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## Revised classification of the genus *Eryx* Daudin, 1803 (Serpentes: Erycidae) in Iran and neighboring areas, based on mtDNA sequences and morphological data

**Table S1.** Number of dorsal scales at mid-body in *E. jaculus* and *E. elegans* reported in different studies.

Number of dorsal scales in <i>E. jaculus</i>	Number of dorsal scales in <i>E. elegans</i>	References
more than 43	fewer than 42	Latifi (1991)
more than 40	fewer than 40	Tzarewsky (1916) and Zarrintab et al. (2017)
more than 40	36	Boulenger (1892, 1893)
more than 43	fewer than 41	Bannikov et al. (1977)
more than 43	fewer than 43	Leviton and Anderson (1970)
more than 43	fewer than 41	Terentyev and Chernov (1965)

**Table S2.** List of the specimens used in this study. The abbreviations of museum codes are as following (in Alphabetical order): Razi University Zoological Museum (BE), the personal collection of Bahman Zangi (BZPC), the personal collection of Eskandar Rastegar-Pouyani (ERP), Institute Zoology Kazakhstan (IZKAZ), the personal collection of Mohammad Zarrintab (PCMZ), Razi Vaccine and Serum Research Institute (RVSRI), the herpetological collection of the Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZISP), Zoological Museum of Ferdowsi University of Mashhad (ZMFUM), the Zoological Museum of Golestan University (ZMGU) and the Zoological Collection of Reza Babaie Savasari (ZMRBS). The retrieved accession numbers from NCBI are marked with an asterisk.

Revealed taxonomic status	Musem Code	Primitive identification	Locality	Niche Modeling			cytb	16S	Reference
				Latitude	Longitude	Morphological Study			
<i>E. jaculus</i>	NHR Lin-12 (lectotype)	<i>E. jaculus</i>	Egypt, NE Africa			*			Anderson (1898)
<i>E. jaculus</i>		<i>E. jaculus</i>	Egypt, NE Africa			*			Anderson (1898)
<i>E. jaculus</i>		<i>E. jaculus</i>	El Kebir, Egypt, NEAfrica			*			Anderson (1898)
<i>E. jaculus</i>		<i>E. jaculus</i>	Abbasiyah, Cairo, Egypt, NEAfrica			*			Anderson (1898)
<i>E. jaculus</i>		<i>E. jaculus</i>	Abu Roash, Egypt, NEAfrica			*			Anderson (1898)
<i>E. jaculus</i>		<i>E. jaculus</i>	Abu Roash, Egypt, NEAfrica			*			Anderson (1898)
<i>E. jaculus</i>		<i>E. jaculus</i>	Gizeh, Egypt, NEAfrica			*			Anderson (1898)
<i>E. jaculus</i>		<i>E. jaculus</i>	Gizeh, Egypt, NEAfrica			*			Anderson (1898)
<i>E. jaculus</i>		<i>E. jaculus</i>	Heluan, Egypt, NEAfrica			*			Anderson (1898)
<i>E. jaculus</i>		<i>E. jaculus</i>	Neighbourhood of Cairo, Egypt, NEAfrica			*			Anderson (1898)
<i>E. cf. jaculus</i> (clade B)	BE23.1.3	<i>E. jaculus</i>	Al Basra province, Iraq			*	MN338623	MN338651	This study

