DEPARTMENT OF ICHTHYOLOGY

Rhodes University, Grahamstown

OCCASIONAL PAPER NO. 15

Issued March, 1968

STUDIES IN CARANGID FISHES
No. 4

The identity of **SCOMBER SANSUN** Forsskal, 1775

by

J. L. B. SMITH

Research Professor and South African Council for Scientific and Industrial Research Fellow in Ichthyology, Rhodes University Grahamstown, South Africa

Illustrations by Margaret M. Smith

(Published by the Department of Ichthyology, Rhodes University Grahamstown, South Africa)

ACKNOWLEDGMENTS

I wish to express my gratitude to the S.A. Council for Scientific and Industrial Research for financial assistance, including a special grant to cover the cost of this publication.

I am greatly obliged to Dr. M. L. Bauchot, Paris, and Dr. W. Klausewitz, Frankfurt, for the loan of invaluable early types, without which this work would not have been possible.

To my wife, Margaret M. Smith, I am indebted for the illustrations.

James Leonard Brierley Smith

On January 8, 1968, James Leonard Brierley Smith (1897 - 1968) died in Grahamstown. In a statement he explained he had felt for some time that his mental powers were deteriorating. He dreaded becoming bedridden and helpless from a stroke, and took his own life " . . . probably only a brief anticipation of nature".

His work is to be continued at the Department of Ichthyology, Rhodes University by his wife, Margaret Mary Smith (51), who has been his full-time scientific associate since 1946. The research will be financed as before by the South African Council for Scientific and Industrial Research.

STUDIES IN CARANGID FISHES
No. 4

The identity of **SCOMBER SANSUN** Forsskal, 1775
(With Plates 38 and 39)

by

J. L. B. SMITH

Research Professor and South African Council for Scientific and Industrial Research Fellow in Ichthyology, Rhodes University Grahamstown, South Africa

Family Carangidae

Scomber sansun Forsskal, is described (1775 : 56) as follows: "74. SCOMBER SANSUN; bright silvery, immaculate, caudal keel wide, equal." **Description.** "Affinis praecedenti". (Resembles the one preceding, i.e. 73. **Scomber fulvogattus** Forsskal). "Lower teeth uniserial, the median larger. Above, one series awlshaped, larger; behind are many setiform teeth. Caudal keel medially strong, straight. Ventral and pectoral fins white, the rest dusky. Upper margin of dorsal fin black. Lower margin of anal and caudal fins yellow. Rays number as before but D $\frac{1}{22}$. A $\frac{1}{16}$." (i.e. D2 I 21. A II+I 15).
Arab: **Abu sansun. Abu lajla. Baghe. Dheirak.** Lohajae: **Bockas."**

In this description there is little of diagnostic value beyond the soft ray counts of the dorsal and anal fins.

Unfortunately Forsskal's type of **S. sansun** no longer exists. Forsskal's known types of fishes are dried half skins. They have been listed and beautifully illustrated, photographically and also mostly radiographically, by Klausewitz and Nielsen 1965. It is however obvious that at some stage some labels or numbers must have been confused. For example type No. 48a labelled **Scomber ferdau** Forsskal, is certainly not that species as described by Forsskal and as now accepted. The shape of the body does not accord with that of (the fish now accepted as) **C. ferdau**. The radiograph of specimen 48a (Klausewitz and Nielsen 1965, Pl 27) shows that the vertical fins have partly disintegrated. An approximate count is D2 I 22 or 23. A I 19. Dr J. Nielsen kindly reports that it is difficult to be sure of the exact count but from the specimen he makes them D2 I 24 or 25; A I 19; and 36 scutes (which are strong). It may clearly be seen on Forsskal's specimen 48a that the lateral line curve is shorter than the straight part and that the lower front part of the chest is distinctly scaly. For his **S. ferdau**, Forsskal (1775 : 55) states D2 I 28; A II+I 23, with which the fish currently named **C. ferdau** agrees. In distinction from the actual specimen 48a the lateral line curve in **C. ferdau** (as at present defined) much exceeds the straight part which has less than 30 feeble scutes, and the lower front part of the side of the chest as well as the lower surface are (distinctly) naked. The data are summarised in Table I below.

Table I

C. ferdau

	"Type" specimen 48a	**C. ferdau**
D2 I+	24 or 25	28 (Forssk)
A II+I	19	23 (Forssk)
Scutes	36 (strong)	24-26 (feeble)
Lower front chest	scaly	naked
L.1. curve with straight part	Much less than	1.5 times

Curiously enough this type 48a cannot be certainly aligned with any of Forsskal's descriptions. All the data one may obtain about this No. 48a indicate it as very likely the type of Forsskal's vague 71b, BAJAD. This was possibly what now passes as **C. melampygus** C & V, 1833 a species not clearly named or described by Forsskal, but which occurs in the Red Sea. It has been described as **C. bixanthopterus** by Ruppell (1835 : 49 Pl 14 fig 2).

