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CERTAIN RARE FISHES

from

SOUTH AFRICA

WITH OTHER NOTES

by

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CERTAIN RARE FISHES FROM SOUTH AFRICA, WITH OTHER NOTES.

(With Plates 13 and 14)

by

J. L. B. SMITH

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Family Albulidae

Pterothrissus belloci Cadenat, 1937

Smith, 1966, R.U. Ich. Occ. Paper **6** : 57, fig 1 (Southwest Africa). Previously unknown early larval stadia of this species were described in the above paper. Since that time I have received from Mr. F. H. Schulein of Walvis Bay, further specimens, all at about the same stage of metamorphosis as previously described. These were got by dredging in 10 fathoms in Sandwich harbour, S.W. Africa. It is possible therefore that the young of this species may migrate to relatively shallow water during development.

Family Nomeidae.

Cubiceps gracilis (Lowe, 1843)

(**Plate 13**)

Seriola gracilis Lowe 1843, Proc. Zool. Soc. **11** : 82 (Madeira). **Atimostoma capense** Smith, 1845, Ill. Zoology S.Afr. **4** : Pl. 24 (C.G. Hope). Bleeker, 1860, nat. Tyds. Ned. Ind. **21** : 53 (Rec. S.Afr.) **Navarchus sulcatus** de Fillipi and Verany 1859, Mem. R. Acad. Sci. Tor. **17** : 7, f 1 (Italy).

Cubiceps gracilis Gunther, 1860, Cat. Fish. B.M. **2** : 389 (Madeira) : and ; 1889, Challenger Rep. **31** Pelagic fish : 11, Pl 2 (mid Atlantic), and ; 1963, **ibid**, reprint. Canestrini, 1874, Arch. Zool. Anat. Fisiol. **1**, no. 1 : 104 (gulf Genoa). Giglioli, 1880, Elen d. Pesci Italiani : 25 (Medit.) Moreau, 1881, Hist. nat. Poiss. France: 479, f 134. Carus, 1893, Prod. Fauna Medit: 662. (Medit). Collett, 1896, Res. Comp. Sci. d. Prince d. Monaco, **15** : 33 (Madeira. Azores.) Regan, 1902, Ann. Mag.nat. Hist. (7);**10** : 123 (Revision). Waite 1904, Rec. Austr. Mus. **5**, 3 : 162 (Lord Howe Is.) : and; 1910, Trans. New Zeal. Inst. **42** : 375. Richard, 1910, Bull. Inst. Ocean, Monaco:149 (Medit). Vincinguerria, 1923, Atti. Soc. It. Sci. nat. **34** : 9 (Medit). Norman, 1930, Disc. Rep. **2** : 350 (33°S x 31°E). Pellegrin, 1933, C.R.Ass. Fr. Av. Sci. Chamb: 368 (Medit). De Buen, 1935, Inst.Esp. Ocean.Madrid: 104. Nobre, 1935, Fauna Mar. de Portugal **1** : 332

(Port). Fowler, 1935, Copeia No. **4**. : 193 : and; 1936, Mar. Fish. W.Afr. Bull. Am. Mus. nat. Hist. **70** : 661, f 297, 1279 (E.Atl.Medit) and; 1938, Ac. nat. Sci. Phil. Monogr. **2** : 196 (Key only). Pellegrin, 1937, Bull. Mus. Hist. nat. Paris (2), **9** : 368 (Gulf Gascony). Legendre, 1940, C.R. Soc. Biogeo. Paris. **17** : no. 146 (France, Atl.). Goncalves, 1941, Trav. Stat. Biol. Marit. Lisbon: 57 (Portugal). Helling, 1943, Mem. Est. Mus. Zool. Univ. Coimbra. (1), **149** : 37 (Portugal). Priol, 1944, Rev. Trav. Off. Pech. Mar. Paris: 430, f.21 (Atl.France). Navaz & Sanz, 1946, Notas. Inst. Esp. Ocean. Madrid : 37 (Spain,Atl.) Sparta, 1946, Boll. Pesca. Piscic. Idriol. Roma, **22** : 17, Pl. (Juv.stadia). Noronha & Sarmento, 1948, Vert. da Madeira: 155. Smith, 1949, Ann. Mag. nat. Hist. (12), **2** : 849 : and ; Sea Fish. S.Afr. 1949 : 307, fig. 856 (S.Afr). Tortonese and Trotti, 1949, Atti. Acad. Lig. Sci. Lett. **6** : 89 (Corsica). Koefoed, 1952, Rep. Sci. Michael Sars North Atl. Exp. **4**, pt 2 : 12 (29 juveniles, N.W.Atl., 150-1500 fms.). Lozano Rey, 1952, Mem. R. Acad. Sci. Madrid **14** : 663, Pl. 51, f 3. Herre, 1953, check list Phil. fishes : 259 (rec Phil.) Abe, 1955, Journ. Oceanogr. Soc. Japan. **77** no 2 : 1, fig 1 (Japan to Central N.W. Pacific) and ; 1959, Rec. Ocean. Works. Japan, **3** : 229 (notes, Japan). Dieuzide, Novella & Roland, 1955, Cat. Poiss. Cotes Alger. **3** : 218, fig (Algeria). Dollfus, 1955, Trav. Inst. Sci. Cherif Zool. **6** : 143 (Tangier). Albuquerque, 1956, Peixes de Port. e ilhas adj: 866, fig 366 (Portugal, Madeira). Kamohara, 1957, Jap. Journ. Ich. **6** : 76 (Kochi). Abe & Tomiyama, 1958, Jap. Encyclop. Fishes. live col : f 599 (Japan). Tortonese, 1959, Ann. Mus. Civ. St. nat. Gen. **71** : 59, fig 1 (Alassio). Blacker, 1962, Ann. Mag. nat. Hist. (13), **5** : 263 (14° west, off Galway Bay, Ireland).
Trachelocirrus mediterraneus Dumet-Adanson 1893, Rev. Mag. Zool. Paris. **15** : 212, Pl. 15 (Medit).

