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Snow Birds: Staying North for the Winter

Story and Photographs by Susan C. Morse

Willow ptarmigan, Ungava peninsula, Nunavik, Quebec

At the northernmost edge of our northern woodlands there is a species of bird that toughs it out in the winter and does not fly to warm weather second homes in the south. Temperatures may plunge to -50° F and high winds are a brutal fact of life up in northern Quebec’s Ungava peninsula, known today as Nunavik. Willow ptarmigan, ***Lagopus lagopus,*** is a chicken-size member of the grouse family, and is superbly adapted for winter’s hardships. This species inhabits a circumpolar range of arctic, sub-arctic, boreal forest and alpine habitats worldwide. These endearing birds can easily be observed foraging on tender leaves, twig tips, buds and whatever berries may still be available within the shelter of willow, dwarf birch and black spruce thickets. Their calls are unique and quite comical to listen to, and try to imitate. I have mastered the art of talking ptarmigan, so much so that they let me get real close where I often have the privilege of watching and photographing them. Curl the lower lip and produce the following staccato vocalizations:

“Erk…erk…erk,erk,erk,erk,erk…gobeck’,gobeck’,gobeck”. These nasal-sounding sounds are hilarious to listen to, and I have concluded that they must be bragging ***Quebec, Quebec, Quebec*** at some point!

Willow ptarmigan’s Latin name means “hare-like feet”. The legs and upper surface of ptarmigan feet are covered with feathers all year. However, by winter the soles of their feet become completely covered with feathers so that they do in fact resemble snowshoe hare feet. It turns out that these feathers contribute to an adaptive “snowshoe effect”.

Winter "hare-like" feathers have not yet grown on the sole of this ptarmigan in early fall.

A physiologist from the University of Alberta, E.O. Höen, conducted an elaborate series of experiments that enabled him to conclude that the sole foot feathers increased the bearing surface of the feet by 4 times, reducing the sinking of the feet by one half. In addition, I am convinced that the structure of the legging feathers further contributes to the flotation capability of ptarmigan on snow. Legging feather tips extending to the ground serve as a strong, but still flexible edge to the foot, comparable to the frame of a snowshoe. Interlocking feathers covering the bottom of the feet are extremely lightweight and perform like the webbing of a snowshoe's interior. The feathers also significantly reduce conductive heat loss from the foot itself. Finally, robust long claws extend beyond the feathered foot and undoubtedly provide traction when needed.

(A) Ptarmigan droppings. **(B)** White winter ptarmigan eating buds. Unpigmented white feathers contain more air spaces and hence provide more insulation. Here, a winter hardy ptarmigan is consuming buds. Each morsel was cut from the plant by the action of the bird's sharp-edged bill and a sudden twist of the head. **(C)** A ptarmigan's crop sack is proportionally quite large compared to other grouse. When full of food, continuous digestion over many hours actually generates heat while the bird is resting within its insulated snow roost. **(D)** This lovely female ptarmigan is having none of it! My imitated calls captivated her male suitor and he crowed his approval **(E)**; our cryptically colored hen, however, promptly strutted away.

Ptarmigan tracks in snow beside shrubs where bird has been foraging for buds and twig tips.

Above: **Male willow ptarmigan in willow shrub. The buds, flowers and seeds of willow species are favorite foods. This picture was taken in Denali National Park, Alaska.**

Right: **This willow ptarmigan in sub-arctic Quebec is foraging and hiding deep within a willow stand. They also feed on dwarf birch *Glandulosa*. +**

Below: **This pellet is full of willow twig tips, bud fragments, and seeds.**