

27th May, 1875.

D. MILNE HOME, Esq., LL.D., *President*, in the Chair.

The following Communication was read:—

On the Want of a Systematic Universal Nomenclature in Mineralogy. By DR DANIEL HAHN, *Foreign Corresponding Fellow.*

I suppose that many, only on account of its curious title, will take no notice of the following paper, because the words, Nomenclature in Mineralogy, do not denote something real or abstract at all. Nevertheless, I venture to hope that, sooner or later, a systematical nomenclature will make its appearance, since it is a real want in the further progress of this science.

Botany and zoology,—and also that part of geology, which is called palæontology,—have, as it were, an international language. In English, or Russian, or German, or French, zoologists know at once what is meant by names such as *Hyæna striata*, *Bos caffer*, *Passer capensis*, &c.; and the botanists of these and other countries cannot be in doubt about the meaning of the Latin words, *Primula veris*, *Lamia alba*, *Gentiana alpina*, &c., or the palæontologist about such names as *Ursus spelæus*, *Terebratula elongata*, *Eozoon canadense*. But how can a Hungarian mineralogist understand what an English mineralogist means by bog iron ore, or a French mineralogist by feroxyde massif argilifère? He cannot ascertain the true meaning of such words as orpiment, arsénic sulfuré jaune, melaconite, chessylite, muriate of mercury, &c., and even should there exist a similarity between these and the corresponding Hungarian words, he can never be quite certain of understanding them correctly. The English and other mineralogists meet with the same inconvenience whenever they go to countries where their respective languages are not spoken.

The same difficulty presents itself within the languages themselves. Take, for instance, the English, French, and German languages, we find in each all the minerals are known, on an average, by three names. Some of them have, however, like some princes, seven, eight, nine, or even twelve names. Pyromorphite, a mineral known in England by half a dozen different names, and in French by more than one, is called in German Buntbleierz, Grünbleierz, Brannbleierz, Phosphorsäures Blei; Arsensäures Blei, Tranbenblei Mimetit, Mimetesit, Buntblei, Polysphaerit, Hedyphan, Naussierit. I could state a great many cases, in which the total of the names of one mineral in these

three languages reaches twenty. Only the most powerful memories are capable of retaining such a host of useless names; but it has unfortunately become a matter of necessity to commit to memory as many of them as possible, as otherwise the study of mineralogical books in one's native or a foreign language is out of the question. Still, in the present state of the nomenclature, we cannot assert that one name is the right one and the other wrong.

The same is the case in Petrography, the science by which geology is related to mineralogy.

But let us look for the so-called leading principles,—if we can speak of leading principles in such a confusion,—which form, as it were, the source, from which all these different names have sprung. We find names such as quartz, felspar, hornblende, blende, gneiss, grauwacke, which are derived directly from the German, in which language they denote just the same as they do in English. These very minerals and rocks have, however, in each of these languages, besides the above, many other names. As to the origin of these words a great deal has been said and written, but no satisfactory explanation has been given as yet. All the names derived from the German have been used in the different mining districts of Germany about three centuries ago, and this is a fact, and about all we know of their origin.

Other names we owe to Latin, especially to Pliny: for example, granite, opal, topaz, spinelle, &c.; however, we are not always certain that these names were applied by the old Roman writers to the same minerals which bear these names now-a-days. Pliny, for instance, calls "*Esmaragdus*" the mineral, "*qui viriditatem puri maris imitatur*;" but many minerals do the same, even some varieties of chrysolithus, of which Pliny says that it is "*aureo fulgore translucens*."

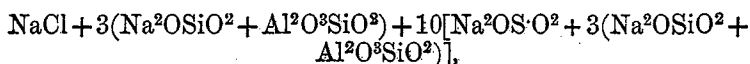
The Greek language is principally used for the purpose of giving new names to minerals, and it is very interesting to see in what way and for what reason many of these Greek titles are bestowed upon the minerals. A few examples may be sufficient to show. Take, for instance, the mineral phenacite, which name has been derived from *φέναξ* liar; this name has been adopted because this mineral was often erroneously taken for quartz; analcime from *ἀναλκις* forceless, because it exhibits only a very small amount of electricity when rubbed; scolecite from *σκοληκότης* wormlike, because this mineral curls up like a worm before the blowpipe. All these derivations are at least always alluding to a property of the mineral, although not always to a very important or characteristic one. But how shall we account for a derivation such as chabazite from *χαβάσιον*, the Greek name of a stone, which was praised by Orpheus in a song, or amethyst from *ἀμέδυστος*, adopted on account of the mineral's

supposed preservative powers against intoxication. Now-a-days "teetotalite" would be a more generally understood expression. If we intend to get a systematical nomenclature in mineralogy, I think that such caricatures of "leading principles" must be abolished, otherwise we may call with the same right the common quartz Demosthenite, because Demosthenes took little pebbles in his mouth in order to learn how to pronounce the letter "r."

