

exposed. I made hooks of my arms, and so got down the ladder, though not, as Mr. Sapsea observes, without some fever of the brow. The rock over which this ladder is fixed does overhang, and to be suspended by the arms on a frozen rung, with one's feet dangling over an abyssmal precipice, may be exhilarating, but it is not climbing properly so called. We got down to the saw, repeated our acrobatic performances on its jagged teeth, gained the Pic Tyndall, and, skirting the Cravate, reached the hut at half-past 8, just as it got dark.

We passed a miserable night. Carrel attempted to enliven us by relating the experiences of Signor Giordano, who passed five nights there, unable, from the bad weather, to go up or down. We had no fire; but the courtesy of the Italian Alpine Club has placed an india-rubber mattress and two sheepskins at the disposal of visitors to that elevated spot. We boiled some coffee with the aid of some spirits of wine, and wrapped ourselves up in the frozen sheepskins. Morshead was not much the worse for wear; but I knew that all my fingers were more or less frostbitten, and all night long I saw Melchior driving us down those gruesome rocks, and heard his constant exclamation, 'Schnell! schnell!'

It snowed all night, but cleared about 7 in the morning. We thawed our frozen boots by burning paper inside them, and descended the mountain with extreme care, for the ice-bound rocks were now covered with 6 or 7 inches of fresh snow. By 3 o'clock we were off the arête, descended the snow couloir of the Col de Lion, skirted the interminable moraines at the base of our vanquished mountain, crossed the Theodule late in the evening, and arrived at Zermatt a few minutes after 10 P.M., where we received from M. Seiler our usual kindly welcome. Kind-hearted Madame Seiler bound up my wounds; and, thinking that a hair of the dog that bit me was an excellent specific, three days afterwards I sunned my frostbitten fingers on the highest peak of the Gabelhorn.

PETERMANN SPITZE IN EAST GREENLAND.

It should be well known to the readers of this Journal, that Dr. Augustus Petermann, the learned and energetic geographer of Gotha, has been, for a long time past, endeavouring to promote exploration and research within the Arctic Regions. He laboured hard for several years, without result, trying to stir up his countrymen to send an expedition to the north. At length, in 1868, he was able to fit out a sloop, and to despatch it towards the Pole under the command of Captain Koldewey. This little vessel—the 'Germania'—no bigger than

an ordinary fishing-smack, started from Bergen on May 24, with a crew of only eleven men, to fight its way through the icy seas. At first they endeavoured to reach East Greenland, but they everywhere encountered the heavy flocs which are permanently drifting down that coast, and they were forced to retreat. Koldewey then made his way to Spitzbergen, and, after some severe combats with ice and storms, succeeded in carrying his ship as far as $80^{\circ} 30'$ N. lat. Thence he was obliged to return on account of pack-ice, and he again essayed to reach the Greenland coast. Again he was baffled, although this time he succeeded in approaching the land closer than upon his first attempt. He then steered northwards once more; managed to pass round the northern side of the great island of Spitzbergen, and made some small discoveries upon its eastern shores. Finally, he turned his ship's head towards the Pole again, and struggled manfully to get northwards. On September 14 he was in $81^{\circ} 5'$ N. lat., but beyond this they could not go. Heavy ice and foggy weather rendered navigation extremely perilous during the nights, and at last the explorers turned back, ran rapidly home, and re-entered the port of Bergen upon September 30.

Koldewey's narrative has only recently been published in Petermann's '*Mittheilungen*' (January 18, 1871). It is accompanied by a large and clear map (which, like all of Petermann's maps, is admirably and thoroughly executed), and this alone, without reference to the text, renders ample testimony to the courage and perseverance of Koldewey and his associates. You see at a glance how they battled with wind and ice, and how pertinaciously they returned to the attack; and the little views which are given upon the margin of the map, of the '*Germania*' in different positions, arouse one's sympathy for these bold, although unsuccessful explorers. This expedition, indeed, recalls the doings of our countrymen—Hudson, Baffin, and Frobisher. Like them, Koldewey sailed in a mere 'cock-boat,' and like them he was gifted with an indomitable spirit. Dr. Petermann acted wisely and generously in giving the command of his second expedition to his zealous lieutenant.

