

A New Species of *Halichoeres* (Teleostei: Labridae) from the Western Gulf of Mexico

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A new labrid fish, *Halichoeres burekai*, is described from specimens collected at Stetson Bank, Flower Garden Banks National Marine Sanctuary (FGBNMS), in the northwestern Gulf of Mexico over claystone, sponge, and coral substrata. The bright purple, blue-green, and yellow body coloration, and anterior black pigmentation of the dorsal fin in the terminal male, large black irregular spot at the base of the caudal peduncle, salmon body coloration, yellow snout in the initial stage/female, and diagnostic differences in the mitochondrial DNA cytochrome *b* gene separate this species from all other western Atlantic labrids. Adult *H. burekai* were observed in small schools along the reef crest mixed with *Thalassoma bifasciatum* and *Chromis multilineata*, and small juveniles were observed in mixed schools with juvenile *Clepticus parrae*. It feeds primarily on calanoid copepods and other plankton and is a close relative of *H. socialis* from Belize. This species is currently known from the FGBNMS and reefs off Veracruz, Mexico, in the western Gulf of Mexico.

THE coral reef fish genus *Halichoeres* is the most species-rich genus of wrasses (Labridae), and occurs in tropical waters of all oceans. Western Atlantic *Halichoeres* were last reviewed by Randall and Böhlke (1965), who recognized nine valid species. After their revision, three additional species from Brazil and one from the Caribbean were described and/or recognized as valid (Rocha and Rosa, 2001; Randall and Lobel, 2003; Rocha, 2004). A molecular phylogenetic analysis of the genus revealed that, with the exception of *Halichoeres maculipinna* and *H. penrosei*, the New World species form a monophyletic clade (Barber and Bellwood, 2005).

In June 1997, a wrasse recognized as a species not previously documented at the East Flower Garden Bank (EFGB) was observed by divers from the Reef Environmental Education Foundation (REEF) and Flower Gardens Bank National Marine Sanctuary (FGBNMS) personnel during an annual reef fish survey. The species was photographed by REEF personnel and tentatively identified as *Halichoeres bathyphilus*. Multiple individuals were subsequently observed at EFGB during 1999, 2000, and 2001 surveys. A single, initial stage individual was also observed at West Flower Garden Bank during the 2000 survey. In 2001, a school of ten individuals, including the terminal phase, was observed at EFGB. A group of up to 20 initial and one or two terminal phase individuals was first observed at Stetson Bank in 1999, and subsequently in July and August 2000. Both initial and terminal phase individuals were photographed during these cruises and subsequently published as *H. bathyphilus* (Humann and DeLoach, 2002).

During visits to the FGBNMS office, the first author studied photographs of terminal males

of the wrasse previously identified as *H. bathyphilus* and realized that it was an undescribed species. Later, Carlos Gonzales sent us underwater photographs of both sexes of the new species taken at Veracruz, Mexico. This new species is described herein, and its morphology and mitochondrial DNA are compared with congeners.

MATERIALS AND METHODS

Morphology.—Measurements were made with dial calipers to the nearest 0.1 mm except for eye diameter and fin spine and ray lengths, which were measured using an ocular micrometer on a dissecting microscope (Table 1). Measurements follow Randall and Böhlke (1965) and Randall and Lobel (2003), and are expressed as percent standard length (SL). Counts and measurements in the description are for the holotype followed, in parentheses, by the range of the paratypes when different. Institutional abbreviations follow Leviton et al. (1985) and Leviton and Gibbs (1988).

Reproductive state of the holotype and paratype was confirmed by histological analysis. To avoid damage to the type series by standard osteological methods (clearing and staining, skeletal preparations), two individuals (the holotype and one paratype) were scanned at the University of Texas High-Resolution X-ray Computed Tomography (HRCT) Facility. The head of the holotype was imaged at 30 μ m sections for a total of 1054 slices with an in-plane resolution of 28 μ m per pixel. Three-dimensional reconstructions of the skeleton were generated from the CT slices using VoxBlast[®] by Vaytek Inc. The original CT dataset and derivative animations can

TABLE 1. MORPHOMETRICS OF *Halichoeres burekiae* AND CLOSELY RELATED SPECIES. The holotype (UF 121176) is the first specimen listed, followed by the mean and range in the entire type series. For related species of *Halichoeres*, mean and range of values are given, and number of specimens examined indicated in parentheses (measurements for *H. socialis* includes values reported by Randall and Lobel, 2003). Standard length is in mm; all other measurements are expressed as percentage of standard length. Characters that do not overlap with *H. burekiae* are in bold and indicated with an asterisk (*).

