

ORNITHOLOGICAL LITERATURE

A COMPARATIVE STUDY OF BIRD POPULATIONS IN ILLINOIS, 1906-1909 AND 1956-1958. By Richard R. Graber and Jean W. Graber. Illinois Natural History Survey Bulletin, Vol. 28, Art. 3, 1963: 152 pp., 32 figs., 56 tables, 4 pls. Price not indicated.

Most of us are aware of the ecological changes resulting from the activities of man upon the earth's surface. One of the most influential causative agents of such changes is agricultural practice. Few studies have provided data which permit an evaluation of conditions existing about 50 years apart as well as a comparison of the bird populations during each period. As a result of putting together data of this type the Grabers have contributed significantly to our knowledge of several aspects of Illinois ornithology, including population changes in relation to time, man, and climatic changes. In addition, this volume contributes information of importance to the management of bird habitats, particularly in states such as Illinois, where the landscape has been changed considerably by agricultural and industrial activities.

A. O. Gross and H. A. Ray, under the direction of S. A. Forbes, in August 1906 began a series of statewide cross-country censuses. These were continued at intervals until September 1909 and provided a quantitative record of Illinois bird populations in relation to a changing environment. In 1956-58 the Grabers conducted similar statewide censuses. This paper is an analysis of their field data and a comparison with those from the first survey.

The strip census method was used for the early censuses. Censusing was at random in the sense that habitats were censused as they were encountered along the straight-line routes. The Grabers censused in most of the counties covered by Gross and Ray but did not follow the same routes. Otherwise their procedures were similar, as was the coverage. In addition, during the summer of 1958, they censused additional acreage of certain habitats of limited area such as marsh and orchard. Censuses were made in northern, central, and southern zones of Illinois.

Gross and Ray included data from all seasons of the year but the Grabers limited their censuses to the winter (December to 1 March) and summer (June to mid-July) seasons. By using Gross's original notes the Grabers recalculated the early population densities for precisely the seasonal periods used in their censuses, thus insuring that the two sets of data were comparable. The population data in this bulletin represent summer and winter censuses of the two surveys. The populations determined from the censuses were compared with the acreage of the various habitats, thereby giving an estimate of the state population of the commonest species during each period. Basic quantitative data are presented in two types of tables. The first, with emphasis on statistics, impresses the reader with the inherent variability in the population data presented, and the second, with emphasis on avifauna, provides data on the species of birds found in each habitat. While the data are presented primarily for comparisons within their study, it is possible to extrapolate beyond this point.

Total population densities as indicated by the strip censuses varied from 10 to 107 birds per 100 acres in cornfields and from 35 to 215 birds per 100 acres of woodland. During the summers of 1907-09 a total of 6,662 acres were censused between 22 May and 15 July; in the summers of 1957-58, 6,785 acres were censused during the same day span. Habitats represented by less than 50 acres were disregarded. The habitats censused (in order of predominate acreage) were: corn, pasture, oats, mixed hay, forest, soybeans, wheat, fallow fields, red clover, residential areas, plowed ground, all shrub and hedge, ungrazed grass, alfalfa, orchard, marsh, garden crops, small grain stubble, sweet clover,

barley, and rye. The first four types of habitats constituted about 60 per cent of the total acreage censused.

Winter bird populations were censused in the following habitats: corn, pasture, small grain stubble, wheat, hayfield, forest, plowed ground, soybean stubble, fallow field, shrub area, orchard, and marsh. A total of 60 species was recorded (all zones combined) in cornfields during the summer and winter periods. During winter, 29 species were recorded in cornfields (all zones). Broken down by zones and periods the number of birds per acre of cornfield was: North, 1909, 0.6 and 1958, 0.9; Central, 1909, 0.5 and 1958, 0.3; South, 1909, 0.7 and 1958, 0.7. An interesting comparison of winter avifauna in the hand-picked cornfields of the earlier census with those of mechanically picked ones of the 1950's showed that more shrub and forest-edge birds used the former areas whereas more prairie and open-field birds used the latter. Also there appeared to be an increase in the number of birds presently using northern cornfields during winter. Perhaps this is correlated with increased amounts of shelled corn left in the fields after mechanical picking operations.

