

## OBITUARY NOTICES.

**Charles Eugène Barrois**, For. Mem. R.S., Hon. F.R.S.E.

CHARLES BARROIS was born on April 21, 1851, and died November 5, 1939. No man since Murchison has won such renown for high-class stratigraphical research, within and without the bounds of his own country. Belonging to a great industrial family of the Nord, he was free from the first to follow his natural bent for Science. In 1871 he entered at Lille what was then a constituent college of the University of France. Immediately he fell under the influence of Professor Jules Gosselet, to whose enduring geological researches one may trace much indeed of our present-day knowledge concerning the Ardennes and the associated Franco-Belgian coalfield—including tectonic principles at once transmitted, through Marcel Bertrand's intuition, to the far-distant Alps. Thus Barrois enrolled as the first definitely geological student of Gosselet's school, still in its birth-struggles; and before the year closed he had assisted his master in founding the Société géologique du Nord, which under his constant care has grown to be one of the most distinguished geological societies of the world. There was nothing evanescent in Barrois' enthusiasm. When the age-limit set Gosselet on one side in 1902, it was Barrois who took his place as Professor of Geology in the University of Lille; and, when Gosselet died in 1916, it was Barrois again who succeeded as Director of the Société du Nord. From active occupation of the former post he retired in 1926, though retaining the honorary title to the end.

Barrois first attracted general attention through a six-week tour of the Chalk of England and Antrim, where he established (1876) the continuation of fossil zones already elaborated by Hébert and others in the north of France. The thoroughness and precision of his onslaught took the breath from contemporary workers in England, and to this day prove an unfailing source of amazement, admiration, and inspiration to successive generations of students making first acquaintance with the subject.

Barrois is also gratefully remembered for friendly invasions into northern Spain, where we owe to him most of our knowledge of the local development of the Hercynian Chain (1882), and into the Sierra Nevada farther south (1884). He travelled widely and fruitfully in other lands, but his greatest contribution to Geology has been his overwhelming share

in the survey of Armorica, by which is understood the whole of Brittany along with a border zone of neighbouring provinces, particularly Normandy. If one emphasises Barrois' contributions as a stratigrapher, one perhaps runs a risk of underrating his general accomplishment. Barrois was a complete geologist, distinguished not only in the field, but also in the laboratory, as a palæontologist well versed in many classes of the animal kingdom, and as a petrologist equally at home among igneous and metamorphic problems. He was main author of more than 20 sheets of Armorica in the 1: 80,000 map of France. In fact a geologist may well say: *Armorica, c'est Barrois*. Armorica is comparable in size with Scotland, and, though more accessible, and favoured with more convenient weather, its geological problems present much the same range and intricacy as do those of the Highlands and Southern Uplands of our country. To his colleagues in Scotland it has seemed very wonderful that one man could cover the whole of this region, everywhere showing manifest delight in, and mastery of, both local detail and wide-reaching principle. The achievement, though in less heroic mould, reminds one of Törnebohm's contribution to Scandinavian research.

As Gosselet's strength failed Barrois seems increasingly to have felt the call of his home coalfield, tectonically the most complicated in the world. His foundation of the Musée Houiller de l'Université de Lille in 1908, and his close personal underground investigation of structural perplexities, proved very valuable to the industry. Versailles later widened his opportunities, and he extended his researches into the relatively simple coalfield of the Saar and its concealed prolongation in Lorraine.

Meanwhile, the last war had burst in 1914. It found Gosselet old, but living; and he and Barrois considered that the highest service that they could offer to their country was to remain at Lille in charge of the University Collections, with the German soldiery in occupation of the town. Gosselet succumbed in 1916, following an attempt to cope with an explosion. Barrois alone in 1918 had the sad happiness of seeing a riotous welcome given to relieving French and British troops: sad because it brought home to him with fresh poignancy the many friends whom he would see no more.

Now the grand old man has died, listening to distant guns of another war. His town, to its own honour be it said, did not forget realities in the midst of such distractions, and assembled to give a civic funeral presided over by a Cardinal Archbishop. An eloquent oration was delivered by Barrois' pupil and successor, Professor P. Pruvost; while Britain was represented by Major (Professor) W. B. R. King, official geologist on the Western Front.

Unassuming and accessible, ever the friend of the young beginner, Barrois did not escape world-wide recognition. He was honoured by the Governments of France, Belgium, Sweden, Spain, and Austria. France created him Chevalier of the Légion d'Honneur when only thirty-seven, and gave him the Cravatte de Commandeur in 1923—Teall used to tell how helpful the little red button of the Legion proved in finding accommodation even in the holiday season in crowded Brittany. The Académie des Sciences de Paris elected him to its membership in 1904, and sat under his presidency in 1927. The main scientific societies of London, Edinburgh, New York, Brussels, Madrid, and the Papacy placed him on their honorary roll, as also the geological societies of Austria, Germany, Belgium, Great Britain, and the United States. Medals are too numerous to recall, but it is significant of his early promise and mature fulfilment that he was awarded both the Bigsby (1881) and the Wollaston (1901) medals of the London Geological Society. Among honorary degrees may be mentioned the doctorates of St Andrews and Oxford.

Though better known personally in England than in Scotland, Barrois is remembered as one of the distinguished foreigners who attended the ever-memorable excursion to the North-West Highlands led by Peach and Horne after the Dundee Meeting of the British Association in 1912.

E. B. B.