	<i>Halichoeres burekiae</i> (n = 8)					
	Holotype	Mean (range)	<i>H. socialis</i> (n = 13)	<i>H. pictus</i> (n = 5)	<i>H. bathyphilus</i> (n = 6)	<i>H. dispilus</i> (n = 4)
Standard length (mm)	77.4	55.6 (39.7–77.4)	38.1 (22.3–47.0)	78.1 (68.6–96.0)	81.1 (63.7–97.1)	71.53 (52.3–91.8)
Head length	28.6	30.3 (28.6–32.7)	32.2 (30.1–35.8)	30.9 (30.2–32.0)	32.4 (31.7–32.6)	31.4 (29.7–33.3)
Eye diameter	5.7	6.5 (5.7–7.8)	7.4 (6.6–8.9)	6.0 (4.9–6.7)	6.3 (5.8–7.1)	6.3 (5.4–7.1)
Interorbital width	6.6	8.1 (6.1–9.9)	7.2 (6.2–7.9)	6.8 (6.3–7.2)	5.3 (4.7–5.6)*	5.9 (5.1–6.1)
Body width	12.1	12.5 (11.8–13.4)	12.7 (12.2–13.8)	12.3 (10.2–13.7)	10.5 (9.9–11.0)*	12.3 (10.5–12.4)
Body depth	25.2	23.7 (21.5–27.5)	21.7 (20.2–22.8)	23.8 (19.7–26.0)	21.7 (20.7–23.5)	25.1 (23.3–26.7)
Caudal ped. length	12.7	13.4 (12.7–14.4)	12.2 (11.8–13.4)	10.9 (10.2–11.7)*	11.1 (10.1–11.8)*	12.0 (11.5–12.8)
Caudal ped. depth	11.2	14.2 (11.2–15.6)	10.6 (9.6–11.8)	10.6 (10.2–11.1)*	10.1 (8.8–10.9)*	10.5 (9.6–12.0)
Snout length	7.2	7.8 (7.2–8.1)	8.9 (8.3–9.8)*	8.9 (8.2–9.6)*	10.0 (9.5–10.5)*	9.3 (9.0–9.6)*
Predorsal length	24.8	28.5 (24.8–31)	29.7 (28.4–31.2)	27.6 (26.0–29.2)	29.8 (27.9–31.9)	28.3 (26.9–30.4)
Preal length	51.8	53.2 (51.2–55.9)	54.9 (54.0–56.8)	55.9 (53.0–58.4)	54.0 (52.1–56.3)	52.5 (50.4–54.4)
First dorsal spine	4.7	5.1 (3.6–6.0)	4.7 (4.1–5.4)	5.1 (3.6–7.8)	4.6 (4.1–4.9)	4.5 (4.0–5.1)
Ninth dorsal spine	7.9	10.3 (7.9–12.5)	10.0 (9.3–10.3)	9.8 (8.3–11.4)	8.9 (8.3–9.4)	8.5 (8.2–8.8)
Longest dorsal ray	11.0	11.2 (10.1–12.7)	13.0 (12.4–14.3)	11.5 (10.6–12.8)	12.1 (11.5–12.6)	12.3 (11.5–12.8)
Length third anal spine	6.8	7.4 (6.4–9.4)	9.3 (8.7–9.8)	7.9 (7.3–9.0)	6.3 (5.8–6.7)	6.7 (6.1–7.1)
Longest anal ray	10.2	10.2 (9.5–10.9)	12.9 (11.6–13.8)*	10.8 (9.8–12.3)	11.0 (10.0–11.9)	11.2 (11.0–11.4)*
Middle caudal ray	20.0	16.2 (13.2–22.9)	22.2 (21.1–24.2)	20.8 (19.3–21.8)	20.1 (18.8–22.3)	20.7 (19.3–21.5)
Longest pectoral ray	19.8	17.9 (16.3–19.8)	20.5 (19.6–21.1)	18.7 (17.6–19.4)	17.1 (15.9–18.5)	19.1 (18.0–19.5)
Pelvic fin length	13.6	11.7 (10.3–14.2)	12.8 (11.5–14.1)	12.6 (11.2–15.4)	13.1 (12.2–15)	13.0 (12.4–14.0)

be viewed at UT's Digital Library of Morphology (<http://www.digimorph.org/>).

Genetics.—DNA extraction, polymerase chain reaction, and sequencing followed the methods described in detail by Rocha (2004). PCR products were sequenced in the forward and reverse directions, and resulting mtDNA cytochrome *b* sequences are deposited at Genbank with accession numbers EF185120–EF185125. Sequences were aligned and edited with Sequencher version 3.0 (Gene Codes Corp., Ann Arbor, MI). The computer program MODELTEST version 3.06 (Posada and Crandall, 1998) was used to determine the substitution model that best fit the data through a hierarchical likelihood ratio test (HLRT). The Tamura–Nei model (Tamura and Nei, 1983) with gamma distribution shape parameter of 0.17 was chosen. The tree of relationships among *H. burekai* and its four closely related species was constructed using the maximum likelihood criterion; support for the resulting tree was evaluated using 500 bootstrap replicates with the software PAUP* (version 4.0b10, D. L. Swofford, PAUP*: phylogenetic analysis using parsimony [*and other methods], Sinauer, Sunderland, MA, 2002). A molecular clock was enforced in the likelihood analysis to estimate divergence times, and the likelihood of the resulting tree was not significantly different from the tree without the enforced clock.

