

**NOTES ON ANIMAL ASSOCIATIONS. 2. THE SCYPHOMEDUSA,
ACROMITUS FLAGELLATUS STIASNY AND YOUNG *SELEROIDES*
LEPTOLEPIS (CUVIER & VALENCIENNES) WITH THE LATTER
FORMING A VANGUARD**

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INSTANCES of young fishes swimming under the umbrella of jellyfishes and taking refuge in their subgenital cavities and grooves at the base of the mouth arms when alarmed are well known. The fishes associated with medusae are mostly carangids and gadids. Panikkar and Prasad (1952) have described the association between *Rhopilema hispidum* Maas and the young of *Caranx kalla* Cuvier & Valenciennes. The association described in the present article differs from the previous records in that the fish were found to move in advance of the medusa as a vanguard.

On 28-4-1960 at about 7.00 a.m., while making underwater observations with the help of mask and snorkel on an interesting case of association between an alpheid and a gobiid fish, which will be described in a subsequent number in this series, my attention was directed to a jellyfish in the neighbourhood by Mr. P. V. Ramachandran Nair, one of my colleagues, who had accompanied me. In association with it were a number of small fish which unlike in other recorded cases remained above the umbrella of the jellyfish and moved in advance in jerks pausing intermittently and in rhythm with the movement of the medusa. The fish kept themselves close to the medusa but not in actual contact with it. Their movements were so well synchronised that it would appear that the fish, which were never seen to turn round or make any special attempt to check the position of the jellyfish, could anticipate the direction in which and the distance to which the latter would move.

The medusa was of light pinkish colour and in the clear water the silvery sheen of the fish reflected brightly against the morning sun and the whole scene presented a most interesting sight through the magnified view offered by the mask. The jellyfish was capable of active movement and attempts made to separate the fish from it did not meet with complete success. Whenever some got scattered or separated from one another they lost no time in re-forming into a compact group ahead of the medusa to resume the characteristic movement in 'fits and starts'. On the particular day I had taken with me an artist who was provided with a mask and snorkel for assisting me in making underwater diagrams and we followed the medusa and the associated fish for a considerable time to observe their behaviour. The drawing made by him is given in Plate I.

The medusa and the fish were brought to the laboratory to be photographed alive but though the former remained in good condition and showed active movements within the confines of a small jar, all the fish died except one. The surviving fish despite signs of exhaustion strived to keep itself ahead of the medusa. The jellyfish was identified as *Acromitus flagellatus* Stiasny, a common medusa on the East Coast of India (Menon, 1930) but apparently not very common in the Gulf

of Mannar or Palk Bay. The preserved specimen has a diameter of 110 mm. and the excumbrellar surface bears numerous brown spots. The associated fish were the young of *Seleroides leptolepis*, a common carangid in the Palk Bay. There were 32 specimens in all measuring from 10.6 to 30.0 mm. These are being described elsewhere.

On the same day, a small specimen of *Mastigias papua* L. Agassiz with two young specimens of *Carnax kalla* under the umbrella were collected and the above are shown on the right hand top corner of the drawing (Plate I). In this case it could be said that the fish might derive some benefit by way of protection from enemies. Similar association with carangids have been noticed in a few other species of medusae also in this area.

Annandale (1915) described from the Chilka Lake *Acromitus rabanchatu* which resembles very much the above species. Unlike *A. flagellatus* this appears to be a 'sluggish medusa' with slow and feeble pulsations and with the stinging cells having 'little or no effect on the human skin.' Though found in large numbers both in brackish waters and in the sea, no instance of any fish in association with *A. rabanchatu* has been reported so far.

In the present case the exact significance of the association is not known and any explanation could only be matter of conjecture. The question of protection to the fish as in other recorded cases does not arise here since they swim in advance of the medusa. It will be interesting if observations could be made on *A. flagellatus* elsewhere to see if the same type of association is a common feature and also if there is any specificity in partnership.

My sincere thanks are due to Messrs. P. V. Ramachandran Nair and C. Sankarankutty who accompanied me and helped me in making these observations. I am grateful to Dr. R. Raghu Prasad for kindly identifying the two medusae for me.

REFERENCES

- ANNANDALE, N. 1915. Fauna of the Chilka Lake. The Coelenterates of the Lake with an account of the Actinaria of the brackish water in the Gangetic Delta. *Mem. Indian Mus.* 5(1):65-114.
- MENON, M. G. K. 1930. The Scyphomedusae of Madras and the neighbouring coast. *Bull. Madras Govt. Mus.* (N.S.) 1 (2): pt. 4:1.
- PANIKKAR, N. K., AND R. R. PRASAD. 1952. On an interesting association of ophiuroids, fish and crab with jellyfish, *Rhopilema hispidum*, *J. Bombay Nat. Hist. Soc.* 51(1):295-296.

