

## 1 | Why are domestic animals kept?

Domestic animals may be provisionally defined as those kept and bred in and around human habitation to be used constantly to human advantage. Such animals are found in flats in large modern cities, in the form of innumerable dogs, cats, rabbits, guinea pigs and hamsters. We find them on the farms of Europe where cattle, horses and donkeys, sheep and goats, pigs, dogs and cats, geese, ducks and hens are kept. Various combinations of species are to be found around the huts and villages in the tropical lands of the Old World. We see camels, horses, sheep and yaks amongst the tents and yurts of the herdsmen of Central Asia and large herds of reindeer amongst the people of the far north of Europe and Asia. In Europe and Asia, as amongst the Eskimos of the icy wastes of the frigid zone of the North American continent, the indigenous Polynesians of the Pacific Islands, the San of the Kalahari, or the Indians in the tropical forests of South America, the dog is the most widely distributed domestic animal. In short, domestic animals are to be found everywhere human beings have made their abode. They are our universal companions (Figs. 1.1–1.4).

Other animals that are kept, but not bred over generations for a particular use, nor subjected to any particular kind of selection, cannot be termed domestic animals, even in the widest sense. They are wild animals kept in captivity and sometimes tamed, as for example are small monkeys, tropical wild cats, pet birds, lizards or tortoises. As a rule, such animals do not undergo the process of domestication. This also holds in principle for zoo animals. It goes without saying that animals that live as

Fig. 1.1. Domestic animals are characteristic of farms all over the world. In addition to cattle and pigs, goats as 'the small man's cow' and donkeys as beasts of burden for many different purposes used to be a part of village life in Central Europe (farmhouse in Tessin, Switzerland).



### *Domestication*

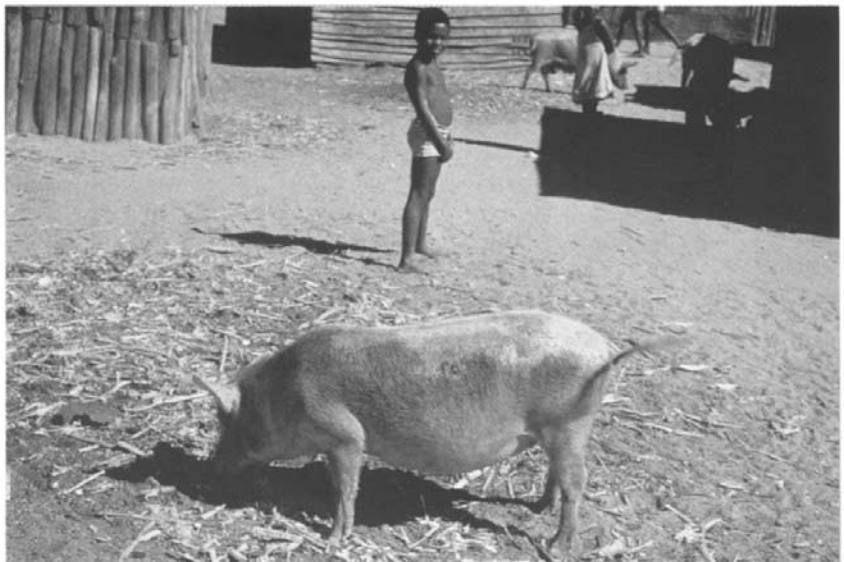
unwelcome guests in human habitations, for example, mice, flies, mosquitoes, cockroaches and bugs, also have nothing to do with domestication.

Domestic animals have provided an essential basis for the fulfilment of the most elementary human needs since the Neolithic at the latest, so it is no surprise that the course of history as a whole has for millennia been closely connected with that of domestic animals. The domestication of the ruminants – sheep, goats, cattle and camels – was the prerequisite for the development of the nomadic herding way of life, producing conflict over land use with sedentary peasant economies from the very beginning. The Cain and Abel story of the Old Testament hints at this rivalry. From the standpoint of the herdsman's culture, within which that metaphorical story was first handed down, the embodiment of good in the herdsman

Fig. 1.2. The horse as a draught and saddle animal has contributed to immense historical upheavals. In the steppes from East Europe to Central Asia, where the origins of its domestication are to be sought, it still fulfils decisive functions in the day-to-day life of mounted herdsmen (rural horses near a yurt in Kirghizia).



