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WHAT IS AN ANIMAL?

If you have ever had the pleasure of owning a cat, or living near one, then you have certainly seen it doing its characteristic cat-like activities: playing with a ball of string, carrying a kitten in its mouth, stalking a mouse, stubbornly refusing to come when called, curling up under a lamp and purring. Cats are marvelous creatures to have around the house, not merely because of how they look, but especially because of what they do. To have an animal, as a pet, and especially an animal as much like us as a cat, is like having a living natural history lesson. It is far better than looking at a picture of a cat in a book or having a stuffed cat, because in the real cat we experience first-hand, through our own senses, the wonder that is the life of an animal.

Whether we have had a cat, a dog, a goldfish, or even only the occasional firefly for a pet, we have all enjoyed sufficient experience of living things to be able to give a general answer to the question, "What is an animal?" Our first answer might consist in pointing out that animals are things that are born, grow, and die. Or, reflecting upon the way our pets respond when they see us and hear us, we might say that animals are living things that move and have the power of sensation.

As we begin our study of animals, however, it is wise for us to reflect upon the question in greater depth, because the question, "What is a living thing?" is the foundational question for our entire inquiry. In addition to animals, plants are also living things. And while our particular interest is the animal

kingdom, in order adequately to answer, "What is an animal?" we must also be able to say what animals and plants have in common that makes them both different from rocks. Only by starting with an adequate answer to the questions, "What is a living thing?" and, "What is an animal?" will we be certain that we are beginning our study of the animals well.

We will do so in the company of a naturalist named Dr. St. George Mivart (1827-1900). Mivart (the "i" should be pronounced *eye*) was awarded an honorary Ph.D. by Pope Pius IX for his book *On the Genesis of Species* (1871), in which he argued that Darwin's theory of natural selection was a faulty explanation of the origin of the different kinds of animals and plants. We will be studying a number of Mivart's writings in the chapters that follow. In this one we will be reading selections from his study of *The Cat* (1881), a book that he intended to serve as an introduction to biology as a whole.

Let us remember before we begin that we are reading the work of a naturalist who wrote before the development of the specialized sub-fields into which contemporary science has been divided. We are doing so because these naturalists base their writings upon the kind of experiences common to most or even all persons, rather than upon the specialized experiences enjoyed only by those with access to laboratories, specimens, and scientific instruments. Mivart begins his discussion with what is most familiar to us and of the greatest immediate interest: the domestic cat, its history, and some basic facts about its life.

Mivart's Introduction to the Cat

Whether it is the Cat or the Dog which is the most domestic of all our domestic animals is a question that may be disputed. The greater intelligence and affection of the dog cause men generally to prefer it to its rival. As the eager partner of our

sports, or the faithful guardian of house or homestead, it is of especial value. Yet the cat is so largely self-supporting and so useful an ally against unwelcome intruders, that it is the inmate of a multitude of humble homes wherein the dog has no place. The cat also is favored by that half of the human race which is the more concerned with domestic cares; for it is a home-loving animal and one exceptionally clean and orderly in its habits, and thus naturally commends itself to the good will of the thrifty housewife.

That men dwell in cities, instead of in woods, is one effect of civilization. A similar but greater change has been produced with English cats by the same cause. For when Julius Caesar landed here our forests were plentifully supplied with cats, while probably not a single mouser existed in any British town or village. The word "cat" appears to be of Roman origin, being probably derived from the Latin word *catus*, which word also seems to have been at the same time the root of the Greek *καττα*, the old German name *chazza*, and of the softened French form of the word, *chat*.

Our Domestic Cat seems to have come to us (like our other domestic animals) from the East, and is probably a descendant of the old domestic cat of Egypt, which, as the granary of the ancient world, might well have been the country in which the animal was originally tamed. It was certainly domesticated in Egypt thirteen hundred years before Christ. The great value set upon the cat at this period is shown by the laws which in Wales, Switzerland, and Saxony, and other European countries, imposed a heavy fine upon cat-killers. As compensation, a payment was required of as much wheat as was needed to form a pile sufficient to cover over the body of the animal to the tip of its tail, the tail being held up vertically with the cat's muzzle resting on the ground.

