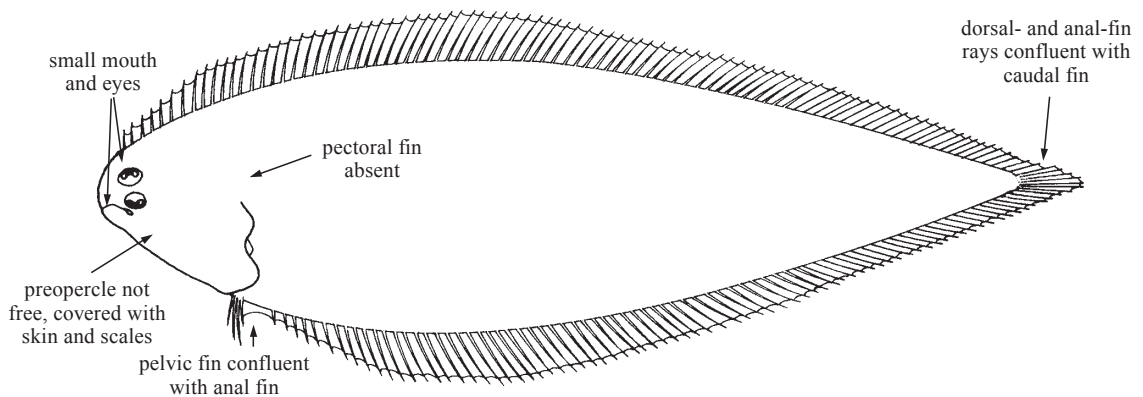


CYNOGLOSSIDAE

Tonguefishes and tongue soles

T.A. Munroe, National Marine Fisheries Service, National Museum of Natural History, Washington D.C., USA

Diagnostic characters: Lance- or tongue-shaped flatfishes with **eyes on left side of body**; body highly compressed and tapering to a point posteriorly. **Dorsal fin reaching far forward onto head usually in advance of posterior border of upper eye; dorsal and anal fins confluent with caudal fin; pectoral fins absent; usually only left pelvic fin (with 4 fin rays) present, located on median line and connected to anal fin by delicate membrane.** Mouth small, subterminal, asymmetrical; reaching posteriorly to a point between verticals at anterior and posterior margins of lower eye or slightly posterior to lower eye; jaws moderately curved on ocular side and notably on blind side; teeth minute and usually better developed on blind-side jaws; some species lacking teeth on ocular side jaws; eyes small and usually close together; **posterior margin of preopercle strongly attached to opercle, without free margin and covered with skin and scales.** No spines or spiny fin rays in dorsal, anal, or pelvic fins. **Lateral line absent on both ocular and blind sides. Scales ctenoid on both sides of body.** A single proximal dorsal-fin pterygiophore inserted into first interneural space. **Colour:** ocular side uniformly brownish or greyish, variably marked with patches, spots, or crossbands on body, and some species with blotches and spots on fins; most species uniformly whitish or yellowish on blind side, others with small, round melanophores (pepper-dots) along blind side, especially at bases of fin rays. Colour pattern (mostly intensity of background shading) may vary within a species.

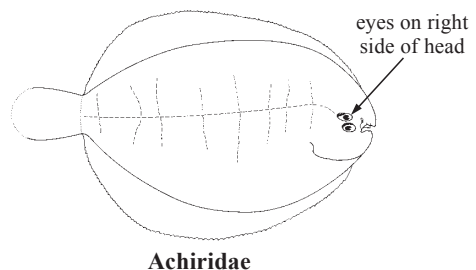
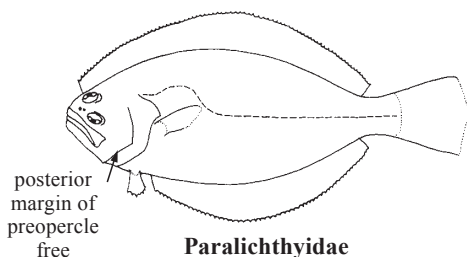


Habitat, biology, and fisheries: Small to medium-sized benthic fishes, commonly found on muddy bottoms, but some species inhabit a wide variety of other substrates. Tonguefishes occur throughout a wide depth range, from tidepools to deep waters on outer continental shelves and upper continental slopes (to about 1 500 m). Most species are small, not very abundant, and of limited economic importance with catch statistics for individual species not usually available. Four of the larger species may have some commercial potential in industrial fisheries. Tonguefishes contribute to the bycatch of trawl fisheries.

Similar families occurring in the area

Poecilopsettidae, Bothidae, Paralichthyidae: dorsal and anal fins not confluent with caudal fin; pectoral fins present; posterior margin of preopercle free, not covered by skin or scales (dorsal and anal fins confluent with caudal fin; pectorals absent, and margin of preoperculum covered by skin and scales in Cynoglossidae).

