

Zootaxa

SUPPORTING INFORMATION

A new subspecies of *Zamenis hohenackeri* (Strauch, 1873) (Serpentes: Colubridae) based on morphological and molecular data

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Electronic Supplementary Table 1 – Information on sequence data used in the molecular analyses: Taxa, sample/isolate ID or voucher numbers, sample localities and GenBank accession numbers. *Z.* = *Zamenis*. MHNG = Natural History Museum Geneva; NHMW = Natural History Museum, Vienna; ZFMK = Zoological Research Museum Alexander Koenig.

Taxon	Locality	ID / No	Reference	mtDNA (<i>coI/cytb</i>)	nDNA (<i>vim/sptbn1</i>)
<i>Z. h. hohenackeri</i>	Armenia, Aboyan	ZFMK90596		AY122765 / KF639741	MH036677 /
<i>Z. h. hohenackeri</i>	Armenia, Aboyan	ZFMK88292	this study	AY122765 / KF639741	MH036676 / MH036696
<i>Z. h. hohenackeri</i>	Turkey, Artvin	hapH3	[1], NCBI	– / KF639742	– / –
<i>Z. h. taureicus</i>	Lebanon, Bcharra	ZFMK65000	this study	– / MH036670	MH036692 / MH036711
<i>Z. h. taureicus</i>	Lebanon, Bcharra	ZFMK60942	this study	MH036650 / MH036669	MH036691 / MH036710
<i>Z. hohenackeri</i>	Turkey, Aribeleni	KM091001	this study	MH036646 / MH036658	MH036684 / MH036703
<i>Z. hohenackeri</i>	Turkey, Konya	ZFMK71175	this study	MH036642 / MH036653	MH036685 / MH036704
<i>Z. h. taureicus</i>	Turkey, Hatay	ZFMK75874	this study	MH036649 / MH036666	– / MH036712
<i>Z. h. taureicus</i>	Turkey, Arslanköy	ZFMK81232	this study	– / MH036664	MH036693 / MH036713
<i>Z. hohenackeri</i>	Turkey, Muğla	BGO_1	this study	– / MH036661	MH036678 / MH036697
<i>Z. h. taureicus</i>	Turkey, Hatay	ZFMK56931	this study	– / MH036665	MH036690 / MH036709
<i>Z. h. taureicus</i>	Turkey, Hatay	BGO_2a	this study	– / MH036667	MH036686 / MH036705
<i>Z. h. taureicus</i>	Turkey, Hatay	BGO_2b	this study	– / MH036668	MH036687 / MH036706
<i>Z. hohenackeri</i>	Turkey, Muğla	BGO_3	this study	– / MH036654	– / –
<i>Z. hohenackeri</i>	Turkey, Kars	BGO_4	this study	MH036651 / MH036671	– / –
<i>Z. hohenackeri</i>	Turkey, Muğla	BGO_5	this study	MH036648 / MH036660	MH036679 / MH036698
<i>Z. h. taureicus</i>	Turkey, Mersin	BGO_6a	this study	– / MH036662	MH036688 / MH036707
<i>Z. h. taureicus</i>	Turkey, Mersin	BGO_6b	this study	– / MH036663	MH036689 / MH036708
<i>Z. hohenackeri</i>	Turkey, Antalya	BGO_7	this study	MH036643 / MH036655	MH36680 / MH036699
<i>Z. hohenackeri</i>	Turkey, Antalya	BGO_8a	this study	MH036644 / MH036656	MH036681 / MH036700
<i>Z. hohenackeri</i>	Turkey, Antalya	BGO_8b	this study	MH036645 / MH036657	MH036682 / MH036701
<i>Z. hohenackeri</i>	Turkey, Muğla	BGO_9	this study	MH036647 / MH36659	MH036683 / MH036702
<i>Z. hohenackeri</i>	Turkey, Hatay	BGO_10	this study	– / MH036672	MH036674 / MH036694
<i>Z. h. hohenackeri</i>	Turkey, Malatya	BGO_11	this study	MH036652 / MH036673	MH036675 / MH036695
<i>Z. h. hohenackeri</i>	Turkey, Mt. Ararat	SH1061	[2], NCBI	AY122765 / –	– / –
<i>Z. h. hohenackeri</i>	Turkey, Mt. Ararat	SH555	[2], NCBI	AY122695 / –	– / –

<i>Z. h. hohenackeri</i>	Turkey, Trabzon	hapGB	[3], NCBI	- / DQ902137	- / -
<i>Z. h. hohenackeri</i>	Russia, Chechenia	hapH1	[1], NCBI	- / KF639740	- / -
<i>Z. h. tauricus</i>	Turkey, Hatay	hapS1	[1], NCBI	- / KF639743	- / -
<i>Z. h. tauricus</i>	Lebanon, Les Cédres	hapS2	[1], NCBI	- / KF639744	- / -
<i>Z. h. tauricus</i>	Turkey, Adana	hapT1	[1], NCBI	- / KF639745	- / -
<i>Z. lineatus</i>			[2, 4], NCBI	AY122698 / HQ392567	- / -
<i>Z. lineatus</i>			[1, 2], NCBI	AY122698 / KF639746	- / -
<i>Z. longissimus</i>			[2, 4], NCBI	AY122696 / HQ392564	- / -
<i>Z. longissimus</i>			[2, 4], NCBI	AY122696 / HQ392566	- / -
<i>Z. persicus</i>			[2, 5], NCBI	AY122704 / DQ902117	KM870863 / KM870821
<i>Z. situla</i>			[2, 6], NCBI	AY122722 / JX315468	- / -
<i>Z. situla</i>			[1, 2], NCBI	AY122722 / KF639748	- / -
<i>Orthriophis taeniurus</i>			NCBI	KC990021 / KC990021	- / -
<i>Ptyas mucosa</i>			NCBI	GQ225662 / AF471054	- / -
<i>Pantherophis bairdi</i>			NCBI	AY122728 / GU073447	- / -
<i>Pantherophis guttatus</i>			NCBI	KU986236 / FJ267686	- / -
<i>Pantherophis obsoletus</i>			NCBI	KU985961 / DQ538344	- / -
<i>Pantherophis vulpinus</i>			NCBI	AY122734 / FJ267681	- / -
<i>Lampropeltis zonata</i>			NCBI	KU986141 / KF216207	- / -
<i>Lampropeltis alterna</i>			NCBI	FJ627813 / AF337080	- / -
<i>Lampropeltis calligaster</i>			NCBI	KU985581 / DQ902129	- / -
<i>Lampropeltis getula</i>			NCBI	KU985672 / FJ997683	- / -
<i>Coluber flagellum</i>			NCBI	KU986192 / KM403637	- / -
<i>Coluber constrictor</i>			NCBI	KU985863 / KM386560	- / -
<i>Salvadora grahamiae</i>			NCBI	KU985949 / KP765667	- / -

References

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Electronic Supplementary Table 2. Primer and annealing temperature used for DNA amplification (amp) and sequencing (seq).

<i>gene</i>	<i>Primer</i>		<i>Direction</i>	<i>Sequence 5' → 3'</i>	<i>annealingTm</i>	<i>Reference</i>
<i>cytochrome oxidase subunit 1 (co1)</i>	co1_F	amp + seq	forward	CATCCTGGGAGCAATTAAATTTCATC	59.7°C	this study
	co1_R	amp + seq	reverse	CCCGTATAGAATGTAATGATACTC	57.6°C	this study
<i>cytochrome b (cytb)</i>	cytv60_1F	amp + seq	forward	TCTCAACCTGATGAAACTTC	53.2°C	this study
	cytv60_1R	amp + seq	reverse	GATGATAGTGAATGGAAGGATG	56.5°C	this study
<i>vimentin gene, intron (vim)</i>	cytv60_2F	amp + seq	forward	TCCATTCACTATCATCTCAATA	52.8°C	this study
	cytv60_2R	amp + seq	reverse	GACGAAAAGTTATGGGTG	54.5°C	this study
<i>beta-spectrin nonerythrocytic 1 gene, intron 1 (SPTBN1)</i>	vim_F	amp + seq	forward	TTAATGTACAATGCTAACATTTGCATG	58.2°C	this study
	vim_R	amp + seq	reverse	ACAGTGCAGAAGGAAACCTATTTC	59.3°C	this study
	SPTBN1_F	amp + seq	forward	GCCTATTCCATCATACACCTGTG	58.9°C	this study
	SPTBN1_R	amp + seq	reverse	GAAGAAACCCCAGGTAGAGTAC	60.3°C	this study

Electronic Supplementary Table 3. Details on *Zamenis hohenackeri* and *Z. situla* records shown in Figure 1. Coordinates were partly derived from Google maps. Chresonyms correspond to the references given with the localities (each separated by a semicolon). Specimens and references used for morphological evaluation are indicated in the “comment” column, as are those that refer to the respective type locality. Samples for molecular analyses are indicated in bold. BGO: Bayram Göcmen, private collection; BMNH: British Museum of Natural History; FMNH: Field Museum of Natural History, Chicago; MHNG: Natural History Museum of Geneva, Switzerland; NHMW: Natural History Museum in Vienna, Austria; NHMB: Natural History Museum Basel, Switzerland; ZDEU: Zoology Department, Ege University, Turkey; ZFMK: Zoological Research Museum Alexander Koenig, Germany; ZSM: Bavarian State Collection of Zoology in Munich, Germany. Reference numbers are given in brackets.

