

DIRECTIONS to the BINDER.

Place Plate CXLVII. CXLVIII. and CXLIX. between page 332 and page 333.

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NATURAL HISTORY.

THE BEAR*.

THERE is no animal so generally known as the bear, concerning which the writers of natural history have differed so much. Their uncertainties, and even contradictions, with regard to the nature and manners of this animal, seem to have proceeded from their not distinguishing properly the different species; and, of course, they sometimes ascribe to one the properties of another. In the first place, the land-bear must be distinguished from the sea-bear, the latter being commonly called the *white bear*, or

* The bear has six cutting teeth and two canine in each jaw; five toes before and five behind. In walking, he reits on the hind-feet, as far as the heel; *Pennant's Synopf. of Quad.* p. 190.

In Greek, *ἀρκίς*; in Latin, *Ursus*; in Italian, *Orso*; in Spanish, *Oso*; in German, *Baar*; in Swedish, *Björn*; in Polish, *Wiewer*, *Niedzwiedz*; in French, *L'Ours*.

Ursus; *Gesner. Quad.* p. 941. *Jen. Quad.* p. 65. *Ray, Synopf. Quad.* p. 171. *Klein. Quad.* p. 82.

Ursus niger, cauda unicolore; *Briffon. Regn. Anim.* p. 253.

Ursus cauda abrupta; *Linn. Syst.* p. 69.

bear of the frozen sea. These two animals are very different, both in the form of their bodies, and in their natural dispositions. The land-bears must again be distinguished into the *brown* and the *black* *; because, having neither the same inclinations, nor the same natural appetites, they cannot be regarded as varieties only of one and the same species. Besides, some land-bears are white, and, though resembling in colour the sea-bear, they differ from it, in every other particular, as much as the other bears. These white land-bears are found in Great Tartary †, in Muscovy, in Lithuania, and in other northern regions. They are not rendered white during winter by the rigour of the climate, like the ermines, or the hares, but are brought forth white, and remain so in all seasons. They ought, therefore, to be considered as a fourth species, if we did not also find bears with their hair consisting of a mixture of brown and white, which indicates an intermediate race between the white land-bear and the brown or black bear; consequently the white land-bear is only a variety of one or other of these species.

The brown bear is very common in the Alps; but the black bear is extremely rare. The latter, on the contrary, abounds in the forests of the

* Under the denomination of the Brown Bears, I comprehend those which are brown, yellow, red, or reddish; and under *black*, all the shades of that colour.

† See Relation de la Grande Tartarie, p. 8.

northern

northern regions of Europe and America. The brown bear is furious and carnivorous; but the black bear is only wild, and uniformly refuses to eat flesh. Of this we cannot give a more distinct and recent testimony than that of M. du Pratz, in his history of Louisiana *.

‘The black bear,’ says he, ‘appears in Louisiana during the winter; because the snows which cover the northern countries prevent him from finding sufficient nourishment. He lives upon fruits, acorns, and roots; but he is peculiarly fond of honey and milk; and, when he meets with these articles, he will rather die than quit them. Notwithstanding the common prejudice, I affirm, and in this assertion I am supported by all the inhabitants of this province, and of the neighbouring countries, that he is not a carnivorous animal. Though numerous, and often pressed by extreme hunger, they never devour men, nor eat even butcher-meat, when they fall in with it. During the time I lived among the Natches, a severe winter in the northern regions made the bears descend in vast quantities. They were so numerous, that they starved each other, and were very meagre. Famine made them come out of the woods which border on the river. We saw them during the night, run into houses and court-yards, which were not properly shut, where they found meat exposed; but they never touched it, and eat only what grains they could pick

* Tom. ii. p. 77.

