rendered no greater service by our National Museum than the completion of this great work. We must all be patient, however, in looking for the published results, recognizing the great amount of time, labor and expense required for doing thorough work of this comprehensive nature. —J.G.

Important to everyone working actively in, or essaying to understand the intricacies of, systematic zoology is a knowledge of the working rules governing the practices in that field. Copies of "The International Rules of Zoological Nomenclature" (28 pp., reprinted, 1926) can now be had at 50 cents from the Secretary of the Biological Society of Washington, J. S. Wade, U. S. Bureau of Entomology, Washington, D. C.

A new manual for collectors has just appeared as Bulletin No. 69 from the National Museum of Canada, under the title "Methods of Collecting and Preserving Vertebrate Animals." The author, Dr. R. M. Anderson, has gathered together in this 140-page illustrated manual all the latest "wrinkles" in field practice, such as we have reason to know will be profitable to the seasoned collector, let alone the beginner. Dr. Anderson has drawn upon his own extensive field experience, and he has also elicited help from many other active collectors. For example, Allan Brooks' special method of making skins of waterfowl is fully described; and no one who has seen them can but admire the results of Brooks' methods, from both the standpoint of permanence and that of beauty and symmetry of make. This manual may be had for 25 cents (from the National Museum of Canada, Ottawa), therefore putting it within easy reach of everyone who collects birds or mammals and who aspires to improve his product.—J.G.

Bird conservation presents an ever-changing problem to those in whose minds this cause rises as one worthy of active attention. An admirable example of scientific attack on one phase of this problem is afforded by the current work of S. Prentiss Baldwin and his associates at the Baldwin Bird Research Laboratory and Western Reserve University, Cleveland. The lines of this scientific attack are learnable from the paper entitled "The Protection of Hawks and Owls in Ohio," just issued through the Ohio Journal of Science (vol. 32, no. 5, September, 1932, pp. 403-424) under the authorship of S. Prentiss Baldwin, S. Charles Kendeigh, and Roscoe W. Franks. Entirely new data are presented; and the ways of handling the evidence and the conclusions drawn by the authors can be studied to advantage by conservationists everywhere. Briefly to quote: "The above information shows clearly that the general hawk and owl populations in Ohio have beneficial food habits and are powerful agents in the natural control of rodents. It is not best to distinguish too closely between species, because they all exert some important, controlling influence in nature, and the average person is not able to identify the different forms nor able properly to judge between the beneficial and harmful species. It is rather best to pass judgment on the hawk population as a whole and the owl population as a whole and base our state control measures upon whole populations rather than on each species separately." Here, we believe, is a sound principle, to be given heed in various other directions. In this same connection we would call particular attention to the valuable article by Paul L. Errington in the present issue of *The Condor*.—J.G.

PUBLICATIONS REVIEWED

PHYSIOLOGY OF THE TEMPERATURE OF BIRDS[1] as it is presented by Baldwin and Kendeigh leads directly to the problems which confront the bird watcher. Students of birds in the field welcome any information which explains for them some phase of the physiology — activity — of birds. They will be attracted to the present work for several reasons. First, the authors have combined long experience with animals in the wild with advanced technical knowledge both as regards use and development of equipment and proper capture and care of birds used in tests. They have studied previous work relating to the subject and have incorporated it into their results. They have organized and presented their material to give a maximum of clarity and meaning, but at the same time have used restraint not to invent, or contribute to, unsupported theories. In the words of the writers "final results and conclusions have not been obtained on any one phase of the general problem. Each item in the physiology of bird temperature is now ready for more detailed and analytical investi-

[1] Physiology of the Temperature of Birds, by S. Prentiss Baldwin and S. Charles Kendeigh. Sci. Publs. Cleveland Mus. Nat. Hist., III, October 15, 1932 (received at Mus. Vert. Zool., Nov. 7), x + 196 pp., pls. I-V, figs. 1-41, frontispiece.

gation. The survey here presented will aid in orienting and correlating such special studies in the problem of bird temperature."