(Sub)species	Chresonym	Details on source and locality	No	Lat N_y	Long E_x	comment
	? <i>Zamenis hohenackeri</i>	Turkey, Abanoz, Anamur, Mersin: p. 148 [1]				<i>Haemorrhois ravergieri</i>
<i>Z. h. hohenackeri</i>		Armenia, Aboyan [Abovian]: vouchers ZFMK88292 , ZFMK90596	1	40.248385	44.609685	morphology
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri</i>	Armenia, Achmangan Dag: [2] reprinted in plate X [3], probably referring to Armaghan Mt., with high altitudes as low as 2250 m asl, yet suitable lower altitudes exist 15 km south in the Vardenis Mts.	2	40.051201	45.241284	morphology
<i>Z. h. hohenackeri</i>		Armenia, Gegard: voucher ZFMK24754	3	40.133333	44.816667	morphology
<i>Z. h. hohenackeri</i>		Armenia: voucher ZFMK17841, ZFMK17843		unknown	unknown	morphology (n=2)
<i>Z. h. hohenackeri</i>	<i>Coluber hohenackeri</i>	Azerbaijan, Chanlar (Göygöl): type locality acc. to [4]; p. 69, plate 2 [5]	4	40.583333	46.316667	type locality
<i>Z. h. hohenackeri</i>		Georgia, Borzhomi: voucher MHNG2008.6, ZFMK38232	5	41.854167	43.412500	morphology
<i>Z. h. hohenackeri</i>		Georgia, Boshuri: p. 580, Fig. 1 [6]	6	41.854549	43.894903	
<i>Z. h. hohenackeri</i>		Georgia, Mzcheta: p. 317[4]; voucher ZFMK24753	7	41.846888	44.703544	morphology
<i>Z. h. hohenackeri</i>		Georgia, Tbilissi: voucher ZFMK46912	8	41.710000	44.790000	morphology
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri taurica</i>	Iran, Maku, West-Azerbaijan: p. 158, 164, Fig. 3 [6] voucher FMNH171139	9	39.296124	44.508570	
<i>Z. h. hohenackeri</i>	<i>Zamenis hohenackeri</i>	Iraq, Choman, Erbil (Arbil): p. 19-21, Fig. 1b [7]	10	36.618278	44.878811	
<i>Z. h. hohenackeri</i>	<i>Zamenis hohenackeri</i>	Iraq, Hanai Dn (Hanay Den), Khormal, Halabdscha: p. 19-21, Fig. 1a [7]	11	35.283756	46.093386	
<i>Z. h. hohenackeri</i>		Turkey (NE): voucher NHMB21004		unknown	unknown	morphology
<i>Z. h. hohenackeri</i>	<i>Elaphe (hohenackeri) hohenackeri</i> ; <i>Elaphe hohenackeri</i> [partim]; <i>Elaphe hohenackeri</i> ; <i>Elaphe hohenackeri</i> [partim]; <i>Zamenis hohenackeri</i> ; <i>Zamenis hohenackeri</i> hohenackeri	Turkey, Agri Dagi (Mt. Ararat), İğdir: p. 14 [8]; p. 164 Fig. 2 [9]; p. 4 [10]; p. 124 [11]; voucher MHNG2403.8	12	39.652805	44.319217	morphology (voucher)
<i>Z. h. hohenackeri</i>	<i>Coluber hohenackeri</i> ; <i>Elaphe taurica</i> [partim]; <i>Elaphe hohenackeri</i> hohenackeri; <i>Elaphe hohenackeri</i> hohenackeri [partim]; <i>Elaphe hohenackeri</i> [partim]	Turkey, Amasya: p. 42 [12]; p. 1099 [13]; p. 274 [14]; p. 88 [15] vouchers BMNH 89.11.8.6-7, NHMW 15174.1, 2 and 15175; p. 123, Fig. 66 [16]; p. 158 [9]	13	40.651661	35.903797	morphology [12]
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri</i> ; <i>Zamenis hohenackeri</i>	Turkey, Artvin: p. 580 [6]	14	41.178983	41.824844	
<i>Z. h. hohenackeri</i>		Turkey, Asipinar-Doğanşehir, Malatya: voucher BGO_11/BGO_1606_11 , Supplementary Fig. 2C	15	38.101339	38.083703	morphology
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri</i>	Turkey, Aydinkavak, Kagizman, Aras valley, Kars: p. 332 [17] and pers. obs.	16	40.193455	43.320350	

		Konrad Mebert 2013				
<i>Z. h. hohenackeri</i>		Turkey, Badere, Hanönü, Kastamonu (pers. comm.); photo voucher with lower resolution available	17	41.610550	34.463964	
<i>Z. h. hohenackeri</i>		Turkey, between Günindi and Kuruyayla, Kars: 3 specimens in 2014 and 2015 by Mebert, Igci, Oguz, Kars, incl. photo vouchers	18	40.220600	43.294220	
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri</i>	Turkey, Cubula, Erenköy, between Borçka and Murgul, Artvin: p. 1163 [18]	19	41.305950	41.607439	
<i>Z. h. hohenackeri</i>		Turkey, Cukuraya, Kagizman, Kars: photo voucher by K. Mebert 2013	20	40.235658	42.928258	
<i>Z. h. hohenackeri</i>	<i>Zamenis hohenackeri hohenackeri</i>	Turkey, Deliktaş, Bitlis: p. 200, plate 89B [19], and photos by Sergé Bogaerts 02.05.2006 on turkherptil.org	21	38.356778	42.047314	
<i>Z. h. hohenackeri</i>		Turkey, Erzincan, 40 km from the city Erzincan: voucher ZSM 83/1996	22	39.602747	39.903288	morphology
<i>Z. h. hohenackeri</i>	<i>Zamenis hohenackeri</i>	Turkey, İğdır: p. 63 [20]; same as in p. 93 [21]	23	39.829466	44.120390	
<i>Z. h. hohenackeri</i>		Turkey, Kagizman, Kars: voucher MHNG1379.27	24	40.150000	43.100000	morphology
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri; Zamenis hohenackeri hohenackeri</i>	Turkey, Karakurt, Kars: p. 63[20]; p. 200, plate 89E [19]	25	40.162439	42.617660	
<i>Z. h. hohenackeri</i>		Turkey, Kaunos, Dalyan, Muğla: photo voucher on herpsafari.nl [22] by Bobby Bok	26	36.832777	28.632046	
<i>Z. h. hohenackeri</i>		Turkey, Kozlu Bucagi, Tokat: photo voucher on turkherptil.org, by M. Cakmak and A. Adakül, 27.04.2012	27	40.620511	36.495506	
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri hohenackeri</i>	Turkey, Macka, 25 km south of Trabzon, 1250 ft (381 m asl); p. 6, 54 [23]	28	40.809560	39.603153	morphology [23]
<i>Z. h. hohenackeri</i>		Turkey, Mokyc (Moxoene), Bahçesaray, Van: voucher ZSM 86/1918, probably Monastery of the Holy Savior of Moks ("Beyaz Kilise")	29	38.116203	42.835337	morphology
<i>Z. h. hohenackeri</i>		Turkey, Sarıkamış-Kazıkkaya, Kars: voucher BGO_4/2012_156 , Supplementary Fig. 2D	30	40.009900	42.696225	morphology
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri hohenackeri; Elaphe hohenackeri hohenackeri [partim]</i>	Turkey, Soganlı, Müküs, Siirt: p. 88 [15]; p. 123, Fig. 66[16]	31	38.051617	42.141343	
<i>Z. h. hohenackeri</i>	<i>Coluber leopardinus; Elaphe situla [partim]; Elaphe hohenackeri; Elaphe hohenackeri hohenackeri [partim]; Elaphe hohenackeri hohenackeri; Zamenis hohenackeri</i>	Turkey, Trabzon: p. 1098 [13]; p. 274 [14]; p. 67 [24]; p. 123, Fig. 66 [16]; p. 88 [15] with voucher NMSF 45309; p. 580 [6] citing p. 177 [25]	32	40.959125	39.737223	
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri hohenackeri; Elaphe hohenackeri hohenackeri [partim]</i>	Turkey, Vakfıkebir, Trabzon: p. 54 [23]; p.123, Fig. 66 [16]	33	41.023090	39.277305	morphology [23]
<i>Z. h. hohenackeri</i>		Turkey, Yeşilyazı-Ovacık, Tunceli: photo voucher on turkherptil.org, by Seyhan Yürek, 17.06.2014	34	39.331436	39.058742	
<i>Z. h. hohenackeri</i>	<i>Elaphe hohenackeri</i>	Turkey, Yüksekova, Hakkari: p. 63 [20]	35	37.630712	44.346867	
<i>Z. h. lyciensis</i> ssp. nov.		Turkey, 15 km ESE of Kumluca, Antalya: voucher ZFMK81224	36	36.320266	30.153063	
<i>Z. h. lyciensis</i> ssp. nov.	<i>Coluber tauricus; Elaphe taurica [partim]; Elaphe hohenackeri taurica [partim]</i>	Turkey, Akşehir, Konya: p. 499 [26]; p. 274 [14]; p. 176 [27]; voucher NHMW15173, p. 89 [15] and p. 123, Fig. 66 [16] and p. 45 [28]	37	38.341464	31.408311	morphology (voucher)
<i>Z. h. lyciensis</i> ssp. nov.		Turkey, Akyaka, Muğla: voucher BGO_1/2015_113 , Supplementary Fig. 1A	38	37.050811	28.297186	morphology
<i>Z. h. lyciensis</i> ssp. nov.	<i>Zamenis situla</i>	Turkey, Candır, S. Lake Köyceğiz, Muğla: p. 208-209 Fig 7 [29]	39	36.844739	28.588154	morphology
<i>Z. h. lyciensis</i> ssp. nov.		Turkey, Çetibeli-Marmaris, Muğla: voucher BGO_5/2012_55 , Supplementary	40	36.915759	28.277618	morphology

