

98. OSPREY, *Pandion haliaetus*.

One flew directly over our camp on May 26, 1917. Noted in 1918 by Young, from May 5 to Aug. 6. Said by the Ward brothers to be rare.

99. LONG-EARED OWL, *Asio wilsonianus*.

In 1917 we received descriptions evidently referring to this species and were shown an old nest that seemed corroborative evidence. The supposition is confirmed by Mr. Job who reports finding four young of various sizes in an old crow's nest on opposite side of the lake June 28, 1912.

100. *SHORT-EARED OWL, *Asio flammeus*.

The commonest owl in 1917, seen nearly every evening, and often during the day, beating along the lake shore or over the old reed beds and marshes. In 1918, however, Young only noted single individuals three times during the entire season, April 30 to May 15, taking one on May 2.

101. *GREAT HORNED OWL, *Bubo virginianus*.

In 1917 occasional large owls were glimpsed or heard of during the spring visit and on Sept. 17th one was taken. It is referable to the Arctic

Horned Owl, *B. v. subarcticus*, but not absolutely typical and with slight tendencies towards the Western Horned Owl, *B. v. pallescens*. During the winter of 1916-17 a large flight of these birds, together with Goshawk and Snowy Owls, came from the north, obviously driven into new fields by the dearth of rabbits. Without doubt the Horned Owls had an appreciable influence in the destruction of upland game; though, as a night hunter, it was probably the least harmful of the trio. Young only noted one individual in 1918, on July 21; by its dates a probable breeder.

102. *SNOWY OWL, *Nyctea nyctea*.

From the accounts of the Ward brothers, it is evident that unusual numbers of this species accompanied the flight of Goshawks and Great Horned Owls in the winter of 1916-17. Being more of a diurnal and open country hunter than the Horned Owl probably this species was largely instrumental in the destruction of the grouse. In 1918, Young saw individuals from April 30 to May 15, taking one on May 2.

(To be continued)

THE ARCHAEOLOGICAL VALUE OF PREHISTORIC HUMAN BONES

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Why do we bring so many human bones into a museum? Why is one skeleton not enough? Such questions are always surprising for it would seem that anyone might think of many reasons why we should collect the bones and why one skeleton would be as unrepresentative as one man is unrepresentative of his race. If we were to describe a tall, bearded man and say that he is representative of the English, it would be untrue, for there are short Englishmen and there are beardless Englishmen. These features of Englishmen are only two of a great many that could be mentioned. Likewise it is necessary, if we are to know an ancient people, to have enough skeletons to enable us to obtain average measurements and a representative series for study of the type.

The age at which an individual died can be determined approximately from his bones. If we have enough skeletons, we can determine how many individuals died in infancy, how many as little children, how many in middle age, and how many lived to be very old. This information regarding a primitive or savage people would be interesting in comparison with the same facts regarding our own people. We are often told that Indians were very healthy and lived to an old age, but in archaeological explorations we find the bones of a great

many children and young people as well as those of old people, showing that many of the Indians died young.

Fairy tales about the bones of giants and dwarfs are common. One can hardly think of a place he has explored where he has not been told of the finding of the bones of a giant, yet giants are very rare and of all the hundreds of skeletons that I have dug up and of the thousands seen in museums, I have yet to find so large a specimen. In fact, the skeletons are no larger than those of the people with whom we daily mingle.

The bones of children, easily determined, are often mistaken, by those who know nothing of such subjects, for bones of dwarfs.

A human skull that would hold "at least a peck" figures frequently among stories told by people who have probably never dug up a single skeleton, but who tell of what they have seen someone else find. Where all these extraordinarily large skulls are now is a mystery, for certainly they are not to be seen in our excavations, or in museums. The same is true in regard to the story of the leg bone of a man, told at practically every place in North America where I have carried on explorations. One end of the bone was put on the ground and the other end came nearly to the waist; but such bones

are never seen by scientists and have never been produced by the story tellers. Another story that seems to crop up everywhere is of the finding of an immense human jaw so large that it could be placed over the lower jaw of a large man. Practically any v-shaped object can be placed over another v-shaped object, so that any medium-sized human jaw can be placed over the face of any man, but the huge human jaw of the story is never in evidence.