Achiridae: also have the dorsal fin placed far forward on the head and some species have the dorsal and anal fins joined to caudal fin, but all achirid species are readily distinguished in having the eyes on the right side of the head (eyes on left side of head in Cynoglossidae).



Key to the species of Cynoglossidae occurring in the area

Note: only the subfamily Symphurinae, with a single genus *Symphurus*, containing approximately 25 species, occurs in the western Atlantic. Species of *Symphurus* are similar morphologically with widely overlapping fin ray and vertebral counts. Counting fin rays will not allow for identification of all species occurring in the west central Atlantic. Of diagnostic value are the numbers of proximal dorsal-fin pterygiophores inserting into the anteriormost interneural spaces (the ID pattern). All species of *Symphurus* have a single pterygiophore inserted into the first interneural space, a unique arrangement among the Cynoglossidae and related taxa. The species differ, however, in the numbers of proximal dorsal-fin pterygiophores inserting into interneural spaces two and three. ID pattern formulae reflect the numbers of pterygiophores inserting into successive interneural spaces, beginning with the first interneural space. Formulae for west central Atlantic tonguefishes and the numbers of species (in parentheses) possessing each are as follows: 1-2-2 (1); 1-3-2 (10); 1-3-3 (1); 1-4-2 (4); and 1-4-3 (9). When used in combination with fin ray counts, ID pattern can facilitate the identification of individual specimens.

- 1a. Caudal-fin rays 14 (rarely 13); dorsal-fin rays more than 104; anal-fin rays 91 to 98; peritoneum black, usually visible through abdominal wall on both sides of body; body elongate, of nearly uniform width throughout most of length; total vertebrae 57 to 60; ID pattern usually 1-2-2 *Symphurus nebulosus*
- 1b. Caudal-fin rays less than 13 (rarely 13); dorsal-fin rays usually less than 104; anal-fin rays less than 91; peritoneum black or unpigmented; body usually deeper in anterior 1/3 of length and tapering noticeably posteriorly; total vertebrae less than 57; ID pattern with 3 or 4 pterygiophores inserted into second interneural space (usually 1-3-2, 1-3-3, 1-4-2, or 1-4-3. → 2
- 2a. Peritoneum black, usually visible through abdominal wall on both sides of body; caudal-fin rays usually 12; pupillary operculum absent (Fig. 1a); teeth present on entire margins of ocular-side jaws; ID pattern usually 1-3-2 → 3
- 2b. Peritoneum unpigmented; caudal-fin rays 10 to 12; pupillary operculum present (Fig. 1b) or absent (Fig. 1a); teeth present or absent over entire margins of both ocular-side jaws; ID pattern usually 1-3-2, 1-3-3, 1-4-2, or 1-4-3 → 9

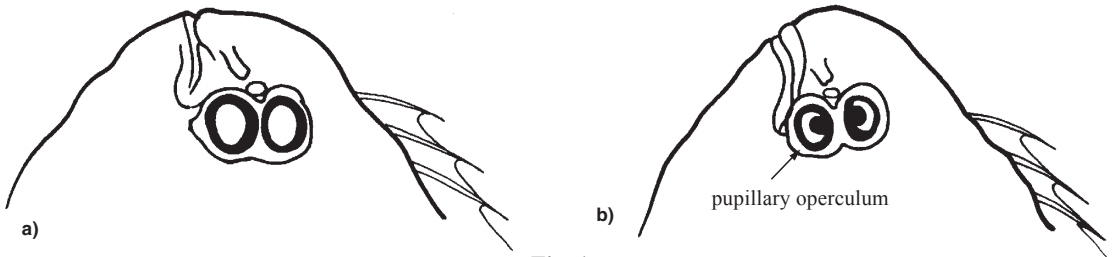


Fig. 1

- 3a. Blind side of body with pepper-dot pattern of melanophores (usually heaviest along bases of dorsal and anal fins) (Fig. 2) → 4
- 3b. Blind side of body without pepper-dot pattern of melanophores. → 5

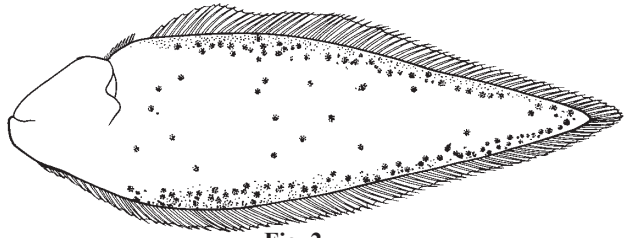


Fig. 2

- 4a. Dorsal-fin rays 77 to 85; anal-fin rays 64 to 70; 70 or fewer scales in longitudinal series; dorsal-fin origin in posterior position, usually only reaching vertical through posterior margin of upper eye or occasionally not reaching that point; dorsal and anal fins without pigmented blotches or stripes; total vertebrae 43 to 46 *Symphurus pelicanus*
- 4b. Dorsal-fin rays greater than 88; anal-fin rays greater than 75; more than 70 scales in longitudinal series; dorsal-fin origin in more anterior position, usually at point between verticals through middle of pupil and anterior margin of upper eye; dorsal and anal fins with stripe along basal margin of fin; total vertebrae usually greater than 49 *Symphurus* sp. A

