

Westernmost record of  
*Montivipera wagneri*  
(NILSON & ANDRÉN, 1984)

*Montivipera wagneri* (NILSON & ANDRÉN, 1984), a mountain viper endemic to Turkey and maybe adjacent northwestern Iran, was described on the basis of a single female museum specimen as *Vipera wagneri*, a taxon that was subject to controversial interpretations of species concepts (SCHÄTTI et al. 1991, 1992; NILSON & ANDRÉN 1992). The subgenus *Montivipera* was introduced by NILSON et al. (1999) for vipers of the *xanthina* 'complex' [*M. wagneri*, *M. xanthina* (GRAY, 1849), *M. albizona* (NILSON, ANDRÉN & FLÄRDH, 1990), *M. bulgardaghica* (NILSON & ANDRÉN, 1985) and *M. bornmuelleri* (WERNER, 1898)] and the *raddei* 'complex' [*M. raddei* (BOETTGER, 1890) including its possible synonym *M. albicornuta* (NILSON & ANDRÉN, 1985) and *M. latifi* (MERTENS, DAREVSKY & KLEMMER, 1967)] and later raised

to species rank by JOGER (2005). Monophyly of *Montivipera* and its above grouping into two lineages was largely corroborated by molecular analyses (HERRMANN et al. 1999; LENK et al. 2001; STÜMPPEL & JOGER 2009).

NILSON & ANDRÉN (1984) specified the type locality of *V. wagneri* as 'vicinity of Lake Urmia ("Armenisch-Persische Grenze"), province Azarbaijan, N. W. Iran' according to the data in the catalogue of the Zoological Museum of Göttingen (Germany). JOGER et al. (1988), however, rated the above specification 'N. W. Iran' as doubtful. Later, additional records were reported from northeastern Anatolia but not Iran (NILSON & ANDRÉN 1986; TEYNIÉ 1987; JOGER et al. 1988; NILSON et al. 1988; SINDACO et al. 2000, 2013; BARAN et al. 2004, 2012; STÜMPPEL & JOGER 2009).

Material.— The authors (Y. K. & Ç. I) found a single adult female (sex was determined by the absence of hemipenes) of *M. wagneri* near Horasan, Erzurum, Turkey, at 1,718 m a.s.l. in the early afternoon (13:00 h) of July 21, 2013 (Fig. 1) representing the snake's westernmost known record (compare maps in SINDACO et al. 2000, 2013). Morphological and colorpattern traits were recorded prior to the specimen's release in the original habitat. To avoid collecting, the location is not referred to in detail. Snout-vent length and tail length were taken to the nearest millimeter using a ruler; the ventral plates were counted according to DOWLING (1951), the terminology used conforms to NILSON & ANDRÉN (1984), JOGER et al. (1988) and BARAN et al. (2004).

Size and scalation.— Total length 535 mm (snout-vent length 493 mm; tail length 42 mm); head relatively large and elongate, distinct from the neck, covered by small scales except enlarged supraoculars. Snout rounded, covered with small keeled scales. Supraoculars in broad contact with the eye; no scales between supraoculars and the eye. Measurements and counts are presented on Table 1 along with comparative information to eight other known specimens.

Colorpattern.— The gray ground color of the dorsum is covered by rounded blotches, each with a light brown center,



Fig. 1: The female *Montivipera wagneri* (NILSON & ANDRÉN, 1984), from near Horasan, Erzurum, Turkey.



Fig. 2: Habitat of *Montivipera wagneri* (NILSON & ANDRÉN, 1984), near Horasan, Erzurum, Turkey, 1718 m a.s.l.

Table 1: Morphometric data of the *Montivipera wagneri* (NILSON & ANDRÉN, 1984) specimen reported here and eight individuals described in the literature. Legend to the abbreviations in column one: An – anal, Ap – apicals, C – canthals (left/right), COa – outer series of circumoculars (left/right) (without supraoculars), COb – inner series of circumoculars (left/right), DB – dorsal blotches, DS – longitudinal rows of dorsal scales (at mid-body i.e., level of ventrals number 60-75), EUL – scale rows between eye and upper labials (left/right), F – female, IC – intercanthals (scales between apicals, canthals and intersupraoculars), IO – interoculars (in a row between supraoculars), ISO – intersupraoculars, LL – lower labials (left/right), M – male, PV – prefrontals, SC – subcaudals (left/right), SO – supraocular scale rows, SVL – snout-vent length, TL – tail length, UL – upper labials (left/right), V – ventrals.