Revealed taxonomic status	Musem Code	Primitive identification	Locality	Niche Modeling		Morphological Study	Accession Number		Reference
				Latitude	Longitude		cytb	16S	
<i>E. cf. jaculus</i> (clade B)	BE23.1.8	<i>E. jaculus</i>	Al Basra province, Iraq			*	MN338622	MN338646	This study
<i>E. cf. jaculus</i> (clade B)	BE23.1.9	<i>E. jaculus</i>	Babil province, Iraq			*	MN338625	MN338650	This study
<i>E. cf. jaculus</i> (clade B)	BE23.1.11	<i>E. jaculus</i>	Babil province, Iraq			*	MN338628	MN338648	This study
<i>E. cf. jaculus</i> (clade B)	BE23.1.12	<i>E. jaculus</i>	Bahr Al-Najaf, Iraq			*	MN338624		This study
<i>E. cf. jaculus</i> (clade B)	BE23.1.13	<i>E. jaculus</i>	Bahr Al-Najaf, Iraq			*	MN338627	MN338647	This study
<i>E. cf. jaculus</i> (clade B)	BE23.2.9	<i>E. jaculus</i>	Bahr Al-Najaf, Iraq			*	MN338620	MN338642	This study
<i>E. cf. jaculus</i> (clade B)	BE23.2.5	<i>E. jaculus</i>	Bahr Al-Najaf, Iraq			*	MN338639	MN338644	This study
<i>E. cf. jaculus</i> (clade B)	BE23.2.7	<i>E. jaculus</i>	Bahr Al-Najaf, Iraq			*	MN338640	MN338643	This study
<i>E. cf. jaculus</i> (clade B)	BE23.2.2	<i>E. jaculus</i>	Bahr Al-Najaf, Iraq			*	MN338626	MN338649	This study
<i>E. cf. jaculus</i> (clade B)	BE23.2.3	<i>E. jaculus</i>	Bahr Al-Najaf, Iraq			*	MN338621	MN338645	This study
<i>E. cf. jaculus</i> (clade B)	BE23.3.1	<i>E. jaculus</i>	Al Kufa, Iraq			*	MN338629	MN338652	This study
<i>E. elegans</i> (clade A)	ERP 8594 (23)	<i>E. jaculus</i>	Sarigol, North Khorasan, NE Iran	36.92888889	57.81805556	*			This study
<i>E. elegans</i> (clade A)	ERP 8596 (352)	<i>E. jaculus</i>	Dargaz, Razavi Khorasan, NE Iran	37.455	59.16805556	*			This study
<i>E. elegans</i> (clade A)	215	<i>E. jaculus</i>	Sabzevar, Razavi Khorasan, NE Iran	36.10583333	57.79527778	*			This study
<i>E. elegans</i> (clade A)	ERP 2643 (7)	<i>E. jaculus</i>	Karde Kalat road, Razavi Khorasan, NE Iran	36.62027778	59.61277778	*	KJ841062*	MN338723	This study
<i>E. elegans</i> (clade A)	ERP 2644 (8)	<i>E. elegans</i>	Karde Kalat road, Razavi Khorasan, NE Iran			*	KJ841060*	MN338718	This study
<i>E. elegans</i> (clade A)	ERP 2645 (9)	<i>E. elegans</i>	Mashhad Kalat road, Razavi Khorasan, NE Iran	36.93777778	59.76722222	*	KJ841059*	MN338722	This study
<i>E. elegans</i> (clade A)	ZMGU 2091	<i>E. elegans</i>	Golill va saranin, Shirvan, North Khorasan, NE Iran	37.75444444	58.1625	*			This study
<i>E. elegans</i> (clade A)	ERP 1126 (14)	<i>E. elegans</i>	Birjand, South Khorasan, NE Iran	32.8675	59.44333333	*	KJ841057*	MN338717	This study
<i>E. elegans</i> (clade A)	ERP 2650 (11)	<i>E. elegans</i>	Ghaen, South Khorasan, NE Iran	33.71888889	59.36111111	*	KJ841058*	MN338719	This study
<i>E. elegans</i> (clade A)	ERP 2651 (12)	<i>E. elegans</i>	Ghaen, South Khorasan, NE Iran	33.7122	59.24194	*	KJ841061*	MN338721	This study
<i>E. elegans</i> (clade A)	ERP 2652 (13)	<i>E. elegans</i>	Ghaen, South Khorasan, NE Iran	33.7254	59.2641	*	KJ841063*		This study
<i>E. elegans</i> (clade A)	ERP1621	<i>E. elegans</i>	Sarigol, North Khorasan, NE Iran	37.12805556	57.97055556	*			This study
<i>E. elegans</i> (clade A)	ZMGU188	<i>E. elegans</i>	Gorgan, Golestan, N Iran	36.773976	54.465176	*			This study
<i>E. elegans</i> (clade A)	ZISP 8711 (syntype)	<i>E. elegans</i>	Eastern KopetDagh, NE Iran	37.036033	59.300566	*			This study
<i>E. elegans</i> (clade A)	ZISP 8473 (syntype)	<i>E. elegans</i>	Golill va sarani, North Khorasan, NE Iran	37.805409°	57.943905	*			This study
<i>E. elegans</i> (clade A)	ZISP 8462 (syntype)	<i>E. elegans</i>	KopetDagh, near Russian border	37.97749	57.328313	*			This study
<i>E. elegans</i> (clade A)	ERP 1122	<i>E. elegans</i>	Bojnurd, North Khorasan, NE Iran	37.52555556	57.27138889		KJ841056*	MN338720	This study
<i>E. elegans</i> (clade A)	ERP 1078	<i>E. jaculus</i>	Razavi Khorasan, NE Iran				KJ841055*	MN338725	This study
<i>E. elegans</i> (clade A)	120	<i>E. elegans</i>	North Khorasan, NE Iran			*			This study
<i>E. elegans</i> (clade A)	ERP 8595 (27)	<i>E. elegans</i>	Sarigol, North Khorasan, NE Iran			*			This study

