

LETTERS TO THE EDITOR.

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Plated Teeth of Sheep.

TWICE in recent years I have had brought to me by different people, as great curiosities, teeth of sheep or lambs, some of which were partly covered with a bright yellow metallic-looking film, which was thought to be gold. One of the persons referred to, as a foreign meat purveyor, had had a large experience with carcasses of sheep, but had not observed the peculiarity before; and none of the farmers whom I questioned about the matter had ever seen or heard of it. But whether it is actually so rare a phenomenon as the above remarks suggest is doubtful, for the Rev. John Morton, in "The Natural History of Northamptonshire," published in 1712, p. 50, says:—

"Whether it be owing to some accidental uncommon Property in the Soil, that the Teeth of certain Sheep, and Cows, are tinged with a Golden, or rather Brazen Colour; whereof they have had instances in Staffordshire, as also here in this County, and of which I have now by me a pretty remarkable Sample that I met with at Oxenden; or whether it be owing to the feeding of Cattel upon yellow-flower'd Plants or to some other Cause, I shall not now stay to examine."

Actually, of course, the yellow film referred to consists of iron pyrites, and seems to require for its formation the concomitants of ferruginous matter, sulphates, and anaerobic bacterial action. Bacteria in the decomposing organic matter on or around the teeth may be supposed to reduce the sulphates with evolution of sulphuretted hydrogen, which latter reacts on the available iron to form the iron pyrites, FeS_2 , a well-known chemical reaction commonly occurring in Nature under anaerobic conditions. It is consequently reasonable to suppose that the particular sheep, etc., exhibiting the characteristic spoken of, that of plated teeth, had been drinking water charged both with iron and sulphates.

Now most chalybeate waters are bog waters, where humic acids have first dissolved the iron, and then on oxidation deposited it in the form of the hydrated peroxide of iron, when sulphates may or may not have been present. But some chalybeate waters (including some bog waters), besides depositing iron, yield abundance of sulphates of iron, or calcium, or both; then obviously the original source of the iron was iron pyrites, probably marcasite. It would appear that this latter class of water would especially lead to the plating of the teeth of animals using it.

I should be rather glad to know of any instances where the result referred to could be actually traced direct to its cause.

BEEBY THOMPSON.

67 Victoria Road, Northampton, May 19.

J. E. B. Mayor and Todhunter.

THE review of Dr. MacFarlane's "Lectures on Ten British Mathematicians" in NATURE of May 17 closes with a quotation about Todhunter.

The words cited are attributed to Prof. Mayor, but a note of interrogation seems to imply some uncertainty as to which of the two brothers Mayor it was who wrote them. The quotation is from the late professor of Latin, John E. B. Mayor.

On the death of Todhunter Mayor wrote an "In Memoriam" notice of his old friend. It appeared in three consecutive numbers of the *Cambridge Review*

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for 1884. The first instalment appeared in the number for March 5. The quotation in NATURE is from the number for March 19, p. 262, col. 1.

Todhunter was not only a mathematician, but also a linguist. "Besides most European languages (including Russian, of which he learnt enough to master a mathematical treatise), he had studied Hebrew, Arabic, Persian, and Sanskrit. He was a sound Latin and Greek scholar" (*loc. cit.*, p. 229).

Unlike his great master, De Morgan, who is said to have been a skilful performer on both the organ and the tin whistle, Todhunter lacked the musical faculty. "He used to say he knew two tunes; one was 'God save the Queen,' the other wasn't. The former he recognised by the people standing up" (p. 261, footnote).

EDMUND SYMES PAYNE.

27 Constitution Hill, Clifton, May 21.

THE REMOULDING OF NATIONAL ADMINISTRATIVE INSTITUTIONS.

IN the recently issued third annual report (1916) of the Carnegie United Kingdom Trust, and fifteenth annual report (1915-16) of the Carnegie Trust for the Universities of Scotland, there is evidence of the deeply adverse influence which the heavy hand of war has exerted in directions usually the most remote from strife and rancour. The width of the influence is very evident, too, for these reports deal with subjects so diverse as higher education, scientific and literary research, music, church organs, libraries, etc. In the case of the former trust it is remarked that, "while the past year may confidently be said to have seen progress made with the work of the trust, the war and its reactions on the ordinary activities of the country have necessarily hampered any rapid development of schemes which are not directly concerned with its prosecution. A philanthropic trust is peculiarly subject to the difficulties of the moment, especially when its efforts must be entirely devoted towards the amelioration of normal conditions." In the case of the latter trust it is remarked that "the operations of the trust under the Research Scheme still continue to be considerably affected by the European war." Fellows and scholars of the trust "have been engaged on military duty," and some "are among the fallen." "The influence of the war . . . is seen in the diminished number of candidates for fellowships and scholarships, and still more in the fact that of those elected one half either did not avail themselves of the awards or resigned in the course of the session to engage in other work. It is also seen in the altered character of the research work of the beneficiaries, which, except in one or two cases, instead of following the usual lines, was directed to the solution of definite problems arising out of the war."

One can remember readily the time when applications were received by the universities from America, but never from the United Kingdom, for honours graduates to direct the labours of, e.g., cotton manufacturers or gardening firms. That the war has made this old condition an impossibility for the future became forcefully clear in the recent report of the Advisory Council of