NOTES.

The following deaths have to be recorded:—

FRIEDRICH JULIUS PETER VAN CALKER (1841–1913) was since 1877 Professor of Crystallography, Mineralogy, and Geology in the University of Groningen, Holland. He was born at Bonn, where his father was Professor of Philosophy, and from here he took his degree of doctor with a dissertation on the optical phenomena in twinned crystals of calcite. Of his few mineralogical papers mention may be made of one on the curious 'barley-corn' pseudomorphs, to which he gave the name pseudogaylussite and described new occurrences from Holland. In 1905 he commenced to issue a periodical publication entitled 'Mitteilungen aus dem Mineralogisch-Geologischen Institut der Reichs-Universität zu Groningen.' He died at Groningen on July 16, 1913.

THEODOSIJ NIKOLAJEVIČ ČERNYŠEV (TSCHERNYSCHEW) (1856–1914) joined the Russian Geological Survey at its commencement in 1882 and became Director in 1903. He was also Director of the Geological Museum of Peter the Great at the Academy of Sciences of St. Petersburg, and for a time he acted as Director of the Mining Institute. For twenty-two years he was secretary of the Russian Mineralogical Society. Some of his earlier papers were descriptive of the minerals and ore deposits of the Ural Mountains, and in 1883 he gave an account of the Pavlovka (Saratov) meteoric stone. A variety of amphibole has been named tschernichewite after him. A biographical notice, with portrait and bibliography, has been given by A. P. Karpinskij in Bull. Acad. Sci. St. Pétersbourg, 1914, pp. 167–184.

GEORG PAUL MAX DITTRICH (1864–1913) was born at Görlitz in Silesia. At Heidelberg he was a pupil of Bunsen and assistant to Victor Meyer, and afterwards Extraordinary Professor of Chemistry. For a time (1891–3) he was chemist on the Geological Survey of Baden. He published papers on the methods of rock analysis, and many of his detailed analyses of rocks appeared in the petrographical papers of other authors.

ADOLF HOFMANN (1853–1913) was born at Žebrák in Bohemia, and from 1880 to 1888 was assistant in the Mining Academy at Leoben in Styria, where his work was mainly palaeontological. From 1888 to 1909 he was Professor of Ore-deposits, Mineralogy, and Geology in the Mining Academy at Przíbram in Bohemia. In his work on ore-deposits he described various new occurrences of minerals from Bohemia. On his retirement he settled in Prague and his later papers were written in conjunction with Professor F. Slavík. (See F. Slavík, Verh. k. k. geol. Reichsanstalt, Wien, 1913, pp. 339–342; and Centralblatt Min., 1913, pp. 721–722.)

ALBERT FAIRCHILD HOLDEN (1866–1913) was born at Cleveland, Ohio, and died there May 18, 1913, in his forty-seventh year. He graduated from Harvard in 1888, and, while a good student, was known among the undergraduates of his time as a great football-player, conspicuous for his energy and fairness, qualities prominent in his later career. He was soon associated with his father in silver mines, and became a successful mining engineer and administrator, carrying a load of responsibility in the management of large properties from Mexico to Alaska.

He began to collect minerals in 1895 and continued with ever-increasing activity until his last illness, or for eighteen years. In a history of his collection, prepared not long before his death, many interesting details are given. He called himself essentially a collector, but he had acquired a wide practical knowledge about minerals and the highest critical standards as to what was fairly good and what was superfine, and to obtain the latter he spared neither trouble nor money. It had long been his intention to add his minerals to the Harvard collection, and his purpose was carried out by his trustees soon after his death. In the instructions accompanying the gift he displayed the broadest sympathy with that perplexity, often the lot of curators, who receive large collections duplicating in part their older ones, and a paragraph is worth quoting: 'In regard to the mineralogical collection. There shall be no obligation on the Museum authorities to keep any of the specimens when they have lost their scientific interest. There will be many duplications as the result of taking over my collection. All duplicates, if from my collection, may be sold, exchanged, used for scientific purposes, or given away. I only ask that specimens shall not be removed from the collection until others as good or better have been provided. It is my desire not to handicap the development of the Mineralogical

Department. I wish to aid in bringing the Harvard Mineralogical collection to the highest possible standard.'

