ON SOME EYE ABNORMALITIES IN THREE SPECIES OF FLAT-FISHES FROM PORTONOVO WATERS

ABSTRACT

Eye abnormalities in three species of flat fishes have been described in the present note from Porto Novo Waters.

THE migration of one of the eyes to the other side of the head is an important event in the metamorphosis of flatfishes. A large number of instances of eye-abnormalities of various degrees in flatfishes have been reported from India. Seshappa (1968) has described a specimen of *Cynoglossus semifasciatus* Day, with the right eye on the blind side of the head, almost in the original unmetamorphosed symmetrical position and this is apparently the first instance of this kind recorded for any flatfish in the Indo-Pacific region. Seshappa (1970) has later described some eye-abnormalities, such as one-eye missing, reduction in the size of the right eye, cases of hidden right eye and cases of normal right eye developed in the larval position all in the Malabar sole, *Cynoglossus macrostomus* Norman. From Soleidae (Order: Pleuronectiformes) only one instance (Houde, 1971) has been recorded about the eye-abnormalities from laboratory reared specimens. The present note is a record of the eye-abnormalities observed in three species of flatfishes from PortoNovo waters.

Three species of abnormal flatfishes belonging to families Soleidae (*Zebrias altipinnis* (Alcock) and to Cynoglossidae, (*Cynoglossus monopus*) (Bleeker) and *C. semifasciatus* Day has one eye missing. The details are as follows:

Zebrias altipinnis (Alcock) Plate (I A)

A specimen of the 'Zebra sole', *Zebrias altipinnis* (Alcock) was obtained on 16–10–1972 at PortoNovo from the commercial catches along with other flatfishes from a trawl net operated at a depth of 15 to 20 fathoms. The chief morphometric and meristic characters of the specimen are:

Total length – 225 mm; standard Length – 192 mm; head length – 42 mm; maximum body depth – 89 mm; eye diameter – 7 mm; number of rays in dorsal fin – 82; number of rays in anal fin – 67 and sex: male. One of the eyes was absent and the missing eye was the left one. The area of the missing eye was indicated by a small depression. Except this minor variation, in all other aspects it resembled the normal specimens.

Cynoglossus monopus (Bleeker) (Plate I B)

A large number of specimens of *Cynoglossus monopus* (Bleeker) were collected on 13–7–1974 at PortoNovo from the commercial catches of which one abnormal specimen was noticed.

The chief morphometric and meristic characters of the specimen are as follows:

Total length – 142 mm; standard length – 132 mm; head length – 27 mm; maximum body depth – 34 mm; eye diameter – 1.5 mm; number of rays in dorsal fin – 116; number of rays in anal fin – 93; number of scales in between the lateral lines of ocular side – 19. Sex : female. In this case the right eye was missing, but a small white tentacle-like structure was seen just above the normal eye and the dorsal side of the head above the eye had a depression which was not present in normal specimens.

Cynoglossus semifasciatus Day (Plate I C)

An abnormal specimen of *C. semifasciatus* Day was collected on 21–7–1974. The chief morphometric and meristic characters of the specimen are:

Total length – 130 mm; standard length – 119 mm; head length – 25 mm; maximum body depth – 33 mm; eye diameter – 2.5 mm; number of rays in dorsal fin – 102; number of rays in anal fin – 76; number of scales. In between the lateral lines of the ocular side – 13. Sex : female. In this specimen one eye was present on the coloured side of the head. It was the right eye that was missing, as in the case of *C. monopus* (Bleeker). But no depression or any traces of the missing eye could be seen.

Seshappa (1968) has described a specimen of Malabar sole, *C. semifasciatus* Day with an eye on the 'blind' side of the head. According to Menon (1969) the true identity of Malabar sole is *C. macrostomus* Norman and not *C. semifasciatus*. The present specimen has been identified as *C. semifasciatus*, (Norman, 1928).

In all these three cases, it is difficult to account for the missing eye.

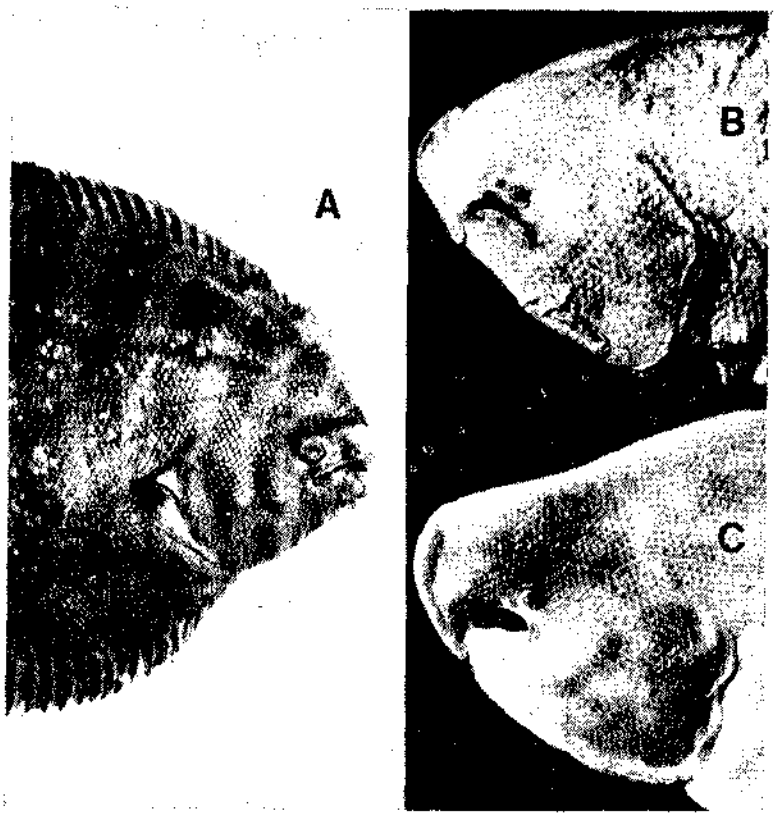

PLATE I. A *Zebrias altipinnis* (Alcock); B. *Cynoglossus monopus* (Bleeker) and C. *Cynoglossus semifasciatus* Day

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REFERENCES

EDWARD, D. HOUDE 1971. *Fish . Bull. (U. S. Dept. Comm.)*, **69**. (3) : 537–544.,

MENON, A. G. K. 1969. *J. mar. biol. Ass. India,* **11** (1 & 2) : 311–315.

NORMAN, J. R. 1928. *Rec. Indian Mus.*, **30** : 173–214.

SESHAPPA, G. 1968. *J. mar. biol. Ass. India,* **10** (2) : 401–402.

————1970. *Ibid.*, **12** (1 & 2) : 171–174.