

EXPLANATION OF THE FRONTISPIECE.

THIS Section of the Earth's Crust is intended to bring under the eye the leading features of Geology.

1. THE RELATIVE POSITION OF THE STRATIFIED AND THE UNSTRATIFIED ROCKS.

The unstratified rocks, namely, granite, sienite, porphyry, trap, and lava, are represented as lying beneath the stratified class, for the most part, yet piercing through them in the centre of the Section, and by several dikes or veins, through which masses have been protruded to the surface. The unstratified class are all of igneous origin. Granite seems to have been first melted and protruded, and it continued to be pushed upward till the close of the secondary period of the stratified rocks, as is shown by the vein of granite on the section. Sienite and porphyry seem to have been next thrust up, from below the granite; next, the varieties of trap were protruded from beneath the porphyry; and last, the lava, which still continues to be poured out upon the surface from beneath all the rest.

2. THE STRATIFIED ROCKS.

The stratified rocks represented on both flanks of the granite peak in the Section, appear to have been deposited from water, and subsequently more or less lifted up, fractured, and bent. An attempt is made on the right hand side of the Section, to exhibit the foldings and inclination of the strata. The lowest are bent the most, and their dip is the greatest; and, as a general fact, there is a gradual approach to horizontality as we rise on the scale.

3. THE RIGHT HAND SIDE OF THE SECTION.

The strata on the right hand are divided into five classes: first and lowest, *the Crystalline, or Primary*, destitute of organic remains, and probably metamorphosed from a sedimentary to a crystalline state, by the action of subjacent heat. 2. *The Palæozoic class*, or those containing the earliest types of animals and plants, and of vast thickness, mostly deposited in the ocean. 3. *The Secondary class*, reaching from the top of the lower new red or Permian system, to the top of the chalk. 4. *The Tertiary strata*, partially consolidated, and differing entirely from the rocks below by their organic contents. 5. *Alluvium*, or strata, now in a course of deposition. This classification is sometimes convenient, and frequently used by geologists.