The collection contains about six thousand specimens, of which four hundred are large-size exhibition type and the remainder smaller, mostly crystals or groups. It is very complete as regards species and varieties, and in general has a very high standard of excellence, with many unique specimens or sets. The most sensational, from the point of view of both the mineralogist and collector, are perhaps such examples as the two transparent and perfect crystals of kunzite, one a foot long and 5 inches wide, the other shorter and thicker, each weighing 47 oz.; and the large groups and selected crystals of California and Madagascar tourmalines. Mr. Holden bought outright several smaller collections of which the Losee from Franklin Furnace contained many fine local minerals, especially tourmalines and corundums. The forty crystallized zincites from there include a number of perfect pyramids, both large and small. Another rarity are the three transparent crystals of cerussite, twinned on the *r*-law, from Organ, New Mexico, of which the largest is 7 inches long, $3\frac{1}{2}$ wide, and $\frac{1}{2}$ thick. These are extreme cases, but the whole abounds in beautiful material which should yield much to study. Following Mr. Holden's wishes, which again express his good sense, that part which is best suited for the purpose will be incorporated in the public exhibition collections, while with the remainder and much other material a research and reference collection will be formed, to be kept in a separate room where it can be studied and inspected.[1]

Ernst Adolf Hugo Laspeyres (1836–1913) was successor to von Lasaulx as Professor of Mineralogy at Bonn, remaining there from 1886 to 1907, when he was followed by R. Brauns. Previously he had been Professor at Kiel and Aachen, and from 1864 to 1870 he was an inspector of mines attached to the Prussian Geological Survey. He published a long series of notes under the titles 'Mineralogische Bemerkungen' and 'Mittheilungen aus dem mineralogischen Museum der Universität Bonn'; the latter in conjunction with his assistants K. Busz, W. Bruhns, and E. Kaiser.

Hugh Marshall (1868–1913) was a native of Edinburgh, where he graduated (D.Sc. in 1889) and was lecturer in chemistry together with

[1] The above note on Mr. A. F. Holden and his collection has been specially written for this Magazine by Professor John E. Wolff, Curator of the Mineralogical Museum of Harvard University, Cambridge, Massachusetts.

mineralogy and crystallography. He had also studied in Munich and Ghent. In 1904 he was elected a Fellow of the Royal Society, and in 1908 was appointed Professor of Chemistry at Dundee. His translation of Groth's 'Introduction to Chemical Crystallography' appeared in 1906.

JOHN MILNE (1850–1913), the pioneer seismologist, was educated at King's College and the Royal School of Mines in London, and after practising as a mining engineer, he was appointed, at the early age of twenty-five, Professor of Geology and Mining in the University of Tokyo, where he remained for twenty years. He was elected an ordinary member of our society in 1878, retiring in 1902. Two papers by him, 'List of Japanese minerals' and 'Experiments on the elasticity of crystals', appeared in this Magazine (vol. iii, 1879). He also published 'Notes on Crystallography and Crystallo-physics' (1879), 'Catalogue of the Minerals, Rocks, etc., in the Imperial College of Engineering' (Tokyo, 1880), 'The Miner's Handbook' (1893). His collection of Japanese rocks, and also the rocks which he collected in Newfoundland, were purchased in 1887 for the British Museum. (For a detailed biographical notice with bibliography and portraits see the series 'Eminent living geologists' in Geol. Mag., 1912, pp. 337–346.)

FRIEDRICH WILHELM MUTHMANN (1861–1913) was born at Elberfeld and studied at Leipzig, Berlin, Heidelberg, and Munich, taking his degree at the last of these Universities in 1886. For a time he was instructor in chemistry in the Clark University at Worcester, Massachusetts. Returning to Munich he acted as assistant in Groth's mineralogical laboratory, and afterwards (1895) was appointed professor of inorganic chemistry in the Technical High School. Most of his original work was chemical, relating chiefly to the rare earths, but he was also the author of a number of mineralogical and crystallographical papers. He worked out, simultaneously with Tutton in 1894, the conception of 'topic axial ratios', and this now well-known term is due to him. He prepared and described crystallographically several allotropic modifications of sulphur and selenium, and also did much work on tellurium. Amongst minerals, he described messelite as a new species, and muthmannite (a telluride of gold and silver) was named after him.

FRIEDRICH CARL ALWIN POCKELS (1865–1913), Professor of Theoretical Physics at Heidelberg, had studied mineralogy and crystallography at Göttingen under F. Klein, T. Liebisch, and W. Voigt, and he was the

author of a 'Lehrbuch der Kristalloptik' (1906). Some of his papers had bearings on crystallographical and geophysical problems. (See J. Koenigsberger, Centralblatt Min., 1914, pp. 19–21.)

