

The Distribution of Amphibians in Daghestan

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РЕЗЮМЕ: Распространение земноводных в Дагестане. Л.Ф. Мазанаева. Обзор данных о распространении земноводных в Дагестане. Даны карты точек находок и кадастры распространения обыкновенного тритона (*Triturus vulgaris lantzi*), тритона Карелина (*Triturus karelinii*), обыкновенной чесночницы (*Pelobates fuscus fuscus*), сирийской чесночницы (*P. syriacus syriacus*), зеленой жабы (*Bufo viridis viridis*), обыкновенной квакши (*Hyla arborea schelkownikowi*), озерной лягушки (*Rana ridibunda*) и малоазиатской лягушки (*R. macrocnemis*), годы наблюдений и источники информации. Приводятся сведения о биотопах и обилии видов.

ABSTRACT: Overview of the data on distribution of *Triturus vulgaris lantzi*, *Triturus karelinii*, *Pelobates fuscus fuscus*, *P. syriacus syriacus*, *Bufo viridis viridis*, *Hyla arborea schelkownikowi*, *Rana ridibunda* and *R. macrocnemis*, with data on years of observations and sources of data, as well as maps, are presented. Data on habitats and abundances of species are also presented.

INTRODUCTION

The amphibian fauna of the Republic of Daghestan, Russia, is insufficiently known. This region seems to be among the most interesting in respect of batrachology. New species records for the Republic may be expected in the future. Recent findings of two amphibians, the spadefoot *Pelobates syriacus syriacus* (Leontjeva, 1986) and the newt *Triturus karelinii* (Roytberg & Mazanaeva, 1995; Orlova & Mazanaeva, 1998), serve as evidence for this. In general, the amphibian fauna of the Republic is not rich of species, but they are interesting from the point of view of both systematics and faunistics (Borkin, 1986; Darevsky, 1987). At present, 2 species of newts and 6 frogs and toads are known there, and 2 others are indicated in literature but these data are not verified.

Only a few special studies were conducted in Daghestan during the last decades, and the existing data (Bannikov and Denissova, 1943; Bannikov, 1954; Khonyakina, 1961, 1968, 1970, 1979, 1980) do not provide a full understanding of the distribution, population number and biological peculiarities of many species. In relation to this, data on the amphibian distribution in Daghestan are of special interest. This paper is an overview on the amphibian distribution there on the basis of available data taken from literature, collections held by the Zoological Museum of Moscow State University

(ZMMU, Moscow), the Zoological Institute of Russian Academy of Sciences (ZISP, St. Petersburg) and the Department of Zoology of Daghestan State University (DSU, Makhachkala). I used also the database "Amphibians of the USSR" (@9803415, Russian State Register of Databases), my own collections and observations in the period from 1991 to 1999, as well as personal communications with researchers from the Laboratory of Animal Ecology of the Daghestan Scientific Centre of the Russian Academy of Sciences and the Department of Zoology of Daghestan State University. All sources of information, except for my own data, as well as data from the database "Amphibians of the USSR", are indicated in the lists of localities. Instead of quoting this database, I quote only the original sources of information from it (as permitted by its administrator S.L. Kuzmin).

Data on the distribution of each species are given as a map and lists of localities with an indication of the time of collecting/observation and source of information. All geographic names are given in the nominative case; they are written according to the General geographic map of the Republic of Daghestan (1998).

Smooth Newt, *Triturus vulgaris lantzi* (Wolterstorff, 1914) (Fig. 1)

Z.P. Khonyakina informed me in 1970 about records of *T. vulgaris lantzi* in Daghestan near Dylm Village. Later, this species was included in the list of amphibians of Daghestan (Eldarov, 1984). No more data about this species are known.



Fig. 1. Distribution of *Triturus karelinii* (I) and *T. vulgaris lantzi* (II).

I failed to find specimens from Daghestan in the collections of the Zoological Museum of Moscow State University, the Zoological Institute of the Russian Academy of Sciences and Daghestan State University. No data on it exist in the Zoological Museum of Daghestan State University, or in the literature (except of course quotations of Khonyakina's data: Roytberg and Mazanaeva, 1995). Studies in suitable habitats in surroundings of Dylm Village in recent years were not successful. The newt lives in areas of the Chechnya Republic

and Stavropol Region adjacent to Daghestan (Karnaikhov, 1987; Tochiev, 1987), so it is possible that it will be found here in the future. Further studies, which can provide real evidence of the existence of this species in Daghestan are necessary. Thus, this personal communication by Z.P. Khonyakina remains the only known report on *T. vulgaris* in Daghestan:

1. Kazbekovskii District, surroundings of Dylm Village – Z.P. Khonyakina, pers. comm., 1975.

Southern Crested Newt, *Triturus karelinii* (Strauch, 1870) (Fig. 1)

This species has been found in Daghestan relatively recently (Roytberg and Mazanaeva, 1995; Orlova and Mazanaeva, 1998), in the south-eastern part of the Republic, in the territory of the foothill Tabasaranskii District near Kuvlig Village. The first specimen was found under heap of stones in a cottage garden. A little later, in early spring, many newts were also found in a small pond at the edge of the village. In winter 1995, significant aggregations of these newts were found in the neighbouring village of Gumi (4–5 km south of Kuvlig) during the cleaning of mud from a pond. The newts were found at the bottom of this pond. Verbal information from local people indicated that this is a fairly common species in the Tabasaranskii District: it is known in the villages of Afna, Bukhang, Kurtil, Kyuryag, Sertil, Sikuk, Uluz, Khalag, Khanak, Kharag, Kuzhnik and Shile (800–1100 m above sea level), which are called the “Verkhonii Tabasaran”. In spring 1998, the newts were found in the surroundings of Arak Village (580 m above sea level) in a small hole near a spring, near a small, swampy, forest lake. In summer of the same year, I found these newts in the neighbouring village of Nov. Lidzhe (450 m above sea level) under a heap of stones.

