CURRENT NOTES ON PHYSIOGRAPHY.

CAMPBELL ON DRAINAGE MODIFICATIONS.

THE processes whereby rivers re-arrange their courses when the region that they drain is affected by gentle deformation is thoroughly treated by M. R. Campbell (Chicago Journ. Geol., IV., 1896, 567–581, 657–678). He gives a detailed deductive consideration of expected changes, leading to the 'law of the migration of divides;' in brief, that divides migrate towards an axis of uplift. It is further shown that, under the influence of tilting, rivers will, by the migration of divides, tend to arrange themselves in rectangular pattern, the smaller streams running down the dip, the larger along the strike of the tilt. Streams are most sensitive to these influences in their old age, when, by long striving, each individual has come to be so delicately balanced against its neighbors that the least outside influence may cause predatory conquests by the more favored. Several examples are given of rivers in the Appalachian region which appear to have been affected by changes of the kind here discussed; among these the Chattahoochee, New and Roanoke rivers being especially interesting.

To the student of the natural history of rivers this discussion by Campbell must be particularly acceptable, inasmuch as it introduces the competent consideration of an element of disturbance not sufficiently attended to in earlier studies of the development of river courses.

RUSSELL'S GLACIERS OF NORTH AMERICA.

UNDER the above title Professor I. C. Russell has prepared another 'reading lessons for students of geography and geology' (Ginn & Co., Boston, 1897), a companion to his Lakes of North America, and has thereby placed teachers and students alike under many obligations to him. Good geographical literature, neither in text-books nor in advanced professional reports, but in accessible and attractive form for ready use, is so rare that teachers are often at a loss where to find it; and students who reach an impressible, interrogative attitude are perforce left unsupplied with answers to their questions. It is only as books like these 'lessons' of Russell's increase in number that the studious treatment of geography can flourish. This book on glaciers is doubly welcome at the present time of a growing interest in geographical science. We find first a general account of glaciers and of their modern and ancient action; then several chapters on the existing glaciers of various districts in North America, the brevity of the chapter on Canada pointing clearly to that district as most in need of further exploration. Closing chapters discuss climatic changes indicated by glaciers, why glaciers move, and the life history of a glacier; the latter being especially recommendable from its novelty and breadth of view. The book contains many excellent illustrations.

THE GOHNA LANDSLIP.

A REMARKABLE instance of foresight in averting disaster is found in an account of the Gohna landslip on a head branch of the Ganges, in the Garhwal Himalaya, and of the flood that followed on the overflow of the resulting lake, as published by the Public Works Department of the Government of India (Calcutta, 1896). The slip occurred in September, 1893, continuing three days with deafening noise, darkening the air with the dust from shattered rocks, and clogging the narrow valley with 800,000,000 tons of detritus. The fall descended about 4,000 feet, spreading about two miles along the valley and rising 850 feet above the former stream level. It resulted from the undercutting of strata that dipped into the valley, and hence should be classed with those slides that follow the erosion of narrow valleys in uplifted

masses; as such, being a characteristic of vigorous young mountains.

Careful study of the ground made it clear that no artificial discharge could be made for the rising lake. As the impending flood could not be controlled, every effort was made to insure the safety of the people in the valley below by timely warning of the disaster. A telegraph line was constructed from Hardwar, on the Ganges at the edge of the plains, to Gohna, 150 miles within the mountains. In April, 1894, August 15th was set as the probable date of the flood. A number of suspension bridges were dismantled and removed. Safety pillars were set up on the valley slopes, at intervals of half a mile, and at heights of from 50 to 200 feet above the ordinary river level, thus indicating the probable limit of the flood, above which there would be no danger.

The lake back of the dam grew to be four miles long and half a mile wide. At midnight of August 25th–26th, during a heavy rainfall, the flood began. In four hours the lake was reduced to two miles in length and quarter of a mile in breadth; 10,000,000,000 cubic feet of water were discharged, cutting down the barrier 390 feet; advancing at a rate of twenty miles an hour at first, and ten miles an hour further down the valley, sweeping away many miles of valley road, completely destroying two bridges that had been left standing, because of remonstrances from local authorities against their removal, and leaving no vestige of many villages and three considerable towns; yet so fully was the danger announced that not a single life was lost.

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CURRENT NOTES ON ANTHROPOLOGY.

THE AMERIQUE INDIANS.

There has lately appeared in Paris a book with the title 'L'Amerique a-t-elle droit sous ce nom à un nom indigène?' by M. Franciot-Legall.

The question discussed is one which at various periods has risen in the Congrès Internationale des Américanistes, and derives its origin from the fact that somewhere in Central America there has been known a native tribe with the name 'Ameriques;' and it was argued that Columbus in his fourth voyage met this tribe and from it his associates gave the name to the land, —not from Amerigo Vespucci, as the geographer Waldseemüller says, or, at least, independently of him.

Some have doubted that there was a tribe so-called, but their existence must be conceded. They have been met by explorers of the present day—by Mr. Crawford, for example. Their affinity and precise location have, however, not been stated. These points have been settled lately by M. Alph. Pinart, who, as he lately informed me, secured a vocabulary of their tongue and found it to be of the Lenca stock, and their present home to be in the State of Honduras.

30TH REPORT OF THE PEABODY INSTITUTE.

The last report of the Curator of this institution, Professor F. W. Putnam, shows it to be in a flourishing condition. Among the results of its field work are numerous specimens of chipped stones said by the Curator to be 'found in the glacial deposits of the Delaware Valley,' about the age of which deposits it is fair to say geologists are not agreed.

Mr. Gordon's researches in Copan are referred to, and the fact emphasized that the establishment of that city was far more ancient than the surface ruins and standing monuments.

The report closes with some excellent suggestions for a course of instruction in anthropology, comprising a group of studies some acquaintance with which is essential to