

RICHARDSON'S GROUSE IN THE YELLOWSTONE PARK

BY M. P. SKINNER

The first ornithologist to visit the Yellowstone National Park was C. Hart Merriam, with the Hayden Survey of 1872. Dr. Merriam found this grouse (*Dendragapus obscurus richardsoni*) in the Teton Mountains south of the Park, but apparently did not see it within the Park itself. Two years later Theo. B. Comstock did find it in the Park, and so reported it (Comstock, 1874, p. 75). Geo. Bird Grinnell reported it again in 1876, and was the first to note that "the specimens preserved on the trip seem to be intermediate between varieties *obscurus* and *richardsoni*." During the next thirty years, other visitors to the Park observed this bird, but, as they were invariably on short trips, or interested more in other matters, it remained for Col. Wirt Robinson to be the first to note it in 1907 as breeding. At the end of this article is a bibliography of all material I can find on the Richardson's Grouse in the Yellowstone Park. Most of these items are but a line or two in length, and all of them combined, even including my own notes, would not cover much over one page of the WILSON BULLETIN.

The Richardson's Grouse, *Dendragapus obscurus richardsoni*, has no distinct terminal tail bands and is resident in the Rocky Mountains from northern Wyoming north to Canada. The Dusky Grouse, *Dendragapus obscurus obscurus*, has a terminal gray band in the tail varying from a half to three-quarters of an inch wide, and is an inhabitant of the southern Rocky Mountains south of Montana and Idaho. Here in the Yellowstone National Park, we are in the borderland occupied by both the southern and the northern forms. It is very difficult to place these Park birds under either *obscurus* or *richardsoni*, for there are birds of each form present and all degrees of gradation between them. I once found a bird dead near the Buffalo Ranch that had no band at all on the end of its tail. Twice I have seen very dark birds with only a slight amount of gray tipping their tails, so that they were more typical of the Sierra Mountain form. Another time, I found a bird so tame that I could approach close enough to determine positively that he had more than three-quarters of an inch of gray on the ends of the middle tail-feathers. At other times, I have found feathers with terminal bands more than a half inch wide. There does not seem to be any segregation of the two forms within the Park, but, so far as I know, the different forms are found in all sections. Both

obscurus and *richardsoni* are larger than Ruffed Grouse, but the Yellowstone specimens are even larger than the average.

These grouse have a fine range, for the Yellowstone National Park is a large and diversified area of 3348 square miles, lying mostly in extreme northwestern Wyoming. Although narrow strips extend over into Montana and Idaho, all my notes on these grouse were made in the portion of the Park in Wyoming. In such a section as this, including areas at different altitudes above sea-level, height above sea-level becomes an important item. The lowest point in the Yellowstone Park, at the junction of the Gardiner and Yellowstone Rivers, is 5300 feet above the sea; the highest point is six miles distant at the summit of Electric Peak, just within the northern boundary and 11,125 feet high. A large share of the Park is a lofty, rolling plateau varying in elevation from 7000 to 8500 feet altitude, but dotted here and there with isolated peaks and ranges of mountains rising to 10,500 or even 11,000 feet.

While the surrounding country is dry and comparatively rainless, such an elevated region as the Park is peculiarly adapted to attracting and catching moisture, ensuring a generous rain and snow fall, and enabling a variety of herbage and forests to grow.

The lowest elevations are treeless, except along the larger streams. Along the smaller streams, there are thickets of brush. If there is any of the Sonoran Life Zone represented in the Park, it is by very limited areas in this treeless, sage-brush-covered, open country. The Transition Zone is also comparatively limited, but it is well named. For in the Yellowstone, it is truly a "transition" from the treeless lowlands to the higher uplands where the aspens (*Populus tremuloides* Michx.) and Douglas firs (*Pseudotsuga mucronata* Raf.) make their appearance. The great bulk of the Park lies within the Canadian Zone, although an important part is Hudsonian, and is covered by forests of lodgepole (*Pinus murrayana*), limber pine (*Pinus flexilis* James), Engelmann spruce (*Picea engelmannii* Parry) and Alpine fir (*Abies lasiocarpa* Hook). But even throughout these forests there are frequent open spaces, called upland prairies and parks, and many open, grassy meadows along the numerous streams. Where the valleys are less open, the streams are apt to be bordered by dense growths of many species of low willows. A small portion of the Park lies above the last white-barked pine (*Pinus albicaulis* Engel.), at timber-line, and is consequently in the Arctic-Alpine Zone.

