

THE OCCURRENCE OF *PARADELLA DIANA*E (MENZIES, 1962)
(ISOPODA, FLABELLIFERA, SPHAEROMATIDAE) IN ALEXANDRIA
MEDITERRANEAN WATERS.

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ABSTRACT

Paradella dianal, a genus and species of Sphaeromatid was recorded for the first time in Mediterranean waters, it was recorded from 10 stations along the intertidal water between green and brown algae, on rocks and manmade structures, on barnacles and in brackish polluted water.

The species tolerates a wide range of conditions and has two morphological types independent from the substratum or salinity.

INTRODUCTION

In a study of isopod community associated with intertidal algae along Alexandria coast, the genus *Paradella* was recorded for the first time in Alexandria Mediterranean waters. It is also worth noting that to date, this is also a first record for the Mediterranean. Morrison and Holdich (1982) gave the known worldwide distribution of the genus *Paradella* which was found in Townsville Harbour, east and west coasts of Australia and California (Menzies, 1962), Puerto Rico (Menzies and Glyn, 1968; Glyn 1968), Marshall Islands (Glyn, 1970), California (Iverson, 1974), Brazil (Pires, 1980) and the Arabian Sea (Waquar and Roshan, 1987). It seems probable that this genus has reached many of its current locations attached to growths on the sides of ocean going ships (Holdich, pers. comm.).

MATERIALS AND METHODS

Thirty seven specimens were collected from 10 stations along the shore (Fig. 1), consisting of 12 adult males, 3.5-4.9 mm; 4 subadult males, 2.9-4 mm; 5 ovigerous females, 2.1-3.6 mm and 16 non-ovigerous females, 2.3-4 mm. The specimens were found between green and brown algae, mainly *Ulva lactuca* on rocks and man-made structures. The species was also recorded from Mex Bay, a brackish and polluted area. Pires (1980) mentioned that *P. dianae* can live in polluted water and withstand low salinity.

Some morphological variability is known to occur in this species. The material examined corresponds closely to the description and illustrations

given by Waquar and Roshan (1987), but there are some minor morphological variations between the illustrations given by Harrison and Holdich (1982).

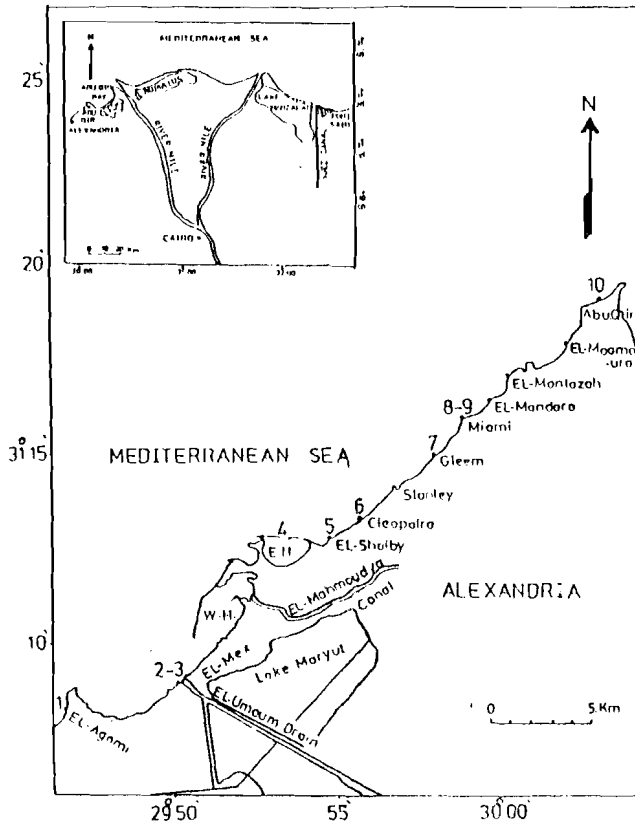


Fig. 1
The study area showing the sampling stations.

OBSERVATIONS

The adult male (Fig. 2A) differs from the Australian specimens while it agrees with the Brazilian (Pires, 1982) Figs. 21 & 22 and Arabian Sea specimens (Waquar and Roshan, 1987: 216, 217 Fig. 1) in having distinct transverse ridges on the posterior margins of pereonites 5 to 7, and in having 2 pairs of slightly larger granules lateral to the submedian pairs of tubercles on the pleotelson. Harrison and Holdich (1982) mentioned that the flagella of the maxillule and maxilla of the adult male were of 12 and 13 segments while the Alexandria and Arabian Sea specimens have 11 and 16 segments in the maxillule and maxilla flagella, respectively.

