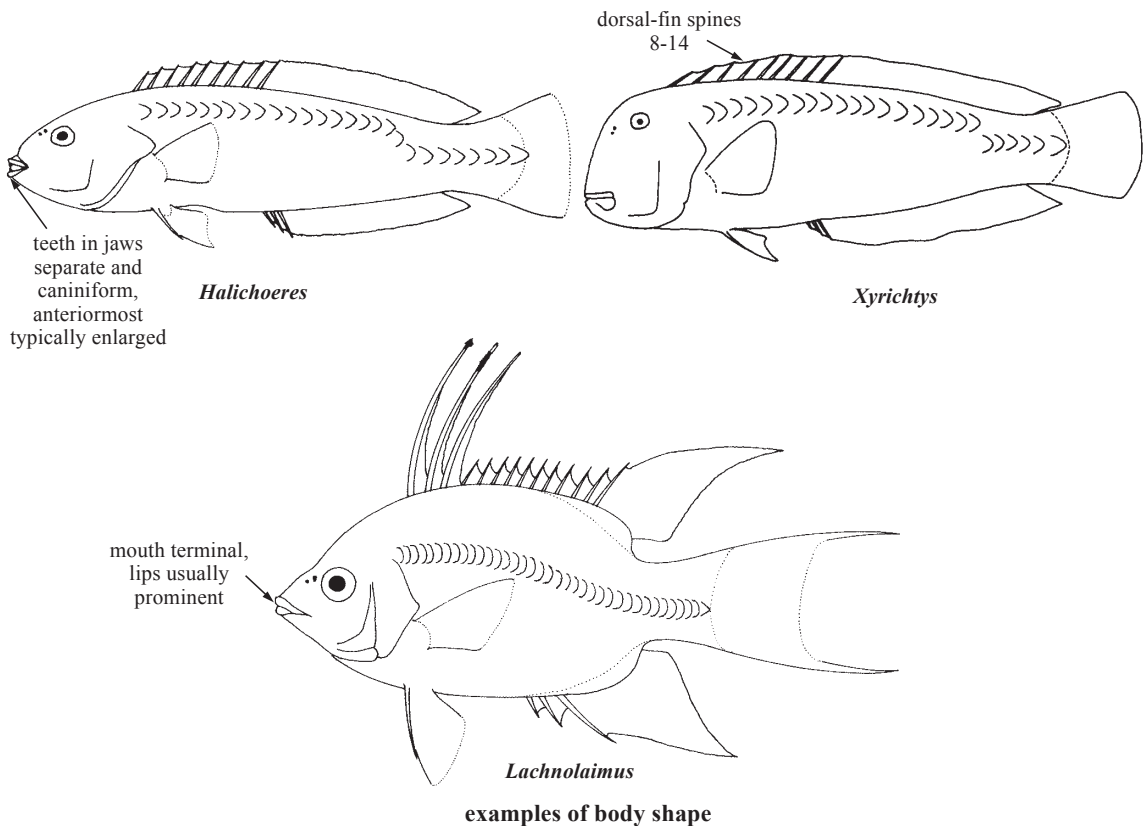


LABRIDAE

Wrasses

by M. W. Westneat, Field Museum of Natural History, Chicago, Illinois, USA

Diagnostic characters: Wrasses are a diverse group of fishes that vary in body shape, size, coloration, and habitat. Most species are small, attaining a maximum body length of less than 20 cm. In the Western Central Atlantic they range from the 5 cm dwarf wrasse (*Doratonotus*) to the large hogfish (*Lachnolaimus*), which grows to more than 70 cm and a weight of 10 kg. Body slightly to extremely compressed. **Mouth terminal, usually with prominent lips; mouth slightly to extremely protrusive; maxilla not exposed on the cheek; teeth in jaws usually separate and caniniform, the anteriormost 1 or 2 pairs typically enlarged and often directed forward; pharyngeal jaws (located at base of throat) strong with pharyngeal teeth either sharp, conical, or broad and molariform; gill membrane partially united.** A single, long-based dorsal fin (except *Xyrichtys*, in which the first 2 spines are separate); **spines 8 to 14**, spines rigid to flexible; spines and rays usually of similar length, but some species have elongate first few spines or elongate posteriormost rays. Pectoral fins robust, ranging in shape from broad and paddle-like (some *Halichoeres*) to long and wing-like (e.g., *Thalassoma*). Pectoral-fin rays 11 to 18. Scales cycloid (smooth to touch) and highly variable in size among species; head never fully scaled; lateral-line below most of dorsal fin smooth, but often abruptly curved ventrally or discontinuous below posterior portion of soft dorsal fin. **Colour:** most species with bright and intricate colour patterns, including stripes, bars, spots, blotches, and ocelli of various shades of brown, blue, green, red, yellow, and white. Patterns often change with age and with sex-reversal in this group.

