

OCURRENCE OF THE BRINE-SHRIMP, *ARTEMIA SALINA*, IN
KARSEWAR ISLAND OFF TUTICORIN, GULF OF MANNAR

G. P. KUMARASWAMY ACHARI¹

Central Marine Fisheries Research Institute, Regional Centre, Mandapam Camp

Artemia salina is reported from Karsewar island off Tuticorin, Gulf of Mannar. Their probable distribution by flamingos which frequently visit *Artemia* habitat is discussed.

The occurrence of *Artemia salina* was first reported in India from the salt ponds at Vadala, on the outskirts of Bombay, by Kulkarni (1953). Baid (1958) reported this species from Sambhar Lake, Rajasthan, and worked on the larval development of this species. Recently Royan *et al.* (1970) recorded this species from the salt pans and storage lakes at Veppalodai near Tuticorin. The present author, in the course of his collection of polychaetes from the neighbouring islands off Tuticorin, has had the occasion to collect *Artemia salina* from Karsewar island, which is about 7 km from the coast, in the Gulf of Mannar, in November 1966.

A good concentration of *A. salina* was noticed in the lagoon bordering the island. The island is situated within the 6-7 m depth line and is uninhabited, though occasionally visited by local fishermen. The vegetation is typical of the saltish swamps but with shrubs not more than 1.2 m height. The island is of coarse sand on the western side, and of finer sand on the eastern side. The lagoon on the eastern side is about 220 sq.m in area and is cut off from the sea by a sand bar of about 6 m width. From the tide marks it is evident that during high spring tides, the sea water overflows into the lagoon and by subsequent evaporation the salinity of the lagoon water goes up. The bed of the lagoon is of dark brown mud mixed with a good amount of plant matter due to the decaying leaves from the surrounding thorny bushes.

The concentration of the brine-shrimp in the lagoon water was high enough to enable a good collection of adult as well as post-larval stages by a simple process of dipping small containers and bating out the sample even without the help of a net.

1. Present Address: Central Marine Fisheries Research Institute; Sub-station, Vizhinjam, via Trivandrum.

The larger specimens in the collection measured 7 to 11 mm and all were females. One specimen of 10 mm had eggs of 0.135 mm diameter in the uterus. Eggs were not seen in other females. It is known that the early developmental stages take place inside the uterus and the larvae hatch out in broods, except in case of resting eggs.

The post-larva measured 0.570 mm in length and 0.225 mm at the cephalic region. It appeared to be between stages 1 and 2 described by Baid (1967) having appendages (3 pairs) as in stage 1, but otherwise resembling stage 2. The trunk segmentation was not demarcated and the rudiments of the caudal cirri were just differentiating from the adjacent region. Accordingly, the larvae at the time of collection might have been actively swimming. The lagoon water also contained insect larvae which are common in *Artemia* habitats.

Artemia eggs are finer in size than the medium sand grains and there is every possibility of their distribution by migrating birds. One of the interesting facts about the flamingo, *Phoenicopterus*, is that its staple food includes chironomid larvae and crustaceans, (*A. salina*) along with water plants, small fishes and organic mud, as reported by Ali and Ripley (1968). Flamingos are known from throughout the Indian sub-continent and Ceylon but the only known nesting ground in this region is the Rann of Kutch (Ali and Ripley, 1968). The migratory waders and flamingos in thousands are said to approach the Vedaranyam salt swamps near Point Calimere on the southeast coast of India in the winter months (Ali, 1963) Karsewar island from where *Artemia* is reported here is off the vicinity of the salt pans at the northern side of Tuticorin and is only about 230 km south of Point Calimere, more or less in the migratory route to Ceylon. Hence there is every possibility that the eggs of *Artemia* are distributed by the birds visiting these areas. The high tolerance of variable physico-chemical conditions in the species, the capacity of eggs remaining dormant for more than a year and the frequency of parthenogenesis in these forms add up to a special advantage of their distribution through migrating birds.

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