

EASTERN RACES OF THE RUFFED GROUSE

BY W. E. CLYDE TODD

THE arrangement of the races of the Ruffed Grouse (*Bonasa umbellus*) as given in the 1931 edition of the American Ornithologists' Union 'Check-list of North American Birds' is admittedly far from acceptable and requires readjustment. Because of the wide range of individual variation that obtains in this species, an adequate revision would have to be based on a large and representative series of specimens. The present study, therefore, has been restricted mainly to a discussion of the status of the eastern races of the species, since they are the ones best represented in the collection of the Carnegie Museum.

Dichromatism is well marked in the Ruffed Grouse, but the color phases tend to have a geographical significance—at least in the East. Northern birds in general exhibit the gray phase; southern birds, the rufous. Both phases of plumage, however, are subject to a curious variation which has mostly escaped notice in the literature, and in which the neck-ruffs and the subterminal tail band are dark brown instead of black. The range of variation in exact color pattern is so great that it is well-nigh impossible to frame a detailed description that would apply collectively to all individuals. Racial characters are found in general color tones (hard to describe but obvious on comparison), in intensity of markings, and in the amount of buffy suffusion on the under parts. Sexual variation must also be considered; it is evident in the relatively shorter tails and generally smaller ruffs of the females (cf. Smyth, Proc. Pennsylvania Acad. Sci., 13: 62-67, 1939). Caution is required in dealing with a group showing such variable characteristics.

All but three of forty-seven adult examples of *Bonasa umbellus umbellus* in the Carnegie Museum come from western Pennsylvania. Nearly all were shot in the fall months, and I cannot be sure just which are birds of the year. The brown-tailed variety is well exemplified in a specimen from Franklinville, Pennsylvania (no. 117,681), and a few specimens from other places tend to share its characters. Another variant is a specimen from Brockwayville, Pennsylvania (no. 114,645), in which the color of the tail above the subterminal band is pale rufescent buff, narrowly and irregularly barred with paler buff and dusky gray.

The tails of several specimens in a series of nineteen from northern Pennsylvania (McKean and Cameron counties) are more or less shaded with gray, as is that of a specimen from Brockport, New York. But I would not on this account refer these birds to *togata*, since in other respects they are indistinguishable from specimens from the mountains and from the eastern part of Pennsylvania—the latter the type locality of *Tetrao umbellus* Linnaeus, 1766 (*ex* Edwards, 1758). I cannot follow Dr. Alexander Wetmore (Proc. U. S. Nat. Mus., 84: 406, 1937), therefore, in identifying birds from the mountains of West Virginia as *togata*, since such an ascription would involve a discontinuous distribution for that form. I have examined his material, and although the breeding birds that he describes from West Virginia differ, as he claims, from fall and winter birds from the lower Hudson Valley, I would not call them *togata*. (The two birds from Johnstown, Pennsylvania, to which he alludes, are not unquestionably from that locality, according to the museum records.)

Tetrao togata also dates from Linnaeus, 1766, and is based on "La grosse Gelinote de Canada," *Bonasa major Canadensis* of Brisson (Ornithologie, 1: 207, 1760). The type locality, as in analogous cases, must be the lower St. Lawrence Valley, probably the City of Quebec. The original description clearly indicates a gray-tinged, gray-tailed bird. The name has been used for the Ruffed Grouse population in Canada as far west as the Rocky Mountains; but, in my opinion, its true application is actually more restricted. I have examined a series of over thirty specimens of this form from the Quebec region, and find that it exhibits a darker, more grayish, general coloration than does a series of typical *umbellus*. A few of the Quebec birds have rufous tails, but the majority are gray-tailed.

Upon comparing this series of *togata* with topotypes of *Bonasa umbellus thayeri* Bangs (Auk, 29: 378, 1912), I find the two to be virtually identical. When Outram Bangs described this supposed new race he had only two specimens from Quebec. These he compared with selected specimens that he had shot in Nova Scotia. I have examined the two Quebec specimens that he used, and I cannot see that they are essentially different from the Nova Scotia series (including the type of *thayeri*). All the New Brunswick specimens that I have seen seem to be the same as those from Nova Scotia; hence I have no alternative but to regard *thayeri* as a synonym of *togata*.