***Halichoeres burekai*, new species**

Mardi Gras Wrasse
Figures 1, 2; Table 1

Holotype.—UF 121176, male, 77.8 mm SL, Stetson Bank, FGBNMS, Gulf of Mexico, 28°10'N, 94°17.5'W, reef crest, 24 m, hand net, 19 April 2002, D. C. Weaver, Genbank Accession No. EF185121.

Paratypes.—UF 121257, female, 56.0 mm SL, same data as holotype; USNM 388617, 4, 39.7–55.7 mm SL, same locality as holotype, 18 Aug. 2006; UF 165651, 2, 56.2–56.8 mm SL, same locality as holotype, 17 Sept. 2006.

Diagnosis.—*Halichoeres burekai* is easily distinguished from all other *Halichoeres* of the western Atlantic in both initial and terminal phases by its short snout (7.2 to 8.1% SL), the presence of a well developed posterior canine tooth, and coloration as follows: terminal phase males have a purple head and dorsum; intense fluorescent yellow broken lateral band; electric blue lines and series of dots on head, body, and fins; black

band on anterior portion of dorsal fin; dark spot with bright blue ocellus above pectoral fin (Fig. 1). Initial phase females are salmon-pink with a yellow snout and white lateral stripe extending from below eye to lower half of caudal-fin base, and a large, oblong black spot with an irregular margin on caudal peduncle (Figs. 1, 2). Dorsal and anal fins with pale yellow submarginal bands, caudal fin pale pink. Terminal phase male *Halichoeres burekai* possess dark blue-green cranial bones, jaws, hypural plate, and fin elements, and prominent tusk-like canines projecting nearly vertically from upper jaw. Dentition, skull, and skeletal elements of the initial phase females resemble terminal males in relative shape and size, but have normal bone coloration, lacking blue-green pigment.

Description.—Dorsal rays IX, 11; anal rays III, 12, all dorsal and anal rays branched, the last to base; pectoral rays 13 (12–13), upper ray unbranched; pelvic rays I, 5; principal caudal rays: 14, inner 12 branched. Lateral-line scales 27 (26–27), each with a single pore opening dorsally, the terminal pored scale posterior to the rear margin of the hypural plate; four scales above lateral line to origin of dorsal fin, two scales above anterior portion of lateral line to base of middle dorsal spines; eight scales below lateral line to origin of anal fin. Scales around the caudal peduncle 16–17. Lateral line continuous with an abrupt downward curve below last three dorsal rays, extending along midline to caudal peduncle. Body slender, depth 25.2% (21.5–27.5) of SL (Table 1). Suborbital pores seven (six to eight). Snout shape bluntly pointed (rounded in initial phase specimens). Nostrils with anterior short tube and posterior flap. Caudal shape double emarginate in terminal males and truncate in initial phase specimens.

Free vertical and horizontal margin of preopercle smooth. Two scale rows between lateral line and dorsal fin at mid-fin, four to dorsal fin origin. Ten suborbital pores total, seven rimming orbit and three branched radiating tubes ending in single pore on lacrimal bone. Gill membranes attached at isthmus. Scales end midway between opercle and preopercle on nape, head naked. Scales on chest smaller than body, extending anteriorly to rear margin of isthmus, and widely spaced near front half of chest between pelvic base and isthmus. Single large, elongate scale between pelvic-fin bases. Three rows of scales on caudal fin, gradually decreasing in size to rear of lateral line.

Upper canine teeth project downward, slightly forward, less so than in congeners, and flare out laterally. Upper front canine tooth nearly verti-