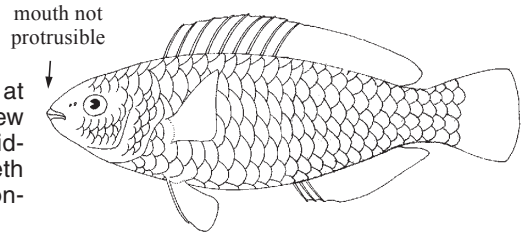


Habitat, biology, and fisheries: Labrids occupy a number of different habitats including turtlegrass beds, sandy patch reefs, plain sand bottom, coral reefs, and rocky flats. Several species school in the open water above patch reefs. Wrasses are found at depths ranging from near-shore waters to below about 100 m. Prominent canine teeth in the front of the mouth form one of the characteristic features of most wrasses, and these fishes are carnivorous and often voracious. Many wrasses feed on gastropods and bivalves by crushing the shells in the pharyngeal jaws formed by ceratobranchial and pharyngobranchial bones. Also among the Atlantic wrasses are piscivores, planktivores, and generalist predators. A number of the smaller wrasses have been identified as cleaners that feed on the ectoparasites of other fishes. In contrast to most other fishes, the major-

ity of wrasses swim largely with their pectoral fins. Most labrids have 3 colour patterns: juvenile, initial phase, and terminal phase. Wrasses show strong sexual dichromatism (sexual differences in colour), and many species change remarkably from young to adult in colour pattern and in body shape. For most species, colour changes can be associated with protogyny, the changing of sex from female to male. In some taxa, such as *Thalassoma*, both males and females at smaller sizes have the initial phase pattern and the large males (which might once have been females) have the terminal phase pattern. In other species (such as *Halichoeres*), the initial phase individuals are all female. Males often preside over a group of females, and many species are highly territorial. Wrasses are diurnal, taking cover in reef crevices or burrowing into the sediment at night. Razorfishes dive into the sand even during daylight hours to escape predators. The commercial importance of labrid fishes lies primarily in their popularity as aquarium fishes, due to their beautiful colours. Dietary specialization and predatory habits of some species make them risky aquarium additions. The hogfishes are considered excellent foodfishes.

Similar families occurring in the area

Scaridae: mouth not protrusible; teeth in jaws coalesced at base or fused into a bony, parrot-like beak, except for a few species (*Sparisoma*, *Cryptotomus*) which have many individual closely packed teeth; when not fused, a pair of canine teeth usually directed horizontally to the side of upper jaw; lips continuous with facial skin, without an indentation.



Scaridae

Key to the species of Labridae occurring in the area

- 1a. Dorsal-fin spines 11 to 14 → 2
- 1b. Dorsal-fin spines 8 or 9 → 6

- 2a. Dorsal-fin spines 14, anteriormost 3 spines extended as long filaments (Fig. 1) *Lachnolaimus maximus*
- 2b. Dorsal-fin spines 11 or 12, the anterior ones not extended as long filaments. → 3

- 3a. Dorsal-fin spines 11, body reddish, darker above, pale below. Lips yellow; yellow stripes from nostrils through eye to edge of opercle and from eye across cheek *Decodon puellaris*
- 3b. Dorsal-fin spines 12; colour not as in 3a → 4

- 4a. Snout rounded; no posterior canine; canine teeth small, relatively weak (Fig. 2a); body primarily violet or purple; teeth and bones pale blue . *Clepticus parrae*
- 4b. Snout pointed; posterior canine present, strong canine teeth present in front of jaws (Fig. 2b), background colour red, or purple and yellow → 5

