

TRANSACTIONS
OF THE
Nova Scotian Institute of Science

SESSIONS OF 1922-1923

(VOL. XVI PART 1)

ACCIDENTAL OCCURENCE IN NOVA SCOTIA OF THE ROCK PTARMIGAN (*Lagopus rupestris welchi* or *L. rupestris rupestris*); WITH REMARKS ON THE STATUS OF *L. welchi* AS A SPECIFIC NAME.—BY HARRY PIERS, Curator of the Provincial Museum of Nova Scotia, Halifax.

(Read 8 January, 1923)

Hitherto none of the Ptarmigans has ever been taken in Nova Scotia, that province being far to the south of their normal range. William Brewster found the stout-billed Willow Ptarmigan (*Lagopus lagopus lagopus*, Linn.), with a chick about ten days old, on the 10th July, 1881, near Fox Bay (lat. 49° 12'), Anticosti Island, where it is reported to be plentiful,* that island being the most southerly extension of its normal range in easternmost Canada. It has occurred accidentally at Bangor, Maine, in Essex County, Massachusetts, and in northern New York, and once in New Brunswick. This Ptarmigan is more southern in its range and less elevated in its habitat than the Rock Ptarmigan (*L. rupestris rupestris*, Gmelin) and therefore more likely to occur here, with the exception perhaps of the insular races of each of these two species, Allen's Ptarmigan (*L. lagopus alleni*, Stejneger) and Welch's Ptarmigan (*L. welchi*, Brewster), both of which are confined to Newfoundland.

Specimen taken at Elmsdale, Nova Scotia, 1922.—On 20th April, 1922, Malcolm Lucas, a twelve-year-old lad, who lives on his father's, C. A. Lucas, farm on the northwest side of the

* Brewster, W., Birds observed during a Summer Cruise on Gulf of St. Lawrence, Proc. Bost. Soc. Nat. Hist., 22, p. 383, 1883.

post-road between Elmsdale and Enfield, $\frac{1}{8}$ mile southwest of Elmsdale, Hants County, in the interior of Nova Scotia, while playing in a field at the back of their house, saw a strange white bird alight in the field which adjoins woodland. The bird began to feed on the remains of the preceding year's buckwheat. He ran into the house and got a .22 rifle, with a bullet from which he wounded the bird and then caught it, but it died soon afterwards. The railway trackmen of the locality also reported having seen the strange bird the same day, but they thought it was a white dove or pigeon.

Description.—Such a bird had never been seen before, and the specimen was brought to the Provincial Museum on May 1st, and was then in excellent condition (Museum Accession No. 5090). It was an adult male Ptarmigan in full winter plumage. The general colour was snowy white; tail very dark fuscous (very nearly black), very narrowly tipped with white, the broadest part of the white tips, .08 inch, being on the two middle feathers; middle line of shafts of primaries dark fuscous (except toward tip); transocular or loreal stripe and bill, black; bare skin above eye, red; feet soiled white.

The measurements, very carefully made, were: length, 15.00 inches; wing, 7.40; tail, 4.45; tarsus, 1.29; bill from nostril, .38; depth of bill at nostril, .32; weight, 15 1-2 ozs. The feet and plumage did not show the slightest evidence that the bird had ever been in captivity; and the bird was not at all in a starved or emaciated condition, thereby showing that it had fared well for food.

Determination.—The dimensions of the bill show conclusively that it is not one of the varieties of the stout-billed Willow Ptarmigan (*L. lagopus lagopus*), but that it is one of the races of the Rock Ptarmigan (*L. rupestris rupestris*, *L. rupestris reinhardi*, or what is known as *L. welchi*).

In measurements, these three last-mentioned geographic races agree, and they are structurally the same, and it is also impossible to distinguish them apart by colour when in the white winter plumage. It is claimed, however, that they may be separated by certain colour differences when in the summer

plumage, if we agree that the published descriptions have been founded upon sufficiently abundant material, for in a bird which shows so much variation in individual specimens, the difference in all cases may not be quite as great as it appears on paper. Regarding the winter plumage, however, it is quite clear that even specialists such as Dr. Jonathan Dwight, are unable to separate the members of the Rock Ptarmigan group when in that dress.

It being, therefore, granted that these three races when in white plumage cannot be separated by any known structural or colour criterion, we are necessarily forced to attempt to approximately identify this specimen by considering the geographic range of the three races and their proneness to migrate, and thus arrive at some idea as to what one was most likely to have found its way by chance so far south of its normal range.

