

extraction but not after, suggests the presence of phospholipid. This substance may be incorporated in the membranes bounding the secretory granules. The PAS positive reaction suggests that the secretory material might be a glycoprotein as in the case of *Parreysia corrugata* (Nagabhushanam and Lomte, 1971). The carbohydrate might be glycogen, as has been suggested for vertebrate neurosecretory material (Schiebler, 1952). In any case it signifies that the carbohydrate moiety might be associated with the neurosecretory protein of *Mytilus*.

This research was supported by a grant of Office of Naval Research contract NOOO 14-70-C-0172 from Washington, D. C., U. S. A.

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#### REFERENCES

- ANTHEUNISSE, L. J. 1963. *Arch. Neerland. Zool.*, 15 : 237-314.
- FAHRMANN, W. 1961. *Zeit. für Zellforsch.*, 54 : 689-716.
- GABE, M. 1955. *C. R. Acad. Sci. (Paris)*, 240 : 1810-12.
- LUBET, P. 1955. *Ibid.*, 241 : 119-121.
- NAGABHUSHANAM, R. 1968. *Bull. National Inst. Sci. India*, 36 : 1-16.
- , B. M. MANTALE U. H. MANE AND R. S. DESHMUKH 1972. *2nd All India Symp. Estuarine Biology, Porto Novo* (In Press).
- , AND V. S. LOMTE 1971. *Marath. Univ. J. Sci.*, 10 : 201-204.
- PEARSE, A. G. E. 1960. *Histochemistry, Theoretical and Applied*. Little, Brown, Boston, Massachusetts, U. S. A.
- SCHIEBLER, T. H. 1952. *Exp. Cell Res.*, 3 : 249-250.

### ON BUCCAL PAPILOMA OF *TACHYSURUS PLATYSOMUS* (DAY)

#### ABSTRACT

Buccal papillomas were observed in the floor of the buccal cavity of a cat-fish *Tachysurus platysomus* (Day) collected from Mandapam (Gulf of Mannar) in the trawl net. The size of the tumor varied from 3 mm to 10 mm. The tumor was lobulated with keratinised surface and the epithelial tissue was supported by connective tissue stroma. All the specimens collected till now with tumor were females.

In fishes epithelial papillomas are the commonest of two types of neoplasms. The earliest known report was that of Keysselitz (1908) on the lips of *Barbus fluviatilis*. Later in 1909, Feibiger reported the formation of epidermal papillomas on *Anabas scandens*; followed by the observation of Breslaver (1916) on the lips, buccal mucosa and fins of *Osmarus eperlanus*. Lucke and Schlumberger (1941) described epithelioma on the lips and buccal cavity of nearly 200 *Ameiurus nebulosus*. Stoik (1956) reported a number of cases of carcinomas in *Xiphiphorus helleri*, *Ephippicharax*

*orbicularis* and *Etroplus maculatus*. Steever (1968) noticed a single large epithelial papilloma located in the middorsal line between the eyes of a brown bull head (*Ictalurus nebulosus*). McFarland (1901) also observed tumor formation on the lips of *Ictalurus*.

In addition to the epithelial papillomas, several instances of tumor formation in fishes have been observed in the dental region, stomach, intestine, liver, pancreas, kidney, ovary, urinary, bladder, thyroid, pituitary and swim bladder. Satyanesan (1966) noticed glomerular cystic tumor in *Mystus vittatus*.

A papilloma was observed in the buccal cavity of a catfish, *Tachysurus platysomus* (Day) collected from Mandapam (Gulf of Mannar) in a trawl net on November 16, 1969. The tumor came to notice only by opening the buccal cavity of the fish. The total length of the fish was 254 mm and weight 202 grams and the fish was in good health and without any change in the body form except for the tumor. The catfish was a female with the gonad in stage III maturity. The fish was well fed and an examination of its stomach showed the presence of food items such as small crabs and prawns.

In the anterior part of the floor of the buccal cavity a single large hemispherical tumor with a diameter of 15 mm and a height of 10 mm was present. It was lobulated with a thick keratinized surface (Fig. 1 A).

Later 14 more specimens of *T. platysomas* were collected from Gulf of Mannar during the months November 1969 to February 1970 (Table 1). All the specimens were with papillomas in the buccal cavity and the size of the tumor varied from 3 mm to 10 mm in height. In one specimen it was found in the form of two buds only. The size of the tumor varied with the size of the catfish. It is significant that all the specimens collected till now with tumor were females. The reason for the formation of tumor in females alone is not known.

TABLE 1

| Locality                  | Date of Collection | Size of the fish (mm) | Sex | Size of the tumor (mm) |
|---------------------------|--------------------|-----------------------|-----|------------------------|
| Mandapam (Gulf of Mannar) | Nov. 1969          | 254                   | F   | 10                     |
|                           |                    | 235                   | F   | 7                      |
|                           |                    | 245                   | F   | 7                      |
|                           |                    | 217                   | F   | 4.5                    |
| Do                        | Dec. 1969          | 275                   | F   | 10                     |
|                           |                    | 260                   | F   | 6.2                    |
|                           |                    | 217                   | F   | 1                      |
| Do                        | Jan. 1970          | 160                   | F   | 1                      |
|                           |                    | 243                   | F   | 5.6                    |
|                           |                    | 198                   | F   | 1.3                    |
| Do                        | Feb. 1970          | 255                   | F   | 6                      |
|                           |                    | 237                   | F   | 7.3                    |
|                           |                    | 171                   | F   | 1.7                    |
|                           |                    | 209                   | F   | 3                      |

The lobulations of the tumor becomes conspicuous only when it grows to a larger size. In the early stages of its formation it was just a thickening in the floor of the buccal cavity. There was no invasion of tumor tissue into the deeper layers nor anywhere in the other body parts. There was no noticeable inflammatory reaction.

