

## THE GOAT\*.

THOUGH the species of animals are separated from each other by an interval, which Nature cannot overleap; yet some species approach so near to others, and their mutual relations are so numerous, that space is only left for a bare line of distinction. When we compare these neighbouring species, and consider them in relation to ourselves, some appear to hold the first rank for utility, and others seem to be only auxiliary species, which might, in many respects, supply the place of the first. Thus the as is might nearly supply the place of the horse, and the goat that of the sheep. The goat, like the sheep, affords both milk and fuet in considerable quantities. His hair, though coarser than wool, is capable of being made into very good cloth; his skin is more valuable than that of the sheep; and the flesh of the kid makes a near approach

\* The horns of the goat bend backward, and are almost close at their base. There are eight cutting teeth in the lower jaw, and none in the upper. The hoofs are cloven; and the male is generally furnished with a beard.

Capra Gaseur. Quad. 266. Rati Syn. Quad. Aldr. El-falc. 635.

Capra hircus, cornibus carinatis, arcuatis, gula barbata, Linn. Syst. 94. Faun. Suec. 44.

Siegen bock, Siege, Klein. Quad. 15.

Le Bouc, La Chevre, Brisson. Quad. 38. Goat. Brit. Zool. I. 29.

to that of the lamb, &c. These auxiliary species are more rustic and robust than the principals: The as and the goat require not near so much attention as the horse and the sheep. They every where find the means of subsistence, eating almost indiscriminately the grossest as well as the most delicate plants. They are less affected by the influence of climate, and can better dispense with the aid of man. The less they depend on us, the more they seem to belong to Nature; and, instead of regarding these subaltern species as degenerated productions of the principal species, instead of considering the as as a degenerated horse, it would be more consonant to reason, to say, that the horse is an improved as; that the sheep is a more delicate kind of goat, which we have trained, raised to greater perfection, and propagated for our own use; and, in general, that the most perfect species, especially among domestic animals, derive their origin from those wild and less perfect kinds which make the nearest approach to the former. The powers of Nature, when united to those of man, are greatly augmented.

Independent of reasonings of this kind, the goat is a distinct species, and perhaps still farther removed from the sheep than the as from the horse. The buck as willingly copulates with the ewe, as the jack-as with the mare; and the ram embraces the she-goat in the same manner as the horse intermixes with the she-as. But

though these commixtures be frequent, and sometimes prolific, no intermediate species has been formed between the goat and the sheep. The two species are distinct, and still remain at the same distance from each other. No change has been effected by these mixtures; they have given rise to no new or middle race of animals. They have only produced individual differences, which have no influence on the unity of each primitive species, but, on the contrary, confirm the reality of their characteristic and essential distinction.

In many cases, however, we cannot distinguish these characteristic differences with sufficient certainty: In others, we are obliged to suspend our judgment; and, in the greatest number, we have not a single ray of light to direct us: For, independent of the uncertainty arising from the contradictory testimonies with regard to historical facts; independent of the doubts resulting from the inaccuracy of those who have endeavoured to study Nature, the greatest obstacle to the advancement of knowledge proceeds from our ignorance of many effects which time alone has not been able to exhibit, and which will not be discovered even by posterity, without numberless experiments, and the most accurate investigation. In the mean time, we wander in darkness, perplexed between probabilities and prejudices, ignorant even of possibilities, and every moment confounding the opinions of men with the operations of Nature. Examples are innumerable;

merable: But, without leaving our subject, we know that the he-goat and ewe, and the ram and she-goat, procreate together: We have still to learn, however, whether the mules produced by these commixtures be barren or fruitful. Because mules produced by the mixture of the horse with the she-ass, or the jack-ass with the mare, are sterile, we conclude that mules of every kind must likewise be deprived of the power of transmission. But this opinion may be false. The ancients assert positively, that the mule produces at the age of seven years; and that it likewise produces with the mare\*. They tell us, that the she-mule is capable of conception; but that she is unable to bring her fruit to perfection†. The truth of these facts, which obscure the real distinctions of animals, as well as the theory of generation, should be either confirmed or destroyed. Besides, though we had a distinct knowledge of all the species of animals around us, we are still ignorant of what might be produced by intermixtures with each other, or with foreign animals. We have no proper information concerning the jumar, an animal said to be produced by the cow and jack-ass, or by the mare and bull. We know not whether the zebra can produce with the horse or ass, or the