Eastern House Wrens supplied most of the records and these were obtained mainly during the breeding season. This species is considered typical of small passerine birds in its temperature reactions. Various types of thermocouples used in connection with indicator and recording potentiometer pyrometers were the chief instruments. Perfecting the adaptation of these for the measurement of avian temperatures probably constitutes the most important part of the work of the present authors.

The twenty-three tables and forty-one figures, mostly charts, are models of clear presentation of facts. Nearly one hundred bibliographic references include practically all papers which have a direct bearing on the physiology of temperature in birds. All temperature records are given in both Fahrenheit and Centigrade scales.

A standard temperature was determined (104.4° F. in the male house wren) and used as a basis for comparing factors which influence body temperature. It would seem particularly desirable that this constant be based on records taken at seasons other than the breeding time, for with the varied physiological changes that are known to occur seasonally the standard temperature of non-breeding birds would surely be more characteristic of the species. These workers indicate (p. 28) that they suspect this, but of course such measurements could not be made.

A few points selected from the many lines of evidence considered will indicate the importance of such studies for interpreting the normal activities of birds. First, it must be recalled that mechanisms regulating heat production and heat loss determine the actual temperature. The ingestion of food into the body is associated with a rise in the bird's temperature. Death in the smaller passeriform birds from lack of food at ordinary air temperatures occurs within a very few hours, possibly from some defect caused by undernourishment. Moderate fluctuations in the normal air temperature have little or no effect on the bird's temperature. The peripheral circulation of blood is so rapid and perfect, and the skin is so well insulated with feathers, that variations in air temperature to which birds are exposed do not greatly affect the relation between skin and body temperatures. Greater amount of activity of birds in summer probably accounts for higher daily temperature in summer. Muscular activity is mainly responsible for the regular daily rhythm in body temperature. Feathers may furnish as much protection against direct solar radiation as they do against intense cold. In the house wren the optimum incubation temperature is probably below 100° F., and a fluctuating temperature may be more favorable than a constant one.

It is not possible to pronounce the book absolutely free of error although it misses this distinction by a narrow margin. No indication is given the reader that the "crow" mentioned (p. 97) in a reference to an American writer is not the common species in the United States, but it is the carrion crow (*Corvus corone*) of Europe. It has not yet been demonstrated that the seasonal variation in the thyroid gland referred to occurs in our crow. The bibliographical reference (p. 166) to Groebbels (1928a) should have been to Pflügers Archiv für die gesamte Physiologie des Menschen und der Tiere, not to Zeitschrift für Biologie. The name of the publication, Anatomical Record, is misspelled in two places in the book. However, minor slips of this nature are so infrequent that they should be ignored in considering the usefulness of the volume.

A more serious objection may be found in giving almost one-eighth of the book to an index. While it may be better to make an index too complete than too scant, no doubt many readers would prefer to have had at least fifteen of those pages devoted to the application and interpretation of the findings, mentioned on page 6.

Final appraisement of this publication involves an appreciation of it as an indicator of the growing tendency to employ the tools and suggestions of the laboratory in analyzing purely out-door problems of natural history. Wider adoption of this viewpoint may bring a surprising acceleration of progress in solving these problems.—JEAN M. LINSDALE.

DESCRIPTIONS OF NEW BIRDS FROM THE MOUNTAINS OF SOUTHERN NEVADA. By A. J. van Rossem. Trans. San Diego Soc. Nat. Hist., vol. 6, no. 22, June 5, 1931, pp. 325-332.

A PARTIAL STUDY OF THE CANADIAN SAVANNA [*sic*] SPARROWS, WITH DESCRIPTION OF *Passerculus sandwichensis campestris*, SUBSP. NOV. THE PRAIRIE SAVANNAH SPARROW. By P. A. TAVERNER. Proc. Biol. Soc. Wash., vol. 45, Nov. 10, 1932, pp. 201-206.