

THE TUFTED TITMOUSE INVADES NEW YORK

S. W. EATON

The Tufted Titmouse (*Parus bicolor*) is one of a group of four essentially non-migratory southern birds which have become quite regular in occurrence in parts of upstate New York. The Cardinal was the pioneer of these four, and has been followed by the Titmouse, Mockingbird and Carolina Wren. This is an attempt to describe the invasion by comparing the increase of the Tit with that of the Cardinal. These two species are essentially seed eaters in winter, whereas the Mockingbird and Wren with their slender bills are more insectivorous and because of these anatomical limitations seem less apt to successfully survive in upstate New York at least in areas remote from feeders. Roosting sites may well be important here as well as food-getting equipment. The Cardinal prefers coniferous thickets; the Tit holes; the Wren holes and crevices or thickets; the Mocker thickets.

Historically we know the Tit to be a regular resident of the New York City area (Dekay, J. F., 1844. *Zoology of New York*. Part II: Birds). E. H. Eaton (*Birds of New York*, Part II, p. 502, 1914) said it was confined to the warmer portion of the Carolinian district as a breeding species. He further said that he found no breeding records for the interior of the state but when noted early in the season, they were in pairs or small flocks indicating the possibility of breeding. W. E. Tood (1940. *Birds of Western Pennsylvania*. University of Pittsburgh Press. p. 396-399.) gave us the best historical account of this bird immediately south of the western part of the Southern Tier. He said towards the northern part of its range individuals showed a decided tendency to wander during the cold season. These wanderers were as apt to wander in one direction as another. He further pointed out that the first occurrences in new areas were always in the winter and concluded that winter conditions, rather than mean temperatures of the breeding season, were important. He stated the bird is not peculiar to the Carolinian fauna as it had invaded the Plateau and the Allegheny Mountain Counties of Somerset and Cambria, Pennsylvania. South of the eastern part of our Southern Tier, P. B. Street (1956. *Birds of the Pocono Mountains Pennsylvania* DVOC, p. 41) considered it a rare straggler on the plateau but said it bred in limited numbers along the southern edge of the Plateau and in the Delaware River Valley. D. Fables, Jr. (*Annotated List of New Jersey Birds*, Urner Ornithologist Club 1955, p. 51) said of the Tit that it was a permanent resident throughout the state but much more regular on the coastal plain, while it was relatively scarce in the three northern counties adjacent to New York and northeastern Pennsylvania. The A. O. U. Check-list, fifth edition, 1957, recorded it as resident in extreme southern New York (Chautauqua County, Elmira, Staten Island) and further stated that in recent years it was spreading northward.

To get a more specific notion of the spread of the species I have assembled in the Table the occurrence or absence of both the Tufted Titmouse and Cardinal on the Audubon Society's Christmas counts. The figures indicate the number of birds seen per party (for a critique of such a procedure see — P. A. Stewart, *Wilson Bul.* Vol. 66 pp. 184-195, 1954). Ten upstate

New York cities, one New York City area (Rockland County), three Pennsylvania cities, Cleveland and two southern Ontario localities were tabulated.

In 1950 only Rockland County reported Titmice (reports from Elmira, Binghamton or Syracuse were not available). In 1954 four cities reported these birds; in 1958 six reported Titmice. This certainly represents a spread particularly when we examine cities reporting these birds — Geneva, Elmira, Binghamton and Schenectady. To these in 1958 are added Jamestown and Rochester. Here the major invasion route appears to be up the Susquehanna River - Finger Lakes corridor. Some spread appears to be from a source in extreme northwestern Pennsylvania into Chautauqua and Cattaraugus Counties probably following the Allegheny River valley and its tributaries. As with the Cardinal, little indication of movement up the Hudson is apparent. In southern Ontario no build up of the species appears. Though the Titmouse appears to be common about Detroit (sixty-eight seen on 1958 Christmas count) London, Ontario did not report this bird from 1950-1958, and Hamilton only once (1955). This is in contrast to the spread of the Cardinal in the same area. S. W. Eaton (*Prothonotary*, Sept. 1950, pp. 61-62) presented evidence to show the Cardinal at Buffalo may well have arrived by way of Southern Ontario as well as along the southern shores of Lake Erie. There was a gradual increase of the species at first Detroit, then London, then Hamilton followed by increases at Buffalo. The Rochester population of Cardinals appears to have come from the south up the Susquehanna and Finger Lakes country or the Chemung and Genesee River valleys. The Titmouse seems to be following this latter route but not the Canadian one.

The differences in invasion routes noted here may be explained on the habitat preferences of the two species. For nesting and feeding the Cardinal is essentially an edge-type species, the Titmouse a forest bird. The spread of the Cardinal preceded the Titmouse by from ten to twenty years. This might be correlated with the abandonment of many farms on the Allegheny Plateau which created first much edge habitat for the Cardinal then progressed to mature forest and became more favorable to Titmice.

The true forest habitat of this bird near Olean was well demonstrated to me from October 1956 to July 1957. During this period I observed the species in the Townships of Olean, Allegany, Carrollton and Great Valley, Cattaraugus County. As many as six individuals could be seen on a two mile hike through a mature Beech-Birch-Maple Forest. These were usually single and with different Chickadee flocks. Once three birds were seen in one forest party of birds made up of Chickadees, White- and Red-breasted Nuthatches, Downy and Hairy Woodpeckers. All these birds fed on beech-nuts in October and November up in the trees and from December to February, Titmice and Bluejays, from stores at tree bases and in holes. From October to February the Titmice were not easy to see and very shy — once their “dee” call and a peculiar high pitched “seep” note was learned it became easier to locate them. On March 3, the first whistling by the birds was noted. On July 4, 1957 I collected an immature, which had juvenal feathers on back and breast and almost no crest. It was with a small family group at 2,000 feet altitude in an area where I had seen them throughout

NUMBER OF TUFTED TITMICE AND CARDINALS SEEN PER PARTY
BY AUDUBON CHRISTMAS BIRD COUNTERS IN N. E.