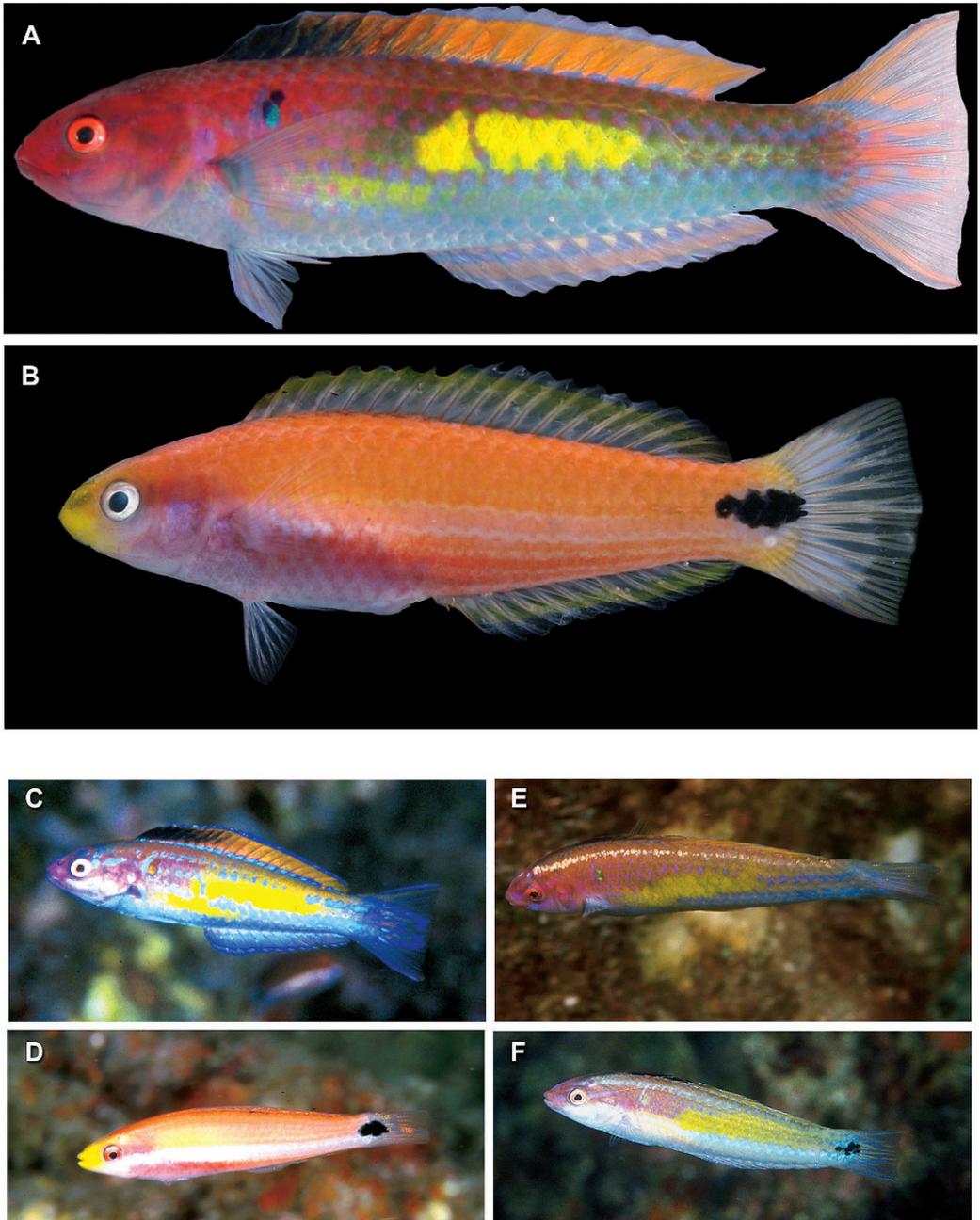


Fig. 1. Color photographs of the (A) holotype (UF121176), the (B) paratype (UF121257), and underwater photographs of a (C) terminal phase male, (D) initial phase/female, and (E, F) transitional males of *Halichoeres burekai*. Photographs by (A) D. Weaver, (B) T. Johnson, and (C–F) J. and F. Burek.

cal, curving backwards and projecting beyond upper lip resembling a tusk. Each upper tooth slides between lower pair of canines. Posterior canine sharp, well-developed, and reaching edge of upper lip flap but covered in holotype; green coloration visible beneath upper lip. Conical teeth in upper jaw seven to nine; inner row of

nodular teeth 11. Ten to 13 conical teeth in lower jaw, small patch of nodular teeth near symphysis behind conical teeth. Gill rakers 17–18, including rudiments. Teeth and bones of terminal phase blue-green, clearly visible beneath skin. Blue-greenish coloration of holotype and terminal phase paratypes also visible on fin