- 5a. Dorsal-fin rays 93 to 104; anal-fin rays 80 to 89; ocular-surface usually with a large, dark brown diamond-shaped blotch on caudal region of body (Fig. 3), but otherwise uniformly pigmented and without pattern of distinct crossbands; basal margins of dorsal and anal fins with dark brown stripe, but without blotches; total vertebrae 51 to 56, usually 52 to 54 *Symphurus marginatus*

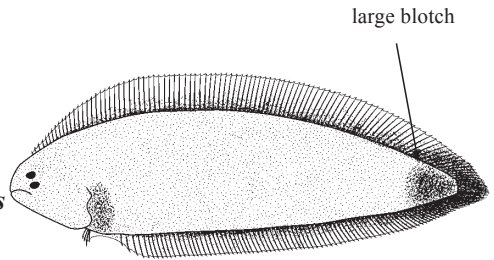


Fig. 3 *Symphurus marginatus*

- 5b. Dorsal-fin rays usually less than 95; anal-fin rays usually 84 or fewer; ocular-surface of body without dark brown, diamond-shaped blotch on caudal region, with or without distinct pattern of crossbands; dorsal and anal fins with or without pigmented blotches; total vertebrae 47 to 53, usually 52 or less → 6

- 6a. Scales fewer, 62 to 75 in a longitudinal series; 5 hypurals; anal-fin rays 68 to 74; inner opercular linings and both sides of isthmus usually lightly pigmented; total vertebrae 45 to 49, usually 47 to 49 *Symphurus piger*

- 6b. Scales more numerous, usually 77 to 100 in a longitudinal series; 4 hypurals; anal-fin rays 71 to 84; inner opercular linings and isthmus unpigmented; total vertebrae 47 to 52, usually greater than 48 → 7

- 7a. Dorsal-fin rays 83 to 88; anal-fin rays 71 to 75; total vertebrae 47 to 49; scales in longitudinal series 77 to 87; ocular surface usually yellowish or lightly straw-coloured, with 1 or 2 prominent, complete, crossbands immediately posterior to opercular opening; dorsal and anal fins without stripe along basal margin; (adult size relatively small, usually not exceeding 80 mm standard length) *Symphurus pusillus*

- 7b. Dorsal-fin rays 87 to 95; anal-fin rays 74 to 84; total vertebrae 50 to 53; scales in longitudinal series 85 to 99; ocular surface usually dark brown, straw-coloured or yellowish, with series of mostly incomplete crossbands posterior to opercular opening, or ocular surface uniformly pigmented without crossbands; dorsal and anal fins frequently with dark brown stripe along basal margins, sometimes in combination with series of large, pigmented blotches alternating with unpigmented areas on dorsal and anal fins → 8

- 8a. Dorsal and anal fins usually with alternating series of prominent, darkly-pigmented blotches (Fig. 4); blotches usually wider than intervening unpigmented areas; no pigmented spot on scaly base of caudal fin; eyeballs round, usually contiguous, or nearly contiguous, within fleshy orbital sac *Symphurus stigmatosus*
- 8b. Dorsal and anal fins usually without alternating series of prominent, darkly-pigmented blotches (if blotches present then as wide as, or only slightly narrower than, width of intervening unpigmented areas), but usually with longitudinal dark brown stripe along bases of fin rays; pigmented spot present on scaly base of caudal fin; eyeballs longer than wide, separated by small space within fleshy orbital sac (Fig. 5). *Symphurus billykrietei*

