

run a direct south course; the eastern line must begin at the pole, 180° east of the other line, and run south. There could be no variation east or west of these lines, and have a center of attraction located $19\frac{1}{2}^{\circ}$ from the pole, and yet attract to the pole. Place your compass where you please on these lines, and the needle would always be true to the north pole. But the needle placed on these true north and south lines does not point to the north pole. What then becomes of the theory of a center of attraction? It has gone with Moses' history of the creation of the world. By traveling down the western line of no variation of compass we will find the line itself varies so as to cross sections of country where the temperature is even, its line of change varying north and south, while east and west the temperature is equal on the same latitude. The eastern line is much more circuitous, wandering out on the low northern lands of Siberia, down into China, thence westward through a country of even temperature, avoiding mountains and currents of cold winds, to find sections where the temperature runs in straight lines east and west.

By referring to the lines of temperature in our rocky mountain territories, we find almost an indescribable amount of irregularity. In the same locality the common magnetic compass varies so greatly that its use is abandoned and the solar compass introduced for all official business. Thus we find there is only a general tendency of the needle to point to the center of the electric helix, attended with all the variations that the lines of temperature and currents of electricity are subjected to. It is said by mariners that the further north they sail the more feeble is the action of the compass. At 72° north the compass will not indicate its polarity without frequent shaking. This fact shows that the greater the degree of cold, the weaker the electric current, and the less power to repel the needle to a right angular position.

But how does this feeble action of the needle comport