		Fig. 1B				
Z. h. lyciensis ssp. nov.		Turkey, Çığlıkara-Elmalı, Antalya: voucher BGO_7/Zh_1 , Supplementary Fig. 1F	41	36.522300	29.790236	morphology
Z. h. lyciensis ssp. nov.		Turkey, Demirli-Köyceğiz, Muğla: voucher BGO_9/BG_1504_9 , Supplementary Fig. 1D, and another specimen on turkerptil.org	42	36.966172	28.937344	morphology
Z. h. lyciensis ssp. nov.	<i>Elaphe hohenackeri taurica</i>	Turkey, Dutagacköy (Dutagaç fide [29]) Aydin: p. 149 and plate 14 Fig. B [30], and Supplementary Fig. 3F	43	37.675433	28.525776	
Z. h. lyciensis ssp. nov.	<i>Zamenis hohenackeri tauricus</i>	Turkey, east of Kalkan, Antalya: p. 270-273 incl. figs and map [29]	44	36.229110	29.448558	
Z. h. lyciensis ssp. nov.		Turkey, Gelesandra-Gündoğmuş, Antalya: voucher BGO_8/BG_160605 , two specimens, Supplementary Fig. 3A	45	36.862117	32.060803	morphology (n=2)
Z. h. lyciensis ssp. nov.	<i>Zamenis hohenackeri tauricus</i>	Turkey, Gömbe, Antalya: p. 204 and Plate 91B [19]	46	36.551877	29.657975	
Z. h. lyciensis ssp. nov.	<i>Elaphe situla</i>	Turkey, Gülmez Mountains (Gülmez Dağ), Antalya: p. 28 [31]	47	36.333300	30.083300	
Z. h. lyciensis ssp. nov.		Turkey, İztuzu-Gökbel, Muğla: voucher BGO_3/2012_177 , Supplementary Fig. 1C	48	36.777722	28.658589	morphology
Z. h. lyciensis ssp. nov.	<i>Elaphe situla</i>	Turkey, Karaveliler, Antalya: p. 26 [32]	49	37.203587	30.636391	
Z. h. lyciensis ssp. nov.		Turkey, Kayaönü, Karaman: voucher ZFMK 71175	50	36.627361	32.986025	morphology
Z. h. lyciensis ssp. nov.		Turkey, Kılıç, Anamur: photo voucher by Hikmet Meydan on turkiyeyabanhayati.org, 15.3.2018	51	36.232706	32.786479	
Z. h. lyciensis ssp. nov.		Turkey, Kirkpinar Karanfill, Aribeleni Yaylası, Muğla; tissue voucher KM091001 , p. 203 and Plate 90 F [19], Supplementary Fig. 1E	52	36.881224	29.202902	
Z. h. lyciensis ssp. nov.	<i>Elaphe hohenackeri</i> [partim]; <i>Elaphe hohenackeri taurica</i> ; <i>Zamenis hohenackeri</i>	Turkey, Kohu Dag, Elmalı, Antalya: p. 306, Fig. 1, [33], voucher MHNG2403.007; p. 149, plate 14 Fig. C [30];	53	36.502690	29.819595	type locality; morphology [33]
Z. h. lyciensis ssp. nov.	<i>Zamenis hohenackeri tauricus</i>	Turkey, Köyceğiz Lake, sw Hamitköy, Dalyan, Muğla: p. 270-273 incl. several Figs. [29]; p. 204 and Plate 91A, C [19]	54	36.896723	28.597647	
Z. h. lyciensis ssp. nov.	<i>Elaphe hohenackeri taurica</i> [partim]; <i>Elaphe hohenackeri</i> [partim]	Turkey, Küktür Köyü, Anamur, Mersin: p. 264 [34]; p. 306, Fig. 1 [33], voucher SZE 232/1976	55	36.183926	32.790931	morphology [33, 34]
Z. h. lyciensis ssp. nov.	<i>Zamenis situla</i>	Turkey, N Köyceğiz Lake, Dalyan, Yesilköy, Muğla: p. 208-209 Fig 7 [29]	56	36.992088	28.715952	
Z. h. lyciensis ssp. nov.		Turkey, Pedasa Antik Kenti, Merkez, Konacık, Bodrum, Mugla: photo voucher Supplementary Fig. 3H by Peter Graveson 6.3.2018, also provided by Orhan Taştekin on turkiyeyabanhayati.org,	57	37.062895	27.419382	
Z. h. lyciensis ssp. nov.	<i>Zamenis situla</i>	Turkey, Phaselis, Kemer, Antalya: p. 147 [35]	58	36.525266	30.552327	
Z. h. lyciensis ssp. nov.	<i>Elaphe situla</i> [partim]	Turkey, Sedişehir, Konya: p. 123, Fig. 66 [16]	59	37.419463	31.848279	
Z. h. lyciensis ssp. nov.		Turkey, Tahtali Dam, district Menderes, Izmir: photo voucher Supplementary Fig. 3D by Raşit Acar, also on turkiyeyabanhayati.org, 5.3.2018	60	38.136170	27.081826	
Z. h. tauricus	<i>Elaphe hohenackeri</i> ; <i>Elaphe hohenackeri taurica</i> ; <i>Zamenis hohenackeri tauricus</i> ; <i>Zamenis hohenackeri</i> cf. <i>hohenackeri</i>	Israel, Mt. Hermon: p. 67-70, Fig. 1-3 [36] voucher UHD; p. 263, Fig. 2 [37]; p. 193 [38]; p. 45, Fig. 6 [39]; p. 202 [40]; pp. 168-169, incl. Figs. [41]; p. 202 plate 90A [19]	61	33.323134	35.768526	morphology [36]
Z. h. tauricus	<i>Elaphe hohenackeri</i>	Lebanon, 7 road-km east of Feraya, probably near Aayoun al Simane: p. 68-69, Fig. -4 [36], voucher HUJ8469	62	33.993825	35.845272	morphology