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				Latitude	Longitude		cytb	16S	
<i>E. elegans</i> (clade A)	Human observation	<i>E. elegans</i>	Quchan, Razavi Khorasan, NE Iran	37.54916667	58.26166667				Human observation
<i>E. elegans</i> (clade A)	BMNH 43.7.21.70. (Holotype)	<i>E. elegans</i>	Afghanistan			*			Gray (1849) and Boulenger (1893)
<i>E. elegans</i> (clade A)	FMNH161178	<i>E. elegans</i>	Paghman, E Afghanistan			*			Anderson & Leviton (1969)
<i>E. jayakari</i>	ZMGU 2919	<i>E. jayakari</i>	Mishdagh, Khuzestan, SW Iran	31.7172	48.184958	*			This study
<i>E. jayakari</i>	RVSRI 19604	<i>E. jayakari</i>	Borazjan, Bushehr, SW Iran	29.2126	51.1609056	*			This study
<i>E. jayakari</i>	RVSRI 14146	<i>E. jayakari</i>	Ahvaz, Khuzestan, SW Iran	31.48772	48.5644	*			This study
<i>E. jayakari</i>	RVSRI 78830	<i>E. jayakari</i>	Ahvaz, Khuzestan, SW Iran	31.3292	48.6911	*			This study
<i>E. jayakari</i>	RVSRI 127273	<i>E. jayakari</i>	Khuzistan, SW Iran			*			This study
<i>E. jayakari</i>	ERP 8372	<i>E. jayakari</i>	Albaji, Ahvaz, Khuzestan, SW Iran	31.51277781	48.63305561	*	MN338641	MN338724	This study
<i>E. jayakari</i>	Human observation	<i>E. jayakari</i>	Mishdagh, Khuzestan, SW Iran	31.72138	48.1152				Human observation
<i>E. jayakari</i>	Human observation	<i>E. jayakari</i>	Fakeh, Khuzestan, SW Iran	31.9363	47.8689				Human observation
<i>E. jayakari</i>	Human observation	<i>E. jayakari</i>	Bostan, Khuzestan, SW Iran	31.37611	47.783				Human observation
<i>E. jayakari</i>	Human observation	<i>E. jayakari</i>	Shushtar, Khuzestan, SW Iran	31.9079528	49.1889528				Human observation
<i>E. jayakari</i>	Human observation	<i>E. jayakari</i>	Ahvaz Andimeshk road, Khuzestan, SW Iran	31.68494	48.4204				Human observation
<i>E. jayakari</i>		<i>E. jayakari</i>	Ha'il Province, Saudi Arabia				HQ267804*		NCBI
<i>E. jayakari</i>		<i>E. jayakari</i>	Ha'il Province, Saudi Arabia				HQ267803*		NCBI
<i>Eryx</i> sp. (clade C)	BZPC 20130	<i>E. jaculus</i>	Ahvaz, Khuzestan, SW Iran	31.597639	48.540741	*	MN338633	MN338656	This study
<i>Eryx</i> sp. (clade C)	BZPC 20126	<i>E. jaculus</i>	Ahvaz, Khuzestan, SW Iran			*	MN338635	MN338657	This study
<i>Eryx</i> sp. (clade C)	BZPC 20131	<i>E. jaculus</i>	Tabriz, E Azerbaijan, NW Iran	38.074063	46.221119	*	MN338637	MN338660	This study
<i>Eryx</i> sp. (clade C)	ERP 4889	<i>E. jaculus</i>	Sare pol zahab, Kermanshah, W Iran	34.4475	45.89444444	*	MN338631	MN338654	This study
<i>Eryx</i> sp. (clade C)	ERP 4890	<i>E. jaculus</i>	Mehran, Ilam, W Iran			*			This study
<i>Eryx</i> sp. (clade C)	ERP 4004 (99)	<i>E. jaculus</i>	Hanivan, Ilam, W Iran	33.63888889	46.55972222	*	MN338630	MN338653	This study
<i>Eryx</i> sp. (clade C)	BZPC 20117	<i>E. jaculus</i>	Mehran, Ilam, W Iran	33.125174	46.158032	*	MN338632	MN338655	This study
<i>Eryx</i> sp. (clade C)	RVSRI 6765	<i>E. jaculus</i>	Mianeh E Azarbaijan, NW Iran	37.41222222	47.66027778	*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 60591	<i>E. jaculus</i>	W Azarbaijan, NW Iran			*			This study
<i>Eryx</i> sp. (clade C)	BZPC 20129	<i>E. jaculus</i>	Qazvin, NW Iran	36.300023	50.279435	*			This study
<i>Eryx</i> sp. (clade C)	ZISP 15725	<i>E. jaculus</i>	Qazvin, NW Iran	36.27678	49.974465	*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 93176	<i>E. jaculus</i>	Urmia, W Azarbaijan, NW Iran	37.62055556	44.80833333	*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 61604	<i>E. jaculus</i>	W Azarbaijan, NW Iran			*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 104297	<i>E. jaculus</i>	Khoy, W Azarbaijan, NW Iran	38.49194444	45.08944444	*			This study

Revealed taxonomic status	Musem Code	Primitive identification	Locality	Niche Modeling		Morphological Study	Accession Number		Reference
				Latitude	Longitude		cytb	16S	
<i>Eryx</i> sp. (clade C)	RVSRI 26714	<i>E. jaculus</i>	Tafresh, Markazi, C Iran	34.75777778	50.045	*			This study
<i>Eryx</i> sp. (clade C)	ZISP 16362	<i>E. jaculus</i>	Qazvin, NW Iran	36.285959	50.181802	*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 59861	<i>E. jaculus</i>	Zanjan, NW Iran	36.58055556	48.51333333	*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 60891	<i>E. jaculus</i>	Zanjan, NW Iran	36.64861111	48.6325	*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 60892	<i>E. jaculus</i>	Zanjan, NW Iran			*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 72655	<i>E. jaculus</i>	Saghez, Kurdistan, W Iran	36.12861111	46.52555556	*			This study
<i>Eryx</i> sp. (clade C)	ZMGU 23	<i>E. jaculus</i>	Dezful, Khuzestan, SW Iran	32.383078	48.423584	*			This study
<i>Eryx</i> sp. (clade C)	ZISP 10343	<i>E. jaculus</i>	Khuzestan ,SW Iran			*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 106941	<i>E. jaculus</i>	Ahvaz, Khuzestan, SW Iran			*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 7331	<i>E. jaculus</i>	Ahvaz, Khuzestan, SW Iran			*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 78813	<i>E. jaculus</i>	Ahvaz, Khuzestan, SW Iran			*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 7333	<i>E. jaculus</i>	Ahvaz, Khuzestan, SW Iran			*			This study
<i>Eryx</i> sp. (clade C)	RVSRI 7268	<i>E. jaculus</i>	Ramhormoz, Khuzestan, SW Iran	31.24333333	49.48527778	*			This study
<i>Eryx</i> sp. (clade C)	BZPC 20122	<i>E. jaculus</i>	Khuzestan, SW Iran			*			This study
<i>Eryx</i> sp. (clade C)	Not cataloged	<i>E. jaculus</i>	Kazeroon, Fars, C Iran	29.645	51.67361111	*			This study
<i>Eryx</i> sp. (clade C)	Not cataloged	<i>E. jaculus</i>	Shiraz, Fars, C Iran	29.61361111	52.66888889	*			This study
<i>Eryx</i> sp. (clade C)	Not cataloged	<i>E. jaculus</i>	Kurdistan, W Iran	36.03211	46.9625	*			This study
<i>Eryx</i> sp. (clade C)	ERP 3215	<i>E. jaculus</i>	Yazd, C Iran	31.80916667	54.18166667		MN338638	MN338661	This study
<i>Eryx</i> sp. (clade C)	7H1155	<i>E. jaculus</i>	Mahneshan to Tekab, Zanjan, NW Iran	36.62111111	47.42666667		MN338636	MN338658	This study
<i>Eryx</i> sp. (clade C)	7H1156	<i>E. jaculus</i>	Mahneshan to Tekab, Zanjan, NW Iran					MN338659	This study
<i>Eryx</i> sp. (clade C)	ERP 5776	<i>E. jaculus</i>	Khuzistan, SW Iran				MN338634		This study
<i>Eryx</i> sp. (clade C)	RVSRI 21818	<i>E. jaculus</i>	Baraghan, Alborz, N Iran	35.88	50.92027778				This study
<i>Eryx</i> sp. (clade C)	Human observation	<i>E. jaculus</i>	Shirvan-Chardavol, Ilam, W Iran	33.66555556	46.75555556				Human observation
<i>Eryx</i> sp. (clade C)	Human observation	<i>E. jaculus</i>	Arak, Markazi, W Iran	34.11611	49.652277				Human observation
<i>E. miliaris</i> (clade D)	ERP 2631 (1)	<i>E. tataricus</i>	Fariman, Razavi Khorasan, NE Iran			*	KJ841070*	MN338683	This study
<i>E. miliaris</i> (clade D)	ERP 2632 (2)	<i>E. tataricus</i>	Sarakhs, Razavi Khorasan, NE Iran	36.568465	61.09624	*	MN338582	MN338662	This study
<i>E. miliaris</i> (clade D)	ERP 2636 (6)	<i>E. tataricus</i>	Fariman, Razavi Khorasan, NE Iran	35.789009	60.195297	*	KJ841066*	MN338670	This study
<i>E. miliaris</i> (clade D)	ERP 8597 (591)	<i>E. tataricus</i>	Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ERP 2634 (4)	<i>E. tataricus</i>	Fariman, Razavi Khorasan, NE Iran			*	KJ841064*		This study
<i>E. miliaris</i> (clade D)	ZMGU 1148	<i>E. tataricus</i>	Torbat jam, Razavi Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ZMGU 494	<i>E. tataricus</i>	Neyshabur, Razavi Khorasan, NE Iran	36.221011	58.780325	*	MN338589		This study
<i>E. miliaris</i> ((clade D)	ZMGU 2001	<i>E. tataricus</i>	Sabzevar, Razavi Khorasan, NE Iran	36.231696	57.661523	*			This study