Fig. 1.3. Pigs bred solely for meat production are just as much at home among huts in tropical villages as in countries in the temperate zones. They rank first in the world statistics of meat production (village in southwestern Madagascar).



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Abel and of evil in the farmer Cain appears completely comprehensible. This tense relationship continues through the millennia right up to the conflicts between farmers and Aborigines in Australia and farmers and Indian tribes in South America. After the domestication of the horse, horsemen from the wide steppes of eastern Europe to eastern Central Asia time and again changed the course of history: the Hyksos succeeded in conquering the Middle Kingdom in Egypt around 1650 BC, the Huns increased the pressure on the peoples of Europe during the migratory movements as 'Antiquity' gave way to the Middle Ages, in the fourth and fifth centuries AD, and the Mongols under Genghis Khan created a huge empire from the east of Europe to the China Sea at the beginning of the thirteenth century. The horse also made it easier for the Spaniards to subjugate the great Inca and Aztec empires of Central and South America at the beginning of the sixteenth century.

The universal distribution of domestic animals and their significance in changing the course of history is based on the many benefits human society has been able to gain from them. This is best expressed by figures on the world stocks of some important species: over a 1 000 000 000 each of cattle and sheep, over 500 000 000 pigs, and almost that number of goats. One elementary need that domestic animals take an essential part in fulfilling is that for food (Figs. 1.5–1.7). Instead of acquiring meat by hunting, which ties up more manpower and involves a higher risk of failure, it gradually became more and more common to keep herds of domestic animals as a constant supply. Most kinds of domestic animal are, or at least were earlier in their history, used as fattened stock for meat production. In 1978, for instance, the worldwide production of meat amounted to about 132.4 million tonnes, of which 48.1 million tonnes were beef and 48.7 million tonnes pork. In addition, several large species of herbivores provide milk and milk products such as butter and cheese.

Fig. 1.4. The dog is the oldest and originally the most widely distributed domestic animal. There are dogs even in civilizations which have no other domestic animals (young dingo, Australian feral dog).



### *Domestication*

Milk production world-wide now amounts to over 450 million tonnes a year (Fig. 1.8). The Masai in East Africa use live cattle as a further source of food by regularly extracting blood from them. Eggs, an important product of domestic poultry, play just as large a part in nutrition as the milk of cattle and other large mammals.

A human necessity just as basic as food, at least in non-tropical regions, is clothing as protection against the cold. Domestic animals provide hides, which are processed into leather for the most varied articles of clothing from shoes to overcoats. Their coats are used for fur products; sheep and rabbits are the main sources, although dogs and cats are also

Fig. 1.5. In industrial countries, highly rationalized pig fattening in narrowly confined pens serves to guarantee meat supplies.

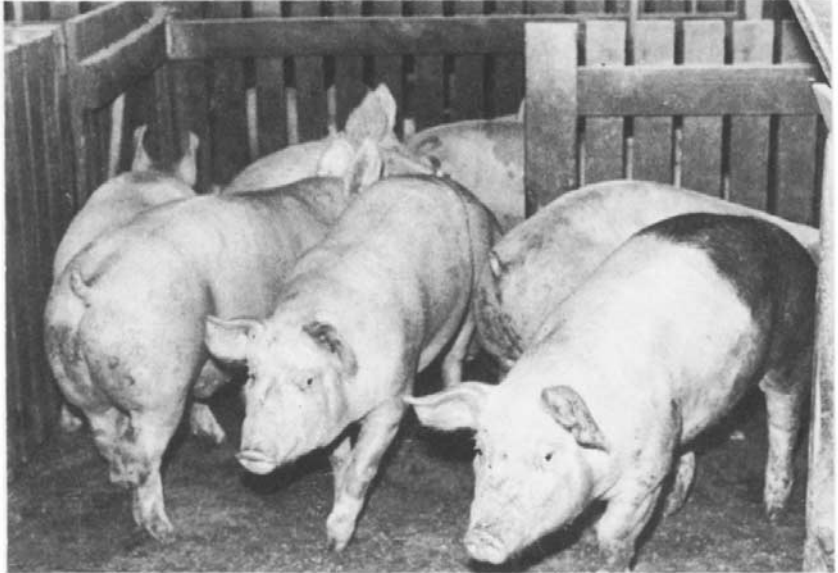


Fig. 1.6. Cattle occupy second place in the world's meat production, close behind pigs. Fattening young bulls is of great importance.