To this second expedition we wish to draw especial attention. It started from Bremen on June 15, 1869, in the presence of the King of Prussia. This time there were two vessels. One, a screw steamer of 140 tons, was again called the '*Germania*'; the other was named the '*Hansa*.' This latter was chiefly laden with fuel for the use of the '*Germania*.' She was speedily separated from her consort; was crushed in the ice off the East Greenland coast on October 22, and her crew of fourteen persons was forced to take refuge on the floe that destroyed the ship. They drifted southwards for more than 600 geographical miles, and, after having been exposed to the rigours of an Arctic climate for 200 days, reached the Danish settlement of Friedrichstal alive, but with one of their number bereft of reason!

The '*Germania*' was more fortunate. She gained the East Greenland coast, and, after pressing up it as far as $75^{\circ} 30'$ N. lat., returned to the Pendulum Islands (lat. $74^{\circ} 30'$) to winter. Sledging parties were sent out during the winter and spring, and explored a considerable extent of heretofore unknown land. On July 22 the '*Germania*'

again steamed towards the north, but was stopped by ice in lat. $75^{\circ} 29'$. The expedition then returned to the south, and in lat. $73^{\circ} 13'$ discovered the entrance to a great fiord. This was free from sea-ice, although encumbered by icebergs, and the explorers proceeded up it for 70 miles.

The surrounding scenery was of the grandest character. Cliffs thousands of feet in height rose directly from the water's edge; mighty glaciers filled the valleys and ravines and entered the fiord, giving birth to the icebergs which were just now mentioned; and sparkling waterfalls bounded from ledge to ledge down the great precipices. The country was everywhere mountainous, and the peaks became more and more important as the explorers proceeded towards the west. Ober-lieutenant Julius Payer, who accompanied the expedition, ascended a mountain in $26^{\circ} 30'$ W. long., of about 7,000 feet, and saw from it a grand snowy ridge rising beyond the western extremity of the fiord, the culminating point of which he estimated to be 14,000 English feet above the level of the sea! This was the greatest geographical discovery made by the expedition, and the name of Dr. Petermann has been naturally connected with it. Petermann Spitze, in East Greenland, will hereafter rank with the celebrated mountains of the world. The peaks which have hitherto been measured in Greenland scarcely, if at all, exceed 7,000 feet.

In introducing this important discovery to the notice of the Royal Geographical Society on January 23 last, Sir Henry Rawlinson took the opportunity to speak of the value of mountain ascents in an unexplored country; and when he expressed a hope that some of our Alpine climbers would turn their attention to the great mountains discovered by the second German Arctic Expedition, he provoked long-continued and enthusiastic applause. Much, however, as we should like to hear that members of the English Alpine Club had succeeded in ascending Petermann Spitze, and gazed down upon the great unknown interior of Greenland, we still think that this is work which belongs rightly to the Germans. They have commenced the work, and they should finish it; and although we might envy them the success, they may be well assured that we shall be among the first to do honour to their courage and their enterprise.

Dr. Petermann has lately presented impressions of a photograph from a sketch by Payer of the Franz Joseph fiord, and the great range at its head, to the Alpine Club and to the Royal Geographical Society, and we recommend this view to the notice of our readers. It is meritorious as a work of art, and it appears to be faithfully executed. In the foreground there are masses of frost-riven rock, surmounted by some members of the expedition in Arctic dress. Behind, a long line of snow-covered glacier stretches downwards towards the inlet. In the middle-distance lies a branch of the fiord, whose still waters is dotted with icebergs from the great ice-streams which flow into it; and, in the background, the sharp snowy pyramid—Petermann Spitze—towers aloft. It is a tempting view—a fascinating view—and it suggests the desirability of the immediate formation of a Greenland Alpine Club.