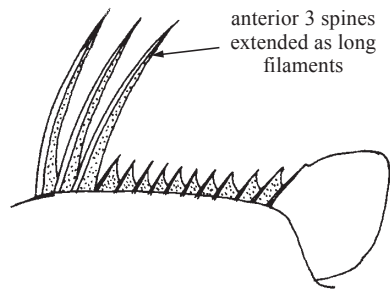
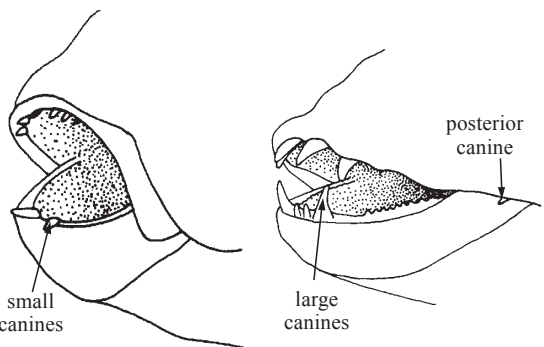


Fig. 1 *Lachnolaimus maximus*



a) *Clepticus* b) *Bodianus*

Fig. 2

- 5a. Head and upper back dark red to brown or purple, lower head and posterior body yellow; no black spot at upper margin of tip of pectoral fin; total number of rakers on first gill arch 17 to 19. *Bodianus rufus*
- 5b. Red dorsally and ventrally with central white stripe, area of yellow on upper posterior body; black spot present at tip of pectoral fin; juveniles yellow; total number of rakers on first gill arch 15 or 16. *Bodianus pulchellus*
- 6a. Lateral line interrupted posteriorly, rear portion a separate midlateral segment on peduncle (Fig. 3a) → 7
- 6b. Lateral line continuous and uninterrupted, though steeply curved below posterior portion of dorsal fin (Fig. 3b) → 10

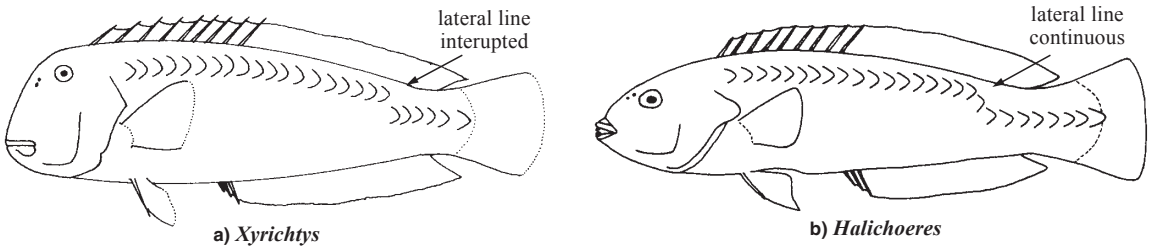


Fig. 3 lateral line

- 7a. Posterior canine present; snout pointed; side of head below and behind eye largely covered with scales (Fig. 4a); smallest wrasse in area (to 8cm); colour mostly green *Doratonotus megalepis*
- 7b. Posterior canine absent; snout blunt; side of head below and behind eye mostly naked (Fig. 4b); colour rarely mostly green → 8

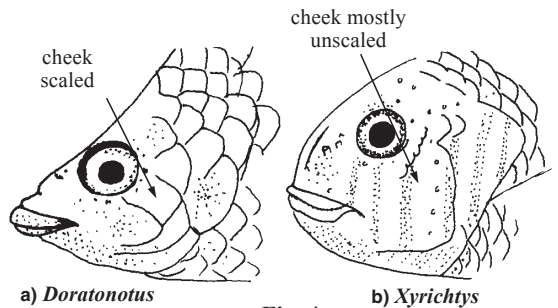


Fig. 4

- 8a. Five scales above first lateral-line scale to origin of dorsal fin; usually 6 pored scales in separated, posterior section of lateral line; diagonal row of scales behind and below eye extending forward to a vertical at centre of eye; pelvic fins of adults not elongated *Xyrichtys novacula*
- 8b. Three or 4 scales above first lateral-line scale to origin of dorsal fin; 5 pored scales in separated, posterior section of lateral line; diagonal row of scales behind and below eye not reaching forward to a vertical at centre of eye; pelvic fins of adult males elongate → 9
- 9a. Caudal fin rounded; adult male with a black spot on side of body; axil of pectoral fin not darker than remainder of fish; gill rakers on first arch 17 to 21; body green and blue, with a vertically elongate blue spot on each scale and black spot at midbody surrounded by a narrow blue ring; or body more yellow-green in colour, without spot on side *Xyrichtys splendens*
- 9b. Caudal fin truncate or slightly rounded; no black spot on side of body; axil of pectoral fin dusky to dark brown; gill rakers on first arch 21 to 25; body greenish above, pinkish below; a diffuse orange-red stripe from behind eye to base of caudal fin; or body colour greenish blue with a golden marking on each scale *Xyrichtys martinicensis*
- 10a. Dorsal-fin spines 8; no posterior canine; large males with bright blue head, black in preservative; juveniles yellow dorsally with dark midbody stripe broken into a series of squarish blotches that can appear as vertical bars *Thalassoma bifasciatum*
- 10b. Dorsal-fin spines 9; posterior canine present; colour not as in 10a → 11