Historical structure of this papilloma is similar to that of epidermal papilloma observed in Atlantic eel *Anguilla vulgaris* by Days (1969). The papilloma con-

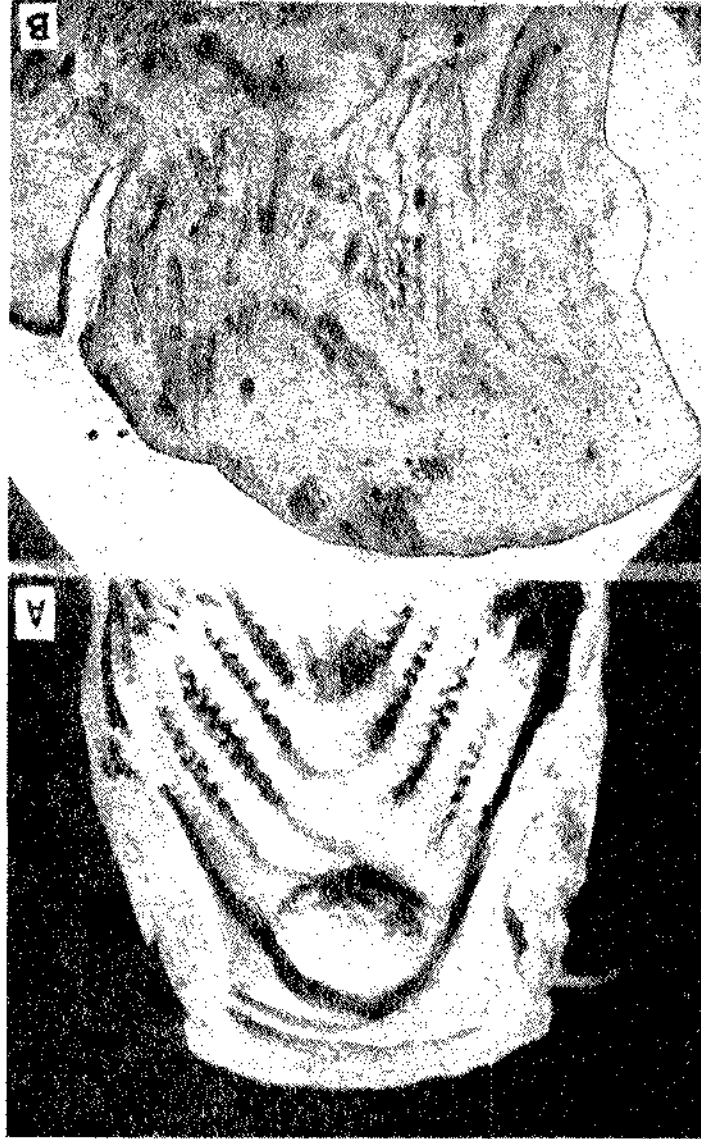


Fig. 1. A. Papilloma on the floor of the buccal cavity of *Tachysurus platysomus*; B. Photomicrograph of section of papilloma shown in A. Haematoxylin and eosin.

sists of epithelial tissue, with a thick keratinized edge. This epithelial tissue layer is supported by connective tissue stroma containing spaces which were filled with blood plasma and mucous cells. (Fig. 1 B).

I am grateful to Dr. R. V. Nair, Deputy Director, Regional Centre of Central Marine Fisheries Research Institute, Mandapam Camp for his kind guidance and encouragement during the course of this study and for suggesting improvements in the manuscript. I am also thankful to the Ministry of Education, Government of India for awarding me a Senior Research Scholarship during the tenure of which the work was carried out.

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#### REFERENCES

- \*BRESLAVER, T. 1916. *Arch. Mikr. Anat.*, **87** : 200-264.  
DAYS, B. F. 1968. *National Cancer Institute Monograph*, **31** : 187-194.  
\*FIEBIGER, J. 1909. *Z. krebsforsch*, **7** : 165-179.  
HARRISON, R. S. 1969. *National Cancer Institute Monograph*, **31** : 215-217.  
\*KEYSSELITZ, G. 1908. *Arch. Protistenk*, **11** : 326-333.  
LUCKE, B AND H. G. SCHLUMBERGER 1941. *J. Exp. Med.*, **74** : 397-408.  
MCFARLAND, J. 1901. *Proc. Path. soc. Phila.*, **4** : 81-97.  
SATHYANESAN, A. G. 1966. *Trans. Amer. Micr. Soc.*, **85** : 53-57.  
STOLK, A. 1956. *Proc. kon. Nederl. Akad. wet (Biol. Med)*.

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\*Not referred to in original.