jump over the edge, and they were found in the morning under the floor of the greenhouse: two of them seemed none the worse, but the other, on being put into the water, remained with its back arched, floating on the top, unable to descend though making vigorous efforts so to do; it remained in that position for several days, after which it was put into spirits to preserve it. They were fond of taking refuge under any object which was put into their tub, evidently to avoid the light.

ART. 7.—*On the Natural History of the* "URSUS AMERICANUS; OR, AMERICAN BLACK BEAR. *By* GEO. M. DOUGLAS, M.D.

[Read, 6th February, 1841.]

The subject upon which I propose occupying the attention of the Society, for a short time, this evening, is the Natural History of the Ursus Americanus; or, American black Bear. The beautiful specimen of which now before us having been lately added to the collection of the Society.

Until a very recent period, the black Bear of this Continent was confounded with the black Bear of Europe—the resemblance, however, is not so great but that any one seeing the two animals together, will at once admit, that they belong to species perfectly distinct, being different from each other in figure, in fur, in colour, and even in their gait, attitudes, and manners. The

Bear before us is naturally of a milder disposition than his European brother—lives more on vegetable substances, and, in consequence, a difference is found in the shape of the skull, especially to that part of it which gives lodgement and origin to the strong muscles of the lower jaw; the forehead is not flat, like that of the black Bear of Europe, but arched; the temporal ridges are, however, well marked, and unite to form a sagittal crest. The nose is continued nearly on the same line with the forehead, and is rather arched, which produces the most striking peculiarity in the physiognomy of this species. The ears are high, far apart, and rounded at their tips; the hair of the feet projects beyond the claws, which are black. The principal food of the Bear is vegetable—wild fruit, berries, roots, &c.,—but, when these are not to be procured in sufficient abundance he preys upon insects, eggs, fish, small birds, and such quadrupeds as he can surprise. Having once tasted animal food, however, like a sensible gourmand, he appears to prefer it to all others; hence, when near settlements, if he has once succeeded in capturing a sheep or hog, he is very apt to return to the spot or linger in the neighbourhood. It is naturally a timid animal, and will rarely face a man unless wounded or has its retreat cut off, or to defend its young. It possesses great tenacity of life, and when firearms are not used defends itself with great strength and agility; hence the chase of the bear is always looked upon, by the native tribes of this continent, as hazardous, and previous to setting out upon such expeditions, it is customary to propitiate the whole race of Bears by certain speeches and ceremonies. The speed of the black Bear, as may be inferred from his make, is not great, and a man may, without much difficulty, escape from him, especially if he makes for brush-wood or long grass; for, extreme caution being one of the characteristics of this

animal, he will, while in pursuit, frequently stop to reconnoitre, raising himself on his hind legs for that purpose.

This animal is the largest of that class which nature has gifted with the property of passing the extreme cold of winter in a dormant state, or as it is technically called, the state of hibernation.

This property in animals, exceedingly curious in all the circumstances that belong to it, is truly wonderful in its preservative power—a power which maintains the existence of the animal as well as if its vital actions were in full operation. While this state of hibernation continues, the usual vital processes are either suspended in toto, or go on with an extraordinary degree of slowness; as soon as the former pass away the latter renew their action, and the animal springs into life with renovated power. From experiments made upon lethargic quadrupeds, by Signor Mangili, of Pavia, it appears, that the hibernating state only takes place within a certain range of temperature; that either too high or too *low* a degree of temperature prevents it from coming on—that the torpor is most profound when the temperature is at from five to seven degrees above zero — and that a more intense cold even revives the animal into activity. The application, too suddenly, of great heat, has the effect of destroying life—resucitation can only be effected by slow degrees. Animals, while in this state, although deprived of the capability of movement, with the eyes closed, and in an apparent state of death-like indifference, still possess a feeling of pain when sharply inflicted; a wound or burn causes them to contract. This property of hibernation is not confined to quadrupeds—birds possess this property in an eminent degree. I have often thought, that the partridges of this country possess to a certain extent, and under certain cir-

cumstances, this property. Whenever the degree of cold is very great, from ten to twenty degrees below zero, the partridge leaves the trees, his natural haunts, and in a very dexterous manner buries himself in the snow in such a way as to obtain a complete covering; he effects this by means of his tail, with which he carefully covers himself under the snow. While in this state he will allow himself to be approached within a short distance. I have kicked one up, with my snow-shoe, under similar circumstances.