This newt is thus known from the following localities:

1. Tabasaranskii District, Kuvlig Village – ZMMU 3500, 3 spec., 5 June 1994, 3538, 2 spec., 8 July 1998; Gumi Village, 9 February 1995; Khalag Village, swampy lake - DSU, 29 May 1999, 2 spec..
2. Tabasaranskii District, surroundings of Arak and Nov. Lidzhe villages, ZMMU 3539, 4 spec., 27 May 1998.

Common Spadefoot, *Pelobates fuscus* (Laurenti, 1768) (Fig. 2)

This species is distributed throughout the northern part of the Republic, mainly in the Nogaiskaya Steppe. It prefers semi-sandy lands. Data on this species are very scarce. Apparently, its population number is not high in Daghestan. The biology is poorly known as a result of a secretive mode of life and the lack of specialised studies.

The spadefoot is known from the following localities:

1. Nogaiskii District, right bank of the Kuma River, surroundings of Lopas Settlement – M.-R. D. Magomadov, pers. comm., 1997.
2. Nogaiskii District, Nogaiskaya Steppe, NW of Terekli-Mekteb Village, left bank of Karanogaiskii Collector, sand massive – Gorovaya and Dzhandarov (1987); ZISP 3566, L.B. Beme, 1926.
3. Nogaiskii District, surroundings of Terekli-Mekteb Village – Beme (1928b); Gorovaya and Dzhandarov (1987); Tertyshnikov et al. (1993).
4. Tarumovskii District, surroundings of Aleksandro-Nevskoe Village – ZMMU 2472, E.E. Syroechkovsky, 5 July 1950.

5. Surroundings of Kizlyar Town, water body in the floodplain of the St. Terek River, spawn, 3 March 1999.
 6. Babayurtovskii District, ca. 40 km N of Tatayurt Village, right bank of the Alikazgan River (part of the Nov. Terek River) – DSU, L.F. Mazanaeva, 19 May 1996.

Eastern Spadefoot, *Pelobates syriacus syriacus* Boettger, 1889 (Fig. 2)



Fig. 2. Distribution of *Pelobates fuscus fuscus* (I) and *P. syriacus syriacus* (II).

This species is distributed in Daghestan at the extreme south-east of the Maritime Lowland on the shore of the Caspian Sea (Leontyeva, 1986). No more data on its distribution exist for Daghestan. Studies of some typical habitats in the surroundings of Mollakent Village and the sea shore of Samurskii Wildlife Sanctuary in recent years did not provide new records, probably due to secretive mode of life of this species and its sporadic distribution. Therefore, only one certain record is known in Daghestan:

1. Magaramkentskii District, mouth of the Samur River (Kryuchkov, 1960);

delta of the Samur River, shore of the Caspian Sea (Leontyeva, 1986).

Green Toad, *Bufo viridis viridis* Laurenti, 1768 (Fig. 3)

The presence of this species in Daghestan has been known since the last century (Walter, 1888). *Bufo viridis* is the most widespread amphibian species in Daghestan. It inhabits various landscapes in the lowland, foothill and mountain zones of the Republic. In the lowlands this species occurs in various habitats, including sand-hill semi-desert, clay-solonchak desert and dry steppe. Its population numbers there exceed those of other amphibian species. The toad is most numerous in the lower reaches of the rivers Kuma, Terek and Sulak. It forms large aggregations in settlements and towns in gardens, parks, forest groves etc. I have found this species on sandy sea shores under stones at a distance of 15–20 m from the sea. In the foothill zone *B. viridis* inhabits mainly forest steppe areas. There it occurs in valleys and floodplains of rivers; it is fairly numerous in cottage gardens, fields and in settlements. The species occurs in the mountains to the height of the alpine belt. There it is found on grasslands, valleys and the floodplains of

mountain rivers and road edges, but the largest aggregations are observed in settlements. G.I. Radde has caught *B. viridis* in Kurush Village in the Dukuzparinskii District (elevation 2700 m above sea level: Zhordaniya, 1900). I have found it in the wet sub-alpine meadow at an elevation of 2300 m and on the xerophilous slopes of Chokholsu Mountain (2700 m above sea level) in Southern Daghestan.

