

THE MUSK*.

TO finish the history of the goats, gazelles, chevrotains, and other animals, of this kind, which are all natives of the Old Continent, it now only remains to give that of the musk, an animal as famous as it is little known.

It

* The Tibet musk is of the form of a roebuck: Length three feet three inches; from the top of the shoulders to the soles of the feet, two feet three inches. The upper jaw is much longer than the lower; on each side of which there is a slender tusk, near two inches long, hanging out quite exposed to view. In the lower jaw are eight small cutting teeth, none in the upper, and in each jaw six grinders. The ears are long and narrow, the inside of a pale yellow, the outside deep brown. The chin is yellow. The hair on the whole body is erect, very long, and each marked with short waves from top to bottom. The colour near the lower part is cinereous, black near the end, and ferruginous at the tips. The hoofs are slender and black; and the spurious hoofs of the forefeet are very long. The tail is an inch long, hid in the hair. The scrotum is of a bright red colour; but the penis is so hid as scarce to be discovered. The female is less than the male, and her teats sharper. She wants the two tusks, and has two small teats. The noted drug the musk is found in a bag or tumour, of the size of a hen's egg, on the belly of the male only; *Pewant's Symp. of Quad.* p. 56.

Capreolus moschi; *Gesner. Quad.* p. 695.

Capra moschi; *Aldrovand. de Quad. Esule.* p. 744.

Hiam, animal musci; *Michael. Bygon, Flora Sincensis*, p. 2.

Animal moschiferum; *Raii Syn. Quad.* p. 127. *Schrekius, Hyl. Muschi*, p. 1. tab. 1.

Animal moschiferum, Kaburga; *Nov. Com. Petrop. tom. iv.* p. 393.

Musk

It has been mentioned by all our modern naturalists, and by most travellers into Asia. Some of them have considered it as a *stag*, a *roebuck*, or a *musk goat*, and others as a large *chevrotain*. It seems, indeed, to be an ambiguous animal, participating of the nature of all these species. We may be assured, however, that its species is distinct, and different from all the other quadrupeds. It is of the size of a small roebuck; but has no horns. By this character, it resembles the *memina* or Indian musk. It has two large tusks in the upper jaw, by which it approaches to the Guiney musk. But what distinguishes the musk from all other animals, is a kind of bag near its navel, about two or three inches in diameter, in which the liquor, or rather fat humour called *musk*, is secreted, and which differs both in odour and consistence from that of the civet. Neither the Greeks nor Romans mention this animal. It was first taken notice of by the Arabians*. *Gesner, Aldrovandus,*

Musk animal; *Tavernier's Trav.* vol. ii. p. 153. *Le Bru's Trav.* vol. i. p. 116. *Bell's Trav.* vol. i. p. 88. *Strahlenberg*, p. 359. *D. Hald, China*, tom. i. p. 63. 324. *Grew's Massam*, p. 21. *Tragus moschiferus*, *Moschus*; *Klein. Quad.* p. 18.

Tragulus ad umbilicum folliculum moschiferum genus; *Brissou, Quad.* p. 97.

Moschus moschiferus, folliculo umbilicali; *Linn. Syst. Nat.* p. 91.

* *Abulfid Serraf* remarks, that the musk animal resembles the roebuck in the skin and colour, in the slenderness of the legs.

vandus, Kircher *, and Boym have treated pretty fully of this animal; but Grew † is the only author who has given an exact description of it from a stuffed skin, which, in his time, was preserved in the cabinet of the Royal Society of London.

This

legs, in the hoofs, in the *erect* and *somewhat bented horns*; and that it is armed with two white tusks on the side of each cheek. This author alone asserts, that the musk animal has horns; he has perhaps conjectured from analogy, that, as it resembled the roebuck in other respects, it ought likewise to have horns. We have taken notice of this error, because it is copied by Aldrovandus. Avicenna, when speaking of the *musk*, says, that it is the purse or follicle of an animal pretty similar to the roebuck, only it has two large crooked tusks. There is a figure of this animal in the fragment of *Cosmas*, printed in the first volume of Tavernier's Travels.