KARL HARRY FERDINAND ROSENBUSCH (1836–1914) was born at Einbeck in Hanover, where his father was the master of an orphan asylum. By the irony of fate he was left fatherless at the age of seven, and he owed his early education to the hard work of his mother. Being brilliant at languages he entered the University of Göttingen as a student of philology, but lack of means prevented him from completing this course. He then, for about five years, acted as a private tutor in a family in Bahia, Brazil. Returning to Germany he studied science at Freiburg (Baden) and Heidelberg, and presented his inaugural dissertation 'Der Nephelinit vom Katzenbuckel' (Freiburg, 1869) at the somewhat late age of thirty-three. The study of microscopical petrography being then in its infancy, it became necessary to correlate all the available information relating to the optical properties of minerals as exhibited in sections. This was done by Rosenbusch in his 'Mikroskopische Physiographie der petrographisch wichtigen Mineralien' (Stuttgart, 1873), in the same year that Zirkel published his 'Die mikroskopische Beschaffenheit der Mineralien und Gesteine'. Rosenbusch's second volume, 'Mikroskopische Physiographie der massigen Gesteine', appeared in 1877, and this well-known standard work has passed through four editions (the last in four parts, 1904–1908), whilst Professor Idding's translation, 'Microscopical Physiography of the Rock-making Minerals', also passed through four editions in English.

In 1873, after the publication of his book, he was appointed Professor (Extraordinary) of Petrography at Strassburg, at a time whilst Groth was there as Professor of Mineralogy; and in 1878 he became Ordinary Professor of Mineralogy and Geology in the University of Heidelberg, from which position he retired in 1908. Here by his teaching he attracted pupils from many countries, some of whom collaborated in the publication of the 'Festschrift Harry Rosenbusch' to celebrate his seventieth birthday in 1906. From 1888 to 1907 he also acted as Director of the Geological Survey of Baden. He was elected an honorary member of our society in 1879. The rare mineral rosenbuschite was named after him by W. C. Brögger in 1887. (See A. Harker, Quart. Journ. Geol. Soc., 1914, vol. lxx, pp. lix–lxi; E. A. Wülfing, Centralblatt Min., 1914, pp. 289–299, and Sitzungsber. Heidelberger Akad. Wiss., 1914. Abh. 8, pp. 1–23, with 2 pls.)

KNUD JOHANNES VOGELIUS STEENSTRUP (1842–1913) was an honorary member of this society as long ago as 1877. During the years 1866–1889 he was assistant in the University Mineralogical Museum at Copenhagen, and afterwards geologist on the Danish survey. He was a leading authority on the geology of Greenland, to which country he took part in no less than nine expeditions. His first trip, in 1871, was to the island of Disko for the purpose of studying the occurrence of the large blocks of native iron, which had been discovered the preceding year by Nordenskiöld. He proved that this iron occurs embedded in basalt and that it is of terrestrial origin. Two of his papers on this subject appeared as translations in this Magazine (vol. i, 1877, and vol. vi, 1884). A biographical notice with portrait and list of his published papers has been given by O. B. Bøggild in Meddelelser fra Dansk geologisk Forening, 1913, vol. iv, pp. 203–214. See also Geol. För. Förh. Stockholm, 1913, vol. xxxv, pp. 333–338, with portrait.

HERMANN TRAUBE (1860–1913) was born at Ratibor in Silesia and graduated at Greifswald in 1884. He was a Privat-Dozent (Titular Professor) of Mineralogy in the University of Berlin, and in 1905 was appointed Extraordinary Professor of Mineralogy at Greifswald, but on account of ill-health he was very soon obliged to retire, and latterly he had lived in Berlin. Between 1884 and 1901 he published more than fifty papers dealing with artificial minerals, microchemical reactions, the occurrence of minerals and rocks in Silesia (e.g. nephrite *in situ*), the crystalline form and optical activity of many organic compounds, and in 1888 appeared his book 'Die Minerale Schlesiens'. He described laubanite as a new species of zeolite.

GRÉGOIRE NIKOLAJEVIČ WYROUBOFF (1843–1913) was born at Moscow of noble family, and being of independent means he turned his attention first to medicine and afterwards to philosophy, conducting the 'Revue de Philosophie positive'. He long ago settled in Paris, taking part in the defence of 1870, and since 1904 occupying the position of Professor of the General History of Sciences in the Collège de France. He was an original member of the French Mineralogical Society and twice its president, besides being numbered amongst the very few honorary members. His earliest scientific paper, in 1866, related to the colouring material of fluor-spar, and his thesis for the degree of Doctor of Science at Paris was on the crystalline structure of optically active substances. He made detailed crystallographic determinations of a large

number of artificial compounds, both organic and inorganic, and discussed theoretically their relations as bearing on isomorphism, polymorphism, pseudo-symmetry, and other crystallographic problems. In 1889 he published a 'Manuel de Cristallographie'. Appreciations of his work have been given by H. Copaux and F. Wallerant in Bull. Soc. franç. Min., 1914, vol. xxxvii, pp. 1–4, 44–58 (with portrait).

