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DISTRIBUTION AND CONSERVATION STATUS OF THE CAUCASIAN NEWT, *Lissotriton lantzi* (WOLTERSTORFF, 1914)

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In Russia, *Lissotriton lantzi* was recorded in 178 localities in nine provinces and authonomous republics. This species also inhabits the Southern Caucasus in the territory of Georgia, Abkhazia, and South Ossetia (57 localities). The Caucasian newt is possibly extinct in Azerbaijan, Armenia, and Turkey. We developed a species distribution model based on climate and land cover data for identification of suitable habitats. Two variables (precipitation of warmest quarter and altitude) accounted for 84% of the predicted range. The newt is listed in the Red Data Book of Russian Federation and the majority of Red Data books of the North Caucasus provinces and autonomous republics. Main factors influencing the decline of *L. lantzi* populations are destruction and reconstruction of suitable water bodies, catching for pet trade, deforestation and introduction of fishes.

Keywords: Amphibia; Salamandridae; *Lissotriton lantzi*; Caucasian newt; distribution model; conservation status.

INTRODUCTION

The Caucasian newt, *Lissotriton lantzi* (Fig. 1) is an endemic of the Caucasus. The first record (August 1, 1810) of the species ("*Salamandra taeniata*") was noted by Baron B. I. Vietinghoff (1812: 94) in the thermal spring near the Mashuk Mount (now Pyatigorsk, Stavropol kray, Russia). In 1832 the famous entomologist V. I. Mochulskiy provided to the Zoological Museum in St. Petersburg (ZISP.62) two specimens of the species from Armenia. Several additional localities were recorded in the end of the 19th century (Kulagin, 1888; Bedriaga, 1897; Boettger, 1899). In 1908 – 1910, W. Wolterstorff (1914) received from L. Lantz samples of the species from vicinities of Novorossiysk (Russia), Poti and Borjomi (Georgia), and described a new form ("*Triton vulgaris* L. subsp. typica f. Lantzi"). Later, A. M. Nikolsky (1918) raised taxonomic status of this form up to subspecies (*Molge vulgaris lantzi*). Recent molecular studies revealed high genetic differences between *L. vulgaris* and the Caucasian form (Borkin et al., 2004; Babik et al., 2005; Weisrock et al., 2006; Skorinov et al., 2008). Therefore, a full species status was proposed in recent taxonomical reviews (Dubois and Raffaëlli, 2009; Frost, 2014). Some time ago, it was found that *L. lantzi* has no morphological characters that distinguishes it from *L. vulgaris* and therefore these two species were considered as cryptic ones (Borkin et al., 2004;

Fig. 1. The male (*a*) and female (*b*) of *Lissotriton lantzi* from Ldzaa (Abkhazia).

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Litvinchuk et al., 2005; Skorinov et al., 2011; Skorinov and Litvinchuk, 2012). Whereas, recently it was shown that, as a rule, the pattern of ventral coloration in females is different in *L. v. vulgaris* and *L. lantzi* (Skorinov and Litvinchuk, 2013).

Species distribution models, describing distribution using bioclimatic factors, are gaining popularity (Elith et al., 2006). The models have been used to understand ecological requirements of organisms, study niche segregation and facilitate fieldwork by predicting potential occurrence areas for rare species, improving conservation, and numerous other applications (Bombi et al., 2009). Presence-only records from different sources such as museum collections or on-line databases provide valuable resources for modeling efforts (Graham et al., 2004). Developments in modeling techniques have allowed these data to be used to predict species distributions (Kaliontzopoulou et al., 2008).

In this study, using maximum entropy modeling, we tried to fill in the knowledge gap that exists in the distribution pattern of *L. lantzi*. This allowed us to estimate the predicted species distribution, amount of remaining and potentially suitable habitats, and conservation status of the species in various parts of the range.

MATERIAL AND METHODS

The distribution of *L. lantzi* was modeled using all known georeferenced localities (see *Appendix*). Duplicated localities were removed by ENMTools 1.3 (Warren et al., 2010). For the contemporary niche predictions, we used 19 bioclimatic variables and the altitude from the WorldClim data set (http://www.worldclim.org), and the land cover variable from the GLCF data set (http://glcf.umd.edu/data/landcover/data.shtml), which were converted to geospatial layers with 1′ resolution in ArcGIS 10 (ESRI, 2011).

Following methodology from Hijmans et al. (2005) and Waltari et al. (2007) and to avoid highly-correlated and redundant climatic variables (which can cause overparameterization and loss of predictive power), correlations between pairs of variables were assessed using the Pearson correlation coefficient by ENMTools. Two variables sharing a correlation coefficient of 0.8 or higher were considered highly correlated. Previous knowledge on the biology and requirements of the studied species is crucial for optimal modeling (Sardà-Palomera and Vieites, 2011); we therefore selected climatic variables based on known preferences of *L. lantzi*. After correcting for correlation among data layers, four bioclimatic variables were retained: Bio6 (minimal temperature of coldest month, °C), Bio9 (mean temperature of driest quarter, °C), Bio11 (mean temperature of coldest quarter, °C), and Bio18 (precipitation of warmest quarter, mm).

The model was generated by Maxent (ver. 3.3.3k; Phillips et al., 2006; Phillips and Dudik, 2008), an algorithm that uses environmental parameters in combination with geographical coordinates that produces high quality predictions of species distribution, often more reliable when evaluated and compared with other predictive models (Hernandez et al., 2006; Jiménez-Valverde et al., 2008; Giovanelli et al., 2010). This model minimizes the relative entropy between two probability densities (one from presence data and one from landscape configuration) defined in covariate space (Elith et al., 2010, 2011) and the model output displays relative occurrence probability of a species within grid cells of the study area. Maxent was used with default settings: convergence threshold = 0.00001, maximum number of iterations = 500, and $\beta_j = 1$. We used 75% of the occurrence localities as training data, and the remaining 25% were reserved for testing the resulting models. We evaluated our predicted model using Area Under the Curve (AUC) derived from the Receiver Operating Characteristic (ROC) plots. The ROC plots represent a model's ability to discriminate species locations from pseudo-absences by plotting sensitivity against 1 — specificity (Fielding and Bell, 1997). Area under curve values range from 0.5 to 1.0, with 0.5 indicating no greater fit than expected by chance and 1.0 indicating perfect model fit (Hosmer and Lemeshow, 2000). Since AUC is not a reliable measure of accuracy of the model by itself (Jiménez-Valverde, 2012), we considered the omission error (the fraction of presence locations wrongly predicted as absence) to make an improved measure for accuracy evaluation of the model. Models with test AUC values above 0.75 are considered useful and above 0.90 very good (Swets, 1988; Elith, 2002). The continuous favorability map of Maxent output was converted into a binary map representing suitable/unsuitable areas using maximum training sensitivity plus specific logistic thresholds, which is a recommended suitability threshold (Liu et al., 2005). Finally, we estimated relative contributions of variables to Maxent model using a jackknife analysis. By performing the model repeatedly leaving out one variable at a time, and then computing a model using each variable alone, the importance of each variable within the model was determined (Philips et al., 2006; Elith et al., 2011).

We extracted the altitude and climatic data for each locality from a set of GIS layers using the program ENVI 4.3.

A map of the distribution of forests was constructed using a geospatial layer downloaded from the GLCF database (2000 – 2001; ~0.5 km resolution; www.landcover.org; Hansen et al., 2002).

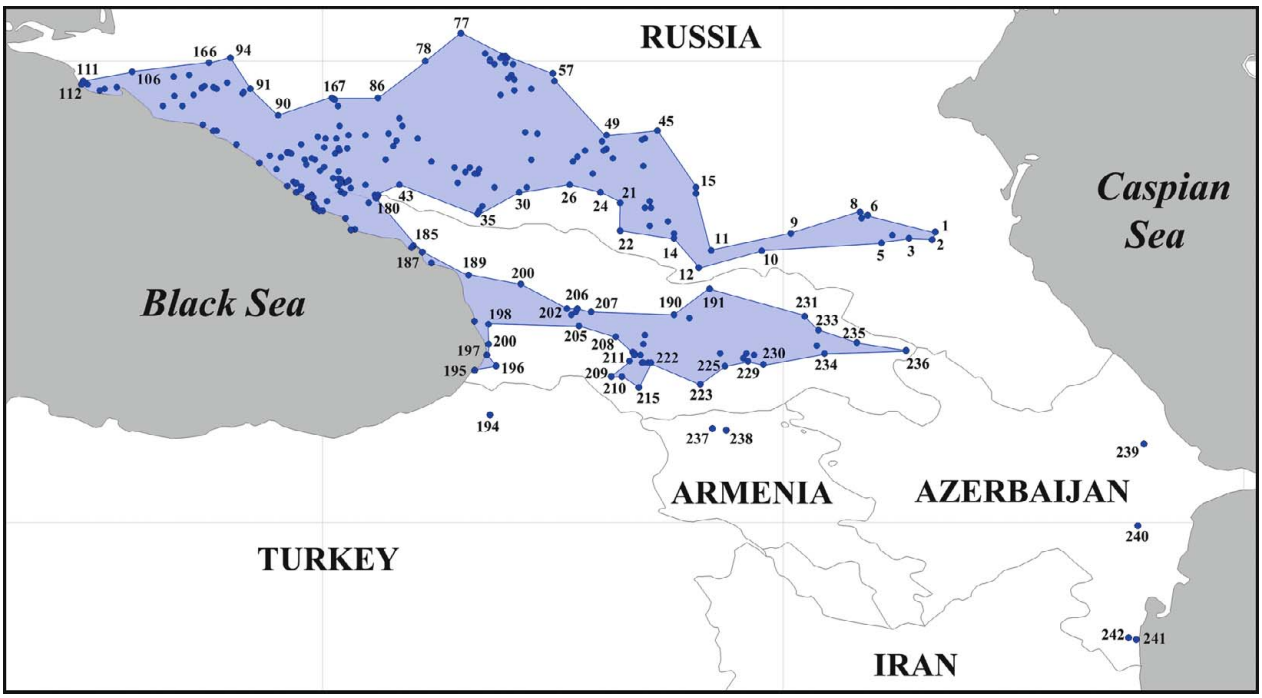

Fig. 2. Distribution of *Lissotriton lantzi*. The numbers of localities are the same as in *Appendix*.

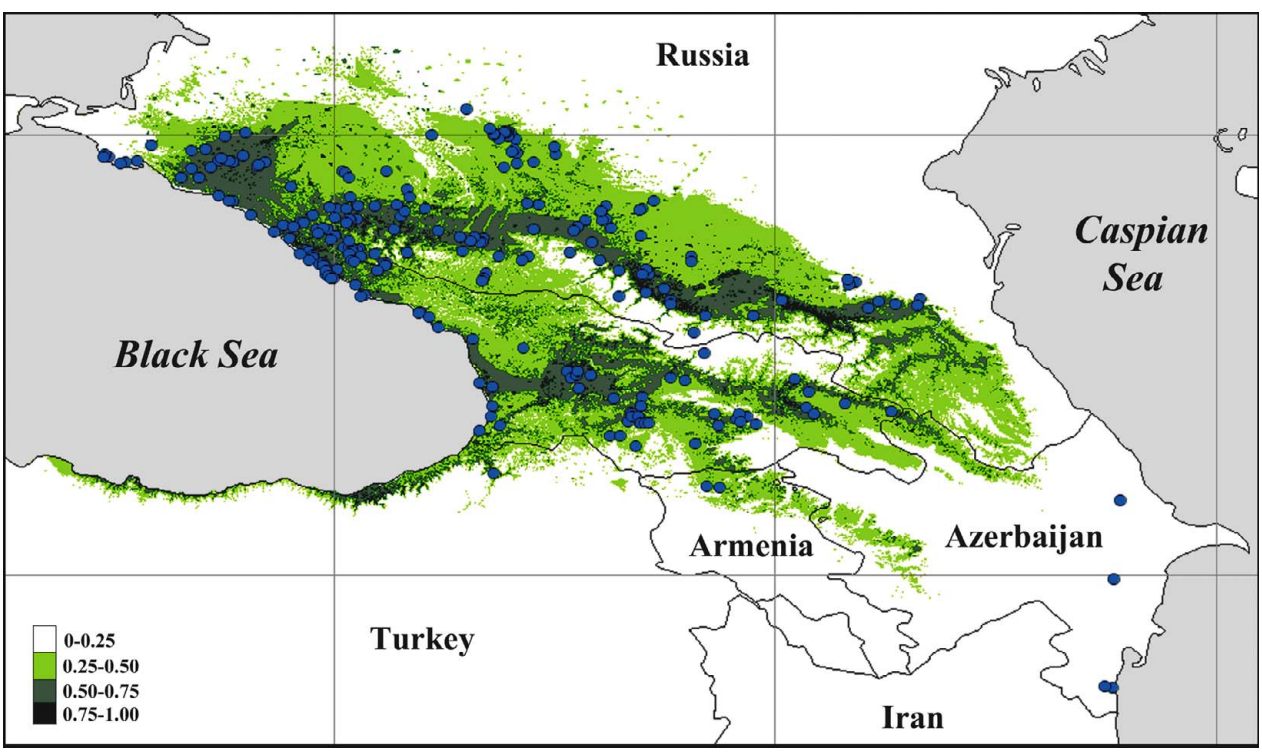

Fig. 3. Predicted potential geographic distribution for *Lissotriton lantzi* made using all known records (blue circles). All areas with black (high suitability), dark green (medium), and light green (low) colors likely represent suitable environmental conditions.

