

to produce fusion, be applied to the ends of the greywacké beds, the various substances of which they consist would have a tendency to resume their original state, at least that state in which they existed in the crystalline rocks whence they have been derived; and, consequently, we should have compounds resembling various crystalline stratified rocks."\*

Now, before this explanation can be admitted, it must be proved that the granite has been thus protruded through the strata over an extent of about twenty miles in diameter, and that crystalline slates, which once existed, have disappeared, after having provided materials for the structure of these metamorphic and unaltered masses of greywacké. It would be more consonant with reason to conclude that the fragments in the greywacké have been derived from the existing crystalline strata which they resemble, than to have recourse to rocks of which we have no knowledge, except through the medium of the Plutonic hypothesis: for such a proceeding is neither according to the general rules of induction, nor according to the acknowledged principles of geology, by which the relative ages of rocks are determined. Thus it has been observed by Lyell, that, "in investigating a district composed of two distinct formations, it is sometimes difficult to ascertain their respective ages, from want of sections exhibiting the order of their superposition. In such cases, another kind of evidence, of a character no less conclusive, can sometimes be obtained. One group of strata has frequently been derived from the degradation of another in the immediate neighbourhood, and may be observed to include within it fragments of such rocks; from which we may *confidently infer* that the group from which the fragments have been derived, is the oldest of the two formations."† Thus, "there can be no doubt that some granites are more ancient than any of our regular series which we identify by organic remains, because there are rounded pebbles of granite, as well

\* Geological Manual, p. 479.

† Principles of Geology, vol. iii. p. 36.