

IDENTIFICATION OF FAMILY SIGANIDAE IN THE RED SEA.

E.M. AMIN AND Kh.A. HUSSEIN

Institute of Oceanography and Fisheries, Alexandria, Egypt.

ABSTRACT

There has been argument on the rabbit fishes (Siganids), and detailed study has not yet been done in the Red Sea. The present comparative study of samples of siganids collected in 1980-1984 from the Red Sea catch (Jeddah region), revealed significant interspecies differences in the merestic characters and morphometric measurements. Their body colouration, blotches and shape of caudal fin were also different. The occurrence of 5 species of siganids was evidenced.

INTRODUCTION

Siganids are lucrative commercial fishes along the Red Sea coast, and widely distributed in the fore-shore. Abundant quantities are yearly caught, mainly by the trammel nets and wire traps.

In recent years, the aquaculture of siganids in cages has greatly succeeded in Red Sea. The fish *Siganus rivulatus* gives from 200 to 300 gms after 9 months feeding in the cages (Thebaity et al., 1984).

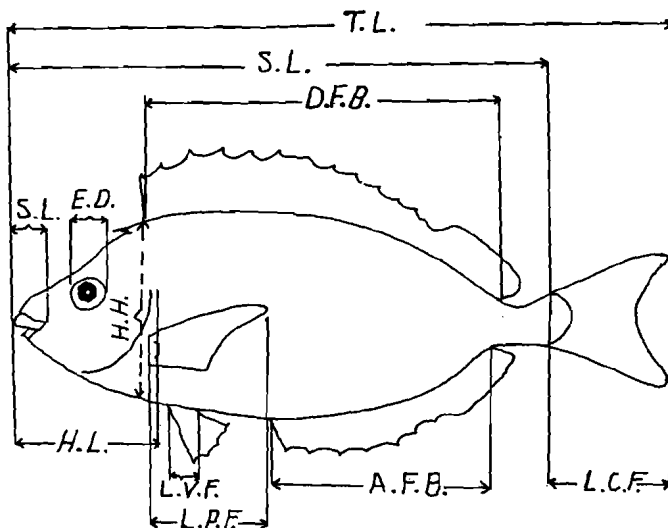
The published information on siganids of Red Sea are incomplete; it was felt desirable to perform a comparative study so as to identify the different species of siganids virtually inhabit the Red Sea.

Al-Kholy (1965) described five species of siganids in the northwestern area of Red Sea (Al-Ghardaqa). Wray et al. (1979) identified only two species in Sudai Arabian Red Sea waters. In the Gulf of Aqaba, four species were noted by Popper et al. (1979). In the present article, the differences between the landed species of siganids in the Red Sea (Jeddah region) were examined through the analysis of their merestic and morphometric characteristics.

MATERIAL AND METHODS

A total of 420 fish samples of siganid species were obtained from the commercial catch in the period from March 1980 to January 1984 from Jeddah region on the Saudi Arabian Coast of Red Sea. Morphometric measurements were made on specimens as illustrated in Fig. 1. Body posture

Fig. 1. Morphometric measurements taken for siganids.



and fin positions were teased into a natural position as to minimize the error of measurements. Total fish length, standard length, head length, eye diameter, inter-orbital space, length of snout, fish depth, and length of fin base were measured to the nearest millimeter. Merestic characters were in turn recorded, fish colour (fresh specimens), number of spines and rays, and shape of fins. Pieces of skin were detached and stained with alizarin for the examination of scales. Obtained data were statistically analysed, Table 1.

RESULTS

Collected siganids samples were similar in most of their morphometric and merestic features. On examination of the obtained measurements and features we could identify five species of siganids found in the studied area and appeared in the landed catch with varying percentages:

1- *Siganus rivulatus* Forskal, Fig. 2.

Synonyms:

Teuthis sigana Gunther.

Amphacanthus siganus Ruppell, Cuv. and Val.

