

reaching ventrals, the latter extending to vent in adult. Dorsal with 11 or 12 fully developed rays, anal with 7, the last ray in each divided to base.

Scales more crowded and irregular in adults of this species than in *C. brevirostris*, the posterior very conspicuously larger than the anterior. This difference between the two species is less marked in the young. The ridges on the scales are less strong in *C. stamias*. 76 to 82 scales are traversed by the lateral line; 14 or 15 scales in an oblique series downward and backward from in front of dorsal to lateral line; 11 in a series vertically upward from insertion of ventrals to lateral line; 35 to 38 oblique series before dorsal.

Upper portions of head and body blackish, the lower parts whitish or silvery, the two colors separated along a definite line traversing sides midway between lateral line and insertion of ventrals. Mandible, preopercle, and the contiguous part of cheeks whitish. Fins dusky.

Abundant in Upper Klamath Lake, where all seen were spent fish in a badly mutilated and dying condition.

Following is a table of measurements, the unit being hundredths of the standard length:

Measurements.	No. 1.	No. 2.	No. 3.
Total length in mm. ....	370	380	220
Length of head. ....	27½	27½	25
Length of mandible. ....	11	12	9½
Length of maxillary. ....	8	8½	6½
Depth of head at mandibular joint. ....	13	14	12
Interorbital width. ....	12½	13	11
Depth of caudal peduncle. ....	6½	9	8½
Length of caudal peduncle. ....	18	16½	17
Snout to insertion of dorsal. ....	48	50	48
Snout to insertion of ventrals. ....	54	57½	57

#### 7. *Deltistes luxatus* (Cope).

*Chasmistes luxatus* Cope, American Naturalist 1879, 784, Upper Klamath Lake and tributaries; Proc. Ac. Nat. Sci. Phila. 1883, 149.

*Catostomus rex* Rosa Smith Eigenmann, American Naturalist 1891, 667, Lost River, Oregon.

*Deltistes luxatus* Alvin Seale, Proc. Cal. Ac. Sci. 1896, 269.

The "Lost River sucker" is the most important food-fish of the Klamath Lake region. It is apparently resident during most of the year in the deeper waters of Upper Klamath and Tule lakes, running up the rivers in incredible numbers in March and April, the height of the run varying from year to year according to the condition of the streams. The Lost River fish are the most highly prized and are said to be much fatter and of finer flavor than those ascending the tributaries of Upper Klamath Lake. Prior to 1894 an attempt had been made to preserve the meat in cans, but apparently with poor success. Oil had also been extracted from heads and entrails, said to be worth from 60 to 85 cents per gallon.

The species most closely resembles in appearance *Chasmistes secundus*, from which it differs principally in the simpler gillrakers, as already noted by Mr. Seale. It agrees with *C. secundus* and differs from other species of *Chasmistes* in its very long, slender head, its small, nearly horizontal mouth, and thicker lips. When these species shall have been thoroughly investigated, *C. secundus* will probably be separated generically from *Chasmistes*.

At the time of our visit to Upper Klamath Lake, June 13 to 16, the run of suckers was well over, and the only specimens observed were the dried heads on the banks of Lost River and some more or less diseased and mutilated individuals floating about in Upper Klamath Lake and River. One young specimen only could be preserved, from which the following notes are taken:

Head 4 in length; depth 4½. D. 12. A. 7. Lat. line 78.

Head very long and slender, the snout and cheeks especially so, the mandibles inclined upward at an angle of about 35°. Snout tapering to a very slender tip, on the under side of which is the very small, nearly horizontal mouth, little overpassed by the premaxillaries. Premaxillary spines forming a decided hump on upper surface of snout near tip. Maxillary not reaching vertical from nostril, half length of snout. Snout 2½ in head; interorbital width 2½; diameter of orbit (measured just within the bony rim) 5½. Lower lip thin, but thicker and wider than in typical *Chasmistes*, the two lobes widely separated at symphysis, which is very narrowly bordered; upper lip very narrow; several series of minute papillae on each lip. Very conspicuous mucous canals on top and sides of

head. Gill plain or more developed.

Scales the lateral to lateral line pores in lateral dorsal.

Ventrals of caudal snout to posterior the anterior one divided constantly.

Very dusky fins dusky.



#### 8. *Leuciscus*

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