The Wild Cat (*Felis catus*) differs from our ordinary domestic cat in that it is more strongly built and larger, with

a stouter head and shorter and thicker tail, which is not tapering but of about the same thickness throughout. Its whiskers also are more abundant, and the soles of its feet are, in the males, deep black. Its body is of a yellowish-gray color, with a dark longitudinal mark along the back, and with numerous darkish stripes descending more or less vertically down the sides, and marking transversely the limbs. Its tail is ringed with black, and is black at the end. It is thus marked like the domestic variety called "tabby." One killed near Cawdor Castle measured 3 feet 9 inches from its nose to the end of its tail. Its savage disposition is very early shown, even the young kittens spitting vigorously at anyone who approaches them. The female makes her nest in hollow trees and in the clefts of rocks, and sometimes uses the deserted nest of some large bird.

Though small quadrupeds and birds are their natural prey, cats are singularly fond of food which in a wild state they can never or but seldom attain, namely cow's milk, and also fish. In spite also of the relative weakness of their sense of smell, they are said to show a marked preference for certain odors, a taste in harmony with that luxurious and ease-loving nature with which they are endowed.

The domestic cat begins to be ready to reproduce by the end of the first year of her life, and she is prolific to her ninth. Her young are carried for fifty-five or fifty-six days, and she generally has five or six young at a birth, and sometimes eight or nine. In a wild state, the cat brings forth at least twice a year, but the domestic cat will do so three or four times annually. The wild cat has only four or five young in a litter. The length of life which cats attain varies with individuals, and is a point difficult satisfactorily to ascertain. It seems probable that about twelve years is its ordinary limit, but in some cases the age of eighteen years may certainly be attained under favorable circumstances.

Facts and Knowledge of Causes, and the Importance of Comparing

Having whetted our appetite, Mivart proceeds to the question at hand, first noting what is most evident to us when we consider the nature of the cat. He begins by making the useful distinction between the kind of knowledge of isolated facts that we have just been gaining—as, for instance, that the cat seems to have been first domesticated in Egypt—and the knowledge of general or universal causes that is our ultimate goal in the study of nature.

To know all about the history and habits of the cat, together with the peculiarities of form and color of its various breeds, both wild and domestic, is not to have a scientific knowledge of the cat. To know the animal scientifically, we must be able to answer correctly the question "What is a cat?" But we cannot so answer this question unless we know both the main facts as to the animal considered in itself absolutely, and the various leading relations in which it stands to all other creatures.

We see here that to answer the question, "What is a cat?" we need to go beyond making a list of facts about cats. We need insight into what makes a cat be a cat, or the causes that cats are what they are.

Mivart makes another important point about how to proceed in studying the cat. He asks us to recall that the natural way in which we learn is through a process of comparing things and seeing how they are distinct from one another. It is a point that we will often have cause to remember.

Nothing can be understood by itself. All our knowledge consists of apprehensions which have been acquired by comparing and

contrasting one thing with another; and the more we know of any object, the greater is the number of relations we are able to affirm to exist between it and other objects. To fully understand any living creature, then, we should understand, as far as we can, the various relations in which it stands to all other living creatures. More than this, we should also understand its relations with that part of the creation which is devoid of life—in short, we should understand its place in nature.

But the reader may deem such an inquiry superfluous as regarding the animal which we have elected to study; for anyone who asked, "What is a cat?" will at once reply, "A beast of a certain kind which preys on other animals"; and if again asked, "What is meant by a beast?" will probably say, "A living four-footed animal." If, however, the inquiry be pressed further, and precise meanings of living creature, animal, beast, and beast of prey be demanded, the unsatisfactoriness of mere vague, popular conceptions will be plainly shown. We must then endeavor to obtain a full, clear, and precise knowledge of what is, or should be, meant by the above terms, so that we may be able to answer the question "What is a cat?" with accuracy, and with a sufficient comprehension of the expressions employed in so answering. We must know "the why and the wherefore" of the terms of our answer.

Note that Mivart again makes the crucial distinction between describing and explaining, that is, between assembling a collection of things that we perceive—facts, if you will—and arriving at an explanation of the cause of those effects. And he also makes clear that we will seek an explanation, or the "causes" of the cat—or whatever it is that we are studying—by making comparisons with other creatures in our experience.

It is evident that the animal moves, takes food, and, if young, increases in size. The slightest observation convinces us that