Z. h. tauricus	<i>Elaphe hohenackeri taurica</i> [partim]	Lebanon, Amnioum (Amioun): p. 158 [9], voucher 1957.13.1.89a	63	34.299016	35.808875	
Z. h. tauricus	<i>Elaphe hohenackeri taurica; Zamenis hohenackeri; Zamenis hohenackeri cf. hohenackeri</i>	Lebanon, Bcharré (Bischarri): p. 28-30, 30, Fig. 11 [42]; p. 580 [6]; p. 199 Fig. 37 and p. 202 plate 90B [19]; vouchers ZFMK60942 , CS97Eh1, ZFMK65000 , ZSM 2719/2005	64	34.259131	36.018009	morphology (vouchers, n=3)
Z. h. tauricus	<i>Elaphe hohenackeri</i> [partim]	Lebanon, Ghazir (former Syria): p. 23 [10], voucher NHMB8969	65	34.010515	35.675349	morphology
Z. h. tauricus	<i>Elaphe hohenackeri</i>	Lebanon, Mazboud, Ain Zhalta: p. 41 [43]; voucher at AUB (Am. Univ. of Beirut)	66	33.733333	35.700000	
Z. h. tauricus	<i>Elaphe hohenackeri</i>	Lebanon, Mazboud, Chim (Shhim, Chehime): p. 41 [43]; voucher at AUB (American Univ. of Beirut)	67	33.616667	35.483333	
Z. h. tauricus	<i>Elaphe hohenackeri</i>	Lebanon, Mazboud, Dahr es (el) Souane (at Chtaura): p. 41 [43]; voucher at Lebanese University	68	33.828862	35.831852	
Z. h. tauricus	<i>Elaphe hohenackeri</i>	Lebanon, Mazboud, Horj Ehden (Horsh Ehden): p. 41 [43]; voucher at American University of Beirut	69	34.316667	35.975483	
Z. h. tauricus	<i>Elaphe hohenackeri</i>	Lebanon, Mazboud, NE of Saida: p. 41 [43]; voucher at American University of Beirut	70	33.600000	35.983333	
Z. h. tauricus	<i>Elaphe hohenackeri</i>	Lebanon, Mazboud, Sannine (Mt. Sannin): p. 41 [43], voucher at Lebanese University	71	33.937270	35.844653	
Z. h. tauricus	<i>Zamenis hohenackeri tauricus</i>	Syria, Slenfe (Slinfah): p. 36, Fig. 3 [44]	72	35.582437	36.185002	morphology
Z. h. tauricus	<i>Zamenis hohenackeri</i>	Turkey, Adana: p. 580, Fig. 1 [6] genetic (NCBI)	73	36.991419	35.330829	
Z. h. tauricus	<i>Zamenis hohenackeri</i>	Turkey, Antakya, Hatay: p. 182 [45], 2 specimens; adjusted to the nearest rocky habitat 10 km west at 36.411355, 36.238441 since original coordinates point to unsuitable agriculture fields	74	36.401829	36.349788	
Z. h. tauricus		Turkey, Arslanköy, Mersin: voucher ZFMK81232	75	37.018567	34.289681	morphology
Z. h. tauricus	<i>Elaphe hohenackeri taurica</i> [partim]; <i>Elaphe hohenackeri</i> [partim]	Turkey, Bélen, Hatay: p. 264 [34]; p. 306 [33], voucher SZE111/1972	76	36.494651	36.193966	morphology
Z. h. tauricus	<i>Elaphe hohenackeri</i>	Turkey, Birecik, Sanliurfa: p. 394 [46]	77	37.024993	37.977476	
Z. h. tauricus		Turkey, Çardak, Dörtçol-Hassa, Hatay;: voucher BGO_10/BGO_1604_10 , Supplementary Fig. 2E	78	36.843383	36.405572	morphology
Z. h. tauricus	<i>Elaphe hohenackeri</i>	Turkey, east of Saksak, ca. 20 km south of Harbiye, Antakya, Hatay, ca. 1000 m asl: p. 119 [47]; vouchers ZFMK56931 and ZFMK75874	79	35.973739	36.108890	morphology (vouchers, n=2)
Z. h. tauricus		Turkey, Gökcedağ-Hasanbeyli, Osmaniye: photo voucher on turkherptil.org, by Ali Bali, 19.05.2013	80	37.136211	36.617961	
Z. h. tauricus	<i>Zamenis hohenackeri cf. hohenackeri</i>	Turkey, Gözene, Yayladagh (Yayladağı) Mountains, Hatay: p. 202-203, plate 90C, E; BGO_2/2007_57 , 2 specimens, Supplementary Fig. 2F	81	36.063686	36.011753	morphology (vouchers, n=2)
Z. h. tauricus	<i>Coluber tauricus</i> Werner, 1898; <i>Elaphe hohenackeri taurica</i> [partim]	Turkey, Gülek, near Adana, Taurus Mountains, Mersin: <i>tauricus</i> type locality: p. 217 [48]; p. 123, Fig. 66 [16]; p. 45 [28]	82	37.257247	34.768648	type locality; morphology (n=2) [48]
Z. h. tauricus		Turkey, Keldaz, Osmaniye: photo voucher on turkherptil.org 21.7.2012 by Mehmet Celik and Süleyman Salkutlu	83	36.963821	36.369151	
Z. h. tauricus	<i>Zamenis situla</i>	Turkey, Küçük Kaymaklı-Nicosia, Northern Cyprus: p. 17 [49]; voucher ZDEU28/1962 and Supplementary Fig. 4	84	35.200000	33.38000	morphology
Z. h. tauricus		Turkey, Mersin, Aladağ: voucher BGO_6/2012_79 , two specimens,	85	36.952389	34.506933	morphology (vouchers, n=2)

		Supplementary Fig. 2B				
Z. h. tauricus	<i>Elaphe hohenackeri taurica</i> [partim]	Turkey, Sebil Köyü Tarsus, Mersin: p. 89-90 [15]; p. 123, Fig. 66 [16]; p. 45 [28]	86	37.129180	34.562318	
Z. h. tauricus		Turkey, Uludaz-Büyüksır, Kaharamamaras: photo voucher on turkherptil.org, by Tolga Demir, 09.06.2014	87	37.461522	36.651122	
Z. h. tauricus		Turkey, Yanalerki, Kozan, Adana: photo voucher on turkherptil.org, by Mehment Yıldız, 10.04.2014	88	37.636829	35.785948	
Z. h. tauricus		Turkey, Yarikkaya, İskenderun, Hatay: photo voucher on turkherptil.org, by Umit Kaplan and Savas Yıldır, 30.10.2011	89	36.582167	36.213394	
Z. hohenackeri	<i>Zamenis hohenackeri</i>	Armenia, Alvank: Plate 14, map point in Fig. 56b [50]	90	38.923968	46.342249	
Z. hohenackeri	<i>Zamenis hohenackeri</i>	Armenia, east of Atan: Plate 14, map point in Fig. 56b [50]	91	40.980864	44.973838	
Z. hohenackeri	<i>Zamenis hohenackeri</i>	Armenia, Jerwandaschat: Plate 14, map point in Fig. 56b [50]	92	40.110472	43.677939	
Z. hohenackeri	<i>Elaphe h. hohenackeri</i>	Armenia, Khosrov Forest State Reserve: p. 200, Plate 89D [19]	93	40.009585	44.890665	
Z. hohenackeri	<i>Zamenis hohenackeri</i>	Armenia, Tatev: Plate 14, map point in Fig. 56b [50]	94	39.388061	46.276608	
Z. hohenackeri	<i>Elaphe h. hohenackeri</i>	Iran, Kuh-e Rangrazi (Kuh Rang), Chuzestan-Isfahan: p. 158 [6] with voucher FMNH 171140	95	32.831848	49.471469	
Z. hohenackeri	<i>Elaphe hohenackeri taurica</i>	Iran, Miyaneh (Mianeh), East-Azerbaijan: p. 158 [6]	96	37.431122	47.721660	
Z. hohenackeri		Russia, Chechenia: p. 580, Fig. 1 [6]; point set into the Caucasus, however, there is no further locality information than Chechenia	97	42.659085	45.851653	
Z. hohenackeri		Turkey, Çaltıbozkır Mahallesi, Silifke, Mersin: pers. comm.; photo voucher with lower resolution available	98	36.524733	33.918897	
Z. hohenackeri	Zamenis hohenackeri taurica; Zamenis hohenackeri	Turkey, Dereçine, Afyonkarahisar: p. 493 [51]; p.236 [52]	99	38.462709	31.284179	
Z. hohenackeri		Turkey, Digor, Kars: pers. comm. by Mario Schweiger; no voucher	100	40.371486	43.436556	
Z. hohenackeri		Turkey, Erdemli, Mersin: pers. comm.; photo voucher with lower resolution available	101	36.628350	34.288675	
Z. hohenackeri		Turkey, Esertepé-Kemaliye, Erzincan: photo vouchers, several specimens, turkherptil.org, by Şevket Gültekin, 2011-2015	102	39.299600	38.504339	
Z. hohenackeri		Turkey, Güney Toroslar, Mersin: p.89-90 [15]; p. 123, Fig. 66 [16]; coordinates just represent the approx. overlay of the locality point on the map in Fig. 66	103	36.765331	33.436919	
Z. hohenackeri	<i>Elaphe hohenackeri</i>	Turkey, Kar Bogaz, Adana: p. 22-23 [53]	104	37.375330	34.678178	
Z. hohenackeri	<i>Elaphe hohenackeri taurica</i> [partim]	Turkey, Kargıcak (Kargıcak) Köyü Silifke, Mersin: p.89-90 [15], voucher SZE100.1965; p. 123, Fig. 66 [16]; p. 45 [28]	105	36.444655	33.655570	
Z. hohenackeri	<i>Elaphe hohenackeri taurica</i> ; <i>Elaphe hohenackeri taurica</i> [partim]	Turkey, Sultan Dagh, Akşehir, Konya: voucher ZSM-coll. Müller Nr. 2315 on p. 91, 94, Fig. 3 [2]; p. 66, plate X Fig. c [3]; p. 89-90 with voucher SZE79.1970 (=ZSM [SLM] 2315, considered lost) [15], p. 123, Fig. 66 [16]; p. 45 [28]	106	38.134465	31.598613	
Z. hohenackeri	<i>Elaphe hohenackeri</i>	Turkey, Tecer Mts., Ulaş, Sivas: p. 25 [53]	107	39.419306	37.143019	
Z. hohenackeri		Turkey, Uzungaburç, Silifke, Mersin: pers. comm.; photo voucher with lower resolution available	108	36.587593	33.925658	
Z. hohenackeri		Turkey, Yaglıca, Kars, 2000 m: pers. comm. (Mario Schweiger), no voucher	109	40.233055	43.328234	

