**Origins Of Domestication** Domestications//EncyclopediaBritannica:https://www.[britannica.com/science/domestication](https://www.britannica.com/science/domestication)

The first attempts at domestication of animals and plants apparently were made in the Old World during the [Mesolithic Period](https://www.britannica.com/event/Mesolithic-Period). [Dogs](https://www.britannica.com/animal/dog) were first domesticated in [Central Asia](https://www.britannica.com/place/Central-Asia) by at least 15,000 years ago by people who engaged in [hunting](https://www.britannica.com/sports/hunting-sport) and [gathering](https://www.britannica.com/topic/hunting-and-gathering-culture) wild edible plants. The first successful domestication of plants, as well as [goats](https://www.britannica.com/animal/goat), [cattle](https://www.britannica.com/animal/cattle-livestock), and other animals—which heralded the onset of the [Neolithic Period](https://www.britannica.com/event/Neolithic-Period)—occurred sometime before 9500 BCE. It was not until the [Neolithic Period](https://www.britannica.com/event/Neolithic-Period), however, that primitive agriculture appeared as a form of social activity, and domestication was well under way. (The Neolithic Period occurred at different times around the world but is generally thought to have begun sometime between 10,000 and 8,000 BCE.) Although the great majority of domesticated animals and plants that still serve humans were selected and developed during the Neolithic Period, a few notable examples appeared later. The rabbit, for example, was not domesticated until the [Middle Ages](https://www.britannica.com/event/Middle-Ages); the [sugar beet](https://www.britannica.com/plant/sugar-beet) came under cultivation as a sugar-yielding agricultural plant only in the 19th century; and [mint](https://www.britannica.com/plant/mint-plant) became an object of agricultural production as recently as the 20th century. Also in the 20th century, a new branch of [animal breeding](https://www.britannica.com/science/animal-breeding) was developed to obtain high-quality [fur](https://www.britannica.com/topic/fur-animal-skin).

Domestication of vegetatively reproducing plants, such as those with [tubers](https://www.britannica.com/science/tuber), probably preceded domestication of the [seed](https://www.britannica.com/science/seed-plant-reproductive-part) plants—[cereals](https://www.britannica.com/topic/cereal), [legumes](https://www.britannica.com/science/legume), and other [vegetables](https://www.britannica.com/topic/vegetable). Some plants were domesticated for the strong [fibres](https://www.britannica.com/technology/fiber-technology) in their stalks, which were used for such purposes as making [fishing](https://www.britannica.com/topic/fishing-recreation) nets. [Hemp](https://www.britannica.com/plant/hemp), one of the most ancient plants domesticated in India, is an example of a multipurpose plant: oil is obtained from its seeds, fibres from its stalk, and the [narcotic](https://www.britannica.com/science/narcotic) [hashish](https://www.britannica.com/science/hashish) from its [flowers](https://www.britannica.com/science/flower) and [leaves](https://www.britannica.com/science/leaf-plant-anatomy).

Some plants were domesticated especially for the production of narcotics; such a plant is [tobacco](https://www.britannica.com/plant/common-tobacco), which was probably first used by [American Indian](https://www.britannica.com/topic/American-Indian) tribes for the preparation of a narcotic drink and only later for [smoking](https://www.britannica.com/topic/smoking-tobacco). The [opium poppy](https://www.britannica.com/science/opium) is another example of a plant domesticated solely for a narcotic. Beverage plants of many kinds were discovered and cultivated, including [tea](https://www.britannica.com/topic/tea-beverage), [coffee](https://www.britannica.com/topic/coffee), and [cola](https://www.britannica.com/plant/Cola-plant-genus). Only when humans reached a sufficiently high level of [culture](https://www.merriam-webster.com/dictionary/culture) did they begin to domesticate to fulfill [aesthetic](https://www.merriam-webster.com/dictionary/aesthetic) requirements for the beautiful and the bizarre in both plants and animals.

## Domestication Of Animals

The specific economic application of domesticated animals did not appear at once. [Dogs](https://www.britannica.com/animal/dog) probably accompanied hunters and helped them hunt wild animals; they probably also guarded human settlements and warned the inhabitants of possible danger. At the same time, they were eaten by humans, which was probably their main importance during the first stages of domestication. [Sheep](https://www.britannica.com/animal/sheep)and [goats](https://www.britannica.com/animal/goat) were also eaten in the initial stages of domestication but later became valuable for producing the commodities of [milk](https://www.britannica.com/topic/milk) and [wool](https://www.britannica.com/topic/wool).

The principal aim of [cattle](https://www.britannica.com/animal/cattle-livestock) breeding in ancient times was to obtain meat and skin and to produce work animals, which greatly contributed to the development of agriculture. Cattle, at the initial stages of domestication, produced a small amount of [milk](https://www.britannica.com/topic/milk), sufficient only to rear their calves. The development of high milk yield in cows with their breeding especially for milk production is a later event in the history of domestication.

The first domesticated [horses](https://www.britannica.com/animal/horse) were also used for meat and skin. Later the [horse](https://www.britannica.com/animal/horse) played an enormous role in the waging of war. Peoples inhabiting the [Middle East](https://www.britannica.com/place/Middle-East) in the 2nd millennium BCE used horses in [chariot](https://www.britannica.com/technology/chariot) battles. With time the horse began to be used as transportation. In the 1st millennium BCE carts appeared, and the horses were harnessed to them; other riding equipment, including the saddle and the bit, seems to have appeared in later centuries.

The [donkey](https://www.britannica.com/animal/donkey) and the [camel](https://www.britannica.com/animal/camel) were used only for load transport and as means of conveyance; their unpalatability ruled out their use as a preferred food.

