

(1864-75). The very valuable publication he undertook along with M. Helmersen, "Beiträge zur Kenntniss des russischen Reichs," numbers twenty-six volumes, and continued to appear until within the last few years. Von Baer continued to work up to the very last, and he has left behind him a large quantity of manuscripts and unfinished works.

Von Baer was undoubtedly one of the most accomplished investigators of the present century. Hacckel speaks of him thus:—"If among living scientific investigators there is one who justly enjoys universal honour and respect it is Karl Ernst Baer; and if classical and in the best sense natural philosophical writers will admire a Coryphæus of to-day, an unsurpassed example of exact observation and philosophic reflexion, let them go to the 'Entwicklungsgeschichte' of this head master of our science." Helmersen speaks of the late biologist as follows in the *St. Petersburger Zeitung*:—"With Baer departs a man such as is rarely met with in any century, a genial man of science and research, endowed with a penetrating critical intellect, with unusual faculty of observation, with perseverance and energy in work. The earth and its inhabitants were the great field of his research, and he brought to his work not only a deep philosophic training, but also an equipment of the profoundest knowledge in several departments of natural science which few of the great spirits of our time have possessed. This great, comprehensive, but profound knowledge, which he to the day of his death continued to increase and turn to use, combined with the determination to trace things to their ultimate grounds and by means of keen and unprejudiced, clearly arranged, and thoughtful observations to discover the truths and the laws of nature, stamp all his works with a monumental character which they will preserve for all time. The widely-known name of Baer is written in large letters in the book of science and its history."

We hear that a subscription will be opened among all the scientific bodies of which von Baer was a member for the founding of a scholarship in his name, or for any other scientific purpose worthy of the name of the great natural philosopher.

DAVID FORBES

AT the comparatively early age of forty-eight the busy life of Mr. David Forbes has been brought to a close. Like his distinguished brother Edward, he has been unexpectedly cut off before much of the immense mass of knowledge he had acquired has been put in a form to be of use to others. He was always looking forward to a time of less active occupation, when he might devote his principal attention to putting on record the results of his many years' investigations. What there may be in the piles of manuscript he has left that will be available for use, there has not yet been time to ascertain. For the last five years the most important papers he wrote were the half-yearly reports for the Iron and Steel Institute, but among his earlier papers there will be recollected "The Relation of Silurian and Metamorphic Rocks in the South of Norway," and "The Geology of Bolivia and South Peru." Alluding to his connection with the Iron and Steel Institute, the organ of that society has just written:—"In his capacity of Foreign Secretary he has, almost from the foundation of the institute, rendered most essential service, and has in no inconsiderable degree contributed to that rapid prosperity which has characterised its operations. His exhaustive reports on the foreign iron and steel industries which appeared in the *Journal* were most valuable, as they embraced everything going on in connection with the iron trade all over the world. The wonderful linguistic accomplishments of Mr. Forbes enabled him to deal easily with the publications of all

countries where iron and steel is made. His name was so well known abroad that the leading people connected with the technological features of ironmaking most readily furnished full details of what was going on in each country; and through his influence mainly the institute speedily assumed a recognised position abroad."

Mr. Forbes joined the Geological Society in 1853, and since February, 1871, has been one of the secretaries. He was also a Fellow of the Chemical Society. In June, 1856, he was elected a Fellow of the Royal Society. He had travelled extensively in many parts of the world. All the family of the Manx Forbeses have been great travellers. Dr. Wilson, in his memoir of Edward Forbes, has mentioned many of his relatives who died out of Europe. Mr. David Forbes, as a consulting engineer, had an extensive practice, and was often summoned abroad. His death occurred at his house on Tuesday, December 5, and on Monday, the 11th, his remains were laid in the Kensal Green Cemetery, in the presence of the Presidents of the Geological and Chemical Societies and many scientific friends.

THE GLACIATION OF THE SHETLAND ISLES

IN the *Geological Magazine* for May and June, 1870, my colleague, Dr. Croll, first pointed out that the Scotch and Scandinavian ice-sheets probably united on the floor of the North Sea, and thence moved northwards towards the Atlantic. He was led to this conclusion by a consideration of the peculiar direction of the striæ in Caithness, in Shetland, and the Faroe Isles, as well as by the occurrence of marine shells in the boulder clay of the northern parts of Caithness. He showed that the enormous *mer de glace* which pressed out on all sides from Scandinavia forced its way close to the Scotch coastline, and in virtue of its greater size produced a slight deflection of the Scotch ice, causing it to over-ride portions of the main land. He stated that in all likelihood both the Shetland and the Faroe Isles were over-topped by the Scandinavian ice in its onward march towards the Atlantic.

During a recent traverse in Shetland I obtained evidence which tends to strengthen this remarkable theory. In the north island of Unst, the direction of the striæ, the boulders on the surface, and the stones in the till, clearly indicate that this island was glaciated by a mass of ice moving from east to west. The proofs of continental glaciation, which are comparatively clear in the north, are obscured in a great measure in the main island by the effects of a local ice-sheet. The nature of the boulder clay, as well as the trend of the striæ in various localities, show that the movement of this local sheet was influenced by the general features of the country. In addition to these markings, however, others were found which could not have been produced by ice shedding off the land in the ordinary way. These cross the island, regardless of its physical features, and are often at right angles to the newer set. Lastly, the wide distribution of morainic matter with groups of moraines indicate the gradual disappearance of the local ice-sheet and the presence of small glaciers, where the ground presented favourable conditions for their development.

The islands are dotted over with small lochs; the most of these lie in peat or drift, while others occupy true rock basins. The singular absence of marine terraces ought not to escape notice, as bearing on the recent geological history of these islands, since the voes or sea-lochs are admirably adapted for their preservation.

These observations will be described in detail in a forthcoming paper before the Geological Society.

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