

## Letter from Alexander Graham Bell to Mabel Hubbard Bell, November 23, 1904, with transcript

ALEXANDER GRAHAM BELL TO MABEL (Hubbard) BELL Beinn Bhreagh, C. B.  
Wednesday, November 23, 1904. My faithful little wife:

Another note from you dated November 19th. Wonder what I can have said in my letters to render you so enthusiastic — I have no copy and can't imagine.

I had made half a dozen attempts at Metric System paper with Mitchell — tore them all up — and then tried to dash off something to you to get a starter — but was unable to complete it — on account of interruptions. Have kept no copy of what I sent — so I can't go on with it now.

The fossil egg story — and everything tetrahedral was just dashed off as it came into my head and I wonder what in all the world there was in my language to excite any one's admiration.

Had a fright about my father today. He has seemed quite bright — but did not care to get up. When I was at laboratory Mrs. Bell telephoned that she would like me to send for the doctor as she was unable to wake my father and so felt uneasy. When I reached home found him apparently asleep but he answered me when I spoke to him and seemed glad to see me. Said he was all right. I lay down beside him and he held my hand in his — giving me a little squeeze every now and then — to show that he was awake. Doctor came and pronounced him O.K. Brightened up in the evening and wanted to attend the men's meeting. Largest attendance I think we have yet had — twenty-five in all. Nearly every one told stories — and I gave them some incidents from the History of the Telephone. My father was wheeled in 2 late in the evening in the wheeled chair. Dr. Macdonald's yarns were especially admired. Also the performances of Mr. Mitchell upon the piano-player. Mr.

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Mitchell took a flash-light photograph of the meeting. I have always felt that Charles fails to provide sufficient eatables for these meetings and the sandwiches of anchovy paste or caviare, do not seem to go down here. I did not like them myself. But tonight he “did himself proud” and the sandwiches were delicious. I think, the men thought so too for within five minutes they — the sandwiches — had all disappeared — and I think the men could easily have disposed of twice as many.

Dr. Macdonald thinks that it would be well for my father to leave here soon — and I have arranged for a private car — or rather an ordinary sleeping-car with 2 staterooms and 10 sections to take us from Iona to Boston without change.

We leave here Friday, December 2nd, at noon and will reach Boston Saturday evening. We have to pay for 18 fares so we will take as many in the party as possible. My father and Mrs. Bell, Miss Mace, Lina McCurdy, Charles Thomson and his wife, Everett, Hattie's colored girl, Mr. Mitchell and myself. There are ten to begin with. Mr. Ferguson is going to Boston for a time after I leave — I will see him tomorrow and invite him to come with us. He can pay me instead of R.R. Company — and thus save me another fare. We may find some others in Baddeck to join us and thus reduce the expense to me.

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I am only afraid of my father's being taken ill in a hotel and wish to push on to Washington as quickly as possible. Have already secured a drawing-room for him on the Federal Express from Boston to Washington leaving Boston Sunday evening, December 4th — so we should reach Washington, Monday December 5th.

I will come on with my father, Mrs. Bell and Miss Mace.

Charles and his wife, and Everett will leave Boston midnight train Saturday — or through train Sunday morning — so they will be ahead of us.

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Mr. Mitchell will look after himself when we reach Boston. I have not yet seen Lina McCurdy but assume that she will go on to Boston with us instead of leaving alone a few days later.

Please see that my father's part of the house is ready for him for I shall be nervous about him until we have him safely in Washington. The plan arranged involves for him I think the least fatigue. The only hitch being the delay in Boston. We shall make it as short as possible.

The vacuum box at laboratory has been completely encased in tin soldered at every joint. Still the thing is not air-tight — but vacuum produced supported 7 inches of mercury — so that we can probably use box in present condition even if men are unable to locate leaks. The men at laboratory were all surprised to see the sides of the stout-wood box— (ironclad on outside) — bellied in by the atmospheric pressure — 4 like the sail of a ship by the wind. They were still more surprised to find that I calculated — from the 7 inches of mercury supported — that the box was then withstanding a crushing force of about 32000 pounds or about 16 tons! Perhaps it is just as well that the thing leaked. If the men do succeed in stopping the leaks — our stout box may itself be crushed in like an egg shell — and then we won't be able to try experiments with our tetrahedral frames!

The behavior of the box strengthens my belief that a vacuum balloon depending for its buoyancy simply upon rarefaction of the contained air is not a practical thing. Still it will be interesting to ascertain how much pressure my frames will stand.

It might be practicable to fill a balloon of this kind with a light gas like hydrogen and then pump out some of the hydrogen — just enough to allow framework to withstand atmospheric pressure from outside — and allow contained gas to expand under heat of sun's rays without producing bursting pressure on balloon. The specific weight of such a balloon would be invariable under changes of temperature — and a good solid structure of

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this sort — well sealed up — if released in the air would never come down ! — that is if it remains air-tight.

Hope to try experiment with tetrahedral structure tomorrow.

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I have just heard the cookoo clock — “Cook-koo” four times — so goodnight.

Your loving husband, Alec. Mrs. A.G. Bell, Twin Oaks, Washington, D. C.