Another "principle" (?) is to call minerals after the localities where they occur. By means of this principle names, such as Vaalite, Lüneburgite, Poonahlite, Vesuvian, &c., are formed. I cannot agree with this terminology, because the localities where the respective minerals occur cannot be considered as their chief properties. If we go on in this way, we shall probably find some day words such as Capetownite, Portobelloite, &c., applied to any variety of minerals or rocks found in the locality.

The remaining leading principles I will omit but one. Humboldtite, Brewsterite, Buchholtzite, Dolomite, (Dolomieu) &c., are names given in order to immortalize those great men, whom I highly esteem; but they do not point to important or characteristic properties of the respective minerals, or at least I cannot find any analogy between the great Humboldt and Brewster and those minerals which bear their names.

The only substitute for an international language in mineralogy has been, up to the present, the chemical formulæ, although the use of these are very limited: Mn^2O^3 , SiO^3Ca , TiO^3Ca , are indeed very short expressions, but I dare say that one would not like to store one's mind with formulæ, such as



which is the dualistic chemical formula of the mineral "Nosean." Therefore, if we intend to obtain a systematical nomenclature in mineralogy which is to serve as an international language, we must avoid, at least to a certain extent, the introduction of chemical expressions,—moreover, it cannot be justified to transfer names of one science to another.

I venture to suggest that, first of all, the name of a mineral should refer, if possible, to its most characteristic or its chief property. But sometimes this cannot be done, and we shall be compelled to add a second distinguishing word to the general name. Why should the minerals not have two names when plants, and animals, and petrefacts are christened in this way? In most cases the use of two names will be absolutely necessary. Malacolite, Sahlite, Fassaite, Alalite, Cocealite, Hedenbergite, Polykite, Hudsonite, Jeffersonite, Bronzite, are names of different

varieties of one mineral, viz., Augite. The stability of the mineral compounds is different from that of the products of a chemical laboratory, that is to say, impurities (which are not to be considered as integral parts) occur so often, that an absolutely pure mineral is an exception and rarity. I think that only when the character of a mineral is changed by the intermixed impurities, we are entitled to change the name, but up to that point the impurity should be denoted only by an attribute added to the general name of the mineral. At first sight the above mentioned names have nothing similar to one another but the ending. For these minerals I should propose to retain the name, "Augite" and to add words, such as granular, white, crystalline, basaltic, in order to denote the variety. *Fringilla coelebs*, *Fringilla montana*, *Fringilla carduelis*, are examples, in accordance with which we ought to adopt *Augites crystallinus*, *Augites granularis*, *Augites manganiferus*, &c., names, which would be understood at once by every mineralogist. But this may be objected to, because there is the impossibility of drawing an exact line of demarcation, as the varieties of a mineral vary gradually, and because these names would consequently not always strictly denote the respective variety. If we recollect that it is easier to divide and separate related things than it is to collect and unite similar things under one point of view, and if we look for the important and not for the unimportant and accessory properties, there will be no great difficulty in arriving at a satisfactory solution of the question. Nevertheless, we must always, in uniting and collecting, keep in view the "aurea mediocritas," otherwise we run the risk of following sooner or later that false and fancy rule :—

Was man nicht decliniren kann,
Das sehe man als Grünstein an.

That is : All rocks we cannot make out are to be considered as "Trappean" rocks.

I am sure that an universal nomenclature in mineralogy would facilitate very much the study of it, and increase the interest in this science, which is, up to the present, I am sorry to say, small compared with that taken in the other related sciences. I should be very glad indeed if these few words would start a discussion on this subject, and supply me with all that can be said *against* the idea of a uniform and practical nomenclature in mineralogy.