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# BEETON'S BOOK

# GARDEN MANAGEMENT,

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Building, arranging, and Management of Greenhouses, and other Garden Structures, Decorative Gardens. Spade Husbandry and Allotment Cultivation.

A copious Monthly Calendar of operations in each department.

Orchard Cultivation, & Management of Orchard-Houses.

The Management of Bees.

## Part I. on the 1st of October, 1861.

GARDEN CULTIVATION is so closely associated with Household Economy, that the "BOOK OF GARDEN MANAGEMENT" naturally presents itself as an almost necessary pendant to the "Book of Household Management," just completed under Mrs. Beeton's editorship. This work, so comprehensive in its plan and practical in its execution, professed "to convey clear, direct, and definite information on every department of the household ;" and we have the testimony of the press that these professions have been realized, and a very valuable work on domestic economy produced. Emulating the work thus successfully completed, the object of the editor and contributors to the "BOOK OF GARDEN MANAGEMENT" will be to render everything connected with the garden plain and intelligible. The principal contributors are practical and experienced gardeners. The information conveyed will be "clear, direct, and definite." The artistic and physiological portions of the work,—the rotation cropping, the use of manures in restoring exhausted soils, as well as the special management of fruit-trees, flowers, and vegetables,—will combine the newest discoveries of science, tempered by practical experience.

"Among the possessors of gardens" (to abbreviate slightly the eloquent postulate of a Quarterly Reviewer), "there are favoured mortals, who have ample means, well-stored knowledge, and intelligent industry, to whom a multitudinous band of gardeners look up for guidance. Such persons are horticultural light-houses shining on high:—fountain-heads of patronage, patterns of successful practice, centres of dissemination and distribution: without them gardening could not be what it actually is." Then there is the "Every gentleman his own gardener," whose enjoyment it is, in early spring, to meet the message from the garden that there is nothing in it either for "missus" or for "cook," by producing, himself, "a charming bunch of Russian violets, fragrant coltsfoot, daphnes, erica carnea, wallflowers, and polyanthus, for cara sposa; and a punnet of the sweetest, geenest sprouts, and the plumpest, whitest of seakale," for the kitcher.

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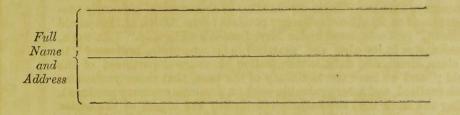
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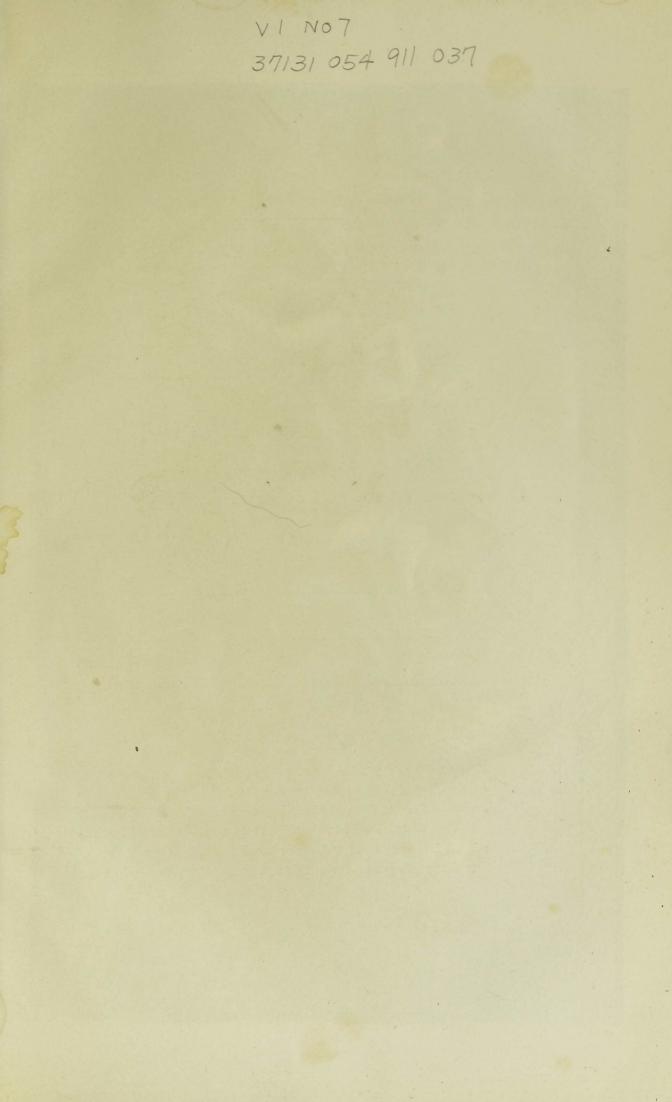


# "The QUEEN."

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#### HOW THE WILD BOAR IS HUNTED.

Wherever a hog will go—even when hard pressed—there should the steed follow, up steep hills, down sudden slopes, over bushes, and along the face of rocks at an angle of forty degrees, and more slippery than metropolitan wood-paving in foggy weather. It is possible, however, to have too clever and impetuous a horse. Captain Shakespeare had one such; without spur or encouragement, it would follow the boar into the most impracticable places; when the boar leapt a rock, the horse leapt too, exactly as the chase went. When it is considered that, when hard run, the boar has been known to tuck in his feet and



fling himself over a bank fifteen feet deep, falling on his chest and up and off again in an instant, the disadvantage of mounting a horse who hunts boars for his own amusement will be apparent.

Speaking of the animal above mentioned, Captain Shakespeare says, "I bought him at auction, at Hyderabad, for a hundred rupees—about nine pounds—and as for courage, I believe he would have faced a tiger. On one occasion, I had a long and severe run over rocks and grass after a wild sow which, on the second time of being speared, ran up the spear and fixed on the chest of this horse. He never moved for

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some time, till at length, I suppose, being convinced that I couldn't get the hog off him, he swung suddenly round, and the sow being a large tall one, this movement brought her alongside of him, when he lashed at her with his hind legs till she was disengaged."

As in Indian boar hunting there is generally as much racing as fighting, and the hunter's valour goes for nought unless he possesses such facilities as will make him more than a match for the fleet, tusked monster, a fast horse is indispensable. "At his first burst, the Indian boar will run away from the fleetest Arab racer." Therefore, care is taken to give the horse every possible advantage. It generally happens that the pasture-ground selected by the cunning boar is situated a long distance-ten, twenty, even thirty miles-from his stronghold. Setting out in the evening, he goes at a steady pace and reaches his feeding-place about the middle of the night; here he gorges, as only hogs wild and tame can gorge, sugar-cane or such other food as he fancies, and, strolling off, reaches home before daylight. This is the time to hunt him. He is full, tired, and sleepy, and altogether incapable of running his fastest. Indeed, it may take a great gang of natives with their tom-toms, bells, cymbals, horns, and other implements of hideous Indian music, to rouse him from his covert, and roused he must be, for to penetrate to his sanctum afoot-however perfectly armed-would be an act almost of suicide, and if a jury of grey-headed hog-hunters sat on such a body, their undoubted verdict would be "temporary insanity." When roused, however, the boar will make the best running he can, and here the hunter's horse has the advantage, for his master has taken care, after he has had his supper over-night, to put a muzzle over his mouth, and he is led out in the morning empty and light, and in a condition to go at the fastest pace he is capable of. The hunter's great aim is to "blow" his formidable game at the first burst and bring him to bay, well knowing that if he allows the boar to keep the lead till he recovers his wind, his hungry horse will flag and droop his ears while the game with his tail erect is still at a hard gallop.

The authority quoted at the commencement of this chapter relates an adventure that occurred to him while hunting in the Deccan, and which amply illustrates the high place the boar deserves in the list of wild animals worthy of chase, as well as its pluck and marvellous tenacity of life.

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While beating the sugar-canes for wild hogs, a few miles from Hingolee, a villager came up, and after inquiring what the captain was hunting for remarked, "If you want to see a hog, come with me and I will show you one;" and leading the way over the brow of a hill, pointed out an object in a field below that "in the mist of the morning appeared like a large blue rock-much too large for a hog." However, the "object" presently got on its legs, and dissipated any doubt existing as to its character. About a hundred yards distant from the animal was a fissure in the hills, thickly wooded, and here, no doubt, was the boar's lair, and if he took alarm and rushed thither it would be next to impossible to dislodge him. A savage boar in his stronghold is as difficult to oust as the grizzly bear from his winter cave in the Rocky Mountains. He constantly rushes out, knocks over and gores the beaters nearest the mouth of his retreat, and then skips back again before there is the shadow of a chance of spearing him.

All this Captain Shakespeare well knew, and thinking it possible that the boar might not run, he galloped round the field and placed himself between the boar and his retreat, and there waited with his companion-a native officer-till the beaters came up and endeavoured to drive the boar over the hill. "Standing as I was, behind a hedge considerably higher than my mare's head, I did not see the boar. The duffadar (native officer) was some thirty yards to my left, and looking over a lower part of the hedge shouted out, "Look out ! here he comes !" The mare was standing still, and I had but just time to drop my spear-point, which caught the boar in the rise, and the blade was buried in his withers. My mare, from her standing position, cleared with one bound the boar, spear and all, as this was carried out of my hand; then, suddenly turning, was in her stride after the hog. The hog had but seventy yards to reach the jungle, and just as he struck the first branch of the jungle with his back, breaking in two the shaft of my spear (which was still fast in his body), the duffadar closed with him. The boar having been missed by the spear ran under the duffadar's horse, and for thirty yards lifted him off his legs, plunging and kicking till the rider came to the ground. Fortunately we had three dogs with us; and having shouted to the people to let them go, they came up and took off the attention of the boar at the moment he was on

the duffadar, who had fallen on his sword and broken it, and was utterly helpless."

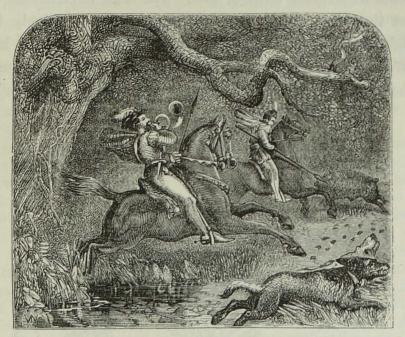
The next moment the boar made full tilt for his stronghold, the dogs following close at his heels. Armed with a fresh spear, the captain rode up the face of the hill, and from thence looking down saw the boar at bay and surrounded by the hounds, but in such a situation that it was impossible on horseback to go to the assistance of the dogs. At this moment one of the captain's beaters came running up with his heavy double-barrelled rifle, and being apprehensive that the hounds would speedily be slaughtered if not relieved, he took the gun and dismounting resolved to attack the boar on foot.

"Just as I got to the bottom, I saw the monster boar with his back to a tree, and the three dogs looking very cautiously at him. He was about forty yards' distance from me. Directly he saw me, putting his head a little down to take aim, he came straight at me, increasing his pace from the trot to the charge. When about fifteen yards off he received the first bullet of my rifle in his neck. Taking not the least notice of it, he came on ; and the second barrel fired at him, at about five yards, broke his left under jaw-bone at the tusk. Fortunately I brought my rifle down to the charge, and, striking it with his head, the boar sent me over on my back. While running over me he made a glance, and wounded me in the left arm. Had I not put down my rifle-barrel at the moment, most probably his tusks would have been buried in my body. As it was, I had two shooting-jackets on, it being a very cold morning, and I suffered more from the jar than the wound.

