

THE **R**EP TILES OF NORTHERN EURASIA

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 **PENSOFIT.**

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ILYA S. DAREVSKY, SERGEI A. RYABOV AND ANDREI V. BARABANOV



NORTHERN EURASIA

TAXONOMIC DIVERSITY, DISTRIBUTION, CONSERVATION STATUS



The Reptiles of Northern Eurasia
Taxonomic Diversity, Distribution, Conservation Status

NATALIA B. ANANJEVA, NIKOLAI L. ORLOV, ROMAN G. KHALIKOV, ILYA S. DAREVSKY,
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Lake Markakol, eastern Kazakhstan

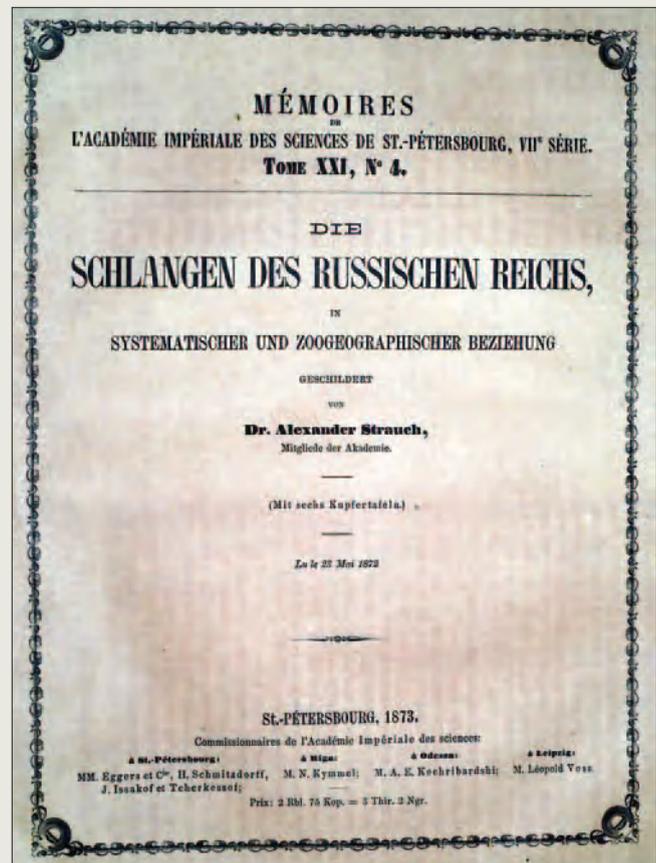
The Reptilia is the first group in the evolution of vertebrates to have turned to terrestrial reproduction and the widespread colonization of terrestrial environment. Recent reptiles are descendants of the diverse world of extinct reptiles inhabiting our planet during the past geological periods beginning with the Middle Carboniferous (about 320 mya). At the present time there are more than 7500 reptilian species known, belonging to five orders: turtles and tortoises (Testudines); crocodiles (Crocodylia); rhynchocephalians (Rhynchocephalia), lizards (Sauria) and snakes (Serpentes). The two latter groups are combined into infraorder Squamata. Reptiles are distributed across all the continents except Antarctica.

Reptiles as well as all biota are exposed to the serious anthropogenic influence. It frequently results in the direct or indirect transformation of habitats and very often in the significant population declines. The widespread use of reptiles as food items in many tropical regions of the world, as well as their exploitation for use in popular traditional medicine, also pose real danger for their survival. Extensive economic exploitation of the environment is the chief reason of population declines or even extinctions. In the twenty-first century we face serious environmental problems, which is why integrative conservation activity is of growing importance.

The International Union for Conservation of Nature and Natural Resources (IUCN) coordinates the programs for the study and conservation of biodiversity. Under the Species Survival Commission (SSC) of the IUCN Specialist Groups were organized on geographic and/or taxonomic base. A monthly bulletin, issues as a supplement to SPECIES, SSC's published newsletter, is published to keep staff, members and the wider IUCN network up-to-date with news and announcements from the Commission. This issue and all previous issues are available on the SSC website at: <http://www.iucn.org/themes/ssc/whats-new.htm>.

