SUPPLEMENT.

COMMITTEE ON THE MIGRATION AND GEOGRAPHICAL DISTRIBUTION OF NORTH AMERICAN BIRDS.

Circular for 1885.

THE Committee on Bird Migration, during the first year of its existence (1884), distributed six thousand circulars, and in reply has received returns from more than a thousand observers. The area over which these observers are scattered is co-extensive with the boundaries of the inhabited portions of the North American Continent, and includes parts of the West Indies, Central, and South America. Stations now exist in every state in the Union, and in every Territory excepting Nevada. Exclusive of Spanish America, the extreme points from which reports have actually been received will appear from the following statement: In the East, the southernmost station is Sombrero Key, off Southern Florida (latitude 24° 37′); and the northernmost, Belle Isle, off Labrador (latitude 51° 53′). In the West, reports have come to hand from Arizona and Southern California, and from Point Barrow, the most northerly point of Arctic Alaska (lat. 71° 18′). The easternmost station from which data have been received is St. John's, Newfoundland (west longitude 52° 45′), projecting well into the Atlantic; while on the Pacific the Committee has observers at various points in California, Oregon, Washington, and British Columbia.

Hence it appears that the migration stations of the American Ornithologists' Union, exclusive of those in Spanish America, are sprinkled over 46° 41′ of latitude (approximately three thousand two hundred miles in a north and south direction), and 72° 15′ of longitude (approximately three thousand five hundred miles in an east and west direction). The distance in a straight line between the two most remote points (Sombrero Key and Point Barrow) is about four thousand three hundred miles.

For convenience in collecting the enormous mass of material accumulated by the Committee, the territory under investigation has been divided into sixteen districts, each of which has been placed under the immediate direction of a competent Superintendent. The Districts, with their respective Superintendents, are: —

ALASKA, Supt., John Murdoch, Smithsonian Inst., Washington, D. C.

NORTH-WEST TERRITORIES, Supt., Ernest E. T. Seton, Assinaboia, *viâ* Carberry, Manitoba.

NEWFOUNDLAND, Supt., James P. Howley, St. John's, Newfoundland.

BRITISH COLUMBIA, Supt., John Fannin, Burrard Inlet, British Columbia.

MANITOBA, Supt., Prof. W. W. Cooke, Moorhead, Minnesota.

QUEBEC AND THE MARITIME PROVINCES, Supt., Montague Chamberlain, St. John, New Brunswick.

ONTARIO, Supt., Thomas McIlwraith, Hamilton, Ontario.

NEW ENGLAND, Supt., John H. Sage, Portland, Conn.

ATLANTIC DISTRICT (New York [excepting Long Island], Pennsylvania, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina), Supt., Dr. A. K. Fisher, Sing Sing, New York.

LONG ISLAND, New York, Supt., William Dutcher, 231 West 128th St., New York City.

MIDDLE-EASTERN DISTRICT (Southern Michigan, Indiana, Ohio, West Virginia, Kentucky and Tennessee east of the Tennessee River, Alabama, Georgia, Florida), Supt., Dr. J. M. Wheaton, Columbus, Ohio.

MISSISSIPPI VALLEY DISTRICT (Dakota, Minnesota, Wisconsin, Northern Peninsula of Michigan, Nebraska, Iowa, Illinois, Kansas, Missouri, Indian Territory, Arkansas, the small portions of Kentucky and Tennessee west of the Tennessee River, Texas, Louisiana, Mississippi), Supt., Prof. W. W. Cooke, Moorhead, Minnesota.

ROCKY MOUNTAIN DISTRICT (Idaho, Montana, Wyoming, Utah, Colorado, Arizona, New Mexico), Supt., Dr. Edgar A. Mearns, Camp Verde, Arizona.

PACIFIC DISTRICT (Washington, Oregon, California, Nevada), Supt., L. Belding, Stockton, California.

LIGHT-HOUSE DIVISION OF NORTH AMERICA, Supt., Dr. C. Hart Merriam, Locust Grove, New York.

LIGHT-HOUSE DIVISION OF SPANISH AMERICA, Supt., L. S. Foster, 35 Pine Street, New York City.

INSTRUCTIONS TO COLLABORATORS.

The Committee particularly desires from each observer a brief but careful description of the principal physical features, including latitude, longitude, and altitude, of the locality which is the seat of his observations.

The data collected may conveniently be arranged in three general classes: *a*. Ornithological Phenomena. *b*. Meteorological Phenomena. *c*. Contemporary and Correlative Phenomena.

