

some support to the theory that this species does not breed during the first year, but on the other hand these birds may have been breeding on their wintering-grounds, for according to Bent¹ and Forbush² Common Terns do breed occasionally on the coast of Venezuela.

During the summer of 1928 one hundred and sixty-five adult Terns were trapped on their nests at Tern Island. Included in this number were five which were two or three years old. While these recoveries are too few to have any real significance, they do give some slight support, subject to later "quantity trapping," to the theory that the Common Tern does not breed during the second summer, or that they do not return to the place of banding during the second summer.

On the other hand, the following recovery should not be overlooked. No. 384216 was banded at Chatham, Massachusetts, on July 14, 1925, and was recovered at the height of the breeding-season near the extreme northern limit of the species' breeding-range along the Atlantic Coast, at Little Fogo Island, Newfoundland, a year later almost to the exact day of banding. From facts gathered to date, the question of whether the Common Tern breeds the year after hatching is entirely a matter of conjecture, and it is the writer's hope to settle the question next year through an extensive trapping of banded nesting birds.

While the above records do not contain all the information desired, they suggest interesting possibilities.

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SYSTEMATIC ORNITHOLOGY AND BIRD-BANDING

BY JAMES L. PETERS

SYSTEMATIC ornithology, as generally understood, consists largely of the classification of birds; that is, *first*, the grouping into orders, families, and genera, and attempting to arrange these groups, the smaller within the larger, in an orderly sequence that best expresses their relationships; *second*, distribution of the various groups, and the refinement of the species, *i. e.* breaking the species into geographical units or subspecies;

¹ Bent, A. C., Bulletin 113 U. S. National Museum, p. 248.

² Forbush, E. H., Birds of Massachusetts and other New England States, Vol. 1, p. 107.

third, questions of nomenclature, *i.e.* the name that each species and subspecies should bear; *fourth*, moults and plumages. This work is carried on primarily by those whom Mr. Griscom has defined as "professionals," men who have under their care large collections of birds, either as alcoholies, skeletons, or skins, and who devote their lives to the study of this material, doing their whole-hearted best, each according to his own lights, to advance the science of ornithology.

The widest gap in the professional equipment of such men is very often the lack of an adequate knowledge of what their material looks, acts, and sounds like in life. For it must be borne in mind that it is not always the privilege of a systematist to acquire first-hand field experience with his subject. Much of his material has come to him from the "professional collector" and contains little information, except that given on the labels of the specimens. This usually consists of the sex, locality, date, sometimes the altitude, and an occasional note on the color of soft parts. Too often his material is fragmentary, too often his series of specimens do not follow the seasons around, or the lack of critical plumages or state of moult hampers his work.

It has been my contention for some years that the more field experience a man has in early life, the better he is equipped to do straight systematic work as he grows older. Professor Sushkin always said that he was much helped in interpreting the results of his anatomical work if he knew the species which he was studying in life. For instance, it is difficult to tell the skins of the Alder Flycatcher and the Chebec apart, even when laid side by side in series, but how differently these birds act and sound in life, in addition to occupying totally different niches!

In this journal (Vol. III, No. 2, 1927, pp. 33-35) the late Mr. Forbush listed twenty-seven problems for the bird-bander, and nearly every one of these problems, if carried out intelligently and with adequate material extending over a sufficient length of time, should furnish a valuable contribution to systematic ornithology.

The bird-bander has one advantage over the systematist. He handles alive a considerable number of "individualized" birds, sometimes the same bird several days or even weeks in succession, in which case he can study the various external changes that go on, such as wear of plumage, moult of the feathers, change in color of soft parts, increased or lost weight, progress of disease, etc. On the other hand he may band large numbers of birds, the recovery of which leads to important and hitherto unknown or at least unproved factors that govern the

migration of a species, its route of migration, or the winter home of a "group."

Hand in hand with bird-banding comes the study of life-histories, a detailed careful field study of a species, beginning with courtship and nest-building, the relation of sexes, eggs, care of young, food, notes, habits, haunts, and migration. The reliable amateur observer can also contribute many valuable data along these lines. It is astonishing how many gaps remain to be filled in our knowledge of the life-histories of even the most familiar species of the New England States, species which are adequately represented in collections and about whose relationships no question can be raised. The systematics of most of our native birds are pretty well understood, of many the life-history is well worked out, but for nearly every species there is still some problem to be solved. Some hitherto unsuspected questions have been raised by banding operations.

It is now well recognized that the bird life of a given region cannot be regarded as though it were in a separate world; it must be regarded only as a part of a whole; the birds of New England must be regarded in connection with those of North America, those of North America with those of the world. The systematist maintains contacts with systematists in other countries; he cannot afford to disregard articles on ornithology, no matter to what portion of the globe they may relate. In the same way the bird-banders who wish to render really important service must keep abreast of developments in other countries.

Perhaps the ornithological works of the future may have to be written by a corps of specialists, the efforts of the systematist, the life-history specialist, and the bander welded together into one great contribution. Remember this is getting to be more and more an age of specialists. It is just as true in ornithology as well as in anything else. So don't criticise the systematist for creating a new subspecies; it is part of his work to discriminate geographic varieties; and don't mind if he occasionally overturns the scientific name of one of your favorite birds. But let the systematist and bird-bander together build, on the foundation that has been already laid by Catesby, Wilson, Baird, Coues, Ridgway, and other great names in American ornithology, what we all hope will be a solid, enduring, and complete structure of knowledge.