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THE RARE BIG-EYE.

PRISTIGENYS NIPHONIA

(C & V), IN SOUTH AFRICA

(With Plate 18)

by

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Grahamstown, South Africa.

Illustrations by Margaret M. Smith

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Grahamstown, South Africa).

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Family Priacanthidae

Pristigenys Agassiz, 1835.

The type **P. macrophthalmus** Agassiz, 1835.

As pointed out by George S. Myers (1958, Stanford Ich.Bull.
7, (3) : 40) there appears to be no valid reason for refusing to accept
this initially fossil genus as valid for living forms. **Pseudopriacanthus**
Bleeker, 1869 is a synonym.

Three known living species have been accepted, one, **P. niphonia**
(C & V, 1839) from the tropical and temperate Indo-Pacific, **P. alta**
(Gill, 1862) found over a wide stretch of the temperate and tropical
shores of the western Atlantic, from the Gulf of Maine to Brazil,
and one of doubtful identity, **P. serrula** Gilbert 1890, known from
only three specimens, two being small juveniles, one each from
southern California, Colombia, and Peru (adult). **P. serrula** has never
been illustrated.

Without specimens of any but **P. niphonia**, from descriptions it
is plain that all three are closely related to doubtfully distinct at
specific level. From descriptions there is little apparent to justify
the distinction of **P. serrula** from **P. niphonia**, except that the adult
of the former, as described by Hildebrand and Barton (1949, Smith.
Misc.Coll. 3, No 10 : 16) from Peru, is described as having a slightly
deeper body. In all major characters, e.g. fin, scale and gillraker
counts **P. serrula** agrees exactly with at least western Indian Ocean
specimens of **P. niphonia**. Virtually the only difference between **P.**
alta and **P. niphonia** is apparently the gillraker count. An exhaustive
account of the Atlantic **P. alta** has been given by Caldwell (1962,
Fish and Wildlife Service, Fish.Bull. 203, 62 : 103-149, numerous
Pls and figs). Caldwell finds gillrakers in **P. alta** to vary 6-9+17-21,
the mean 8+19, commonly 7-8+19-20.

Comparatively few gillraker counts for **P. nipponia** are available, those quoted are : 17 (Boulenger 1895, Japan); and 9+21 (Fowler 1931, Japan). In four specimens from the western Indian Ocean I find 7-8+17-18 (the most anterior a mere knob). If Fowler's 1931 count from a Japanese specimen is correct, then **P. alta** may prove to be more conformably acceptable as a sub-species of **P. nipponia**. While in recent Japanese encyclopaedias there are a number of beautiful illustrations of **P. nipponia**, there does not appear to be a single recent detailed description of that species by any Japanese ichthyologist. No recent gillraker count of any Japanese specimen can be found.

The following table gives comparative data of species of *Pristigenys* Agassiz

	<i>P. nipponia</i>		<i>P. alta</i>	<i>P. serrula</i>		
	Japan, Celebes Boulenger, 1895	Japan Fowler, 1931		W. Indian Ocean 1966	W. Atlantic Caldwell, 1962	Juveniles California Clark, 1936
Dorsal X	11-12	11-12	11	10-12 (most 11)	11	11
Anal III	10-11	10-11	10	9-11 (most 10)	10-11	10
L.1. tubes	34-40	34-36	35-38	31-39 (most 33-37)	36	—
Scales series	55-59	45-56	50-53	50-55?	—	53
Gillrakers	17	9+21	7-8+17-18	6-9+17-21 most 7-8+19-21	16(17?)	17
Depth body in Std. L. Adult	2	1.8	1.9-2.0	2.0	—	1.8
Head in Std. L.	2.5(-3)	2.5(-3.6)	2.5	2.6	—	2.6

The present discussion arises from the discovery of a specimen **P. niphonica**, 225mm total length, taken in a trawl in about 40 fathoms some miles east of Algoa Bay, at about 34°S. This is the first record from South African seas and the furthest south recorded for this species.

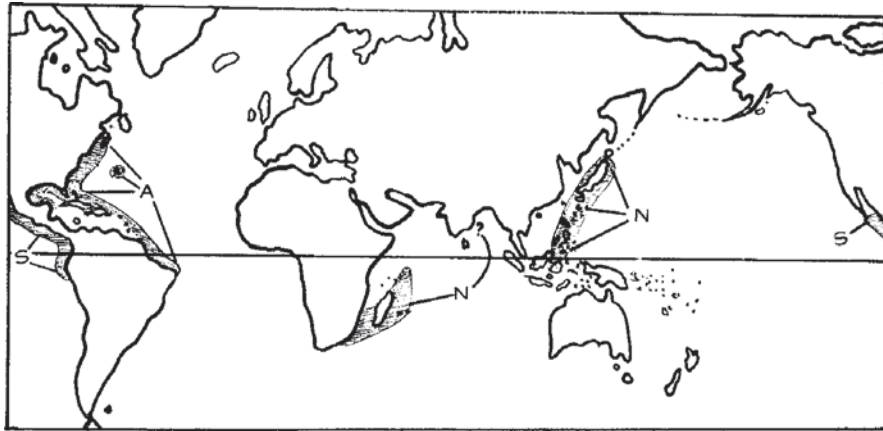


Fig 1. Known distribution of **Pristigenys** Agassiz.

