

## A New Species of Soldierfish of the Genus *Ostichthys* and Records of *O. archiepiscopus* and *O. sandix* from Tahiti

John E. Randall and Louise Wrobel

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**Abstract** Three species of the soldierfish genus *Ostichthys* have been collected in the Society Islands at depths of 300–420 m: *O. archiepiscopus* and *O. sandix* are new records for the South Pacific, and *O. ovaloculus* is described as new from one specimen taken off Tahiti. It is distinctive in having XI,16 dorsal rays, 15 pectoral rays, 38 lateral-line scales (other species of the genus with 27–30),  $3\frac{1}{2}$  rows of scales above the lateral line, a straight dorsal head profile, long snout, and oval eye; color when fresh, bright red, the centers of scales whitish, resulting in longitudinal banding on the body.

The junior author has been monitoring the deeper water catches of fishermen in Tahiti and Moorea, Society Islands in recent years. This has resulted in the discovery of hitherto unreported species of fishes from French Polynesia. Among these fishes are three species of the holocentrid fish genus *Ostichthys*.

The most common of these three fishes, judging from its prevalence in the catches, is *Ostichthys archiepiscopus* (Valenciennes, 1862). The following six specimens caught in 320–400 m off Tahiti and Moorea have been deposited in the Bernice P. Bishop Museum, Honolulu: BPBM 31608, 167 mm SL; BPBM 31615, 188 mm SL; BPBM 31619, 168 mm SL; BPBM 31633, 175 mm SL; BPBM 31658, 163 mm SL; and BPBM 31659, 153 mm SL. This species was previously known only from Réunion (the type locality), Hawaiian Islands, and Ryukyu Islands.

The second species, *O. sandix* Randall, Shimizu et Yamakawa, 1982, is represented by the following three specimens at the Bishop Museum: BPBM 31605, 177 mm SL; BPBM 31649, 192 mm SL; and BPBM 31660, 188 mm SL. They were caught in 320–400 m off Tahiti. This species was collected previously only at Oahu, Hawaiian Islands.

The third fish, represented by a single specimen collected off Tahiti in 1985, is a new species which we describe herein. We have delayed its description in the hope that additional specimens could be obtained, but none has been found.

Methods of counting and measuring the specimens follow those of Randall, Shimizu and

Yamakawa (1982) who revised the genus.

### *Ostichthys ovaloculus* sp. nov.

(Figs. 1, 2, Table 1)

**Holotype.** BPBM 31643, 210.5 mm SL, male, Society Islands, Tahiti, Tautira, about 300 m, hook and line, local fisherman, 8 December 1985.

**Diagnosis.** Dorsal rays XI,16; pectoral rays 15; lateral-line scales 38; no half scale anterior to first lateral-line scale;  $3\frac{1}{2}$  rows of scales above lateral-line to base of middle dorsal spines; no spine at anterior end of nasal bone; no spine at corner of preopercle; gill rakers 6+13; body depth 2.45 in SL; head length 2.4 in SL; dorsal profile of head straight; snout long, 3.65 in head; orbit elliptical, the greatest diameter 3.05 in head; suborbital series narrow, the depth below eye 6.0 in orbit diameter; last two dorsal spines subequal.

**Description.** Dorsal rays XI,16 (first ray unbranched); anal rays IV,10 (all rays branched); pectoral rays 15 (upper two and lowermost rays unbranched); pelvic rays I,7; principal caudal rays 19 (upper and lower rays unbranched); upper and lower spiniform caudal rays 4; lateral-line scales 38; no half scale anterior to first lateral-line scale; scales above lateral line to origin of dorsal fin 4; scale rows above lateral line to base of dorsal fin from just behind first spine to eleventh spine  $3\frac{1}{2}$ ; scales below lateral line to origin of anal fin 8 (progressively smaller ventrally); circumpenduncular scales 14; median predorsal scales 6; median prepelvic scales 12 (anterior scales small); gill rakers 6 (3 as rudiments)+14

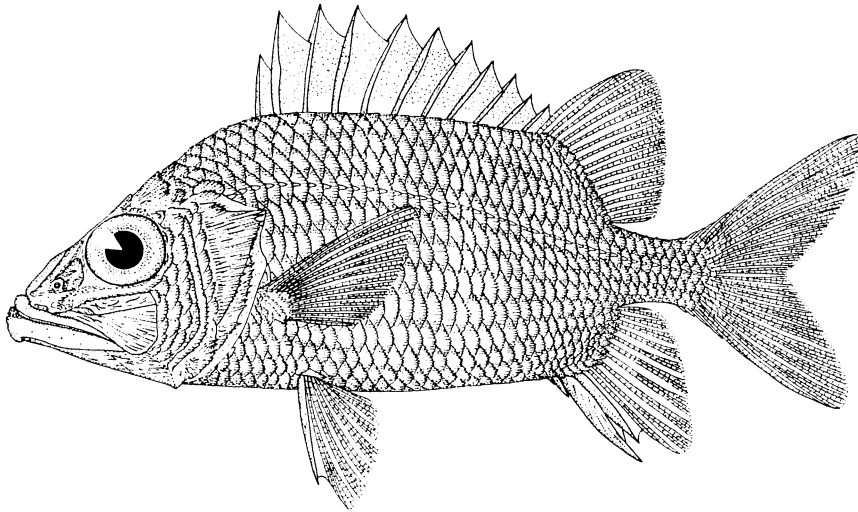


Fig. 1. Holotype of *Ostichthys ovaloculus*, BPBM 31643, 210.5 mm SL, Tahiti (drawing by Takeshi Shimizu).