The West Virginia examples of grouse discussed by Dr. Wetmore are not comparable for season with our series, but I have recently had the privilege of examining seven specimens collected by Mr. Karl

Haller in West Virginia. They were shot in October, and are strictly comparable with our series from Pennsylvania as well as with the Quebec birds, but are distinct from both. They obviously represent a mountain race, which I propose to call

***Bonasa umbellus monticola* subsp. nov.**

Appalachian Ruffed Grouse

Type, no. 984, Collection Karl W. Haller; adult male; two and one-half miles east of Cheat Bridge, Randolph County, West Virginia (4000 feet elevation), October 10, 1939; Karl W. Haller.

Subspecific characters.—Similar to *Bonasa umbellus umbellus* (Linnaeus), but general coloration darker; the under parts more regularly and more heavily barred and more strongly suffused with buff.

Range.—The Appalachian Mountain region (presumably) from West Virginia southward, but the exact latitudinal and altitudinal limits are not yet known.

Remarks.—All the colors of the upper parts are decidedly deeper in tone than those of Pennsylvania birds. There is more black on the crown, back, wings, and upper tail-coverts; even the ruffs are blacker. The rufescent shades are replaced by brownish tones—Prout's brown instead of russet or cinnamon brown—although there is, to be sure, considerable individual variation in both series. The rufous of the tail averages darker. The under parts are not only more richly suffused with buff, but are also more uniformly and more heavily barred with brown, and this color is darker (almost black on the flanks). The dark bars on the under surface of the tail are likewise more conspicuous, and the black subterminal band is a little wider.

Compared with a series of topotypical *togata*, the new race differs in several important respects: the color of the tail is rufous instead of gray, as in most examples of *togata*; the general tone of the upper parts is brownish in the West Virginia bird but grayish in *togata*, although the dark markings are equally prominent in each; the barring on the under parts appears to be about the same in both races, but the buffy wash, which is strongly marked in *monticola*, is largely replaced by a grayish suffusion in *togata*. In short, the new form is readily distinguishable from true *umbellus* as well as from *togata*, and merits recognition as a subspecies. Whether it is confined to the higher elevations of the Appalachians, or ranges also across the forested valleys of this region, remains to be ascertained.

The Ruffed Grouse of northern Ontario and adjacent parts of Quebec is represented in the Carnegie Museum by an adequate series of specimens (spring and fall birds). Following the 'Check-list' arrangement, I had provisionally referred these to *togata*, with the

description of which they seemed to agree. Upon comparing them with toptotypical specimens of this form, however, I discovered significant and fairly constant differences in the general coloration. The proper name for the Ruffed Grouse of the James Bay region is thus in question. If it is not *togata*, could it be *umbelloides*? The solution of this problem hinges on the application of the latter name and leads to a discussion of the western races of this species, which are likewise imperfectly understood. Because my material from the West is so scant, however, I approach this problem with some misgivings.

Bonasa umbellus sabini (Douglas) seems to be the only well differentiated western race; it is characterized by its generally dark, rufous coloration. The recently described *B. umbellus brunnescens* Conover (Condor, 37: 204, 1935) I have not examined, but its relationships appear to be with *sabini*. More uncertainty attaches to the determination of Ruffed Grouse from the interior of British Columbia. Major Allan Brooks, in transmitting a small series for inspection, writes me as follows: "Few workers realize that British Columbia is the most complicated area climatically in North America; the wet and dry areas run north and south, and there are about five of these belts. Grouse cannot be arranged like passerine birds; they are influenced by precipitation and even by local conditions—density of forest, slope exposure, etc. You can get almost any type of *Bonasa* in British Columbia."

