

keepers whose carpets are in danger from the attacks of the Clothes Moth. "Take a wet sheet or other cloth, lay it upon the carpet, and then run a hot flat-iron over it, so as to convert the water into steam, which permeates the carpet beneath and destroys the life of the inchoate moth."

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

Water-supply of the Metropolis

I HAVE no intention of entering into a controversy in your columns with my friend Dr. Frankland, but his letter in your impression of March 16 seems to require some reply.

When I made the remarks which are called in question by Dr. Frankland, I was careful to say that I might not unfairly be accused of having done so from interested motives, an admission of which no one who reads Dr. Frankland's letter can say that he has not taken the full advantage. I am not ashamed of my occupation, and am quite ready to admit another historical parallel afforded by Jack Cade, and confess that I, or those who have gone before me, "against the king, his crown, and dignity, have built a paper-mill." But, whether paper-manufacturers "in the exercise of what they call their rights" are polluters of streams or no, is a question into which I never entered, and is entirely beside the points which I raised.

These are in the main avoided by Dr. Frankland. The two Commissioners, a portion of whose report I criticised, and of whom it is as well to observe Dr. Frankland is one, recommend that the Thames and the Lea should be entirely abandoned as sources of supply for domestic use in London, and particularly refer to the Chalk in the neighbourhood of London, and not to the distant springs of the upper Thames as the future source of supply. In his letter to you Dr. Frankland states that "The Commissioners advise that the drinking water of London should continue to be derived from its present sources, but that it should be led away to its destination before it is mixed with the sewage of Oxford, Reading, Windsor, and other towns, and before it is fouled by the filthy discharges of paper-mills, and by other disgusting refuse." I presume that these two statements can be reconciled, but looking at the proposal that the water should be procured "within a moderate distance of London" the calculations as to the area of 849 square miles of Chalk and Upper Greensand within thirty miles of London, and looking at the enormous expense of conveying water more than thirty miles, I took that radius as representing the area out of which some district was to be placed under unnatural conditions with regard to its springs and streams, in order to supply our vast metropolis, which I am told it is contemptuous to term "overgrown." I never spoke of the fertile meadows of the Thames valley, about which Dr. Frankland makes merry, and I never intentionally alluded in the slightest degree to the main valley of the Thames, except to say that both below and above London there might be spots in it from which a limited supply of water might be pumped without much injury to the neighbouring property. My comments were intended to be confined to districts in which the proposal of the Commissioners could be carried out of sinking wells below the present spring-heads, and so constantly drawing upon them that there should be always a void below the level at which the drainage naturally escapes. If this does not mean the drying up of the streams by cutting away their natural sources of supply I shall be glad to know what it does mean.

If Dr. Frankland were as well acquainted as I am with the gravelly soil of some of the low meadows in Chalk districts, he would cease to be surprised at the possibility of their being converted into "arid wastes" by the abstraction of the water with which they are now charged up to within a very few feet of their surface. In the valley in which I live I have known the peaty soil above such gravel, even without the artificial abstraction of the moisture below, become during a dry summer sufficiently arid accidentally to catch fire and continue burning for days.

But then I am told that the wealthy City of London would be able and willing to pay for any damage it might inflict in procuring its water supply. I can only say that the word "compensation" does not occur in the Index to the Report of the Rivers Commissioners, and I have sought in vain for any allusion

to it in the text. Perhaps Dr. Frankland is not aware that at the present time the state of the law is such that even when compensation has been provided for by Act of Parliament, it has been held to be inapplicable in the case of wells being dried, on the ground that an action will not lie in respect of the loss of underground water, and therefore that no statutable damage has been inflicted.

As to the prescription for increasing the supply of spring water in a Chalk district by lowering the level of the subterranean reservoir, I may observe that in most of such districts floods are almost unknown, the soil being sufficiently absorbent to imbibe all the rain that falls, except when by chance the surface is frozen. The lowering of the water which, except in the valleys, is now usually from 100 to 200 feet below the surface, would make no difference in the receptive power of the soil on the hills, and could not be effected in the valleys without laying the streams, which now flow through them, dry.

As to London encountering the expense of a separate water supply for dietic purposes, I can only say that if it can be effected for 2,000,000*l.*, as suggested by Dr. Frankland, it will in my opinion be far cheaper than the plan the Commissioners advocate. It is as a rule more economical to make use of what we have, than to discard all existing appliances and commence on a new system. Perhaps the Water Companies may have a word to say on this point.

The concluding paragraph of Dr. Frankland's letter seems to have been written under some misapprehension. I distinctly stated that "if we refer to the headings of Organic Carbon and Organic Nitrogen there can be little doubt of the superiority of the Kent Company's water." I may, however, be under some misconception as to the statistics under the awful heading "Previous Sewage or Animal Contamination," in which, possibly, I do not stand alone. What I ventured to suggest was that the Commissioners on the Water Supply of the Metropolis, within whose proper sphere this question lay, were not altogether wrong in reporting, that with perfect filtration and efficient measures taken for excluding from the rivers the sewage and other polluting matter, the Thames and Lea would afford water which would be perfectly wholesome, and of suitable quality for the supply of the metropolis.

If this proved impossible, then I ventured to point out that there was already in London a sufficient supply of water of the kind recommended by the other body of Rivers Commissioners.

I must not, however, waste your space and your reader's time, but will in a few words mention my principal reason for taking up this subject, which, however, apart from any such reason, I considered would be of interest to geologists.

It was this, that in an otherwise admirable and exhaustive public report, measures were advocated involving in all probability great inconvenience and loss to large tracts of country, without, so far as I could see, one single reference to such loss and inconvenience. With the advocates of a private scheme such a disregard of injury to others would be reprehensible, though possibly not uncommon, but some greater consideration of the interests involved might fairly be expected from a public document.

JOHN EVANS

Nash Mills, Hemel Hempsted, March 18

Evidences of Ancient Glaciers in Central France

MANY lovers of natural history who have not the opportunity of seeing foreign scientific periodicals, may learn the advantage of taking such a paper as NATURE in the correspondence which was published between Dr. Hooker of Kew and the late Mr. Poulett Scrope, on the evidences of ancient glaciers in Central France.

The objections raised by Mr. Poulett Scrope, and the pleasure of examining such evidences as are adduced by Dr. Hooker, have induced me to accept the invitation of friends, who also enjoy such researches, to again visit Auvergne for the purpose of examining the Mont Dore valley for glacial traces, and I would gladly avail myself of any observations made by other geologists in that region, if they would do me the favour of sending me the notes of any localities to the address below.

In the meantime M. A. von Lasaulx, of Breslau University, claims the priority over Dr. Hooker in describing glacial traces in the *Ausland* periodical, in 1872, as occurring at the entrance of the "Gorge d'Enfer." I have also before me, as I write, a travelling note-book of Sir Wm. Guise, President of the Cotswold Naturalist Field Club (date, June, 1870), in which he refers