

## SUMMARY.

In early youth the main forms of Persia probably differed but little from those of a moist country. There was more nakedness, roughness, and sharpness, but this was confined to the minor details. From youth onward, however, through maturity the land forms of Persia increasingly diverge from the forms of moister regions. Those of the latter are shaped by erosion; those of Persia largely by deposition. In the one case basins are destroyed; in the other they are preserved. The divergence between the two types is at a maximum during mid-maturity, when, in a moist country such as the southern Appalachian region of the United States, inclosed basins have wholly disappeared, a subsequent drainage follows implicitly the lines of rock structure, and the slopes of the mountains are completely graded; while in an arid country, such as Eastern Persia, inclosed basins are the rule. The drainage is largely interfered with by immense areas of deposition which have no connection with the underlying rocks, and the slopes of even the lower mountains are rough and naked. From mid-maturity onward the main topographic forms of moist and of arid lands again approach one another somewhat, until in old age both are reduced to peneplains. If the wind is active, however, the arid peneplain will continue to develop and may be eroded below sea-level.

## PERSIA AS AN EXAMPLE OF THE INFLUENCE OF CHANGES OF CLIMATE.

Although as a whole the basin deposits of Eastern Persia indicate the long prevalence of an arid climate, there are certain phenomena which suggest a departure from the present condition during relatively recent times. These consist, in the first place, of fine deposits of silt and clay which seem to be of lacustrine or playa origin, although they lie in regions which are never inundated under the present climatic conditions. Associated with these are shore terraces of the kind which are usually characteristic of lakes. These are best explained by supposing either that the rainfall of former times was greater than to-day, or that the climate was colder, evaporation was less, and a greater accumulation of water was possible in the basins.

Another class of facts seems to have some connection with the lakes, but is by no means so well understood. Numerous valleys in all parts of Eastern Persia contain a series of terraces ranging up to five in number, and closely similar to the terraces of Turkestan. Sometimes the terraces are cut partly in rock and partly in stream-laid gravel, sometimes wholly in stream-laid gravel, and sometimes in stream-laid gravel which lies with a slight unconformity upon finer deposits of silt. Such unconformities are common on the edges of the ancient lakes, and in almost every case coarse material lies above and finer material below, while the transition in the reverse order from coarse below to fine above seems to be gradual, without any sudden change. As the terraces and the associated phenomena represent the most recent physiographic changes which have taken place in Persia, it is not impossible that some of them originated since the advent of man, and they must be carefully explained.