The toad is known from the following localities:

1. Tarumovskii District, Daghestanskii Nature Reserve – O.A. Kheifets, pers. comm., 26 January 1998.
2. Tarumovskii District, surroundings of Kochubei Village, 28 May 1997.
3. Nogaiskii District, surroundings of Chervlennye Buruny Village, 14 km westwards from Terekli-Mekteb Village – ZISP RM7411-7418, TP21022-21028, 7 May 1990, TP21031-21032, 8 May 1990.
4. Kizlyarskii District, surroundings of Krainovka Village – DSU, 2 spec., L.F. Mazanaeva, 29 May 1998.
5. Kizlyar Town – Varshavskii et al. (1985); gardens in its surroundings – DSU, 6 spec., L.F. Mazanaeva, 18 April 1999; Bezorukin Settlement – Gozhev (1930).
6. Babayurtovskii District, surroundings of Babayurt Village. numerous (“Baba-Yurt”, “Khasavyurtovskii”) – Krasovsky (1929), my data 30 May 1993.
7. Babayurtovskii District, ca. 40 km N of Tatayurt Village, right bank of Alikazgan River (part of Nov. Terek River) – DSU, 1 spec., L.F. Mazanaeva, 20 July 1994.
8. Babayurtovskii District, Glavnyi Kut, 24 July 1991.
9. Sulak Settlement, 30 km N of Makhachkala City – DSU, 1 spec., L.F. Mazanaeva, 23 April 1997.
10. Khasavyurtovskii District, surroundings of Kostek Village, numerous – Krasovsky (1929).
11. Surroundings of Khasavyurt Town – Krasovsky (1929).
12. Kizilyurtovskii District, Chontaul Village – DSU, 1 spec., L.F. Mazanaeva, 5 April 1999.
13. Kizilyurt Town, bank of Sulak River, numerous (“Chir-Yurt”) – Turov and Krasovsky (1933).
14. Kumtorkalinskii District, Kumtor-Kale Railway Station, Sarykum Sandhill – Krasavtsev (1939), Khonyakina (1961), ZISP TP20970, 2 May 1990, RM7392-7396, 4 May 1990; ZMMU 3036, E.A. Dunaev; Ekibulak Settlement (“Agikulak”) – Pisanets (1978).
15. Surroundings of Makhachkala City, Leninkent Settlement, 13 April 1999.
16. Surroundings of Makhachkala City – Dinesman (1953); Khonyakina (1961, 1980); Pisanets (1977); ZMMU, 1975.
17. Kaspiisk Town – Borkin et al. (1986); DSU, 3 spec., L.F. Mazanaeva, 3 May 1998.
18. Buinaksk Town, 7 April 1997.
19. 20th km of the road Makhachkala-Derbent cities – Pisanets (1992).



Fig. 3. Distribution of *Bufo viridis viridis*.

20. Novolakskskii District, Novolakskoe Village – DSU, 1 spec., L.F. Mazanaeva, 7 May 1995.
21. Khunzakhskii District, Khunzakh Village – E.V. Iliina and Kh.M. Ramazanov, pers. comm., 1996.
22. Gergebilskii District, Gergebil Village – Kh.M. Ramazanov, pers. comm. 1997.
23. Karabudakhkentkii District, surroundings of Karabudakhkent Village, Paraulozen River floodplain, 30 May 1993.
24. Sergokalinskii District, Sergokala Village, 23 October 1996.
25. Izberbash Town, gardens – DSU, 2 spec., L.F. Mazanaeva, 10 April 1999.
26. Akushinskii District, Gapshima Village – DSU, 2 spec., L.F. Mazanaeva, 1 May 1998.
27. Dakhadaevskii District, Urkarakh Village – DSU, 4 spec., L.F. Mazanaeva, 7 April 1999.
28. Kaitagskii District, Madzhalis Village – DSU, 1 spec., L.F. Mazanaeva, 7 June 1995.
29. Derbenskii District, surroundings of Morskoe Village, 15 May 1996.
30. Derbent Town, park, 27 March 1999.
31. Derbenskii District, Arablinskii Settlement – Pisanets (1978), my data, 16 October 1998.
32. Tabasaranskii District, Arak Village – ZMMU, 1 spec., L.F. Mazanaeva; Khuchni Village – DSU, larvae, L.F. Mazanaeva, 8 July 1998.
33. Tabasaranskii District, Kuvlig Village – DSU, 1 spec., L.F. Mazanaeva, 9 July 1998.
34. Agulskii District, surroundings of Burshag Village – DSU, L.F. Mazanaeva, 15 August 1992.
35. Agulskii District, Amukh Village – DSU, L.F. Mazanaeva, 24 July 1997.
36. Dakhadaevskii District, villages of Kunki, Khuduts and Itsari – DSU, 6 spec., L.F. Mazanaeva, 28 March 1999.
37. Kulinskii District, Tsovvara 2nd Village – E.G. Akhmedov, pers. comm., 1997.
38. Lakskii District, surroundings of Chitur Village – DSU, 1 spec., L.F. Mazanaeva, 10 May 1997.
39. Charodinskii District, Gelib Village – DSU, 3 spec., L.F. Mazanaeva, 1995.
40. Charodinskii District, Gochob Village – E.G. Akhmedov, pers. comm., 1996.
41. Shamilskii District, villages of Rugelda and Samada – E.G. Akhmedov, pers. comm., 1995.
42. Tlyaratinskii District, surroundings of Kosob Village – E.G. Akhmedov, pers. comm., 18 April 1998.
43. Tsuntinskii District, surroundings of Tlyadal Village, E.G. Akhmedov, pers. comm., 13 October 1998.
44. Tlyaratinskii District, surroundings of Kamilukh Village – E.G. Akhmedov, pers. comm., 15 October 1996.
45. Khunzakhskii District, Kharakhi Village – DSU, 2 spec., L.F. Mazanaeva, 17 April 1999.
46. Tsumadinskii District, Inkhokvari Village – E.G. Akhmedov, pers. comm., 27 July 1998.
47. Kurakhskii District, Kutul Village, spring near the right hand entrance from the road, spawn in swamp, 7 April 1999; surroundings of Kabir Village, left bank of Kurakh River, spring puddle – DSU, 3 spec., L.F. Mazanaeva, 4 April 1999; Ikra Village – DSU, 1 spec., L.F. Mazanaeva, 24 March 1999; 7th km of the road Ikra–Rugun – DSU, 1 spec., L.F. Mazanaeva, 28 March 1999.
48. Kurakhskii District, Kurakh Village – DSU, 1 spec., L.F. Mazanaeva, 2 April 1999.
49. Agulskii District, Chirag Village, 1-4 June 1997.
50. Rutulskii District, surroundings of Nizh.Katruk Village – E.G. Akhmedov, pers. comm., 1 October 1996.
51. Rutulskii District, surroundings of Tsakhur Village – Krasovsky (1930); surroundings of Ikhrek Village – Khonyakina (1980).
52. Rutulskii District, surroundings of Rutul Village – Krasovsky (1930); DSU 1 spec., L.F. Mazanaeva, 2 May 1994.
53. Akhtynskii District, Akhty Village – Krasovsky (1930).
54. Dokuzparinskii District, Kurush Village – Walter (1888); Zhordaniya (1960); SE slope of Cholokhsu Town, 2700 m a.s.l. – E.G. Akhmedov, pers. comm. 1-12 July 1997.
55. Surroundings of Magaramkent Village, Sumur River floodplain – DSU 1 spec., L.F. Mazanaeva, 29 March 1999.
56. Magaramkentkii District, Samur River mouth – Bannikov (1954); Kryuchkov (1960).
57. Derbenskii District, Mollakent Village – DSU 1 spec., L.F. Mazanaeva, 17 March 1999.