- 11a. Two canines anteriorly on each jaw; black stripe on upper side of body, with thin yellow stripe above black band, white ventrally; large males mostly red and green with prominent black spot on midbody. *Halichoeres maculipinna*
- 11b. Two canines on upper jaw anteriorly, but 4 on lower jaw; colour not as in 11a → 12

- 12a. Dorsal fin with 9 spines and 12 soft rays (the only *Halichoeres* with 12 soft rays); body yellow-green above with a broad, blue-black stripe on most of side, extending as a black wedge onto centre of caudal fin; lower side blue-green; side of head bright yellow, dark blue below, dark stripe from eye up onto nape; caudal fin yellowish, small fish blue with top of head, back and dorsal fin bright yellow. *Halichoeres cyanocephalus*
- 12b. Dorsal fin with 9 spines and 11 soft rays → 13

- 13a. A dark spot immediately behind eye → 14
- 13b. No spot behind eye → 15

- 14a. Small individuals yellow-green with red-rimmed black spot behind eye; a small black spot at rear base of dorsal fin; dark line at pectoral-fin base; large fish dull green, the centres of scales with a dull orange-red spot; purplish red bands form a V-shape on caudal fin with reddish stripe in centre of fin *Halichoeres poeyi*
- 14b. Body blue-green above, pale blue below, the blue on each scale along midside surrounds an olive base; dark green-blue spot behind eye; dorsal and anal fins pinkish with blue stripes; caudal fin striped; young with tan body, 2 dusky streaks on side, area between streaks pale orange. *Halichoeres caudalis*


- 15a. Blue-green spot above pectoral fin, sometimes divided; body colour light greenish tan dorsally and pale ventrally, with green-brown stripe from snout to end of caudal fin; captured only in deep water (27 to 155 m). *Halichoeres bathyphilus*
- 15b. No spot above pectoral fin, green stripe on snout absent, mostly shallow water (less than 60 m) → 16

- 16a. Two dark stripes running length of body (lower sometimes faint or lacking) a black spot just behind last dorsal-fin ray *Halichoeres bivittatus*
- 16b. A single dark stripe or no stripe on body; black markings absent on or just behind dorsal fin → 17

- 17a. Anterior lateral-line scales each with single pore; caudal-fin margin of adults double-emarginate; no diagonal dark lines running upward and back from eyes *Halichoeres pictus*
- 17b. Anterior lateral-line scales each with more than 1 pore, usually 3 or more; caudal-fin margin truncate or convex; diagonal dark lines extending upward and back from eyes → 18

- 18a. Black dots behind postocular black lines; young without blotches but with median blue stripe; adults either with bar across body below middle of dorsal fin or with body nearly uniformly coloured (somewhat darkened above) *Halichoeres garnoti*
- 18b. No black dots behind postocular lines; young with large black blotches at base of dorsal fin and on caudal peduncle, this frequently persisting in larger fish; adult coloration variable with blotchy or with bluish lines and dots but without dark band at midbody *Halichoeres radiatus*

List of species occurring in the area

The symbol  is given when species accounts are included.

