STUDIES IN CARANGID FISHES
No. 3

The genus TRACHINOTUS Lacepede, in the western Indian Ocean

by

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Illustrations by Margaret M. Smith

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To my wife, Margaret M. Smith, I am indebted for the illustrations.
The genus **Trachinotus** Lacepede in the western Indian Ocean
(with Plates 34 to 37)

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Family Carangidae

**Trachinotus** Lacepede, 1802

The type *Scomber falcatus* (non Linn) Forsskal, 1775 = **T. blochii** (Lacep). Compressed more or less deeply ovate body with small rounded scales. Mouth rather small, fine teeth in bands in jaws, on vomer and palatines, become obsolete with age. Lateral line moderately curved in front, no scutes. Scales small, embedded. Head mostly naked. Spinous dorsal of 5-6 spines with one antroverse in front, hidden in adults. Soft dorsal and anal long, front rays more or less produced with age often to falcate lobes. Pectorals and pelvics short. Caudal deeply forked. Small juveniles with 3 large spines on pre-opercle that disappear with growth. Circumtropical, one species in temperate Southern Africa.

Fine game and food fishes. Four species in the western Indian Ocean: one localised, temperate, three more tropical, widely distributed.

**Key to Indo-Pacific species**

A. No spots on body at any stage

I. 16-17 anal soft rays. 18-20 soft dorsal rays. 8-9 normal lower gillrakers (Indo-Pacific) **blochii**

II. 19-21 anal soft rays. 22-23 soft dorsal rays. 12-14 normal lower gillrakers (Southern Africa) **africanus** nov.

B. Spots or blotches on or near the lateral line.

I. Large dark blotches above and touching the lateral line. 11-14 normal lower gillrakers (Indo-Pacific) **russelli**

II. A few small dark spots along lateral line. 14-16 normal lower gillrakers (Indo-Pacific) **bailloni**

157
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<tr>
<td>A II+I</td>
<td>16</td>
<td>17</td>
<td>17</td>
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<tr>
<td>Normal gillrakers</td>
<td>6+9</td>
<td>5+9</td>
<td>6+8</td>
<td>6+9</td>
<td>5+8</td>
<td>5+8</td>
<td>6+9</td>
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</tbody>
</table>
**Caesiomorus blochii** Lacepede 1802: 95 (Madag).

**Trachinotus blochii** Cuvier and Valenciennes 1831: 425 (Madag).
Smith and Smith 1963: 22 Pl 10, F (Seych).

**Scomber falcatus** *non* Linn, 1758) Forsskal 1775: 57 (Red Sea).

**Trachinotus falcatus** *non* Linn) Lacepede 1802: 79 (Madag).
Ruppell 1828: 89 (Red Sea).

Kiener 1961: 332 (not fig 19) (Madag); and, 1963: 72 (not Pl 36) (Madag).


The shape and depth of the body varies with age. In the young it is ovate, with growth it becomes deeper and subrhombic, later it becomes more shallow but oblong.

Depth (to 50mm length) 2.5, (50-100mm) 2.4-1.9, (100-150mm) 1.9-2.1, (above 200mm) 2.1-2.7 in fork length with growth (Table 1). Head 3.4-4.6 in fork length with age. Eye 3.3-4.5 in head, 1-1.7 in interorbital with age. To about 150mm length the eye equals the snout, thereafter slightly less than snout.

The dorsal spines are low, in juveniles with membrane, lost with age. A procumbent spine at front of dorsal obvious in juveniles embedded with age. Front rays of soft dorsal elevated, low in juveniles, increase greatly to lobe much exceeding head at length of about 5-600mm, thereafter diminishes. Anal lobe steadily increases with age until it slightly exceeds head (see Table 1). The pectoral is 2.5 in head in small juveniles and increases to about head length in adults. The pelvics are short, 2-3 in head with age. The caudal is deeply forked to crescentic, the lobes falcate.
To illustrate different body shape.

Above: *Trachinotus africanus* 135mm (East London).
Below: *Trachinotus blochii* 125mm (Beira).
Mouth subinferior, the snout blunt, protuberant. The maxilla reaches below the front of the eye in juveniles, to below the pupil in adults. Teeth obsolete in adults. Lateral line slightly arched over pectoral, thereafter straight to caudal. Scales small, embedded. Head almost naked, a few concealed elongate scales behind eye.

