

## REVIEW.

*Atlas des Vogelzugs nach den Beringungsergebnissen bei paläarktischen Vögeln.* [Atlas of Bird-migration based on the Ringing Data for Palæarctic Birds.] By E. Schüz and H. Weigold. Abhandlung aus dem Gebiete der Vogelzugsforschung, Nr. 3. Berlin (Friedländer), 1931. Price 96RM.

DR. SCHÜZ, of Rossitten, and Dr. Weigold, formerly of Heligoland, have collaborated in the production of a truly monumental work—the well-worn phrase here seems amply justified—which must have involved an enormous labour in the collection, checking, sorting and cartographic recording of data from many sources. This is an atlas of bird-migration based upon the results of bird-marking in all countries within the Palæarctic region.

The whole weighs more than 8 lbs., and measures approximately  $13 \times 11 \times 2$  inches. It consists of a portfolio, in which is contained a paper-covered volume of 167 text pages together with 150 loose plates printed on separate sheets. Each plate is commonly a single map, but sometimes a group of smaller maps.

The aim of the work has been to show on maps all known records of marked birds involving movement of more than purely local extent. It was obviously outside the scope of its plan to give any detailed information about recoveries at or near the place of marking. Yet it must be remembered—without criticizing the work on that account—that positive indications as to the directions and seasons of movement form only a part of the results of this method of study. Records showing absence of movement, or showing return to the place of origin, may also have great value, especially if they can be collated for statistical treatment.

As a rule each map shows the results for a single species. Where there are few records, however, two or more species may be combined in one map; on the other hand, where there are very many records, a species may be allotted a series of maps, each dealing with records from a particular area of marking. The maps are printed in black and white, with geographical features in faint outline and the recovery localities of marked birds shown by bold spots. Where several marking areas are concerned, spots of different shapes show which recoveries relate to each, or else connecting lines are used. The dates of recovery are indicated by numerals for the months and by various underlinings of these for the age-years, the month of marking being also given if this falls outside the breeding-season. There are, too, some interesting maps outlining the distribution of marked birds of particular species and origins.

The effect of this system varies a good deal according to the circumstances of each case. In some it is admirably clear, and the reader receives at a glance a graphic impression of the kind of movement that the records show. In other instances the effect is less satisfactory. In a few, owing to the number of recovery records shown on a single map, and to the variety of the corresponding marking localities, a rather confused impression is given and the significance of the records is ascertainable only by close study and by mentally grouping the data. Again, certain of the maps for species for which there are few records must be regarded as a luxury, having little of importance to reveal. In still other cases the desire for complete comprehensiveness, rather than judicious selection, has led to the complication of a good map by the addition of an odd record for another species.

The text gives for each map a general indication of the sources of the data, and this information is supplemented at the end of the volume by a very full bibliography and by a list of past and present marking schemes. It was no doubt impracticable to publish tables

of the records and of the authorities for them, yet for some purposes tables would have been more useful than the maps. The plan adopted has the disadvantage that it is not always easy to identify a particular record in the map with its counterpart in the original literature. This is especially the case where some slight error has crept in, as has inevitably happened here and there despite the high standard of accuracy that has in general been attained. The difficulty is increased by the inclusion of many records communicated to the authors in advance of publication by the original authorities; the subsequent appearance of these records may leave it doubtful whether they are additions to the atlas or are already included in it.

One is reluctant to seem to disparage in any way the product of so great a labour, for the most part admirably done, but there are some things that must be said. The disadvantages of the format will be obvious: if more flexible paper had been used for the plates they could surely have been conveniently bound, not necessarily in a single volume, and the work thus made less unwieldy. One's chief regrets, however, must be that the work is so expensive that it will be unavailable to many whom it would interest, and that it must inevitably go rapidly out of date except as a foundation for the new data that are every year accumulating in greater quantity. The text volume contains a list of addenda, and two other lists have already appeared in the journal *Der Vogelzug*, but the maps necessarily remain static as representations of the records available up to about the middle of the year 1930.

Nevertheless, the work presents a useful and vivid summary of the chief additions to knowledge of migration that have so far accrued from the marking method in the Old World. It strikingly demonstrates the amount of work that has already been done by that method, and the great value of its results. Dr. Schüz and Dr. Weigold certainly deserve both the congratulations and the grateful thanks of all students of the subject.—A.L.T.