Generally, the Richardson's Grouse are in the Canadian or Hudsonian Zones, but I have also seen several individual birds above tim-

ber-line in the Arctic-Alpine Zone, and even a few down in the lowest parts of the Transition. Most of the nests I have located were in the Canadian or Hudsonian Zones, but occasionally one was in the coolest parts of the Transition. Normally in summer, these grouse are on the ground, or on low logs and boulders; and they live mainly in the evergreen trees while the snow covers the ground. But, when skiing through the winter forests in December and January, I have had roosting birds burst out from under snow drifts. At other times, most of these birds roost in heavy coniferous trees. If not disturbed, they may stay in a small grove of trees, and not descend to the ground for several successive days. At such times, they eat needles for food and use the snow instead of water. When in trees unalarmed, or when they alight there after a flight, they are usually on the lowest branches, or not more than half way to the top, sometimes perched with bodies parallel to the limb, or sometimes crosswise. I have never seen them on top of the foliage, and I have never seen them fly *over* the forest except just above the lowest of the trees. Richardson's Grouse live in all kinds of brush and forest from the willows as low as 5500 feet altitude, through the service-berry (*Amelanchier alnifolia* Nutt.) areas, aspen groves, Douglas firs, limber pines, lodgepole pines, spruce, and white-bark pines to the stunted spruces at timber-line (about 9500 feet). I have seen them out on the open plateaus and high meadows above timber-line, almost up to the 10,000 foot level. These timber-line birds were seen from July to October, but they apparently went down into the forests during the winter. I have seen these grouse in thick-growing lodgepole saplings where the small trees were so thick it appeared impossible for the grouse to walk or fly through them; and I have also seen them out in burned forests, especially where there were berries to be had.

While Richardson's Grouse prefer the forests, I have found them out in the sage-brush (*Artemisia tridentata* Nutt.), sometimes as much as five hundred yards from the nearest tree. Usually, they are wild in such localities, and soon fly to the nearest trees for protection; but on May 31, 1921, one was found hiding under a two-foot sage-bush in the open. I have also seen single birds in open grasslands without brush and as much as two hundred yards from the nearest tree; and once I rode my horse past one in full view in the grass and within twenty feet of me. No doubt this tameness is largely due to the fact that they are absolutely protected and have nothing to fear from man within the Park. They often come boldly about the buildings of the

little village at Mammoth, and even walk across the lawns, both in winter, and when the tourists are numerous in summertime. I have sometimes thought the birds liked the open in winter, because of the sunny warmth there. Still, they are also out in the open on the warmest of summer days.

On the ground, they have a rapid, running gait to escape danger, but they frequently "freeze" in their tracks when they think they are unseen. I see them occasionally strutting along with their tails fanned out and combs swollen, even long after the mating season. Usually they are well groomed, trim and erect, but often they appear to hide close to, or behind, the trunk of a tree.

Richardson's Grouse are not social. Even a mated pair separate as soon as the mating season is over, and the male does not later re-join his family. In fact, the indications are, that the females hide their nests and keep their families away from the males. Neither do the males associate together. The only groups of these grouse are the families of mothers and full-grown chicks.

Some Richardson's Grouse are very wild, but this seems generally to be due to a recent scare, or fright, and they are just as apt to be wild in heavy cover as they are out in the open. On the contrary, most of these protected grouse are remarkably tame. I often see them sitting in the open and watching horsemen, and even autos, pass by but a few feet away. I have even seen a tame wild grouse follow a man up a trail (October 1, 1917), and my note books are filled with such observations as: "I rode my saddle-horse past a grouse in plain sight and only ten feet away" (August 14, 1922). Even when a grouse flies, it may go "only a hundred feet," or be "loth to fly more than a few feet," or be "so tame he only flies a few feet when I ride past." Even a mother bird with young sat quiet and unobserved until "one chick flushed from under my horse's feet." A mother and eight chicks seen on June 27, 1924, allowed an auto to dash by within five feet. But when they do spring up in alarm, Richardson's Grouse generally fly up into a fir, spruce, or pine to a limb not more than twelve to twenty feet above, sometimes perching there nervously and sometimes in absolute quietness.