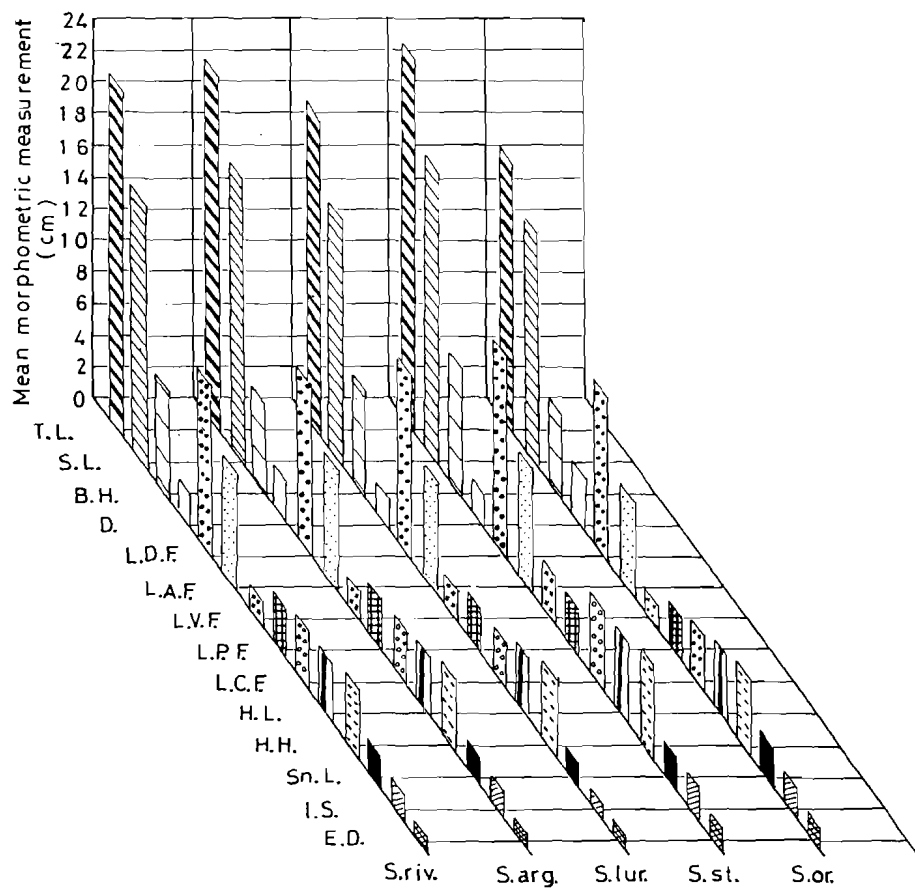


Fig. 4. Morphometric measurements of *S. rivulatus*, *S. argenteus*, *S. luridus*, *S. stellatus* and *S. oramin*.

2- *Siganus argenteus* Quoy and Gaimard, Fig. 5.

Synonyms:

Teuthis argentea Gunther

Amphacanthus argenteus Cuv. and Val.

This species was less common than *S. rivulatus*. It appeared in the commercial catch with varying lengths from 15 to 31 cms. Colour is similar to that of *S. rivulatus*, except in the bluish and yellow tints on the head and flanks. Cheek is rather yellow with some irregular lines.

D. I + XIII - 10, A. VII - 9, V.I - 3 - I, P.15 - 16

The means of morphometric measurements of *S. argenteus* are shown in Table 1, and Fig. 4. The 4th. spine of dorsal fin is the longest, and measures about $\frac{1}{2}$ the head length. The following spines, and up to the 19th. one are of the same length, thence a gradual decrease occurs up to the 13th. spine which measures $\frac{1}{2}$ the length of the 1st. soft ray. The 3rd. spine of anal fin is the longest and equals about $\frac{1}{2}$ the head length. A gradual decrease occurs from the 4th. to the 7th. spine which is nearly equal to the 1st. ray.

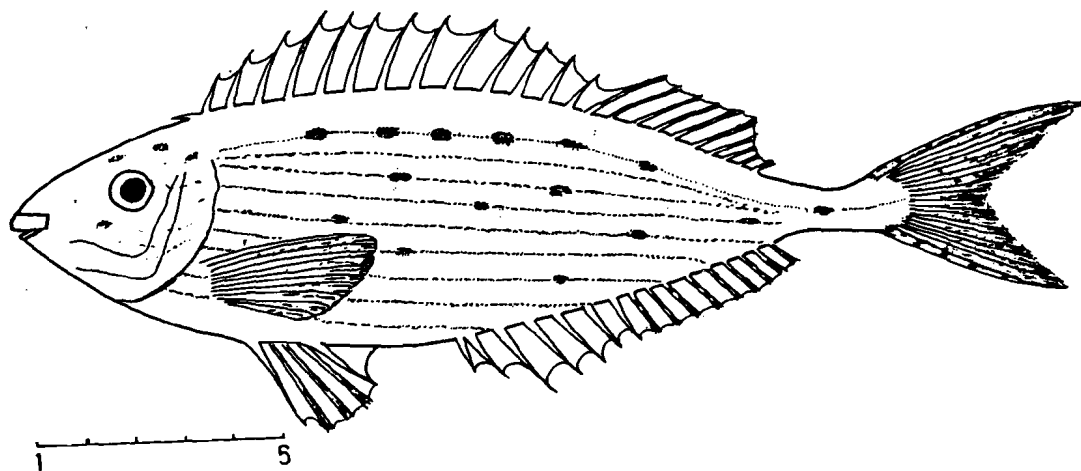


Fig. 5. *Siganus argenteus* Quoy and Gaimard.

