

ECONOMIC IMPORTANT OF NEURO SECRETORY ORGANS IN FRESH WATER
PRAWN

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ABSTRACT

Now a day, Prawn is the famous and highly demanded in world market. Because it is tasty and healthy food of my society. Many of the crustacean hormones and neurosecretory in origin. Enami (1951) recognized first time the presence of neurosecretory cells in the central nervous system of the crab of genus sesarwa. In view of air meagers knowledge related to neurosecretion in freshwater prawns. The present investigation was undertaken to study the neuroendocrine system of the prawn.

INTRODUCTION

The freshwater resources of the country are huge that could be put to different fish culture practices or even culture based capture in case of large water bodies. The ecological needs and physiological system with regard to maturation, breeding and endocrine control of fresh water prawn. Several decapod crustaceans constitute as a high value tasty food items, all over the world.

MATERIAL AND METHODS

For the purpose of study of ovarian cycle, the prawns were segregated depending upon their ovarian condition viz, pre vitellogenic I, II and spent, collected prawns were sacrificed and their eye. Stalls brains and the thoracic ganglia were dissected out and fixed in Bouiris fluid. The material was the processed for histological preparation as per procedure described earlier. The neurosecretory profile of the other groups was compared.

OBSERVATION

Male and Female specimens were identified on the basis of their size difference and presence of respective gonads. It was difficult to recognize. The sexual dimorphism in young ones hence, they were classified as Juveniles. The numerical abundance of each sex juveniles was recorded as in percentage of occurrence. The male is bigger in size, possess a narrower abdomen as compared to females, in the male second chellate legs are longer, stronger and sping than the female each second pleopod bears an additional process.

**CELL DIAMETER, NUCLEAR DIAMETER, CELL COUNT AND THE
NEUROSECRETORY MATERIAL INTENSITY IN ‘C’ CELLS OF THE EYE-STALK
OF FEMALE *M.MALCOLMSONII***

| Month | Cell diameter (μm) mean \pm SD | Nuclear diameter (μm) mean \pm SD | Total number Of cells | NSM intensity |
|-----------|---|--|--------------------------|---------------|
| November | 23.5 \pm 0.81 | 11.21 \pm 0.42 | 10.00 \pm 3.8 | + |
| December | 24.1 \pm 0.52 | 11.33 \pm 0.28 | 17.00 \pm 3.3 | + |
| January | 28.7 \pm 0.44 | 11.89 \pm 0.58 | 26.00 \pm 2.1 | ++ |
| February | 26.2 \pm 0.76 | 12.03 \pm 0.74 | 29.00 \pm 8.6 | +++ |
| March | 37.1 \pm 0.92 | 12.61 \pm 0.61 | 21.00 \pm 6.2 | ++ |
| April | 33.9 \pm 0.67 | 12.12 \pm 0.53 | 18.00 \pm 7.4 | ++ |
| May | 29.3 \pm 0.46 | 11.99 \pm 0.88 | 12.00 \pm 3.5 | + |
| June | 22.8 \pm 0.71 | 11.42 \pm 0.49 | 09.00 \pm 4.3 | + |
| July | 27.1 \pm 0.34 | 0.55 \pm 0.42 | 16.00 \pm 9.6 | ++ |
| August | 32.9 \pm 0.61 | 12.08 \pm 0.55 | 24.00 \pm 9.5 | +++ |
| September | 30.2 \pm 0.40 | 11.91 \pm 0.45 | 19.00 \pm 3.4 | ++ |
| October | 26.4 \pm 0.53 | 11.58 \pm 0.63 | 13.00 \pm 5.5 | + |

+++ = Active, ++ = Moderate, + = Normal.

CELL DIAMETER, NUCLEAR DIAMETER, CELL COUNT AND THE
NEUROSECRETORY MATERIAL INTENSITY IN 'D' CELLS OF THE EYE-STALK
OF FEMALE *M.MALCOLMSONII*

| Month | Cell diameter (μm) mean \pm SsD | Nuclear diameter (μm) mean \pm SD | Total number Of cells | NSM intensity |
|-----------|--|--|--------------------------|---------------|
| November | 17.62 \pm 0.98 | 7.48 \pm 0.42 | 080.00 \pm 13.6 | - |
| December | 17.90 \pm 0.62 | 7.56 \pm 0.98 | 106.00 \pm 09.6 | + |
| January | 18.28 \pm 0.45 | 7.69 \pm 0.22 | 072.00 \pm 10.2 | - |
| February | 19.23 \pm 0.33 | 7.78 \pm 0.29 | 058.00 \pm 07.8 | + |
| March | 17.11 \pm 0.21 | 7.31 \pm 0.62 | 095.00 \pm 06.1 | ++ |
| April | 16.29 \pm 0.46 | 7.02 \pm 0.19 | 062.00 \pm 10.8 | + |
| May | 15.93 \pm 0.60 | 7.00 \pm 0.27 | 112.00 \pm 04.6 | - |
| June | 15.18 \pm 0.86 | 6.98 \pm 0.78 | 120.00 \pm 05.5 | - |
| July | 16.22 \pm 0.40 | 7.02 \pm 0.31 | 129.00 \pm 09.9 | + |
| August | 16.80 \pm 0.56 | 7.27 \pm 0.46 | 116.00 \pm 14.6 | ++ |
| September | 17.02 \pm 0.72 | 7.30 \pm 0.56 | 097.00 \pm 15.1 | + |
| October | 17.42 \pm 0.19 | 7.36 \pm 0.63 | 120.00 \pm 10.5 | - |

++ = Moderate, + = Normal, - = Negative.

DISCUSSION

Crustaceans neurosecretory hormones, synthesized in the cells bodies of the medula terminalis. X-organ are transported within granules along axon to the single gland. In the present investigation, the sinus gland is situated near to the MT and MI. This findings gets supports from the observations of Joshi(1980) that the sinus gland is extended. The occurrence of single giant neuron in the optic ganglion of *M.malcolmsonni* is characteristics of freshwater prawns.

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