It is to be regretted, that the experiments hitherto made upon animals in this state, have thrown little light upon the action of the heart—or in what condition the blood remains—we know that the lungs act, and *par consequence*, that the circulation continues, though very languidly. Our friend Bruin, prepares his winter quarters by selecting a spot where the wind has uprooted some large tree; he there, on the approach of cold weather, and just before a snow storm, scrapes away the earth to a certain depth and lays down, the rapidly falling snow soon furnishes him with a warm and close covering—his respiration makes a small opening or blow-hole, which leads the hunter to his discovery: the melted snow, in the spring time, runs into his den through this opening, and with a changed state of temperature gives him notice to quit. Up to the period when he takes to his winter quarters, berries abound in the woods, and on leaving them, in the spring, many are still met with in the low grounds which have been rendered more palatable by the winter frost. It has been frequently remarked, that Bears never hibernate unless provided with a thick coat of fat; and, it is said, by Dr. Richardson, that when they come abroad in the spring, they are equally fat, though in a few days after they become lean. Those hunters, with whom I have conversed, in Lower-

Canada, however, have never killed a fat Bear in the spring—even when smoked out of their dens (this being the usual means of destroying them) they are lean. In very severe winters, many Bears have been observed to enter the United States, from the northward—all of whom are either males, or females not with young. The coupling season, in this country is usually in the month of September, when the Bears are in good condition from the abundance of berries. Very soon after this period the female retires to her den, the site of which is selected with such care, that it is rarely discovered even by the lynx-eye of the Indian. The period of gestation of the female is not precisely known; it is supposed to be about sixteen weeks; the number of cubs varies from one to five, according to the age of the female. When the mother leaves her den they are still very small and like their European relatives, proverbial for their uncouth, clumsy appearance. The care with which the pregnant female conceals itself affords a solution of the remarkable fact, that to use the language of Brickell, "No man, either Christian or Indian, ever killed a she-Bear with young!" Dr. Richardson, likewise, assures us, that after numerous enquiries among the Indians of Hudson's Bay, only one was found who had killed a pregnant Bear! In regions to the south of this, they usually select, for winter quarters, the trunks of hollow trees, which they not unusually construct at the height of thirty to forty feet from the ground. There appears to be much discrepancy in the statements of naturalists as to the hibernation of the Polar Bear. The generally received opinion now is, that the pregnant females only hibernate. The male, not depending solely upon the vegetable kingdom for food, is able to find subsistence even during the rigour of an arctic winter. During the two winters that Capt. Parry remained on the coast of

Melville Peninsula, white Bears were frequently seen. It is supposed they go out to sea in search of food. Hearne, (whose interesting narrative of a Journey to the Coppermine River will be found in this library) states, and I infer from actual observation, that the males leave the land in the winter time and go out on the ice, to the edge of the open water, in search of seals—and there the female hibernates from December to March, bringing forth their young during that period; and, that when they leave their dens, in March, the young, which are generally two in number, are not larger than rabbits, and make a footmark, in the snow, no bigger than a crown piece. Mr. Graham, who wrote before the publication of Hearne's Narrative, describes the *she Bear* as alone hibernating; she takes up her residence in a different situation from the black: generally under the declivities of rocks, or at the foot of a bank, where the snow drifts over it to a great depth—she is described as being very thin and weak from suckling her cubs—so, as with difficulty to extricate herself, in the spring, from her den—they, at this season, always come down to the shore with their cubs, where they subsist on seals and seaweed. If, perchance, the youngsters are tired they ascend the back of the dam, where they ride secure either in water or ashore; and, though they sometimes are found thirty miles from the sea in the winter, they invariably make for the shore in the spring. I before remarked, that the chief food of the Bear of this country is derived from the vegetable kingdom; this applies more particularly to those found inland, or at a distance from the shore. On the shores bordering the Gulf of St. Lawrence, and on the Island of Anticosti more especially, the principal food is fish, either cast dead, on the beach, or caught when they approach the shore and creeks to deposit their spawn--among the chief of