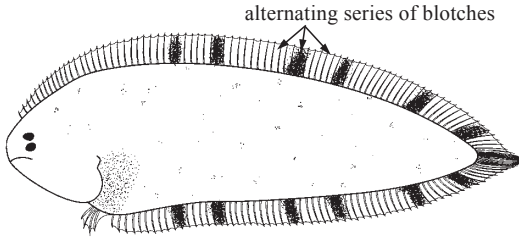


Fig. 4 *Symphurus stigmatosus*

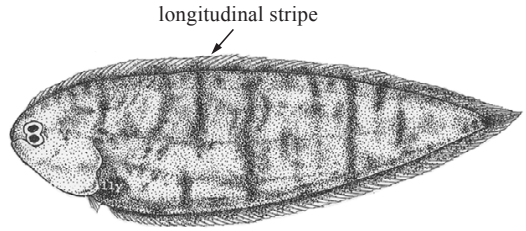


Fig. 5 *Symphurus billykrietei*

- 9a. Caudal-fin rays usually 12; pupillary operculum absent (Fig. 1a); ID pattern usually 1-3-2 or 1-4-3 → 10
- 9b. Caudal-fin rays usually 10 or 11; pupillary operculum present (Fig. 1b) or absent (Fig. 1a); ID pattern usually 1-3-3, 1-4-2, or 1-4-3 → 16
- 10a. Dorsal-fin rays 70 to 76; anal-fin rays 55 to 61; 55 to 65 scales in longitudinal series; pattern of pepper-dots (Fig. 2) on blind side of body (usually); some specimens with darkly pigmented, triangularly-shaped caudal blotch; total vertebrae 39 to 42; ID pattern usually 1-3-2; adult sizes usually less than 50 mm standard length. *Symphurus arawak*
- 10b. Dorsal-fin rays usually more than 80; anal-fin rays 68 or more; 66 to 97 scales in longitudinal series; no pepper-dots on blind side of body; caudal blotch present or absent; total vertebrae 46 or more; ID pattern usually 1-3-2 or 1-4-3; small (less than 45 mm standard length) or large (greater than 70 mm standard length) adult sizes → 11
- 11a. Body whitish or pallid, occasionally with faint crossbands; a darkly pigmented blotch on caudal region of ocular side of body in some specimens; dorsal-fin rays 83 to 87; anal-fin rays 68 to 71; total vertebrae 46 to 48; teeth well developed along margins of both ocular-side jaws; inner opercular linings and isthmus on both sides of body unpigmented; eye relatively large, eye diameter 11.6 to 15.8% head length; ocular-side lower jaw without fleshy ridge; ID pattern usually 1-3-2; adults usually less than 45 mm standard length *Symphurus rhytisma*
- 11b. Body usually darkly pigmented, straw-coloured to dark brown, with prominent crossbands or uniformly pigmented; no darkly pigmented caudal blotch on ocular side of body; dorsal-fin rays 86 to 107; anal-fin rays 70 to 89; total vertebrae 47 to 55; teeth usually absent or only poorly developed on margins of ocular-side jaws (especially upper jaw); inner opercular lining and isthmus on ocular side of body heavily pigmented; eye relatively small, eye diameter 6.4 to 11.4% head length; fleshy ridge present or absent on ocular-side lower jaw; ID patterns usually with 4 or more pterygiophores inserted into interneural space 2; adults exceeding 70 mm standard length → 12
- 12a. Large black spot on outer surface of ocular-side operculum; dorsal-fin rays 91 to 106; anal-fin rays 74 to 89; total vertebrae 48 to 54 → 13
- 12b. Ocular-side operculum without obvious black spot; dorsal-fin rays 86 to 97; anal-fin rays 70 to 81; total vertebrae 46 to 51. → 14

- 13a. Four to 8 small ctenoid scales on blind sides of posterior rays of dorsal and anal fins; ocular-side lower jaw without fleshy ridge on posterior portion; posterior extension of ocular-side jaws reaching only to point between verticals through posterior margin of pupil and posterior margin of eye; ocular surface usually with nine or fewer wide crossbands; posterior 1/3 of dorsal and anal fins becoming progressively darker (black in mature males); dorsal and anal fins without blotches; dorsal-fin rays 91 to 102; anal-fin rays 74 to 86; total vertebrae 48 to 54, usually 50 to 53 *Symphurus tessellatus*
- 13b. No ctenoid scales on blind sides of posterior rays of dorsal and anal fins; ocular-side lower jaw with pronounced fleshy ridge on posterior portion; posterior extension of ocular-side jaws reaching vertical at posterior margin of lower eye or reaching vertical slightly posterior to posterior margin of lower eye; ocular surface with 10 to 14 narrow crossbands; posterior 1/3 of dorsal and anal fins usually without progressive posterior darkening, but with alternating series of blotches and unpigmented areas; dorsal-fin rays 97 to 106; anal-fin rays 81 to 89; total vertebrae 52 to 55, usually 53 or 54 *Symphurus oculellus*
- 14a. Dorsal and anal fins with alternating series of pigmented blotches and unpigmented areas; lower jaw on ocular side without fleshy ridge; snout pointed; distance between upper eye and dorsal-fin base only slightly greater than eye diameter; ocular surface usually with 9 to 15 prominent, narrow crossbands; eye relatively large, usually 9.0 to 10.0% of head length *Symphurus caribbeanus*
- 14b. Dorsal and anal fins without alternating series of pigmented blotches and unpigmented areas; lower jaw on ocular side with fleshy ridge; snout squarish; distance from upper eye to dorsal-fin base much greater than eye diameter; ocular surface uniformly pigmented or with faint crossbands occasionally present; eye relatively small, usually only 6.4 to 9.4% head length → 15
- 15a. Dorsal-fin rays 89 to 97; anal-fin rays 73 to 81; 79 to 89 scales in longitudinal series; eye relatively small, usually only 6.4 to 9.4% head length; total vertebrae 47 to 51, usually 49 to 51 (Caribbean and southern Gulf of Mexico to Brazil) *Symphurus plagusia*
- 15b. Dorsal-fin rays 86 to 93; anal-fin rays 70 to 78; 66 to 83 scales in longitudinal series; eye relatively large (7.0 to 11% head length); total vertebrae 46 to 50, usually 47 to 49 (southeastern USA and northern Gulf of Mexico) *Symphurus civitatum*
- 16a. Caudal-fin rays usually 11; large ocellated spot on caudal fin; dorsal and anal fins without spots; pupillary operculum well developed (Fig. 1b) *Symphurus urospilus*
- 16b. Caudal-fin rays usually 10; no ocellated spot on caudal fin; if spot present on caudal fin (occasionally in *Symphurus diomedeanus*) then spots also present on posterior dorsal and anal fins; pupillary operculum present or absent. → 17
- 17a. Dark brown blotch on caudal region of ocular surface of body or single ocellated spot on posterior dorsal and anal fins; pupillary operculum present; no fleshy ridge on ocular-side lower jaw; ostia present in bases of membranes of dorsal and anal fins; ID patterns usually 1-4-2, or 1-5-2 → 18
- 17b. No dark brown blotch on caudal region of ocular surface of body; no ocellated spots on posterior dorsal and anal fins; pupillary operculum and fleshy ridge on ocular-side lower jaw present or absent; no ostia in membranes at bases of dorsal and anal fins; ID patterns usually 1-4-3, 1-5-3, or 1-4-2 → 20
- 18a. Single ocellated spot on posterior region of dorsal and anal fins; ocular surface whitish or yellowish-white without dark brown blotch in caudal region *Symphurus ommaspilus*
- 18b. No ocellated spots on dorsal and anal fins; ocular surface straw-coloured to dark brown with dark brown blotch on caudal region → 19