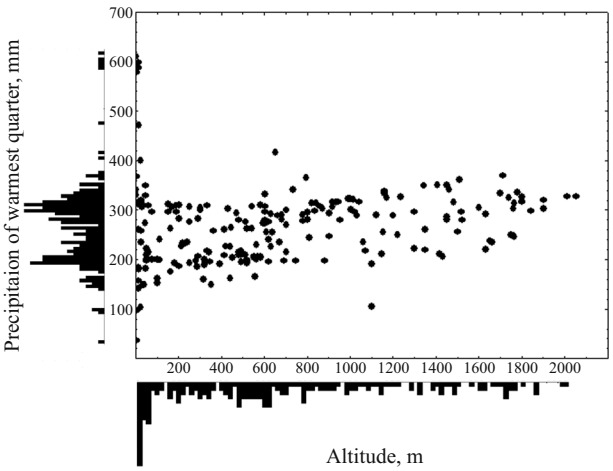

Fig. 4. Distribution of altitude and precipitation of warmest quarter among localities of *Lissotriton lantzi*.

RESULTS AND DISCUSSION

According to our data, 242 localities of *L. lantzi* are known (Fig. 2 and *Appendix*). The species inhabits the northern and south-western parts of the Great Caucasus Mountains, the Stavropol Highland, the Colchis Lowlands, and the north-western part of the Lesser Caucasus on the territory of Russia (178 localities), Abkhazia (11), South Ossetia (4), and Georgia (42). Isolated populations are known from north-eastern Turkey (No. 194), northern Armenia (Nos. 237 – 238), and eastern Azerbaijan (Nos. 239 – 242). An introduced population is known from the vicinities of Rostov-on-Don City, Russia (Belik, 2011).

The model obtained with Maxent had high (0.918) mean test AUC value and showed significance for the binomial omission test, indicating good performance of the model. The predicted potential niche model under the current climate conditions is shown in Fig. 3. According to the model, the most suitable conditions for *L. lantzi* are found in the northern and southern slopes of the Great Caucasus, the Stavropol Highland, the northern slopes of the Lesser Caucasus, and the south-eastern shore of the Black Sea in Turkey (Fig. 3). The Abrau Peninsula (Nos. 107 – 112) and the Lenkoran' Lowland in Azerbaijan (Nos. 239 – 242) has less suitable (or unsuitable) conditions for the species.

The relative importance of each variable and its associated jack-knife tests are provided in Table 1. Two variables (precipitation of warmest quarter and altitude) accounted for 84% of the predicted range. The precipitation of warmest (i.e., summer) quarter has the most important influence of the distributional pattern of the species (58.2%). Applying only single variables, the precipitation of warmest quarter contains a lot of information not present in other variables (Table 1).

Most populations of *L. lantzi* are located in a zone with precipitation of warmest quarter of 150 – 350 mm (average 268 mm; SD = 78; n = 241; Fig. 4). Four Azerbaijan populations are situated in the very dry zone (38 – 106 mm) and five populations from the Colchis Lowlands are present in the very moist zone (579 – 612 mm). Dry regions to the north and south of the Caucasus limit the distribution of the species.

According to our data, *L. lantzi* was recorded in various altitudes from 0 to 2500 m above sea level (a.s.l.). The highest locality is Aishkha-1 Mount in Krasnodar kray of Russia (No. 146). However, some authors (Tarkhnishvili and Gokhelashvili, 1999) indicated 2700 m as the highest limit of the species range (in "the central part of the North Caucasus"). In general, the altitudinal range curve has inverse proportional dependency with most frequented populations in low altitudes (Fig. 4).

The main range of the species is linked to the forest zone (Figs. 5 – 7). However, some populations could be found in the subalpine or steppe zones. Sometimes, this species could be found in anthropogenic transformed landscapes, such as bushes, parks, gardens, meadows, and agricultural territories (Fig. 8). In the north-western part of the Caucasus, most records were registered in subalpine meadows, rhododendron bushes, and birch elfin-woodland (Tuniyev, 2008). The Caucasian newt was not found in dark coniferous forests (Tuniyev and Tuniyev, 2006). It was previously noted that in general the abundance of the species is reduced in eastern and south-western directions (Kuzmin, 2001). This species is relatively common and abundant in Krasnodar kray, Adyghe,

TABLE 1. Relative contribution of each variable to the *Lissotriton lantzi* distribution model from Maxent.

Variable	Contribution	AUC without ...	AUC only with ...
Altitude	25.8	0.91	0.77
Minimal temperature of coldest month	4.3	0.92	0.68
Mean temperature of driest quarter	3.0	0.92	0.74
Mean temperature of coldest quarter	2.0	0.92	0.69
Precipitation of warmest quarter	58.2	0.88	0.90
Land cover	6.7	0.91	0.80

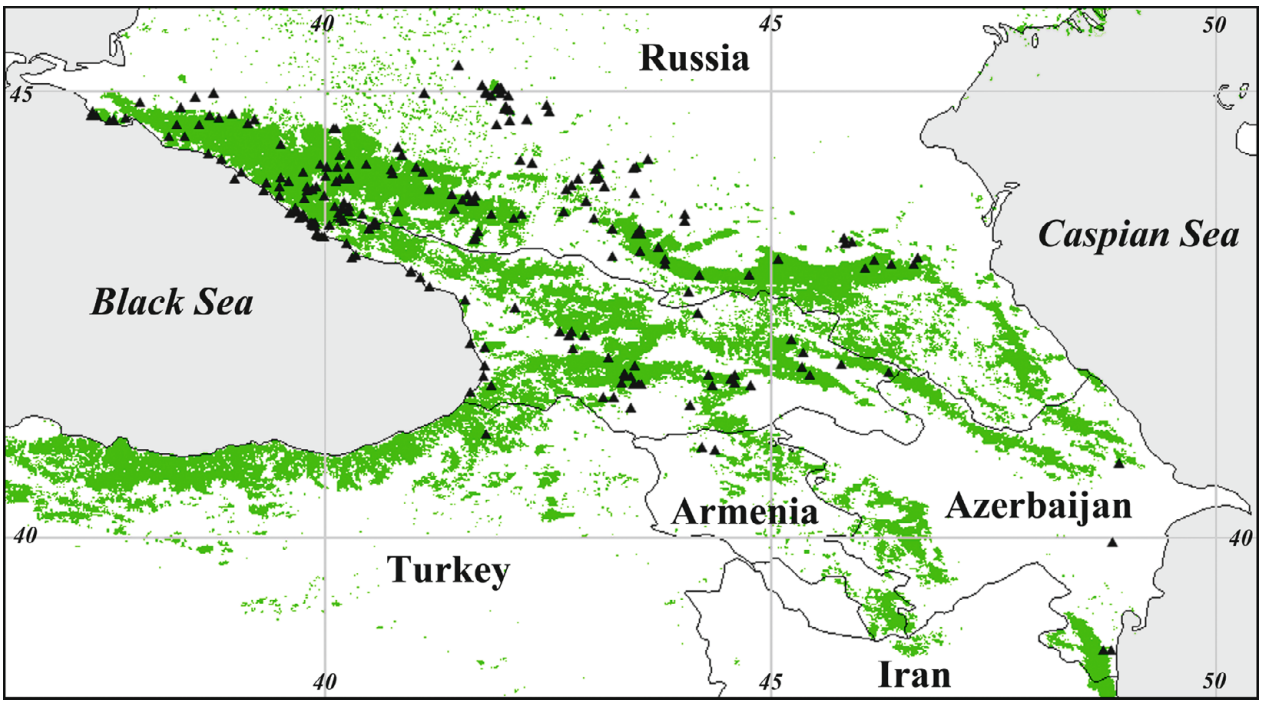

Fig. 5. Map of distribution of forests (green area) in the Caucasus. Dark triangles are records of *Lissotriton lantzi*.

Stavropol Highland, the northern part of Abkhazia, and some parts of Georgia, and very scarce in Daghestan, Chechnya, Ingushetia, North Ossetia-Alania, Kabardino-Balkaria, Karachaevo-Cherkessia, and South Ossetia.

Extinction of the species is assumed for Turkey, Azerbaijan, and Armenia where reliable records of the species have not been registered since 1911, 1974, and 1976, respectively (Eiselt, 1966; Alekperov, 1982; Arakelyan et al., 2011). The extinction of the species in the Lenkoran' Lowland (Azerbaijan) took place after introduction (since 1932; see Den'gina, 1946) of the North American fish *Gambusia holbrooki* Girard, 1859, which can prey on the newt larvae. According to our observations, the main factors which influence the decline of *L. lantzi* populations are destruction and reconstruction of suitable water bodies. Negative consequences have also catching for pet trade, deforestation, drainage and contamination of water bodies, introduction of fishes and common raccoons, resort and city development, and pasturage (Rasulov, 1998; Kuzmin, 2001; Lotiev, 2007; Tuniyev, 2008). The decline and even extinction of some populations of the species was registered by us near such

TABLE 2. Conservation status of *Lissotriton lantzi* populations in various countries and regions*

Country, region	Conservation status	References
Russia (in general)	Least concern	Kuzmin, 2001
Krasnodar Kray, Russia	Near threatened	Tuniyev and Tuniyev, 2007
Adygeya Republic, Russia	Vulnerable	Tuniyev and Tuniyev, 2012
Stavropol Kray, Russia	Vulnerable	Tertyshnikov, 2004; Doronin, 2013
Karachaevo-Cherkessia Republic, Russia	Near threatened	Doronin, 2008, 2014
Kabardino-Balkaria Republic, Russia	Critically endangered	Dzuev and Ivanov, 2000
Northern Ossetia-Alania Republic, Russia	Data deficient	Lipkovich, 2000
Ingushetia Republic, Russia	Data deficient	Bathiev and Tochiev, 2007
Chechnya Republic, Russia	Data deficient	Lotiev, 2007
Daghestan Republic, Russia	Critically endangered	Mazanaeva and Askenderov, 2009
Azerbaijan	Critically endangered	The Red Book of Azerbaijan SSR, 1989

**Lissotriton lantzi* is lacking in red data books of Armenia and Georgia. Red data books of Abkhazia and South Ossetia do not exist.

Fig. 6. Biotop of *Lissotriton lantzi* in Ldzaa (Abkhazia).

large cities as Stavropol, Armavir, Krasnodar, and Sochi. The best solution for increasing the abundance of the species is to dig new ponds at forest edges which the newt could readily use for breeding.

The Caucasian newt is included in the Red Data Book of Russian Federation, is listed in the majority of Red Data books of North Caucasus regions (see Table 2). As a subspecies of *L. vulgaris*, it was included in the Bern Convention on the Conservation of European Wildlife and Natural Habitats (Appendix III). We recommend including this species in Red Data books of Georgia, Abkhazia, and South Ossetia. This species is protected in several nature reserves and natural parks of Russia, Abkhazia, and Georgia (Borkin and Krever, 1987; Darevsky, 1987; our *Appendix*). The most abundant populations are known in the territory of Sochi National Park and Caucasian State Nature Biosphere Reserve in Russia and Malaya Ritza Lake (where fish are lacking) in Ritza's Relict National Park in Abkhazia (Fig. 7).

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APPENDIX

Museum abbreviations: CAS, California Academy of Sciences, USA; GNM, Gothenburg Natural History Museum, Sweden; MNCN, Museo Nacional de Ciencias Naturales, Madrid, Spain; MCZ, Museum of Comparative Zoology, Harvard University, Cambridge, UK; SMG, State Museum of Georgia, Tbilisi, Georgia; SSMR, G. N. Prozritelev and G. K. Prave Stavropol State Museum-Reserve, Stavropol, Russia; USNM, Smithsonian National Museum of Natural History, Washington, USA; ZISP, Zoological Institute of Russian Academy of Sciences, St. Petersburg, Russia; ZMA, Zoological Museum, Amsterdam, Netherlands; ZMKhSU, Zoological Museum of Nature at V. N. Karazin's Kharkov National University, Kharkov, Ukraine; ZMMNK, Zoological Museum of National Museum of Natural History of Ukraine

Fig. 7. Biotop of *Lissotriton lantzi* in Malaya Ritza Lake (Abkhazia).

of National Academy of Sciences, Kiev, Ukraine; ZMMSU, Zoological Museum of Moscow State University, Moscow, Russia; ZMSpbSU, Zoological Museum, St. Petersburg State University, St. Petersburg, Russia; ZMStSU, Zoological Museum of Stavropol' State University, Stavropol', Russia.

Daghestan Republic, Russia

1. Endirey village, 43°09′ N 46°39′ E, ~315 m (Mazanaeva and Askanderov, 2009).

2. Dylym village, 43°04′ N 46°37′ E, ~690 m (Mazanaeva, 2000; Lotiev, 2007; Skorinov, 2009; Kuzmin, 2013).

Chechnya Republic, Russia

3. Nozhay-Yurt village, 43°05′ N 46°22′ E, ~480 m (Tochiev, 1987; Tarkhnishvili and Gokhelashvili, 1999).

4. Between Yalkoy-Mokhk and Akhkinchu-Borzoy villages, 43°07′ N 46°11′ E, ~390 m (Raffaëlli, 2000; Lotiev, 2007; Kuzmin, 2013).

5. Between Pervomayskoe village and Erten-Kort Mount, 43°02′ N 46°04′ E, ~900 m (Raffaëlli, 2000; Lotiev, 2007; Kuzmin, 2013).

6. Terek River, forests in valley, ~43°20′ N 45°55′ E (Ryzhikov et al., 1991).

7. Argun River, lower part, ~43°18′ N 45°51′ E (Ryzhikov et al., 1991; Kuzmin, 2013).

8. Sunzha River, lower part, ~43°22′ N 45°50′ E (Ryzhikov et al., 1991; Kuzmin, 2013).

Ingushetia Republic, Russia

9. Sunzha District, ~43°08′ N 45°05′ E (Afonas'ev, 1961).

Republic of North Ossetia-Alania, Russia

10. Tarskoe village, 42°57′ N 44°46′ E, ~795 m (Naniev, 1983; Alekseev and Udovkin, 2001; Lotiev, 2007; Kuzmin, 2013).

11. Tamisk resort, 42°57′ N 44°13′ E, ~735 m (Naniev, 1983; Alekseev and Udovkin, 2001; Kuzmin, 2013).

12. North-Ossetian Nature Reserve, ~42°46′ N 44°05′ E (Darevsky and Krever, 1987; Kuzmin, 2013).

13. Akhsarisar village, 43°08′ N 43°49′ E, ~835 m (Naniev, 1964, 1983; Alekseev and Udovkin, 2001; Kuzmin, 2013).

14. Kalukh village, 43°05′ N 43°49′ E, ~915 m (Naniev, 1983; Alekseev and Udovkin, 2001).

Kabardino-Balkaria Republic, Russia

15. Zverosovkhoz village, 43°38′ N 44°03′ E, 211 m (A. V. Kolchenko, personal communication).

16. Kotlyarevskaya village, 43°34′ N 44°03′ E, 223 m (Krasavtsev, 1940; Kuzmin, 2013).

Fig. 8. Biotop of *Lissotriton lantzi* in Machara village (Abkhazia).

