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GEOGRAPHIC VARIATION IN NEWFOUNDLAND BIRDS

By Thomas D. Burleigh and Harold S. Peters

A study of the birds of Newfoundland was undertaken by the authors as a cooperative investigation by the Department of Natural Resources of Newfoundland and the U. S. Fish and Wildlife Service. Field observations were begun by Peters in 1937, but it was not until 1942 that intensive collecting of specimens started. The ultimate objective is to be a comprehensive book on the birds of the country and this technical report is for the purpose of clearing up some of the nomenclatural difficulties and thus prepare the way for the book which is to be written in a more popular style.

Each year since 1942 from 4 to 6 weeks were spent in Newfoundland, the month selected depending upon the immediate objective. The preliminary field work was carried on during the late spring and early summer, the breeding birds being considered of primary importance. In 1944, and again in 1946, the fall migration was given consideration, and in 1947 the winter bird life and the spring migration were the objectives of special field trips. Throughout this field work specimens were taken daily of the various species encountered, and gradually a collection was built up that contained representative series of the characteristic birds of the country. At the conclusion of our study, approximately 2,000 specimens were available for examination, and the notes that follow summarize the information obtained from a critical comparison of this material with specimens in the U. S. National Museum and that borrowed from other museums in the United States and Canada.

We wish to express our appreciation to Dr. Alexander Wetmore, Secretary of the Smithsonian Institution, and to Dr. John W. Aldrich, of the Fish and Wildlife Service, for their assistance in determining the validity of the new races described herein. For the loan of specimens for comparison, we are indebted to the Cleveland Museum of Natural History, the Carnegie Museum, the Museum of Comparative Zoology, the Charleston Museum, the Royal Ontario Museum of Zoology, and Cornell University. The fine series of Ontario specimens in the Royal Ontario Museum proved especially valuable for comparison with our Newfoundland material, and we wish to acknowledge our thanks to Mr. L. L. Snyder, Assistant Director of the Museum, for placing his collections at our disposal. Finally, we wish to express our appreciation to the Department of Natural Resources, at St. Johns, Newfoundland, for the unfailing cooperation received throughout the course of our field work. Our

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special thanks are due Harry W. Walters, Chief Game Warden of the Department, without whose help our activities would have been seriously handicapped. It was through his efforts that we were able to cover the country as thoroughly as we did, and establish the contacts that were of such material benefit.

Newfoundland covers a relatively small area, roughly comparable in size to the state of Virginia and, as one might surmise from its geographical position, has a relatively small number of species indigenous to the country. The total list, based on our observations and those of others who have recorded the results of their field work, comprises about 180 species. Possibly 30 of these are merely of casual or accidental occurrence. From the standpoint of individuals, however, the story is quite different. With few exceptions, whether the species is resident or is present only during the summer months, the characteristic bird life of Newfoundland is, for the most part, plentiful and of general distribution. In the case of a few species, such as the song sparrow and the bronzed grackle, it is probable that only in recent years have they come into the country from the adjacent mainland of Canada, for at present they are confined to the extreme southwestern corner of the country. On the other hand, the robin, the black-poll warbler, and fox sparrow, to mention but a few, occur wherever there is a suitable habitat, and can be found practically everywhere.

Isolation has been considered an important factor in modifying, locally, the genetic characters of a species that occurs over a wide range. The bird life of Newfoundland might well serve as an outstanding example of this phenomenon. Despite the limited fauna, 12 sub-species have previously been described by other workers, and a critical examination of the material now on hand reveals the fact that 8 additional races are worthy of recognition and naming.

Newfoundland birds like those in Labrador show a definite tendency to be noticeably darker than individuals of the same species from the interior of the North American mainland, and although other differences are apparent in some species, this one characteristic is most frequent. One can only theorize as to the reasons for the prevalence of this type of variation, but the unusual climatic conditions which are characteristic of Newfoundland suggest an underlying cause.

Strong winds, which accompany the frequent rains of the spring and early summer months, force the birds to remain much of the time in the shelter of the dark spruce thickets. For this reason, and because of the cloudy weather, the birds of this British colony certainly receive far less sunlight than individuals of the same species occurring elsewhere in eastern North America; and while there may be other contributing factors, the climate of Newfoundland would seem to be the most obvious element which may be correlated with the tendency toward darkened plumage. In the case of a few species, the dark coloration persists in the populations occurring on the southeastern coast of Labrador and more rarely Nova Scotia.

No attempt will be made at this time to discuss in any detail all of the bird life of Newfoundland; comment being reserved for those species of particular taxonomic interest. Material now available makes possible a much sounder opinion as to the validity of certain races heretofore of rather questionable status, and to describe other races possessing charac-

ters that set them apart as distinct subspecies. The criterion used in determining whether the subspecies was of sufficiently doubtful status to be discussed further was whether or not it had been accepted by the committee on classification and nomenclature of the American Ornithologists Union. Absence of the subspecies from the 14th edition of the A.O.U. Checklist and the subsequent supplements published in The Auk is considered sufficient reason for discussion here.

