

## Redescription of the Labrid Fish *Oxycheilinus orientalis* (Günther), a Senior Synonym of *O. rhodochrous* (Günther), and the First Record from the Red Sea

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**John E. Randall and Maroof Khalaf (2003)** Redescription of the labrid fish *Oxycheilinus orientalis* (Günther), a senior synonym of *O. rhodochrous* (Günther), and the first record from the Red Sea. *Zoological Studies* 42(1): 135-139. *Oxycheilinus orientalis* (Günther), type locality Indonesia, is recorded from the northern Gulf of Aqaba, Red Sea from specimens collected from seagrass beds in 8-15 m. A full description of the species is provided, with color illustrations. *Oxycheilinus rhodochrous* (Günther), known from 1 specimen from Zanzibar, is a junior synonym. Specimens of *O. orientalis* are also reported from the Ryukyu Islands, Marshall Islands, and Lombok, Indonesia. <http://www.sinica.edu.tw/zool/zoolstud/42.1/135.pdf>

**Key words:** Labridae, *Oxycheilinus rhodochrous*, *O. orientalis*, Red Sea.

In their updated checklist of the fishes of the Red Sea, Goren and Dor (1994) listed 9 species of labrid fishes in the genus *Cheilinus* Lacepède for the Red Sea. They followed Gomon in Fischer and Bianchi (1984) in including *C. trilobatus* Lacepède; however, this was an error, as *trilobatus* is replaced in the Red Sea by the closely related *C. abujubbe* Rüppell.

In a phylogenetic study of the labrid tribe Cheilini, Westneat (1993) resurrected the genus *Oxycheilinus* Gill, type species *Cheilinus arenatus* Valenciennes, from the synonymy of *Cheilinus*. He included 7 species in the genus, of which 2, *O. arenatus* (Valenciennes) and *O. mentalis* (Rüppell), are known from the Red Sea.

The present authors independently collected what they believed to be an undescribed species of *Oxycheilinus* in the Gulf of Aqaba and decided to write the description together. Similarity was noticed, however, to the description and figure of *Cheilinus rhodochrous* Günther in Playfair and Günther (1867) from Zanzibar. This taxon received no attention from ichthyologists until de

Beaufort (1940) concluded that it was the senior synonym of *Cheilinus unifasciatus* Streets (1877) and *C. hexagonatus* Günther (1881). He had asked J. R. Norman to compare the types of *C. rhodochrous* and *C. hexagonatus*, both of which are in the Natural History Museum in London (BMNH). Norman wrote, "the two are probably identical. The former has a more slender body (3.6 in the length) and narrower head and more pointed snout, as well as an apparently different coloration, but I feel pretty certain that these differences are a matter of age." De Beaufort was followed by many authors in this use of the name *rhodochrous*. Randall (1981) realized that the large wrasse in the Pacific, then bearing the name *C. rhodochrous*, was not known from the western Indian Ocean, so he adopted Street's name *unifasciatus*, and *C. rhodochrous* returned to obscurity.

Günther had only a single 6-in specimen of *C. rhodochrous* for his description. He provided the following life color description (obtained from Playfair): "Red, with blue spots and reticulated

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markings on the snout, opercles, and occiput. An orange streak from lower posterior margin of eye to opercular margin just above the pectoral. Several blue lines across throat, from the lower series of cheek-scales on one side to that of the other. Spinous portion of dorsal fin bluish anteriorly, darker between the first and second spines, with a yellow line and darker blue spots near the edge; margin reddish. Anal and soft dorsal red. Caudal red, variegated with darker and with a few white spots, and a broad whitish band across the base."

Nearly all the features of their color description match those of our color slides of Red Sea individuals. We examined the holotype of *Cheilinus rhodochrous* (BMNH 1865.2.27: 84, 117 mm SL), and we have concluded that the Red Sea specimens are the same species. No other specimens of *Oxycheilinus rhodochrous* from the western Indian Ocean have been found; however, we have determined that it is a junior synonym of *O. orientalis* (Günther), type locality Batjan, Indonesia.

