

were trapped in a compartment of freshwater by placing two closely-meshed bamboo lattices across the stream. The fry were later transferred to a conditioning box by means of a fine-meshed hand-net. 30,700 Mulletts of the above two species were thus collected in the course of one month and transplanted in 14 tanks in Nellore and 12 in Kistna Districts. The maximum mortality during the entire process was 5 per cent.

It is clear from the above experiment that it is easy to collect on a large scale and transplant these naturally acclimatised Mullet fingerlings without any elaborate conditioning. The mortality is low and the fry stand transport admirably well. The creeks at Wollapaliem thus afford excellent collection grounds for the fingerlings of *Mugil dussumieri* and *Mugil oer* which like other Mulletts can considerably augment freshwater pisciculture.

Pearl and Chank Fisheries,
Tuticorin,
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1. Published with the permission of the Director of Industries and Commerce, Madras. 2. Devanesen, D. W., and Chacko, P. I., *Pro. Nat. Inst. Sci. India*, 1943 9, 249. 3. Venkataraman, R. S., *Curr. Sci.*, 1944, 14, 239.

ON THE OCCURRENCE OF *SQUILLA HIEROGLYPHICA* KEMP (CRUSTACEA, STOMATOPODA) IN THE COASTAL WATERS OF TRAVANCORE*

Squilla hieroglyphica was briefly described by Kemp¹ in 1911 from a single female specimen measuring 53 mm. in length, from an unknown locality. In his later monograph he gave a more detailed description of the species, but was unable to give any particulars about the provenance of the specimen, beyond stating that there was little doubt that it had been found within the Indo-Pacific region. The type-specimen (No. 7327/10) is preserved in the collections of the Zoological Survey of India and bears a "no-history" label. The species does not appear to have been recorded since the publication of Kemp's original description.

In the course of my researches on the "Bottom Fauna and Bottom Deposits of the Travancore Coast within the 15 fathom line", I obtained a male specimen of *S. hieroglyphica* measuring 61 mm. from the Trivandrum Coast at 12 fathoms. The sea bottom in this region is mostly composed of fine black sand with a small percentage of mud, shells and shell-fragments. The specimen agrees closely with Kemp's type-specimen and description of the species.

As stated by Kemp,² the nearest ally of *S. hieroglyphica* is *S. laevis* Hess from New South Wales; but, apart from other characters, the two species can be easily distinguished from one another by the presence of five teeth on the raptorial dactylus in the former and of six in the latter.

The colouration of *S. hieroglyphica*, as described by Kemp, appears to be very character-

istic. The exact colour pattern of my specimens unfortunately was not noted at the time of collection and though the general colouration is more or less as described by Kemp, the distribution of black chromatophores cannot be easily made out. Traces of dark pigment spots are, however, visible on the carinae and the dark chromatophores on the telson can also be faintly seen. The whole colour pattern appears to have faded, and the three pigment spots on the eye stalks, mentioned by Kemp, cannot be made out.

I am thankful to Dr. B. N. Chopra, Director, Zoological Survey of India, for helping me in identifying the specimen and for the necessary facilities in the laboratories of the Zoological Survey.

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* Published from the Zoological Survey of India.

1. Kemp, *Rec. Indian Mus.*, 1911, 4, 96. 2. —, *Mem. Indian Mus.*, 1913, 4, 51.

PERITROPHIC MEMBRANE IN *SCHISTOCERCA GREGARIA* FORSK. THE DESERT LOCUST

The peritrophic membrane in *Schistocerca gregaria* Forsk. is formed primarily as a single layer by bands of epithelial cells situated a little posteriorly to the anterior limit of the mid-gut while the striated cells of the mid-gut epithelium along its entire length assist in the formation of loosely connected rather concentric lamellar portion of the peritrophic membrane.

In the ventricular part of the alimentary canal, fixed in Bouin's Fluid, the anterior region of the mid-gut containing the band of epithelial cells can be clearly made out when the gut-contents have been thoroughly removed. The oesophageal valve does not extend far enough into the mid-gut to act as a so-called "press" for the peritrophic membrane. In fact the valve does not reach upto the band of epithelial cells.

It seems possible that in those Acridiids in which the bands of cells in the anterior portion of the mid-gut is present, the membrane is formed partly by the band of epithelial cells of that region as a single lamella and is reinforced by the peritrophic membranes produced as detached layers by the striated secreting epithelial cells of the entire mid-gut. In the insects in which this anterior band of epithelial cells is absent, the general striated epithelial cells of the mid-gut secrete the membrane. The formation of the peritrophic membrane takes place apparently when the normal secretion of the cells is inhibited at the time of feeding.

A detailed work on this line will be published elsewhere later.

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