Leghorn cockerels eat baby Quail and Wrens.—A setting of thirteen Quail eggs under a bantam hen produced a covey of eleven sturdy young birds. About the fifth day the Quails were allowed to run at large while the bantam mother was kept within the cage. On the tenth day, three of the little birds disappeared. Two days later, all but two baby birds had disappeared. The killing of three white-leghorn cockerels which had been feeding irregularly about the yard, solved the problem. Two of the young roosters had swallowed a baby Quail apiece, and the third bird had swallowed two, all of which were found in the craws of the "spring fries." No doubt over the period of four or five days these three chickens had accounted for all of the nine fatalities. The two other young Quail are now banded and are big enough to run and fly, and will be placed on a game farm in the near future. Formerly I had known of turkeys eating young Quail, but never before have I known of chickens killing and eating them.

Similarly, north of town a farmer erected a wren box on the fence of his chicken yard. When the young birds half fell and half flew from the nest-box, four of seven alighted in the pen. Most of the chickens paid little attention to the baby birds but again a white-leghorn cockerel struck the little Wrens and swallowed them whole.—T. E. MUSSELMAN, *Quincy, Ill.*

Specific relationships of the Golden and Yellow Warblers.—Recently I had the privilege of identifying specimens of a pair of Cuban Golden Warblers found breeding on the Florida Keys by Mr. Earle R. Greene, manager of the Federal Great White Heron Refuge. While engaged in the necessary comparison of specimens I was impressed by the overlapping of the supposed specific differences between the West Indian Golden Warblers, *Dendroica petechia,* and the Yellow Warblers, *Dendroica aestiva* of the North American continent. This discovery stimulated me to make a further study of the morphological characters of these birds, with the result that I am now convinced that, on the basis of the criterion of intergradation, the West Indian and continental birds are one and the same species. I am, however, not yet convinced that the Mangrove Warblers, *Dendroica erithachorides,* of the coasts of Central America, are also of this same species, as Hellmayr (Field Mus. Nat. Hist. Publ. Zool., 13: pt. 8, 374 and 383, footnotes, 1935) considers to be the case, although admittedly it is a likely possibility.

Let us review for a moment what this group of birds comprises. First, we have the comparatively pointed-winged and yellow-headed birds of continental North America, breeding from Alaska and Newfoundland to south-central Mexico, that we have called *aestiva.* Then there are the relatively rounded-winged, more or less chestnut-capped birds of the West Indies, the coast of Ecuador, Peru, and the Galapagos Islands, that have been considered as *petechia.* Thirdly, there are the chestnut-hooded birds of the coasts of Mexico, Central America, and northwestern South America, that represent the *erithachorides* group. The supposed specific difference between *erithachorides* and *petechia* is the presence or absence in males of a complete chestnut hood covering the entire head and throat. There is some indication of intergradation in this character in chestnut-hooded birds from the Pacific coasts of Costa Rica and Colombia, that are marked male and have the chestnut hood rather indistinct and broken into streaks on the throat. However, the chances are that these individuals are incorrectly sexed females. The fact that a completely hooded form, *ruficapilla,* occurs on Martinique in the heart of the range of the chestnut-capped group without mingling with them is, to my way of thinking, not evidence of conspecific relationship as Hellmayr suggests. The fact

that nowhere do the two types occur side by side could be explained on the basis of segregation as the result of strict competition between two species of very similar habits.

On the other hand there seems to be complete intergradation in all of the supposed specific characters separating *petechia* and *aestiva:* (1) habitat preference; (2) presence or absence of chestnut in pileum; (3) difference in size of bills and feet; (4) relative difference in length of wing and tail; (5) contour of wing. Let us consider these characters on the basis of facts.

The fact that the West Indian populations seem to prefer to make their home in coastal mangrove thickets has been considered as one character distinguishing them specifically from the more generally distributed continental forms. However, is it not likely that our familiar backyard Yellow Warblers, if they occurred in a region where mangroves grow, would nest in mangroves? Moreover, according to Wetmore (Auk, 33: 418, 1916), Peters (Proc. Biol. Soc. Washington, 40: 31–42, 1927), and others, several races of the West Indian group occupy habitats away from the coastal mangrove fringe in upland brushy country.

The character of chestnut on the pileum is one that exhibits complete intergradation, since numerous specimens from Cuba have hardly a trace of chestnut on the head, and it is not uncommon to find specimens of North American Yellow Warblers with distinct flecks of chestnut in the crown.

The difference in size of bills and feet is entirely bridged by the large race of continental Yellow Warbler, *dugesi* of central Mexico. What is even more significant, the relative difference of wing and tail intergrades through the southern continental forms, *sonorana* and *dugesi.* A very interesting gradient is shown by comparing average male wing and tail lengths of the various races, as given by Ridgway (Bull. U. S. Nat. Mus., no. 50: pt. 2, 508–515; 520–521, 1902), going from north to south on the continent and thence to the West Indies. By dividing the wing length by the tail length we get the following results: *rubiginosa,* 1 : 1.44; *aestiva,* 1 : 1.41; *sonorana,* 1 : 1.32; *dugesi,* 1 : 1.28; *gundlachi,* 1 : 1.26.

