

M. S. ARAKELYAN, F. D. DANIELYAN, C. CORTI, R. SINDACO & A. E. LEVITON (2011): *Herpetofauna of Armenia and Nagorno-Karabakh*. – Society for the Study of Amphibians and Reptiles, Salt Lake City, USA, 154 pp., ISBN 0916984842 / 9780916984847.

At the end of 2011, the American Society for the Study of Amphibians and Reptiles announced a new publication dedicated to a herpetological area that is part of one of the 25 biologically richest places in the world generally known as “Biodiversity Hotspots” – Armenia and the adjacent region known as Nagorno-Karabakh. It is not the first book published under the auspices of SSAR that is dedicated to the Middle East, though, and was preceded by *Snakes of Iran* (1991), *The Lizards of Iran* (1999), and *Gecko Fauna of the USSR and Contiguous Regions* (1996). The geographic location (Caucasus area) of this region, situated at the crossroads between Europe and Asia, its complex geomorphological evolution, and the variety of ecosystems directly determine the occurrence of many interesting and endemic species of organisms. It is therefore a logical consequence that the area forms part of the “Global 200 Ecoregion” (OLSON & DINERSTEIN 2002) that are global priorities for biodiversity conservation. Included in this region are approximately 3,600 species of vascular plants (125 endemic), 17,000 invertebrates (316 endemic), 39 fish species (9 endemic), 353 bird species (1 endemic), and 83 mammal species (6 endemic). Although it covers only about 5% of the Caucasus area, Armenia hosts almost all of the types of ecosystems that occur in the southern Caucasus. It is therefore not surprising that its herpetofaunal diversity is significant, with 52 reptile species (6 endemic) and 7 species of amphibians being known from there. In terms of conservation of local biodiversity, it is crucial to know in detail the distribution ranges of individual species and the factors that contribute to their decline. In this context, it is interesting that the *Red Book of Armenia* (1987) considers only 12 of 58 amphibian and reptile species as threatened and in need of protection. In contrast, the IUCN list of threatened species (2009) considers only 20 species as being not threatened. This makes it even more important to understand the current status of the herpetofauna in the region.

This new monograph is dedicated to this understanding. The book is subdivided into five main sections. The first section, “Introduction”, deals with Armenia and the Nagorno-Karabakh separately. The second section is dedicated to palaeontological discoveries of amphibians and reptiles of Armenia. The third part is a review of historical studies on the herpetofauna of the region, the fourth is a key to the species, and the fifth, the largest section, describes in detail all species found in the region. The initial section begins with a table of contents and the authors’ photographic introduction of new publications and is followed by a concise and useful section on geography, climatology, biodiversity, and habitat diversity of Armenia and the Nagorno-Karabakh region. It is supplemented with several tables (e.g., on the occurrence of each species per habitat) and adequately represents the region. In particu-

lar, part of the “Habitats in Armenia” is a useful overview of the landscape and the herpetofauna that inhabits it. Also in this section, information is presented on the proportional habitat occupancy of the Armenian territory, habitat characteristics, occurrence depending on altitude, and a link to the photos at the end of the book that illustrate these habitats. In addition, the authors report on individual habitats and their most abundant herpetofauna. At the end of the chapter is a list of the species of amphibians and reptiles found in the two areas. We learn that Armenia is herpetologically richer, and that only one species (*Trapelus lessonae*) occurs in Nagorno-Karabakh but not in Armenia. The following section is devoted to palaeontology and the fossil record of amphibians and reptiles of Armenia. It is followed by a historical overview of herpetological study in Armenia. It has a long tradition indeed, which can be traced back to the early 19th century, when a zoologist of Lithuanian origin, CARL EICHWALD, published his *Fauna caspia-caucasica* (1841). Another very useful feature of this book is the elaborate identification key to the amphibians and reptiles of the region.