\* *Mulus septennis implere potest, et jam cum equa conjunctus hinnus procreavit: Arist. Hist. Animal. lib. vi. cap. 14.*

† Itaque concipere aliquando mula potest, quod jam factum est; sed enatire atque in finem perducere non potest. Mas generare interdum potest. *Id. lib. ii. cap. 6.*

broad-

broad-tailed Barbary ram with the common ewe; whether the chamois goat be only the common goat in a wild state, and whether an intermediate race might not be formed by their mixture; whether the monkeys really differ in species, or whether they form but one species, diversified, like that of the dog, by a great number of different races; whether the dog can produce with the fox and the wolf, the flag with the cow, &c. Our ignorance of all these facts is almost invincible; for the experiments necessary to ascertain them would require more time, attention, and expence, than the life or fortune of most men can permit. I employed several years in making trials of this kind, of which an account shall be given when I treat of mules. But, in the mean time, I acknowledge, that they afforded me very little information, and that most of my experiments were abortive.

Upon the determination of these and similar facts, however, our knowledge of the distinction of species, and of the genuine history of animals, as well as the manner of treating them, chiefly depends. But, since we are deprived of this necessary knowledge; since it is impossible, for want of facts, to establish analogies, or to lay a proper foundation for reasoning, there is no other method left us, than to proceed step by step, to consider each animal individually, to regard as different species all those which spontaneously procreate together, and to write their history in detached

detached articles, reserving a power of uniting or separating them, as soon as we shall acquire a more perfect knowledge, either from our own experience, or that of other men.

It is for this reason, that, though there are many animals which resemble the sheep and goat, we here confine ourselves entirely to the domestic kinds. We know not whether the foreign kinds could intermix with the common species, and produce new races. We are, therefore, authorised to consider them as distinct species, till sufficient evidence is procured, that the foreign kinds can procreate with the common, and produce fertile individuals: This is the only character which constitutes the reality of what is called *species* both in the animal and vegetable kingdoms.

The goat is superior to the sheep both in sentiment and dexterity. He approaches man spontaneously, and is easily familiarized. He is sensible of caresses, and capable of a considerable degree of attachment. He is stronger, lighter, more agile, and less timid than the sheep. He is a sprightly, capricious, wandering, lascivious animal. It is with difficulty that he can be confined to a flock. He loves to retire into solitude, to climb steep and rugged places, to stand and even to sleep on the point of rocks, and the edges of the most frightful precipices. The female anxiously searches for the male; and they unite with ardour. They are robust and easily nourished;

for they eat almost every herb, and are injured by a very inconsiderable number. The bodily temperament of the goat, which, in all animals, has a great influence on the natural dispositions, is not essentially different from that of the sheep. These two animals, whose internal organization is almost entirely similar, are nourished, grow, and multiply in the same manner; and their diseases are the same, except a few to which the goat is not subject. The goat fears not, like the sheep, too great a degree of heat. He cheerfully exposes himself to the sun, and sleeps under its most ardent rays, without being affected with a vertigo, or any other inconveniency. He is not afraid of rain or storms; but he appears to feel the effects of severe cold. The external actions and movements of animals, which, as formerly remarked, depend more upon the strength and variety of their sensations, than the structure of their bodies, are, for this reason, more vivacious, and less limited in the goat, than in the sheep. The inconstancy of the goat's disposition is marked by the irregularity of his actions. He walks, stops short, runs, leaps, approaches, retires, shows, and conceals himself, or flies off, as if he were actuated by mere caprice, and without any other cause than what arises from an eccentric vivacity of temper. The suppleness of his organs, and the strength and nervousness of his frame, are hardly sufficient to support

support the petulance and rapidity of his natural movements.