-  *Bodianus pulchellus* (Poey, 1860).
-  *Bodianus rufus* (Linnaeus, 1758).
-  *Clepticus parrae* (Bloch and Schneider, 1801).
-  *Decodon puellaris* (Poey, 1860).
-  *Doratonotus megalepis* Günther, 1862.
-  *Halichoeres bathyphilus* (Beebe and Tee-Van, 1932).
-  *Halichoeres bivittatus* (Bloch, 1791).
-  *Halichoeres caudalis* (Poey, 1860).
-  *Halichoeres cyanocephalus* Bloch, 1791.
-  *Halichoeres garnoti* (Valenciennes, 1839).
-  *Halichoeres maculipinna* (Müller and Troschel, 1848).
-  *Halichoeres pictus* (Poey, 1860).
-  *Halichoeres poeyi* (Steindachner, 1867).
-  *Halichoeres radiatus* (Linnaeus, 1758).
-  *Lachnolaimus maximus* (Walbaum, 1792).
-  *Thalassoma bifasciatum* (Bloch, 1791).
-  *Xyrichtys martinicensis* Valenciennes, 1840.
-  *Xyrichtys novacula* (Linnaeus, 1758).
-  *Xyrichtys splendens* Castelnau, 1855.

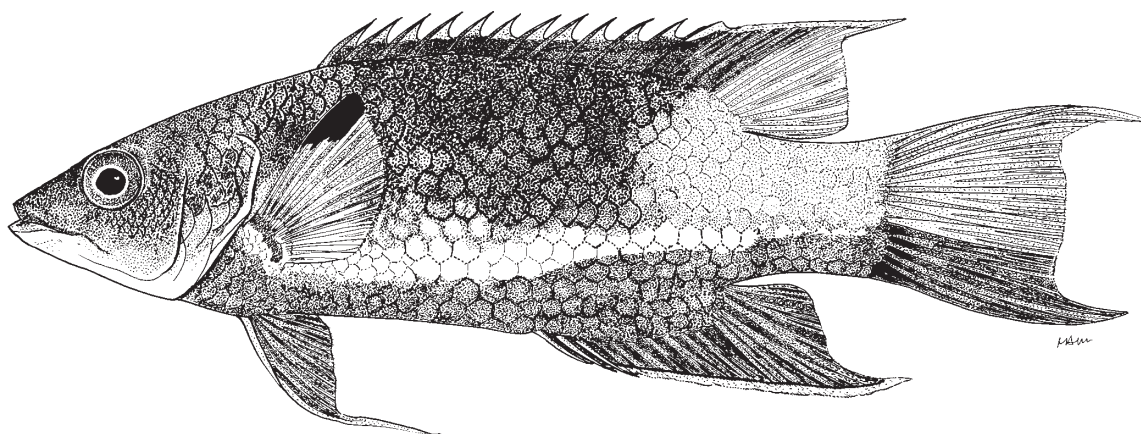
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- Bohlke, J.E. and C.C.G. Chaplin. 1993. *Fishes of the Bahamas and Adjacent Tropical Waters*. Second edition. Austin, Texas, University of Texas Press.
- Robins, C.R. and G.C. Ray. 1986. *A Field Guide to Atlantic Coast Fishes of North America*. Boston, Houghton Mifflin.

Bodianus pulchellus (Poey, 1860)

Frequent synonyms / misidentifications: None / *Bodianus rufus* (Linnaeus, 1758).

FAO names: En - Spotfin hogfish; Fr - Pourceau dos noir; Sp - Vieja lomonegro.

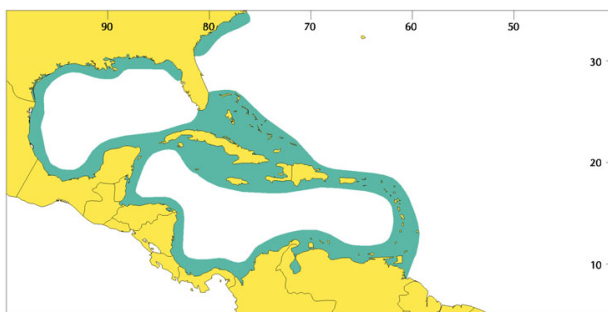


Diagnostic characters: Body moderately deep, depth 2.7 to 3.4 in standard length. Dorsal profile of head slightly rounded; snout pointed; jaws prominent, 4 strong canines situated anteriorly in each jaw, anterior larger than second pair; **a small, curved canine present on each side of rear of upper jaw.** Gill rakers on first arch 15 or 16. **Dorsal fin continuous, with 11 or 12 spines and 9 to 11 rays;** anal fin with 3 spines and 12 rays; caudal fin slightly truncate in young, lobes produced in adults; pectoral-fin rays 15 or 16. **Lateral line smoothly curved, uninterrupted, with 29 to 31 pored scales.** Scales reaching onto bases of dorsal and anal fins; cheek and opercle scaled. **Colour:** adults red with broad white stripe on lower side of head and body and a bright yellow area on upper posterior body extending onto caudal fin. The eye is red, and anal and pelvic fins are red. A prominent black spot anteriorly in dorsal-fin membrane and a dark spot on the distal leading edge of the pectoral fins. Small specimens to about 5 cm are yellow.