* I say, in the first place, that there is a certain flag in the provinces of Xensi and Chiamsi, which has a fine odour, and is called by the Chinese *Nercian*, that is, the *musk animal*. The Chinese Atlas mentions it in the following terms: "To keep you no longer in suspense concerning the signification of the word *muskus*, I can assure you that I have seen the animal oftener than once. It has a protuberance near the navel which resembles a small purse, because it is surrounded with a very delicate skin, and covered with soft hair. The Chinese call this animal *Xe*, which signifies odour, and the compound word *Xehiang* denotes the odour of the animal *Xe*, or *Se muschus*." It is four feet long, and as swift as a flag. The only difference is, that its hair is blacker, and it has no horns. The Chinese eat its flesh, which is very delicate. The provinces of Suchuen and Junnan abound with these animals, and they are most numerous in the western provinces of China; *La Chine Illustrée de Kircher*, p. 256.

† The musk deer breeds in China and the East-Indies. Not ill pictured in Calceolarius's museum. That in Kircher's *China Illustrata* faulty as to the snout and feet. That of Johnston absurd. Almost every where worse described. That he is a two-

horned

This description I have copied in the note. The year after the publication of Grew's work, in 1681,

horned animal, says Aldrovandus, all agree, except Simeon Sethi, who faith he hath but one. Neither of which is true. The description likewise given by Scaliger, and out of him by Chioeco in Calceolarius's museum, is false, and very defective. The best I find is amongst the German Transactions; to which I would have referred the reader, but that, comparing it with that I had drawn up before I met with it, I see some differences.

From his nose and to his tail, a yard and half a foot long. His head above half a foot. His neck one-fourth of a yard. His forehead three inches broad. His nose-end scarce three-fourths of an inch, being very sharp, like that of a greyhound. His ears like a coney's, about three inches long, and erect. As also his tail or scut, which exceeds not two inches. His fore-legs, a foot and two inches long, taking in foot and thigh. Near an inch over; the foot deeply cloven; with two fore hoofs, an inch and a quarter long, each a quarter of an inch over; and two heels almost as big, and therefore conspicuous. His hinder-feet are here wanting.

His hair on his head and legs about half an inch long, and rateably small. On his belly, an inch and a half long, and somewhat thicker. On his back and buttocks three inches long, thicker in proportion than any other animal, except, perhaps, some of the deer-kind, *sc.* three or four times as thick as hog bristles; consisting of brown and white portions alternately from the root to the top. On the head and legs brown. On the belly and under the scut, whitish. As it were fringed, especially on the back and belly, by a kind of undulation. Softer than in most animals, and exceeding light and rare. For, being split, and covered with a gloss, they appear to be made up of little bladders, like those in the plume or stalk of a quill; so that it is a thing betwixt a common hair and a quill. On each side his lower chop, almost under the corner of his mouth, there is a peculiar tuft, (about three-fourths of an inch long,) of short, thick, and hard hairs, or rather bristles, of equal length, as in a scrubbing brush.

The

1681, Luc Schroekius* printed at Vienna, the history of this animal, which contains nothing remarkable either for correctness or novelty. I shall, however, combine the facts which can be gathered from it with those of other authors, and particularly the more modern travellers. Having never been able to procure the animal

The musk bladder or bag is about three inches long, two over, and swelling out from his belly one and a half. Standing before his groin about as much. I fixed it cut open, whereby the observation of its natural aperture (which I suppose it hath as the catster bag) is prevented.

He hath twenty-six teeth. In his lower chop, sixteen; of which there are eight little cutters before; behind four grinders on each side, rugged and continuous. As many like grinders in the upper jaw. About an inch and a half from the nose-end, in the same jaw, on each side a tusk, two inches and a half long, hooked downward, and backward, and ending in a point. Not round but flat, the breadth of half an inch; thin, and having a sharp edge behind; so as it may not unfitly be likened to a fish. There are no horns; Grew's *Museum*, p. 21.