58. Magaramkentskii District, surroundings of Tagirkent-Kazmalyar Village – DSU, 13–14 May 1999, 4 spec.
59. Rutulskii District, surroundings of villages Mishlesh and Korsh, the Samur River floodplain – DSU, 5–6 July 1999, 8 spec.
60. Nogaiskii District, surroundings of Leninaul Village – DSU, 23 May 1999, 8 spec.

Common Tree Frog, *Hyla arborea schelkownikowi* Èernov, 1926 (Fig. 4)

Apparently, this species was identified in the territory of the Caucasus by Pallas [1814]. This frog lives in forest areas in lowland, foothill and mountain zones of the Republic. It is linked to forest areas around water bodies. In the lowlands it is numerous in the lower reaches of rivers and in floodplain forests. In small numbers it also occurs in forest bands, vineyards and gardens. In foothills it lives in the belt of broad-leaved forests. It is especially numerous on northern slopes, forming large aggregations in forest areas around lakes and floodplain lakes. In the foothill zone, it lives in small numbers in gar-



Fig. 4. Distribution of *Hyla arborea schelkownikowi*.

dens and bushlands. In the mountains the tree frog reaches an elevation of about 1400 m above sea level (e.g. Rutulskii District, villages of Tsakhur and Bol. Amushi). It lives there in small numbers in mountain forests, meadows and gardens. The biology of this species in Daghestan is poorly known. There were no special studies in the last decades, and all the data were collected only occasionally.

The tree frog is known from the following localities:

1. Surroundings of Kizlyar Town – Pallas [1814]; Eichwald (1842); ZMMU, 5 spec., N.V. Shibano, 24 May 1923; Tertyshnikov et al., 1993; DSU, 5 spec., L.F. Mazanaeva, 29 May 1998.
2. Terek River floodplain – ZISP 329, A. Gozhev, 28 August 1933.
3. Babayurtovskii District, right bank of Alikazgan River (part of the Nov. Terek River), 3–4 km NW from Tamazyube Village – DSU, 8 spec., L.F. Mazanaeva, 17 May 1996; ca. 40 km N of Tatayurt Village, flood plain forest, 26 July 1994.
4. Babayurtovskii District, surroundings of Utsmiyurt Village (“Utsmiievskie Ekonomii”) – Krasovsky (1929).
5. Khasavyurtovskii District, surroundings of Khasavyurt Town – Boettger (1899); Zhordaniya (1960); surroundings of Karlanyurt Village (“Karkan-Yurt”) – Krasovsky (1929).

