which are adapted or tolerant to muddy and detritic bottoms characterizes this type of mangal - and not the brackish and obligate mud-living species as in other mangals.

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