

Role of Greeks in Geography

Thales (640-540 BC)

The first of the Greek scholars to be concerned about the measurement and the location of things on the face of the earth was Thales who lived in the 7th century BC. Thales was a practical businessman who at one time was able to corner the supply of olive oil to make a large profit for him. But he was also a genius who is credited with a great variety of innovation. On a trip to Egypt Thales observed the priests at work measuring angles and base lines and computing areas. Thales returned with his head full of mathematical and geometrical regularities that went far beyond the practical utility of trigonometry. There are six geometric proposition credited to him;

Work

1. Circle is divided into 2 equal parts.
2. Angles at either end of the base of an isosceles are equal.
3. When two parallel lines are crossed diagonally by a straight line, the opposite angles are equals.
4. The angle in semicircle is a right angle.
5. Sides of the similar triangle are proportional.
6. Two triangles are congruent if they have 2 angles and a side respectively equal.

Moreover, Thales speculated about the meaning of this fascinating universe and concluded that the material was made up of water in various forms. The earth he visualized as a disc floating in water.

Anaximander (611-547 BC)

A younger contemporary of Thales was Anaximander.

Work

1. He observed Solstice and Equinox.
2. He was first ever to draw a map of the world scale.

The scholars who were seeking to explain their observations of the face of the earth and of the relative position of the celestial bodies found difficulty in understanding how the sun could set in the west and yet get back to the east by the next morning. If the earth were a disc floating in water how could the sun go under the water? Anaximander suggested that somewhere to the north must be some very high mountains behind which the sun made the trip again to the east. The shadow cast by these mountains would account for the night. Anaximander was also one of the earliest philosophers to provide with an example of how a 'word' can be used to symbolize something that is not known and not observed. He did not actually reject the idea of Thales that water was the prime substance from which all observable features of the earth were made. But he used the word 'Apeiron' to symbolize the prime substance. Apeiron, which could not be experienced through the senses, nevertheless became a concept, a specific mental image that by process of deduction could become a real substance.

Parmenides (515-450 BC)

He applied mathematical laws to the observations made from earth surface. He took earth as a sphere and divided it into parallel zones of climate.

- i) Tropical zone: a zone uninhabitable because of heat.
- ii) Temperate zone: two intermediate zones fit for living being
- iii) Frigid zone: two zones uninhabitable because of cold

Plato (428-348 BC)

Plato made important contribution to the development of the geographical ideas.

Work

1. He was the master of the deductive reasoning.
2. He observed Attica possessed very productive soil, he also observed that mountainous forests provided feed for animals and also held the rainwater from pouring down the slopes in floods during heavy rains.

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3. Plato was first philosopher to commence the concept of a round earth located in the centre of the universe with the celestial bodies in circular motions around it.

Eudoxus (400-347 BC)

He was acting head during the temporary absence of the Plato.

Work

Eudoxus of Cnidus (contemporary of Plato) developed the theory of zones of climate based on increasing slope away from the sun on a spherical surface.

Aristotle (384-322 BC)

Aristotle was 17th when he joined the Plato's academy. At his time (367 BC) Eudoxus was acting head.

Work

1. Aristotle accepted Plato's concepts of spherical earth. Moreover, he observed that when the shadow of the earth crosses the moon during the eclipse, the edge of the shadow is circular.
2. He also recognized that height of the various stars above the horizon increases as one travels towards the north, which could only occur if the observer were travelling over the curved surface of a sphere.
3. Aristotle told that of the earth close to the equator, the torrid zone, were uninhabitable and frigid zone (far away from the equator) were constantly frozen and also were uninhabitable and the temperate zone in between constituted the habitable part of the earth.

Alexander(356-323 BC)

Aristotle had many pupils in all of them he instilled a desire to test theory by direct observation. He taught them “go and see”. His great pupil was Alexander.

Work

1. Alexander founded the city of Alexandria in 332 BC.
2. His great work was about the heights of the bright stars.

Pytheas (350-285 BC)

He was explorer and geographer.

Work

He was the first geographer who told about ocean tides (the tides on the Mediterranean too small to be noticed) and showed that tides were related to the phases of the moon.

Eratosthense (276-194 BC)

Eratosthense is often identified as the “father of geography” because he was the first to coin the term Geography derived from the two Greek words i.e. ‘Geo’ means earth and ‘graphy’ means description. Eratosthense set a stem on the study of earth as the home of man.

Work

1. Eratosthense is most famous for his calculation of the circumference of the earth.
2. He improved on Aristotle by giving the mathematical boundaries of zones. He told that the Torrid zone was 48° of the whole circumference (24° N & S was calculated as the location of tropics). The frigid zones extended 24° from each poles. The temperate zone was between the tropics and the polar circles.

Hipparchus (190-120 BC)

Hipparchus was a mathematician, astronomer and also a geographer.

Work

1. He was the first to divide the circle into 360 degrees based on Assyrian arithmetic.
2. He pointed the equator was a great circle and the meridians that were drawn converging on the poles were also great circles. The parallels became shorter and shorter as they approached the poles.
3. Hipparchus invented an instrument this was 'Astrolabe' (instrument for taking height of star)
4. He devised two kinds of map projections: i. Stereographic ii. Orthographic

Posidonius (135-50 BC)

He was Greek historian and geographer.

Work

He recalculated the earth circumference that was 18000 miles.