Cubiceps capensis Gunther, 1860, Cat. Fish. Brit. Mus. **2** : 389 (C.G. Hope). Gilchrist, 1902, Mar. Invest. S. Afr. **1** : 129 (S.Afr). Regan, 1902, Ann.Mag.nat. Hist. (7), **10** : 123 (Revision). Ariola, 1912, Riv. Mens. Pesca Idrobiol. Pavia, **7** : 185, Pl 6 (Gulf Genoa). Thompson, 1916, S.Afr. Mar. Biol. Rep. **3** : 105 (S. Africa). Gilchrist, 1922, Ann.Mag.nat. Hist. (9), **9** : 253 (teeth). Gilchrist & von Bonde, 1922, Fish. Mar. Surv. Rep. **4** : 7 (S.Afr. data 1845). Barnard, 1927, Ann. S.Afr. Mus. **21** : 891 (S.Afr.) : and ; 1948, ibid **36** : 389, figs 10-12 (Table Bay, and off Saldanha Bay, **fide** Norman).
Cubiceps lowei Osorio, 1909, Mem. Mus. Bocage Lisboa **1** : 15 (Portugal). Seabra, 1911, Bull. Port. Sci. nat. **5** : 157 (Port).
Cubiceps baxteri McCulloch 1923, Rec. Austr. Mus. **14**, (1) : 15, Pl 1, f 4 (Lord Howe Isl.). Moreland, 1956, Rec. Dom. Mus. Wellington **3** : 10 (N.Z.). Munro, 1956, Handbk. Austr. Fishes : 120 (N.S.W.).

D XI + I 24. A III 21. P 23 (23). L.1. 65. $4\frac{1}{2}$ series of scales above L.1. below first dorsal, about 14 up and forward from anal origin, about 25 round peduncle, predorsal about 40. 11 + 1 + 17 gillrakers.

Body robust, scarcely compressed. Depth 3.8, head 3.3 in standard length. Eye 3.6 in head, equals snout, 1.2 in interorbital, 1.7 in postorbital length. Nostrils subcircular, close together, much nearer snout tip than front of eye. Interorbital and top of head gently convex. Pyloric caeca numerous, small, almost villiform. Mouth moderate, the maxilla ends well before the eye, the maxilla and the premaxilla are entirely concealed laterally beneath the preorbital. There is a single row of fine sharp teeth in each jaw, and there are fine teeth in a row on the vomer, on the palatines, and along the midline of the hind part of the tongue.

The dorsal origin is well behind the head, above about the eighth row of scales, about midway between the front of the snout and the extremity of the pectoral, and 1.7 times further from the caudal base than from the front of the snout. The fourth dorsal spine is the longest, about 1.4 times the eye, those behind shorten rapidly, the last is very short, only the apex is above the scales. The front dorsal rays are the highest, much lower than the spines. The anal is slightly higher in front, the spines are feeble. The pectoral has a subhorizontal insertion and folds flat against the body, dorsally and ventrally, the apex reaches below the middle of the soft dorsal. The pectoral is 1.35 times the head, and 2.5 in the standard length. The pelvic is 2.1 in the head. The caudal is forked, the tips of the lobes are broken.

The whole head is scaly except a subtriangular preorbital area and the tip of the snout. The predorsal scales extend to the level of the nostrils. There are four or five series of scales along the lower part of the preorbital. The scales on the opercle are the largest. The colour is almost uniform deep brown black, the inside of the mouth and much of the branchial cavity are black.

The above description is from a specimen in excellent condition, 475 mm total length, 380 mm standard length, captured by an angler from a boat in Algoa Bay, where the depth is less than 20 fathoms.

While moderate numbers are recorded by Abe (1955, **loc. cit.** : 1) as regularly caught on deep lines off Japan, this is probably the only record of a capture on a line in such shallow water.

In the southern hemisphere at least, this species is generally regarded as rare. As the references above indicate however there are numerous records from a considerable area of the northeastern Atlantic.

Distribution as plotted in fig 1 is interesting, indicating wide dispersion at a considerable depth below temperate to cool sea. Study of this suggests that the fish should eventually be found on the Southwest coast of Australia as well. Apart from the absence of south western Atlantic and of north eastern Pacific records the distribution of **C.gracilis** in the southern hemisphere shows striking similarity with that of **Pentaceros richardsoni** Smith, 1844, namely the Cape, Australasia and Japan (see Smith 1964, Ich. Bull. **29** : 572, Pl. 88 and fig 2). It is of further interest to note that the rare **Centrolophus brittanicus** Gunther, 1860, hitherto regarded as confined to a restricted area of the northeastern Atlantic has recently been found off Southwest Africa (Smith 1966, in press, shown also in fig 1). This may presage the possible eventual discovery of **C.brittanicus** in Australasian waters.

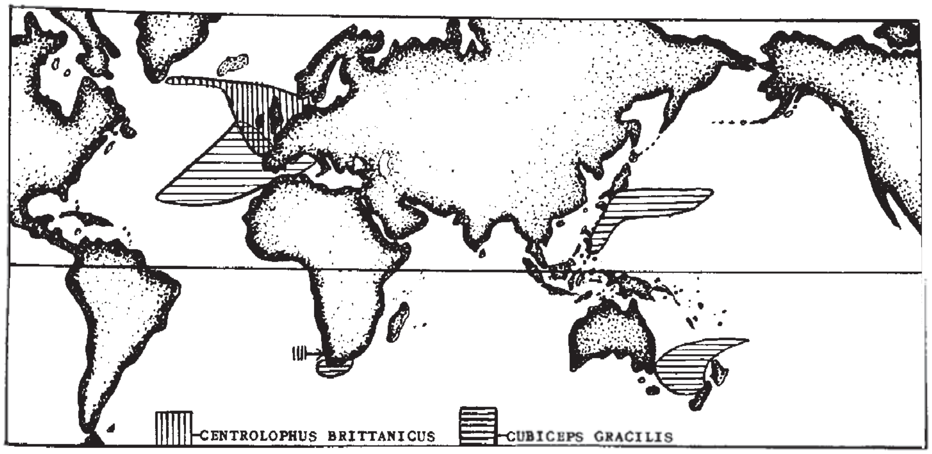

Fig 1. Distribution of **Cubiceps gracilis** (Lowe) and of **Centrolophus brittanicus** Gunther.

The young of **C.gracilis** are apparently pelagic, having been taken in tow nets, and in one case at least, a juvenile was washed aboard a vessel by a wave.

My specimen appears to be identical in almost every respect with the description and illustration of a Japanese specimen of comparable size (Abe, 1955, **loc. cit.**). There does not appear to be any sound reason to maintain the Australian **C.baxteri** Waite, as distinct from **C. gracilis**. The validity of **Cubiceps squamiceps** (Lloyd 1909, Illustr. 'Invest' fishes : 158, Pl 47, f 4), from 500 fathoms in the Arabian sea, is suspect, there are discrepancies between the description and the illustration, the accuracy of the latter is doubtful. The type of **C.squamiceps** needs to be examined to determine its relation to **C. gracilis**.

