

A NEW *POLYSTEGANUS* (PISCES, SPARIDAE) FROM MAURITIUS

Margaret M. Smith

Abstract.—A new fish species, *Polysteganus baissaci*, is described from Mauritius, and a key to the species of *Polysteganus* from the western Indian Ocean is presented. The status of the genus *Polysteganus* Klunzinger is discussed.

Polysteganus baissaci, new species

Fig. 1

Common names in Mauritius: guingham; gueule pavée dorée

Polysteganus undulosus (non Regan) Baissac 1954:9.

Dentex sp. ou *Polysteganus* sp. Baissac 1956:354.

Polysteganus sp. Baissac 1976:211.

Material examined.—Holotype RUSI 29, total length (TL) 370 mm, standard length (SL) 287 mm. Caught on line in about 100 meters, N.W. of Gunner's Coin, Mauritius (19°56'30"S; 57°37'E).

Paratype RUSI 1350, 315 mm TL; 243 mm SL donated to the J. L. B. Smith Institute of Ichthyology from the Mauritius Museum's collection (some fins and symphyses of both jaws damaged).

Dorsal profile evenly convex, could become gibbous in large males as in *undulosus*. Body ovate. Posterior nostril slit-like, 4 mm in length in holotype, anterior nostril an oval pore, major diameter 1.8 mm in holotype, with a posterior flap capable of covering the orifice. Preopercle margin smooth; mouth fairly small; posterior end of maxilla, partly covered by preorbital when mouth closed, reaching to just beyond anterior margin of eye. Jaws subequal, upper 36.4 lower 40.6 percent in head length.

The following measurements (mm) are of the holotype, followed by paratype in parentheses. If different, the measurements of both sides are given, the left first: depth of body 124.5 (97.5); head length 104 (ca. 86.6), eye (horizontal diameter) 24.7 (24), eye (vertical diameter) 20.07, 21.5 (20.02, 20.09); snout 44.7, 45 (damaged), least depth of preorbital 25.5 (19.9); postorbital 44.7 (35, 37.5) and bony interorbital 29.95 (22.8), width of maxilla 12.35 (10.4).

Gill-rakers 7 + 1 + 11 (7 + 1 + 11), length of longest gill-filament 2.85 times length of longest raker and nearly 2% of head length.

Dorsal fin rays XII, 10. Dorsal fin originates above opercular flap, spines heteracanth, last ray double, 1st spine shortest 20.2 (paratype damaged), 2nd 30.5 (paratype damaged), 3rd 41.0 (36.2), 4th longest 44.5 (paratype damaged), reducing gradually to last 32.0 (26.0) millimeters. Rays



Fig. 1. *Polysteganus baissaci* n. sp., holotype RUSI 29, 287 mm SL.

(damaged in paratype) 1st longest, 32.3 2–4th subequal, 31.6, last shortest 20.5 millimeters.

Anal fin rays III, 8. Anal fin originating below last dorsal spine, spines heteracanth, last ray double. First spine 20.5 (19.5), 2nd 38.2 (37.5), 3rd 37.0 (36.1), 1st ray longest 33 (30), decreasing to last 27 (damaged in paratype) millimeters. Pectoral fin rays 16 reaching to above 3rd anal spine, 104.7, 107.5 (81, damaged). Pelvic fin rays I, 5: ca. 60, broken in holotype (57.5), length of spine 42.4 (40.08) mm. Pelvic axillary scale 22.8 (20.3). Origin of pelvic to anal origin 87.5 (77.5). Caudal with 9 + 8 principal rays. Caudal peduncle length 1.2 (1.4) times depth of peduncle which is 35.9 (29.0) mm. Vertebrae 9 + 15. Branchiostegals 6.

Teeth.—Typically denticine with four enlarged canines in each jaw; the inner pair smaller than the outer that flare slightly out and back. Pairs in upper jaw closer together than corresponding pairs in lower jaw. Along sides of jaws smaller subconical teeth form a cutting edge, the largest tooth being in the middle of this series. Those in upper jaw are slightly larger than those in lower jaw. Inside these lateral teeth in both jaws are bands of small granular teeth, slightly larger laterally and increasing in size anteriorly to form patches behind the enlarged canines. In the lower jaw two of these teeth, larger than the other lie between but behind the inner enlarged canines.

In *P. undulosus* and *P. caeruleopunctatus* these two teeth are larger and have moved forward into line with the enlarged canines giving six (instead of four in *P. baissaci*) such enlarged canines in the lower jaw.

Scales ctenoid, lateral line 50 + 3, 50 + 2 (48 + 2), lateral transverse 7/16. Seven rows across cheek, 4 rows on preopercle run obliquely down and back to angle, leaving edge of flange naked. Six–7 rows across opercle. About 40 predorsal scales extending into interorbital region where scales become very small and crowded, reaching to line joining upper edges of posterior nostrils. The margin of scaling is rounded leaving rim of eye naked. Pre-orbital, snout, about $\frac{1}{3}$ of preopercle flange and entire chin to below vertical margin of preopercle naked.

