

the recent widely distributed pamphlet entitled "More Game Birds by Controlling Their Natural Enemies." The power of propaganda, in this case utilizing man's instinctive urge "to go out and kill something" (with double objective, the game in season and then the assumed enemies of game out of season) is again illustrated. The continual publicity issuing from high places, which employs such phrases as "predatory animals" and "enemies of game," promotes and renews this natural tendency of mankind to destroy whatever is imagined to be injurious to his immediate interests. Fortunately, in the present instance, certain Cooper Club members find themselves in position to expend personal effort toward stemming the local wave of anti-vermin activity. Among the conservationists in west-central California who are right now putting their convictions into practice, by bringing the facts and proper interpretations of natural history before the sportsmen's and other organizations concerned, are Mr. C. B. Lastreto, Mr. Laidlaw Williams, Mr. Dudley S. DeGroot, and Dr. Gayle B. Pickwell. It is to be hoped that some if not all of the announced "prize contests" will be given up.—J.G.

PUBLICATIONS REVIEWED

Edward L. Caum has summarized in a paper entitled "The Exotic Birds of Hawaii" (Occas. Papers Bishop Mus., 10(9), 1933, 55 pp.) the results of attempts at bird introduction in Hawaii. About 90 species have been tried, of which 32 are established, and 19 because of too recent importation or other factors are of uncertain status; the others failed. The risks of bird introduction are discussed, but the author seems in agreement with other residents that Hawaii needs more birds and should try for them regardless of risks. The species successfully established are about half game birds, doves, and pigeons, and the remainder a variety of passerine birds. One of them, *Munia nisoria*, "does considerable damage to green rice"; *Acridotheres tristis*, while frequently a nuisance, is deemed to do more good than harm; *Passer domesticus* "is, if anything, rather useful"; and *Carpodacus mexicanus frontalis* has not proved destructive. The publication is a valuable record and of great interest for its bearing on a highly controversial subject.—W. L. McATEE.

Das Sterbende Moor, by Otto Ehrhart-Dachan (Munich, Drei Masken Verlag, 1930, 152 pp.), is a poignantly beautiful tale of a wild and lovely moor where birds and beasts and water things found a safe haven among woods and streams. With masterly skill and fidelity to nature the author interprets the "humble happiness" of the fishes, telling of the lives of an ancient pike and a mighty carp. Thousands of birds—herons, storks, ducks, birds of prey and countless others—nested in the hidden swamps undisturbed by man. But man has so little love for beauty and for his harmless fellow-creatures that this sanctuary was made desolate through drainage and deforestation. It is a book that moves one to love of the gentle wild folk and to pity of their sad plight, as homeless and persecuted, they seek in vain a refuge on the earth.—MARGARET M. NICE.

VALENTIN HAECKER ON RACIAL DIFFERENTIATION (Haecker, Valentin. Phänanalytische Untersuchungen über Hochgebirgs- und Tieflandsvögel, mit besonderer Berücksichtigung der Schilddrüse. Zeitschrift für induktive Abstammungslehre, 43, 1926, pp. 121-170, 2 pls., 2 charts, numerous line drawings).—With the voice of more or less depreciative criticism rather too often raised against the honorable profession of avian systematics as practised, and with the near-despair of the scientific systematist himself over the problem of extracting adequate data from limited and protean series which are jumbles of ages, sexes, plumages, localities and conditions, the suggestion of a new angle is very welcome, especially when it lays emphasis on cause rather than effect and brings reassuring evidence that our orthodox racial differentiations are more than "skin deep." Hidden as it has been in an unfamiliar German periodical, the work of the late Valentin Haecker on the crows of Germany and Switzerland in particular, and of the world in general, is far too little known. Haecker, who died in 1927, had since 1888 combined with a multitude of other zoological studies a persistent interest in ornithological problems, notably in the fields of the mechanism of song-production, feather color, and color races. Görnitz began his work on climate and color races, and Glasewald his work on the melanins, as dissertations under the

direction of Haecker. On the other hand the latter was an active histologist, with a special interest in chromosomes, and had worked on the distribution of melanophores in relation to variable areas of growth energy of the skin. The paper under review is a rather desperate introductory effort, hampered by limited material, to bring his results in all these fields of enquiry to bear directly upon the problem of the differentiation of one or two races of birds under sharply contrasting climatic conditions. Over and above its brilliant concrete results, the paper contains speculation which is equivalent to a program for a new school of racial variation, which the author did not live to carry on.

During the middle nineteen-twenties Haecker began to frame investigations with a view to the detection of the operation of climatic factors upon the birds of high altitudes and a dry climate at Davos in Switzerland and those of the neighborhood of his own university at Halle in Prussian Saxony. The original plan, which was to use both the indigenous crows (*Corvus corone*) and a series of other forms which had been introduced at Davos for variable numbers of years, proved too ambitious, as did the plan to include the adrenals in the histological studies, so that the bulk of the work actually completed consisted in the division of the crows into altitudinal races based on differences in the basal parts of the contour feathers and in the annual cycles of the thyroids. Rather elaborate examination of the second character, which occupies the bulk of the paper, demonstrated satisfactory histologic differences between geographic races of wild birds which are extremely close in external appearance. The whole cycle of annual changes, divided for convenience into four principal phases of thyroid condition and the transitions between them, was fully worked out in both races, and the inter-racial differences are decidedly qualitative. That is, when the two cycles are so adjusted that corresponding phases are superimposed, these are by no means identical, and the differences are not attributable to the regional differences in season and breeding period.