The core of the book consists of a checklist of the genera and species of amphibians and reptiles of Armenia. For each species, the scientific name, synonyms, type locality, taxonomic status, distribution, and occurrence in the area are given. This also includes the first record of each species in either territory. General information about each species includes information on size, karyotype, life history, and biological notes. Each account is concluded with data on population status and degree of threat level as per IUCN criteria and basic literature relating to this species. The book ends with photographs of the species, distribution maps and photos of ecozone landscapes, and a detailed list of references.

The book does not contain any serious errors (although in the key, Fig. 10 gives the name of *Anguis fragilis*, while in the text, this species is referred to as *A. colchica*). I here provide only a few clarifications to the taxonomy and nomenclature: the species *Hemorrhhois nummifer* (p. 89) is referred to as the Coin-Marked Snake (genus *Hemorrhhois*) not Coin-Marked Whip Snake (*Coluber* genus); the preferred common name of *Phrynocephalus persicus* (p. 54) is Persian Toad-headed Agama, not Horvath’s Toad Headed Agama; *A. colchica* (p. 56) should be referred to as the Eastern Slow Worm (GVOŽDÍK et al. 2010) not the Colchican Slow Worm, which was used in connection with its invalid subspecific allocation as *A. fragilis colchicus*. The subspecies (*A. c. colchica*), which occurs in the area, is missing. In contrast, the vernacular name Slender Whip Snake for *Platyceps najadum* (p. 95) is indeed more appropriate than the commonly used name Dahl’s Whip Snake. *Eryx jaculus* (p. 81) is now placed into the family Erycidae, *Natrix* is placed in the family Natriciidae and *Malpolon* in the family Psammophiidae (cf. SPEYBROECK et al. 2010). The Eurasian Blindsnake (p. 80) is traditionally classified as a monotypic species, although recent studies will likely result in a taxonomic revision of this species complex (KORNILIOS et al. 2012). The Sand Boa (*Eryx jaculus*) occurs not only on the

eastern Aegean islands (see general distribution), but actually throughout the southern Balkans and Romanian Dobrogea (e.g., KRECSÁK & IFTIME 2006).

This peer-reviewed publication is a successful treatise that provides in a clearly understood manner all the information that we have currently at our disposal about the herpetofauna of Armenia and Nagorno-Karabakh. A revision of the herpetofauna of this region has been needed for a long time and the book represents a modern landmark in our understanding of this issue. It provides a link, connecting classic herpetology with our today's knowledge of the amphibians and reptiles in Armenia and the entire region of the Caucasus and the Middle East. This work should be mandatory reading for everyone who is more deeply engaged in amphibians and reptiles at the crossroads of Anatolia, the Caucasus and the Middle East.

References

- GVOŽDÍK, V., D. JANDZÍK, P. LYMBERAKIS, D. JABLONSKI & J. MORAVEC (2010): Slow Worm, *Anguis fragilis* (Reptilia: Anguillidae) as a species complex: Genetic structure reveals deep divergences. – *Molecular Phylogenetics and Evolution* **55**: 460–472.
- KORNILIOS, P., Ç. ILGAZ, Y. KUMLUTAŞ, P. LYMBERAKIS, J. MORAVEC, R. SINDACO, N. RASTEGAR-POUYANI, M. AFROOSHEH, S. GIOKAS, S. FRAGUEDAKIS-TSOLIS, B. CHONDOPoulos (2012): Neogene climatic oscillations shape the biogeography and evolutionary history of the Eurasian blind-snake. – *Molecular Phylogenetics and Evolution* **62**: 856–873.
- KRECSÁK, L. & A. IFTIME (2006): A review of the records of the Sand boa (*Eryx jaculus*) in Romania. – *Herpetological Bulletin* **98**: 31–34.
- OLSON, D. M. & E. DINERSTEIN (2002): The Global 200: Priority ecoregions for global conservation. – *Annals of the Missouri Botanical Garden* **89**: 199–224.
- SPEYBROECK, J., W. BEUKEMA & P.A. CROCHET (2010): A tentative species list of the European herpetofauna (Amphibia and Reptilia) – an update. – *Zootaxa* **2492**: 1–27.

DANIEL JABLONSKI