

gestive, though it may have been accidental.

H. HELM CLAYTON.

BLUE HILL METEOROLOGICAL OBSERVATORY,
READVILLE, MASS., March 25, 1897.

ARCHÆOLOGICAL DISCOVERIES MADE IN THE
GRAVELS AT TRENTON.

TO THE EDITOR OF SCIENCE: In Dr. Brinton's reference in your issue of March 12th to Professor Putnam's report to the Peabody Institute, he scarcely does justice to the recent archæological discoveries made by Mr. Ernest Volk in the gravels at Trenton. Dr. Brinton says, referring to Professor Putnam's description of chipped stones "found in the glacial deposits of the Delaware Valley," that "it is fair to say that geologists are not agreed about the age of these deposits." It cannot be that Dr. Brinton has Professor Putnam's recent facts clearly in mind or he would not make this remark.

For Mr. Volk's investigations have been carried on on the Lator farm, which is clearly within the range of the 'Trenton gravels' ascribed to glacial floods by every recent geologist who has visited them, including Professors Cook, Shaler, Chamberlin and Salisbury. This farm lies fifty feet above the level of the Delaware river, and abuts directly upon it. Boulders two or three feet in diameter are lying about loose upon the surface in the immediate vicinity. Mr. Volk, under Professor Putnam's direction, has systematically dug over acres of this farm and has found hundreds of chipped pieces of argillite in the undisturbed layers of sand which are everywhere found from two to three feet below the present surface. In the upper twelve inches of the soil, where there are evidences of disturbance, great numbers of jasper and flint implements have been found, together with some argillite implements; but in the lower two feet excavated no jasper and flint implements have been found, but only argillite; thus demonstrating the correctness of Dr. C. C. Abbott's previous observations, and excluding the various extravagant theories propounded to account for their burial by natural causes; such as overturning of trees, the burrowing of animals and the cracking of the soil.

I would say that I have had the privilege of

accompanying Mr. Volk during some of these excavations, and can add my testimony to his as to the genuineness and importance of these very significant discoveries. In this case there is no chance to claim that they have been buried in the talus; for in the cases which I saw with my own eyes the implements were dug up from the undisturbed strata of the sand more than one hundred feet back from the edge of the bluff.

I trust that the Philadelphia geologists and archæologists will give more personal attention to the work which Professor Putnam, through Mr. Volk, is so successfully carrying on in that disputed district. G. FREDERICK WRIGHT.

[When Mr. Volk's specimens were exhibited at Buffalo Professor McGee stated in the Section that he did not consider that the age of the deposit in which they were found is positively ascertained. The sand layers overlie the gravels, and have usually been supposed to be considerably later. Mr. Volk has not found the specimens referred to in the true, undisturbed gravels.—D. G. BRINTON.]

AN IMAGINARY FLEET.

TO THE EDITOR OF SCIENCE: Permit me to congratulate you for the extremely just and advanced view you take of what a university should be. In your issue of March 19, p. 471, I find, to my great satisfaction, "Research is not only the primary object of the university; it is the university itself." So dominant is this sentiment in my mind that I have attempted the establishment of a department where all work, however elementary, shall be carried on after the manner of original research.

Would that the statement found on p. 473 of the above-mentioned date were true, viz., that the trustees of Cornell University are going to build me a naphtha launch for the transportation of my students in paleontology; would also that the launch were forthcoming that a prominent firm writes me about, viz., one they understand the 'Cornell students' are making for me. These, with the one I *am personally* having built by Lintz & Co., Grand Rapids, Michigan, would certainly form an enviable fleet for the prosecution of paleontologic research.

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