	This study	NILSON & ANDRÉN (1984)	JÖGER et al. (1988) (six specimens)						BARAN et al. (2004)
Gender	F	F	F	M	M	M	M	M	F
An	1	1	-	-	-	-	-	-	-
Ap	2	2	-	-	-	-	-	-	2
C	1/1	1/1	-	-	-	-	-	-	2/2
COa	13/13	14/15	13/13	12/12	13/13	13/13	12/12	12/13	12/13
COb	15/16	16/14	-	-	-	-	-	-	-
DB	24	24	-	-	-	-	-	-	-
DS	23	23	23	23	23	23	23	23	23
EUL	2/2	2/2	-	-	-	-	-	-	-
IC	14	14	-	-	-	-	-	-	-
IO	7	6	-	-	-	-	-	-	-
ISO	29	29	-	-	-	-	-	-	-
LL	13/13	12/13	-	-	-	-	-	-	11/12
PV	2	3	2	2	2	2	2	2	-
SC	26/26	23/24	25/26	30/31	30/31	29/30	29/30	30/31	27/27
SO	2	2	-	-	-	-	-	-	-
SVL (mm)	493	270	-	-	-	-	-	-	580
TL (mm)	42	21	-	-	-	-	-	-	56
UL	10/9	9/9	-	-	-	-	-	-	8/8
V	161	161	165	-	167	166	-	163	162

surrounded by a dark brown or blackish edge. The blotches, numbering 24 in total, are connected on the anterior and posterior portions of the dorsum (14) and discrete along its middle part (10). On both sides of the body, there are dark colored vertical bars, which are connected to the dorsal blotches and reach the lateral edge of the ventrals. There is one temporal stripe extending from the posterior border of the eye along the side of the head. On the upper part of the head, two dark colored oblong blotches form a medially interrupted V. The ventral side is dirty white with dense dark spots.

In its morphology and color pattern, the new specimen corresponds well with the other known individuals as described by NILSON & ANDRÉN (1984), JÖGER et al. (1988) and BARAN et al. (2004) (comp. Table 1).

**Habitat.** – In general, this species prefers densely vegetated rock areas, stream valleys and other moist, vegetated places (MALLOW et al. 2003) at altitudes between 1,200 and 2,000 m a.s.l. (BARAN & ATATÜR 1998). The locality in which the present

specimen was observed was alpine and sub-alpine grassland on calcareous bedrock at 1,718 m a.s.l. (Fig. 2).

The IUCN red list of threatened species lists *M. wagneri* as ‘Critically Endangered’ because of more than 80 % of population decline due to exploitation and collection for the international pet trade during the snake’s past three generations (18 years). Continued population declines are predicted for the future from over-collection and a planned dam construction in the Aras River Valley. The construction of the Karakurt dam complex would lead to a loss of over 80 % of the potential habitat for this species (KASKA et al. 2009). *Montivipera wagneri* is listed in Appendix II of both Bern Convention < <http://conventions.coe.int/Treaty/EN/Treaties/Html/104.htm> > and CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora, also known as the Washington Convention < <http://cites.org/> >).