Günther (1862) provided the new name *Cheilinus orientalis* for a labrid fish from Batjan that Bleeker (1862: 71, pl. 33, fig. 8) misidentified as *C. coccineus* Rüppell, 1828. Günther correctly determined that Rüppell's *C. coccineus* is a synonym of *Sparus radiatus* Bloch and Schneider, itself a synonym of *Labrus diagramma* Lacepède, now *Oxycheilinus diagramma*. We have examined color photographs and specimens of *O. orientalis* from Indonesia and other western Pacific localities and are unable to find any species-level differences in color, morphometric measurements, or meristic data from our Red Sea material.

We provide below a description of our Red Sea specimens of *O. orientalis*, three underwater photographs of Red Sea individuals of this species, one from Indonesia, and specimen photographs from Okinawa and the Marshall Islands. Our specimens are deposited in the Bernice P. Bishop Museum, Honolulu (BPBM) and the Marine Science Station, Aqaba, Jordan (MSSA).

### ***Oxycheilinus orientalis* (Günther)**

(Figs. 1-6)

*Cheilinus orientalis* Günther 1862: 132 (new name for *Cheilinus coccineus*, non Rüppell, Bleeker) (type locality, Batjan, Indonesia).

*Cheilinus rhodochrous* Günther in Playfair and Günther 1867: 90, pl. 11, fig. 3 (type locality, Zanzibar).

*Cheilinus* sp. 2 Masuda and Kobayashi 1994: 287, fig. 5 (Iriomote Jima, southern Ryukyu Islands).

*Cheilinus* sp. Khalaf 1997: 153, lower fig. (Gulf of Aqaba, Red Sea).

*Oxycheilinus orientalis*: Myers 1999: 92, pl. 113, fig. D (Micronesia).

*Oxycheilinus orientalis*: Parenti and Randall 2000: 33 (checklist).

**Description:** Dorsal rays IX,10; anal rays III,8; principal caudal rays 13, the median 11 branched; pectoral rays 12, uppermost 2 unbranched; pelvic rays I,5; lateral-line interrupted, pored scales 12-14 + 6-8 (+ 2 on caudal-fin base); scales above lateral line to origin of dorsal fin 1.5; scales below lateral line to origin of anal fin 5; circumpeduncular scales 12; median predorsal scales 5, preceded by a pair of slightly smaller scales; gill rakers 4-5 + 6-8; total gill rakers 10-13 (usually 11 or 12); branchiostegal rays 5; vertebrae 23.

Body slender, the depth 2.05-3.5 in SL, and compressed, the width 2.1-2.4 in depth; head length 2.4-2.65 in SL; dorsal profile of head straight to slightly convex; snout pointed, its length 2.45-2.7 in head; fleshy orbit diameter 5.0-6.95 in head (56-131 mm SL); caudal-peduncle depth 2.6-2.8 in head; caudal-peduncle length 3.8-4.0 in head.

Mouth large, the maxilla reaching or slightly posterior to a vertical at anterior edge of orbit, the upper-jaw length 2.3-2.85 in head; mouth oblique, forming an angle of about 25° to horizontal axis of head and body, the lower jaw strongly projecting; upper jaw with a row of 4 or 5 canine teeth each side, with 1-4 stout conical teeth between canines, these smaller teeth displaced slightly medially; lower jaw with a pair of canines anteriorly and a single row of conical teeth on side of jaw, only a few slightly longer than others; pair of canines at front of jaws projecting but slightly incurved, the lower pair fitting inside upper pair when mouth closed.

Nostrils very small, anterior to upper third of eye, the anterior slightly closer to eye than front of snout at base of upper lip, with a small posterior flap; three suborbital pores; four mandibular pores, continuing as 5 pores along free edge of preopercle.

Scales typically labrid, large, thin, and cycloid; scales dorsally on head extending to anterior 1/2 of interorbital space; two oblique rows of 4 scales on cheek, the lower flange of preopercle broadly naked; median prepelvic scales 5; a median pelvic process of 2 scales; dorsal and anal fins naked; caudal fin with very large scales extending half

way to posterior margin.

