

observer, after having traced a particular bed for some time, suddenly loses sight of it, and comes upon some bed above or below it, according as the strata may have been elevated or depressed. The point where this elevation or depression has occurred is called a fault. The preceding figure represents a fault in Tynemouth Castle Cliff, on the coast of Northumberland, observed by Professor Sedgwick, and, though not of great extent, affords an illustrative section. In this locality the strata have been fissured, and shifted from their natural situation. The coal-beds are peculiarly subject to this particular disturbance, to the no small inconvenience of miners; for it frequently happens that, after having worked a bed for a considerable time, it is suddenly lost, and many months or years may be expended in the effort to regain it.

#### CLASSIFICATION OF STRATIFIED ROCKS.

Having stated and explained the various appearances which stratified rocks present, and suggested the explanation of some difficulties that may be experienced by the beginner in the process of his inquiries, our next object must be to explain the classification which has been adopted by geologists. Plans of classification can only be considered as arbitrary arrangements, formed for the purpose of facilitating the study of the sciences, and of combining isolated facts. To form an advantageous classification requires a considerable knowledge of facts, and on this account the systems adopted in the infancy of particular sciences have been found unsuited to their maturer growth. This has been exemplified in the progress of geology. It was at first doubted whether a system formed upon the mineralogical character of rocks, or upon their position in relation to one another, would be found most advantageous. This doubt was removed by the increase of knowledge, and the latter plan has been universally adopted.

One of the first classifications of rocks was formed upon the discovery that some rocks contained animated and vegetable remains, while others were destitute of them. The rocks lowest in the series, that is, those at the greatest depth to which our researches have extended, do not contain fossils, and were therefore supposed to have been formed before the creation of things that had life, and were arranged under a class called primitive or primary; while those which possessed these relics of organization were denominated second-