tunately the present museums are in such a state of neglect from the want of competent curators, and from the apathy and ignorance of committees connected therewith, that they render the formation of local collections waste of time and energy, as they are unfitted for their permanent and efficient preservation.

Scientific men seem frequently to be so much engrossed in their own departments that the result is, the general interests of science are neglected. This want of public spirit is much to be regretted; not to mention the jealous spirit too often exhibited, and their acting, in some instances, as if they had taken leases of certain departments of Nature, and had set up a notice "Trespassers Beware."

I may mention that a museum in London, as a centre of the provincial museums, would be a great requirement, representing an epitome of the collections throughout the country, and of British Geology, Natural History, and Archæology. This should be the British Museum. *British* not in a national, but in a scientific sense. The more appropriate term for the present British Museum would be the "National Museum"; and it should confine its collections more especially to the productions (Natural History, etc., and Antiquarian) of foreign countries. F. G. S.

November 17th, 1871.

GREENLAND METEORIC IRON.[1]

Sir,—When reading Mr. Forbes's account of the meteoric iron, whose occurrence on the shore of Greenland was communicated to the Geological Society on the 8th November, the same idea which was expressed by Professor Ramsay occurred to me before I had got as far as his remarks, viz., the idea that this native iron, instead of being derived extraneously from the fall of a meteorite, might be a portion of a "metallic core of the earth, brought to the surface by the eruption of the basalt in which it is said to be imbedded."

But upon consideration this seems extremely unlikely. Nothing is more certain than that the earth consists of concentric spheroidal strata, each stratum being of equal density throughout. And since the mean density of the whole is fully twice the mean density of the surface, it follows that there must be strata of great density within. Now such being the case, it seems not to admit of doubt, that the more dense strata will be there more deeply situated. When, then, we consider the relative densities of meteoric iron, which is about 7·7, and of basalt, which is about 3, it seems highly improbable that they should be sufficiently nearly associated in the interior for the heavier one to have been raised to the surface entangled in the lighter. Nevertheless a terrestrial origin appears to me possible.

From the analogy of meteoric stones, it seems very probable that our earth may possess a central core of iron. Those bodies are, as is well known, divisible into stony and metallic. The former nearly resemble our crystalline rocks, and the latter consist principally

[1] Other letters have been received on this subject from Colonel Greenwood and F. G. S., but want of space precludes their publication till next month.

of metallic iron. If, as is surmised, these are portions of a shattered planet (or of more than one such planets), then that planet must have consisted of a metallic core, surrounded by a stony envelope, affording a presumption that ours is similarly constituted.

The question may be looked at from another point of view. We know such bodies to be flying about in space; and it is highly probable that our earth was formed out of a conglomeration of them. It seems probable, then, that the materials of the earth were originally mingled fortuitously in a state of fusion, arising from the heat developed by the collision. So long as the heat was sufficiently great to keep the whole in a liquid state, in spite of the pressure arising from the mutual gravitation of the parts, the heavier materials would continue to fall towards the centre, and thus produce a metallic core. But this process would possibly be imperfect in some parts, either owing to the superficial portions being cooled to the limit of the melting point for the pressure too soon for the precipitation to be completed, or perhaps from meteorites arriving afterwards, when the superficial layers had become too viscid for them to sink through to their proper stratum. The subsequent contraction of the whole beneath a cooled crust might, as I have suggested elsewhere,[1] cause subjacent rock to pass into a fluid state, owing to decreased pressure beneath mountain elevations, and thus basalt containing metallic masses might be erupted.

I wish that the report given in the MAGAZINE had described the *forms* of the masses of iron,[2] which I believe are generally of a similar angular character in most meteorites. O. FISHER.

TERRACES IN NORWAY.

SIR,—Allow me to express my regret to Colonel Greenwood for having misunderstood him, and to assure him that I did not write without his letters before me. The mistake, which I now see to be my own, was partly due to my not understanding the word "inland" in exactly the same sense as he had done,—a misunderstanding caused to some extent by my experience in Norway, where terraces which he would call "marine" occur some distance away from the sea; his reference to Glenroy also helped to increase the confusion. In the other matter, we are using the word "cause" in a slightly different sense. I know, of course, that in one case there is upheaval, in another lowering of the river bed, but each makes the water run quicker, and that—the running water—I have called the cause. With this expression of my regret, both for having misunderstood Colonel Greenwood and for being still unable to accept his theory, I must occupy no more of your space on this matter.

T. G. BONNEY.

[1] Cam. Phil. Trans., vol. xi., part iii.; and GEOL. MAG., Vol. V., p. 493, and Vol. VI., p. 45.

[2] Nearly every *stone* meteorite preserves its true external dark vitrified coat; but meteoric iron corrodes and rusts so rapidly on its exterior, that the original form of the mass is seldom preserved.—EDIT. GEOL. MAG.