

**CEPHALOPHOLIS XANTHOPTERUS, A NEW SPECIES OF
SERRANID FISH FROM INDONESIA, MELANESIA AND THE
GREAT BARRIER REEF**

GERALD R. ALLEN*

and

WALTER A. STARCK II†

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ABSTRACT

Cephalopholis xanthopterus, a member of the family Serranidae, is described from eight specimens collected at Indonesia, New Britain, Solomon Islands, and on the northern Great Barrier Reef of Australia. It differs from other species of *Cephalopholis* primarily with regards to colour.

INTRODUCTION

During 1972 and 1973 the authors conducted ichthyological investigations aboard the research vessel 'El Torito' at various localities in Melanesia and on the Great Barrier Reef off Cairns, Queensland. Several collections of reef fishes were made with small spears and powdered rotenone. Among our material are five specimens of an undescribed serranid. Three additional specimens were collected by the senior author and J. Randall near Rabaul, New Britain during August 1973 and at Ambon and the Seribu Islands, Indonesia in February 1975. The species belongs to the subfamily Epinephelinae and genus *Cephalopholis* as defined by Katayama (1960). Type specimens have been deposited at the Australian Museum, Sydney (AM), the Bernice P. Bishop Museum, Honolulu (BPBM), and the Western Australian Museum, Perth (WAM).

* Curator of Fishes, Western Australian Museum, Perth.

† Research Associate, The Australian Museum, Sydney.

Cephalopholis xanthopterus n. sp.
(Fig. 1; Table 1)

Holotype

BPBM 15621, 93.5 mm SL, collected with dynamite at Alite Reef (approximately 8°52'S, 160°36'E), off Malaita, Solomon Islands in 15 metres by G. Allen, B. Goldman, J. Randall, and W. Starck II on 25 July 1973.

Paratypes

AM I.17498-001, 2 specimens, 74.2 and 92.9 mm SL, collected with dynamite at Kovuhika Island (approximately 8°59'S, 160°02'E), off northern end of Florida Island, Solomon Islands in 10-15 metres by G. Allen, B. Goldman, and J. Randall on 28 July 1973; AM I.17499-001, 92.9 mm SL, collected with rotenone near Tanavulu Point (approximately 9°02.5'S, 160°04'E), northern end of Florida Island, Solomon Islands in 10 metres by B. Goldman and J. Randall on 29 July 1973; AM I.17503-001, 52.0 mm SL, collected with rotenone at Blanche Bay (approximately 4°18'S, 152°11'E), about six nautical miles south of Rabaul, New Britain in six metres by G. Allen and J. Randall on 7 August 1973; AM I.16866-001, 75.3 mm SL, collected with rotenone at Opal Reef (16°15'S, 145°50'E), Great Barrier Reef, off Port Douglas, Queensland, Australia in 13 metres by G. Allen and W. Starck II on 26 November 1972; WAM P25244-008, 112.0 mm SL, collected with rotenone at Ambon Bay off Poka Village, Ambon, Molucca Islands, Indonesia in three to four metres by G. Allen and J. Randall on 6 February 1975; BPBM 18088, 91.0 mm SL, collected with spear at Pulau Putri, Seribu Islands, Java Sea in 1.5 metres by J. Randall on 15 February 1975.

Diagnosis

A species of *Cephalopholis* with the following combination of characters: dorsal rays IX, 16 (last ray composite); anal rays III, 8 to 9; pectoral rays 17; lateral-line pores 42 to 46; vertical scale rows from upper edge of gill opening to base of caudal fin about 90 to 95; body mostly dark brown; soft dorsal, anal, pelvic, and caudal fins mostly pale (bright yellow-orange in life).