* Schroekius gives a figure, but no description, of this animal. He only remarks, that it resembles a roebuck, with the exception of having two prominent tusks in the upper jaw, about three inches long, and directed downward; that this is the chief characteristic of the animal; that it varies in the colour of its hair; that its head likewise differs from the roebuck, and approaches to that of the wolf; that the hair is generally marked with several spots; and that the protuberance which contains the musk is situated a little below the navel. He adds, that this animal is found in Tartary, in Tibet, in China, and particularly in the province of Xiali, in Tonquin, in Pegu, in the Kingdom of Aracan, and in Boutan; p. 32.—57.

itself,

itself, we are reduced to the necessity of collecting and digesting what has been said of it by others. From Grew's description, which is the only authentic work we are possessed of, it appears that this animal has long coarse hair, a sharp muzzle, and tusks like those of a hog; and that, by these characters, it approaches the wild boar, or rather the *babiroussa*, called the *wild Indian boar* by the naturalists, which, along with several characters of the hog, is, like the musk animal, smaller, and has taller and more nimble limbs, resembling those of the stag or roebuck. On the other hand, the American hog, which we have called *pecari*, has on his back a cavity or purse which contains an odorous humour; and the musk animal has a similar purse, not on his back, but under his belly. In general, none of those animals which produce odorous liquors, as the badger, the beaver, the *pecari*, the musk rats, and the civet, belong to the genus of deer or goats. Hence we should be led to think, that the musk animal makes a nearer approach to the hog-kind*, of which he has the tusks, if, at the same time, he had cutting teeth in the upper jaw. But, his want of these teeth

* Animal moschiferum neque e cervino neque e caprino genere esse videtur; cornua enim non habet, et an ruminet incertum est; dentibus tamen incisivibus in superiore mandibula caret, ruminationem in modum, et dentes ibidem exsertos habet, (*Tylos Anglice, desferet Gallice.*) velut porcus; *Raii Syn. Quad.* p. 127.

connects him with the ruminating animals, and particularly with the chevrotain, which chews the cud, though it has no horns. All these external characters, however, furnish us with conjectures only. But an examination of the internal parts can alone decide concerning the nature of this animal, which is still very little known. I have made it follow the goats and antilopes, not because it seems to have any connection with these species, but lest I should too much offend the prejudices of most naturalists.

Marco Paolo, Barbofa, and P. Philippe de Marini, are all more or less deceived in the notices they have given concerning this animal.* The only

* Paolo describes it in this manner:—Its hair is coarse, like that of the stag. It has the feet and tail of a gazelle, and no horns *any more than that animal*. It has four teeth in the upper jaw, about three inches long, which are as delicate and white as ivory; two of them rise upward, and two turn downward; and the creature is exceedingly beautiful. During the full moon, it is affected with an imposthume on the belly near the navel; and at this time the hunters seize the animal, and open the imposthume. Barbofa says, that it is very like the gazelle; but he agrees not with other authors, when he tells us that its hair is white. The following are his words: "The musk is found in small white animals which resemble gazelles, and have tails like elephants, though much smaller. A kind of imposthume forms under the belly and breast of these animals, and, when the matter is ripe, the tumour grows so itchy, that they rub it against the trees: The matter which falls down in small grains is the real perfect musk." Thevenot's description seems to correspond still better with the others. "In these countries," says he, "there is an animal with a muzzle similar to that of the fox, but whose body exceeds not the size of a hare. His hair refer-

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only fact in which they agree is, that the musk is formed in a pouch or tumour near the navel; and it appears from their testimonies, as well as those of other travellers, that the male alone produces the musk; that the female has the same pouch near the navel, but that the humour secreted in it has not the same odour; that this tumour of the male is not filled with musk, except in the rutting season; and that, at other

bles that of the stag, and he has the teeth of a dog: He produces excellent musk in a bladder under the belly, which is full of corrupted blood; and this blood composes, or rather is the musk itself. The natives cut away this bladder, and cover the cut part of it with leather, to prevent the dissipation of the odour. But, after this operation, the animal soon dies." The description given by Pigafetta, who says that the musk is of the size of a cat, corresponds not with that of other authors; neither does that of P. Philippe, who makes the head of the musk resemble the head of a wolf: And P. Kircher, in the figure he has given of this animal, represents it with the snout of a hog, which is perhaps an error of the engraver, who has likewise given it claws instead of cloven hoofs. Simeon Sehi recedes still farther from truth, when he makes the musk as large as an unicorn, and even a species of that animal. "The musk of least value," says he, "is brought from China and the East Indies, and is of a blackish colour. The musk is formed below the navel of a large animal with one horn, and which has a resemblance to the roebuck. In the rutting season, a mass of clotted blood collects round his navel, and produces a swelling, the pain of which prevents him from eating or drinking: He then rolls himself on the earth, breaks the tumour, and discharges the blood, which, after coagulating, acquires a fine odour." All these authors agree, in the manner in which the musk is formed in a bladder or tumour near the navel, when the animal ruts; *Anciennes Relations des Indes & de la Chine*, p. 216.

times, the quantity of this humour is smaller, and its odour weaker.

