The commonest bird in the world is the domestic chicken and among the commonest mammals are domestic dogs, cats, cattle, sheep, pigs and goats.

The 70 or more species of animals kept by man as companions or farmed for their products are the subjects of this book. For most people in the world, these animals are the only well-known species. Man’s attitude to them, although often affectionate, sometimes verges on the contemptuous, yet recent research showing the complexity and sophistication of their behavior emphasizes that they deserve our respect. Members of a herd of 40 cows, for example, recognize and respond to each of their fellows and rapidly learn the complex tasks associated with modern automated feeding methods. The fascination of domestic animals as subjects for scientific study or brief observation will be apparent from the enthusiasm of the authors of the articles in this book.

Animals have been farmed from an early stage in man’s history. The first evidence that man kept animals in or near his dwellings and selectively bred them so that they became genetically different from their wild ancestors comes from bones of sheep and goats found in settlements in southwest Asia dated more than 10,000 years ago. Evidence for domesticated pigs comes only a few hundred years later in the same area, and cattle must have been kept in Turkey as long as 8,000 years ago. Reindeer were domesticated in Europe 7,000 years ago and at about the same time the llama and alpaca were first used in South America. The development of civilization depended upon the use of farmed animals and almost all societies depend upon their use today.

Yet regarded by many as the earliest known fossil of any domestic animal is that of a puppy dating from 12,000 years ago. It was found buried together with the remains of its owner, whose hand was resting on it in an obviously affectionate pose.

In advance of any documented efforts to tame animals to productive roles, humans were already transferring to animals the care and affection which they feel a natural need to bestow on other individuals. For this reason we devote the first part of the book to companion animals.

The companion animals section is not, as such, about pets. What we bring together here is information about certain species—ones which are associated with man in a particularly striking way. Whilst in the huge diversity of the animal world almost any species can be the subject of affectionate human care, only the nine mammals, four birds and two fish heading the main articles of this section are characteristic and long-established companions of man. An exchange of affection, moreover, is only part of the companionship which humans have shared with these species.

Of the millions of individual dogs that have lived, for example, historically only a tiny minority have been pets. Most have been bred and trained for guarding, hunting, herding or some other work role, and in their work roles they have found a more equal companionship with man, making their own contribution to joint endeavors. Guard dogs share their owners’ sense of territorial possession. The hunt is an ancient cooperative enterprise of man and dog, in which two species have transferred and combined natural patterns of social behavior. The sheep in a flock are reared for their produce, but the dog that helps the shepherd to tend them has been reared as a working partner.

While it is possible to keep a horse as a pet—simply as an object of affection—this is not the usual equine way of entering into human life. It is in the intimately cooperative activity of riding, through 5,000 years of warfare, riding, hunting and sheer recreation, that man has learned to transfer to horses some of his highest forms of regard, finding them courageous, loyal and, on several occasions in history, worthy of high honors. The donkey, held in much humbler esteem than the horse, has nevertheless served as a mount for longer, and it too finds a place among the companion animals.

We have also counted as companion animals any that are kept primarily for recreation. This brings the domestic pigeon and the ferret into the category, as well as any species kept mainly for the fascination of breeding aesthetically attractive varieties, such as the domestic rat or mouse. Also, goldfish and kol, whose ornamental role probably outweighs any sense they give to owners of sharing life’s experiences, have been included because they suit their owners’ fancy. Recent research has nevertheless shown that watching a tank of fish is relaxing, reducing the observer’s blood pressure.

Some of the species included are companion animals, therefore, on more than one count. Animals that are typically pets may also be objects of aesthetic interest which exist in a wide range of different breeds, such as cats, rabbits and canaries do, because it gives followers pleasure to so breed them. Animals with distinctive recreational roles, such as pigeons, gundogs and horses ridden for pleasure tend also to double as fancy animals, appearing at shows. If the animal can, like the dog or the horse, be a full and sharing participant in the recreation, and in other human activities, then it is the more a companion animal. Some companion animals, in particular the
rabbit, the horse and the donkey, also have a role as farmed animals. Although the horse, the donkey and the mule are represented in a survey of beasts of burden in the farmed animals section, the subsidiary agricultural roles of companion animals also feature in their main entries. Fancy and ornamental breeds of chicken appear in the main article on domestic fowl in the farmed animals section.

