

Pays Plat, 24 June, 1885. Wellsau,

Dear Father; I have been keeping my eyes open for anything noticeable in a geological way especially as better shown by the railway cuttings but have seen little of note beyond what can be learnt from natural exposures. The ground work of the region is of course granite, mostly red, sometimes white, + often finely glauciated on the surface. On this lies a fairly horizontal red sandstone, under a layer of basaltic trap. The sandstone only occurs with the trap as it has protected it from the general denudation. Together they form bluffs along the Lake, + hills in the interior with bold escarpments; but seem confined to the region extending from Port Arthur to Neepigon and a little beyond. At twenty mile or so East of Neepigon there is no more of the trap, the hills being all granite. At one point, "Red Rock" near Neepigon, there is a cutting which shows the actual junction between the sandstone and basalt above it rather better than it usually appears in natural exposures; and the character of the granite can also be well seen in the cuttings. What wd be of most service however, it seems to me, wd be a complete topographical survey of the basalt as it now stands, from which something might be learnt of its origin + ^{the} original direction of the flow, &c. The R'y of course makes the country more accessible, + it wd be worth exploring and examining more carefully for minerals, besides the lithological specimens it affords. The only thing I have come across, besides small quartz crystals, are a few little crystals about $\frac{1}{32}$ " face of what appears to be fluorite. What is the age of the red sandstone?

The plants here are very interesting & many of them new to me. I have seen some 6 distinct species (?) of *Equisetum*. Two of these resemble each other in having a dozen or so of fronds from one main central root, (the others are otherwise different) and one ~~sees~~ fertile frond in the middle. There is also a plant resembling a thistle in general appearance, a purple flower at the top, & leaves a little like parsley, without prickles; besides many others new to me; in addition to the ordinary wild flowers I am acquainted with. The variety of spiders, ants, beetles, & other insects is astonishing also, & I have no doubt many new species might be discovered here. On the whole, plants & insects afford the best field for the naturalist here, I think.

The muskies form an interesting feature here also. I am told that they never thaw out all thro' the summer; & indeed it is evident that the frost must still be in them. The little streams flowing from them, tho' of a yellowish tinge, are as cold as iced water. This may help to account for the coldness of the L. Superior water. I have noticed also in some of the clays here, the remains of fresh water shells. I do not know whether these are indications of deposits made by L. Superior itself at a higher level (improbable I think) or simply deposits from little local lakes. I wish borings could be made in these muskies; lying among such high hills they must be very deep, and might easily contain old marine deposits in the bottom, with a whole series of lacustrine & other deposits on top; as the last vegetable matter now on top appears to be the growth from the edges of a lake. These muskies may easily be 100 to 300 feet deep or even more.

Your affectionate son,

William.