

footed, and display great strength and agility in leaping. They also prefer as food the leaves and small branches of shrubs, and the strongly aromatic herbs which abound in mountainous localities, to the herbage of the richest pastures, browsing rather than grazing, as do sheep. They live in small herds, but the old bucks are likely to live separately, and thus serve the purpose of scouts, though all are extremely wary and hence are among the most difficult of game for the sportsman. Two kids are usually produced at birth, in late spring, and very quickly become able to travel with the band.

The best-known as well as most characteristic species of wild goat is the bezoar goat, or pasang (*Capra aegagrus*), which was once common throughout the Grecian Archipelago, but now is known only in Crete and one or two other islands and thence eastward through the highlands of Asia Minor to Persia and thence to northeastern India. It inhabits all barren hills in the East, but in Persia rarely descends much below the timber line. This goat (see Plate of WILD GOATS, ETC.) stands about 36 inches high and in winter is brownish gray, changing in summer to a more reddish-yellow tint, with the buttocks and underparts nearly white; and the older bucks have the forehead, chin, beard, throat, front of the legs, a stripe along the spine, the tail, and a band of the flanks dark brown. The horns of the old bucks measure 40 to 50 inches along the curve, rise close together from the top of the skull, and sweep backward in an even curve, with the front edge forming a strong keel marked by irregular prominences; the horns of the female are much smaller and smoother. The old bucks maintain a most vigilant watch, one or more being constantly on the lookout and warning the herd of danger. This is the species from which domestic goats have been derived. An illustrated account of this species will be found in the *Proceedings of the Zoölogical Society of London for 1875*, by C. G. Danford.

**GOAT** (AS. *gāt*, Icel. *geit*, OHG. *geiz*, Ger. *Geiss*; ultimately connected with Lat. *hædus*, kid). A genus (*Capra*) of ruminant quadrupeds of the family Bovidae, so closely allied to the sheep that it is not easy exactly to define the distinction, although the common domestic goat and sheep are of widely different appearance. One of the most marked of the distinguishing characters is that the horns of goats, present in both sexes, but smaller in the females, are long and directed upward, backward, and outward, while those of the sheep are more or less spirally twisted. Other characteristics are the beard on the chin of the male goats, which is wanting in the sheep, and the straight line of the face in goats, as compared with the arched line in sheep. The tail of goats is also much shorter than that of sheep. A constant mark of distinction is the absence in goats of a small pit between the toes of the hind feet (in some cases of all four feet), producing a fatty secretion, which exists in sheep and is peculiar to them. And another constant mark which is absent in sheep is the strong smell of male goats, particularly during the rutting season. Equally constant are the differences of temper and manners, goats being in a high degree curious and confident.

#### WILD GOATS

True wild goats, of which some 10 species are recognized, belong to the Old World alone, where they are confined to the mountainous region which extends from the Atlas ranges of northwestern Africa to Central Asia. Some other animals called goats are zoölogically otherwise related. All are essentially mountain animals and exhibit a great aptitude for scrambling among rocks and bushes, are extremely sure-

**Goats of the Caucasus, or Turs.** Three kinds of wild goats, distinguished as species, but perhaps only varieties of a single race, inhabit the Caucasus Range, which in form and color much resemble the pasang, though somewhat paler as a rule, and with long reddish-brown beard and short scut. Their horns, however, are very different, being very massive, smooth, and black, with a squarish cross section at the base, and sweeping outward and then inward, with a tendency towards a spiral, best shown in the Western, or Severtzow's, tur (see Plate of WILD GOATS, ETC.), which more nearly approach the form of the ibex's. The eastern Caucasus is inhabited by Pallas's tur (*Capra cylindricornis*); the central parts of the range, between Mount Elburz and Daghestan, by the Caucasian tur (*Capra caucasica*); and the western part by the larger, more ibex-like Severtzow's tur (*Capra severtzowi*).

**The Spanish Goat.** Closely allied to the turs is the wild goat, or "cabramontes" (*Capra pyrenaica*), of the mountains of Spain and Portugal. It is a smaller animal than the others, bucks standing about 26 inches in height, with horns measuring 25 to 28 inches in length. Its horns are divergent, tend to be spiral, are somewhat triangular in section, with a strong keel on their posterior border, and knobs along the outside. These goats are so wary and resourceful that they remain numerous.

GOAT-ANTELOPES



1. EUROPEAN CHAMOIS (*Rupicapra rupicapra*).
2. JAPANESE SEROW (*Nemorhædus crispus*).
3. WHITE GOAT of Rocky Mountains (*Oreamnus montanus*).