Man continues to develop new relations with animals, and in a number of boxed feature articles, additional species are highlighted as recent arrivals to the role of companion animal: the Golden hamster, for example, first collected from the wild in the 1930s, recently domesticated cage birds or the chinchilla, which is beginning to be kept as a fancy animal. The article on companion fish gives pride of place to goldfish and koi, domesticated for centuries, but also finds room for a few of the most important species among the more than 200 now bred commercially for aquarium life.

The farmed animals section includes articles on the animal species which are farmed by man throughout the world and on the methods used in the production of important commodities for man. Pains have been taken to gather up-to-date statistical data giving a world picture of products and producers and to present these in readily accessible charts and diagrams. The rearing of animals for the conversion of animal food to meat, milk, wool etc, and some of the procedures involved in the production of these commodities are discussed in detail in the first

Silver Sebright cockerel (Ardea).
part of the section (see pp146–161). The theme of the value to man of farmed animals is pursued in each species article in a boxed summary of the world importance of that species. As well as considering what man gains from farmed animals, our obligations to them are also considered. The necessity to consider the welfare of each individual is emphasized in that part of the article on ethics and animal husbandry (see pp158–159). Public attitudes to preserving the variety of animal life are reflected in discussions of the conservation of rare breeds, the ways in which wild populations such as fish and whales should be treated (see pp262–275), and in a forward-looking article on farming endangered species (see pp286–287).

In addition to the major species, there are sections on yaks, llamas, deer, ducks, geese, turkeys, game birds, ostriches, fish, whales, shellfish, bees and silkmoths. The list could also have included rabbits, cavies (Guinea pigs), rats and mice for scientific research, and others. These animals are, however, discussed earlier, as are some of the animals mentioned in the article on beasts of burden (see pp238–243). The importance of animals as sources of power is enormous throughout most of the world. Man’s ingenuity in using animals to collect food and other materials is illustrated by many intriguing examples in the article on hunters and gatherers (see pp282–285).

In both the farmed and companion animals sections of the book, space is devoted to species in proportion to their importance to man and the diversity of their breeds. Each species is introduced by an opening panel giving details of classification, distribution, physiology, diet and reproduction. In the main articles, expert authors detail each animal’s biology and survey the full breadth of its place in human life. Authors explain what is known of the origin of the animal’s domestic populations and of the historical development of its role. Where possible, insights are given into the natural preadaptations which the species has for a domestic niche.

Considerable attention is given to the impact that domestication has had on the behavior and physiology of the animals. A major article on domestication introduces this theme, and each main article takes it up in detail. In addition, separate fact box summaries follow the main articles on the major species, giving the history and characteristics of several hundred of the uncounted breeds of animals that have resulted from the domestication process. These summaries are in part based on the official breed standards of governing authorities. Boxed feature articles on canine, feline and equine physique explain the terms used in their breed descriptions.

The domestication of animals involves selection by man for particular characteristics, as explained in the article on breeding and genetics (see pp164–167), but natural selection is also occurring. Domestic animals are often confronted with such difficulties in life as new foods, competitive feeding situations, brief opportunities for mating and close contact with that dangerous predator, man. Individuals do adapt to these situations but those whose digestive, sensory, hormonal and behavioral abilities are best able to deal with the problems will be most likely to survive and breed successfully. Hence natural selection is still important in domestic animals and each individual of each breed and species is worthy of study. The very great diversity of breeds adapted to physical conditions and husbandry practi-
ces in the various regions of the world is emphasized especially in this book. The recent increases in activities of rare breeds societies in many countries and the proliferation of farm parks are evidence for the continuing interest of the scientific community and the general public in old and local breeds as well as in those which are the most successful in modern farming and modern life.

Another focus of the authors’ attention has been the impact on the natural world of domestic animals, especially through the establishment of feral (wild) populations descended from strays. A feature article on feral animals in general appears on pp8–9. It is amplified by feature articles throughout the volume on feral populations of particular species. On pp56–57 a main article is devoted to an especially long-standing return to the wild, that of the Australian dingo.

This volume may appear to be a chronicle of the exploitation of animals by man, but it is worth remembering that several domestic animals have achieved enormous populations by adapting to man’s requirements and, in a sense, by exploiting man’s capabilities. As with some wild animals, a farmed or a companion animal may become successful by collaboration with man.

The quality of this book depends upon the expertise and efforts of an international panel of distinguished authors, artists and photographers. Credit is also due to the editorial team of Equinox (Oxford) Limited who have helped the domesticated animals to take their rightful place in the animal world.

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KAL KAN, CALIFORNIA

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Left: sorting reindeer (Robert Harding Picture Library).
Overleaf: ewe and lamb (Ardea).