"As I lay, I seized the end of my rifle-barrels, determined to sell my life as dearly as possible. To my delight, I must say, I saw the boar knock over the man who was running down with my big spear. He did not turn on either of us; for the boar is a noble foe, rarely turning, unless desperately wounded and unable to go on, to mutilate a fallen enemy. The dogs immediately tackled him, and permitted me, though almost breathless, to get up. The rifle-stock was cracked, and the pin that fastens the barrel into the stock much bent. Having put this to rights I loaded, and, proceeding in the direction the boar had gone, came up to within fifteen yards of where he had halted, and stood regarding me vengefully. Taking

#### HOW THE WILD BOAR IS HUNTED.

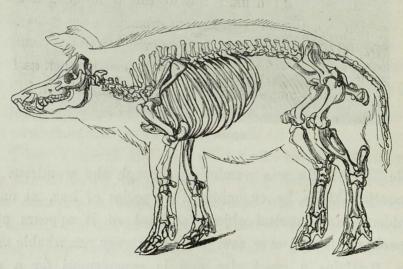
aim I sent a bullet through his eye into his brain, and rolled him over dead. . . . I have stated that the boar is the most courageous animal in the jungle. There he was; with a broken spear in his withers—the shaft sticking up a foot and a half from the blade —knocking over a horseman and wounding his horse; receiving two bullets—ten to the pound—the first in his neck and throat, the second breaking his jaw, and fired within a few feet of his muzzle; making good his charge, cutting down his enemy like grass, wounding him; knocking over a second man armed with a spear; defying the dogs; and then, when in the act of charging again, shot to the brain, and dying without a groan."



SPOOR OF BOAR.

While Du Chaillu was wandering through the wondrous forests of Equatorial Africa, he encountered a species of hog, at once the most hideous and comical object (at least so it appears pictured in his book) the world ever saw. "It is a very remarkable animal," says he, "attains a great size, and is conspicuous for a curious white face, adorned with several large warty protuberances on each side half-way between the nose and eyes. These and the singular long bristles which surround the eyes, and the long ears, ending in a tuft of coarse hair, have a very curious effect. The colour or the body is red. Most difficult game these red hairy-eyed pigs appear to be. They are described as tremendously savage, and active as terriers. Chaillu, singling a boar from among a herd and bringing him down with a bullet, its companions in their fright "made a leap which must have measured over ten yards." "I have repeatedly seen them," says the same authority, "leaping across the Ovenga, where by my own measurement it was more than eight yards wide."

In his late exploration to the Okavango, Mr. Andersson had considerable sport with the wild boar of Southern Africa. "The speed of these animals," says he, "I found surprisingly great. On open ground, when fairly afoot, I found the dogs no match for them, and yet some of my curs were rather swift of foot. The dogs nevertheless dodged them at times successfully; at others they came willingly to bay. They fight desperately; I have seen wild boars individually keep off most effectually half a dozen fierce assailants. I have also seen them, when hotly pursued, attack and severely wound their pursuers."

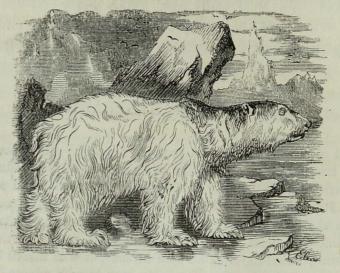


SKELETON OF BOAR.

### CAPTAIN SHAKESPEARE.

THE subject of this brief notice has provided the world with a book, valuable, not only as a truthful record of sporting experience at all times admirable, and occasionally terrible and romantic, but also as a budget of sound and practical information. It is, indeed, a perfect jungle-sportsman's manual; not only does the author, in the most graphic language, relate his terrible bouts with every savage beast infesting India, he likewise instructs the reader sportively inclined how he may turn panther-slayer on his own account, how to handle his weapons, how to post his scouts and beaters, descending even to such minute detail as the number of grains of gunpowder necessary to speed the proper-sized bullet to its desired billet, the heart or brain of the crouching, fiery-eyed game. Not only does he narrate how, on such a day, he set out and slew a monstrous boar, but also particularises the sort of horse he rode, how he managed it, and how you should manage yours; together with the length and breadth of the tools he used, with a dissertation on the right and wrong sort.

The captain, at starting, modestly declares that he does not presume to set up as a monitor of old and experienced sportsmen, but as a teacher of the young and uninformed. How far he is qualified for this task may be judged from the fact, that for a quarter of a century-from 1834 till 1859-he has unflaggingly followed a pursuit for which a bold heart and a cool head have eminently fitted him. Of the captain's success as a hunter, the reader of "Wild Sports of the World" must have a tolerable inkling. Over and above all other consideration, the thorough accuracy of Captain Shakespeare's book is guaranteed on the page which informs us, "the author of this book has sons of his own, already in India and about to proceed thither. It was for their instruction and guidance that he first conceived the idea of writing this work. . . . I would point out an amusement and a useful pursuit and a way of passing his leisure time to the boy who, freed from the trammels of school, can scarcely sit down and amuse himself with books, and in consequence is likely to fall into idleness-the root of all evil. To each one is his talent given by God to cultivate; to the preacher in order to save the souls of the poor unlettered and ignorant heathen; to him who has been blessed with the gifts of good nerves, energy, and strength, that he may save the bodies of these same ignorant heathen from the fell destroyer that lives in the forest and preys upon them."



THE POLAR BEAR.

### THE BEAR.

The dealings of the modern inhabitants of England with the "grizzly bear," although frequent, are by no means of a nature to convey to them an accurate idea of the animal in its natural condition. Thanks to pictorial bears' grease pots, we are familiar with the bear's shape, and for the shagginess of his coat we can vouch from having worn it over our own shoulders. As to his voracity, we may to a certain extent convince ourselves by visiting a zoological garden, and observing how greedily he snaps up the picnic biscuits thrown to him in his pit. In even more terrible aspect may the elderly amongst us claim to have seen him—a lean and mangy brute muzzled and chained, and made to dance in the mud by the application of thick sticks to his starting ribs.

He was not so meanly treated by our ancestors. By them his strength and fierceness were acknowledged, and a stone castle built for his lodging. To bait him against savage mastiffs was thought fit game to set before the king, and to this end there were founded at Southwark, in Paris Gardens (still so called), two circular buildings somewhat after the style of the ancient Roman amphitheatre. The buildings were unroofed, and contained tiers of seats for the company. with a pit in the centre. The first mention of a bear garden is made by a poet named Crowley, who lived in the reign of Henry VIII.

#### THE BEAR.

The price of admission to the "Beare Baytinge" was, Mr. Crowley informs us, one halfpenny; and that he did not approve of the sport is evident from the following lines :—

> "At Paris Garden each Sunday, a man shall not fail To find two or three hundred for the bearwards vale. One halfpenny a piece they use for to give, When some have no more in their purses, I believe. Wel, at the last day their conscience wil declare, That the poor ought to haue al that they spare. If you therefore give to see a bear fight, Be sure God his curse wil on you light."

In the reign of James I. the bear garden was, under the protection of royal patent, granted to the holders "for the sole practising and profit of the fighting and combating of wild and domestic beasts in England for fourteen years." Edward Alleyn, the celebrated actor and founder of Dulwich College, enjoyed this patent for several years ; and as, according to his biographer, his annual income from the bear garden alone was 500*l*., the great fortune he accumulated is at once accounted for.

The practice of granting a patent to the bear-master was checked in 1642. One Godfray was at the time patentee, and on there being a rumour that the office was to be abolished, the bear-master was proved by witnesses to have sworn "that he would cut the throats of those who did not sign a petition praying for the maintenance of the office." Whereupon a member of parliament moved that Mr. Godfray be committed to Newgate; and it was ordered, "that the masters of the bear garden, and all other persons who have interest there, be enjoined and required by this house that for the future they do not permit to be used the game of bear-baiting in these times of great distraction, till this house do give further order herein." That the house did give further order, or else that the bear-keepers took no heed of the "house," is evident from the fact that, in 1672, one Mons. Torevier wrote an account of his visit to the "Bergiardin by Sodark;" but judging from the foreigner's inaccurate way of spelling the place of exhibition, I should not like to reprint his description. At what period the Southwark bear garden was destroyed is uncertain; but Stone, in 1720, speaking of Bear Alley, says, "On this spot is a glass house, and about the middle a new-built court well inhabited, called

#### THE BEAR.

Bear Garden Square, so called as built in the place where the bear garden formerly stood, until removed to the other side of the water, which is more convenient for the butchers and such like who are taken with such rustic sports as the baiting of bears and bulls."

The deference and respect with which the bear is treated by folks who have reason to hate him as their greatest enemy is very curious. When the Lap starts from his icy home to hunt grim Bruin, he does so with as much solemnity as if he were going to the funeral of a dear relation. When the bear is discovered, and the attacking party are driving at him with their spears, they the while chant a supplication hoping he will not take it amiss, and imploring him not to hurt them. The reindeer that draws home the dead bear is held sacred for a year, and allowed to do no manner of work. There is no such thing as rejoicing over the death of their enemy; they are afraid even to mention him by name, and allude to him when obliged as "the old man in the fur cloak." Their reverence, however, does not prevent them cooking the bear for supper; but not a word is said about the excellence of his flesh-all the talk is of the excellent moral qualities of the defunct beast, and of how extremely kind it was of him not to resist more than he did. Sir John Richardson relates a story of an old Indian and his wife, who, while sitting on the bank of a narrow stream, looked up to see a monstrous bear facing them on the other side. Having no weapon to attack the animal, the Indian made an appeal to its better nature. "Oh! bear," said he, "I never did you any harm; I always had the highest respect for you and all your relations; pray go away and do not molest us." And the bear went away, moved, as the Indian firmly believed, by his eloquence.

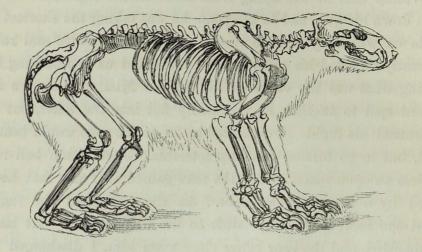
Sir Emerson Tennent relates that amongst the Singhalese there exists a belief that certain charms are efficacious in protecting them from the violence of bears, and that those accustomed to expose themselves to encounters carry a talisman either attached to their neck or enveloped in the folds of their hair. At the same time, Tennent relates an anecdote told to him by a sporting friend, showing how an unfortunate Moorman came to grief through placing implicit faith in a charm. "Desiring to change the position of a herd of deer, he (the Moorman) with his charm was sent across some swampy land to disturb them. As he was proceeding, we saw him suddenly turn from an old tree, and run back with all speed, his hair becoming

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#### THE BEAR.

unfastened and, like his clothes, streaming in the wind. It soon became evident that he was flying from some terrific object, for he had thrown down his gun, and in his panic he was taking the shortest line towards us, which lay across a swamp covered with sedge and rushes that greatly impeded his progress, and prevented us approaching him, or seeing what was the cause of his flight. Missing his steps from one hard spot to another, he repeatedly fell into the water, but rose and resumed his flight. I advanced as far as the sods would bear my weight, but to go further was impracticable. Just within ball range there was an open space, and as the man gained it, I saw that he was pursued by a bear and two cubs. As the person of the fugitive covered the bear, it was impossible to fire without risk. At last he fell exhausted, and the bear being close upon him, I discharged both barrels. The first broke the bear's shoulder, but this only made her the more savage, and, rising on her hind legs, she advanced with ferocious grunts, when the second barrel, though I do not think it took effect, served to frighten her, for, turning round, she retreated at full speed, followed by the cubs. Some natives then waded through the mud to the Moorman, who was just exhausted, and would have been drowned but that he fell with his head upon a tuft of grass; the poor man was unable to speak, and for several weeks his intellect seemed confused. The adventure sufficed to satisfy him that he could not again depend upon a charm to protect him from bears, though he always insisted that, but for its having fallen from his hair, where he had fastened it under his turban, the bear would never have ventured to attack him."