Juveniles silvery, dorsal anal and caudal lobes dusky to black. A large adult taken in Kenya was almost uniform bright golden yellow, darker on the back, pectorals and tips of fin lobes darker.

Described from ten specimens, 37-800mm total length, from Durban, Mozambique, Zanzibar and Kenya.

This species ranges widely in the tropical Indo-Pacific, being known from the Red Sea, India and as far as Australia and the Central Pacific. Reputed to attain close on 1,000mm. Boulenger (1916 loc.cit.) confused East African specimens with *T. falcatus* Linn, from West Africa, his illustration (1916, fig 2) is of a West African specimen. Pellegrin (1933 loc.cit.) and Kiener (1961 and 1963 loc.cit.) continued the confusion in merely copying Boulenger’s illustration.

**TRACHINOTUS AFRICANUS** sp. nov.

(Plates 34, 35)


D2 I 22-23 (4x22 : 4x23). A II+I 19-21 (3x19 : 4x20 : 1x21). P 1,18. Normal gillrakers 8-9+12-14=21-22 total (4x21 : 2x22), plus 1-2 anterior rudiments. The snout is blunt and subvertical, overhanging the mouth. The body is more or less uniformly ovate at all stages to 500mm length, it becomes slightly more elongate with age. Depth 2.3-2.6, head 3.7-4.2 in fork length with age. Eye 3.5-4.5 in head, 1.3-1.7 in interorbital and 1-1.2 in snout, all with age (Table II).

The dorsal spines are low, in juveniles with membrane that is lost with growth. Antrorse recumbent spine apparent in juveniles, later concealed. Front rays of dorsal and anal little elevated in juveniles, more so in adults, attain but do not exceed the head length. The pectoral is 1.5 in the head in juveniles, increases with age to somewhat less than head length. The pelvics are short, about 2.5-2.7 in head. The caudal is deeply forked, the lobes more or less falcate.
Above: *Trachinotus blochii* 420mm (Kenya, after Williams).

Below: *Trachinotus africanus* Type. 375mm (Knysna, S.Africa).
The mouth is sub-inferior, the maxilla reaches below the front of the eye, barely so in adults. Teeth are virtually obsolete in adults. The lateral line is irregularly arched and wavy over the pectoral, thereafter straight to the caudal base. Scales small, embedded. Head almost naked, a few vertically elongated scales behind the eye.

Juveniles silvery with yellow suffusions, tips of dorsal and anal lobes dusky. Adults brilliantly coloured, the back bluish, lower half silvery, the two zones separated by a vague stripe of orange pink from head to caudal base. The dorsal lobe and the base of the soft dorsal dusky, distal half of fin yellow. Body of anal bright yellow, lobe of fin orange red. Caudal dusky yellow basally and out on lobes, hind part of fin yellow. Pectorals and pelvics dusky yellow. Iris silvery.

Found in South Africa along the Cape coast from at least as far west as Knysna (34°S x 23°E), eastwards from there to Natal and Delagoa Bay.

Described from eight specimens, 138-500mm from Knysna, Algoa Bay, Fish Point, East London, Durban and Delagoa Bay. The type, 375mm total length, from Knysna in this Department. As far as at present known attains about 600mm.

This species has long been confused with T. blochii, which it resembles in many respects. It has long been a puzzle that the otherwise strictly tropical T. blochii should live and plainly breed in such temperate sea as that of the south Cape coast.

Investigation now shows this species to be clearly distinct and localised. T. africanus differs constantly from T. blochii in meristic characters, as shown in the key. Also there is distinct difference in shape and in the degree of prolongation of the fins. Half-grown young of T. blochii are distinctly deeper in body and have longer dorsal and anal lobes than equivalent stadia of T. africanus (Plates 34, 35). Also the body shape of the latter is constantly ovoid, not altering as in T. blochii (q.v.). The two species overlap at the extremes of their African ranges, for at least the young of T. blochii reach as far south as Durban, while T. africanus extends northwards to southern Mozambique. In African species T. africanus is most closely related meristically to the eastern Atlantic T. goreensis C & V, 1831 known from tropical West Africa from about 15°N to 5°S, also at the Cape Verde Islands, about 15°N. T. africanus however differs clearly in shape, in gillraker count and in lacking black spots along the lateral line that occur in T. goreensis. T. Africanus also differs clearly from all others known in the eastern Atlantic, in shape, fin and gillraker counts and in the uniformly coloured body without dark spots or marks.