In attempting to solve the problem of the identity of **C. sansun** Forsskal, in the absence of the type importance must be attached to the opinions of ichthyologists who worked on material at or from the Red Sea soonest after Forsskal. Ruppell spent a whole year at the Red Sea during 1826-27 and again in 1831. The natives in that area are expert fishermen and there is every reason to assume that both Forsskal and Ruppell would have depended largely on those fishermen for specimens of common fishes. In his well-known volume on the fishes of the Red Sea, Ruppell (1828 :1) states that at the Red Sea he set out especially to clarify the exact identities of the fishes described by Forsskal. He would certainly have paid special attention to the correlation of native names for Red Sea fishes recorded by Forsskal, which would probably not have changed in that time. Forsskal would have been likely to get the more common species caught by native fishermen, and they would have been equally accessible to Ruppell. However one cannot attach too much importance to native names, for example the name 'Abu sansun' recorded by Forsskal for his **Scomber sansun** is not specific. Forsskal records that the species he names **Scomber ferdau** var. **bajad** is also named 'Abu sansun' by the natives, and it is indeed common experience that especially unlettered persons confuse such names and species.

Forsskal records no less than five native common names for his **S. sansun.** This alone is suspicious and probably indicates confusion on the part of the natives who gave those names. As shown below Ruppell has obviously given the name 'sansun' for two different species.

The only Indo Pacific species (as at present defined) likely to be in the Red Sea and whose dorsal and anal ray counts accord with Forsskal's original data for **S. sansun**, i.e. D2 I 21 : A I 15, are shown in Table II following:

Table II

Author	Name	Locality	Dorsal fin rays Range	Majority	Anal fin rays Range	Majority
Forsskal	**sansun**	Red Sea	21		15	
Forsskal	**ignobilis**	Red Sea	18-21	19-20	15-17	16
Williams	**"sansun"**	W.Ind.Oc.	18-21	20-21	15-17	16
C & V	**forsteri**	Indo.Pac.	19-21	19-21	14-16	15-16

(**C. marginatus** Gill, 1863 from the Pacific coast of America is very closely related to **C. forsteri** C & V, if not identical, but is recorded as having D2 I 19-20).

Forsskal named and briefly described (1775 : 55) **C. ignobilis** and there are remains of a type which conform to the fish that now bears that name. While adults of **C. ignobilis** show a degree of sexual dichromatism, this is not observed at the relatively small size of the types of Forsskal. While not impossible it cannot entirely be ruled out that Forsskal might mistakenly have described a specimen of **C. ignobilis** as **C. sansun**, even though these two species apparently had different vernacular names.

With the elimination of **C. ignobilis** as a possibility, it will be seen from Table I that the identity of **C. sansun** Forsskal is likely to lie between **C. forsteri** C & V (as here defined) and the **"C. sansun"** of Williams 1956-58.

Study of the Red Sea **"C. sansun"** described by Ruppell (1828 : 101) indicated that his fish was probably the abundant **C. forsteri** C & V, 1833. And the **'Caranx hippus'** of Klunzinger (1871 : 465) is also clearly the same fish, as Klunzinger also states that the breast is fully scaly.

To establish this it was essential to determine the identity of Ruppell's **"C. sansun".** In the Senckenberg Museum collection there are five specimens from Djedda, Red Sea, identified and described by Ruppell as **C. sansun** Forsskal. Three, all SMF 33, are spirit specimens, two, SMF 2855 and 2856, are mounted. By kindness of Dr W. Klausewitz I have been able to examine the three spirit specimens and one of the mounted pair*. These are not identical. The three spirit specimens 175, 180 and 185mm lengths respectively all have completely scaly breasts and appear to be identical (one is aberrant in having A II+I 17, but otherwise agrees exactly).

*See note on page 183.

They indeed prove to be the common widespread species named variously **C. elacate** J & E, 1903 or **C. forsteri** C & V, 1833 (the type of the latter, by kindness of Dr M. L. Bauchot, of Paris, is also here). This evidence is important as it establishes that **C. forsteri** is present in the Red Sea and probably not rare there.

As noted elsewhere, while Ruppell was generally accurate he seems to have found the Carangid fishes troublesome and his work contains numerous errors. For example, in describing the species he named **C. sansun,** Ruppell states (1828 :101) 'In front of the brush-like teeth, in both jaws a row of robust conical teeth'. This is ambiguous, but if it implies that there is a band of fine teeth in each jaw, this is not the case with the specimens I have examined, nor with any of the five specimens of Ruppell. Dr Klausewitz has kindly sent one, SMF 2856, of the mounted specimens of **C. sansun** of Ruppell, 280mm fork length, 310mm total length (**Pl 39, C**). This is a different species from the SMF 33 and is without doubt what now passes as **C. ignobilis** Forsskal. It has D2 I 20. A II+I 16, the front of the breast is naked, with a small patch of scales before the pelvic bases, the naked area extends slightly up on the side of the chest in a curve. The front dorsal lobe is 1.5 in the head, the curved part of the lateral line is 1.15 in the straight part, on which there are 27 scutes. The shape of the head alone establishes this **'C. sansun'** of Ruppell as clearly **C. ignobilis** Forsskal, as affirmed by Klunzinger (1884 :100). Information kindly sent by Dr Klausewitz indicates that the remaining mounted specimen SMF 2855*, 400mm standard length, is identical with SMF 2856. Ruppell's illustration of **C. sansun** (1835 : Pl 13, fig 3), if based on his specimens is poor and inaccurate.

