THE SPHAEROMATID ISOPOD GENUS *SPHAEROMOPSIS*

HOLDICH & JONES IN AFRICAN, AUSTRALIAN AND
SOUTH AMERICAN WATERS

BY

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INTRODUCTION

Although occasional reference has been made in the literature to psamma-
obiotic sphaeromatid isopods, only three publications have dealt with them
in any detail. Brown (1973) gave details of the ecology and feeding behaviour
of the hemibranchiate sphaeromatid, *Exosphaeroma truncatitelson* Barnard, from
South Africa; Holdich & Jones (1973) dealt with the systematics and ecology of
a new eubranchiate sphaeromatid, *Sphaeromopsis amathitis* Holdich & Jones,
from Kenya; and Eleftheriou et al. (1980) examined the systematics and
ecology of a new platybranchiate sphaeromatid, *Tholozodium ocellatum* Elef-
theriou, Holdich & Harrison, from India. In all three cases the sphaeromatids
were found inhabiting intertidal sandy beaches with cirolanid isopods.

Recent studies of the intertidal sandy beaches of Queensland, Australia have
revealed the presence of a number of new species and new records of cirolanid
isopods (Holdich et al., 1981) and of the eubranchiate sphaeromatid genus,
*Dynamenella* Hansen (Harrison & Holdich, 1981). In addition, a new species of
*Sphaeromopsis* was found inhabiting similar substrata to some of the cirolanid
and *Dynamenella* species. The genus *Sphaeromopsis* was previously known only
from Watamu, Kenya, East Africa, but its discovery in Australia prompted an
examination of other collections. This revealed two additional species of
*Sphaeromopsis*, one from the Red Sea and the other from Brazil.

MATERIALS AND METHODS

A wide variety of intertidal micro-environments was sampled manually on
the north eastern coast of Queensland, Australia, and on a number of offshore
islands (Heron Island, Hinchinbrook Island, Magnetic Island and Lizard
Island). Samples from these micro-environments were examined soon after
collection and the fauna extracted under a binocular dissection microscope.
*Sphaeromopsis* was only commonly found in association with intertidal sand; and
stones, dead coral and wood lying on sand on the open coasts and estuaries of
the mainland and the continental islands. Using suction samplers, a large number of samples was obtained from sublittoral sediments in the Townsville area during routine sampling by divers from the James Cook University Three Bays Survey, and subsequently sieved through a 1.0 mm mesh. Only one sample revealed a Sphaeromopsis specimen. Some other isopods found during this study have already been dealt with by Holdich & Harrison (1980a, b, c, d), Holdich et al. (1981) and Harrison & Holdich (1981).

In addition to the samples mentioned above, collections of isopods have been examined from southern Queensland, from South Australia and West Australia, but these have failed to reveal any Sphaeromopsis. Collections made from Mediterranean sandy beaches in Israel, and the Red Sea by Dr. D. M. Dexter (using a 0.025 m² corer sampling to a depth of 0.2 m, with samples being sieved through a 0.5 mm mesh) were found to contain Sphaeromopsis specimens in the Red Sea material. Examination of the literature revealed these to be the same as specimens previously described by Stebbing (1910) as Exosphaeroma reticulatum from the Red Sea. Specimens of Pseudosphaeroma mourei Loyola e Silva kindly lent by Dr. Loyola e Silva proved, upon re-examination, to be a species of Sphaeromopsis.

In order to clarify the situation all species now known to belong to the genus Sphaeromopsis are redescribed with a new species from Australia. All material mentioned below but not designated a museum reference number has been placed in a reference collection at Nottingham University.

As so few systematists define developmental stages of isopods when listing collections, the following definitions are given for Sphaeromopsis: adult male — appendix masculina free and fully formed; sub-adult male (i.e. stage before adult male) — appendix masculina fused with endopod tissue and only visible in partly formed state through endopodal cuticle, penes terete, shorter than those of adult; immature male (i.e. stage before sub-adult male) — penes obvious but shorter than those of sub-adult male, no indication of appendix masculina, whole animal markedly smaller than adult males; ovigerous female — female with brood pouch (whether brood is present or not); non-ovigerous female — a specimen of adult or sub-adult size, but showing no obvious sexual characters; immature specimen — a specimen smaller than sub-adult male or non-ovigerous female size, showing no obvious sexual characters but having seven free and fully formed pairs of pereopods; juvenile — a specimen with only six free and fully formed pairs of pereopods, the seventh pair being reduced and held horizontally across the sternite of pereonite 7.

**Sphaeromopsis** Holdich & Jones, 1973

Generic diagnosis. — Eubranchiate Sphaeromatidae with antennular peduncle article 1 not extended anteriorly as a plate. Both sexes with pereon and pleon lacking dorsal processes and ornamentation. Pleon with posterior...