GENERAL AFFINITIES

Nichols and Breder (1928) have discussed the relationship of the members of the group Synentognathi which is divided into two main groups - the Microsquamati and Macrosquamati. The former includes the group Belonidae and Scomberesocidae while the latter includes Hemiramphidae and Exocoetidae.

These authors consider that, of the groups included in Synentognathi, the family Belonidae is the most primitive and its separation from the main trunk "has been early". According to them the presence of the Hemiramphus stage in the development of the Microsquamati does not necessarily mean that the Belonidae have evolved from the Hemiramphidae and it is worthwhile to quote their observations which read as follows:-

"The half-beak tendency is foreshadowed in the young of the needlefishes with a shorter upper jaw. This might be brought forward as evidence of the half-beaks' being ancestral to the needlefishes, but such knowledge as we have of evolutionary drift in marine surface fishes leads us to interpret it otherwise. Larval fish forms are not as a rule parallel to the phylogeny of the adult but specialized adaptations (correlated with different feeding habits, etc.) to the different environment which the young must meet due to its small size. Instances are not lacking where such
specialized larval forms become established as the adult form, making an evolutionary step upward, and it is just this which seems to have taken place in the transition from needlefish to half-beak".

They further mention that, of the Belonidae, *Belone* with its retention of gill-rakers certainly is closest to the base of the Synentognathi evolution.

The present author from a study of the development feels inclined to agree with the views expressed by these authors. The primitive nature of *Belone* is specially borne out by the presence of a transverse commissure connecting the two lateral aortae in its early stages of development and the late retention of the posterior part of the vena capitis medialis. The exit of the glossopharyngeal and vagus nerves through a common foramen metoticum is also a primitive feature as shown by de Beer (1931).