

I am.' He had swum ashore and scrambled along, having, unlikely as it seems, sustained little damage from so high a tumble.

The story is, no doubt, substantially true but greatly exaggerated. The Seven Icebergs are seven parallel glaciers that flow into the sea at the N. part of the W. coast of Spitsbergen. They are nearly flat and considerably crevassed, so that it would be quite impossible to glissade down them. A view of one of them will be found on p. 269 of my 'First Crossing of Spitsbergen.' Three hours' hard walking might take a man up what he would imagine to be about a quarter of the length of one of these glaciers, which may be some ten miles long from where they quit the inland ice. Probably Old Kees and Bommel were climbing one of the neighbouring hills, and came down a couloir or snow-slope ending in the sea. It is not to be supposed that a sketch of the place was made on the spot. The engraving was doubtless constructed in Holland 'from materials supplied,' and the story did not lose in the telling. Note how the walrus, the bears, and the fox interest themselves in the climbers! Some falling stones on the right seem to be pounding a human body to pieces, one arm and a leg being already dismembered. To this mountaineering catastrophe there is no reference in the text. It was, perhaps, the artist's own gruesome invention.

IN MEMORIAM.

DR. GUSTAV RADDE.

We regret to have to record the death, at the age of seventy-two, of our honorary member, Dr. Gustav Radde, the well-known Siberian and Caucasian traveller, and Curator of the Tifis Museum.

The following sketch of his career, which originally appeared, on Dr. Radde's completion of his seventieth year, in Petermann's 'Geographischer Anzeiger,' has been forwarded to us for publication, by its author, Mons. de Déchy:—

'Gustav Radde was born in Dantzic in 1831, the son of a poor schoolmaster. After passing through the Real-Gymnasium he took to the study of medicine. His means were narrow and his evening hours were his only leisure for the pursuit of his studies in natural history. He had already developed a passion for scientific travel, for which he eagerly prepared himself. In the winter of 1852, provided with a slender purse by the Society of Naturalists of his native city, and with recommendations from the Russian consul, he betook himself to the Crimea. From that time, for the

remaining fifty years of his life, he remained in Russia, which became his second fatherland.

From this date, during the three years he spent in South Russia and the Crimea collecting and observing, began his contributions to the Bulletin of the Natural History Society of Moscow. His reputation reached the heads of Russian science, and he was in 1885, attached to an expedition to East Siberia and Kamtschatka.

In the course of the following five years Radde travelled over the south of Eastern Siberia, and thoroughly explored certain districts. In the years 1857-8 he led a nomad existence in the Middle Amur in the forests of the Budeja Mountains, then wholly without inhabitants. He lived a sort of Robinson Crusoe life, with two Cossacks, a Tungoos, and a dog as his only companions. In 1859 he visited the sources of the Irkut and attempted the ascent of the Munkv Sardyk (over 3,500 mètres) at the eastern source of the Jenissei. After founding a Cossack "stanitza" called "Raddooka," he returned in 1860 with his zoological and botanical collections to St. Petersburg. The results were published in Russia and in "Petermann's Mittheilungen."

In 1868 Radde took up his abode in the Caucasus, which was to be the scene of his future labours. It would take too long to enumerate all the journeys he made in different parts of the Caucasian isthmus. He began with the high valleys of Kolkhis, the Radsha and Suanetia, he climbed to 4,200 mètres on the slopes of Elbruz, visited the mountain fastnesses of the Chevsurs, the Tuschins, and the Pshavs, traversed the Highlands of Daghestan, and wandered through the deserted glens of the Western Caucasus, the old Abkhasia. He also visited Armenia and the Persian and Turkish frontier lands. In 1866 he led a scientific mission beyond the Caspian to Khorasan. These journeys were recorded in separate volumes, "Die drei Längenhochthäler Imeritiens" (1866), "Die Chevsuren und ihr Land" (1878), "Reisen an der Persisch-Russischen Grenze: Talysch" (1886), and numerous articles.

His scientific results were given in "Grundzüge der Pflanzenverbreitung in den Kaukasusländern," "Ornis Caucasica," "Die Fische der Kaukasusländern," and the work in course of publication at the time of his death, on "Die Sammlungen des Kaukasischen Museums," of which four volumes (zoology, botany, archæology, and geology) have appeared.

Radde was fortunate in finding sympathy and support in the member of the Imperial family who in the Sixties held his court at Tiflis. He was thus enabled to overcome any obstacles in the way of founding the Tiflis Museum. In later life he was selected on more than one occasion as a travelling companion to Imperial Highnesses, and he published in two volumes "23,000 Meilen auf der Jacht Tamara," an account of his cruise to the Farther East with the Grand Dukes Alexander and Sergei Mikhailovitsch.

Radde's descriptions of nature were always accurate, and the

variety of his interests and knowledge made them generally attractive. The "Vier Vorträge über den Kaukasus" (1874), published in "Petermann's Mitteilungen," are an excellent example of his talent for popular exposition and furnish an admirable outline of the organic and inorganic features of the Caucasian isthmus. Botany and zoology were Radde's special pursuits, but his eyes and intelligence were open and alert in regard to the most varied branches of knowledge—ethnography, ethnology, and archæology. He was an upholder of the variability of species, and was loth to classify small variations as new species. His descriptions of the forms of landscape lent themselves to geological studies.

'With those specialists or minute philosophers (and Radde was attacked by such) who will only count as science what can be observed by means of a microscope or a retort, or extracted out of the dust of archives, we need not argue here. The old question "Is geography science?" need not be re-argued. Radde had his detractors who strove to injure his reputation. To these the leading geographical societies of the world have given a sufficient answer.

'In 1897 he received the Constantine Medal of the Imperial Russian Geographical Society. Nine years previously, in 1888, he had been awarded the Patron's Medal, the highest honour of the Royal Geographical Society. I cannot conclude this notice better than by quoting the statement of the grounds of this grant (drawn up by Mr. Douglas Freshfield), which gives in a few words a summary of the claims of Dr. Radde to an honourable place in the list of scientific explorers:—

"The Patron's Medal to Dr. G. Radde (Director of the Natural History Museum, Tiflis), for a life devoted to the promotion of Scientific Geography, as a traveller, observer, and author, and particularly for his five years' travels in Eastern Siberia (1855-60), his persistent exploration of the Caucasian chain (1864-5 and 1876-85), Mingrelia, Abkhasia, Karatchai, Daghestan, and of the Armenian Highlands, and the Caspian coast (1875-80), and his services as chief of the Transcaspian Expedition in 1889. Also for the important works in which he has recorded the result of his explorations: (1) 'Reisen in Ost-Siberien, mit Karten' (1862-4); (2) 'Die drei Längenhochthäler Imeritiens'; (3) 'Vier Vorträge über den Kaukasus,' 1874; (4) 'Aus den Hochalpen des Daghestan,' 1886; (5) 'Die Chews'uren und ihr Land,' 1878; (6) 'Reisen an der Persisch-Russischen Grenze,' 1886; (7) 'Vorläufiger Bericht über die Expedition nach Manchurien und Khorassan,' 1887. And particularly for the talent with which, while paying special attention to various branches of natural history, especially ethnology, ornithology, and botany, he has kept in view their relations to Geography, and has made it his main object to set out in a clear and comprehensive manner the physical characteristics of the countries he has explored, with their causes and effects (see Nos. 1, 3, and 5). And finally, for the zeal, energy, and artistic intelligence he has exhibited in the arrangement on a Geographical basis of the Natural History Museum at Tiflis.'"