The IUCN Species Survival Commission (SSC) E-Bulletin - June 2003 informed that a new North Eurasia (former Soviet Union and Mongolian territories) Reptile Specialist Group has been organized with the approval of the Reptiles and Amphibians SSC Executive Focal Point (Chair - Natalia Ananjeva). This new group will be active in the organization and coordination of conservation programs, the standartization of approaches and methods, and the evaluation of taxa in light of IUCN, local Red List and CITES categories and criteria (<http://www.redlist.org>; <http://www.cites.org>).

The members of North Eurasian Reptiles Specialist Group are: Natalia Ananjeva - Chair (St.Petersburg, Russia), Aram Agasyan (Erevan, Armenia), Eduard Adnagulov (Khabarovsk, Russia),





Andrey Bakiev (Togliatti, Russia), Anatoly Bozhansky (Moscow, Russia), Sergey Drobenkov (Belarus), Tatyana Dujsebayaeva (Almaty, Kazakhstan), Ilze Dunze (Riga, Latvia), Tatiyna Kotenko (Kyiv, Ukraine), Andrey Korosov (Petrozavodsk, Russia), Valentina Kuranova (Tomsk, Russia), Lydmila Mazanaeva (Makhachkala, Russia), Mark Pestov - Secretary (Nizhniy Novgorod, Russia), Sergey Ryabov (Tula, Russia), Khayankhayarvaa Terbish (Ulaanbaatar, Mongolia) and Boris Tuniyev (Sochi, Russia).

The history of study of rich and diverse fauna of North Eurasia can be traced to the time of Peter Simon Pallas. Among the first expeditions of interest to herpetologists were those of Pallas in 1768-1773 to Eastern Russia and Siberia. These explorations resulted in the first inventory of the fauna of the vast territory of Russian Empire and in the description of a number of new species. The further development of herpetology resulted in the publication of numerous monographs (Strauch, 1866, 1869, 1870, 1873, 1887, 1890; Nikolsky 1905, 1915, 1916, 1918; Chernov, 1934, 1935, 1959; Paraskiv, 1956; Taratschuk, 1959; Bogdanov, 1960, 1962; Yakovleva, 1964; Darevsky, 1967; Muskhvelishvili, 1970; Alekperov, 1978; Said-Aliev, 1979; Szczerbak, 1966, 1974; Szczerbak and Szczerban, 1980; Shammakov, 1981; Atayev, 1985; Szczerbak and Golubev, 1986; Eremchenko and Szczerbak, 1986; Sattorov, 1993; Brushko, 1995).

The main faunal works referring to the North Eurasia region are the guides to the reptiles and amphibians by Terentyev and Chernov (1949), Bannikov et al. (1977), Ananjeva et al. (1997, 1998, 2004), and Szczerbak (2003).

Present book on the Reptiles of North Eurasia presents up-to-date information on taxonomic diversity, geographical distribution and conservation status of all species and subspecies of turtles (7 species), lizards (110 species) and snakes (74 species) inhabiting the territories of former Soviet Union and Mongolia. We tried to reflect the results of recent taxonomic and phylogenetic revisions that have not previously been included into the monographs about this territory. Detailed geographic distribution information, with schematic map, data on type localities and conservation status (IUCN and regional Red lists, CITES) are included into each species account. The present book can be used as illustrated reference manual of the reptiles of North Eurasia. The data provided could serve as a basis for Global Reptiles Assessment (GRA). Its presentation in English corresponds with growing interest of zoologists and conservation biologists to this extensive area with high biological diversity.

There are 7 species of turtles, 110 species of lizards and 74 species of snakes recorded in the list of reptiles of North Eurasia. Most of them are presented in color illustrations,

