brought Old World horse culture to America, we should be puzzled at the similarities observed between these traits on the two hemispheres, but would probably set it down as another case of assumed independent invention. This investigation shows that the invoking of independent invention, to be more than a plea of ignorance, must rest upon specific data.

The final discussion of this subject will appear in full in the Anthropological Papers of the American Museum of Natural History.

DISCOVERY OF ALGONKIAN BACTERIA

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At a meeting of the Botanical Society of Washington, held April 6, 1915, I spoke upon the subject of 'Prepaleozoic Algal Deposits' and in this connection called attention to the existence of bacteria in association with the algal deposits of the Newland limestone, a formation of the Beltian series of Algonkian rocks in central Montana.

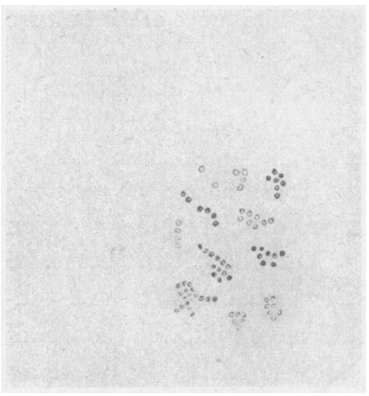
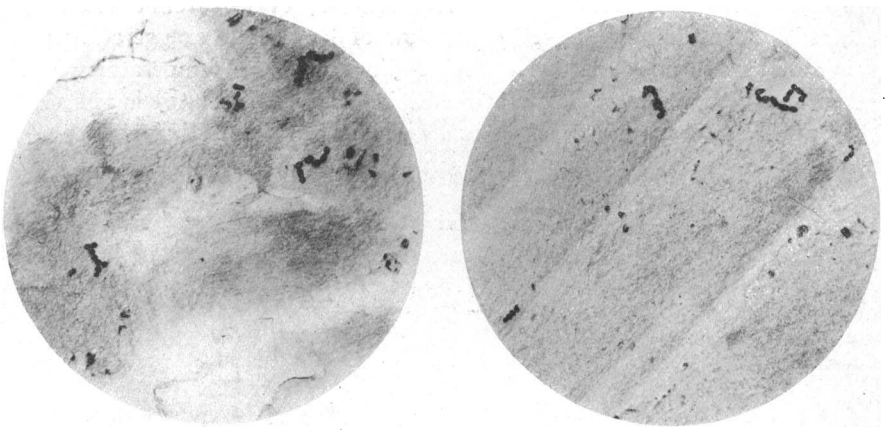


Fig. 1. Characteristic groups of *Micrococcus vaccinae*. (After Cohn.) Very highly magnified. [Encyclopædia Britannica, 11th Ed., Vol. III, p. 160, fig. 5–B.]

In a preliminary publication[1] I stated that it was quite probable that bacteria were the most important factor in the deposition of the Algonkian limestones. At that time no definite bacteria had been discovered. From the collections made during the season of 1914 many thin sections were prepared. These were examined by Dr. Albert Mann, plant morphologist of the Department of Agriculture, assisted by Mr. Charles E. Resser of the National Museum, with the result that bacteria were discovered in three of the sections, which were cut from an algal form included under the generic term *Gallatinia* as defined in the preliminary paper upon the Algonkian Algal Flora.[2]

The bacteria consist of individual cells and apparent chains of cells which correspond in their physical appearance with the cells of Micro-

cocci.[3] For the purpose of comparison in this preliminary notice an illustration is here given of a group of recent forms as shown in the *Encyclopedia Britannica*[3] and of the form shown in the cells in the thin sections cut from the fossil alga of the Newland limestone.



Figs. 2 and 3. *Micrococcus* sp. undt. (× about 1100 diameters.) Average size of Micrococci 0.95 to 1.3 microns in diameter. (Slide D.) From locality 401b, Algonkian: Gallatin formation; north side of East Gallatin River, 5 miles (8 km.) east of Logan, Gallatin County, Montana.

[1] Walcott, Pre-Cambrian Algonkian Algal Flora, *Smithsonian Misc. Coll.*, **64**, No. 2 (1914).
[2] Idem. p. 116, pl. 23, fig. 1.
[3] *Encyclopaedia Britannica*, 11th ed., vol. 3, p. 160, fig. 5.

A CORRECTION

(Received March 29, 1915)

In my paper on the earth considered as a heat engine, this volume, page 81, the linear expansion of rock forming minerals was inadvertently taken at 100 times its real value. A square area of superficial rock of relatively low diffusivity would really need to be several hundred degrees hotter than the surrounding areas to be shattered by the compressive stresses called into play by mere difference of temperature. Similarly a mean temperature difference of 40° between oceanic and continental columns overlying the level of isostatic compensation, would by itself account for a difference of level of only about 39 metres.

The error committed does not affect the general argument that the subcontinental shell acts as a heat engine, for it is known that several reversible processes such as elastic strain, expansion, liquefaction and volatilization are