17. Khasan'ya village, 43°25′ N 43°34′ E, ~595 m (Khaltukhov and Yakimov, 2004).

18. Golubye Lakes, 43°13′ N 43°33′ E, ~870 m (Dzuev and Ivanov, 2000).

19. Kenzhe village, 43°29′ N 43°33′ E, ~520 m (Khaltukhov and Yakimov, 2004; Kuzmin, 2013).

20. Belaya Rechka village, 43°25′ N 43°30′ E, ~680 m (Khaltukhov and Yakimov, 2004).

21. Nalchik City, 43°28′ N 43°26′ E, ~600 m (Khaltukhov and Yakimov, 2004; Lotiev, 2007).

22. Kabardino-Balkarian nature reserve, ~43°10′ N 43°14′ E (Borkin and Krever, 1987; Kuzmin, 2013).

23. Tambukan Lake, 43°57′ N 43°09′ E, 561 m (Khaltukhov and Yakimov, 2010).

24. Gundelenskoe canion, 43°35′ N 43°01′ E, ~1040 m, M. A. Purmak and K. A. Purmak, 07.1998, ZMStSU (Ermolina and Doronin, 2010; Kuzmin, 2013).

25. Kichmalka River, 43°47′ N 42°56′ E, ~1000 m (A. V. Yakimov, personal communication).

26. Malka River, upper part, 43°40′ N 42°41′ E, 1779 m (Khaltukhov and Yakimov, 2010).

Karachaevo-Cherkessia Republic, Russia

27. Kuban' Reservoir, 44°13′ N 42°20′ E, ~636 m (Karavaev, 2006).

28. Indysh Settlement, 10 km to the east, 43°38′ N 42°13′ E, ~1460 m, 05.07.1981, ZMMNK. 3071 (Pisanets, 2003; Kuzmin, 2013).

29. Maloe Lake, 44°14′ N 42°12′ E, ~608 m (Karavaev, 2006).

30. Elbursskiy Settlement, 43°35′ N 42°08′ E, ~1160 m (Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Kuzmin, 2013).

31. Nizhnyaya Teberda village, 43°38′ N 41°52′ E, 1700 m, M. F. Tertyshnikov, 10.07.1980, ZMMNK. 1099; 24.05.1981, ZMMNK.3067 (Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Pisanets, 2003; Kuzmin, 2013).

32. Teberda Town, 43°26′ N 41°44′ E, ~1340 m, M. F. Tertyshnikov, 15.06.1980, ZMMNK.1099.

33. Kordonikskaya village, 43°50′ N 41°42′ E, ~914 m (Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Kuzmin, 2013).

34. Teberda Nature Reserve, "kordon," 43°23′ N 41°42′ E, ~1406 m, 18.05.1981, ZMMNK.3068 and 3070 (Borkin and Krever, 1987; Tertyshnikov et al., 1989; Pisanets, 2003).

35. Teberda Town, 7 km to the south, 43°21′ N 41°41′ E, ~1450 m (Doronin, 2008; Kuzmin, 2013).

36. Aksau Reservoir, 43°47′ N 41°41′ E, ~992 m (Karavaev, 2006).

37. Marukhskoe Reservoir, 43°47′ N 41°39′ E, ~997 m (Karavaev, 2006).

38. Zelenchukskaya village, 43°51′ N 41°36′ E, ~935 m (Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999).

39. Dausuz village, 43°48′ N 41°33′ E, 800 – 900 m (Pisanets, 2012).

40. Bukovo village, 43°41′ N 41°28′ E, ~1160 m, 22.05.1981, ZMMNK.3070.

41. Storozhevaya village, 43°51′ N 41°26′ E, ~943 m, M. F. Tertyshnikov, 23.05.1982, ZMMNK.2998; A. V. Gubina, 05.2000, ZMStSU (Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Pisanets, 2003; Doronin, 2008; Ermolina and Doronin, 2010; Kuzmin, 2013).

42. Yubileynyi Settlement, 43°55′ N 41°11′ E, 800 m, 24.05.1981, ZMMNK.3066 (Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Pisanets, 2003; Kuzmin, 2013).

43. Damkhurts Settlement, 43°40′ N 40°50′ E, ~1170 m, A. G. Vysotin, 08.1987, ZMStSU (Doronin, 2008; Ermolina and Doronin, 2010; Kuzmin, 2013).

Stavropol Kray, Russia

44. Soldato-Aleksandrovskoe village, 44°16′ N 43°45′ E, 190 m (Doronin, 2008).

45. Novozavedennoe village, 44°15′ N 43°38′ E, 200 m (Doronin, 2008; Kuzmin, 2013).

46. Krasnokumskoe village, Safonovskiy forest, 44°10′ N 43°30′ E, 250 m (Doronin, 2008).

47. Mar'inskaya village, 43°52′ N 43°29′ E, 440 m (Tertyshnikov, 1999, 2003; Kuzmin, 2013).

48. Georgievsk Town, 44°09′ N 43°28′ E, 280 m (Tertyshnikov, 1999; Lotiev, 2007; Kuzmin, 2013).

49. Mineral'nye Vody Town, 44°12′ N 43°05′ E, 344 m (O. V. Bezman-Maseyko, 2010, personal communication).

50. Mashuk Mount, 44°03′ N 43°05′ E, 810 m (our data).

51. Pyatigorsk Town, 44°02′ N 43°03′ E, 490 m, A. A. Brauner, 05.1905, ZMMNK.2470 (Tertyshnikov, 1977, 1999; Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Pisanets, 2003; Kuzmin, 2013).

52. Zheleznovodsk City, 44°08′ N 43°02′ E, 639 m, A. A. Brauner, 06.1906, ZMMNK.2471; 1976, ZMMNK.2584 (Gorovaya and Tertyshnikov, 1983; Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Tertyshnikov, 1999; Pisanets, 2003; Kuzmin, 2013); Lermontov thermal spring (Vietinghoff, 1812).

53. Essentuki Town, 44°02′ N 42°51′ E, 620 m (Tertyshnikov, 1999).

54. Podkumok Settlement, 43°58′ N 42°46′ E, 700 m (Tertyshnikov, 1999).

55. Kislovodsk Town, Podkumok River, 43°55′ N 42°43′ E, 780 m, 20.05.1912, ZMKhSU.26382 (Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Tertyshnikov, 1999; Zinenko and Goncharenko, 2009; Kuzmin, 2013).

56. Kunitskiy forest, 44°47′ N 42°31′ E, 320 m (Gorovaya and Tertyshnikov, 1983; Tertyshnikov and Garanin, 1984; Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Tertyshnikov, 1999; Kuzmin, 2013).

57. Verkhniy Yankul' Settlement, 44°52′ N 42°30′ E, 520 m, M. F. Tertyshnikov, 23.05.1979, ZMMNK.1922 (Tarkhnishvili and Gokhelashvili, 1999; Tertyshnikov, 1999; Kuzmin, 2013).

58. Yankul' village, Yankul' forest, 44°42′ N 42°16′ E, 490 m (Vysotin and Tertyshnikov, 1988).

59. Novoekaterinovskaya village, 44°41′ N 42°05′ E, 507 m (Kuzmin, 2013; our data).

60. Nevinnomysskaya Mount, 44°38′ N 41°56′ E, 340 m, E. A. Shebzukhova, 1967, ZISP.4194 (Kuzmin, 2013).

61. Temnolesskaya village, 44°51′ N 42°03′ E, 450 m (our data).

62. Strizhament Hill, "Tyomnyi les," 44°49′ N 42°01′ E, 700 m (Krasavtsev, 1940; Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Khokhlov, 1993).

63. Lipovchanskiy homestead, 44°48′ N 42°05′ E, 480 m, K. A. Purmak, 04.2000, ZMStSU (Doronin, 2008; Ermolina and Doronin, 2010).

64. Vshivoe Lake, 44°58′ N 42°04′ E, 510 m (Krasavtsev, 1940; Fedorov, 1956).

65. Mutnyanka beam, 45°02′ N 42°00′ E, 490 m, 19.04.1981, ZMMNK.3064; K. A. Purmak, 03.2000, ZMStSU (Pisanets, 2003; Doronin, 2008; Ermolina and Doronin, 2010; Kuzmin, 2013).

66. Stavropol' City, 45°03′ N 41°59′ E, 620 m, M. F. Tertyshnikov, 06.1975, ZMMNK.2582 – 2583, 7.04.1979, ZMMNK.1098 and 25.03.1979, ZMMNK.1771 and 1921; S. N. Litvinchuk and K. A. Purmak, 14.06.2002, ZISP.7572 (Luchnik, 1908; Krasavtsev, 1938, 1940; Vysotin and Tertyshnikov, 1988; Pisanets, 2003; Litvinchuk et al., 2004; Lotiev, 2007; Skorinov et al., 2008; Skorinov, 2009).

67. Mamayskiy forest, Koryta point, 44°59′ N 41°59′ E, 580 m, M. A. Purmak and K. A. Purmak, 05.1997, ZMStSU; 28.04.1998, SSMR (Doronin, 2008; Ermolina and Doronin, 2010).

68. Former estate of N. Ya. Dinnik, 45°02′ N 41°58′ E, 560 m, 15.05.1924, SSMR (Doronin, 2008).

69. Komsomol'skie ponds, 45°03′ N 41°57′ E, 520 m (Gnilovskiy et al., 1951).

70. Sipyagin, pond, 45°03′ N 41°57′ E, 498 m (Gnilovskiy et al., 1951).

71. Arkhiereysky forest, 45°02′ N 41°57′ E, 580 m, 04.1921 and 1922, SSMR (Doronin, 2008).

72. Tashly beam, 45°02′ N 41°56′ E, 570 m (Gnilovskiy et al., 1951).

73. Tatarka village, Tatarskiy forest, 44°58′ N 41°52′ E, 550 m, M. F. Tertyshnikov, 3.05.1978, ZMMNK.795 (Pisanets, 2003; Skorinov, 2009).

74. Kravtsovo Lake, 45°00′ N 41°49′ E, 550 m (Krasavtsev, 1940; Fedorov, 1956; Kuzmin, 2013).

75. Sobachiy homestead, 45°01′ N 41°49′ E, 410 m, M. F. Tertyshnikov, 05.1979, ZMMNK.1923 (Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Tertyshnikov, 1999; Pisanets, 2003).

76. Molochnyi homestead, Sengileevskoe Reservoir, 45°05′ N 41°46′ E, 287 m (V. G. Danilevich, personal communication).

77. Solnechnodol'sk Settlement, Novotroitskoe Reservoir, 45°18′ N 41°30′ E, 160 m (Vysotin and Tertyshnikov, 1988; Tarkhnishvili and Gokhelashvili, 1999; Tertyshnikov, 1999; Kuzmin, 2013).

Krasnodar Kray, Russia

78. Armavir Town, 45°00′ N 41°07′ E, ~180 m, V. Volnukhin, 10.04.1911, ZISP.2462 (Bartenev and Reznikova, 1935; Krasavtsev, 1940; Kuzmin, 2013).

79. Akhmetovskaya village, 44°10′ N 41°02′ E, ~600 m (Zhukova, 2006).

80. Mostovskoy Settlement, Laba River, 44°23′ N 40°46′ E, ~360 m (Zhukova, 2006; Kuzmin, 2013).

81. Laba River, upper part, ~44°18′ N 40°52′ E, ~445 m, E. Yutner, 10.08.1909, SMG. 243a (Zhordaniya, 1960).

82. Psebay Settlement, 44°05′ N 40°46′ E, 682 m, A. A. Brauner, 06.1905, ZMMNK.2464; V. Volnukhin, 21.04.1911, ZISP.2465 (Nikolsky, 1918; Bartenev and Reznikova, 1935; Krasavtsev, 1940; Schmidtler and Schmidtler, 1967; Pisanets, 2003; Skorinov et al., 2008; Skorinov, 2009; our data).

83. Gerpigem Ridge, 44°08′ N 40°48′ E, 900 m (Tuniev, 1994; Tuniyev and Tuniyev, 2007; our data).

84. Besleneevskaya Village, 44°13′ N 40°43′ E, ~490 m (Kuzmin, 2013).

85. Chernorech'e kordon, 43°56′ N 40°41′ E, ~900 m (our data).

86. Vostochnyi Settlement, 44°36′ N 40°36′ E, ~325 m (Kuzmin, 2013).

87. Tur [= Gurmay] Mount, 44°12′ N 40°28′ E, ~1120 m (Tuniyev, 1985; Tarkhnishvili and Gokhelashvili, 1999).

88. Kamyshanova Polyana biological station, 44°10′ N 40°02′ E, ~1200 m, N. S. Golubev, 27.05.1979, ZISP.6160; students of Kalmyk State University, 2008, ZISP.11193 (Zhukova, 1987; Peskova and Zhukova, 2009; Skorinov, 2009); Kamyshanova Polyana nature reserve (Ostrovskikh, 2012).

89. Mezmay Village, 44°11′ N 39°57′ E, 800 m (Zhukova, 1988).

90. Khadyzhensk Town, 44°25′ N 39°31′ E, ~110 m, N. S. Golubev, 18.05.1980, ZISP.6161 (Skorinov, 2009; Kuzmin, 2013; our data).