Zenaidura macroura (Linnaeus). Mourning Dove.

The present known status of the mourning dove in Newfoundland is that of a casual transient in the fall and early winter months, but the increasing number of records in recent years indicates the possibility that this species may breed, at least sparingly, in the interior. This assumption is further emphasized by the appearance of 7 specimens given to us by James Ewing and W. Templeman of St. Johns, E. J. Bragg, of Port aux Basques, and by the Rev. A. L. Parish, of Rose Blanche. These were a female (locality unknown) taken in 1929; a male and an unsexed specimen from St. Johns, taken in December 1945 and January 1947; 2 specimens, sex undetermined, taken at Port aux Basques on October 5, 1946, and at Red Island on December 2, 1946; a male taken at Rose Blanche on October 22, 1946; and an unsexed specimen taken at Badger, December 5, 1944. All agree in being smaller and noticeably darker, both above and below, than typical *carolinensis*, and with a bill perceptibly shorter and less stout in appearance. It is not improbable that they represent a distinct race, but until their breeding range is determined, it would be impracticable to give them a name. At present, the interior of Newfoundland is difficult of access and relatively little known, so there is no obvious reason why this dove could not nest there undetected over a period of years.

Megaceryle alcyon alcyon (Linnaeus). Eastern Belted Kingfisher.

The kingfisher was a fairly common summer resident in Newfoundland, but so wary that we succeeded in securing but 3 specimens. All were males, and were taken at Glenwood on June 18, 1942, and at Doyles on September 2, 1944, and September 7, 1946. When compared with a small series of typical *alcyon*, they proved to be indistinguishable from the nominate race, although it had been suggested (Noble, 1919) that Newfoundland birds would be found to be distinct from those breeding farther south.

Colaptes auratus luteus Bangs. Northern Flicker.

Our series of flickers, totaling 9 specimens, proved to be indistinguishable from typical *luteus*, this agreeing with the conclusions previously reached by Aldrich and Nutt (1939). The range of *C. a. borealis*, as given by Ridgway (1911:31) includes Labrador and it might be assumed that in common with other Labrador forms this would be the race in Newfoundland. This not being the case, the flicker might have reached Newfoundland by crossing the stretch of open water separating the southwestern corner of the country from Nova Scotia. Under such circumstances, *luteus* would be the race more likely to occur in Newfoundland.

Sphyrapicus varius varius (Linnaeus). Yellow-bellied Sapsucker.

In view of the diversity of opinion concerning the recognition of 2 eastern races of the yellow-bellied sapsucker, we were interested in com-

paring the small series of breeding birds taken in Newfoundland with similar material from the southern Appalachian Mountains. Oberholser (1938) on the basis of measurements alone, recognized 2 races—*varius*, breeding from Pennsylvania south to northern Georgia, and *atrothorax*, breeding from central Mackenzie, southern Quebec, and Newfoundland, south to central Missouri and New York. Of especial interest to us was the fact that the type of *atrothorax*, described by Lesson in 1831, and now in the Paris Museum, came from Newfoundland. A comparison of measurements, however, convinces us that individual variation is so great as to make it impracticable to recognize 2 races on this basis alone, and that *atrothorax* cannot be accepted as a valid form. It is true that an occasional specimen from Newfoundland has a longer wing measurement than any specimen of the same sex taken at approximately the same time in the southern part of the breeding range of this species in the east. On the other hand, a breeding female from Newfoundland, taken at Badger on June 11, 1942, is identical in size with a breeding female collected June 2, 1930, at an altitude of 4,600 feet on Mt. Mitchell, in western North Carolina. Obviously, it would be extremely difficult, if not impossible, to identify specimens taken during the winter months as definitely *varius* or *atrothorax*, so it seems advisable to recognize but one race of *Sphyrapicus varius* in the east.

Dendrocopos pubescens medianus (Swainson).

Northern Downy Woodpecker.

The downy woodpeckers of Newfoundland were separated by Oberholser (1914) as a distinct race which he named *microleucus*. We have compared a series of specimens from various parts of that country with a comparable series of *medianus* from the United States, and have come to the conclusion that *microleucus* is a very weak race that is not worthy of recognition by name. The color of the underparts can be matched by specimens taken as far south as Maryland, and the spotting on the wings is equally variable. There is no appreciable difference in size, and the tendency for the black of the upperparts to be more intense is noticeable only in the most recently taken skins. Accordingly, we think that *microleucus* should be placed in the synonomy of *medianus*.

Perisoreus canadensis sandfordi Oberholser. Newfoundland Canada Jay.