A. **P. alta**. N. **P. niphonica**. S. **P. serrula** (**niphonia**?)

It is of interest to note that the distribution of **P. niphonica** shows close correspondence with that of **Velifer multispinosus** Smith, (1951, Ann.Mag.nat.Hist. (12)4 : 504). Both occur in the same area of the Mozambique channel and in Japan.

Another comparable case of close connection between South Africa, Japan and the far eastern Pacific is that of **Pentaceros richardsoni** Smith, which also is found in those areas, but not anywhere intermediate (see Smith 1964, R.U. Ich.Bull. 29 : 572, fig 2, PI 88).

PRISTIGENYS NIPHONIA (C & V, 1829).

(Plate 18)

Priacanthus niphonius Cuvier and Valenciennes 1829, Hist.Nat.Poiss. 3 : 107 (Japan). Schlegel 1843, Fauna Jap. : 21, PI 7a (Japan).

Pseudopriacanthus niphonius Bleeker 1869; 241; and, 1876, Atl.Ich. PI 352, fig 3 (Celebes). Boulenger 1895, Cat.Fish.B.M. 1 : 358 (Japan, E. Indies). Fowler 1931, U.S.Nat.Mus.Bull. 100, 11 : 80 (Japan). Smith 1951, Ann.Mag.nat.Hist. (12) 4 : 53, fig 3 (Moz. channel). Herre and Herald 1951 : 330 (Philippines). Smith Mem. Mus.Alv.Castro 1953 : 8 (rec Moz.channel); and, 1953, Sea Fishes S.A. : 517, PI 106, fig 406a (Moz.Channel). Fourmanoir and Gueze 1962, Poiss. Reunion : 6 (rec). Smith and Smith 1963, Fishes Seychelles : 13, PI 9,B.

Myripristis refulgens Valenciennes 1862 : 1169 (Bourbon).
Priacanthus refulgens Sauvage 1891 Hist.Nat.Madag.Poiss **16** : 129,
Pl 5, fig 5 (E. coast Madagascar).
Priacanthus meyeri Gunther 1871 Proc.Zool.Soc.Lond. : 656 (Men-
ado).

The South African Algoa Bay specimen has the following: D X 11. A III 10. P 2,15. L.1. 38 tubules, about 52 series along above the lateral line to caudal base. Five scales above the highest point of L.1., and about 26 from the anal origin up to the L.1. The anterior predorsal scales are very small and embedded. Gillrakers 7+1+15 plus an anterior knob, the longest rakers near the angle exceed the gill filaments.

Depth 1.9, head 2.5 in standard length. Eye 2.2 in head and 1.8 times snout and interorbital. Fourth dorsal spine longest, 1.7 in head, 4 in standard length. Pectoral 2.0, pelvic 1.3 in head.

Colour after death bright scarlet with three very faint lighter bars across the whole depth of the side (that have vanished on preservation). Iris bronzy-red. Opercles silvery red, chin orange. Spinous dorsal deep salmon, soft dorsal basally red, grades through salmon to distal half chrome yellow, with narrow black margin. Anal similar, but basal two thirds red. Pectoral salmon red. Pelvic deep blood red, apically black. Caudal yellow, hind margin narrowly black.

Previously known from the Mauritius area, Mozambique, Madagascar, Seychelles, East Indies, Philippines and Japan this handsome and striking species is a noteworthy addition to the fauna of South African seas.

It is interesting to note that the extended zones where **P. nipponia** and **P. alfa** have been found are similar in the configuration of the bottom. It would appear that this genus (typified by the two species mentioned) probably inhabits a restricted zone along the margins of submarine banks of moderate depth. Myers (1958, **loc.cit.**) notes it as surprising that the genus has not been found about Australia and that it may well be found in West Africa. It may also be predicted that it will be found to occur along most of East Africa and along the extensive mid Indian Ocean ridge that includes Socotra, Chagos, Rodrigues and St Paul, possibly north to Maldives, Ceylon and India.

It is probable that this genus has already been found in Indian seas but not recognised. Day (1876, Fishes India : 48) in a footnote under '**Priacanthus blochi** Bleeker, states "Jerdon remarks (M.J.L. and Sc 1851, p 131) '**Priacanthus**, I possess drawings of apparently two species of this genus. The one is entirely of a fine red colour and was named **Paswa** (Tamil). The other is reddish above, white on the sides and the ventrals spotted dusky. D 10/11. A 3/11, it was named Kewai".