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used, and animals such as foxes and minks, first farmed in the second half of the last century, have acquired considerable economic significance for their high quality fur. For instance, in 1976 West Germany imported 4.75 million mink pelts for DM242.9 million and 6.20 million sheep skins, mainly Persian lamb, for DM278.5 million. The third raw material significant for clothing production is wool, above all from sheep but also from goats and alpacas. In addition to the protection woollen clothing gives against cold, wool is also used in making carpets which insulate the floors in our homes. The production of wool in the world amounts to over 1.5 million tonnes a year.

People's requirements for warmth can be satisfied either directly or

Fig. 1.7. The black and white cattle originating in the lowlands of Holstein and Friesia are one of the best dairy breeds in the world, with an annual yield of over 5500 kg milk per cow. They have now become widely distributed.



Fig. 1.8. Rationalized milk production in industrialized countries presupposes large stocks of cattle. The extent of these stocks in a modern dairy is most striking when the cows crowd into their shed after coming from the pasture.



indirectly by domestic animals in other ways. Dingoes, the original Australian domestic dogs now found mostly in the feral state, still serve the Aboriginal people as living sources of warmth on cold desert nights when human and animal sleep closely huddled together. In several desert and dry areas the dried-out dung of camels, llamas or yaks can be used instead of wood as fuel while simultaneously giving light. Fat from domestic animals is also used in oil lamps; honeybees, which may for the present be termed domestic animals according to the generalized definition, provide wax for candles.

Domestic animals have been exploited in a great variety of ways for medical purposes. For instance, almost all parts of the dog's body were used in Graeco-Roman medicine. Dog fat, and later also cat meat, were supposed to help against tuberculosis. For centuries until the present day, cat skins have been used as an effective therapy for rheumatic diseases. Many parts of the goat's body were significant in folk medicine. Until genetic engineering and biotechnology provide higher yields, domestic animals are still indispensable as sources of several hormones, such as insulin for the treatment of diabetes or thyroxine to treat thyroid ailments. Domestic animals are used in the production of serums for vaccinations. Pigskin may be a temporary substitute skin in the case of serious burns, and artificial heart valves can be made from pigs' heart valves. Large amounts of enzymes for all sorts of different purposes are isolated from the organs of domestic animals.

Producing raw materials for a large variety of products is another essential aspect of the use of domestic animals. Leather from the skins of slaughter animals has always been used for a wide range of purposes other than clothing. Today these extend from covering upholstered furniture and car seats to the basic material for bags, suitcases and bookbindings. Goat leather was at one time converted to parchment, an important writing material. The whole skins of the small ruminants, goat and sheep, were used as containers for water or wine. The horn of horned animals can be turned into buttons, combs and ornaments, and in earlier times it was also part of the manufacture of musical instruments and tools. Hair, in addition to the central role of wool, was and is used in musical instruments (e.g. horsehair for covering violin bows), to make paintbrushes and brushes, to manufacture felt, to twine cords and finally as an insulating stuffing for cushions or mattresses. Poultry feathers also serve similar purposes and one should remember the former use of goose quills as writing utensils and ornaments.