Although not here hunted by man, these grouse have plenty of other enemies such as wolves, coyotes, mink, weasels and all the other predaceous fur-bearers, as well as the Duck Hawks, Coopers' Hawks and Western Horned Owls. The Big Western Red-tailed and Swain-

son's Hawks do not bother the grouse even when they are small. I remember once watching a red-tail circling over head. I could not see what it was hunting, but apparently it was not Richardson's Grouse, for almost at the same time an undisturbed grouse and seven little fluffy youngsters were noted in the grass under the circling hawk. Soon, the mother grouse flew up into a small sapling and from there clucked loudly to her brood, while the little grouse tried their best to fly up to her, one at a time, on very shaky little wings. Sometimes I see a Richardson's Grouse with many tail-feathers missing, as if it had just escaped an enemy by the sacrifice of a few feathers. They rise suddenly from the ground with a thunderous racket, but usually fly quietly out of a tree. Often they sail away from a tree branch and off down a mountain slope without beating a wing. If they alight on the ground after such an alarm, they usually walk a short distance immediately afterward. Once while eating lunch, I saw a flock of grouse fly across a small pond rather than go around the end. Like other grouse, these birds are apt to fly one after another rather than all together as Bob-whites do.

Neither the Richardson's Grouse nor the Gray Ruffed Grouse (*Bonasa umbellus umbelloides*) are very abundant here, for the enemies just enumerated also thrive under the protection given to all wild life. The Richardson's Grouse are resident birds with only a limited migration down the mountains in the autumn when the heavy snows fall. On the other hand, they are great wanderers throughout their range in the Park, often making unexplained journeys on foot and by short flights, for miles, at all seasons, except when encumbered by young birds.

Their food consists largely of berries, such as bear berries (*Arctostaphylos uva-ursi* L.), huckleberries (*Vaccinium scorparium* Leiberg), high bush blueberries (*Vaccinium membranaceum* Dougl.), service-berries (*Amelanchier alnifolia* Nutt.), false buffalo berries (*Shepherdia canadensis* L.), raspberries (*Rubus strigosus* Michx.), gooseberries (*Ribes saxosum* Hook and *Ribes parvulum* Gray), and strawberries (*Fragaria americana* Porter). In addition they eat many insects, especially grasshoppers. When other food becomes scarce they eat fir, pine, and spruce needles. On July 26, 1921, while I was seated quietly at lunch, a mother grouse surrounded by her brood of seven half-grown young, walked past me. They moved along in open order with the mother in the middle; at times a chick would stop to eat a raspberry, or to catch a small grasshopper, and then run hard to catch up with the rest. I do not find the Richardson's Grouse to

be as fond of dust baths as the Ruffed Grouse are. Occasionally they resort to the roads for dust and gravel, but not often. On the other hand, *richardsoni* likes to take sun baths.

These birds have a peculiar booming call, often heard in the spring. When the air is still, or early in the morning, this sound may carry quite a distance. Richardson's Grouse has no ruff, but it does have a naked sac on each side of the neck that is extended and displayed during the courting. Courting is done in April by the male birds, and at such times they seem absolutely indifferent to danger and allow me to approach very closely. A courting male spreads his dark tail in a big fan at right angles with, and over, his back; he droops his wings until they trail on the ground; he swells out the naked orange-red gular sacs in the center of, and vividly contrasted with large rosettes of white feathers reversed on the sides of his neck; his head is drawn back until the neck seems to disappear entirely; and two small brilliant yellow sacs, one over each eye, are expanded to their fullest extent. In this posture, the male struts and parades in circles; he nods his head jerkily up and down half a dozen times; then runs quickly four or five steps to one side or the other, with his head and neck held stiffly out near the ground. None of the birds I saw doing this, uttered a sound *at the time*. After such a display, the male bird continues strutting and parading, but with gradually diminishing force and energy. These displays take place with the bird on the ground, or on low rocky platforms. Sometimes these ceremonies are in the immediate presence of the females, and sometimes actually out of sight, although a female is almost always in the neighborhood.

Nesting takes place in May, and the nests are usually placed at the foot of forest trees at any altitude from 6300 to 8000 feet, and perhaps even above the last named height. The Richardson's nests are shallow depressions lined with grass, pine needles and leaves, and contain from seven to ten creamy eggs speckled and blotched with brown. Fresh eggs are laid from May 10 until almost the first of July in belated cases. The little chicks hatch from June 15 to July 15, and can run about quite nimbly as soon as they are out of the shell. These youngsters are astonishingly expert at hiding, and they can fly when very small; but for unknown reasons and even after making allowance for all known enemies, the mortality of young grouse is unusually high in the Yellowstone. Yet, their mothers take good care of them, although the fathers pay no attention whatever to their families. I remember watching one brood in late June beside a main road. The mother grouse permitted autos to dash by within a

few feet, but when she finally moved off, she did so very alertly. So solicitous was she, that she did not feed, but spent all her time watching and guarding her brood of eight chicks that were less than a week old. These tiny balls of down were very quick and darted here and there over the stony ground, and in and out amid the sage and tufts of grass.

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