

Kalmbach has underestimated the economic significance of this corvine trait. The reviewer was born and raised in Maryland, which is a veritable crow paradise, and he had abundant opportunity of observing the havoc wrought by crows during the nesting season. Lack of space precludes an extended account of this or other interesting points, so suffice it to say that the destruction of only a few insectivorous birds by a crow, means that in order to be beneficial, his crowship would have to spend the balance of his life in pursuing noxious insects!

Valuable tables are given, and an interesting feature is a chart showing the percentages of the different classes of foods consumed during all months. Specifically distinct items to the number of 656 have been discovered on the crow's menu, which is rather large even for such an omnivorous appetite. In fact, it is well-nigh impossible to recall anything biological to which the crow is not partial. The most serious offense of which the black robber is guilty, is the destruction of great quantities of corn, especially just after planting, and this grain forms the principle single item of food, amounting to 65 per cent of the stomach contents during December. Other grains are eaten in smaller amounts; and lesser deprivations, in the way of destruction of fruit and vegetables, poultry, beneficial insects, reptiles, and even small pigs and lambs, are listed. Against this is the consumption of harmful insects (including many grasshoppers), weed seeds, some small mammals, and carrion, in the control of which last the crow is no mean rival of the buzzards. Mr. Kalmbach thinks that the harm which the crow does is almost counterbalanced by its good traits, but this seems still to be an open question, and one which will be vigorously argued by the farmer who has lost an entire crop of melons or a planting of corn in a short time. Whether we catalogue him as an undesirable or not, the crow is here to stay, for no destructive agency yet devised by man is capable of removing him, and the long black ribbon of his followers, from an eastern winter sky.—A. B. HOWELL.

Included in the "SUMMARY REPORT OF THE GEOLOGICAL SURVEY, DEPARTMENT OF MINES, FOR THE CALENDAR YEAR 1916" [Ottawa, Canada, 1917] there are several "Divisional Reports" treating of collections of birds, by P. A. Taverner or R. M. Anderson. Those by the first mentioned author pertain to collections made near Barkley Sound, Vancouver Island, in midwinter (pp. 355-357), at mainland points in British Columbia during the summer months (pp. 359-368), and in Manitoba (pp. 371-374). The Barkley Sound list is of especial interest from the time of year at which the collection was made, and doubtless the mainland reports also contain records of value, but the feature of the three

papers that calls for special comment is the rather startling innovation in style introduced by the author.

Subspecies are ignored in all the headings. The scientific name of the *species* is given in binomial form, and the English name is that applied to the whole specific group or else to the eastern race. Thus, although the Cassin Vireo is the form of that particular species occurring in British Columbia, it is entered as "Solitary Vireo, *Lanivireo solitarius*." As, in the present state of our knowledge of the ornithology of the northwest, the value of such a report as this one lies largely in the exact subspecific determination of the various forms at the points at which specimens are taken, the procedure here followed seems most decidedly a move in the wrong direction. In nearly every instance the author's comments upon the specimens examined treat of the racial peculiarities exhibited, and in the many cases where he has evidently made up his mind as to the subspecies represented there seems to be no good reason why the proper subspecific name should not be placed plainly as a heading. There is no evident gain in the procedure he has followed, but there is, on the contrary, throughout all three reports, an atmosphere of vagueness and uncertainty that detracts greatly from their value. Certainly there are many "records" incorporated therein that can be used by no one else, at least in any study of geographical distribution, without re-examination of the specimens listed.

The author seems to be rather pessimistically inclined towards most western subspecies, and while no one could criticize him on that score were his objections clearly stated and his evidence in orderly array, the vague, and in a general way, deprecatory remarks directed against many subspecies now quite universally recognized by other bird students, are of such unconvincing character that for the most part they were better left unsaid until they could be more logically and strongly presented. They are the "dribbling protests" to which Osgood (CONDOR, XI, 1909, 107) once rightly took exception.

As an example in point, the treatment accorded the Western Goshawk may be cited. It is entered as "Goshawk, *Astur atricapillus*", with the following comment: "The fineness of the breast vermiculations seems to be more an indication of age than geography; younger birds being more coarsely marked than old ones." Now this may be very true, and it is, of course, a point worthy of careful consideration; but one would like to see some supporting evidence for the conclusion reached. It is an easy matter to make a selection of specimens representing various steps between two extremes, but it does not necessarily follow that any one in-

dividual bird goes through the changes indicated. What reason is there for believing that goshawks with heavier markings are younger than those with finer vermiculations—since the transversely barred plumage, coarsely or finely marked, is the only test we now know for distinguishing old from young? The author may be perfectly correct in refusing recognition to the western subspecies, *striatulus*, but a casual statement of his belief, such as is cited above, cannot by itself be expected to convince others.