Origin of dorsal fin slightly anterior to posterior edge of opercular membrane, the predorsal length 2.55-2.65 in SL; 1st dorsal spine 4.6-5.9 in head; membranes of spinous dorsal fin incised in specimens less than about 75 mm SL; dorsal spines progressively longer (though the last 3 are subequal), the 9th 3.15-3.5 in head; 8th dorsal ray longest in large specimens, 2.4-2.5 in head, the

1st ray longest in small ones, 2.75-2.9 in head; origin of anal fin below base of last dorsal spine, the preanal length 1.5-1.55 in SL; anal spines progressively longer, the 3rd 3.0-3.5 in head; 6th anal soft ray longest in large specimens, 2.1-2.25 in head, 1st ray longest in small specimens, 2.65-2.75 in head; caudal fin rhomboid to slightly double emarginate, the upper corner slightly protruding in large adults, the fin length 3.4-3.95 in SL; pectoral fins



**Fig. 1.** Underwater photograph of *Oxycheilinus orientalis*, Lombok, Indonesia (J. Randall).



**Fig. 2.** *Oxycheilinus orientalis*, BPBM 19158, ♂, 103 mm SL, Okinawa (J. Randall).



**Fig. 3.** *Oxycheilinus orientalis*, BPBM 28750, 52 mm SL, Kwajalein Atoll, Marshall Islands (J. Randall).



**Fig. 4.** Underwater photograph of *Oxycheilinus orientalis*, Gulf of Aqaba, Red Sea (J. Randall).



**Fig. 5.** Underwater photograph of *Oxycheilinus orientalis*, Gulf of Aqaba, Red Sea (M. Khalaf).



**Fig. 6.** Underwater photograph of *Oxycheilinus orientalis*, Gulf of Aqaba, Red Sea (J. Randall).

short, 2.75-2.9 in head; pelvic fins below lower base of pectoral fins, the prepelvic distance 2.4-2.55 in SL; pelvic fins short, 2.3-2.45 in head.

Color in alcohol uniform pale yellowish brown with or without a dark blotch on upper 1/2 of 2nd and 3rd lateral-line scales and the lower 1/2 of the intermediate scale above; posterior edge of eye black (mostly hidden under edge of orbit unless eye directed forward); fins pale yellowish.

Large adults red in life, the body often with 5 indistinct narrow pale bars that may contain white flecks, and 2 faint pale stripes along side; irregular bright red vertical lines on edges of scales anteriorly on midside and lower part of body, along with red dots; head with white to pale blue-green transverse lines on side of lower jaw, the widest near front of chin; side of snout and head below eye with small dark-edged white to pale blue-green spots; iris orange-yellow with a blue ring, the hind edge of eye black with a bright blue-green spot above (shows when eye directed forward); a blackish smudge on 2nd and 3rd lateral-line scales present or absent (not related to sex); dorsal and anal fins light orange-red with oblique red lines and dark-edged white to blue lines or rows of dashes or small spots, the dorsal sometimes blackish on 1st membrane, rarely with a broad dusky border (as seen in Khalaf and Disi 1997, p. 153, lower fig.); caudal fin red with small white spots, often with an irregular blotchy white bar near base; pectoral fins with dark-edged pale yellowish rays and clear membranes; pelvic fins translucent whitish, blotched with red and flecked with white.

Small adults light red, finely flecked with pink dorsally and white ventrally, with an orange-yellow stripe from chin to eye and along side of body to midbase of caudal fin; stripe on body broadly bordered above and below with a broad whitish band; edges of scales along midside of body with vertical red lines; two small midlateral bright red spots, one below middle of soft portion of dorsal fin and the other on base of caudal fin.

**Remarks:** The following measurements were made on the holotype of *Cheilinus rhodochrous* as percentages of standard length (117 mm):

Body depth	28.3	Predorsal length	40.8
Body width	14.6	First dorsal spine	6.9
Head length	39.7	Ninth dorsal spine	12.2
Snout length	15.2	Longest dorsal ray	13.6
Orbit diameter	6.8	Third anal spine	13.5
Bony interorbital width	8.1	Longest anal ray	14.6
Upper-jaw length	14.9	Caudal-fin length	24.6
Caudal-peduncle depth	14.2	Pectoral-fin length	13.8
Caudal-peduncle length	10.7	Pelvic-fin length	15.9

Günther in Playfair and Günther gave the lateral-line scale count as 20, which is correct; the 2 parts are 14 + 6. The pectoral-ray count is 12. The gill-raker count on the first gill arch is 4 + 7.