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				Latitude	Longitude		cytb	16S	
<i>E. miliaris</i> (clade D)	ERP 792	<i>E. tataricus</i>	Sabzevar, Parvand, Razavi Khorasan, NE Iran			*	KJ841043*	MN338682	This study
<i>E. miliaris</i> (clade D)	ERP 2653 (22a)	<i>E. tataricus</i>	Birjand, South Khorasan, NE Iran	33.536178	59.47742	*	KJ841068*	MN338671	This study
<i>E. miliaris</i> (clade D)	ERP 2654 (22b- 30)	<i>E. tataricus</i>	Shaskuh, Ghaen, South Khorasan, NE Iran			*	KJ841067*	MN338676	This study
<i>E. miliaris</i> (clade D)	33	<i>E. tataricus</i>	Torbat jam, Razavi Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ERP 929	<i>E. tataricus</i>	Joghatai Sabzevar, Razavi Khorasan, NE Iran			*	KJ841049*	MN338678	This study
<i>E. miliaris</i> (clade D)	15	<i>E. tataricus</i>	Birjand, South Khorasan, NE Iran	32.871741	59.240429	*			This study
<i>E. miliaris</i> (clade D)	ERP 590	<i>E. tataricus</i>	Torbat jam, Razavi Khorasan, NE Iran	35.258431	60.638116	*			This study
<i>E. miliaris</i> (clade D)	ERP 2633 (3)	<i>E. tataricus</i>	Tehran, N Iran	35.72611111	50.71416667	*	MN338596	MN338686	This study
<i>E. miliaris</i> (clade D)	ERP 5961	<i>E. tataricus</i>	Zabol, Sistan and Baluchestan, E Iran	31.08722222	61.79333333	*	MN338597	MN338693	This study
<i>E. miliaris</i> (clade D)	ERP 6640	<i>E. tataricus</i>	Qom, C Iran	34.44583	51.16194	*	MN338594	MN338689	This study
<i>E. miliaris</i> (clade D)	ERP 1009	<i>E. tataricus</i>	Sabzevar, Razavi Khorasan, NE Iran			*	KJ841052*	MN338687	This study
<i>E. miliaris</i> (clade D)	ERP 6670	<i>E. tataricus</i>	Zabol, Sistan and Baluchestan, E Iran	31.15805556	61.73694444	*	MN338601	MN338694	This study
<i>E. miliaris</i> (clade D)	ERP 6049	<i>E. tataricus</i>	Zabol, Sistan and Baluchestan, E Iran			*			This study
<i>E. miliaris</i> (clade D)	ERP 6671	<i>E. tataricus</i>	Zabol, Sistan and Baluchestan, E Iran	31.1875	61.78027778	*	MN338598	MN338692	This study
<i>E. miliaris</i> (clade D)	ZMRBS 115	<i>E. tataricus</i>	Semnan, C Iran	35.50378	53.406601	*	MN338592		This study
<i>E. miliaris</i> (clade D)	PCMZ1	<i>E. tataricus</i>	Aran and Bidgol, Isfahan, C Iran	34.1091	51.571166	*	MN338595	MN338685	This study
<i>E. miliaris</i> (clade D)	PCMZ2	<i>E. tataricus</i>	Aran and Bidgol, Isfahan, C Iran			*			This study
<i>E. miliaris</i> (clade D)	PCMZ3	<i>E. tataricus</i>	Aran and Bidgol, Isfahan, C Iran	34.1091	51.571166	*	MN338588	MN338688	This study
<i>E. miliaris</i> (clade D)	ZMGU 2560	<i>E. tataricus</i>	Feyzabad, Khorasan Razavi, NE Iran	35.019863	58.772638	*			This study
<i>E. miliaris</i> (clade D)	ZMRBS333	<i>E. tataricus</i>	40 km south of Damghan, Semnan, C Iran			*	MN338584	MN338672	This study
<i>E. miliaris</i> (clade D)	ZMRBS 393	<i>E. tataricus</i>	Birjand, South Khorasan, NE Iran	32.871741	59.240429	*			This study
<i>E. miliaris</i> (clade D)	BZPC 20128	<i>E. tataricus</i>	Eshtehard, Alborz, N Iran			*			This study
<i>E. miliaris</i> (clade D)	BZPC 20127	<i>E. tataricus</i>	Eshtehard, Alborz, N Iran	35.725556	50.366111	*	MN338602	MN338674	This study
<i>E. miliaris</i> (clade D)	BZPC 20125	<i>E. tataricus</i>	Boin Zahra, Qazvin, NW Iran	35.774212	50.054624	*	MN338585	MN338673	This study
<i>E. miliaris</i> (clade D)	ZMGU 883	<i>E. tataricus</i>	Voshmgir Dam, Golestan, N Iran			*	MN338590		This study
<i>E. miliaris</i> (clade D)	RVSRI 74087	<i>E. tataricus</i>	Zabol, Sistan and Baluchestan, E Iran			*			This study
<i>E. miliaris</i> (clade D)	RVSRI 44587	<i>E. tataricus</i>	Karaj, N Iran			*			This study
<i>E. miliaris</i> (clade D)	ERP 1051	<i>E. tataricus</i>	Torbat jam, Razavi Khorasan, NE Iran	35.3763	60.704166		KJ841054*	MN338684	This study
<i>E. miliaris</i> (clade D)	ERP 1105	<i>E. tataricus</i>	Mashhad, Razavi Khorasan, NE Iran					MN338663	This study
<i>E. miliaris</i> (clade D)	ERP 1018	<i>E. miliaris</i>	Sabzevar, Parvand, Razavi Khorasan, NE Iran	35.909821	57.123772		KJ841053*	MN338679	This study

