

Are *Anguis graeca* (BEDRIAGA, 1881) and *Anguis cephalonica* WERNER, 1894, sympatric in the lowlands of southern Laconia?

The Balkan Peninsula is an important center of biodiversity and endemism of the European herpetofauna (SILLERO et al. 2014). The knowledge of amphibians and reptiles in the region has been increasing noticeably during the last decades (SPEY-BROECK et al. 2010) leading to taxonomic revisions and descriptions of new species



Fig. 1: A specimen of *Anguis* resembling the phenotype of *Anguis graeca* (BEDRIAGA, 1881). Record locality 36.70066° N, 22.49006° E, 45 m a.s.l., Karioupoli, southern Peloponnese Peninsula, Greece.

(e.g., ARNTZEN et al. 2007; LJUBISAVLJEVIC et al. 2007; LYMBERAKIS et al. 2008; GVOŽDIK et al. 2010). However, information about the biology, ecology and distribution of most of these species is still fragmentary.

Within the genus *Anguis* LINNAEUS, 1758, two Balkan endemics, *Anguis graeca* (BEDRIAGA, 1881), and *Anguis cephallonica* WERNER, 1894, are known to occur on the Greek Peloponnese Peninsula (GVOŽDIK et al. 2010). So far, on the Peloponnese, *Anguis graeca* (BEDRIAGA, 1881) [previously assigned to *Anguis colchica* (NORDMANN, 1840) and *Anguis fragilis* LINNAEUS, 1758] was only known to occur in the northern part, while the Peloponnese / south Ionian island endemic, *Anguis cephallonica* WERNER, 1894, seemed to be widely distributed over the whole peninsula (GRILLITSCH & CABELA 1990). Sympatric occurrence within of a narrow contact zone of both species was reported from the northern highlands of the Peloponnese (e.g., MAYER et al. 1990, 1991).

In the last years, additional records of *A. graeca* from central parts of the Peloponnese were published (VALAKOS et al. 2008; SILLERO et al. 2014). These new records suggest that the range overlap on the Peloponnese is much wider than previously thought. THANOU et al. (2014) pointed to the problem that the distinguishing features of the two Peloponnesian slow worm species as described by CABELA & GRILLITSCH (1990) should be handled carefully due to phenotypical overlap.

Bearing in mind these problems, the present note reports the record of a specimen from the lowlands of the Kato Mani Promontory, southern Laconia, which meets all currently known morphological features of *A. graeca* as described in CABELA & GRILLITSCH (1990). The specimen had a thick body, snout-vent-length was 20 cm, total length 26 cm. There was no lateral undulated neck band or black belly present. The number of longitudinal scale rows at mid-body was 25, i.e., below 28 and the massive head was slightly set off from the neck (Fig. 1).

The site (36.70066° N, 22.49006° E, 45 m a.s.l.) is located in the surroundings of the village Karioupoli, about three kilome-

ters from the sea. The anguid was found early in the morning of April 29, 2014, resting on a stone wall at the edge of a dirt road between olive plantations and *Quercus macrolepis* woodlands. The region is characterized by a mix of broadleaved oak forest, olive tree groves, citrus groves, gardens and scrublands; the near Eridanus River provides suitable habitats such as riverbeds and humid pastures. During the following days, two specimens of the *A. cephallonica* phenotype were found within a hundred meter distance to the finding location of the *A. graeca* phenotype specimen, providing evidence for the coexistence of both forms in the area.

These findings substantiate the occurrence of the *A. graeca* phenotype 100 kilometers south of the supposed *A. graeca* - *A. cephallonica* contact zone. Moreover, it shows that both forms occur in sympatry among lowland conditions of the southern Peloponnese.

These findings and the results of THANOU et al. (2014) confirm the need of a revision of the actual knowledge about the co-occurrence of *A. graeca* and *A. cephallonica* within the Peloponnese Peninsula. Further studies should combine molecular results with external morphology, ecology, distribution and the degree of sympatry among both *Anguis* forms.

ACKNOWLEDGMENTS: The author is grateful to Dionysios Zaharatos and Sonja Peters for their hospitality, the Anhalt University of Applied Sciences and the Hellriegel Institute e.V. for their financial support. Thanks also go to Erik Kubitz and Lisa Hoyer for support of the field work, to Benny Trapp, Evanthia Thanou, Johannes Honold and Klaus Richter for the general discussion, to Peter Watson for correction of the manuscript and last but not least to Fineas Zaharatos who first spotted the specimen.

