

## Hand-Rearing Birds

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**Hand-Rearing Birds.** Laurie J. Gage and Rebecca S. Duerr, Blackwell Publishing Professional, 2121 State Avenue, Ames, Iowa 50014, USA. 2007. 441 pp. ISBN 978-0-8138-0666-2. US \$79.99 (hardback).

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*Review by Sandra van Riper*

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For anyone working in the field of wildlife disease and dealing with avian populations, there inevitably comes a time when hand-rearing individuals is necessary. There are over 9,600 recognized avian species worldwide, with 810 found in North America. Each species is unique, with differing nutritional requirements. As anyone who has attempted hand-rearing knows, success is probably more art than science, but without the knowledge and reference of basic formulas and techniques, it can be even more time-consuming and less successful than the norm might otherwise be. It is more often than not that a chick that needs hand-feeding will arrive unexpectedly, and action must be taken immediately to save its life. There is no luxury of researching methods and formulas the next day. This book brings together a variety of methods that have been successfully used by an array of animal curators, rehabilitators, aviculturists, bird enthusiasts, veterinarians, and biologists. Having formulas and techniques available for a wide variety of avian species in one source is invaluable when confronted with a hungry orphan chick.

The editors, Rebecca Duerr and Laurie Gage, did an excellent job in finding experts in the field of hand-rearing chicks to provide the content for the chapters. Rebecca received a BS from San Francisco State University and her DVM from UC Davis. She has worked on oiled seabird care and is currently an avian and exotic animal veterinarian for the Wildlife Care Association of Sacramento. She brings a love of birds to this book, and it is mentioned that her favorite birds are hatchling American robins and house finches. She contributed material for several chapters including the introductory chapter on general care, woodpeckers, and finches. Laurie Gage was a director at Six Flags Marine World in Vallejo, California, and then a veterinary assistant at the Los Angeles Zoo. She is currently with the United States Department of Agriculture, where she specializes in big cats. Gage previously wrote a book on hand-rearing mammals (Gage 2002).

Because captive propagation is critical in the management of some avian species and their

long-term survival, there is a need for hand-rearing techniques and consistent record-keeping protocols to be followed by workers in the field. There are several books that discuss hand-rearing techniques (e.g., Fowler 1986; Vriends 1996), but they either do not specialize in birds or are intended primarily for pet birds. This book expands our knowledge base for wild birds. Each chapter includes a short section on natural history, criteria for intervention, record keeping, initial care and stabilization, common wildlife disease problems, details on diet, feeding techniques, formulas and recipes, growth and development from egg to fledging, preparation for wild release, and references. The goal of hand-rearing as presented in this book is to return the individuals to the wild whenever possible. But the authors also recognize that their wild release protocol is not the case with a few birds, for example, parrots, lorikeets, and domestic poultry. There is a "template" feel to some sections of this book, where authors seem to have added material that might not be relevant, but just to complete the sections requested by the editors. This additional material leads to considerable extraneous information that is really not necessary. An example of this is in the dove chapter, where it talks about leg trauma caused by human hair in nests, and this would be extremely unlikely in Columbiform nests, but rather more possible in nest linings of passerines.

This book is refreshing because it is not mainly a rehashing of what is known about domestic species (i.e., chickens) extrapolated to wild birds, but rather it details techniques developed by individuals with hands-on experience and data from diverse avian species. The book abounds with unique techniques that are creative and practical, like using a laundry basket as a cage. Special recipes for each species are presented, and tools are recommended that can be utilized to perform the actual task of feeding—a syringe with a plastic feeding tube being the most standard for tubing young birds. Other helpful ideas are exemplified as, for example, in hornbills (Chapter 30), where Patricia Witman suggests filling a latex glove with warm water and placing the nestlings between the fingers of the glove. Rebecca Duerr suggests using pine cones, cactus skeletons, and routed logs to teach woodpeckers to forage. Puppets are shown for birds such as hawks and eagles and condors where human contact must be minimized (Chapter 13).

Growth rates are presented in graphs and/or tables for many species, and these data would be quite useful for tracking progress in hand-

rearing. The species with growth rate graphs include lorikeets, roadrunners, kingfishers, hornbills, house finches, house sparrows, turacos, doves, condors, gulls, terns, and plovers. Many photos throughout the book show nestlings and fledglings in their cages and artificial nests and being fed. There are also notes about treating common problems such as trauma and some diseases. But this is not a veterinary manual. It is aimed at wildlife rehabilitators, and, in many cases, it is suggested that a veterinarian be consulted for specific treatment of medical problems. There are, however, some references to treatments that are general and practical. For example, splayed legs are discussed in penguins, geese, hawks, condors, turkeys, parrots, woodpeckers, turacos, and pigeons with photos showing simple splints. Because this is a problem often exacerbated by substrate that can occur in smooth-floored cages or nest bowls, and is treatable if dealt with early, the inclusion of treatment is excellent. Dehydration is also addressed, which is important to recognize and can be common in hand-rearing. This is dealt with, for example, in detail in the chapter on owls. Generally, step-by-step procedures will be appreciated by nonveterinarians and wildlife disease practitioners who do not have formal training in medical care.

