## ARE BOWLDER CLAYS MARINE?

writes: "Taking the evidence all in all, I do not think there is any serious difficulty in accounting for Cretaceous forms in the drift of this region" (Chicago). After referring to the interest attaching to Mr. Wright's observations, he adds the following interesting suggestion concerning them: "It has occurred to me to raise the question whether a certain number of marine microscopic forms are not to be expected in any slow-accumulating deposit like a clay, in the interior of the continent, having been borne there by the wind with other dust picked up from marine flats on the windward side of the continent."

The purpose of this communication is accomplished in stating as above, briefly, the new facts which appear to bear upon the question asked in its title. It seems to be at least very probable that, in addition to derived Cretaceous foraminifera often found in the drift deposits of the Great Plains, we have contemporaneous forms of the sea of the glacial period, still unfilled with mineral matter, unaltered, hyaline in aspect, and representing the same species elsewhere commonly found in deposits of this period. Should further investigation confirm the contemporaneous and autochthonous character of this fauna, it will greatly assist in enabling the formation of definite hypotheses respecting events of the glacial period in the western part of the continent.

Mr. Wright's notes on the specimens of bowlder clay from the Saskatchewan, are as follows :---

No. 1. Bowlder clay, twelve miles below Victoria. Weight 4 lbs. 4.5 oz. Troy. After washing—Fine 1 lb. 3.7 oz. Course 0.7 oz. Stones mostly rounded, some angular.

Gaudryina Sp., very rare. Bulimina pupoides D'Orb., frequent. Pulvinulina Karsteni (Rss.), very rare. Nonionina depressula (W. & J.), very rare. Rotalia orbicularis, D'Orb., very rare. Radiolria, frequent. Sponge spicules, rare.

No. 2. Bowlder clay, twelve miles below Victoria. Weight 2 lbs. 6.2 oz. Troy. After washing — Fine 8.9 oz. Coarse 0.5 oz. Stones mostly rounded, some angular.

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