these are herring and caplin. Brickell, in his History of North Carolina, says, speaking of Bears: "There you shall see these beasts sit and take up fish as fast as it is possible for them to dip their paws into the water." A dead whale affords them an occasional treat, which they share with the foxes.

One of the means, adopted by the fishermen, on the coast of Gaspé, to destroy them, is to place a small quantity of fish at a short distance from a hut, in which they secret themselves—on Bruin coming down, they shoot him with ease and certainty. In the interior, it is customary to kill them by means of a trap, rudely constructed with poles, loaded with stones and heavy timber, this weight is supported by a pole, to which a piece of meat or fish is fixed, in such a manner that the slightest pull brings down the whole affair upon the animal, and prevents his moving until the hunter arrives and despatches him.

In former years, Bear skins constituted a considerable part of the fur trade. In the year 1783, no fewer than ten thousand five hundred skins were imported into England, from the northern parts of America, and the numbers gradually increased until 1803, when it reached 25,000. The supply appears subsequently to have been greatly diminished, partly in consequence of the wholesale manner in which the destruction of the animal had been carried on, and partly in consequence of the preference given to the finer kinds of fur—at one time, when the skins were much used for muffs and hammercloths, the sum of from twenty to forty guineas was paid for a single skin, with the fur in prime order and the claws appended—at present such a one may be bought for about as many shillings.

It is a singular fact, that great similarity of feeling and ideas on the subject of the Bear, the manner of hunting him, &c., exists between the inhabitants of the North of Europe and

those of this continent. Regnard (Pinkerton's Voyage, vol. 1) informs us that the chase of the Bear is the most solemn action of the Laplander, and the successful hunter may be known by the number of tufts of Bear's hair he wears in his bonnet. When the retreat of a Bear is discovered, the ablest sorcerer of the tribe beats the ***Runic*** drum, to discover the event of the chase (the same kind of drum or double-headed tambourine, painted with rude representations of wild beasts and of the heavenly bodies, is common throughout all the North American tribes). During the attack, the hunters join in a prescribed chorus, and beg earnestly of the Bear that he will do them no mischief. When they have killed him, they put the body on a sledge to carry it home; The reindeer which has been employed to draw it, is exempted from labour the rest of the year. A new hut is expressly constructed for the purpose of cooking the flesh, and the huntsmen joined by their wives, begin again their songs of joy and of thanks to the animal for permitting them to return in safety. Sears, also, in his Danish Lapland, acquaints us, that the Laplanders never presume to call the Bear by his proper name of ***Guour Sija***, but term it, "***The old man, in the fur cloak***," because they esteem it to have the strength of ten men and the sense of twelve.

The Kamskatkans also consider the Bear as their great master in medicine, surgery, and the polite arts; they observe the herbs he has recourse to, when ill or wounded, and acknowledge him as their dancing-master, mimicking his attitudes and graces with great aptness. (Pinkerton, vol. 5.)

Mr. Alexander Henry, an Englishman, who visited the fur countries, soon after the reduction of Canada, gives a very minute account of a Bear hunt, by some Indians, which resembled that of the Laplanders. After the death of the Bear,

he says, the different persons approached, and all, but more particularly an old squaw, took the Bear's head in their hands and kissed it several times; begging a thousand pardons for taking away its life; calling her their relation and grandmother; and requesting it not to lay the fault upon them since it was truly an Englishman that had put her to death.

The flesh of the Bear, resembles, when in good condition, greasy and rather flabby pork; and, when fed on the coast or near rivers has also a fishy taste. The *Pemmican*, so much used as food in the north west, is compounded of lean meat pounded together with Bear's fat.