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A NEW SPECIES OF FROG-EYED GECKO, GENUS *Teratoscincus* STRAUCH, 1863 (SQUAMATA: SAURIA: SPHAERODACTYLIDAE), FROM CENTRAL IRAN

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In this study we present an analysis of morphological and molecular (COI mtDNA) variation within the genus *Teratoscincus* and describe a new species, *Teratoscincus mesriensis* sp. nov. from environs of Mesr, Isfahan Province in Central Iran. The new species can be distinguished from other congeners by the following combination of morphological characters: (1) position of enlarged dorsal scales, which not cover the occipital region on the dorsal surface of head; (2) comparatively high number of scales across midbody; (3) maximal body size reaching SVL_{max} 93.6 mm. We also provide a COI-based barcoding estimation of diversity of the genus *Teratoscincus*. Moreover, our new morphological and molecular data indicate that the population of *T. scincus* from Ferghana Valley (Uzbekistan and Tajikistan), previously described as a subspecies *T. scincus* rustamowi, is differentiated from other populations of *T. scincus* complex on species level; we provide a revised diagnosis and propose a full species status for this geographically isolated form as *Teratoscincus rustamowi* stat. nov. Diversity and phylogenetic relationships of the genus *Teratoscincus* are discussed.

Keywords: taxonomy; reptiles; Middle East; *Teratoscincus mesriensis* sp. nov.; *Teratoscincus rustamowi* stat. nov.; zoogeography; Ferghana Valley; COI; DNA-barcoding.

INTRODUCTION

The frog-eyed geckos, or wonder geckos of the genus *Teratoscincus* are a group of desert-dwelling lizards distributed along the arid belt of Middle and Central Asia; the range of the genus includes southern Mongolia, northern and north-western China, southern Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan, as well as Iran and Afghanistan, western Pakistan, and the eastern part of the United Arab Emirates (Fig. 1). The composition and phylogenetic position of this genus among Gekkota have been discussed for a long time (Kluge, 1967, 1987; Grismer, 1988; Macey et al., 1997, 1999, 2005; Anderson, 1999; Han et al., 2004; Gamble et al., 2008; 2012). Kluge (1987) performed a phylogenetic analysis which allowed him to assume that the genus *Teratoscincus* is a sister taxon of all other gekkonid lizards; he erected a distinct monotypic subfamily Teratoscincinae Kluge, 1987. However, results of the subsequent study of mitochondrial and nuclear genetic markers (Han et al., 2004) contradicted this conclusion. The first phylogenetic hypothesis for the New World sphaerodactylid geckos and their closest Old World relatives based on molecular data was presented by Gamble et al. (2008; 2012); they resurrected the family name Sphaerodactylidae for the group containing the New World gekkotan genera *Coleodactylus*, *Gonatodes*, *Lepidoblepharis*, *Pseudogonatodes*, and *Sphaerodactylus*, and the Old World genera *Aristelliger*, *Euleptes*, *Quedenfeldtia*, *Pristurus*, *Saurodactylus*, and *Teratoscincus*. According to the recent data, the morphologically compact Old World sphaerodactylid genus *Teratoscincus* consists of 6 species: *T. bedriagai* Nikolsky, 1899, *T. keyserlingii* Strauch, 1863, *T. microlepis* Nikolsky, 1899, *T. przewalskii* Strauch, 1887, *T. roborowskii* Bedriaga, 1906, and *T. scincus* (Schlegel, 1858) (Uetz and Hošek, 2016). *Teratoscincus toksunicus* Wang, 1989 is considered as a junior synonym of *T. pzewalskii* (Rös-

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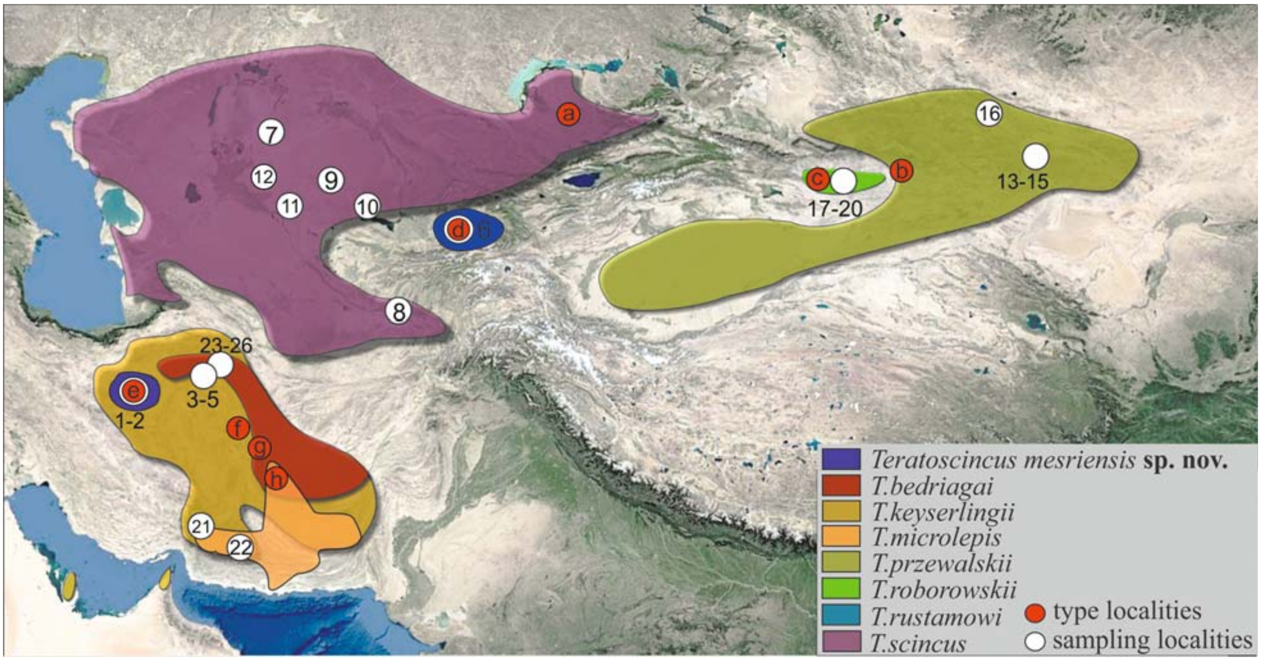

Fig. 1. General distribution of the genus *Teratoscincus* (numbers on the map correspond to the numbers in Table 1). Type localities: *a*, *T. scincus* Ili River, eastern Turkestan; *b*, *T.przewalskii* Oasis Hami (42°48′ N 93°27′ E), Xinjiang Uygur, Autonomous Region China; *c*, *T. roborowskii* Oasis of Satschsheu (40°10′ N 94°50′ E), Dunhuang Co., Gansu Prov., China; *d*, *T. rustamowi* Uzbekistan, Ferghana Valley, central Ferghana [Fergana] sand dunes, between Quqand and Djumashuyi; *e*, *Teratoscincus mesriensis* sp. nov. Iran, Isfahan Province, environs of Mesr, 34°04′ N 54°47′ E, elevation 845 m a.s.l.; *f*, *T. keyserlingii* Seri-Chah, eastern Iran; *g*, *T. bedriagai* Zirkuch and Seistan, eastern Persia; *h*, *T. microlepis* Duz-Abad, E Kerman, Persia.

ler, 2000), while *T. zarudnyi* Nikolsky, 1896 described from "Eastern Persia" (apparently from Zirkuh, south Khorasan, Iran) is regarded as a junior synonym of *T. keyserlingii* (Szczerbak and Golubev, 1986).

Kluge (1967) analyzed morphological data to resolve intrageneric relationships of *Teratoscincus*. From the a priori assumption that the earliest center of desert fauna in Eurasia was located in Central Asia, while arid areas in Middle Asia, Iran and Afghanistan appear to be more recent, concluded that *T. przewalskii* from Central Asia represents an earlier lineage of the genus *Teratoscincus*, while *T. microlepis* and *T. bedriagai* are more derived and recent. According to Kluge (1967), *T. scincus* lineage represents the most derived and specialized psammophilous form. Anderson (1999) suggested that *T. microlepis* is the most primitive representative of the genus, while *T. scincus* is the most specialized. A well-supported phylogenetic hypothesis for four species of the genus *Teratoscincus* was presented based on analyses of 1733-bp fragment of mtDNA (Macey et al., 1999) and a complete mitochondrial genome of *T. keyserlingii* (Macey et al., 2005). These data strongly suggest that Central Asian species *T. przewalskii* and *T. roborowskii* form a monophyletic group, with Middle Asian species *T. scincus* as their sister taxon, while *T. microlepis* from Iran is the sister taxon to the clade containing the first three species (Macey et al., 1999). Macey et al. (1999, 2005) assumed that speciation within *Teratoscincus* was associated with tectonic plate movements in Southwest Asia and western China due to the Indian and Arabian collisions. This phylogenetic hypothesis resulted in an area cladogram for *Teratoscincus* with the monophyletic lineage in Chinese-Mongolian deserts (Taklimakan, Gobi, and Turpan); the Caspian Basin lineage was reconstructed as a sister area to the Iranian Plateau; together these lineages form a monophyly with the exclusion of the Afghan-Pakistan deserts.

In the last decades, high level of the cryptic reptile endemism was discovered in central Iran Plateau. Several new species of lacertid (*Eremias andersoni* Darevsky et Szczerbak, 1978; *E. kavirensis* Mozaffari et Parham, 2007), and agamid lizards (*Phrynocephalus lutensis* Kamali et Anderson, 2015) were described from this territory. Isolated massifs of sand dunes in central Iran are of great interest for studies of speciation, population variability and phylogeography of psammophilous squamates. During recent fieldwork in central Iran we encountered a previously unknown morphologically distinct

TABLE 1. Specimens and Sequences of *Teratoscincus* Representatives Used in Molecular Analyses of the COI mtDNA Gene Fragment