Size: Maximum length to about 20 cm.

Habitat, biology, and fisheries: Inhabits coral reefs at depths of 10 to 120 m, most common below 20 m on steep slopes. Feeds primarily on benthic, hard-shelled invertebrates such as molluscs and crustaceans. Juveniles live in coral caves and occasionally clean other fishes. This species is not commonly marketed for food, but is frequently seen in the aquarium trade.

Distribution: South Carolina, Bermuda, the Bahamas and Florida to Brazil, including the Gulf of Mexico and Central American coast.

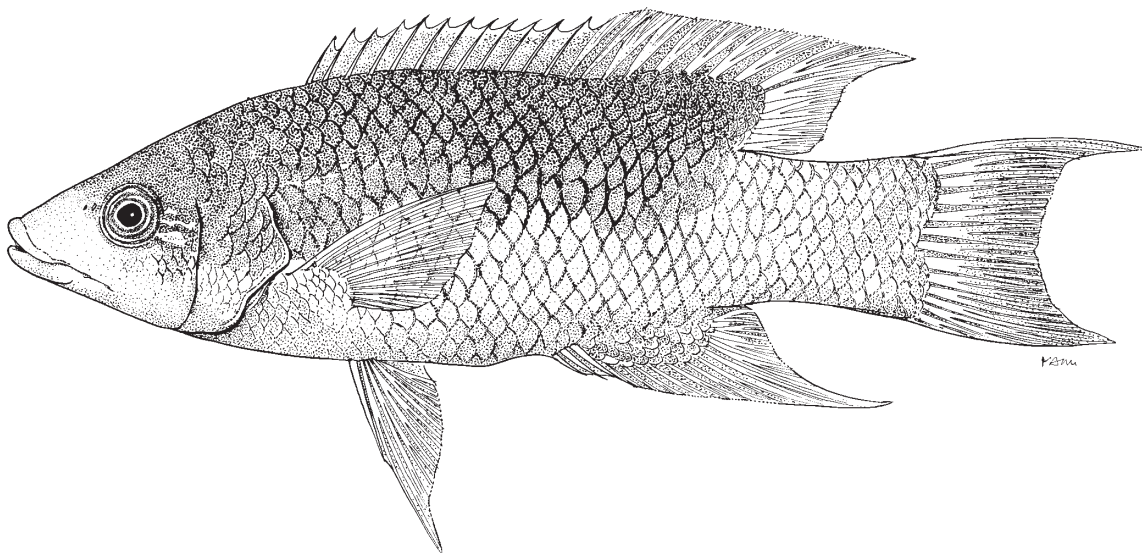


Bodianus rufus (Linnaeus, 1758)

BDR

Frequent synonyms / misidentifications: None / *Bodianus pulchellus*.

FAO names: En - Spanish hogfish; Fr - Pourcea espagnol; Sp - Vieja colorada.

