cited captive birds. Manley Miner reports in the May issue that a pair of Jack Miner's banded Canada Geese, with a family of three young, spent some time in the protection of another privately maintained sanctuary about one hundred and fifty miles east of Mr. Miner's banding station at Kingsville, Ontario.

The McCabes of Barkerville, B. C., record in the November issue, the constancy during two seasons of a pair of Red-breasted Sapsuckers. These birds, banded at their nest in June, 1927, reappeared on April 15, 1928, and soon began another nest. They were recognized by their "right and left" banding, and later the female was taken, though the male was not. We have few instances on record of the continued mating of wild birds.

We have space to record but a few of the recoveries listed under the official Canadian returns. A Black Duck banded at Lake Scugog, Ont., was killed in Maryland when at least seven years old, while a Crow banded as a nestling in Saskatchewan was shot five years later only a mile and a half from the place of banding. Other interesting recoveries are a Bronzed Grackle banded near Ottawa, recovered in North Carolina; a Song Sparrow banded in Massachusetts, taken in Nova Scotia; a Blue Jay from Rhine-beck, N. Y., taken in New Brunswick; Herring Gull, Wisconsin to New Brunswick; Robins banded in Saskatchewan and taken in Louisiana and Georgia; Caspian Tern, Quebec to North Carolina; Arctic Tern, Labrador to France; Common Tern, Massachusetts to Ontario; Black-crowned Night Heron, Saskatchewan to Georgia; and many duck and gull recoveries. A great deal of space is wasted, however, in the opinion of the reviewer, in recording as "returns" young birds picked up dead near the place of banding which had evidently never left their natal ground, and many other birds found at the place of banding within a few days of banding. These records can only be of interest to the bander himself or to a possible student of bird mortality, and the latter could obtain better results by a questionnaire. An extreme case is that of a Robin banded in April which repeated twice at five-day intervals and two weeks later "was presumably killed by a cat at the same station. Only the feathers were left and as this bird was seen no more it is thought that No. 269,920 was the bird which the cat caught" (italics ours). The February issue records seventeen Great Black-backed Gulls, each banded as a juvenile in July, and "found dead on the Island on which it was banded—in October. The bird had apparently died a long time before its body was found."—J B. M.

## CORRESPONDENCE

## BIRD-BANDING AND TERMINOLOGY

Editor of Bird-Banding:

It seems that the discussion of the use of terms such as "repeats" or "returns" in bird-banding promises only to increase any slight confusion there may be, or rather to cause confusion where none had before existed. The real confusion is not in the use of words, but in the failure to recognize two entirely different purposes and methods in banding; to recognize these two quite different purposes will help clarify the discussion of the use of words.

Prior to 1920, banding was carried on by very few operators, in a small way, and chiefly as a study of whether birds do come back to home and nest. As the importance of these records became recognized, banding was taken up by the United States Biological Survey, and bands have since been issued by the Survey to operators licensed by Federal permit, and all records of the bands placed upon birds are filed with the Survey.

The chief purpose in this undertaking by the Survey was to get records yielding information on migration and distribution of birds. For this each banding-record is intended to be simply the exact record of taking a certain individual at a certain place at a certain time. Great accuracy is required to supply only exact facts without any frills or guesswork, and the office work in handling the details, is tremendous. When it is realized that these reports come from some sixteen hundred persons who have volunteered, very few of whom have any scientific background, and still less any training in classification, charting, or tabulating, it must be evident that the cooperator must not be asked to do any theorizing or discriminating, but give only the bare facts. I do not speak for the Biological Survey, but I can easily see just sixteen hundred reasons why the Survey should not adopt any complicated system or ask of their coöperators any exercise of judgment as to the status of the bird. In fact, in some ways I can see where it might be wise if terms like "Repeats" or "Returns" were abandoned in Survey reports. The latest instructions from the Survey are to the effect that in future only returns are to be reported, and these are to be forwarded on special cards, so it will be evident that the intent of that office is to simplify the method of reporting as much as possible.

Let us turn now to quite a different purpose of banding, a purpose which was only partly contemplated or appreciated when banding as a method was adopted by the Biological Survey. Bird-banding makes it possible for the scientist to make many kinds of studies of birds in which the identification of the individual bird is the basis of work; renders it possible to make most careful laboratory studies of living birds under all sorts of natural and

controlled conditions.