The blood of slaughter animals, formerly a food, is now also a source for albumen adhesives, blood meal for animal feed, and pharmaceuticals. Animal fats not used for food may be materials for cosmetics, glycerine and fatty acids. The last of these are used in producing stearin candles, while glycerine is used for technical purposes, e.g. anti-freeze and pharmaceuticals, and is also the basis for dynamite production. The

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bones left after the removal of skin and meat form the basis of the manufacture of glue, gelatine and bonemeal for livestock feed and fertilizer. Even the inner hollow organs do not go to waste: the gut, stomach and bladder can be used as skins in sausage-making, gut for stringing musical instruments, and catgut (nowadays sheep gut) for stitching after operations as it can be absorbed by the body. Sinews have also been used as bowstrings or thread, fat as a lubricant. Finally the dung of domestic animals, apart from being dried to use as fuel as already mentioned, is a natural fertilizer.

The amount of work done by domestic animals is of inestimable significance. Large ungulates provided power for transport for thousands of years, which was a decisive factor in war and peace (Fig. 1.9). Horsemen made history in extended campaigns of conquest. Besides the horse, the dromedary attained importance as a saddle animal, particularly amongst the Arabs. Transporting goods over terrains impassable to waggons or sleds could only be accomplished with the aid of pack animals before modern technical means had been developed. Here one need think only of the donkey, and the mule (the cross between donkey and horse), in Europe and the Near East. Any significant kind of trade between the East Asian world and Europe would have been impossible formerly without the large camel caravans through the deserts of Central Asia. The yak made transport possible in the high mountains of Inner Asia as did the llama in the Andes of South America. Cattle were of central significance as draught animals for thousands of years. A reminder of this is conserved for tourists in Europe on the island of Madeira, where oxen-drawn sleds still frequent the plastered streets of Funchal (Fig. 1.10). Zebus are used as draught animals more frequently in tropical lands. The horse was employed to draw war chariots before it came to replace cattle more and more for everyday and agricultural

Fig. 1.9. Besides the part they play in satisfying the basic human need for food, domestic animals have been kept to perform work since ancient times. The horse attained special significance in war and peace in early historical times. This is expressed in the wide variety of depictions in the art of many peoples (relief from Classical Greece: National Museum of Archaeology, Athens).



purposes. Draught animals were necessary in agriculture not only to draw waggons and carts but also for ploughing fields. Donkeys and camels plodded constantly around deep wells to turn winches to draw water for drinking or to irrigate the fields. In a similar way, large ungulates such as oxen were used to help in threshing by treading out the grain from cereal plants spread out on the ground. Reindeer were used to draw sleds and for riding in the far north of Eurasia. Finally, human penetration so far into the icy wastes of the Arctic and Antarctic would have been quite unthinkable without sled dogs.

Some kinds of domestic animal, in particular the dog, perform some tasks by using specific modes of behaviour rather than physical strength. Geese can be used as guards; so too can dogs, which in a number of countries are indispensable helpers in keeping large herds of ungulates together. In hunting, different kinds of specially bred hound chase and catch the game, drive and hold it at bay until the hunter arrives, set and so locate it, seize it, fetch the bag, look for and follow tracks, as required (Fig. 1.11). Especially powerful types of dog were also bred for combative purposes, above all to fight large beasts of prey. The fighting and tracking abilities of dogs in the hunt led to similar employment elsewhere. Police and Customs and Excise dogs carry out important tasks particularly nowadays because the efficiency of their sense of smell allows them to be trained to detect hidden goods, such as smuggled drugs. Dogs have also attained importance in searching for people buried by avalanches. Pigs can be trained to a certain extent to search for objects by smell, and, in addition to individual cases of hunting, they may aid in the search for truffles. Finally, in communications, carrier pigeons have attained a special value.

Fig. 1.10. The oxen sleds preserved for the tourists in Funchal on Madeira amidst the cars of the modern world are a reminder of the time when cattle were the most important draught animals in the daily life of the peasants of Europe as they still are today in many parts of the tropics.





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Another important job performed by domestic animals is the control of commensal rodents (i.e. those living in and around houses and settlements), which cause considerable damage in stores of foodstuffs. The domestication of two kinds of animal, the cat and the ferret, was probably originally connected with this problem.

