

NOTES AND NEWS

In view of restricted facilities for transportation, the Cooper Ornithological Club will not hold an annual meeting this year. Continuance of local meetings of divisions and chapters is, however, urged as vital in maintaining scientific interest and activity through the war period.—A. H. M.

The Board of Governors of the Cooper Ornithological Club has approved the addition of two assistant editors to the staff of the *Condor*. Harvey I. Fisher and Frank A. Pitelka have been chosen to serve in this capacity, beginning with the present issue of the magazine.

Word concerning recent activity in bird study in the Kansas City area has come from Mr. Russell Spotswood, of the Department of Ornithology, Kansas City Museum. Although the museum is about forty years old it has been housed at its present location, the old R. A. Long Mansion, for only a year and a half and ornithology was established as a department only a year ago. Materials include mounted specimens and study skins, and there is a laboratory and workshop. Mr. Spotswood reports that the local Audubon group now numbers about 130 members with much enthusiasm for bird study and conservation.—J. M. L.

PUBLICATIONS REVIEWED

The appearance of William J. Beecher's extensive ecological study of breeding birds (Nesting birds and the vegetation substrate (*Chicago Ornith. Soc.*), 1942, viii + 69 pp., front. + 10 figs. and 2 tables) marks a definite step forward in this field of avian biology. Ornithologists and ecologists will generally agree with the Council of the Chicago Ornithological Society, the publisher, that this paper is important and that it should stimulate similar research elsewhere.

A study area of 483 acres, situated in the marshy parts of the morainic lake region of northeastern Illinois, was surveyed by the author during the years 1935 to 1939. Most intensive work was done in 1936 and 1937, when over 1000 hours were spent in the field. In 1937, over 1000 nests were found within the study area. With the aid of a photographic mosaic map and simple mapping techniques, the author plotted nest locations species by species, noting habitat relationships and stages of breeding in each instance. A vegetation map was used to relate locations and numbers of nests to plant communities. Total areas of each community were calculated together with total length of boundary or edge for each community. Some communities

were massive, some were scattered in small blocks or islands; and the ratio of total edge of each community to its total acreage is presented as a correction factor which must be applied to all figures of nesting densities before the true relationship of numbers of breeding birds to a plant community can be apparent.

Each plant community is taken up individually, its plant species are listed, and its features are discussed in relation to problems of nesting of several characteristic avian species. A relatively wide variety of habitats, modified as well as unmodified, is represented and includes lake and pond marshes, border thickets, high prairie, woodland, cultivated fields, and fence rows. Complete data on nesting populations are presented in tabular form for each community and for each species. An annotated list of species then summarizes the statistical data to include total nests, subtotals of nests within different communities, and calculated number of nests per 1000 acres of each community. There is a final figure of acres per nest (total acres of one or several communities occupied by a species ÷ total nests of that species), which is supposed to yield "a measure of the suitability of any community complex to its individual nesting species." This list includes subspecific designations of birds which appear to stem only from gratuitous assumption; in a paper of this type, it is questionable whether the names of subspecies serve any purpose.

The relation of habitat edge to population densities, or the so-called "edge effect," is considered in detail. An attempt is made to apply Raunkaier's law of frequency to nest distribution. There follow interesting discussions of nest distribution in time and space, factors in nesting distribution, and tolerance of bird species to biotic changes. A summary and bibliography of 70 titles close the paper.

There are a few typographic errors, and a need for further editing is apparent in several places. Bibliographic slips are relatively numerous: at least four different authorities, cited in the body of the paper, do not appear in the bibliography; three listed under "Literature Cited" are never cited. I found over a dozen additional inaccuracies without any attempt to check to original sources.

In view of the size of the study area, the author's investigation was designed to establish only the broader biotic relationships between nesting birds and their plant environment (page 11). Some readers may question whether this paper brings together "in a more thorough manner than has before been done the studies of

plant ecology and bird populations" (page 2). I refer to Palmgren's work in Finland (*Acta Zool. Fennica*, 7, 1930:1-218). While the author makes no attempt to review literature, the absence of any reference to the work of C. C. Adams, Forbes, Palmgren, and others is rather surprising in a paper of this character.

