

DIGGING DINOSAURS

JOHN R. HORNER and JAMES GORMAN. 1988. Workman Publishing, New York. 200 pp. Hardcover.

"I don't give a damn" what killed the dinosaurs, is a famous quote of John Horner, a paleontologist at the Museum of the Rockies in Bozeman, Montana. I remember that when I first heard this I was taken aback a bit because I was (and still am) fascinated by this question. Horner emphasizes in his new book *Digging Dinosaurs* that no matter how you look at the question of extinction, the dinosaurs as a group lived for 140 million years; so he says, "let's stop asking why they failed and try to understand why they succeeded."

Because of Horner's work, the interpretation of dinosaur fossils in regard to the animals' physiology, growth and social habits has changed dramatically. No longer are they seen as lethargic and mindless reptiles. Now we can look back more than 70 million years and report that a certain group of duck-billed dinosaurs were "good mother lizards" as Horner puts it.

Horner's story began in 1978 when he and long-time friend and associate Bob Makela, a high school teacher, followed Marion Brandvold, a local resident of Choteau, Montana, to a site that yielded some very small dinosaur bones. So small in fact that they could have only come from a baby. Previous

to this discovery, there were relatively few specimens of sub-adult dinosaurs and not much was known about them. Horner's recovery of nests (and the remains within them) in the succeeding years showed that at one time there were nesting grounds belonging to 10,000 dinosaurs in the area he searched.

There are two dinosaurs found in the Montana sites that are known to have laid eggs: *Maiasaura*, a duck-billed dinosaur, and *Orodromeus*, a small (about 7 feet long) bipedal dinosaur. With regards to *Maiasaura*, an entire growth series has been attained from embryonic to full adult skeletons. Because of the high number of nest recorded, Horner established that not only were they herding animals but they also grew at a rate similar to that of birds and mammals. Thus inferences are made that at least some dinosaurs were endothermic (possessed internally constant temperature) and not ectothermic (body temperature controlled by external factors) as previously thought by paleontologist.

The book begins with Horner's discovery of the eggs and concludes with his current activities. Along with its account of factual discoveries, it gives personal insights into paleontology in general and into John Horner himself. The illustrations in this book are well done, capturing all the detail that the reader needs. The picture that first caught my eye was one that showed the small size of two dinosaur bones by

comparison with a tab from a Rainier Beer can. This shows two of the facets of dinosaur digging - bones and beer (the former are abundant if you look in the right place, the latter is an extremely good coolant for a paleontologist on a hot summer day)!

Another example of Horner's initiative is his search for research grants (a necessity for almost all paleontological endeavors). In the beginning, he needed \$10,000 for field work. Knowing that the institution that he then worked for, Princeton University, was short on funds, he and Makela contacted the Rainier Beer Company for possible financial support. (Horner and crew supported the Rainier Beer Company in the field, why not have this same company assist in their digging?) They were then notified by the head of the geology department that free-lancing in search of funds was not allowed. Soon after this discussion, Princeton came up with the \$10,000.

Digging Dinosaurs is a book that introduces technical information only when necessary. Though it digresses a lot into interesting side issues, it is very readable. Paleontology, unlike many other scientific endeavors, encompasses many disciplines and is in contact with many more. In the book, there are bits about geology, stratigraphy, physiology, histology, how collecting and preparing are performed and a little history of paleontology. The background information is just enough to make the book fully comprehensible.

With the dinosaur craze at its peak, there are many books on store shelves that clinically illustrate "all there is to know" about dinosaurs. These are informational, but often boring. But if you want to know more about the insight into the process of paleontology; how it works, and how scientists draw their conclusions, this book (which focuses

on a central theme, that of baby dinosaurs) is one of the best around. It is truly enjoyable reading. - Reviewed by *Tim Tokaryk*, Saskatchewan Museum of Natural History, Regina. S4P 3V7

GHOST OF THE FOREST, THE GREAT GRAY OWL

MICHAEL S. QUINTON. 1988.
Northland Press, Flagstaff, Arizona.
10.5 x 9", 66 color photos, 99 pp.
Paper \$19.95.

