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THE COOPER CLUB MEMBER AND SCIENTIFIC WORK*

By HAROLD C. BRYANT

AT THE END of each year the merchant takes an inventory of his stock and makes plans for future business. In the same way, it seems to me, such an organization as the Cooper Ornithological Club can well afford to take the time to consider in review its accomplishments of the preceding year and to outline its policies for the coming year. It is therefore fitting that tonight we should look into the past, estimate where we stand at the present, and with the data from these two sources as a foundation, formulate working plans for the future.

We cannot pride ourselves on being an old organization, for we will only have reached our majority next June. It was on June 22, 1893, that four youthful but earnest bird students met in San Jose and organized the Cooper Ornithological Club, naming the organization after that pioneer student of birds in California, Dr. J. G. Cooper. The charter members were W. H. Osgood, H. R. Painton, Chester Barlow and F. A. Schneider, the four constituting the first officers of the Club. By the end of the first year the Club's membership numbered twenty-five. "The Nidiologist", an amateur bird magazine, several numbers of which had already appeared under the editorship of Harry R. Taylor, formerly of Alameda, was taken over as the official organ. In 1897 the "Nid" suspended publication, and it was not until a year later that the first "Bulletin" of the Cooper Club was issued. During the interim "The Osprey", another amateur ornithological magazine, issued at Galesburg, Illinois, was used as the publishing medium of the Club, the notes being edited by D. A. Cohen. After a year the "Bulletin" of the Cooper Ornithological Club was named THE CONDOR, and under this name is now well known as a magazine of western ornithology.

In 1894 members of the Club residing in southern California obtained per-

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mission to hold separate meetings in their locality. For a time the southern organization was known as the "Annex", but has latterly been known as the Southern Division. One need only point to the harmony that has always existed between these two really separate organizations to show the character of the membership of the Cooper Ornithological Club. The jealousy and attendant ill feeling that so often exists under similar circumstances has been almost wholly absent.

The worth of a thing is often proved by testing it. The loyalty of Cooper Club members was put to the test in the early days. It was some of the younger members, who, against the protest of the more conservative, dared to start the publication of a bulletin. It was the same young contingent which through the years of 1899-1901 helped to make up the cash deficit resulting from the small membership roll in those initial years.

Such then were the beginnings. Now as to our present status: We have a membership at the present time of 439. Nor is our membership limited to California, for we have representatives living in all the principal countries of the world. The centralization of activities is shared by two divisions, one in southern California with meetings held each month in Los Angeles, at the Museum of History, Science and Art, and the other in the San Francisco Bay region, with monthly meetings held at the Museum of Vertebrate Zoology in Berkeley. A bi-monthly periodical, *THE CONDOR*, is published, which last year totaled 246 pages for the volume and which we are told by naturalists abroad, is not excelled in general worth by any other ornithological paper of its class.

The purposes of the Cooper Ornithological Club as stated on its official letter-heads are as follows:

- For the observation and co-operative study of Birds, because of the resulting pleasure;
- For the spread of interest in Bird Study, so that this pleasure may be shared by others;
- For the conservation of Birds and Wild-life in general, for the sake of the future;
- For the publication of Ornithological Knowledge, as being a contribution to Science.

These then are our ideals. Every member should be acquainted with these ideals and do his best to further them, or else the Club fails of its objects. I am sorry that I cannot discuss each one of the four. This being impossible, I have done the next best thing and attempted to treat in detail of one phase of the work of the Club. It deals perhaps more closely with the last named object—the publication of ornithological knowledge as being a contribution to science, but it has ramifications which necessarily include the other objects above mentioned. It is on the Cooper Club member in relation to scientific work that I wish to speak.

If we follow the general trend of the research work carried on by members here in California we find that it can be classified as follows:

1. Collecting of bird skins, nests, and eggs.
2. Preparation of local lists.
3. Recording of field observations, such as migration and nesting dates, and habits.
4. Systematic descriptions of new species and races and systematic position of groups.
5. Photography.
6. Faunistics, or the study of distribution.
7. Economic investigations.
8. Conservation of wild-life.

This sequence is a natural one. "It is characteristic of the progress of research that as one proceeds the horizon widens and new questions spring up in the pathway of the investigator." I should say also that it is a progressive one. By that I do not mean that the former problems have been solved or that these first ones were of less importance, but that more difficult ones have been discovered and given prominence. It is because of this very progressivism that scientists the world over are so optimistic.