6. Khasavyurtovskii District, surroundings of Endrei and Aktash villages ("Andrei-Aul", "Aktash-Aukh") – Krasovsky (1929).
7. Kazbekovskii District, surroundings of Dylm Village – Krasovsky (1929), Kh.M. Ramazanov, pers. comm., 1996.
8. Kazbekovskii District, surroundings of villages of Burtunai and Guni, 9 July 1991.
9. Khunzakhskii District, surroundings of Mushuli Village – DSU, 1 spec., L.F. Mazanaeva, 17 April 1999.
10. Buinakskii District, surroundings of Manasaul Village – E.V. Iliina, pers. comm., 1992.
11. Kizilyurtovskii District, surroundings of Sultan-Yangiyurt Village; surroundings of Kizilyurt Town, bank of the Sulak River ("Sultan-Yangi-Yurt", "Chir-Yurt" Railway Station) – Turov and Krasovsky (1933).
12. Kumtorkalinskii District, surroundings of Adzhidada Village ("Khadzhi-Dada") – Turov and Krasovsky (1933).
13. Kizilyurtovskii District, surroundings of Nechaevka Village – Turov and Krasovsky (1933).
14. Sergokalinskii District, surroundings of Degva Village – DSU, 1 spec., 2 May 1998.
15. Kaitagskii District, surroundings of Dzhibakhni Village, 18 April 1996.
16. Khasbekskii District, surroundings of Tatlyar Village, forest in the floodplain of the Uluchchai River – DSU, 1 spec., L.F. Mazanaeva, 20 March 1999.
17. Derbenskii District, surroundings of Morskoe Settlement, forest grove near lake, 12 May 1996.
18. Samurskii Wildlife Sanctuary, Samur River delta – Beme (1928a); Bannikov (1954); Zykov et al. (1991); ZMMU 2722, coll. S.L. Pereshkolnik, 1988; E.V. Iliina, pers. comm., 1996.
19. Tabasaranskii District, surroundings of villages of Khuchni, Arak and Khurik – DSU, 6 spec., L.F. Mazanaeva, 21 May 1988.
20. Suleiman-Stalskii District, surroundings of Alkadar Village, 20 August 1997.
21. Akhtynskii District, surroundings of Akhty Village – Krasovsky (1930).
22. Rutulskii District, surroundings of Rutul Village – Krasovsky (1930).
23. Rutulskii District, surroundings of Tsakhur Village – Krasovsky (1930).
24. Kurakhskii District, surroundings of Iskra Village, lake – DSU, 15 May 1999, 1 spec.
25. Magaramkentskii District, surroundings of Tagirkent-Kazmalyar Village, gardens and Samur Forest – DSU, 13–14 May 1999, 2 spec.

Iranian Long-Legged Frog, *Rana macrocnemis* Boulenger, 1885 (Fig. 5)

This species was first noted in Daghestan by G.I. Radde in 1865 in its south-eastern part (from Kurush: British Museum of Natural History). This frog is the most common amphibian species in the mountain zone of Daghestan. It is also found in the foothills of the Republic, and in some lowland regions. This species is most numerous in the mountain regions of the northern part of Daghestan. In the highlands, it occurs in small lakes originating from glaciers near the foot of peaks, as well as on wet areas of alpine and subalpine meadows near springs, streams and wells. It is most widely distributed in the central belt of the mountains. There it inhabits small swampy lakes, wet grassland meadows, swampy glades, floodland meadows and small ponds in the valleys of mountain rivers, as well as wet areas of mountain forests. The largest aggregations of *R. macrocnemis* occur in grasslands on wet sites near springs and along mountain streams and rivulets originating from springs. It lives also in puddles formed after rain. In mountains of the south-western part of Daghestan it may be found fairly far from water bodies. According to the available data, it reaches mountain elevations higher than 3000 m above sea level. I have observed it in the grass near a lake at the base of the peak of Alakhundagh Mountain (3801 m), while Krasovsky (1933) caught it near Kurush Village (2700 m) in

the Dokuzparinskii District and near the top of Shakhdagh Mountain (4243 m), 5 km from Yarydagh Mountain in Southern Daghestan.

The frog is not numerous in the foothills. It lives there in swampy glades in river valleys, in reed groves around lakes in the forest steppe, in vegetation near springs and spring-fed water bodies. In the majority of typical habitats it occurs together with *Rana ridibunda*, whose population number there is higher.

On lowland *R. macrocnemis* was found by Bannikov (1954) in the Samur Forest, the mouth of the Samur River, and, in small numbers, by Turov and Krasovsky (1933) in the surroundings of Sultan-Yangiyurt Village in the Sulak River valley. A single specimen was also collected by Krasovsky (1929) in the Aktash River near Endrei Village. Khonyakina (1968) caught specimens near Makhachkala City. However, I failed to found this frog at this location. In general, its present existence in the lowland areas of Daghestan requires confirmation.

• The frog is known from the following localities:

1. Kizilyurtovskii District, surroundings of Nechaevka Village – Khonyakina (1968).
2. Kizilyurtovskii District, surroundings of Sultan Yangiyurt Village, Sulak River valley (“Sultan-Yangiyurt”) – Krasovsky (1929); Turov and Krasovsky (1933).
3. Khasavyurtovskii District, surroundings of Endrei Village, bank of the Aktash River (“Andrei-Aul”) – Krasovsky (1929).
4. Surroundings of Makhachkala City – Khonyakina (1968).
5. Buinakskii District, surroundings of Manasaul Village – E.V. Iliina and Kh.M. Ramazanov, pers. comm., 1994.
6. Khunzakhskii District, surroundings of Mochokh Village, lake at about 1800 m above sea level – E.V. Iliina and Kh.M. Ramazanov, pers. comm., 1994.
7. Sergokalinskii District, surroundings of Usemikent Village – Khonyakina (1968); surroundings of Sergokala Village – Caucasian Museum 429, O. Lukstin, 1916 (“site Dashlagar” – Zhordaniya, 1960).
8. Charodinskii District, surroundings of Usacha Village – Khonyakina (1968, 1979); surroundings of Gochob Village – E.G. Akhmedova, pers. comm., 1996.
9. Charodinskii District, surroundings of Gelib Village – DSU, 2 spec., L.F. Mazanaeva, 17 May 1995; surroundings of Archib Village – E.G. Akhmedova, pers. comm., 1996.