This is a highly personalized account of a wildlife photographers's experiences with Great Gray Owls in Yellowstone National Park, Wyoming, and Island Park, Idaho. Michael Quinton, a free-lance photographer who lives in eastern Idaho, watched and photographed Great Grays intensively over 5 years. Most of his work was done in Island Park at three or more nests, including one nest-site he prepared himself by trimming the top of a huge broken snag. As he had hoped, owls nested successfully on this snag. Quinton first reported on this experience in a notable photo-essay in *National Geographic* for July 1984.

By spending a lot of time with his subjects (45 days in a blind at one nest) Quinton was able to capture some marvelously intimate views, documenting some behavior which, to my knowledge, has not been previously recorded. I am thinking especially of three shots of a pair engaged in mutual preening; the birds are totally relaxed and absorbed in each other, yet the photos are clear and sharp. Also, this aspect of Great Gray Owl courtship behaviour is carefully described, something few photographers take time to do. Quinton's photos demonstrate his ability to get close to these remarkable birds without interrupting their activities, good evidence that he is an experienced and sensitive naturalist as well as a determined photographer. His photos of an owl bathing in a woodland stream prove my point.

The photos in this sumptuous book, which was printed in Korea, appear to be perfectly reproduced. This is a lavish spread of owls. Of the 66 color photos (including front and back covers) two are double-page and 22 are full-page or more. (Incidentally, eight watercolor sketches by one Monte Varah depict owls and their habitat with charming fidelity). Careful planning, a good sense of composition and superb photographic technique are evident in nearly every photo. Quinton's book reveals much of the world of the Great Gray Owl in the western United States. Birders in that region will appreciate the specific directions provided for finding Great Gray Owls in Quinton's favorite haunts. In terms of breeding habitat, these birds are in big tree country — Douglas Fir and Lodgepole Pine. The open-galleried forests of this region appear easier to get around in than the tangled tamarack bogs which are used by the owls I have studied. Note, too, that the main prey species is a pocket gopher. Some interesting information about pocket gopher habits and the

methods whereby owls capture them are included. There are several excellent photos of Great Gray Owls in pursuit of, or carrying, what Quinton calls those "terrestrial, tunneling, flower-snatching pocket gophers." We read about a number of other denizens of owl habitat, including marten, Moose, Elk, Red Squirrel, Gray Jays, Trumpeter Swan and even a jumping spider, but none of these are in the photos.

There a few minor inaccuracies and some grammatical slips in the text that should have been caught by routine editing. My impression is that the text is pretty much as the author wrote it. It is perhaps too much to expect a top-notch photographer to be an equally competent writer. Quinton is able to convey his excitement and enthusiasm through some spirited writing, but often his style is rather simplistic. Some readers will feel uneasy about lines such as the female owl with a "look of revenge in her eyes" and "giving me the evil eye" and "she had figured I wouldn't try anything stupid," but generally one is able to understand what is happening. I found no typos.

This book has some strong conservation messages. Quinton added a last-minute note to the text, warning about plans to clearcut a key nesting area in 1988. He points out that the large trees in old-growth forest are essential to Great Gray Owl welfare. The large trees eventually die, break off and provide the snag nest-sites that Great Gray Owls in this area depend upon. Several times the author identifies "wilderness forest" as prime habitat, a useful designation. He writes: "It is hoped that greater awareness will mean greater concern for the bird's continued existence." This book helps meet those worthy objectives. — Reviewed by *Robert W. Nero*, Wildlife Branch, Box 14, 1495 St. James Street, Winnipeg, Manitoba. R3H 0W9

THE BALD EAGLE: HAUNTS AND HABITS OF A WILDERNESS MONARCH

JON M. GERRARD and GARY R. BORTOLOTTI 1988. Western Producer Prairie Books, Saskatoon and Smithsonian Institution Press, Washington. 178 pp. Paper \$18.95.

Naturalists in western Canada should be very proud of their prominent contributions to the well-written, well-illustrated single-species nature books published by the Smithsonian Institution Press. First was Robert W. Nero's *The Great Gray Owl*, phantom of the northern forest, in 1980, followed by Nero's *Redwings* in 1984 and J. David Henry's *Red Fox: the cat-like canine* in 1986. Appropriately, Western Producer Prairie Books of Saskatoon has obtained Canadian publishing rights for the fourth of these major Canadian-content books.