No.	Species	Collection number	Locality	GenBank accession number
1	*Teratoscincus mesriensis* sp. nov.	ZMMU RAN 2536	Iran, Isfahan Prov., near Mesr vill.	MF573794
2	*Teratoscincus mesriensis* sp. nov.	ZMMU RAN 2537	Iran, Isfahan Prov., near Mesr vill.	MF573795
3	*T. keyserlingii*	ZMMU RAN 242	Iran, Khorasan, near Gonobad	MF573793
4	*T. keyserlingii*	ZMMU RAN 1931a	Iran, Khorasan, near Gonobad	MF573792
5	*T. keyserlingii*	ZMMU RAN 1931b	Iran, Khorasan, near Gonobad	MF573791
6	*T. rustamowi*	ZMMU R-11069-1	Uzbekistan, Ferghana Valley	MF573805
7	*T. scincus*	ZMMU R-11420-1	Uzbekistan, Qoraqalpogiston, Karateren’ lake	MF573807
8	*T. scincus*	ZMMU R-5817	Tadjikistan, Tigrovaya Balka Nature Reserve	MF573808
9	*T. scincus*	ZMMU R-11422-1	Uzbekistan, Navoi dist., near Tamdy vill.	MF573806
10	*T. scincus*	ZMMU R-10865-1	Uzbekistan, Navoi	MF573809
11	*T. scincus*	ZMMU R-10064	Uzbekistan, Bukhara – Khorezm road	MF573810
12	*T. scincus*	ZMMU R-L-32	Uzbekistan, Qoraqalpogiston	MF573811
13	*T. przewalskii*	ZMMU R-13122-1	China, Inner Mongolia Prov.	MF573796
14	*T. przewalskii*	ZMMU R-13122-2	China, Inner Mongolia Prov.	MF573799
15	*T. przewalskii*	ZMMU R-13122-3	China, Inner Mongolia Prov.	MF573801
16	*T. przewalskii*	ZMMU R-12044-1	Mongolia, Eikhin Gol Lake	MF573797
17	*T. roborowskii*	ZMMU RAN 1297.a	China, Shanshan	MF573802
18	*T. roborowskii*	ZMMU RAN 1993	China, captive breading	MF573803
19	*T. roborowskii*	ZMMU RAN 702	China, captive breading	MF573804
20	*T. roborowskii*	XF001	China, no locality data	KP115216
21	*T. microlepis*	ZMMU RAN 1189	Iran, Kerman Prov., near Jiroft	MF573798
22	*T. microlepis*	ZMMU R-11736	Iran, Sistan-Baluchistan Prov., near Bampur	MF573800
23	*T. bedriagai*	ZMMU RAN 039. a	Iran, Khorasan Prov., near Gonobad	MF573788
24	*T. bedriagai*	ZMMU RAN 1912	Iran, Khorasan Prov., near Gonobad	MF573789
25	*T. bedriagai*	ZMMU RAN 1913	Iran, Khorasan Prov., near Gonobad	MF573787
26	*T. bedriagai*	ZMMU RAN 1914	Iran, Khorasan Prov., near Gonobad	MF573790
27	*Tropiocolotes algericus*	ZMMU RAN-1664	Morocco	MF573812

population of *Teratoscincus*; subsequent molecular analysis suggested this population might represent a new previously undescribed species. We analyze taxonomic status of this population and address questions on taxonomy and evolution of the genus *Teratoscincus* in the present paper.

MATERIAL AND METHODS

Sampling

Sampling was performed in the environs of Mesr village, Isfahan Province, central Iran. Detailed specimen information is given in Table 1; geographic location of sampling localities is shown in Fig. 1. Specimens were anaesthetized, preserved in 75% ethanol and subsequently deposited in the collections of the Zoological Museum of Moscow State University, Moscow, Russia (ZMMU), Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZISP), and Department of Biodiversity, Institute of Environmental Science, International Center for Science, High Technology and Environmental Science, Kerman, Iran (ICSTZ). We also examined additional specimens stored in the Zoological museum of National Museum of Natural History, Ukrainian Academy of Sciences (ZM NMNH), Kiev, Ukraine, and Museum für Naturkunde (ZMB), Berlin, Germany.

Morphology

For the morphological descriptions and comparisons in total 124 specimens (Appendix I.) belonging to the eight recognized species of *Teratoscincus* were examined. We studied 31 morphological features; including 21 morphometric characters (all measured with digital calipers to the nearest 0.1 mm) and 10 scalation characters (characters for analysis were chosen according to Anderson 1999; Bauer et al., 2002, 2003; Nazarov et al., 2012; Szczerbak, Golubev 1986) (Table 5).

Measurements. The list of morphological characters used in the study includes the following measurements: snout-vent length (SVL, from tip of snout to vent); tail length (TailL, from vent to tip of tail); head length

(HeadL, distance between retroarticular process of jaw and snout-tip); head width (HeadW, maximum width of head); head height (HeadH, maximum height of head, from occiput to underside of jaws); distance from the tip of snout to the anterior edge of rounded enlarged dorsal scales on the occipital region (HES); the greatest diameter of orbit (OrbD); snout to eye distance (SnEye, distance between anterior corner of eye and tip of snout); ear length (EarL, longest dimension of ear opening); trunk length (TrunkL, distance from axilla to groin measured from posterior edge of forelimb insertion to anterior edge of hindlimb insertion); shoulder length (LS, from forelimb insertion to elbow); forearm length (ForeaL, from base of palm to elbow); femur length (FemurL, from hindlimb insertion to knee); crus length (CrusL, from base of heel to knee); length of finger IV (LF4); length of toe IV (LT4); eye to ear distance (EyeEar, distance from anterior edge of ear opening to posterior corner of eye); maximal length of rostral plate (RW), maximal height of rostral plate (RH), maximal length of mental plate (MW), maximal height of mental plate (MH).

Scalation characters. The following pholidosis characters were examined: scales around midbody (SAB); number of large scales along midbody from neck to anterior edge of cloaca (excluding small gular scales) (SLB); supralabials (SL); infralabials (IL); number of triangular fringed scales on the both sides of fourth finger (right side FFr 4, left side FFl 4) and fourth toe (right side TFr 4, left side TFl 4); scales across dorsal surface of head, calculated as the number of scales between the centers of ciliary scale rows (SEH); and number of enlarged nail-shaped scales on the dorsal tail surface (NP). Paired meristic characters are given in the right/left order.

For morphometric analysis, the following ratios were analyzed: SVL/TailL; SVL/HeadL; SVL/TrunkL; HeadL/HeadW; SVL/OrbD; HeadL/SnEye; HeadL/EyeEar; SVL/LS; SVL/ForeaL; SVL/CrusL; SVL/FemurL; SVL/LD4A; SVL/LD4P; SVL/HES; SVL/EarL. All obtained morphological data were analyzed in Statistica 7.0 (StatSoft).

TABLE 2. Results of the Discriminant Analysis of Eight *Teratoscincus* Species from 27 Morphometric and Meristic Characters

	Wilks' Lamba	Partial Lambda	*F*-remove (6.87)	*p*-level	Toler.	1-Toler. (R-Sqr.)
SVL/HL	**0.000160**	**0.657579**	**7.55058**	**0.000002**	**0.261585**	**0.738415**
SVL/TrunkL	0.000113	0.933344	1.03553	0.407965	0.888910	0.111090
HL/HW	**0.000143**	**0.738852**	**5.12505**	**0.000150**	**0.454919**	**0.545082**
SVL/OrbD	**0.000138**	**0.763640**	**4.48801**	**0.000526**	**0.628073**	**0.371928**
SVL/ForeaL	**0.000138**	**0.764508**	**4.46644**	**0.000549**	**0.414128**	**0.585872**
SVL/FemurL	**0.000136**	**0.775444**	**4.19896**	**0.000934**	**0.546899**	**0.453101**
SVL/LD4A	**0.000161**	**0.656818**	**7.57612**	**0.000001**	**0.239386**	**0.760614**
SVL/LD4P	**0.000195**	**0.542039**	**12.25086**	**0.000000**	**0.272146**	**0.727854**
SVL/HES	**0.000284**	**0.371888**	**24.49024**	**0.000000**	**0.557092**	**0.442908**
SAB	**0.000210**	**0.501736**	**14.39968**	**0.000000**	**0.705478**	**0.294522**
SLB	**0.000191**	**0.552723**	**11.73377**	**0.000000**	**0.677151**	**0.322849**
SEH	**0.000143**	**0.737943**	**5.14922**	**0.000143**	**0.720814**	**0.279186**
FFr4	**0.000141**	**0.746677**	**4.91937**	**0.000225**	**0.523512**	**0.476488**
NP	**0.000137**	**0.772520**	**4.26975**	**0.000811**	**0.595915**	**0.404085**
SVL/TailL	0.000115	0.919600	1.26773	0.280619	0.683990	0.316010
HeadL/SnEye	**0.000131**	**0.805467**	**3.50198**	**0.003773**	**0.601711**	**0.398289**
HeadL/EyeEar	0.000114	0.921720	1.23145	0.298138	0.557117	0.442883
SVL/LS	0.000114	0.923824	1.19564	0.316285	0.554966	0.445034
SVL/CrusL	0.000119	0.883147	1.91856	0.086690	0.655264	0.344737
SVL/EarL	0.000117	0.901052	1.59229	0.158969	0.656406	0.343594
FFl4	0.000108	0.976930	0.34241	0.912500	0.538218	0.461782
TFr4	0.000121	0.872538	2.11820	0.059131	0.400037	0.599964
TFl4	0.000114	0.923556	1.20018	0.313933	0.332845	0.667155
SL r	0.000121	0.873736	2.09541	0.061792	0.580744	0.419256
SL l	0.000111	0.951553	0.73825	0.620219	0.586262	0.413738
IL r	0.000109	0.964122	0.53959	0.776738	0.699770	0.300230
IL l	0.000120	0.882541	1.92983	0.084854	0.608423	0.391577

Note. $N = 120$. No. of variables in model: 27; Wilks' Lambda: 0.0011; approx. $F_{(162,519)} = 12.025$; $p < 0.0000$.

Molecular analyses

DNA isolation, PCR, and sequencing. For molecular phylogenetic analyses, total genomic DNA was extracted from ethanol-preserved muscle tissue using standard phenol-chloroform — proteinase K (final concentration 1 mg/ml) extraction procedures with consequent isopropanol precipitation (protocols followed Hillis et al., 1996 and Sambrook et al., 1989). The isolated total genomic DNA was visualized in agarose electrophoresis in presence of ethidium bromide. The concentration of total DNA was measured in 1 µl using NanoDrop 2000 (ThermoScientific), and consequently adjusted to ca. 100 ng DNA/µl.

We amplified a fragment of Cytochrome oxidase I (COI) gene with maximal length of 660 bp, a mitochondrial marker widely used as a barcoding marker for vertebrates, including both reptiles and amphibians (Smith et al., 2008, Nagy et al., 2012, Murphy et al., 2013) and which proved to be useful for species identification in various groups of lizards (Solovyeva et al., 2011, Nazarov et al., 2012, 2014, Nazarov, Poyarkov, 2013). Primers used both for PCR and sequencing were the VF1-d (5’-TTCTCAACCAACCACAARGAYATYGG-3’) (Ivanova et al., 2006), VR1-d (5’-TAGACTTCT GGGTGGCCRAARAAYCA-3’) (Ivanova et al., 2006), RepCOI-F (5’-TNT TMT CAA CNA ACC ACA AAG A-3’) (Nagy et al., 2012) and RepCOI-R (5’-ACT TCT GGR TGK CCA AAR AAT CA-3’) (Nagy et al., 2012). The obtained fragments were sequenced in both directions for each sample, and a consensus sequence was generated. PCRs were performed in 25 µl reactions using ca. 50 ng genomic DNA, 10 pmol of each primer, 15 nmol of each dNTP, 50 nmol additional $MgCl_2$, Taq PCR buffer (10 mM Tris-HCl, pH 8.3, 50 mM KCl, 1.1 mM $MgCl_2$ and 0.01% gelatine) and 1 U of Taq DNA polymerase. The PCR conditions for the COI gene fragment followed Nazarov et al. (2012) and included an initial denaturation step at 95°C for 3 min; 5 cycles at 95°C for 30 sec, annealing at 45°C for 1 min, extension at 72°C for 2 min followed with 35 cycles at 95°C for 30 sec, annealing at 51 for 1 min, extension at 72°C for 2 min and final extension of 5 min at 72°C.

PCR products were loaded onto 1.5% agarose gels in presence of ethidium bromide and visualized in agarose electrophoresis. If distinct bands were produced, products were purified using 2 µl, from a 1:4 dilution of ExoSapIt (Amersham), per 5 µl of PCR product prior to cycle sequencing. A 10 µl sequencing reaction included 2 µl of template, 2.5 µl of sequencing buffer, 0.8 µl of 10 pmol primer, 0.4 µl of BigDye Terminator version 3.1 Sequencing Standard (Applied Biosystems) and 4.2 µl of water. The cycle sequencing reaction was 35 cycles of 10 sec at 96°C, 10 sec at 50°C and 4 min at 60°C. Cycle sequencing products were purified by ethanol precipitation. Sequence data collection and visualization were performed on an ABI 3730xl automated sequencer (Applied Biosystems). The list of material used in molecular analysis is presented in Table 1.

The obtained sequences are deposited in GenBank under the accession numbers MF573787-MF573812 (Table 1).

Phylogenetic analyses. In total 26 sequences of the COI fragment of *Teratoscincus* representatives and an outgroup COI sequence of *Tropiocolotes algericus* were included in the final alignment and subjected to phylogenetic analyses (Table 1).

Nucleotide sequences were initially aligned using ClustalX 1.81 (Thompson et al., 1997) with default parameters, and then optimized manually in BioEdit 7.0.5.2 (Hall, 1999) and MEGA 6.0 (Tamura et al., 2013). Mean uncorrected genetic distances (*p*-distances) between sequences were determined with MEGA 6.0. ModelTest v. 3.06 (Posada, Crandall, 1998) was used to estimate the optimal model of DNA evolution. The best-fitting models selected for the first, second and third codon positions of COI gene were (K80), (F81) and (GTR+Γ), respectively, as suggested by the Akaike Information Criterion (AIC).

Phylogenetic trees were inferred using two different methods: Bayesian inference (BI) and Maximum Likelihood (ML). BI was conducted in MrBayes 3.1.2 (Huelsenbeck and Ronquist, 2001; Ronquist and Huelsenbeck, 2003); Metropolis-coupled Markov chain Monte Carlo (MCMCMC) analyses were run with one cold chain and three heated chains for four million generations and sampled every 1000 generations. Five independent MCMCMC runs were performed and 1000 trees were discarded as burn-in. Confidence in tree topology was assessed by posterior probability (PP) (Huelsenbeck and Ronquist, 2001). The ML analyses were conducted using Treefinder (Jobb et al., 2004). Confidence in tree topology was tested by non-parametric bootstrap analysis (BS) with 1000 replicates (Felsenstein, 1985). We a priori regarded tree nodes with bootstrap (BS) values 70% or greater and posterior probabilities (PP) values over 0.95 as sufficiently resolved, those BS from 70 to 50% (PP from 0.95 to 0.90) were regarded as tendencies, those BS below 50% (PP below 0.90) were considered to be unresolved (Huelsenbeck and Hillis, 1993; Felsenstein, 2004).

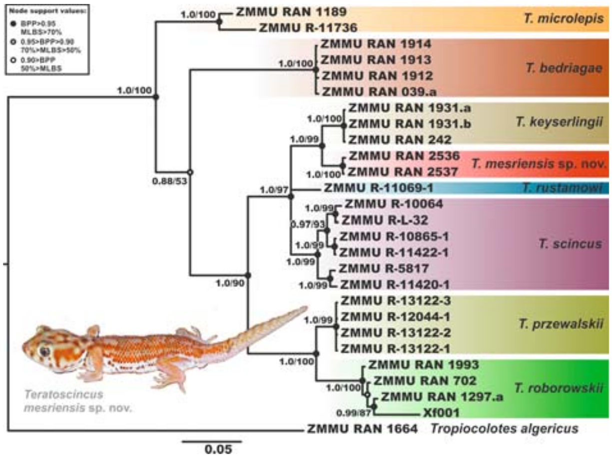

Fig. 2. Bayesian inference tree resulting from analysis of cytochrome oxidase submit I (COI) 660 bp fragment of the studied samples of *Teratoscincus*. For the major nodes BI PP/ML BS support values are given.

RESULTS

Genetic differentiation

Sequence data. The final alignment of the examined COI mtDNA gene fragment consisted of 660 sites: 449 sites were conserved and 208 sites were variable, of which 188 were identified to be potentially parsimony-informative. The transition-transversion bias (R) was estimated as 4.66. Nucleotide frequencies were A = = 23.95%, T = 28.09%, C = 30.16%, and G = 17.79% (all data given for ingroup only).

Phylogenetic relationships. Bayesian and Maximum Likelihood analyses resulted in essentially similar topologies (Fig. 2) slightly differing from each other only in associations at several poorly supported basal nodes. The short fragment of the COI gene is applied in this study primarily as a DNA-barcoding marker; however, the examined fragment still had certain phylogenetic signal which infers the following set of genealogical relationships within the genus *Teratoscincus*.

T. microlepis from south part of Iran appears to be phylogenetically the most distant species of *Teratoscincus* forming a sister clade with respect to all other congeners; monophyly of the group, joining all the remaining *Teratoscincus* species with exception of *T. microlepis*, however, is not supported (0.88/53; hereafter node support values are given for BPP/ML BS, respectively). Phylogenetic position of *T. bedriagai* from eastern Iran is poorly resolved.

All the remaining species of *Teratoscincus*, excluding *T. microlepis* and *T. bedriagai*, form a well-supported clade (1.0/90) which is subdivided in two reciprocally monophyletic subclades:

(1) Subclade I joining Middle Asian (Irano-Turanian) species complexes of *T. scincus* and *T. keyserlingii* including allied taxa (see below) (monophyly support 1.0/97).

(2) Subclade II joining Central Asian species *T. przewalskii* from Mongolia and western China and *T. roborowskii* from Turpan Depression in Xinjiang, China (monophyly support 1.0/100).

Within the Subclade I phylogenetic relationships appear to be insufficiently resolved with *T. scincus* sensu lato being paraphyletic with respect to *T. keyserlingii*: the subspecies *T. scincus rustamowi*, inhabiting Ferghana Valley in Uzbekistan and Tajikistan, do not form a monophyly with remaining populations of *T. scincus scincus* from the remaining part of the species range in Middle Asia (1.0/99). The *T. keyserlingii* species complex (1.0/99) consists of two reciprocally monophyletic clades, joining populations from Khorasan Province (*T. keyserlingii* sensu stricto; 1.0/100) and population from Isfahan Province (*Teratoscincus* sp., described below as a new species; 1.0/100).

TABLE 3. Uncorrected *p*-distance (%) between COI Sequences of *Teratoscincus* Species Included in Phylogenetic Analyses (below the diagonal), and Standard Error Estimates (above the diagonal)*

No.	Species	1	2	3	4	5	6	7	8	9
1	*T. microlepis*	4.65	1.26	1.34	1.43	1.26	1.26	1.22	1.31	1.63
2	*T. bedriagai*	16.32	0.16	1.43	1.40	1.34	1.27	1.33	1.37	1.53
3	*T. keyserlingii*	14.57	16.16	0.00	0.69	0.99	0.86	1.19	1.26	1.67
4	*T. mesriensis* sp. nov.	15.58	17.33	3.02	0.16	1.03	0.96	1.24	1.29	1.64
5	*T. rustamowi*	14.34	16.94	6.51	7.36	—	0.87	1.07	1.28	1.61
6	*T. scincus*	15.76	16.76	7.44	8.14	6.34	2.18	1.13	1.24	1.49
7	*T. przewalskii*	16.74	15.54	12.25	12.79	11.94	11.42	0.00	0.89	1.52
8	*T. roborowskii*	18.92	17.28	14.14	13.67	14.88	13.98	6.84	2.65	1.57
9	*Tropiocolotes algericus*	22.40	23.88	22.17	22.25	22.64	23.04	23.88	24.51	—

* The ingroup mean uncorrected *p*-distances are shown on the diagonal and shaded with gray.

TABLE 4. Comparison of Meristic and Morphometric Data (in mm) for All Known Representatives of the Genus *Teratoscincus*

Character	*T. scincus* (*n* = 20)	*T. rustamowi* (*n* = 21)	*T. keyserlingii* (*n* = 20)	*T. mesriensis* sp. nov. (*n* = 12)	*T. przewalskii* (*n* = 20)	*T. roborowskii* (*n* = 7)	*T. bedriagai* (*n* = 20)	*T. microlepis* (*n* = 3)
SVL_{max}								
male	84.3 (92.8)*	81 (84)*	109	88.5	87.2	91.8	65.8	76.3
female	87.1 (98.2)*	80.2 (85)*	116.5	93.6	92.8	93.7	70	66.9
TailL	56.39 ± 4.63	44.61 ± 6.74	64.69 ± 9.96	49.4 ± 17.9	50.42 ± 5.94	44.91 ± 15.86	30.96 ± 2.66	43.6 ± 6.22
HeadL	22.29 ± 1.51	19.76 ± 1.58	24.52 ± 2.32	20.99 ± 4.54	23.77 ± 1.28	19.24 ± 3.8	17.5 ± 1.11	21.3 ± 0.75
HES	19.7 ± 1.74	17.8 ± 1.53	25.78 ± 4.05	27.96 ± 5.81	31.96 ± 1.91	22.03 ± 5.91	23.35 ± 1.64	34.77 ± 3.06
HeadW	18.19 ± 1.56	14.73 ± 1.69	19.38 ± 2.47	15.87 ± 3.91	18.19 ± 0.95	14.79 ± 3.39	12.99 ± 0.89	16.57 ± 0.75
HeadH	11.85 ± 1.14	9.13 ± 0.96	11.82 ± 1.57	9.79 ± 2.19	11.24 ± 0.92	9.66 ± 1.24	8.53 ± 0.78	11.03 ± 0.68
SnEye	7.61 ± 0.65	6.56 ± 0.6	8.58 ± 1.03	7.28 ± 1.88	7.99 ± 0.44	7.16 ± 0.92	5.74 ± 0.36	6.53 ± 0.15
OrbD	4.61 ± 0.43	4.55 ± 0.34	5.64 ± 0.71	4.98 ± 1.22	4.97 ± 0.39	4.67 ± 0.45	4.22 ± 0.55	4.9 ± 0.44
EarL	3.31 ± 0.4	3.13 ± 0.36	4.46 ± 0.69	3.58 ± 0.94	3.24 ± 0.52	3.06 ± 0.66	2.68 ± 0.51	2.93 ± 0.42
EyeEar	7.08 ± 0.85	5.6 ± 0.72	7.15 ± 0.97	6.08 ± 1.41	6.93 ± 0.53	5.79 ± 0.89	4.78 ± 0.62	6.27 ± 0.55
TrunkL	36.9 ± 3.41	33.27 ± 4.07	41.33 ± 6.74	34.82 ± 10.06	39.37 ± 3.14	36.37 ± 4.63	31.13 ± 3.35	34.3 ± 2.71
LS	11.36 ± 0.99	10.4 ± 1.08	14.03 ± 1.72	10.67 ± 2.27	12.97 ± 0.77	11.43 ± 1.54	10.08 ± 0.71	11.1 ± 0.9
ForeaL	11.06 ± 0.94	9.94 ± 0.94	13.99 ± 1.7	10.44 ± 2.37	12.47 ± 0.57	11.41 ± 2.09	9.48 ± 0.79	10.87 ± 0.85
FemurL	12.97 ± 0.98	12.61 ± 1.27	16.64 ± 2.02	12.91 ± 3.1	15.57 ± 0.77	14.17 ± 1.85	11.55 ± 0.93	13.2 ± 0.92
Crus L	11.65 ± 0.9	10.93 ± 1	14.86 ± 1.75	11.62 ± 2.66	13.33 ± 0.84	11.63 ± 1.9	9.35 ± 0.8	11.6 ± 0.35
LD4A	6.43 ± 0.54	5.72 ± 0.52	6.5 ± 0.76	5.79 ± 1.13	7.13 ± 0.37	6.27 ± 0.43	5.17 ± 0.35	5.77 ± 1.01
LD4P	8.67 ± 0.75	8.24 ± 0.65	8.85 ± 1.12	8.05 ± 1.79	9.86 ± 0.46	8.36 ± 0.68	6.26 ± 0.43	8.9 ± 0.56
SLB	33.4 ± 2.41	32.95 ± 2.84	34.45 ± 2.74	39.58 ± 2.39	39.7 ± 2	30.86 ± 2.48	51.6 ± 1.82	105.0 ± 14.11
SAB	34.2 ± 2.26	35.95 ± 1.83	36.05 ± 2.33	37.50 ± 2.07	35.7 ± 2.08	31.14 ± 2.04	50.0 ± 3.67	107.67 ± 15.04
SHE	38.1 ± 5.03	32.25 ± 1.91	37.88 ± 4.55	35.0 ±	38.45 ± 4.71	34.5 ± 3.15	31.35 ± 2.08	48.67 ± 3.06
FFr 4	17.75 ± 1.48	19.86 ± 1.28	21.25 ± 2.99	19.75 ± 1.71	17.35 ± 1.23	17.29 ± 1.70	14.1 ± 2.2	18.33 ± 3.79
FFl4	19.65 ± 1.69	21.38 ± 1.56	22.55 ± 3.27	20.75 ± 1.42	19.05 ± 2.19	18.71 ± 1.38	16.05 ± 2.16	20.0 ± 3.61
TFr4	23.65 ± 1.39	24.52 ± 1.89	25.75 ± 3.21	25.83 ± 2.52	21.85 ± 1.35	20.43 ± 1.40	18.4 ± 1.98	23.33 ± 1.15
TFl4	25.85 ± 1.93	26.24 ± 1.95	28.0 ± 2.7	27.58 ± 2.07	24.55 ± 1.54	21.86 ± 1.21	20.8 ± 3.05	25.33 ± 1.53
SL r	10.85 ± 0.88	9.9 ± 0.7	11.0 ± 1.08	10.0 ± 0.85	9.58 ± 0.61	8.71 ± 0.76	10.2 ± 0.83	11.0 ± 1
IL r	10.58 ± 1.07	9.76 ± 0.89	10.68 ± 1.11	9.92 ± 0.67	9.32 ± 0.95	8.57 ± 1.13	9.75 ± 1.12	11.0 ± 1
NP	15.71 ± 1.2	14.25 ± 1.52	14.0 ± 1.12	14.22 ± 1.86	13.42 ± 1.44	13.5 ± 3.02	10.79 ± 0.79	10.33 ± 0.58
SVL/TailL	1.41 ± 0.09	1.56 ± 0.15	1.44 ± 0.1	1.46 ± 0.1	1.67 ± 0.29	1.71 ± 0.36	2.02 ± 0.2	1.68 ± 0.17
SVL/HeadL	3.56 ± 0.11	3.49 ± 0.19	3.74 ± 0.33	3.55 ± 0.26	3.53 ± 0.11	3.72 ± 0.46	3.57 ± 0.12	3.42 ± 0.15
SVL/TrunkL	2.16 ± 0.1	2.08 ± 0.12	2.23 ± 0.15	2.19 ± 0.17	2.14 ± 0.09	2.13 ± 0.08	2.02 ± 0.13	2.13 ± 0.17
HeadL/HeadW	1.23 ± 0.06	1.35 ± 0.07	1.27 ± 0.06	1.34 ± 0.1	1.31 ± 0.07	1.32 ± 0.12	1.35 ± 0.08	1.29 ± 0.01
SVL/OrbD	17.32 ± 1.28	15.2 ± 1.37	16.31 ± 1.46	15.07 ± 1.06	16.98 ± 1.45	16.59 ± 1.77	14.96 ± 1.64	14.93 ± 1.44
HL/SnEye	2.94 ± 0.11	3.02 ± 0.08	2.87 ± 0.16	2.95 ± 0.37	2.98 ± 0.12	2.85 ± 0.23	3.05 ± 0.11	3.26 ± 0.05
HL/EyeEar	3.17 ± 0.24	3.55 ± 0.22	3.46 ± 0.29	3.48 ± 0.23	3.44 ± 0.26	3.56 ± 0.53	3.71 ± 0.46	3.41 ± 0.29
SVL/LS	7.01 ± 0.43	6.65 ± 0.44	6.55 ± 0.45	6.99 ± 0.56	6.48 ± 0.31	6.78 ± 0.31	6.2 ± 0.28	6.57 ± 0.22
SVL/ForeaL	7.2 ± 0.43	6.96 ± 0.59	6.56 ± 0.4	7.16 ± 0.49	6.74 ± 0.31	6.83 ± 0.26	6.6 ± 0.35	6.71 ± 0.2
SVL/CrusL	6.84 ± 0.5	6.32 ± 0.42	6.18 ± 0.42	6.45 ± 0.45	6.31 ± 0.35	6.68 ± 0.3	6.7 ± 0.42	6.28 ± 0.38
SVL/FemurL	6.14 ± 0.38	5.49 ± 0.4	5.52 ± 0.42	5.82 ± 0.31	5.4 ± 0.33	5.46 ± 0.22	5.42 ± 0.33	5.52 ± 0.24
SVL/LD4A	12.41 ± 1.06	12.12 ± 1.37	14.24 ± 2.08	12.85 ± 1.46	11.81 ± 0.88	12.48 ± 2.58	12.11 ± 0.85	12.81 ± 1.5
SVL/LD4P	9.2 ± 0.74	8.4 ± 0.88	10.44 ± 1.33	9.27 ± 0.67	8.53 ± 0.61	9.26 ± 1.03	10.0 ± 0.7	8.21 ± 0.78
SVL/scales	4.04 ± 0.17	3.77 ± 0.23	3.88 ± 0.7	2.65 ± 0.26	2.63 ± 0.14	3.29 ± 0.35	2.67 ± 0.09	2.1 ± 0.07
SVL/EarL	24.25 ± 2.44	22.28 ± 3.03	20.9 ± 3.43	21.16 ± 2.19	26.47 ± 3.83	25.95 ±	24.09 ± 4.66	25.14 ± 3.74

Note. For each parameter (except SVL, for which the maximum value are given), the mean value and standard deviation are given.
* Data form Szczerbak [= Shcherbak] N. N. (1979).

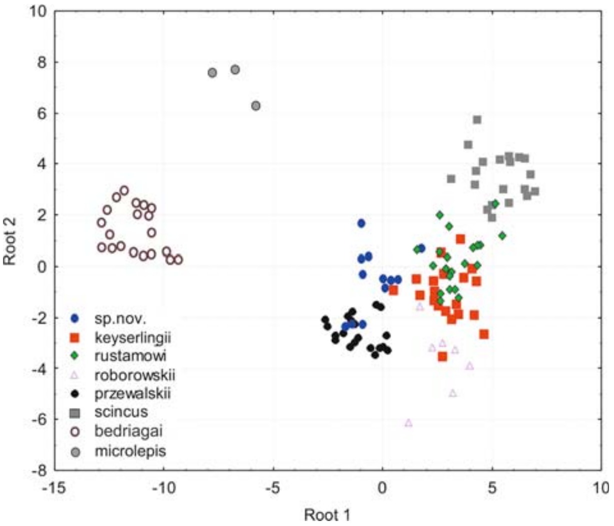

Fig. 3. Results of discriminant analysis of 29 morphometric and meristic characters for 8 species of the genus *Teratoscincus*.

Genetic distances. The uncorrected genetic *p*-distances among and within the COI gene fragment of the studied *Teratoscincus* species are given in Table 3.

The observed interspecific distances in COI gene within *Teratoscincus* varied from $p = 3.02\%$ (between the Isfahan population of *Teratoscincus* sp. and *T. keyserlingii* sensu stricto) to $p = 18.92\%$ (between *T. roborowskii* and *T. microlepis*) (Table 3). The observed intraspecific distances in our analysis varied from $p = 0\%$ to 4.65%, the last value corresponds to the genetic differentiation between two mtDNA lineages of *T. microlepis* from Sistan-Baluchistan and Kerman provinces respectively (Table 3).

T. scincus rustamowi from Ferghana Valley was significantly distant from populations of *T. scincus scincus* ($p = 6.34\%$), this value is comparable with differentiation between distinct species *T. przewalskii* and *T. roborowskii* ($p = 6.84\%$) and likely corresponds to the level of interspecific differentiation in *Teratoscincus*. Morphologically distinct population of *Teratoscincus* sp. from Isfahan Province in COI sequences is quite close to *T. keyserlingii* sensu stricto since the observed value of genetic distance ($p = 3.02\%$) is lower than intraspecific differentiation within *T. microlepis* ($p = 4.65\%$).

Morphometric analysis

Mean values of 27 morphometric and meristic characters and 15 ratios examined for 120 adult specimens of eight species of *Teratoscincus* are summarized in Table 4. Discriminant analysis of morphometric and meristic data showed that 14 of 27 examined characters have impact in diversification of eight *Teratoscincus* species (Table 2). According to our data, proportions of head (SVL/HeadL; HeadL/HeadW), body shape (SVL/TrunkL), relative eye size (SVL/OrbD), relative forearm length (SVL/ForeaL) and femur length (SVL/FemurL), relative lengths of fingers and toes (SVL/LD4A; SVL/LD4P) and position of the enlarged scales on the neck region (SVL/HES) appear to be useful characters for diagnostics of *Teratoscincus* species. From 11 studied scalation characters, only five characters were significantly contributing into separation of eight *Teratoscincus* taxa: SAB; SLB; SEH; FFr 4, and NP.

Sexual dimorphism in morphometric characters was not revealed for *T. roborowskii* and *T. s. rustamowi*.

- Males of *T. przewalskii* have significantly shorter trunk than females (SVL/TrunkL 2.2 ± 0.07 vs. 2.09 ± 0.07, $p = 0.04$).
- Females of *T. keyserlingii* have significantly longer fingers and toes (SVL/LD4A 13 ± 1.6 vs. 15.75 ± 1.5, $p = 0.004$; SVL/LD4P 9.7 ± 0.9 vs. 11.4 ± 1.2, $p = 0.004$) than in males.
- Males of *T. bedriagai* have longer tail (SVL/TailL 1.9 ± 0.2 vs. 2.09 ± 0.2, $p = 0.004$), comparatively wider head (HeadL/HeadW 1.3 ± 0.07 vs. 1.4 ± 0.5, $p = 0.03$) and shorter forth fingers (LD4A 5.02 ± 0.4 vs. 5.31 ± 0.3, $p = 0.03$) than females.
- In *T. scincus*, enlarged dorsal scales covered comparatively larger area on occipital region in males (SVL/HES 18.6 ± 1.2 vs. 20.6 ± 1.6, $p = 0.007$) than in females. Females have more elongated forelimbs (LS 11.8 ± 1 vs. 10.7 ± 0.5, $p = 0.02$ and FemurL 11.4 ± 0.9 vs. 10.6 ± 0.8, $p = 0.002$) as well fingers and toes (LD4A 6.65 ± 0.5 vs. 6.1 ± 0.4 $p = 0.04$ and LD4P 9.05 ± 0.7 vs. 8.2 ± 0.5 $p = 0.007$) than males.

Discrimination of eight *Teratoscincus* species is shown in Fig. 3. The most morphologically distant species are *T. bedriagai* and *T. microlepis* with numerous morphological characters clearly separating them from all other congeners. *T. s. scincus* forms a compact group distinct from all other taxa in the analysis with exception of *T. s. rustamowi* for which discriminant values for a single specimen overlap with *T. s. scincus* values (Fig. 3); other specimens of *T. s. rustamowi* were clearly separated from *T. s. scincus*. Values for *T. keyserlingii* significantly overlap with *T. s. rustamowi* and *T. roborowskii*, but are separated from *T. przewalskii* and *Teratoscincus* sp. from Mesr; values for the latter two taxa partially overlap.

DESCRIPTION OF A NEW SPECIES OF *Teratoscincus* FORM CENTRAL IRAN

Significant morphological differences between the newly discovered population of *Teratoscincus* from Mesr, Isfahan Province, and all other congeners are congruent with the observed genetic differentiation. This allows us to describe this population as a new species:

Teratoscincus mesriensis sp. nov.

(Figs. 4, 5, 6*a*, *c*, *e*; 9*d*)

Holotype. ZMMU R-15156. Adult female, collected in Iran, Isfahan Province, environs of Mesr; 34°04′ N 54°47′ E; elevation 845 m a.s.l.; collected on June 22, 2013 by Roman A. Nazarov and Mehdi Radjabizadeh.

Paratypes. ZMMU R-15157, R-15158, R-15159; R-15385; R-15386; R-15387; ZISP-29577, 29578, 29579, 29580 all with the same collection data as the holotype.

Diagnosis. Medium sized gecko with SVL_{max} up to 93.6 mm. A member of the genus *Teratoscincus* based on the following combination of morphological attributes: (1) fingers and toes not flattened or laterally compressed with numerous spiny scales on lower surface; laterally fringed with enlarged elongated scales; (2) body covered with enlarged rounded imbricate “scincoid” scales, head with small tubercular scales, getting larger at snout and jaws; (3) dorsal surface of tail with nail-shaped scales, ventrally with small uniform scales; (4) precloacal or femoral pores absent (following Szczerbak and Golubev, 1986). The species can be distinguished from all other congeners by the following set of morphological characters: dorsal surface of body covered by rows of enlarged imbricate juxtaposed scales, scale rows around the body 34 – 42 and along the body 35 – 41 (vs. SAB 29 – 37 for *T. keyserlingii* and 26 – 36 for *T. scincus*). These enlarged scales not reaching occipital region (vs. enlarged scales covering occipital region both in *T. keyserlingii* and *T. scincus*). Head large and well-defined from body, cov-

TABLE 5. Meristic and Morphometric Data (in mm) for the Type Series of *Teratoscincus mesriensis* sp. nov.

Character	Holotype	Paratypes									
	ZMMU R-15156	ZMMU R-15157	ZMMU R-15158	ZMMU R-15159	ZISP 29577	ZISP 29578	ZISP 29579	ZISP 29580	ZMMU R-15386	ZMMU R-15385	ZMMU R-15387
Sex	f	f	m	juv	juv	m	m	m	m	m	f
SVL	86.5	93.6	64.6	44.8	36.3	87.5	87.1	56.5	85.7	84.1	90.0
TailL	61*	50*	32*	17.5*	22	57*	61	40.3	60.4	33.8*	63.3
HeadL	22.7	25.8	17.8	13.5	12.4	23.7	23.3	17.2	24.0	23.6	23.7
HeadW	18.4	18.3	13.9	9.5	7.8	18.0	18.6	13.0	18.4	16.8	19.5
HeadH	11.5	12.2	8.8	6.2	5.8	10.5	11.7	7.5	10.8	10.6	11.3
HES	34	28.7	25	18, 2	—	26.8	—	18.8	31.5	31.5	32.8
SnEye	8.1	9.0	6.5	3.3	4.3	8.2	8.3	5.8	8.6	8.1	8.6
OrbD	5.2	6.4	4.0	3.0	2.7	5.7	5.7	4.3	5.6	5.2	6.3
EarL	4.3	3.6	2.8	2.2	1.8	5.0	4.3	3.0	3.8	4	4.1
EyeEar	7.3	7.5	5.4	3.8	3.1	6.8	6.8	5.2	7.0	6.5	7.0
TrunkL	41.6	47.2	29.2	19.7	14.8	45.3	40.5	27.1	39.7	39	36.2
LS	11.6	12.7	10.1	7.0	5.9	11.5	11.4	9.0	11.7	11.8	13.3
ForeaL	12.4	12.2	9.8	7.0	5.5	12.8	11.0	8.0	11.2	11.6	12.0
FemurL	14.6	15.4	11.8	8.8	6.0	14.6	15.2	10	14.2	13.6	15.4
Crus L	13.7	13.8	11.2	7.2	6.2	13.5	13.7	9.3	12.8	12.2	13.8
LD4A	6.7	6.6	5.2	4.3	3.5	6.8	7.2	4.7	5.8	6.1	6.2
LD4P	8.7	10	7.5	5.1	4.7	9.0	9.7	6.2	8.6	8.5	9.3
SAB	42	37	37	42	40	41	38	42	35	42	39
SLB	36	38	41	38	35	35	35	39	40	36	38
FF 4 (r/l)	22/21	19/20	21/23	19/21	16/18	19/21	19/21	19/20	19/19	22/21	21/21
TF 4 (r/l)	29/29	28/29	26/28	26/28	21/24	25/29	23/24	23/26	26/27	26/28	29/31
SL (r/l)	10/11	9/9	11/10	11/11	11/11	9/9	9/9	10/10	10/10	10/11	11/11
IL (r/l)	10/9	10/10	11/10	10/10	9/10	11/11	10/10	10/11	10/10	9/10	10/10
SEH	40									35	
NP	18	11	*	7*	14	14	14	15	15	5*	14

* Regenerated tail.

Fig. 4. General view of *Teratoscincus mesriensis* sp. nov. *in situ*.

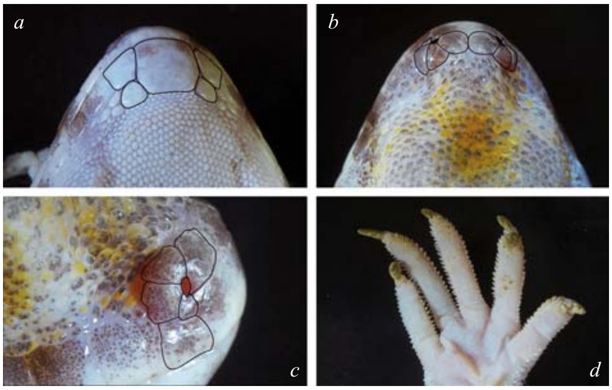

Fig. 5. Details of scalation in *Teratoscincus mesriensis* sp. nov.: *a*, mental area; *b*, rostral area; *c*, scales surrounding nostril; *d*, palmar view of hand.

ered by small granular scales. Nostril in contact with rostral, enlarged supranasal, two large nasals and a small additional scale; first supralabial separated from nostril. Fingers and toes with fringed edges formed by large elongated triangle scales. Claws strongly compressed laterally. Small imbricate scales cover the lower surface of digits; the distal part of fingers and toes only with few transversely widened scales. Ventral scales of approximately the same size as dorsal scales. No precloacal and femoral pores. Hemipenial swellings moderate in size; a single precloacal spur on the each side at the base of tail. Tail rounded in cross section, tail shorter than SVL (SVL/TailL ratio 1.4), dorsal surface of tail covered by 11 – 18 enlarged nail-like scales. Adults in live with a light gray dorsal ground coloration with bright red-orange pattern. Dorsal pattern formed by indistinct longitudinal red-orange stripes, which are more distinct on the lateral sides of body, becoming interrupted and forming irregular pattern on the middle of dorsum. Dark brown pattern may be present on forelimbs and in the neck region. Dorsal surface of head light gray or yellowish occasionally with irregular reddish spots; wide interspaces between these spots make head dorsal coloration lighter than that of body. No distinct markings on limbs and tail. Young specimens with four transverse wide dark bars on dorsum; interspaces between them wider than the transverse bars (vs. dark transverse bars equal in width or wider than the interspaces between them in *T. keyserlingii*). Four dark transverse bars on tail in young specimens. Ventral surfaces of body and limbs white. In preservative specimens grayish-white with dark brown patterns.

Description of holotype. Adult female, SVL 86.5 mm, TailL 61 mm (tail regenerated), HeadL 22.7 mm, HeadW 18.4 mm, HeadH 11.5 mm, SnEye 8.1 mm, OrbD 5.2 mm, EarL 4.3 mm, EyeEar 7.3 mm; body proportions as follows: SVL/HeadL 3.81, HeadL/HeadW 1.23, HeadL/HeadH 1.97, SnEye/EyeEar 1.1, HeadL/OrbD 4.36.

Rostral shield width 2.9 mm, height 2.4 mm, RW/RH ratio 1.2, rostral divided on one third of its height by median groove; nares in contact with rostral; supranasal enlarged (about two times the size of rostral); two large nasals (about two times the size of supranasal) and a small additional (supernumerary) scale (about three times the size of nasal); first supralabial separated from nostril (Fig. 5*c*); supralabials 10/11; infralabials 9/10.

Dorsal surface of head covered by small uniform granular scales of approximately same size on the rostral, interorbital and occipital parts of head; 40 small granular scales between the orbits on the dorsal surface of head.

Mental plate hexagonal in shape with rounded posterior edge, narrower than the rostral (MW 2.4 mm; MH 3.0 mm; MW/MH ratio 0.8); one pair of enlarged postmentals (each 1.5 – 2 times the size of the first supralabial); the first pair of infralabials smaller than the second pair (Fig. 6*c*).

Dorsum covered with large flattened rounded imbricate scales of the same size as ventral scales (Fig. 6*e*); no enlarged dorsal tubercles; scales around the middle of body in 36 longitudinal rows; scales along the ventral side of body in 42 transverse rows; lateral folds absent; dorsal surface of fore- and hindlimbs covered by flattened imbricate scales smaller than the imbricate scales on dorsum; a single median lamella present only on the distal surface of digits; no enlarged precloacal and femoral scales or pores; one pair of enlarged postcloacal spurs; tail without whorls or segments, dorsally covered by nail-like flattened and rounded scales in (14 scales in a single row); subcaudals without enlarged scale row, flattened, imbricate, approximately the same size as dorsal scales.

Coloration in preservative. Preserved specimen grayish-white, with longitudinal narrow dark stripes on the flanks, which continue from the posterior edge of ear to the tail basis. Some irregular dark spots located on the flanks between the longitudinal lines and belly. On the middle of dorsum between the two parallel longitudinal dark paravertebral stripes along the midline; five transverse bands are visible, the width of which increases posteriorly. Between the transverse bands, the light rounded spots form an indistinct pattern resembling a chain. Symmetrical dark patterns on the head dorsal surface consist of three narrow dark crescent-shaped blotches, the anteriormost of them located between the orbits in the frontal region, the middle one located between the posterior edge of orbits to the occipital region and the posterior one on the neck connecting in the dark spot at the axilla. Two dark spots with indistinct borders on each side of jaws both on infra- and supralabials (at the levels of the middle of snout and the anterior eye corners). No distinct patterns on the dorsal surface of limbs. Ventral surface immaculate white.

Variation of paratype series. Measurements of the type series are presented in Table 5. Juvenile specimens have 4 – 5 wide dark transverse bands on dorsum and the same number of dark bands on tail. In some adult specimens distinct markings on the dorsal surfaces are absent.

Fig. 6. The main diagnostic characters for distinguishing two closely related species of *T. keyserlingii* species complex — *Teratoscincus mesriensis* sp. nov. (*a*, *c*, *e*) and *T. keyserlingii* sensu stricto (*b*, *d*, *f*). Position of enlarged rounded dorsal scales (*a*, reaches the level of limb insertion; *b*, covers occipital region); first pair of infralabials (*c*, smaller than the second pair; *d*, the same size as the second pair); difference in size of dorsal scales (*e*, smaller in the new species; *f*, bigger in *T. keyserlingii* sensu stricto).

Phylogenetic position. The new species is reconstructed as a sister species of *T. keyserlingii* sensu stricto (Fig. 2) and is genetically quite close to the latter species (uncorrected genetic *p*-distance 3.02%, Table 3).

Comparisons with other congeners. Morphologically a new species is most closely allied to *Teratoscincus keyserlingii*, however it can be distinguished from all known congeners by the large rounded imbricate dorsal scales not reaching to the occiput as in other *Teratoscincus*, but usually extending anteriorly as far as the shoulder area (Fig. 6*a*). In other congeners having enlarged imbricate dorsal scales, i.e., in *T. keyserlingii* sensu stric-

Fig. 7. Paralectotype of *Teratoscincus keyserlingii* (ZMB 6872). The enlarged dorsal scales reach to the occipital region.

Fig. 8. Holotype of *Teratoscincus zarudnyi* (ZISP 8804), Rume, eastern Iran.

to (Fig. 6*b*), *T. roborowskii*, *T. rustamowi*, and *T. scincus*, these scales always cover the occipital region, so this diagnostic character seems to be quite important.

We have examined the available type specimen of *T. keyserlingii*; paralectotype ZMB 6872 has the enlarged dorsal scales clearly reaching the occipital region (Fig. 7). Similarly, the type specimen (holotype) of *T. zarudnyi* ZISP 8804 has the same position of the enlarged dorsal scales, which cover the occipital region (Fig. 8).

The new species can be further distinguished from *T. keyserlingii* by smaller body size (SVL$_{max}$ up to 93.6 mm in the new species vs. up to 116.5mm in *T. keyserlingii*), comparatively smaller size of the enlarged rounded scales on dorsum (SAB 35 – 42 in the new species vs. 29 – 37 in *T. keyserlingii*; SLB 35 – 41 in the new species vs. 32 – 38 in *T. keyserlingii*). For other morphological differences between the new species and its congeners, see Table 4.

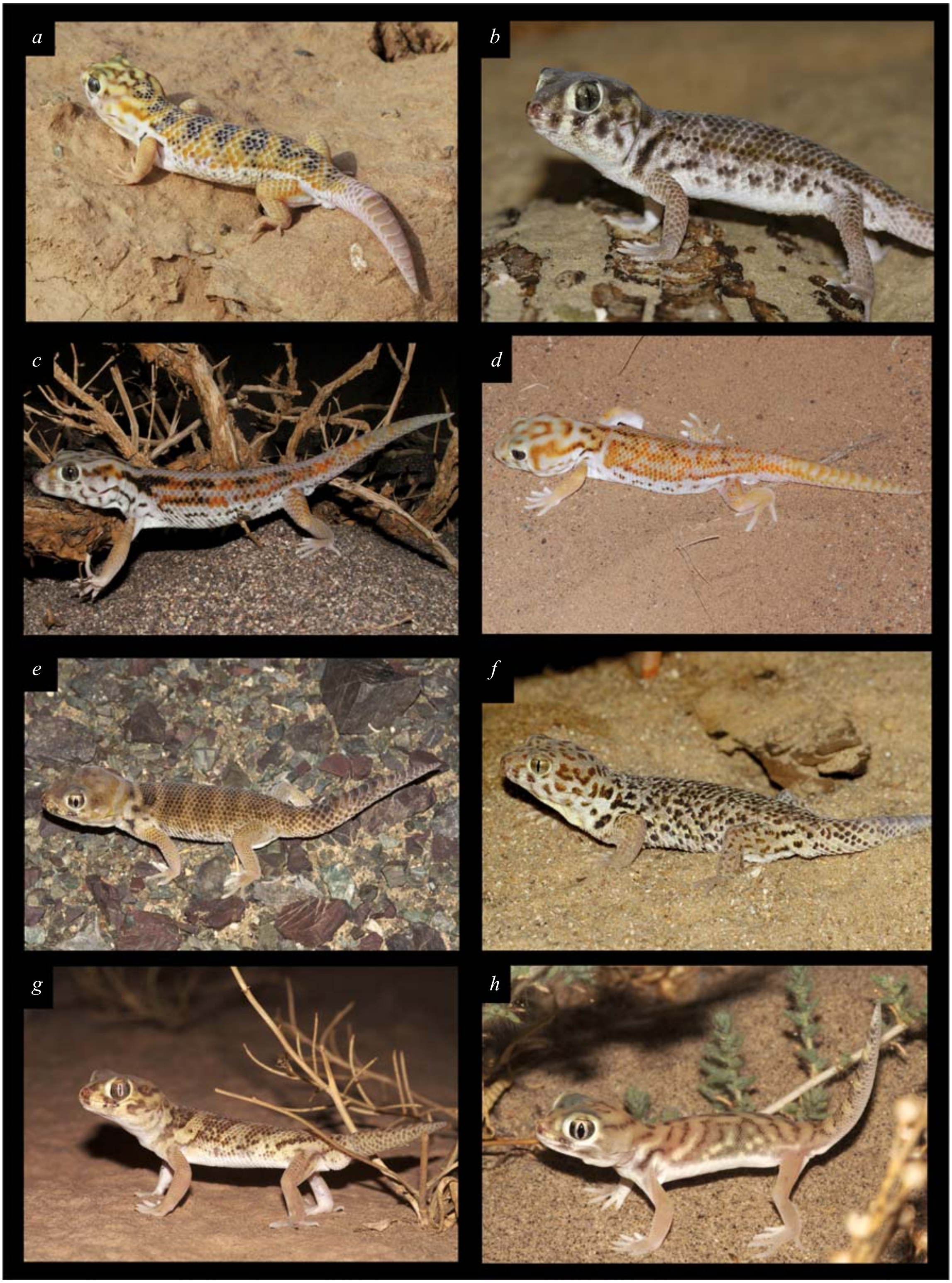

Fig. 9. Photos of all known members of the genus *Teratoscincus* in life: *a*, *T. scincus* sensu stricto, southern Uzbekistan, Daraut-Qurgan; *b*, *T. rustamowi* stat. nov., Uzbekistan, Ferghana Valley, Qukand; *c*, *T. keyserlingii* sensu stricto, Iran, Khorasan Province, Dehsalm; *d*, *Teratoscincus mesriensis* sp. nov., Iran, Isfahan Province, Mesr; *e*, *T.przewalskii* Mongolia, Ekhingol; *f*, *T. roborowskii*, China, Xinjian-Uygur Autonomous Region, Turpan; *g*, *T. bedriagai*, Iran, Khorasan Province, Gonobad; *h*, *T. microlepis*, Iran, Kerman Province, Jiroft.

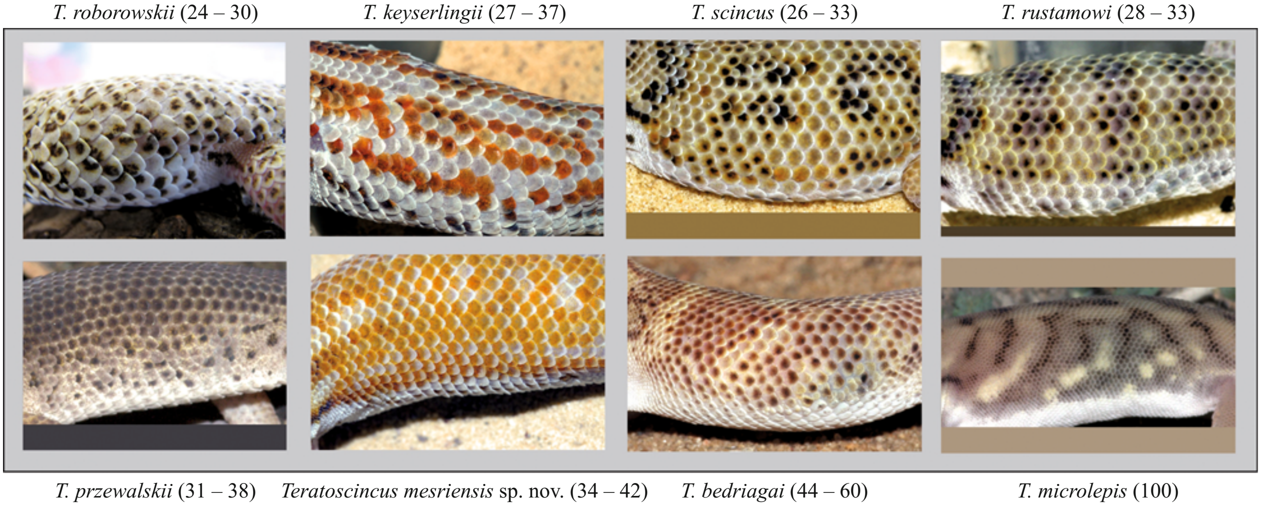

Fig. 10. Differences in dorsal scalation of the all known members of the genus *Teratoscincus*.

The new species can be differentiated from other congeners by the following morphological characters:

- From *Teratoscincus bedriagai* by bigger body size (SVL_{max} up to 93.6 mm in the new species vs. up to 73.4 mm in *T. bedriagai*), by smaller number of scales around midbody (SAB 34 – 42 in the new species vs. SAB 44 – 53 in *T. bedriagai*) and by presence of one or two pairs of enlarged postmentals in the new species vs. no enlarged postmentals in *T. bedriagai*. The two species also have markedly different dorsal patterns (Fig. 9*d*, *g*).
- From *Teratoscincus przewalskii* by different dorsal pattern and coloration: longitudinal dorsal patterns on a reddish or orange background in the new species vs. wide dark brown cross-bands on grayish to ochre background in *T. przewalskii* (Fig. 9*d*, *e*). Scalation characters are similar with the new species.
- From *Teratoscincus roborowskii* the new species can be distinguished by having smaller number of the enlarged round dorsal scales (SAB 34 – 42 in the new species vs. SAB 24 – 30 in *T. roborowskii*, the latter has the largest size of dorsal scales among all species of the genus (Fig. 10), they also reach the occipital region in *T. roborowskii* (Fig. 9*f*).
- From *Teratoscincus scincus* the new species differs by position of enlarged dorsal scales which extend anteriorly as far as the level of forelimb insertion not covering the occipital part of head; SAB 34 – 42 in the new species vs. 30 – 40 in *T. scincus*; coloration patterns are also different between the two species (Fig. 9*d*, *h*).
- Dorsal surface of *Teratoscincus microlepis* is covered by numerous homogenous granular scales vs. enlarged rounded imbricate scales in the new spices. The two species also have markedly different dorsal patterns and coloration (Fig. 9*d*, *h*).

Etymology. The new species is named after the name of a village where it was discovered — Mesr (Isfahan Province, Iran). The species epithet is a Latinized toponymic adjective.

Natural history. The new species was found in sandy areas and was mostly recorded on dunes. Nocturnal lizards, they leave burrows just after the sunset and are active during the entire night, with maximal activity from 9 to 11 p.m. In the same biotope we recorded following sympatric species of reptiles: *Varanus griseus caspius*, *Phrynocephalus maculatus*, *Eremias* cf. *fasciata*, *Eremias* cf. *lineolata*, *Trapelus agilis*, and *Bunopus tuberculatus*.

Distribution. Currently known distribution is shown in Fig. 1. To date the new species is known only from the type locality (sand dunes near Mesr, Isfahan Province, and Central Iran).

Status of the *Teratoscincus* population from Ferghana Valley. The isolated population of *Teratoscincus scincus* sensu lato inhabiting Ferghana Valley in Uzbekistan and adjacent parts of Tajikistan was described as a separate subspecies *T. s. rustamowi* (Szczerbak, 1979). New morphological and molecular data indicate that the Ferghana population is clearly distinct from other congeners in a number of diagnostic morphological characters (see below) and also does not form a monophyletic group with *T. scincus* sensu stricto. We assume that differentiation of Ferghana population reaches the species level and reconsider the taxonomic status of *T. scincus rustamowi* proposing the full species status for this population. Below we provide evidences for this decision and a revised diagnosis of Ferghana *Teratoscincus*.

Teratoscincus rustamowi Szczerbak, 1979 stat. nov.[6]

Holotype. ZLK Re No. 9 — Uzbekistan, Ferghana Valley, central Ferghana [Fergana] sand dunes, between Quqand and Djumashuyi, collected on June 8, 1976, by N. N. Shcherbak [Szczerbak], M. N. Golubev and E. M. Pisanets (Fig. 11).

Referred material. Additional material examined included ZMMU R-14985 (six specimens) from Uzbekistan, Ferghana Valley, sand dunes near Quqand; 40°38′ N 70°51′ E; elevation 379 m a.s.l.; collected in August 2013 by R. A. Nazarov. ZMMU RAN-851 – 860; RAN-875 – 879 (15 specimens), Uzbekistan, 30 km W from Quqand, near Chinabad village; 40°38′ N 70°51′ E; elevation 379 m a.s.l. collected on September 16, 2007, by R. A. Nazarov.

Revised diagnosis. Medium-sized gecko with SVL_{max} up to 81 mm (less than SVL_{max} of *T. scincus* sensu stricto — 90.2 mm). Dorsal surface of body covered by rows of enlarged imbricate juxtaposed scales, in 26 – 36 longitudinal rows around the midbody and 32 – 41 transverse rows counted along the body. Enlarged scales reach occipital region. Head large and well-defined from body, covered by small granular scales.

Nostril in contact with rostral, enlarged supranasal, two large nasals and first supralabial. Usually no additional subnasal scales between supralabial and naris; if such supernumerary scales present their diameter less or equal to half of naris diameter (vs. additional subnasal scales always present, their diameter about the same size as naris in *T. scincus* sensu stricto). Fingers and toes with fringed edges formed by large elongated triangle scales. Claws strongly compressed laterally. Small imbricate scales covering the lower surface of digits, with only a few transversely widened scales at the distal part of fingers and toes. Ventral scales of approximately the same size as dorsals. No precloacal and femoral pores. Moderate hemipenial swellings; single precloacal spur on the each side at the tail basis. Tail rounded in cross section (SVL/TailL ratio about 1.55 in *T. rustamowi* vs. 1.4 for *T. scincus* sensu stricto), tail dorsal surface covered by 11 – 18 enlarged nail-shaped scales. We failed to find any significant differences between males and females of *T. rustamowi* in all examined metric and meristic characters (vs. pronounced sexual dimorphism revealed for the several morphological characters in *T. scincus* sensu stricto: HES; OrbD; LS; FemurL; LD4A; LD4P and SVL/HES ratio).

Fig. 11. Holotype of *T. rustamowi* stat. nov. (ZIK Re-9).

Coloration in life. Adults in live dorsally have light gray dorsal background color with five dark transverse wide bands; they are wider than the lighter interspaces between them. In general, dorsal coloration is usually grayish and not contrasting in adults (Fig. 9*a*, *b*) not like in *T. scincus* sensu stricto which usually have contrasting dorsal patterns and more yellowish tint in dorsal coloration of adult exemplars. Dorsal surface of head grayish with irregular brown spots, in occipital region light-beige or yellowish shamrock-shaped or butterfly-shaped pattern is present. Shamrock-shaped pattern on occipital region could serve as an additional morphological character for identification of this *Teratoscincus* species in the field. Young specimens have more contrasting pattern formed by 5 – 6 transverse wide dark bands on the dorsum with yellowish narrow interspaces in between; tail with 3 – 4 wide transverse black bands with white interspaces between them. Ventral surfaces of body and limbs immaculate white.

Coloration in preservative. Preserved specimens grayish to off-white with dark brown patterns.

Phylogenetic position. This species is most closely related to *T. scincus* sensu stricto; however our study shows a deep genetic divergence between these forms ($p = 6.34\%$, Table 3), moreover, *T. scincus* sensu stricto, *T. rustamowi* and the clade including *T. keyserlingii* + *Teratoscincus mesriensis* sp. nov. form essentially unresolved trichotomy, so monophyly of grouping *T. scincus* sensu stricto with *T. rustamowi* is not supported (Fig. 2).

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[6] In original description [*Teratoscincus rustamovi*] Shcherbak N. N. (1979).

Comparisons with other congeners. *T. rustamowi* can be distinguished from *T. scincus* sensu stricto by the following combination of morphological attributes: smaller body size (SVL$_{max}$ up to 81 mm in *T. rustamowi* vs. SVL$_{max}$ up to 87.1 mm in *T. scincus* sensu stricto); smaller ventral scale number (SLB 36 ± 1.82 in *T. rustamowi* vs. SLB 34 ± 2.26 in *T. scincus* sensu stricto); fewer scales between eyes (SEH 32 ± 1.9 in *T. rustamowi* vs. 36.5 ± 5.0 in *T. scincus* sensu stricto); greater number of elongated triangle scales on the fringes of 4th finger (FFr4 20 ± 1.27 and FFl4 21 ± 1.56 in *T. rustamowi* vs. FFr4 18 ± 1.48 and FFl4 20 ± 1.69 in *T. scincus* sensu stricto); smaller number of supralabials and infralabials (SL 10 ± 0.7, IL 10 ± 0.88 in *T. rustamowi* vs. SL 11 ± 0.87, IL 11 ± 1.07 in *T. scincus* sensu stricto); smaller number of enlarged nail-shaped scales on the dorsal surface of tail (NP 15 ± 1.5 in *T. rustamowi* vs. 16 ± 1.2 in *T. scincus* sensu stricto).

Moreover, we found significant differences in body and limb proportions between the examined populations of *T. scincus* sensu stricto and *T. rustamowi* (Table 4). *T. rustamowi* have significantly shorter tail (SVL/TailL 1.51 ± 0.4 vs. 1.39 ± 0.1, $p = 0.001$), more elongated body (SVL/TrunkL 2.07 ± 0.4 vs. 2.11 ± 0.1, $p = 0.01$), comparatively more elongated and narrow head (HeadL/HeadW 1.33 ± 0.3 vs. 1.24 ± 0.1, $p = 0.000006$), bigger eyes (SVL/OrbD 14.5 ± 3.3 vs. 16.8 ± 1, $p = 0.0001$), shorter rostrum (HeadL/SnEye 3.03 ± 0.6 vs. 2.9 ± 0.1, $p = 0.01$), shorter occipital region (HeadL/EyeEar 3.57 ± 0.7 vs. 3.17 ± 0.2, $p = 0.00002$), and longer limbs (SVL/LS 6.6 ± 1.4 vs. 6.9 ± 0.3, $p = 0.01$; SVL/CrusL 6.2 ± 1.3 vs. 6.7 ± 0.4, $p = 0.001$; SVL/FemurL 5.5 ± 1.2 vs. 5.9 ± 0.3, $p = 0.000008$) than *T. scincus* sensu stricto.

From the other species of *Teratoscincus*, *T. rustamowi* can be distinguished by the following morphological characters:

- From *Teratoscincus bedriagai* by larger body size (SVL$_{max}$ up to 81 mm in *T. rustamowi* vs. SVL$_{max}$ up to 73.4 mm in *T. bedriagai*); less scales around the body (SAB 26 – 36 in *T. rustamowi* vs. SAB 34 – 42 in *T. bedriagai*); and two to three pairs of enlarged postmentals in *T. rustamowi* (vs. no enlarged postmentals in *T. bedriagai*). Dorsal enlarged imbricate scales reach occipital region in *T. rustamowi* vs. dorsal enlarged scales extend anteriorly as far as the level of forelimbs in *T. bedriagai*. Adults have markedly different dorsal patterns (Fig. 9*b*, *g*).
- From *Teratoscincus keyserlingii* sensu stricto by smaller body size (SVL$_{max}$ up to 81 mm in *T. rustamowi* vs. SVL$_{max}$ up to 116.5 mm in *T. keyserlingii* sensu stricto); less scales around the body (SAB 26 – 36 in *T. rustamowi* vs. SAB 29 – 39 in *T. keyserlingii* sensu stricto); transversal dorsal patterns in *T. rustamowi* vs. longitudinal dorsal patterns in *T. keyserlingii* sensu stricto; grayish dorsal coloration in *T. rustamowi* vs. reddish dorsal coloration in *T. keyserlingii* sensu stricto (Fig. 10*b*, *c*).
- From *Teratoscincus przewalskii* by smaller body size (SVL$_{max}$ up to 81 mm in *T. rustamowi* vs. SVL$_{max}$ up to 93 mm in *T. przewalskii*); dorsal enlarged imbricate scales reaching occipital region in *T. rustamowi* vs. dorsal enlarged scales reach as far as the level of forelimb in *T. przewalskii*; less scales around the body (SAB 26 – 36 in *T. rustamowi* vs. SAB 31 – 38 in *T. przewalskii*); and different coloration (Fig. 9*b*, *e*).
- From *Teratoscincus roborowskii* by higher number of scales around the body (SAB 26 – 36 in *T. rustamowi* vs. SAB 24 – 30 in *T. roborowskii*); and by different dorsal patterns (Fig. 10*b*, *f*).
- From *Teratoscincus mesriensis* sp. nov. by smaller body size (SVL$_{max}$ up to 81 mm in *T. rustamowi* vs. SVL$_{max}$ up to 93.6 mm in *Teratoscincus mesriensis* sp. nov.), dorsal enlarged scales reaching occipital region in *T. rustamowi* vs. dorsal enlarged scales extend anteriorly as far as the level of forelimb insertion in *Teratoscincus mesriensis* sp. nov.; less scales around the body (SAB 26 – 36 in *T. rustamowi* vs. SAB 35 – 42 in *Teratoscincus mesriensis* sp. nov.); and different dorsal patterns (Fig. 9*b*, *d*).
- From *Teratoscincus microlepis* by presence of enlarged rounded imbricate dorsal scales in *T. rustamowi* vs. small homogenous granular scales in *T. microlepis*; and also by different coloration (Fig. 9*b*, *h*).