3- *Siganus luridus* Ruppell, Fig. 6

Synonyms:

Teuthis lurida Gunther

Amphacanthus luridus Cuv. and Val.

This species was very rare, represented by few individuals, frequently measured from 18 to 28 cms. Colour is olive green or blackish brown.

D. I + XIII - 11, A. VII - 9, V. I - 3 - I, P. 16

The means of morphometric measurements of *S. luridus* are listed in Table 1, and represented in Fig. 4. In Fig. 6, the first four spines of dorsal fin increase posteriorly in length. The 4th. spine measures the same head length without snout. Beginning with the 5th. spine, a gradual decrease in length to the last 13th. which is shorter than the 1st. soft ray. Anal spines increase in length posteriorly to the 3rd. and 4th. spines which measure the same length as the 4th. spine of dorsal fin, and also the head length without snout. A gradual subsequent decrease in length thence occurs up to the last 7th. spine which is shorter than the 1st. anal soft ray, which in turn extends to about the same length of 1st. dorsal fin ray.

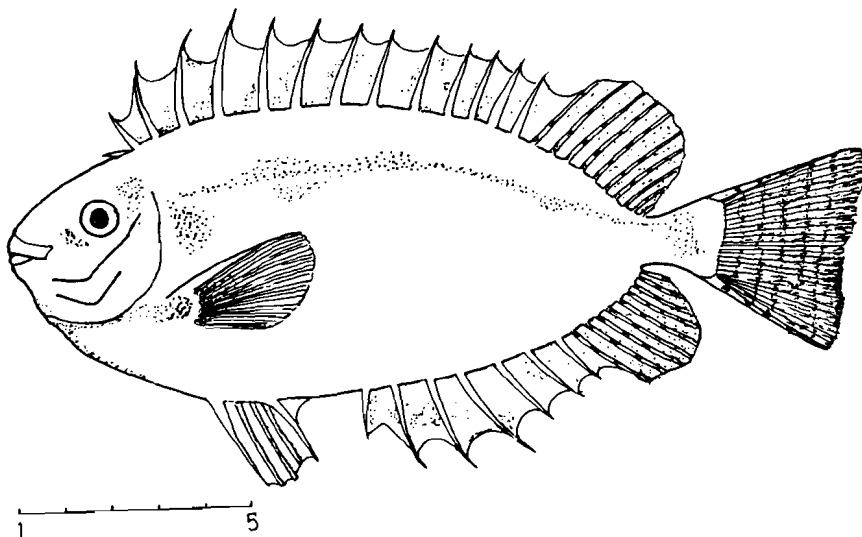


Fig. 6. *Siganus luridus* Ruppell.

4- *Siganus stellatus* Forskal (Fig. 7).

Synonyms:

Teuthis stellata Gunther.

Amphacanthus stellatus Bleeker, Schneider.