Although not mentioned in the color description, the upper posterior part of the eye of the holotype is black. A small dark smudge is apparent on the 1st interspinous membrane of the dorsal fin. Small dark spots are faintly visible on some of the membranes of the caudal fin. The illustration of the holotype in Playfair and Günther is accurate except for dusky longitudinal lines along the middle of the scale rows. These are not apparent now on the body of the specimen, and they were not mentioned in the color description.

All of our Red Sea specimens have been collected in the northern Gulf of Aqaba at depths of 8-15 m in seagrass beds or sandy areas with sparse growth of *Halophylla*. None has been seen in coral reefs. Our 1 specimen from Indonesia was obtained in a fish market, hence lacks habitat data. Two lots from Kwajalein Atoll in the Marshall Islands were collected from a dense bed of algae (*Dictyota*, *Padina*, and *Caulerpa* predominating) in the lagoon at 18-27 m. Two lots from Okinawa were from a rubble and rock bottom at 35-42 m.

As expected, the largest of our specimens of *Oxycheilinus orientalis* are males. When we checked the sex of a specimen 72 mm in SL, believing it would be a female, we were surprised that it is a mature male. Even more surprising, a 64-mm specimen of BPBM 31839 is also a mature male. A 46-mm specimens from the same lot is a fully mature female, as is one of 57 mm from BPBM 13870. A 33.5-mm specimen from BPBM 18302 is a female with developing ova. The same amazing small size for mature females was noted in 1 lot (BPBM 28750) from Kwajalein Atoll. Specimens of 42 and 52 mm SL are mature females, and the ovary of a 36-mm female has developing ova. A 56-mm one (BPBM 28763) from Kwajalein appears to be an intersex specimen.

As mentioned above, two other species of *Oxycheilinus* occur in the Red Sea. One is *O. arenatus*, usually found on reefs in more than 45 m and not apt to occur in the same habitat as *O. orientalis*. It is easily recognized among all species of the genus by a thin blackish midlateral stripe and a black area covering most of the first 2 membranes of the dorsal fin. However, the other species, *O. mentalis*, has been collected with *O. orientalis*. Adults of both may have a dark blotch in the humeral region centered on the 2nd and 3rd

scales of the lateral line. In *mentalis* the blotch is mostly below the lateral-line tubules, and in *orientalis* it is above. Adults of *mentalis* are easily distinguished by usually having a broad dark midlateral stripe, a concave dorsal profile of the snout and forehead, and a slightly rounded fin (when spread) with the corners a little prolonged in large adults. In small size it may be confused with *orientalis*. It has 4 or 5 small dark spots in a midlateral row (only 2 in *orientalis*) and 6-7 + 7-8 gill rakers (total usually 14), compared to 4-5 + 6-8 (total usually 11-12) for *orientalis*. Also the dorsal profile of the snout and forehead of small *mentalis* is usually straight to slightly concave, whereas it is slightly convex in *orientalis*.

**Materials examined:** Red Sea: Gulf of Aqaba, Al-Mamlah Bay (15 km S of Aqaba), MSSA 289, 4: 64-102 mm. Eilat, BPBM 10518, 107 mm; BPBM 18301, 5: 22-42 mm. Marsa el Mukabeila, BPBM 13870, 4: 57-110 mm; BPBM 31839, 3: 46-64 mm. Tanzania: Zanzibar, BMNH 1865.2.27: 84, 117 mm (holotype of *Cheilinus rhodochrous* Günther). Indonesia: Lombok, BPBM 29759, 127 mm. Ryukyu Islands: Okinawa, Sesoko Island, BPBM 19158, 2: 100-102 mm; BPBM 22320, 75 mm; BPBM 22325, 77 mm. Marshall Islands: Kwajalein Atoll, BPBM 28750, 5: 27-52 mm; BPBM 28763, 56 mm. Enewetak Atoll, BPBM 28890, 8: 21-90 mm.

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