

monitoring the last wild breeding pair of California Condors to aiding in the administering of vitamins to panthers (*Felis concolor coryi*) in Florida, the author writes of his experiences while accompanying trained personnel in the field in an ongoing and desperate attempt to ensure the survival of a species.

The author expertly conveys his feelings to the reader allowing one to vicariously experience the excitement of being in close proximity to these beautiful and often elusive creatures. He writes with empathic conviction a thought-provoking text encouraging readers to reflect not only on the natural world around us but more importantly, our relationship within it.

Throughout the text topics relating to the causes of certain species becoming endangered or extinct, including a major one, loss of habitat, are examined in detail. Accompanying Bergman's text on his excursions is an abundance of information relating to each particular species. Bergman attempts to shed some light as well on controversial issues like captive breeding and intensive wildlife management. The book concludes with a partial, but nonetheless extensive, list of extinctions as well as a listing of organizations concerned with wildlife the reader may wish to contact.

An unusual, but interesting addition worth noting in a book of this type is Bergman's inclusion of numerous references to, and quotes from literary works relating to the topic under discussion. Passages from *A Midsummer Night's Dream*, poetry by D. H. Lawrence, and quotes from other authors are inserted throughout the text. As Bergman is a Professor of English this appears to be a demonstration of his own unique approach.

Of the ten species Bergman highlights, the tragedy is the Dusty Seaside Sparrow which has been considered extinct since 1989 and a sighting of the Ivory-billed Woodpecker has not been documented in recent years. *Wild Echos* however, is a well-presented cry for the preservation and celebration of all the species that remain. Bergman has written an enjoyable, easily comprehended and informative book on a few of the many endangered animals in North America that serves to promote awareness and make one conscious of the true vulnerability of all life.

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"Language" and Intelligence in Comparative Developmental Psychology

By Sue Taylor Parker and Kathleen Rita 1990. Cambridge University Press, N 590 pp., illus. U.S. \$65.

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Golden-crowned Kinglets: Treetop Nesters of the North Woods

By Robert Galati. 1991. Iowa State University Press, Ames. xi + 142 pp., illus. U.S. \$18.95.

Until recently, the basic facts of Golden-crowned Kinglet reproduction were not well known. In my copy of the *Audubon Society Encyclopedia of North American Birds* (J. K. Terres. 1980. Alfred A. Knopf, New York), several entries, such as length of incubation period and age at fledging, are simply described as "unknown". Undoubtedly, the diminutive size of this bird and its habit of nesting near the top of tall trees are responsible for this state of affairs.

This lack of knowledge was corrected in 1985 by the publication of an article by R. Galati and C. B. Galati (1985, *Journal of Field Ornithology* 56: 28-40). The authors had observed, in 1954-1960, the reproductive efforts of 13 kinglet pairs in Itasca State Park, Northwestern Minnesota. Now, Robert Galati has published a book that intends to be a more personalized account of his and his wife's observations.

The first chapter, entitled "How we got started", is the most interesting. In it we learn of how the Galatis managed to find the nests of this elusive bird (essentially by climbing many trees!) and then observe the parents' behaviour from platforms erected in the nest

tree itself or atop towers as tall as 16 m. Certainly the vagaries of working at treetop level are not usually described in technical reports. We are also told of the incredible tameness of kinglets. How many researchers can boast of being able to study feeding habits by simply removing prey items directly from the bill of the parents at the nest? How many ornithologists have taken the trouble to build a blind only to find the study bird enter the blind and perch on the observer's shoulders?

The other chapters cover, in order, the study location, vocalizations, territorial behaviour, the nest, eggs, incubation, nestlings and their development, fledging, experiments, and nesting success. The encyclopedic nature of some of the information is worthy (incubation lasts 15 days, young fledge 16-19 days after hatching) but unfortunately this and other more trivial findings are not presented within any conceptual framework. This makes for rather dry reading in places. Despite the author's best intentions, I found interesting anecdotes to be few and far between. Somehow, the field work feeling (excitement and tediousness alike) does not show through as it did in the first chapter. Could one blame this on the fact that the book was presumably written several decades after the actual study took place?

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Species Bergman highlights, the rusty Seaside Sparrow which has become extinct since 1989 and a sighting of a Woodpecker has not been documented in years. *Wild Echos* however, is a book for the preservation and celebration of species that remain. Bergman has written in a readable, easily comprehended and concise style on a few of the many endangered species in America that serves to promote awareness of the true value of these species.

