

Origin and domestication of the goat and history of the Angora goat and the mohair industry

Tofiq Froghi, Azad Hosaini

Islamic Azad University, Maku Branch, Maku, Iran
tofiq.froghi@yahoo.com

Abstract: Goats are thought to have been among the first species of farm or ranch livestock to have been domesticated. Insofar as can be determined, only the dog predates the goat as an animal to have been tamed and brought into a symbiotic relationship with man. There appears little doubt that Angora goats, as a breed, developed in the region known as Asia Minor. This area lies between the Black Sea and the Mediterranean within which Turkey is located. Specifics of where they originally developed are largely speculation, but it is fairly certain that fiber producing goats have occupied the area of Asia Minor for at least 2,000 years. The first importation of Angoras to South Africa reportedly occurred in 1838. Most countries which have a significant mohair industry have one or more organizations supporting their industry. These may be concerned with maintaining pedigrees or herdbooks or supporting marketing or promotional efforts for both breeding animals and for mohair. For reasons of time and space, this discussion will relate primarily to those organizations which directly impact the Angora goat and mohair industry in the United States.

[Tofiq Froghi, Azad Hosaini. **Origin and domestication of the goat and history of the Angora goat and the mohair industry.** *Life Sci J* 2012;9(3):2615-2618] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 380

Keywords: History of Angora; Mohair industry; Goat

1. Introduction

Goats are thought to have been among the first species of farm or ranch livestock to have been domesticated. Insofar as can be determined, only the dog predates the goat as an animal to have been tamed and brought into a symbiotic relationship with man. It is unlikely that domestication can be regarded as a single or specific event or that the total population of this or any species traces to a single instance of domestication. Thus, it is probably not logical to insist that domestication of any species totally predates that of another. It is generally conceded that the species; sheep, goats and dogs were among the first to be domesticated. It has been suggested that animals which have some type of social relationship with one another, such as the formation of flocks or herds, are more likely or are more easily domesticated and adapt to a long-term association with man. The terms "taming" and "domestication" are used here somewhat interchangeably, but, in fact, they have quite different meanings according to Squires (1975). Taming would be generally defined as "the elimination of the tendency to flee from man," whereas, domestication often involves morphological, physiological and behavioral changes in the animal as the result of man's control of breeding, feeding and activity patterns. According to this definition, an individual wild animal might be tamed and made into a pet, but domestication would involve a large number of animals over many generations. Thus, it is impossible or inappropriate to be very specific as to the date, but domestication of the goat is thought to have occurred

"at least by the eighth millennium B.C.," or, at least 10,000 years ago perhaps at more than one site in Asia or Africa. The reader should also be reminded of the close chronological relationship of domestication of the three species mentioned earlier to the transition of man from a nomadic hunter to one who actively managed the resources around him. Clearly, the domestication of the sheep and goat played an important role in placing man on the long road to civilization. Over the years, and even to this date, many people have been almost self-sufficient on the products obtained from sheep and goats. Both species produce, or have the capability to produce meat, milk, fiber and skins. At times, they are also kept for other purposes such as sport, beasts of burden or for their manure. Goats belong to the order Artiodaggle, the family Bovidae, and subfamily Caprinae. Other animals comprising this subfamily are the antelope, sheep, chamois, Rocky Mountain goat (not a true goat), musk ox and aoudad. Within the genus *Capra*, to which the goat belongs, there are a number of related wild types. These include the Bezoars or Pesangs (*Capra hircus*), Markhor (*Capra falconer*), Turs (*Capra caucasica*) and Ibex (*Capra pyrenaica*). These are not always easily distinguished from related genera such as *Ovis* (sheep), *Hemitragus* (tahr), *Ammotragus* (Barbary or aoudad) or *Pseudosis*(Bhara1). Within the wild types of *Capra*, the Ibex is most widespread, with a number of subtypes such as the Spanish Ibex, Alpine Ibex, Caucasian Ibex, Siberian Ibex, Nubian Ibex and Abyssinian Ibex. It is not known precisely which wild type contributed to the domestic goat, but the

Bezoars (*Capra aegagrus*) are thought to have been the most important. The domestic goat (*Capra hircus*), especially the Angora, is sometimes referred as *Capra hircus aegagrus*. However, any type could have contributed, as they are all interfertile. True wild types such as the Ibex are most often found at higher elevations and in rough terrain. As a result, most are sure-footed and produce well-developed undercoats, thus contributing to their early exploitation as fiber producers. Most wild types are larger than domestic goats. So-called "wild goats" are found at many places in the world in relatively large numbers, but in general, these are more properly called "feral goats" or domestic goats which have reverted to the wild state. The *Capra* genera apparently did not cross the Bering Strait in prehistoric times, as did wild sheep. As a result, there were no true indigenous wild goats in the Americas. The so-called Rocky Mountain goat is not a goat, but is more closely related to the antelope. Several species of Ibex have been introduced to the U.S. in more recent times and have been intentionally crossed with domestic goats. In general, this crossing has been for reasons of science or novelty or to develop populations of wild types for hunting. Up to the present time, they have apparently not been seriously introduced into commercial types. Most types of Ibex are larger than domestic goats, but they are more difficult to control, late to mature sexually, and are very seasonal in breeding. This would suggest caution in crossing these into domestic goat populations. Since time immemorial, man has attempted to separate the sheep from the goats. This is made more difficult, even for the scientist, when it is realized that there are many species, or subspecies, of each group and that various degrees of hybridization between some of these may occur. Closely related to the efforts to separate the sheep from the goats are the attempts to mix them up again by crossing the two species. In general, these efforts have not been successful, but this statement requires some qualification. Matings between the two species occasionally occur under field conditions, and many specific cross-matings have been made by man. This may be done naturally, by selecting individual males which will mate with a female of the opposite species, or by artificial insemination. When a male goat is mated to a female sheep, conception does not, in general, occur. The apparent explanation is a failure of sperm transport due to immunological antagonism. If a male sheep is mated to a female goat, conception will occur in a large number of cases, but the conception rate of 30-50% is below that of intra-species mating. The normal result of mating a male sheep to a female goat is a hybrid embryo which dies in the 40-50 day range, with some

