

We may now proceed to consider what effects, according to this theory, would be produced on the earth's crust as the same was constituted after the slate rocks above mentioned, and even the so-called greywacke series had been deposited. The slates and sandstones of the latter formation are the oldest rocks which thoroughly resemble, in their lithological characters, the sedimentary deposits of later periods; wherefore we may suppose that at the same time they were formed, the temperature of the earth's surface and the agencies at work upon it somewhat approximated to those of the present day. The portion of the earth's crust least likely to be affected by the subsidences consequent upon the contraction of the globe, may reasonably be supposed to have been the thickest part, that part where vertical strata of gneiss and rocks allied to it, extended deep down into the earth's crust. The part most liable to be fractured and raised into folds, would most probably be the thinnest, or that part where horizontal or but slightly inclined gneiss strata, had been conformably overlaid by micaceous, argillaceous, chloritic and quartzose slates. If we attempt to speculate as to what might be the first consequences of the contraction upon these latter rocks, we would naturally suppose that after a fissure had once been formed, the strata bordering on it would rise in a manner sketched in the subjoined figure.



a. gneiss, b. mica schist, c. clay slate.

And in reality not a few of the so-called Primitive Slate districts possess an architecture closely analogous to the above ideal section. This is especially the case in the Alps of Salzburg and Upper Carinthia. In this part of the central Alps, according to Credner, a mass of granitic gneiss, drawn out from east to west, forms the centre. On the north as well as on the south side of this mass crystalline slates overlie it. On the north side the dip is at a high angle to the north, and on the south side the highly inclined strata dip to the south. These crystalline slates are divisible into three groups, the lowest consisting of common and calcareous mica-slate, the middle group of chlorite and talc slates, and the upper group of common and calcareous clay-slate. Moreover the structure of the metamorphic rocks of eastern North America, and also of the slate districts north of the Mjo'sen in