REFERENCES: ARNTZEN, J. W. & THEMUDO, E. & WIELSTRA, B. (2007): The phylogeny of crested newts (*Triturus cristatus* superspecies): nucleargenetic characters suggest a hard polytomy, in line with the paleogeography of the centre of origin.- Contributions to Zoology, Amsterdam; 76 (4): 261-278. GRILLITSCH & CABELA (1990): Zum systematischen Status der Blindschleichen (Squamata: Anguillidae) der Peloponnes und der südlichen Ionischen Inseln (Griechenland).- Herpetozoa, Wien; 2 (3/4): 131-153. GVOŽDIK, V. & JANDZIKET, D. & LYMBERAKIS, P. & JABLONSKI, D. & MORAVEC, J. (2010): Slow worm, *Anguis fragilis* (Reptilia: Anguillidae) as a species complex: Genetic structure reveals deep divergences.- Molecular Phylogenetics and Evolution, San Diego; 55: 460-472. LJUBISAVLJEVIC, K. & ARRIBAS, O. & DŽUKIĆ, G. & CARRANZA, S. (2007): Genetic and morphological differentiation of

Mosor rock lizards, *Dinarolacerta mosorensis* (KOLOBATOVIĆ, 1886), with the description of a new species from the Prokletije Mountain Massif (Montenegro) (Squamata: Lacertidae).- Zootaxa, Auckland; 1613: 1-22. LYMBERAKIS, P. & POULAKAKIS, N. & KALIONTZOPOULOU, A. & VALAKOS, E. & MYLONAS, M. (2008): Two new species of *Podarcis* (Squamata: Lacertidae) from Greece.- Systematics and Biodiversity, Abingdon; 6 (3): 307-318. MAYER, W. & RICHTER, K. & KAMMEL, W. (1990): Kartierung der Herpetofauna des Beckens von Feneos (Griechenland: Nord-Peloponnes).- Herpetozoa, Wien; 2 (3/4): 87-106. MAYER, W. & GRILLITSCH, H. & CABELA, A. (1991): Proteinelektrophoretische Untersuchungen zur Systematik der südgriechischen Blindschleichen (Squamata: Anguinae: *Anguis*).- Herpetozoa, Wien; 4 (3/4): 157-165. SILLERO, N. & CAMPOS, J. & BONARDI, A. & CORTI, C. & CREEMERS, R. & CROCHET, P. A. & ISAILOVIC, J. C. & DENOËL, M. & FICETOLA, G. F. & GONÇALVES, J. & KUZMIN, S. & LYMBERAKIS, P. & DE POUS, P. & RODRIGUEZ, A. & SINDACO, R. & SPEYBROECK, J. & TOXOPEUS, B. & VIEITES, D. & VENCES, M. (2014): Updated distribution and biogeography of amphibians and reptiles of Europe.- Amphibia-Reptilia, Leiden; 35: 1-31. SPEYBROECK, J. & BEUKEMA, W. & CROCHET, P. A. (2010): A tentative species list of the European herpetofauna (Amphibia and Reptilia).- Zootaxa, Auckland; 2492: 1-27. THANOU, E. & GIOKAS, S. & KORNILOS, P. (2014): Phylogeography and genetic structure of the slow worms *Anguis cephallonica* and *Anguis graeca* (Squamata: Anguinae) from the southern Balkan Peninsula.- Amphibia-Reptilia, Leiden; 35: 263-269. VALAKOS, E. & PANAYIOTIS, P. & SOTIROPOULOS, K. & LYMBERAKIS, P. & MARAGOU, P. & FOUFOPoulos, J. (2008): The amphibians and reptiles of Greece. Frankfurt am Main (Edition Chimaira), pp. 463 [Frankfurt contributions to natural history, volume 32].

KEYWORDS: Reptilia: Squamata: Sauria: Anguinae; *Anguis cephallonica*, *Anguis graeca*, contact zone, range overlap, endemism, distribution, Peloponnese Peninsula, Greece

SUBMITTED: 30.11.2016

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