Fine teeth are often attributed to the Indians, and it is stated that savages never suffered from toothache, but in every large collection of Indian bones we are able to observe that they not only sometimes had abnormal teeth, but that they suffered much from toothache and even from large and painful ulcers in the jaws. The teeth of Algonkians are found to have been affected by decay much less than the teeth of Iroquoians who, being agricultural, ate much soft cooked corn food.

Diseased bones are found in large numbers in Indian burial places, many of them among the bones of fairly young people. These show that the Indians were not all healthy. Many diseases do not affect the bones, so that there was evidently a still greater percentage of disease. In a series of only twenty-four skeletons found near Prescott, Ontario, at least three had diseased growths on the spinal column, one so severe that two of the vertebrae were grown together. In the same collection were other diseased bones. When one has a sufficiently large series, say one hundred skeletons, he is usually able to tell what proportion of the people had severe diseases that affected the bones, the various parts of the body that were affected, and the frequency in each part, also whether the bones of an individual were thus affected only in one part or in many. Sores also sometimes leave their traces on the bones to a certain extent. Where the number of skeletons collected is sufficient, statistical studies of all these diseased bones may be made.

Wounds in some cases are indicated by the bones. In a large series from an aboriginal burial place one frequently finds bones that were broken when the individual was alive, which afterward grew together, sometimes as strong and useful as before. Occasionally arrow points are found in bones. Sometimes such a point has been broken off in the bone and healthy bone has grown partly over it, showing that the individual recovered. Frequently these are only found when washing the bones in the laboratory, not having been seen by the excavator because of the soil on the bones. In such cases the facts would never have been known had some particular bone or piece of bone been discarded and reburied.

The uses to which human bones were put and the things done with the body or the skeleton may also be learned from the bones. Disks cut from human skulls and perforated for use as ornaments or charms are found in Ontario. Several lower arm bones have been found in an Iroquoian site at Roebuck in eastern Ontario, which show that one end has been used as a handle while the other has been sharpened for use as an awl or a dagger. Perhaps they were considered to have special virtue because made from human bones or possibly they were for use in practising witchcraft.

Cannibalism may at least be surmised when cracked or burned human bones are found, and cremation where burned bones are found. Scalping is frequently indicated as having been practised in a certain place and at a particular time, by knife-marks found on the bones of the head.

Painting of the bones or body is often indicated by the paint found on the bones. Copper ornaments or implements placed with the dead, even where the metal has completely decayed, often leave a green stain and chemical evidence on bones.

Skulls perforated with conical drilled holes after death or so as to cause death are found in Ontario and suggest that the skulls were suspended as trophies or charms, or had something fastened to them as a death dressing.

The skeleton of a man differs from that of a woman in many respects. If in each of these respects the difference is extreme, it is easy to determine whether the skeleton is that of a man or woman, but if the difference is very slight, or if in one respect the skeleton resembles that of a man and in another that of a woman, it is more difficult to make the determination. For instance, the skeleton of an athletic, outdoor woman in some respects might resemble the skeleton of a man, while the skeleton of a delicate man might resemble the skeleton of a woman. Nevertheless, by careful examination and allowing for error, it is possible to determine approximately the distribution of sex in a series of skeletons and to use this information in many other studies, as for instance to determine whether certain bone diseases were more prevalent among men than among women; and it is possible to compare certain physical features of the skeletons of primitive women with those of our own women who have long been subject to the conditions peculiar to "civilization".

Sutures in the skulls of some old people which have been found had grown almost if not entirely together, so that there was no further opportunity for the brain to increase in size.

