



Melbourne
July 31st. 1901

My dear Spencer

Thanks very much for your Thermometer readings and for having secured Mr Byrne of Charlotte Waters to take regular observations for us. I have written to him, asking him to consider whether Evaporation observations could be undertaken. We know nothing about that factor, for central Australia. It must be admitted that it is a very difficult task, but perhaps Mr Byrne may suggest something. The task is to determine the actual amount of water lost through evaporation at the surface of a tank sunk in the ground, with the water nearly at the same level as the ground, the water surface being fully exposed to the sky day and night throughout the year, quite in the open, away from buildings trees or structures of any kind. The difficulty is to discriminate what part of the total loss (which can be easily measured) is to be ascribed to evaporation, and how much is lost through other causes (animals, insects for instance).

I am sending you a Thermometer, intended for observing ground temperature during the greatest heat of the day. The Thermometer should be placed on the ground at about noon and kept there for about four hours, taking a reading every hour, or perhaps a couple of readings between noon and four pm might do in most cases. What I am driving at is this. What is the highest temperature of the layer of air in contact with the soil during the day, in the hot season. Of course this will depend upon the nature of the soil to a considerable extent, and this should be noted with the respective temperatures recorded. The thermometer should never be placed on grass, but on bare ground; and the bulb should be covered with a sprinkling of the soil, sand or earth or whatever it may happen to be. Now if you have the opportunity and the convenience of making observations of this kind I shall be grateful. I wish particularly to see if 200° F. can really be reached anywhere in Central Antarctica. Perhaps the highest temperature of the ground will occur usually between 1 and 2 pm; somewhat earlier than the max of air in shade. It would be interesting to collect evidence from various sources as to whether earthquakes here can be noticed at any time in the past.

31
Could you secure some photographs of distinct types of cloud? These should be taken with a very small stop, about $f/32$, exposure about $\frac{1}{32}$ sec developing very very slowly. The direction of motion of the cloud should be noted as well as the direction of the surface wind.

The most important types are the cumuli. I shall not attempt to give you any seeds as I suppose you are kept well posted up with any thing that may interest you. There is certainly a good deal of blowing about the next meeting of the AAAS. Some one is coincidentally hard at work to make it a draw. And how is Mr. Gillen!

If he is a jolly in Central Antarctica as he was here in Melbourne in January 1900, there can be no dulness with you.

By the way your letter dated April 28 did not reach me till June the 13th I sent you the new thermometer at once, and Sir Charles Todd promised to see to them. I hope they reached you safely. With kind regards and best wishes your articles in the eye are
Yours sincerely
R. B. Adams