With regard to the *musk* itself, its essence is perhaps as little known as the nature of the animal from which it is procured. All travellers agree, that this substance is perpetually adulterated with blood, or other drugs, by the venders. The Chinese not only augment its size, by mixture, but they endeavour to increase its weight by incorporating with it finely powdered lead. The *musk* that is purest, and in most request among the Chinese themselves, is that which drops spontaneously from the animal upon stones or trunks of trees, against which it rubs, when the matter is too abundant, or begins to irritate the pouch where it is formed: That found in the pouch itself is seldom so good; because it is not fully ripe, or rather because it is during the rutting season only that it acquires its greatest strength and odour; and, at this period, the animal endeavours to get rid of a matter which is too highly exalted, and occasions itching and some degree of pain. Both Chardin* and Ta-

vernier

* It is well known, that *musk* is the excrementitious matter of an animal which resembles the wild goat, except that its body and limbs are more delicate. It is found in High Tartary, in the north of China, and in Tibet, which is a kingdom between India and China. I never saw these animals alive, but I have seen their skins in many places. There are figures of them in the Dutch ambassador's lodgings at China, and in the *China Illustrata* of Kircher. It is commonly said, that

vernier have well described the methods practised by the Orientals to adulterate *musk*. The merchants

that the *musk* is the sweat of the animal, which runs down and is collected in a thin bladder near the navel. But the natives of the East tell us with more precision, that it is formed in an abscess within the body, and near the navel of this goat, the humour of which produces an itching and prickling pain, especially when the animal is in season; that, by rubbing against trees or rocks, the abscess bursts, and the matter is disused between the muscles and the skin, where it collects and forms a kind of blister or bladder; and that the internal heat exalts this corrupted blood, and gives it the strong odour of *musk*. This bladder is called *the navel of the musk*, or *the odoriferous navel*. The Eastern people prefer the Tibet *musk* to that of China, whether it is really a stronger odour, or only appears so, because it arrives to them fresher, Tibet being nearer to them than the province of Xinsí, which produces more *musk* than any other district of China. The great *musk* trade is carried on at Boutan, a celebrated town in the kingdom of Tibet. The Patans go there to purchase it; and they distribute it all over India, from whence it is transported through the whole earth. The Patans border on Persia and High Tartary, and are subject or rather tributary to the Great Mogul. The Indians make great use of this aromatic drug. They employ it in their perfumes, confections, and every composition they have been accustomed to prepare for the purposes of provoking love, or of restoring lost vigour. The women use it to dissipate the vapours which ascend from the uterus to the brain, by fixing a bladder of it on their navel; and when the vapours are violent and perpetual, they take the *musk* out of the bladder, tie it in a small linen bag, and apply it to a place which modesty permits not to be named. — It is commonly alledged, that, when the musk-bag is cut open, so strong an odour bursts out, that the hunter is obliged to have his mouth and nose covered with several folds of linen; and that, notwithstanding this precaution, the force

merchants must necessarily augment the quantity of it beyond conception; for, in one year, Tavernier * purchased 1663 bags, which supposes
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of the odour is often so great as to produce a mortal hæmorrhagy. I made a particular inquiry into this fact, and, having heard similar accounts from some Armenians who had been at Boutan, I am inclined to think it is true; because this drug, instead of acquiring, loses its odour in process of time. Now, this odour is so strong in India, that I was unable to bear it. When I dealt in musk, I stood always in the open air, with a handkerchief on my face, and at a distance from those who handled the bladders, and brought them to my broker. I then perceived that musk, when fresh, is extremely heady, and quite insupportable. I shall only add, that there is no drug so easily or so frequently adulterated. Some bags are only pieces of the animal's skin, filled with its blood, and a small quantity of musk to give it an odour, instead of that bladder formed by the wisdom of Nature near the navel to receive this wonderful and odoriferous humour. With regard to the genuine bladders, when the hunters find that they are not full, they squeeze the animal's belly, and fill them with blood; for they believe that the blood of the musk, and even its flesh, has a fine scent. The merchants afterwards mix the musk with lead, ox's blood, and other substances proper for augmenting its weight. The Eastern people employ several modes of detecting this falsification, without opening the bag: They learn from experience to distinguish the proper weight of an undiluted bag. They likewise know by the taste. Hence the Indians never purchase musk without tasting small grains of it, which they squeeze out of the bags. In fine, they take a thread steeped in garlic juice, and draw it through the bag with a needle: If the odour of the garlic be extinguished, the musk is good, and if the thread preserves the scent of the garlic, the musk is adulterated; *Voyage de Chardin*, tom. ii. p. 16.

