

67. Machine-Made Eoliths.

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results, and will probably produce more, is evident from a simple recapitulation of the chief discoveries of the two seasons' work, which has been carried out at a total expenditure of only about £1,500, from first to last. These are :—The oldest Theban temple, which is at the same time the best preserved of the older temples of Egypt, and is the only one of the Middle Kingdom of which we know anything as regards plan and construction; some of the finest specimens of ancient Egyptian masonry and wall-building known; sculpture in coloured relief of the XI Dynasty, which has given us entirely new ideas concerning the art of that little-known period; new monuments of kings of the same age; portrait-statues of the greatest king of the XII Dynasty; and anthropological material of great interest in the ex-votos of the Hathor shrine.

The exhibition of the statues, reliefs, and other objects found this year was held in the rooms of the Society of Biblical Archæology, 37, Great Russell Street, W.C., during the month of July.

H. R. HALL.

Archæology: Eoliths.

Dalton.

Machine-made Eoliths. By O. M. Dalton, M.A., F.S.A.

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The eolithic question appears likely to enter upon a new stage before very long as a result of the researches of M. André Lavilles, of the School of Mines at Paris, Professor M. Boule, M. E. Cartailhac, and Dr. H. Obermaier. On June 22nd last these gentlemen went to Mantes to observe the results of certain operations in a cement factory, intended to remove the flint nodules embedded in the masses of chalk which are treated in the manufacture of cement. They claim that the mechanical process by which the flints are finally separated from the chalk and deposited in a gravel at the bottom of a large receiver results in the production of all the familiar forms of eoliths; and that this being so, the hypothesis of human agency in the case of plateau flints becomes superfluous. The following passage translated from Dr. Obermaier's preliminary account in the *Münchener Allgemeine Zeitung* (*Beilage*, July 23, 1905, p. 157) will explain the manner in which the "eoliths" were mechanically produced by whirling water, similar in its effects to the violent fluvial action of remote prehistoric times: "By its natural constitution the local chalk contains numerous unbroken flint nodules, which have to be removed before it can be used for cement. In order to effect this separation, the blocks of chalk are placed in a receiver full of water to which a rotatory motion is communicated. After twenty-nine hours the chalk is completely refined, and the flint is left deposited on the bottom of the vessel like a bank of gravel. But during the operation of this artificial whirlpool the nodules have been rolled one over the other and exposed to every conceivable kind of pressure and shock. At the conclusion of the process on the day of our visit we found to our astonishment that the great majority presented examples of all the eolithic forms. The similarity of the different specimens before us to the prevalent eolithic types was so close that they could not possibly have been distinguished from actual eoliths."

As a result of these investigations, M. A. Gaudry, in a report to the *Académie des Sciences* of Paris, dated June 26th, states his opinion that eoliths can certainly be produced by mechanical means and as a result of purely natural forces; further that the argument from eoliths to the existence of Tertiary man now falls to the ground. Professor Boule and Dr. Obermaier will shortly publish a full account of the pseudo-eoliths of Mantes, in which their bearing upon the plateau implements will be discussed. This should be of interest to both parties.

O. M. DALTON.