



THE JOURNAL OF EDUCATION

Devoted to Education, Literature, Science, and the Arts.

Volume XXII.

Quebec, Province of Quebec, June and July, 1878.

No. 6 & 7.

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Map-making in the Middle-Ages.

Paper read by E. T. FLETCHER, Esquire, before the Geographical Society of Quebec.

The advance of geographical science has always been commensurate with that of the commercial or political necessities of the age. The oldest attempts at map-making were limited by the horizon of the artist. The Chinese, the Indian, the Arab, the Greek, each of these looked on his own country as the centre of the world. Among the Indians and Greeks the middle-point of this was held to be the dwelling-place of the Gods. To the old Hellenes from Thessaly this point was Olympus. From the Homeric songs it is not difficult to construct a map that shall reflect the prevalent ideal of the Ionian Greeks. To their mind, in the extreme east, the River Phasis, a kind of strait, united the waters of the Euxine with the Ocean: on the west, the island of Trinakia, or Sicily, almost touched the mysterious narrows,

where darkness ever brooded, where was the descent to Tartarus, and where the River of Ocean took its rise, to flow round the entire earth as a girdle, bathing, at its discharge, Elysium and the Fortunate Isles. To them the world was a disc that floated in the circumambient ocean, as the yolk of an egg in the surrounding shell. There is a definite advance in the conceptions of the Ionian school of navigators, who traded far west of Sicily. The logographer Hecateus describes the map or scheme of the Habitable World, the *oikoumene* inscribed on a tablet by Anaximander of Miletus, about 555 B. C. On this nine thousand Homeric stadia were allowed for the distance from Greece to Sicily, and six thousand from Sicily to the Pillars of Hercules. Half a century later a similar schema, extending eastward as far as Susa, was depicted on a metallic tablet by Aristagoras, for the Spartans. The voyage of Pytheas of Marseilles, and the eastern expedition of Alexander the Great, opened new avenues of thought in the world of science. The Messenian Dicæarchus, in 321, composed a celebrated pinax, or tablet, of the *oikoumene* which was afterwards exhibited by Theophrastus at the portico of the academy. In this tablet Rhodes occupied the centre.

The Macedonian conquests in Asia, and the expeditions of Nearchus and Patrocles, to which they gave rise, led to the appearance of more carefully prepared marine charts, for the special purposes of navigation. The Ptolemies, then recently established in Egypt, gave their powerful assistance. Ariston explored the Arabian gulf; Timosthenes, the Mediterranean and the West. Eratosthenes of Cyrene, in 226, sought to determine the length of a degree. Assuming Alexandria and Syene to be under the same meridian, and their difference of latitude to be 7° 12', he deduced, from their measured distance apart, the