

activity was for some time developed in oriental commerce : the ships of the Chinese and Arabs cruised in concert, over the seas which bathe the vast peninsula of Hindustan ; Arabian travellers made their way everywhere. Of Massoudi, the most remarkable, it was said that he early quitted his native town, Bagdad, to pass over the earth as the sun passes through the firmament. In 915 he was at Bassora ; in the following year he travelled over India : then in succession he visited Southern Arabia, Palestine, Khorassan, Armenia, Syria, Africa, Spain, and Roum. He died in Egypt in 957. In this way invaluable materials were collected. Renowned also as geographers and map makers were Abou Ishak the persian, and Ibn Haoukal of Bagdad. Their maps, and those of the time, displayed a geographic painting, charged with descriptive epigrams. The seas, the islands, the lakes, the morasses, had a more or less circular form ; the towns were shewn ranged on a line, or in small chequer-squares, the mountains largely protuberant, the rivers wide ; curved like a bow, or drawn in a straight line, the whole illuminated with brilliant colors. The nomenclature was of course different from ours. Spain was farther Magreb : the nearer Magreb was Mauritania : the Black Sea was Bahar Nitasch. The Atlantic was the Sea of Darkness : Asia Minor was Roum.

Meanwhile the Astronomical College founded under the caliphate of Al Mamoun, at Bagdad, still continued its labors. Astrolabes of improved construction were invented by Ali Ben Isa, who thence acquired the surname of Al Astralabi. Syed ben Ali, and Khaled ben Abdulmalek, who had assisted in their youth in measuring the length of a degree in the plains of Vaset, established themselves at Damascus, where they labored in the observatory till their old age, towards the close of the ninth century. Other observatories were successively formed in Egypt, at Cordova, at Samarcand, and elsewhere. In all these the movements of the heavenly bodies were patiently watched and noted. Aided by these observations the illustrious Ibn Iounis, born 979, the most remarkable astronomer of his age, succeeded in determining the approximate latitude and longitude of nearly three hundred important positions. He tells us that he used the eclipses of the moon for some of his longitudes. His work still exists in manuscript, in the library of Leyden. In his list of places he qualifies by the term of " Medina " all towns of importance. Many localities are no longer to be identified, among others Kasr el Molh (castle of salt) in Taharistan, on the Caspian. Corinthia appears as Kartania, and Slavonia is called Atari, that being the name of a son of Japhet from whom the Arabs believed the slaves to be descended. The impulse thus given to science extended far into Orient lands, Abou Rihan, surnamed al Mohakka, or the subtle, a member of the Kharasmian society of savans, settled in India, mastered the Sanscrit language, and reconstructed the geography of Hind, or Hindostan. Among his fellow-laborers in the west were Arzakel in Andalusia, Aboul Hasra at the

foot of Mount Atlas, and El Edrisi, one of the numerous Mohammedans at the court of king Roger of Sicily. Edrisi affirms, among other things, that he saw with his own eyes in 1117 the grotto of the seven sleepers in Asia. His maps, which are chiefly itineraries, have attracted much attention. Two sections of these, reproduced by Joachim Lelewel, extend from England on the west, which is here on the right hand, to beyond the Black Sea on the east, and include, in breadth, the sixth and seventh climates. England, under the name of Ankiltara, is shewn round as a plum-pudding, and occupies the right hand lower corner, the south side of the map being uppermost. London is Londres : Dover is Dobris : Paris is Abaris : all spelt of course in arabic characters. Norbeza or Norway is an island. Suada or Sweden is opposite on the main land. A large lake is shewn north of the Euxine, near the sources of the Dnieper. The execution is elaborate. The mountains are sketched in elevation. In the original, the seas are colored blue with close wavy lines, the land being left white : the rivers are yellowish green : the mountains are of different colors, red, green, rose, violet, with white bars : the forests are green : the towns rose-shaped and gilt. The voluminous Aboulfeda, perhaps the most widely celebrated of all, and eminent as a descriptive geographer, is not known to have constructed any map or chart. One might even doubt whether he had ever seen one, had he not expressly referred in one place, to the map of El Harail. Contemporary with him, and illustrating the decline of Arab science, appears Ibn el Ouardi born 1292, died 1349, whose manuscript map of the world is still extant. It is fanciful and worthless. The mountain Khaf surrounds all the earth, or rather, stands on the outer edge of the circumambient ocean. The north is downwards : the south or uppermost part has a legend to the effect " here plants, animals, birds, all that has life, are wanting from the excessive heat." The river Nile comes from the east before turning to the North. Europe is shewn as an Island. The mouth of the Tigris is in the centre, and Africa covers all the southern or upper part. After him came darkness. Already the eastern Khalifate had been dissolved. In 1258 the last of the successors of the prophet was trodden beneath the horse-hoofs of the Mongols. Bagdad was plundered during forty days : two hundred thousand persons were slaughtered : and science and learning fled to other lands.

During this period of Arabian Supremacy and decline, the Frankish nations of Europe were passing through the darkness of the tenth century and the dawning twilight of the eleventh. The approach of the mystic year one thousand, when, it was thought, by some confused misapprehension of the millenium, the world would come to an end, was heralded and accompanied by a wide-spread feeling of terror, incertitude, and despair. Many charters and muniments of the time begin with the words, '*Nunc appropinquante fine mundi*' ' the end of the world now approaching.' The duties of life were neglected : the ground was left untilled : famine and its terrible