It has been an evolutionary trend, a trend from work requiring little skill or coming to the individual most naturally, to work requiring more skill and more concentration of purpose. Let us pass in review some of these problems which have interested and are interesting members of the Cooper Club.

Collecting specimens naturally formed the foundation on which the more advanced work has been accomplished. In the early days collecting was of the desultory type. An egg or two from a nest, with little or no recorded data, was sufficient to give the oologist a standing. Now not only is the whole set considered requisite, but in critical cases a parent bird and the nest as well, is preserved along with fully written notes as to circumstances, exact location, date and collector. A specimen or two of each species of bird was sufficient for the early collector. A *series* of each of the more interesting species or of a particular group is now the ideal. As in other sciences the time for specialization has arrived. It is now no longer worth while for the younger member of the Cooper Club who is beginning to collect, to build up a collection of all of the birds of the state, or of the eggs of all of the birds of the state. Rather should the attempt be made to restrict collecting to a particular group in which the student is interested and is likely to be able to contribute actually new knowledge. The aim should no longer be *quantity* but *quality*.

The study of plumage cycles forms a field almost wholly neglected. We do not know the sequence of plumages even of some of our commonest ducks. Let the collector of bird skins specialize, therefore, and, by obtaining a complete series, place before us the information necessary to fill in this gap in our knowledge.

The variation in size, shape, color and color pattern of the eggs of a particular group of birds furnishes an intricate problem and one worthy of more attention than it has as yet received. Nor have we exhausted the possibilities as regards the finding of yet undiscovered nests and eggs. The nest and eggs of the Harlequin Duck, Saw-whet Owl, and Crossbill have never been taken in California, although these species are known to breed within the state.

Here then are two important problems which claim the attention of him who follows that instinct which is so strong in most of us, that of making collections, be they of birds, birds' nests, or birds' eggs, or all three.

If there is anything in our work that we have possibly overdone, it is the plain faunal list. No worker in ornithology will for an instant underestimate the value of the faunal list. Nevertheless, he must admit that the value of such a list increases in proportion to the annotations. The mere locality list of species is of prime importance only when it comes from new localities, and not all of us are able to seek out such. The annotated list, on the other hand, seldom affords a duplication and always offers a comparison of life-history notes. It also has historical value, for it usually affords basis sooner or later for a study in the change in the status of birds. AVIFAUNAS of the type of Willett's "Birds of the Pacific Slope of Southern California" and Tyler's "Birds of the Fresno District" must be held up as models of the kind of work

most needed. They give authoritative facts about the birds of the district treated, and are extremely useful. Such AVIFAUNAS should be printed in large enough numbers so that they can be furnished to every interested school teacher and student of birds in the district covered.

In spite of the fact that the recording of field observations, such as migration and nesting dates, has been carried on systematically by some of our members since the formation of the Club, yet it is astonishing to find how limited our knowledge of the life-histories of many of our native birds really is. This has been especially apparent to me as I have, during the past year, attempted to obtain information on the life-histories of our game birds. The first striking discovery was the extremely small amount of detailed facts on record; the second was the lack of specific information where it was most needed. To illustrate: An attempt was made to assemble statistics as regards the nesting dates of the California Valley Quail, to serve as a basis for correctly placing the open season. When on the track of records I would repeatedly run across such statements as "during the summer, while working in a hay-field I discovered five quail nests". In such a statement three important details are lacking,—the exact species, the exact date, and the exact locality.

We find, therefore, that we have not yet discovered very much of what birds do. Even though we see far enough ahead to know that our next step will be to find out *why* they do certain things, yet it is well that we still emphasize the gathering of those facts which must act as a foundation for more advanced problems. We have not outgrown this phase of our activity and we never will. We should, on the other hand, more largely emphasize it during the coming years and, above all, improve the accuracy and compass of notes taken and recorded.

In spite of the fundamental need for the services of the man who attempts to put in systematic order our knowledge of the relationships of birds, the old type of systematist is passing away. Apparently the lure of modern biological problems, in which the immediate bearing is more clearly seen, deters many from remaining in this field. The man who improves our classification and nomenclature lays the foundation without which the so-called higher types of investigation cannot be carried on. Just one case in point: The present trend of investigation on the origin of species,—the problem which has longest interested the biologist,—toward the isolation theory awaits a more dependable classification of animals at the hand of the acute systematist at this very moment. We may have come to the point where the description of a new species is seldom justified; but the extent of variation, intergradation, and geographical distribution of our different species furnishes problems to the systematist that are most important. Biologists are describing about 10,000 new forms annually. Whatever may be said as to the advisability of such a proceeding, it gives us an idea as to what an immense field the biologist has in which to work.