During four summer seasons and three winters, 168 species of birds were identified in census strips. Nine additional species were identified outside the census strips. H. R. Smith and P. W. Parmalee (1955, "A Distributional Check List of the Birds of Illinois") included 384 species for the state. Subtraction of extinct, accidental, and migrant species from this figure leaves 185 species which occur in the state during winter and summer. This number is close to that obtained by the Grabers. Only nine species were recorded in all years and all zones during both winter and summer. An annotated list of the common species includes a discussion of such factors as habitat preference, estimated population in each of the three census zones, estimated state populations, and a statement of explanation for changes in population numbers.

In a discussion of the avifaunal differences between censuses, the Grabers pointed out that of the 177 species of birds recorded during the two census periods, 104 appeared on both lists. Fourteen species identified in 1906-09 were not identified in 1956-58. Fifty-nine species were reported in 1956-58 which had not been recorded during the earlier censuses. Apparently the winter concentrations of birds, particularly Bald Eagles, along the Mississippi River were at points outside the census strips.

Included in the discussion are comments about: Events Previous to 1800; Development of Managed Habitats; Specific Changes in Avifauna; Specialization in Managed Habitats; Population Density and Avifaunal Variety; Population Changes and Latitude; Range Extensions; Habitats and the Future of the Avifauna; Man and the Avifauna. The stimulating ideas elaborated upon in this section add much to the value of this work.

It is obvious that "The value of systematic bird censuses increases as the years pass, for without some reference to the past we cannot see the trends of evolution; we can see neither the magnitude nor the direction of change." The early work of Gross and Ray and the recent work of the Grabers represent but 4 years out of a half century. The Grabers recognized the possibility of confusing short-term fluctuations with relatively permanent changes but justifiably accepted the data largely at face value. However, they stressed that the data are open to evaluation and this should be borne in mind by the reader.

My review has just touched upon a few of the topics presented in this important contribution and perhaps does not indicate adequately my great satisfaction with it. Living in Illinois and studying the birds therein has made me aware of the lack of good ecological works for the state. When ornithologists study habitats and bird populations, particularly of songbirds, they seldom take cropland into consideration because it is

generally regarded as too sterile to be of interest or to warrant their time. Most of the censuses and population studies have been conducted in the "more rewarding" areas of forests, marshes, prairies, etc. In an age when agricultural land covers large portions of some states, it is difficult to ignore it as a type of managed habitat.

The Grabers are to be complimented for this well-prepared ornithological contribution and I trust that it will serve as a stimulus for similar studies in other localities.—WILLIAM E. SOUTHERN.

ANIMAL WORLDS. By Marston Bates. Random House, New York, 1963: 8 $\frac{5}{8}$ \times 11 $\frac{1}{4}$ in., 316 pp., 245 photos. (100 in col.). \$15.00.

While this book is patently designed for eye appeal and the luxury market, it happens also to have a text that is every bit as good as its appearance. From his seemingly bottomless store of information on natural history, Dr. Bates has the knack of developing meaty ideas and putting them down in a fluent style that is entirely his own. Although he occasionally cites the findings of investigators, as a rule he does not encumber his story with references to sources. There is consequently no bibliography. I can see no objection to this procedure in a popular work of this sort, but I do raise the question: If the reader is sufficiently stimulated, as he should be, by the ideas expressed, should he not be given leads to further information?

"Animal Worlds" is a fine elementary text on ecology of environments. The "Worlds" for animals are such places as the open sea, ocean depths, margins of the sea, coral reefs, tropical forests, deserts, and mountains. Each environment is treated in a separate chapter. First the subject is colorfully defined and described, then it is discussed at length with regard to its ecological factors and the ways in which some of its prominent or more unique creatures—from lower invertebrates to birds and mammals—have adjusted to them. The final three chapters deal with man, his world, and his impact on other environments.

The illustrations leave little to be desired in variety, composition, and sheer appeal. The color work, however, is of poor quality generally, the reproductions in many instances showing an unnecessary fuzziness and a washed-out effect.—OLIN SEWALL PETTINGILL, JR.

THE ROYAL BIRDS. By Lillian Grace Paca. St. Martin's Press, New York, 1963: 6 $\frac{1}{4}$ \times 9 $\frac{1}{2}$ in., xii + 164 pp. Illus. by the author. \$7.50.