This is another race, the validity of which has been subject to a diversity of opinion among taxonomists. Our series of 30 specimens taken at various times of the year, and in different parts of the country, has been critically compared with equivalent plumaged specimens of both typical *canadensis* from southeastern Canada and of *nigricapillus* from northern Labrador, and we find that the characters, as given by Oberholser (1914) readily separate *sandfordi* from these two forms. From *canadensis*, it differs in being darker below and in having the forehead a duller white. From *nigricapillus* it is distinguishable by being browner, less gray above, which character is common to many of the distinct forms occurring in Newfoundland.

Cyanocitta cristata bromia Oberholser. Northern Blue Jay.

We found the blue jay a fairly common bird in the Humber River Valley, but elsewhere in the country rather local in its distribution, and

far from plentiful. Although Noble (1938) suspected that the blue jays of Newfoundland might prove to be racially distinct, our series of 20 specimens, taken throughout the year, proved not to differ from comparable specimens of *bromia* from the eastern United States, with respect to either size or coloration.

Para hudsonicus rabbittsi*, new subspecies

Newfoundland Brown-capped Chickadee

Characters.—Similar to *Parus hudsonicus hudsonicus*, of interior Canada, but upperparts, both pileum and back, decidedly paler; flanks lighter cinnamon-brown. Also, noticeably paler than *Parus hudsonicus littoralis* of southeastern Canada. In size, intermediate between these two races, the wing and tail in *rabbittsi* being shorter than in *hudsonicus* and longer than in *littoralis*. The bill is shorter than in either of these forms.

Measurements.—Average of 10 males from various localities in Newfoundland: Wing, 64.3 mm; tail, 59.2; exposed culmen, 6.8. Average of 4 females from various localities in Newfoundland: Wing, 62.7 mm; tail, 58.5; exposed culmen, 7.

Type.—Adult male, No. 394176, United States National Museum, Fish and Wildlife Service collection; St. Andrews, Newfoundland, May 1, 1947; Thomas D. Burleigh, original number 10262.

Distribution.—Newfoundland.

Specimens of Parus hudsonicus rabbittsi examined.—Total number 35, from the following localities in Newfoundland: St. Andrews, 3; Tomkins, 8; Stephenville Crossing 3; Stephenville, 1; Port au Port, 1; Corner Brook, 1; Humbermouth, 1; South Brook, 2; Badger, 5; Grand Falls, 1; Princeton, 1; Bay Bulls, 1; St. Johns, 1; Topsail, 1; N. E. Brook, Canada Bay, 1; Maiden Arm, Hare Bay, 1; La Scie, 1; Bull Island, Trinity Bay, 1; Cow Head, 1.

Remarks.—*P. h. rabbittsi* is the palest of the now recognized races of *Parus hudsonicus*, and is therefore an exception to the general tendency to be perceptibly darker than individuals on the adjacent mainland. This new race appears to be confined to Newfoundland, specimens in comparable plumage examined from New Brunswick, Nova Scotia, and the coast of Labrador being found to be typical of *littoralis*. No decrease in numbers was noted during the winter months, so this species can be considered resident and of general distribution throughout all of Newfoundland.

Table of Comparative Measurements of the Known Races of *Parus hudsonicus*

	hudsonicus[1]	*columbianus*[1]	*cascadensis*[2]	*littoralis*[3]	*rabbittsi*[4]
Wing	66.2	66	67.6	62	64.3
Tail	64.1	64	65.1	58.4	59.2
Exposed Culmen	9.0	9.1	10.0	7.1	6.8

[1]Ridgway, Birds of Middle and North America, Vol. 3, 1904.
[2]Miller, A. H., Occas. Papers, Mus. Zool., La. State Univ., 14:261-3.
[3]Five males from Nova Scotia, New Brunswick and Labrador.
[4]Ten males from Newfoundland.

*Named in honor of Mr. Gower Rabbitts, of the Department of Natural Resources, whose interest in the bird life of the country was responsible for the addition of a number of rare species to the avifauna of Newfoundland, and at whose suggestion this detailed study was undertaken.

Certhia familiaris anticostiensis Braund and McCullagh.
Anticosti Brown Creeper.

The brown creeper apparently breeds commonly in the interior of Newfoundland, for while we recorded it on but very few occasions during our summer field work, it proved to be a plentiful fall transient in the southwestern corner of the country. Our series of 27 specimens, including a breeding male taken July 24, 1945, on the Grey River, approximately 9 miles inland from the south coast, possessed characters obviously different from typical *americana*. Comparison with 2 specimens (including the type) of *anticostiensis* borrowed from the Cleveland Museum of Natural History showed that the Newfoundland birds belong to this recently described race (Braund and McCullagh, 1940). Superficially, *anticostiensis* suggests *nigrescens* of the southern Appalachians, but it is less gray (slightly more rufescent) above, has a lighter rump and a darker brown nape. This last character separates it at once from the other eastern races of *Certhia familiaris*. In fresh plumage, the underparts are noticeably whiter, but unfortunately this character is soon lost and, unless the specimen is washed, is rarely distinguishable by mid-winter.