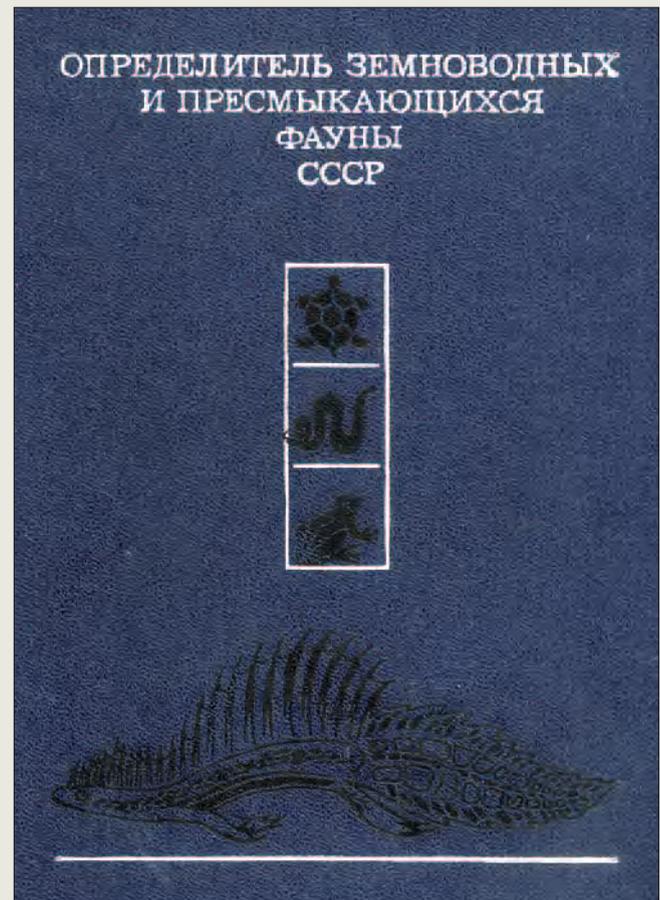
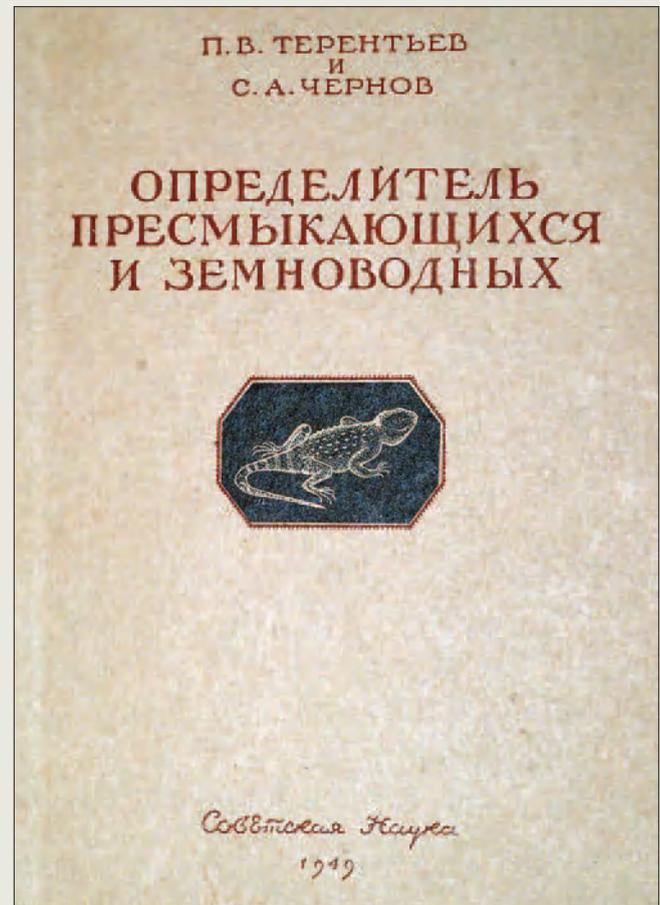
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“Fundamentals of Biological Resources management”, program of Presidium of Russian Academy of Sciences “Scientific fundamentals of conservation and biodiversity in Russia, program “Grant of President of Russian Federation supporting leading scientific schools” NS 1647.2003.4 and Grants of Russian Foundation of Basic Research 05-04-48147 and 05-04-48156.

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Aram Agasyan, Chary Atayev, Tatyana Duisebayeva, Ilze Dunze, Alexander Kreuzberg and Elena Mukhina-Kreuzberg, Alexander Malkhasyan, Ruslan Novitsky, Eugeny Pisanets and Vlad Postalacci contributes information on categories and criteria for reptiles in regional Red Lists.