**REFERENCES:** BARAN, İ. & ATATÜR, M. K. (1998): Türkiye herpetofaunası (kurbağa ve sürüngen-



ler) [Turkish herpetofauna (amphibians & reptiles)]. Ankara (Republic of Turkey, Ministry of Environment), pp. XIII, 214. BARAN, İ. & ILGAZ, Ç. & AVCI, A. & KUMLUTAŞ, Y. & OLGUN, K. (2012): Türkiye amfibi ve sürüngenleri. (Amphibians and reptiles of Turkey). Ankara (TÜBİTAK Popüler Bilim Kitapları) pp. 204. BARAN, İ. & KUMLUTAŞ, Y. & TOK, C.V. & OLGUN, K. & ILGAZ, Ç. & KASKA, Y. & TÜRKOZAN, O. & İRET, F. (2004): On two herpetological collections made in east Anatolia (Turkey).- *Herpetozoa*, Wien; 16 (3/4): 99-114. DOWLING, H. G. (1951): A proposed standard of counting ventrals in snakes.- *British Journal Herpetology*, London; 1: 97-99. HERRMANN, H. W. & JOGER, U. & LENK, P. & WINK, M. (1999): Morphological and molecular phylogenies of viperines: Conflicting evidence? *Kaupia*, Darmstadt; 8: 21-30. JOGER, U. (2005): *Montivipera* NILSON, TUNİYEV, ANDRÉN, ORLOV, JOGER, HERRMAN, 1999; pp. 61-62. In: BÖHME, W. (Ed.): *Handbuch der Reptilien und Amphibien Europas*. Wiesbaden (AULA Verlag). JOGER, U. & TEYNIÉ, A. & FUCHS, D. (1988): Morphological characterization of *Vipera wagneri* NILSON & ANDRÉN, 1984 (Reptilia: Viperidae), with first description of the males.- *Bonner Zoologische Beiträge*, Bonn; 39 (2/3): 221-228. KASKA, Y. & KUMLUTAŞ, Y. & AVCI, A. & NILSON, G. (2009): *Montivipera wagneri*. In: IUCN 2012. IUCN Red List of Threatened Species. WWW document available at < <http://www.iucnredlist.org> > (last accessed: June 17, 2014). LENK, P. & KALYABINA-HAUF, S. & WINK, M. & JOGER, U. (2001): Evolutionary relationships among the true vipers (Reptilia: Viperidae) inferred from mitochondrial DNA sequences.- *Molecular Phylogenetics and Evolution*, San Diego; 19: 94-104. MALLOW, D. & LUDWIG, D. & NILSON, G. (2003): True vipers. Natural history and toxicology of old world vipers. Malabar, Florida, (Krieger Publishing Company), pp. 359. NILSON, G. & ANDRÉN, C. (1984): Systematics of the *Vipera xanthina* complex (Reptilia: Viperidae). 2. An overlooked viper within the *xanthina* species-group in Iran.- *Bonner Zoologische Beiträge*, Bonn; 35 (1/3): 175-184. NILSON, G. & ANDRÉN, C. (1986): The mountain vipers of the Middle East - the *Vipera xanthina* complex (Reptilia: Viperidae).- *Bonner Zoologische Monographien*, Bonn; 20: 1-90. NILSON, G. & ANDRÉN, C. (1992): The species concept in the *Vipera xanthina* complex: reflecting evolutionary history or hiding biological diversity? - *Amphibia-Reptilia*, Leiden; 13: 421-424. NILSON, G. & ANDRÉN, C. & FLÄRDH, B. (1988): Die Vipern der Türkei. *Salamandra*, Rheinbach; 24 (4): 215-247. NILSON, G. & TUNİYEV, B. & ANDRÉN, C. & ORLOV, N. & JOGER, U. & HERRMANN, H. (1999): Taxonomic position of the *Vipera xanthina* complex.- *Darmstädter Beiträge zur Naturgeschichte*, Darmstadt; 8: 99-102. SCHÄTTI, B. & BARAN, İ. & SIGG, H. (1991): Rediscovery of the Bolkar viper: morphological variation and systematic implications on the '*Vipera xanthina* complex'.- *Amphibia-Reptilia*, Leiden; 12: 305-327. SCHÄTTI, B. & BARAN, İ. & SIGG, H. (1992): The '*Vipera xanthina* complex' - a reply to NILSON and ANDRÉN.- *Amphibia-Reptilia*, Leiden; 13: 425. SINDACO, R. & VENCHI, A. & CARPANETO, G. M. & BOLOGNO, M. (2000): The reptiles of Anatolia: A checklist and zoogeographical analysis.- *Biogeographia*, Bologna; 21: 441- 554. SINDACO, R. & VENCHI, A. & GRIECO, C. (2013): The reptiles of the Western Palearctic. 2. Annotated checklist and distributional atlas of the snakes of Europe, North Africa, Middle East and Central Asia, with an

update to volume 1. Latina (Edizioni Belvedere), pp. 543. STÜMPER, N. & JOGER, U. (2009): Recent advances in phylogeny and taxonomy of Near and Middle Eastern Vipers - an update.- *ZooKeys*, Sofia; 31: 179-191. TEYNIÉ, A. (1987): Observations herpétologiques en Turquie, 1<sup>ère</sup> partie.- *Bulletin de la Société Herpétologique de France*, Paris; 43: 9-18.

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