It may be emphasised here that as native fishermen could give Ruppell the same name, 'Sansun', for two different species, this shows how unreliable vernacular names can be.

While I have not been able to trace Klunzinger's specimens, it may be noted that **Caranx sansun** from the Red Sea described by Klunzinger (1871: 466) is almost certainly the fish now defined as **C. ignobilis** Forsskal. Klunzinger's data are D2 I 19-20; A II+I 15-16; scutes 32, and he describes the curved naked area low down on the side of the chest typical of **C. ignobilis** as now accepted (see Smith 1967, Pl 30,C). This identity was later recorded by Klunzinger himself (1884 :101).

In his 1958 monograph Williams does not mention Ruppell's 1828 **'C. sansun'**, and he puts the **'C. sansun'** of Ruppell, 1835 in the synonymy of **C. ignobilis** Forsskal, despite the clear statement by Ruppell (1835 : 48) "breast wholly scaly".

It may be emphasised that no worker who has applied the name **C. sansun** Forsskal to any fish has been able to justify the use of that name, which can in effect be no more than pure guesswork. Wakiya (1924 : 197) made an attempt to justify the use of **C. sansun** for a Japanese fish, but by the extraordinary statement that Forsskal "states that **S. sansun** closely approaches **S. ignobilis**". That is however not the case, Forsskal made no such statement. What he

*See note on page 183.

did state (1775 : 56) was that 74. **Scomber sansun**, is "similar to the species (singular) preceding", i.e. to No. 73, (**S. fulvoguttatus**), thus further confusing the issue, for the species that most closely resembles **C. fulvoguttatus** at all stadia is **C. gymnostethus** C & V, 1833, which has so far not been recorded from the Red Sea (though stated to do so by Williams 1958, but on what authority cannot be traced). In all but the earliest stadia **C. fulvoguttatus** is very different from **C. ignobilis** (which the '**C. sansun**' of Williams 1956-58 does resemble. This is possibly the influence of Wakiya!). It is probably this incomprehensible and inaccurate statement by Wakiya that has led to such widespread confusion about the identity of **C. sansun** as has prevailed for species with the lower surface of the breast naked, save for a small central patch of scales, as found in **C. ignobilis**.

Despite the wealth of material in Carangid fishes he had available, Williams unfortunately nowhere gives detailed frequency data. In 19 specimens of **C. forsteri** (his **C. elacate**, of which he had 53 specimens) he states (1958 : 385) D 'usually' 20, A 'usually' 15-16. In fin counts of **C. forsteri** I find D 19-21 (i.e. 9x19 : 9x20 : 7x21) and A 14-16 (i.e. 2x14 : 9x15 :11x16). Thus with D2 21; A 15 **S. sansun** Forsskal could well fall there. Williams states (1958 : 390) that the large fish found in the western Indian Ocean which he identifies as **C. sansun**, has 'usually' D2 I 20-21 and A II+I 16, so that Forsskal's A I 15 would be an unusual or limital count* I found no adults as described by Williams (1958 : 390) but have four juvenile specimens from Durban which are here regarded as identical with the species named **C. sansun** by Williams (1958 : 390). These Durban specimens are described below and all have D2 I 20. A II+I 16.

As it had numerous local vernacular names one may rule out the remote possibility that **C. sansun** Forsskal was a rare species not found by later workers in the Red Sea. With the identity of Ruppell's types of **C. sansun** established as **C. forsteri** C & V, and as **C. ignobilis** Forsskal, there is no evidence that the "**C. sansun**" of Williams, 1958 occurs in the Red Sea, and hence the application of the name **C. sansun** Forsskal, 1775 to those western Indian Ocean fishes is not justifiable.

The true identity of **C. sansun** Forsskal, is not determinable without information on three characters not mentioned by Forsskal and not determinable in the absence of the type specimen. These are (1) the nature of the scaling on the lower surface of the breast (2) the length of the dorsal and anal fin lobes and (3) gillraker count. Not only that, but on the part of those who have used the name **C. sansun** (Forsskal), there has been no unanimous opinion about its identity. The only indication is that Ruppell (1835 : 48) states clearly that the fishes named to him "sansun" by the native fishermen have the "breast completely scaly".

