

The remainder of the Afghan depression may be summed up briefly. In the southwestern corner of Afghanistan lies the hollow of Sistan, bounded to the west by the unknown, and probably unknowable, escarpment of Palan Kuh (Panther Mountain). Then comes the God-i-Zirrah in Baluchistan, a part of the Sistan hollow; and lastly, to the southeast, the hollow of Mashkel, west of which, near the edge of the escarpment, lies the active volcano of Kuh-i-Taftan. From north to south the Afghan depression, varied as it is in character, forms a continuous whole. So, too, from the Jam basin southward, does the escarpment which forms the western edge and divides the basin of Sistan from that of Persia. It is not by accident that the boundary between Afghanistan and Persia is located along this line. The Heri Rud, so long as it flows in a gorge, forms an unmistakable frontier which can not easily be crossed. The deserts of Nemeksar and the Desert of Despair form an even more effectual barrier. In two places the frontier is weak. One is where the Heri Rud turns northward and the plains of Jam and Herat coalesce. At this point there is no natural barrier, although the land southwest of the bend of the river is so nearly desert and of so little value that it affords small provocation for quarrels. The other weakness is at Sistan, where the boundary arbitrarily bends eastward to the Helmund River, leaving the incomparable natural boundary afforded by the absolute desert at the base of Palan Kuh. Geographically, the whole of Sistan belongs to Afghanistan. Until the political boundary coincides with the natural boundary it is not to be expected that Persia and Afghanistan can avoid quarrels.

#### THE TERTIARY HISTORY OF THE BASINS OF EASTERN PERSIA.

In a preceding paragraph an outline has been given of the history of one of the minor basins of northeastern Persia.

*The Zorabad Basin.*—Apparently the Zorabad basin was first occupied by the sea and later became dry land. Then, by the warping of the earth's crust, it was converted into a lake, which in time was drained by the cutting of a gorge. As the water of the lake receded gravel was washed in from the sides and covered the lake deposits. Since that time the gorge at the outlet has been cut deeper, the various deposits have all been more or less dissected, and terraces have been formed. At intervals during the progress of these events warping has gone on in such a fashion that the size of the basin has continually diminished and all the deposits except the most recent gravels have been warped along the edges, although apparently remaining horizontal in the center of the basin. Most of this history probably belongs to Tertiary times, although the dissection of the lake deposits and the formation of the terraces almost certainly belong to the present geological era.

In order to understand the geological history of Persia it will be necessary to ascertain to what extent a similar series of events has occurred in other basins. What few facts are known indicate that the history of all the basins is similar to that of Zorabad, with the exception of the lake episode. The only lakes of which we have record in the other basins occurred at a later time and were due to changes of climate rather than to warping of the crust.