
ART. II.—*A New Cyprinid Fish, Leuciscus rosei, from the Miocene of British Columbia*; by L. HUSSAKOF.

SOME time ago Dr. B. Rose, of the Geological Survey of Canada, sent me for examination four fossil fishes which he had collected while investigating the geology of the southern part of British Columbia in 1912. The specimens are from a formation known as the Tranquille beds, probably of Miocene age, on Kamloops Lake, B. C.* Each specimen consists of a more or less complete fish about 6 inches in length, represented by its skeleton in a layer of stratified light brown tuff. The fishes apparently represent a new species.

Leuciscus rosei, n. sp.

Type.—Impression of a complete fish lacking only the lower lobe of the caudal. Total length, 127^{mm}. In the collection of

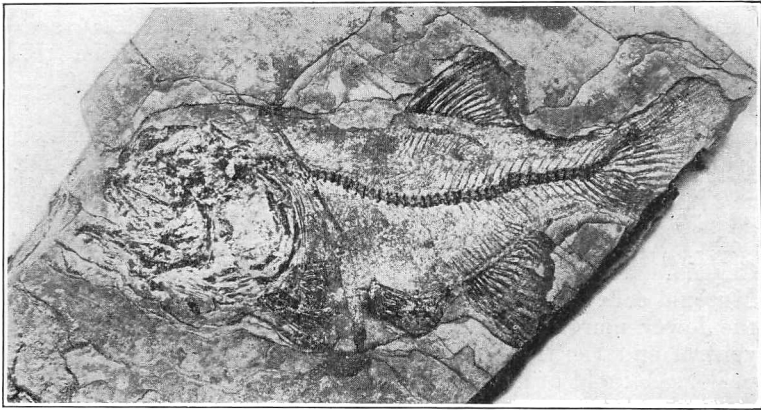
* A brief description of the geology of the region in which the specimens were collected was given by Dr. B. Rose in his paper, "Savona Map-area, British Columbia," Summary Report, Geological Survey Canada, for the Calendar year 1912 (1914), 151-155.

the Geological Survey of Canada. Locality: Red Point, on Kamloops Lake, B. C.

Head $2\frac{1}{2}$ in length to base of caudal; depth $2\frac{3}{4}$. Dorsal 14; anal 18 or 19. Vertebrae about 40.

Fish rather short and deep, with large head and projecting lower jaw. Dorsal triangular, its front rays the longest, half again as long as the dorsal base. Origin of dorsal behind that of ventrals, at about middle of the total length; $\frac{1}{3}$ of dorsal base

FIG. 1.



Leuciscus rosei, n. sp. Type, $\times \frac{2}{3}$. Tranquille beds (probably Miocene); Kamloops Lake, British Columbia.

in front of anal. Anal larger than dorsal, its anterior rays elongated, its base separated from the caudal by a distance slightly less than the depth of the peduncle. Origin of ventrals about equidistant between origins of pectorals and of anal. Peduncle rather deep, equal to base of dorsal. Caudal not completely preserved, but obviously forked as shown by the elongation of the upper rays and the shortness of the middle ones in the type specimen.

Remarks.—The Cyprinid fishes are distinguished into genera largely by the character of their pharyngeal teeth, and since these are not preserved in the present specimens one cannot be absolutely certain as to the generic determination. However, a comparison with figures of various genera would indicate from the proportions of the fish, the position and size of the

fins, and the projection of the lower jaw, that the species most probably belongs in the genus *Leuciscus*.

It is interesting to note that the fossil has considerable resemblance to *Leuciscus balteatus* (Richardson), a species now living in the same region and said to be "generally abundant everywhere in the Columbia Basin, and very variable."* It differs, however, in being deeper, in having a larger head, and a longer dorsal, with 14 rays as against 10. The anal in *Leuciscus balteatus* is given by Jordan and Evermann as "11 to 22, usually 16," so that the anal of the fossil species falls within this range of variation.

Six other fossil species of *Leuciscus* have been described from North America,† but only one is known by a complete fish, the other five—from the Pleistocene of Idaho—being based on pharyngeal teeth. The complete fish is *Leuciscus turneri* Lucas,‡ from the Miocene of Nevada. From this species the present one differs in proportions, position of the fins and other details.

Besides the type, I have in hand three other specimens (paratypes) from the same locality, and also collected by Dr. Rose. One is a fish as large as the type but with the fins in less perfect condition and lacking the upper margin of the body. This specimen also belongs to the Geological Survey of Canada. Secondly, two imperfect fishes in the American Museum collection: one, an impression lacking the snout and the lower margin of the body including the pectorals, one ventral and the front portion of the anal; the other, a poorly preserved mold of a fish about as large as the type with the bone completely weathered away but showing part of the outline of the body and tracings of the opercular region and of the dorsal and caudal fins.

The species is named for Dr. Bruce Rose, of the Geological Survey of Canada, who collected the specimens, and kindly placed them at my disposal for study.

* Jordan and Evermann, *Fishes of North America*, Pt. I, 238: and Pt. IV, pl. xlii, figs. 105, 105a.

† O. P. Hay, *Bibliogr. and Catal. Fossil Vertebr.*, N. Amer., 1902, 396.

‡ F. A. Lucas, *A New Fossil Cyprinoid, Leuciscus turneri*, from the Miocene of Nevada. *Proc. U. S. Nat. Mus.*, xxiii, 1901, 333-334, pl. viii.