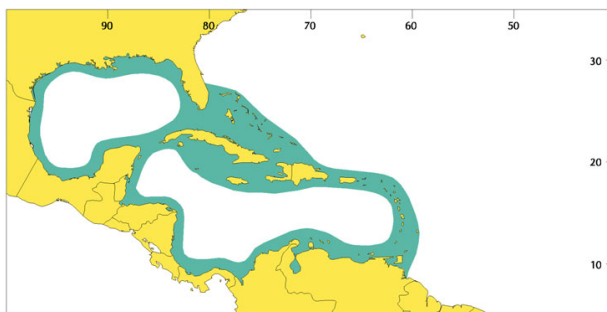


Diagnostic characters: Body moderately deep, depth 2.7 to 3.4 in standard length. Dorsal profile of head slightly rounded; snout pointed; jaws prominent, 4 strong canines situated anteriorly in each jaw, anterior larger than second pair; **a small, curved canine present on each side of rear of upper jaw.** Gill rakers on first arch 17 to 19. **Dorsal fin continuous, with 11 or 12 spines and 9 to 11 soft rays;** anal fin with 3 spines and 12 soft rays; caudal fin slightly truncate in young, lobes produced in adults; pectoral-fin rays 15 or 16. **Lateral line smoothly curved, uninterrupted, with 29 to 31 pored scales.** Scales reaching onto bases of dorsal and anal fins; cheek and opercle scaled. **Colour: upper anterior 2/3 bluish, reddish or plum coloured, the posterior and ventral regions yellow; jaws gold to orange or reddish.** Unlike *Bodianus pulchellus*, whose colour pattern changes fairly drastically from young to adult, *B. rufus* retains much the same pattern through life. The eyes are red, with the inner margin of the iris golden. Black spot on the anterior portion of the spinous dorsal fin.

Size: Maximum length to about 50 cm.

Habitat, biology, and fisheries: Inhabits coral reefs at depths of 10 to 40 m. Feeds primarily on benthic, hard-shelled invertebrates such as crabs, molluscs, and crustaceans. Juveniles frequently clean other fishes. This species is not commonly marketed for food, and is occasionally seen in the aquarium trade.

Distribution: Bermuda, the Bahamas, and Florida to Brazil, including the Gulf of Mexico and Central American coast.

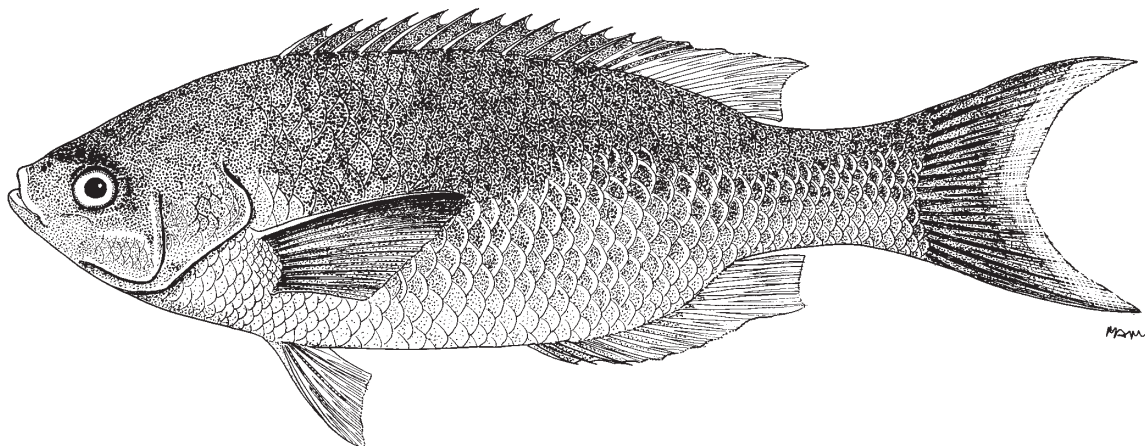


Clepticus parrae (Bloch and Schneider, 1801)

USP

Frequent synonyms / misidentifications: *Clepticus parrai* / None.

FAO names: En - Creole wrasse; Fr - Donzelle créole; Sp - Doncella mulata.

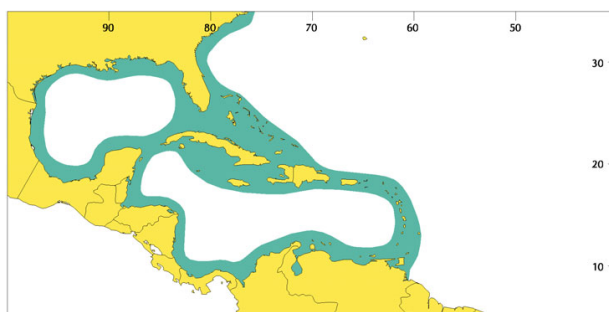


Diagnostic characters: Body moderately deep, depth 2.7 to 3.3 in standard length. Dorsal profile of head slightly rounded; snout rounded; **mouth small, oblique, with opening directly anterior to eye; upper jaw extremely protractile;** teeth small, the upper jaw with 2 pairs of canines at front and lower jaw with 1 pair. Gill rakers 26 to 28. **Dorsal fin continuous, with 12 spines and 10 soft rays;** anal fin with 3 spines and 12 soft rays; caudal fin emarginate in young, lunate in adults; pectoral-fin rays 17 or 18; dorsal and anal fins with a broad scaly sheath; adults with fifth to seventh dorsal and anal-fin rays prolonged. **Lateral line continuous, with 32 pored scales.** **Colour: body primarily violet or purple; teeth and bones pale blue.** Young are purplish above, a silvery white below. In adults the last half of the soft dorsal fin, most of the anal fin and the ventral fins are all yellowish. The lunate caudal fin is tricolour, the basal portion dark purplish like the body, the distal margin yellow, the intervening crescent intermediate in colour.

