

LETTERS TO THE EDITOR

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Forbes and Tyndall

AT p. 387 of the recently published "Life and Letters" of the late Principal Forbes, the following passage occurs:—

"I believe that the effect of the struggle—though unsuccessful in its immediate object—will be to render Tyndall and Huxley and their friends more cautious in their further proceedings. For instance, Tyndall's book, again withdrawn from Murray's 'immediate' list, will probably be infinitely more carefully worded relative to Rendu than he at first intended."

This passage has been selected, among others, by Principal Shairp, the editor of this portion of the "Life," from a letter addressed to A. Wills, Esq., under date of November 14, 1859: the "struggle" to which it refers arose out of an attempt on the part of some influential friends of Principal Forbes, who were at that time members of the Council of the Royal Society, to obtain the Copley medal for him; and it took place at the Council meetings which were held on October 27 and November 3, 1859.

I was not a member of the Council at this time, and therefore, I could take no direct part in the "struggle" in question. But, for some years before 1859, glaciers had interested me very much; I had done my best to inform myself in the history of glacier research; I had followed with close attention the controversy which had been carried on between Prof. Tyndall and his friends, on the one hand, and Principal Forbes and his supporters on the other; and, finally, I had arrived at a very clear conviction that the claims made for Principal Forbes's work, could not be justified.

Under these circumstances I thought it would be a most unfortunate occurrence if the Council of the Royal Society, containing as it did, not a single person who had made the glacier question his especial study, should practically intervene in the controversy then raging, and throw its weight upon the side of one of the combatants, "without due consideration of what was to be said on the other side.

A friend of mine, who was a member of the Council, shared these views; and, in order to enable him to enforce them, I undertook to furnish him with a statement which he could lay before the Council when the award of the Copley medal came up for discussion.

It is not necessary to state what took place at the meetings of the Council—suffice it to say that the Copley medal was not awarded to Principal Forbes.

So far, therefore, as my statement may have contributed to this result, my efforts were completely successful. Principal Forbes's very influential champions in the Council were left, as I am informed, in a hopeless minority; and instead of tending to make me more cautious in my "future proceedings," what occurred on this occasion should have emboldened me.

The notion expressed by Principal Forbes that I and Prof. Tyndall's other friends were in any way discouraged by the results of our battle, is therefore strangely erroneous; however, I do not know that the error would have been worth correction, if Prof. Tyndall had not been referred to as one of those who took part in the fray. But, in justice to Prof. Tyndall, I am bound to say that he knew nothing about the battle until after it was over. My ally in the Council and I, agreed, for reasons which will be obvious to any honourable man, that Prof. Tyndall, though an intimate friend of ours (and largely because he was so), ought not to have any knowledge of the action we took; and, in a note dated November 4, 1859, I find myself suggesting to my friend in the Council, that Tyndall ought to be kept in his then ignorance "until his book is out." I have every reason to believe that this suggestion was carried into effect; at any rate, Prof. Tyndall did not see the drift of my statement till a year ago⁷ when (on May 13, 1872) I sent it to him accompanied by some other documents and the following note:—

"Routing among my papers yesterday I came upon the inclosed cinders of an old fire, which I always told you you should see some day. They will be better in your keeping than mine."

I am informed that there was not even an attempt to controvert the leading points of my statement on the part of the advocates of Principal Forbes's claims; and therefore the assertion that Prof. Tyndall was led to word "infinitely more carefully" what he had already written about Rendu, by anything which occurred in the Council, is simply preposterous.

In making these remarks I have no intention of throwing the slightest blame upon the late Principal Forbes; who surely had a perfect right to express to an intimate friend whatever impression was left upon his mind, by such reports as reached him of the occurrences to which he refers. But I confess I find it difficult to discover any excuse for the biographer, who deliberately picks the expressions I have quoted out of a private letter, and gives them to the public, without taking the trouble to learn whether they are, or are not, in accordance with easily ascertainable facts.

T. H. HUXLEY

May 17

Forbes and Agassiz

IN the review of Dr. Tyndall's book on the "Forms of Water" which appeared in NATURE, vol. vii. p. 400, the following words occur:—"But surely it was not unnecessary to rake up again the Forbes-Rendu controversy, nor to renew the claims of Agassiz and Guyot." Mr. Alexander Agassiz takes exception to this (see NATURE, vol. viii. p. 24) and makes the following assertions:—"That when a guest of Agassiz on the glacier of the Aar in 1841, Forbes returned the hospitality of Agassiz "by appropriating what he could" from the work of the latter, and "misrepresenting the nature of his intercourse with Agassiz." This refers to a matter of facts and may be proved or disproved by the facts. It refers to an attack made upon Forbes in 1842, which was immediately answered by him in a manner that left no room for further discussion. I must necessarily be brief in stating the facts. They may be found fully detailed in the *Edin. New Phil. Journal*, 1843, or in the "Life and Letters of James David Forbes, 1873." They are as follows:—In 1841 Forbes enjoyed the pleasure of a visit to Agassiz on the Unteraar Glacier. On the first day of their sojourn (August 9), their only companion was Mr. Heath, of Cambridge. They were afterwards joined by friends of Agassiz. On this first day Forbes pointed out to Agassiz the veined structure of the ice. Agassiz had spent five summers studying the glaciers (see Mr. Alexander Agassiz' letter in NATURE), but he replied "that it must be a superficial phenomenon, that he had on a previous occasion noticed such markings, and that they were caused by the sand of the moraines causing channels of water to run." Forbes showed him that the structure was general, even in the body of the glacier. Agassiz expressed a doubt "whether the structure had not been superinduced since the previous year." Forbes afterwards showed him that in a crevasse three or four years old the markings extended across the crevasse and were visible in continuation from one side to the other. Further, Forbes insisted upon its intimate connection with the theory of glaciers. When in the ensuing winter M. Desor wrote to Prof. Forbes denying his claims to the discovery, the latter sent him a statement of the above facts, begging that M. Agassiz should state whether they were correct or not. M. Agassiz wrote an answer to this letter. He does not deny a single one of the facts supplied by Forbes in connection with the observations of August 9. This letter was printed and circulated by M. Agassiz. Furthermore, when these facts were published by Forbes, even then M. Agassiz did not deny any of them. Moreover, Mr. Heath, the only other witness, gives his evidence in support of the accuracy of the above facts (see "Life of Forbes," Appendix B, Extract I.). Other friends of Agassiz, who joined them afterwards, wrote to Forbes stating their belief that to him alone belonged the discovery. After leaving the Aar glacier Forbes extended his observations. He showed (1), that the structure was common to most, if not all, glaciers (see "Forbes' Life," p. 550, note); (2), that this was the cause of the sand lying in lines ("Life," p. 548); (3), that this was also the cause of the supposed horizontal stratification of the terminal face of some glaciers (Royal Soc. Edin., 1841, Dec. 6); (4), he showed that these blue markings were the outcroppings of blue ice that formed lamellar surfaces in the interior of the glacier; (5), he actually determined the shape of these surfaces in the case of the Rhone glacier (R. S. E., 1841, Dec. 6); (6), he remarked that "the whole phenomenon has a good deal the air of being a structure induced perpendicular to the lines of greatest pressure," though he did not assert the statement to be general. This was in 1841. In later years he extended these observations. I have said enough to prove (1), that although Agassiz carried with him "a geologist, a microscopic observer, a secretary, a draughtsman, and many workmen," and though he had spent five summers studying the glaciers, he did not see these markings (or at any rate recognise them as a structure of the ice) until Forbes showed them to him; and (2), that Forbes recognised this structure as an important "indication of