Cubiceps natalensis Gilchrist and von Bonde, 1923, from Natal (the types lost) appears likely to have been identical with **C.squamiceps**. However both the Arabian sea and the Natal specimens are stated to have had 52-53 series of scales (against 63-65 in **C. gracilis**), and Barnard (1927, **loc. cit.** : 892) states that a small specimen presumed to be **C.natalensis** has 14-15 lower gillrakers, against 18-19 in **C. capensis** (=gracilis). This count may increase with age, and it may be noted that Gilchrist and von Bonde's illustration of **C. natalensis** (1923, S.Africa Fish. Mar. Surv. Rep. Pl 7, fig 2) shows about 62 and not 52 (as stated) series of scales. A re-examination of the type of **C.squamiceps** will help to settle this matter. Lloyd (1909, **loc.cit.**) gave no gillraker count, and the types of **C.natalensis** are apparently lost.

Herre & Herald (1951, Phil.Journ. Sci. **79**, No 3 : 324) record twenty-three specimens, 75-138 mm in length, from the markets, Luzon, Philippines, identified as juveniles of **Cubiceps gracilis** (Lowe),

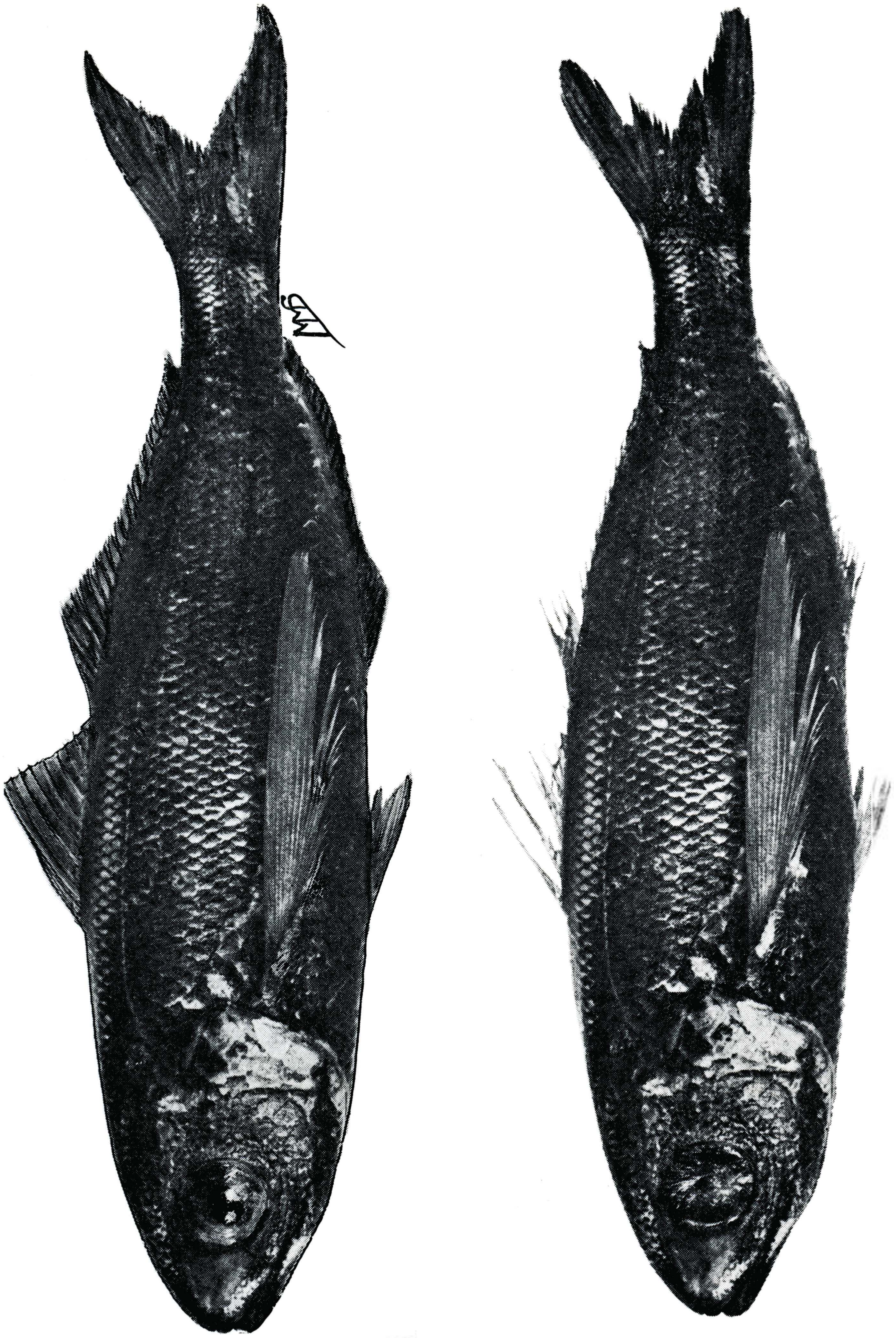

Plate 13

Cubiceps gracilis (Lowe), 475 mm total length. (Algoa Bay). Below, (untouched) : above, the fins reconstructed.

said to be not uncommon there. They give data : D XI-I-22. A. III 20-22. L.1. 66, and gillrakers 4 + 13. This latter count is far below the usual for **C.gracilis** (11 + 18 -19), and it is regrettable that no further data are recorded, e.g. nothing is said about the relative depth of the body or the length of the pectoral fin. These Philippine fishes plainly need further investigation.

It may be noted that the subhorizontal insertion of the elongate pectoral fin in **C.gracilis** indicates use primarily for balancing, it would scarcely appear to be effective for braking or for reversing.

Family Bramidae

Taractes asper Lowe, 1843.

(**Plate 14**, **A**).

Taractes asper Lowe, 1843, Proc. Zool. Soc. Lond. **11** : 83 (Madeira). Hilgendorf, 1888, Archiv. Naturg. **54**, 1 : 208 (Azores). Gunther, 1860, Cat. Fish. Brit. Mus. **2** : 410 (copy, Lowe). Mead, 1957, Zoologica, **42** pt 2 : 58 (key only). Mead and Maul, 1958, Bull. Mus. Comp. Zool. Harvard, **119**, (6) : 397. fs 2, 5, 7, (Madeira).

Trachyberyx barretoi Roule 1929, Bull. Oceanogr. Monaco, no. **546** : 2, fig (Madeira). Fowler, 1936, Bull. Am. Mus. nat. Hist. **70**, (2) : 1269, fig 544 (Madeira, copy Roule). Maul, 1954, Bol. Mus. Municip. Funchal, **7**, (17) : 18, fs 4-6 (Madeira).

D. 32. A. 23. P 18. V i 5. C 1, 17, 1. L.1. 50, 44 series of scales. Tr about 25 total, from anal origin up. Gillrakers ii + 1 + 1 + 6 + iii, total, 8 formed rakers, with two rudimentary knobs above and 3 below.