Fig. 5. Distribution of *Rana macrocnemis*.

10. Lakskii District, surroundings of Chitur Village – ZMMU 3537, 5 spec., L.F. Mazanaeva, 11 April 1998.
11. Akushinskii District, surroundings of villages Gapshima and Burshmak, bank of the river Akusha, DSU, 5 spec., 3 May 1998.
12. Kulinskii District, surroundings of Tsovvara 2nd Village, near rivulet – E.G. Akhmedov, pers. comm., 1998.
13. Dakhadaevskii District, surroundings of villages of Kunki, Khuduts and Itsari – DSU 15 spec., L.F. Mazanaeva, 22 March 1999.
14. Agulskii District, surroundings of Burshag Village, spring stream and well – DSU, 9 spec., L.F. Mazanaeva, 20 August 1998.
15. Agulskii District, surroundings of Amukh Village, lake and grass near well – DSU, 6 spec., L.F. Mazanaeva, 8 July 1997.
16. Agulskii District, surroundings of Chirag Village, western lake in the foothills of Alakhundagh Mountain, 3801 m a.s.l. – E.V. Iliina, pers. comm.; my data, 9 July 1997.
17. Tabasaranskii District, surroundings of Darvag Village – Khonyakina (1968, 1977, 1979).
18. Tabasaranskii District, surroundings of Khustil Village – ZMMU 3535, 2 spec., L.F. Mazanaeva, 9 July 1998; surroundings of Khuchni Village, Rubas River bank – ZMMU 3536, 2 spec., L.F. Mazanaeva, 9 July 1998; surroundings of Arak Village, lake near spring, 22 May 1998.
19. Tabasaranskii District, surroundings of Kurkak Village, lake – DSU, 2 spec., L.F. Mazanaeva, 10 July 1998.
20. Khivskii District, surroundings of Khiv and Kantsil villages (“Kantsilo”) – Khonyakina (1968, 1977, 1979); spring puddle near the highway between Khiv–Tpig, 2 km from the administrative margin of the district, 10 August 1997.
21. Kurakhsii District, surroundings of Kabir Village, valley of the river Kurakh, swampy area near spring – DSU, 8 spec., L.F. Mazanaeva, 2-3 March 1999.
22. Samurskii Natural Wildlife Sanctuary, mouth of the Samur River – Beme (1928a); Bannikov (1954); Borkin (1977); Zykov et al. (1991).
23. Magaramkentskii District – Khonyakina (1968).
24. Dokuzparinskii District, surroundings of Kurush Village – Khpnyakina (1968); near the top of Shakhdagh Mountain (“Shakh-Dagh”) – Krasovsky (1932).
25. Akhtynskii District, NW from Akhty Village – Krasovsky (1930, 1932).
26. Surroundings of Rutul Village, Samur River – Nikolsky (1913); Krasovsky (1932); DSU, 5 spec., L.F. Mazanaeva, 3 May 1998.
27. Rutulskii District, surroundings of Luchek Village, floodplain of the Kara-Samur River – DSU, 3 spec., L.F. Mazanaeva, 10 June 1998.
28. Rutulskii District, surroundings of Nizh. Katruk Village – E.G. Akhmedov, pers. comm., 1 October 1996.
29. Rutulskii District, surroundings of villages of Tsakhur, Dzhinykh (“Dzhenykh”) – Khonyakina (1968), Mishlesh, Ikhrek, Dzhinykh, Mukhakh (“Dzhanykh”, “Mukokh”) – Krasovsky (1932).
30. Rutulskii District, surroundings of Kurdul Village – E.G. Akhmedov, pers. comm., 3 October 1996.
31. Tlyratinskii District, surroundings of Kamilukh Village – E.G. Akhmedov, pers. comm., 15 October 1996.
32. Tsuntinskii District, surroundings of Tlyadal Village – E.G. Akhmedov, pers. comm., 13 October 1998.
33. Tlyratinskii District, surroundings of Kosob Village – E.G. Akhmedov, pers. comm., 18 April 1998.
34. Tsumandinskii District, surroundings of Khvarshi Village, steep slope, bank of the river Khvarshi along the road to Santlada Village, singular individuals – E.G. Akhmedov, pers. comm., 23 July 1997.
35. Gunibskii District, surroundings of Shangoda Village, the river bank – 24 August 1999.
36. Derbenskii District, surroundings of Bilgadi Village, forest brook – 20 June 1999.
37. Magaramkentskii District, surroundings of Tagirkent-Kazmalyar Village, brooks in Samur Forest – 13–14 May 1999, DSU, 20 spec.
38. Rutulskii District, surroundings of Korsh Village, Samur River floodplain forest – 5–6 July 1999, DSU, 7 spec.