Special thanks to Igor Danilov for critical comments and helpful suggestions to the “Turtle and Tortoises” chapter, Aaron Bauer for improving of English in Preface chapter and Oksana Tishenko for her big contribution (translation into English).



Taxon	Bonn Convention Appendix I	Bonn Convention Appendix II	Bern Convention Appendix II	Bern Convention Appendix III	CITES Appendix I+II	CITES Appendix III	Habitat directive priority species	Habitat directive Appendix II	Habitat directive Appendix IV	Habitat directive Appendix V	IUCN
<i>Ablepharus bivittatus</i>				•							
<i>Ablepharus chernovi</i>			•						•		
<i>Agrionemys horsfieldii</i>											VU A2cd
<i>Alsophylax pipiens</i>				•							
<i>Anguis fragilis</i>				•							
<i>Caretta caretta</i>	•	•	•				•	•	•		EN A1abd
<i>Chalcides ocellatus</i>			•						•		
<i>Coluber najadum</i>			•						•		
<i>Coluber nummifer</i>				•					•		
<i>Coluber ravergieri</i>				•							
<i>Coronella austriaca</i>			•						•		
<i>Cyrtopodion caspius</i>				•							
<i>Darevskia alpina</i>											DD
<i>Darevskia armeniaca</i>				•							
<i>Darevskia caucasica</i>				•							
<i>Darevskia chlorogaster</i>				•							
<i>Darevskia clarkorum</i>			•								EN C2a
<i>Darevskia dahli</i>				•							
<i>Darevskia derjugini</i>				•							
<i>Darevskia mixta</i>				•							
<i>Darevskia parvula</i>				•							
<i>Darevskia portschinskii</i>				•							
<i>Darevskia praticola</i>				•							
<i>Darevskia raddei</i>				•							
<i>Darevskia rostombekovi</i>				•							
<i>Darevskia rudis</i>				•							
<i>Darevskia saxicola</i>				•							
<i>Darevskia unisexualis</i>				•							
<i>Darevskia valentini</i>				•							
<i>Dermochelys coriacea</i>	•	•	•						•		EN A1abd
<i>Eirenis collaris</i>				•							
<i>Eirenis modestus</i>				•					•		
<i>Eirenis punctatolineatus</i>				•							
<i>Elaphe dione</i>				•							
<i>Elaphe hohenackeri</i>				•							
<i>Elaphe longissima</i>			•						•		
<i>Elaphe sauromates</i>			•						•		
<i>Elaphe situla</i>			•						•		DD

<i>Emys orbicularis</i>			•					•	•		LR / nt
<i>Eremias arguta</i>				•							
<i>Eremias pleskei</i>				•							
<i>Eremias trauchi</i>				•							
<i>Eremias velox</i>				•							
<i>Eryx jaculus</i>				•					•		
<i>Eryx miliaris</i>				•							
<i>Eumeces schneideri</i>				•							
<i>Gloydus halys</i>				•							
<i>Hierophis caspius</i>			•						•		
<i>Hierophis schmidtii</i>				•							
<i>Lacerta agilis</i>			•						•		
<i>Lacerta media</i>			•						•		
<i>Lacerta parva</i>			•								
<i>Lacerta strigata</i>				•							
<i>Lacerta viridis</i>			•						•		
<i>Laudakia caucasia</i>				•							
<i>Macrovipera lebetina</i>			•								
<i>Malpolon monspessulanus</i>				•							
<i>Mauremys caspica</i>			•					•	•		
<i>Mediodactylus kotschy</i>			•						•		
<i>Mediodactylus russowii</i>				•							
<i>Natrix megalcephala</i>			•								VU A1d, C1
<i>Natrix natrix</i>				•							
<i>Natrix natrix persa</i>				•							
<i>Natrix tessellata</i>			•						•		
<i>Ophisops elegans</i>			•						•		
<i>Phrynocephalus guttatus</i>				•							
<i>Phrynocephalus helioscopus</i>				•							
<i>Phrynocephalus mystaceus</i>				•							
<i>Podarcis taurica</i>			•						•		
<i>Pseudocyclophis persicus</i>				•							
<i>Pseudopus apodus</i>			•						•		
<i>Rhynchocalamus melanocephalus</i>				•							
<i>Telescopus fallax</i>			•						•		
<i>Testudo graeca</i>			•					•	•		VU A1cd
<i>Trachylepis septemtaeniata</i>				•							
<i>Trapelus ruderatus</i>				•							
<i>Trapelus sanguinolentus</i>				•							
<i>Typhlops vermicularis</i>				•							
<i>Vipera (Pelias) berus</i>				•							
<i>Vipera (Pelias) darevskii</i>											CR C2b
<i>Vipera (Pelias) dinniki</i>											VU C1+2a
<i>Vipera (Pelias) kaznakovi</i>			•								EN A1cd+2cd
<i>Vipera (Montivipera) raddei</i>				•							
<i>Vipera (Vipera) transcaucasiana</i>			•						•		
<i>Vipera (Pelias) ursinii moldavica</i>											CR B1+2abcde, C1+2a
<i>Zootoca vivipara</i>				•							