- 19a.** Dorsal-fin rays 69 to 81, usually 72 to 77; anal-fin rays 55 to 64, usually 56 to 64; total vertebrae 41 to 44, usually 41 to 43; 55 to 67 scales in a longitudinal series *Symphurus minor*
- 19b.** Dorsal-fin rays 75 to 86, usually 77 to 84; anal-fin rays 60 to 70, usually 62 to 67; total vertebrae 43 to 47, usually 44 to 46; 59 to 78 scales in longitudinal series. *Symphurus parvus*
- 20a.** Posterior dorsal and anal fins spotted (usually); pupillary operculum present (Fig. 1b)
 *Symphurus diomedeanus*
- 20b.** Dorsal and anal fins without spots; pupillary operculum absent or only weakly developed
 *Symphurus plagiusa*

List of species occurring in the area

The symbol  is given when species accounts are included.

-  *Symphurus arawak* Robins and Randall, 1965.
 -  *Symphurus billykrietei* Munroe, 1998.
 -  *Symphurus caribbeanus* Munroe, 1991.
 -  *Symphurus civitatium* Ginsburg, 1951.
 -  *Symphurus diomedeanus* (Goode and Bean, 1885).
 -  *Symphurus marginatus* (Goode and Bean, 1886).
 -  *Symphurus minor* Ginsburg, 1951.
 -  *Symphurus nebulosus* (Goode and Bean, 1883).
 -  *Symphurus oculellus* Munroe, 1991.
 -  *Symphurus ommaspilus* Böhlke, 1961.
 -  *Symphurus parvus* Ginsburg, 1951.
 -  *Symphurus pelicanus* Ginsburg, 1951.
 -  *Symphurus piger* (Goode and Bean, 1886).
 -  *Symphurus plagiusa* (Linnaeus, 1766).
 -  *Symphurus plagusia* (Bloch and Schneider, 1801).
 -  *Symphurus pusillus* (Goode and Bean, 1885).
 -  *Symphurus rhytisma* Böhlke, 1961.
 -  *Symphurus stigmosus* Munroe, 1998.
 -  *Symphurus tessellatus* (Quoy and Gaimard, 1824).
 -  *Symphurus urospilus* Ginsburg, 1951.
- Symphurus* sp. A. To about 12 cm standard length. Colombia.

References

Ginsburg, I. 1951. Western Atlantic tonguefishes with descriptions of six new species. *Zoologica* 36:185-201.

Menezes, N. and G. de Q. Benvignú. 1976. On the species of the genus *Symphurus* from the Brazilian coast, with descriptions of two new species (Osteichthys, Pleuronectiformes, Cynoglossidae). *Pap. Avulsos Dep. Zool. São Paulo* 30:137-170.