91. Saratovskaya village, 44°42′ N 39°13′ E, ~50 m (Zhukova, 2006).

92. Goryachiy Klyuch Town, 44°39′ N 39°08′ E, 56 m, A. M. Peklo, 15.04.1975, ZMMNK.270 and 737; N. S. Golubev, 15.02.1978, ZISP.6159; A. G. Vysotin, 05.04.1989, ZMStSU (Golubev, 1985; Pisanets, 2003; Kuzmin, 2013; our data).

93. Goryachiy Klyuch Town, 4 km to north-east, 44°40′ N 39°09′ E, 113 m (our data).

94. Krasnodar City, 45°02′ N 39°00′ E, ~25 m, A. Geydmann, 30.07.1916, SMG.335; V. F. Del'vig, 1929, ZISP.3445 (Krasavtsev, 1940; Zhordaniya, 1960; Zhukova, 1988; Kuzmin, 2013; our data).

95. Kaluzhskaya village, 44°46′ N 38°58′ E, 76 m (Babik et al., 2005).

96. Ubinskaya Settlement, 44°42′ N 38°51′ E, 177 m (Ostrovskikh, 2011a; Kidov et al., 2013; our data).

97. Rimba and Kalina springs, 44°42′ N 38°32′ E, 345 m (Ostrovskikh, 2011a).

98. Stavropolskaya village, 44°43′ N 38°49′ E, ~49 m (Zhukova, 1984; Kuzmin, 2013).

99. Krepostnaya village, 44°42′ N 38°40′ E, 106 m (Kuzmin, 2013; our data); Afips River canion (Zhukova, 1984).

100. Krepostnaya village, 4 km to north, 44°44′ N 38°43′ E, 51 m (our data).

101. Dzhubga Settlement, 44°19′ N 38°42′ E, ~50 m (Zhukova, 2006).

102. Plancheskaya Schel' village, 44°38′ N 38°36′ E, ~100 m (Zhukova, 1984; Golubev, 1985).

103. Il'skiy Settlement, Il' River, 44°51′ N 38°33′ E, ~60 m, 05.1969 (Zhukova, 1973; Kuzmin, 2013).

104. Kholmskaya village, Kabl' River, 44°50′ N 38°23′ E, ~48 m (Ostrovskikh et al., 2002)

105. Vozrozhdenie Settlement, 44°31′ N 38°16′ E, ~290 m, E. A. Dunaev and E. Babanin, 06.04.2012, ZMMSU.4577.

106. Krymsk Town, Krasnoe Lake, 44°53′ N 37°56′ E, ~100 m (Zhukova, 2006; Kuzmin, 2013).

107. Novorossiysk Town, 44°43′ N 37°46′ E, ~10 m (Lantz, 1909, 1912; Wolterstorff, 1914, 1925; Tuniyev and Tuniyev, 2007; Pisanets, 2012); Tsemesskaya bay, Yu. M. Korotkov, 1972, ZISP.6089.

108. Glebovka village, 44°42′ N 37°38′ E, 31 m (Skorinov et al., 2008; Skorinov, 2009; our data).

109. Abrau-Dyurso Settlement, 44°41′ N 37°35′ E, ~100 m, N. N. Szczerbak, 27 – 29.05.1961, ZMMNK.117 (Pisanets, 2003).

110. Sukhoy Liman Lake, 44°45′ N 37°27′ E, 350 m (Kidov, 2007; Skorinov, 2009; our data).

111. Sukko Settlement, 44°47′ N 37°24′ E, ~12 m (Ostrovskikh, 2011b).

112. Bol'shoy Utrish village, 44°46′ N 37°23′ E, ~40 m, V. L. Yakhontov, 03.1997, ZMMSU.3906 (Kuzmin, 2013).

113. Papay Mount, 44°38′ N 38°24′ E, ~300 m (Tuniyev and Tuniyev, 2007; Tuniyev, 2008; our data).

114. Oblego Mount, 44°31′ N 38°29′ E, ~570 m (Tuniyev, 2008; Tuniyev and Tuniyev, 2007; our data); Pshada River, middle and upper part (Tuniyev, 2000).

115. Novomikhaylovskiy Settlement, "Vostok" resort, 44°15′ N 38°51′ E, ~25 m, K. D. Milto, 14.10.1995, ZISP.5878.

116. Novomikhaylovskiy Settlement, "Orlyonok" camp, 44°15′ N 38°49′ E, ~15 m, K. D. Milto, M. G. Paramonov, 9.10.2000, ZISP.6745 (Kuzmin, 2013).

117. Tuapse Town, 44°06′ N 39°04′ E, ~10 m (Bannikov et al., 1977; Kuzmin, 2013).

118. Cheshe Lake, 44°06′ N 39°46′ E, 1631 m (Tuniyev, 1995; Kuzmin, 2013); Fisht Mount, 10 km to the north-west, lake on the base of mount, G. Nilson, 28.07.1990, GNM Bare.1995 – 2557.

119. Bekeshey Mount, 44°01′ N 39°37′ E, ~1400 m (Tuniyev and Tuniyev, 2007; Tuniyev, 2008; our data).

120. Khakudzh Mount, 44°01′ N 39°38′ E, ~1413 m (Tuniyev and Tuniyev, 2007; Tuniyev, 2008; our data).

121. Watershed of Ashe and Psezuapse rivers, forest lake on the southeastern slope, 43°59′ N 39°26′ E, ~265 m (Tuniyev, 2008; our data).

122. Grachevskiy Pass, 44°00′ N 39°40′ E, ~1310 m (our data).

123. Shirokaya River, 43°58′ N 39°33′ E, ~510 m (Tuniyev, 2008; our data).

124. Belorechenskiy pass, 43°56′ N 39°55′ E, ~1600 m (Tuniyev et al., 1987; Tuniyev, 2008; our data).

125. Khuko Lake, 43°56′ N 39°48′ E, 1843 m (Tuniyev, 1987, 2008; Tuniyev and Tuniyev, 2007; our data).

126. Volov'e Lake, 43°57′ N 39°53′ E, 1900 m (Tuniyev, 1987, 2008; our data).

127. Lazarevskaya Settlement, 43°55′ N 39°21′ E, ~43 m, R. L. Byome, 1966, ZMMSU.1031 (Kuzmin, 2013).

128. Babuk-Aul cordon, 43°53′ N 39°49′ E, 630 m (Tuniyev, 1995, 2008; our data); Sharopatina polyana (Tuniyev and Kabina, 1997); Shakhe River (N. L. Orlov, personal communication).

129. Bol'shoy Kichmay village, 43°50′ N 39°30′ E, ~200 m (Tuniyev, 2008; our data).

130. Malaya Chura Mount, 43°51′ N 40°01′ E, ~1910 m (Tuniyev, 2008; our data).

131. Bzych Ridge, 43°49′ N 39°58′ E, 1300 m (Tuniyev, 1985, 1995, 2008; Kuzmin, 2013; our data).

132. Meteostation near Krasnaya Polyana Settlement, 43°44′ N 40°07′ E, 1800 m (Litvinchuk et al., 1996; Skorinov, 2009; our data).

133. Krasnaya Polyana Settlement, 43°41′ N 40°15′ E, ~500 m, A. A. Brauner, 31.05.1907, ZMMNK.2474 – 2475; N. Dorovatovskiy, 16.07.1912, ZMSpbSU.21 and 30 – 21a; A. N. Bartenev, 1929, ZISP.3523, 3680, 4122; V. I. Vedmederya, 26.08.1974, ZMKhSU.27201; Yu. V. Sviridenko, 14.09.1976, ZMKhSU.G-12 and G-13 (Dorovatovskiy, 1913; Bartenev and Reznikova, 1935; Tuniyev, 2008; Zinenko and Goncharenko, 2009; our data).

134. Laura River, 43°43′ N 40°17′ E, 820 m (Tuniyev, 1999, 2008; Tuniyev and Tuniyev, 2007; our data).

135. Laura cordon, 43°42′ N 40°16′ E, ~560 m (Tuniyev, 1999, 2008; Tuniyev and Tuniyev, 2007; Kuzmin, 2013; our data).

136. Zerkal'noe Lake, Achishko Mount, 43°44′ N 40°10′ E, ~1760 m (Tuniyev and Tuniyev, 2007; our data).

137. Baranovka Village, 43°42′ N 39°41′ E, ~150 m (Tuniyev, 2008; our data); Vostochny Dagomys River drainage (Tuniyev, 1987a; Tuniyev et al., 1987).

138. Khmelevskogo lakes, 43°43′ N 40°12′ E, ~1763 m (Bartenev and Reznikova, 1935; Tuniyev, 1987, 2008; Tuniyev and Tuniyev, 2007; our data).

139. "Izvestiya" sanatorium, 43°41′ N 40°12′ E, ~600 m (Tuniyev, 2008).

140. Roza-Khutor point, 43°38′ N 40°18′ E, 580 m (Tuniyev, 2008; our data).

141. Sergey-Pole Settlement, 43°40′ N 39°42′ E, ~300 m, R. Macey and T. J. Papenfuss, 02.1992, CAS: Herp.184372 – 184376 (Tuniyev, 1985, 1995, 2008; Tuniyev and Tuniyev, 2007; our data).

142. Shkol'noe Lake, 43°41′ N 39°43′ E, ~400 m (our data).

143. "Belye Nochi" resort, Loo Settlement, 43°40′ N 39°38′ E, ~75 m (Skorinov, 2009; our data).

144. Mzymta River, middle part, ~43°39′ N 40°10′ E, ~333 m (N. L. Orlov, personal communication).

145. Piket Mount, 43°39′ N 39°46′ E, ~140 m (Tuniyev, 1985, 1995; Tuniyev and Tuniyev, 2007; our data).

146. Aishkha-1 Mount, 43°40′ N 40°28′ E, ~2500 m (Tuniyev, 2008; our data).

147. Bzugu River, 43°37′ N 39°46′ E, ~300 m (Tuniyev, 2008; our data).

148. Sochi City, 43°37′ N 39°44′ E, 200 – 300 m, V. K. Konstantinov, 1909, ZISP.3393, 1910, ZISP.2463; R. L. Byome, 1966, ZMMSU.1031 (Bartenev and Reznikova, 1935; Krasavtsev, 1940; Tuniyev, 1983; Skorinov, 2009).

149. Aibga Village, 43°35′ N 40°12′ E, ~840 m (Tuniyev and Tuniyev, 2007; Tuniyev, 2008; our data).

150. Achishkho Pass, 43°34′ N 40°14′ E, ~1480 m, A. Rudakov, 07.1979, ZMMSU.1744; A. T. Bozhanskiy, 13.07.1979, ZMMSU.1753.

151. Azmych [= Bzych] River, ~43°33′ N 40°34′ E, ~1740 m (Tuniyev, 1995; Tuniyev and Tuniyev, 2007).

152. Uglovoy Ridge, 43°33′ N 40°36′ E, 1800 m (Tuniyev, 1985, 2008; Tuniyev and Tuniyev, 2007; our data).

153. Bol'shoy Akhun Mount, 43°32′ N 39°51′ E, ~100 m (Tuniyev, 1985, 1995; our data).

154. "Belye scaly" breakaway, 43°33′ N 39°53′ E, 170 m (Tuniyev, 1993).

155. Vostochnaya Khosta and Zapadnaya Khosta rivers fusion, 43°33′ N 39°53′ E, 56 m (Tuniyev, 1987; our data).

156. Khosta's yew-box grove, 43°32′ N 39°53′ E, 30 m, V. I. Vedmerya, 19.08.1974, ZMKhSU.27145 (Tuniyev, 1985; Tuniyev and Tuniyev, 2007; Kuzmin, 2013; our data).

157. Shakhgenskoe canyon, 43°29′ N 40°03′ E, ~100 m (Tuniyev, 2008; our data).

158. Kashtany Village, 43°31′ N 39°54′ E, 200 m (Tuniyev, 1987, 1995, 2008; Tuniyev and Tuniyev, 2007; our data).

159. Ovsyannikova Mount, 43°32′ N 39°53′ E, 185 m (Tuniyev, 1985, 1995, 2008; Tarkhnishvili and Gokhelashvili, 1999; our data).

160. Mzymta River, mouth, 43°26′ N 39°56′ E, 0 m (Tuniyev, 2008; Leont'eva, 2012; Peskova and Zhukova, 2012).

161. Adler City, 43°27′ N 39°56′ E, ~9 m, V. I. Vedmerya, 16.05.1982, ZMKhSU.G-580; 19.05.1990, CAS: Herp.182922 – 182924 (Zinenko and Goncharenko, 2009).

162. "Izvestiya" sanatorium, 43°28′ N 39°54′ E, ~7 m (our data).

163. "Yuzhnye kul'tury" Park, 43°25′ N 39°56′ E, ~9 m (Kuzmin, 2013; our data).

164. Psou checkpoint, Veseloe Settlement, 43°23′ N 40°00′ E, 2 m (Skorinov et al., 2008; Skorinov, 2009; our data).

165. Veseloe Settlement, 43°23′ N 39°58′ E, 30 m (our data).

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166. Afipsip village, 44°59′ N 38°46′ E, ~15 m, A. M. Peklo, 07.04.1975, ZMMNK.272 and 04.1980, ZMMNK.1095 (Pisanets, 2003, 2012; Kuzmin, 2013).

167. Vodolechebnitsa sanatorium, Maykop City, 44°36′ N 40°06′ E, 219 m (Zhukova, 2006); Maykop City, A. A. Brauner, 06.1905, ZMMNK.2473 (Pisanets, 2003; Kuzmin, 2013).

168. "Voskhod" microregion, Maykop City, 44°35′ N 40°08′ E, 238 m (Zhukova, 2006; Skorinov, 2009; our data).

169. Tul'skiy Settlement, 44°31′ N 40°10′ E, ~255 m (Kuzmin, 2013).

170. Kamennomostskiy [= Khodzhokh] Settlement, 44°18′ N 40°11′ E, 413 and 800 m (Zhukova, 2006; Skorinov et al., 2008; Skorinov, 2009; Kuzmin, 2013; our data).