We are at the present time seeing just the beginning of a new science which deals with the relation of animals to their environment, and this science we call ecology. The ecologist must necessarily depend almost entirely upon the systematist for workable material. Here then is a plea for men who are willing to remain below ground, as it were, out of the light while they lay the foundation. Current recognition may not give due credit to the systematist, but time will prove the worth of his service.

Of recent years a new type of naturalist has joined our ranks, namely, the

camera hunter, or more properly, the hunter with a camera. It is needless to point out that nothing has been more useful in promoting interest in and diffusing knowledge about birds than the photograph. Many a reader of a magazine, be it ornithological or otherwise, will imbibe what knowledge he can by looking at the pictures even though he never takes time to read a text description. Pictures leave a more lasting impression than does descriptive writing. Let me also call to your attention the fact that good photographs are practically as reliable in establishing records as are skins. Read Dawson's "Identification by Camera" and see the accompanying photographs in the November-December CONDOR, if you want to be convinced. Ray and Heinemann's Pine Grosbeak photographs are really much more valuable in establishing the breeding record of this bird than the nest and eggs themselves, for whereas the original nest and eggs can only be seen by a few people at most, and will ultimately be lost or destroyed, the photographs have convincingly demonstrated the record to thousands and will in the end be more permanent. The life-history-of-the-sharp-shinned-hawk series which appeared in the last CONDOR is another beautiful example of valuable photographic work. There is no reason why a rare collection of negatives should not be just as valuable, if not of actually much more value, than a collection of skins or eggs. The one drawback to the collecting of photographs appears to be the expense attached thereto. However, the day is not far distant when even those in more humble circumstances will be able to indulge, for already the brave are making their own Graflex and Reflex cameras.

The economic phase of ornithology has been largely neglected by Cooper Club members. This is especially evident when we view the work of the United States Biological Survey and then inspect the meagre notes to be found in our western publications. This Bureau of the United States Department of Agriculture has within the last seventeen years examined the stomachs of nearly 75,000 birds and tabulated the contents found, and has published 135 documents relating wholly or in part to the food of birds. Somehow at this day and age the convincing value of a live bird lies in its usefulness. This usefulness is computed on its food habits and the consequent value to the agriculturist. Doubtless this point of view is exaggerated and the other real value,—the esthetic,—is left in the background; but we must meet the demands of the times.

What do birds eat? Observation says that the Western Meadowlark eats grain almost exclusively. Stomach examination shows that this bird eats insects almost exclusively except during the time when the numbers of insects are at a minimum. Casual observation and inferential reasoning says that the Roadrunner eats the eggs and young of quail and other birds. Stomach examination of over twenty-five of these birds taken in localities from which complaint comes has failed to disclose a feather or an egg-shell.

Ducks have been slaughtered by the millions in California and yet when the man who desires to propagate ducks wants to know of what their food in the wild is made up, the answer must be given in general rather than specific terms: "largely vegetable—seeds and grasses". But of what kinds?

Is it not more important just at the present time to know what birds *eat* than when they arrive, how they act, or how many eggs they lay? The farmer wants to know what the Barn Owl's average catch of gophers is, whether the number of insects destroyed by the Western Meadowlark will more than coun-

terbalance the damage caused to sprouting grain, and whether the grosbeak can pay for the fruit destroyed by its destruction of scale and other insects.

If we are to meet the demands of the day, therefore, we must concentrate some of our energy on the solution of the economic problems connected with birds. The collector should by all means save stomachs and so doubly justify the killing of the birds collected.

Nor is the food habits of birds the only economic problem. The fast disappearance of our game birds is creating a loss to the state that is not fully appreciated at the present time. It took many years to successfully arouse public opinion in regard to another of our natural resources, forests. It may take a similar period of time to draw proper attention to the need for the conservation of our wild life, but it must be done. Every member of the Cooper Ornithological Club should be an active conservationist, for upon whom can the burden be shifted? Surely not upon those who take no active interest in bird-life. Those who are intimately acquainted with the facts must not only be the experts with the evidence but must be the prime movers in an active campaign to preserve the relatively scanty remnant of wild-life which is left.