Body deep, moderately compressed. Depth 2.2, head 2.25 in standard length. Eye 2.5 in head, about 1.5 times snout and interorbital, equals the postorbital length. There are slender spines in a cluster at the angle of the preopercle, and a few flexible spiniform processes at the hind edge of the interopercle. There is a slit behind the fourth gill, pseudobranchiae are well developed. On the upper limb of the outer arch are two knobs and one well formed raker below, there are seven well formed moderately slender rakers with three knobs in front on the lower limb. The mouth is strongly oblique, large, the lower jaw projects. The maxilla, fully exposed, extends to below the front of the pupil. There are fine sharp somewhat curved teeth in ragged bands in each jaw, there is a single outer almost exsert wide-spaced series of strongly curved teeth round the front and sides of the lower jaw, where, within this, is an irregular biserial band of slightly curved slender sharp teeth, irregular in size and disposition, the largest in front, where there are a few smaller teeth directed almost horizontally backwards. In the upper jaw there is a close set outer series of small slightly curved sharp teeth, exsert, increasingly so posteriorly, that extend almost to the hind end of the premaxilla, the lateral teeth are exterior to the mandible. Within this outer series is an irregular band of slender sharp teeth of varying sizes, all retrose depressible, those in front longest. No teeth can be seen on the vomer, but there are a few small slender sharp teeth in 1-2 sparse rows along each palatine. The tongue bears numerous papillae and villiform asperities, but no teeth.

The dorsal originates behind the head, 1.3 times further from the caudal base than from the tip of the snout. The front three rays may be flexible spines, the first is small, the next four are progressively longer, the fin is greatly elevated, rounded, the fourth to about the tenth rays are subequal, the longest is about as long as the head; the base of the fin is 2.15 in the standard length. The anal origin is below about the eighth dorsal ray, about midway between the base of the caudal and the front of the eye. The front short flexible rays are at most feebly spiniform, the fin is elevated, the longest rays are 1.4 in the head, the base of the fin is 3 in the standard length, and 1.4 in the base of the dorsal fin. The pectoral is large, rounded, almost as long as the head. The pelvics reach to beyond the anal origin, 1.4 in head, along the inner ray is a fold of skin that might be mistaken for a sixth ray. The caudal is damaged (see Plate 14) but appears to be truncate, it has 19 principal rays. The characteristic keeled scales cover all the body in well marked rows, the scales of the five principal rows along the peduncle each bear a spiniform process larger than any others on the body. The predorsal scales extend on the head to slightly before the level of the hind margin of the orbit. The interorbital and the front of the top of the snout are naked, the head is otherwise mostly scaly. There are 7-8 rows of scales across the cheek with a narrow flange naked. There are five series across the maxilla, only a narrow margin posteriorly is bare. The bottom of the side of the lower jaw is naked, and there is a series of large pores. The mentum is covered with about seven transverse rows of flexible leaf-like scales. All fins are naked.

Colour as preserved, dark grey brown. The vertical fins are light, each with two broad brown longitudinal bars. The pectoral is light, the pelvics are dark.

Described from a single specimen, 70 mm total length, 51 mm standard length, found swimming in the docks at Cape Town, and sent for identification by the Director of the South African Government Fisheries Survey, Dr. P. de Jager. Previously reported from the northeastern Atlantic about Madeira and the Azores, this is a rare and somewhat controversial species as only relatively small fishes are known. Most of the knowledge about this rarity has come from the painstaking work of Mead and Maul.

Another rare and poorly known similar fish is **Trachyberyx barretoi** Roule, 1929 also from Madeira, known only from the 190 mm type. In discussing this species Mead and Maul (1958, **loc.cit.**) while stressing its similarity in major characters to **T.asper** consider that it differs sufficiently to be retained as distinct. They base this conclusion chiefly on a slight difference in caudal rays and on the feebler spination of the peduncle scales of **T. barretoi**.

These fishes may show great changes with growth. Apart from the type of **T.barretoi** Roule, the largest specimen described (as **Trachyberyx barretoi**, by Maul 1954, **loc. cit.**,19,fig.4, Madeira) is about 150 mm in total length. Maul (1954, **loc. cit**) had a fine series of specimens ranging from 41 to about 150 mm in length. The smaller fishes are clearly close to the South African specimen, the largest (Maul 1954, **loc. cit**. fig. 4) is plainly well on the way to the more elongate form of the type of **Trachyberyx barretoi** Roule, (1929, **loc. cit**. fig.)

There does not appear to be any valid reason for retaining **T. barretoi** as distinct, the type is almost certainly merely an advanced stage of **T.asper**. It may well be an adult, but I have not been able to examine the type of **T.barretoi**.

The presence of this species in South African seas is in line with recent discoveries of other northern Atlantic fishes in South Africa as mentioned in the present paper.

Data of **Taractes asper** Lowe.

	Dorsal rays.			Anal rays.		
	32	33	34	23	24	25
Maul (Madeira)	7	5	1	1	3	9
Lowe (Madeira)	—	1	—	1	—	—
Type of **barretoi** (Madeira)	1	—	—	1	—	—
South Africa	1	—	—	1	—	—

	Pectoral rays		Lateral line tubules.				
	17	18	49	50	51	52	53
Maul (Madeira)	1	8	1	2	3	2	1
Lowe (Madeira)	1	—	—	—	—	—	—
Type of **barretoi** (Madeira)	1	1	—	1	—	—	—
South Africa	—	1	—	1	—	—	—

Scales, lateral series, Lowe (Madeira) 43. S. Africa 44.

Taractes longipinnis (Lowe, 1843).

Mead, 1957, Zoologica, **42**, part 2 : 52, Pls 1-8.

Smith, 1963, R.U. Ich. Occ. Pap. 3 : 16, Pl. 5, A.

In dealing with **Taractes asper** (above) I have discovered an inexplicable lapse in our indexing of literature. In the above paper I stated that the only gillraker count of **T. longipinnis** was that of Munro (1958, Fishes Australia, **30** : 122). I had not seen Dr. Mead's admirable 1957 description and records of **T.longipinnis** from the Gulf of Mexico, where gillraker counts are stated. More recently from Southwest Africa I have been sent two sets of gills of **T. longipinnis** and now record gillrakers as iii + 3 + 1 + 7 + iii-iv, i.e. on the upper limb three rudiments followed by three normal rakers, the upper small, the lower two increasing in length, the eight on the front of the lower limb normal, long, with 3-4 rudiments anteriorly.

Family Clinidae

Note on certain genera.

The type of **Clinus** Cuvier, 1817 has for some time been accepted as **Blennius superciliosus** Linn, (Cape of Good Hope). This was apparently first quoted by Jordan (1917, The Genera of Fishes, 1758-1920: 101).

