Correspondence.

Letter from Capt. Marshall Hall to Prof. Heddle, with analyses of Serpentine.

Maison Allamand, Vernex-Montreux,

Canton Vaud, Switzerland, Oct. 2, 1879.

My dear Professor Heddle,

Seeing your interest in the formation of Serpentine, I venture to send you my figures as to three analyses made by me for David Forbes, who was "on" the question of Dolomite *versus* Serpentine. The minerals he told me were,—*i.e.* the first two—close neighbours, from Cornwall. Unfortunately he died before carrying out his investigations. Both rocks (pure minerals they were not), were translucent, light-green, but serpentinic, rather than Dolomitic, gave no peroxide of iron, indistinctly crystalline (if at all), and shewed, to the best of my recollection, no specks. Of course I have not got them here.

Cornish—from David Forbes.

	Dolomitic.	Serpentinic.
SiO_2	3·43 ..	39·48
FeO, Al_2O_3, &c.	1·15 ..	1·65
(Iron, all protoxide)		
CaO	13·37 ..	24·14
MgO	20·12 ..	18·16
CO_2	49·04 ..	13·83
H_2O and loss on ignition	12·91 ..	4·56
	100·02	101·82
Sp. Gr...	2·83	2·80
Insol. in HCl.	4·53	72·314

Traces of Organic Matter

Slight Manganese reaction.

Impure Serpentine (also from David Forbes) from Lissoughton, Galway.

FeO, &c.	2·452
CaO	5·207
MgO	38·173
SiO_2	37·332
CO	1·859
H_2O (ignition)	14·000
	99·083
Sp. Gr. (in lump)	2·50
Do. (in powder)	2·03
Insol. res. with HCl	38·010

Professor Renevier of Lausanne, is next year to bring out a book on the Vaudois Alps. M. Henri de Saussure sends me a lot of gabbros from the Saas Thal, and when I have done some work in connection with Professor Renevier's investigation, I propose to take these in hand. Next spring I want to visit the Saas Thal, which I can reach in one long day from this house, and where I have not been since 1849.

Not wishing to be a martyr to science I shall *not* go till summer of 1880. Meanwhile I hope to get the rocks to study and in part to analyse, and so be prepared to look out for the points of alteration. The gabbros (strictly euphotide) contain, I think, saussurite and diallage as principal minerals, whilst another seems like hypersthenite, and to contain labradorite (or saussurite), and hypersthene. But I am only too weak in my mineralogy, and with no chance in this healthy but un-intellectual village of bettering my knowledge. I should like to live at Lausanne, but it is so much colder. Meanwhile I should like to send half of each stone to England, get sections cut, and somebody's opinion on the contained minerals. I think I see garnet, and there is lots of schistose serpentine connected with the gabbros. If you are interested enough you could compare these rocks with the Scottish forms, only I am in a "fix" that I did not get my stones from the locality myself, and can tell but little about them till I go to the Saas-Thal. Curiously enough the glaciers have brought down specimens to the lake side here!

I only wish I could induce *you* to come out and put your rocks side by side with the Valaisan stones. Without professing much I may lay claim to such a knowledge of the country as might do some service in the way of direction.

By the bye I have not your method of silicate analysis *here*—you gave me a copy of your work—I wish it were published separately, how it would conduce to uniformity if all were to work by the same exact method, sinking small differences of opinion.

I am much exercised as to the way to estimate boracic acid. I forget if you give a method ?

Should you think anything in this letter of use for the Mineralogical Magazine pray send any extracts to it which seems unto you worth while.

Wishing you all in England and Scotland a merry Christmas two months hence.

Very truly yours,

MARSHALL HALL.

Professor M. Forster Heddle.