



BOOK III.

SURFACE OF THE GLOBE.

CHAPTER I.

THE MOUNTAINS—PRINCIPAL MOUNTAIN-CHAINS OF THE GLOBE— DIFFERENT FORMS OF THE MOUNTAINS.

THE mountains which, at different points, and following a varying linear direction, relieve the surface of the earth, have been formed by two geological effects, each resulting from the same cause—the progressive cooling of the globe. The cooling of the terrestrial mass, the transition of a portion of the liquid interior nucleus into the solid state, by diminishing the volume of the internal aggregate, unduly enlarged its consolidated envelopment. Accordingly, this envelopment, or crust, has sunk at certain points and risen at others; it has produced *wrinkles*, and *folds*, and *protuberances* on the earth's surface. When an apple dries—that is, when it diminishes in size through the evaporation of its aqueous particles—its rind shrinks and shrivels; the image is a vulgar one, but it will explain to the reader the formation of mountains and valleys on the terrestrial crust when contracted by cooling.

This refrigeration of the interior mass of the globe, however, has not only produced ridges and wrinkles, but numerous fissures. The immense crevasses which, at certain epochs, yawned wide in the thickness of the terrestrial crust, were soon filled up by the slow or sudden