We cannot, of course, refrain from an immediate criticism or at least reservation, namely, that there is no real reason to believe such differences heritable. A vast amount of indirect evidence and a considerable amount of experimental investigation have given us confidence in the herita-

bility, regardless of immediate effects of environment, of the average size differences and variations in color and pattern in fur and feathers which are the orthodox criteria of the named races of the higher vertebrates. For the histology of the endocrine glands we have no such body of evidence. Haecker himself, for instance, quotes data on differences, at least in size, in tadpole and in human thyroids from sharply contrasting environments, and we cannot be confident that the qualitative differences between the races of crows may not likewise be the result of immediate environmental influences rather than deeply seated, genetic characters. Such confidence may or may not come with the further application of anatomical and histological data to systematic problems.

Likewise, it must be understood that such diverse differentia are correlated only in so far as they exist at the same time in the same groups of animals. Whatever we may hope for, and, on the basis of other experimental work, be inclined to prophesy, as yet no causative interdependence is proved, and nothing new is adduced in support of the idea that either thyroids or adrenals are links in a chain of agencies through which the effects of the contrasting environments are translated into differences in gross morphology.

The external character which differentiates the two altitudinal races (the extent and color of the light feather-bases) is, however, rather closely linked to a narrow range of environmental factors, for, with the help of other ornithologists, large series of observations (especially by Stresemann) and of specimens from other crows of Europe, Asia, and the islands of the Pacific were secured, and in a large majority of instances the more extensive and whiter bases were found in birds which represented either very dry areas or high mountain areas, or, as at Davos, a combination of the two.

Pyrrhonorax alpinus, the Alpine Chough, from Davos, and spring series of House Sparrows from both Halle and Davos, were also investigated as to the histology of the gonads and the thyroids. Perfectly distinct inter-specific differences in the thyroid were found in all forms, and very striking sexual differences in the sparrows; but between the sparrows of Davos, where they were introduced at least fifty years ago, and the indigenous lowland birds of Halle, no difference was discovered.

A large fraction of the paper is neces-

sarily devoted to the technical minutiae of descriptive histology and microtechnique, but Haecker indulges in pregnant speculation both as to possible concrete climatic factors which might be involved in the differentiation of the crows and as to possible physiological agencies involved. Reverting to his own earlier work on "Farbenrasen", and to that of Görnitz, he is eager to detect the mechanism of physiological regulation of the types and intensities of melanin pigmentation, and finds the most promising fields in metabolic gradients, regions of differentiated blood supply, and especially in the results of his own work of 1918 on the distribution of melanophores in the axolotl in correlation with areas of greater or lesser energy of skin development. For reasons not wholly clear to the reviewer, possibly through temporal as opposed to merely regional variations in such factors, he believes them capable of operating not only upon unit areas of body surface, but perhaps upon parts or periods of individual feather growth, and so of producing the patterns of individual feathers as well as of the feather covering as a whole.—THOMAS T. MCCABE, *Berkeley, California, January 7, 1934.*

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

NOVEMBER.—The regular monthly meeting of the Northern Division of the Cooper Ornithological Club was held at 8:00 p. m., Thursday, November 23, 1933, in Room 2003, Life Sciences Building, Berkeley. About seventy-five members and guests were present. Vice-president Alden Miller occupied the Chair. Minutes of the Northern Division for October were read and approved. Minutes of the Southern Division for October were read. The following applications for membership were presented: Mrs. Donald C. Frames, 1730 Middlefield Road, Palo Alto, Calif.; Mrs. R. E. Hackley, 807 Waverley St., Palo Alto; Miss Lulu Sours, 1027 Bryant St., Palo Alto; all proposed by Mrs. M. E. Davidson; and A. C. Shelton, Suite 1, 224 Massachusetts Ave., Arlington, Mass., by J. Grinnell.

Miss Margaret W. Wythe, Chairman of the program contest of the Northern Division, urged members to take advantage of the opportunities offered and presented each member with a memorandum of the contest rules.

Mrs. Allen asked for reports of Golden-crowned Kinglets and Mr. Cain replied that he had seen them on October 26 at the Oakland Scout Camp, where also on November 16 he had noted a Slender-billed Nuthatch and 2 Red-breasted Nuthatches. Miss Rinehart reported hearing and seeing a Barn Owl in the afternoon of November 13 at College Avenue and Dwight Way and asked whether the birds were Berkeley residents. Mrs. Price assured her that notes of the Barn Owl could be heard in that general neighborhood nearly any night in the year.

The evening's program was given by Mr. Ernest I. Dyer of Piedmont, who reported upon "A Year with the Thrashers" in a talk which for new natural history content has not been paralleled in the history of the Northern Division. A diagram of the oak-covered ridge on Selborne Drive at the head of Trestle Glen comprising the grounds about Mr. Dyer's home, and showing the sites of the five nests constructed by a single pair of the birds during the past nesting season, was drawn upon the blackboard. Lantern slides were used to illustrate the talk and at its close two reels of motion pictures of the Thrashers were shown.

There is a magic in the word "Selborne" and the secretarial mind reverts to the mood of Gilbert White when he wrote: "Faunists, as you observe, are too apt to acquiesce in bare descriptions, and a few synonyms: the reason is plain, because all that may be done at home in a man's study; but the investigation of the life and conversation of animals, is a concern of much more trouble and difficulty, and is not to be attained but by the active and inquisitive, and by those that reside much in the country."

All gratitude to Mr. Dyer for sharing with us these delightful observations from his suburban residence! Adjourned.—HILDA W. GRINNELL, *Secretary.*

DECEMBER.—The December meeting of the Northern Division of the Cooper Ornithological Club was held at 8:00 p. m. on Thursday, December 28, 1933, in Room 2003 Life Sciences Building, Berkeley, with about forty-five members and guests present and President Pickwell in the Chair. Minutes of the Northern Division for November were read and approved. Minutes of the Southern Division for November were read.

The following applications for member-