

various depths and also a specimen from the surface of the prospect. The samples did not contain any of the salt except the one taken from the very surface. On this the nitrate was a coating about a quarter of an inch in thickness, and, as the previous sample sent, was approximately pure potassium nitrate. So far, the salt found is in very limited quantities and there are no explanations to offer for its existence or accumulation. It is evident that it has been brought in and deposited upon the sandstone but the source has not been detected. Owing to the winter months being close at hand when the discovery was made, it was not possible to carry on any extended examination. Potassium nitrate has been found in very minute quantities in the Leucite hills by Cross; this, however, is the most important discovery ever made in the State, and may result in the location of nitrate deposits of commercial importance.

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#### CURRENT NOTES ON PHYSIOGRAPHY.

##### SOUTHERN WISCONSIN.

'THE Geography of the Region about Devil's Lake and the Dalles of the Wisconsin' by R. D. Salisbury and W. W. Atwood (*Wis. Geol. and Nat. Hist. Survey*, Bull. v, Educational series, 1, Madison, 1900), is a significant publication if for no other reason than that it is concerned with geographical features and that it is a State publication 'primarily designed for use in the schools.' State surveys have been very slow in coming to recognize their responsibility in this direction; and we are glad to see Wisconsin now following Missouri, New Jersey and Maryland. The region described includes a typical resurrected mountain, Baraboo ridge, of Huronian quartzite, adjoined by a plain of erosion, too smooth over much of its extent to be called a peneplain, formed by the removal of paleozoic strata which once buried the ridge, and which still remain in isolated castle-like hills here and there over the plain, and more continuously in hilly uplands farther southwest. The Dalles of the Wisconsin river are cut in the plain where the

river has been displaced by glacial action from its former course. The 150 pages of the report are illustrated by 38 plates and 47 figures, and closed with a good index.

##### THE ISLANDS OF SOUTHERN CALIFORNIA.

'A TOPOGRAPHIC Study of the Islands of Southern California,' by W. S. Tangier Smith (Bull. Dept. Geol., Univ. Cal., ii, 1900, 179-230) presents additional details concerning the features of this interesting group. The author points out that on a single shore line a wave-cut terrace of much strength may be developed where the coast has a moderate resistance and gentle slope, while hardly any shore marking is made where the coast is more resistant and of steeper slope. On San Clemente the rocks are relatively resistant and the general slope of the island is moderate; here wave-cut terraces at various levels have been remarkably developed and wonderfully preserved.

The occurrence of such terraces suggests some observations regarding the origin of those plains of erosion which now stand somewhat above sea level and are moderately dissected by streams, as in the Piedmont district of eastern Virginia and in the peninsula of Brittany. On both these plains the broad uplands are sheeted over with heavy soils of local weathering; the valleys that dissect the uplands are narrow and steep-sided. If the plains were of subaërial origin the abundant soils would be an appropriate feature; if the plains were the result of marine abrasion, the soils must have been developed by weathering on the wave-cut rock floor in the same period of time as that required for the erosion of the narrow valleys. The terraces of San Clemente may perhaps afford means of comparing the rate of soil production and valley erosion, and thus of giving further evidence regarding the origin of the districts in question.

##### DEECKE'S ITALIEN.

A WORK on the general geography of a country should not be criticised too closely with regard to its physiographic chapters, for there are many other lines toward which the chief interest of the author may have been drawn more strongly. It is nevertheless instructive to examine the method of treating land forms

that is found acceptable in an important volume of a new series of geographical handbooks. Deecke's work on Italy\* treats in its first chapter the limits and area of the country; in the second, the surrounding seas; in the third, the history of exploration; relief in the fourth, geological structure in the fifth, and climate and hydrography in the sixth and seventh. Then after 250 pages devoted to population, history, products and commerce, government and religion, the remaining 125 are given to the description of provinces ('Chorography'). In comment on this order, it may be said that it is not satisfactory from a physiographic standpoint to give a leading place to relief and a following place to geological structure; in such an order, relief must be treated empirically and to that extent imperfectly. Under hydrography many interesting details are given concerning certain rivers which have changed their courses in historical time—the Adige, the lower Po, and the Chiana between Tiber and Arno—but the development of rivers is hardly considered. The provincial descriptions include much material of value, yet they omit many facts that would shed useful light on local topography. Taken all together, the book is certainly good, but it does not contribute much to the development of the new scheme of geographical treatment that it is to be hoped may characterize similar works in the new century.

#### NORWAY.

A HANDSOME volume entitled 'Norway, official publication for the Paris exhibition, 1900' (Kristiana, 1900, 626 + xxxiv p., many plates, figures and maps) contains valuable chapters on topography, by Hansen; geology, by Reusch; and climate, by Steen, occupying 50 pages; the rest of the volume being given to history, social conditions, commerce, etc. Hansen gives a just emphasis to normal and glacial erosion in his account of surface features. The highland is described as an immense mountain plateau, whose 'even summits clearly indicate that it was originally a plain of denudation that has afterwards been forced up into an arch.' The

\* 'Bibliothek der Länderkunde' herausgegeben von Dr. A. Kirchhoff und Dr. R. Fitzner. Berlin, Schall. 'Italien' von Professor Dr. W. Deecke, 1898.

summits that tower above it, being of harder rocks, may be supposed to have withstood the destructive forces which leveled the remainder. 'Actual connected mountain chains rising above lowlands at both sides do not exist.' Canyon like valleys, cut in the uplifted highland, were modified by strong glacial erosion, producing fiords. The mountains that rise above the highland frequently have sharp alpine forms with corries (botner) which are described as having been developed in névé fields above level of the glacial sheet. The glaciated area exposes bare rock over so much of its surface as stands above the old shore line that marks post-glacial submergence; but below this line there are abundant sands and clays, affording arable land. The population is largely found below this level.

The relation of Norway to Sweden is interestingly presented. Although the two countries border each other along a boundary line that measures a thousand miles in length, by far the greatest part of this line lies on the uninhabited mountainous highland. The two countries are therefore separated rather than joined. Only three railroads and about a dozen highways cross the boundary. In 1898, only five per cent. of Norway's goods-exchange crossed the land frontier by railway and only one third of one per cent. by other means, while ninety-five per cent. went by sea.

WM. DAVIS.

#### UNITED STATES BOARD ON GEOGRAPHIC NAMES.

THIS Board, to which is referred questions of disputed geographic nomenclature arising in the Executive Departments of the Government, held its monthly meeting January 9th. Philippine Island names were considered at some length. The Coast and Geodetic Survey is about to issue an atlas of the Philippine Islands. This atlas will contain about thirty maps made by Jesuit missionaries in the islands. It is preceded by an introduction, which, among other things, has three lists, comprising in all about 6,000 geographic names. These names are now in the final proof stage. The list was prepared and the proof corrected by Rev. Father Algue, S.J., of Manila, but who has been