	1950	1951	1952	1953	1954	1955	1956	1957	1958
Buffalo -----	0;1.0	0;0.9	0;1.9	0;0.9	0;1.3	0;1.3	0;0.8	0;1.5	0;1.7
Cortland -----	0;0	0;0	0;1.0	0;0	0;0	0;1.0	0;1.5	0;0.5	0;6.0
Geneva -----	0;0.5	0;2.2	0;2.0	0;1.9	0;1;2.1	0;3.4	0;4.0	0;8.0	0;3;4.0
Jamestown -----	0;1.3	0;2.0	0;3.5	0;2.5	0;1.3	0;1.3	0;2.0	0;2;2.0	0;4;2.2
Olean -----	0;2.3	0;0.4	0;2.5	0;0	0;0.8	0;1.0	0;0.5	0;8;0.3	0;1.5
Elmira -----	-----	0;3;2.0	0;3;2.3	0;1;0.8	0;3;0.4	0;1;4.8	-----	-----	0;5;4.6
Rochester -----	0;1.3	0;1.1	0;2.3	0;3.3	0;3.0	0;6;4.2	0;1;3.5	0;4.8	0;3;3.5
Syracuse -----	-----	-----	0;1.5	0;2.5	0;2.0	0;1.3	0;0.9	0;1.4	0;1.1
Binghamton -----	-----	-----	-----	0;0.9	0;5;1.3	1;0;2.4	0;3;2.8	0;7;2.2	0;5;6.8
Schenectady -----	0;0	0;0	0;0	0;0	0;1.0	0;0	0;0.1	0;0.1	0;3;0.5
Rockland Co. -----	8;5;3.2	-----	12.9;9.3	15.8;5.4	16.8;10.0	16.1;8.6	-----	-----	-----
Philadelphia -----	18.4;6.8	9.4;5.7	11.4;8.6	6.5;7.3	27.4;21.6	-----	-----	-----	-----
State College, Pa. -----	6.0;7.7	1.2;2.8	1.4;2.7	3.4;2.4	4.0;2.0	3.6;1.4	5.2;4.0	5.8;4.0	6.0;3.8
Warren, Pa. -----	0;11.0	0;5	0;3.5	2.0;7.0	0;5.0	2.0;12.0	4.0;6.0	9.0;6.0	8.0;24
Cleveland, Ohio -----	3.1;6.2	4.7;15.1	5.4;13.1	5.9;12.6	13.0;12.5	4.9;8.1	5.1;7.1	5.6;18.6	6.8;9.4
London, Ont. -----	0;12.4	0;9.0	0;14.7	0;13.6	0;5.6	0;19.3	0;19.0	0;18.0	0;14.4
Hamilton, Ont. -----	0;4.0	0;4.0	0;6.6	0;3.9	0;32	0.4;2.5	0;3.9	0;4.1	0;6.5

Numbers to left of semicolon are numbers of Tufted Titmice seen per party.

Numbers to right, numbers of Cardinals per party.

the fall, winter and spring. When I returned to the area in September 1957 (Ten Mile Valley near Vandalia, New York) the Titmice were absent. They have still not returned to southern Cattaraugus County in the numbers seen in 1956-1957. The beechnut crop was a complete failure in the fall of 1957 and may account for their leaving. This fall, 1958, there was an excellent crop of beechnuts but still no Titmice. In contrast, in the same general area the Cardinal is restricted to edge habitat of the valley of the Allegheny during the nesting season, seldom occurring above 1,600 feet. In winter they may leave the river valley and winter in hemlock groves of the smaller valleys and coves.

What is causing these southern birds to move north? Southern populations appear to be increasing if the Christmas counts are true measures of population changes (see Philadelphia and Cleveland on Table). Many attribute it to a gradual amelioration of the climate. This may be one of the factors but there are undoubtedly others. One which hasn't been stressed enough is the increase of the Japanese Honeysuckle which has become a 'vegetational starling' in the south, climbing over the shrubs and trees, producing much new thicket habitat. Maturing of the forests on abandoned farm land of the Allegheny Plateau may also be contributing to the successful colonization by the Titmouse.

SUMMARY

Though still not as commonly reported in upstate New York as the Cardinal the Tufted Titmouse seems to be continuing to increase. The principal invasion seems to be occurring up the Susquehanna and from areas in northwestern Pennsylvania. The Poconos, Catskills and the high plateaus may be somewhat constricting this invasion to the Susquehanna River valley and the western fringe of the High Plateaus. The invasion from southern Ontario towards Buffalo which occurred with the Cardinal in the 1940's, has not materialized with the Tufted Titmouse. The Hudson River-Mohawk Valley appears not to be an important invasion route into east central New York. The lag of the Titmouse behind the Cardinal may be due in some measure to the different habitat requirements. Cardinals are edge-type nesters; Titmice, mature forest nesters.

Department of Biology, St. Bonaventure University, St. Bonaventure, New York.