

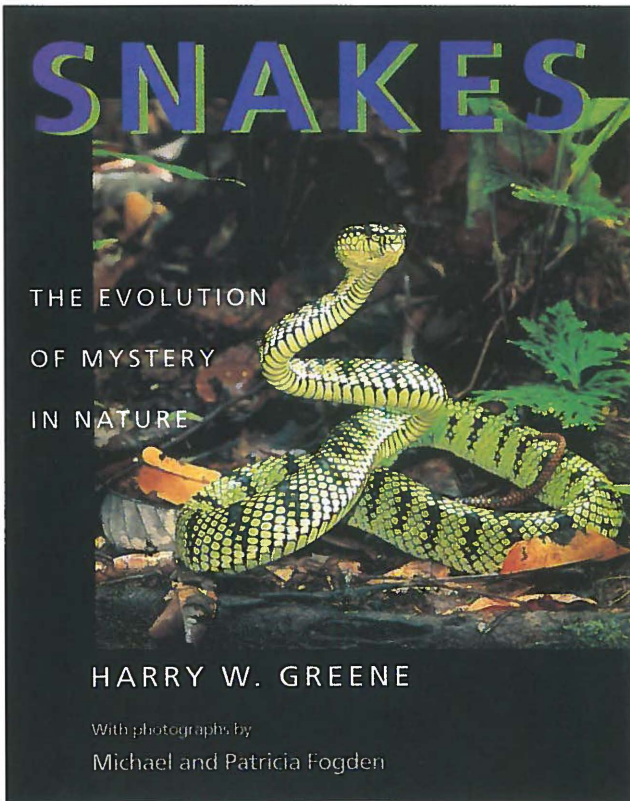


BOOK REVIEW

HARRY W. GREENE, *SNAKES.*
The evolution of mystery in nature.

With photographs by Michael and Patricia Fogden. University of California Press. Berkeley, Los Angeles, London, 1997. Prijs: \$ 45,-; isbn: 0520200144.

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If one in the Middle Ages would see a book and wanted to get a copy for himself, one would have to go to a scriptorium of a monastery to order such a copy, for in that time a monastery would be the only place where one could find people able to read and write. How the book, to be copied letter by letter, was going to look like upon completion was a matter of money. The person copying the book mastered several handwritings: from quick and dirty (and cheap) to very elaborate, and therefore expensive. The parchment could be either cheap or of very high quality and the same would go for the illustrations. Often the design of the book would reflect the quality of the contents.

The 2.2 kg weighing book that Harry Greene has written is of considerable size, is printed on high quality paper, has an beautiful layout and contains the most beautiful pictures of snakes that I have ever seen. For these reasons only this book, if published in the Middle Ages, would have belonged to the most expensive handwritings of a scriptorium: written in the most expensive handwriting by the best calligrapher on the highest quality parch-

ment. The copier would cooperate closely with the master illustrator of the monastery and, after a production time of as much as a year, would have been presented to the principal with due pride. A layout as luxurious as that would leave no doubt about its contents and would raise high expectations with anyone who would look at the book.

In these great expectations the buyer of the book of Greene will not be disappointed easily. He will read the very inspiring and enthusiastic story of a man with a great love for snakes that many of us will recognise. A man also who spent an endless time observing these animals, not only in captivity but also in the wild. In many different countries and in environments that were sometimes very unfriendly for men.

Greene has split his magnificent book in three major parts, each of which has its own division in chapters:

Part I: *Lifestyles*, in which Greene discusses: (1) 'Classification and General Biology', (2) 'Locomotions and Habitats', (3) 'Diet and Feeding', (4) 'Venomous Snakes and Snakebite', (5) 'Predators and Defense' and a chapter (6) 'Behavior, Reproduction, and Population Biology'.

Part II: In this part Greene shows the *Diversity* of the world of snakes in eight chapters. Successively we come across (7) 'Blindsnakes', (8) 'Pipesnakes, Boas, and Other Basal

Groups', (9) 'Old World Colubrids', (10) 'New World Colubrids', (11) 'Stiletto Snakes and Other African Enigmas', (12) 'Cobras, Coralsnakes and Their Relatives', (13) 'Sea-kraits and Seasnakes' and, eventually, we find (14) 'Vipers, Adders, and Pitvipers'.

Part III: This part carries the title *Synthesis* and contains chapters like (15) 'Evolution and Biogeography' and (16) 'Snakes and Others: Past, Present, and Future'. An 'Epilogue', in which Greene asks himself the question 'Why Snakes?' concludes this magnificent piece of work. What is left then is an 'Appendix' with 'Systematics and Evolutionary Inference', 'Notes', the 'References' and finally the 'Index'.

Furthermore all chapters are interrupted by special topics. In these topics Greene deals in more detail with certain aspects of herpetology for which the normal chapter would not have been the best place to do so.