Troglodytes troglodytes aquilonaris, new subspecies
Newfoundland Winter Wren

Characters.—Similar to *Troglodytes troglotdytes hiemalis*, but darker and less rufescent above, the underparts paler brown, with the vermiculation of the abdomen and flanks heavier and more extensive. In these characters, it suggests *Troglodytes troglodytes pullus*, but differs from this southern Appalachian race in being paler above, the rufescence of the back having a definitely grayish tinge. There is no appreciable size difference.

Measurements.—Average of 8 males: Wing, 48.1 mm; tail, 30.5; exposed culmen, 10.7. Average of 8 females: Wing, 45.5; tail, 28.3; exposed culmen, 10.5.

Type.—Adult male, No. 394151, United States National Museum, Fish and Wildlife Service collection; Tompkins, Newfoundland; May 14, 1947; Thomas D. Burleigh, original number 10304.

Distribution.—As far as now known, confined to Newfoundland.

Specimens of Troglodytes troglodytes aquilonaris examined.—Total number 23, from the following localities in Newfoundland: Tompkins, 13; Stephenville, 4; Port au Port, 1; Cape St. George, 1; Deer Harbour, Random Island, 1; Round Head Island, St. John Bay, 1; Brigus, Avalon peninsula, 1; Topsail, Avalon peninsula, 1.

Remarks.—This new race is so similar in appearance to the Winter Wren of the southern Appalachians that comparable series of both forms are necessary to identify satisfactorily specimens taken as transients or wintering individuals away from the breeding range of *hiemalis*. The one constant character, the grayish tinge of the upperparts, is admittedly a minor one, but in reexamining a number of specimens of *Troglodytes troglodytes* taken during the winter months in the southeastern United States, and originally identified as *pullus*, no difficulty was experienced in recognizing an occasional specimen of *aquilonaris*. Despite the fact that Newfoundland birds so closely resemble those from the southern

Appalachians, they are widely separated by another race, *hiemalis*, differing much more markedly in appearance.

Turdus migratorius nigrideus Aldrich and Nutt. Black-backed Robin.

This is an exceptionally well-marked race in adult plumage, but where subadult individuals are concerned, *nigrideus* can easily be confused with typical *migratorius*. On examining a small series of breeding birds in fresh, unworn plumage taken in the Codroy Valley in early May, we found that the one character distinguishing one-year-old birds (both male and female) was the deeper red of the underparts. The upper parts lacked entirely the black pattern characteristic of more mature individuals, and the white throat was emphasized by narrow streaks of black, in contrast to the broad and more numerous black streaks found in more mature specimens of *nigrideus*. Aldrich and Nutt (1939) considered this race less highly developed in the western part of Newfoundland but we could distinguish no difference between breeding birds from the Avalon peninsula, the interior, or from the lower Codroy Valley.

Hylocichla guttata crymophila, new subspecies

Newfoundland Hermit Thrush

Characters.—Similar to *Hylocichla guttata faxoni* of the northeastern United States, but entire upper parts from pileum to rump noticeably darker, the flanks grayer and with little suggestion of brown. No appreciable difference in size.

Measurements.—Average of 6 breeding males: Wing, 93 mm.; tail, 69; exposed culmen, 13. Average of 2 breeding females: Wing, 90 mm.; tail, 66.5; exposed culmen, 12. Average of 4 males in fresh fall plumage: Wing, 94.1 mm.; tail, 68.3; exposed culmen, 12.5. Average of 5 females in fresh fall plumage: Wing, 90.4 mm.; tail, 67.4; exposed culmen, 12.

Type.—Adult male, No. 382061, United States National Museum, Fish and Wildlife Service collection; Badger, Newfounland; June 11, 1942; H. S. Peters and T. D. Burleigh, original number 83.

Distribution.—Newfoundland.

Specimens of Hylocichla guttata crymophila examined. Total number 23, from the following localities in Newfoundland: Tompkins, 3; Searston, 1; Stephenville Crossing, 6; Stephenville, 1; Port au Port, 1; Badger, 1; Princeton, 1; Glenwood, 1; LaScie, 1; St. John Island, 1; St. Genevieve Bay, 1; Heartsease, Trinity Bay, 1; N. E. Arm of Connoire Bay, 1; N. E. Brook, Canada Bay, 1; Maiden Arm, Hare Bay, 1; Grand Beach, Burin peninsula, 1.