This book maintains the high standards achieved in the earlier volumes. Again, information of the highest scientific validity is presented in a way the interested layman can understand and enjoy. The photographs, as in the other books, are superb — though this time not in color.

It is always a thrill for anyone, no matter how slight his or her interest in birds generally, to see a Bald Eagle. Yet the Bald Eagle has become important for more than aesthetic reasons. When Bald Eagle productivity began to decline drastically between 1947 and 1952, another Canadian, Charles Broley, reasoned that new pesticides might be responsible. Broley was correct, and his work formed much of the basis for Rachel Carson's landmark 1962 book, *Silent spring*. By the time DDT use was banned at the end of

1972, the Peregrine Falcon had ceased to breed in the eastern half of the continent and the productivity and numbers of eastern populations of Bald Eagle and Osprey had fallen to a small fraction of that of pre-DDT times. Egg shells of all three species were thin and fragile, in proportion to their DDT exposure. Chapter 1 succinctly recounts this important conservation story.

Subsequent chapters deal with Bald Eagle anatomy, flight, feeding, distribution, territory, nest building, eggs, young, migration, wintering, and management. Appendices give data such as measurements, food supply, clutch and brood size, and growth curves. We also learn that the incubating female leaves her eggs for shorter periods when wind-chill is high and that Bald Eagles tend to winter where the temperature is just at the freezing mark, although immatures winter where it is somewhat warmer.

The literature on Bald Eagles has been thoroughly reviewed, allowing interesting comparisons to be made. The widest Bald Eagle nest, in Florida, was over 9 feet in diameter and 20 feet deep. An Ohio nest was used for 35 years.

This book results largely from continuous, long-term studies of the 20 to 25 breeding pairs and associated immature Bald Eagles at Besnard Lake, Saskatchewan. These eagles have been studied since 1968 by Doug Whitfield and Jon Gerrard, the Gerrard family, and an ever-changing crew of volunteers who have come from far and wide, every summer, without pay, to observe and record. Gary Bortolotti first came to Besnard Lake from Toronto in 1976, then spent four summers of concentrated study there, 1979 through 1982, to obtain a Ph. D. degree. Amongst other things, Bortolotti's measurements showed that juvenal

eagles have longer wings and tails than the full-plumaged adults.

Gerrard, an enthusiastic amateur, and Bortolotti, the biologist, share many of their insights and personal feelings by recalling an important field experience to begin each chapter. Gerrard is now a respected medical researcher, director of the Manitoba Institute of Cell Biology and director of the medical student research programs at the University of Manitoba. Bortolotti is an assistant professor of biology at the University of Saskatchewan.

I remember well my first encounter with Jon Gerrard. He was 8 years old. His parents, John and Betty, enthusiasts newly arrived from England, were telling me of their sighting of a probable Boreal Owl. I asked some questions. An unusually perceptive little Jon slipped

away, then soon returned, having looked up Peterson's Field Guide and studied the differentiating features. He said "Mother, I rather think the owl was a Saw-whet Owl, as Dr. Houston has intimated by his questions." Jon has lived up to this early promise. As he grew older, Jon was my helper on a number of banding expeditions, but it wasn't long before he and Doug Whitfield had branched out so that eagle studies used up all of their spare time.

That devotion and dedication to a single important bird species should be maintained over such a long span and produce a book of this quality is a great satisfaction to all Saskatchewan naturalists. You will read the book with interest, and keep it as a reference. — Reviewed by *C. Stuart Houston*, 863 University Drive, Saskatoon, Saskatchewan. S7N 0J8

PRAIRIE NEST RECORD CARD SCHEME

The Prairie Nest Record Card Scheme requires additional contributors who are interested in birdlife and would be willing to record information on special cards about the bird nests they find. The Prairie Nest Record Scheme applies to Alberta, Manitoba, Saskatchewan and Northwest Territories.

At the end of the nesting season the cards are to be returned to the coordinator. A report is issued yearly, listing the species, number of nests, contributors and information about use of cards from the file.

Researchers, university graduate students, biologists and government agencies, etc., use data on species they are studying.

For information, blank nest record cards, and instruction card, write to:

H.W.R. Copland, Coordinator
Prairie Nest Record Card Scheme
c/o Manitoba Museum of Man and Nature
190 Rupert Avenue
Winnipeg, Manitoba
R3B 0N2