Revealed taxonomic status	Musem Code	Primitive identification	Locality	Niche Modeling		Morphological Study	Accession Number		Reference
				Latitude	Longitude		cytb	16S	
<i>E. miliaris</i> (clade D)	ERP 875	<i>E. tataricus</i>	Sabzevar, Parvand, Razavi Khorasan, NE Iran				KJ841045*	MN338665	This study
<i>E. miliaris</i> (clade D)	ZISP10325	<i>E. tataricus</i>	Between Tehran and Qazvin, N Iran	35.742809	50.632903				This study
<i>E. miliaris</i> (clade D)	ZISP9273	<i>E. tataricus</i>	Hajabad, Zirkuh, South Khorasan, NE Iran	33.608749	59.99386				This study
<i>E. miliaris</i> (clade D)	ZISP15737.1	<i>E. tataricus</i>	12 km from Shahrud, Semnan, C Iran	36.437164	55.099071				This study
<i>E. miliaris</i> (clade D)	Human observation	<i>E. tataricus</i>	Pirhajat, Tabas, C Iran	34.11194444	56.47111111				Human observation
<i>E. miliaris</i> (clade D)	Human observation	<i>E. tataricus</i>	Halvan, Tabas, C Iran	33.94777778	56.27444444				Human observation
<i>E. miliaris</i> (clade D)	ERP 2635 (5)	<i>E. miliaris</i>	Fariman, Razavi Khorasan, NE Iran			*	KJ841065*	MN338668	This study
<i>E. miliaris</i> (clade D)	ERP 592	<i>E. miliaris</i>	Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ERP 593	<i>E. miliaris</i>	Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ERP347	<i>E. miliaris</i>	Dasht, North Khorasan, NE Iran	37.304151	56.011739	*			This study
<i>E. miliaris</i> (clade D)	ERP 594	<i>E. miliaris</i>	Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ZMFUM 143	<i>E. miliaris</i>	Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ZMFUM 141 a	<i>E. miliaris</i>	Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ZMFUM 1159	<i>E. miliaris</i>	Jajarm, North Khorasan, NE Iran	36.9175	56.43361111	*			This study
<i>E. miliaris</i> (clade D)	317	<i>E. miliaris</i>	Birjand, South Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ERP806	<i>E. miliaris</i>	Sabzevar-Neyshabur, Razavi Khorasan, NE Iran	36.094343	58.292944	*	KJ841044*	MN338664	This study
<i>E. miliaris</i> (clade D)	ERP925	<i>E. miliaris</i>	Joghatai Sabzevar, Razavi Khorasan, NE Iran	36.639003	57.067382	*	KJ841046*	MN338667	This study
<i>E. miliaris</i> (clade D)	ERP926	<i>E. miliaris</i>	Joghatai Sabzevar, Razavi Khorasan, NE Iran			*	KJ841047*		This study
<i>E. miliaris</i> (clade D)	ERP928	<i>E. miliaris</i>	Joghatai Sabzevar, Razavi Khorasan, NE Iran			*	KJ841048*	MN338677	This study
<i>E. miliaris</i> (clade D)	ERP 976	<i>E. miliaris</i>	Neyshabur-Torbatjam, Razavi Khorasan, NE Iran	35.579748	59.23883	*	KJ841050*	MN338675	This study
<i>E. miliaris</i> (clade D)	ERP906	<i>E. miliaris</i>	Sarakhs, Razavi Khorasan, NE Iran			*	KJ841071*		This study
<i>E. miliaris</i> (clade D)	ERP 8366 (10)	<i>E. miliaris</i>	Ghaen, South Khorasan, NE Iran	33.726667	59.184444	*	KJ841069*	MN338681	This study
<i>E. miliaris</i> (clade D)	ERP 977	<i>E. miliaris</i>	Neyshabur, Razavi Khorasan, NE Iran			*	KJ841051*	MN338680	This study
<i>E. miliaris</i> (clade D)	ZMFUM 141 b	<i>E. miliaris</i>	Khorasan, NE Iran			*			This study
<i>E. miliaris</i> (clade D)	ERP 5962	<i>E. miliaris</i>	Zabol, E Iran			*	MN338599	MN338690	This study
<i>E. miliaris</i> (clade D)	ERP 1451	<i>E. miliaris</i>	Sabzevar, Razavi Khorasan, NE Iran			*		MN338669	This study
<i>E. miliaris</i> (clade D)	ERP 1687	<i>E. miliaris</i>	Khorasan, NE Iran			*			This study
(clade D)	ERP 3960	<i>E. miliaris</i>	Bampoore, SE Iran	27.24194444	60.38972222	*	MN338593	MN338726	This study
<i>E. miliaris</i> (clade D)	ZMGU 218	<i>E. miliaris</i>	alagol Lake, Golestan, N Iran	37.373835	54.557286	*	MN338583	MN338666	This study
<i>E. miliaris</i> (clade D)	ZMGU 881	<i>E. miliaris</i>	golestan,maraveh tape	37.899087	55.959762	*			This study

