

LETTERS TO THE EDITOR.

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[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

"The Conspiracy of Silence."

WILL you allow me a word on "The Great Lesson" by the Duke of Argyll? It is especially what is said about Darwin's coral-island theory in the following lines, to which I wish to refer:—"All the acclamations with which it was received were as the shouts of an ignorant mob. It is well to know that the *plébiscites* of science may be as dangerous and as hollow as those of politics. The overthrow of Darwin's speculation is only beginning to be known. . . . Reluctantly, almost sulkily, and with a grudging silence as far as public discussion is concerned, the ugly possibility has been contemplated as too disagreeable to be much talked about."

The terms "ignorant mob," "sulkily," and "grudging silence," as used above, cannot readily be forgotten if forgiven by men of science on this side of the Atlantic any more than by their brethren in England.

I am unable to see anything sulky or silent in the exposition of Mr. Murray's coral-island theory of over three pages in length, which was published and sent to all the scientific world in NATURE, vol. xxii. p. 351; nor in the many articles in the current literature and recent geological text-books that have since appeared. In this country no large text-book of geology has been issued since 1880; but Mr. John Murray's work has been fairly discussed, and, so far as I know, has always been recognized. Here at Williams College, for example, the views of Mr. Murray referred to have been expounded each year in the course in geology since 1880. One may, I take it, differ from the Duke of Argyll in accepting or rejecting, wholly or in part, any theory, without laying himself open to the charges quoted above. Of anything like sulkiness or grudging silence I have yet to see or hear the first evidence. There is indeed a "great lesson" in the article by the Duke of Argyll, but it is hardly the one he intended to give.

SAMUEL F. CLARKE.

Williams College, Williamstown, Mass., December 5.

"DARWIN'S LIFE AND LETTERS" are now public property, and as reference to vol. iii. p. 242, shows—what nearly every scientific man knew—that the late Sir Wyville Thomson was distinctly anti-Darwinian in his views, it follows that the Duke of Argyll's inferences as to his reasons for urging Mr. Murray's withdrawal of the "new coral-reef theory" paper from the Royal Society of Edinburgh is illogical, not to say absurd. In justice to Sir Wyville's memory and in support of Mr. Bonney's surmise (NATURE, November 24, p. 77) I wish to state that, talking with Sir Wyville about "Murray's new theory," I asked what objection he had to its being brought before the public? The answer simply was: he considered that the grounds of the theory had not as yet been sufficiently investigated or sufficiently corroborated, and that therefore any immature, dogmatic publication of it would do less than little service either to science or to the author of the paper.

AN OLD PUPIL OF WYVILLE THOMSON'S.

December 17.

Greenland Glaciers.

I HAVE received a letter from Prof. Steenstrup, of Copenhagen, which gives further interesting information respecting the extraordinarily rapid advance of the Greenland glaciers, and corroborates the opinion I expressed in the paper I recently read before the Geological Society, that the rate of advance during the Glacial period may have been far more rapid than that generally assumed, and that that period should be much shortened. Prof. Steenstrup states:—

"Meantime the difference between the Alpine data and the Greenland data seems to have grown greater and greater.

During the now returned biennial expedition to our northernmost boundary of the west coast of Greenland, the leader of the Expedition, the clever naval officer, Mr. Care Ryder, has measured a progress or a flow of the great glaciers = 99 feet per diem or in twenty-four hours during the summer, and = 30-35 feet in twenty-four hours during winter months."

This, no doubt, will interest many of your Alpine readers.

JOSEPH PRESTWICH.

Shoreham, Sevenoaks, December 17.

"The Mammoth and the Flood."

IN the notice which you have given of my book, which you are good enough to say is, apart from its theories, a valuable work of reference, I should have been more gratified if you had devoted a little space either to stating my arguments or to refuting them, instead of indulging in a rhetorical wail over my backsliding from the orthodox ways of uniformity.

The theories for which I am responsible have been accepted by so many men in the first rank in science in both hemispheres that I am naturally anxious to have them seriously and severely discussed, and I think your critic would allow that I have justified my hope that this will be the case by converging upon my inferences an unusual array of facts.

It was assuredly quite time that someone who disbelieves in "authority in science" should raise a strong protest against the extravagant position which the English school of geology has taken up on this question of uniformity, an extravagance of which students in other branches of science are hardly aware.

The head of the Geological Survey in this country, speaking not long ago with all the authority and responsibility which surround a President of the British Association, committed himself to the following statement:—"From the Laurentian epoch down to the present day, all the physical events in the history of the earth have varied neither in kind nor in intensity from those of which we now have experience."

This was not the opinion of an irresponsible and eccentric student, but of the official mouthpiece of English geology, and with one notable exception—namely, Prof. Prestwich—it has remained, so far as I know, without protest or repudiation, while Prof. Prestwich himself has been treated as a heretic for the views he has so courageously and ably maintained.

My book is meant to challenge the doctrine of uniformity as generally held by English geologists, and which as held here is largely repudiated both in America and on the Continent.

In regard to its many arguments, I cannot defend them in a letter, but I can shortly examine the only one to which your critic directs attention, and which happens to be a very crucial one.

This is the explanation of the existence of a series of mammoths buried in the tundras of Siberia, throughout its entire length, with their soft parts intact. This fact, which has been known for a century, compelled Cuvier long ago to adopt a conclusion which I have simply accepted and enlarged. I state it shortly in the following extract from my work:—"The facts compel us to admit that when the mammoth was buried in Siberia the ground was soft and the climate genial, and that immediately afterwards the same ground became frozen, and the same climate became Arctic, and that they have remained so to this day, and this not gradually and in accordance with some slowly continuous astronomical or cosmical changes, but suddenly and *per saltum*." I also argue that the only way I can explain the existence of a chain of such carcasses buried many feet deep in *continuous beds of gravel and clay* is by the operation of one cause only, and that a flood of water on a large scale.

Your critic, who I can hardly think has read the part of my book dealing with this issue, says that the carcasses are found in ice. The fact is, *they are never found in ice*, as the Russian explorers have so well shown. The reference to ice in the account of the discovery of the famous Adam's mammoth has been shown by Baer to have been altogether misunderstood, and nothing is more clear than that they are found buried deep in hard frozen gravel and clay.

Secondly, he urges a view which was generally held fifty years ago, but which has been completely dissipated by the elaborate researches of the Russian naturalists, especially the geologist Schmidt, and which I quote at length—namely, that the carcasses have in some way been floated down by the Siberian rivers and buried in their warp. As Schmidt shows, the