

### 13.—LIST OF THE FISHES INHABITING CLEAR LAKE, CALIFORNIA.

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Clear Lake is a depression in volcanic rocks in Lake County, Cal. It is irregular in form, about 30 miles in length by 5 to 10 in breadth, and surrounded by mountains of eruptive rocks belonging to the Coast Range. Its waters are generally very clear, with bottom of volcanic gravel and ash. They are derived from mountain streams and springs. The outlet of the lake, Cache Creek, flows through a wild ravine, Grizzly Canyon, through the mountains to the southeast, into the Sacramento Valley. Here the waters sink or are lost in the tules (*Juncus*), very rarely reaching the Sacramento River, except by underground soakage or through tracts of tules without distinct channels.

In a recent visit to Clear Lake, specimens of various species of fishes were obtained, and additional specimens and information have been derived from Mr. Sanford Parrish, of Lakeport, a gentleman interested in the natural history of the region. The fauna is identical with that of the Sacramento River, except that the salmon of the Sacramento can not enter Cache Creek.

1. *Entosphenus tridentatus* (Gairdner). *Lamprey*. Occasionally taken, according to Mr. Parrish; not seen by us.
2. *Catostomus occidentalis* Ayres. *Sucker*. Common. According to Mr. Parrish, another species of *Catostomus*, known as "mullet," exists in the lake, with larger head and stouter body than the common sucker.
3. *Lavinia exilicauda* Baird & Girard. *Hitch; Chy; Silversides* (young). Very common, reaching a length of 14 inches. Young silvery, with a black caudal spot.
4. *Orthodon microlepidotus* (Ayres). *Blackfish*. The commonest fish in the lake, largely used as food. Coloration very dark. Reaches a length of about 15 inches.
5. *Leuciscus crassicauda* (Baird & Girard). *Chub*. Generally common, according to Mr. Parrish; not seen by us. Takes the hook.
6. *Ptychocheilus oregonensis* (Richardson). *Chappaul or Shappaw*. Very common, reaching a weight of 15 to 20 pounds. It runs up the streams in the spring. We saw specimens speared by fishermen in Kelsey Creek. This species takes the hook and is often taken on a trolling spoon. The specimens seen were unusually robust in form. Scales in lateral line, 69 in one specimen, 80 in another.
7. *Ptychocheilus harfordi* Jordan & Gilbert. Not seen by us. Occasionally taken, according to Mr. Parrish. "Much smaller and darker than *P. oregonensis*, with smaller scales and does not take the trolling spoon."
8. *Pogonichthys macrolepidotus* (Ayres). *Splittail; "Fresh-water Smelt."* Common, the young (called *P. argyreus* by Baird & Girard) especially abundant.
9. *Salmo mykiss irideus* Ayres. *California Brook Trout*. Common in the lake and in most of its tributaries; the ordinary form of trout characteristic of the Coast Range, varying much in size and color in accordance with the food supply and the character of the water. Specimens weighing 12 pounds have been taken in Clear Lake. Mr. Parrish thinks that the young fry remain two to three years in the streams before going down to the lake. In Kelsey Creek, a tributary flowing in on the west side of the lake, are falls some 20 feet in height. Above these falls no trout were found until after they had been planted there.

10. *Gasterosteus microcephalus* Girard. *Stickleback*. Said to be common; not seen by us.
11. *Archoplites interruptus* (Girard). *Perch*. Formerly very common, but now becoming scarcer as its spawning-grounds are devastated by the carp. An excellent food-fish, vigorous and gamy, reaching a weight of 4½ pounds. The destruction of this valuable fish is one of the most unfortunate results of the ill-advised introduction of the carp into California waters.
12. *Cottus gulosus* (Girard). Occasionally taken; several specimens seen. The form described by Dr. Eigenmann under the name of *Uranidea semiscabra centropleura*, from Allen Springs, a tributary of Cache Creek, is apparently not distinct from *Cottus gulosus*.
13. *Hysterolepis traski* Gibbons. *Viviparous Perch*. Common, reaching a length of 8 inches. It brings forth its young in May and June. The development of this singular fish could be studied here, and may yield interesting results.

Besides these native fishes, the following have been introduced from the streams of the Eastern States:

14. *Cyprinus carpio* Linnaeus. *The Carp*. Everywhere very common, burrowing into the mud among the tules or in shallow waters, thus keeping the shoal waters roily all the time. This species is regarded as worthless as food. It destroys the eggs of the Sacramento perch, and also devours the *Vallisneria*, or water celery, on which the canvasback and other ducks feed. In California this species is a nuisance, without redeeming qualities.
15. *Ameiurus nebulosus* Le Sueur. *The Catfish*. Extremely abundant and destructive to the spawn of other species. It is, however, a fair food-fish and much less objectionable than the carp. It is the best fish in the lake except the Sacramento perch and the trout.
16. *Ameiurus catus* (Linnaeus). *The Fork-tailed Catfish*. Occasionally taken with the preceding.
17. *Micropterus dolomieu* Lacépède. *Black Bass*. Introduced lately; a very few specimens taken.