

delivered February 23rd, 1863,\* by Professor Max Müller. His remarks, coming from one whose profound researches have shed so much light on the history of our race, are entitled to a peculiar weight. Referring to his attention having been recently drawn to the supposed similarity in the structure of Polynesian, and Indo-European languages, he says, "strange as it may sound to hear the language of Homer and Ennius spoken of as an offshoot of the Sandwich Islands, mere ridicule would be a very inappropriate and very inefficient answer to such a theory." "There are other theories not less startling than that, which would make the Polynesian language the primitive language of mankind."

ART. VIII.—*On Magnesia-Alum, or Pickerinigte, containing a little nickel and cobalt, occurring in slate, in Hants Co.* By PROF. How, D. C. L., King's College, Windsor.

[Read May 4th, 1863.]

THE mineral forming the subject of the present communication was found in the spring of 1862, and sent to me for examination, through Dr. Weeks, of Brooklyn. A gentleman working in the laboratory of this College at the time, Mr. Lyttleton, examined the small quantity of substance furnished, and brought out the fact that it contained the elements of Magnesia-Alum, with a little cobalt. Interested in this result, I proceeded to the locality in the autumn, and procured a supply of the mineral. I found it to occur on a nearly perpendicular cliff of slate, some 60 feet high, on the land of Mr. F. Parker, in Newport. It is met with as an efflorescence on the slate, protected from rain by overhanging ledges of the rock, in the form of compact and also of loosely coherent masses, of a white or yellowish colour, which are sometimes apparently amorphous in structure, sometimes distinctly crystalline, in short silky needles, (as shewn in the specimens sent for the cabinet of the Institute.) It is soluble

recognized the value of these historical materials, suggests that if a comparison of the *times of observance* of the festivals of nations were made, "there would be found striking resemblance among them; and an attentive comparison of them all might throw great light on the religion, and perhaps on the history of the primitive world." See Sir W. Jones' Works (ed. 1807,) IV. p. 165.

I use the word *Ethology*, for although Ethics would really embrace these researches, that word has now acquired a limited and conventional meaning, while Ethology is quite as admissible as *Ethnology*, although Herodotus, I am aware, uses a different word from that which I have selected, when he refers to customs. Those desirous of knowing the views hitherto entertained as to the possibility of tracing popular customs and superstitions to their origin, are referred to Brand's preface to his *Popular Antiquities*.—(Ed. 1853) p. vii. to xi.

\* Published in Macmillan's Magazine for March, 1863.



in water, and has the taste of alum. When heated it loses much water, and swells up considerably, leaving an opaque white residue, which gives the alumina reaction before the blowpipe, with nitrate of cobalt. On submitting it to qualitative analysis, I obtained the same results as Mr. Lyttleton, but, having more material at command, I was enabled to find nickel and manganese also present. The results of quantitative analysis I place below, by the side of those obtained by Dr. Hayes,\* of Boston, in the examination of a mineral from Iquique, in Peru; the material I employed was airdry, the water was determined by careful heating below redness, and the nickel and cobalt were separated by means of nitrite of potass.

	How.		HAYES.
Oxide of copper, . . . . .	.02	Lime, . . . . .	.126
Alumina, . . . . .	10.64	Protoxide of iron and	} .430
Protoxide of iron, . . . . .	.13	manganese,	
Magnesia, . . . . .	4.79	Alumina, . . . . .	12.130
Oxide of cobalt, . . . . .	.06	Magnesia, . . . . .	4.682
Oxide of nickel, . . . . .	.14	Hydrochloric acid, .	0.604
Oxide of manganese, . . . . .	.45	Water, . . . . .	45.450
Potassa, . . . . .	.23	Sulphuric acid, . . . .	36.322
Water, . . . . .	46.06		<hr/>
Sulphuric acid, . . . . .	36.33		99.744
Slate, . . . . .	.72		
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	99.57		

It appears from these analyses, that the Nova Scotian and Peruvian minerals are identical; the leading constituents are seen to be magnesia, alumina, sulphuric acid and water. Dr. Hayes named the mineral from Peru pickeringite, and, from its resemblance in taste, and, as has been wrongly thought, in constitution, to alums, it has also been called magnesia-alum. It is rather curious that just as natroborocalcite is only found at Iquique, in Peru, (and perhaps one other place,) and, as I shewed† some years ago, at Windsor, Nova Scotia, so this mineral has no other locality assigned to it in the manuals of mineralogy than Iquique, and now we meet with it also in this Province. Strictly speaking, the mineral has neither the exact chemical constitution nor the crystalline form of a true alum;‡ but its taste and some of its properties are those of such salts, and it would admit of use in the place of common alum in various

\* Dana's Mineralogy, 4th Ed., p. 382.

† Silliman's Journal, Sept. 1857.

‡ This has been shewn in a paper by myself, read before the Chemical Society of London, and published in the Journal of the Society for July, 1863.



operations ; for some of these it would require purification, especially from iron ; it has been employed in Newport in some simple process of domestic dyeing. The slate in which it occurs would yield it largely if properly treated, and there is an immense quantity of the rock ; common alum, however, is sold at a very low price. The presence of nickel and cobalt in the mineral is interesting—the former has never, so far as I know, been found before in the Province. Since Hunt has met with\* small quantities of nickel in various minerals of the Silurian rocks of Canada, these metals may be generally distributed in such rocks here in like amount ; there may also be richer ores of both nickel and cobalt in the range of rocks affording the magnesia alum containing these metals.

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ART. IX.—*Notice of the occurrence of a Trilobite in the Lower Carboniferous Limestone of Hants Co.* By PROF. HOW, D.C.L., King's College, Windsor.

THE object of the present notice is to acquaint the members of the Institute with the fact of the existence of an undoubted Trilobite in the Lower Carboniferous Limestone of the Province. This rock has been, it is well known, a great deal examined in various parts of the country, and numerous fossils have been obtained from it. It is interesting to have the addition of a well marked trilobite to its varied fauna, as affording precise means of comparison with corresponding deposits in other places. There is a "trilobite or limulus" mentioned in the list of fossils given in the appendix to Acadian geology, as occurring at De Bert River, Cumberland Co., but as there is no description of it in the body of the work, I could not compare it with the fossil now noticed. Several specimens of this were found by myself, last July, in a quantity of blue limestone rock, brought here for the purpose of building the new College Library. On enquiry I was told that the rock was brought from the mouth of the Kenetcook River, Hants Co. I sent specimens of the fossils to the Rev. Mr. Honeyman, during the Exhibition, and they proved a welcome addition to the illustrations of the Geology of the Province. Mr. Honeyman informed me that the trilobite belongs to the genus *Phillipsia*.† This is nearly if not quite the sole genus remaining to the carboniferous period

\* Report on Geology of Canada, 1863, p. 507.

† It has since been described by Mr. Billings, Paleontologist to the Geological Survey of Canada, to whom I sent specimens, as a new species, under the name of *Phillipsia Howi*, in *Canadian Naturalist*, July, 1862.