Young Hooded Seals in the Zoological Park. When Feeding Time Arrives the Young Seals Are Very Alert.

The Hooded Seal of the North Atlantic*

One of the Most Important Industries of Newfoundland

By Harry Whitney

EXCLUSIVE of the walrus, there are five distinct species of seals inhabiting the Atlantic waters contiguous to northeastern America: the Harbor or Ranger seal (*Callocephalus vitulinus*, Linnaeus), a small coastal breeding seal which frequently ascends fresh water streams; the Ringed seal (*Phoca hispida*, Schr.), also a small coastal breeding seal; the Harp seal (*Phoca gruenlandica*, Fabr.), somewhat larger than the two preceding seals, and, unlike them, breeding upon the north Atlantic ice floes; the Bearded or Square-Flipper sometimes called the Big seal (*Phoca barbata*, Fabricius), a very large seal, breeding along the northern coasts; and the Hooded or Bladder-Nose seal (*Cystophora cristata*, Erxleben), which, like the Harp seal, gives birth to its young upon the winter-formed ice floes of the north Atlantic.

The five young seal pups which I brought from the north in May, 1912, and which are now in the New York Zoological Park, belong to this last species, and a brief description of the species, its habits and its economic value, may be of interest to our readers.

In size, the Hooded seal ranks second to, and sometimes rivals, the Bearded seal, which is classed as the largest of the Atlantic seals. A full grown Hood "dog" will not infrequently measure from eight to nine feet in length, and tip the scale at one thousand pounds, while an old female Hood will often weigh between eight hundred and nine hundred pounds.

In color, the adult is bluish-black on the back, with a belly usually of lighter shade, varied with paler spots, though sometimes the belly is of a light-grayish tinge, with darker spots.

The male has a muscular sac or bag extending from the nose backward to the center of the head. This bag may be inflated at will, forming a hood-like covering to the head. It is this hood which gives the species its name.

The Hooded seal has one other distinctive feature. While each of the other four species mentioned has six front teeth or incisors in the upper jaw and four in the lower jaw, the Hooded seal has but four above and two below.

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Standing at Attention.

Bringing the Seals to the "Neptune."

Both males and females will attack their enemies with boldness and savage ferocity, and in all my experience I have never encountered a more determined or dangerous antagonist among wild beasts than an angry Hooded seal brought to bay. I have seen an old dog Hood seize a gaff between his teeth and chew it into splinters. They travel upon the ice with remarkable speed, and the hunter must always be alert, prepared to meet their vicious charge.

Hood pups are nursed by their mothers until about two weeks old, when they are left to forage for themselves. After capturing the five little pups now in the Bronx Zoological Park, and taking them aboard our ship, the "Neptune," I was confronted with the difficulty of securing proper food for them, and it occurred to me to examine the stomachs of the carcasses of several of the old ones which had been killed. To my surprise I found that all I examined contained perfectly fresh herring, and in nearly every instance the fish were whole and entirely free from injury, without a tooth mark or scratch. From a single one of the old dogs I secured in this way six large fish. It is claimed that the seal herds off the Newfoundland and Labrador coasts destroy more codfish and herring each year than are taken by the entire fishing fleet.

The Hooded seal is migratory in its habits. During the summer the greater herds are found along the southeast coast of Greenland. In February and March they appear in countless numbers on the winter-formed ice floes off the Labrador and Newfoundland coasts, both in the open Atlantic and in the Gulf of St. Lawrence. It is at this time that they give birth to their young upon the floes, where they are found in families consisting of the mother seal, her pup and two or three old males. I have seen few instances where a seal gave birth to more than one pup in a season.

The pup is a shapeless, furry, steel-gray ball when first born, but grows and assumes shape with truly wonderful rapidity. It is safe to estimate that it increases three or four pounds in weight in each twenty-four hours during the first eight days after birth. The stormier the weather and the more snow that flies, the better it thrives.

The Hooded seal attains its full growth in four years,

Hooded Seals on the Ice. The Flippers Are Turned Under When Moving Around.

and competent observers state that they begin breeding at that age.

