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DESCRIPTION OF A FOSSIL CYRENA FROM ALBERTA.

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(With one plate.)

In 1888, Mr. T. C. Weston, of the Geological Survey Department, made an interesting collection of fossils from the rocks exposed at Fossil Coulee, Milk River Ridge, in southern Alberta. According to Dr. G. M. Dawson, the plateau through which this coulee is cut is capped by the Pierre shales, and the section in the coulee itself "may be regarded as a representative one of the upper or pale portion of the Belly River series."† The species represented in this collection are apparently as follows: *Anodonta propatoris*, White, several good specimens; *Unio*, three undescribed species, one very large; *Cyrena* a large and previously undescribed species; *Physa Copei*, White, the short spired typical form; *Goniobasis*, two species; all purely fresh-water forms: and a land shell, like *Anchistoma parvulum*. The *Cyrena* in this collection may be thus named and described:

CYRENA ALBERTENSIS, sp. nov.

Shell quite large for the genus, moderately convex, ovately subtrigonal in marginal outline, a little longer than high, and very inequilateral.

Anterior side short, rounded; posterior side longer and more pointed, most produced in the postero-basal region, the posterior extremity being subtruncate rather obliquely above and narrowly

* Communicated by permission of the Acting Director of the Geological Survey.

† Geological Survey of Canada, Report of Progress for 1882-83-84, pp. 50 and 51C.

rounded below. Ventral margin broadly rounded in front of the midlength and straighter behind it; superior border sloping rapidly, obliquely, and somewhat concavely downward in front of the beaks, and more gradually and convexly so behind them; umbones rather narrow and moderately prominent; beaks curved inward and forward, placed in advance of the midlength.

Surface marked with numerous concentric lines of growth; test thick and apparently not nacreous.

Hinge dentition and muscular impressions unknown.

Approximate dimensions of the specimen described and figured, which has both valves preserved though slightly displaced: maximum length, 72 mm.; height, 64 mm.; greatest thickness or convexity of the two valves when closed, about 41 mm.

Judging by its external characters and by analogy with other fossil and recent species, this specimen would seem to be referable to *Cyrena* rather than to *Corbicula*. If it is a true *Cyrena*, it is the first species of that genus that has been recognized in Canada. But according to Mr. Meek, "it is quite probable that a critical study of the numerous extinct species that have been described under the general name *Cyrena*, by those who are not very particular in regard to generic distinctions, would bring to light sufficient reasons for the separation from that genus and *Corbicula*, of several groups, either holding the rank of distinct genera or subgenera."^{*} And, in reference to *Cyrena*, Mr. Meek had previously remarked that "Mr. Prime has called attention to the fact that, in the existing American species of this genus and *Corbicula*, the pallial line is always distinctly sinuous, the sinus being comparatively deep and sharply angular; while in foreign species it is but slightly, or sometimes not at all, sinuous." "So far as I have had an opportunity to determine," Mr. Meek adds, "all of our far-western fossil species, excepting *C. Dakotensis*, have a more or less distinctly sinuous pallial line; but, in no instance have I seen the sinus so deep and sharply angular in the latter, as represented by Mr. Prime in some of the recent species."[†] In a future re-

^{*} Report of the U. S. Geological Survey of the Territories, vol. IX, p. 160.

[†] *Idem*, p. 157.

vision of the Cyrenidæ, *C. Albertensis* may have to be placed in a new genus, but at present it cannot be satisfactorily separated from *Cyrena*. Unfortunately, the pallial line is not visible in the only specimen of that species that the writer has seen.

The genus *Cyrena* was constituted by Lamarck in 1818 for the reception of a number of fresh or brackish water bivalves, with ovately subtrigonal or nearly circular shells and a greenish epidermis, which differ from *Unio* in their porcellaneous or non-nacreous test, and comparatively short lateral hinge teeth. Dr. Paul Fischer, in his *Manuel de Conchyliologie*, says that there are about 80 recent species of *Cyrena*, which live in (the warmer parts of) Asia, America and Oceania. On this continent living Cyrenas are not found north of the Southern States.