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### STRUCTURE OF THE BEAR.

This bulky representative of the *plantigrade* section of the carnivora differs from the rest of the family in the nature of his molar teeth, which, although they are compressed in form, are furnished with tubercular crowns, indicating that the animal is at least adapted for a partially vegetable diet. Indeed, as truly says quaint and clever Rev. J. G. Wood, nothing comes amiss to the bear, "a leg of mutton, a pot of honey, a potato or an apple, are equally acceptable."

The feet of the bear are armed with formidable curved claws, equally handy to tear a carcase or dig up roots. With the horrible grizzly bear (his Latin appellation is *Ursus horribilis*), these claws possess the singular property of independent movement, each separate claw being as capable of distinct motion as the fingers of the human hand. Besides these crooked claws, the polar bear, that passes the chief part of its life on the glassy ice, is secured from slipping by having the *soles* of his feet covered with hair.

The amount of strength possessed by certain members of this family is prodigious. Take, for instance, the case of the grizzly bear, who will bear off a bison weighing a thousand pounds. Any one who has seen a bear climb a pole must at once have been struck with the ease with which the heavy, thickset brute ascends. It is during this performance that the wonderful mobility of the brute's hinder limbs becomes apparent. Watching how deftly the great limbs wind about the pole, and with what small effort the ponderous carcase is raised, one no longer wonders at the marvellous feats accredited to them.

The polar bear, whose home is the solitary waste that flanks the Northern Seas, and whose prey is the seal and walrus, equals in size and strength the grizzly bear of California; indeed, Lamont, who has but recently returned from an Arctic exploration, during which he had frequent opportunities of making the acquaintance of Ursus maritimus, asserts the animal in question to be "the largest and strongest carnivorous animal in the world:" moreover, he was informed by several Spitzbergens that a full-grown polar bear would attack and kill a bull-walrus three times his own size, the bear's hunting tactics being to conceal himself behind an ice-hillock, and watching till the walrus came floating past, spring on its back, and holding on by its teeth to the creature's neck, batter in its skull with repeated blows of its tremendous fore-paws.

According to many capable writers, among whom may be counted Mr. Darwin, "the polar bear appears to be nothing more than a variety of the bears inhabiting Northern Europe, Asia, and America; and it surely requires no very great stretch of imagination to suppose that this variety was originally created, not as we now see him, but by individuals of Ursus arctus in Siberia, who, finding their means of subsistence running low, and pressed by hunger, ventured on the ice and caught some seals. These individuals would find that they could make a subsistence in this way, and would take up their residence on the shore, and gradually take to a life on the ice. Polar bears, in the present day, are often carried on the ice to Iceland, and even to within swimming distance of Northern Norway, so that it is not impossible that the brown bears, who, by my theory, were the progenitors of the present white bears, were accidentally driven over to Greenland and Spitzbergen by storms or currents. Individual bears of Ursus arctus are found frequently of a silvery grey colour, and such bears are known in Norway as 'silver bears.' Then it stands to reason that those individuals who might happen to be palest in colour would have the best chance of succeeding in surprising seals, and those who had most external fat would have the best chance of withstanding cold. The process of natural selection would do the rest, and Ursus arctus would, in the course of a few

thousand or a few million of years be transformed into the variety at present known as Ursus maritimus."

"It may be urged," continues Lamont, a disciple of Mr. Darwin, "that there is no reason, if this theory be true, why brown bears are not still occasionally taking to a polar life, catching seals and turning white. The answer is easy; the ground is already occupied by the variety of bears formed by nature, acting through the process of natural selection, for catching seals. The seals are so shy, that even the existing white bears have a difficulty in living; and a brown bear, although he may eke out his means of subsistence by occasionally still catching a seal on the shores of Siberia, would have no chance of succeeding in the struggle for life if he were to set off on a seal-hunting expedition, and to enter into competition with his white congeners, who are already formed and fitted by nature, through countless generations, for that particular mode of life." "Easy" and simple, however, as is the "answer," it may scarcely be considered as conclusive. In my humble opinion, it seems that no end of argument contradictory of the above theory might be adduced, not the least important being, that, when the "brown progenitor of the present white bear" was stranded by accident on the Greenland coast, he need not have gone hungry till he learnt the art of seal-catching; reindeer abound in Spitzbergen and thereabouts, besides foxes, and multitudes of gulls, fulmars, and eider-ducks, whose eggs, abounding in every rocky crevice through the length and breadth of the land, would certainly make a hungry bear pause before he ventured his carcase on a piece of drift ice on a fishing excursion.

# HABITAT OF THE BEAR.

THE grizzly bear is the largest and most formidable of his tribe,

and abounds throughout the Rocky Mountains and the plains east of them. From nose to rump (it has no tail worth speaking of) this animal, full grown, measures from eight to nine feet, and weighs about eight hundred pounds. His strength is tremendous. Mr. Dougherty, a celebrated hunter, had shot a bull-bison, and having marked the spot, set off for the purpose of getting assistance to skin it and cut it up. When he returned, however, the bison was gone ! Quite sure that he had left it dead, the men set about searching for the carcase, and presently found it at a considerable distance buried in a pit; and that the pit had been scratched out, and the dead bison conveyed thither by a grizzly bear, was evident from the "spoor" plainly indented in the moist earth. This propensity to bury the dead it

#### HABITAT OF THE BEAR.

may make or find is very peculiar. Bear hunters suddenly overtaken by this animal have stretched themselves along the earth and feigned death, and the shaggy sexton has immediately scraped out a shallow grave, bundled in the man shamming death, and covered him with earth. So the cunning hunter escapes—unless indeed the grizzly bear should take a fancy to tread down the mound! It is said that wolves, however famished, will not touch a body buried by a grizzly bear, though they will greedily devour any and the vilest offal that they chance to meet.

Another peculiarity of the grizzly bear is, that he does not *hug* his prey. His claws are broad, of great length, and cut like a chisel. Eyeing the object of attack intently for a moment, it rushes at it, rears, and strikes with its tremendous fore-paw. Sir John Richardson mentions the case of a hunter who was completely scalped; the skull being laid bare, and the hair turned right over the face, by a single pat of a grizzly bear's paw.

Judging from Tennent's account of him, the Singhalese bear, if let alone, is not such a very bad fellow, studiously avoiding the paths of men, and content, while allowed to roam the forest fastnesses, hunting for honey in the hollow trees and clefts of the rocks, or grubbing up ants and termites. "His solitary habits render him timid and retiring. Hence he evinces alarm on the approach of man, or other animals; and unable to make a rapid retreat, his panic rather than his vicious disposition leads him to become an assailant in self-defence. But so furious are his assaults under such circumstances, that the Singhalese have a terror of his attacks greater than that occasioned by any other beast of the forest. If not armed with a gun, a native in the places where bears abound usually carries a light axe with which to strike them on the head. The bear, on the other hand, always aims at the face, and if successful in prostrating his victim, usually commences by assailing his eyes. I have met numerous individuals in our journeys who exhibited frightful scars from these encounters, the white seams of their wounds contrasting hideously with the dark colour of the rest of their bodies."

The bear of India is equally harmless "when let alone," and despite his omnivorous nature is happy with a profusion of honey, berries, and white ants. When "roused," however, he is a tartar, and from his enormous size and agility one of the most terrible of beasts. The particulars related by Mr. Lamont attending the capture of two orphan polar bears is curious, and worth relating, as affording one more instance of the wonderful affection of the most ferocious of brute creatures for its little ones.

The two Arctic huntsmen, after a hard day with the bears and walruses among the icebergs, returned to their vessel, and retired to bed. They had not lain two hours, however, before the watch on deck came with the news that three bears were at that moment taking a nocturnal promenade on a little ice island a short distance off. Tired and sleepy as were the hunters, the opportunity was too splendid a one to be lost, especially as, according to the hunters' experience, bears were the least plentiful of the large game abounding in the neighbourhood. The watch, who had observed the animals through his glass (there is, of course, no such thing as a *dark* summer night in the region in question), declared them to be an old bear and two cubs, and that they were making their way to a spot where lay the disrobed carcase of one of their own species shot some time before.

"We had a row of several miles along the shore before we overtook the bears, and at last discovered them seated on a strip of land ice. Lord Kennedy then agreed to get out, and by running try to cut them off from the hills, while I should continue in the boat, and row as fast as possible up to the edge of this ice, in case they should take to the We got to within about five hundred yards of the bears before sea. they perceived us. The old one stood up on her hind legs, like a dancing bear, to have a good look at the boat, and a moment's inspection. seemed to convince her it was time to be off. She set off at the top of her speed, with her two cubs at her heels, along the smooth surface My companion, although an excellent runner, could not of the ice. keep up with them, so he got into the boat again, and we rowed with might and main to keep in sight of the bears; but they got far ahead of us, and we began to think they would beat us, when luckily they got to the end of the strip of smooth 'fast' ice, and before them lay a great expanse of soft mud, intersected with numerous little channels and with much rough ice, left by the tide aground amongst it. This seemed to embarrass them very much, as the cubs couldn't jump over the channels, and the old bear appeared to be getting very anxious and uneasy; but she showed great patience and forbearance with her cubs, always waiting, after she had jumped over a channel, until they swam

#### HABITAT OF THE BEAR.

across, and affectionately assisting them to clamber up the steep sides of the rocky places; nevertheless, the mixture of sticky mud with rough ice and half-frozen water soon reduced the unhappy cubs to a pitiable state of distress; and we heard them growling plaintively, as if they were upbraiding their mother for dragging them to such a disagreeable place.

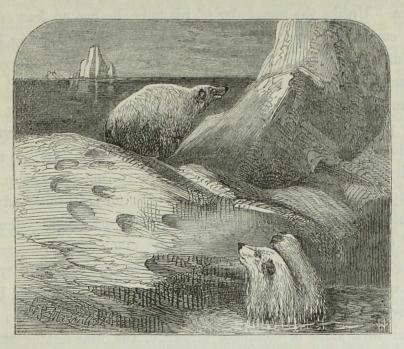
"We had got the boat into a long narrow channel among the mud, which contained water enough to float her, and we were now rapidly gaining on the bears ; when all of a sudden, the boat ran hard aground, and not an inch farther would she go. This seemed as if it would turn the fate of the day in favour of the bears, as we did not think it possible to overtake them afoot among the mud; but there still remained the chances of a long shot, as the boat had grounded within two hundred yards of the animals. Lord David fired, and struck the old bear in the back, paralyzing her; we then scrambled through the icy mud up to where she lay, and despatched her. The cubs, quite black with mud and shivering with cold, lay upon the body of their mother, growling viciously, and would not allow us to touch them, until the men, bringing a couple of walrus-lines from the boat, threw nooses over their heads and secured them tightly, coupling them together like a brace of dogs. They were about the size of colley-dogs, and no sooner did they feel themselves fast, than, quite regardless of our presence, they began a furious combat with one another, and rolled about amongst the mud, biting, struggling, and roaring, till quite exhausted."

