

Some gneiss will be equally well proved to be of igneous origin;¹ nay, even masses of crystalline limestone must frequently be classed as igneous rock.

It is needless, however, that I should follow Mr. Forbes into all the minute criticism which he has thought proper to bestow upon my papers. He remarks that "the crystallographer will be rather puzzled" with my somewhat careless expression, *porphyritic felspar crystals*; if so, it will not argue much for the crystallographer's penetration.

The writer concludes his remarks by disclaiming "any feeling of personality against a gentleman whom he has never even seen." Surely in a discussion of this kind, such a disclaimer ought to be quite unnecessary. Personalities are here utterly out of place, and I would, with deference, submit that personal details are equally so. Is it not beside the question altogether, that a gentleman so well known as Mr. Forbes should tell his readers that he "does not speak upon the strength of an acquaintance with this subject of a few months or years, but for more than twenty years has continuously occupied himself in a special and minute study of the crystalline and metamorphic rocks;" that he should assure us that he has examined these rocks "in the field over a great part of Europe, North and South America, Polynesia, part of Africa, etc., with all requisite appliances at his command, and without having neglected the study of chemistry and mineralogy;" that besides pressing upon us the fact of his being a qualified chemist, mineralogist, and petrologist, he should be at the trouble to point out that he knows how to handle the microscope, and that he has gathered together "above 900 sections of crystalline and metamorphic rocks from about 480 localities, in different parts of the world;" that, in addition to all this, we should be informed that he is well acquainted with "the English, French, German, Spanish, Italian, Swedish, and Danish languages?" Surely the many memoirs and articles contributed by Mr. D. Forbes to British and foreign scientific publications ought to testify enough to his rare opportunities for observation, and be sufficient guarantee of his accomplishments.

I am, Sir, faithfully yours,

JAS. GEIKIE.

EDINBURGH, February 26th, 1867.

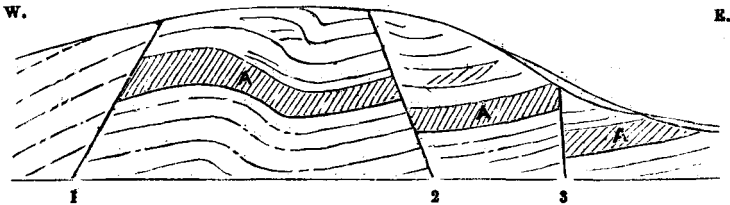
FAULTS IN DRIFT.

To the Editor of the GEOLOGICAL MAGAZINE.

DEAR SIR.—As the subject of faults in the Drift has been before your readers for some time past, I venture to send you a sketch, taken a few months since at Rochdale, in Lancashire, during the progress of excavations for the new Town Hall. Though personally inclined to be incredulous regarding the occurrence of faults in these deposits, knowing how subject they are to sundry irregularities of

¹ I am well aware that some geologists are fully persuaded of the igneous and eruptive character of certain gneissic rocks.

stratification, yet, I confess, the clearness of the bedding, and the sharpness of the fissures convinced me that in this instance there had been several vertical displacements. The following is the section:—



FAULTS IN DRIFT SAND AT ROCHDALE.

The height of the section is about fifty-five feet; the length two hundred feet. The throw of No. 1 is down to the west; No. 2 down to the east ten feet; No. 3 down to the east twelve feet. The beds between Nos. 1 and 2 are much contorted.

The whole section is composed of fine white or yellow sand, with occasional layers of gravel, and contains in the centre a well marked band of loamy sand (A. A. A.), which shows exactly the amount of displacement. Three faults are shown. The amount of throw in two of these is twelve feet and ten feet respectively; that of the third being uncertain. The sand is the middle member of the Drift series according to my classification, lying between the upper and lower tills, or Boulder-clays, neither of which are shown in this section.

As to the origin of these apparent faults I do not venture an opinion. It cannot be owing to mining operations, as the position is beyond the out-crop of the *Arley Mine*; besides this the amount of the slip is much greater than would be caused by the ground giving way in consequence of the extraction of a seam of coal less than five feet in thickness. On the other hand, it must not be forgotten that very considerable vertical elevations of the solid strata have occurred in the interior of the country since the Drift Period, amounting to at least 2,000 feet, and it is not improbable that old fissures may have been re-opened, or even new ones made in the older formations, which would pass upward into the overlying drift-beds.

I am, etc.,

EDWARD HULL.

ON THE PARALLELISM OF THE DRIFT DEPOSITS IN LANCASHIRE AND THE EASTERN COUNTIES.

To the Editor of the GEOLOGICAL MAGAZINE.

DEAR SIR.—I hope you will not think it highly objectionable if I address you twice in the same month; but while I have my pen freshly steeped in Drift, allow me to draw attention to the remarkable similarity of the Drift-series in the Eastern Counties as indicated by Mr. S. V. Wood jun., and that in Lancashire and Cheshire, described by myself in a paper "On the Drift Deposits in the