Remarks.—This is the darkest of all the known races of the hermit thrush. Birds in breeding plumage can be easily recognized, but it is in fresh fall plumage that the characters of *crymophila* are most evident, the color of the upperparts, at that time, being sepia rather than the isabelline brown of *faxoni*. Young in juvenile plumage are equally distinct, the dark appearance of the upper parts contrasting strongly with the much lighter brown of comparable specimens of *faxoni*. Austin (1932) lists the hermit thrush as a rare summer resident in southern Labrador, but we failed to record this species there during field work carried on in 1943 and 1944, and we have seen no specimens from this region in connection with this study.

Hylocichla ustulata clarescens, new subspecies
Northeastern Olive-backed Thrush

Characters.—Similar to *Hylocichla ustulata swainsoni* of the northeastern United States, but upperparts paler and less olivaceous. In respect to grayishness it approaches *H. u. almae* of continental North America from Labrador westward, but the gray of the back is darker, and there is a definite suggestion of brown.

Measurements.—Average of 7 breeding males from Newfoundland: Wing, 100.8 mm.; tail, 68.7; exposed culmen, 11.5. Average of 5 breeding females from Newfoundland: Wing, 97 mm.; tail, 63; exposed culmen, 11.1.

Type.—Adult male, No. 382037, United States National Museum, Fish and Wildlife Service collection; Glenwood, Newfoundland; June 18, 1942; H. S. Peters and T. D. Burleigh, original number 122.

Distribution.—As far as now known, Newfoundland and Cape Breton Island, Nova Scotia.

Specimens of Hylocichla ustulata clarescens examined.—Total number 18, from the following localities: Newfoundland: Tompkins, 4; Stephenville, 1; South Brook, 1; Badger, 2; Glenwood, 2; North Arm, Bay of Islands, 1; Norris Point, Bonne Bay, 1; 12 miles up White Bear River, 2; in Nova Scotia: Ingonish, Cape Breton Island, 1; North Ingonish, Cape Breton Island, 3.

Remarks.—Although intermediate in its characters, *clarescens* is distinct from both *swainsoni* and *almae;* it is closer, however, to the latter race. Specimens from Cape Breton Island, Nova Scotia, were found to be similar in every respect to those from Newfoundland, but how extensive the range of this new race is in the Maritime Provinces of Canada has yet to be determined. A breeding male taken June 28, 1943, at the head of Chateau Bay, Labrador, was clearly referable to *almae,* and since Braund and McCullagh (1940) found that specimens from Anticosta Island (in the Gulf of St. Lawrence) were also referable to that race, it would seem that *almae* has an unbroken range across Canada to the Atlantic coast north of the Maritime Provinces.

Hylocichla minima minima (Lafresnaye)
Northern Gray-checked Thrush

In his monograph on the Bicknell's thrush, Wallace (1939) comments on the brownish coloration of some of the gray-checked thrushes of Newfoundland, and suggests the possibility of their racial distinctness from continental forms. With this thought in mind, we collected these thrushes at every opportunity, and succeeded in securing a series of 28 specimens representing the various localities throughout the country where this species was found during the summer months. It was at once apparent, when this series was critically examined, that Wallace was justified in calling attention to this color difference, and also in concluding that a biphase condition exists on the island. We found that there are two-color phases of the gray-checked thrush in Newfoundland, one olive brown, and the other paler and grayer, both occurring in almost equal numbers. In the series that we had available for study, 16 specimens represented the gray phase, 10 were in the brownish plumage, and 2 were intermediate in their characters. Locality was found to be no factor in limiting the presence or absence of either phase. Two males

taken at Brigus represented both phases; 3 specimens from Glenwood were olive brown, and one was gray. A male from St. Anthony was olive brown, while at Quirpon (north of St. Anthony) one male taken was gray, another somewhat intermediate but approaching the olive brown phase.

In size, the Newfoundland birds with wing length in males, 103-106 mm.; tail, 73-76 mm.; proved to be clearly referable to the large northern race. The correct name for this has been shown by Wallace (1939) to be *minima*.

Mniotilta varia (Linnaeus). Black and White Warbler.

In his publication on the birds of Newfoundland, Noble (1919) commented on the fact that the black and white warblers appeared dark and possibly represented an undescribed race. Our series of breeding birds was compared with a series in equivalent plumage from the eastern United States, and we could find no color difference whereby the Newfoundland birds could be separated as a distinct subspecies. An occasional bird was perceptibly darker, but individual variation was such as to make this character of no value in recognizing a new race. A breeding male taken at Baywood, Louisiana (20 miles north of Baton Rouge), on May 10, 1945, is as dark as the darkest individual collected in Newfoundland. Obviously, it would not be possible to recognize a Newfoundland black and white warbler taken in migration south of its breeding range.

