

In the whole course for teachers, if the matter, method and the scientific spirit be kept in mind, the teachers go to their work with a liking for it which is not gained otherwise. A course in geography for teachers and children along the lines suggested above has been planned and is now in operation in the Teachers' College, New York City, and though it is in its first year of operation the result is very pleasing, and the promise for future good results is most encouraging. The constantly increasing interest, as well as understanding, of the children shows that the conception that physical geography can not be profitably given to young children, is erroneous. If it is given in a way to arouse them to thought it becomes a means of drill that is of great service, and that develops more of their powers than if they were simply required to do a lot of memorizing of description and location, without any scientific underlying thread connecting the various topics considered.

*Experiments imitative of Glacial Esker and Sand-Plain Formation.* By C. W. DORSEY.

A preliminary account was given of a series of experiments performed under the direction of Mr. T. A. Jaggar in the Laboratory of Experimental Geology. The object of the experiments is to reproduce in miniature the conditions of delta deposition at the mouth of a subglacial cavern, with a view to systematic study of the conditions that govern the form of deltas, the arrangement of bedding in cross-section, the development of lobate margins and the influence of variations in stream velocity, coarseness of material and water level. The apparatus used consists of a tin half-tube whose cross-section has the form of an inverted U, and this is longitudinally bent into somewhat serpentine form, to imitate a subglacial stream cavern; a funnel soldered at its upper end supplies load, and a rubber tube from the hydrant supplies the current. Thin sheet lead is bent over this apparatus to represent roughly the form of a glacier front, and the whole is arranged in a large square tank. On starting the current, sand, fine gravel and mixtures of sand with plaster are fed into the funnel and are deposited in a fan delta at the cavern's mouth. The

structures obtained may be photographed at any stage, and at the end of each experiment the imitation cavern is removed to show the deposit that represents the feeding esker. On slicing the deltas horizontally and vertically the progressive stages of growth are beautifully shown by the white plaster layers, and in this way migration of the lobes and of the frontal scarp of the delta, as well as the arrangement of cross-bedding, back-set beds, etc., may be traced. An attempt with ice is in preparation, to test the effect of the melting away of the ice on the resultant forms.

The results of these experiments will be offered for publication in the near future, probably in the *Journal of Geology*.

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NEW BOOKS.

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*Elements of Botany.* J. Y. BERGEN. Boston and London, Ginn & Co. 1896. Pp. v+57.

*Voice Building and Tone Placing.* HOLBROOK CURTIS. New York, D. Appleton & Co. 1896. Pp. xii+215. \$2.00.

*The Whence and Whither of Man.* JOHN M. TYLER. New York, Charles Scribner's Sons. 1896. Pp. xv+312. \$1.75.

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