

below the present surface of the plain, its western extension, which is overgrown and hidden by the alluvial strata and irrigation silts, extends to a depth of at least 27 feet, where its culture-strata contain the pottery that belongs only in the lower culture. North Kurgan west shaft II, after sinking through 15 feet of irrigation silts, was continued to -30 feet* through alluvial strata. Down to -22 feet these contained fragments of the pottery peculiarly characteristic of the upper culture II, *i. e.*, of the strata above the level of 45 feet above the base of the main mass of the kurgan; while from -25 to -27 feet there was found only the pottery of the lower culture. The conditions under which the pottery was found at -19 feet were such as would seem to exclude the possibility of its having been washed into place. The pieces were sharply angular and they were found by R. W. Pumpelly to be associated with bones and charcoal—conditions indicating contemporaneity of age for the pottery, bones, charcoal, and alluvial clay.

Now we have seen that in shaft F, at the South Kurgan, pottery of the lower culture of that kurgan was found in alluvial strata at 26 feet below the level of the plain, *i. e.*, 7 feet deeper under the surface than the level at which the upper-culture pottery of the North Kurgan was found in the shaft near the North Kurgan. Therefore, the whole of the growth from -26 feet upward occurred after the founding of the South Kurgan. Assuming that the pottery, bones, and charcoal were left by man on the plain when it stood -19 to -20 feet at the North Kurgan, we have evidence that the alluvial growth in shaft F of the South Kurgan is a younger growth than that in the west shaft II of the North Kurgan, for artefacts of the younger South Kurgan could not become naturally buried at a deeper horizon than those of the older kurgan in alluvial strata of the same growth. On this evidence the alluvial strata, which are shown in shafts D, E, and F to have overgrown the older settlement on the extension of the South Kurgan, must belong to a younger growth than that of the strata in North Kurgan west shaft II, and degradation must have intervened between the two. We have not found either pottery or charcoal in any of our shafts at a greater depth than 27 feet below the surface. And these traces of man's occupation of the region were so abundantly scattered over the contemporary surface that we find them in all shafts at various depths down to 27 feet. We have, therefore, evidence of three separate growths of alluvial strata between the founding of the North Kurgan and the beginning of irrigation, and of two intervening degradations.

While these growths and degradations doubtless affected the whole surface of the oasis to a certain extent, the full extent of their action was apparently limited to the principal channel or channels through which the water found its way from the mountains to the desert. This is still faintly shown by careful observation in the topography of the present surface, and it is recorded also in the character of the sediments pierced by our shafts. The "irrigation canal," a small distributing ditch, shown on plate 2 as passing by the east side of the South Kurgan and to the west of the North Kurgan, follows a broad but only

*The surface of the plain is the datum.