<i>Z. hohenackeri</i>		Turkey, Yazılı, Karaman: photo voucher on turkherptil.org, by Ali Yağcı, 23.10.2014	110	37.134606	33.100169	
<i>Z. situla</i>		Greece, Asfendiou, Kos Island: photo voucher in Supplementary Fig. 3G by Bert Van de Bosch on 11.05.2015	111	36.834902	27.217867	
<i>Z. situla</i>		Greece, Chios Island: map 36, p. 244 [30]	112	38.386182	26.041619	
<i>Z. situla</i>		Greece, Lesvos Island: map 36, p. 244 [30]	113	39.234883	25.918777	
<i>Z. situla</i>		Greece, Rhodes Island: map 36, p. 244 [30]	114	35.912282	27.789273	
<i>Z. situla</i>		Greece, Rhodes Island: map 36, p. 244 [30]	115	36.118461	27.822178	
<i>Z. situla</i>		Greece, Rhodes Island: map 36, p. 244 [30]	116	36.347978	28.186335	
<i>Z. situla</i>		Greece, Samos Island: map 36, p. 244 [30]	117	37.666218	26.833817	
<i>Z. situla</i>	<i>Elaphe situla</i> [partim]	Turkey, Beykoz Istanbul: p. 123, Fig. 66 [16]; p. 67 [24]	118	41.112935	29.160311	
<i>Z. situla</i>	<i>Elaphe situla</i>	Turkey, Biga Peninsula, se Bayramic district, Çanakkale: p. 67, 71 with Fig. 1 [54]	119	39.806197	26.824654	
<i>Z. situla</i>	<i>Zamenis situla</i>	Turkey, Biga Peninsula, western Ayvacık district, Çanakkale: p. 67, 71 with Fig. 1 [54]	120	39.617764	26.256967	
<i>Z. situla</i>	<i>Zamenis situla</i>	Turkey, Bursa: photo voucher on turkherptil.org, by Semih Özen, 1.6.2017	121	40.217871	29.030373	
<i>Z. situla</i>	<i>Elaphe situla</i>	Turkey, Denizli: p. 63 [3]	122	37.783016	29.096333	
<i>Z. situla</i>	<i>Elaphe situla</i> ; <i>Zamenis situla</i>	Turkey, Efesus, Selçuk, Izmir: a specimen each by p. 579 [55]; p. 123, Fig. 66 [16]; Fig. on p. 274, and p. 277 [29]	123	37.942850	27.338154	
<i>Z. situla</i>	<i>Elaphe situla</i> [partim]	Turkey, Geyikdere Köyü, Altinova, Yalova: p. 123, Fig. 66 [16]	124	40.662921	29.473777	
<i>Z. situla</i>	<i>Zamenis situla</i>	Turkey, Geyre, Aydin: p. 234-235, Plate 106E [19]; photo voucher in Supplementary Fig. 3E by Bayram Göçmen and on turkherptil.org	125	37.708587	28.724887	
<i>Z. situla</i>	<i>Zamenis situla</i>	Turkey, Gökçeada Island, se. Gökçeada- or Zeytinli-Reservoir, Çanakkale: p. 77 [56]; p. 71, Fig. 1 [54]	126	40.143536	25.845743	
<i>Z. situla</i>	<i>Elaphe situla</i> [partim]	Turkey, Havuzdere Köyü, Altinova, Yalova: p. 123, Fig. 66 [16]	127	40.675647	29.464040	
<i>Z. situla</i>	<i>Elaphe situla</i> [partim]; <i>Elaphe situla</i>	Turkey, İstanbul: p. 1098 [13]; p. 274 [14]; p. 123, Fig. 66 [16]; p. 67 [24]; p. 18 [57]; p. 63, Plate IXd [3]	128	41.000000	28.900000	
<i>Z. situla</i>		Turkey, Iznik, Bursa: p. 28 [58]	129	40.428767	29.753708	
<i>Z. situla</i>	<i>Zamenis situla</i>	Turkey, Kaz Dag, Mehmetalani, Balıkesir: photo voucher on turkherptil.org, by Sükrü Cam, 8.5.2016	130	39.641993	26.957290	
<i>Z. situla</i>	<i>Elaphe situla</i> [partim]	Turkey, Kınık (Kınık), Izmir: p. 123, Fig. 66 [16]	131	39.076166	27.390502	
<i>Z. situla</i>	<i>Elaphe situla</i> [partim]	Turkey, Kürkü, border Usak-Manisa provinces: p. 63 [3]; p. 123, Fig. 66 [16]	132	38.727213	29.013034	
<i>Z. situla</i>	<i>Z. situla</i>	Turkey, Kuşadası, Izmir: p. 21 [59]	133	37.866667	27.266667	
<i>Z. situla</i>	<i>Zamenis situla</i>	Turkey, Orhangazi, Bursa: photo voucher on turkherptil.org, by Yüksel Calikoglu, 18.5.2015	134	40.484464	29.288645	
<i>Z. situla</i>		Turkey, Rasathane, Nif Mt., Izmir: photo voucher in Supplementary Fig. 3B by Bayram Göçmen on 25.03.2008	135	38.399664	27.277203	
<i>Z. situla</i>	<i>Elaphe situla</i> [partim]	Turkey, Savaştepe Balıkesir: p. 123, Fig. 66 [16]	136	39.382366	27.653896	

<i>Z. situla</i>	<i>Elaphe situla</i>	Turkey, Spil Mountain National Park, Spil Dağı, south of Manisa: p. 65 [60], and photo voucher 15.4.2011 on turkherptil.org. by Bayram Göçmen	137	38.582898	27.426725	
<i>Z. situla</i>	<i>Elaphe situla</i> [partim]	Turkey, Tokmak Köyü Altınova, Yalova: p. 123, Fig. 66 [16]	138	40.677548	29.548851	
<i>Z. situla</i>	<i>Coluber situla</i> Linnaeus, 1758; <i>Coluber leopardinus</i> ; <i>Elaphe situla</i> [partim]; <i>Zamenis situla</i> ; <i>Elaphe situla</i>	Turkey, type locality re-designated to Izmir: p. 63 [3]; p. 1098 [13]; p. 274 [14]; p. 123, Fig. 66 [16]; p. 234, Plate 106 D [19]	139	38.423694	27.142890	type locality
<i>Z. situla</i>		Turkey, Urla, Izmir: photo voucher in Supplementary Fig. 3A by Ozgur Can Sonmez, also on turkiyeyabanhayati.org, 27.3.2017	140	38.295704	26.783432	
<i>Z. situla</i>		Turkey, Yoncaköy, Selcuk, Izmir: photo voucher in Supplementary Fig. 3C by Tanju Yavuz, provided by Yusuf Kumlutas	141	37.986402	27.251123	
<i>Z. situla</i>	<i>Zamenis situla</i>	Turkey, Zeytinli, Balıkesir: p. 3 [61]	142	39.616839	26.947118	

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Electronic Supplementary Fig. 1. Selected life *Zamenis hohenackeri lyciensis* sp. nov. illustrating some geographic variation from west to east. **A)** Akyaka, district Ula, Muğla (locality 38, Fig. 1); **B)** Çetibeli, district Marmaris, Muğla (locality 40, Fig. 1); **C)** İztuzu-Gökbel, district Ortaca, Muğla (locality 48, Fig. 1); **D)** Demirli, district Köyceğiz, Muğla (locality 42, Fig. 1); **E)** Kirkpinar Karanfilli, Aribeleni Yaylasi, district Dalaman, Muğla (locality 52, Fig. 1); **F)** Çığlıkara, district Elmalı, Antalya (locality 41, Fig. 1). All photos taken by Bayram Göçmen, except E) by Konrad Mebert.



Electronic Supplementary Fig. 2. Selected life *Zamenis hohenackeri* ssp. illustrating some geographic variation. Alphabetic sequence of capital letters in figures reflects records from west to east (A to D) followed by more southern records (E and F). **A**) dimorphic gender in *Z. lyciensis* ssp. nov.: orange-, light-border blotched female and yellow-, thick-bordered blotched male from Gelesandra, district Gündoğmuş, Antalya (locality 45, Fig. 1); **B**) two subadults *tauricus* from Aladağ, district Toroslar, Mersin (locality 85, Fig. 1); **C**) *hohenackeri* from Asipınar, district Doğanşehir, Malatya (locality 15, Fig. 1); **D**) *hohenackeri* from Kazıkkaya, district Sarıkamış, Kars (locality 30); **E**) *tauricus* from Çardak, district border between Dörtyol and Hassa, Hatay; **F**) *tauricus* from Gözene, Samandag, Hatay (locality 81, Fig. 1). All photos taken by Bayram Göçmen.