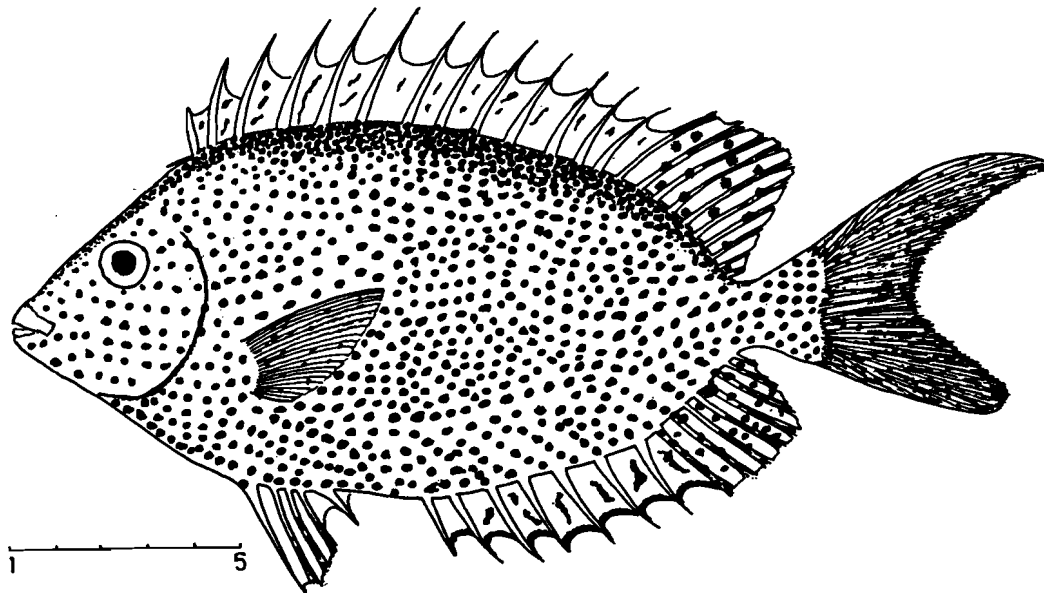
Amphacanthus punctata Ruppell.

Amphacanthus nuchalis Cuv. and Val.

This species was not common. Collected samples varied in length from 20 to 33 cms. Colour is greenish, small brown spots cover the whole body. Other spots of greenish yellow colour are scattered in front of dorsal fin and below the pectorals. Caudal and pectoral fins are yellowish. Dorsal and anal fins are spotted with dark spots.

D. I + XIII - 10, A. VIII - 9, V. I - 3 - I, P. 16.

The means of morphometric measurements of *S. stellatus* are shown in Table 1 and Fig. 4. In Fig. 7, the 5th. and 6th. spines of dorsal fin are the longest, extending to the same length of head without snout. A gradual decrease thence occurs to the last one (13th. spine), which is shorter than the 1st. ray. Anal spines increase posteriorly in length, whereas the last spine (7th.) is the longest but still shorter than the 1st. ray.



Fi. 7. *Siganus stellatus* Forskal.

5- *Siganus oramin* Schneider (Fig. 8)

Synonyms:

Teuthis oramin Gunther.

Teuthis brevirostris Gronov.

Amphacanthus guttatus Bleeker.

A very rare species, few samples were obtained ranged from 11 to 20 cms. Colour is olive green, brownish above with many small rounded pale spots, and a dark blotch above the pectoral base. Dorsal fin is spotted with brown spots, pectorals orange, and caudal with four vertical bars.

D. I + XIII; -10, A. VII -9, V. I -3 I, P. 16.

The means of morphometric measurements of *S. oramin* are listed in Table 1, and represented in Fig. 4. As shown in Fig. 8, the dorsal spines increase posteriorly in length to the 4th. one, they subsequently decrease to the last spine which is shorter 1st. ray. Anal spines increase from the 1st. to the 3rd. and then decrease in length to the last one which measures as the 1st. ray.

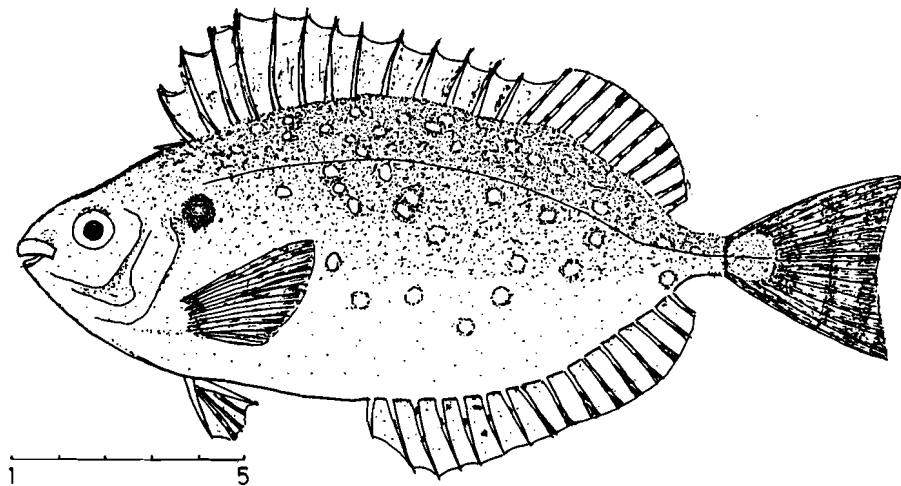


Fig. 8. *Siganus oramin* Schneider.