

into the interior of the mass, like the waves which start from the edge of a canal;\* and like them, become more and more faint as they proceed, till they melt into the general level of the internal temperature. The heat thus transmitted is accumulated in the interior of the earth, as in a reservoir, and flows from one part to another of this reservoir. The parts of the earth near the equator are more heated by the sun than other parts, and on this account there is a perpetual internal conduction of heat from the equatorial to other parts of the sphere. And as all parts of the surface throw off heat by radiation, in the polar regions, where the surface receives little in return from the sun, a constant waste is produced. There is thus from the polar parts a perpetual dispersion of heat in the surrounding space, which is supplied by a perpetual internal flow from the equator towards each pole.

Here, then, is a kind of circulation of heat; and the quantity and rapidity of this circulation, determine the quantity of heat in the solid part of the earth, and in each portion of it; and through this, the *mean* temperature belonging to each point on its surface.

If the earth *conducted* heat more rapidly than it does, the inequalities of temperature would be more quickly balanced, and the temperature of the ground (below the reach of annual and diurnal variations) would differ less than it does. If the surface *radiated* more rapidly than it does, the flow of heat from the polar regions would increase, and the temperature of the interior of the globe would find a lower level; the differences of temperature in different latitudes

\* The resemblance consists in this; that we have a strip of greater temperature accompanied by a strip of smaller temperature, these strips arising from the diurnal and nocturnal impressions respectively, and being in motion; as in the waves on a canal, we have a moving strip of greater elevation accompanied by a strip of smaller elevation. We do not here refer to any hypothetical undulations in the fluid matter of heat.