Willingly would I here leave the question as regards the affection displayed even by grim polar bears one to the other, but justice compels me to state a shameful fact in the case of the two little bears above discussed. Let the narrator of the generous she-bear's story himself furnish the reader with the scandalous termination to the Arctic tragedy as witnessed by him.

"I am sorry to have to record the most horrible case of filial ingratitude that ever fell under my observation. Without doubt, the old bear had sacrificed her life to her cubs; she could have escaped without difficulty if she had not so magnanimously remained to help them. When, however, we proceeded to open the old bear for the purpose of skinning her, the two young demons of cubs—having by this time settled their differences with each other—began to devour

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their unfortunate and too devoted parent, and actually made a hearty meal off her. When we finished skinning her, the cubs sat down upon the skin, and resolutely refused to leave it; so we dragged the skin, with the cubs sitting on it, like a sledge, to the boat, and after another tussel with them, in the course of which they severely bit and scratched some of the men, we got them tied down under the thwarts of the boat, and conveyed them on board the sloop. . . . In the course of the day we got a sort of crib made for them on deck out of some spare spars and pieces of drift-wood, and while they were being thrust into it they resisted so furiously, that one could almost imagine that they knew they were bidding adieu for ever to the fresh breezes and icy waters of Spitzbergen."



SPOOR OF THE POLAR BEAR,

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THE BLACK BEAR.

## HOW THE BEAR IS HUNTED.

Let us begin with that terrible fellow, the grizzly bear of North America. Unlike the remainder of his tribe, he has no fear of man : on the contrary, indeed, should he encounter a human being he will give him chase and keep on his track, with the greatest perseverance, for hours. An American traveller relates that he was followed nearly thirty miles by a grizzly bear, and only succeeded in shaking off his hungry pursuer by swimming a broad and deep river. Moreover, so marvellously tenacious of life is this monster, that according to reliable authority he will resist the hunter's assaults till not six square inches of sound hide remain on his carcase. Therefore it becomes advisable for hunters of bears' meat and skins to adopt some other system than that of open warfare. They manage pretty much as follows :—

The grizzly bears live in deep and retired caves, to which they retire for the winter after having revelled for a few weeks on autumn berries, and grown very fat. When the season has become so cold as to reduce the bear to a state of complete torpidity, the bear-hunter sets out, armed with his deadly rifle, some matches, and a candle composed of wax, softened with bear's grease. This candle, provided with a broad wick, burns with a brilliant white flame. Having discovered by unfailing signs a cave in which a bear is hidden, lighting his candle and carrying it in one hand, while he grasps his gun in the other, the hunter gropes his way into the deep den. The light reveals his game curled in a shaggy ring in a distant corner ; he plants his candle on the ground, about the centre of the cave, and then retiring to the entrance, cocks his rifle, and waits. He is not detained long. In a few moments the grim sleeper, roused from his bearish dreams by the glare, wakes, fixes his eyes on the flame with a puzzled, sleepy expression, and finally yawns, 'gets on his legs, and shuffles towards it for a closer inspection. Now is the time. The grizzly monster is as tenacious of life as a cat, and as swift as one when wounded and bent on revenge ; therefore it is of the first importance that if he fire at all it be with deadly aim. Slowly the bear approaches the candle, till he is so close that its rays light up his savage eyes like two dusky red stars. One of these dusky stars the hunter covers with the muzzle of his rifle, and instantly there arises a double roar—that of the discharged piece, and that of the stricken beast ; and lucky hunter he if both roars subside together, leaving him to skin his game by the light of the trusty candle.

That this mode of hunting the bear is not unaccompanied by peril, the following story, selected almost at random from a hundred such, will sufficiently illustrate. A large bear was tracked to a cavern, and every effort made for three days without avail to smoke or burn him out. At length one of the hunting company boldly declared that "if the bear would not come out, he would go in to the bear." The entrance to the monster's den was a slanting, well-like hole, that descended about ten feet, but beyond that from the exterior A rope was passed round the waist of no more could be seen. the adventurous bear-hunter, a butcher's knife stuck in his belt, his musket well primed, and loaded with two ounce bullets, and in each hand he bore a long pine lath, pierced at the end so as to hold a candle. The candles were lighted, and the man lowered into the hole by his companions. At the bottom of the well-hole he discovered a little lane, turning sharply off at right angles, about six feet in length, and terminating in a small round chamber where the bear had taken up his quarters. The hunter's tactics were ingenious, but frightfully perilous. Lying on his back, in the narrow lane, he pushed along the candles with his feet, and so wriggled himself along into the bear's parlour, grasping his musket the while, and prepared to shoot as soon as the candle-flame should reveal two twinkling eyes. Presently his mates heard a bellowing crash, and, as prearranged, hauled in the rope just in time to haul the man out of the clutches of the wounded bear, who pursued him to the very mouth of the chasm.

#### HOW THE BEAR IS HUNTED.

The bear, however, retreated to its den again, and there was no alternative but to leave the work altogether undone, or begin again. The former seemed the most prudent plan, but the brave hunter would not hear of it. He had, he said, aimed fairly at the bear's eyeballs, and if not dead, she must be mortally wounded. That she was not dead, however, was certain, for at intervals came a painful moan from the dark hole. Fresh equipped, down went the bold hunter once more. Again the cavern re-echoed the crash of his bullets, and again strong arms jerked up the adventurer by the rope about his waist. This time, however, the bear seemed determined not to let her assailant go free. Roaring with agony, and deluged with a red stream, she came close at his heels, and as he was hoisted up, leapt after him, and reached the rock where the men stood. A scrambling volley was fired at her, but with no effect, and then the man, with the rope still about him, drew his butcher's knife and rushed to close with the bear in single combat; but the poor animal was in no condition for fighting. The effort of rearing to meet her antagonist was too much, and she rolled over dead.

Gerstäcker tells a terrible bear story. He was engaged with one or two companions, and a gang of professional Indian hunters, seeking bears in the depths of a great American forest. Very little luck attended the party during the early part of the day, so they divided in twos and threes, and spread themselves abroad in hope of beating up game. Gerstäcker and a young man named Erskine, accompanied by five dogs-one of which belonged to the narrator, and was named "Bearsgrease"-hunted together. Still for a long time their luck showed no signs of amending, till by-and-by the loud baying of the dogs, that had trotted on ahead, announced that game of some sort had been brought to a stand. Hastening to the spot, the hunters discovered an enormous bear reared on its hind legs and fighting with the dogs like a demon. Four of them were already lying dead on the ground, and Erskine, exasperated at this wholesale slaughter of his canine friends, flung down his rifle, and drawing his hunting knife, rushed at the bear with the intention of making "short and sure" work of him. Maddened, however, by the terrible grips it had received from the hounds, Bruin instantly gave battle to his new assailant, and before the latter could deal him a blow, had him fast locked in his tremendous arms. Eager to rescue his friend, Gerstäcker bounded forward, and made two or three indiscriminate lunges at the

bear's body; when the animal, without relaxing his terrible hold of Erskine, dealt our German friend a stroke with his mighty paw and felled him senseless to the earth.

Hours after, the German hunter was awoke by a tickling sensation across his face, and opening his eyes, discovered his faithful dog "Bearsgrease" whining over and caressing him. Still half unconscious, he raised himself on one arm and looked about him; and there within a few feet of him lay the crushed form of Erskine, and beside him the shaggy monster, the blood still welling from the many gashes in his body, which was so saturated as to make him look like a red and not a brown bear. Besides these, the bodies of five dogs lay about the great bear and its victim.

Giddy from loss of blood and the agony of a dislocated shoulder, Gerstäcker, who was benumbed with cold, set about making a fire. This he accomplished by tearing off a part of his hunting-shirt, rubbing some gunpowder into the rag, and igniting it with a flash from his rifle. "Blowing it up to a flame, I piled on dry leaves, twigs, &c., and succeeded in making a good fire, though with great pain and trouble. It was now dark. I went to my dead comrade, who was lying about five yards from the fire; he was already stiff, and it was with great difficulty that I could pull down his arms and lay him straight; nor could I keep his eyes closed, though I laid small stones on them.

"The dogs were very hungry, but as it was impossible for me to break up the bear, I only ripped him up, and fed them on his entrails. Bearsgrease laid himself down by the corpse, looked steadfastly in his face, and went near the bear no more. In the hope of obtaining help I loaded and fired my rifle twice, but without any result; the forest appeared one enormous grave.

"I felt very ill, vomited several times, and my shoulder was excessively painful. Winding my blanket about me as well as I could, I laid myself beside the fire, and lost all consciousness of my situation. Whether I slept or fainted is more than I can tell, but I know that I dreamed that I was at home in bed, and my mother brought me some tea, and laid her hand on my breast; I heard the children in the street making a noise, and saw the snow on the roofs of the houses, and thought it must be very cold out of doors.

"Such an awakening as I had was worse than I could wish to my bitterest enemy. Bearsgrease had pressed close to my side, laying his head on my breast, the fire was almost out, I was shivering with cold, and the wolves were howling fearfully around the dead, keeping at a distance for fear of the living, but by no means disposed to lose their prey. I rose with difficulty and laid more wood on the fire. Louder and fiercer howled the wolves; and the dogs, five of whom were alive besides Bearsgrease, answered them. Partly to scare away the wolves, and partly in hope of finding help, I loaded and fired till my powder was expended, and to my inexpressible delight I heard shots in return. As morning broke I heard two shots fired, and then a third, and shouting lustily a human voice answered me, and the next moment I heard the startled 'Wah!' of the foremost Indian, as his eyes encountered the terrible spectacle."

In Sweden abounds the big brown bear, who makes periodical raids on the different districts. When this is the case, the minister from his pulpit gives public notice of the fact, and likewise names an early day for a great hunt. According to the presumed number of the bearish horde, so the inhabitants turn out—sometimes as many as fifteen hundred being so employed. Their hunting tactics are of the most primitive sort, being indeed such as are practised by savages of the remotest regions. They spread themselves abroad armed with guns or axes till a living ring encompasses the infested district, and then they gradually "close in," driving the bears to the centre and compelling them to fight for their lives, or succumb without fighting. This latter, however, is seldom the result, for the bear is no cur, and when driven to extremes will fight to the last gasp.

