

the upper and under surfaces should be parallel to one another; *ii* in a perpendicular direction, its vertical surfaces should be parallel. But the term does not admit of this great accuracy of definition, and those beds that have not strictly parallel planes are considered to be stratified.

It may appear a very easy thing to determine whether a rock is stratified or not; but there are many practical difficulties, and he who examines rocks for the first time is very liable to deception.

It was once a subject of discussion among geologists, whether granite is stratified. M. Gruber thought the stratification so evident, that he doubted whether the man who was not of his own opinion could see at all. Dr. Mitchell says he traced a stratified granite for sixty miles along the chain of the Risengebirge, and Professor James for one hundred and fifty miles. Yet Von Buch strained his eyes in vain to observe some appearance which should bring him to the same opinion, and, after a diligent search, gave up the pursuit in despair. A celebrated Swedish naturalist says, he never saw an unstratified granite; and an equally eminent English geologist never saw a granite stratum. It is, however, now generally admitted, that granite is not a stratified rock. But it is important to inquire into the circumstances which deceived so many eminent observers, that we may avoid the sources of error that misled them.

CLEAVAGE OF ROCKS.

It is well known to mineralogists, that there are certain crystallized minerals which may be more easily split in a particular direction than in others. Some minerals are cleavable only in one direction, others may be cleaved in two, three, or more, and the latter may often be made to assume regular geometrical forms.

Rocks also have frequently a line of cleavage, called by workmen the grain of the bed. Those who work granite are accustomed to look for the direction of cleavage; and although the indications can seldom be detected by a person unacquainted with the practical working, the miner has no difficulty in fixing upon the direction in which the rock will most readily split.

Now, it is this line of cleavage that is frequently mistaken for stratification—it was this that deceived geologists as to