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The Downy Waterfowl of North America.—Colleen Helgeson Nelson. 1993. Delta Station Press, Deerfield, Illinois. xx + 302 pp., 9 color plates, numerous pen and ink drawings and charcoal sketches, 3 appendices. ISBN 1-55056-219-3. \$39.95 in USA; \$49.95 in Canada.—This long awaited monograph had its inception in 1962 as an artistic project. Colleen Nelson was encouraged by H. Albert Hochbaum to compile a set of paintings of day-old waterfowl using live birds from the hatchery at the Delta Waterfowl Research Station as models. The resulting watercolor paintings were widely acclaimed for their accuracy and charm, and Colleen was encouraged to publish them. Originally, she planned an elegant folio with a color plate for each species, but this proved to be impractical. A compromise in the form of a monograph began to take shape as she painted additional species, added text, and reviewed the literature on downy waterfowl. After 30 years the project has been completed, and we have the first book ever devoted solely to downy waterfowl.

The book has several objectives. First and foremost, it presents paintings of day-old birds made from live models, with special attention to accuracy in color, downy plumage pattern, body proportions, and postures. This objective is met in nine superb color plates, surely unmatched for quality in any previous publication. Samples of Colleen Nelson's downy waterfowl paintings have already appeared in Volume 2 of *The Handbook of North American Birds* (1976), but the new plates are more finely crafted and more delicately reproduced. They are especially interesting for the varied postures represented, all of which reflect the artist's acute observations of her models as they stand, sit, walk, preen, sleep, and threaten one another. The same keen sensitivity to characteristic postures adopted by downies is reflected in the many charcoal sketches sprinkled through the text.

The first half of the book consists of a systematic description, by tribe and species, of the morphology of downy waterfowl of North America, Central America, and the West Indies. The main focus is on the colors and patterns of downy plumages. Munsell color charts and notations are used to describe colors of down and unfeathered parts. Direct observation of live birds was supplemented by color transparencies of wild birds and extensive use of museum collections in North America and abroad to describe color variations. Notes on vocalizations and other behavior of downy young are based on the author's observations on hatchery birds. The sections introducing each tribe give summaries of distribution, taxonomy, appearance, and behavior based largely on review of the literature on Anatidae worldwide. Under each species, appearance and color variation are described and discussed, and the source of specimens examined is listed, with references.

This half of the book is packed with descriptive

detail meticulously presented and carefully discussed. Taxonomic disputes are reviewed and sources of variation are evaluated based on the author's extensive experience and wide circle of consultants. The result is a handbook that summarizes much of what is currently known about the external morphology of downy waterfowl and draws attention to noteworthy aspects of behavior. The importance of downy plumages in anatid systematics is reaffirmed, although only a few taxonomic suggestions are made (e.g. retention of genera *Philacte* and *Mareca* based on distinctive color patterns).

The second half of the book consists of three appendices giving weights and measurements, color descriptions, and identification keys for downy waterfowl. Morphometric data, derived from live birds, are presented in four age categories of birds between 8 and 96 h of age. Color descriptions for each species are based mainly on the author's Munsell notations taken from live, newly-hatched birds. An identification key to genera is followed by keys to species in each polytypic genus. Characteristics of plumage pattern and bill structure, rather than color differences, are emphasized in the keys, and diagnostic features are illustrated in excellent line drawings from museum specimens. For most species, age changes in bill shape and head patterns are illustrated for day-old and several-week-old ducklings.

This book is a gold mine of detailed information about the comparative morphology of downy waterfowl. It will certainly be the major reference on this topic for many years to come. The keys will be invaluable for identification of specimens by systematists, aviculturists, and field workers. The mass of detailed descriptive material and precise documentation of specimen sources make the first half of the book heavy going for the general reader, but the illustrations (color plates, sketches, key drawings) are superb. For the price, this is a very good buy for waterfowl enthusiasts of every kind, and many ornithologists will want to own a copy just for the plates alone. The book is handsomely produced with few typos and effective layout, as is appropriate for the magnum opus of the leading expert on downy waterfowl.—FRANK MCKINNEY, *Bell Museum of Natural History, University of Minnesota, 1987 Upper Buford Circle, St. Paul, Minnesota 55108, USA.*