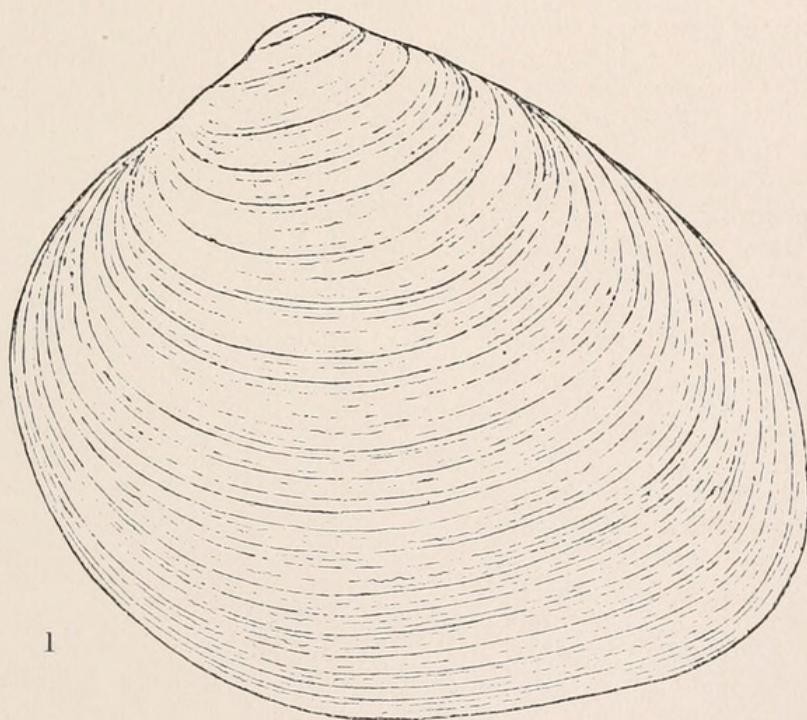
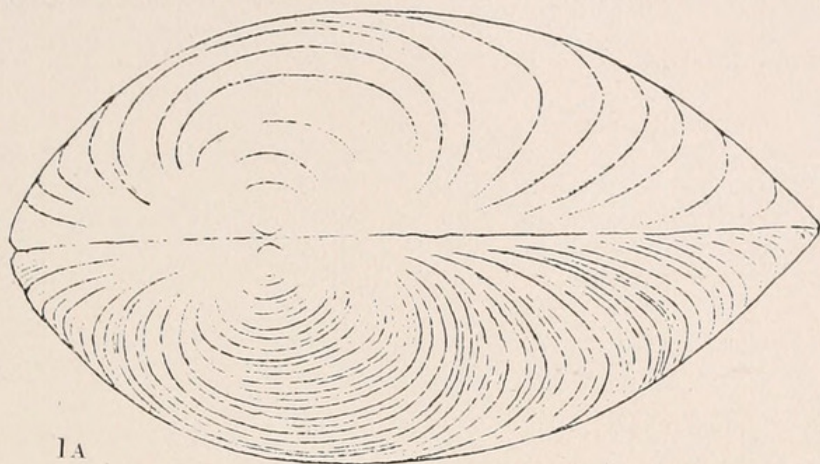
In a fossil state, species of *Cyrena*, as that genus is now understood, are said to range from the Jurassic period up to the present time, and to culminate in the Eocene. The fossil species of Cyrenidæ, however, are found much farther to the northward than the living ones have been, the former occurring also in Northern Europe, including the British Islands, and in Canada. Including the one now described, four species of Cyrenidæ have so far been recognized as occurring in the Laramie and Belly River formations of Alberta and Assiniboia. These are *Corbicula occidentalis* and *C. cytheriformis* of Meek and Hayden, *Corbicula obliqua* (nobis), and *Cyrena Albertensis*.

Ottawa, Feb. 5, 1903.

EXPLANATION OF PLATE IV.

Fig. 1.—*Cyrena Albertensis*. Outline of left valve of the specimen described.

Fig. 1A.— „ „ Dorsal view of the same specimen, slightly restored, to show the amount of convexity of the two valves when closed.



L. M. Lambe, *del.*

Cyrena Albertensis.



Whiteaves, Joseph Frederick. 1903. "Description of a Fossil Cyrena from Alberta." *The Ottawa naturalist* 16(12), 231–233.

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