The original description of *Tetrao umbelloides* by Douglas (Trans. Linn. Soc. London, 16 (1): 148, 1829) is of little help in determining the proper application of the name. The name was given only provisionally to a "supposed variety" found "in the valleys of the Rocky Mountains, 54° north latitude, and a few miles northwards near the sources of Peace river." Comparing this supposedly new form with birds from New York, Pennsylvania, and the "chain of lakes in Upper Canada," he found, "first, that the western bird is constantly one-third smaller, of a very light speckled mixed gray, having little of that rusty colour so conspicuous in the southern bird:—secondly, the ruffle consists invariably of only 20 feathers, these short, black, and with but little azure glossiness; the crest-feathers are few and short." The description is not diagnostic, and the alleged discrepancy in size is contrary to fact (Douglas may have handled only young birds).

The type locality is likewise indefinite—a circumstance that gains significance in view of Major Brooks's statement, above quoted. Since, however, some decision is desirable, I propose to consider the Ruffed

Grouse taken at Henry House, Alberta, as virtual topotypes of *umbelloides*. Six specimens from this locality, collected by Mr. Joseph H. Riley in the fall of 1911 (Canadian Alpine Journ., special no., 57, 1912), are now before me. They are the same examples that are mentioned by Dr. Joseph Grinnell in the description of the race *yukonensis* (Condor, 18: 166, 1916). In the dark coloration of the upper parts and in the deep buffy tone of the under parts, they agree with skins from northern British Columbia (Bear Lake, Hazelton, and Dease River). Our single adult male from southern British Columbia (no. 115,752, Leona Lake, above Barriere), on the contrary, is closely matched by a specimen in comparable plumage from Fort McMurray, on the Athabaska River, that has been identified by Mr. J. L. Peters as *yukonensis*. Evidently, the status, relationships, and distribution of the races *umbelloides* and *yukonensis* require elucidation.

Dr. Grinnell, in the paper above cited, considers seven skins of Ruffed Grouse from Edmonton, Alberta, to be the same as those from Henry House. After examining the same specimens, I cannot agree with this dictum. The differences between the two series are difficult to formulate, although they may be clearly seen. In general, the upper parts of the Edmonton birds are more suffused with rufous and buffy tints; the grays are paler; and the wings are browner, less grayish. The under parts, moreover, are relatively whiter. Birds from the Minneapolis region of eastern Minnesota agree with the Edmonton series. This fact suggests an extensive range for a form that seems to be worthy of a name, and which I propose to call

***Bonasa umbellus medianus* subsp. nov.**

Minnesota Ruffed Grouse

Type, no. 20,542, Collection Carnegie Museum; adult male; Excelsior, Minnesota, October 24, 1886; Albert Lano.

Subspecific characters.—Similar to *Bonasa umbellus umbelloides* (Douglas), but the upper parts are less grayish, more rufescent, and the under parts are more albescent and less heavily barred.

Range.—Transition Life Zone from Alberta to southeastern Minnesota (and probably farther east?).

Remarks.—The exact allocation of the Ruffed Grouse of Minnesota has long been in question. Dr. T. S. Roberts (Birds of Minnesota, 1: 376, 1932) includes the races *umbellus* and *togata* in his book on the birds of that State but adds that both the gray and the rufous phases occur there—often together. He leaves the impression, at any rate, that birds of both phases are indiscriminately distributed. With

only a few specimens at my command, I am unable to discuss the matter to advantage, but I venture to suggest that the gray phase will be found in greater numbers in the northern part of the State, and the rufous phase, in the southern. Three of four males from the Minneapolis region have gray tails, while one has a rufous tail with a broad gray band above the subterminal black band. The latter individual is doubtless a variant in the direction of typical *umbellus*. Ruffed Grouse from the Canadian Life Zone of northern Minnesota are, however, clearly intergrades between *medianus* and the form about to be described.

