

invariably altered near the line of junction; but when consolidated masses of granite have been protruded, no such change is observable. Into the slate rocks of the Cambrian chain, sienite, porphyry, and greenstone, have been injected in a melted state, and now fill up fissures produced during the general movements of those strata; but the central nucleus of primary rock exhibits no such appearance. In the Isle of Arran, and other places, the granitic rocks were evidently erupted in a state of fusion, for the slates are penetrated by veins of granite (Tab. 151, fig. 1); and in some instances are changed into fine-grained mica, or hornblende slate. M. Dufrenoy describes granite veins traversing chalk, in the Pyrenees, which have converted the cretaceous rock into crystalline limestone, and generated in it veins of iron-ore. An extraordinary fact is noticed by M. Elie de Beaumont. In the environs of Champoleon, where granite comes in contact with the Jura limestone, whatever may be the position of the surfaces in contact, the limestone and the granite both become metalliferous near the line of junction, and contain small veins of galena, blende, iron and copper pyrites, &c.; and at the same time the secondary rocks are harder and crystalline, while the granite has undergone a contrary change.* Mr. Lyell describes a remarkable example of the change induced in stratified rocks by intrusions of sienite

* De la Beche.