

countries strongly support the supposition that the interior of the earth has a much higher temperature than its superficies, though it may have been long and is still decreasing. We are not yet able to assert this as the result of experiment; but from the observations that have been made upon the temperature of mines, it is, we think, quite certain, that the heat increases from the surface downward. There are, however, many difficulties connected with the investigation of this subject, and the sources of error which affect the results of all the experiments that have been made, lead many persons to believe that the comparatively high temperature of mines and other excavations may be traced to local causes, independent of any increase of internal heat. It is true that the breath of the miners, and the heat given out by their lamps, as well as by the explosion of gunpowder, are calculated to raise the temperature of mines, and to vitiate the results obtained by experiment. But the errors thus produced are in some measure corrected by the circulation of cold air through the galleries of the mine; for, as one mass of air becomes heated, it expands, and escaping, is replaced by cold air which rushes in. Now, whether experiment be made upon the temperature of the air or of the water in the mine, or of the rocks themselves, some allowance must be made for the effects of the disturbing causes to which allusion has been made. Some geologists, however, attribute the increased temperature of mines and other excavations entirely to these local causes. There is something like an unwarrantable skepticism in this opinion; for, admitting and allowing for the influence of these deranging causes, there is evidently a resultant which increases with the depth, and can be only attributed to an increasing interior temperature. About three hundred observations had been made in various countries previous to the year 1827, at depths varying from 127 to 1700 feet, the results of which have been combined by M. Cordier, and they severally lead to the same conclusion—a subterranean temperature increasing with the depth. M. Cordier has endeavoured to allow for the errors to which these experiments were liable, and has probably approximated to the truth, although the difficulties connected with the investigation are undeniably greater than might at first be imagined. If the temperature of the water found in mines be taken as a criterion of the temperature of the depth at which it is found,