Revealed taxonomic status	Musem Code	Primitive identification	Locality	Niche Modeling		Morphological Study	Accession Number		Reference
				Latitude	Longitude		cytb	16S	
<i>E. miliaris</i> (clade D)	ZMGU 882	<i>E. miliaris</i>	voshmgir Dam, Golestan, N Iran	37.23526	54.721588	*	MN338586		This study
<i>E. miliaris</i> (clade D)	ZMGU 1407	<i>E. miliaris</i>	Damghan, Semnan, C Iran			*			This study
<i>E. miliaris</i> (clade D)	ZMRBS 290	<i>E. miliaris</i>	40 km south of Damghan, Semnan, C Iran	35.701002	54.407078	*	MN338591		This study
<i>E. miliaris</i> (clade D)	ZMRBS 245	<i>E. miliaris</i>	Damghan, Semnan, C Iran	36.178636	54.322972	*	MN338587		This study
<i>E. miliaris</i> (clade D)	BZPC 20123	<i>E. miliaris</i>	Mashhad, Razavi Khorasan, NE Iran	36.366878	59.72676	*			This study
<i>E. miliaris</i> (clade D)	RVSRI 106948	<i>E. miliaris</i>	Gorgan, Golestan, N Iran			*			This study
<i>E. miliaris</i> (clade D)	ERP 6672	<i>E. miliaris</i>	Zabol, Sistan and Baluchestan, E Iran			*	MN338600	MN338691	This study
<i>E. miliaris</i> (clade D)	ZISP 10131.1	<i>E. tataricus</i>	Gorgan river, Golestan, N Iran			*			This study
<i>E. miliaris</i> (clade D)	ZISP 10131.2	<i>E. tataricus</i>	Gorgan river, Golestan, N Iran			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 268/3153	<i>E. miliaris</i>	Guryev (Atyrau) Province, Kukurte, W Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 286/4268	<i>E. miliaris</i>	10 km Kul'sary Village near Emba River, W Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 56 (624/1)	<i>E. miliaris</i>	Eastern coast of Mangyshlak Peninsula, Aktau Mountains, Tauchik Village, W Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 193/2343	<i>E. miliaris</i>	Northern Ustyurt, Sam Sands, W Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 103/1553	<i>E. tataricus</i>	Ustyurt, Karakalpakskaya Station, W Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 29	<i>E. m. miliaris</i>	Mangyshlak Peninsula, N vicinity of Aktau Town, Kosskuduk Urochische, W Kazakhstan			*	MN338606	MN338698	This study
<i>E. miliaris</i> (clade D)	IZKAZ 103/1225	<i>E. miliaris</i>	Eastern Aral Sea Basin, W Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 193/1950	<i>E. miliaris</i>	Eastern Aral Sea Basin, Zhana-Darya River, W Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 256/2955	<i>E. tataricus</i>	Kizilorda Province, Kizilkiya Site, S Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 256/3877	<i>E. tataricus</i>	foothills of Karatau Ridge, S Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 268/2869	<i>E. tataricus</i>	Kizilkul Lake near Karatau Ridge, S Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 529/1	<i>E. tataricus</i>	South Balkhash Lake Basin, 114 km from Almaty by Bakanass road, SE Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 268/3428	<i>E. tataricus</i>	South Balkhash Lake Basin, Ushkol' Lake, SE Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 373/4183	<i>E. tataricus</i>	South Balkhash Lake Basin, 60 km NE Kokzhide, SE Kazakhstan			*			This study