Description

Dorsal rays IX, 16 (last ray composite); anal rays III, 9 (one paratype with III, 8); pectoral rays 17 (mostly branched); pelvic rays I, 5; branched caudal rays 15; lateral-line pores to caudal base 42 to 46; vertical scale rows from upper edge of gill opening to base of caudal fin about 90 to 95; scale rows above lateral-line to origin of dorsal fin 22 to 24; scale rows below lateral-line to anus 31 to 32; gill rakers (excluding rudiments) on first arch $1 + 1 + 8 = 10$ (range for paratypes 9 to 11 total rakers).

The range of proportional measurements for the paratypes are indicated in parentheses when differing from the holotype. Morphometric proportions

for the holotype and three paratypes are expressed as thousandths of the standard length in Table 1.

Greatest body depth 2.8 (2.8 to 2.9), greatest width 6.1 (5.2 to 6.1), head length 2.4 (2.3 to 2.5), snout to origin of dorsal fin 2.4 (2.4 to 2.5), snout to origin of anal fin 1.5 (1.4 to 1.5), snout to origin of pelvic fin 2.6 (2.5 to 2.8), all in standard length. Snout 4.5 (4.9 to 5.2), eye 5.5 (4.9 to 5.3), postorbital length of head 1.6 (1.6 to 1.7), least width of bony interorbital 9.6 (9.0 to 10.7), tip of snout to rear edge of maxillary 2.1 (2.0), least depth of caudal peduncle 3.2 (3.1 to 3.2), length of caudal peduncle 4.6 (4.3 to 4.6), length of dorsal fin base 0.7 (0.7 to 0.8), of anal fin base 2.1 (1.9 to

TABLE 1
MORPHOMETRIC PROPORTIONS (IN THOUSANDTHS OF THE
STANDARD LENGTH) OF SELECTED TYPES OF *CEPHALOPHOLIS XANTHOPTERUS*

CHARACTERS	Holotype BPBM 15621	Paratype AM I.17498-001	Paratype AM I.17498-001	Paratype AM I.16866-001
Standard length (mm)	93.5	92.9	74.2	75.3
Greatest body depth	357	354	350	361
Greatest body width	164	164	175	193
Head length	419	399	418	425
Snout length	84	76	85	86
Eye diameter	76	80	85	80
Postorbital length of head	258	255	259	252
Interorbital width	44	44	39	40
Least depth of caudal peduncle	136	135	131	132
Length of caudal peduncle	95	98	99	100
Snout to origin of dorsal fin	422	394	415	416
Snout to origin of anal fin	662	673	698	683
Snout to origin of pelvic fin	380	388	386	404
Length of dorsal fin base	572	566	532	529
Length of anal fin base	203	209	195	179
Length of pectoral fin	279	260	270	259
Length of pelvic fin	202	194	202	207
Length of 1st dorsal spine	61	57	62	70
Length of 2nd dorsal spine	106	102	115	113
Length of 3rd dorsal spine	128	123	135	121
Longest soft dorsal ray	187	170	177	166
Length of 1st anal spine	87	84	92	94
Length of 2nd anal spine	175	170	174	185
Length of 3rd anal spine	145	134	159	147
Longest soft anal ray	189	181	178	197
Length of caudal fin	227	231	222	234

2.4), of pectoral fin 1.5 (1.4 to 1.6), of pelvic fin 2.1 (1.8 to 2.1), of first dorsal spine 6.9 (6.0 to 7.0), of second dorsal spine 3.9 (3.6 to 4.1), of third dorsal spine 3.3 (3.1 to 3.5), of longest soft dorsal ray 2.2 (2.3 to 2.6), of first anal spine 4.8 (4.5 to 4.8), of second anal spine 2.4 (2.3 to 2.5), of third anal spine 2.9 (2.6 to 2.9), of longest soft anal ray 2.2 (2.1 to 2.3), of caudal fin 1.8 (1.7 to 1.9), all in head length.

