

TEN KATE'S EXPLORATIONS IN WEST-ERN AMERICA.

AFTER devoting himself for a number of years to the special study of somatology, and also to the more general acquirements necessary for an ethnologist, Dr. H. Ten Kate, jun., born in La Hague, set out on different expeditions to study some tribes and nations *in natura*. He accompanied Prince Bonaparte to Lapland and Finland in the summer of 1884, and in the present year has undertaken an extensive trip to Surinam, aided by subsidies from a number of scientific societies. The expedition which he undertook through the south-west of the United States and the north-west of Mexico was performed in the space of about thirteen months, — from November, 1882, to December, 1883, — and resulted in many valuable discoveries and observations, described by him at length in his recent volume written in Dutch, 'Reizen en onderzoekingen in Noord-Amerika' (Leiden, Brill, 1885, 464 p., 8°), with map and two plates containing views, portraits of Indians, etc. Having reached the west through Texas and Arizona, he first paid a visit to Sonora, and the southern extremity of the Californian peninsula. He found there graves of the Pericú Indians, whose skulls and bones proved them to belong to a race anthropologically distinct from the Cochimi, and other tribes farther north in the same peninsula. He left that dry country to pass through Sonora again, and north to the Gila River, to the Mohave reserve on Colorado River, to central Arizona, to the Pápago and Apache-Tinné settlements in the same territory, to Zúñi and the Pueblos of New Mexico scattered along the Rio Grande. The aboriginal tribes last seen by him were the southern Utes and the tribes in the centre and the east of the Indian Territory. We easily understand that the space of thirteen months was but a short lapse of time, considering the immense area travelled over, and the large number of Indian tribes and other objects of ethnologic interest which came under his observation; but, in reading the long and interesting report, we must acknowledge that the traveller has made the best use of the opportunities offered him. There is an endless variety of remarks on botany, geology, zoölogy; on Indian dresses, customs, pictographs, color adjectives; on government, politics, history, and political economy of the countries visited. We also meet at times with a few pungent remarks on the traders, cowboys, politicians, and 'judges' in the far west, — observations which greatly help to brighten the narrative, and enhance the interest we take in it.

Several smaller articles auxiliary to this report were issued by Dr. Ten Kate before its appearance. Their purpose is to give scientific accounts of Indian craniums, bodily admeasurements, tribal names, etc.: they are written in French.

THE GLACIAL PERIOD IN AUSTRALIA.

IN a paper on this subject recently read to the Geological society of London, Dr. R. von Lendenfeld said, that, although several previous writers have

suggested that boulders and gravels found in different parts of Australia are of glacial origin, the evidence is vague, and no clear proof of glaciation has been brought forward. During a recent ascent of the highest ranges in Australia, — parts of the Australian Alps, — where he discovered a peak which he named Mount Clarke, 7,256 feet high, he found traces of glaciation in the form of *roches moutonnées* throughout an area of about a hundred square miles. The best preserved of the ice-worn surfaces were found in a valley named by the author the Wilkinson valley, running from north-east to south-west, immediately south of Müller's Peak and the Abbot Range. No traces of ice-action were found at less than 5,800 feet above the sea. The rocks showing ice-action are all granite; and the fact that the surfaces have been polished by glaciers is said to be proved by the great size of such surfaces, by their occurrence on spurs and projecting points, by many of them being worn down to the same general level, and by their not coinciding in direction with the joints that traverse the rock. Dr. von Lendenfeld's paper closed with a comparison of the evidence of glacial action in Australia with that in New Zealand.

Prof. T. G. Bonney considered that more evidence was necessary in order to establish the point contended for by Dr. von Lendenfeld. All his proofs were founded on granite, which had a constant tendency to form rounded bosses. The fact that the supposed *roches moutonnées* occurred on spurs, rendered the matter still more doubtful, seeing that in small glaciated tracts such surfaces were chiefly found in valleys. It was a remarkable, and to him a very suspicious, fact that no moraines or perched blocks were noticed: in fact, the only point of importance adduced in favor of the author's view seemed to be the difference in the direction of the joint-planes and of the rounded surfaces; and this he thought insufficient.

Mr. W. T. Blanford agreed with Professor Bonney, and mentioned examples of the occurrence in the plains of India, where glaciation was out of the question, of granite surfaces simulating *roches moutonnées*, and of larger dimensions than those cited by the author. It seemed to him not impossible that Dr. von Lendenfeld was right; but the evidence brought forward was certainly not sufficient. The circumstance most in favor of a glacial origin for the supposed *roches moutonnées* was their restriction to a particular elevation.

THE RECENT CHOLERA CONFERENCE IN BERLIN.

AT the recent cholera conference in Berlin, May 2-8, the principal disputants were Koch and Pettenkofer, the former asserting, and the latter denying, the specific character of the so-called 'comma' bacillus of cholera.

The following summary of the position of each, taken from reports that have just reached us, may be of interest to our readers.

Koch's grounds for his assertions he sums up as follows: 1. The constant occurrence of the bacillus