In his attempt to bring together the studies of plant ecology and bird distribution, the author faced the problem of terminology. Among ecologic terms, there are many instances where definition and concept await clarification. But these defects are magnified among other biologists as well as ecologists by differences in viewpoints, interests, and backgrounds. What confusion now exists could be reduced appreciably by some collaboration to reach a common understanding of these differences.

Beecher employs several basic terms in a manner which reflects this state of confusion, and the community units of Clements and Shelford are adopted with little regard for their accepted usage. Readers may best overlook this aspect of the paper; if interested, they may refer to discussions of the terms in question by Weaver and Clements (*Plant Ecology*, 1938:95, 101) and Cain (*Amer. Midl. Nat.*, 21, 1939:151).

Only one term will be mentioned here. *Ecesis* is not "invasion" or "range-extension." This usage verges on the ridiculous in a statement on page 55, which reads: "The Red-wing—a relatively recent *ecesis* [!] in the marsh—remains a good generalized species." In a single word, *ecesis* is better defined as "establishment." A plant species spreads when its seeds or spores are carried by dispersing agents (wind, water, animals). If the seed or spore falls on suitable substrate, it germinates; a new plant grows and reproduces. The adjustments which this individual plant must make in establishing itself constitute *ecesis* (Weaver and Clements, *loc. cit.*:132, 166). The plant usually faces competition during the course of *ecesis*. These three major problems in the successful spread of a species (or community), namely, migration, *ecesis*, and competition, are all involved in invasion. To invade new territory and so to extend its range, an animal faces the same problems.

Only casual reference is made to another basic concept, that of the ecologic niche. Several times the author mentions "nesting niches" when he means merely nesting sites. The general impression one gains is that the author uses this concept in the sense of physical features of the community rather than the sense of dynamic relations of a species within the web of community life (*vide* Grinnell and Elton).

The chief contribution of this paper is its analysis of the edge effect. Beecher shows that "population density increases directly with increase in number of feet of edge per unit area

of the plant society or with the increasing floristic complexity of the environment in terms of communities per unit area." This at once makes obvious two facts: (1) the population density for any sample area is quite meaningless without an accompanying quantitative analysis of the area in terms of plant communities and their interspersions, and (2) different sample areas cannot be compared on a common basis without correction of the numerical data for differences in amount of edge and in community composition. In other words, to study a bird population, one must do more than select a 10-acre plot of varied physiognomy, perhaps map it, and find all the nests on it. A knowledge of plant ecology and certain quantitative methods of analysis is almost indispensable. Test or control areas, different in quantitative make-up of the same vegetation, are very helpful in guiding the final analysis. Beecher's work sheds light on many problems: it shows, for instance, why Saunder's dense climax forest of broad-leaved and coniferous trees (N. Y. State Mus. Handbook No. 16, 1936:83) should have a higher population of birds than other dense forests of only broad-leaved or coniferous trees. It also shows how precautions may be taken to avoid the misleading variations in results of *Bird-Lore* breeding-bird censuses. Above all, it forces us to agree that population data from diverse sources, published heretofore, cannot be compared without compensating for amount of edge and amount of community interspersions within sample areas.

Beecher's work demonstrates the *relation* of population density to amount of edge and complexity of the plant community; but he does not present any "correction" (page 38) of his own data. The reader is led to expect that comparative data representing population densities in several communities of importance within his study area will be presented after the correction factor is discussed; but we are only told why such correction must be made. Furthermore, one may question the wisdom of speaking of *population* densities when the figures are actually *nesting* densities; to arrive at an accurate estimate of the population of any area or community, one must obviously consider inter-community movements, feeding range, other territorial requirements, as well as requirements for a suitable nesting site.

The formal definition of "edge effect" (page 2) is not too clear or precise. We observe edge effect when we notice an increment in population numbers of birds along the periphery of a community. It is more than an "influence"; it is a "favorable effect" (Swynnerton, *Trans. Royal Ent. Soc.*, 84, 1936:518) which can be seen usually without knowledge of the ratio of edge to area. Secondarily, it is true, as Beecher shows, that the greater the ratio of edge or boundary of one community to its total area, the higher the nesting

density of birds within that community (see Leopold, Game Management, 1937:132).