Ranges of the Rock Ptarmigans.—The typical Rock Ptarmigan, *L. rupestris rupestris* (Gmelin, 1788), A.O.U. 302, occurs in Arctic America, breeding from Melville Island in the west to Melville Peninsula in the east and south on the Barren Grounds from Alaska in the west to Ungava in the east, and also on alpine summits south to central Yukon. It winters south in the mountains of British Columbia, and even it is said as far as Vancouver Island, as well as to southern Mackenzie (about lat. 63°) in the west; and to southern Ungava and Hamilton Inlet (lat. 54°), Labrador, in the east. In normal seasons it comes south on Hudson Bay to lat. 58°, and in some seasons down to 55° at the entrance of James Bay. It thus has a southward movement in winter of perhaps about four hundred miles. It is therefore distinctly a migratory race, and hence perhaps liable to occasionally get out of its normal range at the times of the vernal and autumnal movements. The nearest point that it normally approaches Nova Scotia is Hamilton Inlet, Labrador, which is about 700 miles northward of Elmsdale, Nova Scotia.

Reinhardt's Ptarmigan, *L. rupestris reinhardi* (Brehm, 1823), A.O.U. 302a, the second member of the group, is the most northeasterly geographic race. It occurs in Greenland

(the only form there), and on the western side of Baffin Bay and Davis Strait, viz. on Ellismere Land, western shores of Cumberland Sound, Melville Peninsula (*vide* Arctic Manual, 1875), northern Ungava, and northern extremity of Labrador, probably nearly as far southeastward as about Okkak in Labrador. This race, therefore, replaces the preceding from about Melville Peninsula or Baffin Land. It does not occur nearer to Nova Scotia than the district somewhat to the north of Okkak, Labrador, which is about 940 miles north of this province.

Welch's Ptarmigan, *L. welchi*, Brewster, 1885, A.O.U. 303, is an insular geographic race which is only found on the interior (?) elevated parts of the island of Newfoundland, where it occurs with a race of the Willow Ptarmigan, known as Allen's Ptarmigan (*L. lagopus alleni*). Welch's bird may be generally considered as non-migratory. Cape Ray, the nearest point of Newfoundland, is only about 275 miles northeast of Elmsdale, Nova Scotia.

Our specimen must be either Welch's or the Rock Ptarmigan.

The northern range of Reinhardt's Ptarmigan should dismiss it from mind in relation with the Elmsdale specimen, as it would have had to cover at least 940 miles in coming here. Therefore I think the latter must be referred either to Welch's (*L. welchi*) or to the typical Rock Ptarmigan (*L. rupestris rupestris*).

The question of identity as affected by distance from normal southern range.—We will see if the matter may be still further narrowed down. As we have found that the nearest southern winter range of the typical Rock Ptarmigan is Hamilton Inlet, lat. 54°, about 700 miles to the north of us, it is far more probable, when the traversed distance is considered, that our specimen is Welch's Ptarmigan of Newfoundland, which island is only about 275 miles northeast of the place where the bird was taken, and it would only have had to come one-third the distance the Rock Ptarmigan would have to come from Hamilton Inlet. Cabot Strait, which separates Newfoundland from Cape North, Cape Breton Island, is only about 64 miles wide.

Even a non-migratory bird like Welch's Ptarmigan might easily be caught in a northeasterly gale and so blown across that narrow strait to Cape Breton, from whence it could have wandered southwestward, overland, to Elmsdale, a further land journey of 210 miles. It is also probable that it could have been borne in this direction by the drift-ice of spring setting southward; in fact this is a very likely explanation of its transport hither. Judged by the criterion of distance alone, one would readily decide that our specimen must be Welch's Ptarmigan of Newfoundland.

The question of identity as affected by migratory and non-migratory habits of the two races.—Welch's Ptarmigan is practically a non-migratory bird, confined to a large island, and one would not expect it to have any natural tendency to proceed beyond its normal limits; unless, as we have said, it happened to be blown off land by a heavy gale, or was carried south on an ice-berg. The true Rock Ptarmigan, on the other hand, is a migratory bird, which from its breeding grounds on Melville Peninsula regularly migrates southward in Eastern Canada, in autumn, as far as lat. 58°, or even 55° on Hudson Bay, and to Hamilton Inlet. From thence, in the spring, it returns northward to the Barren Grounds in the far north. The southern migration, consisting of thousands of birds, passes Chesterfield Inlet, northwestern part of Hudson Bay, early in October, and passes northward again in May (*vide* A. P. Low).

