**Early Saharan pastoralists**

**早期撒哈拉牧民**

The Sahara is a highly diverse, albeit dry, region that has undergone major climatic changes since 10,000 B.C. As recently as 6000 B.C., the southern frontier of the desert was far to the north of where it is now arid plains. This was a landscape where antelope of all kinds abounded—along with Bos primigenius, a kind of oxen that has become extinct. The areas that are now desert were, like all arid regions, very susceptible to cycles of higher and lower levels of rainfall, resulting in major, sudden changes in distributions of plants and animals. The people who hunted the sparse desert animals responded to drought by managing the wild resources they hunted and gathered, especially wild oxen, which had to have regular water supplies to survive.

尽管干旱，撒哈拉的物种极其多样，并自公元前10,000年前开始已经历了数次重大气候变迁。直到公元前6,000年前，沙漠的南部边界比现在的位置要靠北很多，那时半干旱的草原和浅淡水湖泊覆盖了现在干旱的平原。这里曾经是各种羚羊和一种已灭绝的野牛出没的地方。像所有干旱地区一样，现在的沙漠地区对降雨量的变化周期极为敏感，因而其动植物的分布变化巨大且迅速。依靠捕食稀少的沙漠动物的居民对待干旱的方式是管理他们捕捉和收集到的野生资源，尤其是需要可靠水源维持生命的野牛。

Even before the drought, the Sahara was never well watered. Both humans and animals were constantly on the move, in search of food and reliable water supplies. Under these circumstances, archaeologist Andrew Smith believes, the small herds of Bos primigenius in the desert became smaller, more closely knit breeding units as the drought took hold. The beasts were more disciplined, so that it was easier for hunters to predict their habits, and capture animals at will. At the same time, both cattle and humans were more confined in their movements, staying much closer to permanent water supplies for long periods of time. As a result, cattle and humans came into close association.

甚至在干旱之前，撒哈拉地区也从未有充足的水分。人类和野生动物都不停的迁徙，以寻找食物和可靠的水源。在这些情况下，考古学家Andrew Smith 认为随着干旱的持续，沙漠中野牛群会变成更小、组织更紧密的族群。兽群变得更加自律，因此猎人更容易预测他们的习性并随意抓捕。同时，牛和人类的行动范围进一步靠近，在固定水源附近长期更亲近的共处。结果牛和人类形成了紧密的联合。

Smith believes that the hunters were well aware of the more disciplined ways in which their prey behaved. Instead of following the cattle on their annual migrations, the hunters began to prevent the herd from moving from one spot to another. At first, they controlled the movement of the herd while ensuring continuance of their meat diet. But soon they also gained genetic control of the animals, which led to rapid physical changes in the herd. South Africa farmers who maintain herds of wild eland (large African antelopes with short, twisted horns) report that the offspring soon diminish in size, unless wild bulls are introduced constantly from outside. The same effects of inbreeding may have occurred in controlled cattle populations, with some additional, and perhaps unrecognized, advantages. The newly domesticated animals behaved better, were easier to control, and may have enjoyed a higher birth rate, which in turn yielded greater milk supplies. We know from rock paintings deep in the Sahara that the herders were soon selecting breeding animals to produce offspring with different horn shapes and hide colors.

Smith相信猎人对猎物更加自律的行为了然于胸。猎人们不再跟随牛进行每年一度的迁徙而是开始阻止兽群的迁移。起初他们控制兽群的迁移以获得持续的肉食来源。但很快他们能够在遗传上控制动物，使得兽群的体征迅速变化。南非牧养大羚羊(一种体型较大的非洲羚羊，它们的角短且扭曲)的农民说如果不持续从野外引进公羚羊则其后代体型迅速变小。近亲繁殖的影响同样发生在控制拥有某些额外的可能并未认清的优势的牛的数量上。最新驯化的动物更易控制，出生率也更高，而反过来也会提供更多奶源。我们从撒哈拉腹地的岩石绘画可知牧民很快就选择一些动物进行繁殖，它们角的形态和皮毛颜色都有差异。

It is still unclear whether domesticated cattle were tamed independently in northern Africa or introduced to the continent from Southwest Asia. Whatever the source of the original tamed herds might have been, it seems entirely likely that much the same process of juxtaposition (living side by side) and control occurred in both Southwest Asia and northern Africa, and even in Europe, among peoples who had an intimate knowledge of the behavior of wild cattle. The experiments with domestication probably occurred in many places, as people living in ever-drier environments cast around for more predictable food supplies.

我们仍无法知道牛是在北非独立驯化的还是从东南亚引入的。不管驯化的兽群起源何处，与驯化动物毗邻而居、控制这些动物的行为在东南亚和北非、甚至是欧洲都有出现，这些人对野牛的行为了然于胸。随着人们居住环境不断干燥和食物供给的可预测性更强，驯化的尝试很可能发生在很多地方。

The cattle herders had only a few possessions: unsophisticated pots and polished adzes. They also hunted with bow and arrow. The Saharan people left a remarkable record of their lives painted on the walls of caves deep in the desert. Their artistic endeavors have been preserved in paintings of wild animals, cattle, goats, humans, and scenes of daily life that extend back perhaps to 5000 B.C. The widespread distribution of pastoral sites of this period suggests that the Saharans ranged their herds over widely separated summer and winter grazing grounds.

骆驼牧养人的财产很少：一些并不精致的罐子和磨光的斧子。他们也利用弓箭捕猎。撒哈拉人在撒哈拉腹地洞穴的墙壁上留下了很重要的关于他们生活的记录。他们的艺术创作保存了大量关于野生动物、牛、山羊、人类及其日常生活的各种场景的绘画。这些场景可能追溯到公元前5,000年前。这一时期田园画古迹的广泛分布表明撒哈拉人曾在广泛且独立的夏季和冬季牧场上放牧。

About 3500 B.C., climatic conditions again deteriorated. The Sahara slowly became drier and lakes vanished. On the other hand, rainfall increased in the interior of western Africa, and the northern limit of the tsetse fly, an insect fatal to cattle, moved south. So the herders shifted south, following the major river systems into savanna regions. By this time, the Saharan people were probably using domestic crops, experimenting with such summer rainfall crops as sorghum and millet as they moved out of areas where they could grow wheat, barley, and other Mediterranean crops.

大约公元前3,500年前，气候条件又一次恶化。撒哈拉沙漠渐渐地更加干旱，湖泊相继干涸。另外西非内陆降雨增加，并且舌蝇这种对牛致命的昆虫也从北部向南移动。所以牧牛人也追随大平原区域的主要河流系统向南迁徙。此时，随着撒哈拉人从原本可以种植小麦、大麦和其它一些地中海农作物的区域中迁出，他们可能依靠当地的农作物，试验种植高粱和小米一类的依靠夏季降雨的作物。