

TRUE AND APPARENT DIP.—FLOATING ICE.

SIR,—“The accurate rule” given by Mr. E. Hill, in the July number, *GEOL. MAG.* p. 334, is, I believe, identical with that given by the late Professor Phillips in his *Guide to Geology*, 5th ed. (1864), p. 298.

Whilst writing, I may as well call attention to what appears to be a misprint in Mr. J. Milne’s paper, in the same Number. The equation “ $H = h = 1.080$,” p. 307, line 6 from bottom, should, I think, be $H = h \times 1.080$.

W. PENGELLY.

LAMORNA, TORQUAY, 5 July, 1876.

TRUE AND APPARENT DIP.

SIR,—I am obliged to your correspondent, the Rev. H. G. Day, for his remarks on my rules for finding the direction of true dip. I was aware that there would be a slight error arising from the difference between the circular measure of an angle and the tangent of that angle, but in practice the former is much more readily adopted, and the error is so small that generally it may be ignored.

My friend, the Rev. O. Fisher, writes me, “Your rule *A* is correct for small dips for all practical purposes. It is not necessary that the angle between the faces of the quarry should be obtuse, the rule is equally true whatever be the angle.”

The modification Mr. Day proposes for rule *B* is an improvement: but it would be better still, as Mr. Fisher had in the meantime suggested, to measure off a line parallel to one face of the quarry and apply rule *A* behind it,—adding, “you may step it on the ground at once, without making a diagram.”

W. H. PENNING.

H.M. GEOLOGICAL SURVEY,
15th June, 1876.

ABSENCE OF LLANDOVERY ROCKS IN THE LAKE DISTRICT.

SIR,—I venture to think that Mr. Hicks’s somewhat authoritative treatment of Mr. Aveline’s opinion—and Mr. Aveline’s opinions are never hastily formed—with regard to the absence of the Llandovery rocks in the Lake District, appears a little out of place, when it is remembered that Mr. Aveline has spent nearly a lifetime among the rocks of Wales and their equivalents in Cumberland, and that Mr. Hicks knows nothing of Cumberland, though he is justly regarded as an authority upon many of the rocks of South Wales, among which he has worked so ably and successfully.

I cannot but think, also, that the fossil evidence, upon which so much stress has been laid, must not be received unhesitatingly as absolute. The presence or absence of certain Graptolites in these old rocks is but imperfect evidence at the best, so little do we yet know of the life-history of this group, and so much have recent deep-sea discoveries shaken one’s faith in the absolutism of palæontological evidence.

Had Mr. Hicks worked among the Cumberland rocks the number of years that Mr. Aveline and I have done, he would not perhaps have found things so “tolerably clear” on comparing the districts of Cumberland and Wales.

J. CLIFTON WARD.

ESKDALE, June 10th, 1876.