Mr. Lloyd tells a good story of a bear fight that happened in these regions. The hero was a veteran hunter named Jan Svenson, who had waged war with the big brown bear all his life, and before whose musket at least seventy grizzly monsters had fallen. On the occasion in question, Jan and his companions surrounded the lair of a huge bear, and a dog was sent in to rouse him. The bear was ripe for fight, and on the first challenge bounded out, and felled one of the peasants to the ground, mauling him in an ugly way. Jan Svenson made a shot at him, and rolled him over so decidedly that the old hunter thought he had killed him, and stood carelessly reloading his piece. Without an instant's warning, however, and before the gun was half loaded, the bear recovered his senses, sprang to his legs, and seized Jan by the arm, while Jan's dog, seeing his master's peril, flew at the animal, and fixed his fangs in its hind-quarters. To get rid of



THE MORNING AFTER THE BATTLE.

this second antagonist, the bear—still keeping the man's arm between its vice-like jaws—threw itself on its back, and struck at the dog with its disengaged paws. Beat off for a moment, the good dog returned to the rescue with such fury, that Bruin was fain to quit his hold of Jan the better to defend itself. Not for an instant, however, did it leave the prostrate hunter, but stood over him alternately gripping various parts of his body with his teeth, and making dashes at the hound. So the game lasted for nearly half an hour, till, weakened by the blood that all the time was flowing from the gunshot wound Jan had administered, the bear staggered to a neighbouring tree, seized the trunk convulsively between his teeth, and rolled over dead, leaving poor old Svenson more dead than alive, and bitten in thirty-one different places, chiefly about the arms and legs. For the defeat and death of one of those tremendous fellows—the great black bear of India—as well as for a wonderfully graphic account of the same, we are indebted to a gentleman frequently quoted in this volume, the "Old Shekarry."

"The herdsman led the way, and under his guidance we climbed, in Indian file, a steep rocky hill, which caused us to puff and blow, and made our knees tremble before we got to the top, where by dint of creeping along on our hands and knees on the edge of break-neck precipices, and hanging on to perilous ledges, we managed to work our way along the crest until we came to a deep rocky ravine, which appeared to have been denuded of the dense bush that generally covered the face of the country. Here our guide assured us the lair was, and indeed it looked a likely place to meet with queer customers, for in all my peregrinations I never saw a wilder country.

"After an hour's careful investigation, as I was crossing a patch of sand, I perceived the fresh footprints of a bear, which I instantly saw must be a very large one, from his long stride and the size of his pugs, my hand hardly covering them. I followed up the trail for some distance, but lost it on some rocky ground, and was making casts in different directions in order to regain it, when some of the Bey's dogs, which had gone on some distance ahead, gave tongue, and immediately after I heard a sullen roar, followed by four or five dropping shots. I sprang upon a boulder of rock, and discovered an enormous bear, in full pursuit of four or five Abbasians, who were running shrieking up the hillside about two hundred yards distant. One of them in his frantic flight tripped over a stone, and before he could rise the brute was upon him.

"Although the hind-quarters of the animal only were presented to me, I threw up my rifle and let drive. Whether it was that my hand was unsteady that morning, or that I feared hitting the man, I know not, but the first bullet fell short; the second, however, struck fair, and the bear, with a sharp hoarse cry of pain, quitted the fallen man and again made after the rest. I reloaded as quickly as possible, and ran up towards the wounded man, when I again saw Bruin for a moment, and got a couple of snap shots at him as he bolted into some cover, having been turned by a straggling volley from some of my gang and the Bey's people. I found the youth who had fallen into the bear's clutches severely bitten in the shoulder, beside having his side clawed, and being considerably bruised and shaken, though not dangerously hurt; so after bandaging his wounds as well as I could, I collected the people together and prepared to make another effort to drive the bear from his shelter.

"One of my people had seen him enter some thick underwood, between two large rocks, and I tried to coax the dogs to go in and drive him out; but it was of no use, they only ran yelping round the thicket. Two of their number had been killed in the first onset, and some of the others severely mauled, which damped the courage of the rest; so finding that nothing could be effected with their assistance, I posted all the people in groups as safely as I could at one end of the cover, in case the game might break without showing fight, and followed up the trail, which was very plainly marked with blood, alone.

"I peered through the bush, but could see nothing; so resting my rifle against the trunk of a tree, I endeavoured to swarm up, in order to have a better look round. I had hardly raised myself a couple of feet from the ground, when, with a terrific roar, the brute, which must have got wind of me, charged. Luckily the bush was so thick in front that he could not get at me very easily, but had to make a turn, which gave me time to seize and cock my rifle, and as his monstrous head, with flashing eyes and open jaws, appeared, about a couple of paces from me, I gave him the contents of both barrels, which almost stunned him, for he spun round and round, and I had time to follow it up with my smooth-bore, both bullets taking effect in the head, but such was the enormous tenacity of life that he managed to tear out of the cover, rolling over and over as he went.

"After reloading carefully I followed up and found him sprawling about on the ground, moaning piteously. As I got out of the bush he caught sight of me, and made another headlong charge, reeling from side to side as he came; but I stopped him with another bullet in the head, which made him bite the dust. He rose again and got up on his hind-legs as if to look round, and whilst in this position he looked a fearful object, standing as he did with his fore-paws raised about seven feet high, and the blood pouring in torrents from his mouth. I now had a fair shot at his chest, and inflicted a mortal wound, for he rolled over and over, making his teeth meet in the root of a tree with his last dying effort. He proved to be the largest bear I ever met with, standing over four feet high at the shoulder, and from the number of men it took to lift him, I should think he could not have weighed less than eight hundred pounds."

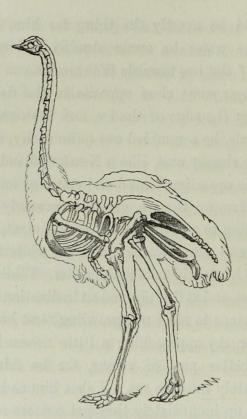
That polar bears are anything but numerous, even in their natural breeding and abiding places, is evident from the fact that through an entire summer (1859) passed by Mr. Lamont and his hunting companion, Lord Kennedy, in and about the Northern Seas, but eight bears fell to their rifles, that being, with the exception of three, the whole number seen and pursued; and that they were not novices in the art of hunting is proved by the fact that during the summer they "bagged" forty-six walruses, eighty-eight seals, and sixty-one reindeer. One bear slain by Lamont was an enormous fellow. He measured upwards of eight feet in length; almost as much in circumference. He was four and a half feet high at the shoulder; his fore-paws were thirty-four inches in circumference, and tipped with long, sharp, and powerful nails; his coat was beautifully thick and snow-white, and hung several inches below his feet. The skin alone of this animal weighed a hundred pounds, the entire carcase twelve hundred, and the pure fat stripped therefrom weighed nearly four hundred pounds.

Mr. Lamont gives the following graphic description of the chase and defeat of this enormous animal: "Sitting in the bow of the boat I saw a dull-white object on the shore, and by applying the glass I made it out to be a large bear, evidently sniffing his way up the wind to the carcases of the three seals which I had shot first in the morning, and which I had left on the ice on the western side of the fiord. The bear, when we first saw him, was about a mile distant, and the carcases lay about halfway between him and the boat. We rowed as fast as we could towards the carcases, and pushed the boat into a little creek which fortunately existed in the edge of the ice, eighty yards on our side of the dead seals. The bear was still snuffing about on the land, and had not perceived us yet, and the boat being quite white, like the ice, it was not likely he would now do so if we kept still. I made all the men crouch down in the bottom of the boat, while I alone watched the motions of Bruin by peeping over the gunwale through a large double-barrelled opera-glass, which I generally carry in preference to a telescope for sporting purposes, on account of its greater quickness.

"The bear walked slowly and deliberately for some two or three hundred yards on the ice, as if uncertain whether he should go up to the dead seals or not. How earnestly I prayed that he might not have had his dinner! Shortly he appeared to make up his mind that a seal supper would be exactly the thing for him, and sliding sternforemost into the water he swam steadily and quietly along, close under the edge of the ice, towards the carcases.

"When the bear came close opposite to the dead seals he peeped cautiously up over the edge of the ice, and then perceiving that they were not live seals, he scrambled out quite coolly, and began to shake the wet from his shaggy coat, like a Newfoundland dog. The instant he concluded this operation I fired and smashed one of his shoulders. He fell on his face on the ice, growling savagely and biting at the wound. According to a preconcerted arrangement, I instantly sprang out on the ice and ran towards the bear, while the boat started to meet him in case he should take to the water. While I was running the bear got to his feet, and at first showed an inclination to fight it out, as he advanced a few steps to meet me, growling most horribly and showing his teeth; but on my approaching a little nearer he seemed to think discretion the better part of valour, for he fairly lost heart and scuffled precipitately into the sea. I shot him as he swam away, and the boat coming up immediately they got a noose round his neck and towed him to the ice. He was so large and heavy that we had to fix the ice-anchor and drag him up with block and tackle as though he had been a walrus."

At the conclusion of his trip Mr. Lamont returned to England, bringing with him a tremendous cargo of seal, walrus, bear, and reindeer hides, besides bear's fat, and two young polar bears. One would have thought the interesting creatures would have experienced little difficulty in finding an asylum here, but, as an Irish M.P. lately observed, "we are the neatest hands at bungling of any country in the world;" and we refused to entertain the Arctic strangers. To use Mr. Lamont's own words, "I entered into correspondence with nearly every wild-beast keeper and secretary of zoological gardens in the United Kingdom, but, as usual, the 'British market was quite overstocked.' There was a 'glut' of bears, in fact. Eventually I disposed of them to the Directeur of the Jardin des Plantes, and I heartily wish his Imperial Highness joy of his bargain. I had the satisfaction of seeing them some months later, considerably grown, but their naturally amiable dispositions not improved by their being confined in one of the warm, dry dens, used for the tropical carnivora."



SKELETON OF OSTRICH.

## STRUCTURE OF THE OSTRICH.

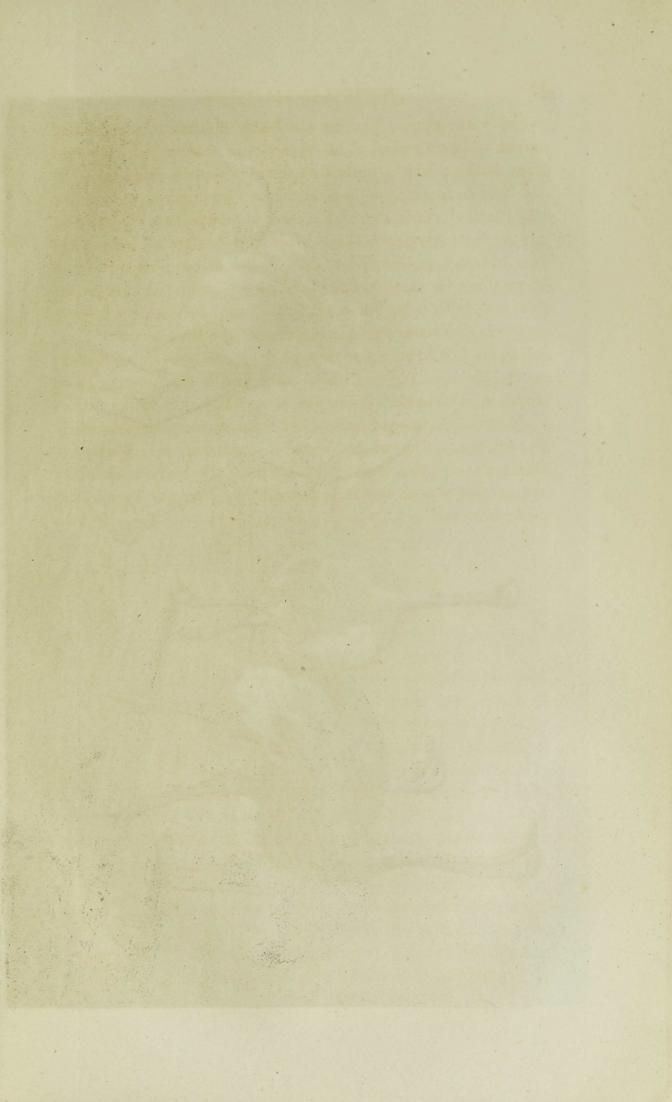
THIS feathered giant, which from its formation would seem a kind of connecting link between the two great families of aves and mammalia, inhabits the plains of Africa as far east as the deserts of Arabia. In the Indian Archipelago its representative exists in shape of the stately cassowary; while the western hemisphere furnishes the rhea, and Australia the emu. At the Rio Negro, in Northern Patagonia, where the common ostrich abounds, Darwin heard the natives speak of a very rare bird, which they called Avestruz Petise, and they described it as being shorter in the legs and feathered lower down than the common ostrich, and of a dark and mottled colour. The eggs of the small species were said to be nearly as large as those of the rhea, but of a different form, and with a tinge of pale blue. In the Museum of the Zoological Society there is a specimen of the petise, and if ever a poor body nearly escaped the doubtful honour of stuffing, it was the bird in question. Says Mr. Darwin, "When at Port Desire

