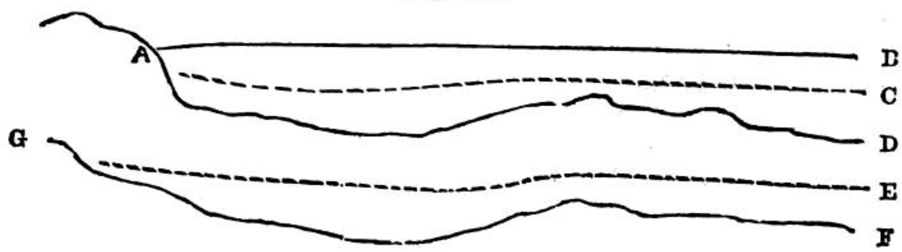
http://www.geology.19thcenturyscience.org/books/1860-Hitchcock-Geol/README.htm

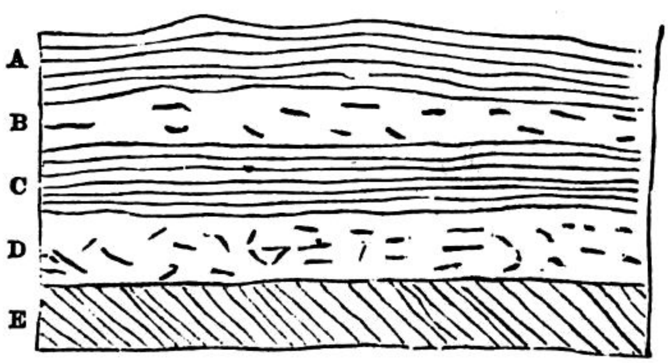
posed a theory to show how the surfaces of equal temperature within the earth's crust might experience changes in a vertical direction. Thus, suppose A B, Fig. 139, to be the ocean's surface, and A D its bottom, rising into a continent above A. Let G F be a line of equal temperature, say two miles below the ocean's bed, which line would be essentially parallel to the surface. Let now the accumulations of sand, clay, and gravel, which are constantly going on in the ocean, raise its bottom to A C. This coating of non-conducting materials would prevent the escape of the heat, which rises from the heated interior, and cause it to accumulate at a higher level, so that the isothermal G F, (line of equal temperature), would rise to G E; that is, as high as the bottom of the ocean had been filled. The increase of heat might be sufficient to produce the metamorphisms which we find many of the stratified rocks to have undergone.

Fig. 138.



Another consideration deserves to be taken into the account. Different beds of rock require for their fusion, or semi-fusion, very very different degrees of heat. Hence, heat permeating upward through the successive beds A, B, C, D, E, Fig. 139, might almost entirely melt some, (D) partially fuse others, (B) obliterate the

Fig. 139.



fossils in one, (E) and leave them more or less distinct in others (C and A). This is exactly what we find in the earth, and what we might expect in theory.