and grain are successively developed and matured. Why should such laws of heat and elastic fluids so obtain, and be so combined? Is it not in order that they may be fit for such offices? There is here an arrangement, which no chance could have produced. The details of this apparatus may be beyond our power of tracing; its springs may be out of our sight. Such circumstances do not make it the less a curious and beautiful contrivance: they need not prevent our recognizing the skill and benevolence which we *can* discover.

2. But we have not yet done with the machinery of the weather. In ascending from the earth's surface through the atmosphere, we find a remarkable difference in the heat and in the pressure of the air. It becomes much colder, and much lighter; men's feelings tell them this; and the thermometer and barometer confirm these indications. And here again we find something to remark.

In both the simple atmospheres of which we have spoken, the one of air and the one of steam, the property which we have mentioned must exist. In each of them, both the temperature and the tension would diminish in ascending. But they would diminish at very different rates. The temperature, for instance, would decrease much more rapidly for the same height in dry air than in steam. If we begin with a temperature of 80 degrees at the surface, on ascending five thousand feet the steam is still $76\frac{1}{2}$ degrees, the air is only $64\frac{1}{2}$ degrees; at ten thousand feet, the steam is 73 degrees, the air $48\frac{1}{2}$ degrees; at fifteen thousand feet, steam is at 70 degrees, air has fallen below the freezing point to $31\frac{1}{2}$ degrees. Hence these two atmospheres cannot exist together without modifying one another: one must heat or cool the other, so that the coincident parts may be of the same temperature. This accordingly does take place, and this effect influences very greatly the constitution of the atmosphere. For the most part, the steam is compelled to accommodate itself to the tem-