171. Sakhray Settlement, 44°12′ N 40°17′ E, ~600 m (Tuniyev and Tuniyev, 2012).

172. Nikel' Settlement, Belaya River valley, 44°10′ N 40°09′ E, 500 m, V. A. Koneva, 1973 – 1976, ZISP.9102 – 9105; A. M. Peklo, 4.07.1984, ZMMNK.1885 (Melnikov, 2001; Tuniyev and Tuniyev, 2012).

173. Lagonaki Plateau, ~44°04′ N 40°01′ E, ~700 m (Bartenev and Reznikova, 1935).

174. Mar'enkina [= Merenkina] polyana point, 44°04′ N 40°16′ E, ~1370 m (Tuniyev, 1987, Tuniyev and Tuniyev, 2012; our data).

175. Lagernyi cordon, mouth of Kisha River, 44°02′ N 40°11′ E, 600 m (Tuniyev, 1995; Tuniyev and Tuniyev, 2012).

176. Krugloe Lake, Chugush Mount, 43°48′ N 40°11′ E, 1900 m (Tuniyev, 1983, 1987, 1995; Tuniyev and Tuniyev, 2007; our data).

177. Kisha cordon, 44°04′ N 40°10′ E, 800 m (Tuniev, 1994; Tuniyev and Tuniyev, 2012; our data).

178. Guzeripl' cordon, 44°00′ N 40°08′ E, ~680 m (Tuniyev, 1987, 1995, Tuniyev and Tuniyev, 2012; our data).

Abkhazia

179. Mzy Lake, 43°31′ N 40°35′ E, 2052 m (Malandziya and Vasilenko, 2002; Tuniyev, 2005; our data).

180. Kutyki point, 43°31′ N 40°35′ E, 2011 m (Malandziya and Vasilenko, 2002); Mzymta River, upper part (Malandziya and Vasilenko, 2002).

181. Malaya Ritza Lake, 43°28′ N 40°30′ E, 1235 m (Poznanskiy, 1915; Malandziya, Vasilenko, 2002; Skorinov et al., 2008, 2009; our data); Ritza's relict national park (Kurashvili, 1985; Chikovani et al., 1990; Malandziya and Vasilenko, 2002).

182. Gagra Town, 43°18′ N 40°15′ E, ~25 m, A. N. Kaznakov, 4.11.1907, SMG.242 (Nikolskiy, 1913, 1918; Bartenev and Reznikova, 1935; Krasavtsev, 1940; Zhordaniya, 1960; Tarkhnishvili and Gokhelashvili, 1999; Tarkhnishvili et al., 2002).

183. Ldzaa [= Lidzava] village, 43°11′ N 40°21′ E, 48 m, A. M. Rudik, 3.04.1987, ZISP.5780, 10.04.1996, ZISP.5415; A. M. Rudik, 5.05.1989, ZMKhSU.1711 (Rudik, 1989; Litvinchuk et al., 1996; Skorinov et al., 2009; our data).

184. Pitsunda [= Bichvinta] Town, 43°11′ N 40°19′ E, 0 m, A. N. Kaznakov and A. B. Shelkovnikov, 11.01.1907, SMG.247 (Nikolsky, 1913, 1918; Bartenev and Reznikova, 1935; Krasavtsev, 1940; Zhordaniya, 1960; Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999; Tarkhnishvili et al., 2002; our data).

185. Sukhum [= Sukhumi, Sukhum-Kale] City, 43°00′ N 40°59′ E, ~48 m, A. Stauch, MCZ: Herp.A-1963 and A-126079; V. I. Chernyavsky, 1879, ZISP.1137, 1138 and 3020; USNM.014355 and 278131 (Bedriaga, 1897; Lantz, 1909; Bartenev and Reznikova, 1935; Krasavtsev, 1940; Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999; Tarkhnishvili et al., 2002; Skorinov, 2009; Kuzmin, 2013).

186. Mayak Lake, 42°59′ N 40°58′ E, 0 m (Malandziya and Vasilenko, 2002).

187. Machara village, 42°56′ N 41°05′ E, 4 m (Malandziya and Vasilenko, 2002; Skorinov, 2009; Skorinov et al., 2009; our data).

188. Pskhu-Gumista nature reserve, ~42°49′ N 41°11′ E, ~22 m (Chikovani et al., 1990a; Kuzmin, 2013).

189. Bebesyr Lake, 42°41′ N 41°35′ E, ~14 m, Ya. Gurevich, 20.02.1957, ZMMSU.2620.

South Ossetia

190. Bekmar [= Bekmari] Village, 42°15′ N 43°49′ E, 885 m (http://osinform.ru/40494-flora-i-fauna-yuzhnoy-osetii-za-5-maya-2013g.html).

191. Edisi [= Edisa, Edys] Village, 42°32′ N 44°12′ E, ~1710 m, G. I. Guliy, 2.08.1933, SMG.438 (Zhordaniya, 1960; Kuzmin, 2013).

192. Tskhinval Town, 42°13′ N 43°59′ E, ~860 m (Tarkhnishvili and Pyastolova, 1985; Kuzmin, 2013).

193. Dampalet swamp, 42°16′ N 43°56′ E, ~1082 m (K. D. Lotiev, pers. com).

Turkey

194. Artvin Town, 41°10′ N 41°49′ E, ~555 m, L. A. Lantz, 1911, ZISP 3187.

Georgia

195. Batumi City [= Batum-Kale], 41°39′ N 41°39′ E, ~10 m, G. K. Radde and A. N. Kaznakov, 04.1893, SMG.245 (Boettger, 1899; Deryugin, 1901; Nikolsky, 1905, Wolterstorff, 1914; Bartenev and Reznikova, 1935; Krasavtsev, 1940; Zhordaniya, 1960; Raxworthy, 1988; Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999; Tarkhnishvili et al., 2002; Kuzmin, 2013).

196. Tsiskara meteostation, Mtirala Mount, 41°42′ N 41°53′ E, ~1150 m, N. I. Kudryashova, 26.07.1961, ZMMSU.2776.

197. Kobuleti Town, 41°49′ N 41°47′ E, ~3 m (Dzganishvili, 1956; Tarkhnishvili et al., 2002).

198. Poti Town, Rioni River mouth, 42°11′ N 41°39′ E, ~1 m (Kulagin, 1888; Bedriaga, 1897; Lantz, 1912; Nikolsky, 1905, 1913, 1918; Wolterstorff, 1914; Bartenev and Reznikova, 1935; Krasavtsev, 1940; Ektimishvili, 1940; Freytag, 1954; Tarkhnishvili, 1996; Pisanets, 2012).

199. Kolkhida national park, ~42°09′ N 41°48′ E, ~4 m (Chikovani et al., 1990; Tarkhnishvili and Gokhelashvili, 1999; Kuzmin, 2013).

200. Natanebi station [= Kvemo Natanebi], 41°56′ N 41°48′ E, ~10 m, V. Kozlovsky, 04.1913, SMG.244 (Zhordaniya, 1960; Kuzmin, 2013).

201. Mukhuri [= Mukheri] Mount, 42°35′ N 42°09′ E, 650 m (Ekvtimishvili, 1940; Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999).

202. Satapli national park, ~42°19′ N 42°39′ E, ~470 m (Darevsky, 1987; Tarkhnishvili, 1996; Kuzmin, 2013).

203. Kutaisi Town, 42°15′ N 42°42′ E, ~125 m (Tarkhnishvili, 1996; Tarkhnishvili et al., 2002).

204. Okriba point, 42°17′ N 42°45′ E, ~250 m (Shugurov, 1909; Nikolsky, 1913, 1918; Bartenev and Reznikova, 1935; Krasavtsev, 1940; Ektimishvili, 1940; Tarkhnishvili and Gokhelashvili, 1999).

205. Kursebi Mount, 42°19′ N 42°46′ E, 480 m (Ektimishvili, 1940).

206. Adzgament nature reserve, 42°08′ N 42°47′ E, ~160 m (Kuzmin, 1999, 2013).

207. Dabadzveli Lake, 42°17′ N 42°55′ E, 540 m, L. F. Mlokoskevich, 10.07.1911, ZISP.2549 (Wolterstorff, 1914; Bartenev and Reznikova, 1935).

208. Kharagauli, 42°01′ N 43°11′ E, ~333 m, T. Panner, 05.2012 (http://vipersgarden.at/cascade/species$FP.php).

209. Chobareti village, 41°35′ N 43°08′ E, ~1430 m, M. A. Bakradze, ZMMNK.687.

210. Aspindza Town, 41°35′ N 43°15′ E, ~1100 n, M. A. Bakaradze, ZMMNK.687.

211. Kakhisi-Tba Lake, Chobis-Khevi Village, 41°45′ N 43°20′ E, 1765 m, N. G. Ostashko, 6 – 7.07.1979, ZMMNK. 903 (Pisanets, 2003; Skorinov, 2009; Kuzmin, 2013).

212. Borjomi nature reserve, ~41°51′ N 43°22′ E, ~1350 m (Kuzmin, 1999, 2013).

213. Borjomi Town, 41°50′ N 43°23′ E, 880 m, L. A. Lantz, 1914, ZISP.3277 – 3278 (Wolterstorff, 1914; Krasavtsev, 1940; Pisanets, 2012).

214. Trialeti Mountains, near Borjomi Town, 41°49′ N 43°23′ E, ~1300 m (Tarkhniшwili and Thiesmeier, 1994).

215. Tba Settlement, 41°28′ N 43°26′ E, 1143 m (Ektimishvili, 1940; Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999).

216. Vorontsovskoe Plateau, ~41°49′ N 43°27′ E, 1070 m, L. A. Lantz, 1914, ZISP.3226 and 3268 (Lantz, 1912; Kuzmin, 2013).

217. Sakochavskie [= Sakochavi] lakes, 41°44′ N 43°28′ E, 1650 m (Ektimishvili, 1940; Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999).

218. Yagoras-Veli [= Iagoras-Veli] village, 41°44′ N 43°29′ E, 1660 m (Ektimishvili, 1940; Kuzmin, 2013).

219. Surami Pass, ~42°02′ N 43°30′ E, ~940 m (http://www.herpetofauna.at/index.php/herpetologische-reiseberichte/62-herpetologische-exkursion-nach-georgien-3-20-mai-2007)

220. Akhaldaba Settlement, 41°56′ N 43°29′ E, ~743 m, D. N. Tarkhnishvili, 1.05.1992, ZMA: Herp.09342.

221. Bakuriani Settlement, 41°44′ N 43°32′ E, 1760 m, E. S. Kir'yanova, 3.07.1949, ZISP.3821 and 3823; M. A. Bakaradze, 8.09.1972, ZMMNK.688; I. S. Darevsky, 07.1973, ZISP.4717; N. G. Ostashko, 3.07.1979, ZMMNK.897 (Nikolsky, 1913, 1918; Bartenev and Reznikova, 1935; Krasavtsev, 1940; Bischoff and Engelmann, 1976; Tarkhnishvili, 1996; Tarkhnishvili et al., 2002; Pisanets, 2003; Skorinov, 2009; Kuzmin, 2013).

222. Didi-Mitarbi village, 41°44′ N 43°34′ E, 1500 m (Ektimishvili, 1940; Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999).

223. Upper Triale Lake, ~41°30′ N 44°06′ E, 1750 m (Belova, 1985).

224. Ertatsminda Lake, 41°50′ N 44°19′ E, ~1030 m (Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999; Kuzmin, 2013).

225. Manglisi village, 41°42′ N 44°22′ E, ~1220 m, M. A. Bakradze, 09.1974, ZMMNK.686.

226. Satovle ridge, 41°47′ N 44°34′ E, 1350 m (Kuzmin, 1999; Tarkhnishvili, 1996); "Tarckhnishwili Lake," V. M. Chkhikvadze, 15.04.1983, MNCN.40463 (González-Fernández, 2000).

227. Chili-Tba Lake, 41°49′ N 44°41′ E, 1135 m (Tarkhnishvili and Pyastolova, 1985; Kuzmin, 2013).

228. Dzegeva lakes, 41°50′ N 44°36E, 520 m (Tarkhnishvili and Pyastolova, 1985).

229. Tsodoreti forestry, 41°45′ N 44°37′ E, ~1060 m, D. N. Tarkhnishvili, 05.1981, ZMMNK.1240 (Tarhnishvili and Pyastolova, 1985; Pisanets, 2003; Kuzmin, 2013).

230. Tbilisi City, 41°43′ N 44°47′ E, 440 m (Freytag, 1951; Raxworthy, 1990; Kuzmin, 1999, 2013; Ratnikov and Litvinchuk, 2009).

231. Batsara nature reserve, ~42°14′ N 45°14′ E, ~1510 m (Kuzmin, 1999).

232. Chiantba Lake, 41°55′ N 45°22′ E, 950 m (Tarkhnishvili, 1996; Tarkhnishvili et al., 2002; Tarkhnishvili and Gokhelashvili, 1999; Kuzmin, 2013).

233. Babaneur nature reserve, ~42°05′ N 45°23′ E, ~670 m (Kuzmin, 1999).

234. Tsivi-Gombori mounts, ~41°50′ N 45°27′ E, ~1518 m (Kuzmin, 1999).

235. Kvareli Town, 41°57′ N 45°48′ E, 420 m (Tarkhnishvili, 1996).

236. Lagodekhi nature reserve, ~41°52′ N 46°20′ E, ~1520 m (Didmanidze, 1962; Darevsky, 1987; Chikovani et al., 1990; Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999; Kuzmin, 2013).

Armenia

237. Urasar [= Kuybyshev] village, 9 km to the west, 41°01′ N 44°14′ E, ~1630 m, Expedition of Erivan Zoo, 7.06.1976, ZMKhSU.29069 (Zinenko and Goncharenko, 2009; Kuzmin, 2013).

