

evening of the 25th, the President, Dr. Dawson, will hold a reception in the new Peter Redpath Museum which will then be formally opened. On Saturday, August 26th, there will be excursions to Ottawa and Quebec, giving members of the Association an opportunity of visiting these cities, where they will be entertained by the citizens. An excursion is also planned to visit Lake Memphremagog and Newport, Vermont, while other excursions and social entertainments are provided and will be announced at the time of the meeting. The excursion to Ottawa and Quebec by the Quebec, Montreal, Ottawa and Occidental R.R., that to Lake Memphremagog by the South Eastern R.R., and also one to Lachine by the Grand Trunk R.R., are given by these lines free of charge.

Prof. E. Loomis has lately been studying the laws of rainfall. He has obtained the average annual rainfall at more than 700 points. Of 204 stations at which the annual fall exceeds 75 inches, some are elevated nearly 2000 feet above the sea, and nearly all are within 100 or 200 miles of high mountains. It is noted that rain generally falls when wind is blowing from the ocean towards the mountains, whilst the very great fall in the vicinity of hills is probably caused by these hills deflecting the wind upwards, to such a height that a considerable part of its contained moisture is condensed by the cold of elevation. Where rainfall is deficient it is observed that no elevation of land exists, which can cause an upward current. Another cause of deficient rain may be found in the fact that the air which passes over the area is that which has previously passed over mountains, and in so doing has been deprived of its vapour in the manner above described. Such effects are produced by the Rocky Mountains on the Plains to the east of them, and by the Himalayas on the Desert of Gobi. At Mount Washington in New Hampshire the mean rainfall is 77 inches whilst in the surrounding district it is only 40 inches. It would certainly seem here that the air loses the greater part of its vapour in passing over the highlands and has but a small quantity left for the lower levels. Distance from the sea in the direction of prevalent winds has also considerable influence upon an extent of country with reference to its rainfall.

As scientific knowledge increases we are more and more amazed at the wonderful influence exerted by the humbler forms of life both animal and vegetable. A vast number of the diseases which war against both plants and animals have been traced to these humble organisms against whom charges are daily multiplying. It has long been known that soils become poor on account of the nitrogenous matter in them being converted into nitrates, and in this condition washed out and lost so far as growing plants are concerned. It is only recently that the cause of this loss has been discovered. It is found that a *bacterium* converts ammonia and nitrogenous organic matter into nitrates which are thus washed out. Nitrification takes place chiefly in warm weather, and as cereals accumulate little nitrogen after June, the greater quantity of this most valuable element is lost. In an experiment made by Messrs. Lawes and Gilbert, it was found that in four years, on uncropped and unmanured lands nearly 42 lbs. of nitrogen per acre, per annum, was lost by this process of nitrification and washing out of the nitrates formed. It would seem that the best