

SCIENTIFIC AND LITERARY NOTES.

GEOLOGY AND MINERALOGY.

ORIGIN OF ROCK CLEAVAGE.

Few subjects connected with the physics of Geology have attracted of late years more attention than that of rock cleavage. Long considered, in accordance with the views of Sedgwick, as the result of a peculiar crystalizing force produced by electrical action or by heat, its origin has more recently been attributed, and evidently with truth, to the effects of mechanical causes. In other words, cleavage in rocks may be regarded as the result of enormous or long-continued pressure, exerted at right angles to the direction of the cleavage planes. Amongst those who have chiefly labored in support of this latter view, the late President of the Geological Society of London, Daniel Sharpe, with Mr. Sorby, and Professor Tyndall, may be especially cited. Observations of great interest on this subject will be found in some of the recent numbers of the *Philosophical Magazine*.

MEAN DENSITY OF THE EARTH.

According to the computations of the Astronomer Royal, based on his late pendulum experiments at the Harton Coal Pit, South Shields, the mean density of the Earth is equal to 6.566. This value is about one degree higher than any previously obtained.

The Rev. Samuel Haughton of Trinity College, Dublin, in a paper communicated to the *Philosophical Magazine* for July, 1856, has deduced from these experiments, by another mode of calculation, the value 5.480.

The officers engaged on the Trigonometrical Survey of the United Kingdom, have also taken up the question of the Earth's density. Observations on the deflection of the plumb-line at Arthur's seat, Edinburgh, conducted by Colonel James, R. E., and re-calculated by Captain A. R. Clarke (proceedings of the Royal Society, May 8, 1856,) give for the Earth's mean density, the value 5.316. A further set of observations on the Stack Mountain, Sutherlandshire, pointed out by the late Dr. Macculloch as the best adapted in all Scotland, for the estimation of the Earth's density by the deflection of the plumb-line, are also promised.

We have collected the above, and other earlier results, into the following table:

A. Estimated by Plumb-line Deviation.

1. From Dr. Maskelyne's observations on the Scheshallien Mountain in Perthshire, (corrected by Hutton).....	4.9999
2. From Colonel James' Observations on Arthur's Seat	5.316
(The first calculations gave 5.14.)	

B. Estimated by the Ball Apparatus.

3. By Cavendish (corrected by Bailey).....	5.448
4. By Cavendish (corrected by Schmidt).....	5.52
5. By Reich, in Freiberg (1837).....	5.44
6. By Bailey (mean result of over 2,000 observations).....	5.67