The first few chapters are general in focus, laying the background for hand-rearing birds. Chapter 1 includes a section on legal considerations, including some of the permits that may be necessary for wildlife disease workers to hold captive birds, even temporarily. Addresses and contact information for many permitting agencies in the United States and Canada are outlined in Appendix I. A form from the Wildlife Care Association is presented as a format for information that might be collected, and there are suggestions for the preliminary physical examination. An emphasis on record keeping is consistent throughout the book. Chapter 1 also shows how to make easily assembled incubators constructed from aquariums and heating pads as well as more sophisticated setups. Chapter 2 presents two tables to assist in the identification of bird types. The first table shows traits that allow identification to the taxonomic Order level and determines whether an individual is altricial or precocial. The second table is a guide to common passerines according to mouth color. Often rehabilitators are confronted with a chick that may be difficult to identify in that young birds before being feathered seldom resemble adults, but they should recognize that mouth color can be very distinctive in many species. Chapter 3 includes a general

discussion about aspects of incubation, including egg handling, storage, temperature, humidity, candling, and hatching. The discussion of temperature, humidity, and other parameters is based on poultry but could be extrapolated to wild species; the California condor is used as an example in several instances. The author of Chapter 3 was involved with the California Condor Recovery Program in Los Angeles. However, anyone incubating eggs of a wild species would need to find more specific details than those presented in this general chapter. Some incubation details are available further on in the book, in chapters that discuss each bird type. Appendix I provides addresses of many permitting agencies and rehabilitation associations in the United States and Canada. There are general calculations for determining the energy requirements for growing birds in Appendix II. Appendix III has many contacts, addresses, phone numbers, and websites for supplies such as feed and supplements, equipment, veterinary supplies, and general items that one might need when hand-rearing chicks. The index is more than adequate.

#### OUTLINE OF CHAPTERS

- Chapter 1. (General Care, Rebedda Duerr)
- Chapter 2. (Chick Identification, Guthrum Purdin)
- Chapter 3. (Incubation of Eggs, Susie Kasielke)
- Chapter 4. (Ratites, Dale A. Smith)
- Chapter 5. (Penguins, Jane Tollini)
- Chapter 6. (Grebes, Sandie Elliott)
- Chapter 7. (Pelicans, Wendy Fox)
- Chapter 8. (Flamingos, Peter Shannon)
- Chapter 9. (Shorebirds, Libby Osnes-Erie)
- Chapter 10. (Gulls and Terns, Meryl Faulkner)
- Chapter 11. (Alcids, David A. Oehler)
- Chapter 12. (Ducks, Geese, and Swans, Marjorie Gibson)
- Chapter 13. (Eagles, Nancy A. Lang)
- Chapter 14. (Hawks, Falcons, Kites, Osprey, and New World Vultures, Louise Shimmel)
- Chapter 15. (Condors, Susie Kasielke)
- Chapter 16. (Hérons and Egrets, Megan Shaw Prelinger)
- Chapter 17. (Domestic Poultry, Nora Pihkala and Patricia Wakenell)
- Chapter 18. (Wild Turkeys, Quail, Grouse, and Pheasants, Marjorie Gibson)
- Chapter 19. (Cranes, Marjorie Gibson)
- Chapter 20. (Pigeons and Doves, Martha Kudlacik and Nancy Eilertsen)
- Chapter 21. (Parrots, Brian Speer)
- Chapter 22. (Lorikeets, Robyn Arnold)

Chapter 23. (Roadrunners, Elizabeth Penn Elliston)

Chapter 24. (Owls, Lisa Fosco)

Chapter 25. (Goatsuckers, Linda Hufford)

Chapter 26. (Turacos, Kateri J. Davis)

Chapter 27. (Hummingbirds, Elizabeth Penn Elliston)

Chapter 28. (Swifts, Paul D. Kyle and Georgean Z. Kyle)

Chapter 29. (Mousebirds, Kateri J. Davis)

Chapter 30. (Hornbills, Kingfishers, Hoopoes, and Bee-eaters, Patricia Witman)

Chapter 31. (Woodpeckers, Rebecca Duerr)

Chapter 32. (Toucans, Martin Vince)

Chapter 33. (Corvids, Elaine J. Friedman)

Chapter 34. (Passerines: Hand-Feeding Diets, Rebecca Duerr)

Chapter 35. (Passerines: House Finches, Goldfinches, and House Sparrows, Rebecca Duerr and Guthrum Purdin)

Chapter 36. (Passerines: American Robins, Mockingbirds, Thrashers, Waxwings, and Bluebirds, Janet Howard)

Chapter 37. (Passerines: Swallows, Bushtits, and Wrens, Veronica Bowers)

Chapter 38. (Passerines: Exotic Finches, Sally Cutler Huntington)

Appendix I. Important Contacts

Appendix II. Energy Requirements for Growing Birds

Appendix III. Resources for Products Mentioned

For any wildlife disease worker, biologist, wildlife rehabilitator, aviculturist, or curator of avian species in captive situations, this book would be good to have on the shelf as a potential reference to enhance success in caring for and hand-rearing orphan birds. Black-and-white photos are numerous throughout the book and add a great deal of information to the content. Only the cover is in color, but it has some wonderful photos of nestling birds waiting for food or being fed. The book is bound hardback and is well constructed for many years of shelf life.

#### LITERATURE CITED

- FOWLER M. E. (ed.). 1986. Zoo and wild animal medicine. W. B. Saunders Co., Philadelphia, Pennsylvania, 1152 pp.
- GAGE, L. J. 2002. Hand-rearing wild and domestic mammals. Iowa State Press, Ames, Iowa, 279 pp.
- VRIENDS, M. M. 1996. Hand-feeding and raising baby birds: Barron's Educational Series, Hauppauge, New York, 176 pp.

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