surviving for a more extended time. Over the long period of history, many alleged viable hybrids have been reported, and in recent years, some have been verified as such by chromosome studies. The inability to successfully cross the two species was initially-attributed to the differences in chromosome number. However, this was not easily reconciled with the early growth of the embryo, followed later by death. As of this writing, an alternative theory is that of an allergic reaction in which the hybrid embryo is rejected by the maternal organism. Unconfirmed reports have suggested that hybrids have been carried to term when they are carried "in utero" with a nonhybrid of the same species as the dam. The above discussion will appear to most as being of academic interest only. However, it is not without at least a minimal practical interest. For instance, if mating between the species did occur under field conditions, normal reproduction could be interfered with. This would more likely be the case where male sheep mate with female goats, where the resulting conception could at least delay normal within-species reproduction possible for a breeding season. The writer is aware of instances in which crossspecies matings have been observed to occur under field conditions. However, the long history and widespread practice of running the two species together would indicate that this is not normally a problem. It is more likely to be a problem where high-libido types of young male sheep are run with young replacement female goats.

2. Origin and history of the angora

There appears little doubt that Angora goats, as a breed, developed in the region known as Asia Minor. This area lies between the Black Sea and the Mediterranean within which Turkey is located. Specifics of where they originally developed are largely speculation, but it is fairly certain that fiber producing goats have occupied the area of Asia Minor for at least 2,000 years. In the Bible, it is recorded that Moses directed that articles of goat's hair be brought to the tabernacle. Four separate references are made to articles of goat's hair in these passages. Although fiber-producing goats were originally found over a much wider area, it is accepted that the white fleeced animal we now recognize as the Angora evolved on the Anatolian Plains of Turkey near the city we now know as Ankara and from which the name "Angora" derives. The term "mohair" apparently derives from arabic (*mukhayyar*). In Turkey, it is known as "tiftik," but this term refers specifically to white goat hair, as other colors have different names. The first recorded information about Angoras as a breed, in any detail, became available during the second half of the

nineteenth century. Early books written by Hayes and Schreiner contain details gathered from reports and correspondence obtained from early importers of Angoras. The Angora, in its native or homeland, was a small goat with long ringlets, very white in color and containing little oil in its fleece. These goats were found in the valleys and elevated plateaus around Angora (Ankara). The region is described as extending 80 miles east; 80 miles west, 100 miles south-and 150 miles north of Ankara. The earliest Angoras were described as a small, refined, delicate animal of great beauty, clipping from 2 to 4 pounds (according to sex and age; kids considerably less). The fleece consisted of dazzling white, fine, soft, silky, very lustrous mohair, curling in ringlets from 8 to 10 inches long, based on a single annual shearing. The doe was smaller and finer than the male and had only one kid at a birth. It's delicacy was thought to be due mainly to inbreeding. It should be pointed out that the Angora was not the only goat found in this region of Turkey and, no doubt, some mixing occurred from time to time. This point has significance to early attempts to establish a mohair industry in other parts of the world. This may also be a factor in the quality of mohair from Turkey at the present time. Beginning as early as the sixteenth century, Angoras were taken from Turkey to a number of countries, mostly in Europe; attempting to establish a mohair industry in these areas. For a variety of reasons, these attempts were largely failures; leading to the belief that Angoras could not be produced outside the dry and cool plateaus of Turkey. Based on more recent experience, we now know that this is not true as Angora goats are being successfully reared in many European countries, although large-scale industries have not as yet developed in these areas. In general, it should probably be recognized that as the Angora is taken into higher-rainfall and colder areas a higher level of management (particularly in respect to disease and parasite control and shelter or protection) is required. The technology or resources to provide these inputs may have been largely unavailable in the earlier period. Although it was inferred above that the Angora can be produced almost anywhere, major industries became established (outside of Turkey) only in South Africa and the U.S. (largely in areas on or adjacent to the Edwards Plateau of Texas). The uniqueness of these areas and their similarity to the Plains of Turkey warrants further attention.

3. Importations to South Africa

The first importation of Angoras to South Africa reportedly occurred in 1838. The one surviving fertile male from this shipment was bred to Boer goats, thus initiating the industry, at least

partially, on a crossbred foundation. However, in the period from 1856 to 1896 it is reported that over 3,000 head were shipped from Turkey to South Africa including shipments as large as 500 and 700 head. Some of these animals made their way to Basutoland (currently known as Lesotho), thus establishing the breed in this area, where it persists to date in numbers approximating one million head. In this century, several exchanges of breeding stock occurred between the U.S. and South Africa. Two shipments, totaling 40 head, went from the U.S. to South Africa in 1961 and 1965.

4. Organizations supporting the Angora goat and mohair industry

Most countries which have a significant mohair industry have one or more organizations supporting their industry. These may be concerned with maintaining pedigrees or herdbooks or supporting marketing or promotional efforts for both breeding animals and for mohair. For reasons of time and space, this discussion will relate primarily to those organizations which directly impact the Angora goat and mohair industry in the United States.

Acknowledgements:

Authors are grateful to the Islamic Azad University, Maku Branch, Maku, Iran for financial support to carry out this work.

Corresponding Author:

Tofiq Froghi
Islamic Azad University, Maku Branch, Maku, Iran
E-mail: tofiq.froghi@yahoo.com

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9/6/2012