This migratory characteristic, might tend to cause an individual, at the time of the northward spring movement, to take some erratic course of flight, perhaps assisted at first by a northerly gale which would drive it far out of its normal course; and thus separated from its companions, it might proceed overland some 750 miles, via Quebec and New Brunswick, into Nova Scotia, in the latter part of April. Taking migratory instinct as the basis of probability in the case, it would seem more likely that our specimen would be the true Rock Ptarmigan (*L. rupestris rupestris*), which is endowed with instinct and power for extensive migratory movements, which Welch's Ptarmigan is not.

Conclusion.—We thus find that Welch's Ptarmigan would have had only one-third the distance to cover that the Rock Ptarmigan would have had; but the former lacks the strong migratory instinct of the latter. Personally, I feel strongly inclined to believe that our Elmsdale specimen came the much shorter distance, from Newfoundland, having first been blown out to sea or else transported on ice as before suggested, and that therefore it should be recognized as Welch's Ptarmigan, the so-called *Lagopus welchi* or *Lagopus rupestris welchi* as no doubt it should be properly called. It is to be regretted that the question of identity will probably never be more closely ascertained.

Welch's Ptarmigan probably a geographical race of the Rock Ptarmigan.—As there is no known difference in form, structure or measurements between Welch's and the Rock Ptarmigan, the only difference being the subsidiary one of the colour in the summer plumage, the winter plumages being indistinguishable apart, it is extremely probable that *L. welchi* is not a valid separate species, but is merely a non-migratory, insular geographical race of *L. rupestris*, differing only in seasonal colour.

Brewster, when first describing *welchi* in the "Auk," vol. 2, April, 1885, pp. 193-195, says: "as there is good evidence that their habitat is strictly isolated, intergradation with any of their allies is so improbable that I have thought it best to describe the bird as a full species, which I name after the collector of my type." It is confined to the rocky hills and mountains of parts of Newfoundland, while the stouter-billed Allen's Ptarmigan (*L. lagopus alleni*, Stejn.) occupies the rocky barrens.

The variation of colouring in the Ptarmigan generally, is great, even among individuals; and until a more extensive series of *L. welchi* has been collected and compared with a large number of other related forms, one naturally feels cautious in fully accepting it as a separate species, even if it has been so generally considered in America since 1885.

W. R. Ogilvie-Grant, in his Catalogue of Game Birds in the British Museum (Catalogue of Birds in British Museum,

vol. 22), Lond., 1893, p. 50, after referring to *reinhardi*, *welchi*, and other related forms, under the head of *L. rupestris*, says: "of the greater number of these supposed different species, we have seen a dozen examples, and of the rest there are excellent figures and descriptions. After going over all the facts very carefully and allowing for very slight individual differences and climatic variations, we cannot see the slightest object to be gained in cataloguing under endless names what are clearly only forms of one species, especially as *L. rupestris*, taken as a whole, appears to be barely specifically distinct from *L. mutus* [of Europe]."

The scholarly Dr. Coues, who chafed under much of the "hair-splitting" tendencies of American ornithologists of his time, says of *Lagopus* in his Key to North American Birds, 5th ed., 1903, vol. 2, p. 743: "Specific characters founded upon colour alone are peculiarly fallacious in this genus. We have three well known good species, one of them with several alleged sub-species; I record all these, also the three other North American forms, without vouching for any, excepting *L. lagopus*, *L. rupestris*, and *L. leucurus*."

I understand that P. A. Taverner, naturalist of the Geological Survey of Canada, is inclined to somewhat agree with Ogilvie-Grant and Coues, being skeptical as to whether *welchi* should be specifically separated from *rupestris*.

It seems to me time that *welchi* should be considered untenable as a separate species, and that its very close relationship with *rupestris*, from which it cannot be separated in winter plumage, should at least relegate it to sub-specific rank as at present a mere geographical, non-migratory, insular race, with a more southern habitat, of that species, under the varietal name *Lagopus rupestris welchi*, as has already been done by Blasius in 1862 with Brehm's *Tetrao reinhardi* of 1823. This seems to be the more necessary, when we have seen that some systematists even go so far as to think that *L. rupestris*, taken as a group, is barely specifically distinct from the European *L. mutus*.

On the other hand it may be said that as long as we know so little about the fundamentals of specificity, the difference between species must be the present conventional and necessarily somewhat arbitrary one of non-intergradation; and until intergradation has been actually demonstrated, we have to give the two forms full specific distinction no matter how slight the difference may be, and even if it leads us into what seems to be an obvious error.

We can only hope that someone will soon undertake to collect a sufficient number of specimens of the so-called *L. welchi* and of *L. rupestris*, to be in a position to definitely settle the specific or sub-specific status of the former. Careful comparison of many specimens would doubtless demonstrate that it intergrades with the mainland phase through individual variation at least.

Provincial Museum, Halifax, N. S.,
5th January, 1923.