---

*Forsskal's recorded data are D $\frac{1}{22}$. A $\frac{1}{16}$. If these were in fact D2 I 22, A I 16, this would rule out the identity of the East African fishes as **C. sansun** for they have D 18-21.

As shown below two Indo-Pacific species have been confused under the name **C. sansun** (Forsskal), both with partly naked breast as in **C. ignobilis.** Of one, described below as **C. williamsi** sp.nov. so far known certainly only from the western Indian Ocean, only adults have hitherto been described (by Williams 1956, 1958). The other, described below as **C. celetus** sp.nov. is more widespread, ranging from South Africa to the Pacific.

If it should be desired to retain the name **C. sansun** Forsskal, the balance of the evidence indicates **C. sansun** as likely to have been the species here described as **C. forsteri** C & V, 1833 (**C. elacate** J & E, of Williams 1958). Acceptance of this can also however be based on guesswork (and would involve the relegation of **C. forsteri** C & V, and of **C. elacate** J & E, to the synonymy of **C. sansun** Forsskal).

With regard to the species defined by Williams 1958 as **C. sansun**, the most telling argument against the likelihood of its being **C. sansun** Forsskal, 1775 is that nobody has reported or described an undoubted specimen of Williams' **"C. sansun"** from the Red Sea. It is significant that Williams (1956-58) does not quote any record of **C. sansun** from the Red Sea but the original of Forsskal.

It might possibly be argued that William's experience in East Africa indicated that only adults of his **'C. sansun'** can be caught and that juveniles possibly stay in deep water, but this theory would again be pure guesswork, and I have three juvenile specimens from Durban that appear to be the **'C. sansun'** of Williams.

Nobody has yet described a specimen of undoubted **C. sansun** of Williams from anywhere but Kenya. On the other hand both Ruppell and Klunzinger obtained and described from the Red Sea the widespread and common **C. forsteri** C & V (both the **C. sansun** of Ruppell, 1828, and, 1835, as well as the **C. hippus** of Klunzinger, 1871 are without doubt **C. forsteri** C & V).

It is therefore sounder to declare **C. sansun** Forsskal, 1775 as demonstrably unidentifiable and a **nomen dubium**.

As noted, **"Caranx sansun** Forsskal, 1775 has been recorded, described and illustrated by numerous workers from East Africa to the central Pacific. Data and likely identities of the specimens on which those are based are given in Table III below.

Of the two species that have been confused, one, the **'C. sansun'** of Williams 1958, is known certainly only from the western Indian Ocean and is here described as **C. williamsi** sp.nov. From data assembled the other appears to be more widespread, almost certainly ranging from South Africa over the Indian Ocean to at least Japan, Philippines and beyond in the Pacific. In search of the literature for reports or descriptions which might be this second species, **Caranx xanthopygus** Cuvier and Valenciennes, 1833, described as abundant at Reunion must be taken into account. The brief description is based on a 13-inch specimen, stated to have greenish or yellow fins and sparse dark spots along the back. The specimen is stated to have D2 I 21; A II+I 17. However, a smaller specimen is stated to have

Table III
Specimens described as **C. sansun** (Forsskal, 1775).

Author	Date	Locality	D2 I+	A II+I	Scutes	L. line curve in L.1. str.	Gill-rakers	Breast naked or scaly	Identity
Forsskal	1775	Red Sea	21	15	—	—	—	—	Unidentifiable
Ruppell	1828	Red Sea	20	17	—	—	—	scaly) naked)	**(C. forsteri (C. ignobilis**
Ruppell	1835	Red Sea	19	16	ca30	1.1 (fig)	—	scaly) naked)	**(C. forsteri (C. ignobilis**
Klunzinger	1871	Red Sea	19-20	15-16	32	1.2-1.3	—	naked	**C. ignobilis**
Day	1876	India	19-20	16-17 (fig 16)	30-32	1.3	—	scaly	**C. forsteri**
Meek	1897	Somalia	(20)-21	(17-)18	30-34	—	—	—	Unidentifiable
Wakiya	1924	Riukiu Japan	21-23*?	16-18*?	36	1.3	—	naked	Unidentifiable
Weber & de Beaufort	1931	East Indies	22-23	18	36	shorter	—	naked	**C. celetus** nov.
Herre	1936	Philippines	22	18	30	1.3	—	naked	**C. celetus** nov.
Munro	1955	Ceylon	22-23*	18*	36	shorter	—	naked	**C. celetus** nov.
Williams	1956	Kenya	18-21	15-17	30-36	—	—	naked	**C. williamsi** nov.
Munro	1958	Australia	18-23*	15-18*	30-39	shorter	18-23*	naked	Unidentifiable?
Williams	1958	Kenya	18-21	15-17	30-36	1.2-1.34	18-23 lower	naked	**C. williamsi** nov.

*Apparently compiled, not original, not of critical diagnostic value.

D2 I 22. A II+I 18. **C. xanthopygus** C & V, is reported by Baissac (1949 : 21) as common at Mauritius. His colour agrees with that of C & V, and with our specimens*. However, on enquiry Dr. M. L. Bauchot informs me that the type of **C. xanthopygus** C & V, cannot be traced in Paris. There is not even an entry of the species in the register of the museum. In the absence of the type of **C. xanthopygus** C & V, this name cannot be used with any certainty. Also in 23 specimens I find never less than 18 anal rays (22x18 :1x19) and the type of **C. xanthopygus** is stated to have 17.

It therefore becomes necessary to assign a name to this species. **C. celetus** sp.nov. as here defined resembles **C. melampygus** C & V, closely in appearance and shape, but differs in the nature of the scaling of the lower surface of the breast, which is completely scaly in **C. melampygus** and partly naked in **C. celetus.** Both have dark spots on the body, but the former has characteristic blue dorsal and anal fins., while in the latter these are green or yellow and the body is yellowish. They differ clearly in fin and gillraker counts.

The two related species hitherto confused under "**C. sansun**" Forsskal, may be distinguished as follows:

A. A II+I 15-17 (mostly 16). D2 I 18-21 (mostly 20-21). Lobe of soft dorsal shorter than head without snout. No dark spots in adults .... **williamsi**

B. A II+I 18. D2 I 21-23 (mostly 22). Lobe of soft dorsal equals or exceeds the head without snout. Adults with scattered dark spots mostly along the back .... **celetus** nov.

Caranx williamsi sp.nov.
(Plate 38)

Caranx sansun (**non** Forsskal). Williams 1956 : 28, ?Pls 6,7, and fig 7 (Kenya); and, 1958 : 390, Pl 8, fig 7 (Kenya).
D2 I 20. A II+I 16. P 20. L.l. scutes 35. Gillrakers 7 + 15-17 (1-3) = total 25. Depth 2.6, head 3.6 in fork length. Eye 4.1-4.3 in head, 1.0-1.2 in interorbital and snout, 2-2.1 in postorbital. Dorsal lobe 1.7-1.8, postorbital length 2.1-2.2 in head. L.l. curve 1.3-1.4 in straight part. Scutes strong, cover all of L.l straight.

Lower part of breast partly naked. Along the middle from the pelvic base forward is a variable patch of scales up to an eye diameter in length, but the sides and front of this area are naked to near the front of the isthmus, which is scaly right across.

The front of the mouth is at about the level of the lower edge of the eye. The maxilla extends to below the middle of the eye. In the upper jaw an outer row of sharp teeth with a band of fine teeth within. Lower jaw with one series of stout sharp teeth. Fine teeth on palate and tongue.

Colour silvery, bluish above. First dorsal dusky. In juveniles distal third of second dorsal lobe and of upper caudal lobe black, rest of dorsal, caudal and whole of anal exceptionally brilliant chrome yellow. Pectoral and pelvic light yellowish. Upper part of peduncle dark. Iris golden.

*But both Baissac and C & V indicate body completely scaly.

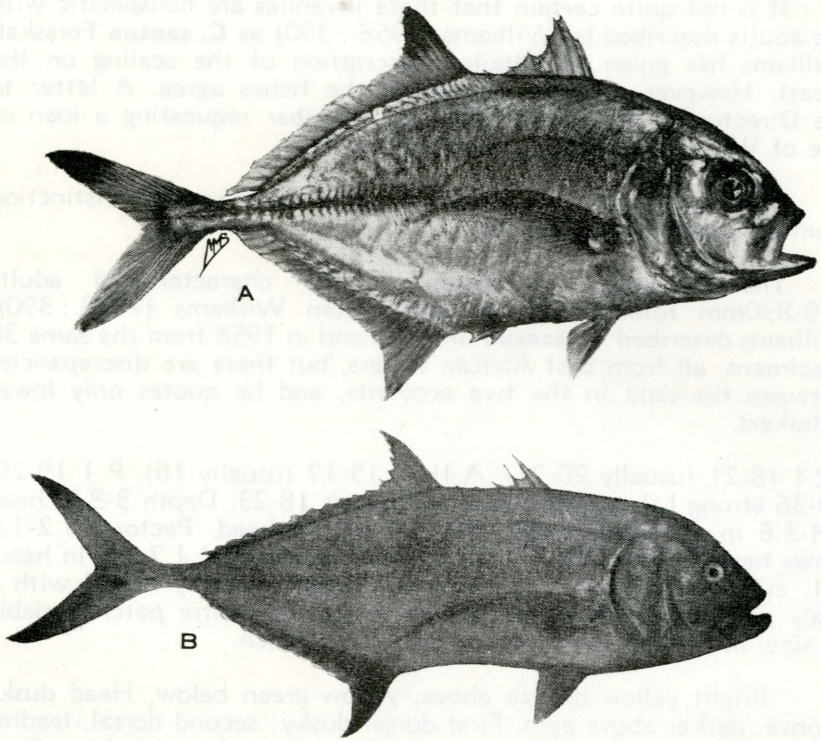

Plate 38

Caranx williamsi sp.nov. A. Type, 175mm (Durban). B. About 760mm total length (after Williams, Kenya).