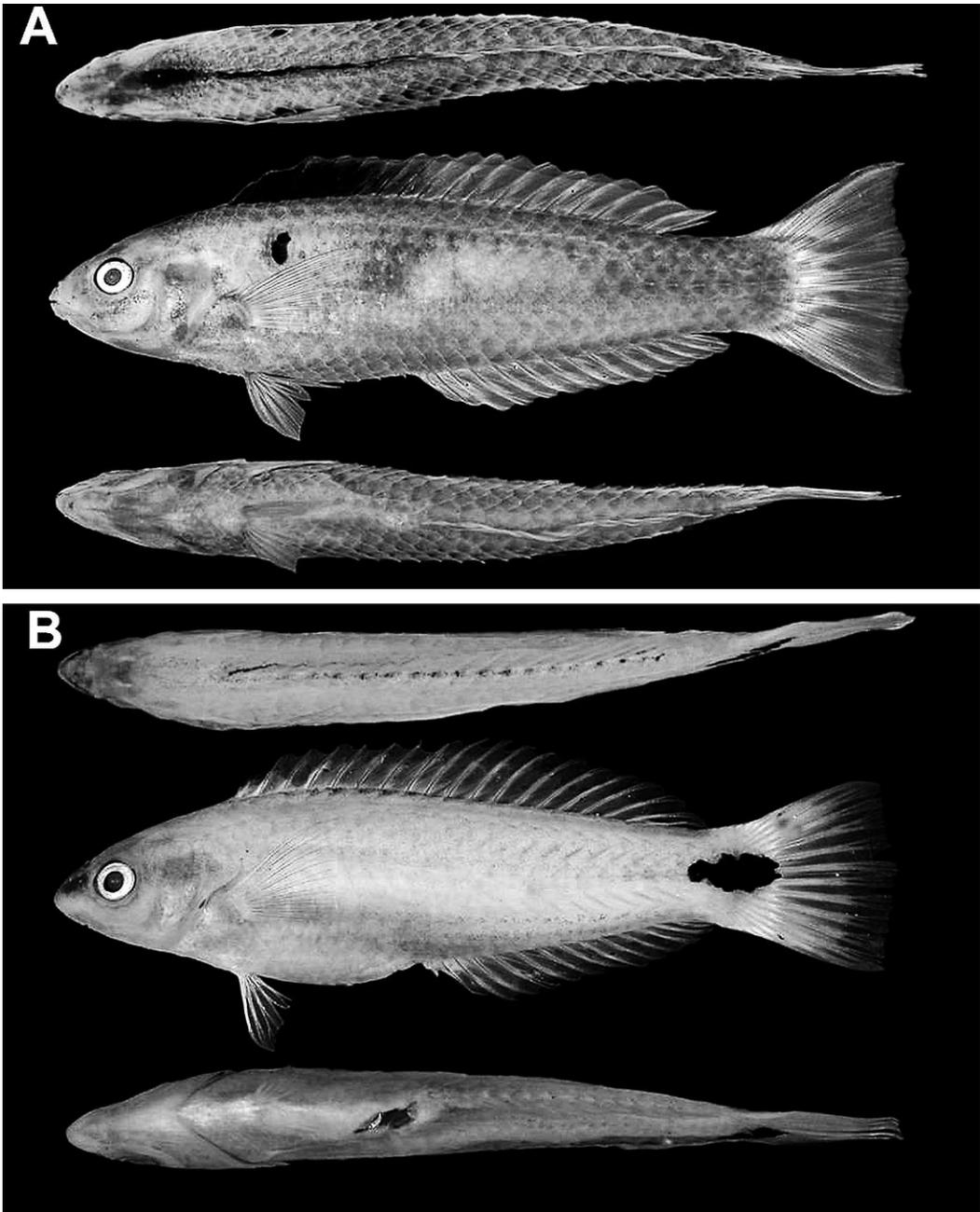


Fig. 2. Dorsal, lateral, and ventral views of preserved *Halichoeres burekai*: (A) holotype (UF121176) and (B) paratype (UF121257). Photographs by D. Weaver.

spines and rays, including caudal, hypural plate, and pectoral/pelvic girdle. Skeleton and teeth of initial phase specimens pale with no obvious coloration.

Coloration in life.—Prominent coloration of terminal males includes purple on the head and dorsum, broad orange submarginal band in

dorsal fin with anterior black band, continuing as prominent mid-dorsal black line on nape (Fig. 1). A bright yellow band on side with irregular margins that may continue onto caudal peduncle and caudal fin, and greenish-blue base coloration on lower sides. Bright blue stripes on head, along side of body and caudal fin, at margin and base of dorsal and anal fins. Series of

blue dots occurring in four to six rows along side and at base of anal and dorsal fins. Conspicuous black humeral spot rimmed with blue. Caudal fin with prominent blue and orange medial and marginal stripes, some individuals with black pigment on outer rays. These color patterns were observed on all terminal phase individuals encountered during SCUBA surveys.

Transitional phase individuals are similar to terminal phase, but lateral yellow stripe diffuse or absent, and broad white lateral stripe on lower portion of body gradually changing to pale greenish blue posteriorly, or pinkish in coloration in smaller individuals (Fig. 1E, 1F). Black caudal spot still evident in transitional males, although paler and/or smaller than initial phase, and black anterior region and submarginal orange band of dorsal fin well developed.

Initial phase juveniles and females have a black spot around nostrils, a large black spot at the caudal-fin base, and a dusky stripe on upper snout (Fig. 1B, 1D). Dorsal and anal fins bear pale yellow margins and a punctate line occurs along both sides of the dorsal-fin base. Base coloration of body is salmon-pink with a broad white stripe extending from below eye to lower portion of caudal peduncle. Longitudinal pink stripes present on belly, may cover broad white lateral stripe in preserved specimens (Fig. 1B). Snout bright yellow, with light yellow wash on lateral surface from edge of gill cover to middle of body. Bright silvery-white stripe on each side of dorsal-fin base, extending from above the center of eye to the middle of the dorsal fin. Upper two-thirds of iris pink to red, lower third white. Small juveniles (12–18 mm TL) do not appear to have a unique color pattern, resembling larger females.

Coloration in alcohol.—The male holotype was grayish brown and pale green after six months in 70% ethanol, with pale gray fin membranes (Fig. 2A). Black pigment conspicuous on anterior portion of dorsal fin and humeral spot, with dusky margins along entire dorsal fin and anterior portion of spot. Brown stripes present on caudal fin, dorsal margin, and dorsal-fin base that correspond to blue stripes in life. Pale region on side corresponds to bright yellow band on living specimen. Dark pigment present on cheek, breast, and along midside surrounding pale band. Blue-green pigmentation of skull bones and dentition still conspicuous through skin, and particularly evident at fin spine and ray bases and caudal peduncle. Females or initial phase specimens are pale, with prominent black spot on caudal peduncle (Fig. 2B). Fin membranes clear, with dark pigment at base of each

dorsal-fin spine and ray. Fine black edge present along anterior margin of dorsal fin. Dusky pigment present on snout, with series of small dots bordering midline and along lower rear portion of body.