(*a*) *Ornithological Phenomena.*

Each observer is requested to prepare, at his earliest convenience, a complete list of the birds known to occur in the vicinity of his Station, and to indicate (by the abbreviations enclosed in parentheses) to which of the following five categories each species pertains:—

1. *Permanent Residents*, or those that are found regularly throughout the year (R).

2. *Winter Visitants*, or those that occur only during the winter season, passing north in the spring (WV).

3. *Transient Visitants*, or those that occur only during the migrations, in spring and fall (TV).

4. *Summer Residents*, or those that are known to breed, but which depart southward before winter (SR).

5. *Accidental Visitants*, or stragglers from remote districts (AV).

It is desirable also to indicate the relative abundance of the different species, the terms to be employed for this purpose being: *Abundant*, *Common*, *Tolerably Common*, *Rare*.

If you are in a position to observe the lines of flight of birds, have you noticed whether or not such lines are influenced by the topography of the country, and if so, to what extent?

If a mountain intercepts the line of flight, what kinds of birds pass around it, and what kinds pass over it?

What localities in your neighborhood are sought as resting-places by the various kinds of migrating birds? Can you give any reason for this selection?

What kinds of birds generally move in flocks, and what kinds in pairs or singly?

Are you familiar with any kinds of birds in which the males and females, and old and young, fly in separate flocks? In many species the males arrive in advance of the females, hence it is important to note the sex of the first comers, and the date at which the opposite sex is first seen.

Have you observed from year to year any increase or decrease in the numbers of any kind of bird known to you? If so, do you attribute such change to altered conditions in the bird's breeding grounds? If not, can you assign a cause?

Have you observed the increase or decrease of one species to affect the numbers of another species? If so, can you explain the fact?

Has any kind disappeared altogether, and if so, can you assign a cause for this disappearance?

Among the birds which are now common about your station is there any kind that was formerly rare or absent? If so, can you explain the fact?

Among the birds which breed regularly in your vicinity have you ever observed an individual which by some personal peculiarity (such as the presence of white or dark feathers where they do not belong, or by some deformity) could readily be distinguished from others of its kind? If so, has this bird returned to the same place to nest year after year?

In recording arrivals and departures it is highly important to distinguish between the movements of irregular stragglers, of the advance guard or 'van,' and of the principal mass or 'bulk' of the species. For this purpose observers are requested to note:—

1. When the species is first seen.
2. When it is next seen.
3. When it becomes common.
4. When the bulk departs.
5. When the last individual is seen.

In addition to the above data, which *all* observers are requested to furnish, the Committee particularly desires exact records of every increase and decrease in the numbers of a given species over a given area; for it is only by the knowledge of the daily fluctuations of the same species in the same place that the progress and movements of a 'flight,' or 'bird-wave,' can be traced. Such data can be contributed by experienced observers only, and in their procurement much time must be spent in the field. During the progress of the migratory movement the observer should go over

the same ground day after day, and, if possible, both early in the morning and late in the afternoon. He should visit woodlands, thickets of dense undergrowth, and open fields; and, if possible, both swamp and upland should fall under his daily scrutiny.

The above may be regarded as *essential data*. There are many other noteworthy details that bear more or less directly upon the complicated problems involved in the study of migration. Among such may be mentioned the bodily condition of the bird (whether fat or lean), the moult, and the periods of song. The time of mating, when observed, should always be recorded.

The Committee desires positive information concerning the food of all birds.

(*b*) *Meteorological Phenomena.*

The Committee desires information upon:—

1. The direction and force of the wind.
2. The direction, character and duration of storms.
3. The general conditions of the atmosphere, including rainfall.
4. The succession of marked warm and cold waves, including a record of all sudden changes of temperature.

(*c*) *Contemporary and Correlative Phenomena.*

The Committee desires that the data under this head be as full and complete as possible, and requests exact information upon:—

1. The date at which the first toad is seen.
2. The date at which the first frog is heard.
3. The date at which the first tree-toad or 'peeper' is heard.
4. The dates at which certain mammals and reptiles enter upon and emerge from the state of hibernation.
5. The dates at which various insects are first seen.
6. The dates of the flowering of various plants.
7. The dates of the leafing and falling of the leaves of various trees and shrubs.
8. The dates of the breaking up and the disappearance of the ice in rivers and lakes in spring, and of the freezing over of the same in the fall.

It must not be supposed, because the Committee asks for a large amount of information upon a variety of subjects, that meager or isolated records are not desired. Quite the contrary is true. Comparatively few of the observers are ornithologists, or even bird collectors, the great majority being intelligent farmers, tradesmen, and light-keepers. Those who know only the commonest birds, such as the Robin, Bluebird, Bobolink, Martin, Hummingbird, and Chimney Swift, can furnish important data, and their services are eagerly sought.

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