Marsh Frog, *Rana ridibunda* Pallas, 1771 (Fig. 6)

This species has been known in Daghestan for many years. This is one of the most numerous amphibian species there. It inhabits water bodies of different types in lowland, foothill and, partly, in the mountain zones. This frog is most numerous in the lowland. There it occurs in reed groves in brackish waters of the Caspian Sea coastal area. The largest aggregations occur in floodland swamps, lakes, the lower reaches of rivers and in swampy areas of the Agrakhanskii Bay. It is fairly numerous in groves of semi-aquatic vegetation around lakes, in small ponds near



Fig. 6. Distribution of *Rana ridibunda*.

river deltas, in swampy areas of river valleys and in artificial water bodies, reservoirs, rice fields and irrigation channels. In semi-arid parts of the desert, the frog inhabits lakes fed with ground water, puddles near the numerous artesian wells, irrigation channels and water collectors. In the foothill zone, *R. ridibunda* inhabits water bodies along river valleys, lakes in the forest steppe and small, swampy forest lakes. It occurs in aggregations along forest brooks, in spring puddles, ditches and ground wells. The frog penetrates the mountain zone by using river valleys, but there it avoids steep and grassless banks. It occurs in valleys with a slow-moving river, in mountain lakes and in pools of water occurring by mountain streams. According to the available data, the maximum elevation reached is 1700–1800 m above sea level (Mochokh Lake, Khunzakh District).

The frog is known from the following localities:

1. Shore of Kizlyar Bay, Daghestanskii Nature Reserve – Vronskii and Amirkhanov (1990).
2. Tarumovskii District, Surroundings of Kochubei Village, 28 May 1997.
3. Nogaiskii District, surroundings of Terekli-Mekteb (“Terekti-Mektev”) – Borkin et al., 1979.
4. Nogaiskii District, surroundings of Chervlenye Buruny Village – ZISP RM 7419-7421, TP 21029-21030, 8 May 1990.
5. Kizlyarskii District, surroundings of Krainovka Village (ditch near riverbed) – DSU, 4 spec., L.F. Mazanaeva, 30 May 1998.
6. Surroundings of Kizlyar Town, St. Terek River valley, 17 March 1999; Talovka River flood lake – DSU, L.F. Mazanaeva, 15 March 1999.

7. Babayurtovskii District, ca. 40 km N from Tatayurt Village, right bank of the Alikazgan River (part of Nov. Terek River) – DSU, coll. L.F. Mazanaeva, 17 May 1996.
8. Babayurtovskii District, surroundings of Babayurt Village (“Baba-Yurt”, “Khasavyurtovskii”): Krasovsky, 1929), 22 June 1997.
9. Agrakhanskii Bay, surroundings of Novaya Kosa Village, delta of Nov. Terek River – ZMMU 1756, V.P. Vasiliev, 1979; Glavnyi Kut, 25 May 1993
10. Surroundings of Sulak Village, mouth of Sulak River – DSU, 2 spec., L.F. Mazanaeva, 16 March 1999.
11. Khasavyurtovskii District, surroundings of Aksai Village – Krasovsky (1929).
12. Khasavyurtovskii District, surroundings of Kostek Village – Krasovsky (1929).
13. Surroundings of Chontaul Village, right bank of Mal. Sulak River, left bank of Sulak River – DSU, 3 spec., L.F. Mazanaeva, 5 April 1999.
14. Kumtorkalinskii District, surroundings of Adzhidada Village (“Khadzhi-Dada”, “Khasavyurtovskii”) – Turov and Krasovsky (1933).
15. Kizilyurtovskii District, right bank of Sulak River, surroundings of Nechaevka Village (“Nechaevskii Khutor and site Kedzhi-Tomak”) – Turov and Krasovsky (1933).
16. Surroundings of Kizilyurt Town, Sulak River floodland (“Railway Station Chir-Yurt”) – Turov and Krasovsky (1933); DSU, 2 spec., L.F. Mazanaeva, 19 May 1997.
17. Khasavyurtovskii District, surroundings of Endrei Village (“Andrei-Aul”) – Krasovsky (1929).
18. Surroundings of Makhachkala City, NW of Semender Settlement, irrigation channel – DSU, 5 spec., L.F. Mazanaeva, 30 March 1999.
19. Surroundings of Makhachkala City, SW of Leninkent Settlement – DSU, 2 spec., L.F. Mazanaeva, 13 April 1999.
20. Surroundings of Makhachkala City, Fishery Turali-1 – Khonyakina (1961); Akgel Lake – DSU, larv., L.F. Mazanaeva, 5 June 1995; Nov. Kyakhulai Settlement – ZMMU 3534, 3 spec., L.F. Mazanaeva, 6 May 1998.
21. Surroundings of Kaspiisk Town, western summer-cottage settlement, lake – DSU, 3 spec., L.F. Mazanaeva, 17 May 1994.
22. Surroundings of Buinaksk Town, Shurozen River floodplain, 7 April 1997.
23. Khunzakhskii District, surroundings of Mochokh Village, ca. 1800 m a.s.l., I.V. Iliin and Kh.M. Ramazanov, pers. comm., 1996.
24. Gergebelskii District, surroundings of Gergebel Village, bank of the tributary of Karakoisu River, Kh.M. Ramazanov, pers. comm., 1997.
25. Surroundings of Karabudakhkent Village, Paraulozen River floodplain, 31 May 1993.
26. Karabudakhkentskii District, surroundings of Manaskent Village, Manasozen River mouth – DSU, L.F. Mazanaeva, 8 July 1994.
27. Surroundings of Izberbash Town, NW of Kolichi River mouth, 5 August 1991.
28. Surroundings of Izberbash Town, S from the ditch near sulphur spring – DSU, 3 spec., L.F. Mazanaeva, 11 April 1999.
29. Kayakentskii District, surroundings of Pervomaiskoe Village, SE from the spring, 2 June 1991.
30. Kayakentskii District, surroundings of Novokayakent Village, Gamriozen River mouth – DSU, L.F. Mazanaeva, 9 May 1998.
31. Derbenskii District, surroundings of Berikei Village; Morskoe Settlement, lake and irrigation channel – DSU, 10 spec., L.F. Mazanaeva, 18 May 1997.
32. Kaitagskii District, surroundings of Madzhalis Village, Ulluchai River floodplain – DSU, 2 spec., L.F. Mazanaeva, 3 May 1998.
33. Surroundings of Derbent Town, S of irrigation channel, 7 August 1992.
34. Tabasaranskii District, surroundings of Khuchni Village, Rubas River floodplain; pond near Khustil and kurkak villages – ZMMU 3533, 8 spec., L.F. Mazanaeva, 6-9 July 1998; pond in surroundings of Tsanag and Tened villages – ZMMU 3534, 3 spec., L.F. Mazanaeva, 10 July 1998.
35. Tabasaranskii District, surroundings of Arak Village, lake near the entrance below the road – DSU, 5 spec., L.F. Mazanaeva, 20 May 1998.