It appears to be the most southerly form in this genus in the southern hemisphere.
Table II

**Trachinotus africanus** sp. nov.

<table>
<thead>
<tr>
<th>Locality</th>
<th>East London</th>
<th>Durban</th>
<th>*Durban</th>
<th>Algoa Bay</th>
<th>Fish Point</th>
<th>Knysna (type)</th>
<th>Durban</th>
<th>Delagoa</th>
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<tr>
<td>Fork length mm</td>
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<td>280</td>
<td>300</td>
<td>315</td>
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<td>Normal gillrakers</td>
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<td>8+14</td>
<td>8+13</td>
<td>8+13</td>
<td>9+12</td>
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</tr>
</tbody>
</table>

* Specimen described by Gilchrist and Thompson (1908 : 187)
Plate 36

**Trachinotus blochii**

Above: 575mm (Kenya). Below: 800mm (N. Mozambique).
Above: *Trachinotus russelii* 500mm (Kenya).
Below: *Trachinotus baillonii* 300mm (N. Mozambique).
TRACHINOTUS RUSSELLII  Cuvier and Valenciennes, 1831
(Plate 37)

Trachinotus russellii  Cuvier and Valenciennes 1831: 436.
Trachynotus russelli : Pellegrin 1914: 228 (N.D. Madag).

Trachynotus oblongus  Gilchrist and Thompson 1908: 187 (Natal).
D2 I 22-23 (5x22 : 5x23). A 11+1 20-21 (5x20 : 5x21). P 1, 16-17.
Normal gillrakers 6-7+11-14 = total 18-20 (2x18 : 6x19 : 1x20), plus 1-2 lower rudiments anteriorly.

Bluish along the back, silvery below. 3-4 large plumbeous blotches along mostly above the lateral line but partly on the line. Vertical fin lobes dusky. Pectoral mainly dusky, pelvics light.

Described from ten specimens, 45-370mm, from Natal, Mozambique and Kenya. This species is rather rare, it was not found by us at Seychelles nor has it been recorded from there. It is however widespread, ranging over a wide area of the tropical Indo-Pacific. It has not yet certainly been recorded from the Red Sea. It is stated to occur there by Williams (1958: 425) but on what authority is not clear. It is reputed to attain at least 600mm.

TRACHINOTUS BAILLONII  (Lacepede, 1802).
(Plate 37)

Caesimorus baillonii  Lacepede 1802: 93.

Trachinotus bailloni  : Cuvier and Valenciennes 1831: 431 (Madag).
Weber and de Beaufort 1931: 288 (Zanz. Madag. E. Indies)
Smith and Smith 1963: 22 Pl 10,G (Seych).


Baissac 1949: 28 (Maur).


Caesiomorus quadripunctatus  Ruppell 1828: 90 Pl 24 fig 1 (Red Sea).
**Trachinotus quadripunctatus**: Cuvier and Valenciennes 1831: 434 (Seych).


In life silvery, darker above, 2-5 small black spots along the lateral line. Falcate lobes of dorsal and anal fins dusky.

Described from three specimens, 280-370mm total length, from Mozambique and Seychelles. Reputed to attain at least 600mm.

Apparently nowhere abundant but widespread, ranges from Natal over East Africa to the Red Sea, India to Japan, Australia and the central Pacific.

**SUMMARY**

The four species of **Trachinotus** from the western Indian Ocean, including **T. africanus** n.sp. from South Africa, are described and figured.
REFERENCES

(Mere records without data or illustrations are not included)


DAY, F. 1875-78, Fishes of India. London. xx, 778p. 198 pls.


-------------------- 1936, A synopsis of the fishes of China. Hong Kong Nat. 7 (3-4):271-315.


