

was justifiable in defending what were his own well-matured views, as well as those of the surveyors, against an attack, which, however learned, was apparently based upon work in the museum and library." "Palæontological evidence is a powerful assistant to stratigraphy, but it must yield precedence to results clearly made out in the field."

The Professor in his reply enumerates his extensive continental labours and studies, thus justifying my estimate of his learning. But it seems to me now, that his foreign studies have been carried too far. For his comment on the above quoted passage is, that he hopes I am the only geologist who will regard such action (the study of foreign geology) as constituting a disqualification on his part—an interpretation certainly "foreign" to my meaning.

O. FISHER.

RATE OF DENUDATION.

SIR,—The appearance in your March Number of the letter of Mr. McJames asking explanation of some points in Mr. Tylor's letter induces me to notice some errors in the latter.

1. Evidently by a slip of the pen Mr. Tylor has given v^5 instead of v^6 as the law of variation of transporting power of running water, although his calculations are based upon the true law: v^6 . Mr. Tylor is right, therefore, in stating that, when the velocity increases 3 times, the transporting power is increased 729 times, and not 243 times, as Mr. McJames thinks it ought to be. This law was established by Mr. Hopkins in 1842 (Phil. Mag. 1845, vol. xxvii. p. 56), and is now universally accepted. It may be stated thus: "*The weight of the largest fragment (of given form and sp. gr.) transportable by a current varies as the sixth power of the velocity.*"

2. But *transporting power* must not be confounded with *erosive power*. This is Mr. Tylor's mistake, and it vitiates all his calculations. The resistance to be overcome in the one case is *weight*, in the other *cohesion*. The one varies as v^6 , the other probably v^2 . In many cases of lightly cohering material the resistance is a mixture of these two resistances and the power of removal will vary somewhere between v^2 and v^6 .

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JUKES AND THE SUPPOSED LAURENTIAN OF DONEGAL.

SIR,—I have taken advantage of the first leisure I have had to look up my notes for the "Geology of Ireland," and have to request that you will publish the following.

In 1862, after describing the Laurentians or primary gneiss of Sutherland, Jukes goes on to say:—"Ireland—It is probable that some of the highly metamorphosed rocks of the north of Ireland may consist of this Pre-Cambrian gneiss."

G. H. KINAHAN.