Dendroica striata lurida, new subspecies. Western Black-poll warbler

Characters.—Similar to *Dendroica striata striata* of eastern Canada and Newfoundland, but breeding males less black above, both with respect to the pileum and to the back and scapulars, the pileum a dull black, as compared to the deep, glossy black of typical *striata*. Light areas of back dark gray or pale olive, as compared to the lighter gray, frequently dull white, streaking of the eastern race. Females, and males in fall plumage equally distinct, the upper parts being dull olive green rather than yellow green, and with the black streaks of the back narrower and less distinct. Immatures in first winter plumage distinguished by this same dull olive green plumage. Measurements average very slightly larger than in birds from the eastern part of the range of this species.

Measurements.—Average of 6 breeding males from Alaska: Wing, 75.6 mm.; tail, 51; exposed culmen, 9.1. Average of 6 breeding males from Newfoundland: Wing, 74.2 mm.; tail, 50; exposed culmen, 9.2.

Type.—Adult male, No. 231288, United States National Museum, Fish and Wildlife Service collection; Nushagak, Alaska; June 13, 1911; G. D. Hanna, original number 96.

Distribution.—Northwestern Alaska, northern Mackenzie, northern Manitoba, and northern Quebec (Ungava) south to northern British Columbia and Manitoba. Southern limits still imperfectly known.

Specimens of Dendroica striata lurida examined.—Total number 71, as follows: Alaska, 15; Yukon, 5; British Columbia, 1; Mackenzie, 28; Alberta, 8; Saskatchewan, 10; Quebec (Ungava), 4.

Remarks.—One of the most unexpected results of the critical study of our Newfoundland collections was the fact, immediately apparent, that the Black-poll Warbler was represented by two distinct races, one occupying the eastern portion of its breeding range, the other occurring

in the west. *Dendroica striata* was originally described from Fort Severn, Ontario, and fortunately for us, the collections in the Royal Ontario Museum of Zoology contain an adequate series of breeding specimens from this critical area. The Fort Severn specimens are intermediate in their characters, but closer to the birds from the eastern part of the breeding range of this species. Accordingly, the nominate race must be considered eastern in its distribution, with the western population comprising the above described race, *lurida*. As might be expected, the characters of typical *striata* reach their maximum development in Newfoundland, breeding males being intensely black and strikingly different from breeding males from Alaska. Specimens from Churchill, Manitoba, prove to be intermediate in their characters, but, unlike those from Fort Severn, are closer to the new race.

Seiurus noveboracensis uliginosus, new subspecies
Newfoundland Northern Water-thrush

Characters.—Similar to *Seiurus noveboracensis noveboracensis* of the northeastern United States, but upperparts lighter and more olivaceous; yellow of underparts more intense; streaks on chest and flanks darker and more extensive; wing and tail longer, bill smaller.

Measurements.—Average of 20 breeding males representing all sections of Newfoundland: Wing, 78.3 mm. (extremes, 76-80); tail, 54 (extremes, 52-57); exposed culmen, 10.8 (extremes, 10-12). Average of 8 breeding females from various parts of the country: Wing, 74 mm. (extremes, 68-78); tail, 51.6 (extremes, 52-57); exposed culmen, 10.8 (extremes, 10-11.4).

Type.—Adult male, No. 381382, United States National Museum, Fish and Wildlife Service collection; Topsail, Avalon peninsula, Newfoundland; June 22, 1945; H. S. Peters and T. D. Burleigh, original number 830.

Distribution.—Newfoundland and the adjacent French islands of St. Pierre and Miquelon.

Breeding specimens of Seiurus noveboracensis uliginosus examined.—Total of 35, from the following localities in Newfoundland: St. Andrews, 1; Tompkins, 5; Doyles, 2; St. Georges, 1; Stephenville Crossing, 2; South Brook, 1; Deer Lake, 1; Grand Falls, 1; Gander, 1; Makinsons, Avalon peninsula, 1; St. Johns, 2; Topsail, Avalon peninsula, 1; North Arm, Bay of Islands, 1; Jacksons Arm, 1; St. Genevieve Bay, 1; St. Lunaire Bay, 1; N. E. Brook, Canada Bay, 1; Ariege Bay, Hare Bay, 1; S. W. Arm, Pistolet Bay, 1; St. Anthony, 1; Harbour Deep, 1; Rencontre East, Fortune Bay, 1; Catalina, 1; Heartsease, Trinity Bay, 1; Bull Island, Head of Trinity Bay, 1; Pushthrough, 1; 9 miles up Gray River, 1; Stag Harbour, Fogo Island, 1; from the French Islands of St. Pierre and Miquelon, St. Pierre, 1.