Saur mountain range, eastern Kazakhstan



Charyn River, eastern Kazakhstan

The turtles differ from all other vertebrates by presence of the bony shell covered with horny scutes or skin; shoulder and pelvic girdles are situated inside the shell, i.e. under the ribs. The upper part of the bony shell (the carapace) is formed by internal skeleton (ribs and spiny processes of trunk vertebrae expanded in to dermis) and dermal ossifications.

The lower part of the bony shell (the plastron) is represented by dermal ossifications, including clavicles (epiplastra) and interclavicle (entoplastron) which form anterior part of the plastron. As a rule, the shell is covered with symmetrical horny scutes. Teeth are absent; jaws are covered with horny sheaths forming a kind of a beak.



Mating of Agrionemys horsfieldii

All turtles are oviparous. In most of them eggs are covered with hard calciferous shell, more rarely – with a soft skinny shell.

The turtles are distributed in temperate and tropical latitudes and are represented by terrestrial, fresh water and marine forms.

The world fauna includes more than 250 species united into more than 95 genera, 13 families and two suborders. In the

fauna of North Eurasia there are seven species of seven genera and six families belonging to the suborder Cryptodira Cope, 1868, the members of which are characterized by the vertical plane of neck retraction and by a ligamentous connection of the pelvis with the shell.

MARINE TURTLES

The family unites very large turtles with a big head and short neck inhabiting the warm equatorial and tropical sea water of the World Ocean. Forelimbs are flipper-like, with one – two claws.

The Marine Turtles feed on vegetative food (genus *Caretta* Rafinesque, 1814) or have a mixed diet including sea animals (genus *Eretmochelys* Fitzinger, 1843). Interesting is the process of reproduction connected with long distance migrations to the permanent nesting places. They have a unique mechanism of orientation in the open sea allowing them to find nesting coasts accurately.

FAMILY CHELONIIDAE OPPEL, 1811

Marine Turtles are distributed in tropical and subtropical regions of the World Ocean. Following warm currents they often swim far away into the temperate latitudes.

The family consists of five genera which unite six species. Their number is rapidly declined. All species of sea turtles are included into the lists of the Red Data Book of the International Union of Conservation Nature (IUCN) and lists of Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, into the Appendices of the Bern Convention. They are also strongly protected by the national laws of the countries where they occur and nest.

In the territorial waters of the former USSR (in Russia) there is a reliable record of only one genus and one species of the family.

LOGGERHEADS

Large turtles with an oval heart-shaped carapace and two claws on the forelimbs. There are no less than five pairs of pleural (=lateral) scutes on the carapace. The upper surface of the head is covered with more or less large symmetrical scales.

The genus is monotypic.

GENUS CARETTA RAFINESQUE, 1814



LOGGERHEAD, OR RED-BROWN TURTLE



TERRA TYPICA. Bimini, Bahama Islands.

DISTRIBUTION. It inhabits Atlantic, Indian and Pacific Oceans. Nearly all nesting places are situated in temperate and subtropical regions. Except for the western Caribbean Basin they are present to the north from the tropic of Cancer or to the south from the

CARETTA CARETTA (LINNAEUS, 1758)

tropic of Capricorn. Single individuals are registered in the north of temperate waters and in the arctic waters up to 70°N, in the Barents Sea (in the vicinity of Murmansk city), and in the Southern Hemisphere – up to 35°S, in the area of La Plata Gulf, Argentina. In the waters of Russia two reliable records in the north periphery were registered: in 1964 in the north-west in the Kola Gulf in the Barents Sea near the city Murmansk and in 1940 in the Far East, in the Sea of Japan, in the Peter the Great Gulf (probably in the Manchur Bay).

