

to Keele. The important and striking gap between the Rocky mountains and Mackenzie mountains, about sixty miles in width, which was first recognized by R. G. McConnell of the Geological Survey of Canada, on a remarkable canoe traverse of Liard river in 1887, was hardly appreciated at its full physiographic value at the time, owing to the difficulty of human travel by the old methods, but was immediately seen by bird's-eye view from the air and confirmed by observations and photographs taken. The low, tree-covered pass was easily distinguished from the rugged and barren mountains on both sides of the river.

This Liard River gap, while it offers a logical explanation of what may be called a central Yukon and Alaska extension of the Eastern Canadian fauna, does not account for the entire fauna of central and southern Yukon Territory, as the mountain sheep (*Ovis dalli*), mountain goat (*Oreamnos americanus*), pika or "rock rabbit" (*Ochotona collaris*), and hoary marmot or "whistler" (*Marmota caligata*), which are closely related to northern Asiatic forms, are presumably derived from Asiatic immigrants that came to North America in preglacial or interglacial times. The mountain sheep has worked down some of the western ranges as far south as Mexico, but is most abundant in the Rocky mountains and their outliers. However, the Canadian elk or wapiti (*Cervus canadensis*), also closely related to Eurasian species, but not strictly a mountain form, may very possibly have come in to the Prairie Provinces and as far east as Ontario by this low roadway through the mountains.

The Mackenzie mountains form the basis of a distinct chain of mountains running northwestward along the boundary between the Northwest Territories and the Yukon Territory, approaching the Richardson mountains in Arctic Yukon, and with a considerable depression at the Porcupine-Bell River divide, which allows a certain amount of migration from the Yukon to the lower Mackenzie drainage basin, swinging more to the west, continuing as the Brooks range, formerly known as Arctic or Endicott mountains, terminating at cape Lisburne in the Arctic ocean north of Kotzebue sound, Alaska.

Peculiarities of Bird Distribution.

Explorations in the northern parts of North America have yielded few types of new species of birds within recent years, as most of the species on their migrations have been passing through settled districts twice a year since the earliest periods of colonization. Additions of species to our western avifauna are usually due to capture of stragglers from northeastern Asia which frequently come to Alaska and we may expect others to be picked up on the coast of British Columbia when resident ornithologists become more common in that region. Other new records are occasionally obtained of southern species which are carried north by tropical hurricanes, but the greater part of the modern increases in the bird faunal list is due to "splitting" of species, *i.e.*, finer discrimination of subspecies or geographic races.

The listed avifauna of Canada now stands at something over 600 forms (Taverner, 1934).⁹ The last Ontario list (Nash, 1905)¹⁰ recorded 324 forms known to have occurred in the province, and the latest addenda to the list of birds of the Ottawa district (Lloyd, 1936)¹¹ bring it up to 250 forms. These lists include every form which has ever been taken in the region in question, numbering permanent residents (not many over two dozen in the Ottawa district), regular migrants which may be expected to occur every year, and casual stragglers of which only one record of occurrence may be known.