Remarks.—Birds in fresh fall plumage are perceptibly darker than breeding birds, but are easily recognizable because of the olivaceous color of the upperparts, and the even more intense yellow of the underparts. Of the 4 races of *Seiurus noveboracensis*, this new subspecies is the most olivaceous above and the yellowest beneath. *S. n. limnaeus*, from British Columbia, is the opposite extreme, being very dark and grayish above, and with very little yellow on the underparts. *S. n. noveboracensis*, and *notabilis* are intermediate between these 2 races,

noveboracensis being closer to *uliginosus* in coloration, and *notabilis* approaching *limnaeus* in its darker upperparts and limited amount of yellow beneath. Specimens examined from Labrador (male, St. Peters Bay, August 7, 1944; one male and one female, Hawkes Bay, August 14, 1944; one male and one female, Cartwright, August 17 and 18, 1944) were found referable to *noveboracensis*, as were also a small series of comparable specimens from Nova Scotia.

TABLE OF COMPARATIVE MEASUREMENTS

	noveboracensis[1]	uliginosus[2]
Wing	75.1	78.3
Tail	50.2	54
Exposed culmen	12.1	10.8

[1]Five breeding males from West Virginia.
[2]Twenty breeding males from Newfoundland.

Geothlypis trichas brachidactyla (Swainson). Northern Yellow-throat.

Although found throughout the country, yellow-throats are rather local in their distribution in Newfoundland, and by no means common. As a species, *Geothlypis trichas* is extremely plastic, and seems to respond readily to any change in environment, so we anticipated a new race when our series of 32 Newfoundland specimens was critically examined. This did not prove to be the case, however, for when compared with specimens of typical *brachidactyla* from the northeastern United States and the Maritime Provinces of Canada, no characters could be found that would separate Newfoundland birds from them. It is possible that this species is a recent addition to the avifauna of Newfoundland, and has had insufficient time to evolve a new race in response to its environment.

In connection with this study, we have examined 2 breeding specimens (including the type) of *Geothlypis trichas pelagitis* recently described from Anticosti Island by Braund and McCullagh (1940), and can find no characters whereby this proposed race can be distinguished from *brachidactyla*.

Setophaga ruticilla tricolora (Müller). Northern American Redstart.

When first separated from other American redstarts (Oberholser 1938), the range of *tricolora* was thought to be limited to the western part of the United States and Canada, but recent studies have shown that this race actually is also represented by the more northern population of redstarts, with a distribution extending across the continent from British Columbia to Newfoundland. Our series of redstarts from Newfoundland, taken in various parts of the country, shows the characters of *tricolora* very well, and demonstrates clearly that this is a valid race. Males are readily distinguished from the nominate race, represented by breeding birds of the eastern United States, by their smaller measurements, and by the noticeably smaller orange speculum. Females and subadult males are even more distinct, the upper parts being grayish rather than olive green, and the yellow speculum so reduced that in many cases only a faint trace of yellow is visible.

Euphagus carolinus nigrans, new supspecies
Newfoundland Rusty Blackbird

Characters.—Similar to *Euphagus carolinus carolinus*, but males more intensely black both above and below, the gloss of the entire body being

more bluish and less green. Females a darker, clearer gray, with the upperparts, as in the males, perceptibly glossier and bluer. Young in first fall plumage distinct from *carolinus* in having the brown of the upper parts much darker, approaching chocolate, rather than sooty brown. No appreciable size difference is apparent.

Measurements.—Average of 7 adult males: Wing, 117.2 mm.; tail, 92.1; exposed culmen, 18.1; average of 3 adult females: Wing, 108.6 mm.; tail, 82.3; exposed culmen, 17.5.

Type.—Adult male, No. 394218, United States National Museum, Fish and Wildlife Service collection; Stephenville Crossing Newfoundland; May 20, 1947; Thomas D. Burleigh, original number 10329.

Distribution.—Newfoundland and the Magdalen Islands, in the Gulf of St. Lawrence.

Specimens of Euphagus carolinus nigrans examined.—Total number 16, from the following localities in Newfoundland: Tompkins, 2; Stephenville Crossing, 2; Corner Brook, 1; Badger, 1; Dunville, 1; Cow Head, 1; Maiden Arm, Hare Bay, 2; and Roddickton, 1; also Magdalen Islands, Quebec, 5.

Remarks.—The type locality of *Euphagus carolinus*, as given in the 4th edition of the A.O.U. Check-list, is Carolina (= South Carolina). In accordance with the restriction of other Linnaean species based on the work of Catesby in the vicinity of Charleston, South Carolina, the type locality of *Euphagus carolinus* is herewith restricted to that city. The rusty blackbird occurs as a common winter resident about Charleston, so before the Newfoundland birds were named, it seemed advisable to determine what race is represented by birds wintering on the South Carolina coast. Five specimens of *Euphagus carolinus* in the collections of the Charleston Museum, taken in the vicinity of Charleston, were made available for our examination. Four of these were found to have the dull black coloration, while a single specimen was of the deeper coloration typical of birds breeding in Newfoundland. Therefore, assuming that the continental breeding form is the commoner wintering bird in the Charleston region, the name *carolinus* is applied to it and the new name *nigrans* is assigned to the Newfoundland population. Three specimens from Labrador, an adult male taken at Groswater Bay on July 13 (year not given) and 2 immature males collected at Nain Bay on August 3, 1928, have none of the characters of *nigrans*, and adequate series from Ontario and the mainland of Quebec show the birds of this province also to be typical *carolinus*. On the other hand 3 males and 2 females taken in June on Grosse Isle, Magdalen Islands, are referable to *nigrans*.

