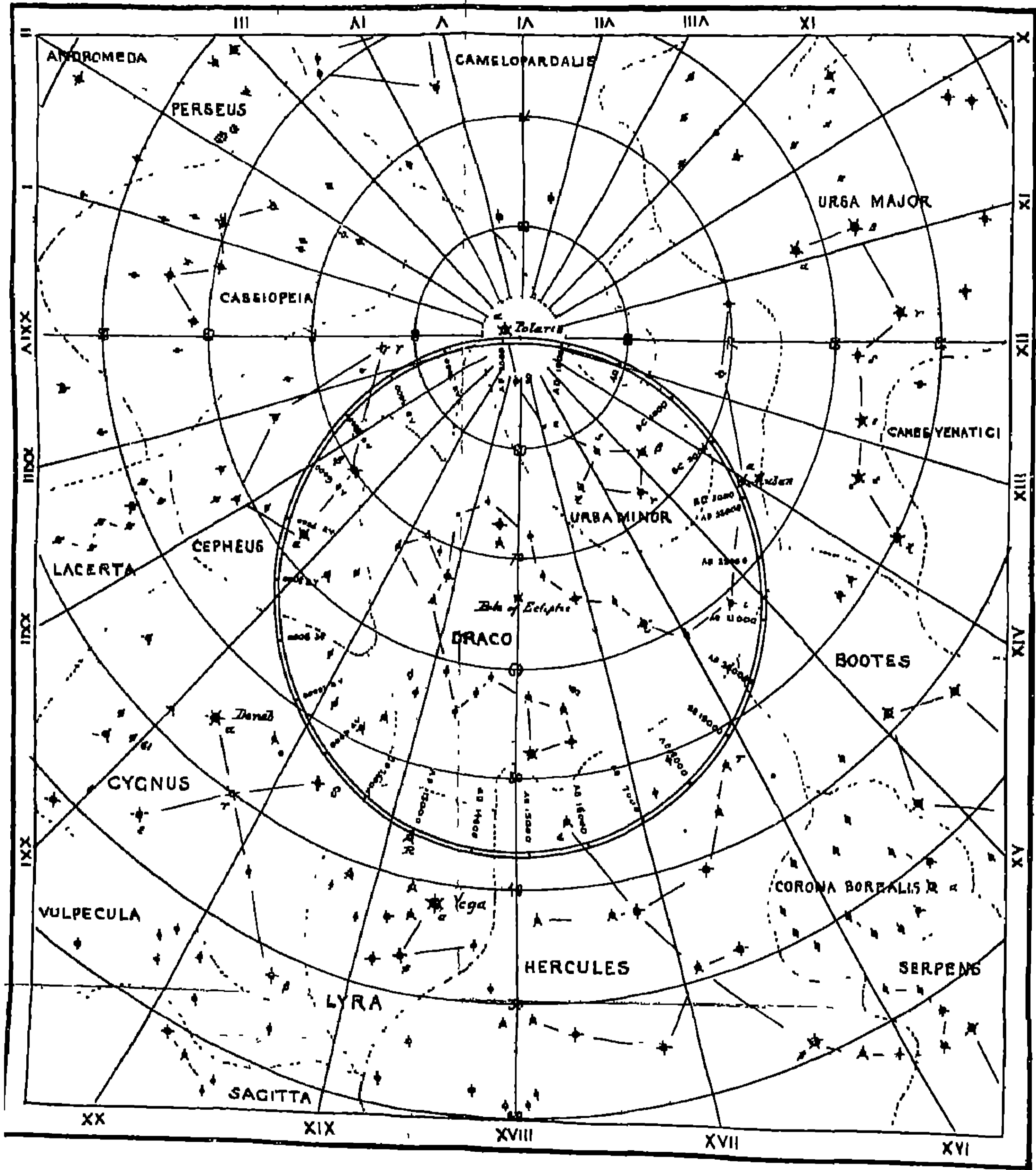


— THE WANDERING POLE. —



## The Wandering Pole.

THE two points in the heavens where the ecliptic intersects with the celestial equator, and which are called the vernal and autumnal equinoxes, are not fixed points. They would be so if the axis of the earth was rigidly inclined to any particular point in the heavens, but in consequence of the moon's attraction on the redundant matter at the earth's equator, the axis of the earth undergoes a slow gyratory motion, which is called nutation, similar to that of a peg top when spinning, and this motion has the effect of causing the pole in the heavens to describe a large circle, as shown in the diagram, having a radius of  $23^{\circ} 27'$ , with the pole of the ecliptic as the centre. The movement is extremely slow, being at the rate of about 50 seconds of arc annually, to the west, and it is called the precession of the equinoxes. It therefore requires nearly 26,000 years for the pole to complete its journey around the circle.

The north pole at present is within a little more than one degree from Polaris, the principal star in Ursa Minor, which has served as the polar star for about two thousand years, its predecessor being Beta Ursæ Minoris, while Thuban in Draco was the polar star 5,000 years ago, and will be so again 21,000 years hence. In the meantime the pole will wander through Cepheus, Cygnus, Lyra, and Hercules; and by the time it passes between the two last-named constellations, the positions of the zodiacal constellations will undergo curious changes. Sagittarius and Scorpio, now the most southerly of those constellations, will be the most northerly; while Taurus and Gemini, now the most northerly, will become the most southerly. Virgo and Pisces will be practically in their present positions on the equator; but Orion, instead of crossing the heavens on the equator, will rise low down in the south-east and will set in the south-west. Capella in Auriga, now the most northerly of the first magnitude stars, will be on the equator, while Sirius will only rise about five degrees above the southern horizon at the latitude of Calcutta, and Canopus will not be visible at that latitude.

Hipparchus, who lived about 200 B.C., is generally credited with the discovery of the precession of the equinoxes, but it is fairly certain that it was known to astronomers in India, and to the Chaldeans, many centuries before the time of the great Grecian astronomer.

HENRY HART.

MANGALORE,

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