

## Letter from Alexander Graham Bell to Mabel Hubbard Bell, March 8, 1908, with transcript

ALEXANDER GRAHAM BELL TO MABEL (Hubbard) BELL Bath, New York. Sunday, March 8th, 1908. Mrs. A. G. Bell, 1331 Connecticut Avenue, Washington, D. C. Dear Mabel:

Glad to find your telegram awaiting me here last night. I have been thinking of calling up Mr. Curtiss by telephone and asking him how he gets me by Long Distance without telling him where I am! but on second thoughts I believe it to be better just to pop in upon them at Hammondsport. I am only ten miles from there — but this being Sunday I can get no train till 8 P. M. The weather is too disagreeable for a 10 miles drive. There has been plenty of snow and ice here but it is all slush now — and there is a gentle but dismal pour of mixed snow and rain. I want to give our Hammondsport friends plenty of time to make their report. If they succeeded in making satisfactory experiments yesterday they are probably utilizing Sunday for the writing of the report. I shall slip into Hammondsport tonight — and appear on the scene of action early in Monday morning.

I have been thinking a good deal about the proposed cottages at Beinn Bhreagh and have come to the conclusion that the early maturing of the Telephone Bonds will give us all the capital required for these cottages and for the A.E.A. without touching income. It is true that they do not mature till July — but they are coupon bonds and can easily be 2 disposed of any time we required the money. We may have to pay some discount that is all. There is no reason therefore why you should not go ahead now with any plans and have the cottages put up. Baldwin cottage at Laboratory, Byrne's concrete cottage, and Farm-house for Manchester. I would not use McInnis' cottage until Fall at least. He will probably not leave before June. Then we will have it thoroughly renovated and put in good order. I could not find Manchester's notes in the safe. It was so full, however, that I did

## Library of Congress

not care to disturb the contents very much. I looked through a number of the packages without success. I wish we could find these notes and return them to him. If you have not seen an important letter I wrote to Manchester just before leaving Beinn Bhreagh — and I don't think you have — you better get Cox to hunt it up in the Letter Press Copy Book. I judge, from what Manchester told me, that if we can give him a cottage and a salary that he would probably marry and settle down with us permanently. I have a shrewd suspicion as to the girl although I have not asked him anything, and he volunteered no information. I rather suspect it is —? Who do you think?

I really must write to him and to McInnis at once.

Read in the train “The Shuttle” by Frances Hodgson Burnett. All her books seem to be well written — quite a change from the usual railroad literature.

3

Scientific men don't seem to take much stock in the inheritance of acquired characteristics — and it is certainly astonishing that after generations upon generations of circumcised Jews, they should not be born circumcised .

Disused organs tend to become atrophied in the individual — is not this tendency to become atrophied handed down to the offspring by heredity. I see no other explanation of the numerous atrophied structures possessed by all animals including man. Vestigial structures they are sometimes called — they seem to be useless at all events to the individuals. Why should a male have nipples? What is the significance of the presence in man of muscles to wag the ears and move the scalp? Why should we have a functionless appendix and other organs both external and internal that have no function. The most curious case to my mind is found in the calf. The unborn calf has embryo front teeth in the upper jaw — which never cut the gum and which disappear as the creature grows older. Dissect the upper jaw of a full grown cow and you can find no trace of front teeth not even embryonic in the gum — they have been absorbed.

## Library of Congress

It seems perfectly obvious to me that the presence of useless and undeveloped structures indicate inheritance from ancestors who possessed these organs in a functional condition. Cattle are descended from animals that possessed front teeth in the upper jaw. We are descended from ancestors who could wag their ears and move their scalps. Why then are these 4 organs not functional now? The only explanation that seems satisfactory to me is that non-use of the organs led to atrophy — and that the tendency to atrophy has been transmitted by heredity and confirmed by continued non-use.

If this is true then the opposite should be also true. An organ grows when it is used — should not this tendency to grow be transmitted by heredity.

The use of an organ, by pressure and movement and irritation, leads to an increased blood supply to the organ and this leads to its growth — whereas non-use leads to lessened blood-supply and stoppage of growth. Thus, in an individual, there is a close connection, like cause and effect, between the use or non-use of an organ and its growth — and it does seem reasonable to suppose that the tendency to grow or to diminish may be transmitted by heredity.

If individual peculiarities produced by use or non-use can be transmitted, the age of the individual when reproduction takes place should be a factor in the transmission. Imagine a flabby-muscled individual by exercise and training, to be converted into an athlete with splendid muscular development — we would naturally expect that this increased muscular development if transmitted to his offspring at all, would be transmitted only to those offspring born after the muscular development had taken place. In which case those peculiarities that appear later in life would not be.

5

Casey has just appeared. Your telegram to Hammondsport gave me away and Casey has come up here on exploring condition to hunt me up.

Library of Congress

Your loving husband, Alec.