of the old "Farmers' and Drovers' Tavern" in which thirty holes had been cut years before for their accomodation. There are also Martin notes from many other spots "It is always in the sun that I remember Martins," he writes, "I think of Robins singing in soft April rain, of Blackbirds driving in clangorous flocks through misty September daybreaks, of Bluebirds' fall notes dropping to me out of November eves but when I think of Martins it is always of their crying and calling, their sailing and diving, through bright sunny air. . . . Black birds as they swoop past the white of the full blossomed pear trees and on to their homes under the low tavern eaves."—W. S.

Street's 'Brief Bird Biographies.'[1]—There seems to be always room for something new in the way of popular bird books. Mr. Street's idea is to present line drawings of the birds, only one species to a page, and to try, largely by posture, to make the figures characteristic and identifiable without resorting to color. Habitat is moreover the key note of his book and he has presented on each plate landscapes or bits of vegetation which are typical of the bird's haunts while the species are arranged according to habitat rather than systematically. While well known as an architect and draughtsman this is the author's first attempt at bird drawing and we think he is to be congratulated.

His idea is sound for during his many years of field study of birds, he has realized that we depend very largely upon posture and environment in our identifications and to the trained ornithologist color is of secondary importance. If this fact can be brought home to the beginner it may go far to increase his accuracy and save us from many records of birds in impossible places. Besides the drawing there is on the same page a brief biography, account of color, size, and geographic range. Brief mention also is made of some closely allied species. One hundred and fifty birds from east of the Mississippi River are figured and mention is made of sixty-four others.

In some of the sketches the nests of the birds appear and like most artists who attempt to draw nests Mr. Street has found them more difficult than the birds and we suspect that in most cases his nests were drawn from memory rather than with actual specimens before him.

The book should appeal to a wide range of readers especially those who are just beginning their studies.—W. S.

Baldwin and Kendeigh on the 'Physiology of the Temperature of Birds.'—It is a far cry from Mr. Baldwin's first report on bird-banding to this technical volume[2] and it illustrates better than anything else the

[1] Brief Bird Biographies. A Guide to Birds through Habitat Associations. By J. Fletcher Street. Pp. 1–160 (size 10¼ x 7¼). Grosset and Dunlap, N. Y. Price $1.00.

[2] Physiology of the Temperature | of Birds | By | S. Prentiss Baldwin and S. Charles Kendeigh | Sci. Publ. Cleveland Mus. Nat. Hist., Vol. III. Pp. i–x + 1–196, frontispiece, pls. I–V, figs. 1–41. October 15, 1932.

progress that has been made in the development of the Bird Research Laboratory at Gates Mills, Ohio, which he established.

The volume before us sets forth in detail various investigations upon the temperature of birds, especially of the House Wren, which was the subject of most of the experiments. Most of the results were obtained by the use of the thermocouple as explained previously in a paper in 'The Auk.'

There is considerable variability in the body temperature of Passerine birds due to muscular activity brought on by emotional excitement and other factors, and a regular daily rhythm rising until about noon and decreasing to midnight. Many other experiments are recorded relating to resistance to extreme temperatures etc., etc. Much information was also secured regarding the temperature of the nest, the eggs, and the incubating bird.

The work is illustrated by charts and photographs, and there is a bibliography and an excellent index. The handsomely printed volume will prove a valuable work of reference for those interested in the physiology of birds as well as physiology in general.—W. S.

Kendeigh and Shelford on Life Zones and Temperature Laws.—The two papers[1] here reviewed appeared together in the 'Wilson Bulletin' and are evidently prepared in conjunction to question the accuracy of the data and methods employed by Merriam in outlining his theory of temperature control and his resulting life zones maps.

After considering data available in 1894 Dr. Merriam decided that animals and plants are restricted in northward distribution by the total quantity of heat during the season of growth and reproduction and in their southward distribution by the mean temperature of a brief period covering the hottest part of the year. As isotherms based upon these data corresponded fairly well to the boundaries of life zones based upon distribution of various birds and mammals, he assumed that they were the controlling factors in the north and south distribution of animals and plants.

Mr. Kendeigh, largely on the basis of experiments carried on in the Baldwin Bird Research Laboratory, claims as objections to Merriam's first law that temperatures at other times of year than the season of reproduction may be effective in limiting northward range and that the mere agreement of isotherms with the boundaries of life zones does not prove that the former are the critical factors in limiting distribution without an aedquate physiological basis. He also considers that the basis of "summing temperatures" used by Merriam is without significance because the temperature threshold of development varies widely in different species and because there is a marked difference in the rate of development at different temperatures. Moreover, the actual data used by Merriam (as later admitted) was, by an oversight, incorrectly determined. Some of the same

[1] A Study of Merriam's Temperature Laws. By S. Charles Kendeigh, Wilson Bulletin Sept. 1932, pp. 129–143 and Life Zones, Modern Ecology and the Failure of Temperature Summing. By V. E. Shelford. Ibid, pp. 144–157.