Size: Maximum length to about 30 cm.

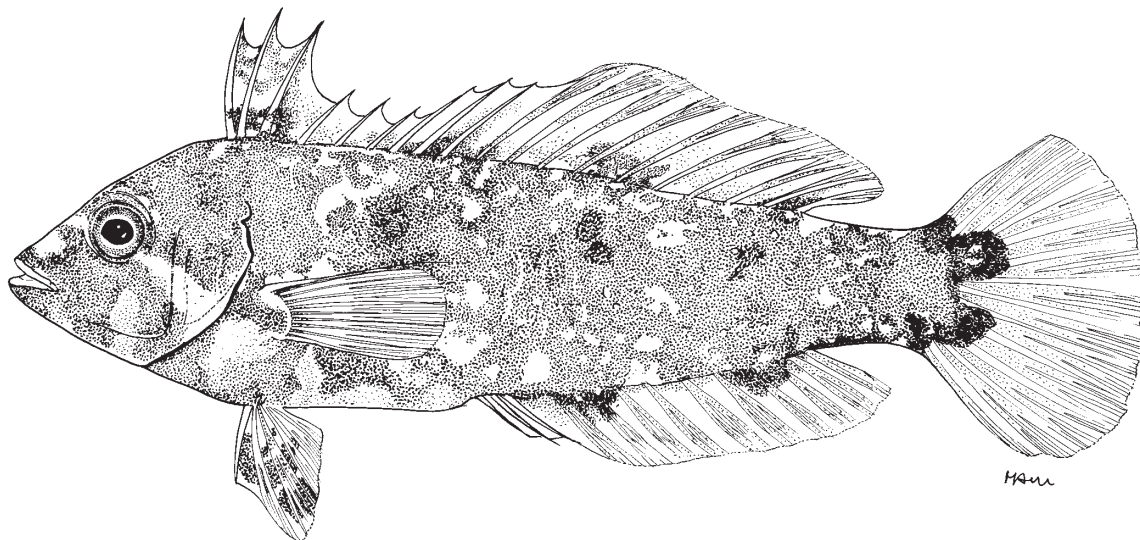
Habitat, biology, and fisheries: Inhabits outer reef areas at depths of 10 to 30 m. Feeds planktivorously in aggregations off the bottom on copepods, jellyfishes, pteropods, tunicates and larvae. This species is not commonly marketed for food, and is occasionally seen in the aquarium trade.

Distribution: Bermuda, the Bahamas, and Florida to Brazil south through the West Indies.



***Doratonotus megalepis* Günther, 1862**

DRE

Frequent synonyms / misidentifications: None / None.**FAO names:** En - Dwarf wrasse.

Diagnostic characters: Body moderately deep, depth 2.5 to 3.1 in standard length. Head small, dorsal profile of head slightly concave; snout pointed; large scales on head except for top and region before eye; upper jaw protractile; teeth small, increasing in size to form 2 small canines at front of upper and lower jaw; a small canine tooth posteriorly at rear of upper jaw. Gill rakers on first arch 15 or 16. **Dorsal fin continuous, with 9 spines and 10 soft rays, first 3 and last 3 spines longer than central 3;** anal fin with 3 spines and 9 soft rays; caudal fin rounded; pectoral-fin rays 11 or 12. **Lateral line interrupted, with 17 pored scales in upper portion and 4 on peduncular portion.** **Colour:** body colour variable, primarily pale green or green to mottled reddish brown or a translucent orange with a few rows of large brownish spots and with more numerous rows of white spots superimposed on these; an oblique white bar on cheek.

Size: Smallest wrasse in area, maximum length to about 8 cm.

Habitat, biology, and fisheries: Inhabits shallow sea grass beds. Feeds on small fishes and invertebrates. This species is not marketed for food, and is rarely seen in the aquarium trade.

Distribution: Bermuda, Florida Keys, and Caribbean Sea; also from eastern Atlantic.

