

Book Review

The Dangerous Snakes of Africa

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Authors Stephen Spawls and the late Bill Branch (1946–2018; see Conradie et al. 2019) have produced a pivotal book, *The Dangerous Snakes of Africa* (Fig. 1). Worldwide, snakebite affects an estimated 4.5 million people annually, claiming 125,000 human lives. In Africa alone, it is estimated that between 80,000 and 420,000 people are bitten each year, resulting in anywhere between 3,500 and 30,000 fatalities. Impacts from snake bites are significant medical issues that need attention. *The Dangerous Snakes of Africa* is a step forward in addressing the need.

Following a field guide format, the book covers 137 dangerous snakes (both venomous and nonvenomous) as well as another 70 species that can be mistaken as dangerous (see Clark 2012). The Introduction is a must read; it provides the background information needed to fully appreciate the book. The Introduction is divided into five sections: (1) Africa's snakes: which ones are dangerous?, (2) Where are the dangerous snakes in Africa?, (3) Using the maps in this book, (4) A note on conservation, and (5) Identifying a snake. Section 5 is particularly pertinent because it provides the reader with the tools needed to distinguish snakes from other reptiles. Included are diagrams showing head scales from various views, how to tell keeled and unkeeled scales apart, how to tell snake tail cloacal and subcaudal scales apart, and how to count the dorsal scale rows of a snake. Another important part of the introduction is identification strategies for living snakes that may quickly disappear. Often, observers only have a few seconds to view a snake and identification may be difficult. Key points to record include an estimate of the snake's size, shape, and appearance; take careful note of the color and distinctive markings or patterns; note its thickness (pencil vs. broomstick, or larger); and behavior—was it on the ground, in a tree, did it move quickly or slowly, hiss or strike? If a dead snake is encountered, then

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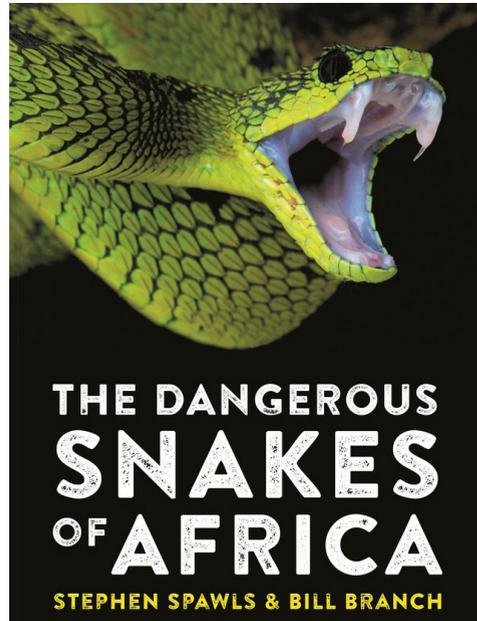


Fig. 1. *The Dangerous Snakes of Africa*. Authors: Stephen Spawls and Bill Branch. Princeton University Press, Princeton, New Jersey, USA. Published 4 August 2020.

Paperback | Price: US \$35.00 / £30.00 | ISBN: 9780691207926
Pages: 336 | Size: 5.25 x 8.5 in. | Illus: 650+ color photographs and maps.

identification may be easier—but make sure the snake is actually dead before handling it, as some dangerous snakes may feign death defensively! For example, turn the snake on its back—if it flips back over, it's not dead. Look for rhythmic waves along the body or if the tail coils and uncoils. If any of these movements are observed, then the snake may be fatally injured but it is not safe to handle. After making sure the snake is dead, various measurements and diagnostics can be taken to aid in identification.