The original definition of **Clinus** by Cuvier (1817, Regne Animal : 251- 2) is somewhat confused. On p.251 is stated i.a. "Dans quelques uns, les primiers rayons de la dorsale forment une point separee par une echancre du reste de la nageoire (**Bl. mustelaris** L.; **bl. superciliosus** Bl, 168)". On p. 252 Cuvier states i.a. "Dans d'autres, au contraire, la dorsal est continue e egal (**Bl. mustelaris. blenn. spadiceus** Schn — **blenn acuminatus** id and others)." . Cuvier and Valenciennes (1836, Hist. nat. Poiss. **11** : 270) consider that **Blennius mustelaris** Linn, is not different from **B.superciliosus**. They base their opinion on the original description by Linnaeus (1758, Syst. Nat. 10th ed. : 257, No. 9), which states "mustelaris, 9. B.pinna dorsalis anteriore triradiata. D 3. 43, P. 17, V. 2 A. 29," which falls within the data of **B.superciliousus**. However in the pre-Linnaean (and hence invalid) 1754, Mus. Adolf. Fred. I : 69, **B. mustelaris** is shown as a different fish, with uniform dorsal.

The clear definition (Cuvier, **loc.cit.** : 251) of the dorsal fin as having a crest in front separated by a notch from the rest of the fin; and the mention of **bl. superciliosus** in illustration, would appear to justify the acceptance of **B. superciliosus** as the type of the genus. On the other hand **Blennius mustelaris** is mentioned by Cuvier in two categories, as it happens, its citation in the second case (Cuvier, 1817, **loc. cit**: 252, allied with **B.acuminatus**) is erroneous, as it falls rather with **C. superciliosus** in the nature of its fin as defined by Linnaeus (1758, **loc. cit.** 257). It would appear that in defining the genus **Clinus** (Cuvier 1817 **loc. cit.** : 251) clearly intended to cite in his first category only fishes of the **B. superciliosus** type, i.e. those with a separate crest of three spines, and it is regrettable that this should not have been recognised. In the absence of a clear definition of a type by Cuvier, there appears to be no alternative but to accept the apparent haphazard designation of **Blennius acuminatus** Bloch Schneider, 1801 as the type of **Clinus** Cuvier, 1817, by the first revisor, Swainson, (1839, nat. Hist. Class. fishes etc. **2** : 75). This selection does not accord with what Cuvier plainly regarded as the primary group of species. **B. superciliosus** Linn, has been accepted as the type of **Clinus** Cuvier, 1817 by all recent workers in South

Africa, and the genus **Ophthalmolophus** Gill, 1860 (the type **Clinus latipennis** C & V, 1836) has been used for **B. acuminatus** Bl.-Schn. and its congeners. Acceptance of **B. acuminatus** as the type of **Clinus** Cuvier, 1817 necessitates a reshuffling of species.

Ophthalmolophus Gill, then falls into the synonymy of **Clinus** Cuvier, and the two South African species, **C. superciliosus** Linn, 1758 and **C. robustus** Gilchrist and Thompson, 1908 need to be accommodated in another genus. Hubbs (1952, Stanf. Ich. Bull., **4**, No 2 : 107) has suggested that these species should be assigned to **Clinitrachus** Swainson, 1839, the type **Blennius variabilis** Rafinesque, 1810, which is accepted as a synonym of **Blennius argentatus** Risso, 1810.

By kindness of Dr. E. Tortonese I have been able to examine five specimens of **Clinitrachus argentatus** (Risso, 1810) from the Mediterranean and to compare them with **C. robustus** and **C. superciliosus**. The latter two both show differences from **C. argentatus** that are considered to justify generic distinction, as follows:

A. Scaling incomplete, imbricate on trunk but not on tail and increasingly sparse posteriorly. Vertical fins entirely naked. Ridge on shoulder girdle without hook .... **Clinitrachus**

B. Scales uniformly imbricate over trunk and tail. Vertical fins scaly at least over basal half. Hook on shoulder girdle well developed .... **Caboclinus** nov.

The South African species affected by this reshuffling therefore fall as follows:

Clinus Cuvier, 1817

The type, ***Blennius acuminatus*** *Bloch Schneider*, 1801 (Cape of Good Hope). A prominent ciliate tentacle above the eye. No barbels. More than one soft ray in the dorsal fin. Cheeks naked. No marked bony ridge above the eye. The dorsal fin uniform, without anterior crest or notch. Apparently South Africa only, six species. **Species** : **acuminatus** Bl-Schn, 1801 : **latipennis** C & V, 1836: **venustris** Gilchrist & Thompson, 1908 : **agilis** Smith, 1931 : **helenae** Smith, 1946 and **anne** Smith, 1948.

Mrs. M. L. Penrith has informed me privately that she has discovered a seventh species along the southwestern coast closely related to **C. acuminatus** and of like distribution.

Caboclinus gen. nov.

The type **Clinus robustus** Gilchrist & Thompson, 1908 (S.Africa). A prominent ciliate tentacle above the eye. No barbels. More than one soft ray in the dorsal fin. Cheeks naked. No marked bony ridge above the eye. The front three spines on the head form an elevated crest with a distinct notch between the third and fourth spines, but the membrane from the third is attached well up the fourth spine. Two species, South Africa only : the type, and **Caboclinus superciliosus** (Linn, 1758).

Family Scorpaenidae.

Rhinopias Gill, 1905.

Rhinopias Gill, 1905, Proc. U.S. Nat.Mus. **28** : 225, the type **Scorpaena frondosa** Gunther, 1891, (Mauritius).
Peloropsis Gilbert, 1905, Bull. U.S. Fish.Comm. for 1903 : 630, the type **Peloropsis xenops** Gilbert, 1905 (Hawaii).

This genus is characterised by a deep highly compressed body partly covered with minute, at most feebly ctenoid scales. Over the whole animal there are many cutaneous appendages, those over the eye largest. Four gills, no slit behind the fourth, rakers poorly developed. Fine teeth in bands in each jaw and on vomer, none on palatines, no canines. The single dorsal fin originates on the nape, the spinous part higher. Three anal spines.