The "Royal Birds" of this book are swans, not only the Mute Swan—long considered the property of the British Crown, but the several other species in the world, all "definitely aristocrats."

Seven of the ten chapters are concerned with the different species. The introductory chapter traces the history of the Mute Swan as a bird of royalty, while the concluding two deal with swans in myth and legend and the care and keeping of swans. The generous number of drawings, over 90, show a pleasing softness of line and texture and satisfactorily portray a wide range of attitudes and actions. The text reads easily. Although a few errors and ambiguities have crept in, for the most part it is correctly factual—and objective. Only where it is based on the author's observations and interpretations of behavior does it get out of hand, becoming sugary, sentimental, and (in places) outrageously anthropomorphic. The author seems obsessed with the idea that cygnets must be trained or educated to feed, swim, fly, build nests, and so on. The book is at best a review of, not a contribution to, the knowledge of swans.—OLIN SEWALL PETTINGILL, JR.

THE GREAT AUK. By Allan W. Eckert. Little, Brown and Company, Boston, 1963: 5 $\frac{5}{8}$ \times 8 $\frac{3}{4}$ in., [iv] + 202 pp., endpaper maps. \$4.75.

THE PEREGRINE FALCON. By Robert Murphy. Illustrated by Teco Slagboom. Houghton Mifflin Company, Boston, 1964: 6 $\frac{1}{8}$ \times 9 $\frac{1}{4}$ in., [viii] + 157 pp., numerous illus. \$4.00.

Both of these books are admitted novels with birds as the central characters; both authors have made use of reference material, even though the term "novel" relieves them somewhat of this obligation; and both have maintained a fine balance of information on the life histories of the subjects, descriptions of the wilderness settings, and the hazards encountered on the nesting grounds and during the long migrations.

The chief difference between the two books lies in the attitude of the authors. In "The Great Auk" the birds have human traits. We read, for example, of birds "chuckling with something akin to embarrassment," and being "intensely proud of their egg." In the "The Peregrine Falcon" we find none of these anthropomorphisms. Mr. Murphy writes as a naturalist with sympathy and understanding of a handsome and fearless bird which is in grave danger of following the path of the Great Auk to extinction. His book is altogether delightful and Mr. Teco Slagboom's spirited drawings give it an extra polish.—ELEANOR RICE PETTINGILL.

BIRDS OF WISCONSIN. By Owen J. Gromme. University of Wisconsin Press, Madison, 1963: 9 $\frac{1}{4}$ \times 12 $\frac{1}{4}$ in., xvi + 220 pp., 105 col. pls., many bird silhouettes and distributional maps. \$22.50.

For an amateur to review a book of this sort may seem at first to be somewhat presumptuous. A good deal of pains was taken in its production: the binding is handsome, the paper is glossy, the pictures are colored, the format is large, and the price is high. Obviously, no effort was spared to make it attractive and useful. And yet the prefatory material indicates that the purpose is to present formal plates (there are 89 showing 328 species of birds) to be used for identification, plus 16 informal pictures added for good measure. In these days even amateurs use other means of identifying the birds they see, and certainly professionals do not need another book of pictures.

Related species are shown on a single plate where possible and on the facing page, cleverly tied in with silhouettes of the birds shown in the paintings, are Wisconsin distributional maps (summer range in yellow, winter in blue, and through the year in green) and date lines showing by months the occurrence of the species in Wisconsin and its nesting period there, plus a brief notation of its status. This material brings up to date from 1903 information with regard to the changes which have taken place in bird distribution in Wisconsin.

Mr. Gromme states that the original plan was to publish the plates with a detailed text in a single volume. The plates, however, were completed before the text and the "present publication of the plates only was the result of a desire to make the identification portraits available for public use without further delay. Work on an accompanying text continues in expectation of a second volume to complete the original plan."

There remains, then, a handsome picture book (though not "one of the art treasures of ornithology" as the jacket inflatedly claims) with fine reproductions of water color paintings and one oil, done between 1942 and 1962. As to the technical quality of the paintings themselves, this reviewer is not a competent judge, but in spite of some lapses (the Common Merganser seems quite out of shape and the color of the Bobolink leaves much to be desired) on the whole they seem to be well done.—EDWARD F. DANA.