

peculiar to that culture. And this aggrading continued until the overlying irrigation sediments began to be deposited, which occurred at about the time of the founding of the city of Anau.

If we knew the rate of cutting-down as well as we know that of aggrading, and if we knew also the depth to which the cutting-down extended, we could assign very proximate values, expressed in equivalent feet of culture-strata, to the intervals between the different cultures, after which a determination of the rate of growth of these would give an absolute chronology expressed in centuries. I have no doubt that these missing factors could be determined by further work on the lines of the method we used. But as it now stands, while each of the first two aggradings falls wholly within the life of a culture, each cutting-down occurs partly during a culture-gap.

There is, however, one point at which the geological data are of the greatest use, in that they enable us to determine proximately the distance between the beginning of the upper or iron culture of the South Kurgan and the founding of the city of Anau.

We have seen that in shaft B there grew 7 feet of alluvial strata between the time of deposition of the pottery peculiar to the iron culture and the beginning of deposition of irrigation sediments which began at about the time of the founding of the city of Anau.

Using our ratio of 1 to 2.5 we find that these 7 feet correspond to 17.5 feet of culture-strata. Now, on the low northern extension where they are thickest, there are only 12 or 13 feet of strata of the pure iron period, leaving about 4 or 5 feet unaccounted for. As there was no overlapping of the cultures of the kurgan and city, these 4 or 5 feet of interval may belong partly to a period of abandonment, or wholly to wastage. The top of the high kurgan itself has naturally undergone a greater amount of loss, and there we find only 4 feet of pure iron culture-strata.

GAP BETWEEN COPPER AND IRON CULTURES.

The conditions which are shown in Dr. Schmidt's sketch of the side of the "upper digging" (fig. 37) indicate that after the abandonment by the copper-using people, the kurgan remained for a long time unoccupied. The walls of the empty houses remained standing, and the rooms inclosed by them filled slowly with earth, drifted in from the slow wastage of the bricks. Eight feet of débris of wastage intervenes between the copper and iron occupation, and in this a few pieces of rough hand-made pottery and the absence of construction would seem to mark a temporary or occasional occupation by a nomadic people. There are no culture-strata properly speaking, and the gap itself gives no internal evidence of the duration of the interval. In bridging this gap we can use the geological method only as far as the observed amount of aggrading can help us. The observations in shaft B show that after the cutting-down that began towards the end of the copper culture there was an aggrading of at least 12 feet before the founding of Anau. This alone is the equivalent of 30 feet of culture-strata. To this must