

Since moving my family permanently to New Mexico in 1946, I have come to know the birds of that state from the willow thickets of the Rio Grande and its tributary watercourses to the alpine meadows of the Sangre de Cristo range. In the juniper-piñon forest that cover the low foothills of that range, the only warbler to breed is the black-throated gray. In June this species is not uncommon there, and its buzzy song -- similar in quality though not in pattern to that of the black-throated green warbler -- may be heard as the males demarcate their respective breeding territories.

page 49 insert

At the beginning of the Pleistocene many of the wood warbler prototypes were presumably resident in the mixed deciduous-coniferous forests which covered the northern part of the continent late in the Pliocene.

warbler family are by genetic origin.  
page 49 insert

← With the advance of the ice sheets the most northerly breeding individuals of these ancestral species could have been cut off by a wedge of the ice front from their more extensive breeding range to the south and east. Such a geographically separated group might then be the nucleus for the development of a distinct variant population. The migration of these birds, forced by the advancing ice into a new pattern, would , during

the succeeding interglacial warming period follow the advance northward of the forests to which they had become adapted in the western part of the continent, and thus remain geographically and ecologically isolated from the parent species. By a repetition of these events during successive cycles of Pleistocene glaciation several populations could thus have been split off from the ancestral stock. As interbreeding opportunities with the prototype species were geographically reduced or eliminated, independent evolutionary directions were opened for the isolated groups.

Of these populations, one emigrating to the northeast -- New England, New York State, and the Great Lakes country -- became the black-throated green warbler, while the one that is now the black-throated gray warbler traveled north into the montane coniferous and deciduous <sup>forests</sup> of the Rocky Mountains. A third group, the hermit warbler, spread westward to reach the Pacific and moved up the coast to Oregon and Washington, with the barrier of the Rockies blocking contact with the population to the east. A fourth population, the ancestor of the Townsend's warbler, eventually extended its range all the way northward to southern Alaska and the Yukon territory. The nesting ranges of the hermit and Townsend's warbler prototypes overlapped in the Pacific Northwest, where the present species now hybridize to a limited extent but maintain their distinct ecologically-based identities. The last and smallest of the emigrating groups, the ancestors of the golden-cheeked warbler, extended their range only as far as the dry Edwards Plateau in Texas, where they adapted to an oak-cedar association not unlike the one inhabited by the black-throated gray warbler in New Mexico.



- Robert A. McCabe - 1951 The Song and Song-flight of the Alder Flycatcher. The Wilson Bulletin, Vol. 63: 89-98
- Andrew J. Berger and David F. Parmelee - 1952 The Alder Flycatcher in Washtenaw County, Michigan: Breeding Distribution and Cowbird Parasitism. The Wilson Bulletin, Vol. 64: 33-38
- John W. Aldrich - 1953 Habits and Habitat Differences in Two Races of Traill's Flycatcher. The Wilson Bulletin, Vol. 65: 8-11
- Peter Paul Kellogg and Robert Carrington Stein - 1953 Audio-Spectrographic Analysis of the Songs of the Alder Flycatcher. The Wilson Bulletin, Vol. 65: 75-80
- Kenneth C. Parkes - 1954 Traill's Flycatcher in New York. The Wilson Bulletin, Vol. 66: 89-92
- Olaus J. Murie - 1962 Why Do Birds Sing? The Wilson Bulletin, Vol. 74: 177-182
- Lawrence H. Walkinshaw - 1966 Summer Biology of Traill's Flycatcher. The Wilson Bulletin, Vol. 78: 31-46
- Douglass H. Morse - 1966 The Context of Songs in The Yellow Warbler. The Wilson Bulletin, Vol. 78: 444-455
- Douglass H. Morse - 1967 The Contexts of Songs in Black-throated Green and Blackburnian Warblers. The Wilson Bulletin, Vol. 79: 64-74
- Russell P. Balda and Gary C. Bateman - 1971 Flocking and Annual Cycle of the Piñon Jay, Gymnorhinus cyanocephalus. The Condor, Vol. 73: 287-302
- Douglass H. Morse - 1967 Competitive Relationships Between Parula Warblers and Other Species During the Breeding Season. The Auk, Vol. 84: 490-502
- R. M. Mengel - 1964 The Probable History of Species Formation in Some Northern Wood Warblers (Parulidae). Living Bird, 3: 9-43
- S. C. Kendeigh - 1947 Bird Population Studies in the Coniferous Forest Biome During a Spruce Budworm outbreak. Ontario Dept. Lands and Forests, Biol. Bull. 1
- John P. Hubbard - 1969 The Relationships and Evolution of the Dendroica coronata Complex. The Auk, Vol. 86: 393-432
- A. L. Rand - 1948 Glaciation, An Isolating Factor in Speciation. Evolution, 2: 314-321
- Lawrence H. Walkinshaw and William A. Dyer - 1961 The Connecticut Warbler in Michigan. The Auk, Vol. 78: 379-388
- Ernst Mayr - Systematics and the Origin of Species, Columbia Biological Series No. XIII, 1942