238. Stepanovan Town, 41°00′ N 44°23′ E, ~1415 m (Gumilevskiy, 1939); Stepanovan District (Dal', 1954).

Azerbaijan

239. Altyagach village, 40°51′ N 48°55′ E, ~1100 m (Tertyshnikov, 1953; Alekperov, 1957, 1964; Kuzmin, 2013).

240. Rybkhoz settlement, 39°58′ N 48°51′ E, ~3 m (Velieva, 1975; Kuzmin, 2013).

241. Lenkoran' City, 1.5 km to north-west, 38°44′ N 48°50′ E, ~22 m, N. N. Tertyshnikov, 12.04.1948, ZISP.4715 (Nikolsky, 1913, 1918; Sobolevskiy, 1929; Bartenev and Reznikova, 1935; Krasavtsev, 1940; Alekperov, 1951, 1957, 1964, 1977; Tertyshnikov, 1953; Velieva, 1974; Tarkhnishvili, 1996; Tarkhnishvili and Gokhelashvili, 1999; Gasymova and Ganiev, 2011; Kuzmin, 2013).

242. Haftoni [= Isti-su] Settlement, 38°45′ N 48°45′ E, ~5 m (Velieva, 1975; Alekperov, 1977; Alekperov and Dzhafarova, 1981; Gasymova and Ganiev, 2011).

REFERENCES

Afonas'ev S. T. (1961), "On question to study of vertebrate fauna of Checheno-Ingush Autonomous Republic," *Izv. Chech.-Ingush. Resp. Kraeved. Muz.*, **10**, 42 – 48 [in Russian].

Alekperov A. M. (1951), "The Class Amphibia," in: Alizade A. N., Asadov S. M., and Derzhavin A. N (eds.), *Fauna of Azerbaijan*, Izd. AN AzSSR, Baku, pp. 203 – 206 [in Russian].

Alekperov A. M. (1957), *Amphibians and Reptiles of Azerbaijan Republic, Vol. 1. Unpublished PhD Thesis*, Baku [in Russian].

Alekperov A. M. (1964), "About tailed amphibians (Caudata) in Azerbaijan," *Uch. Zap. Az.GU im. S. M. Kirova. Ser. Biol. Nauk*, **2**, 21 – 24 [in Russian].

Alekperov A. M. (1977), *Amphibians and Reptiles of Azerbaijan*, Elm, Baku [in Russian].

Alekperov A. M. (1982), "The present state of rare and threatened species and subspecies of herpetofauna in Azerbaijan," *Vertebrata Hungarica*, **21**, 19 – 24.

Alekperov A. M. and Dzhafarova S. K. (1982 [1981]), "About status, distribution and abundance of species of amphibians and reptiles, included in the Red Data Book of Azerbaijan," in: Alekperov A. M. (ed.), *Influence of Anthropogenic Factors on Fauna and Ecology of Animals in Azerbaijan*, Izd. AzGU, Baku, pp. 28 – 34 [in Russian].

Alekseev S. K. and Udovkin S. I. (2001), "Altitude-zonal distribution of amphibians in the eastern part of the Nortern Caucasus and strategy of conservation of their biological diversity," *Vopr. Geogr. Geoékol.*, **3**, 64 – 70 [in Russian].

Arakelyan M. S., Danielyan F. D., Corti C., Sindaco R., and Leviton A. E. (2011), *Herpetofauna of Armenia and Nagorno-Karabakh*, Soci. for the Study of Amphibians and Reptiles.

Babik W., Branicki W., Crnobrnja-Isailović J., Cogălniceanu D., Sas I., Olgun, K., Poyarkov, N. A., García-París, M., and Arntzen J. W. (2005), "Phylogeography of two European newt species — discordance between mtDNA and morphology," *Mol. Ecol.*, **14**, 2475 – 2491.

Bathiev A. M. and Tochiev T. Yu. (2007), "The smooth newt — *Triturus vulgaris* Linnaeus, 1758)," in: Martazanov A. M (ed.), *The Red Data Book of Ingush Republic: Plants. Animals*, Serdalo, Magas [in Russian].

Bannikov A. G., Darevsky I. S., Ishchenko V. G., Rustamov A. K., and Szczerbak N. N. (1977), *A Guide of Amphibians and Reptiles of Fauna of USSR*, Prosveshchenie, Moscow, [in Russian].

Bartenev A. and Reznikova M. (1935), "Materials on fauna of amphibians and reptiles of western and central parts of the Caucasian State Nature Reserve," *Byull. Muz. Gruzii*, **8**, 11 – 41 [in Russian].

Bedriaga J. (1897), "Die Lurchfauna Europa's. II. Urodela. Schwanzlurche," *Byull. Imp. Mosk. Obshch. Ispyt. Prirody*, **4**, 1 – 435 [in Russian].

Belik V. (2011), *Resources of Biodiversity of Steppe Don River Territorry. Amphibia. Reptilia*, LAP LAMBERT Acad. Publishing [in Russian].

Belova Z. V. (1985), "Distribution of rare species of amphibians in some regions of Georgia," in: Darevsky I. S (ed.), *Problems of Herpetology*, Tashkent, p. 23 [in Russian].

Bischoff W. and Engelmann W.-E. (1976), "Herpetologische Ergebnisse einiger Sammelreisen im Kaukasus und in Transkaukasien," *Zool. Jb. Syst.*, **103**, 361 – 376.

Boettger O. (1899), "Reptilia et Batrachia," in: Radde G., *Die Sammlungen des Kaukasischen Museums im Vereine nit Special-Celehrten Bearbeitet, und Herausgegeben. Bd. 1. Zoologie*, Tiflis, pp. 273 – 294 [in Russian].

Bombi P., Luiselli L., Capula M., and Salvi D. (2009), "Predicting elusiveness: potential distribution model of the Southern smooth snake, *Coronella girondica*, in Italy," *Acta Herpetol.*, **4**(1), 7 – 13.

Borkin L. J. and Krever V. G. (1987), "Protection of amphibians and reptiles in reserves of Russian Republic," in: Darevsky I. S. and Krever V. G (eds.), *Amphibians and Reptiles of Protected Territories*, Moscow, pp. 39 – 53 [in Russian].

Borkin L. J., Litvinchuk S. N., Rosanov J. M., and Skorinov D. V. (2004), "On cryptic species (from the example of amphibians)," *Zool. Zh.*, **83**, 936 – 960 [in Russian; full English version in *Entomol. Rev.*, **84**(Suppl. 1), 75 – 98].

Chikovani T. G., Vronsky N. V., Gigauri G. N., and Syroechkovskiy E. E. (1990), "Ritza Nature Reserve," in: Sokolov V. E. and Syroechkovskiy E. E. (eds.), *Natural Reserves of the Caucasus*, Mysl', Moscow, pp. 115 – 123 [in Russian].

Chikovani T. G., Vronsky N. V., Gigauri G. N., and Syroechkovskiy E. E. (1990a), "Pskhu-Gumistinskiy reserve," in: Sokolov V. E. and Syroechkovskiy E. E. (eds.), *Natural Reserves of the Caucasus*, Mysl', Moscow, pp. 124 – 136 [in Russian].

Chikovani T. G., Vronsky N. V., Kurashvili B. E., and Syroechkovskiy E. E. (1990), "Satapli-Kolchida reserve," in: Sokolov V. E. and Syroechkovskiy E. E. (eds.), *Natural Reserves of the Caucasus*, Mysl', Moscow, pp. 137 – 145 [in Russian].

Chikovani T. G., Gigauri G. N., Didmanidze E. A. Syroechkovskiy E. E., and Shavliashvili I. A. (1990), "Lagodekh reserve," in: Sokolov V. E. and Syroechkovskiy E. E. (eds.), *Natural Reserves of the Caucasus*, Mysl', Moscow, pp. 210 – 225 [in Russian].

Dal' K. S. (1954), *Fauna of Armenian Republic. Vol. 1. Vertebrates*, Izd. AN ArmSSR, Yerevan [in Russian].

Darevsky I. S. (1987), "Conservation of amphibians and reptiles in nature reserves of the Caucasus," in: Darevsky I. S. and Krever V. G (eds.), *Amphibians and Reptiles of Protected Territories*, Moscow, pp. 85 – 101 [in Russian].

Den'gina R. S. (1946), "*Gambusia* and its role in fish industry," *Trudy Inst. Zool. Baku*, **11**, 41 – 73 [in Russian].

Deryugin K. M. (1901), "Materials on herpetology of the South-Western Transcaucasia and vicinities of Trapezond," *Ezheg. Zool. Muz. Imp. Akad. Nauk. St. Petersburg*, **6**(1), 84 – 111 [in Russian].

Didmanidze E. (1962), "Materials on study of amphibian and reptile fauna of the Lagodekhi Nature Reserve," *Tr. Lagodekh. Zapovedn.*, Issue 1, 172 – 187 [in Russian].

Djanashvili A. G. (1956), *Guide to Amphibians of Georgia*, Tbilisi Univ. Publ. House, Tbilisi [in Georgian]

Doronin I. V. (2008), "Data on the distribution of rare amphibians and reptiles of the West Caucasus and Predkavkaziye," in: Ananjeva N. B. et al. (eds.), *The Problems of Herpetology*, St. Petersburg, pp. 105 – 111 [in Russian].

Doronin I. V. (2013), "The Lantz's newt, *Lissotriton lantzi* (Wolterstorff, 1914)," in: The *Red Data Book of Stavropol Kray. Vol. 2*, Stavropol [in Russian].

Doronin I. V. (2014), "The Lantz's newt, *Lissotriton lantzi* (Wolterstorff, 1914)," in: *The Red Data Book of Karachaevo-Cherkessia Republic*, Nartizdat, Cherkessk [in Russian].

Dorowatowsky N. (1913), "Lurche (Amphibia). Katalog der Kollektionen des Museums am Zoologischen Institut der Kaiseri. Universitat zu St.-Petersburg," *Trav. Soc. Imp. Natur. St-Petersbourg. Sect. Zool. Physiol.*, **17**(4), 11 – 56 [in Russian].

Dzuev R. I. and Ivanov I. V. (2000), "The smooth newt," in: Ivanov I. V (ed.), *The Red Data Book of Kabardino-Balkaria Republic*, El'-Fa, Nalchik, p. 157 [in Russian].

Dubois A. and Raffaëlli J. (2009), "A new ergotaxonomy of the family Salamandridae Goldfuss, 1820 (Amphibia, Urodela)," *Alytes*, **26**(1 – 4), 1 – 85.

Eiselt J. (1966), "Ergebnisse zoologischer Sammelreisen in der Türkei. Amphibia caudate," *Ann. Naturhist. Mus. Wien*, **69**, 427 – 445.

Elith J. (2002), "Quantitative methods for modeling species habitat: comparative performance and an application to Australian plants," in: Ferson S. and Burgman M. (eds.), *Quantitative Methods for Conservation Biology*, Springer, New York, pp. 39 – 58.

Elith J., Graham C. H., Anderson R. P., Dudík M., Ferrier S., Guisan A., Hijmans R. J., Huettmann F., Leathwick J. R., Lehmann A., Li J., Lohmann L. G., Loiselle B. A., Manion G., Moritz C., Nakamura M., Nakazawa Y., McOverton J. C., Peterson A. T., Phillips S. J., Richardson K. S., Scachetti-Pereira R., Schapire R. E., Soberón J., Williams S., Wisz M. S., and Zimmermann N. E. (2006), "Novel methods improve prediction of species' distributions from occurrence data," *Ecography*, **29**, 129 – 151.

Elith J., Kearney M., and Phillips S. J. (2010), "The art of modeling range shifting species," *Meth. Ecol. Evol.*, **1**, 330 – 342.

Elith J., Phillips S. J., Hastie T., Dudík M., Chee Y. E., and Yates C. J. (2011), "A statistical explanation of MaxEnt for ecologists," *Divers. Distr.*, **17**, 43 – 57.

Ekvtimishvili Z. S. (1940), "Amphibians of Borjomi-Bakuriani district," *Tr. Biol. Stantsii Narkomprosa GruzSSR*, **1**, 110 – 121 [in Georgian].

Ermolina L. P. and Doronin I. V. (2010), "Herpetological collection of the Zoological Museum of Stavropol State University. Amphibia," *Sovr. Gerpetol.*, **10**(3/4), 121 – 127 [in Russian].

Fedorov S. M. (1956), "Reptiles, amphibians, cyclostomes, and fishes of Stavropol Kray (species composition, importance and use)," in: Krasnov G. D. (ed.), *Materials to Study of Stavropol' Kray. Vol. 8*, Stavropol', pp. 203 – 220 [in Russian].

Fielding A. H. and Bell J. F. (1997), "A review of methods for the assessment of prediction errors in conservation presence/absence models," *Environ. Conserv.*, **24**(1), 38 – 49.

Freytag G. E. (1951), *Der Teichmolch*, A. Ziemsen Verlag, Wittenberg Lutherstadt.

Freytag G. E. (1954), "Der Kaukasus-Salamander, ein Seltener Terrarienpflegling," *Aquar. Terrar. Jb. Jena*, 115 – 119.

Frost D. R. (2014), *Amphibian Species of the World: an On-line Reference. Version 5.6*, American Museum of Natural History, New York, USA. Electronic Database accessible at http://research.amnh.org/herpetology/amphibia/index.html.

Gasymova G. Kh. and Ganiev F. R. (2011), "On distribution and conservation of rare species of amphibians of Azerbaijan," in: *Biological Museums: Role and Place in Scientific and Educational Process*, Izd. DGU, Makhachkala, pp. 93 – 97 [in Russian].

Giovanelli J. G. R., Haddad C. F. B., and Alexandrino J. (2010), "Predicting the potential distribution of the alien invasive American bullfrog (*Lithobates catesbeianus*) in Brazil," *Biol. Invasions*, **10**, 585 – 590.

Gnilovskoy V. G., Skripchinsky V. V., and Reznik P. A. (1951), *Excursions in Stavropol Region. Excursion Routes*, Krayizdat, Stavropol [in Russian].

Golubev N. S. (1985), *The Caucasian Parsley Frog* — Pelodites caucasicus *Boulenger (Distribution, Morphology, Ecology). Ph.D Thesis*, Izd. Zool. Inst. AN SSSR, Leningrad [in Russian]

González-Fernández J. E. (2000), "Coleccion de anfibios y reptilies," in: *Catalogo de las colecciones zoologicas de Asia del Museo Nacional de Ciencias Naturales. III. Vertebrados*, Madrid Museo Nacional de Ciencias Naturales, Consejo Superior de Investigaciones Cientificas, p. 61 – 180.

