

three cells lose their walls and their protoplasts fuse forming a cyst which degenerates subsequently.

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OBSERVATIONS OF BREEDING AND FREQUENCY OF SEX IN THE ISOPOD CRUSTACEAN *LIGIA INDICA* OF TUTICORIN COAST

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Introduction

THE isopod *Ligia indica* inhabits the rocky shore of Tuticorin coast (Lat $8^{\circ}47'N$; Long. $78^{\circ}9'E$) where boulders are found in large numbers. The environment in which isopod *L. indica* inhabits is intermediate in character between land and sea like *L. pallasii*¹. Even though a lot of information is available regarding water and salt balance⁵⁻⁷, egg incubation and yolk utilization³ of *Ligia* sp., very little is known about breeding behaviour of the genus. The present study deals with the breeding and frequency of sex in *Ligia indica* of Tuticorin coast.

Materials and Methods

Collection of *Ligia indica* was made once in a month during the study period from August 1978 to July 1979, numbering over 300 animals in each collection. During each population census over 300 *Ligia indica* were collected at random from the demarcated study area of $4m^2$. Collection was made in the early morning during the low tide period. The isopods from each collection were sexed and the frequency of each sex

was noted. If female, note was taken about the external reproductive state.

Results and Discussion

From the collection data it has been found that females usually grow to a size less than 15 mm and never grow larger than 21 mm. Adult females are always smaller than the males. The mean length of gravid females was found to be 14.8 ± 1.2 mm (S.D. based on 80 individuals) and the mean number of eggs or juveniles per brood was 33 ± 6 (S.D. based on 36 individuals).

During the study period it has been found out that even though the maximum number of berried females occur in the month of June, July and August, gravid females do occur in less frequency in other months (Fig. 1). The percentage of females reaches as high as 70 in the month of July and August and as low as 30 in January and February, while that of males is found to be less in July, August and September (28-40%) and reaches its maximum in December, January and February (55-68%) (Fig. 2).

