

therms) must move upwards into new deposits as they are laid down. This is duly acknowledged in chap. vii. and credited to Babbage, who, I believe, has priority; but should the use of a natural law in building up a theory disentitle the theoriser to the full right of property in his own theory?

It is said, "What's in a name?" To which I answer, A great deal that is bad when it is vague and misleading and perpetuates errors and misconceptions.

T. MELLARD READE.

PARK CORNER, BLUNDELLSANDS, Feb. 9th, 1891.

CRINOIDAL STEMS IN ORDOVICIAN OF SWEDEN.

SIR,—I am glad to have elicited from Dr. Holm such interesting information about the crinoid stems that he has found in the Leptænakalk of the Lissberg. But I am sorry that my remark has given rise, perhaps not unnaturally, to some misunderstanding. Dr. Holm in his original notice says two things:—First, that the rock is "chiefly composed of corals, cystids, and crinoid stems;" secondly, that he himself has found there "erinoid stems belonging to at least two species." Now I never doubted that so experienced a palæontologist as Dr. Holm had very good reasons for this latter statement; his letter shows how sufficient those reasons were. Nor did I "without having seen a single one of them," venture to assert that all the stem-fragments belonged to Cystidea. I was indeed well aware of the sessile nature of the majority of the Cystidea from this locality. But, remembering as I did how often stems undoubtedly cystidean had been referred to Crinoids, and knowing that not a single Crinoid had been recorded from the Ordovician of Sweden, though 23 species of Cystidea showed the possibility of their preservation, I merely wished, as indeed I still wish, to suggest that some of these ossicles might have pertained to the long and exceedingly crinoid-like stem of *Caryocrinus*. So inevitable did this seem that, though I did not so far forget either myself or Dr. Holm's very valuable works as to call him a mere collector, still I did express myself in a manner which now seems to me to need an apology, and this I trust, Sir, you will here permit me to offer.

F. A. BATHER.

5 Feb. 1891.

MOTION OF LAND-ICE.

SIR,—As I have paid some attention to Glaciers,¹ I should like to make a few remarks on the paper by Mr. Goodchild on "The Motion of Land-ice" in the *GEOL. MAG.* for January last, pp. 19–22.

1. The expansion and contraction of ice for changes of temperature below 0° C. and under a pressure of one atmosphere is but an example of the general law for solids, which has been recognized for many years in physical science; and the power of ice to resist tensile strain is (as Helmholtz has pointed out) so small as to furnish an explanation of the formation of crevasses, though these are not by any means always produced by contraction due to lowering of temperature. But this very property of ice shows that contraction

¹ Q.J.G.S. vol. xxxix. pp. 62–71, "On the Mechanics of Glaciers"; also 'Nature,' vol. xxvii. pp. 553, 554, "On Solar Radiation and Glacier-motion."