

SALTNESS OF THE  
SEA—EVAPORA-  
TION.

humidity, the greater part of which has been dried up by fire, and the surplus has been transformed under the influence of heat. Others allege that the whole of the primitive humidity, having been submitted to the devouring action of the sun in its revolutions, all the pure parts have been removed, and the present ocean is merely a saline and bitter residue. There are others who assert that the sea is simply the secretions which flow down from the earth scorched by the heat of the sun during its constant revolutions. Some believe that the sea is nothing else than the primitive humidity separated from all coarse and terrestrial principles, just as fresh water mixed with ashes loses its sweetness and retains a saline taste even after it has been filtered. It is also supposed that in water the fresh and salt parts were mixed, and that the sun volatilised the fresh portions because of their subtlety, be it that it absorbs these parts itself, be it that once arrived in high regions where cold condenses them and gives them, so to speak, a new form, they change a second time into water. It is held that water being an element, the molecules which are found in the air and under the action of cold have a soft taste, while the molecules which remain on the land take up a bitter flavour under the influence of the heat which penetrates them. Several learned men have held that the mass of water which flows into the ocean either from the surface of the soil or from subterranean passages, having once arrived at that vast reservoir, has absorbed everywhere the saline principles which the earth discharges into it. It is not to be wondered at, then, that the water of the sea preserves always the same weight and bulk, since the subtile parts, which heat removes, change again into dew and water whence arise mountain streams, which fall into rivulets and ponds and flow into the wet places of the land, until they arrive, at last, in the great whirlpool of the ocean. It is thus that absolutely none of the water is lost, and springs are like machines which, drawing water from a river, return it to a rivulet that passes it again to the river. . . . . It is evident, from experience, that all humid matters endowed with a certain relish, having passed through the retort and still, preserve in their sublimate the same smell and taste, like vinegar, date wine, rose saffron, gilly-flower water, except, however, saline substances, which change the taste and smell, especially when they are submitted twice to the operation of fire and the still.”<sup>1</sup>

INDICATIONS OF A  
TRUE SCIENTIFIC  
METHOD.

It will be seen from this quotation, which may be regarded as a correct *résumé* of the knowledge of the Arabs on this matter, that Mas‘ūdī possessed exact notions about the phenomena of evaporation, the formation of rain, and, in general, on the aerial circulation of water, and on the saltness and conservation of the same in marine basins. This exposition is, no doubt, disfigured by errors; it lacks precision and definiteness, but the principles expressed are true, and prove the relative state of advancement of Arabian philosophy. In the closing sentences of the above passage the author explains the phenomena of nature by comparison with those which take place in the laboratory. This is, as Peschel has noted, one of the first occasions on which we meet with this truly

<sup>1</sup> Mas‘ūdī, *op. cit.*, tom. i. ch. xiv. pp 277-280.