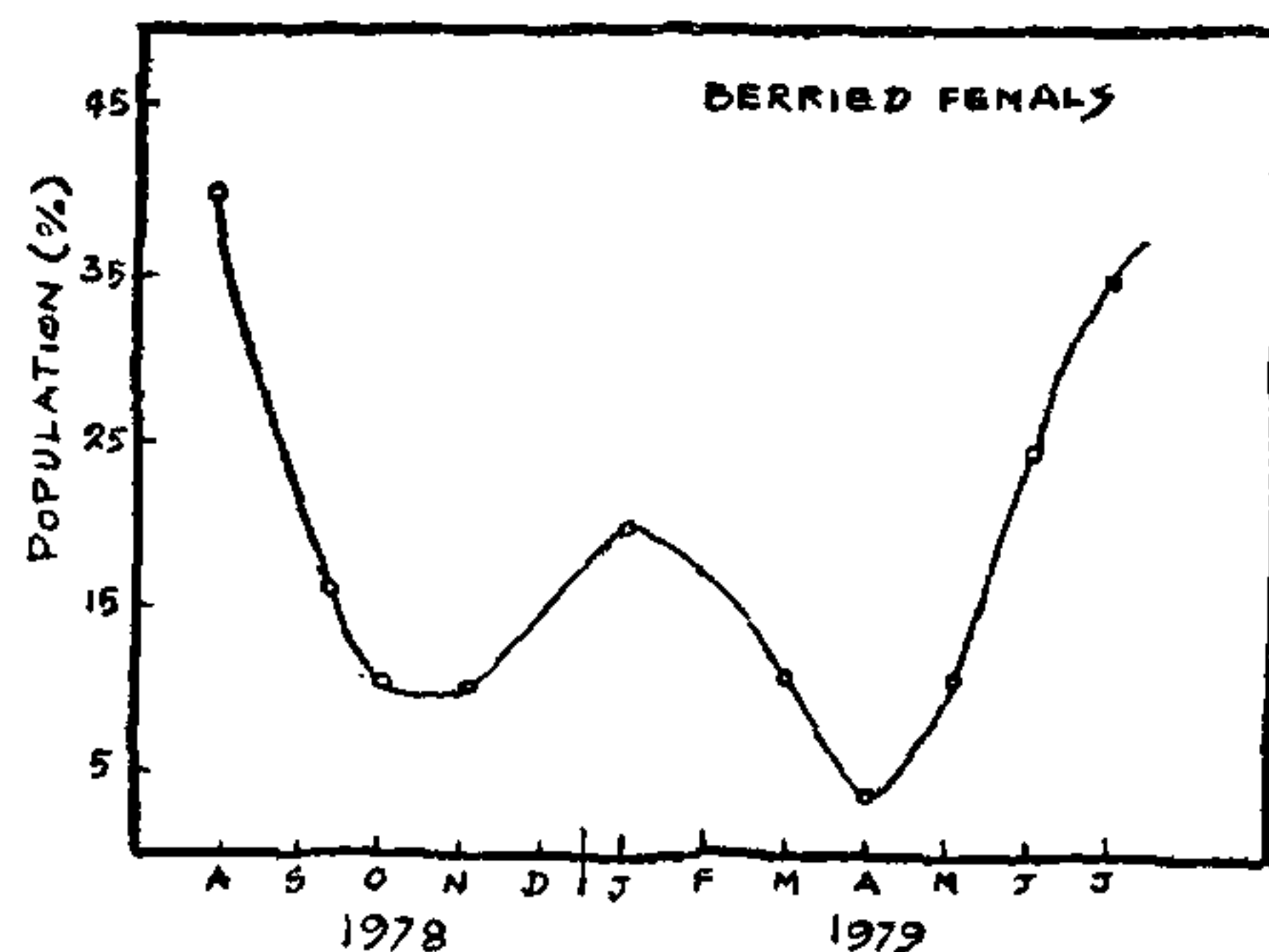


FIG. 1

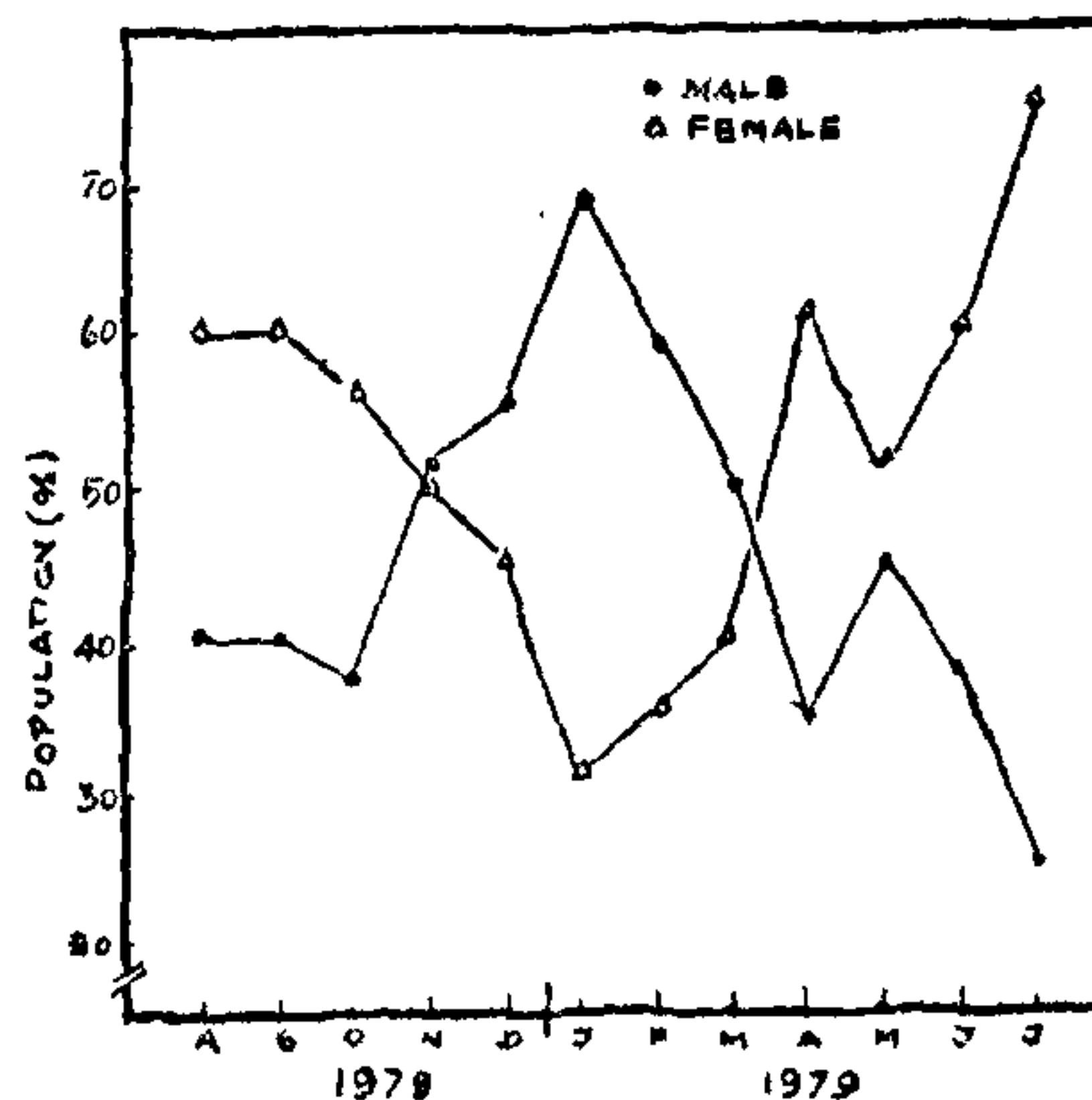


FIG. 2

In general, breeding in isopods reaches its peak during summer¹. In the present study, the percentage of berried females is found to be high during June–August and gravid females and pairs are found throughout the study period. This leads us to the conclusion that like *L. oceanica*², *L. indica* also breeds all the year with a peak during June–August. Like *Armadillidium vulgare*⁴, during reproductive moults, the females show high rate of moulting and this is indicated by the very low percentage of females from November–March. So it may be concluded that June–August is the peak period when *L. indica* breeds most and during which the frequency of females outnumbers the frequency of males.

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The above workshop will be held at Solid State Physics Laboratory of the Ministry of Defence, New Delhi, from 23–28 November, 1981.

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