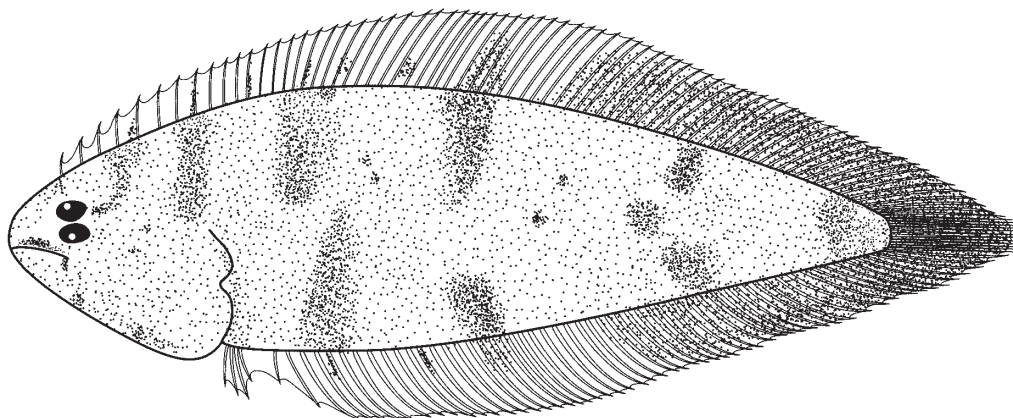
Munroe, T.A. 1998. Systematics and ecology of tonguefishes of the genus *Symphurus* (Cynoglossidae, Pleuronectiformes) from the western Atlantic Ocean. *Fish. Bull.* 96:1-182.

Topp, R.W. and F.H. Hoff, Jr. 1972. Flatfishes (Pleuronectiformes). *Mem. Hourglass Cruises, Fla. Dep. Nat. Resour., St. Petersburg, Florida*, 4(2):1-135.

Symphurus arawak Robins and Randall, 1965

Frequent synonyms / misidentifications: None / None.

FAO names: En - Coral reef tonguefish (AFS: Caribbean tonguefish).

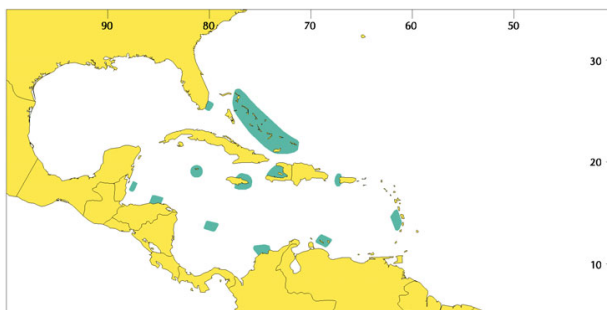


Diagnostic characters: Body relatively deep; greatest depth in anterior 1/3 of body; tapering rapidly posterior to midpoint. Head long and wide; head length usually slightly shorter than head width. Snout long and pointed. **Lower eye large.** Anterior and medial surfaces of eyes not covered with scales. **Pupillary operculum absent.** Maxilla usually extending posteriorly to point between verticals through middle and anterior margin of lower eye. **Ocular-side lower jaw without fleshy ridge. Teeth well developed on all jaws. Dorsal-fin rays 70 to 76.** Dorsal-fin origin usually reaching point between verticals through anterior margin and midpoint of upper eye. **Anal-fin rays 55 to 61.** No scales on blind sides of dorsal- and anal-fin rays. **Caudal-fin rays usually 12,** rarely 11, 13, or 14. **Longitudinal scale rows 55 to 65. ID pattern usually 1-3-2,** rarely 1-2-2 or 1-3-3. **Total vertebrae 39 to 42, usually 40 or 41. Colour:** similar for both sexes. **Ocular surface usually off-white or pale yellowish, with 2 to 7 (usually 4 or 5), conspicuous, dark brown, complete or incomplete crossbands on body that sometimes extend onto fin rays.** Sometimes with short, incomplete crossbands forming 6 to 10 large, and variably positioned, dark brown blotches best developed on caudal 1/3 of body. **Dark caudal patch present in some specimens.** Posteriormost pair of crossbands usually conjoined, forming dark, M- or Y-shaped mark near point approximately 1/3 distance between caudal-fin base and opercular opening. **Blind side (in most specimens larger than ca. 20 mm) with small pepper-dots along trunk, but usually best developed in region overlying proximal pterygiophores of dorsal- and anal-fin rays, and covering entire caudal 1/3 of body. Peritoneum unpigmented.** Dorsal and anal fins without obvious spots or blotches in anterior region, sometimes with small blotches on fins proximate to body blotches or crossbands. Dorsal- and anal-fin rays in caudal 1/3 of body usually strikingly darker than fin rays in anterior regions of fins. Caudal fin dark brown or black.

Size: Maximum about 50 mm standard length, commonly 25 to 40 mm standard length.

Habitat, biology, and fisheries: Frequently captured on sandy sediments adjacent to coral reefs at 6 to 39 m, with most shallower than 30 m. Among the smallest of flatfishes. Settlement occurs at about 10 to 11 mm standard length. Females somewhat larger than males and maturing at ca. 25 to 30 mm standard length. Gravid females as small as 30 mm. Little known concerning the life history of this diminutive flatfish. Of no commercial importance.