I want to make it clear that I am not in the position to judge the pure scientific side of Greene's work. I don't have a laboratory to my disposal, I did not collect numerous data on many different snake species of many years, I am not that interested in taxonomy, a topic Greene sometimes deals with in great depth. But because the author is a professor of biology, *integrative biology* to be precisely - whatever that may be - at the university of California, Berkeley, I feel

I don't have to doubt that what he, after ample research, found to be true. So when I read in his book that all pythons, boa's and vipers hunt mainly from ambush, and he then mentions some exceptions to this rule like *Epicrates gracilis* and *Agkistrodon contortrix*, I am more than willing to take his word for it (pag. 65). If on pag. 128 he claims that the female of *Agkistrodon piscivorus* sometimes behaves like a male to use so-called rivalry combat to see if a particular male would be a suitable father for her offspring, I presume this is based on personal observation, or at least on reliable research by others. And a number of interesting facts like these can be found on almost any page. The book contains an enormous amount of information and one should not try to read it in between courses. I myself went through it chapter by chapter, initially leaving out the special subjects. This is quite some work but an interesting and rewarding task.

As one can read from the table of contents the book deals with quite some aspects of herpetology. Greene has collected part of the data he presents through thorough field and laboratory work. In addition he has used research results of many others - as can be seen from the number of references at the end of the book. Generally these were the parts that demanded the best of my English knowledge. Sentences that were grammatically not always very clear, difficult words that were not in my dictionary and all in all rather technical.

Still I found those technical chapters very useful for me. I will give you some examples. I am still involved in research on the intriguing book by Jacob van Maerlant, a Flemish author from the 13th century. This book that, among other things, deals with snakes is part of his famous work *Der naturen bloeme*, a work he wrote around 1270 AD. This book is a translation from Latin and shows the knowledge people had at that time of snakes. We now know that much of this information from these past times was not quite correct or even clearly wrong. Yet things are not always that simple. For example, in Maerlant we can read that the heart of a snake is located directly behind the neck. (see e.g. Van der Voort 1993, 19-20). This fact is not acknowledged by e.g. Engelman or Weidensaul, who respectively show a photograph and a drawing that both clearly show a distance between the neck and the heart. At first thought one could conclude that the old observation was not right and that the fact that the heart is located directly behind the neck is wrong. In the book of Greene (pg 46) however, I read that arboreal snake species have their heart closer to the head than terrestrial species. They have solved the problem of a more difficult blood circulation, caused by their vertical habitat, by this anatomical adaptation. It is not necessarily the solution but possibly this old observation, copied for several centuries and never verified, was made on an arboreal snake species.

I will give you a second example. Maerlant mentions a snake species, in Latin called

'berus', that displays a rather strange behaviour. By hissing this snake lures a lamprey from the water after which mating between the two occurs. The original Latin text explicitly mentions a lamprey from the sea. According to Maerlant, repeating his Latin source, this mating is proof that the lamprey is poisonous. In the chapter on sea snakes Greene gives some information that, at least provides an interesting angle to the strange behaviour of the berus. Of a particular genus of sea snakes (*Laticauda*) he mentions (pg. 237) that they feed on eels. Among other things these eels use mimicry to escape their predators. It seems fair to suppose that once it was observed that a snake from the genus *Laticauda* seized an eel whereby it was thought that the animals were mating. The thought that the lamprey would become poisonous from the mating can possibly be explained by the fact that someone picked up an animal of which, because of the mimicry he thought was an eel but wasn't. In the same genus of sea snakes (*Laticauda*) it was observed that these animals mate outside the water, just as the berus and the lamprey do according both the Old Dutch and the Latin text. We do have to realise that these observations of these strange phenomena were made in countries far from here, and in a time in which our ancestors were still walking around in bear skins and their only interest in animals was whether they were edible or not.

All this information may be very interesting but in my opinion the book of Greene con-

tains many passages that are truly impressive. My main interest in snakes is not primarily in counting scales and species determination. It is more focussed on how men has interacted, and still is interacting with these animals. Also in this respect Greene's book was a feast. I particularly liked the parts in which Greene, in almost literal language, includes ecology in his reflections. This happens in several places in the book, e.g. chapters 6 and 16. Destruction of habitats and killing by humans really threaten American rattlesnake populations. Maybe you once saw a television documentary of a so-called round-up. In these round-ups, large numbers of rattlesnakes are caught that are made to act in different rodeo-like games. In the end they are all beheaded and all parts of the animals are sold. Because of the large revenues for the city in which such a spectacle takes place, no questions are asked about the ecological consequences for the area from which these animals are removed. In these chapters Greene is quit convincing when it comes to the effects of these crazy events: we can no longer wait with giving even more education on snakes and we cannot afford to waste any more time. These fascinating animals have to be protected. His book may be the ultimate plead for the change of attitude that is needed for this.

Finally some words on the illustrations. As I mentioned before I have rarely seen such beautiful pictures of snakes. Michael and Patricia Fogden are true artists. Thereby they must have had the best of equipment

available. Each new chapter starts with a full-sized picture against a black background. My favourite is the one on page 231: a beautiful blue surface of waves in which a *Pelamis platurus* is swimming. It would look rather good as a painting in a modern interior.

The dozens of other full-colour pictures contribute to the fact that it will be hard to publish another book on snakes that, when it comes to contents and lay-out will come near this magnificent work of Harry Greene.

■ REFERENCES

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