Comparisons with congeners.—The mtDNA phylogenetic analysis (Fig. 3) reveals that *H. burekai*, *H. socialis*, *H. dispilus*, *H. pictus*, and *H. bathyphilus* form a monophyletic group within the New World *Halichoeres*, which are also monophyletic and separated from Indo-Pacific lineages (Barber and Bellwood, 2005). These five species also share morphological and behavioral characters. They have a relatively slender body and include the only New World *Halichoeres* to live relatively high in the water column and feed primarily on plankton. Thus, we focus our comparisons below on these species.

Sequence divergence between *H. burekai* and its sister species (*H. socialis*) is 6.2%, which is equal to or greater than the divergence between many sister species pairs of *Halichoeres* (Rocha and Rosa, 2001; Rocha, 2004). By calibrating a molecular clock using the Isthmus of Panama (Knowlton et al., 1993) and the separation between *H. socialis* and *H. dispilus*, we estimate that *H. burekai* has been on its own evolutionary path for at least 1.7 million years (Fig. 3). The primary external characteristics distinguishing the sister species *H. socialis* and *H. burekai* are body size and coloration. Randall and Lobel (2003) reported a maximum size of 36.4 mm SL in a sample of 102 specimens. Four additional specimens (UF 126317) examined during this study are 35.4–46.6 mm SL, whereas *H. burekai* attains at least 77.4 mm SL. *Halichoeres socialis* lacks the deep purple body coloration, bright yellow lateral stripe, and black anterior pigment in the dorsal fin of *H. burekai*. Initial phase *H. socialis* can be distinguished by the pale green to gray body coloration (salmon-pink in *H. burekai*) and the small caudal spot (smaller than eye diameter in *H. socialis*, length of spot 2–3 times the diameter of eye in *H. burekai*). A caudal spot is present in both sexes of *H. socialis*, although faint in terminal phase males. The humeral spot pigment in terminal male *H. socialis* is concentrated in four to six neighboring scales, diamond shaped, larger than spot displayed in *H. burekai*, which covers one or two adjacent scales. Both initial and terminal phase *H. socialis* are dusky above midline and paler below lateral stripe. In addition to these external features, *H. socialis* has small, fused teeth and lacks well developed canines (Randall and Lobel, 2003), compared to the tusk-like front canines and prominent rear tooth in *H. burekai*.

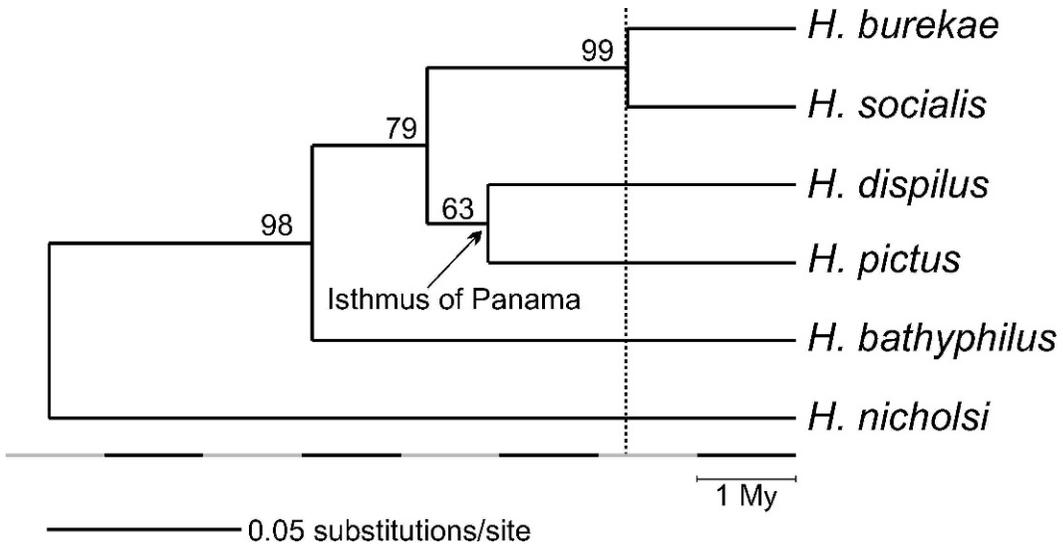


Fig. 3. Phylogenetic relationships of *Halichoeres burekai* based on maximum likelihood analysis of the mitochondrial DNA cytochrome *b* gene. Numbers above nodes are bootstrap support values from 500 replicates. A phylogenetic reconstruction using maximum parsimony resulted in the same tree topology. Time scale in the bottom of the tree is based on the split between *H. pictus* and *H. dispilus* (indicated by arrow), which approximately coincides with the closure of the Isthmus of Panama; this same point was used to calibrate a larger tree containing 35 species of *Halichoeres* (Barber and Bellwood, 2005).

