finger-shaped dark spots at right angles to its border; these indicate
the positions of the fin-rays below the skin.

The network of bright silver bands, with small black spots,
enclosing oval patches of dull greyish silver, and irregular dark marks
on the back and hind end of the body, described by Barnard (1927),
are not indicated in the present specimen.

The specimen will be deposited in the collections of the Zoological
Survey of India.

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Taraporevala Marine Biological Station,
Bombay 2.
B. F. CHHAPGAR

13. A PRELIMINARY ACCOUNT OF THE FLATFISHES
(HETEROSOMATA) FOUND ALONG THE BOMBAY COAST

The flatfishes (Heterosomata) are well represented in the catches
along the Bombay coast and as many as fourteen species have so far
been recorded in the samples of catches obtained during the years
1957-58 from Okha to Malvan. Out of these, the occurrence on this
stretch of coast of three species, Pseudorhombus elevatus Ogilby,
Brachirus commersoni (Lacépède), and Paraplagusia blochii (Bleeker),
is being recorded here for the first time. A list of flatfishes of Bombay,
with a brief account of the variations from previous descriptions with
reference to the morphometric and meristic characters, is given below.

SYSTEMATIC LIST OF FLATFISHES OF THE BOMBAY COAST

Family Psettodidae

Psettodes erumei (Schneider) Marathi, Bhakas; English, Indian Turbot
D. 47-54, A. 35-41.

Common in trawl catches throughout the year. In small numbers
in the inshore waters from September to October.
Hab. East Africa to the Pacific.

1 The area studied and reported on includes the coasts of Maharashtra and
Gujarat States.
**Family Bothidae**

**Subfamily Paralichthinae**

**Pseudorhombus arsius** (Ham.-Buch.) *Marathi, Lepti, Lep.*
Specimens from Bombay, Veraval, and Okha.
Hab. East Africa to Pacific.

**Pseudorhombus elevatus** Ogilby
D. 76-78, A. 57-60, Lt.1. 67-68.
Numerous specimens were collected from wall-nets, locally known as *wana*, during the period December to March on different shore-strips. They were not so common in other months and hence are not of much commercial significance.
Hab. From the Persian Gulf, through the Indian Ocean and Archipelago to Australia.

**Pseudorhombus javanicus** (Bleeker)
Hab. East Coast of India to Malay Peninsula and Archipelago.

**Family Soleidae**

**Brachirus commersoni** (Lacépède)
Depth 3½ to 4, head 5½ to 6, in length; diameter of eye 7 to 10 in length of head. Right pectoral 5 to 7 in length of head. Scales about 155 to 160 in longitudinal series.
Specimens from Bombay and Ratnagiri.
Hab. Seas of India to Malay Archipelago.

**Brachirus orientalis** (Bloch & Schneider)
Specimens from Jaitapur, Malvan, Bombay, Satpati, and Okha.
Hab. From the Persian Gulf, through the Malay Peninsula and Archipelago, to China and Australia.

**Zebrias quagga** (Kaup) *Marathi, Sudi; English, Sole*
Specimens from Bombay and Satpati.
Hab. Seas of India, throughout the Malay Peninsula and Archipelago to China.

**Aseraggodes cyaneus** (Alcock)
Hab. From the Persian Gulf, through the Indian Ocean and Archipelago to the Timor Sea.
Family Cynoglossidae

Paraplagusia bilineata (Bloch) Marathi, Shivra; English, Sole

Specimens from Kodinar.
Hab. From East Africa, through the Indian Ocean and Archipelago to China and Japan.

Paraplagusia blochii (Bleeker)

Specimens from Okha and Kodinar.
Hab. East Africa, throughout the Indian Ocean and Archipelago to Formosa.

Cynoglossus bilineatus (Lacépède)

Specimens from Kodinar, Umarsadi, Kolak, Bombay, and Mithbao.
Hab. From the Red Sea, through the Indian Ocean and Archipelago, to Australia and Japan.

Cynoglossus dispar Day

Depth $3\frac{1}{2}$ to $3\frac{3}{4}$, head $4\frac{1}{2}$ to $4\frac{3}{4}$, in length. Snout $3\frac{3}{4}$ to $3\frac{1}{2}$ in head. Diameter of eye 9 to 10 in head, almost equal to interorbital width; scales 106 to 112 in longitudinal series; two lateral lines on ocular side, separated by 19 to 20 series of scales, two on blind side separated by 23 to 26 series of scales.
Specimens from Bombay.
Hab. Bombay; Madras.

Cynoglossus dubius Day

D. 103-115, A. 84-91.
Depth $3\frac{3}{4}$, head about 4, in length. Snout $2\frac{3}{8}$ in head, diameter of eye 12 in head; two lateral lines on ocular side separated by 20 series of scales.
Specimens from Bombay and Satpati.
Hab. Sind and Baluchistan, Travancore.

Cynoglossus lingua Ham.-Buch.

Few specimens from the trawl catches off Bombay coast.
Hab. Coasts of India to Malay Peninsula and Archipelago.

Cynoglossus macrolepidotus (Bleeker)

Common in the catches along this coast but not of much commercial importance.
Hab. Persian Gulf, seas of India, Malay Peninsula and Archipelago; China.
14. ON THE ABILITY OF GLYPTOTHORAX TELCHITTA (HAMILTON) TO SURVIVE OUTSIDE WATER

During a study of the fish fauna of the upper Gangetic plain, I came across an extraordinary case of the ability on the part of Glyptothorax telchitta (Hamilton), a fish belonging to the family Sisoridae and locally known as tiller, to survive outside water.

On 20 December 1960 I went with some fishermen to Kalinadi (a small stream flowing along the western border of Muzaffarnagar town) to observe the catch and to collect fish for my work. At about 11 a.m. a solitary Glyptothorax telchitta (Hamilton) was netted and I asked the fisherman to keep it separately for me in his basket. At about 3 p.m., when the fishing was over, I selected some more fish, put them all in a paper bag, and reached the laboratory at 3.45. At about 4.30 I took the whole lot of fishes and placed them in a sink for washing. As I opened the tap, I saw, to my surprise, that G. telchitta was still alive. I separated it from other fish and put it in flowing water (a sink full of water with an overflow arrangement). I found that the fish regained its normal activity and to all appearances was none the worse for its ordeal of more than 5 hours outside water. It was perfectly normal and healthy even after five days when I fixed the whole fish in Bouin's fluid for histological examination.

No accessory respiratory organs are known to exist in this species, nor were any discovered on a careful examination. It was noted, however, that all the barbels, the characteristic adhesive pad on the ventral side, and the lips were blood-red in colour after 5 hours' stay outside water. This indicates that all these parts were suffused with an unusual supply of blood to enable them to allow gaseous exchange with the atmosphere necessary for maintaining at least the minimum respiratory activity required for survival. This process may probably be supplemented by the gills by gasping air through the

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