The value of large collections of human bones is illustrated by the fact that a dentist living in

Kansas finds it worth while to make a yearly trip to New York to study just the teeth of skeletons received since his last visit in only one museum in that city. This knowledge he uses to advance methods of dentistry, to save not only the teeth of his own patients, but also those of any one going to dentists who derive benefit from his publications. A surgeon visited the same museum and many others solely to measure and study the three large pelvic bones of the female skeletons. This opportunity he expected would result in the saving of many lives. What he learned might be used by many other surgeons who would read of his discoveries. From these facts it is evident that all human bones should be saved during archæological excavations—not

merely entire skeletons or only whole bones, but even a stray tooth, a bone of the pelvis, or the broken end of a bone perhaps exhibiting a diseased surface, an imbedded arrowpoint, or a fracture. The humblest bone or fragment may help to increase human knowledge, which in turn may relieve suffering or be useful to mankind in some other way.

It is very desirable that all finds of prehistoric human bones made in Canada be promptly and fully reported to the Museum of the Geological Survey, Ottawa, and the bones, instead of being neglected or reburied, be kept as found until they can be investigated by an officer of the Museum or, where this is impossible, that they be carefully labelled, packed and sent to the Museum.

NOTES ON MIDWINTER LIFE IN THE FAR NORTH.

BY E. J. WHITTAKER.

During the summer of 1917, the writer spent some days at Hay River post, N. W. Territories. This post is pleasantly situated at the mouth of the river of the same name, which flows into Great Slave lake at its western end. While there, we enjoyed the bounteous hospitality of all. We were especially well treated by the English Church mission, the Rev. Mr. Browning, its pastor, and by M. Louis Roy, the trader of the Hudson Bay Company. While awaiting a steamer at the end of the season's work, our stay there was especially pleasant. Fish of all kinds were abundant, and so were potatoes and other garden truck from the mission garden. Such is the rapidity of growth in these northern latitudes where the sun was above the horizon for twenty hours out of the twenty-four, that potatoes planted only forty-five days before were quite large. The brilliant green meadows of the alluvial islands contrasted pleasantly with the sombre hues of the evergreen forest farther back, out of whose depths flowed the brown flashing waters of the Hay, which not so many hours before had flung themselves in a wild torrent over the Alexandria Falls, some fifty miles up the river. This summer aspect contrasts sharply with that of winter, as is indicated in the following paragraphs taken from letters describing the vicissitudes, as well as the pleasures, of life in midwinter in the same region.

In a letter from Mr. Roy, the company trader, the following appears: "We have been very short of goods this winter, and I have been obliged to haul from other posts, and my poor dogs have had no rest at all. I, myself, made three trips, one each to Buffalo lake, Resolution, and Providence. It was terribly cold on that trip to Providence, 65° below, and a head wind. We were unable to use

our knives and forks, as they would stick to our lips, and the first occasion we tried it we had a bad time. We would have to put our fingers close to the fire every little while to keep them from freezing. We certainly ate in a hurry then. In the middle of the night, we had to get up to put wood on the fire, as the cold was so intense that the warmest sleeping bag would not keep it out. We would hitch up and '*marche*' at four o'clock. We have had a terribly cold winter and lots of snow. The cold is so intense, and storms so frequent, that the Indians do not visit their traps very often, and there is scarcely any fur being caught. It is the poorest year for fur I have ever seen. They say that east of the Slave river the Indians are living in plenty as the caribou have come closer and in greater numbers this winter than for years past."

Mr. Browning, according to his letter has been enjoying at his mission a few of the luxuries of a more southerly clime, but has had his troubles too. In his letter, he says: "Lately we have been living quite high. The mission garden gave us a plentiful supply, and we are enjoying lots of beets, carrots, cabbages and onions—not too bad for this out-of-the-way spot. We are getting lots of fish, both trout and whitefish, but the former are very large and almost too fat. I have some parsley growing in the cellar, also some rhubarb. When we run short of provisions, parsley sauce is not bad with whitefish. We are all well now, though most of the workers were down with diphtheretic sore throat, and all had a period of quarantine. Fortunately, it did not get to the village.

"I had the pleasure (?) of a trip with dogs to Chipewyan and back. I do not mind going behind the dogs as a rule, but to get up one morning,



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