Returning now to the Ruffed Grouse of the region south of James Bay, I can state definitely that it is not *umbelloides* as I have defined and restricted that form, nor is it the same as the form just described as *medianus*. It deserves segregation as a subspecies and may be called

***Bonasa umbellus canescens* subsp. nov.**

Northern Ruffed Grouse

Type, no. 94,237, Collection Carnegie Museum; adult male; Abitibi River, latitude 50° 53' N., northern Ontario, October 3, 1923; George M. Sutton.

Subspecific characters.—Similar to *Bonasa umbellus togata* (Linnaeus), but the upper parts in general are grayer, less brownish, and thus lighter in tone, particularly on the secondaries, scapulars, rump, and upper tail-coverts. The under parts are also lighter-colored on an average, and the dark barring is less intense. Similar to *B. umbellus medianus* nobis, but the upper parts are generally darker, more grayish and less rufescent, and the tail is obviously darker gray; the buff of the under parts as a rule is not so rich and deep. The general coloration is lighter than in *B. umbellus umbelloides* (Douglas).

Range.—From Labrador (?) west to James Bay and thence to eastern Manitoba.

Remarks.—A specimen from Shoal Lake, Manitoba (no. 20,843, Collection Carnegie Museum), agrees best with this form, but in its lighter-colored tail it more nearly resembles *medianus*. Specimens from the Canadian Life Zone of Minnesota and southern Manitoba are also intermediate between *canescens* and *medianus*, as already said. Intergradation between these two forms seems to take place in this general region. Specimens from the Canadian Labrador are clearly referable to *canescens* and not to *togata*, although intergradation with the latter must occur somewhere in the region north of the lower St. Lawrence River. It is by no means certain whether or where *canescens* intergrades directly with *umbellus*; the limits of the range of *canescens* to the southward remain to be determined. Like typical *umbellus*, *canescens* has a brown-ruffed, brown-banded phase that is independent of age, sex, or season. This new race is, however, definitely a gray bird, and in it the gray color of the tail is a more

constant character than it is in any other of the Canadian races. Thirty-two specimens of *canescens* have been examined; most of them come from northern Ontario and adjacent parts of Quebec.

Comparative characters of the several forms discussed in this paper are as follows:

Bonasa umbellus umbellus.—A decidedly rufous bird, the under parts showing relatively lighter barring and little buffy wash. Tail rufous, lightly barred.

Bonasa umbellus monticola.—General coloration rufous, but darker than in *umbellus*; barring and buffy wash on the under parts more pronounced; tail rufous, generally darker than in *umbellus*.

Bonasa umbellus togata.—A gray-brown bird, with the tail usually gray, but sometimes rufous, and always heavily barred and mottled with dusky gray. The under parts also are heavily barred.

Bonasa umbellus canescens.—A grayer bird with a gray tail (rarely inclining to rufous) and with the under parts not so strongly barred.

Bonasa umbellus medianus.—The palest race of all; the upper parts more rufescent than in either *canescens* or *umbelloides*; tail normally gray (lighter-colored than in any of the other races) but sometimes rufous; dark barring on the under parts reduced, producing a whiter appearance.

Bonasa umbellus umbelloides.—Resembles *togata* in the dark tone of its general coloration and is not invariably distinguishable therefrom (cf. A. O. U. 'Check-list,' ed. 3, 140, 1910, under *B. u. togata*), but the breast and under parts usually show more rufous and buffy suffusion; the barring is lighter brown.

Bonasa umbellus yukonensis.—A decidedly gray bird, heavily and uniformly barred below with dusky gray. General coloration paler and ashier than in *umbelloides*. Tail gray oftener than rufous.

Bonasa umbellus sabini.—Easily distinguishable from all the other races by the deep rufous of its general coloration.

In this preliminary paper a number of problems concerning distribution and systematics are necessarily left unsettled; they will doubtless be solved in time, as the necessary material accumulates. Good series are essential for an understanding of the variations other than geographic. Racial characters in this species are average characters; they do not hold true for every specimen.

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Carnegie Museum
Pittsburgh, Pennsylvania