up. On an occasion so pressing, they must infallibly have discovered their carnivorous disposition, if they had an appetite of this nature. They never kill animals to devour them; and, if they were carnivorous, they would not abandon countries covered with snow, where they could find men and animals at will, in order to search for fruits and roots, a species of food rejected by the carnivorous tribes.* M. du Pratz adds, in a note, that, since writing the above article, he had learned with certainty, that, in the mountains of Savoy, there are two kinds of bears, the one black, like those of Louisiana, and not carnivorous; the other red, and equally carnivorous as the wolves. The Baron de Hontan remarks*, that the bears of Canada are very black, but by no means dangerous; and that they never attack men, unless when shot at and wounded. He farther observes†, that the reddish bears are extremely mischievous, and boldly attack the hunters; but that the black bears uniformly fly from men.

Wormius‡ informs us, that there are three kinds of bears in Norway: The first (*breffidur*) is very large, not altogether black, but brownish, and not so destructive as the other kinds, living only on herbs and the leaves of trees: The second (*ildgierfdur*) is smaller, blacker, and carnivorous, often attacking horses and other animals,

* Tom. i. p. 86.

† Tom. ii. p. 40.

‡ Mus. Worm. p. 318.

especially

especially in autumn: The third (*myrebiorn*) is still smaller, but fails not to be noxious. He is said to feed upon ants, and delights in overturning their hillocks. It has been remarked (he adds, without proof), that these three kinds mix, and produce intermediate species; that the carnivorous kind attacks the flocks, kills every creature, like the wolf, and devours only one or two; that, though carnivorous, they eat wild fruits; and, when the fruit of the service-tree abounds, they become more dangerous, because this sour fruit sets their teeth so much on edge, that nothing but blood or grease can remove this malady, which prevents them from eating with ease. But most of these facts related by Wormius appear to be extremely equivocal; for we have no examples of animals, with appetites so uniformly different as those of the two first species, the one living only on herbs and the leaves of trees, and the other on flesh and blood, intermixing and producing intermediate species. Besides, he makes the black bears carnivorous, and the brown frugivorous, which is absolutely repugnant to truth. Add to this, that P. Rzaczynski*, a Polish writer, and M. Klein of Dantzick†, in describing the bears of their country, mention two species only, the black, and the brown or red; and, of the latter, they speak of a larger and lesser kind. They remark, that the black bears are more rare; that the

* Aftuar. Hist. Nat. p. 32.

† De Qquadrap. p. 82.

brown, on the contrary, are very common; that the black bears are the largest, and feed upon ants; and, lastly, that the red or brown kind are the most carnivorous and destructive. These proofs, added to those of M. du Pratz and of the Baron de la Hontan, are perfectly opposite to what Wormius advances. In a word, it appears to be certain, that the red or brown bears, which are found not only in Savoy, but in the high mountains, in the vast forests, and in almost every desert of the earth, devour live animals, and even the most putrid carcases. The black bears inhabit not very cold countries, but we find the brown or red bears in the frozen, the temperate, and even in the southern regions. They were common in Greece; and the Romans brought them from Lybia*, to be exhibited at their public spectacles. They are found in China†, in Japan‡, in Arabia, in Egypt, and as far as the island of Java§. Aristotle § likewise mentions white land-bears, and considers this difference of colour as accidental, and proceeding from a defect in generation. Thus bears are found in all desert, rude, and woody countries. But they

* Herodot. Solon. Crinit. et alii. Quod frano Lybici domantur ursi, fays Martial.

† Hist. Generale des Voyages, par M. l'Abbé Prevost, tom. iii. p. 492. Hist. Nat. du Japon, par Kœmpter, tom. i. p. 109.

‡ Strabo, lib. xvi. Prosp. Alpin. p. 233.

§ Voyage autour du Monde de le Gentil, tom. iii. p. 85.

¶ Aristot. de Admir. cap. cxi. Idem de Gen. Anim. lib. v. cap. 6.

never appear in populous nations, nor in open and cultivated regions. There are none in France or in Britain, except, perhaps, a few in the most unfrequented mountains of France.