I am glad to be able to recall to your attention that the Cooper Club has during the past year taken a definite and active stand for the conservation of wild-life. Growing out of the appointment of a committee on conservation by the Northern Division, one of our members, Mr. Walter P. Taylor, was instrumental in organizing the California Associated Societies for the Conservation of Wild Life, of which the Cooper Club is now a member. Not only did much of the time and energy of some of our members go into the recent campaign but also some of our funds. As a result, this associated society has been able to bind together about 10,000 persons who are pledged to carry on a campaign of education and to stimulate legislation in behalf of this great natural asset. The recent campaign waged during the last session of the state legislature, although somewhat disappointing, has certainly showed us the enemy in all his strength. We are therefore in a better position to renew the attack and to carry it to a finally successful issue.

I have now pointed out some of our achievements and attempted to show their relative merit. If I should go still farther and attempt to prophesy as to the future scientific work of the Club, I would say that it will be largely characterized by the use of the experimental method. The present-day trend of biology is in that direction and it is to be expected that ornithologists will follow this lead. Another reason why this method is going to be used in the future is because we have come up against that big question,—why do birds do this and why do birds do that;—and the only logical way of attacking that problem is to use the experimental method.

One does not need a laboratory nor even apparatus in order to perform an experiment. Nor is it necessary to keep the birds experimented upon in captivity. In the laboratory of nature may be found both subject and apparatus. However, there rests on the performer of the experiment the duty of furnishing the originality and foresight demanded and the ingenuity to be used in the arrangement of controls. The road which leads to a better knowledge of life-histories and the mysteries of migration is to be built upon experimental method.

Workers in science are often justly criticized because they seldom make the product of their endeavor available to the general reader. The populari-

zation of science will still further justify it. In our own case, it is the one fundamental way of attaining our second ideal—the spread of interest in bird study. Why truths must be couched in language that only a few can understand is incomprehensible. If it is necessary that scientific treatises on birds be of a technical nature then they should be paralleled in every case with a popular account. The spread of interest in bird study comes from such popular accounts and not from technical reports framed by and for the specialist.

In conclusion let me suggest that, if you have not done so, you add to the simple pleasure that comes to you through bird study the scientific spirit which urges us to use scientific method in our work. The aim of the scientist is to make “durable, trustworthy records of natural phenomena.” The method, according to Minot, is first to record truly everything dealing with the phenomenon itself. Here is work for the amateur. Second, to verify and correlate the personal knowledges until they acquire impersonal validity. Here is work for the professional. I hope, therefore, that in this review each member has been able to recognize a niche suited to his personal ability and inclination, in which to work and to become useful in the gathering of facts concerning wild-life. Just as soon as you find such a place to work, and adopt such ideals towards which to strive, just so soon you become a scientist in the true sense of the word and as a result become a more useful member of the Cooper Ornithological Club.

Let me close with this quotation of Coward's from his “Migration of Birds”, as an added inspiration to do productive scientific work: “But putting aside economic and utilitarian considerations there is to some of us a greater stimulus to solve the problems of nature. With the birds, and the insects and plants upon which they feed, we share a common heritage, and the more we learn of the life of these, our fellow-workers, the nearer we approach solution of the great riddle of the Universe, the mysterious law-abiding scheme of Nature. The book of knowledge to which we add some iota is marred with mystery, superstition and error, but each proved fact cleans its pages. ‘Facts’, says Laing, ‘are the spokes of the ladder by which we climb from earth to heaven.’”

Museum of Vertebrate Zoology, Berkeley, California, March 19, 1914.

BIRD NOTES FROM NETARTS BAY, OREGON

By STANLEY G. JEWETT

WITH FIVE PHOTOGRAPHS BY O. J. MURIE

THE FOLLOWING notes were taken at Netarts Bay and along the sea-coast north of Netarts postoffice to Cape Meares Lighthouse, in Tillamook County, Oregon, during four visits to that locality for the purpose of collecting specimens and securing data on the birds found along that part of the Oregon coast. This work has been carried on by the Oregon Fish and Game Commission under the direction of William L. Finley, State Game Warden. The plan is to make a thorough biological survey of the state and build up a careful scientific collection of birds and mammals.

The first visit, September 1st to September 11th, 1912, Mr. M. E. Peck, of Willamette University, Oregon, and I were in the field continually for ten