The only other *Halichoeres* that has a green skeleton is *H. pictus* (fresh specimens from the Florida Keys had a faint blue green pigment in dentition, jaws, and skull bones); however, *H. pictus* lacks the oblong black spot on the caudal fin in the juvenile and initial phases, developing only in mature males. In contrast, newly settled juvenile and female *H. burekai* have a distinct black spot that fades during transition to the terminal phase. Terminal *H. burekai* lack any evidence of a caudal black spot. Juvenile *H. pictus* bear a dark brown mid-lateral stripe and a yellow dorsum, while *H. burekai* have a salmon-pink body throughout all initial stages. Terminal male *H. pictus* lack the bright yellow mid-lateral band, anterior black band on dorsal fin, and mid-dorsal stripe on nape present in all mature males of *H. burekai*. Anterior canines of *H. pictus* are poorly developed, even in large terminal males, and project forward. Rear tooth in terminal male *H. pictus* also reduced in size (Fig. 4). Moreover, *Halichoeres pictus* have longer snout lengths, narrower body and interorbital widths, shallower caudal peduncle depths and width when compared to *H. burekai* (Table 1).

Halichoeres burekai and *H. bathyphilus* differ in habitat preferences, morphology, and coloration. *Halichoeres bathyphilus* is one of the most common deepwater wrasses in the Gulf of Mexico, and occurs on all shelf edge reef systems surveyed (Weaver et al., 2002; Weaver, pers. obs.). Howev-

er, this species typically does not occur at depths of less than approximately 50 m. It has not been documented on the shallow region (at depths where *H. burekai* occurs) of East and West Flower Garden Bank, or Stetson Bank. This species is abundant at depths between 50–120 m at FGBNMS, based on remotely operated vehicle (ROV) surveys conducted by FGBNMS staff. *Halichoeres bathyphilus* bears a narrow yellow stripe or series of zig-zag yellow spots extending from snout, through the eye, to the caudal fin in the initial and terminal phases (alternating on two scale rows in the terminal phase). Terminal phase *H. bathyphilus* lack the deep purple body color, bright yellow irregular lateral bands, orange submarginal band, and black anterior band on the dorsal fin present in *H. burekai*. Initial phase *H. bathyphilus* have small black caudal spots (less than half the diameter of pupil, twice the diameter of eye in *H. burekai*) and lack the white lateral stripe.

Halichoeres dispilus most closely resembles *H. burekai* in body shape (Table 1) and color pattern. Terminal phases of both species have black humeral spots rimmed with blue, electric blue lines on the head, side of the body, and medial fins, and similar patterns of alternating orange and blue stripes on the caudal fin. Initial stage individuals share the large irregular black spot on the caudal peduncle, salmon-pinkish body coloration, and a lateral white stripe that

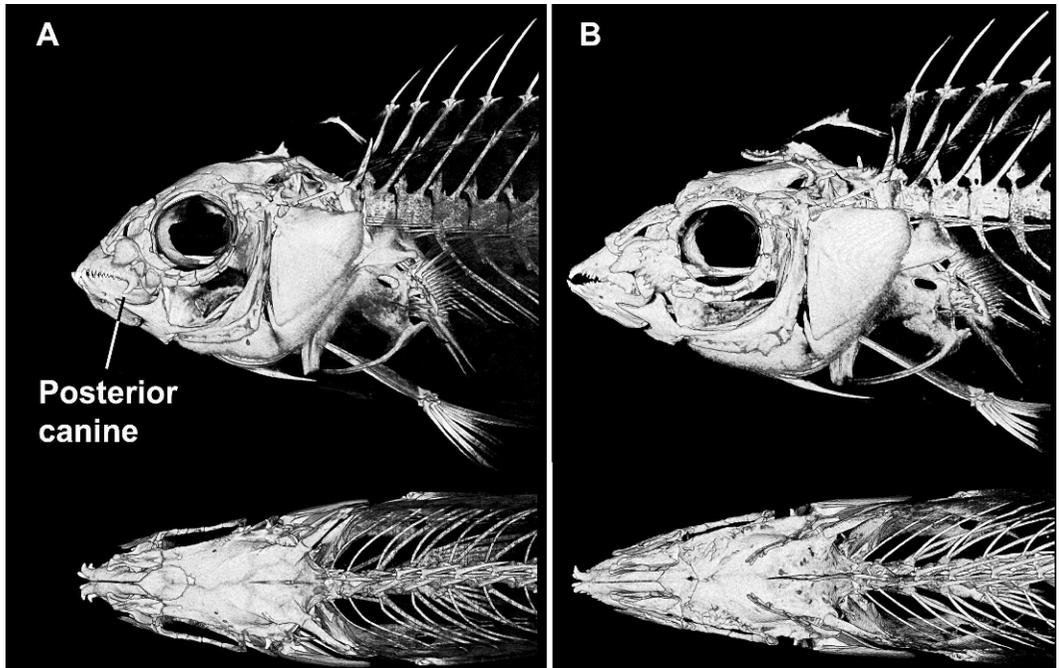


Fig. 4. Lateral and dorsal views of cranial bones of (A) *Halichoeres burekiae* holotype (SL = 77.4 mm) and (B) *H. pictus* (SL = 100.5 mm). Image provided by J. Maisano.

extends from below the eye to the caudal peduncle. However, *Halichoeres dispilus* terminal phase lacks the conspicuous black anterior and solid orange medial pigmentation of the dorsal fin, and the distinct purple and yellow body coloration of *H. burekiae*. A widespread species, *H. dispilus* is one of the most common wrasses in the tropical Eastern Pacific (Allen and Robertson, 1994).