The bulk of the book consists of the species accounts. The accounts are separated into two groups: (1) dangerous front-fanged snakes (130+ species) and (2) dangerous rear-ranged and fangless snakes (17 species). Each account contains four to five sections: Identification, Habitat and Distribution, Natural History, Medical Significance, and sometimes Taxonomic Notes. Each account is accompanied by several color photos of the snake and a range map. The accounts are 1–2 pages long, written without technical jargon, and easy to read. Scattered throughout the accounts are keys to help identify various species within one genus, especially if a particular genus has several species that are difficult to tell apart. Special care was taken to make the Medical Significance section as complete and as up to date as possible. Information covered includes the type of venom (cytotoxic, haemorrhagic, neurotoxic, etc.), if antivenom is needed (or if even available), bite and venom symptoms, bite behavior (frequent “dry” bites, aggressiveness, etc.), and other important information that may help when treating bite victims.

The 17 species covered in the “dangerous rear-ranged and fangless snakes” section fall within a few groups based on the dangers they pose, rather than taxonomic groups. These include the pythons which are powerful enough to kill humans, rear-fanged snakes that have been known to kill people (mainly snake handlers), and fangless snakes whose bites are dangerous due to their toxic saliva. The accounts follow the same format as in the “dangerous front-fanged snakes” section.

Following the two dangerous snake sections is a “look-alikes and common species” section. The 70 or so species featured in this section do not have species accounts, rather, a brief description is provided along with a list of similar-looking dangerous species and a few photos. These short write-ups also include distinctive characteristics that the look-alike species have that the dangerous species may lack (but not always, hence the confusion).

Following the look-alike and common species section is an essay entitled, “Snakebite in Africa: the big picture.” Here, the authors discuss various public health issues related to snakebite, such as pharmaceutical companies and their decisions on whether to make antivenom or not, African healthcare, and the apparent randomness of snake bites. In addition, the authors compare Australia with Africa in regard to snake bites. Australia has more species of venomous snakes than harmless ones, and yet the number of snake bites is relatively small. Most Australians are affluent and medically snake aware. They are able to adequately seal their houses against snakes, wear strong footwear when entering wild areas, and farming practices are mechanized. The situation in Africa is much different—the population is poorer, not as well informed, and measures for protection from snakes are not as great. The authors explore some solutions to address the situation, such as improving living standards, increasing snake bite awareness, creating a network of clinics, and increasing regional cooperation.

Much work still needs to be done on these fronts.

Additional sections in the book include tips for avoiding snakebite (both in the home and outside in the field), who is at risk (when and where), what happens when a snake bites and how bad will it be, an incredibly important section on snakebite first aid (do’s and don’ts), and treatment of snakebite at medical centers. There is also a brief section on eye and face first aid for spitting snakes. The authors go into great detail about antivenom, such as syndromes of envenoming, when antivenom should be used, administration of antivenom, and use of antivenom by a lay person.

The book concludes with several valuable appendices: current producers of snakebite antivenoms useful for Africa; important references, forums, and websites; and a checklist of dangerous snakes from the regions and countries of Africa. A list of medical and snakebite terms, a glossary, and an index are also included.

Although snakes are often feared, and a first response when seeing a snake—dangerous or not—is to kill it, snakes have benefits. Their venoms are pharmaceutically important for drug research and advancements. Snakes benefit humans indirectly as important members of the global fauna and have their place in food webs and landscape ecology. The authors argue that snake threats must be taken in context. A cobra on school grounds may obviously need to be dealt with, but a snake crossing a road in a wildlife refuge can be appreciated without the need to interact. To determine if an African snake is potentially dangerous—use this book! Use your best judgement and don’t unnecessarily handle or otherwise disturb snakes. Snakes tend to avoid humans and make efforts to avoid detection. In conservation terms, snakes are not actually threatened by direct killing or by commercial collection. The biggest threats are habitat destruction and conversion to large-scale farms and logging operations. Many of the African snakes covered in this book occur in small patches of habitat and these remaining refuges are being threatened daily by human encroachment. If Africa’s herpetofauna is to survive, habitat conservation needs to be a mainstream goal and local human populations need to understand that these reserves are beneficial in a practical or aesthetic way. We have a long way to go in achieving a balance between human appreciation of nature and recognizing when herpetofauna actually pose a real threat. *The Dangerous Snakes of Africa* is a first step toward approaching this balance.

Literature Cited

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