Gorovaya V. I. and Tertyshnikov M. T. (1983), "Abound biology of *Triturus vulgaris lantzi* Wolt., 1914 (Caudata, Salamandridae) in the Central Ciscaucasia," in: *Species and Its Efficiency in Range*, Moscow, pp. 88 – 92 [in Russian].

Graham C. H., Ferrier S., Huettman F., Moritz C., and Peterson A. T. (2004), "New developments in museum-based informatics and applications in biodiversity analysis," *Trends Ecol. Evol.*, **19**(9), 497 – 503.

Gumilevskiy B. A. (1939), "Fauna of amphibians of Armenia and Nakhichevan' Republic," in: Bening A. L. (ed.), *Zoological Digest. Vol. 1. Proc. of Biol. Inst. Armenian Sector of Academy of Sciences of USSR. Vol. 3*, Yerevan, pp. 1 – 24 [in Russian].

Hansen M., DeFries R., Townshend J. R. G., Sohlberg R., Dimiceli C., and Carroll M. (2002), "Towards an operational MODIS continuous field of percent tree cover algorithm: examples using AVHRR and MODIS data," *Remote Sens. Env.*, **83**, 303 – 319.

Hernandez P. A., Graham C. H., Master L. L., and Albert D. L. (2006), "The effect of sample size and species characteristics on performance of different species distribution modeling methods," *Ecography*, **29**, 773 – 785.

Hijmans R. J., Cameron S. E., Parra J. L., Jones P. G., and Jarvis A. (2005), "Very high resolution interpolated climate surfaces for global land areas," *Int. J. Climatol.*, **25**, 1965 – 1978.

Hosmer D. W. and Lemeshow S. (2000), *Applied Logistic Regression*, Wiley, New York.

Jiménez-Valverde A. (2012), "Insights into the area under the receiver operating characteristic curve (AUC) as a discrimination measure in species distribution modeling," *Global Ecol. Biogeogr.*, **21**, 498 – 507.

Jiménez-Valverde A., Lobo J. M., and Hortal J. (2008), "Not as good as they seem: the importance of concepts in species distribution modeling," *Divers. Distr.*, **14**, 885 – 890.

Kaliontzopoulou A., Brito J. C., Carretero M. A., Larbes S., and Harris D. J. (2008), "Modeling the partially unknown distribution of wall lizards (*Podarcis*) in North Africa: ecological affinities, potential areas of occurrence, and methodological constraints," *Can. J. Zool.*, **86**, 992 – 1001.

Karavaev A. A. (2006), "Complex of water reservoirs in middle mountains of Kuban' River drainage system (Aksau, Marukhskoe, Ust'-Dzhegutinskoe, and Kuban' water reservoirs, and Maloe Lake)," in: Mishchenko A. L. (ed.), *Wetlands in Russia. Wetlands in the North Caucasus. Vol. 6*, Moscow, pp. 133 – 151 [in Russian].

Khaltukhov A. M. and Yakimov A. V. (2004), "Some data about the Caucasus newt (*Triturus vulgaris lantzi* Wolterstorff, 1914) in conditions of Kabardino-Balkaria Republic," *Tr. Gos. Darvin. Muz. Mos.*, Issue 8, 191 – 194 [in Russian].

Khaltukhov A. M. and Yakimov A. V. (2010), "About a record of Lantz's newt (*Lissotriton vulgaris lantzi* Wolterstorff, 1914) in anthropogenic water body in the mountain sector Pyatigor'e – Elbrus in the Central Caucasus," in: Spiridonov S. N. (ed.), *The Problems of Study and Conservation of Vertebrates in Anthropogenic Water Bodies*, Progress, Saransk, pp. 182 – 184 [in Russian].

Khokhlov A. N. (1993), *The Animal World of Stavropol Region*, Stavropol [in Russian].

Kidov A. A. (2007), "Utrish node," *ZooPrice*, **5**(106), 78 – 79 [in Russian].

Kidov A. A., Timoshina A. L., Matushkina K. A., Afrin K. A., Blinova S. A., Baksheyeva A. A., and Kovrina E. G. (2013), "Notes on distribution of the Aesculapian snake (*Zamenis lingissimus* (Laurenti, 1768)) on the northwestern periphery of the area in the Caucasus," in: Ananjeva N. B. et al. (eds.), *Modern Herpetology: Problems and Ways of Their Solutions*, Zoological Institute of RAS, St. Petersburg, pp. 96 – 97 [in Russian].

Krasavtsev B. A. (1938), "On biology of the fair-bellied toad," *Priroda*, Issue 5, 90 – 95 [in Russian].

Krasavtsev B. A. (1940), "On ecology of the smooth newt in the Ciscaucasia," *Tr. Voroshilov. Ped. Inst.*, **2**, 166 – 172 [in Russian].

The Red Data Book of Azerbaijan SSR (1989), Baku. http://ru.wikipedia.org/wiki/Красная_книга_Азербайджана.

Kulagin N. M. (1888), "Lists and descriptions of objects which are in Zoological Museum of Moscow Imperial University. II. Lists and descriptions of the museum collections of amphibians and reptiles," *Tr. Lab. Zool. Muz. Imp. Mosk. Univ.*, **4**(2); *Izv. Imp. Obshch. Lyubit. Estestvozn. Antropol. Etnogr.*, **56**(2), 1 – 39 [in Russian].

Kurashvili B. E. (1985), *Protection and Conservation of Fauna of Georgia*, Nauka, Moscow [in Russian].

Kuzmin S. L. (1999), *Die Amphibien Russlands und angrenzender Gebiete*, Magdeburg.

Kuzmin S. L. (2001), "The Caucasian newt, *Triturus vulgaris* (subspecies *lantzi*)," in: Pavlov D. S. (ed.), *The Red Data Book of Russia. Animals*, AST-Astrel', Moscow, pp. 314 – 315 [in Russian].

Kuzmin S. L. (2013), *The Amphibians of the Former Soviet Union. Revised Second Edition*, Pensoft, Sofia – Moscow.

Lantz L. (1909), "Aus Westkaukasien," *Blatter Aquarien-Terrarienkunde. Magdeburg*, **20**(19), 291 – 294.

Lantz L. (1912), "Beitrag zur Biologie von *Molge* (= *Triton*) *vittata* Gray forma ophrytica Berthold," *Blatter Aquarien-Terrarienkunde. Magdeburg*, **22**(12), 181 – 188.

Leont'eva O. A. (2012), "The herpetofauna of low-mountain territories of the Abrau Peninsula," in: *The Mountain Systems and Their Components*, Poligrafservis i T, Nalchik, pp. 108 – 109 [in Russian].

Lipkovich A. D. (2000), "The smooth newt — *Triturus vulgaris* (L., 1758)," in: Komzha A. L. et al. (eds.), *The Red Data Book of North Ossetia-Alania Republic. Rare and Endangered Species of Plants and Animals*, Vladikavkaz, p. 47 [in Russian].

Litvinchuk S. N., Rudyk A. M., and Borkin L. J. (1996), "Observations on paedomorphic newts (*Triturus vulgaris*) from the former Soviet Union," *Russ. J. Herpetol.*, **3**(1), 39 – 48.

Litvinchuk S. N., Lashina O. S., and Kazakov V. I. (2004), "Distribution of satellite DNA TkS1 in genomes of salamanders (Salamandridae)," *Tsitologiya*, **46**(7), 634 – 639 [in Russian].

Litvinchuk S. N., Borkin L. J., Rosanov J. M., Skorinov D. V., Khalturin M. D., Džukić G., Kalezić M. L., and Mazanaeva L. F. (2005), "Geographic differentiation in newts (*Triturus*) of eastern Europe: genome size, allozymes, and morphology," in: Ananjeva N. and Tsinenko O. (eds.), *Herpetologia Petropolitana. Proceedings of the 12th Ordinary General Meeting of the Societas Europaea Herpetologica*, St. Petersburg, pp. 57 – 60; *Russ. J. Herpetol.*, **12**(Suppl.).

Liu C., Berry P. M., Dawson T. P., and Pearson R. G. (2005), "Selecting thresholds of occurrence in the prediction of species distributions," *Ecography*, **28**, 385 – 393.

Lotiev K. Y. (2007), "The Caucasian newt," in: *The Red Data Book of Chechnya Republic. Rare and Threatened Species of Plants and Animals*, Southern Publ. House, Groznyi, pp. 271 – 272 [in Russian].

Luchnik V. (1908), "The small newt (*Triton vittatus*)," *Lyubitel' Prirody*, **11**, 370 – 372 [in Russian].

Malandziya V. I. and Vasilenko D. P. (2002), "On distribution and biology of newts (*Triturus*, Amphibia) of Abkhazia," in: Tarba Z. M. (ed.), *Biological Diversity of the Caucasus*, Sukhum, pp. 127 – 134 [in Russian].

Mazanaeva L. F. (2000), "The distribution of amphibians in Daghestan," *Adv. Amphibian Res. in the Former Soviet Union*, **5**, 141 – 156.

Mazanaeva L. F. and Askenderov A. D. (2009), "The Caucasian smooth newt — *Lissotriton vulgaris lantzi* (Wolterstorff, 1914)," in: Abdurakhmanov G. M. (ed.), *The Red Data Book of Daghestan Republic*, Makhachkala, pp. 374 – 376 [in Russian].

Mel'nikov D. A. (2001), "Amphibians and reptiles of the vicinity of the practice camp of Rostov-on-Don State University 'Belaya rechka' (settlement Nikel')," in: *Proc. of the Int. Theor. and Pract. Conf.* "*Biosphere and Human*", Maykop, pp. 177 – 179 [in Russian].

Naniev V. I. (1964), "On knowledge of the smooth newt in the eastern part of the Central Caucasus," *Uch. Zap. Ser. Matem. Estestvozn.*, **26**(2), 106 [in Russian].

Naniev V. I. (1983), *Amphibians and Reptiles of North Ossetia* (*Methodological Instructions*), Ordzhonikidze [in Russian].

Nikolsky A. M. (1905), "Reptiles and amphibians of Russian Empire (Herpetologia rossica)," *Zap. Imp. Akad. Nauk. 8 Ser. Fiz.-Mat. Otd.*, **17**(1), 1 – 518 [in Russian].

Nikolsky A. M. (1913), *Herpetologia Caucasica. Reptilians and Amphibians of the Caucasus*, Izd. Kavkaz. Muz., Tiflis [in Russian].

Nikolsky A. M. (1918), *Amphibiens (Amphibia). Faune de la Russie et des Pays Limitrophes*, Izd. Imp. Akad. Nauk, Petrograd [in Russian].

Ostrovskikh S. V. (2011a), "Amphibians and reptiles of the Regional National Reserve "Gora Sober-Bash" (the North-West Caucasus, Krasnodar Kray)," in: Nagalevskiy M. V. (ed.), *Actual Problems of Ecology and Protection of Nature of Ecosystems of South Regions of Russia and Adjacent Territories*, Izd. KGU, Krasnodar, pp. 91 – 96 [in Russian].

Ostrovskikh S. V. (2011b), "Amphibians and reptiles of the Nature Reserve "Utrish," " in: *Mater. VII Miżdzynarodowej naukowi-praktycznej konferencji* "*Dynamika naukowych badań – 2011*". *Vol. 15. Medycyna. Nauk biologicznych. Fizyczna kultura i sport*, Nauka I studia, Przemyśl, pp. 65 – 68 [in Polish].

Ostrovskikh S. V. (2012), "Amphibians and reptiles of the Nature Reserve "Kamyshanova polyana" (the North-West Caucasus, Krasnodar Kray)," in: Abdurakhmanov G. M. (ed.), *Proc. of XIV Int. Sci. Conf.* "*Biological Diversity of the Caucaus and South Russia*," IPE RD, Makhachkala, pp. 218 – 219 [in Russian].

Ostrovskikh S. V., Plotnikov G. K., and Khasanov I. A. (2002), "The record of neotenic larvae of the smooth newt (*Triturus vulgaris lantzi* Wolt., 1914) in Krasnodar Kray," in: *Actual Problems of Ecology and Protection of Nature of Ecosystems of the Southern Regions of Russia*, Krasnodar, pp. 88 – 89 [in Russian].

Peskova T. Yu. and Zhukova T. I. (2009), "Level of fluctuating asymmetry of close related species in syntopic biotops of mountain water bodies of the Caucasus," in: Rozhnov V. V. et al. (eds.), *Animals of Mountain Territories*, KMK, Moscow, pp. 406 – 411 [in Russian].

Peskova T. Yu. and Zhukova T. I. (2012), "Peculiarities of belly coloration in the smooth newt in Western Ciscaucasia," in: *The Mountain Systems and Their Components*, Poligrafservis i T, Nalchik, pp. 115 – 116 [in Russian].

Phillips S. J., Anderson R. P. and Schapire R. E. (2006), "Maximum entropy modeling of species geographic distributions," *Ecol. Modeling*, **190**, 231 – 259.

Phillips S. J. and Dudík M. (2008), "Modeling of species distributions with MaxEnt: new extensions and a comprehensive evaluation," *Ecography*, **31**, 161 – 175.

Pisanets E. M. (2003), *The Tailed Amphibians (Amphibia: Caudata). Catalogue of Collections*, Zoological Museum National Museum of Natural History, Kyiv [in Russian].

Pisanets Y. (2012), *Amphibians of the Eastern Europe. Part I. Order Caudata*, Zoological Museum NMNH NAS Ukraine, Kyiv.

Poznanskiy M. A. (1915), "Excursions in Bol'shaya and Malaya Ritza lakes," in: *Anniversary Proc. of the Crimea-Caucasian Mountain Club*, Odessa, pp. 144 – 166 [in Russian].

Raffaelli J. (2000), "New records of the smooth newt (*Triturus vulgaris lantzi*) in Chechnya," *Adv. Amphibian Res. in the Former Soviet Union*, **5**, 273 – 274.