CONSERVATION STATUS. The number is declined. As all sea turtles, the Loggerhead is included into the IUCN Red Data Book (as a vulnerable species), its status is determined as EN A1abd, into the list of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, Appendix I), into the Appendix II of the Bern Convention. Besides, the species is protected by the national laws of Cyprus, Italy, Greece and the USA.

LEATHERBACK SEA TURTLES

FAMILY DERMOCHELYIDAE FITZINGER, 1843

The largest species among the recent turtles reaching 2 m in length and a mass of about 600 kg.

In contrast to other recent turtles, the shell is not associated with the internal skeleton, but is formed by numerous polygonal bone plates, closely articulated between themselves. Horny scutes are absent and the shell is covered with a smooth skin.

The extremities are in the form of flippers.

They feed on jelly-fish, crustaceans and other invertebrates, as well as on some water plants (algae).

The family is represented by a single genus and single species.

LEATHERBACK SEA TURTLES

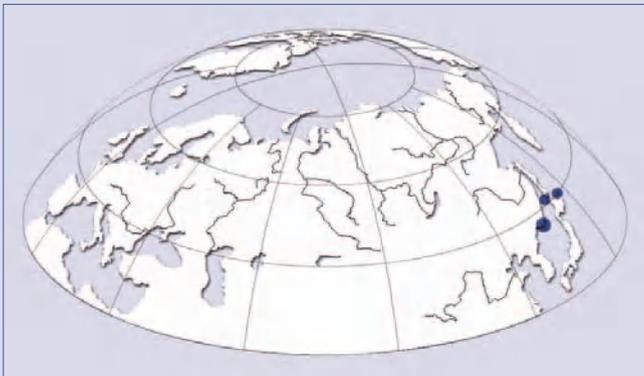
GENUS *DERMOCHELYS* BLAINVILLE, 1816

The genus is monotypic.

The characteristic corresponds to those of the family.

LEATHERY TURTLE

DERMOCHELYS CORIACEA (VANDELLI, 1761)



TERRA TYPICA. Palermo, Sicily Island.

DISTRIBUTION. Circumtropical species nesting on the tropical coasts of the seas of Atlantic, Pacific and Indian Oceans and migrates and feeds in temperate waters. The main nesting populations are known on the Pacific coast of Mexico where up to 30 thousand females nest every year, as well as in French Guiana (4500 – 6500 females) and in western Malaysia (1000 – 2000 females). In the waters of the USSR and Russia more than 10 reliable registrations were made from 1936 till 2000 in the Far

East: in the Sea of Japan, near the coast of Primorsky Territory, in the Peter the Great Gulf (in the bays of Gamov and Astaf'ev, between the islands Askold and Putyatin, near Cape Povorotnyi) and in the Gulf Rynda (47° 44' N); at the distance of 30 miles from the south-western coast of Sakhalin Island and near the southern Kuril islands (Iturup, Kunashir and Shikotan) on the both sides of them, i.e. in the Seas of Okhotsk and in the Pacific Ocean.

Finding of the Leatherly Turtle is known in the north-east of Russia, in the Bering Sea, and also, according to the unverified data, in the north-west of Russia, in the Barents Sea.

CONSERVATION STATUS. The Leatherly Turtle is included into the IUCN Red List (as a critically endangered species, category CR A1abd), into the lists of the Convention on International Trade in Endangered Species of Wild Fauna and Flora) CITES, Appendix I), into the Appendix II of the Bern Convention. The conservation measures, according to the recommendation of IUCN, include collecting of eggs in the protected nesting places with a subsequent incubation and releasing (reintroduction) of the juveniles into the sea. 70% of eggs of each clutch are successfully incubated. In North Eurasia in connection with single accidental findings special conservation measures are not provided for.