It is the purpose of the Bird-Banding Associations and of this journal to encourage each bird-bander who has time and training to develop his own lines of study to the highest degree. Studies of this sort are conducted by persons trained in the methods of acquiring exact information, and of digesting such information by tabulation and the making of graphs or charts. Reports of this sort of work may not necessarily be entered into the reports that are sent to the Biological Survey, nor should they be allowed by the Survey to encumber their records, as work of this kind constitutes original research by the operator concerned and, when carried to a logical conclusion by him, should go into suitable magazines or other publications. No better example have we of operators of this class than Mr. and Mrs. John A. Gillespie, able, experienced workers, who are producing abundant and valuable results; but in the opinion of the writer, operators of this class should be allowed their methods and terms without dictation from others whose needs may not be the same. I need confess that ten or fifteen years ago I thought of "repeats" as being of no value; simply so much unproductive rubbish, and we then marked birds "Return" in much the same way as we might use an asterisk to mark a record that was interesting. To-day in my laboratory nearly every bird of the thousands handled during the summer deserves the asterisk, because each time a bird is handled it gives data on weight, temperature, plumage, or some other kind of information.

Such a system of terms as is suggested by Mrs. Gillespie is, therefore, impracticable in our work, yet it may be of great value in the interpretation

of her results.

Let those who find use for a system of this nature use it, but two things I would advise in regard to it. First do not use or narrow the term "returns" to some new or limited meaning. That word "returns" as used for "reports" is authorized by the dictionary, and has for many years been used in "election returns," "tax returns," "advertising returns" and all sorts of

other "returns" without any confusion of mind; the word has been so used in bird-banding for many years before any one discovered that it could be confusing, and, during many years of teaching bird-banders, I have never discovered among the hundreds of operators any confusion in its use. So leave it to us to use as in the past. And second, do not ask the Biological Survey to adopt a complicated system of records nor expect them to demand discrimination from operators.

demand discrimination from operators.

In looking over the "Terms" and "Abbreviations" in Mrs. Gillespie's interesting paper! I feel that very few of the birds that I have ever handled could be designated under her suggested classification. It seems to me to require a great deal of guesswork to name a bird as "permanent resident," "summer return," "winter return," or as "migrating north," or "migrating south." Birds en masse, the flocks as they come and go, yes, one may be fairly certain, as to them, but as to any individual, I have my doubts. True, in reports of ten years ago from Thomasville I classed certain birds as "Residents," others as "Migrants," but even then I carefully explained that it was not intended as definitely describing the status of any individual bird; and of late years I became more skeptical of my ability so to describe them.

S. PRENTISS BALDWIN.

Thomasville, Ga., March, 1930.

## A NOTE ON BIRD-BANDING TERMINOLOGY

Editor of *Bird-Banding*:

The instructive paper entitled "Suggestions for a Revised Bird-Banding Terminology," by Mabel Gillespie, on page 14-19 of Vol. I, No. 1, of your journal has just been read by me with interest and profit. Its author's zeal is evident and her logic convincing, and the paper concludes with a list of sixteen different terms, some of which have several minor subdivisions, to be applied to the rediscovery of a banded bird, alive or dead. These are considered adequate for all present needs, though liable to future additions, to meet the possible requirements of further refinements in the study of birds by placing bands on them.

While some may have use for all the terms thus provided, it may be hoped, in passing, that bird-banding will not become smothered under an elaborate and highly technical terminology, unintelligible to all but the initiated few, such as is the bane of many a field of science. It is generally possible to be thoroughly scientific and accurate in quite simple language,

and this, it seems to me, is an aim well worth keeping in mind.

However, what I particularly wish to comment on here is the surprising absence from the proposed terminology of any general term, inclusive of all the others. The terminology to be used in indicating the rediscovery of a banded bird has been pushed on to a multiplicity of terms, which correspond to various subdivisions or types of renewed meetings with such a bird, according to present refinement of ideas on the subject, but no term by which the undivided concept of the report of a banded bird subsequent to its banding may be referred to is provided. Surely there is need for such a term. A bird-bander, or any other person, for example, may have occasion to refer to the number of such occurrences, relating to birds banded

<sup>&</sup>lt;sup>1</sup>Suggestions for a Revised Bird-Banding Terminology. Bird-Banding, vol. I, no. 1, pp. 14-19, January, 1930.

by him, or banded in a given area, or as the case may be, in a given period of time. How shall he do it? It would be erroneous to speak of "100 repeats, returns, and recoveries" (just as it is erroneous to speak of "100 species and subspecies"), for it is a primary mathematical rule that unlike things cannot be added. Before forming or using a total, we must bring to one common term all the units with which we may be dealing, and no such common term appears in the terminology proposed in Mrs. Gillespie's paper.

I sincerely hope that Mrs. Gillespie, who has carried bird-banding terminology to its present advanced state, will propose for all workers in this field a simple term that will meet this real need.

HARRISON F. LEWIS.

Ottawa, Canada, January 23, 1930.