in Patagonia, Mr. Martens shot an ostrich; and I looked at it, forgetting at the moment in the most unaccountable manner the whole subject of the petises, and thought it was not a full-grown bird of the common sort. It was cooked and eaten before my memory returned. Fortunately, the head, neck, legs, wings, many of the larger feathers, and a large part of the skin had been preserved, and from these a very nearly perfect specimen was put together." Dobrirhoffez, however, who a hundred and twelve years ago published an "Account of the Abipoues," was aware of there being two kinds of ostriches. He says, "You must know, moreover, that emus differ in size and habits in different tracts of land; for those that inhabit the plains of Buenos Ayres and Tucuman are larger, and have black, white, and grey feathers : those near to the Straits of Magellan are smaller and more beautiful, for their white feathers are tipped with black at the extremity, and their black ones in like manner terminate in white."

When full grown, the African ostrich stands as high as from seven to nine feet, and its weight has been known to exceed three hundred pounds. The keel-like breastbone found in the bird of flight, and essential, as increasing materially the extent of surface from which the muscles of the breast take their origin, is absent in birds of the ostrich genus, whose wings at best serve them on land but as sails serve a boat on the water. The breastbone or *sternum* of the ostrich forms merely a kind of osseous shield, covering comparatively a very small portion of the breast. The bird's only weapon of defence is its long muscular leg. A single blow from its gigantic two-toed foot (Andersson says it invariably kicks *forward* as does a human being) is sufficient to maim and even to kill the panther or jackal, and many a time have the bare ribs of the gaunt *honden* or wild-dog sustained fatal fractures through a kick of the "camel-bird."

The eyes of the ostrich are wonderfully keen, and being so elevated above the plain, its range of vision is very great. To this fact, combined with another equally important, viz. a disinclination for any but bare and barren localities, it doubtless owes comparative immunity even from the far-reaching bullet of the European sportsman. The male ostrich is of a glossy black colour, with the exception of the large plumes of the wing-feathers, which in both sexes are snowy white, and the chief objects of ostrich hunting. In the female the general colour of the feathers is of a greyish or ash-brown, slightly

fringed with white. Nothing can better illustrate the surpassing wisdom of the Creator of all things than this provision of light glossy feathers, which, while they afford a perfect shade from the sun's fiery darts, admit of the most complete ventilation. Among the inhabitants of Persia and Arabia there is said to be a vulgar belief that the shutur-moog (camel-bird) is the joint produce of a camel and some hitherto undiscovered roc-like species of ava; and, really to ignorant minds, there is almost enough of quadruped peculiarities about the ostrich to furnish excuse for the error. Its voice is sufficiently gruff to be sometimes mistaken for that of the thunder-voiced lion; its legs are jointed strong as those of the giraffe, and cloven-hoofed; and its hide, according to credible authorities, is stout enough to be tanned as sole-leather. Andersson says, "The skin of the ostrich is said to be held in great request, and forms no inconsiderable article of commerce. The whole defensive armour of the Nasamones, inhabitants of Lybia, was manufactured of the bird's thick skin; even at the present day it is formed into a cuirass by some of the Arab troops."





# HABITAT OF THE OSTRICH.

THE jealousy that attaches to all other birds during their periods of incubation would seem to be entirely wanting in the ostrich. As many as forty-five eggs have been found in a

single nest—closely packed on end so as to economise space—of which number perhaps not more than a dozen may belong to any individual hen. It is a joint-stock affair, and any shareholder sits—even the managing director, the old male bird himself, is not above "lending a hand," and may be seen with his great clumsy legs astride the nesthole, and his proud head perched high in the air, ever watchful for intruders. Whether in these ostrich-egg-companies the liability is limited, and each hen depositor responsible only for the faithful hatching of her ovarious promise, is not known.

As may be supposed, so important a subject has not escaped the rays of the lamps of science. Lamp Darwin sheds the light of his research and reason on the subject as regards the ostrich of South America, the rhea, and, for all that is known to the contrary, the same laws govern the entire family. "The Gauchas unanimously affirm that several females lay in one nest. I have been positively informed that four or five hen-birds have been watched to go in the middle of the day one after the other to the same nest. Although this habit appears at first very strange, I think it may be explained in a very simple The number of eggs in the nest varies from twenty to forty, manner. and even to fifty; and according to Azara, sometimes to seventy or eighty. Now, although it is most probable, from the number of eggs found in one district being so extraordinarily great in proportion to the parent-birds, and likewise from the state of the ovarium of the hen, that she may in the course of the season lay a large number, yet the time required must be very long. Azara states that a female in a state of domestication laid seventeen eggs, each at the interval of three days one from another. If the hen was obliged to hatch her own eggs, before the last was laid the first probably would be addled; but, if each laid a few eggs at successive periods, in different nests, and several hens, as is stated to be the case, combined together. then the eggs in one collection would be nearly of the same age. If the number of eggs in one nest is, as I believe, not greater on an average than the number laid by one female in the season, then there must be as many nests as females, and each cock-bird will have its fair share of the labour of incubation; and that during a period when the females probably could not sit from not having finished laying. I have before mentioned the great numbers of huachos or deserted eggs; so that in one day's hunting twenty were found in this state. It seems odd that so many should be wasted. Does it not arise from the difficulty of several males associating together, and finding a male ready to undertake the office of incubation? It is evident that there must at first be some degree of association between at least two females, otherwise the eggs would remain scattered over the wide plains at distances far too great to allow of the male collecting them into one nest."

With respect to the eggs found lying *outside* the nest, various travellers—Andersson of Lake Ngami among the number—incline to

the opinion that because the indurated matter furnished by the sterile plain would be unacceptable to the tender digestion of the newly born chicks, these supernumerary eggs are laid and stored by the thoughtful mother-ostrich, ready to be cracked for the nourishment of her callow brood. It is unfortunate that so pretty an argument should be questioned; but fact is inexorable. The surplus eggs in nine cases out of ten are, when discovered, addled and putrid; and this may probably be the reason why so many are found by European travellers; the natives knowing at a glance, or at all events at a shake, their worthlessness, and allowing them to lie as they find them, and so accumulate from season to season. Livingstone makes a remark on this subject, which, although curiously obscure, seems to bear out the last suggested notion. "The Hottentots use their trousers to carry home the twenty or twenty-five eggs usually found in a nest, and it has happened that an Englishman intending this knowing dodge, comes to the waggons with blistered legs, and after great toil finds all the eggs uneatable from having been some time sat upon." Now how stands the case? The eggs were carried in the Englishman's trousers, but the fact of the poor man's legs being blistered is prima facie evidence that for the time he did not wear his nether garments, and therefore he could not have sat on the eggs. No; it must have been either the Hottentot or some ostrich that sat on and addled the eggs; most probably the latter. I beg good Doctor Livingstone's pardon, I'm sure.

Respecting these outlying and abandoned eggs, there seems, from what can be gleaned concerning the matter, a strong probability that they are simply eggs that have been laid too late to be effectually operated on with a previously laid batch, and remaining whole and encumbering the nest after the chicks are born, are turned out. This is of course a mere guess at the riddle ; if I were allowed two guesses I should join Livingstone for the second, who says, "The ostrich begins to lay her eggs before she has fixed on a spot for a nest. Solitary eggs, named by the Bechuanas 'lesetla,' are thus found lying forsaken all over the country, and become a prey to the jackal."

The egg of the ostrich weighs about three pounds, and contains as much nutritive food as twenty-four eggs of the barn-door fowl. It will be seen at once, however, that comparatively the barn-door fowl's egg is the heaviest. A hen's egg weighs on an average two ounces, and

a full-grown hen six pounds. An ostrich egg weighs three pounds, and a full-grown ostrich three hundred pounds : thus it would take but *forty-eight* of the eggs of the domestic hen to turn the beam against her, while in the case of the ostrich exactly a hundred would be required. The finding of an ostrich egg would, according to the standard of civilized appetite, be a good meal provided for three men. - Three men, however, not unknown to the reader, Messrs. Stewardson, Andersson, and Galton, on the authority of the last-mentioned gentleman, "finished one very easily for breakfast, before beginning upon giraffe." Even this episode of hearty feeding, however, sinks into insignificance before an instance related by the second of the abovementioned gentlemen. "From the great size of the ostrich egg, it might be supposed that one would be a sufficient meal for any man; but I have known instances where two eggs have been despatched by a single individual, even when mixed with a quantity of flour and fat. Indeed, Hans and his companion once finished five ostrich eggs in the course of an afternoon." Tastes as well as appetites differ. "If the flesh of the ostrich be not much esteemed," says Andersson, "its eggs at all events are prized in the highest degree by natives and travellers." "The eggs have a strong, disagreeable flavour, which only the keen appetite of the desert can reconcile one to," says Dr. Livingstone.

Barrow says, "In the eggs of the ostrich are frequently discovered. a number of small oval-shaped pebbles, about the size of a marrowfat pea, of a pale yellow colour, and exceedingly hard. In one egg we found nine, and in another twelve such stones." Thunberg again relates, "A stone or two is sometimes within the egg of the ostrich, hard, white, rather flat and smooth, and about the size of a bean (!). These stones are cut and made into buttons, but I never had the good fortune to see any of them." All African travellers, ancient and modern, have regarded this "stone in the egg" with more or less wonder. Livingstone, however (who, be it remembered, compares the cry of the ostrich to the majestic roar of the lion), treats the matter with characteristic coolness: "Some ostrich eggs contain small concretions of the matter which forms the shell, as occurs also in the egg of the common fowl; this has given rise to the idea of stones in the eggs." The ostrich egg is possessed of great vital power. One kept in a room during more than three months, in a temperature about

sixty degrees, when broken was found to have a partially developed live chick in it.