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On the cover, in order, the study localities, territorial behaviour, the nest, kinglet nestlings and their development, kinglet nestlings, and nesting success. The availability of some of the information is limited to 15 days, young fledging (nothing) but unfortunately this and other findings are not presented within the book. This makes for rather dry reading. The author's best interesting anecdotes to be few and far between. The field work feeling (excitement) does not show through in this chapter. Could one blame this on the fact that it was presumably written several years after the study took place?

The book is small and well-produced. Twenty-seven black-and-white photographs accompany the text. Nine line drawings by Colleen Helgeson Nelson show the different stages of nesting development (one more drawing shows a pendulum-type nest). I think that this book will appeal to ornithologists interested in the natural history of Golden-crowned Kinglet reproduction (although I would

advise them to first consult, as a cheaper alternative, the Galatis' 1985 article in the scientific literature) and to people who have done similar observational work on other species.

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"Language" and Intelligence in Monkeys and Apes: Comparative Developmental Perspectives

By Sue Taylor Parker and Kathleen Rita Gibson, Editors. 1990. Cambridge University Press, New York. xviii + 590 pp., illus. U.S. \$65.

It is not surprising that throughout the entire history of the study of animal behaviour no area has generated more interest or controversy than the higher capacities of our nearest relatives. The present work reflects this continuing focus, with most chapters based on a workshop in 1986 but updated in the interim. The first of six groups of chapters establishes a theoretical framework. Parker provides a historical survey of germane portions of anthropology, ethology, primatology, and psychology. Within this a program of comparative developmental evolutionary psychology, mercifully acronymized to a CDEP, is proposed as an extension of Piagetian theory. While readers trained in the traditions of either behaviourism or the "modern synthesis" of biology will appropriately draw a deep and suspicious breath at this proposal, they need not panic: Piaget is invoked only in some of the subsequent chapters, and always critically, with due attention to the problems surrounding his legacy. On another front, the use of heterochrony here as in behavioural ecology reflects the increasing attention paid to this concept. In the first of two chapters addressing neural substrates, Parker interestingly considers, in the context of the theory of life histories, how intelligence in primates is likely constrained by the high metabolic costs of large brains. Within an examination of the relations of brain size and behavioural skills, Gibson argues against the conclusion that human intelligence is achieved through neonatal altriciality. In a fourth chapter Parker and Bernard Baars review the multiple uses of key terms, a litany which may be useful and is certainly tedious.

Three of four chapters on cebus intelligence adopt Piagetian approaches (one reporting on a single individual of uncertain ontogeny and species!). The fourth, and most intriguing, by Dorothy Fragaszy, analyzes sensorimotor development in capuchins in terms of dynamical systems and time series, with different activities at different developmental stages viewed as attractor stages. Among three chapters in imitation and cultural transmission, the two informa-

tive ones both issue cautions on views which are presently widely held: Elisabetta Visalberghi and Fragaszy conclude that in monkeys imitation plays at most a limited role in behavioural acquisition while Michael Tomasello shows that to the extent that chimpanzees have cultural transmission, it is very different from our own.

Among four chapters on social intelligence and communication in great apes, there are noteworthy similarities in the use of communication to solve problems in the gorilla studied by Juan Dómez and the orangutans by Kim Bard. Among three chapters on numerical and classificatory abilities, Tetsuro Matsuzawa profitably compares spontaneous sorting in a chimpanzee with young children while Irene Pepperberg does likewise for conceptualization by her African grey parrot with chimpanzees. In two final chapters on linguistic ontogeny in apes, Lyn Miles reports on the acquisition by an orangutan of some 140 signs based on American Sign Language, while Patricia Greenfield and Sue Savage-Rumbaugh, on the contentious question of grammatical use by apes, carefully demonstrate that bonobos use and invent simple grammatical rules in patterns similar to both deaf and hearing children.

Among the reviews of previously published work and the fresh data provided here, there is much material for consideration, especially comparisons across species. Venerable concepts, especially genetic ones such as the "innate schoolmarm" of Konrad Lorenz, and such as parallels between ontogeny and phylogeny, the non-identity of intelligence and associative learning, and whether the occurrence of a new word is regarded as a lexical innovation or ambiguity, receive novel examination. Those who suspect that investigators studying fewer individuals become more deeply involved with them will be interested to know that of the 14 chapters presenting new data, the three longest deal with a total of four subjects (two individuals and one pair). (Presumably if communication with some of these subjects progresses, they will be promoted from named entries in the text and index to the status of co-authors.) Given the known wide individual variation among primates, as acknowledged by some of the authors, the signifi-