

limit of their ranges, and the Baltimore oriole, bluebird, catbird and bobolink overlap the solitary vireo and Wilson's thrush.

The Upper Austral zone in Canada is small in area but important in production. It just crosses our borders in a narrow shore belt along lake Erie extending to the south side of lake Ontario and including the Niagara Peninsula. It forms the famous Ontario fruit belt and is comparatively strongly marked by quite a number of characteristic forms, especially amongst plants. It extends south as far as the northern borders of the Gulf States, variously dotted and cut into by intrusive branches of the neighbouring faunas from either side, especially in the broken country of the west.

There are not many peculiar mammals that are well known to the general public, and perhaps the opossum is the most distinctive. Among birds we have the yellow-breasted chat, mockingbird, Carolina wren, Carolina chickadee, orchard oriole, barn owl, a number of distinctive southern warblers and southern subspecific forms allied to more northern variations.

These make the latitudinal or thermal divisions of our faunal life. Outside of the species mentioned are numerous forms that extend over the whole area, but show in different zones variations recognizable to the expert but stopping short of specific distinction. A good example is the hairy woodpecker. This bird breeds over all the wooded parts of North America, but the birds from the Lower Austral zone are quite separable by the trained eye from those of the Upper Austral and Transition and these from the large northern form of the Hudsonian. This is but one case of many where a northern and a southern race exist in the same species and which we designate subspecies. Some of these geographical races are so slightly differentiated as to require an expert to separate them while others are marked and striking. The critical difference between a full species and a subspecies is the fact that the latter intergrade and blend into each other gradually. With species the break between is sudden, and intermediates do not occur.

With this zonal distribution and a variation of life groups depending basically upon temperature, we have another system of distribution east and west, depending largely upon physical conditions of habitat—the arrangement of land and water or mountain ranges forming barriers or highways of migration and leading certain forms in certain directions while barring them from others—and the comparative rainfall and humidity of climate. This has a primary direct influence upon the forms of life we are considering, as well as a secondary and indirect one through the plants and insects which give them food or shelter.

The principal divisions east and west are divided by the Rocky mountains, which successfully cut the Pacific coast off from close contact with eastern forms. This great backbone of the continent extends in a northwesterly direction and forms the political boundary between Alberta and British Columbia. An extension of this line until it strikes the centre of the main Alaska-Yukon boundary roughly approximates the dividing line of the east and west faunas, leaving a