always take place. It is a study in which man is vitally interested, and the prediction of earthquakes is not entirely a dream, it comes within the range of scientific investigation. Another branch of geophysics that the Observatory pursues is that of gravity, upon which is dependent the shape and form of the earth. This work rests on the observation of the swing of a pendulum-no clock-work. The number of oscillations a pendulum makes in an hour or a day, depends on the pull that actuates it-not political pull for that is too uncertain. The farther we are from the centre of the earth the less the pull or force. If a pendulum clock keeping accurate time in Ottawa were taken to Washington it would lose time, because Washington is farther from the centre of the earth than we are and besides is more apt to fly off the handle than Ottawa, i.e. the centrifugal force is greater there and decreases the gravitational effect. You don't weigh as much in Washington as you do here for the same reason,-weighed on a spring balance. The pendulum not only reveals to us the shape of the earth, what its flattening is, but also anomalies in structure underneath us, whether there are vast masses of greater or less density than the average below the surface. From the pendulum we have learned that the Rocky mountains float so to speak in the crust of the earth like an iceberg does in the sea. This means that the roots of the mountains are composed of matter less dense than at the same depth say under the sea. The crust of the earth does not support the Rocky mountains or any other range; they are in equilibrium. In this investigation of the earth, which is an international undertaking, the Observatory is taking its part. Let me give you just one figure in regard to the refinement of pendulum observations; a single swing of the pendulum is determined with an accuracy of the units of the 7th place of the decimal, that is, to the ten millionth of a second of time.

The third branch of geophysics pursued by the Observatory is that of terrestrial magnetism, a subject of concern to man on land and sea, particularly the latter. When the poet exclaims "True as the needle to the pole" we must make allowance for poetic license, otherwise the captain of a ship steering by compass would never reach his destination. The needle doesn't point to the pole except along a line where its deviation to the west meets or merges into deviation to the east. The needle is almost as fickle as the weather. Our first work is to ascertain its general behavior in the wide extent of Canada from the Atlantic to the Pacific, then to study its daily and annual idiosyncrasies with some odd ones thrown in. These last have been traced pretty well to the sun as the disturbing element but just how, we do not know as yet. There is scarcely any investigation