

*Obituary Notice of Gerhard vom Rath.*

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THE last few years have been years of disaster amongst German Mineralogists, for in them we have had to lament in rapid succession the loss by death of Sadebeck, Websky, von Lasaulx, Max Schuster, and last and greatest, that of Prof. Gerhard vom Rath.

The main facts of Professor vom Rath's life are soon told. He was born of well-to-do parents at Dinsberg in the Rhenish provinces on the 20th of August, 1830. He had a good German education, the advantages of a cultivated home, and graduated at Berlin, after studying there as well as at Bonn and Geneva, in the Science faculty in 1853. His thesis was an investigation of Scapolite, which had been carried out in the laboratory of Prof. Rammelsberg. He began lecturing at Bonn in 1856, was appointed Extraordinary Professor in the University in 1863, and to a full (Ordinary) Professorship in 1872. The duties of his chair, combining as it did, the sciences of Geology and Mineralogy as well as the direction of the Museum, were necessarily heavy. Finding these irksome he sought and obtained permission to divide the duties in 1880, when von Lasaulx undertook the work which he gave up. Later on, the desire to devote himself entirely to research and to have time for foreign travel, induced him to give up all lecturing. In January of this year he retired with the title of Honorary Professor, and received, as was natural, from the Minister of Education an expression of the warmest recognition of his life-long and highly meritorious services. He was struck down by paralysis at Coblenz about the middle of April, and after lingering for some days, died on the 23rd of April 1888.

Professor vom Rath's scientific activity was enormous and embraced the whole range of mineralogical investigation during the last quarter of a century. His position in later years was such, that he shared with Prof. Des Cloizeaux the advantage of being the general referee on the greater number of newly found minerals, and the papers in which he recorded his investigations are to be counted by the score. The number of new minerals either discovered or first described by him would constitute in themselves a foundation for a very considerable reputation. Amongst such papers that on Tridymite is specially worthy of mention. This classical memoir is an excellent example of vom Rath's work, both as

crystallographer and chemist. It shows powers of observation of the highest order, and a perfect mastery in deciphering complicated twin-laws, —the more remarkable seeing that these groups are rarely to be obtained in dimensions which exceed a millimetre. Another important paper is that on the Binnenthal sulph-arsenates, in which he was the first to describe the rare minerals jordanite and skleroclase, whilst at the same time he discriminated and fully determined the minerals Binnite and Dufrenoyite, which had been up to that time confused. He has contributed largely to our knowledge of all the more common minerals, such as the feldspars, quartz, calcite, &c. His quick sight perceived some fine lines on faces of good leucite crystals in the Naples Museum. These lines had never before attracted attention, but they led him to a view of the structure of leucite which he has developed in his classical memoir on this mineral, and which, though from the nature of the case not final, has contributed more than probably any other paper to the fresh advance which is being made in mineralogical science. Though, since the publication of his paper in 1872, much work has been done by himself, Baumhauer, and Klein, it has but served to indicate the incompleteness of our knowledge of the relations which exist between internal structure and external form. Another classical memoir of his—that on the three types of humite—requires special notice; for in it he has established on a firm basis the remarkable facts which characterise this mineral, which had been first noticed by M. Scacchi. These facts are that we have three groups, which can be referred crystallographically to the same axial planes mutually at right angles, and to the same parameters; though, for the sake of simplicity, it is usual to select values of  $c$ , which are as 7 : 5 : 9, the parameters  $a$  and  $b$  being the same in all three types. But whilst in type I. all the planes of a form required by three planes of symmetry at right angles are present, only half of them, selected so as to be parallel and in a zone, are present in types II. and III. These latter types only differ therefore from oblique crystals in having three planes mutually at right angles, of which one only is an effective plane of symmetry. Professor Des Cloizeaux has since shown that the optic characters of crystals of II. and III. agree completely with their being oblique, whilst he confirms vom Rath's results both as regards axial planes and parameters. These papers, as indeed are all his crystallographic notes, are illustrated by a number of excellent drawings, both of single crystals and of complicated twin-groups, which are unequalled and seem incapable of being surpassed.

But his scientific activity was not limited to his purely mineralogical

work. The monographs he has published on his journeys to Hungary, Sicily, and other places are models of geographical and geognostic description. And again his memoirs on the earthquakes of Belluno, Cosenza, Chios, &c., show equal activity on his geological side. They are careful and accurate summaries of the main features of these phenomena.

But no account of Professor vom Rath can be regarded as at all satisfactory which omits to note the sterling qualities which rendered his private life so charming. He was a man of warm and ready sympathies, of great generosity, and of an enthusiastic fervent temperament, throwing himself heart and soul into any subject which attracted his sympathies. He was moreover a man of deep religious feeling and a staunch Protestant. The writer once called on him in the evening and found him busy explaining the difficulties of a sentence in the Latin delectus to one of his young friends. Professor vom Rath bore two great misfortunes with great resignation and sweetness—the one the long continued irremediable illness of his wife, and the other the death at the age of 14 of his only child, a youth of great promise. In his memory he founded a number of scholarships in the Bonn Gymnasium for the support of promising clever youths, the sons of widows, or orphans. Just before his death he also founded the Wilhelmsrube Workmen's Home near Cologne, a tribute to the memory of the Emperor William I. But all his life bore the impress of an intense energetic and unselfish character, combined with a high sense of duty; and fortunate are those who have numbered him amongst their friends.

W. J. LEWIS.

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NOTE.—Since the above was written an obituary notice has been published by Prof. Laspeyres (*Nat. Ver. der preuss. Rheinlande*, May 22nd, 1888), to which is appended a full list of all vom Rath's published works, which occupies 20 pages.

*Note on a Picrite from the Liskeard District.*

By Prof. T. G. BONNEY, D.Sc., LL.D., F.R.S.

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SINCE this paper was printed, a memoir by Prof. Sauer, on the peculiar blue hornblende from Socotra, has appeared (*Zeitsch. d. Deutsch. geol. Gesellsch.* Vol. XL. p. 138). It is found on analysis to have more  $\text{SiO}_2$ , much more  $\text{Fe}_2\text{O}_3$ , and less  $\text{FeO}$  than Arfvedsonite, so that he proposes the separate name Riebeckite.