That these animals are naturally friends to man, and that, even in uninhabited countries, they betray no savage dispositions, is apparent from the following fact. In the year 1698, an English vessel having put into the island of Bonavista, two Negroes came aboard, and offered *gratis* to the captain as many goats as he pleased. The captain having expressed his astonishment at this offer, the Negroes replied, that there were only twelve persons on the island; that the goats had multiplied so greatly as to become extremely troublesome; and that, instead of being caught with difficulty, they obstinately followed the men, like other domestic animals\*.

The male is capable of engendering when he is a year old, and the female when she is seven months. But the fruits of such premature embraces are feeble and imperfect; and, for this reason, they are generally restrained till they arrive at the age of eighteen months or two years. The he-goat is a beautiful, vigorous, and ardent animal. In the course of two or three months, one male is sufficient for more than 150 females. But this ardour, which soon consumes him, lasts three or four years only, and at the age of five or six, he is old and enervated. Hence, a male for breeding should be

\* L'Hist. Gen. des Voyages, tom. 1. p. 513.

large,

large, handsome, and not exceeding two years of age. His neck should be short and fleshy; his head light; his ears pendant; his thighs thick; his limbs firm; his hair black, thick, and soft; and his beard long and bushy. The choice of the female is not of equal importance. It may only be remarked, that those which have large bodies, thick thighs, a light walk, long and capacious udders, and soft bushy hair, ought to be preferred. The females are in season during the months of September, October, and November: But, when allowed to approach the male, they are willing to receive him, and are capable of producing, in all seasons. They, however, hold much furer in autumn; and the months of October and November are preferred; because the young kids are brought forth when the grass is tender. They go with young about five months, and are delivered in the beginning of the sixth. They suckle their young a month or six weeks. Thus, six months and a half should be reckoned between the time when they are covered, and that when the kid begins to feed upon pasture.

When pastured along with sheep, the goats always take the lead of the flock. They love to feed separately upon the tops of hills, and prefer the most elevated and rugged parts of mountains. They find sufficient nourishment in heathy, barren, and uncultivated grounds. They do infinite mischief when permitted to go  
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among corn, vines, copses, or young plantations; for they eat with avidity the tender bark and young shoots of trees, which generally prove fatal to their growth. They carefully avoid moist ground, marshy meadows, and rich pastures. They are seldom reared in plain countries, where they never thrive, and where their flesh is always bad. Vast quantities are reared in warm climates; and they are never put into stables. In France, they would perish, if not sheltered during winter. They require no litter in summer; but, in winter, as moisture is very hurtful to them, they should be frequently supplied with fresh litter, and never allowed to lie upon their own dung. They are conducted to the fields very early in the morning, grass covered with dew, which is injurious to sheep, being extremely salutary to goats. As they are untractable and wandering animals, one man, however robust and active, is unable to manage above fifty of them. They are never permitted to go out during snow or hoar-frost; but are fed in the stable with herbage, small branches of trees collected in autumn, cabbages, turnips, and other roots. The more they eat, the quantity of their milk is the greater. To increase the quantity of milk still more, they are made to drink much, by mixing a little nitre or salt with their water. The milk may be drawn from them five days after bringing forth; and they continue to yield considerable quantities of  
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it, every morning and evening, for four or five months. The female produces but one kid, though sometimes two, seldom three, and never more than four. She is fertile from one year or eighteen months, till she be seven years of age. The male may propagate as long, and perhaps longer, if he were properly managed; but he is seldom employed above five years. He is then sent to be fattened among the old and young male goats, which have been castrated, to render their flesh more tender and succulent. These are fattened in the same manner as widders. But, whatever attention is bestowed on them, or however they are fed, their flesh is never so good as mutton, except in very warm climates, where mutton is always ill tasted.