Respecting the degree of intelligence displayed by the wild ostrich, the opinions of travellers are at variance, some ascribing to it the most complete stupidity, and others giving it credit for unusual vivacity and cunning. Livingstone evidently inclines to the former opinion. He says, "It is generally seen feeding on some quiet spot where no one can approach him without being detected by his wary eye. As the waggon moves along far to the windward, he thinks it is intending to circumvent him, so he rushes up a mile or so from the leeward, and so near to the front oxen that one sometimes gets a shot at the silly bird. When he begins to run, all the game in sight follow his example. I have seen this folly taken advantage of when he was quietly feeding in a valley open at both ends. A number of men would commence running as if to cut off his retreat from the end through which the wind came, and although he had the whole country-hundreds of miles-before him by going to the other end, on he madly rushed to get past the men, and so was speared. He never swerves from the course he once adopts, but only increases his speed."

In taking the eggs, the natives—if they wish to continue drawing on the nest—are obliged to use considerable caution. It is common enough—even when the hatching period is close at hand—for the whole of the proprietors of a nest to wander away from it in search of food—a circumstance that has doubtless given ground for the erroneous supposition that the bird in question leaves her eggs in the sand, trusting to the sun for their vivification. When the native finds a nest of eggs so abandoned, he procures a long stick and rakes them out all but one or two; if this is managed cleverly, and the wind has been favourable, the bereaved bird will neither scent the thief nor be aware of her loss, but go on laying for months—from June to October—supplying the Bushman with new-laid eggs with the precision and regularity of the hens of our own farms and homesteads.

Even the shell of the ostrich egg is an item of the utmost importance in the domestic economy of the wandering Bushman. It provides him with plates and dishes, and drinking cups, and, more important still, with a convenient vessel in which to carry that first essential to existence, water, across the vast and thirsty plains of

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Africa. The singular and ingenious method of collecting water into these shells from the reedy and shallow pools is thus graphically described by Dr. Livingstone :—

"The dread of visits of Bechuanas of strange tribes causes the Batkalahari to choose their residences far from water; and they not unfrequently hide their supplies by filling the pits with sand, and making a fire over the spot. When they wish to draw water for use, the women come with twenty or thirty of their water-vessels in a bag or net on their backs. These water-vessels consist of ostrich eggshells, with a hole in the end of each, such as would admit one's finger. The women tie a bunch of grass to one end of a reed, about two feet long, and insert it in a hole as deep as the arm will reach; then ram down the wet sand firmly round it. Then applying the mouth to the thin end of the reed they form a vacuum in the grass beneath, in which the water collects, and in a short time rises into the mouth. An egg-shell is placed on the ground alongside the reed, some inches below the mouth of the sucker. A straw guides the water into the hole of the vessel as she draws mouthful after mouthful from below. The water is made to pass along the outside-not through the straw. If any one will attempt to squirt water into a bottle placed some distance below his mouth, he will soon perceive the wisdom of the Bushwoman's contrivance for giving the stream direction by means of a straw. The whole stock of water is thus passed through the woman's mouth as a pump, and when taken home is carefully buried. I have come into villages where had we acted a domineering part and rummaged every hut we should have found nothing, but by sitting down quietly and waiting with patience until the villagers were led to form a favourable opinion of us, a woman would bring out a shellful of the precious fluid from I know not where. An intelligent Bakwain related to me how the Bushmen effectually baulked a party of his tribe which lighted on their village in a state of burning thirst. Believing, as he said, that nothing human could subsist without water, they demanded some, but were coolly told by these Bushmen that they had none, and never drank any. Expecting to find them out, they resolved to watch them night and day. They persevered for some days, thinking that at last the water must come forth ; but, notwithstanding their watchfulness, kept alive by most tormenting thirst, the Bakwains were compelled to

exclaim, 'Yak! yak! these are not men; let us go.' Probably the Bushmen had been subsisting on a store hidden underground, which had eluded the vigilance of their visitors."

As is the case with all wild creatures caged and domesticated against their inclination, the ostrich as he is seen in England furnishes but a poor idea of the bird's appearance as a free roamer in the African wilderness. The ostrich with which we are acquainted is a dull heavy-looking bird, with a goose-like expression and a slouching gait; but in its wild state its eye is bright and intelligent, its head well set, and by its general comportment betraying the fleet runner—so much so that one is disposed to regard the wings not as mediums of flight, but as mere ornamental appendages.

The newly hatched chicks are about as large as pullets, and as soon as they escape from the shell are able to walk about and follow their parents. The cock-bird, it seems, is just as able, and certainly as willing, to take charge of his children as the hen. Dr. Livingstone says, "I have several times seen newly hatched young in the charge of the cock, who made a very good attempt at appearing lame in the plover fashion, in order to draw off the attention of pursuers. The young squat down and remain immovable when too small to run far, but attain a wonderful degree of speed when about the size of common fowls." The colour of the ostrich chick is a blending of grey and white, and harmonizes admirably with the colour of the plains it is in the habit of traversing. Its external covering at this stage of its existence is neither down nor feathers; but a substance more resembling the bristles of the hedgehog spread scantily over its body.

It is easy enough to domesticate the ostrich, but it is of little utility. There being no particular use for its lovely and singular plumage, when living in our genial climate, its feathers grow ragged and ill formed, and at times it is so extremely vicious as to make it dangerous for any but its keeper to approach it. All attempts to breed the tame ostrich, or to hatch ostrich eggs by means of artificial heat, have signally failed. It is only on arid plains that the giant bird "increases and multiplies."

Even on the sandy wastes of Africa, however, this important process cannot be carried on without interruption and disaster to the unfortunate ostrich. Wandering tribes of savages hunt the desert plains in search of the big bird's substantial eggs; besides man, the ostrich's ovarious deposits are frequently plundered by still more watchful enemies—the jackal, who, scraping the eggs from their low-lying nest, rolls them together that he may break them and lick up the yolks; the hyena, whose nesting tactics are much the same; and the white Egyptian vulture. Sir John Alexander relates, on the authority of the natives about Orange River, that when the ostrich has gone abroad to search for food, "a white Egyptian vulture may be seen soaring in mid-air with a stone between his talons. Having carefully surveyed the ground below him, he suddenly lets fall the stone, and then follows its rapid descent. Let the hunter run to the spot, and he will find a nest of probably a score of eggs, some of them broken by the vulture."

Should a Bushman discover a nest when a long distance from home, he is of course desirous of securing the precious eggs; but how is he to carry them ? Pockets he has not, he is equally barren of pockethandkerchief, and he does not invariably wear either a hat or a cap. Under such circumstances, dear reader, you or I would just take one egg in each hand and one under each arm, and walk off regretting that we were unable to secure any more. But the Bushman has a "dodge" almost as ingenious as it is unscrupulous. He takes off his trousers, tears a strip off the waistband, and secures the bottom of each leg therewith, and is at once provided with a commodious double bag which he fills with eggs, and contentedly trots home with his bare legs scorching in the sun. The Bushman has implicit confidence in powdered ostrich egg-shell as a preventive of eye diseases, and should his cattle be afflicted with strangury, he will grind up a bit of the potent shell, mix it with vinegar, pour it down the throat of the ox, and next morning the brute is sound again ;-at least, so says the Bushman.

There is a vulgar belief that the ostrich can eat "anything;" that articles of wood, horn, or stone, are as acceptable to his accommodating stomach as a feed of grain, and that if a packet of tenpenny clouts and a peck of oats were set before him, he would as soon devour one as the other. This is by no means a modern error. In the "Boke of Phillip Sparrow" we read of

> The ostridge that will eate An *horshowe* so great In the steade of meat Such fervent heat His stomach hath.

Although there are no authenticated instances on record of the ostrich ever having eaten so indigestible a thing as a "great horseshoe," the obtuseness of taste displayed by the giant bird is very remarkable. In a wild state its chief food consists of pods and seeds of different kinds of leguminous plants and small bulbs. The naras is also a great favourite with the ostrich. The naras is the fruit of a creeper growing in the sand; it is about the size of an ordinary turnip, covered with prickles and of a yellowish green colour; the interior is of a deep orange colour, and contains a number of seeds much resembling in appearance and flavour bleached almonds. If, however, while searching for bulbs a few marble-sized pebbles should present themselves, the ostrich will swallow them with the greatest unconcern. Ostriches that have been domesticated are even less particular in their diet. A mixture of barley, chaff, and cabbage is the food usually allowed them, but when confined they have been known to devour wood shavings with great relish; and on one occasion, a gentleman who had an ostrich, and who likewise grew wall-fruit, discovered the former busily eating up some shreds of old cloth he was knocking from the wall to which they had been attached, to support last year's fruit branches.

Methuen in his "Life in the Wilderness," when speaking of a female ostrich that came under his immediate attention, says : "One day a Muscovy duck brought a promising brood of ducklings into the world, and with maternal pride conducted them forth into the yard. Up with solemn and measured strides walked the ostrich, and wearing the most mild, benignant cast of face, swallowed them all one after the other like so many oysters, regarding the indignant hissings and bristling plumage of the hapless mother with stoical indifference."

Another story is told of a woman living at Portsmouth, who hearing of the arrival of a cargo of ostriches, locked up her house and hurried off to see them landed. The forlorn and bedraggled creatures were penned together near the Dockyard, and the woman, who carried her street-door key on her finger, compassionating their distress, patted the innocent-looking head of the nearest bird to her; but the silly creature thinking it was food and not kindness the lady was offering him, snapped at the iron key and swallowed it at a gulp. There is another story told concerning a tame ostrich kept aboard a man-ofwar. For a considerable period the clasp-knives of the mariners

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continued to disappear in an unaccountable manner. At last, however, it was remarked that whenever the bird approached the ship's compass it oscillated in the strangest way, and it was only on the animal's death and dissection that the reason was discovered—a quantity of iron clasp-knives in its inside. This latter narrative is, however, in all probability fictitious.

The flesh of the ostrich is white and coarse, somewhat resembling in flavour the flesh of the wild turkey; so says more than one authority, while Andersson compares the taste of ostrich to the flesh of the zebra; at the same time, however, he assures us that when young the ostrich is "not unpalatable." In accordance with Mosaic law, the Jews regard the ostrich as an unclean beast, and will not partake of its flesh. Most of the natives of Southern Africa, however, have no such religious scruples, and look upon ostrich flesh as a rare daintyespecially when it is nice and fat. Moreover, the African savage is not to be despised for his taste ; the ancient Romans, who were almost as great as gluttons and epicures as they were as men of war, regarded the ostrich as a delicious dish-a dish fit to be set before the king; nor was "the king" slow to appreciate its "fitness," for it is related of the Emperor Firmius that he devoured an entire ostrich at one sitting. As to the silly bird's brains, they were considered a superlative delicacy. Six hundred such brains were cooked and served at one serving at the table of the Emperor Heliogabalus.

The enduring speed of the ostrich is marvellous. A reliable and painstaking traveller has been at the trouble of observing and carefully measuring the pace of the great bird. The result is as follows : "When the ostrich is feeding, his pace (stride) is from twenty to twentytwo inches; when walking but not feeding, it is twenty-six inches, and when terrified it is from eleven and a half to thirteen and even fourteen feet in length. Only in one case was I at all satisfied at being able to count the rate of speed by a stop-watch, and if I am not mistaken there were thirty in ten seconds; generally one's eye can no more follow the legs of the ostrich than it can follow the spokes of a carriage-wheel in rapid motion. If we take the above numbers, and twelve feet stride as the average pace, we have a speed of twenty-six miles an hour. It cannot be very much above that, and is therefore slower than a railway locomotive." We have the evidence of Gordon Cumming and Mr. Andersson to the same effect. The latter gentle-

man says, "Its speed is truly marvellous. Its feet seem hardly to touch the ground." Adauson relates that in Senegal he has witnessed two men mounted on the back of an adult ostrich, and the bird maintaining a speed exceeding that of the fastest horse.

