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### MINNESOTA'S AMPHIBIANS AND REPTILES

*Amphibians and Reptiles Native to Minnesota*. Barney Oldfield and John J. Moriarty. 1994. University of Minnesota Press, Minneapolis. 240 pages. \$25.95 (cloth).

It has been 50 years since Walter J. Breckenridge's classic *Reptiles and Amphibians of Minnesota* was published, and Oldfield and Moriarty have taken on and met the challenge of updating it. Their job has been made more urgent in light of the recent knowledge of worldwide declines in amphibian, and undoubtedly in reptile, populations. Oldfield and Moriarty's stated purpose in compiling this account is to provide a contemporary description of the 48 species of amphibians (five salamander and 14 frog and toad species) and reptiles (17 snake, nine turtles, and three lizard species) for use by sports/outdoors persons.

*Amphibians and Reptiles Native to Minnesota* includes the following chapters: the History of Minnesota Herpetology; Habitats; Observing, Studying, and Photographing Amphibians and Reptiles; Conservation; Common Amphibian and Reptile Problems; Amphibian and Reptile Identification; a Checklist; Keys; Amphibian Descriptions; Reptile Descriptions; Species of Possible Occurrence; and Resources. A Glossary, Literature Cited section, and an Index are also included.

Species descriptions include color photographs, distribution maps, life history information, and remarks about other important aspects of the animal's biology. Species distributions include distinctions between pre-and post-1960 museum specimens, and between these data and literature reports. The keys are organized into a novel, user-friendly, circular format (as originally suggested by Phil Regal) rather than being arranged into the traditional dichotomous format, with which scientists will be more familiar.

*Amphibians and Reptiles Native to Minnesota* is an attractive book. The coverpiece to my hardcover copy is an appealing Golden Gopher maroon and yellow with an Oldfield photograph of a timber rattlesnake. Open the book and you will be thrilled by the quality of the color photographs, mostly taken by Oldfield. Photographs are interspersed within the text, rather than being gathered into a separate section. These photographs by themselves are worth the price of the book. The University of Minnesota's Bell Museum should consider making some of them into postcards; they would sell.

The book has been written with laypersons in mind. In most cases this writing style works; Oldfield and Moriarty have managed to deliver the biology of these animals in a form that the uninitiated can digest. Moreover, when I first received this book, prior to knowing that I would be reviewing it, I read it straight through and did not find that the format and species descriptions produced a sense of redundancy. In a few places the text gets wordy and locked into common phraseology--for example: "Spring peepers have all but disappeared from the Twin Cities ...," rather than "Spring peepers are now rare ...," or "Spring peeper numbers have crashed ...," or "Urbanization has decimated ... " Most readers will not notice this, and it does not detract from the book's overall appeal.

In trying to convey more complicated concepts, the authors have sometimes simplified too much, raising questions in the mind of a careful reader. For example, we learn early on that many species enter southeastern Minnesota through the corridor of the Mississippi River, and are present only there. Later, as an example that

cold and dry conditions limit the distributions of species, we learn that northwestern Minnesota (17 species) has many fewer species than are found in the southeast (34 species). Undoubtedly, both factors (corridor and climate) are important in the presence of Minnesota's southeastern species, and both statements are true. But I found myself wondering which factor was most important, they are never teased apart.

The literature cited is comprehensive, but I found the format in which the references were listed to be difficult to work with. Here, the first line of each reference is indented, as if it was a paragraph, and there are no additional spaces between citations. The cumulative effect of this within a column of text is that the author's names are buried, and the reference is cumbersome to extract. One's ability to do this improves with practice, but this format makes this portion of the book less user-friendly than it could have been.

A general criticism of most books covering amphibians that have been published up to this point is that photographs of aquatic larval stages, especially tadpoles, are not included. There are probably good economic and functional reasons for not doing so—limited money or space, and the fact that people tend to encounter terrestrial rather than aquatic forms. But an unconscious philosophical bias may also creep in—the notion that larval forms are incomplete versions of adults, and therefore need not be acknowledged. This is an incorrect view. In its larval and adult forms an individual amphibian is ecologically two very different animals—aquatic and terrestrial, each adapted to the specific environmental factors it typically faces. Without these larval adaptations the healthiest adult population will not be able to successfully reproduce and vice-versa. You might as well ask which is more important, a chicken or an egg. It is a non-question, both are equally important because chickens in general cannot survive without either form. Therefore, future accounts of amphibians, and future editions of existing books, would be improved by including images of larvae. While *Amphibians & Reptiles Native To Minnesota* does not include many photographs of larvae, Oldfield and Moriarty cannot be criticized on this point, they are just following tradition. It is this tradition that needs to be changed.

I invite people to ask why such a significant and professionally accomplished book was compiled by two amateurs. (I do not mean this in any negative sense. I am simply acknowledging that Oldfield is a practicing veterinarian and Moriarty is a Hennepin Parks wildlife biologist who has dozens of projects ongoing, most of which do not deal directly with herps, and that they spent their spare time assembling this book.) It is a tribute to these men, and reflective of their concern and dedication for Minnesota's herps, that they have pulled this off. A professional would have been challenged to equal this effort. But, where are the professional herpetologists in Minnesota? It is a sad fact that there are no professional herpetologists in Minnesota with the research time and interest required to pursue intensive studies of Minnesota species. Minnesota's herps are not benefitting from this neglect. Minnesota's current laws enacted to insure amphibian and reptile conservation are ... let's just say, interesting. For example, it is currently illegal for a curious child to keep a frog or two as a pet in an aquarium (such a sense of curiosity, by the way, has been known to lead to a career in biology), while a commercial bait dealer has the license (literally) to take as many thousand frogs of any size as they want. Animals from exotic (non-Minnesotan) populations of species found in Minnesota are permitted to be used as bait, and thus are being released into the wild (opening up the potential for

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introducing foreign genes and pathogens). Finally, game fish and bait fish aquaculturalists are devastating Minnesota's natural wetlands (where herps aggregate) by turning them into rearing ponds. A basin used for aquaculture is no more a wetland than a field used for agriculture is a prairie. This is not natural resources management, this is natural resources exploitation, and the data available suggest that it is severely reducing Minnesota's amphibian populations. For once, much of the blame for these conditions cannot be placed squarely on the shoulders of a fish and game-oriented department of natural resources. Rather it appears that certain Minnesotan legislators actively ignore the recommendations of their agency, and instead are only able to listen to the money that comes their way from the growing bait fish and aquaculture industries.

*Amphibians & Reptiles Native To Minnesota* is an important book that comes at a critical time if Minnesota is to preserve a significant component of its natural history. The excitement that has surrounded the publication of this book needs to be translated into a grassroots effort to educate the public about the value of Minnesota's native herps. Oldfield and Moriarty have initiated this effort, and have provided the educational background. It is the responsibility of the far-sighted people of Minnesota (a contingent this liberal state used to be proud of) to see it through. Buy a copy for yourself. Enjoy it, use it, learn from it, and buy additional copies as gifts for friends. Spread the word.—*Michael J. Lannoo, Muncie Center for Medical Education, Indiana University School of Medicine, Ball State University, Muncie, IN 47306.*