The strong odour of the he-goat proceeds not from his flesh, but from his skin. These animals, which are not permitted to grow old, might perhaps live ten or twelve years. Whenever they cease to multiply, they are killed, and the older they are, their flesh is the worse. Both males and females, with very few exceptions, are furnished with horns. The colour of their hair is exceedingly various. It is said, that those which are white, and have no horns, give most milk; and that the black goats are the strongest. Though the food of these animals costs almost nothing, yet they fail not to bring considerable profit. Their flesh, tallow, hair,  
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and skin are valuable commodities. Their milk is more wholesome and better than that of the sheep: It is used as a medicine, curdles easily, and makes very good cheese. As it contains few oily particles only, the cream should never be separated from it. The females allow themselves to be sucked by infants, to whom their milk affords very good nourishment. Like cows and sheep, they are sucked by the *viper*, and still more by a bird called the *goat-sucker*, which fixes on their paps during the night, and, it is said, makes them lose their milk\*.

The goat has no cutting teeth in the upper jaw. Those of the under jaw fall out, and are replaced in the same time, and in the same order, as the teeth of the sheep. The age of the goat is indicated by the teeth and the knobs of the horns. The number of teeth in the she-

\* That the viper sucks cows, sheep, and goats, has all the appearances of a vulgar error; and should not, therefore, have been related so seriously, unless the author could have supported what he advances with the most unquestionable facts. As to the goat-sucker, though it has been blamed for this practice by most naturalists, yet I am convinced, that the accusation has not the smallest foundation in truth. This bird, which feeds upon moths, flies, and other insects, has indeed the power of opening its mouth to an uncommon width. But nothing can be more opposite to the structure of parts necessary for the operation of sucking, than the bill of a bird. The frequent attendance of these birds upon cattle of all kinds has probably given rise to this ridiculous notion. They attend cattle, not to suck them, but to seize the flies and other insects which perpetually assemble about these animals. This reasoning will acquire additional force, when it is considered, that the goat-sucker attends males as constantly as females.

goat is not uniform: They are generally fewer than those of the male, whose hair is also more rude, and his beard and horns longer. These animals, like the ox and sheep, have four stomachs, and chew the cud. Their species is more universally diffused than that of the sheep. Goats, every way similar to our own, are found in many parts of the world. They are only smaller in Guiney, and other warm climates, and larger in Muscovy, and other northern regions. The goats of Angora or of Syria, with pendent ears, are of the same species with ours; for they intermix together, and produce even in our climates. The horns of the male are equally long with those of the common kind; but they are directed and contorted in a different manner. They extend horizontally from each side of the head, and form spirals nearly like those of a screw. The horns of the female are short, bend backwards, downwards, and then advance forwards, so as to terminate near the eyes; but their direction and contour are not always uniform. The present description was taken from a male and a female in the royal menage. Like most Syrian animals, their hair was very long and bushy, and so fine, that cloths, as beautiful and glossy as silken stuffs, are made of it.

Plate XVIII.



HE GOAT

*A. Bell, sculp.*

Plate XIX.



SHE GOAT

*A. Bell, sculp.*



Plate XX



THE GOAT of ANGORA

*Abel's Engr.*

Plate XXI



SHE GOAT of ANGORA

*Abel's Engr.*

## SUPPLEMENT.

WE are informed by Pontoppidan \*, that goats are so numerous in Norway, that, from the port of Bergen alone, 80,000 raw hides are annually exported, without reckoning those which have been dressed. Goats, indeed, seem to be well adapted to the nature of this country : They search for their food upon the tops of the highest and most rugged mountains. The males are very courageous ; they fear not the attack of a single wolf, and even assist the dogs in defending the flock.

\* Nat. Hist. of Norway.