

OVINA.

WILD SHEEP.

Ovis vignei arkal Lydekker. (See plate 75, fig. 1; plate 76, figs. 1-4 and 8; plate 82, fig. 2).

Among the bones which are assignable to the sheep there are several fragments of very large horn-cores, which could in part be put together, forming then the calvarium (plate 75, fig. 1). This comes from culture Ia layers from a depth of -20 feet and, therefore, belonged to a contemporary of the oldest period.

In order to identify this fragment of a skull we must first learn whether we have to do with a wild or domesticated sheep. This question, thanks to the better bones, is easier to determine than it was in the case of the Anau bovinds. There is no domestic sheep which shows horns corresponding even approximately to these horn-cores. We find them, however, among wild sheep.

Among the wild sheep that might come in question are those of the steppes, *Ovis orientalis* Gmelin (*Ovis arkal* Brandt) and those of the Kopet Dagħ, which Lydekker calls *Ovis vignei* arkal.

It is now evident that, even according to Lydekker, there is no great difference between these two forms of sheep, and that it will not be possible to show any differences from the few bones, since the species and subspecies are based only on characters of skin and horn. I would remark here that in my preliminary report of last year to Professor Pumpelly, without then knowing of the occurrence of the urial in the Kopet Dagħ, I wrote: "These large spongy horn-cores seem to belong to the forms of *Ovis orientalis* Gmelin, seu *O. arkal* Brandt, although they are but little different from *Ovis vignei* Blyth."

The Kopet Dagħ sheep was named *Ovis arkal* in 1857 by Blasius and is evidently allied to the urial of the Punjab race, with which Lydekker has proposed to identify it.*

In a more recent treatise† Lydekker studies an adult skull of this animal and says:

It will be remembered that the Punjab race of the urial (*Ovis vignei cycloceros*), at any rate as exemplified by the specimens from Peshawar and Afghanistan in the British Museum, differs from the typical *Ovis vignei* of Astor and Ladak in the much greater prominence of the two front angles of the horns, which are often raised into nodose beads, between which the front surface of the horn is depressed and carries bold and widely separated transverse ridges. In the Kopet Dagħ urial the prominence of the front angles of the horns is still more pronounced, though the beading is somewhat less conspicuous. Moreover, the front surface of the horn is unusually broad and flattened, with the transverse wrinkles very low and indistinct. The length of the horn is 33 inches along the inner front angle, with a basal circumference of 11 inches, a basal width of 3 inches and a basal depth of 4 inches.

The last two dimensions are considerably greater than in a skull of the urial, measured by Mr. Hume, in which the length along the curve is 35 inches.

The Kopet Dagħ urial appears decidedly to be a distinct form connected with the typical *Ovis vignei* by the Punjab race of that species.

On these grounds I regard it as a local race, rather than a species; its name will accordingly be *Ovis vignei arkal* (or perhaps *arkal*).

*Lydekker, Wild Oxen, Sheep, and Goat, p. 173.

†Lydekker, Note on the Wild Sheep, of the Kopet Dagħ, Proc. Zool. Soc., Feb. 3, 1903, pp. 102-3.