Reviews

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The Snakes of Thailand and their Husbandry, by Merel J. Cox. Krieger Publishing Company, P.O. Box 9542, Melbourne, Florida 32902-9542, USA, 1991. xxxviii + 526 p., 9 tables, 36 line drawings and 164 color photographs. Price US$ 48.50.

During 11 days in Bangkok and vicinity I saw exactly one snake in nature. Although the general tourist, even if interested in snakes, does not continually stumble on them, snakes do abound in Thailand. The 514,000 km^2 of the Kingdom of Thailand are home to 175 ophidian species and subspecies. In contrast, the similarly sized Kingdom of Spain, 504, 750 km^2, possesses a paltry 13 species (SCHALL& PIANKA,1977; BARBADILLO 1,987). This difference is obviously related to climate: Thailand, stretching from 5°N to 20° N, is tropical, whereas Spain, situated between 36-44°N, is mainly Mediterranean.

In the numbers of persons studying snakes and of writings on snakes, we see the opposite trend. The two previous comprehensive works on the snakes of Thailand appeared three decades ago (TAYLOR,1965; CHOTE,1967) although the information on Thai snakes has increased since then. So has the need for this information. Two inter-related considerations nowadays make it increasingly important to know more about reptiles, including snakes, and their biology.

First, it transpires that reptiles (and amphibians) are very important to the functioning of ecosystems. Since, unlike mammals and birds, they spend little food on heating their bodies, they convert into biomass most to the food they consume. Being efficient feeders, they are abundant in the habitat, providing food for the higher predators (including man). So, knowing the reptilian populations and their biology is a prerequisite to understanding the ecosystems. Second, the modern interest in preserving the world's biodiversity necessitates recognition of the species to be protected.

Cox's book beautifully fills these needs. Addressing amateur and scientist alike, in the core of the book Cox first expertly explains (pages 3–71) the general biology and proper handling and maintenance of Thai snakes, as a means to knowing them. He then (pp. 73-408) describes and illustrates the 175 taxa. The systematic arrangement of snakes into families etc. has been chaotic for several decades. Cox adopted the recent, knowledgable, and relatively widely known proposal of MCDOWELL (1987) but he wisely left out the terms "Opisthoglypha" and "Proteroglypha"; these are used by McDowell in confusing deviation from tradition.

The treatment of each species (usually a page or two) includes its scientific, English and Thai names; reference to its color photograph (almost always present); morphological description (including variation); life habits (where known) and distribution in Thailand (to the extent known) and the world. A highlight are the detailed descriptions and illustrations of the variations and life of the cobras.

This book on snakes opens touchingly and, to me, symbolically, with a dedication (p. V) to a victim of man's really satanic enemy—the motor vehicle. An endearing trait of the author shines through his detailed Acknowledgements (pp. xxi–xxiii) and especially through his comment in the Preface, "The reader must be clear that this text is surely not the last word on the snakes of Thailand" (p. xviii).

A great asset of the book are the various introductory and appendicular matters which are not standard in snake books: geographical and climatological information (pp. 5–16,

427–464); addresses of herpetological organizations (pp. 39, 411–426); interrelation with man (pp. vii–x, 3-4, 16–19); conservation (pp. 38–39, 465–466); and explanation of all Thai vernacular snake names, except for three enigmas (pp. 467–499).

The last-named appendix is especially fascinating. We learn that although most Thai people cannot even recognize the venomous species (p. 16), an elaborate system of vernacular names has evolved, distinguishing all species and often grouping them in parallel to the scientific system. Such discernment is typical of people closely interacting with nature (see also MAYR, 1965:17). The Thai snake names refer to conspicuous morphological and sometimes biological traits. It is instructive that two species are named for their similarity to reptiles associated with man: "Tokay gecko green snake" for *Trimeresurus wagleri* which of course has vertical slit-pupils, and "Malayan house gecko-headed green snake" for *Ahaetulla mycterizans* whose pupils are indeed elliptical, though horizontally so.

The useful Bibliography contains 92 references to books and articles: 81 in English, 6 in Thai, 5 in French and German. The comprehensive Index, like the listings of Contents, is quite detailed and together they are efficient.

This first edition retains a small number of inconsequential rugosities, most of which will presumably be ironed out in a future edition. Thus, although almost all of the photographs of snakes are good enough to aid identification—and some are impressive—a few have been positioned upside-down (Plates 1, 22, 28, 35, 65, 66, 127 and 139).

In unison with most herpetologists, Cox, in his otherwise generally knowledgable and dependable text, describes snakes as unable to hear airborne sound (p. 27). In fact, snakes do hear aerial sounds at low frequencies, and actually hear these better than a cat does (WEVER & VERNON, 1960; HARTLINE & CAMPBELL, 1969; WEVER, 1978). However, the slowness at which such myth-dispelling information spreads, is demonstrated by the ENCYCLOPAEDIA BRITANNICA (1975): in it, under "Serpents" (16:563) snakes are deaf even though under "Sound reception" (17:46) they hear. The snake charmer, I think, is fraudulent not because the cobra is deaf but perhaps because today he is lazy, whereas his predecessors may have trained the snakes to the music (WERNER, 1973).

Some may miss in the book an identification key. Presumably the paucity of data on the variation of morphological characters hampers the preparation of a reliable key. Here Cox only partly helps the reader, because ranges of variation of scutellation are presented without sample sizes (a range of ten ventrals indicates great variablity if derived from a sample of five individuals, but small variability if derived from a hundred). Anyway, the descriptions, photographs, sketches of pholidosis and occasional comparative tables should help identification.

In summary, the book can be highly recommended, not merely for preparedness on the shelf but also for reading. Unfortunately, in Thailand it is hard to obtain and expensive. The publisher's address given above is more recent than that printed in the book.

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