

**FREQUENCY OF OCCURRENCE OF *HETEROSACCUS INDICUS*
(RHIZOCEPHALA) ON THE EDIBLE CRAB *NEPTUNUS PELAGICUS*
IN THE GULF OF MANNAR**

ABSTRACT

Heterosaccus indicus Boschma parasitises the blue swimming crab *Neptunus pelagicus*. During January 1967, the authors examined 1836 crabs caught by crab traps in the vicinity of the Regional Centre of Central Marine Fisheries Research Institute, Mandapam Camp. While 12.2 per cent of the total population examined was found to be infested, 28.1 per cent of the females had parasites. The ratio of female hosts to male was 1 : 1.3. It was also observed that 5.8 per cent of the infested crabs possessed more than one parasite.

THE rhizocephalus parasite *Heterosaccus indicus*, was first described by Boschma (1957) from the blue swimming crab *Neptunus pelagicus* from Gulf of Mannar near Mandapam Camp, India. According to Boschma (1957) 'the parasites are of rather uniform shape, broadly oval to triangular, more or less kidney-shaped to slightly panduriform' in appearance. The anatomical feature of the parasite that distinguishes it from closely related species is its open connection of the two testes. At Palk Bay and Gulf of Mannar along the Ramnad District the host crab forms a fishery of moderate significance, chiefly caught by crab traps. During January 1967, the crabs were found to be commonly caught and the authors examined the catches regularly for a fortnight.

Observations :

The parasites ranged from 20 to 34 mm in greater diameter. In some cases there were more than one parasite in a single host. In living condition the parasites were dull white when young, or slightly grey when ripped, with a prominent external mantle opening. The presence of more than one parasite did not cause any marked reduction in the size of each when compared to single ones. Many of the parasites when separated and left in fresh sea water extruded large quantities of nauplii. During the period of observation a total of 1836 crabs were studied of which 1039 were uninfested males and the rest females. Among the 797 females 224 had parasites, thirteen of them with more than one parasite (Table 1). We made no attempt to search for the earlier stages of the parasites inside the hosts.

The number of male crabs in the natural population was more than the females, the ratio of male to female being 1.3 : 1. It was observed that 12.2 per cent of the total population examined was infested with the parasite. However, in view of the strict female host specificity, it may be noted that 28.1 per cent of the female crabs was infested. The incidence of infestation in a natural population is thus very high, roughly one in every eight being affected.

Discussion :

George (1943) observed that 20% of the 519 crabs examined by him from the Madras coast was infested by a rhizocephalus parasite. According to Nair and Gurumani (1956), 169 out of 193 specimens of *Neptunus sanguinolentus* had parasites which they said to be a *Sacculina*. Among the infested ones 73 had more than one parasite each. Whether their observations were made on a selected sample or on a natural population was not mentioned. Boschma (1957) could not confirm whether the parasites of *N. pelagicus* and *N. sanguinolentus* are conspecific for want

TABLE 1. Occurrence of *Heterosaccus indicus* on *Neptunus pelagicus*, from Gulf of Mannar

Date	Total No. of crabs examined	No. of Males	No. of Females	No. of infested crabs	No. of crabs with more than one parasite	Percentage of occurrence of the parasite	
						Total catch	Among Females
9-1-1967	101	53	48	7	2(2)*	7	14.6
10-1-1967	121	93	28	4	1(3)	3.3	14.3
11-1-1967	106	50	56	11	..	10.4	19.6
12-1-1967	108	65	43	11	..	10.2	25.6
13-1-1967	207	77	130	37	3(3)	17.9	28.5
18-1-1967	163	105	58	9	1(2)	5.5	15.5
19-1-1967	78	50	28	8	2(2)	10.2	28.6
20-1-1967	214	130	84	20	3(2)	9.3	23.8
21-1-1967	90	50	40	10	..	11.1	25.0
22-1-1967	133	114	19	4	..	3.0	21.0
25-1-1967	151	70	81	36	1(2)	23.8	44.4
26-1-1967	157	93	64	32	..	20.4	50.0
27-1-1967	35	19	16	11	..	31.6	68.8
30-1-1967	172	70	102	24	..	13.9	23.5
Total	1836	1039	797	224	13	Average 12.2	28.1

* Numbers in the bracket indicate the number of parasites.

of detailed information on the anatomy of the parasite of the latter. However, George (1959) has identified the parasite of *N. sanguinolentus* as *Heterosaccus ruginotus* Boschma. From the present observation as well as that of George (1943) it seems only reasonable to assume that 12 to 20 per cent of the natural population of edible crabs of the south-east coast of India is parasitised by a rhizocephalus parasite.

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