Described from four juveniles 160-300mm total lengths, all from Durban. The 175mm specimen is designated as the type.

This fish is named is appreciation of Dr F. Williams' work on the carangid fishes of East Africa. While a number of workers have published revisions of this group, Williams is the first to have worked largely on well-grown and adult fishes and his data are invaluable.

It is not quite certain that these juveniles are conspecific with the adults described by Williams (1958 : 390) as **C. sansun** Forsskal. Williams has given no detailed description of the scaling on the breast. However, in most characters the fishes agree. A letter to the Director of the E.A.M.F.R.O. at Zanzibar requesting a loan of one of Williams' specimens has had no reply.

However, in any case, these juveniles merit specific distinction from all other known species.

The following compilation of the characters of adults 570-830mm total length, is taken from Williams (1958 : 390). Williams described **'C. sansun'** in 1956 and in 1958 from the same 38 specimens, all from East African waters, but there are discrepancies between the data in the two accounts, and he quotes only lower gillrakers.

D2 I 18-21 (usually 20-21). A II+I 15-17 (usually 16). P 1 19-20. 30-36 strong L.l. scutes. Lower gillrakers 18-23. Depth 3-3.7, head 3.4-3.6 in standard length. Eye 5.5-6.3 in head. Pectoral 1.2-1.6 times head. Dorsal lobe 1.7-2.2 in head, postorbital 1.7-1.8 in head. L.l. curve 1.2-1.34 in L.l. straight. Breast ventrally naked with a scaly patch in front of the pelvics, scales of centre patch variable in size, as is shape and area of the naked patch.

"Bright yellow-bronze above, yellow-green below. Head dusky bronze, darker above eyes. First dorsal dusky; second dorsal, leading edge of falcate lobe black, rest bright yellow. Anal bright yellow. Pectorals and pelvics yellowish. Caudal yellow, distal third of upper lobe and trailing edges black. Scutes on lateral line dark. Later colour generally darker."

This species is apparently rather rare. Williams (1956 : 28) reports that it was taken off Kenya on only four occasions. Of his 38 specimens 31 were taken in one run of 80 minutes. He reports that it is "common in the Gulf of Aden". In his 1958 revision (based on the same 38 specimens from Kenya, p 391) Williams gives as distribution "Kenya, Red Sea, Arabian Sea, Seychelles, India, Ceylon, Formosa, Riu Kiu, Iwojima".

Neither Ruppell nor Klunzinger appears to have certainly found this species in the Red Sea.

There does not appear to be any authority other than Williams 1956 for the statement that "**C. sansun**" (of any identity) is common in the Gulf of Aden or in the Arabian Sea. In our work in the western Indian Ocean we did not specifically hunt Carangid fishes but got all we could. We did not catch an adult certainly of this species.

Caranx celetus sp.nov.

(Plate 39, A,B)

Caranx jarra (**non** C & V, 1833). Bleeker 1852 : 58 (E. Indies). Day 1876 : 215 (India).
Caranx sansun: ?Meek 1897 : 172 (Somalia, in part). Weber & de Beaufort 1931: 254 (E. Indies). Herre 1936 :114 (Philippines). Munro 1955 :129 (Ceylon).
Caranx carangus (**non** Linn) Gilchrist and Thompson 1917 : 384 (Natal). Barnard 1927 : 545 (Natal).
Caranx xanthopygus Fowler 1934 : 446 fig 25 (in part, Natal).
Caranx ignobilis (**non** Forsskal) Woods 1953 : 517 (Rota. Guam).
Caranx (Caranx) species Williams 1956 : 32 Pl 11 (Kenya).
?Caranx hippus (**non** Linn) Fourmanoir 1957 : 210 (W. Madag).

D2 I 21-23 (6x21:16x22 :1x23). A II+I 18-19 (22x18 :1x19). P 20-21. Gillrakers 8-9+18-20(0-2)=26-28 (1x26 :10x27 : 4x28). Lateral line scutes 33-36, cover almost all of straight part, which is 1.15-1.35 times the length of the curved part. Scutes strong, the highest is about two-thirds of an eye diameter. Breast ventrally partly naked, the naked area does not extend up laterally and ends well behind the front of the isthmus, which is scaly. The scaly patch before the pelvic base is short, less than an eye diameter in length. Depth 2.7-3.4, head 3.4-4 in fork length with age. Eye 3.5-5.5 in head, 1.2-1.8 in snout, and 1.0-1.5 in interorbital, all with age. Pectoral 1.1-1.4 times head with age. Lobe of soft dorsal 1.3-1.4 in head, equals or slightly exceeds the postorbital plus eye.