Rasulov Sh. A. (1998), "The smooth newt," in: Abdurakhmanov G. M. (ed.), *The Red Data Book of Daghestan Republic. Rare and Endangered Species of Animals and Plants*, Dagestanskoe Knizhnoe Izd-vo, Makhachkala, p. 87 [in Russian].

Ratnikov V. Yu. and Litvinchuk S. N. (2009), "Atlantal vertebra of tailed amphibians of Russia and adjacent countries," *Russ. J. Herpetol.*, **16**(1), 57 – 68.

Raxworthy C. J. (1988), "A description and study of a new dwarf sub-species of smooth newt, *Triturus vulgaris*, from western Anatolia, Turkey," *J. Zool.*, **215**, 753 – 763.

Rudyk A. M. (1989), "New herpetological records in the Caucasus," in: Szczerbak N. N. (ed.), *The Problems of Herpetology*, Naukova Dumka, Kiev, pp. 213 – 214 [in Russian].

Ryzhikov V. V., Anisimov P. S., Samarskiy G. G., Gazaryants S. K., and Golobutskiy A. A. (1991), *Nature of Chehceno-Ingush Republic. Its Protection and Reasonable Employment*, Kniga, Groznyi [in Russian].

Sardà-Palomera F. and Vieites D. R. (2011), "Modeling species' climatic distributions under habitat constrains: a case study with Coturnix coturnix," *Ann. Zool. Fenn.*, **48**, 147 – 160.

Schmidtler J. J. and Schmidtler J. F. (1967), "Über die Verbreitung der Molchgattung *Triturus* in Kleinasien," *Salamandra*, **3**(1/2), 15 – 36.

Shugurov A. M. (1909), "Materials to knowledge of herpetofauna of Imeretia," in: *Directive about Administration of Caucasus Educational District. Vol. 473. No. 1*, Tiflis, pp. 2 – 9 [in Russian].

Skorinov D. V. (2009), *Taxonomy and Distribution of Newts of the Species Group* Lissotriton vulgaris (*Salamandridae*). *PhD Thesis*, Izd. Zool. Inst. RAS, St. Petersburg, [in Russian].

Skorinov D. V. and Litvinchuk S. N. (2012), "Axial skeleton variation in newts of the genus of *Lissotriton*: comparative-evolutionary study," in: Ananjeva N. B. and Novitskiy R. V. (eds.), *The Problems of Herpetology*, Minsk, pp. 285 – 288 [in Russian].

Skorinov D. V. and Litvinchuk S. N. (2013), "Variation of ventral color pattern in two cryptic newt species, *Lissotriton vulgaris* and L. lanzi (Amphibia: Salamandridae)," *Tr. Zool. Inst. RAN*, **317**(4), 459 – 473 [in Russian].

Skorinov D. V., Litvinchuk S. N., Borkin L. J., and Rosanov J. M. (2008), "Genetic differentiation, genome size and morphological variation in newts of the *Lissotriton vulgaris* group," in: Ananjeva N. B. et al. (eds.), *The Problems of Herpetology*, St. Petersburg, pp. 363 – 371 [in Russian].

Skorinov D. V., Novikov O., Borkin L. J., and Litvinchuk S. N. (2009), "Two new cases of paedomorposis in the Caucasian newts: *Ommatotriton ophryticus* (the first record) and *Lissotriton vulgaris lantzi*," *Russ. J. Herpetol.*, **16**(1), 16 – 18.

Skorinov D. V., Litvinchuk S. N., Borkin L. J., and Rosanov J. M. (2011), "Systematics of newts of the *Lissotriton vulgaris* complex (Salamandridae)," in: Ananjeva N. B. (ed.), *The Problems of Herpetology*, St. Petersburg, pp. 235 – 240 [in Russian].

Sobolevskiy N. I. (1929), "Herpetofauna of the Talysh and Lenkoran' Lowland," in: *Zap. Zool. Otd. Obshch. Lyubit. Estestvozn. Antropo. Étnogr.*, **5**, 1 – 143 [in Russian].

Swets K. (1988), "Measuring the accuracy of diagnostic systems," *Science*, **240**, 1285 – 1293.

Tarkhnishvili D. N. (1996), "The distribution and ecology of the amphibians of Georgia and the Caucasus: a biogeographical analysis," *Zeitschr. Feldherpetol. Mageburg*, **3**, 167 – 196.

Tarkhnishvili D. N. and Gokhelashvili R. K. (1999), "The amphibians of the Caucasus," *Adv. Amphibian Res. in the Former Soviet Union*, **4**, 1 – 212.

Tarkhnishvili D. N. and Pyastolova O. A. (1985), "Dynamics of abundance of larvae of newts (Urodela, Salamandridae) of the Caucasus in their joint development in natural conditions," *Zool. Zh.*, **64**(7), 997 – 1002 [in Russian].

Tarkhnishvili D. N. and Thiesmeier B. (1994), "Zur Verbreitung und Ökologie der Amphibienin Georgien unter besonderer Berucksichtigung des Trialeti-Gebirges," *Herpetofauna*, **16**(91), 27 – 34.

Tarkhnishvili D., Kandaurov A., and Bukhinishvili A. (2002), "Declines of amphibians and reptiles in Georgia during the 20th century: virtual vs. actual problems," *Zeitschr. Feldherpetol. Mageburg*, **9**, 89 – 107.

Tertyshnikov N. N. (1953), "On knowledge of fauna of amphibians of Azerbaijan," *Izv. Akad. Nauk AzSSR*, **9**, 61 – 71 [in Russian].

Tertyshnikov M. T. (1977), "To question about history of study of Stavropol Kray," in: *Fauna of Stavropol Kray. Vol. 2*, Stavropol, pp. 43 – 51 [in Russian].

Tertyshnikov M. T. (1999), *Amphibians of Stavropol Kray*, Izd. StGU, Stavropol [in Russian].

Tertyshnikov M. T. (2004), "The Caucasus newt, *Triturus vulgaris lantzi* Wolterstorff, 1914," in: Ivanov A. L. (ed.), *Additions to the Red Book of Stavropol Kray for 2003 Year*, Servisshkola, Stavropol, pp. 80 – 81 [in Russian].

Tertyshnikov M. T. and Garanin V. I. (1984), "Anthropogenic impact on amphibians and reptiles and aims of their conservation," in: *Fauna of Stavropol Kray. Vol. 3*, Stavropol, pp. 38 – 48 [in Russian].

Tertyshnikov M. T., Gorovaya V. I., and Vysotin A. G. (1989), "About species composition and distribution of amphibians in Teberda and Caucasus nature reserves," in: *Hydrobiological Investigations in Nature Rreserves of USSR*, Moscow, pp. 128 – 129 [in Russian].

Tochiev T. Y. (1987), "On amphibian fauna of Chechen-Ingush ASSR," in: *Problems of Regional Fauna and Ecology of Animals*, Izd. StGPI, Stavropol, pp. 72 – 76 [in Russian].

Tuniyev B. S. (1983), "Herpetofauna of the southern part of the Caucasus Nature Reserve," in: Solod'ko A. S. (ed.), *Protection of Relict Vegetation and Fauna of the North-West Caucasus*, Izd. Geogr. Obshch. SSSR, Leningrad, pp. 84 – 94 [in Russian].

Tuniyev B. S. (1985), "New records of amphibians and reptiles in the Caucasus," in: Darevsky I. S. (ed.), *The Problems of Herpetology*, Nauka, Leningrad, pp. 213 – 214 [in Russian].

Tuniyev B. S. (1987), *Herpetological Fauna of the Caucasian Nature Reserve. PhD Thesis*, Izd. Zool. Inst. AN USSR, Leningrad, [in Russian].

Tuniyev B. S. (1993), "On morphological variation of the West Caucasian newts," in: *Abstrs. of the Second World Congress of Herpetology*, Adelaide, p. 266.

Tuniev B. S. (1994), "Peculiarities of variation of the spotted newt *Triturus vulgaris lantzi* Wolt., crested newt *T. cristatus karelini* Str., and the banded newt *T. vittatus ophryticus* Bert. in the Western Caucasus," *Russ. J. Herpetol.*, **1**(2), 143 – 160.

Tuniyev B. S. (1995), *Herpetofauna of Alpine Folding of the Caucasus and Central Asia. Doctoral Thesis*, Izd. Zool. Inst. RAN, St. Petersburg [in Russian].

Tuniyev B. S. (1999), *Fauna of the Caucasus Nature Reserve*, Moscow [in Russian].

Tuniyev B. S. (2000), "The modern status of the herpetofauna of Gelendzhik Town," in: *Actual Problems of Ecology and Conservation of Nature in Ecosistems of the Southern Regions of Russia and Adjacent Territories*, Izd. KGU, Krasnodar, pp. 110 – 111 [in Russian].

Tuniyev B. S. (2005), "Herpetofauna of the Ritza Relict National Park," in: *The Ritza Relict National Park. Handout*, Sochi, pp. 95 – 105 [in Russian].

Tuniyev S. B. (2008), *Ectotermic Vertebrates of the Sochi National Park: Taxonomic Structure*, *Zoogeography*, *and Conservation. PhD Thesis*, Izd. Zool. Inst. RAN, St. Petersburg [in Russian].

Tuniyev B. S. and Tuniyev S. B. (2006), "Herpetofauna of the Fisht-Oshten mountain massive and the Lagonaki Upland of Caucasus Nature Reserve," in: *Problems of Stable Development of Regions of Recreation Specialization*, Sochi, pp. 193 – 205 [in Russian].

Tuniyev B. S. and Tuniyev S. B. (2007), "The Caucasian newt, *Triturus vulgaris lantzi* (Wolterstorff, 1914)," in: Zamotaylov A. S. (ed.), *The Red Data Book of Krasnodar Kray. Animals*, Krasnodar, pp. 338 – 339 [in Russian].

Tuniyev B. S. and Tuniyev S. B. (2012), "The Caucasian newt, *Lissotriton vulgaris lantzi* (Wolterstorf, 1914)," in: Zamotaylov A. S. (ed.), *The Red Data Book of Adyghe Republic. Rare and Endangered Animals and Plants. Part 2. Animals*, Kachestvo, Maykop, p. 231 [in Russian].

Velieva Z. D. (1974), "Ecology of tailed amphibians (Caudata) of South-East Azerbaijan," *Uch. Zap. MVSSO AzSSR. Ser. Biol. Nauk*, **2**, 67 – 68 [in Russian].

Velieva Z. D. (1975), *Fauna and Ecology of Amphibians of South-East Azerbaijan. Author's Abstract of Candidate's Thesis*, Izd. AzGPI, Baku [in Russian].

de Vietingoff (1812), "Sur quelques objets d'Histoire naturelle recueillis au Caucase," *Mem. Soc. Imp. Nat. Moskou*, **3**, 83 – 96.

Vysotin A. G. and Tertyshnikov M. T. (1988), "Amphibians of Stavropol Kray," in: Tertyshnikov M. T. (ed.), *Animal World of the Ciscaucasia and Neighboring Territories*, Stavropol, pp. 87 – 122 [in Russian].

Waltari E., Hijmans R. J., Peterson A. T., Nyári Á. S., Perkins S. L., and Guralnick R. P. (2007), "Locating pleistocene refugia: Comparing phylogeographic and ecological niche model predictions," *PLoS ONE*, **2**, 563.

Warren D. L., Glor R. E., and Turelli M. (2010), "ENMTools: a toolbox for comparative studies of environmental niche models," *Ecography*, **33**, 607 – 611.

Weisrock D. W., Papenfuss T. J., Macey J. R., Litvinchuk S. N., Polymeni R., Ugurtas I. H., Zhao E., Jowkar H., and Larson A. (2006), "A molecular assessment of phylogenetic relationships and lineage accumulation rates within the family Salamandridae (Amphibia, Caudata)," *Mol. Phylogen. Evol.*, **41**(2), 368 – 383.

Wolterstorff W. (1914), "Zwei neue *Triton*enformen der paläarktishen Region," *Abh. Ber. Mus. Natur- Heimatkunde Naturwiss. Magdeburg*, **2**(4), 271 – 281.

Zhordaniya R. G. (1960), "Catalogue of collections of amphibians (Amphibia) of Zoological department of the S. N. Dzhanashiya State Museum of Georgia," *Vestn. Gos. Muz. Gruzii im. S. N. Dzhanashiya*, **20-A**, 159 – 179 [in Russian].

Zhukova T. I. (1973), "Materials to food of the lake frog and the green toad," in: *The Problems of Ecology of Vertebrates*, Izd. KGU, Krasnodar, pp. 16 – 37 [in Russian].

Zhukova T. I. (1984), "About distribution of some species of amphibians in the West Ciscaucasia," in: *Proc. of VIII All-Union Zoogeogr. Conf.*, Leningrad – Moscow, pp. 308 – 309 [in Russian].

Zhukova T. I. (1987), "Amphibians of settlements of Mezmay and Kamyshanova polyana," in: *Problems of the Lagonaki Upland*, Izd. KGU, Krasnodar, pp. 92 – 95 [in Russian].

Zhukova T. I. (1988), "Influence of anthropogenic pressure on batrahofauna of settlements of the North Caucasus," in: *Animals of Ciscaucasia and Neighboring Territories*, Stavropol, pp. 52 – 54 [in Russian].

Zhukova T. I. (2006), "Abundance and distribution of tailed amphibians (Amphibia, Salamandridae) in reservoirs of Western Ciscaucasia. Pages of the Red Data Book of Ossetia," in: *Problems of Ecology of Mountain Territories*, KMK, Moscow, pp. 39 – 42 [in Russian].

Zinenko A. I. and Goncharenko L. A. (2009), *Catalogue of Collections of the Museum of Nature at V. N. Karazin's Kharkiv National University. Amphibians* (*Amphibia*). *Reptiles* (*Reptilia*): *Crocodiles* (*Crocodylia*), *Turtles* (*Testudines*), V. N. Karazin Kharkiv National University, Kharkiv [in Russian].