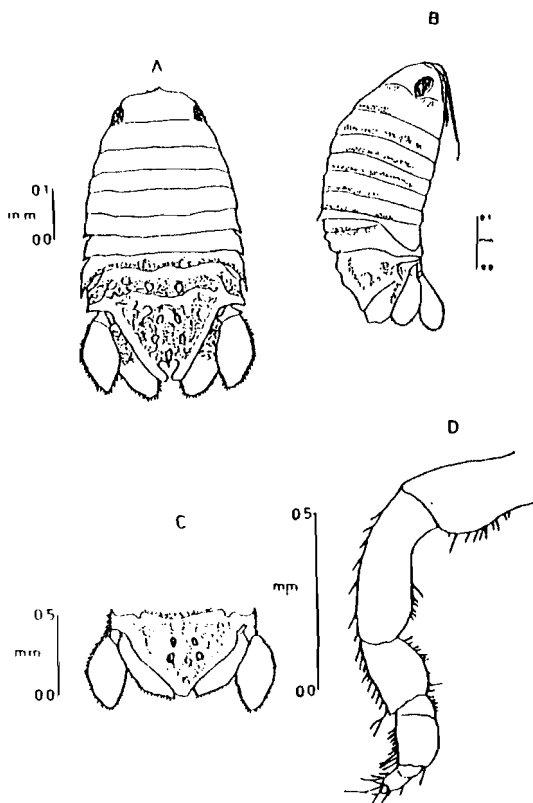


Fig. 2
Paradella diana (Menzies, 1962); A, dorsal view
of adult male; B, lateral view of adult male; C, dorsal
view of pleotelson of ovigerous female; D, Pereopod I.

The Alexandria and Arabian Sea specimens also have a granulated pleon while illustrations given by Harrison and Holdich (1982: 104, Fig. 6a) show no granules.

The endopod of pleopod I (Fig. 3D) is not so acutely produced as that of the Australian specimen figured by Harrison and Holdich (1982: 104, Fig. 6j), but is very similar to that figured by Waquar and Roshan (1987: 216, Fig. 11). Also, the setae on the pleopods carry small setules while the Australian specimens do not.

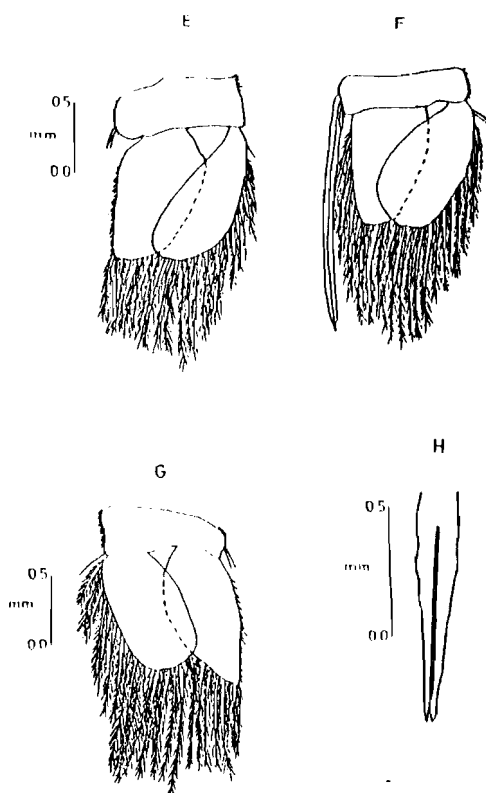


Fig. 3
Paradella dianae (Menzies, 1962): E, pleopod 1;
 F, pleopod 2; G, pleopod 3; H, penes.

The pleotelson of the ovigerous female (Fig. 2B) is rather more granular than that of the Australasian ovigerous female and the submedian tubercles are not completely fused as those given by Harisson and Holdich (1982: 104, Fig.6q), but rather similar to the Arabian Sea specimen (Waquar and Roshan, 1987: 217, Fig. 2A).

DISCUSSION

It seems from the above observations that *P. dianae* exhibits morphological variation, e.g. specimens from Australia differ from those found in South America, Mediterranean and Arabian Sea specimens. Such variations seem to be independent of the substratum, as all the specimens mentioned before were collected from the intertidal zone among green and brown algae.

Salinity is also indifferent as the range of surface salinity near the east and west coasts of Australia vary from 34 to 36‰ (Bowden, 1975) and that of the Arabian Sea ranges from 27 to 30‰ (Duxbury and Duxbury, 1984) while *P. dianae* recorded from Alexandria was found in brackish waters with a salinity below 30‰ at Mex Bay and also recorded from the intertidal zone along the Alexandria beaches with a salinity of 36 to 38‰.

The temperature gradient recorded from the three areas under consideration shows slight differences. The values of surface temperature recorded from Australia during winter and summer were 14 - 25°C and 24 - 25°C, respectively (Sverdrup et al., 1955), while those from the Arabian Sea range between 24 and 27°C, and 27 and 30°C in winter and summer (Sverdrup et al., 1955).

Alexandria surface water temperature ranges between 14-16°C in winter and 24°C-28°C during summer, these values seem to be close to the Australian habitat.

This review supports the view that *P. dianae* has two morphological types independent from the substratum, the salinity and temperature.

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