

sends two principal branches into the land masses. The eastern branch forms the China Sea, the Indian Sea, the Arabian and Persian Gulfs, and the Sea of Zanzibar: the western branch forms the Mediterranean. The water of these branches is derived from the encircling ocean. Navigation is confined to the branches, no ship having traversed the encircling sea. Yacut states that the inhabited climes are all north of the equator.¹

OROGRAPHY AND
BATHYMETRY OF
THE ARABS.

The Arabs have left very few documents relating to orography or bathymetry. It is rarely that we find in their writings even an evaluation of the heights of mountains. Ibn Khaldūn, who, in the fourteenth century, wrote his celebrated History of the Berbers, remarks that if the highest mountains are situated near the sea, it must be regarded as a providential arrangement to arrest the invasion of the ocean.² The Arabs do not seem to have been aware of the significance of volcanic phenomena from a geological point of view. They admitted, however, that the surface of the globe was subject to changes; that the sea might occupy the place of the land or be confined within narrower limits.

CORAL ISLANDS.

We find them recording observations on the formation and destruction of coral islands. Al-Bīrūnī³ points out that in the Laccadives and Maldives several islands sank beneath the waters, while others were raised above them, so that they became habitable one after the other. He says:—"The name of Dyvah is given to islands that originate in the sea, and appear above the water in the form of sand-banks; these banks in growing extend and unite till they present a solid aspect. At the same time others of these islands by breaking up decompose, melt, and disappear in the sea; when the inhabitants perceive this, they retire to some new island that is on the increase, transport into these their cocoa-nuts, palms, grains, and utensils, and finally establish a new home."⁴

ARAB VIEWS
REGARDING THE
ACTION OF WATER.

Notions concerning the geological action of water, and the sediments carried into the sea and then solidified, are met with in the writings of Kazwini.⁵ Al-Bīrūnī, whom we have just cited, embraced the idea previously expressed by Megasthenes,⁶ according to which Bengal has been formed by the accumulation of sediment deposited by the Ganges. Al-Bīrūnī also shows that he had observed the distribution of materials transported by water. He points out that the larger fragments are laid down at the upper parts of rivers, that gravel is formed in the lower portions of their course, and that, finally, sand and the finer particles are carried into the ocean.⁷

We find in Mas'ūdī examples of the carriage of fluviatile sediments, the accumulation of which causes the sea to retire. He had been profoundly impressed by the sanding-up

¹ Yacut, Geog. Dict., Leipzig, 1866, pp. 501, 504.

² Ibn Khaldūn, Histoire des Berbers, trad. de l'Arabe par M. Slane, Paris, 1852, tom. i. p. 194.

³ Flourished about 1000 A.D.

⁴ Alberuni's India, by Sachau, London, 1888, p. 106, and Al-Bīrūnī, Reinaud, No. III., "Extrait de l'Ouvrage d'Albirouni sur l'Inde," *Journal Asiatique*, ser. 8, tom. iv. p. 265, 1884.

⁵ Kazwini's Kosmographie, nach der Wüstenfeldschen Textausgabe, aus dem Arabischen von H. Ethe, Leipzig, 1869.

⁶ Megasthenes was sent to India by Seleucus about 302 B.C., and was probably the first Greek to reach the banks of the Ganges, certainly the first writer to give an account of the country from personal observation.

⁷ Alberuni's India, Sachau, p. 198.