While at Bahia Blanca, Darwin saw three or four ostriches come down at low water to the extensive mud banks, and was informed by the Gauchas that they came there to feed on small fish. The lastquoted authority says, "It is not generally known that the ostrich takes readily to the water. On one fine hot day I saw several enter a bed of tall rushes, where they squatted concealed till quite closely approached. Mr. King informs me that at the Bay of St. Blas and at Port Valdes in Patagonia, he saw these birds swimming several times from island to island. They ran into the water both when driven to a point, and likewise of their own accord when not frightened; the distance crossed was about two hundred yards. When swimming, very little of their bodies appear above water; their necks are extended a little forward, and their progress is slow. On two occasions I saw some ostriches swimming across the Santa Cruz river, where its course was about four hundred yards wide and the stream rapid. Captain Sturt, when descending the river Murrumbidgee in Australia, saw two emus in the act of swimming."



SPOOR OF OSTRICH.

Does my lady the Duchess of Gemantin ever give a thought as to the manner in which the lovely white wing-feathers of the ostrich, gracing her noble head, came into the market? Let her ladyship ask her "feather-man," and doubtless he will inform her that they were "exported from the Cape." But the ostrich, for all his reputed silliness, does not come down to the Boer's store at the Cape, and shed his feathers at command. He parts with his feathers only with his life, and of this latter possession he is as chary as the best of us. His head is planted high in the air, and his organs of vision are so placed that he can discern an enemy at a great distance. The introduction of European hunting tactics have done little towards stocking the ostrich-feather market. In fair chase, the horse is no match against this plumed game, and should the hunter's dog outstrip his steed, it had best not be too presumptuous. The strength of the ostrich is equal to its bulk, and a single straight-out kick (the way, it is said, in which it uses its only weapon of defence) will break back or limb as surely as a blow from the paw of the lion. Still, the ostrichfeather market must be supplied. King Fashion demands it. The mighty monarch insists on several hundredweight of feathers each year, and though on an average seventy feathers weigh but a single pound, and it rarely happens that more than five and twenty marketable feathers can be plucked from any one bird, King Fashion requires a certain number for his weddings, and buryings, and court presentations, and operas, and balls, and obtained they must be.

The Damara and the Bechuana have no objection. From two to twelve guineas per pound is the price offered by the exporter, and if the Damara or the Bechuana is three months or so earning even the smaller sum, he considers it splendid wages, and the following are a few of the methods to which he resorts in discharge of this branch of his business.

March or April is the chief "feather season," for then the birds have recovered their moult, and their feathers are springy and vigorous; whereas at other periods, especially during the pairing season, the ostrich, like the familiar turkey-cock, has a habit of trailing its wings and utterly spoiling the outer feathers. The savage hunter provides

himself with a bow about three feet long, and with arrows made from a slender reed, and tipped with a sharp spike of bone, thoroughly poisoned with a composition of which the principal ingredients are obtained in form of a milky juice from the Euphorbia tree; or from the entrails of a little caterpillar called N'gwa. They squeeze out these and place them all round the bottom of the barb, and allow the poison to dry in the sun. With the loftiest contempt for anything approaching cleanliness, the South African takes particular care in "working" this poison, to cleanse his hands, his finger nails, and the quicks of his nails, from every atom of N'gwa matter. The effect of the poison is so terrible, that in a few moments the person imbibing it either goes raving mad, and flies or is driven from human habitation, or becomes a whining idiot "calling for his mother's breast as if he were returned in idea to childhood again."

With his arrows tipped with one or other of these potent poisons, the savage hunter discovers the nest of an ostrich—a mere hollow in the sand from three to six feet wide and eighteen inches deep. Removing the eggs from the nest and burying them out of sight, the cunning bowman lies flat on his belly in the excavation, and patiently awaits the return of the unsuspecting birds. Let their number be what it may, two, three, or four, he lies quite snug and still, till sauntering easily up they come fairly within range of his dreadful arrow; then over the edge of the nest he takes aim, and before the first bird, pierced with the poisoned dart, has time to cry out, another arrow is fitted, and twang! another mighty ostrich is stricken to death. If he is a cool hand and knows his business, ten minutes from the time of the ostriches' first approach will see him with the entire family at his feet, and he eagerly gathering his crop of feathers. It is important that he should pluck them while the bird's body is still warm—they retain their gloss and curl the better, and fetch more at the sale.

Another method adopted by the ostrich hunter is to disguise himself in the skin of one of these birds, and, armed with his bow and poisoned arrows, stalk about the plain imitating the gait and motions of the ostrich. Mr. Moffat thus describes a hunt of this kind :—

"A kind of flat double cushion is stuffed with straw and formed something like a saddle. All except the under part of this is covered

over with feathers attached to small pegs and made so as to resemble The head and neck of an ostrich are stuffed and a rod the bird. introduced, and the Bushman intending to attack game whitens his legs with any substance he can get. He places the feathered saddle on his shoulders, takes the bottom part of the neck in his right hand, and his bow and poisoned arrows in his left. Such as the writer has seen were most perfect mimics of the ostrich, and at a few hundred yards' distance it is not possible for the eye to detect the fraud. This human bird appears to be picking away at the verdure, turning the head as if keeping a sharp look-out; shakes his feathers, now walks and then trots, till he gets within bow-shot, and when the flock runs from one receiving an arrow, he runs too. The male ostriches will, on some occasions, give chase to the strange bird, when he tries to elude them in a way to prevent them catching his scent; for when once they do, the spell is broken. Should one happen to get too near in pursuit, he has only to run to windward, or throw off his saddle. to avoid a stroke from a wing that would lay him prostrate."

The Arabs of North Africa pursue the ostrich on horseback; not at a dash, however—one exciting run and victory decided—but in a deliberate and business-like way. A flock having been sighted, the Arabs put their steeds in motion, and hold them at sufficient speed to keep in sight the fluttering army in advance. When the evening comes, the Arab pickets his horse and rests for the night, and his tired game, finding it is no longer pursued, sinks to the earth and rests too. Next morning the chase is commenced, the clicking of hoofs rouses the still weary bird, and once more he braces his limbs and pursues his hopeless flight. So the game continues, till, tired to death, and with drooping and bedraggled wings, the poor ostrich comes to a dead halt, and the gallant Arab hunter safely approaches and cuts its throat.

Towards the approach of the rainy season, when the days are intolerably hot and sultry, the ostrich may easily be ridden down by a single horseman. At the above-mentioned period the protracted drought tells even on this invulnerable bird, and he may be seen standing in a stupified manner with his wings outspread and his beak wide open. Under such circumstances he offers but little resistance, and though for a few moments he may make hard running, his speed is not enduring; and presently he is again stock still and stupidly agape, waiting for the hunter to knock him on the head with his

"shambok," or knobby stick. Andersson relates that in certain parts of Southern Africa the ostrich is run down on foot. "I have myself seen the Bushmen accomplish this exploit on the shores of Lake Ngami. They usually surround a whole troop, and with shouts and yells chase the terrified birds into the water, where they are of course speedily killed." Harris, on one occasion, fell in with a party of caravans chasing an ostrich on foot, and when they got close enough, "shying" after the fleeing bird their clubs, striking the bird's legs and eventually laming him. "When the ostrich is slain," says the lastmentioned authority, "the throat is opened and a ligature passed below. the incision. Several hunters then raise the bird by the head and feet, and shake and drag him about until they obtain from the aperture nearly twenty pounds of a substance of mingled blood and fat, of the consistence of coagulated oil, which under the denomination of manteque is employed in the preparation of dishes and the cure of various maladies."

Some African tribes take the ostrich in snares, similar to those used in the capture of the smaller species of antelope. "A long cord having at the end a noose is tied to a sapling, which is bent down, and the noose pinned to the ground, in such a manner that when a bird treads within it the sapling springs back by its own natural elasticity, suspending the bird in the air, only to be released from its sufferings by death." Others again are said to employ ostrich feather parasols, or rather massy plumes—such as adorn our hearses—while hunting wild animals of every description. Thus in case of a wounded beast charging a man, the latter, just at the moment he is about to be seized, whips the big plume off his head, and thrusting the spike to which the feathers are bound into the ground slips off. While the furious animal is venting his rage on the nodding feathers, the wild hunter steals to its rear, and transfixes it with his assagai.

In hunting the ostrich, the mode most favoured by the European sportsmen is to lie in wait at the margins of such pools and springs as the birds come to, to drink. They swallow the water deliberately, and by a succession of gulps. While staying at Elephant Fountain, Andersson shot eight, within a very short period. "Lying in wait," however, and taking advantage of your game from behind a wall or hedge, is by no means as a rule a favourite system with the European hunter. If an animal has "fight" in it, nothing gives the true sportsman greater

pleasure than for it to demonstrate the same to the fullest extent sharp steel against talons just as sharp and terrible, swift bullets against swift and sudden springs and bounds, and death-dealing fangs; the chances are brought to something like a balance, and the old English motto, "fair play," which Englishmen would carry with them even to the heart of an Indian tiger jungle, vindicated. Should the animal chased be dependent on its fleetness for safety, again the true sportsman would meet it with its own weapons, and stake bit and spur on the issue of the chase.

Mr. Andersson relates the particulars of a chase after young ostriches by himself and a friend, and which is none the less interesting that it bears witness to the tender solicitude of the ostrich for its progeny. "While on the road between the Bay and Scheppmansdorf, we discovered a male and female ostrich, with a brood of young ones, about the size of ordinary barn-door fowls. This was a sight we had long been looking for, as Galton had been requested by Professor Owen to procure a few craniums of the young of this bird. Accordingly we dismounted from our oxen and gave chase, which proved of no ordinary interest.

"The moment the parent-birds became aware of our intention, they set off at full speed, the female leading the way, the young following in her wake, and the cock, though at some little distance, bringing up the rear of the family party. It was very touching to observe the anxiety the old birds evinced for the safety of their young. Finding that we were quickly gaining upon them, the male at once slackened his pace, and diverged somewhat from his course ; but seeing that we were not to be diverted from our purpose, he again increased his speed, and with wings drooping so as almost to touch the ground, he hovered round us, now in wide circles, and then decreasing the circumference till he came almost within pistol-shot, when he threw himself abruptly on the ground and struggled desperately to regain his legs, as it appeared, like a bird that has been badly wounded. Having previously fired at him, I really thought he was disabled, and made quickly towards him; but this was only a ruse on his part; for, on my nearer approach, he slowly arose, and began to run in an opposite direction to that of the female, who by this time was considerably ahead with her charge. After about an hour's severe chase, however, we secured nine of the brood, and though it consisted of about double that number, we found it necessary to be contented with what we had bagged."

Then there comes he for whom the present work is intended, who has all the industry, all the desire to emulate these horticultural notabilities, and become his own gardener, but has yet to learn how. It will be the object and desire of the contributors to the "BOOK OF GARDEN MANAGEMENT" to instruct the uninitiated possessor of a garden, so that he may know how to cultivate his own plot of ground, and know also when he is well served by his gardener; to initiate the young operative gardener, likewise, into the mysteries of nature, whose agent he is to become, and teach him, as far as written directions can teach, the manipulative as well as the scientific methods of his art.

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