Revealed taxonomic status	Musem Code	Primitive identification	Locality	Niche Modeling		Morphological Study	Accession Number		Reference
				Latitude	Longitude		cytb	16S	
<i>E. miliaris</i> (clade D)	IZKAZ 464/1	<i>E. tataricus</i>	Eastern Balkhash Lake Basin, 2 km W Arganaty Village, SE Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 256/2667	<i>E. tataricus</i>	Ily River Depression, Minbulak Site, SE Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	non catalaged	<i>E. tataricus</i>	Ily River Depression, Big Boguty Mountains, SE Kazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 256/2666	<i>E. tataricus</i>	Betpak- Dala Desert, Katymkuduk Sands, C Khazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 268/3427	<i>E. tataricus</i>	25 km SE Makkanchi Village, Barmakkum Sands, E Khazakhstan			*			This study
<i>E. miliaris</i> (clade D)	IZKAZ 268/3426	<i>E. tataricus</i>	26 km SE Makkanchi Village, Barmakkum Sands, E Khazakhstan			*			This study
<i>E. miliaris</i> (clade D)	ZISP 24675 (Type locality <i>E. m.</i> <i>nogaiorum</i> )	<i>E. m. nogai-</i> <i>rum</i>	near Chervlenaya, Shelkovskaya ,Chechnya			*	MN338604	MN338696	This study
<i>E. miliaris</i> (clade D)	ZISP 22485 (Type locality <i>E. m. miliaris</i> )	<i>E. m. miliaris</i>	Dosang settl, Astrakhan region, Russia			*	MN338608	MN338699	This study
<i>E. miliaris</i> (clade D)	IZKAZ 9	<i>E. t. tataricus</i>	Altyn Emel National Park, N coast of Ily River, S Kazakhstan,				MN338613	MN338708	This study
<i>E. miliaris</i> (clade D)	IZKAZ 10	<i>E. t. tataricus</i>	Tarbagatay, between villages karabaty and Bakhty, E Kazakhstan,				MN338610	MN338703	This study
<i>E. miliaris</i> (clade D)	IZKAZ 12	<i>E. t. tataricus</i>	Alakol Depression, Sassikol Lake, Zharsuat Village, E Kazakhstan,					MN338702	This study
<i>E. miliaris</i> (clade D)	IZKAZ 13	<i>E. t. tataricus</i>	Altyn-Emel National Park, Minbulag Station vicinity, S Kazakhstan,				MN338611	MN338704	This study
<i>E. miliaris</i> (clade D)	IZKAZ 25	<i>E. t. tataricus</i>	Arkary Mountains, Bakaly Canyon, E Kazakhstan,				MN338612	MN338705	This study
<i>E. miliaris</i> (clade D)	IZKAZ 30	<i>E. t. tataricus</i>	Sugatay Valley, southern part, S Kazakhstan,					MN338706	This study
<i>E. miliaris</i> (clade D)	IZKAZ 31	<i>E. t. tataricus</i>	N coast of Balkhash Lake, Ortaderessin Village , C Kazakhstan,					MN338707	This study
<i>E. miliaris</i> (clade D)	IZKAZ 40	<i>E. t. tataricus</i>	Karashik River near Turkestan Town, S Kazakhstan					MN338709	This study
<i>E. miliaris</i> (clade D)	IZKAZ 43	<i>E. t. tataricus</i>	E Kazakhstan,				MN338614	MN338710	This study
<i>E. miliaris</i> (clade D)	IZKAZ 47	<i>E. t. tataricus</i>	Narimsky Range, Kayindy (former Slavyanka) Village vicinity, Adylsay, E Kazakhstan					MN338711	This study
<i>E. miliaris</i> (clade D)	IZKAZ 49	<i>E. t. tataricus</i>	Narymsky Range, Kayindy (former Slavyanka) Village vicinity, E Kazakhstan				MN338615	MN338712	This study

Revealed taxonomic status	Musem Code	Primitive identification	Locality	Niche Modeling		Morphological Study	Accession Number		Reference
				Latitude	Longitude		cytb	16S	
<i>E. miliaris</i> (clade D)	IZKAZ 58 (Type locality <i>E. t. tataricus</i> )	<i>E. t. tataricus</i>	Amanutkel Village, Eastern Aral Sea Region, S Kazakhstan			MN338609	MN338701	This study	
<i>E. miliaris</i> (clade D)	IZKAZ 59	<i>Eryx</i> sp.	between kordon Onere (Ustyurt Reserve) and Akkuduk Village, W Kazakhstan			MN338616	MN338715	This study	
<i>E. miliaris</i> (clade D)	ZISP2592	<i>Eryx</i> sp.	W Kazakhstan			MN338617			This study
<i>E. miliaris</i> (clade D)	ZISP2593	<i>E. tataricus</i>	W Kazakhstan			MN338700			This study
<i>E. miliaris</i> (clade D)	ZISP 2594	<i>E. miliaris</i>	W Kazakhstan			MN338605			This study
<i>E. miliaris</i> (clade D)	ZISP 2595	<i>Eryx</i> sp.	W Kazakhstan			MN338618	MN338714	This study	
<i>E. miliaris</i> (clade D)	ZISP 2596	<i>Eryx</i> sp.	W Kazakhstan			MN338619	MN338716	This study	
<i>E. miliaris</i> (clade D)	ZISP 2598	<i>E. tataricus</i>	S Kazakhstan,			MN338713			This study
<i>E. miliaris</i> (clade D)	ZISP 22478	<i>E. m. nogaiorum</i>	Davnsa sands, Chernozemlsky District, Kalmykia	*	MN338603	MN338695			This study
<i>E. miliaris</i> (clade D)	ZISP 28843	<i>E. m. miliaris</i>	Ustyurt Nature Reserve, Mangystau Region, Kazakhstan	*	MN338607	MN338697			This study
out group	NE3.14	<i>Calabaria reinhardtii</i>	Congo, Central Africa			KF576784*	KF576929*		
out group	NE2.14	<i>Calabaria reinhardtii</i>	Congo, Central Africa			KF576783*	KF576928*		
out group	NE3.11	<i>Calabaria reinhardtii</i>	Gabon, Central Africa			KF576782*	KF576927*		

**Table S3.** Post hoc pair-wise test of studied morphological (meristic and metric) characters among *Eryx* populations revealing significant character differences among them. See Table 1 for descriptions of character abbreviations.

