

Ann Arbor, Mich  
May 12<sup>th</sup> 1888

My Dear Sir,

I had just returned here, preparatory to going to Canada, to commence upon beaches about Huron and Erie. I had been following up Gilbert's Ohio beaches, in order that I might make a correlation on the Canadian side of the Lakes. When they disappear by interruption then Gilbert & Chamberlain thrust in a glacial dicer. They regard all the stepped Pleistocene of the St. Lawrence as newer than even the <sup>terrace</sup> late ridges. After the most difficult work I have attempted on the beach question I have carried the Ohio beaches far up in Michigan. But the country is broken and there were many islands of clay &c standing up in the old lake

June 18/88

highlands north of the lake were no lower  
higher than the Shenandoah county & the south  
part that the Appalachian elevations will  
prove the south side is higher than the  
one; for there seems that the height of Mo.  
up to 2000 - 3000 feet is everywhere a level  
plateau found near by also that the  
whole drift of the High Valley was more  
or less uniform. Also the differences  
elevation of the Fair Coal on front  
shows a elevation from the southward to  
the High Valley of 5000 feet in  
more than the depth was deposited.



Add to this difficulty, the subsequent  
erosion has been great. It  
comes to be this, that the  
work must be done of accurate  
levelling. Had instruments  
from the University of Mich.  
I go into New York north of  
the Adirondacks in June.  
I borrow for N.Y. a level from  
Cornell. Would you  
be kind enough to get a  
good level (not too heavy)  
placed by the Professor with  
Hamilton, so that I can get  
it when I reach Canada,  
after a successful or un-  
successful attempt to con-  
nect the Lake beaches with  
the marine deposits of Lake  
Champlain. Three old  
students go with me.  
In Mich. I find the higher  
beaches rise about 2 feet  
per mile, but that the

and I have my carrying  
results farther northward.

Therefore with Hudson  
Bay depressed 1700-2300  
lower than now, how  
could glaciers be found  
brought to 2600' pushing  
upward against the  
Mountains of Pennsylvania  
(the stress on S.E. upward against N.W.)  
The latter being no com-  
plicated.

I wish I could see you  
to tell all my results,  
which had not crystallized  
when last I saw you.

Letters will be forwarded  
from here.

Yours faithfully

JW Spencer

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