not only enriched the Museums of Europe and the United States, but have formed the groundwork of the investigations into the *zones* and *fossils* of the Gault made by myself, and fellow-workers—the Rev. Professor Wiltshire before my own endeavours, and those of Mr. F. G. H. Price, F.G.S., and Mr. Starkie Gardner, F.G.S., since. Mr. F. G. H. Price, of Messrs. Child's Bank, Temple Bar, W.C., has kindly undertaken to receive subscriptions for the "Griffiths Fund."

H.M. Geological Survey. C. E. De Rance, F.G.S.

OBITUARY.

CALEB EVANS, F.G.S., MEMB. GEOL. ASSOC.

Born July, 1831; Died Sept. 16, 1886.

The subject of our present Memoir was a resident of Hampstead. He was educated at University College School, and so early as in 1846 he entered a solicitor's office, and was appointed Clerk in the Chancery Pay-Office in 1852, where he served for 30 years, but retired on account of ill-health in 1882.

He commenced to study geology about the year 1855, and attended lectures by Prof. Owen and Dr. Melville. He made no actual collection of specimens until 1858, but from that time until his health gave way, he took advantage of his annual official vacations to visit the various localities of geological interest, especially those of the South-East of England. In 1859 he became a member of the Geologists' Association, and in 1867 he was elected a Fellow of the Geological Society of London. The beds to which he chiefly directed his attention were those of the English Tertiaries and the Chalk, and in addition to a large collection from the Isle of Wight and Hampshire beds, he obtained numerous London Clay fossils by watching the excavations in various parts of the Metropolis, and more especially from the main-drainage works in the South of London, which yielded numerous fossils of the Woolwich and Reading Series, from strata then exposed for the first time, and which have never been accessible since in this particular area.

Mr. Evans was author of eleven papers, eight of which appeared in the Proceedings of the Geologists' Association, the most important being that "On the Geology of the Neighbourhood of Portsmouth and Ryde." But the paper by which he will be best known was that read before the Geologists' Association in January, 1870, entitled, "On some Sections of Chalk between Croydon and Oxtead," which was separately published. It was the first attempt made in this country to subdivide the Chalk into zones according to their fossil contents, and to correlate these zones with those in other parts of England and on the Continent.

Mr. Evans constructed several geological relief-maps or models, based on his own observations; one of the neighbourhood of Hampstead and Highgate; one of the Thames Valley in the neighbourhood of London; one of Hastings, one of Sidmouth, and one of England

and Wales. Although Mr. Caleb Evans only attained the age of 55 years, he has left behind him a very excellent record of geological work achieved by a private individual in the leisure hours of a busy life.

JOHN ARTHUR PHILLIPS, F.R.S., V.P.G.S., F.C.S., M.I.C.E., ETC.

BORN NOVEMBER, 1822; DIED 5 JANUARY, 1887.

THE new year has deprived us not only of an excellent chemist, mineralogist, and geologist, but of a dear and valued friend. Born at Polgooth, near St. Austell, where several of his family had been connected with that important tin-mine, young Phillips inherited a love of mining and metallurgy which he retained unabated to the end of his useful and valuable life. His school-days were passed at St. Austell, but he does not appear to have developed a love for science until near his 20th year, when the subject of electro-metallurgy attracted John Arthur Phillips' attention, and he exhibited some specimens of electro-deposited copper on lace, for which he received the first prize from the Royal Cornwall Polytechnic Society in 1842 at Falmouth.

This led to a series of investigations into the formation of mineral lodes. But the want of more accurate scientific training led him to Paris in 1844, where he entered as a student at the École des Mines. Here he passed through the regular course of study, and showed such proficiency that he obtained the appointment of engineer to one of the large French Collieries, which he held for some years. On his return to England, he was engaged by Sir Henry de la Beche and Dr. Lyon Playfair to carry out experiments at Putney for the Admiralty, on the various qualities of coal suited for the steamships of the Royal Navy. Lead-smelting and desilvering works next occupied his attention. Thence he went to California on an inspection of the gold-producing regions, and to report upon the machinery and methods in use in separating the precious metal at gold-mines and works. On his return to England, he lectured before the Society of Arts, on May 14th, 1862, on "Gold-Mining," giving the result of his own experience and observations in America. Mr. Phillips published his "Manual of Metallurgy" in 1852, a second edition in 1854, and a third in 1858. At the time of his death he was engaged upon a fourth edition assisted by Mr. Bauerman, which we understand will be almost immediately published. Mr. Phillips was also the author of a work on "The Mining and Metallurgy of Gold and Silver," which appeared in 1867. In 1884 he published his "Treatise on Ore-deposits," giving all the varied natural phenomena connected with the occurrence of metalliferous deposits.

For the last sixteen years Mr. Phillips has mainly directed his attention to the study of petrography, and his paper in the Quarterly Journal of the Geological Society, "On Concretionary Patches and Fragments of Rocks found in Granite," and others of a kindred nature, are of the greatest value to petrologists.

His communications were not however confined to the Geological