	Clade A	Clade B	Clade C	Clade D	<i>E. jaculus</i> (Egypt)
Clade B	RE-LAB-DS-VS- WI/DEM				
Clade C	LAB-BE-DS-VS	BE- WI/DEM			
Clade D	RE-LAB-BE-PIN-BEN-DS- VS- WI/DEM	RE-LAB-BE-PIN-BEN-DS- VS- WI/DEM	RE- LAB -BE- PIN- BEN- DS- WI/DEM		
<i>E. jaculus</i> (Egypt)	RE-LAB-BE-PIN-DS-VS	BE-PIN-DS	RE-BE-PIN-DS	RE-LAB-BEN-VS	
<i>E. jayakari</i>	RE- LAB- BE- PIN-DS- WI/DEM	BE-PIN-VS- WI/DEM	RE- BE- PIN - DS-VS- WI/DEM	RE- LAB -BE- BEN-WI/ DEM	BE-VS

**Table S4.** Factor loadings of the first two principal components for studied specimens of *Eryx*. See Table 1 for descriptions of character abbreviations.

Characters	PC1	PC2
RE	0.829	-0.046
LAB	0.830	0.232
BE	0.635	-0.429
PIN	0.788	-0.188
BEN	0.802	-0.065
DS	0.212	0.849
VS	0.176	0.787
Eigenvalue	3.120	1.620
Accumulated percent of trace	44.577	67.721

**Table S5.** Standardised canonical coefficients for studied specimens of *Eryx*. See Table 1 for descriptions of character abbreviations.

Characters	Function 1	Function 2	Function 3	Function 4	Function 5
RE	0.350	-0.036	-0.220	-0.062	0.074
LAB	0.350	0.267	-0.179	0.091	-0.498
BE	0.504	-0.132	0.678	0.366	0.376
PIN	0.364	0.186	-0.007	-0.837	0.211
BEN	0.363	-0.242	-0.348	0.516	-0.102
DS	-0.277	0.787	-0.054	0.217	0.640
VS	0.102	0.329	0.663	-0.140	-0.603
Eigenvalue	4.872	1.536	0.399	0.199	0.012
Accumulated percent of trace	69.4	91.3	97.0	99.8	100

**Table S6.** The results of studied multistate characters in *Eryx* populations. See Table 1 for descriptions of character abbreviations.

	Clade A	Clade B	Clade C	Clade D	<i>E. jaculus</i> (Egypt)	<i>E. jayakari</i>
Height of 2nd and 3rd upperlabial scales	0, 2	0, 1, 2	0, 1, 2	0, 1, 2	0	0, 1
Size of around eye scales	0	0	0, 1	0, 1	0	1
Oblique line from eye to the corner of mouth	0	0	0	0	0	1
Connection of PIN with rostral scale	1	1	1	0, 1	1	0
Eyes status	0	0	0, 1	0, 1, 2	0	2
keel	0, 1	1	0, 1	0, 1	1	0
End of the tail	1	1	1	1	1	0

**Table S7.** AUC value, Percentages of contributions and the Permutation importance of variables included in the distribution model of *Eryx* spp. in Iran. Numbers of applied points (N) regarding each clade are mentioned.

	AUC	Clade A N: 17	Clade C N: 25	Clade D N: 39	<i>E. jayakari</i> N: 10
Bio1 Annual Mean Temperature	Percent contribution	34.45			
	Permutation importance	57.14			
Bio3 Isothermality (BIO2/BIO7) (* 100)	Percent contribution	13.26		3.33	
	Permutation importance	12.40		3.72	
Bio4 Temperature Seasonality (standard deviation *100)	Percent contribution	14.40	14.46	0.52	
	Permutation importance	9.55	29.01	0.74	
Bio 5 Max Temperature of Warmest Month	Percent contribution		3.70		40.00
	Permutation importance		9.04		6.62
Bio7 Temperature Annual Range (BIO5-BIO6)	Percent contribution		5.83		
	Permutation importance		1.22		
Bio8 Mean Temperature of Wettest Quarter	Percent contribution	14.01	0.48	0.62	0.64
	Permutation importance	15.88	0.49	1.05	0.86
Bio 11 Mean Temperature of Coldest Quarter	Percent contribution			27.72	
	Permutation importance			35.62	
Bio12 Annual Precipitation	Percent contribution		68.18		
	Permutation importance		32.18		
Bio14 Precipitation of Driest Month	Percent contribution	23.89			
	Permutation importance	5.03			
Bio17 Precipitation of Driest Quarter	Percent contribution		5.50		
	Permutation importance		11.22		
Bio 18 Precipitation of Warmest Quarter	Percent contribution			9.27	
	Permutation importance			7.71	

		Clade A N: 17	Clade C N: 25	Clade D N: 39	<i>E. jayakari</i> N: 10
Bio19 Precipitation of Coldest Quarter	Percent contribution		1.85	15.25	
	Permutation importance		16.85	6.68	
Altitude	Percent contribution			43.28	59.37
	Permutation importance			44.48	92.52

**Figure S1.** Phylogenetic relationships (Maximum-likelihood approach) based on 1263 base pairs of the cytochrome *b* and 16S sequence data set comprising of five major clades. The bootstrap values are shown next to the nodes. The specimens from the type localities are shown with an asterisk.

