

scanty pasturage. It is no wonder, therefore, that the Turkoman cattle are unusually small and yield very little milk. How entirely different from the animal breeding of to-day in that region was that which the bone-remains of ancient Anau indicate!

At the time when the lowest layers of the North Kurgan at Anau were formed man lived in this region entirely without domestic animals. The mighty wild ox (*Bos namadicus* Falconer & Cautley), and the small wild horse—possibly in the form that Wilckens thought he discovered among the finds of Maragha in Persia, or in that of *Equus przewalskii*—roamed on the steppes and the oases of the Kara Kum desert and sought shelter in the forest which probably then occupied the valleys and slopes of the Kopet Dagh. There lived, too, the large-horned wild sheep (*Ovis vignei arkal* Lydekker) and the gazelle (*Gazella subgutturosa* Guedenstedt).

From the absence of all stone weapons in the oldest period, we may conclude that man lived on a friendly footing with these animals and that he could gain possession of them only by depriving the wolves of their prey or by the use of fire-hardened wooden weapons. The absence of weapons among the primitive Anau-li presents an actual condition such as that which forms the basis of the very plausible theory of the domestication advanced by R. Mucke.* It would be guesswork to attempt to picture the method of domestication, and to assume with Mucke that the wild horse, the wild sheep, and the wild ox voluntarily (or compelled by the necessity of food from outside the oasis) approached human dwellings to graze on the weeds and other plants and so were gradually brought into companionship with man, who then assumed the care of their nourishment. We know only that after the accumulation of the lowest 10 feet of the strata in the North Kurgan this same ox occurs in an almost equally large, but certainly a domesticated form, becoming more and more frequent in the higher strata, when the horse and the sheep also pass over into the domesticated condition. It seems probable, however, that little use was made of the milk of the cattle and that they were used for riding and as working animals, as is the case to-day.

In the —8-foot layer, *i. e.*, 12 feet from the bottom, there appears the pig, of which we had no trace in the lower layers. Was it a domesticated pig or the wild *Sus vittatus*? This can not be determined with certainty. In any event it was the same animal, and the breeding of swine was actively followed by the Anau-li into the metal period, whereas at present it is entirely wanting among the Mohammedan population.

In this remote period also the breeding of sheep, which to-day forms the principal part of the Turkoman's animal industry, began to be developed. The first remains of the domesticated sheep that we find point to an unusually heavy and stout-horned form, which, in the earlier layers, is very closely related to the wild sheep of the Kopet Dagh. Gradually the horns of this sheep became smaller and smaller and there arose that form which has been designated as "turbary

*R. Mucke, *Urgeschichte des Ackerbaues u. der Viehzucht*. Greifswald, 1898.