Strong adipose eyelids. The lower edge of the tip of the upper lip is opposite the level of the lower margin of the eye in the young, well below with age. Maxilla extends below the front of the pupil in juveniles to below middle of eye or beyond in adults. In the upper jaw a row of strong teeth in front and a band of smaller teeth behind. Lower teeth uniserial, strong with age. Fine teeth on vomer, palatines and tongue.

In life greenish or yellow above, silvery below. Dorsal dusky yellowish, anal brighter yellow. Upper caudal lobe dusky, lower bright yellow. Opercular spot variable, sometimes absent. At about 400mm length scattered black spots appear along the back, more with age.

Described from 23 specimens, 156-600mm length from the Cape South coast, Durban, Zululand, Delagoa Bay, Zanzibar, Aldabra, Seychelles. The type 390mm, from Zanzibar in this Department. Data include the specimen "**Caranx species**" of Williams (1956 : 32 Pl 11, Kenya).

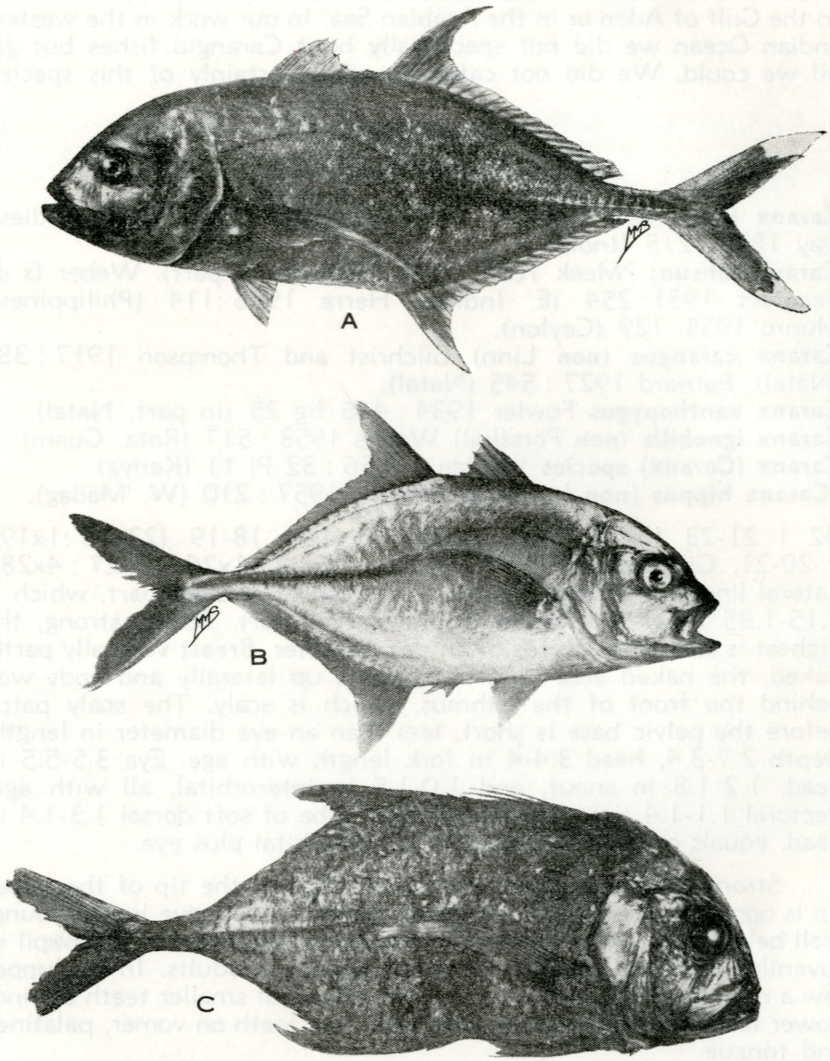

Plate 39

A and B. **Caranx celetus** sp.nov. A. Type, 390mm (Zanzibar).
B. 175mm (Durban).
C. "**Caranx sansun**" fide Ruppell, S.M.F. 2856, 310mm (Red Sea).

This is clearly a widespread species, extending from South Africa to India, the East Indies and to at least the central Pacific. So widespread and not uncommon a fish should have been discovered as distinct before, but the most thorough search of literature of the Indo-Pacific has failed to reveal it. **C. bixanthopterus** Ruppell, 1835 appeared to be a possible name, but by kindness of Dr W. Klausewitz I have been able to examine the type, which proves to be **C. melampygus** C & V, 1833, with the breast fully scaly.

The species described as **C. sansun** Forsskal, by Weber and de Beaufort (1931: 254) based on **C. jarra** (**non** C & V) Bleeker, 1852 proves to be this species. Dr M. Boeseman has kindly examined the type and has confirmed its identity. With regard to **C. jarra** C & V, 1833, Dr M. L. Bauchot informs me that there is no type of this species in their collections. C & V apparently based this species on Russell (1803 : 35, Pl 147), which shows a fish with D2 I 18; A II+I 17, the text states D2 20; A 2/2 17. This could be **C. ignobilis** Forsskal, 1775.