Soft dorsal and anal naked until last ray but each fin fits into a scaly sheath 2 scales high that extend up onto the last ray.

Color in life.—Head rosy pink, nape and body pink with golden sheen on back, silvery below. The 6–7 sub-parallel narrow wavy blue bands along the body start behind the head with a few blue spots forward on area above eye. Membranes of dorsal and soft anal bluish. Eye rosy.

Coloration in preservative.—Whole fish pale buff color, bands darker.

Locality.—Known only from Mauritius, caught on lines mainly north of the main island in 80–100 meters.

Etymology.—It gives me very great pleasure to name the new Mauritius species *Polysteganus baissaci* after Jean de B. Baissac, not only because he

recognized it as undescribed, but also to pay tribute to the many years he worked with Mauritian fishes. Through his energy, collecting and publications he has produced a comprehensive list of the fishes of that area, so useful to subsequent workers.

Relationships.—Closely related to *Polysteganus undulosus* with which it was originally confused, it differs in having fewer gill-rakers (11 on lower arch compared with 14–16 in *undulosus*) and only 4 enlarged canines in lower jaw (*undulosus* has 6). Dorsal fin originates over opercular flap instead of behind opercle (as in *undulosus*), pectoral fin reaches well beyond anal origin. The scales are larger: the lateral line has a maximum of 53 scales (*undulosus* has a minimum of 58 scales), lateral transverse 7/16 and 7 rows across cheek (*undulosus* 9–10/19–20 and 9–10 respectively).

The color also differs in that *baissaci* has fairly pale blue lines on a pink background while the body lines along *undulosus* are a brilliant peacock blue in a bright pink band, with body color in between being yellow. The most striking color difference which is obvious in preserved specimens as well is of course the absence in *baissaci* of the large black oval blotch that occurs in *undulosus* across the lateral line below the 5–6th dorsal spines.

Key to the Western Indian Ocean Species of *Polysteganus*

1. Eye 1.6–2.0 in preorbital depth (Algoa Bay to Beira)
 - Eye about equal to preorbital depth *praeorbitalis* Günther, 1859 2
2. Each scale with a dot to form rows of dots along the body (Natal to Red Sea)
 - Every alternate row of scales with a narrow light line forming 8–9 wavy lines along body *caeruleopunctatus* Klunzinger, 1870 3
3. A large dark (generally oval) blotch across lateral line beneath 5–6th dorsal spines, 14–16 gill-rakers on lower arch, 6 enlarged canines in lower jaw. Dorsal fin originates behind opercle (Cape to S. Mozambique)
 - No dark blotches on body, 11 gill-rakers on lower arch, 4 enlarged canines in lower jaw. Dorsal fin originates above opercular flap (Mauritius) *undulosus* Regan, 1908
 - baissaci* new species

Discussion of the Genus *Polysteganus* Klunzinger, 1870

In 1870, Klunzinger described *Polysteganus* with its type-species being *P. caeruleopunctatus* from the Red Sea. After 1870, workers like Boulenger (1903), Gilchrist and Thompson (1908) and Barnard (1927) considered *Polysteganus* a junior synonym of the Atlantic *Dentex*. Fowler (1933) considered the subgeneric rank restricted to the type-species of *Polysteganus*.

Smith (1938) resurrected *Polysteganus* for four species found in South African waters, viz the type-species *caeruleopunctatus* and three endemics: *undulosus* Regan 1908, *argyrozona* Valenciennes, 1830 (which he placed in a new subgenus *Argyrozona*) and *praeorbitalis* Günther, 1859 (for which he erected the subgenus *Axineceps*). In 1949 Smith restricted *Polysteganus* to only three species, elevating *Argyrozona* to generic status. *Polysteganus* is here accepted as restricted by Smith (1949).

Denticine characteristics are: a moderate mouth with no true molars but four to six enlarged canines anteriorly in each jaw; scales ctenoid; and skull similar to Sparinae in having well-developed occipital and parietal crests but differing in having short premaxillary pedicels, much shorter than the relatively slender rami. The denticines also have no parapophyses on the first two precaudal vertebrae.

The following are common to all species of *Polysteganus*: A deep ovate body with depth greater than head length; blunt snout; moderate eye; lanceolate gill-rakers; Dorsal XII, 10; Anal III, 8-9; preopercle flange partly scaly; and predorsal scales extend to before anterior margin of eye. Dorsal and anal fins naked with scaly sheaths along bases of soft fins. Lateral line tubules, especially anteriorly, appear bifurcated due to two smaller tubes or pores behind the main tube. Color reddish with longitudinal bluish lines or spots. Predators of relatively deep water, only *P. praeorbitalis*, the species with the smallest eye, occasionally caught from the shore.

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Institute of Ichthyology, Rhodes University, Grahamstown, 6140, Republic of South Africa.