A CASE OF PARTIAL AMBICOLOURATION COMBINED WITH THE DEVELOPMENT OF AN UNUSUAL ACCESSORY FIN IN *CYNOGLOSSUS MACROSTOMUS* NORMAN

ABSTRACT

A specimen of *Cynoglossus macrostomus* Norman with a regenerated injury was noticed in the fish collections obtained from six fathoms depth off Calicut on 27th January 1965. The specimen was interesting in having an accessory fin running across the body in front of the caudal region on the lower or blind side and also in having normal pigmentation characteristic of the eyed side on the lower surface in the region between the caudal and the accessory fins. Details of this unusual specimen are given and discussed, this being a first record of the kind for this species.

IN a previous communication the author (Seshappa, 1971) has reported the occurrence of partial albinism and partial ambicolouration in *Cynoglossus semifasciatus* Day (= *C. macrostomus* Norman) along with instances of certain lateral line abnormalities. *C. macrostomus* seems to be a hardy species providing instances of considerable degrees of regeneration of natural injuries. Specimens with fresh injuries of a minor nature are common in the commercial catches, these being frequently ignored as injuries that may have occurred during the process of netting or by bites of other fishes, birds and so on. Cases of partially or completely repaired injuries are also quite common, the region mostly affected in such cases being the caudal fin. It would appear that fin-injuries are almost always completely repaired, there being, however, no regularity in the number or the pattern of the fin-rays developed in the regenerated part of the fin. While the normal number of fin rays in the caudal fin of *C. macrostomus* is 10, a larger number is quite frequent in regenerated cases, as many as 18 caudal rays being counted by the author in one case. A lower number than the normal ten fin rays is also sometimes found in the regenerated caudal fins. The size and form of regenerated fin rays are variable to some extent depending on the extent of the injury and repair.

In a specimen collected from six fathoms off Calicut on 27-1-1965 the normal caudal fin is unaffected, but what seems to be most probably a case of regenerated

injury is the transverse cut on the lower surface of the body, and the formation of a completely new fin across the body on this side in the posterior part of the trunk region and anterior to the caudal fin. A point of further interest is that the region of the lower surface behind the abnormal fin and upto the caudal fin, has the pigmentation of the normal coloured side with a well-developed lateral line also within this coloured part. In other words, this is an instance of regeneration with an abnormally developed extra fin and combined also with partial ambicolouration. (Fig. 1a and b).

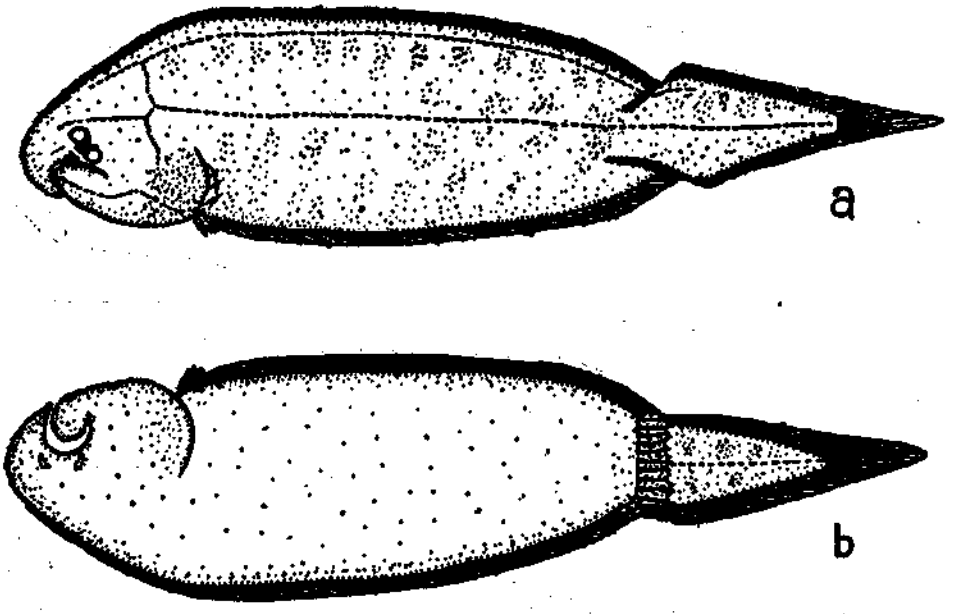

Fig. 1a and b. Abnormal specimen of *Cynoglossus macrostomus* 7.7 cm in total length.

a. eyed side showing constriction of body; and b. blind side showing the accessory fin, and the pigmented nature of the posterior part of the body.

According to Gunther (1880) the power of regeneration in the teleostean fishes is limited to the 'delicate terminations of their fin rays and the various tegumentary filaments', but he adds that wounds affect fishes much less than higher vertebrates, a seaperch or pike surviving the loss of a portion of its tail, and a carp that of 'half of its snout'. Norman and Greenwood (1963) also give a similar opinion and state that abnormalities of fins occur in nature, extra fins developing in unnatural positions and normal fins reduced or even lost. Rae (1965) mentions cases of accessory fins in the lemon sole *Microstomus kitt* (= *Pleuronectes microcephalus*) which he associates with derangement of metamorphosis; he cites four cases of lemon soles in this category presented to his laboratory during the period from 1924 to 1963, the abnormality in each case consisting of accessory fins branching off from the dorsal and ventral fins in the posterior half of the body and extending across towards or over the lateral line.

The present example of an accessory fin in *C. macrostomus* is the first to be recorded for this form. The specimen is a male and measures 7.7 cm in total length

and 6.9 cm in standard length. The middle part of the caudal fin is itself regenerated, having short and slender rays. The accessory fin has 11, rather thick and unbranched rays measuring from 3 to 4 mm in length ; the fin is folded on itself on one side and three of the rays are hidden in this fold. It seems clear that this fin is not formed during metamorphosis as there is a constriction in the body on the coloured side at the level of the fin which suggests a deep injury such as a transverse cut, on the lower side and only a little twist and constriction of the body on the eyed side. The new fin, however, retains continuity with the dorsal and ventral fins on either side, the folds at the sides suggesting that this is an overgrowth on parts of the above fins. The presence of the normal colour of the eyed side and a well-developed lateral line canal in the region behind this fin on the lower surface makes it a difficult matter to guess whether the two phenomena are in any way related to each other, and also to any occurrence of abnormalities in the metamorphosis of the specimen. In the light of other examples cited above, however, it appears that the occurrence of the two phenomena is merely a coincidence, the ambicolouration being, perhaps, caused by genetic aberration and the fin-formation obviously by regeneration.

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