Carpodacus purpureus nesophilus, new subspecies

Newfoundland Purple Finch

Characters.—Similar to *Carpodacus purpureus purpureus*, of the northeastern United States and eastern Canada, but upperparts in both sexes decidedly darker. Pileum of adult males deep, maroon purple, in contrast to the deep wine purple of *purpureus*. Underparts duller and lacking the pinkish tinge of the nominate race. Females and subadult males less olive above, with the whitish streaks of the back broader and more numerous. In size, both sexes average slightly larger than *purpureus*.

Measurements.—Average of 3 breeding males: Wing, 84.3; tail, 57; exposed culmen, 11.8. Average of 2 subadult males: Wing, 70 mm.; tail, 55.2; exposed culmen, 10.8. Average of 4 breeding females: Wing, 80.7 mm.; tail, 57.5 exposed culmen, 10.7.

Type.—Adult male, No. 394070, United States National Museum, Fish and Wildlife Service collection; Stephenville Crossing, Newfoundland; May 23. 1947; Thomas D. Burleigh, original number 10337.

Distribution.—Newfoundland, as far as now known.

Specimens of Carpodacus purpureus nesophilus examined.—Total number 9, from the following localities in Newfoundland: Tompkins, 4; Stephenville Crossing, 2; South Brook, 1; Grand Falls, 1; and Glenwood, 1.

Remarks.—The type locality of the Eastern purple finch, *purpureus*, as cited in the 4th edition of the A.O.U. Check-list, is based on Catesby's plate of this species, and is given merely as South Carolina. The actual specimen from which the painting was made was probably taken on the coast, and within a reasonable distance of Charleston, where the species occurs as a migrant, so this city is herewith arbitrarily designated as the type locality of *Carpodacus p. purpureus.* Specimens examined from this general area were all found to be referable to the lighter colored mainland race, so *purpureus* is applicable to this breeding population, leaving the distinct Newfoundland race available for the above proposed new name *nesophilus.* There are apparently no records for the occurrence of this species in Labrador, and no material from the Maritime Provinces of Canada was available in connection with this study, so the range of *nesophilus* as now known is confined to Newfoundland. Breeding birds from Ontario were found to be typical of *purpureus*, with no suggestion of intergradation with a darker race.

Pinicola enucleator eschatosus Oberholser. Newfoundland Pine Grosbeak.

Despite the diversity of opinion concerning the validity of *eschatosus* we are convinced, after a critical study of our series of 36 pine grosbeaks taken at various times of the year and in all parts of Newfoundland, that this race is worthy of recognition. Compared with *leucura*, it was found to be decidedly smaller and darker, these characters being constant regardless of season or age. Specimens personally taken in Labrador in 1944, a female at St. Peters Bay on August 7, and a male at Hawkes Harbour on August 14, were noticeably lighter and had wing measurements appreciably larger than comparable specimens from Newfoundland, so unlike some other Newfoundland races, *eschatosus* apparently does not occur in Labrador. A male from Nova Scotia, however, taken on Cape Breton Island on July 4, 1942, is typical of *eschatosus* both in respect to size and color, so it is possible that this race is not limited entirely to Newfoundland. During 3 days of field work in 1945 on the French islands of St. Pierre and Miquelon, we took a single pine grosbeak, a female, on Little Miquelon, on July 20. This was found to be indistinguishable from Newfoundland birds which further strengthened our opinion as to the validity of *eschatosus.*

Melospiza melodia melodia (Wilson). Eastern Song Sparrow.

It was of decided interest to us to find no characters in our series of 17 breeding song sparrows from Newfoundland whereby the Newfoundland birds could be separated from those of typical *melodia* from the Maritime Provinces of Canada and the northern New England states.

Our specimens were critically compared with a series from this region and they proved similar in every respect. As a species, *Melospiza melodia* seems to respond readily to a changed environment, the large number of subspecies now recognized attesting to that fact, so it is logical to assume that the song sparrow is a relatively recent addition to the avifauna of Newfoundland. At present, it is limited as a breeding bird to the southwestern corner of Newfoundland, but it is locally common and apparently thoroughly established there.

Fish and Wildlife Service,
Moscow, Idaho
and
Charleston, South Carolina

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