

At +8 feet we find for the first time a well-preserved core of a domesticated sheep, which belongs to the already mentioned large-horned form. It is the same as the *Ovis vignei* horn-cores, but a little smaller. But in the same layer there occurs a second core, which is not derived from the same animal, as it is notably smaller, more slender and also of two-edged form. Further core-pieces occur frequently in all the following layers, the best-preserved of these cores being found at +20, +25, and +26 feet. These cores disappear then entirely and from there on we meet only with the very slender cores of *Ovis aries palustris*, horn-core bases, with both attached frontal pieces and middle pieces, being very common.

The cores of *Ovis aries palustris* begin to appear, however, before the +28-foot layer, *i. e.*, during the occurrence of remains of the large-horned form. The calvarium already mentioned, shown in plate 75, fig. 2, comes from this layer. Its horns, which are still rather stout, indicate that the now-developing turbary-sheep form is yet in the process of evolution. The turbary-sheep form continues until the uppermost layers of the kurgan are reached. It becomes considerably rarer, however, above +33 feet and about that time there enters a hornless sheep, which we shall presently consider. Thanks to Professor Pumpelly's care these closely accurate stratigraphic relations afford us weighty evidence that the *Ovis palustris* is autochthonous in this part of Turkestan and was bred from the *Ovis vignei* of the Kopet Dagh; for it is clear that here a few feet of culture-strata represent centuries during which a very great transformation could take place in the Anau sheep.

In the tables on pp. 374-375, I have brought together the measurements of the horn-cores and the cranial remains from the layer +28 feet, in comparison with such specimens from European culture-strata. It is easily seen that the measurements agree with each other, serving merely to strengthen the impression made by the agreement in form.

THE HORNLESS SHEEP OF THE COPPER PERIOD.

(See plate 75, fig. 3.)

In the former section it was shown that at about the +33 to +34-foot culture-layer the horned *palustris* sheep was crowded into the background by a hornless sheep, which suddenly appears in numerous individuals. As is well known it is difficult to find among the hornless sheep such differences in cranial structure as to permit a determination of the breed. The skulls of hornless sheep and of goats are distinguishable from each other with difficulty when the sutures of the parietal bone are no longer recognizable. It is, therefore, impossible to determine the exact relationship of the hornless sheep of the II or copper-culture period. The dimensions of the skulls of different hornless sheep, brought together in the following table, show a perfect agreement with the hornless sheep skull from a turbary at Abbeville in France, preserved in the Museum of Natural History at Paris; but, on the other hand, the agreement of the measurements with those of the skull of an *Ovis platyura bucharica* ewe is very strong.