* The best, and the greatest quantities of musk come from the kingdom of Boutan, from which it is carried for sale to Patna, the chief town of Bengal. All the musk sold in Persia

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an equal number of animals. But, as this animal is no where domestic, and the species confined to a few provinces of the East, it cannot
possibly

is transported from thence. I had the curiosity to carry a skin of this animal to Paris, and have given a figure of it.

After killing the animal, the peasants cut off the bag, which is of the size of an egg, and is situated nearer the organs of generation than the navel. They next take out the musk, which then has the appearance of clotted blood. When they want to adulterate it, they put a maul of the animal's liver and blood in the place of the musk they had extracted. In two or three years, this mixture produces certain small animals which eat the good musk; so that, when opened, a great defalcation is discovered. Others, after extracting a portion of the musk, put in small pieces of lead, to augment the weight. The merchants who transport musk to foreign countries love this trick better than the other, because none of these small animals are produced by it. But the deceit is still worse to discover, when, of the skin taken from the belly of a young animal, they make little bags, which they sew so dexterously with threads of the same skin, that they resemble genuine bags. These they fill with what they take out of the genuine bags, and some fraudulent mixture, which it is extremely difficult for the merchants to detect. When the bags are sewed, immediately upon their being cut, without allowing any part of the odour to dissipate in the air, after they have abstracted as much of the musk as they think proper, if a person applies one of these bags to his nose, blood will be drawn by the mere force of the odour, which must necessarily be weakened or diluted, in order to render it agreeable, without injuring the brain. The odour of the animal I brought to Paris was so strong, that it was impossible to keep it in my chamber. It made every head in the house giddy; and I was obliged to put it in a barn, where my servants at last cut away the bag: The skin, notwithstanding, always retained a portion of the odour. These animals are not found in a lower latitude than the fifty-sixth degree. But

possibly be so numerous as to produce such a quantity of this matter. Most of these pretended bags, therefore, must be little artificial bladders made of the skin of other parts of the animal's body, and filled with blood and small portions

in the sixtieth they are very numerous, the country being full of woods. In the months of February and March, it is true, after suffering much hunger in their favourite clime, on account of the snow, which is sometimes ten or twelve feet deep, they come southward as far as the forty-fourth or forty-fifth degree, in order to procure grain or fresh rice. During this period, the peasants lie in wait for these animals with snares, and kill them with arrows and bludgeons. Some of them, I was assured, are so meagre and languishing with the hunger they suffer, that they are easily taken. These animals must be extremely numerous; for each of them has but one bag, and the largest bag, which seldom exceeds the size of a hen's egg, cannot furnish above half an ounce of *musk*: Three or four of them are sometimes necessary to afford a single ounce.

The King of Dantan, apprehensive that the practice of adulterating the *musk* would injure the commerce of his kingdom, especially as it is also produced, though dearer and in less quality, in Tonquin and Cochinchina, ordered, some time ago, that none of the bags should be sewed, but that the whole of them should be brought open to Boutan, the place of his residence, to be examined and sealed with his own seal. All those I purchased were of this kind. Yet, notwithstanding all the precautions of the King, the peasants open the bags in a crafty manner, and put into them small pieces of lead, which the merchants tolerate, because lead, as formerly remarked, does not spoil the *musk*, but only augments the weight. In one of my voyages to Patna, I purchased 1663 bags, which weighed 2557 ounces and a half; and the *musk*, when taken out of the bags, weighed 452 ounces; *Les Six Voyages de Jean-Baptiste Tavernier en Turquie, en Perse, et aux Indes*, tom. iv. p. 75.

of the true *musk*. It affords, in fact, the strongest of all known odours. A small bit of it perfumes a large quantity of matter. The odour of a small particle extends through a considerable space. It is likewise so fixed and permanent, that, at the end of several years, it seems to have lost no part of its activity.