36. Derbenskii District, surroundings of Mollakent Village, swampy lake – DSU, 1 spec., L.F. Mazanaeva, 20 March 1999.
37. Derbenskii District, surroundings of Belidzhi Village, irrigation ditch, 15 August 1991.
38. Kurakhskii District, surroundings of Kutul Village, S of the mineral spring Fan Yad – DSU, 10 spec., 7-13 April 1999.
39. Suleiman-Stalskii District, surroundings of Kasumkent Village, spring near the entrance below the Derbent-Kasumkent highway, swampy area, 26 August 1992; Chirakhchai River floodplain – DSU, 2 spec., L.F. Mazanaeva, 2 May 1998.
40. Magaramkentskii District, Samur River mouth, Samur Natural Wildlife Sanctuary, Samur Fishery – Beme (1928a); Bannikov and Denissova (1943); Zykov et al. (1991); E.V. Iliin, *pers. comm.*, 1992.
41. Surroundings of Magaramkent Town, Samur River – DSU, 4 spec., L.F. Mazanaeva, 15 March 1999.
- 42 and 43. Akhtynskii District, Samur River floodplain below Akhty Village – Krasovsky (1930).
44. Akhtynskii District, surroundings of Kurkal Village, Akhtychai River dry floodland, irrigation ditch, ca. 1200 m above sea level – DSU, 2-3 July 1999, 4 spec.
45. Derbenskii District, surroundings of Bilgadi Village, forest brook – 20 June 1999.
46. Nogaiskii District, surroundings of Leninaul Village, lake and irrigation channel – DSU, 23 May 1999, 12 spec.
47. Magaramkentskii District, surroundings of Tagirkent-Kazmalyar Village, brooks in Samur Forest, fish ponds in the Samur River delta – DSU, 14 May 1999, 12 spec.
48. Gunibskii District, surroundings of Gunib Village – DSU, 25 July 1999.

DOUBTFUL AND SUPPOSED DISTRIBUTIONS

There are several records of the existence of species which seem really to be absent from Daghestan. Zhordaniya (1960) indicated in the collection of the Caucasian Museum, Tbilisi (no. 418), the Caucasian Toad, *Bufo bufo verrucosissima* (= *Bufo verrucosissimus* (Pallas, [1814])) collected in 1916 in the surroundings of Buinaksk City. No more data are known on the distribution of this species in Daghestan. I have examined suitable habitats in the surroundings of Buinaksk in the last few years, but failed to found this species. This toad, however, was also indicated in the following neighbouring territories: Stavropol Region, Chechnya, Georgia and Azerbaijan (Borkin, 1986; Kafnaukhov, 1987; Tochiev, 1986; Ananjeva et al., 1998). Therefore, we can not include *B. verrucosissimus* in the list of the fauna of Daghestan. Further studies are necessary, especially in the forest steppe habitats in the foothill districts.

Rukhlyadev and Abdurakhmanov (1975) identified the Caucasian Parsley Frog, *Pelodytes caucasicus* Boulenger, 1896 as a Caucasian endemic in the fauna of Daghestan. I think this resulted from a misunderstanding. These authors did not particularly study the amphibians and reptiles of Daghestan. In addition, there are no data on the existence of *P. caucasicus* in adjacent regions and there is no suitable habitat for this species in Daghestan.

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