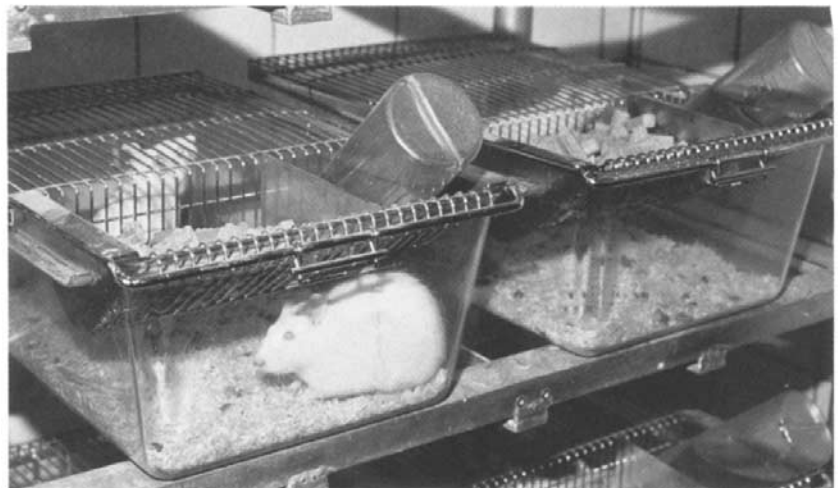
Medical research is another field no longer conceivable without the use of domestic animals. Huge numbers of laboratory animals, typically rabbits, rats, mice, hamsters and guinea pigs, are used (Fig. 1.12). Large numbers of dogs and cats also serve in testing new operating techniques and new medications, or for the general promotion of research into new problems. Breeding special miniature pigs has made it possible to use this species, normally too difficult to manage, in laboratories also.

Today more than ever, domestic animals have social functions to fulfil. Bloodthirsty forms of entertainment such as bullfighting and cockfighting are still significant, if only in geographically limited areas, whilst dogfighting and badger-baiting have become commoner in recent years.

Fig. 1.11. Hounds were bred to help men in hunting as far back as antiquity. Large breeds were used to bring strong game to bay (Roman relief: Roman-Germanic Museum, Cologne).



Fig. 1.12. Small domestic animals are kept in huge numbers in batteries of standardized cages as experimental animals for medical research.



Greyhound racing is a form of sport involving the performance of the animal alone, while horse racing combines the active performance of both man and animal. Riding has gained greatly in significance as a recreation especially very recently: the horse is not only a 'sporting appliance' but also a companion.

The role of companion, significant mainly for children and people living alone, is also fulfilled by countless pet dogs and cats, rabbits, guinea pigs and golden hamsters, depending on how large is the available space. The wide distribution and statistical significance of such social uses of domestic animals represents an economic factor of considerable importance. Breeding horses, dogs, cats and other small animals as pets comes under this heading as do the local pet shop, the pet food industry and the manufacture of accessories for riding or for the care of dogs and cats. It should be mentioned in passing that the increase in such social animal-keeping in crowded urban areas has also created new communal problems, such as the need to provide riding paths and the removal of dog droppings from streets, public parks and children's playgrounds.

Another frequent social function of dogs is without doubt that of a status symbol. One example is sufficient: the 'status dog', whose existence (and the fact that it is taken everywhere possible) is intended to increase the esteem or at least the self-esteem of its owner. Like all status symbols it is subject to changes in fashion: it becomes more valuable if it draws attention by its conspicuous size or coat (e.g. the Afghan hound) – or, conversely, by its conspicuous smallness (e.g. the Yorkshire terrier) – and then loses its value when the fashion has become so widespread that its main purpose, attracting attention, is no longer achieved. In the more practical world of peasants and above all herdsmen, it is not the single domestic animal which has to attract notice, but rather the size of the herd, which indicates the wealth of the owner directly. This aspect has been represented by the significance of cattle, sheep, goats or camels as direct means of payment, for instance as a bride-price, for thousands of years. Large ungulates serve as signs of wealth not only for the living but also even the dead. Even today, amongst the herdsmen of southwestern

Fig. 1.13. Domestic animals have been companions for humans since early times. This relief from Classical Greece depicting a dog and a cat in a domestic scene is one of the first records of the existence of domestic cats in Europe (National Museum of Archaeology, Athens).

