

It is the opinion of an important school of archeologists that the earliest products of metallurgy in bronze and iron successively progressed to the western world from the far East—a progress that in each case carried with it a revolution in civilizations. We do not know whether this region saw the birth of the metallurgy of those elemental substances which—beginning with copper and tin and progressing through bronze to iron and steel and the use of coal—marks the birth of civilization and its great revolutions. If it was not the birthplace of this art, and if it was a distributing center, it is a long step nearer to any far eastern source, whether this was China, East Turkestan, India, or Persia.

#### RESULTS IN PHYSICAL GEOGRAPHY.

Both our own observations and the excellent and extensive work of the Russian geologists show that the progressive desiccation of the region has greatly diminished both the area of cultivable land and the volume of water, and greatly reduced the population. Is this change a phase of cyclical phenomena—of cycles of long periodicity? In what relation have the geologically recent secular phenomena in central Asia stood to man and civilization in that region and to the outside world?

One of the chief objects of the reconnaissance of the past season was to determine whether a systematic investigation would be likely to throw light on these questions. Perhaps the most important result is our finding that successive physical events have left such abundant records, written in large strokes, all over the mountains and the plains.

The work of this year has not only made a most promising beginning in this interpretation, but has shown that it is probably possible to correlate the different events among themselves and with the period of human occupation, and possibly with similar physical events in Europe.

As an interior region, central Asia is arid and dependent for its water almost wholly on its bordering mountains. It is also self-contained, *i. e.*, without drainage to the ocean. Changes of climate, resulting in great fluctuations of water supply, would therefore probably be recorded by old shorelines at different levels. They might also be more or less legibly recorded in the evidences of repeated glaciation and erosion in the high mountains.

It will be seen from the report of Professor Davis that he has found traces of an old shoreline about 600 feet above the west shore of the Caspian Sea, and a very distinctly marked one on the east side, at an elevation of 200 feet or more. Further search for shorelines was left to form the object of a more extended special study than could be made in our general reconnaissance.

In the eastern mountains, near Issik Kul and Son Kul, Professor Davis found clear evidence of two and probably three glacial epochs. Mr. Ellsworth Huntington, working in the higher Tian Shan, found proof of three epochs, and later of five phases, in the successive moraines of a large number of glaciers studied by him in