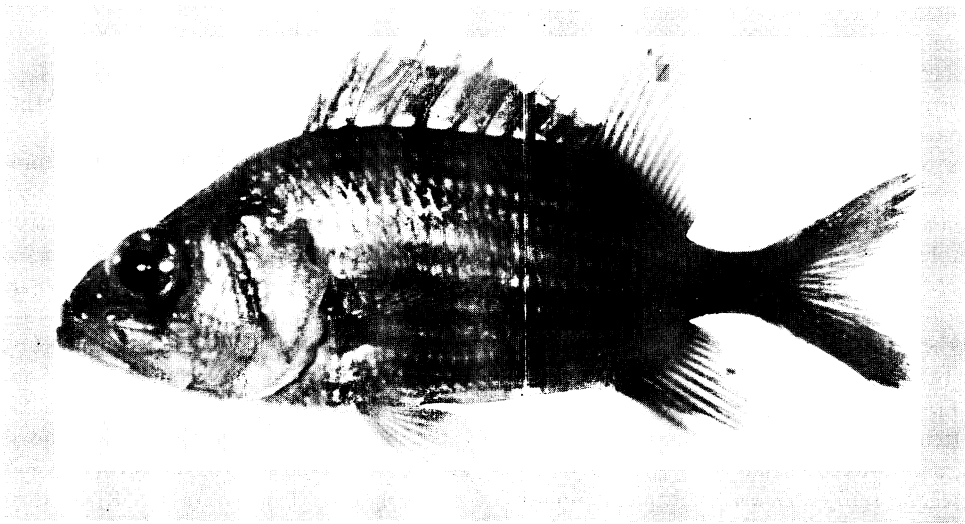


Fig. 2. Holotype of *Ostichthys ovaloculus*, BPBM 31643, 210.5 mm SL, Tahiti (photograph by Louise Wrobel).

(5 as rudiments); pseudobranchial filaments 41; branchiostegal rays 8, the first slender and medial to second; predorsal bones 2; vertebrae 11+15.

Body not very deep for the genus, the maximum depth 2.5 in SL; body compressed, the width 2.15 in depth; head length 2.4 in SL; dorsal profile of head straight to above upper preopercular margin, then curving slightly onto nape; snout long, 3.65 in head; interorbital space flat, the least width 6.85 in head; eye large, the greatest diameter 3.05

in head, and elliptical, the least diameter 1.2 in greatest diameter; suborbital bones forming a narrow rim below orbit, the suborbital depth below center of eye 6.0 in greatest diameter of orbit; caudal peduncle slender, longer than deep, the least depth 4.5 in head.

Mouth large and slightly oblique, the maxilla reaching a vertical through rear of orbit, the upper jaw length 1.7 in head; lower jaw projecting when mouth closed; maxilla broad posteriorly, its

height combined with that of supramaxilla 4.2 in head; dentition typical of the genus, the teeth in villiform bands in jaws, broader and thickened anteriorly; knob-like anterior end of lower jaw fitting into toothless symphyseal notch in upper jaw; villiform teeth on vomer in a subtriangular patch; villiform teeth on palatines in a narrow band, the anterior end curving medially to a hook-shape; tongue pointed, edentate.

Nasal fossa large, subtriangular, directly in front of lower third of eye; gill rakers moderately long, the longest at angle, its length half orbit diameter; longest gill filaments on first gill arch one-fourth orbit diameter.

External bones of head rugose, ridged, and spiniform; free margins of suborbitals, postorbitals, opercle, subopercle, and double margin of preopercle with numerous sharp spinules; margin of interopercle smooth; no spine at front of nasal bone; opercular spine not well-developed, its tip not extending posterior to opercular membrane; no spine at corner of preopercle; premaxillary groove broadly V-shaped.

Scales ctenoid but the ctenii small for the genus and the ridges on the scale surfaces relatively fine; scales on body with as many as 52 ctenii; lateral line a very gentle curve, ending at midbase of caudal fin with one small pored scale posterior to a vertical through end of hypural plate; scales dorsally on head extending forward to a point over upper end of anterior margin of preopercle; base of opercle with a single row of scales; preopercle with broad, vertically elongate band of scales, about four scale rows across its greatest width; no scales basally on spinous portion of dorsal fin; a sheath of small scales basally on anal fin and soft portion of dorsal fin, not adherent to rays; very small scales on caudal fin extending about three-fourths distance to posterior margin; small scales basally on pectoral fins but none in axil; pelvic fins with a triangular scaly projection at midbase.