All in all, there is much in this paper that will interest ornithologists and ecologists, and no student of bird populations can afford to overlook it. Beecher's work is one of the most extensive population studies made in America, and his comparative data on diverse communities, subjected to consistent analysis, is worthy of careful study. Throughout the paper, there is evidence of keen field observation, and the general discussions of nesting factors are replete with thought-provoking ideas.—FRANK A. PITELKA.

A substantial contribution to western ornithology is made by Robert T. Orr in his paper entitled, "A study of the birds of the Big Basin region of California." (*Amer. Midl. Nat.*, 27, 1942:273-337, 16 figs.). The area concerned lies in adjoining parts of San Mateo and Santa Cruz counties and extends from the coast to the red-wood areas eight miles inland. Emphasis is placed on the occurrence of birds in relation to the major biotic associations, and only those species observed by the author are listed. There is no consideration whatsoever of the subspecies of birds involved. In general this omission seems justified in a paper of this kind, although occasionally it leads to confusion where separate races of the same species evidently are involved, one of which is summer resident and the other winter visitant. Difficulty of this kind is most noticeable in the Hermit Thrushes, Savannah Sparrows, Oregon Juncos and White-crowned Sparrows. The days of observation total 176, spread through the seasons, but with scant representation in fall and early winter. Particularly well noted were the birds of the shore line.—ALDEN H. MILLER.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

AUGUST.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held on Tuesday, August 25, 1942, at 8:00 p.m., in Room 145, Allan Hancock Foundation, Los Angeles, with President Sherwin F. Wood in the chair and 14 members and guests present. Minutes of the Southern Division for July, 1942, were approved as read. The following application for membership was read: E. Alexander Bergstrom, Southern Arizona School, Tucson, Arizona, proposed by W. Lee Chambers.

The resolution recommending that George Willett be elected to honorary membership in the Cooper Ornithological Club in recognition of his outstanding contributions to the science of ornithology and to the club was read for the second time in compliance with the by-laws. A motion for its acceptance was made by W. A. Kent and seconded by H. L. Cogswell. A vote

was then taken and Mr. Willett was declared unanimously elected to honorary membership by this division.

The meeting was then opened to reports on recent observations. W. A. Kent gave a detailed description of a trip made a year ago by himself and Mrs. Kent to Jasper National Park and return, discussing observations on many of the birds they had seen on the trip.

H. L. Cogswell described a bird survey made by him on a 40-acre tract of land near Pasadena. The area was covered principally with chaparral. He enumerated 13 species of nesting birds found there and reported that there were 116 pairs in all.

J. S. Garth reported hearing from our secretary, Jack von Bloeker, stating that he was having a very successful trip in Oregon. Dr. Garth mentioned seeing many Lark Buntings near Gila Bend, Arizona, on a trip last spring. He gave a detailed description comparing the north and south rims of the Grand Canyon and pointing out the difference in elevation existing on the two sides, the North Rim representing the Canadian Life-zone and the South Rim the Transition Life-zone.

George Willett reported seeing many Black-chinned Hummingbirds and gave a resumé of his investigations on the hummingbirds of the Channel Islands made before the Pearl Harbor event.

Dr. S. F. Wood reported a new publication on geese and ducks by T. M. Shortt.

Adjourned.—IRWIN D. NOKES, *Acting Secretary*.

SEPTEMBER.—The regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held on Tuesday, September 29, 1942, at 8:00 p.m., in Room 145, Allan Hancock Foundation, Los Angeles, California, with President Sherwin F. Wood in the chair and 54 members and guests present. Minutes of the Southern Division for August, 1942, were approved as read. The following application for membership was read: Roy Leonard Kilby, 1514 Aberdeen Street, Vancouver, British Columbia, Canada, proposed by W. Lee Chambers.

Dr. S. F. Wood reported that he had just received a copy of a new publication, "Some Common Birds of the Los Angeles County Coast," by George Willett, Los Angeles County Museum, Science Series No. 5, Zoology Publication No. 1. Also it was announced that the Cooper Club has just received from the Department of Mines and Resources of Canada a copy of a pamphlet entitled "The Migratory Birds Convention Act and Federal Regulations for the Protection of Migratory Birds."

The President then introduced the speaker of the evening, Roland Case Ross, who presented an interesting talk entitled "Bird Songs, East