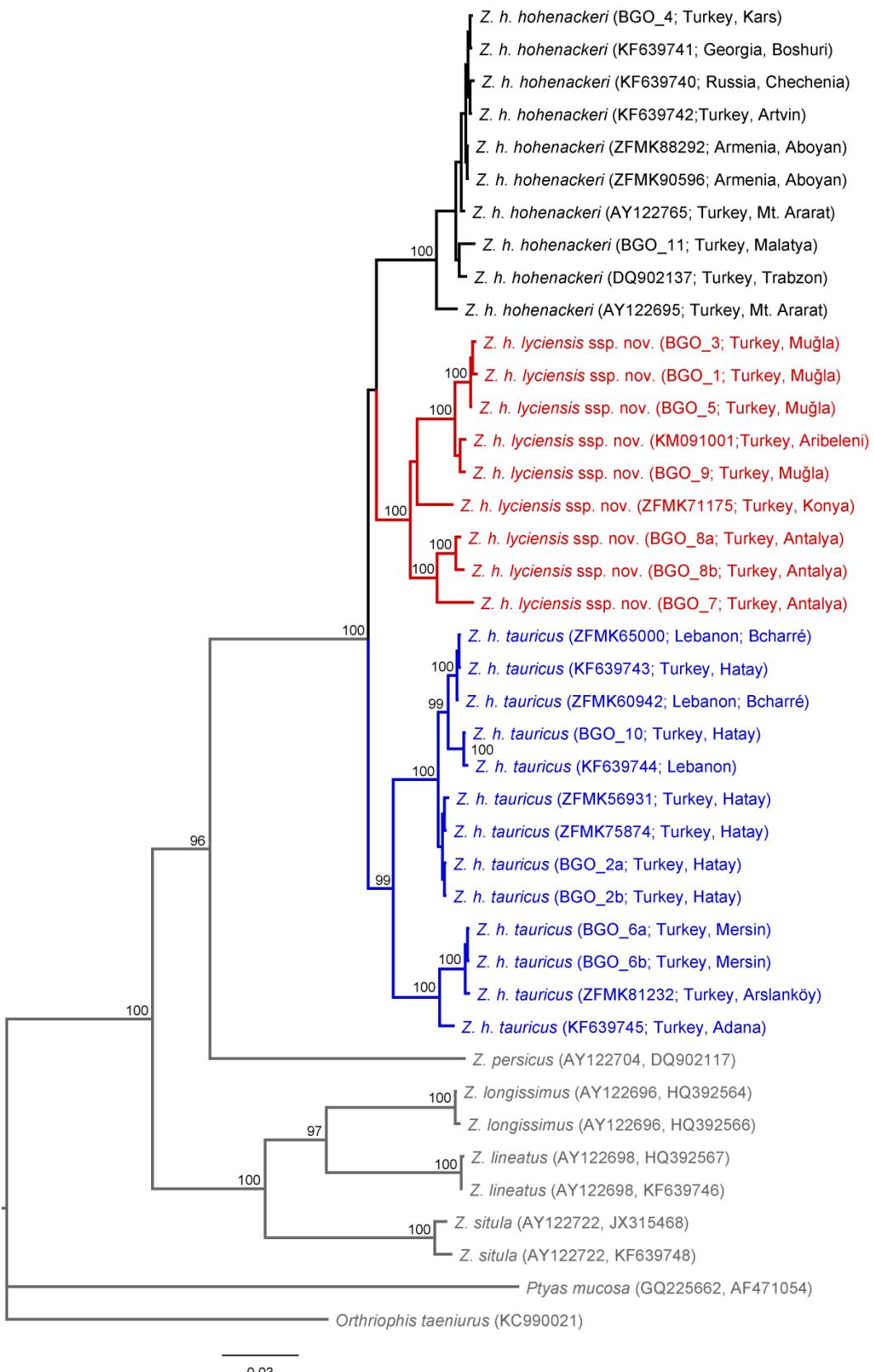


Electronic Supplementary Fig. 3. Proximate records and potential contact zone (sympatry) of *Zamenis situla* and *Z. hohenackeri* in western Turkey with specimens displayed from north to

south. Associated locality numbers in Fig. 1 are given in parenthesis: **A)** *Z. situla* from Urla, Izmir (locality 140), photo via Ozgur Can Sonmez; **B)** *Z. situla* from Rasathane, Nif Mountain, Izmir (locality 135), photo by Bayram Göçmen; **C)** *Z. situla* from Yoncaköy, Selcuk, Izmir (locality 141), photo by Tanju Yavuz via Yusuf Kumlutus; **D)** *Z. h. lyciensis* ssp. nov. from Tahtalı Dam, district Menderes, Izmir (locality 60), photo by Rasit Acar; the photo is only available in lower resolution. The red lines in the inset image (**D**) point to traits typical for *Z. hohenackeri*. This Lycian Ratsnake record is surrounded by records of herein depicted *Z. situla* at ca. 30 km northwest (specimen **A**), and northeast (specimen **B**), and 22 km south (specimen **C**). Most proximate records between *Z. situla* and *Z. hohenackeri* in southeastern Aydin province: **E)** *Z. situla* from Geyre, Aydin (locality 125), photo by Bayram Göçmen; **F)** *Z. h. lyciensis* ssp. nov. from Dutagacköy, Aydin (locality 43), photo by L. Trutnau. These two specimens were found <20 km straight distance apart from each other across suitable habitat. Proximate records 30 km straight line between **G)** *Z. situla* from Kos Island, Greece (locality 111), photo by Bert Van de Bosch, and **H)** *Z. h. lyciensis* ssp. nov. from Pedasa Antik Kenti, Merkez, Konacik, district Bodrum, Mugla province (locality 57), photo by Peter Graveson, provided by Orhan Taştekin. The minimum distance across sea surface, Kos strait, between island and mainland is 5 km. Photos and use, coordinates or other locality information from external sources were provided with permission by the respective authors.



Electronic Supplementary Fig. 4. *Zamenis hohenackeri tauricus* from Northern Cyprus: Dorsal view and head close up of the male (ZDEU28/1962) from Küçük Kaymaklı-Nicosia, leg. Hürmüz A. Cemal, 01.09.1962. Image contrast enhanced to increase resolution of the colour pattern. This specimen is the only record from Cyprus; it might represent a translocated specimen from the mainland to east (Levant) or northeast (Bay of Iskenderun), or part of a native Cypriot population. Suitable habitat exists at Lapithos (Kyrenian Mt. Range, western parts).



Electronic Supplementary Fig. 5. Maximum-likelihood tree based on 1191 bp sequenced from *co1* and *cytb* genes. The tree was reconstructed by RAxML v.8.2.9 using the GTRGAMMA model model. Bootstrap values $\geq 95\%$ are shown above the nodes. Sample/voucher number and locality are shown in parenthesis. *Z.* = *Zamenis*; *Z. h.* = *Zamenis hohenackeri*.

Electronic Supplementary Table 4. Potential diagnostic nucleotide sites among *Zamenis hohenackeri* sequences of the *sptbn1* (274 bp) and the *vim* (291 bp) gene fragment. ‘Altstate’ is the site present in the remaining taxa and indicated in light blue in the aligned sequences under the table. Further variable sites are denoted in yellow. Taxa abbreviated as follows: Ho = *Z. h. hohenackeri*, Ly = *Z. h. lyciensis* ssp. nov., Ta = *Z. h. tauricus*.

Site	Subspecies	State	Altstate
<i>sptbn1</i> : 260 bp Pos.	HoTa	C	deletion (all <i>lyciensis</i> sequences except one [BGO1])
<i>vim</i> : 72 bp Pos.	HoTa	G	A or R