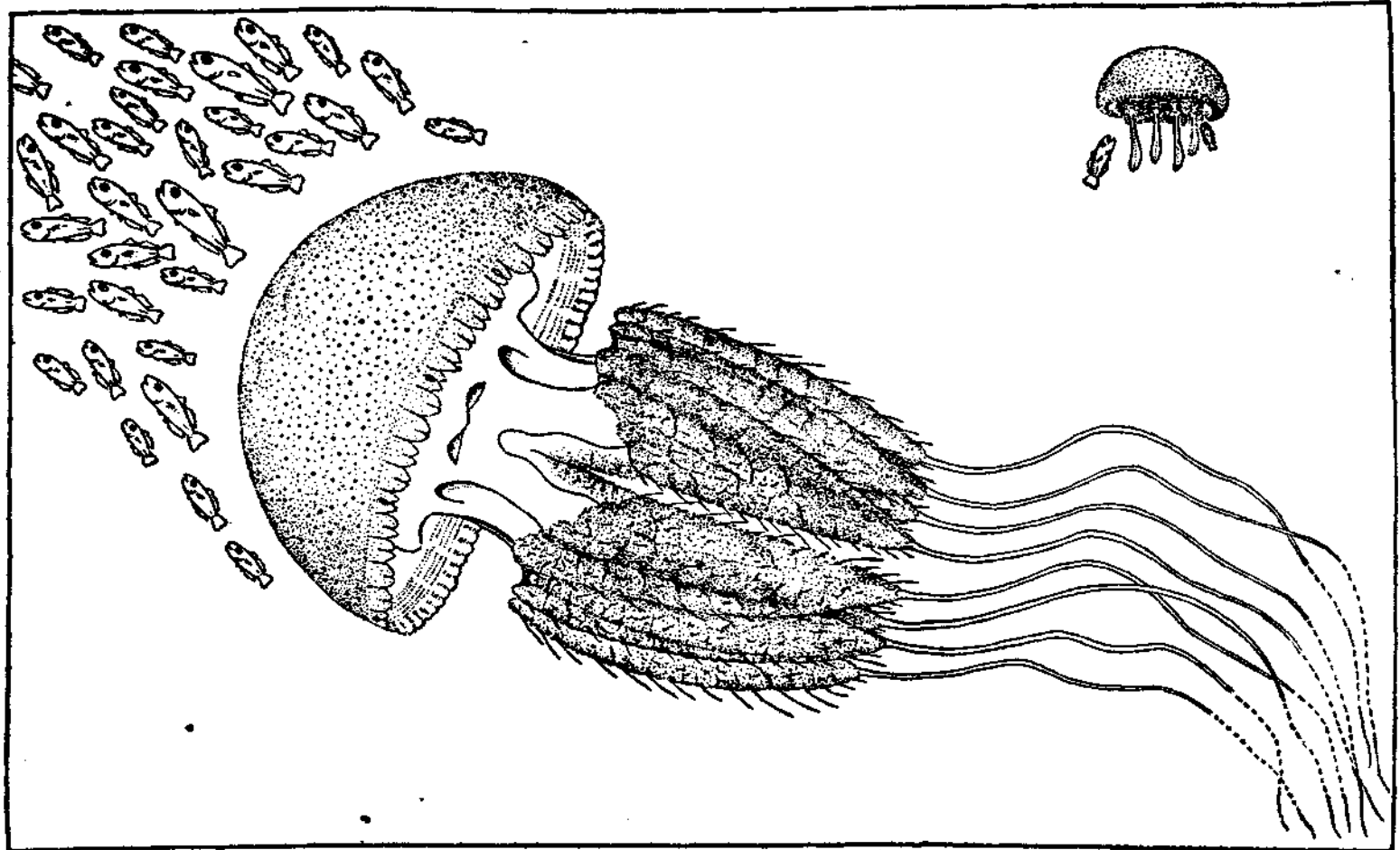


PLATE I: A semidiagrammatic view of the association between *Acromitus flagellatus* and *Seleroides leptolepis*. On the right top is shown *Mastigias papua* in association with two young *Caranx kalla* (By Mr. K. L. K. Kesavan)