Origin of dorsal fin over second lateral-line scale; third and fourth dorsal spines longest, 2.6 in head; last dorsal spine very slightly shorter than penultimate spine; space between last dorsal spine and first soft ray about half the space between last two spines; third dorsal soft ray longest, 2.45 in head; origin of anal fin below base of second dorsal soft ray; first anal spine very small; third anal spine much the longest and stoutest, its

length 2.5 in head; second anal soft ray longest, 2.2 in head; caudal fin moderately small, 1.65 in head, and forked, the caudal concavity 4.1 in head; pectoral fins extending slightly posterior to tips of pelvic fins when appressed, the fourth ray longest, 1.7 in head; origin of pelvic fins below lower base of pectoral fins; second pelvic soft ray longest, 2.05 in head.

Color in alcohol pale with brown stripes passing along centers of scale rows, these stripes more evident below lateral line than above; exposed bones of head brown; fins pale except spines which are brown, becoming pale at tips.

Color when fresh bright red with a silvery white blotch basally on each scale (above lateral line whitish spots partly obscured by preponderance of red coloration); scales on cheek and opercle largely silvery white; spinous portion of dorsal fin bright red except triangular upper part of each interspinous membrane and a rectangular spot at base of each membrane which were whitish.

Table 1. Proportional measurements of the holotype of *Ostichthys ovaloculus* expressed as a percentage of the standard length.

	BPBM 31643 male
Standard length (mm)	210.5
Body depth	40.2
Body width	19.0
Head length	41.7
Snout length	11.5
Orbit diameter	13.7
Interorbital width	6.1
Suborbital depth	2.3
Upper jaw length	24.0
Caudal peduncle depth	9.3
Caudal peduncle length	10.9
Predorsal length	43.6
Preanal length	78.0
Prepelvic length	44.7
Length of first dorsal spine	8.6
Length of longest dorsal spine	16.1
Length of tenth dorsal spine	5.8
Length of eleventh dorsal spine	5.7
Length of longest dorsal ray	16.9
Length of third anal spine	16.6
Length of longest anal ray	18.7
Caudal fin length	25.5
Caudal concavity	10.2
Pectoral fin length	24.3
Pelvic spine length	14.2
Pelvic fin length	20.2

**Remarks.** This species of *Ostichthys* is named *ovaloculus* from the Latin *ovalis* for egg-shaped or oval and *oculus* for eye, in reference to the distinctive oval to elliptical shape of the eye.

*Ostichthys ovaloculus* does not seem closely related to any of the nine other known species of the genus. In having XI instead of XII dorsal spines it may be separated from all other species except *O. delta* Randall, Shimizu et Yamakawa. In having  $3\frac{1}{2}$  rows of scales above the lateral-line instead of  $2\frac{1}{2}$ , it differs from *O. delta*, *O. kaianus* (Günther), *O. archiepiscopus*, and *O. trachypoma* (Günther). It is distinct from all species in having 38 lateral-line scales (other species with 27–30). It shares its straight dorsal head profile only with *O. archiepiscopus*. It has the longest snout of the genus and the shortest suborbital rim. It is also distinctive in the more numerous ctenii of its scales and, as mentioned, its oval eye (the orbit of other species is more circular).

Although now known only from Tahiti, *O. ovaloculus* probably occurs at other islands of the South Pacific and may be even more widely distributed. The deeper water fish faunas of most insular areas of the Indo-Pacific region have not been adequately sampled.

#### Acknowledgments

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- (JER: Bernice P. Bishop Museum, Box 19000-A, Honolulu, Hawaii 96817, U.S.A.; LW: Etablissement pour la Valorisation des Activités Aquacoles et Maritimes (E.V.A.A.M.), BP 20, Papeete, Tahiti, Polynésie Française)

#### タヒチから得られたエビスダイ属 (イトウダイ科) の 1 新種と 2 未記録種

J. E. Randall • L. Wrobel

ソシエテ諸島の 300–420 m からオキエビス *Ostichthys archiepiscopus* と *O. sandix* (従来はハワイのみからの記録) が採集された。また、新種 *O. ovaloculus* がタヒチ島から採集された。エビスダイ属の中では、楕円形の眼と、38 と多い側線鱗数 (他の種では 27 から 30) が本種の特徴である。エビスダイ属のうちの側線上方鱗数が  $3\frac{1}{2}$  枚のグループに属し、このグループ内の他の種では背鰭棘が 12 本であるのに対し、本種のみが 11 本である。南太平洋の島嶼の陸棚斜面の魚類相は十分に解明されていないので、これらの種が他の諸島から記録される可能性は大きい。