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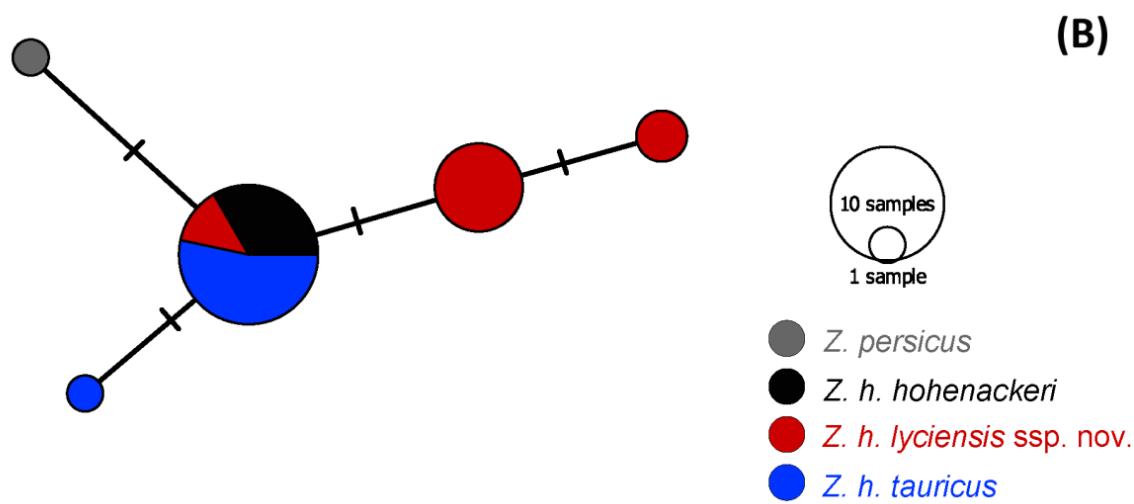
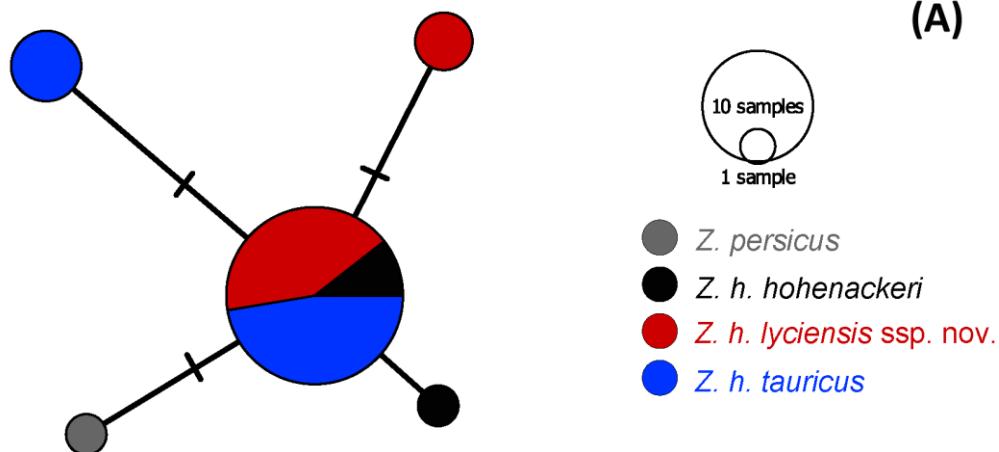
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Electronic Supplementary Fig. 6. TCS haplotype networks obtained by PopART v.1.7 for subspecies of *Zamenis hohenackeri* and *Z. persicus* inferred from individual nuclear loci (*sptbn1* and *vim*). Note that PopART masks any gaps during analysis (e.g. in *Z. h. lyciensis* ssp. nov., see Supplementary Table 4).

Electronic Supplementary Table 5. Age estimates (in million years) for each node referenced in Figure 2. Estimates (div. time) are given in millions of years, with the 95% highest posterior density interval (HPDI). Divergence time estimation based on node constraints obtained from fossil records (=this study), and estimated ages in previous studies (Burbrink & Lawson 2007; Kyriazi et al. 2012; Salvi et al. 2018).

Node no	This study div. time	95% HPDI	Burbrink & Lawson 2007	Kyriazi et al. 2012	Salvi et al. 2018
1	30.4	24.7-37.4	29.3-30.6		
2	27.9	22.7-35.0			
3	25.3	21.5-31.2	26.5-28.1		9.7-17.5
4	22.2	16.8-28.1	ca. 24.0	ca. 22.0	6.4-11.4
5	21.7	20.4-23.8	27.2-30.5	ca. 21.5	
6	20.0	17.6-23.0	ca. 23.7	ca. 20.0	7.0-12.5
7	18.3	12.9-24.4	22.0	17.0	5.0-8.9
8	17.2	16.3-18.5	16.2-16.9		
9	16.3	15.4-17.8			
10	12.9	11.6-14.7	13.0-24.6	ca. 12.0	
11	12.9	8.9-16.5			
12	11.4	7.7-15.1			
13	11.1	7.1-15.2	ca. 12.0		
14	10.2	7.0-14.1	10.8-12.3		3.8-6.8
15	7.4	4.6-10.8			2.9-5.3
16	6.0	4.2-8.8			
17	4.1	2.4-6.3			
18	3.3	1.9-4.8			
19	2.8	1.6-4.2			
...	<2.0				

References

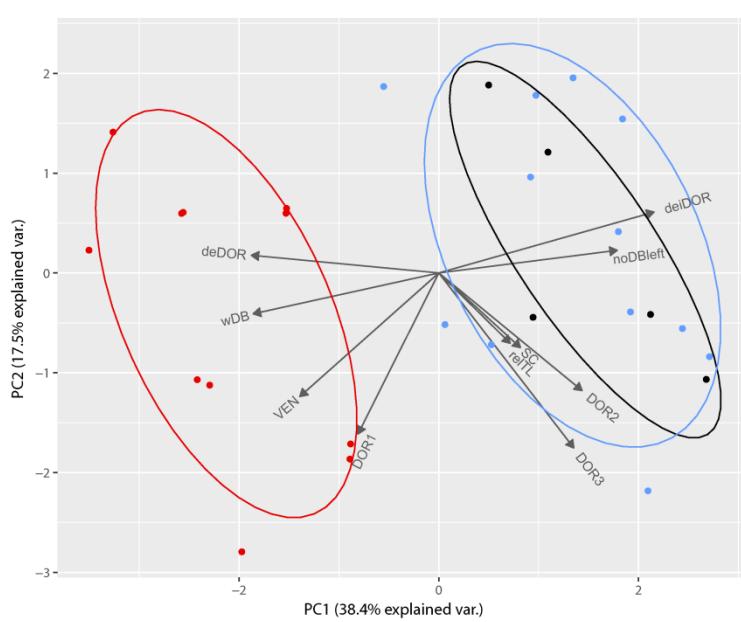
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Electronic Supplementary Table 6. Results of principal component analyses on 10 morphological traits of *Zamenis hohenackeri* based in the imputed reduced (n = 28) and complete (n = 50) dataset.

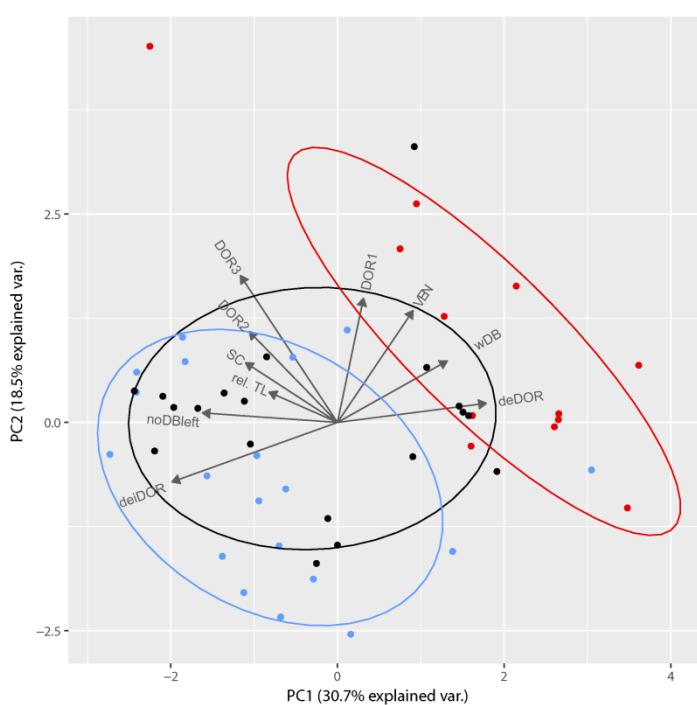
deDOR = dark edges on surrounding dorsals of blotches; deiDOR = dark edges on inner dorsals of blotches; DOR1/2/3 = number of dorsal scale rows at position of the 10th ventral plate, at mid-body, and at one head length before the anal plate; wDB = width of dorsal blotches in dorsal scales; noDBleft = number of dorsal blotches counted on the left side; SC = number of subcaudals; relTL = relative tail lengths (residuals of the regressed on SVL); VEN = number of ventral scales. Main loadings on PC1 are indicated in bold.

