

## Fundulus parvipinnis.

Plate II, Fig. 3, 4, teeth.

*Fundulus parvipinnis* Grd., 1854, P. Phil. Ac., VII, 154, — 1859, P. R. R. Rep., X, Fish, 363; Bkr., 1860, Cypre., 457; Gthr., 1866, Cat., VI, 319; St., 1876, Sb. Ak. Wien, LXXIV, ext. 153, pl. 10, fig. 1-2; Jor. & C., 1877, B. Buf. Soc., III, 141; Jor., 1878, B. U. S. G. Sur., IV, 433; Smith, 1880, List Fish San Diego, — 1884, P. U. S. Mus., VI, 233, — 1885, W. Am. Sci., 54; Bean, 1881, P. U. S. Mus., III, 105; Jor. & G., 1881, P. U. S. Mus., III, 30, 457, — 1882, P. U. S. Mus., IV, 42, — 1883, P. U. S. Mus., V, 355; Jor. & J., 1882, P. U. S. Mus., IV, 13; Eig., 1892, Ann. Lyc. N. Y., VI, 352, — P. U. S. Mus., XV, 142.

*Fundulus (Hydrargyris) parvipinnis* Jor. & G., 1882, B. 16, U. S. Mus., 333; Jor., 1887, R. U. S. F. Com., 836.

*Fundulus punctatus* Gthr., 1866, Cat., VI, 320, — 1868, Tr. Z. Soc., VI, 482, pl. 84, fig. 5; Jor., 1856, P. U. S. Mus., VIII, 368; Eig., 1893, P. U. S. Mus., XVI, 56.

*Fundulus guatemalensis* Gthr., 1866, Cat., VI, 321, — 1868, Tr. Z. Soc., VI, 482, pl. 84, fig. 3-4; Jor., 1856, P. U. S. Mus., VIII, 368; Eig., 1891, P. U. S. Mus., XIV, 64, — 1893, P. U. S. Mus., XVI, 56.

*Fundulus packycephalus* Gthr., 1866, Cat., VI, 321, — 1868, Tr. Z. Soc., VI, 483, pl. 84, fig. 6; Jor., 1856, P. U. S. Mus., VIII, 368; Eig., 1893, P. U. S. Mus., XVI, 56.

*Fundulus viactus* Jor. & G., 1882, P. U. S. Mus., V, 355; Jor., 1886, P. U. S. Mus., VIII, 368, — 1887, R. U. S. F. Com., 837.

*Fundulus lima* Vaill., 1894, Bull. Soc. Philom., (8) VI, 71.

Var. *labialis*.

*Fundulus labialis* Gthr., 1866, Cat., VI, 319, — 1868, Tr. Z. Soc., VI, 481, pl. 84, fig. 1, 2; Eig., 1893, P. U. S. Mus., XVI, 56.

*Fundulus robustus* Bean, 1892, P. U. S. Mus., XV, 285, pl. 44, fig. 2.

B. 5; D. 13-15; A. 12-16; V. 6; P. 18-20; Ll. 34-36; Ltr. 12-14; Vert. 15 + 19.

From the side this fish bears some resemblance to *F. heteroclitus*: but the head is smaller, and seen from above head and shoulders are more compressed. Head somewhat narrow and pointed, about one fourth of the total length, or a little more than the depth of the body; crown flattened. Snout comparatively narrow, blunt, as long as the eye. Mouth medium, lower jaw longer, upper protractile. Teeth conical, hooked, in bands, outer series larger; pharyngeal with a shoulder, median swollen and molar-like. Eye large, as long as snout, one fourth of the head, two thirds to three fifths of the interorbital space. Dorsal origin near the middle of the total length, a

little farther forward than that of the anal. Anal base shorter than that of dorsal, opposed, fin rays more often longer and reaching farther back. On large males the anal becomes long, pointed on the lower angle and concave on the outer (hinder) margin. Both dorsal and anal vary greatly with age and sex. Ventrals small, not reaching the anal. Pectorals small, short, broad. Caudal broad, two thirds the length of the head, subtruncate. All fins longer on males. Oviduct produced but little on the first ray of the anal, a prominent flap at each side of the bases of the anterior rays. If straightened the intestine would reach to the end of the caudal.

Olivaceous, punctulate with brown. Old males become very dark on the upper surfaces. A more or less distinct band of brown along the flanks, fading anteriorly. With or without numerous vertical bars on the flank; in some cases each bar is broken into three, forming three longitudinal series of spots. Scales commonly darker on their edges. A silvery tint along the sides is not rare. Cheeks and belly with a metallic lustre. Some of the males are very dark, have the dorsal and anal fins considerably elongated, and the borders of these fins light colored, while the middle is crossed by cloudings or a band of black punctulation. Largest specimen three and three fourths inches in length.

California and southward.

Var. *labialis* has the same coloration, but seems to possess a few more scales and fin rays. The variability of the species is so great, however, that these features are hardly sufficient to distinguish it.

Guatemala.