It sometimes happens that large herds become imprisoned upon the floes, through long continued winds in one direction which raft the ice and cut off their retreat. When this occurs and the seals are long exposed to the strong rays of the sun, their skins burn and crack, and they are subject to intense suffering. When in this condition, at times when the ice parted, permitting them to again return to the sea, I have observed them jump clear of the water, giving bellows of pain that could be heard for a long distance. When the skins are thus burned they are valueless, and the animals are not molested.

The value of the Hood, and, in fact, all species of North Atlantic hair seals, lies in its hide and blubber. The hide is tanned into leather, and the blubber converted into oil. From its hide, wallets, traveling bags and other fine leather goods articles are manufactured. The oil is utilized in many ways. It has even been said

that no small proportion of high-grade seal oil which finds its way into the Italian market, passes through a process of deodorization and refinement and is launched upon the market by the resourceful Italian as "olive oil."

Sealing has long been one of the most important industries of the colony of Newfoundland. The seal fishery, it is said, had its beginning early in the eighteenth century, and the records of the Newfoundland Board of Trade state that as early as the year 1742, Fogo and Twillingate reaped a profit of nearly three thousand pounds sterling from trade in seal oil.

In the early days sealers went to the ice in sailing craft, but in 1862 the "Bloodhound" and the "Wolf," the vanguard of the present large fleet of sealing steamers especially fitted for the work, were introduced, and a new era in seal hunting began. It is the object of the sealers to find the floes upon which the herds are located, and this done, old and young alike are slaughtered upon the ice. Late in the season, after the young have taken to

the water, a sealing steamer will sometimes follow a large herd at full speed for a hundred miles, or until the herd, becoming exhausted, takes to the ice floe again for rest. When thus thoroughly wearied they will not at once return to the water, and are spoken of as "beat out." After a long drive of this kind they are very poor, and large lumps form under each flipper.

The Harp, the one other species, as previously stated, which whelps upon the ice, though a much smaller seal than the Hood, is more valuable, and is found in much larger herds than the Hood. The young of this species is snow white until two weeks old, when it sheds its first coat and assumes a dark slate color.

The seal hunt was at its zenith in 1831, when 686,836 seals were captured. In 1911 the total numbered 304,591. Capt. Abraham Kean, with the "Florizel," captured the largest number of any one ship during that year, his catch reaching a total of 49,129, of which more than half were Harps.

Tracking Wild Animals by their Spoor

An Attractive Field of Observation

AMONG the various forms of wood-craft which appeal alike to the sportsman, the country-dweller, the naturalist, and the mere lover of nature, none is more fascinating than the tracking of wild animals by their spoor.

This art is susceptible of a very high development by the combination of close observation and critical deduction. Not only the presence of the animal and the approximate time of its passage may be determined, but its species, its age, its size, and its sex.

M. Martin discusses entertainingly in *La Nature* the methods of such study.

"From the most primitive times," he observes, "man, surrounded by all sorts of animals, has been obliged to gather from their tracks useful information, either for the purpose of catching them or of escaping them; and even to-day, certain savage tribes, by studying the traces left by game have acquired an almost incredible skill in tracking them over the most varied ground in widely differing circumstances. Not gifted like the carnivora with the ability to track his prey by the scent, man has been forced to depend on reason and acquired experience.

"No confusion is possible between the prints of hoofs and those made by the feet of the carnivorous mammals. In the case of the latter, let us take for example four species having a different manner of walk: the badger and otter, which are plantigrade, show an impress made by the five toes of each foot; the cat and the fox, which are digitigrade, show only four toes.

"If the plantigrade imprint shows the track of short nails, slightly indented, it belongs to the otter, while that of the badger shows nails long and clearly marked, extending in front of a sort of hand.

"As for the cat and fox, the first, whose nails are retractile, shows no trace of them, while the latter shows a straight nail extended in front of each pad of the foot. Hence, the tracks are easy to distinguish.

"The foot of the fox, indeed, is more similar to that of many other mammals, e. g., it much resembles that of a small dog, such as a terrier; but in this case, if the track is sufficiently marked the thick coat of fur between the pads immediately reveals Reynard. It has also some analogy to that of the martin and the beech-martin, but these two species are smaller and their tracks are notably longer and narrower.

"Among the rodents, the impression left, when very clear, shows four digits. That of the hare, especially, is somewhat oval and very furry. Its shape is clearly indented on soft ground, but when the earth is dry only the point of the foot may be marked with the trace of nails generally clearly shown in front.