The bear is not only a savage, but a solitary animal. He flies from all society, avoiding every place to which man can have access, and is only easy where Nature appears in her rudest and most ancient form. An old cavern among inaccessible rocks, or a grotto formed by time in the trunk of a decayed tree, in the midst of a thick forest, serve him for an habitation. Thither he retires alone, and passes part of the winter without provisions, and goes not out of it for several weeks. However, he is neither torpid, nor deprived of feeling, like the dormouse and marmot; but, as he is excessively fat about the end of autumn, which is the time he retires, this abundance of grease enables him to endure abstinence; and he departs not from his den till he is almost famished. It is alledged, that the males leave not their retreats for forty days*; but that the females continue four months, because it is there that they bring forth their young. It is difficult to believe that they should not only subsist, but nourish their young, without taking food for so long a period. I allow, that, when pregnant, they are prodigiously fat, and that, being clothed with very thick hair, sleeping the greatest part of the time, and remaining without motion, they must

* Aristot. Hist. Anim. lib. viii. cap. 17.

lose little by perspiration. But, if it be true, that the males, pressed with hunger, go out in forty days, it is not natural to think, that the females, after bringing forth and suckling their young, should feel less the want of food, unless we suppose them to devour some of their offspring, together with the membranes, &c. which is not probable, notwithstanding the example of the cats, which sometimes eat their young. Besides, I am here talking of the brown species only, the males of which devour the new-born cubs, when they discover them in their dens. The females, on the contrary, seem to love their offspring with an astonishing ardour: After they bring forth, they are more ferocious and more dangerous than the males. They fight, and expose themselves to every peril, in order to save their young, who are not unformed for some time after birth, as the ancients alledged, but grow nearly as quick as other animals. They are perfectly formed in the womb of the mother*; and, if the fœtus, or young cub, seems, at the first glance, to be ill-formed, it is only because the old bear herself, upon the whole, is an animal gross and disproportioned; and we know, that, in every species, the fœtus, or new-born animal, is more disproportioned than the adult.

* In museo illust. senatus Bononiensis arsalum a caelo matris utero extractum, et omnibus suis paribus formatum, in vase vitreo adhuc servamus; *Albrecht de Quadrup.* p. 120.

Autumn,

Autumn, with the bears, is the season of love: The female is said to be more ardent than the male. It is alledged, that she lies on her back to receive him, that she embraces him closely, and keeps him fast for a long time, &c. It is certain, however, that they copulate like other quadrupeds. Captive bears have been seen coupling, and have been impregnated. But how long the females go with young, has not been so accurately marked as could be wished. Aristotle* has said, that they go with young 30 days only. As nobody has contradicted this fact, and as we are not in a condition to verify it, we, of course, can neither affirm nor deny with regard to this matter. We shall only remark, that it appears to be doubtful: 1. Because the bear is a large animal; and, in proportion to the size of animals, they require the longer time to be formed in the womb: 2. Because the young bears grow very slowly; they follow their mother, and require her assistance, for a year or two: 3. Because the female produces but one, two, three, four, and never more than five; a property common to all large animals, who produce but a few young, and carry them long: 4. Because the bear lives 20 or 25 years, and the time of gestation and that of growth are generally proportioned to the duration of life. From these analogies, I am inclined to believe that the bear goes with young at least several months. However this matter stands,

* Arist. Hist. Animal, lib. vi. cap. 30.

the

the mother takes the greatest care of her young. She prepares for them a bed of moss and herbs in the bottom of her cavern, and suckles them till they are able to go abroad with her. She brings forth in winter, and the cubs begin to follow her in the spring. The male and female live not together; but each has a separate and a distant retreat. When they cannot find a cavern for a den to make a lodging, they break and collect branches of trees, which they so cover with herbs and leaves as to render them impenetrable by water.