4. TAHR or HIMALAYAN GOAT (*Hemitragus jemlicus*).
5. HIMALAYAN SEROW (*Nemorhædus bubalinus*).
6. HIMALAYAN GORAL (*Cemas goral*).

**Ibex.** All wild goats are frequently spoken of as ibexes, but the term should properly be restricted to four species of *Capra* dwelling upon the higher mountains of southeastern Europe, Syria, Arabia, Abyssinia, and in the Himalayan region. They have long, knobbed, scimitar-like horns. See IBEX.

**The Markhor.** This is a large wild goat (*Capra falconeri*) of the western Himalayas, distinguished by its high, upward-reaching, flattened and spirally twisted horns. (See Plate of WILD GOATS, ETC.) It is found from central Afghanistan to the sources of the Indus, and in this area exhibits several well-marked local races, in some of which the horns are much less twisted than in others, the longest measuring (along the curve) 50 inches. Its habitat ranges from barren foothills to the edge of the snow and includes much rocky forest land; the country, therefore, is always an exceedingly difficult one to hunt in, besides which the animals are wonderfully keen and watchful. Nevertheless, kids are captured from time to time and are found to thrive well in captivity and to interbreed with domestic goats. The markhor is larger than other goats and is distinguished by the great black beard of the old bucks, which covers the whole throat and breast with a mat of long hair, which also forms a heavy ruff around the shoulders. The remains of a goat closely resembling the markhor have been found in the Pliocene strata of India.

**Tahrs and Goat Antelopes.** There exist in southern Asia three species of goat which have no beards and small horns and are assigned to a separate genus, *Hemitragus*, the tahrs; one is known to Anglo-Indian sportsmen as "Nilgiri goat." For an account of this genus, see TAHR.

Intermediate between the goats and the antelopes stand several genera and species of mountain-loving animals, including the goral, cambingutan, serows, takin, chamois, and the American white goat. For these, see their names and GOAT ANTELOPE.

**Bibliography.** Lydekker, *Royal Natural History*, vol. ii (London, 1896); Blanford, *Fauna of India: Mammals* (ib., 1888-89); id., *Eastern Persia: Zoology* (ib., 1876); Danford, "Notes on the Wild Goat," in *Proceedings of the Zoological Society of London* (ib., 1875); Lydekker, *Wild Ozen, Sheep, and Goats* (ib., 1898). Consult also the writings of sportsmen in India and Central Asia.

#### DOMESTIC GOATS

It is probable that the native Asiatic goats were among the first animals brought under the subjection of man, and there is no doubt that the main stock of those now in domestication was derived from the Persian pasang (see above). They must have been of peculiar value to the early nomadic men of southeastern Asia, since they could pasture on the scanty herbage and bushes of the rocky mountains and plateaus and move anywhere their masters went with even greater facility—conditions which domestic sheep could not well endure.

The varieties of the domestic goat are too many for treatment here, where only the most important can be mentioned. Those of Europe present many diversities of coat and form of horns, and distinguishable breeds are found in Ireland, Wales, and Norway; but no kind has the pendulous ears frequently seen in Asia, except a

cream-colored breed peculiar to the island of Malta, whose ears hang below the jaw. This goat and some Spanish breeds are frequently hornless. More distinctive breeds exist south and east of the Mediterranean. Thus, the "guinea" goats, kept in enormous flocks by the natives of the Sudan and of the Niger valley, are rather small, short-legged, short-haired, and usually dark in color, black and red prevailing. The horns are only 3 or 4 inches long and curve forward at their tips; and the black beard is continued downward to spread over the shoulders and forelegs, suggesting some possible ancestral cross with the aoudad (q.v.). The Nile valley and Egypt have a different goat, in which the legs and horns are longer; the profile is very convex, the horns crumpled, and often absent, and there is no beard. The short coat is usually reddish or bluish gray, more or less spotted, and the pendent ears are about as long as the head, flat, and round at the ends. The goats of Syria, Turkey, and southwestern Asia, on the other hand, are large and tall, with the hair long, black, and silky, prominent curving horns, a small beard in both sexes, and the ears hanging for half their length below the jaw. These are sometimes called mamber, or Kurd, goats, and are the common stock of the country. In Asia Minor, however, there has existed, from immemorial times, a remarkable breed known as mohair, or Angora, goats, which merit particular description, since lately they have been sedulously cultivated in various other countries, including South Africa and the United States.

