

books, and also the most recent, is that of Major Sykes, "Ten Thousand Miles in Persia," a work which embodies a vast amount of careful observation and record, supplemented by most painstaking research. To it and to others of the same class which are noted in the bibliography at the end of this report, I shall have more or less occasion to refer. Lord Curzon's "Persia" stands easily first among books on the country as a whole, but unfortunately it deals but briefly with the eastern part of the Shah's dominion, and hence will be referred to but little. Of books by professional geographers or geologists, there is, so far as I know, not one which deals with Sistan and the most important parts of Eastern Persia. Blanford, however, over thirty years ago, traversed the neighboring regions to the south and west, and has given us the result of his observations and studies in a valuable review of the geology of Persia as a whole, and in a masterly essay on that most striking of Persian physiographic phenomena, the huge gravel fans at the base of the mountains. More recently Vredenburg has written a geological account of the portions of Baluchistan to the south and east of Sistan. His facts are valuable, although some of his conclusions are open to question. In addition to the classes of books already named there are several accounts of Eastern Persia which are mere travelers' tales of the most ephemeral interest. The books of all classes, so far as I have consulted them, are mentioned in the bibliography at the end of this report, although not all are referred to in the text. As an aid to future students a brief comment on the nature of the work is appended to each title in the bibliography.

OUTLINE OF THE FOLLOWING REPORT.

Eastern Persia is one of the most desolate lands in the world. The chief cause of its desolation is aridity, due in the first place to the country's continental position and in the second to its basin character. As a result of Persia's continental position the prevailing northwest winds which blow across it have not only already traversed wide stretches of land and been deprived of most of their moisture, but they are continually advancing into more heated regions and thus becoming warmer and less ready to part with moisture. The basin character of the country tends to increase the dryness of the interior; for the mountains which surround the basin are for the most part lofty and cause the precipitation of whatever moisture the winds may still contain after their long journey from the sea, so that almost nothing is left for the inner regions.

Eastern Persia, northwestern Baluchistan, and southwestern Afghanistan are all included in the basin which has just been mentioned. Close to the eastern border of Persia this basin of Iran, as it is called, is divided into two subsidiary basins by a range of mountains running north and south. (See sketch map, fig. 152.) East of the range, and complementary to it, lies a remarkable depression containing the Heri Rud River and four large hollows containing playas or saline swamps. (See map at end of volume.) Although the geological history of the country is imperfectly known, the unconformability between Tertiary deposits of continental or estuarine origin and Cretaceous deposits of marine origin shows that Iran began to assume its present basin form far back in the Tertiary era. Since