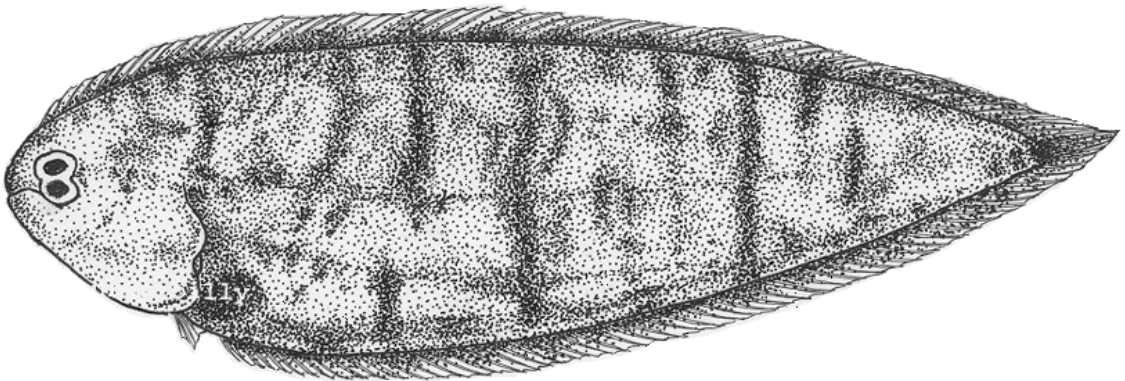
Distribution: Throughout Caribbean Sea from Florida (one capture at Alligator Reef) to Isla de Tierra Bomba, Colombia, including the Bahamas (numerous captures), Curaçao, Dominica, Haiti, Jamaica, Puerto Rico, Providencia Island, St. John, Virgin Islands, Cayman Islands, and along continental reef areas including Belize and Colombia.



Symphurus billykrietei Munroe, 1998

Frequent synonyms / misidentifications: None / None.

FAO names: En - Billy Kriete's tonguefish.

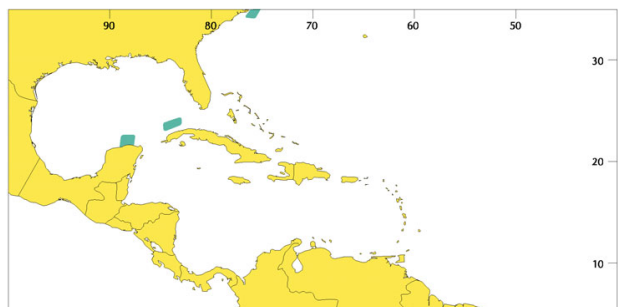


Diagnostic characters: Body relatively deep; maximum depth in anterior 1/3 of body; tapering rapidly posterior to midpoint. Trunk relatively long. Head short and relatively wide; head length slightly smaller than head width. Snout short and rounded. Lower eye moderately large; eyes usually equal in position; **with small space between eyeballs within orbital sac**. Anterior and medial surfaces of eyes partially covered with 3 to 5 rows of small ctenoid scales. **Pupillary operculum absent**. Maxilla extending posteriorly almost to vertical through anterior margin of lower eye pupil. Ocular-side lower jaw without fleshy ridge. Teeth well developed on blind-side jaws. **Ocular-side dentary with row of teeth along complete margin of jaw. Ocular-side premaxilla with single row of slender teeth, or occasionally with only anterior three-fourths of margin of bone bearing teeth. Dorsal-fin rays 89-95.** Dorsal-fin origin reaching point between verticals through midpoint of upper eye and anterior margin of pupil of upper eye. **Anal-fin rays 76-84.** Scales absent on blind sides of dorsal- and anal-fin rays. **Caudal-fin rays 12, rarely 11. Longitudinal scales 80-100.** ID pattern usually 1-3-2, rarely 1-3-3 or 1-4-2. **Total vertebrae 50 to 53, usually 51-52. Colour:** coloration similar for both sexes. **Ocular surface light to dark brown, usually with 5 to 8 irregular, darker brown crossbands on head and body, and without caudal blotch;** crossbands not continued onto dorsal and anal fins. Crossbands, except second anteriormost, usually incomplete and darker on dorsal and ventral regions of body, rather diffuse in midsection. Second crossband, located immediately posterior to operculum, almost always continuous across abdominal region and the most intensely pigmented. **Blind side uniformly yellowish, without pepper-dots;** some specimens (especially those without scales and faded in colour) with median series of conspicuous dark black melanophores in dermis along axis of vertebral column on both sides of body (most obvious in middle and posterior regions of body). **Peritoneum black.** Anterior dorsal and anal fins lightly pigmented; **posterior dorsal and anal fins with continuous narrow dark brown stripe on proximal portions of fin rays and connecting membranes;** not continuing across caudal-fin base. **Caudal fin with irregularly-shaped spot on scaly portion of fin base;** distal 2/3 of caudal fin unpigmented.

Size: Maximum about 119 mm standard length, commonly 56 to 105 mm standard length.

Habitat, biology, and fisheries: Commonly collected on mud sediments on the outer continental shelf at 48 to 650 m, with a centre of abundance at 201 to 380 m. Rarely trawled deeper than 380 m, or shallower than 200 m. Sexes reaching nearly same size. Females mature at ca. 80 mm standard length. As for most deep-water tonguefishes, little is known about the ecology of this species. Of no interest to fisheries.