The voice of the bear is a deep murmuring, often accompanied with a grinding of the teeth, especially when irritated. He is very susceptible of anger, which is always furious, and often capricious. Though, when tamed, he appears mild and even obedient to his master, he should always be treated with diffidence and circumspection; and we should be particularly careful not to strike him on the nose; or on the parts of generation. He may be taught to walk on end, to dance, and to perform various gesticulations. He seems even to listen to music, and to observe some kind of measure. But, to give him this species of education, he must be taken young, and constrained during life. An old bear cannot be tamed, nor will he suffer restraint. He is naturally intrepid, or, at least, indifferent to danger. The wild bear never turns out of his road, nor flies from the aspect of man. It is alledged, how-

ever,

ever, that the sound of a whistle* surprises and confounds him to such a degree, that he rises on his hind feet. This is the time for shooting, and endeavouring to kill him; for, if he be only wounded, he attacks the huntsman with fury, embraces him with his fore-feet, and suffocates him †, if not timely assisted.

Bears are hunted in different manners. In Sweden, Norway, Poland, &c. the least dangerous mode, it is said ‡, is to intoxicate them by throwing ardent spirits on honey, of which they are fond, and search for it in the trunks of trees. In Louisiana and Canada, where the black bears are common, and where they live not in caverns, but in decayed trees, they are taken by setting their habitations on fire§. As they climb trees with ease, they seldom reside on a level with the ground, and their habitations are often 30 or 40 feet high. If it be a mother with her young, she descends first, and is slain before she reaches the ground. The cubs follow, are seized by throwing a rope round their necks, and carried off either for the purposes of training or eating them; for the flesh of the cubs is delicate and good: That of the adult is eatable; but, as it is mixed with an oily fat, the paws alone, which are more compact, are reckoned a delicate dish.

* Voyages de Regnard, tom. i. p. 37.

† Id. Ibid. Hist. de la Louisiane, par M. du Pratx, tom. ii. p. 81.

‡ Voyages de Regnard, tom. i. p. 53.

§ Mem. sur la Louisiane, par M. Dumont, p. 75. Hist. de la Louisiane, par M. du Pratx, tom. ii. p. 87.

The hunting of the bear, without being very dangerous, is extremely lucrative, when performed with success. The skin is a valuable fur, and the quantity of oil drawn from a single bear is considerable. The flesh and fat are boiled together in a caldron, and the oil is easily separated. "Afterwards," says M. du Pratz, "the oil is purified, by throwing it, when very warm, into a quantity of salt and water. A detonation ensues, and a thick smoke rises, which carries off the disagreeable odour of the grease. When the smoke ceases, and while the grease is still warm, it is put into a pot, where it is allowed to remain for eight or ten days. At the end of this period, a clear oil is seen swimming on the top, which is taken off with a ladle. This oil is equally good, and answers the same purposes, as the best olive oil. Beneath, we find a lard as white, but a little sester than hog's-lard. It serves for culinary purposes, and has no bad taste or smell." M. Dumont, in his Memoirs of Louisiana, agrees with M. du Pratz, and adds, that, from a single bear, they obtain more than 120 pots of this oil; that the savages traffick in this article with the French; that it is very wholesome and good; that it never congeals but during great colds, and, when this happens, it is all clotted and of a dazzling whiteness; and that it is then eaten upon bread like butter. Our druggists keep no bear's grease, but import, from Savoy, Switzerland, or Canada, axungium, which is by no means pure. The author

thor of the Dictionary of Commerce affirms, that good bear's grease should be grayish, viscid, and of a disagreeable odour; and that, when too white, it is sophisticated and mixed with suet. It is applied topically in hernias, rheumatism, &c. and many persons assure us, that they have felt its good effects.

