

THE CANADA GROUSE (*DENDRAGAPUS CANADENSIS*) IN CAPTIVITY; ITS FOOD, HABITS, ETC.—BY WATSON L. BISHOP, Dartmouth, N. S.

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The habitat of the Canada Grouse, commonly called in Nova Scotia the "Spruce Partridge" is, northern North America east to the Rocky Mountains, from the northern portions of New England, New York, Michigan and Minnesota to the limit of trees reaching the western coast in Alaska.

In this province it is mostly found in the spruce forests and swamp regions far from the habitation of man. It is very seldom seen in the vicinity of fields and clearings, which are the favorite resort of the Ruffed Grouse (*Bonasa umbellus*).

A few years ago I kept quite a number of these birds in a large enclosure for several years and this gave me an excellent opportunity to study their food and habits, an occupation of which I was very fond. Since that time I have had many inquiries in regard to the food and care of these birds in captivity. I am, therefore, writing this with a view to assist any who may wish to experiment in the domestication of this interesting species.

My first bird, a male, was got about the middle of September. I put him in a small pen with a black duck (*Anas obscura*) also a male; but they did not get along well together. The grouse kept continually nagging the duck about the pen, so that I had to separate them until I had built a larger enclosure (about 30 feet square). There they got along on more friendly terms. Not long after, I obtained three females. The question to be solved then was, how to feed them, which I soon learned was rather a difficult matter; for two of them sickened and died within three weeks. When I

found they were ailing, I tried every means to restore them to health but without avail. I had them replaced by others, however, as soon as I could get them. This was not long as I had offered a liberal price. I then began to study what their food supply consisted of in their wild state. I therefore carefully examined the contents of the crops of those brought me to be mounted, and found that their food consisted of the foliage of the red and white spruce, some crops containing a few buds of hachmatack or larch (*Larix americana*), and sometimes a few blades of grass.

The tops of several young spruce trees seven or eight feet long were then cut and stood up in the pen. As soon as they were in place the birds flew up in them and commenced feeding, and it was interesting to see how eagerly and adroitly they would strip the spine-like leaves from the branches. In gathering these spines from the twigs the bird makes a stroke nearly parallel with the branch on which they grow, striking outward towards the end of the limb, gathering perhaps a half a dozen leaves at a time. Then by a twisting movement of the head, the spines are partly broken and partly bitten off, leaving a small portion still in place on the twig. These movements are as rapid as those of a domestic fowl picking up corn.

These tree tops served for roosting places as well as food, and were replaced whenever needed to keep them fresh and good. In selecting trees for this purpose, the young thrifty growing ones must be got, for the birds will not eat those which are old and slow growing as the foliage is tough and hard. By pinching off the spines with the fingers it is quite easy with a little practice to select those which are most acceptable to the birds. During the winter this food was supplemented by a little bread and grain, wheat and buckwheat. Oats and barley were not relished. As the spring advanced and the spruce buds began to swell, they were eagerly eaten by the birds, and even after the new shoots had grown to a length of two or three inches the whole new growth was eaten. The cones were

also fed upon while young and tender. I lost one fine bird by eating cones after they had become too hard and woody to be digested. This seemed to cause great distress and pain. The sick bird would sit for hours on the ground with his body quite upright, and keep continually moving his neck and body from side to side. I could not understand the cause of this strange conduct until later.

After a few days in this condition, during which time he would eat nothing, he died. On examination I found a hard spruce cone which had lodged in the narrow passage before reaching the gizzard. This explained the strange position and movements of the body during the illness. He was trying to force the obstruction along and thus ease the pain. Gangrene had set in where the cone lodged and ultimately resulted in death.

I do not think this accident would have happened in a wild state as there would be a greater supply to select from and the hard cones would not have to be eaten. At this season almost any kind of tender young grass would be eaten. Later when the common grasses became tough and hard, clover and dandelions would be eaten, and these were supplied by cutting up the sod on which they grew and placing it in the pen. Grasses supplied in this way would not dry up as cut grasses. They would keep fresh and green until all was used up. Other food such as green peas and wild berries, bunch berries, and winter green particularly, were relished best. At all times in the year it is necessary to keep a good supply of fresh spruce where they can have all they want. This being one of their most natural supplies, tends to keep them in good health.

One winter, in February, a man brought me two of these birds in a small basket, just large enough to contain their bodies, with a cloth tied over the top having two holes to allow their heads to stick out. They were brought in on a slow ox team a distance of 15 miles. The two birds having been confined to so small a space and covered with a cloth became so hot that one was dead when it arrived, and the other did not

look as though it would live more than a few minutes. Its head was lying over to one side with eyes closed, and it seemed to be dying. I took it from the basket and gave it some pulp of grapes which revived it. Its body having been in such a hot place, and with no water to drink, it was dying of heat and thirst. With good care it soon recovered and became smart, and that spring laid eight beautiful eggs which I presented to Mr. J. Parker of Philadelphia.

These birds became very tame, in fact as tame as any domestic fowls, and would run to meet me at the door when I went to feed them.

The coloring of the eggs is deposited entirely on the surface and can be easily washed off when the egg is first laid. So soft is this pigment and so easily marked that the eggs will sometimes show scratches on the large end, caused by coming in contact with the coarse parts of the nesting material when being laid. It also fades if exposed to the light, so that eggs which are nest-worn or have been exposed to light for any length of time, lose much of their beauty.

The color of a fresh laid egg is almost exactly like that of the outer case of new young buds of the red and white spruce on which they feed. I often noticed that when they were fed plentifully on this food, the eggs would be more highly colored.

The birds usually lay an egg each alternate day, but sometimes there would be two days between in which the supply of pigment seemed to have been collecting to be deposited on the next egg, which is of a much deeper color than that of the normal egg.