Earlier (Smith 1957, **loc.cit**. below) in a revision, not having a specimen of either species, I suggested that **R.frondosa** and **R.xenops** might be identical. However Palmer (1963-64, **loc. cit.** below) with data from the type of **R. xenops**, has established that the two are distinct. Palmer advocated cleavage that appeared to be confirmed by distribution, specimens from the Indian ocean he identified as **R. frondosa**, while those from Hawaii and Japan he considered all to be **R. xenops**. However, comparison of a specimen of **R. frondosa** recently discovered in South Africa and of a specimen from Ceylon, with the description of **R.xenops** (including data of the type quoted by Palmer), while confirming that the two species differ, indicates a somewhat different differential pattern and distribution as follows:

A. No dorsal spine abruptly longer than the remainder, but the fin deeply notched between spinous and soft portions. P 16, the 8-9 simple lower rays thickened, the apices free. 14 lower gillrakers. (S.E. Africa, Arabian Sea, Mauritius, Ceylon, Vietnam, Japan, Australasia) .... **frondosa**

B. Third dorsal spine much the longest, the fin moderately notched between spinous and soft portions. P 18, the lower eleven simple rays thickened, the apices free. 17 lower gillrakers. (Hawaii only) .... **xenops**

The genus **Peloropsis** Gilbert, 1905, the type **P.xenops** Gilbert, 1905 from Hawaii, clearly identical with **Rhinopias** Gill, 1905 has to yield priority to that genus by only a few months (February and August 1905). **Pteropelor** Fowler, 1938 (Proc. U.S. Nat.Mus. **85** : 771, fig 34) the type, **P.noronhai** Fowler, 1938, from 100 fathoms in the China sea, is regarded by Whitley (1954, Austr.Zool. **12** : 60, Pl. 3, fig 2) as identical with **Rhinopias** Gill, and Whitley describes **R. godfreyi** from northwestern Australia.

Judging from descriptions however **Pteropelor** Fowler, appears to merit distinction from **Rhinopias** Gill, in the more normal, elongate, less highly compressed body, much larger scales and incomplete lateral line. Whether these add up to generic level only comparison of specimens can show.

The types of **P.noronhai** Fowler, and of **R.godfreyi** Whitley, 44 and 60 mm total length respectively, are probably juveniles, and from the descriptions there is little to distinguish one from the other. Fowler quotes D X11 9 for **P.noronhai**. Whitley states D X1 10 for **R. godfreyi**, but his illustration shows D X11 9. Whitley gives no count of gillrakers, Fowler finds 6 + 12 in **P.noronhai**.

Rhinopias frondosa (Gunther, 1891)

(**Plate 14, B**)

Scorpaena frondosa Gunther 1891, Proc.Zool.Soc. pt 4 : 482, Pl 39 (Mauritius).

Peloropsis xenops (**non** Gilbert, 1905) Kamohara, 1942, Zool. Mag. Tokyo, **54** : 28, fig 1 (Japan) : and ; 1950, Desc. Fishes Tosa Kishu, Japan : 784, fig 165 (Japan).

Peloropsis frondosa Deraniyagala, 1952, Col. Atl. Vert. Ceylon, 1 : 109, Pl 32 (Ceylon).

Peloropsis frondosus Kamohara, 1959, Rep.U.S.A. Mar.Biol. Stn. **6** : 5, fig 2 (Japan) : and ; 1964, **ibid** : 73, fig 47 (Kochi, Japan). Munro, 1955, Mar. F.W. Fish Ceylon : 250, Pl 48, f 726 (Ceylon, copy Deraniyagala). Fourmanoir and Nhu-yung, 1965, Cahiers Orstom, Oceanogr. nr. special : 93, f 59 (Nha-Trang, Vietnam).

Rhinopias frondosa Smith, 1957, R.U. Ich. Bull. **4** : 62, Pl 4, C (Mauritius, copy Gunther). Whitley, 1963, Austral. Naturalist **12,** pt 4 : Pl 2 (Photo Catala, Noumea). Palmer, 1963 (1964), Ann.Mag. nat.Hist. (13), **6** : 701, Pl 20 (revision). Kotthaus, 1966, Umsch. Wiss. u. Technik, Frankfurt A.M. **4** : f 8 (N. Indian Ocean).

D XI I 9. A III 5. P 7+9 = 16. C 5, 16, 5. L.1. 25 tubules, with gaps. Gillrakers 7+1+13. Depth 2.2, head 2.1 in standard length. Eye 4.5 in head, 2 in snout, 1.1 in interorbital, 2 in postorbital length.

No nasal spines. The supra-orbital ridge is elevated and terminates in a flat retrorse spine. Each side of the origin of the dorsal fin there is a nuchal ridge which is apically broadly bispinose. There are three opercular spines, all curved, the upper short, the lower two subequal, the opercle concave between them. On the preopercle are four spines, one on the hind margin, two about the angle, the upper the largest, and one below, obtuse. The eyes are somewhat protuberant laterally. The nostrils are circular, about one diameter apart, the hinder plain, midway between eye and snout tip, the posterior with an elongate filament. The head and body bear numerous skinny appendages, those supraorbital most prominent, each is twice as long as the eye diameter and wider than the eye, with smaller side processes. There are small flaps along the front and side of the snout and a large one above the middle of the maxilla. There are small flaps on the dorsal spines both on the sides and apically, and a number on the chin and along the margin of the preopercle, the largest below. There are a few small ones on the chest. The whole circle of the iris bears wart-like processes, each with an apical flap, that behind the pupil much the largest, the one above also large. There are small slender cilia on the head, most prominent on the cheek. There is no slit behind the last gill. The gillrakers are rudimentary, most are merely low spinose knobs, the upper seven are smaller than those on the lower arch, that in the angle is longest, lobate. The uppermost raker on the lower limb is rudimentary. Pseudobranchiae are present.

The mouth is protractile, oblique, and the apices of the short subvertical premaxillary processes form a prominent median knob on the top of the snout. The lower jaw projects slightly, the maxilla reaches to below about mid eye. Along each jaw is a band of fine sharp teeth, the upper pair, widely separated at the symphysis, bear teeth in 3-4 series, similar bands in the lower jaw are almost confluent anteriorly, with teeth in 2-3 series. There is an angular band of similar but smaller teeth on the vomer in 2-3 series. The palatines and the tongue are edentate.

The dorsal originates on the nape, the front two spines are curved, slightly antrorse, the membrane is moderately incised. The first spine is 1.3 times the eye, those behind lengthen to the fourth, which is longest, 4 in standard length. Thereafter the spines shorten regularly to the eleventh, which is the shortest, about 3/5 of the first, forming a deep notch in the fin. The membrane from the apex of the eleventh spine is attached midway up the abruptly longer twelfth spine, which is twice as long as the eleventh. The soft fin is high, the rays increase to the fourth, which is as long as the fourth spine, thereafter shorten, giving the fin a broadly convex margin. The base of the spinous dorsal is twice that of the soft fin. The dorsal soft rays except the first and the hindmost bifid unit, show incipient apical bifurcation. The anal is inserted below the front of the soft dorsal fin. The first anal spine about equals the orbit, the third is twice as long, the second intermediate. The anal soft rays are longer, the third and fourth are longest, the rays are all simple. The last ray in the dorsal and anal is double to the base, and both fins are completely free from the caudal.

All the rays of the rounded caudal are simple. The pectoral equals the head and reaches beyond the anal origin. On both sides the upper two pectoral rays are closely adjacent, all the rays are apparently simple, but the apices of the second to the seventh rays are dilated (flattened), and appear to be in process of bifurcation. The eight lower rays are thickened and the apices are free, plainly used as feelers.

The pelvic is adnate, the rays are apically bifurcate, the fin reaches beyond the anal origin. Though the anal and the caudal rays are not divided, they are apically dilated exactly as the 2nd-7th pectoral rays.

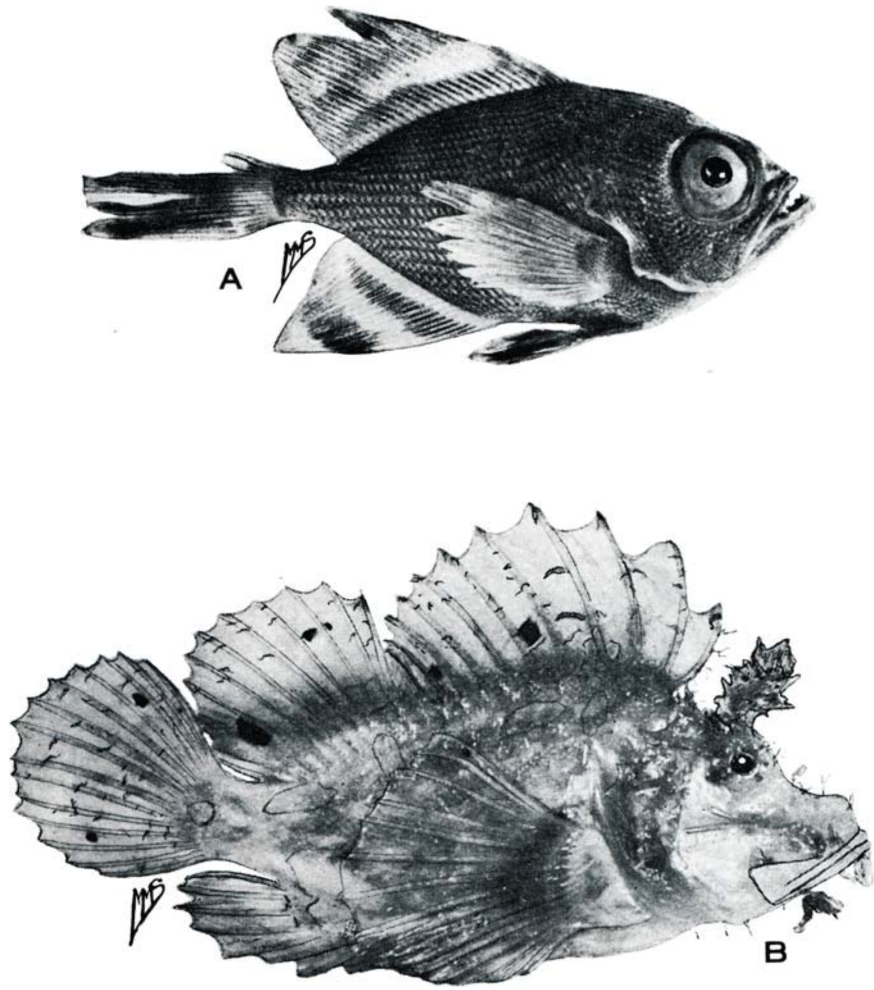

Plate 14

A. **Taractes asper** Lowe, 70 mm (Cape Town). B. **Rhinopias frondosa** (Gunther), 51mm, (Durban).

The lateral line, almost complete, consists of a series of rather slender tubules above the scaling and runs parallel with the dorsal profile. Much of the body is covered with minute adjacent but non-imbricated cycloid scales, which become obvious only after alizarin staining, about 70 series, difficult to count. No scales could be detected on the head or on the fin membranes. At the upper part of most scales is a minute papillose process, giving the skin a rough appearance, especially about the shoulder.

Colour in life (from colour transparency by Dr. A. Wright) milky yellow, with orange tinge over the opercle. The body is covered with thin brown lines forming irregular loops of varying size and shape. The iridal flaps are almost black, giving a radial effect. There are a few prominent dark marks on the fins, one rectangular, low, between the 5-6th dorsal spines, one, smaller, behind the base of the ninth dorsal spine, one across the upper part of the second dorsal ray, a small one on the upper and another at the lower part of the caudal. The largest is low down between the seventh and eighth dorsal rays, and the smallest (but distinct) between the apices of the first and second (upper) rays of the pectoral fin.

Described from a single specimen from Durban, 51 mm in total, 45 mm standard length, caught underwater at moderate depth and preserved by Dr. A. Wright of Durban.

This is a noteworthy discovery in South African waters.

R. frondosa was first found at Mauritius, the type a "7½ inch long" specimen described by Gunther in 1891, and while no other has been recorded from there, the species has since been found at Ceylon, Arabian Sea, Japan, Vietnam and New Caledonia, close east of Australia. Deraniyagala (1952, **loc.cit.** above) described and figured **R. frondosa** from Ceylon. No length is stated in the description, the data of the plate indicate the length of the specimen as about 380 mm, by far the greatest yet recorded. However, the scale on the plate is erroneous, the actual length of the specimen proves to be 126 mm, one third of that indicated. The only dimension in the description is "head 2.2", but the illustration shows the head 2.5 in standard, 3.2 in total length. Puzzled by these discrepancies, on attempting to secure the specimen on loan from Ceylon, I was informed that it had been sent to the British Museum. Fortunately, by kindness of Dr. P. J. P. Whitehead I have been able to examine the specimen. Palmer (**loc.cit.** above) has given data of this 126 mm specimen from Ceylon, and states depth 2.2, which is correct, whereas Deraniyagala's plate shows depth 3.2 in the standard length.

Palmer (1963-64, **loc.cit.** : 703) distinguished **R. frondosa** from **R.xenops** as follows:

	R. frondosa	**R. xenops**
	Indian Ocean.	Pacific Ocean.
Pectoral rays.	8-9 + 7-8	1+6+9-11
Gillrakers.	4+17-18	6+14-17

For the type of **R. xenops** Palmer (**loc.cit**. above) records P 18, the uppermost and the eleven lower rays simple, which agrees with the original description. For the type of **R.frondosa** Palmer records of P 16, the lower seven rays simple, i.e. P 9+7. However, while Gunther's original description (1891, **loc.cit.**) agrees with Palmer's data for the pectoral fin, Gunther's illustration shows P 16, the uppermost ray barely divided apically, the folowing seven are shown as divided, and the eight lower simple, i.e. P 8+8. It is possible that while both pectoral fins of the type have sixteen rays, there may be variation in the number of simple and divided rays, which I have found to be not uncommon in Scorpaenid fishes.

Japanese specimens as quoted by Palmer all have P 1+6+9, i.e. total 16, and from the illustrations these certainly appear to be specifically identical with my South African specimen, which at 51 mm total length is by far the smallest yet found. This has P 16, the rays all simple, with however the second to the seventh apically flattened and the lower nine thickened and apically free. The dorsal fin rays in my fish are mostly in process of apical division, most other fin rays are simple but some are apically flattened.

In extensive studies of Scorpaenoid, especially of Scorpaenid fishes I have found that in the young usually all fin rays are simple, and that apical division develops with age. Further, it is rare in Scorpaenid fishes to find in one species a variation of more than one in pectoral ray total count, variation shows chiefly in the relative number of simple and divided rays, even on the two sides of one fish this may differ, while the total is the same in the great majority of individuals. All specimens under review, except the Hawaiian type of **R.xenops**, have sixteen pectoral rays, initially all simple, the others show increasing apical furcation of the upper seven rays with growth, i.e. the pectoral formula may be written as P 0-1, 6-8, 8-9 = total 16. Further, all these specimens, (except the type of **R. xenops**) have the eleventh dorsal spine not more than half as long as the twelfth, and all have a marked black blotch on the lower part of the membrane between the seventh and eighth dorsal rays. It is difficult to credit that this latter mark can be a generic character, for one thing there is neither sign nor mention of it in the original description of **R. xenops**. Also, the type of **R. xenops** differs from all other congeneric specimens in having eighteen pectoral rays, all the remainder, from both Indian and Pacific oceans, have sixteen.

There appears also to be a difference in scaling between **R.xenops** and **R.frondosa**. While the original description (Gilbert, 1905, **loc.cit.** : 630) of **R.xenops** states "scales in irregular series, about 70 vertical rows above lateral line", the illustration (**loc.cit.**, fig 245) shows no more than fifty regular rows.

Even though much smaller, my Durban specimen agrees so closely with the description and illustration of Kamohara's 205 mm specimen from Susaki, Japan, that it is impossible to consider them as different: equally my specimen agrees with the type of **R. frondosa** in almost every detail. The upper pectoral ray in that type is shown by Gunther (**loc.cit**. above) to be feebly divided apically whereas in the Durban specimen it is simple. This difference is almost certainly merely developmental, the total count has more significance.

Palmer (**loc.cit**. above) has recorded gillrakers as follows : for the type of **R.xenops**, 6+17, for the 202 mm Mauritius type of **R. frondosa** 4+17, and for the 126 mm Ceylon specimen 4+18. I have examined the latter, from which most of the outer gill-arch on the right side has been excised but is with the specimen. I find unmistakably 6+14 outer rakers on each side, and can only surmise that Palmer included four posterior poorly developed inner rakers in his count of the lower rakers, these inner rakers alternate in insertion with the hinder outer four, but are definitely posterior. It appears justifiable to assume that **R.frondosa** has 6-7+14 gillrakers, the uppermost raker on the upper limb in my small specimen is a rudiment and was confirmable only on alizarin staining. This uppermost rudiment probably becomes obsolete with age. It may be noted that the gillraker count of 6+17 for the type of **R. xenops** was (**fide** Palmer) determined by Schultz and Kanazawa in Washington.

The Hawaiian type of **R. xenops** thus differs from all other congeneric specimens in its higher pectoral ray count, in gillraker count, in the profile of the dorsal fin, including the abruptly elongate third dorsal spine, and in the absence of prominent characteristic black marks on the fins. Though unable to examine any but my own specimen and that from Ceylon, the evidence appears to favour the specific isolation of the Hawaiian **R.xenops**. The remaining known specimens are in my view all conspecific, distinguished from **R.xenops** as indicated above. This results in the distributional pattern shown below.

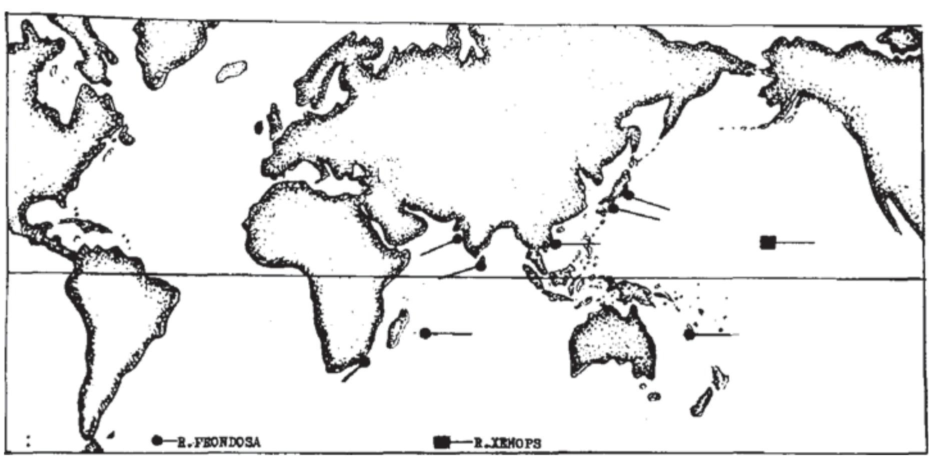

Fig. 2. Distribution of species of **Rhinopias** Gill. Most represent a single specimen, emphasising the rarity of the species.

Addendum to **Taractes asper** (Lowe) :

Since the above was composed I have seen the following:

Grindley and Penrith, 1965, Zoologica Africana, **1** (1) : 284, where **Taractes asper** is recorded as having been taken in deeper water off Natal and in the S. W. Indian Ocean, south of Madagascar, precise localities not defined.

ADDENDUM 2.

Family Nasidae.

ATULONOTUS VOMER (Klunzinger, 1871)

This hornless slender bodied species, well known but not abundant in the Red Sea has not before been found along the shores of East Africa. In a deep channel off Shimoni, Kenya, some years ago we saw a shoal of apparently this species but were unable to capture a specimen, nor did we get any despite constant search in the Western Indian Ocean. We have a portion of an underwater film taken at a reef off Bazaruto, Mozambique, showing a shoal of apparently this species, but the outlines are not of such clarity as to be certainly distinguishable from those of the closely related **A. hexancanthus** Bleeker, 1855.

Recently we have received a 340 mm specimen from Mr. A. R. Thorpe of Durban that is unmistakably this species, the first positive record of **A. vomer** from the East coast of Africa.

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