The surprising thing is that there is greater difference in this character between *rubiginosa* of Alaska and *sonorana* of the southeastern United States than between *sonorana* and *gundlachi* of Cuba.

Now we come to the fifth and by most people heretofore considered the most trenchant difference separating *aestiva* from *petechia,* the contour of the wing as indicated by the so-called 'primary formula.' In *petechia* the outermost or ninth primary is alleged to be shorter than the sixth, and in *aestiva* is just the reverse. It is true that in practically all West Indian birds the ninth primary is shorter than the sixth, although in a few examples of *gundlachi* from Cuba it equals the sixth or is longer, as is also the case with the female specimen from the Florida Keys and two specimens of *flaviceps* from the Bahama Islands. Furthermore, it is true that the northern races of Yellow Warbler, *rubiginosa, aestiva,* etc., almost invariably have the ninth primary longer than the sixth. But when the southern races, *sonorana* and *dugesi,* are considered, all manner of intergradation is found. Out of a series of 71 specimens of *sonorana* examined from southwestern United States and northwestern Mexico, in all plumages, male, female, adult, juvenal, worn, and fresh, 29 had the outermost primary equal to or shorter than the sixth, and in *dugesi* of central Mexico seven out of ten specimens exhibited this characteristic of the *petechia* group. It might be considered significant that in this character, as in the case of bill and foot size and relative difference in length of wing and tail, the nearest approach among continental birds to the characters of true *petechia*

is found among birds from the southern part of their range. Conversely the greatest divergence is found among birds from Alaska, which are farthest removed geographically from the West Indies population. Furthermore, it is the more northern representatives of the West Indian group, *gundlachi* of Cuba and *flaviceps* of the Bahama Islands, that have the least chestnut in the crown, and thus are more like the continental Yellow Warblers.

The reasons for the discontinuity of the ranges of the *aestiva* and *petechia* complexes, of course, can merely be speculated upon at the present time, and no good purpose would be served in doing that here. In any case it seems to me that enough evidence has been presented for considering the West Indian and North American birds as belonging to the same species and for recognizing the fact by nomenclature. The unfortunate part of it is that the well-known specific name *aestiva* must be replaced by the relatively poorly known *petechia,* since *Motacilla petechia* Linnaeus (Syst. Nat., ed. 12, 1: 334, 1766), antedates *Motacilla aestiva* Gmelin (Syst. Nat., 1: pt. 2, 996, 1789 [1788]). This involves the following new arrangement of names for the continental Yellow Warblers:

Dendroica petechia rubiginosa (Pallas). Alaska Yellow Warbler.
Dendroica petechia amnicola Batchelder. Northern Yellow Warbler.
Dendroica petechia aestiva (Gmelin). Eastern Yellow Warbler.
Dendroica petechia morcomi Coale. Great Basin Yellow Warbler.
Dendroica petechia brewsteri Grinnell. California Yellow Warbler.
Dendroica petechia sonorana Brewster. Sonora Yellow Warbler.
Dendroica petechia inedita Phillips. Tamaulipas Yellow Warbler.
Dendroica petechia dugesi Coale. Dugés Yellow Warbler.

—JOHN W. ALDRICH, *Fish and Wildlife Service, Washington, D. C.*

Bonaparte's types of *Oriturus wrangeli* and *Oriturus mexicanus*.—Dr. C. E. Hellmayr has recently suggested (Cat. Birds Amer., 11: 464, 1938) that *Oriturus wrangelii* "Brandt" Hartlaub might be an earlier name for the Brown Towhee currently known as *Pipilo fuscus petulans* Grinnell and Swarth. Examination, in July, 1939, of the specimen in the Leiden Museum which was the type of *Oriturus wrangeli* "Brandt" Bonaparte and *Oriturus Wrangelii* "Brandt" Hartlaub, shows that the suggestion was well founded. Details concerning it will be given at a future date but for the present it may stated that the bird is definitely of the San Francisco Bay race. Also, the type of *Oriturus mexicanus* is, equally definitely, of the southern Mexican race of *Aimophila superciliosa* Swainson. However, I cannot follow Dr. Hellmayr in his assignment of the generic and specific names to the authority of Hartlaub. Utterly inadequate and unidentifiable as Bonaparte's 'diagnoses' of the two species in his new genus were on first appearance [Consp. Gen. Avium, 1 (pt. 2): 469–470, 1850], they definitely are not *nomina nuda* and are considered by Sherborn to be valid names. Both are identifiable beyond question, in part by Hartlaub (Journ. f. Orn., 3: 361, 1855), by the later explanation of Bonaparte himself (Compt. Rend. Acad. Sci. Paris, 1856, p. 413) when he designated *mexicanus* as the genotype, and by the authentic, existing types of both species. Hartlaub merely re-described one of the two species (*wrangeli*) on an intelligible basis together with a citation to the 'Conspectus' and a few well chosen remarks on Bonaparte's carelessness. Not even by implication does he choose *wrangeli* as a genotype and Bonaparte's (1856) designation must stand.

The necessary adjustments are that *Plagiospiza* Ridgway becomes a synonym of *Oriturus* Bonaparte, the reference being as follows: