

Supplementary Information

Hidden diversity in the Caucasian mountains: an example of birch mice (Rodentia, Sminthidae, *Sicista*)

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Table S1 Specimens used in the study and their accession numbers.

Species	Code	Collector Year	Locality	Cytb	IRBP	BRCA1	SPTBN	THY	PRKC	Voucher
<i>Sicista armenica</i>	Sevan	MR 2015	Armenia, Gegharkunik, Semenovka	KY967424	KY967473	KY967450	KY967510	KY967445	KY967497	released
<i>Sicista caucasica</i>	Lagonaki1	MR 2014	Russia, Adygea, Lagonaki	KY967419	KY967467	KY967449	KY967505	KY967436	KY967488	ZMMU S- 196002
<i>Sicista caucasica</i>	Lagonaki2	MR 2014	Russia, Adygea, Lagonaki	KY967420	KY967468	KY967453	KY967506	KY967437	KY967489	ZMMU S- 196003
<i>Sicista caucasica</i>	Lagonaki3	MR 2014	Russia, Adygea, Lagonaki	KY967421	KY967469	KY967454	KY967507	KY967438	KY967490	ZMMU S- 196004
<i>Sicista caucasica</i> ¹	west	Baskevich 1990	Russia, West Caucasus	KM397201	KM397150	KM397287	-	-	-	
<i>Sicista caucasica</i> ²	Adler	Baskevich 2009	Russia, Krasnodar, Mzymta	KR107030	-	-	-	-	-	
<i>Sicista kazbegica</i>	Arkhon 1	MR 2014	Russia, North Ossetia, Unal	KY967422	KY967470	KY967451	KY967508	KY967439	KY967491	released
<i>Sicista kazbegica</i>	Arkhon 2	MR 2014	Russia, North Ossetia, Unal	KY967423	KY967472	KY967452	KY967509	KY967440	KY967492	released
<i>Sicista kazbegica</i> ¹	Kazbek	Baskevich 1990	Georgia, Kazbegi, Suatisi	KM397202	KM397151	KM397288	-	-	-	
<i>Sicista kazbegica</i> ¹	Tsey 1	Baskevich 1990	Russia, North Ossetia, Tsey	KM397203	KM397152	KM397289	-	-	-	
<i>Sicista kazbegica</i> ²	Tsey 2	Baskevich	Russia, North Ossetia, Tsey	KR107029	-	-	-	-	-	
<i>Sicista kazbegica</i> ²	Tsey 3	Baskevich	Russia, North Ossetia, Tsey	KR107028	-	-	-	-	-	
<i>Sicista kazbegica</i> ³	unknown	?	?	-	FM200058	-	-	-	-	
<i>Sicista kluchorica</i>	Mukhu 1	MR 2016	Russia, Karachay-Cherkessia, Teberda	KY967425	KY967476	KY967460	KY967511	KY967441	KY967493	ZMMU S- 197464
<i>Sicista</i>	Mukhu 2	MR	Russia, Karachay-Cherkessia,	KY967426	KY967477	KY967461	KY967512	KY967442	KY967494	ZMMU S-

<i>kluchorica</i>		2016	Teberda							197465
<i>Sicista kluchorica</i>	Mukhu 3	MR	Russia, Karachay-Cherkessia,	KY967427	KY967478	-	KY967513	KY967443	KY967495	ZMMU S-197466
<i>kluchorica</i>		2016	Teberda							
<i>Sicista kluchorica</i>	Mukhu 4	MR	Russia, Karachay-Cherkessia,	KY967428	KY967479	-	KY967514	KY967444	KY967496	ZMMU S-197467
<i>kluchorica</i>		2016	Teberda							
<i>Sicista kluchorica</i> ¹	Elbrus 1	Baskevich 1990	Russia, Kabardino-Balkaria, Elbrus	KM397206	KM397157	KM397293	-	-	-	
<i>Sicista kluchorica</i> ²	Elbrus 2	Baskevich	Russia, Kabardino-Balkaria, Elbrus	KR107027	-	-	-	-	-	
<i>Sicista kluchorica</i> ²	Elbrus 3	Baskevich	Russia, Kabardino-Balkaria, Elbrus	KR107026	-	-	-	-	-	
<i>Sicista kluchorica</i> ²	Elbrus 4	Baskevich	Russia, Kabardino-Balkaria, Elbrus	KR107025	-	-	-	-	-	
<i>Sicista subtilis</i>	Pavlodar	Surov & Tikhonov	Kazakhstan, Pavlodar, Kudaykol	KY967416	KY967464	-	-	-	-	ZMMU S-182802
<i>Sicista subtilis</i>	Tuva	Surov	Russia, Tuva, Kyzyl	KY967415	KY967475	KY967456	KY967503	KY967434	KY967486	
<i>Sicista subtilis</i> ⁴	Kamyshin	Surov & Lebedev	Russia, Volgograd, Kamyshin	-	JQ347923	KY967446	-	-	-	
<i>Sicista subtilis</i>	Astrakhan	Ryurikov 2016	Russia, Astrakhan, Grachi	KY967417	-	-	-	-	-	ZMMU S-197172
<i>Sicista lorigera</i> ⁵	Kinburn	MR 2009	Ukraine, Kherson, Black-Sea Reserve	KP715878	KF854235	-	-	-	-	ZMKNU 7541
<i>Sicista lorigera</i>	Borisovka1	Kovalskaya	Russia, Belgorod, Borisovka	KY967418	-	-	-	-	-	
<i>Sicista lorigera</i>	Borisovka2	Kovalskaya	Russia, Belgorod, Borisovka	-	KY967474	KY967457	KY967504	KY967435	KY967487	
<i>Sicista lorigera</i>	Borisovka 3	Kovalskaya	Russia, Belgorod, Borisovka	-	-	KY967447	-	-	-	
<i>Sicista betulina</i>	Altai	NL 2015	Russia, Altai, Artybash	KY967411	KY967471	KY967455	KY967500	KY967431	KY967483	
<i>Sicista betulina</i>	Moscow	Kovalskaya	Russia, Moscow, Chernogolovka	KY967412	KY967463	KY967448	KY967499	KY967430	KY967482	
<i>Sicista strandi</i>	Tsimlyansk	Kovalskaya	Russia, Rostov, Tsimlyansk sands	KY967414	KY967465	KY967459	KY967502	KY967433	KY967485	ZMMU S-178460
<i>Sicista strandi</i>	Saratov	Tikhonov & Oparin 2005	Russia, Saratov, Slavianka	KY967413	KY967466	-	-	-	-	
<i>Sicista strandi</i>	Provalye	MR 2009	Ukraine, Lugansk, Provalye	-	-	KY967458	KY967501	KY967432	KY967484	ZMKNU 7542
<i>Sicista tianschanica</i>	Tarbagatay	NL 2007	Kazakhstan, East Kazakhstan, Urzhar	KY967410	KY967480	KY967462	KY967498	KY967429	KY967481	ISEA 59532

<i>Sicista tianschanica</i> ¹	East Shan 1	Tien	J.-P. Quéré	China, Xinjiang, Narati	KM397205	KM397154	KM397291	-	-	-
<i>Sicista tianschanica</i> ¹	East Shan 1	Tien	J.-P. Quéré	China, Xinjiang, Narati	KM397204	KM397153	KM397290	-	-	-
<i>Sicista tianschanica</i> ⁶	unknown 3		?	Dzungar Alatau?	-	AF297288	-	-	-	-
<i>Sicista tianschanica</i> ⁷	Xinjiang		?	China, Xinjiang	-	JF938868	JF938765	-	-	-
<i>Sicista concolor</i> ⁸	Sichuan		?	China, Sichuan, Baoxing, Jiajin	KJ648496	-	-	-	-	-
<i>Sicista concolor</i> ⁹	Qinghai		?	China, Qinghai	-	JF835089	-	-	-	-
<i>Sicista concolor</i> ¹	unknown		?	?	-	-	KM397294	-	-	-

ZMMU: Zoological Museum of Moscow State University; ISEA: Institute of Systematics and Ecology of Animals, Novosibirsk; ZMKNU: Zoological Museum of Kiev National University.

References:

- ¹ Pisano J., Condamine F.L., Lebedev V., Bannikova A., Quéré J.P., Shenbrot G.I., Michaux J.R., 2015. Out of Himalaya: the impact of past Asian environmental changes on the evolutionary and biogeographical history of Dipodoidea (Rodentia). *J. Biogeogr.* 42(5): 856–870.
- ² Baskevich M.I., Potapov S.G., Mironova T.A., 2016. Caucasian cryptic species of rodents as models in research on the problems of species and speciation. *Biology Bulletin Reviews* 6(3): 245–259.
- ³ Montgelard C., Forty E., Arnal V., Matthee C.A., 2008. Suprafamilial relationships among Rodentia and the phylogenetic effect of removing fast-evolving nucleotides in mitochondrial, exon and intron fragments. *BMC Evol. Biol.* 8: 321.
- ⁴ Lebedev V.S., Bannikova A.A., Pisano J., Michaux J.R., Shenbrot G.I., 2013. Molecular phylogeny and systematics of Dipodoidea: a test of morphology-based hypotheses. *Zool. Scr.* 42(3): 231–249.
- ⁵ Cserkés T., Rusin M., Sramkó G., 2016. An integrative systematic revision of the European southern birch mice (Rodentia: Sminthidae, *Sicista subtilis* group). *Mammal Rev.* 46(2): 114–130.
- ⁶ DeBry R.W., Sagel R.M., 2001. Phylogeny of Rodentia (Mammalia) inferred from the nuclear-encoded gene IRBP. *Mol. Phylogent. Evol.* 19(2): 290–301.
- ⁷ Wu S., Wu W., Zhang F., Ye J., Ni X., Sun J., Edwards S.V., Meng, J., Organ C.L., 2012. Molecular and paleontological evidence for a post-Cretaceous origin of rodents. *PLoS One* 7(10), e46445.

⁸ Yue H., Yan C., Tu F., Yang C., Ma W., Fan Z., Song, Z., Owens J., Liu S., Zhang X., 2015. Two novel mitogenomes of Dipodidae species and phylogeny of Rodentia inferred from the complete mitogenomes. *Biochem. Syst. Ecol.* 60: 123–130.

⁹ Zhang Q., Xia L., Kimura Y., Shenbrot G., Zhang Z., Ge D., Yang Q., 2013. Tracing the origin and diversification of Dipodoidea (Order: Rodentia): Evidence from fossil record and molecular phylogeny. *Evol. Biol.* 40(1): 32–44.