Habitat and behavior.—This species was observed in small, mixed schools along the reef crest with other planktivorous reef fishes, primarily *Thalassoma bifasciatum*, juvenile *Bodianus rufus*, and *Chromis multilineata*. Small juveniles (12–18 mm TL) observed at East and West Flower Garden Bank occurred with juvenile *Clepticus parrae* of similar size. The Mardi Gras Wrasse is a planktivore; stomach contents included numerous calanoid copepods (18 in holotype and 45 in paratype) and one small fish larva (holotype).

During courtship, terminal phase males raise the dorsal “flag” when approaching a female and keep the dorsal fin erect while in close proximity to her. Terminal males primarily use pectoral “labriform” propulsion for locomotion unless making rapid rushes at a female from a distance, in which case the caudal fin and body are used for rapid propulsion to pursue her. The male typically circles the female with dorsal fin

flared, also periodically flaring the caudal lobes, and was observed to nip the female on the fins. Agonistic interactions were observed between males, with males approaching each other, flaring gill plates and jaws, and rapidly fanning their pectoral fins.

Distribution and ecology.—*Halichoeres burekiae* is apparently restricted to the Gulf of Mexico, and was collected at Stetson Bank (northwestern Gulf) and photographed in Veracruz, Mexico (southwestern Gulf, Fig. 5). The FGBNMS, including East Flower Garden Bank, West Flower Garden Bank, and Stetson Bank, are mid to outer continental shelf banks formed by the surface expression of salt domes in the northwestern Gulf of Mexico and support a diverse coral reef assemblage, with over 200 species of reef fishes that are characteristic of the Caribbean region (Pattengill et al., 1997).

On 17–19 April and 22 August–1 September of 2002, video and photographic records of the new species were made, and two individuals (large terminal male and initial stage female) were collected. On the remaining three cruises in 2002, no individuals were observed by up to 12 divers. During research cruises of the 2003–2005 field seasons, no individuals were observed at Stetson Bank. On 19 May 2006, the species was again observed at Stetson Bank, as newly settled

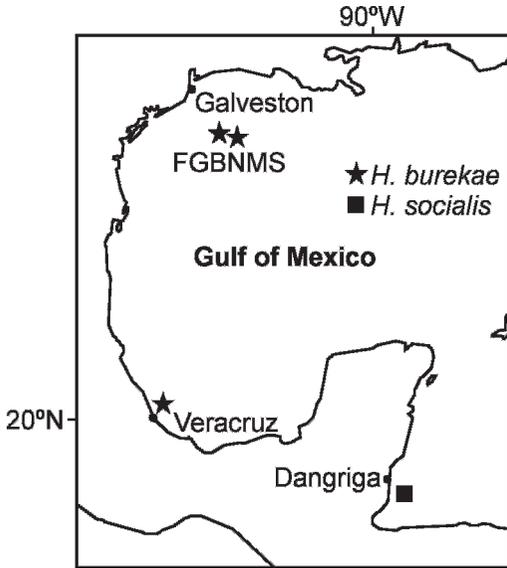


Fig. 5. Distribution of *Halichoeres burekai* and *H. socialis*.

juveniles in large schools (20–100 individuals). Initial phase individuals ranging in size from approximately 12–18 mm total length were observed at numerous locations along the crest of Stetson Bank, and the total population was estimated at over 1,000 individuals. Subsequent cruises during the 2006 field season resulted in additional field observations, photographs, and video surveys. Eight individuals were collected as additional type material and for further genetic and morphological analysis, and over 150 adults were counted during August 2006. During September 2006, additional specimens were documented at East and West Flower Garden Bank, including three adults at West Flower Garden Bank, a single individual at East Flower Garden Bank, and schools of small juveniles at both banks.

Etymology.—We assign the name *burekai* in honor of Joyce Burek, who first photographed the terminal phase male of this species, and in appreciation of the talents and generosity of Joyce and Frank Burek for donating their underwater photographs to the FGBNMS and their ongoing support of Sanctuary research and education. The Bureks photographed both initial and terminal stages of the fish and brought the species to the attention of researchers for identification. The common name “Mardi Gras wrasse” refers to the vivid purple, yellow, and green colors of the Mardi Gras tradition displayed by terminal males of this species, evident in color photographs (Fig. 2).

MATERIAL EXAMINED

Halichoeres pictus. Bahamas: ANSP 147548, 1. Bermuda: ANSP 133688, 6. Dominica: ANSP 128993, 1. Jamaica: ANSP 144372, 1.

Halichoeres bathyphilus. Bermuda: ANSP 133442, 3; ANSP 133443, 3. Florida: UF 204525, 1; UF 209822, 1. Venezuela: UF 228286, 1.

Halichoeres socialis. Belize: UF 126317, 4.

Halichoeres dispilus. Mexico: CAS 14856, 1; CAS 14857, 13; CAS 14859, 1; CAS 17666, 1. Peru: CAS 37515, 3.

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