The amazing fatness of the bear makes him light for swimming; and, accordingly, he traverses, with ease, rivers and lakes. "The bears of Louisiana," says Dumont *, "which are of a fine black colour, cross the river, notwithstanding its great breadth. They are remarkably fond of the fruit of the *plaqueminier*, *guaiacana* †, or date plumb-tree: They climb these trees, sit altride upon a branch, keep themselves firm with one hand, and collect the fruit with the other. They frequently come from the woods into the cultivated fields to eat potatoes and yams." In autumn, they are so fat, that they can hardly walk ‡, or, at least, they cannot run so quick as a man §. Upon the sides and thighs they have sometimes ten inches thick of fat §. The soles of their feet are gross and inflated. When wounded, there issues out a white lacteous juice. This part appears to be composed of

* Mem. sur la Louisiane, p. 76.

† For an account of this tree, see Dict. Raisonné d'Hist. Nat. par Bomare.

‡ Voyage du Baron de la Hontan, p. 86.

§ Hist. de la Louisiane, par M. du Pratz, p. 83.

§ Extrait d'un ouvrage Danois cité par M^r. Arnauld de Nobleville et Salerne; Hist. Nat. des Animaux, tom. vi. p. 374.

small glands, like *papillæ*; and it is for this reason, that these animals, during their winter retreat, continually suck their paws.

The bear enjoys, in an excellent degree, the senses of seeing, hearing, and touching, though his eye is proportionally small, his ears short, and his skin thick and covered with bushy hair. His sense of smelling is, perhaps, more exquisite than that of any other animal; for the internal surface of this organ is very much extended, having four rows* of bony plates, separated from each other by three perpendicular planes, which increase prodigiously the surfaces proper for the reception of impressions from odoriferous bodies. He has fleshy legs and arms, like those of a man, a short heel-bone, which forms a part of the sole of the foot, five metatarsal bones opposed to the heel in the hind-feet, and an equal number of metacarpal bones in the fore-feet. But the thumb is not separated, and the largest finger is on the outside of this species of hand; whereas, in man, it is on the inside. His toes are thick, short, and locked to each other, both in the hands and feet. His nails are black, and of a hard homogeneous substance. But these gross resemblances to man render the bear only more deformed, and give him no superiority over the other animals.

* Etienne Lorentinus, Ephem. d'Allem. decur. i. an. ix et x. p. 403. cité par Mrs. Arnauld de Nobleville et Salerne; *Hist. Nat. des Animaux*, tom. vi. p. 366.

SUPPLEMENT.

M. de Musly, major of artillery in the service of the States General, has communicated some notices concerning domestic bears, of which the following is an extract.

"At Berne, where these animals are nourished," says M. de Musly, "they are kept in large square ditches, where they have room to walk about. These ditches are covered above, and lined with stone, both at the bottom and on the sides. Their lodges or cabins are likewise paved on a level with the bottom of the ditch, divided into two by walls, and may be shut both internally and externally by iron gates. In the middle of these ditches, there are large holes in the pavement, where considerable trees may be set up on end. There is likewise, in each ditch, a trough full of fresh water.

"Two young brown bears were transported here from Savoy, thirty-one years ago, of which the female is still alive; the male was killed about two months ago, by a fall from one of the high trees planted in the ditch. They began to generate at the age of five years: Since that time, they have every year come in season during the month of June; and the female has always brought forth in the beginning of January. The first

first time she produced one cub only, and afterwards, sometimes one, sometimes two, and sometimes three, but never more; and the three last years she brought forth one only at each time. The man who takes care of her, thinks her still pregnant (October 17, 1771). When the young come into the world, their figure is pretty; their colour is yellow, but white round the neck; and they have not the least appearance of bears. The mother is extremely fond of them. Their eyes are shut during four weeks. At first they exceed not eight inches in length; and three months after, they measure 14 or 15 inches from the end of the muzzle to the root of the tail; and their hair is nearly an inch long. Their figure is then almost round, and the muzzle is very sharp pointed; so that a person would hardly know them. They afterwards become weak and tender till they acquire their full growth; the white colour is gradually effaced, and the yellow changes into brown.