**The Angora Goat.** Various types of Angora goats have arisen in Asia Minor and Turkey during the last half century, owing to unwise crossing with the common Kurd stock. The pure-bred Angora was originally a small, exceedingly delicate animal, with small thin horns, suggesting by their spiral form descent from the wild markhor. It was clothed with "dazzling white, fine, soft, silky, very lustrous mohair, curling in ringlets from 10 to 18 inches long." The continual crossing and recrossing it has undergone has resulted in an animal much larger and more hardy. The type now approved in the United States (see Plate of WILD GOATS) is strongly built, with a straight horizontal back, short and strong legs, the head like that of a common goat, but less coarse, and the horns heavy, with an inward twist. "Except the face and legs, from the hocks and knees down, the entire animal should be covered with mohair. Both the belly and throat and even the lower part of the jaws should have a covering of fine, silky mohair in long, curly ringlets." These goats were introduced into the United States by a gift of nine from the Sultan of Turkey in 1849. Little increase followed, and all disappeared during the Civil War. Other importations were occasionally made until 1881, when the Sultan prohibited any exportation of the animals. Several were, nevertheless, obtained for California breeders in 1901. Angoras were scattered through the Southern States, but their raising and keeping did not become an industry until recently, when large flocks were produced on the Pacific coast, especially in Oregon, and they have been successfully introduced in Iowa and Missouri. So promising have been these experiments that an extensive culture of this breed all over the United States, as well as in southern South America, is expected; and two clubs for the encouragement of the industry

and the registry of blooded stock have been organized. It is claimed for the Angora goats that they are among the most useful of domestic animals in a variety of ways. "The fleece, called mohair (q.v.), furnishes some of the finest of fabrics among ladies' goods and is used in various other manufactures; their habit of browsing enables the farmer in a wooded locality to use them to help in subjugating the forest; their flesh is exceedingly delicate and nutritious; the milk, though not so abundant as with the milch breed of goats, is richer than cow's milk; their tanned skins, though inferior in quality to the skins of the common goat, are used for leather; their pelts make the neatest of rugs and robes; they are excellent pets for children; a few of them in a flock of sheep are a protection from wolves and dogs; their manure is noticeably helpful to the grass, which follows them after they have cleaned away the underbrush." A pamphlet was issued by the United States Department of Agriculture in 1901, containing an account, with illustrations, of the breed, and its qualities and products, and full directions as to feeding, care, shearing, etc. See *Bibliography*.

Goats otherwise have never taken a serious place in the farm property of the United States. The latest agricultural statistics enumerate only 45,500 in the whole country—a number exceeded by such small countries as Cape Verde Islands and Senegal. The great bulk of the goats in the world, estimated at 36,000,000 in 1893, and 32,000,000 in 1896, are to be found in the south of Europe, in Syria, and in northern Africa. All the rest of the world together possesses scarcely a fifth of the total, and goats are almost absent from English-speaking countries the world over. The ordinary domestic goat is highly prized in oriental and tropical countries for its milk and its flesh which differs but little from that of sheep. The skins form an important article of commerce, the value of the goat skins imported into the United States ranging from \$20,000,000 to \$25,000,000 per annum and coming from China, Southern Russia, South America, and Mexico.

**The Cashmere or Shawl Goat.** Nowhere have goats, other than Angoras, received more attention or been brought to a higher usefulness than in India, where a long list of varieties might be named and described, such as the streaked "naga" of Assam, the "bukee" of the Deccan, the "maycay" of Mysore, etc. None of these equal in importance, however, those of the western Himalayan region, which are cultivated for the sake of their wool, of which the genuine Cashmere shawls are made. Two principal varieties of these are distinguished—the lesser, or chappoo, and the more common *changra*, or "shawl goat." This variety is rather small, of various colors, but generally silvery white, with long, flattened, spiral horns, and pendent ears. These goats are valued, not for the long outer hair, but for the underwool, or *pashm*, which in summer is combed out and appears like grayish down. It is beautifully fine, soft, and silky, and from it are made the famous and often extremely costly shawls of Kashmir and its neighborhood. These goats were introduced into France and Germany during the last years of the nineteenth century and have thriven well. Their natural home extends through Tibet through the mountains southwestward to the country of the Kirghiz,

and enormous flocks are pastured by the natives in the high Himalayan valleys.

For the "Rocky Mountain goat," see ROCKY MOUNTAIN WHITE GOAT.

**Bibliography.** Pegler, *The Book of the Goat* (4th ed., London, 1909); Schreiner, *The Angora Goat* [in South Africa] (London, 1898); Thompson, "The Angora Goat," in *United States Department of Agriculture, Farmers' Bulletin No. 137* (Washington, 1901); Robertson Scott, *The Case for the Goat* (New York, 1908).