REDUCED DATASET	PC1	PC2	PC3
<i>Eigenvalues</i>	3.84	1.75	1.37
Traits	Factor loadings		
<i>deDOR</i>	-0.40	0.06	-0.15
<i>deiDOR</i>	0.46	0.19	-0.11
<i>DOR1</i>	-0.17	-0.50	-0.17
<i>DOR2</i>	0.30	-0.37	0.28
<i>DOR3</i>	0.29	-0.55	-0.11
<i>wDB</i>	-0.39	-0.13	0.30
<i>noDBleft</i>	0.38	0.07	-0.18
<i>relTL</i> (residuals TL~SVL)	0.15	-0.22	-0.51
<i>SC</i>	0.17	-0.23	0.64
<i>VEN</i>	-0.29	-0.39	-0.21
Total variance explained (%)	0.38	0.18	0.14
Cumulative total variance explained (%)	0.38	0.56	0.70
COMPLETE DATASET	PC1	PC2	PC3
<i>Eigenvalues</i>	3.07	1.85	1.28
Traits	Factor loadings		
<i>deDOR</i>	0.44	0.07	-0.21
<i>deiDOR</i>	-0.49	-0.23	0.10
<i>DOR1</i>	0.08	0.47	-0.55
<i>DOR2</i>	-0.26	0.34	0.39
<i>DOR3</i>	-0.28	0.56	-0.14
<i>wDB</i>	0.32	0.23	0.34
<i>noDBleft</i>	-0.40	0.04	0.15
<i>relTL</i> (residuals TL~SVL)	-0.20	0.12	-0.07
<i>SC</i>	-0.27	0.23	-0.26
<i>VEN</i>	0.22	0.42	0.51
Total variance explained (%)	0.31	0.18	0.13
Cumulative total variance explained (%)	0.31	0.49	0.62

(a)



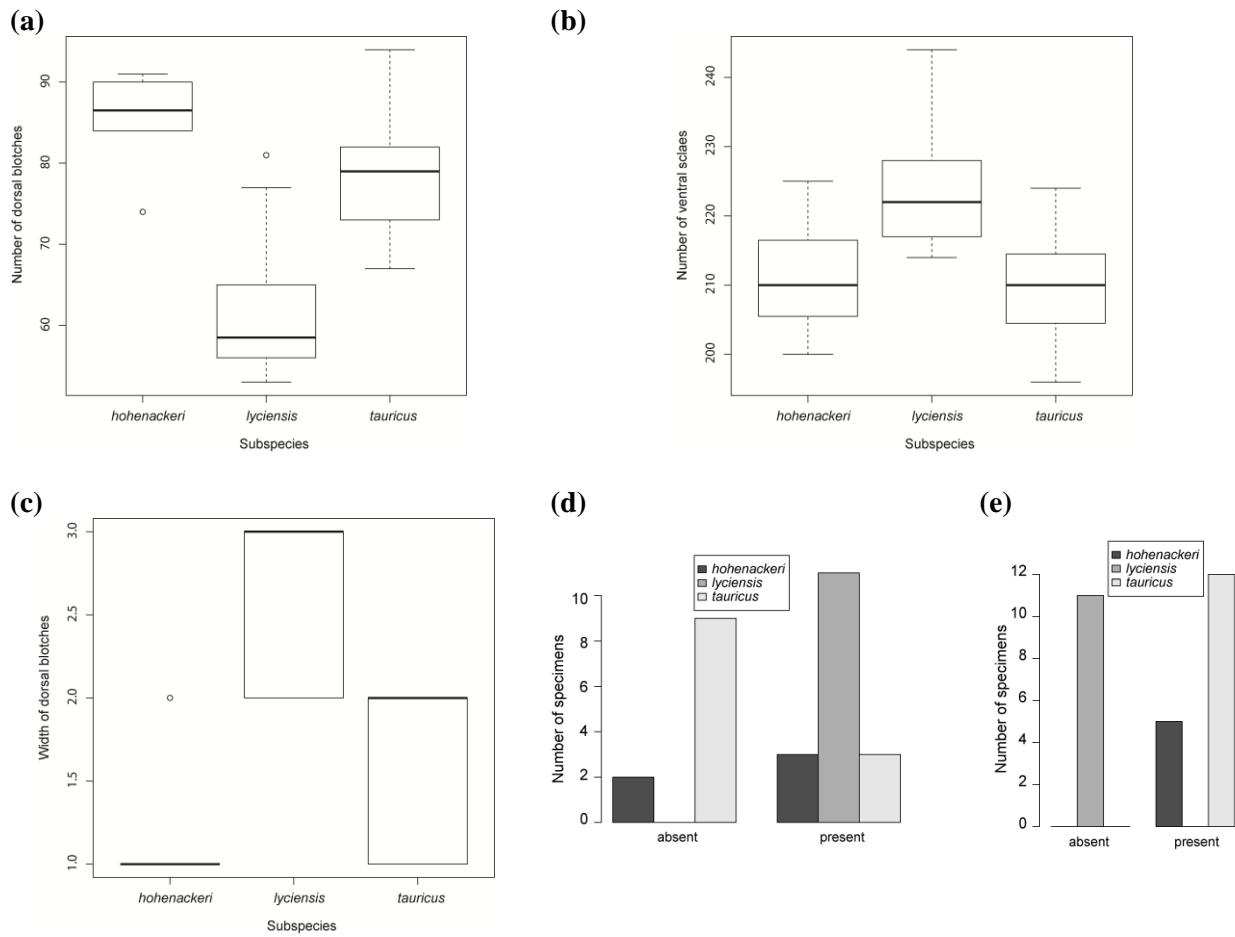
(b)



Electronic Supplementary Fig. 7. Position of *Zamenis hohenackeri* specimens belonging to the different subspecies along PC1 and PC2 based (a) on the imputed reduced ($n = 28$) and (b) complete ($n = 50$) dataset. *hohenackeri* = *Z. h. hohenackeri*; *lyciensis* = *Z. h. lyciensis* spp. nov.; *tauricus* = *Z. h. tauricus*; deDOR = dark edges on surrounding dorsals of blotches; deiDOR = dark edges on inner dorsals of blotches; DOR1/2/3 = number of dorsal scale rows at position of the 10th ventral plate, at mid-body, and at one head length before the anal plate; wDB = width of dorsal blotches in dorsal scales; noDBleft = number of dorsal blotches counted on the left side; SC = number of subcaudals; refTL = relative tail lengths (residuals of the regressed on SVL); VEN = number of ventral scales.

Electronic Supplementary Table 7. Variation in morphological traits in the *Zamenis hohenackeri* subspecies (means in parentheses). deDOR = dark edges on surrounding dorsals of blotches (percentage of specimens where trait is present/number of specimens); deiDOR = dark edges on inner dorsals of blotches (percentage of specimens where trait is present/number of specimens); DOR1/2/3 = number of dorsal scale rows at position of the 10th ventral plate, at mid-body, and at one head length before the anal plate; wDB = width of dorsal blotches in dorsal scales; noDBleft = number of dorsal blotches counted on the left side; SC = number of subcaudals; SVL = snout-vent length; TL = tail lengths; VEN = number of ventral scales.

Taxon	deDOR	deiDOR	DOR1	DOR2	DOR3	wDB	noDBleft	SC	SVL	TL	VEN
<i>Z. h. hohenackeri</i> (n=19)	60/5	100/6	23-25 (24)	23	17-19 (18)	1-2	74-91 (85)	52-78 (63)	220-727 (484)	38-200 (97)	200-225 (211)
<i>Z. h. lyciensis</i> ssp. nov. (n=12)	100/11	0/11	23-25 (24)	21-25 (23)	17-19 (18)	2-3	53-81 (62)	50-68 (60)	270-760 (473)	40-190 (96)	214-244 (224)
<i>Z. h. tauricus</i> (n=19)	16/3	100/5	23-25 (23)	23-25 (23)	17-19 (18)	1-2	67-94 (80)	50-73 (61)	220-666 (393)	40-142 (79)	196-224 (210)



Electronic Supplementary Fig. 8. Box- and barplots of the diagnostic variables to separate *Zamenis hohenackeri lyciensis* ssp. nov. from the two known subspecies. **(a)** Number of dorsal blotches (noDBleft): ANCOVA $F_{2,24} = 16.42$, $p < 0.001$; Tukey's post hoc test, t-value $_{lyciensis/tauricus} = 4.75$, p -value < 0.001 ; t-value $_{hohenackeri/lyciensis} = -5.08$, $p < 0.001$. **(b)** Number of ventral scales (VEN): ANCOVA $F_{2,42} = 8.63$, $p < 0.001$; Tukey's post hoc test, t-value $_{[lyciensis/tauricus]} = -3.90$, p -value < 0.001 ; t-value $_{[hohenackeri/lyciensis]} = 3.62$, $p < 0.01$. **(c)** Width of dorsal blotches (wDB): Kruskal–Wallis $H_2 = 27.69$, $p < 0.001$, Dunn's post hoc test $p < 0.05$ for all pairings. **(d)** Presence/absence of dark edged dorsals around blotches (deDOR): Fisher's exact test, $p < 0.001$, $p_{[lyciensis/tauricus]} < 0.001$; $p_{[hohenackeri/lyciensis]} = 0.083$; $p_{[hohenackeri/tauricus]} = 0.280$. **(e)** Presence/absence of dark edged inner dorsals of blotches (deIDOR): Fisher's exact test, $p < 0.001$, $p_{[lyciensis/tauricus]} < 0.001$; $p_{[hohenackeri/lyciensis]} < 0.001$; absent in *Z. h. lyciensis* spp. nov., while present in *Z. h. hohenackeri* and *Z. h. tauricus* specimens.