"As we see, each species has its own peculiar imprint, but this, larger or smaller, according to the size and age of the individual, may also vary slightly in animals of abnormal form.

"It is important also to judge the time at which the imprint has been made. If, for example, the foot has been placed in a puddle of water, and the water is still troubled the passage of the animal has obviously been very recent; if water still seeps into an impression made in humid soil, the passage must have taken place within a few hours; if the mud is dried about the edge of the track a considerable time must have elapsed. Moreover, account must be taken in each instance of conditions of wind and temperature and character and action of the soil.

"The same remarks apply to hoofed animals, such as the stag, goat, and wild boar. The foot of the last much resembles that of the domestic pig, but in the wild animal the mark of the heel is generally less deeply

marked, while the front of the foot and ends of the toes are very distinct. The pig, on the contrary, bears rather more on the heel. At the rear of the hoof, moreover, the print of the boar's foot has two indentations or grooves, cut by the spurs. The age of the animal may be judged by the depth of these. Sometimes, too, one of the toes is longer and more recurved than the others.

"The study of the spoor of the stag is especially interesting, because the animal varies greatly as it increases in age, and it is a great advantage to the hunter

to judge merely by the track both of age and sex. In the female the foot is comparatively long and narrow, the toes of the four feet spread apart, while the male has larger hoofs, with those of the hind feet stronger than those of the fore feet; the gait, especially if it is old, is more regular, and while traveling the toes of the hind feet are usually closed. In measure as it grows older the feet grow in size, the horny part of the hoofs is worn away, and the ends of the toes become more and more rounded, while at the same time its weight increases; these are all progressive changes which serve to indicate age and which are shown in the tracks. It must, of course, be remembered that the feet wear off and become rounded more quickly if the earth of the forest is hard and rocky, and less rapidly if the animal lives on a soft clay soil; also in some regions the deer are larger and more vigorous than in others.

"In following on foot the spoor of a mammal other significant signs accompanying the tracks are often seen, such as *dijecta*, an overturned stone, a patch of scraped earth, crushed herbage, browsed foliage, etc., which permit an easier decision as to the animal's size, weight, and gait.

"The study of the tracks left by animals on forest ground is a most attractive pursuit, which develops the powers of observation and which interests both the landed proprietor and the passing pedestrian as fossil imprints interest a geologist. A very great pleasure may be found in resolving a series of problems: the affirmation of the species, judgment as to size, age, and sex, and action at the moment the track was made. The proper experience once acquired, the observer will solve these problems quite as well and sometimes even better than if he saw with his own eyes the creature flee past him in the midst of the forest.

"Experience and logical reasoning are, in fact, more accurate in many circumstances than vision. Nothing can better justify this assertion than the example of d'Yanville, a celebrated huntsman of the eighteenth century. The stag he was following lost its antlers in the course of the chase, and thus disburdened bounded past many hunters and passers-by. These people thought to have seen with their own eyes a doe and not a stag; they affirmed this in d'Yanville's presence. But he examined the trail and ordered the chase to go on. 'My eyes,' he said, 'told me, to be sure, that the animal was a doe, but my reason tells me the foot is that of a stag.'

A New Case of Mutation

At a recent meeting of the German Horticultural Society, Mr. Walter, of Vevey, presented a series of cyclamens having a remarkable character. Six years ago he suddenly obtained a white cyclamen plover in which the plover instead of being turned downward as usual were now turned up like most plover. In most species of cyclamen the stem is strongly curved at the base of the plover so that this has its face downward, while the curved lobes of the corolla are upturned. In the new specimen the stem was straight and the plover was accordingly turned upward, with the corolla lobes downward. Mr. Walter then made numerous crossings with this plant, and found that the upturning which had been suddenly obtained by mutation, was seen in all the hybrids since the first generation. Thus the effect appears due to a dominant quality. He obtained cyclamens of various races and colors, all of which were upturned, and the results are very interesting for the mutation theory.

The Spoor of Various Wild Animals. 1. Badger's Front Paw; 2 and 3, Front and Hind Paw of the Otter; 4 and 5, Front and Hind Paw of the Wild Cat; 6, Front and Hind Paw of the Fox; 7, Front and Hind Paw of a Ferret; 8, Front and Hind Paw of a Hare; 9, the Hind Foot of a Boar.