CHAPTER 1

The Origin and Evolution of Cattle. The Cattle Studied and Methods Used.

If one idly watches a large-udderded dairy cow rubbing itself on a fence post, it is difficult to imagine that cattle were once wild-eyed, quick-acting creatures. The ancestors of domestic cattle were the large Aurochs which roamed around on the edges of the post-glacial forests. These long-legged beasts (Bos primigenius) stood up to 2 metres at the withers and were fleet of foot. James Wilson (quoted by Zeuner (1963) described them as 'mighty untamable monsters of unconquerable ferocity'.

The first of the hoofed animals to be tamed, bred and used by man were sheep and goats in about 7000 BC. These animals were small, easy to feed (they have very catholic tastes) and easy to manipulate, especially when one considers the weak grass ropes and lack of sophisticated tools of early man. However, the increase in the human population rapidly necessitated the expansion of food growing areas and animals were needed as beasts of burden to carry supplies and to work the land. Sheep and goats were inadequate for this task, so in about 6000 BC the first cattle were 'domesticated' - they were tamed, and their movements, mating and life span were controlled by man, with whom they began to live in close association. The symbiotic relationship benefitted both man and beast. The domestication of cattle was one of the most important and fundamental steps taken by man and enabled large-scale exploitation of the western world, but it also required massive re-organization of agricultural practices.

Large animals, such as cattle, require relatively large amounts of food (about 15 to 20 kilograms of bulk food per day) which must have been a problem for the early sedentary Neolithic agriculturalists. The result was that the early domestic cattle and other livestock were malnourished and there is a very noticeable decrease in size from the wild to early domestic types. The latter have been described, again by James Wilson, as 'small, thin fleshed, narrow backed, sickel hocked, light dun beasties'. This change in size is so dramatic that many archaeologists thought they had discovered a new species, which they called Bos longifrons. Most of today's archaeologists maintain however that this was not a new species, but just a malnourished version of the Aurochs, Bos primigenius (Clutton-Brock, 1976). Living examples of these cattle can be seen today in the southern Mediterranean peasants' cattle and also the small Kerrys of Ireland.

The importance of cattle to early man is emphasized by their frequent occurrence in ancient paintings, myths and religions.

While some cattle were becoming domesticated, the Aurochs continued to live wild in the forests being hunted.
occasionally until the beginning of the fourteenth century. The last survivor is reputed to have died in a Polish park in 1627. There have been attempts to re-breed this magnificent long-horned animal by crossing Hungarian Steppe cattle with Highland and Alpine breeds in Münich Zoo. At Berlin Zoo they tried independently to breed animals that must have resembled Aurochs by crossing Spanish fighting cattle with Camargue and Corsican cattle and introducing a smattering of English park cattle's blood. Both these efforts at 'reconstruction' have been relatively successful in establishing the colour marking and the offspring are still in Munich Zoo at least. However, they are very much smaller than the Aurochs are reputed to have been and therefore probably resemble the first domesticated cattle more than the Aurochs. As well as the changes in size and body form of the animals, a change in temperament is reported. The reconstructed Aurochs that have been allowed to run wild in the German forests have been called 'fierce, temperamental and extremely agile'. How much of this is the result of lack of contact with man, and how much genetic we don't know (Zeuner 1963).

Lately in Britain there have also been efforts to breed a reconstructed small domestic cow such as Neolithic man might have had by crossing the small Kerry, Dexter, Sussex and North Devon cattle. The Sussex cattle in particular, some of which are included in our experimental herds (see page 9) are considered to have 'purity of blood in a long and unbroken stream'.

How the first wild Aurochs were tamed remains something of a mystery. Juliet Clutton-Brock (1976) suggests that in the first place man selected animals that were non-territorial, such as sheep, goats and cattle, rather than the territorial antelope and deer which would be unlikely to breed in large numbers if restrained. She suggests rather than those which were selected for domestication had hierarchical social structures. We think this is probably an over-simplification although behaviour was, and is, one of the fundamental factors controlling both domestication and subsequently animal breeding.

The most likely way in which these enormous animals were domesticated would have been the capture of the young within twelve hours of birth when they are still unable to run fast. These were probably captured before they recognized their mother and then suckled by goats or sheep - or even women - who would then be recognized as the mother. Thereafter it would have been only a matter of training to teach them to lead, pull, stand to be milked, let down their milk and so on - 'only a matter of training' though which even with today's animals is a highly skilled affair.

As soon as the captured animals became mature, the first efforts at selective breeding were practised and unwanted bulls castrated. In this way there was rapid selection for particular characteristics both of physique and of behaviour. The selection of appropriate behavioural traits has tended not to be conscious