Dorsal patterns and body habitus of all known members of the genus *Teratoscincus* are summarized in Fig. 9.

Distribution and natural history. Distribution of *T. rustamowi* species in the Ferghana Valley is limited by sandy areas with dunes, which are sporadically located in the valleys surrounded by agricultural areas (Fig. 12). Available data on distribution and ecology of this species is summarized by Nazarov et al. (2016).

The density of *T. rustamowi* population appears to be still quite high: we registered up to 40 specimens during 1.5 h of night survey. However, the intensified anthropogenic press and landscape destruction together with the absence of any nature protected areas in the Ferghana Valley may cause a serious threat for *T. rustamowi* in the future.

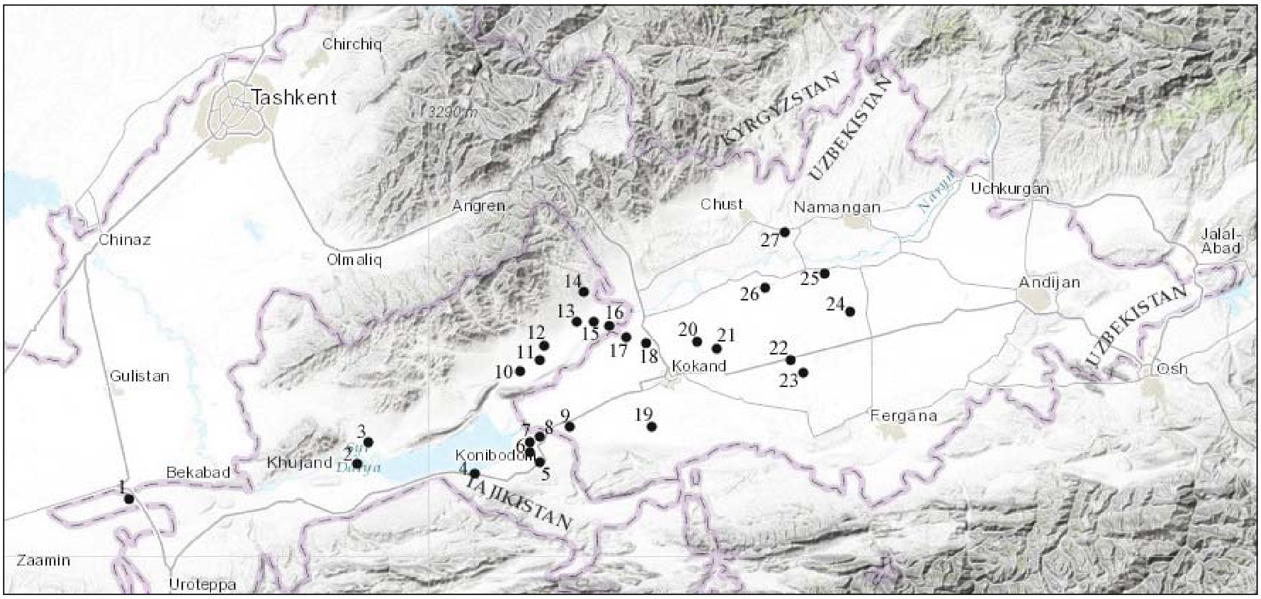

Fig. 12. Distribution of *Teratoscincus rustamowi* in the Ferghana Valley (from Nazarov et al., 2016): *1*, Zafarobod; *2*, near Qairaqum (Szczerbak, 1978); *3*, Samgar vill.; *4*, Makhram vill.; *5*, near Kanybadam; *6*, near Melnikovo railway station; *7*, Patar vill.; *8*, Yakkaterak vill.; *9*, Yakkatut vill.; *10*, Kamishqurgan (Rabat) vill.; *11*, Bulak vill.; *12*, Gulshan vill.; *13*, Kirquduk vill.; *14*, Ashti-Kalon vill.; *15*, Djarabulak vill.; *16*, Uzbekadjar vill. (Sattorov, 1993); *17*, near Taptik Sroyi vill.; *18*, near Chinabad vill.; *19*, 15 km SW Quqand, near Yaiypan vill. (ZMMU R-11069); *20*, near Quqand, Buvayidy railway station (Bogdanov, 1960); *21*, near Ak-Tepe; *22*, sands between Quqand and Andijon, Qaraqalpak steppe or Yazyavan sand dunes (ZMMU R-13246); *23*, Qizil-Tepe vill. (Zakhidov et al., 1970); *24*, Tokalik, Qaraqalpak steppe or Yazyavan sand dunes; *25*, Gurtepe vill. (Zakhidov et al., 1970); *26*, NW edge of Yazyavan sand dunes, 14 km form, Buvayidy railway station, 2 km W Navbakhor vill. (ZMMU R-13749); *27*, near Shokhidon vill. (Zakhidov et al., 1970).

DISCUSSION

Our preliminary data on genetic variation in COI partial sequences of *Teratoscincus* species examined in the present study indicate genetic heterogeneity and presence of highly-divergent mtDNA lineages for several species such as *T. scincus*, *T. keyserlingii*, and *T. microlepis*. However, differentiation in mtDNA marker examined and morphological characters were not always congruent with each other. For example, the genetic divergence between morphologically quite similar *T. scincus* sensu stricto and *T. rustamowi* for the examined fragment of COI is quite high ($p = 6.34\%$). Genetic comparison of *T. microlepis* specimens from the eastern and western parts of the Jazmurian Depression in Sistan-Baluchistan and Kerman provinces revealed their deep genetic divergence ($p = 4.65\%$). Morphologically these populations are quite similar to each other, and further studies, including examination of morphologically more distinct populations of *T. microlepis* from the Sistan Depression, are required to understand differentiation within *T. microlepis*.

In the *T. keyserlingii* species complex we have an opposite situation with populations clearly distinct in a number of important morphological features appear to be genetically quite close to each other with genetic distances in COI within the *T. keyserlingii* species not exceeding $p = 3.02\%$, which is somewhat lower genetic distances observed between other recognized species. However genetic data from a single mtDNA marker should be taken cautiously and an integrative taxonomic approach is required.

Since 2012 we keep *Teratoscincus mesriensis* sp. nov. and *T. keyserlingii* sensu stricto in captivity, however, despite numerous attempts to obtain hybrids between these species, we did not succeed though each of these species was successfully breeding in captivity for over than five years. This fact is not strong enough to prove a reproductive isolation between *Teratoscincus mesriensis* sp. nov. and *T. keyserlingii* sensu stricto in natural conditions, however we assume that it likely exists. The small currently known range of *Teratoscincus mesriensis* sp. nov. is surrounded by populations of *T. keyserlingii* sensu stricto, however the population of the new species preserves a unique set of morphological features never observed in *T. keyserlingii*. Further studies of *T. keyserlingii* species complex, including taxonomic assessment of *Teratoscincus* populations located between the known ranges of *Teratoscincus mesriensis* sp. nov. and *T. keyserlingii* sensu stricto, as well as application of additional genetic markers, are required to test the existence of probable reproductive isolation between the two species, mechanisms of which should be studied and understood in future.

All these issues indicate that more detailed comprehensive studies, using a set of molecular techniques, including nuclear DNA- markers, together with a thorough morphological examination of various populations of *T. keyserlingii* species complex are required.

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APPENDIX
List of examined samples

Teratoscincus bedriagai (*n* = 20)

Iran, prov. Khorasan, 60 km N from Gonobad. 34°43′ N 58°48' E, 860 m a.s.l. (ZMMU R-13885-4; 13885-5; 13885-7; ZMMU RAN 228; 230; 232; 475; 476; 477.a; 703; 703.a; 703.b; 703.c; 703.f).

Iran, prov. Khorasan, 80 km NW Gonobad, near Ynesi, Kol-e-Shur river. 34°47′ N 58°22′ E, 847 m a.s.l. (ZMMU RAN 1232; 1234; 1236; 1237).

Iran, prov. Semnan, 30 km S Damghan (ZMMU RAN 2188, 2189).

Teratoscincus scincus (*n* = 20)

Uzbekistan, Bukhara region, bank of Lay-Qul Lake, 20 km N from Shafrikan vill. (ZMMU R-3780-1 – 8).

Turkmenistan, Qara-Bata vill. (ZMMU R-5674-1 – 12).

Teratoscincus rustamowi (*n* = 21)

Uzbekistan, Ferghana Valley, sand dunes near Quqand; 40°38′ N 70°51′ E; elevation 379 m a.s.l. (ZMMU R-14985-1 – 6; ZMMU RAN 851 – 860; 875 – 879).

Teratoscincus przewalskii (*n* = 20)

Mongolia, Bayan-Khongor aimak, 35 km N from Ekhingol, 15 km S from Nogon Tsav (ZMMU R- 4073; R-12044-1 – 3; ZMMU RAN 1439).

Mongolia, without exact locality (ZMMU RAN 3031-1 – 11).

Mongolia, Bayan-Dzak (ZMMU R-5227-1 – 4).

Teratoscincus roborowskii (*n* = 7)

China, from pets market in Chengdu, without exact locality (ZMMU RAN 699 – 702; 1993).

China, from pets market in Beijing, without exact locality (ZMMU R-13221).

China, Xinjian Uygur Autonomous Region, Shanshan (ZMMU RAN 1297.a).

Teratoscincus keyserlingii (*n* = 20)

Iran, prov. Khorasan, 60 km N from Gonobad. 34°43′ N 58°48′ E, 860 m a.s.l. (ZMMU RAN 240; 242; 310; 311; 465; 467 — 471; RAN 547 — 548). As well, eight adult alive specimens form the same locality were used for morphometric analysis.

Teratoscincus mesriensis sp. nov. (*n* = 11)

Iran, Isfahan Province, environs of Mesr. 34°04′ N 54°47′ E, elevation 845 m a.s.l. (ZMMU R-15156 (holotype); ZMMU R-15157 — 15159; R-15385 – R-15387; ZISP 29577 – 29580).

Teratoscincus microlepis (*n* = 3)

Iran, Sistan-Baluchistan prov., 20 km W from Iranshahr, Bampur. 27°12′ N 60°26′ E, 537m a.s.l. (ZMMU RAN 058; 333; 337).