valley. As we rode up the gorge toward the great peaks, and finally, leaving our horses, climbed up on the principal glacier, I saw how greatly, from our previous elevated position, I had underestimated distances, heights, and magnitudes. The Katoon River, which from above had looked like a narrow, dirty-white ribbon, that a child could step across, proved to be a torrent thirty or forty feet wide, with a current almost deep and strong enough to sweep away a horse and rider. The main glacier, which I had taken to be about three hundred feet wide, proved to have a width of more than half a mile; and its central moraine, which had looked to me like a strip of black sand thirty feet wide, piled up in form to a height of six or seven feet, like a long furnace dump, proved to be an enormous mass of gigantic rocks three to four miles long, and three hundred to four hundred feet wide, piled up on the glacier in places to heights of seventy-five and eighty feet. In short, it was a tremendous glacier, and yet it was only one of eleven which I counted from the summit of the ridge between the Black and the White Berel. Seven glaciers descend from the two main peaks alone.

We spent all the remainder of the day in sketching, taking photographs, and climbing about the valley and the glaciers, and late in the afternoon returned to our camp in the valley of the White Berel.

Monday we made another excursion to the crest of the Katoonski ridge, and succeeded in getting a good photograph of the two great peaks without a cloud.

We returned to the Altai Station, Wednesday, Aug. 5, and two days later started back for Oost-Kamenogorsk. We were overtaken by a storm in the mountains between Bookhtarma and Alexandrofskaya; lost our way; our tarantass capsized into a hole about nine o'clock at night in the darkness; and we lay there until morning in a cold rain, without shelter, food, or fire. Shortly after daybreak help arrived from the nearest settlement; but it took eight horses and three drivers, two of the latter mounted, to get our tarantass to the next station. GEO. KENNAN.

CURRENTS OF THE NORTH SEA.

THE 79th supplement to *Petermann's mittheilungen* is by Prof. H. Mohn, director of the meteorological institute in Christiania, on 'Die strömungen des europäischen Nordmeeres.' The area thus designated lies between Norway, Novaya Zemlia, Greenland, Iceland, and Scotland, and has been examined by several exploring vessels, especially by Norwegians; so that tolerably full data as to depth, temperature, and salinity, have been determined from surface to bottom. On this basis, Professor Mohn has attempted a new style of investigation of its currents, fed on the south by the warm, dense waters of the North Atlantic; on the north, by the cold, fresher waters from the polar seas. His method is much like that which has been successfully applied to the study of atmospheric currents, and it has led him to very interesting conclusions. First, the density is examined, and the results graphically exhibited on ten sections. Next follow a series of detailed investigations, summarized in six maps, showing, 1°, surface isotherms; 2°, contour lines as determined by hydrostatic equilibrium, the North Sea thus appearing five centimetres higher than the ocean east of Iceland; 3°, the atmospheric pressure for the year, prevailingly low from Iceland towards the North Cape; 4°, the deformation of the surface of wind-formed currents by the deflective force arising from the earth's rotation, which depresses the central area about fifteen decimetres below the marginal; 5°, the same, due to both gravitative and wind currents; and, 6°, the summation of all persistent deforming causes. The currents themselves, as thus deduced, are shown in a larger map; their correspondence with what might be inferred from the isotherms establishes the correctness of the work. Finally, the pressure, temperature, and currents at depths of 500, 1,000, and 1,500 fathoms, are discussed and graphically illustrated in three pairs of maps. Taking this with an earlier monograph (supplement No. 63) by the same author, we have a very full description of the average physical conditions of these northern waters. The methods employed by Mohn may some day be well applied to the American Mediterranean from the Windward Islands around to the Bahamas.

W. M. DAVIS.

THE venerable Professor Vilanova secured the indorsement of the International geological congress, at its last session, to the project of a polyglot dictionary of definitions and technical terms. He himself cannot do more than supply the Spanish-French part of such a work ('Ensayo de diccionario geográfico-geológico,' por D. Juan Vilanova), but he hopes others will take up and supplement his work, until a cyclopaedia of the sciences is produced in which any man can readily find exact statements of the facts in his own language, and their equivalents in all other languages. It is an important work, and the congress and all geologists will doubtless help him to the extent of their power.