By the generosity of Mr. F. N. A. Fleischmann, the British Museum mineral collection has recently (1914) been enriched by a large and valuable series of zeolites. During the past fifteen years Mr. Fleischmann, a member of this Society, has specialized in this group of minerals, and he has spared no pains in obtaining the most representative and finest specimens from every locality possible. He has always intended that his collection should eventually become the property of the Museum; but owing to want of space he has decided to transfer at the present time all the specimens from foreign localities. Two large instalments so far transferred include over a thousand specimens, and represent eighty different localities in France, Germany, Italy, Bohemia, Tyrol, Iceland, Nova Scotia, Michigan, California, and New Jersey. Specially remarkable are the very large series of fine specimens from West Paterson and Great Notch in New Jersey.

Each specimen is accompanied by a printed label and a corresponding printed catalogue slip, on which is given very precise information as to the exact locality and mode of occurrence. The name and situation of each quarry or mine are stated, references to the literature are quoted, and unpublished notes of considerable value embody the information collected by Mr. Fleischmann during personal visits to certain of the localities and by correspondence with local collectors and others. Apart from the fact that the collection consists of choice and selected specimens, this precise information adds considerably to its value. Being placed on view in a public museum, the specimens can be admired by the ordinary visitor on account of their beauty of form and delicacy of colouring, whilst to the mineralogist the series will be useful and reliable for purposes of reference.

Amongst other recent additions to the British Museum mineral collection may be noted:—

A fine crystal of transparent lilac-coloured spodumene from Pala, San Diego Co., California. This isolated crystal measures $27{\cdot}5 \times 7 \times 2$ cm. (i.e. nearly 11 inches long and 3 inches wide) and weighs 770·5 grams

(= 27·18 oz. avoirdupois). It was acquired partly by purchase from the Pala Chief Mining Company, and partly as a presentation from Mr. Frank A. Salmons, president of the company, after whom the mineral salmonsite has recently been named. Although not so fine as the crystals bequeathed by Mr. A. F. Holden to Harvard University (see p. 118 above), still it is a remarkable crystal. From the same source was also acquired a specimen of rare occurrence showing crystals of the gem spodumene embedded in its matrix of pegmatite.

The crystal of mauve-coloured apatite from Untersulzbachthal, Salzburg, described and figured by Mr. S. Henson in this Magazine (1883, vol. v, p. 198), which had recently come again into the market at the auction sale, held in London on February 25, 1914, of the mineral collection of Mr. Kendall Hazeldine.

A series of large and delicately crystallized groups of crocoite from Dundas, Tasmania, which with special care had been transported by Mr. A. R. Pontifex. These specimens, together with some others previously in the Museum collection, have been arranged in a special light-proof case on the wall in the Mineral Gallery.

The metric carat of 200 milligrams as an international unit of weight for precious stones is now an accomplished fact, the last two countries of importance having fallen into line in its adoption. In the United States it was adopted from July 1, 1913, and in the British Isles an Order in Council dated October 14, 1913, legalized its use on and after April 1, 1914. Its use for current trade purposes will clearly be accompanied by advantages, especially in international exchanges; but for writers on precious stones, when quoting the weights of historic gems, some caution will have to be exercised. Any ambiguity would be avoided by quoting, whenever possible, the weights in grams, which are easily reduced to metric carats by multiplying by five.

Prof. P. von Groth has now been joined by Dr. Erich Kaiser, Professor of Mineralogy in the University of Giessen, in the editorship of the 'Zeitschrift für Krystallographie und Mineralogie'. The latter editor has compiled a 'Hauptregister' to the first fifty volumes of this periodical, covering the period 1877 to 1912. This differs from the previously-published four volumes of the 'Repertorium' and 'Generalregister' to each set of ten volumes, in that it indexes only the volumes themselves and takes no account of the literature not noticed in the

Zeitschrift. The catalogue of authors issued last year (1913, 323 pp.) gives the titles of all original papers and translations, and (in German) of all abstracts that have appeared in the Zeitschrift. The first part of the subject-index ('Sachregister') has also been issued (1914, 384 pp., covering A–Hessonite); and a third portion giving an index of localities ('Ortsregister') is in preparation.

The first part of a new periodical 'Zeitschrift für Vulkanologie' (Volcanological Review) has been issued (January, 1914) under the editorship of Immanuel Friedlaender, Director of the new Volcanological Institute at Naples, and published by D. Reimer of Berlin. It contains papers written in German, French, Italian, and English, and is illustrated by numerous plates, on one of which are represented crystals of augite, labradorite, and leucite.

A new edition has appeared (1913) of Sir A. H. Church's well-known 'Precious Stones', issued as a Victoria and Albert Museum Handbook. Several additions have been made and the volume increased by twenty-nine pages. The descriptions of the specimens in the Townshend collection are now incorporated in the body of the work under each species. An appendix gives a list of faceted gem-stones which have recently been presented to the Museum by Sir A. H. Church for the purpose of making this collection more representative.