Interorbital space flattened; anterior nostrils tubular; maxillary reaching level slightly posterior to eye; opercle armed with three spines, middle spine slightly closer to lower than upper spine; opercular flap rounded; preopercle margin broadly rounded; upper limb of preopercle finely serrate; scales on head and anterior body region cycloid, remainder of scales ctenoid; predorsal scale extending almost to tip of snout; teeth on dentary and on premaxillary in a villiform band, inner rows longest and depressible; pair of short, conical canines on each side of lower jaw near symphysis; single canine on each side at front of upper jaw; narrow V-shaped band of villiform teeth on vomer; narrow band of villiform teeth on palatine; caudal and pectoral fins rounded.

Colour of holotype in alcohol: head, body, and basal portion of dorsal and anal fins mostly dark brown; rear portion of caudal peduncle light tan; dorsal, anal, pelvic, and caudal fins yellowish-tan; distal margin of pelvic, dorsal, anal, and caudal fins slightly dusky; pectoral fins brown.

The 74.2 and 75.3 mm paratypes have the entire caudal peduncle and the portion of the body immediately adjacent to the soft dorsal and anal fins

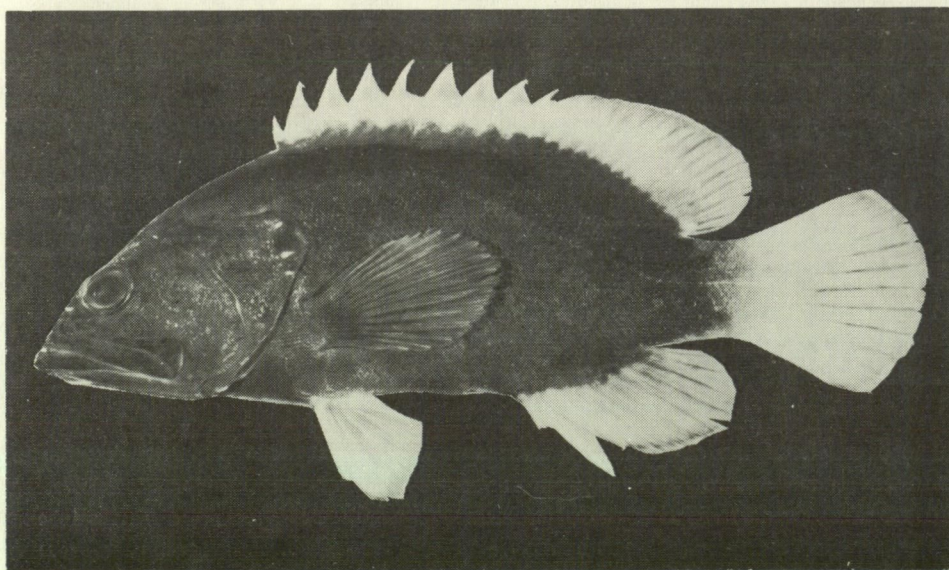


Fig. 1. *Cephalopholis xanthopterus*, holotype, 93.5 mm SL, Solomon Islands.

light tan to yellowish. The specimen from Pulau Putri, Indonesia has most of the spinous dorsal fin and basal half of the soft dorsal dark brown. In addition, the caudal peduncle and basal portions of the anal and caudal fins are brown. The pelvic fins are slightly dusky on the basal half and on the anterior edge.

Colour of holotype in life: head and body dark brown; posterior portion of caudal peduncle and all fins except pectorals yellow-orange; pectoral fins brown.

Remarks

The types were mostly collected from rich coral areas in 1.5 to 15 metres except the specimen from New Britain, which was taken from a World War II shipwreck situated in a silty bay at a depth of six metres. The species is either rare or is seldom seen because of its cryptic habits. The stomach of the specimen from the Great Barrier Reef contained the partly digested remains of a small fish.

The species differs from all other *Cephalopholis* primarily with regards to colour pattern. It is named *xanthopterus* in reference to the striking yellow-orange fins.

ACKNOWLEDGEMENTS

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