At just one point in the paper is a trinomial used: "Hybrid Flicker, *Colaptes auratus* [sic] *cafer*". As no comments are made it is not clear what inference is to be drawn from this manner of entry.

The bird report by Anderson (pp. 376-381) lists species collected by the Canadian Arctic Expedition on the coast of extreme northwestern British America and northern Alaska. Sixty-one species are listed, mostly without comment. Mr. Taverner's peculiar usage of names is not adopted, the more generally accepted classification of the A. O. U. Check-List being followed throughout.—H. S. SWARTH.

THE GEOGRAPHICAL DISTRIBUTION OF COLOR AND OF OTHER VARIABLE CHARACTERS IN THE GENUS JUNCO: A NEW ASPECT OF SPECIFIC AND SUBSPECIFIC VALUES. By JONATHAN DWIGHT, M. D. Bulletin of the American Museum of Natural History, vol. xxxviii, June 1, 1918, pp. 269-309, plates xi-xiii, 5 figs. (maps) in text.

Dr. Dwight's previous studies of plumage variation, together with his known interest in the group of birds here discussed, render this publication one deserving of more than ordinary attention. The problem concerned is the classification of the juncos so that names may be applied to the various groups of species and subspecies, the method employed is somewhat novel, and the resulting systematic treatment of the genus is radically different from that adopted in the A. O. U. Check-List. While, however, the arrangement of species and subspecies here given may be taken as the author's conception of their proper relationships, the outcome of the careful study of a large amount of material, the treatise itself is more in the nature of an essay on a method of research, rather than the detailed exposition of accumulated data bearing upon this particular problem. Thus, in the author's own words, it is not so much his purpose "to attempt a complete revision as it is to focus attention upon them [the juncos] from a new angle," and "the winter ranges are not given and other matters of indirect interest are not taken up because they scarcely come within the scope of this particular study of the Juncos."

As a result the reader is confronted with many sweeping statements, rather dogmat-

ically uttered, on points regarding which he might wish to weigh the evidence for himself before accepting the author's classification of the genus as final.

Characters of the juncos are found to be "of two kinds, qualitative and quantitative, which include all differences of structure, size, proportions, pattern, and coloration. In structure . . . they are all practically alike; in size and proportions, their differences are quantitative; but, in pattern and coloration, the variations are both quantitative and qualitative." Color characters alone are here considered. Nine areas on the bird's body are differentiated (head, breast, back, sides, wing-coverts, tail, lores, iris, and bill), and each part considered by itself. The geographical distribution of the types of coloration on the several parts is separately platted, and species and subspecies determined according to the extent of coördination in the several maps. In a general way, of course, this (barring the maps) is very similar to what has been done by most monographers of bird groups, though not usually with the different parts of the bird so rigidly defined, nor with such absolute disregard for other modifying factors. Some of the results attained by Dr. Dwight are more or less in accordance with those of one or another of previous authorities on this group, but the allocation of some forms is so widely at variance with all prior classifications, that, before arriving at a final conclusion, it would seem desirable to give some consideration to factors other than those of color characters, so arbitrarily defined.

Several forms in good standing in the Check-List are here regarded as hybrids, *annectens*, *ridgwayi*, *montanus*, and *dorsalis* being disposed of in this way. The specimens serving as types of *annectens* and *ridgwayi* had already been shown to be clearly of such character by Ridgway, but that *montanus* and *dorsalis* are of the same category is a new idea. The contention appears to be well founded, and is a point of some importance in the author's argument. The occurrence of individual birds apparently of hybrid origin and in sufficient numbers to have long been regarded as representative of distinct forms, is, of course, a feature deserving of most careful consideration in any systematic treatment of the group.

A new name is provided Junco nomenclature, *Junco oregonus couesi*, proposed for the race called *connectens* in the Check-List, and *shufeldti* by Ridgway. *Connectens* is regarded as a synonym of *hyemalis* (in accordance with Ridgway's previous contention), and *shufeldti* as a synonym of *oreganus*. The type specimen of *shufeldti* is a winter collected bird from Fort Wingate, New Mexico, and if this individual is actually an example of the Alaskan *Junco* o.