No Indo Pacific (or any) species of **Priacanthus** is known which normally has less than twelve soft rays in either the dorsal or the anal fin, only **Pristigenys** has eleven (11-12) in the dorsal and eleven (9-11) in the anal fin.

It is therefore probable that this "**Kewai**" is a species of the genus **Pristigenys**, probably **P. nipponia**, which has D X 11-12 and A III 10-11.

As the drawings mentioned by Day are probably still in existence the identity of this fish could be verified.

Early juvenile stadia of **P. nipponia** are apparently unknown, they have not been described. When found they will probably show that the supposed differences between **P. serrula** Gilbert, and **P. nipponia** are chiefly a matter of age.

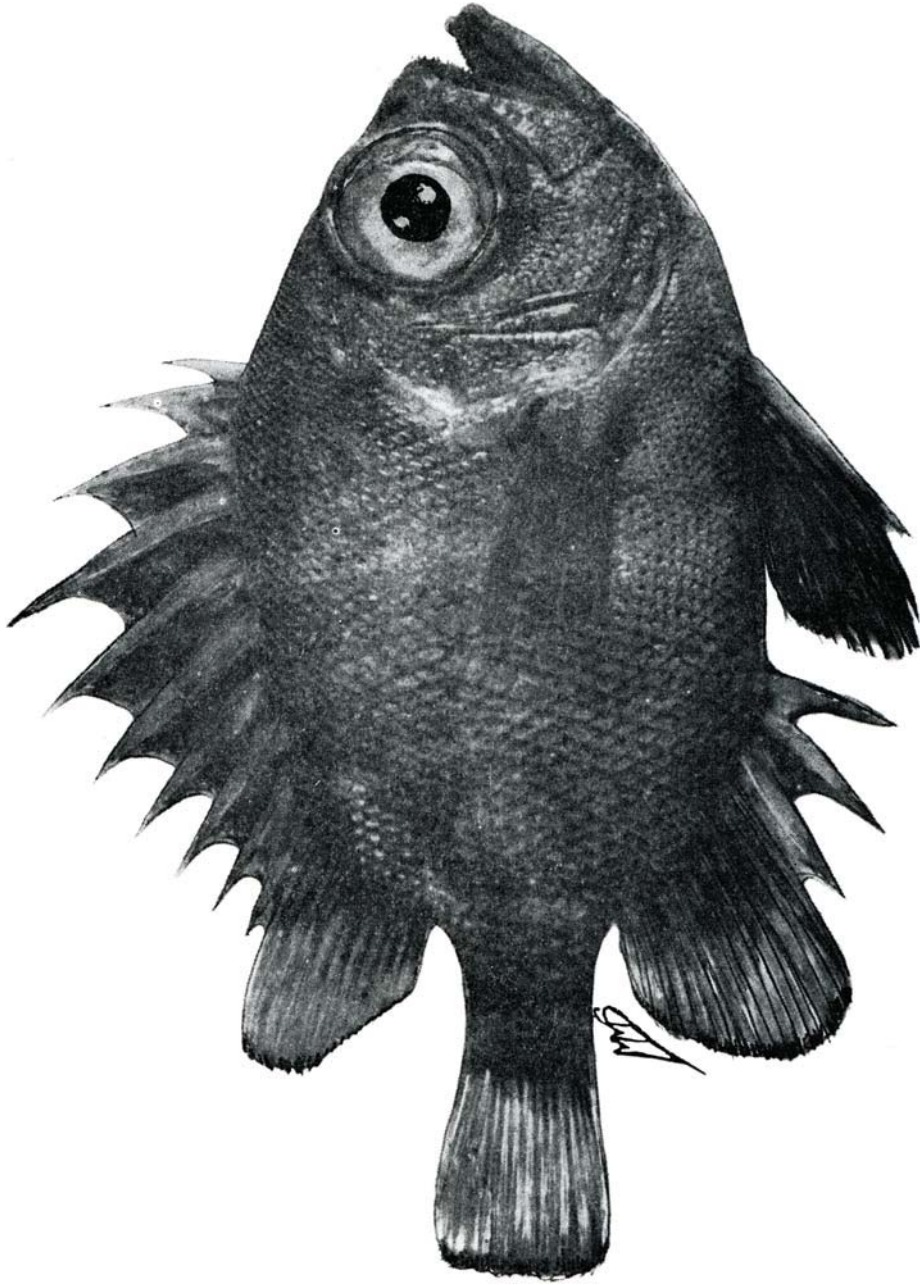


Plate 18
***Pristigenys nipponia* (C & V). 220mm (Algoa Bay).**

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