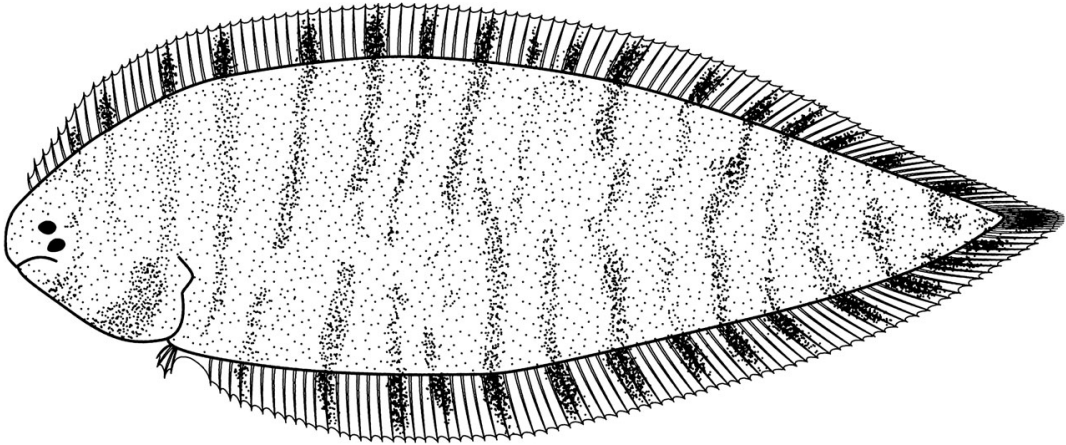
Distribution: Western North Atlantic primarily off southern Nova Scotia (ca. 43°N) and southward to Cape Hatteras, North Carolina (ca. 35°N latitude). Few records south of Cape Hatteras, occasional captures in Gulf of Mexico to region just north of Yucatán Peninsula.



Symphurus caribbeanus Munroe, 1991

Frequent synonyms / misidentifications: None / *Symphurus tessellatus* (Quoy and Gaimard, 1824); *Symphurus plagusia* (Bloch and Schneider, 1801).

FAO names: En - Caribbean tonguefish.



Diagnostic characters: Body relatively deep; greatest depth in anterior 1/3 of body; tapering relatively rapidly posterior to body midpoint. Head wide and short; considerably shorter than head width. Snout moderately long and pointed. Lower eye small (82 to 110 thousandths of head length); eyes slightly sub-equal in position. Anterior and medial surfaces of eyes not covered with scales. **Pupillary operculum absent. Maxilla usually reaching posteriorly to point between verticals through posterior margin of pupil and posterior margin of lower eye. Ocular-side lower jaw without distinct, fleshy ridge. Upper and lower jaws on ocular side usually with small patch of teeth only on anterior 1/3 of jaw margins, or lacking teeth. Dorsal-fin rays 89 to 96. Dorsal-fin origin usually reaching, or occasionally slightly anterior to, vertical through anterior margin of upper eye. Anal-fin rays 74 to 80. Blind sides of dorsal- and anal-fin rays without scales. Caudal-fin rays usually 12. Longitudinal scale rows 78 to 89. ID pattern usually 1-4-3. Total vertebrae 48 to 51, usually 49 or 50. Colour:** pigmentation similar for both sexes, but more intense in mature males. **Ocular surface dark brown to almost yellow; usually with 10 to 15 narrow, irregularly complete, sharply-contrasting, darker brown crossbands on head and trunk. Blind side off-white, without pepper-dots. Peritoneum unpigmented. Outer surface of ocular-side opercle without dark spot** (sometimes with dusky blotch due to dark pigmentation of inner lining of opercle showing through to outer surface). **Inner lining of opercle and isthmus heavily pigmented on ocular side; unpigmented on blind side. Except for anteriormost portion of dorsal fin, entire dorsal and anal fin with alternating series of dark blotches and unpigmented areas.** Caudal fin either uniformly darkly pigmented, or with alternating series of pigmented blotches and unpigmented areas throughout length of fin.

Size: Maximum about 130 mm standard length.

Habitat, biology, and fisheries: Inhabiting sand and mud sediments in shallow water (20 m or less), with the deepest capture at 29 m. All life stages present in shallowest collections. Feeds nocturnally mostly on polychaetes and small, benthic crustaceans. Males and females attain similar sizes. Females mature at 70 to 80 mm standard length. Little else is known about the ecology of this species. Of no interest to fisheries.

Distribution: Widely distributed in the Caribbean Sea, along coastal margins of Central and northern South America and at islands fringing the Caribbean Sea. Collected at St. Martin and Cuba, with most specimens taken at Puerto Rico and Haiti. Collected at coastal locations in Nicaragua, Costa Rica, Panama, and Colombia.