The first domesticated [hens](https://www.britannica.com/animal/chicken) perhaps were used for sport. [Cockfighting](https://www.britannica.com/sports/cockfighting) was instrumental in bringing about the selection of these [birds](https://www.britannica.com/animal/bird-animal) for larger size. Cocks later acquired religious significance. In [Zoroastrianism](https://www.britannica.com/topic/Zoroastrianism) the cock was associated with protection of good against evil and was a symbol of light. In [ancient Greece](https://www.britannica.com/place/ancient-Greece) it was also an object of sacrifice to gods. It is probable that [egg](https://www.britannica.com/science/egg-biology) production of the first domesticated hens was no more than five to ten eggs a year; high egg yield and improved meat qualities of hens developed at later stages of domestication.

Early domestication of the [cat](https://www.britannica.com/animal/cat) was probably the result of the pleasure experienced from keeping this animal. The cat’s ability to catch [mice](https://www.britannica.com/animal/mouse-rodent) and [rats](https://www.britannica.com/animal/rat) was surely another reason that impelled people to keep cats at home. In [ancient Egypt](https://www.britannica.com/place/ancient-Egypt) the cat was considered a sacred animal.

Some animals were domesticated for utilitarian purposes from the very beginning. Here belongs, first of all, the [rabbit](https://www.britannica.com/animal/rabbit), whose real domestication was carried out from the 6th to the 10th century CE by French monks. The monks considered newborn rabbits “fish” and ate them when the church calendar indicated abstinence from meat.

For the sake of [honey](https://www.britannica.com/topic/honey), the [bee](https://www.britannica.com/animal/bee) was domesticated at the end of the Neolithic Period. Honey has played an enormous role in human [nutrition](https://www.britannica.com/science/nutrition) since ancient times; it ceased being the sole [sweetening agent](https://www.britannica.com/topic/sweetener) only about 200 years ago. Bees also provided [wax](https://www.britannica.com/technology/wax) and bee [venom](https://www.britannica.com/science/venom), which was used as medicine. Bees were used also, to a limited extent, in [warfare](https://www.britannica.com/topic/war), hives being thrown among enemy troops to rout them.

To obtain [silk](https://www.britannica.com/topic/silk), the [silkworm](https://www.britannica.com/animal/silkworm-moth) was domesticated in China no later than 3000 BCE, and by 1000 BCE the [technology](https://www.britannica.com/technology/technology) of silkworm breeding and raising had been thoroughly documented.

Shepherdy and [nomadic](https://www.britannica.com/topic/nomadism) [animal breeding](https://www.britannica.com/science/animal-breeding), which determined the social and economic organization and the way of life of some peoples to a great extent, appeared at later stages of human development, after the accumulation of a large number of domestic animals. Rudiments of nomadic animal breeding in Eurasia appeared no earlier than 1000 BCE, considerably after the domestication of animals took place.

The process of domestication in the New World took place somewhat later than in the Old World and independently of the latter, since humans first appeared in the New World only during the end of the [Pleistocene Epoch](https://www.britannica.com/science/Pleistocene-Epoch) (which lasted from 2.6 million to 11,700 years ago), long after settlement of the Old World.

## Biological And Genetic Changes

Traditionally, the main [criteria](https://www.merriam-webster.com/dictionary/criteria) for judging relationships between domestic or cultivated organisms and wild ancestors were similarities of structure and function, but cytogenetical examinations, particularly comparisons of [chromosomes](https://www.britannica.com/science/chromosome) and chromosome sets, also are adding to the knowledge of the origins of domesticated organisms. With animals, morphological and biochemical (i.e., blood typing) studies are made.

During the 11,000 or 12,000 years that have passed since the beginning of domestication, the animals and plants that humans have selected as useful to them have undergone profound changes. The consequences of domestication are so great that the differences between breeds of animals or varieties of plants of the same species often exceed those between different species under natural conditions.

The most important consequence of domestication of animals consists of a sharp change in their seasonal biology. The wild ancestors of domesticated animals are characterized by strict seasonal [reproduction](https://www.britannica.com/science/reproduction-biology) and [molting](https://www.britannica.com/science/molt) rhythms. Most domesticated species, on the contrary, can reproduce themselves at almost any season of the year and molt little or not at all. No less characteristic are the changes that occur in plants as a result of domestication. Their structure and general appearance may be drastically changed.

The elementary [genetic](https://www.britannica.com/science/genetics) mechanism that draws the [recessive](https://www.britannica.com/science/recessiveness) [genes](https://www.britannica.com/science/gene)out from the cover of the wild [genotype](https://www.britannica.com/science/genotype) of the natural species also brings about the first domestication-dependent changes and the initial differentiation of a wild species into types that can serve as the basis for breed formation. Nature, in effect, has a store of various types and forms hidden as recessive [mutations](https://www.britannica.com/science/mutation-genetics) in every natural population of wild animals and plants. It is this accumulated mutation pool that is exploited by humans in breeding. Such interference, called artificial selection, plays a truly creative role in the formation of modern animal breeds and plant varieties to suit human needs.

Artificial selection differs considerably from [natural selection](https://www.britannica.com/science/natural-selection), which creates stabilized biological systems that ensure the development of a normal, or so-called wild, [phenotype](https://www.britannica.com/science/phenotype)—i.e., an organism containing a wealth of properties that preadapt it to a wide variety of environmental conditions and ensure continuation of the species. Artificial selection breaks down precisely these stabilized systems, thereby creating gene combinations that could not survive in nature and providing a range of new possibilities.