During the act of copulation, the male commences with short, but brisk movements, which last about a quarter of a minute; he then reposes double that time upon the female, without disengaging himself: In this manner he proceeds for three or four times; and when the operation is finished, the male bathes himself in the trough up to the neck. They sometimes fight cruelly, making a horrible grumbling noise. But, in the
season

season of love, the female has generally the advantage, because the male, at that time, spares her. The ditches, which formerly were in the town, are now filled up, and others are made between the ramparts and the old walls. These two bears, having been separated some hours when removing into new ditches, raised themselves on an end when they again met, and embraced each other with transport. After the death of the male, the female appeared to be much afflicted, and refused every kind of nourishment for several days. But, unless these animals be brought up and fed together from their earliest youth, they cannot endure one another; and, after being accustomed to this kind of society, the survivor will not admit another mate.

"The trees put yearly into the ditches in the month of May, are green larches, in climbing upon which the bears take vast delight. They are fed with rye-bread, which is cut into large morsels, and steeped in warm water. They likewise eat all sorts of fruits; and, when any unripe fruits are brought to the market, they are thrown in to the bears by order of the magistrate. It has been remarked, however, that some bears prefer pulse to the fruits of trees. When the female is about to bring forth, they give her plenty of straw, of which she makes a rampart. After this the male is removed, lest he should eat the cubs; and when she has littered, she is fed
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with a more nourishing diet than usual. We never could perceive any part of the membranes or after-birth, which makes it probable that she eat them. The cubs are allowed to remain with her for ten weeks; and are afterwards separated, and fed, for some time, with milk and biscuit.

"The bear which we believed to be in a state of pregnancy, was furnished, about the common time, with straw, of which she made a bed, and rested on it during three weeks, without producing any thing. She brought forth, for the last time, at the age of 31, in the month of January 1771; but, though she received the male in the following June, it was ineffectual in January 1772. It were to be wished that she was allowed to live, in order to discover the term fixed by Nature for the duration of these animals.

"There are brown bears on Mount Jura, upon the frontiers of our canton, in Franche-comté, and in the country of Gex. When they descend into the plains in autumn, they repair to the chestnut woods, where they make great havoc. In this country, the bears are said to have weak eyes, but acute senses of hearing, touching, and smelling."

The bears of Norway are more common in the provinces of Bergen and Drontheim, than in the other districts of that country. Two races of them are remarked, of which the one is considerably smaller than the other. In the colours of both,

both, there are great varieties. Some of them are of a deep brown, others of a shining brown; and some are grey, and of every shade of white. At the beginning of October, they retire into the dens they prepare for themselves, and where they make a kind of bed composed of moss and leaves of trees. As these animals are very formidable, especially when wounded, there are seldom less than three or four hunters in company; and, as the bear easily kills large dogs, they employ only small dogs, who pass under his belly, and seize him by the genitals. When he finds himself overpowered, he leans his back against a rock or a tree, collects turf and stones, which he throws at his enemies; and it is generally in this situation that he receives the finishing blow*.

We have seen at the menagerie of Chantilly an American bear of a fine black colour, and having soft, straight, long hair. We remarked other differences in the figure of this American bear, compared with that of Europe, as in the head, which is somewhat longer, because the muzzle is not so flat as that of the European bear.

In the relation of M. de Bertram's expedition, we have a notice of an American bear, killed near St. John's river, in East Florida, in the following terms:

* Pentopidian's Natural History of Norway.

"This bear," according to the relation, "weighed only 400 pounds, though the length of its body was seven feet, from the extremity of the nose to the tail. The fore-feet were only five inches broad, and the thickness of the fat was four inches. We drew from this animal 60 Paris pints of oil *."

* Letter of Mr. Collinson to M. de Buffon, dated London, February 6, 1767.

Plate CIII.



A. Bell sculpt.

BEAR.

Plate CIV.



A. Bell sculpt.

WHITE BEAR.