SUMMARY

Scomber sansun Forsskal, 1775 is shown to be a **nomen dubium.** Two species previously confused under the name **Caranx sansun** Forsskal, are described as new. **Caranx williamsi** sp.nov. is at present known only from the western Indian Ocean. **Caranx celetus** sp.nov. is shown to range from southeast Africa to the central Pacific.

Ruppell's specimens of **C. sansun** prove to be **C. forsteri** and **C. ignobilis** (Forsskal, 1775); Klunzinger's **C. hippus** is C. forsteri C & V, 1833 which is therefore present in the Red Sea. **C. xanthopygus** C & V, 1833 is unidentifiable. **C. bixanthopterus** Ruppell, 1835 is a junior synonym of **C. melampygus** C & V, 1833.

NOTE: Ruppell's specimen SMF 2855 400mm standard length, kindly sent by Dr. Klausewitz also proves to be **Caranx ignobilis.**

CORRECTIONS TO OCCASIONAL PAPER No. 13

Dr M. Boeseman of Leiden who kindly assisted us with Bleeker's specimens of **talamparah,** pointed out an error on p.145. Lines 15 and 18 from the bottom: 27 should read **26** for the number of specimens at Leiden, **four,** not five, are "**C. malabaricus**" (line 14 from bottom).

On page 152, line 7 from bottom "**C. malabaricus** (Bl-Schn)" should read "**C. caeruleopinnatus** Ruppell".

REFERENCES

BAISSAC, J. de B. 1949. Trans. roy. Soc. Arts Sci. Mauritius (C) No. 15 : 19-36.

BARNARD, K. H. 1927. Ann.S.Afr.Mus. **21** (2):419-1065, figs 19-32. Pls. 18-32.

BLEEKER, P. 1852. Verh.Bat.Gen. **24**:93p.

CUVIER, G. & VALENCIENNES, A. 1833. Hist.nat.Poiss. **9**:1-521 (1-397), Pls. 246-279. Paris.

DAY, F. 1875-8. Fishes of India. xx,778p, 198 pls. London.

FORSSKAL, P. 1775. Descript.animal:164p. Hauniae.

FOURMANOIR, P. 1957. Mem.Inst.sci.Madagascar (F) **1** :316p, 195 figs, 17 pls.

FOWLER, H. W. 1934. Proc.Acad.nat.Sci.Philad. **86**:405-514. 53 figs.

GILCHRIST, J. D. F., & THOMPSON, W. W. 1917. Ann.Natal Mus.: **1** 291-431.

GILL, T. N. 1863 (1864). Proc.Acad.nat. Sci.Philad.:162-180.

HERRE, A. W. C. T. 1936. Field Mus.nat.Hist.(zool.ser.) **21**:472p, 50 figs.

KLAUSEWITZ, W. & NIELSEN, J. G. 1965. Spolia zool.Mus. Hauniensis **22**:29p, 38 pls.

KLUNZINGER, C. 1871. Verh.zool.bot.Ges.Wien. **21**:441-668.

————————1884. Fische des rothen Meeres:133p, 13 pls.

MEEK, S. E. 1897. Publ.Field Columb.Mus. (zool.) **1**:165-173, Pl.

MUNRO, I. S. R. 1955. The marine and freshwater fishes of Ceylon: xvi,349p, 56 pls, 19 figs. Canberra.

————————1958. "Handbook of Australian fishes". : 172p, 1013 figs. Canberra. Published in **Fisheries Newsletter** from July 1956 to Dec. 1961.

RUPPELL, W. P. 1828. Atlas Reise Nordl.Afrika.Fische des rothen Meeres: 141p, 35 pls. Frankfurt-a-M.

————————1835-38. Neue Wirbelthiere . . . Fische des rothen Meeres:148p, 33 pls. Frankfurt-a-M.

RUSSELL, P. 1803. Descriptions and figures of 200 fishes, collected at Vizagapatam on the coast of Coromandel. **2**:1-90. Pls 101-208. London.

SMITH, J. L. B. 1967. Rhodes Univ.Dept.Ichthyol.occ.Pap. (12): 139-141, Pls 30-31.

WAKIYA, Y. 1924. Ann.Carneg.Mus. **15** (2-3):139-244. Pls. 15-38.

WEBER, M. & de BEAUFORT, L. 1931. The fishes of the Indo-Australian Archipelago **6**:xii, 448p, 81 figs. Leiden.

WILLIAMS, F. 1956. Fish. Publ., Lond. (8):68p, 15 pls.

————————1958. Ann.Mag.nat.Hist. (13) **1**:369-430, Pls 6-16, 27 figs.

WOODS, L. P. 1953. In Schultz L.P. and collaborators. Bull.U.S.nat. Mus. (202):504-520. Pls. 45-46.

LONG & COMPANY (PTY) LIMITED, PRINTERS
297 Kempston Road, Port Elizabeth, South Africa.