South Sakhalin island. One of the records of *Dermochelys coriacea*

SOFT-SHELLED TURTLES

Turtles of medium and large sizes with a flattened shell without horny scutes covered with a soft skin. The length of the carapace is up to 90 cm. Plastron is connected with the carapace by an elastic ligament. The bony shell is strongly reduced. Each limb has three internal fingers with long sharp claws. Swimming membranes are well developed. Horny jaws are covered with thick skinny appendices. The function of dermal respiration is developed due to adaptation to the aquatic mode of life.

Presence of a long neck and an elongated head pointed with a long soft proboscis with nostrils at the tip is important when breathing atmospheric air without emerging to the surface for

FAMILY TRIONYCHIDAE FITZINGER, 1826

what it is sufficient to put out the tip of the proboscis. Thus the animal remains unnoticeable for predators.

The family consists of about 25 species of aquatic turtles belonging to 14 genera and distributed in Africa, North America, south and eastern Asia, Indo-Malayan Archipelago to New Guinea.

The family is subdivided into two subfamilies (Cyclanorbinae Gray, 1852 and Trionychinae Fitzinger, 1826). The fauna of North Eurasia contains one genus and one species from the nominative subfamily.

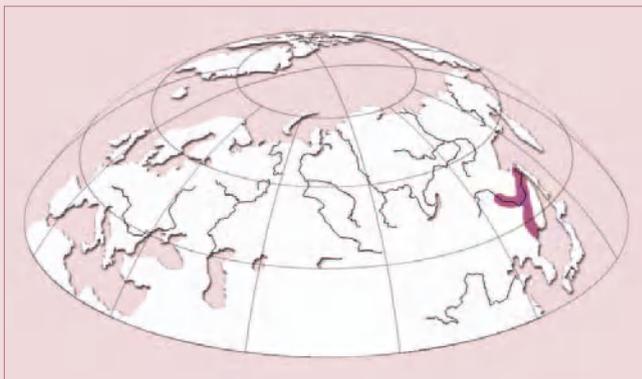
SOFT-SHELLED TURTLES

Turtles of a medium size. Lateral and posterior margins are bordered with a soft skinny fringe. There are no peripheral plates in the carapace. Anterior portions of the plastron (epiplastrons) strongly project forward. Ventral surface of the shell bears seven plastral callousities.

GENUS *PELODISCUS* FITZINGER, 1835

The genus contains only one species. Previously it was referred to the genus *Trionyx* Geoffroy, 1809 (or *Amyda* Geoffroy, 1809) which recently was divided into several genera.

CHINESE SOFT-SHELLED TURTLE



TERRA TYPICA. In the Tiger River at Macao, China.

DISTRIBUTION. Chinese soft-shelled Turtle is distributed in eastern, central and southern China, including the islands Hainan and Taiwan, north of Vietnam, Korea and Japan. It is introduced into southern Japan to the Ryukyu Archipelago, Mariana Islands (Guam) and Hawaiian islands. On the territory of North Eurasia it occurs on the northern border of its distribution range, only in the south of the Russian Far East in the basin of Amur and Ussuri rivers and their large tributaries, as well as on Hanka Lake. At present the distribution area of the species is confined to two main regions – the region adjacent to the Amur River (the basin of the Gassy Lake in the Khabarovsk Territory) and Hankay region (the basin of the Hanka Lake in the Primorsky Territory). The record in the Chuiskaya valley of Kyrgyzstan must be considered as an introduction, cases of which are rather common due to a wide use of

PELODISCUS SINENSIS (WIEGMANN, 1835)

this species as food and establishing of farms on breeding in China and Indochina. Usually subspecies are not distinguished, though turtles from Russia, north-eastern China and Korea are sometimes considered as a distinct species, *P. maackii* (Brandt, 1858). Clarification of the taxonomic status is complicated and confused by with numerous cases of introduction of forms from different parts of the distribution range and their hybridization.

CONSERVATION STATUS. The turtles in the Russian Far East are rather rare, their number is permanently declined. The highest density is registered on the Hanka Lake, in the valley of the Ussuri River and on the Gassy Lake of the Nanaian region in the Khabarovsk Territory. Main factor of the reduction of their number is caused by direct and indirect influence of humans; by summer floods washing away the clutches of eggs; by destruction of the clutches by mammals (raccoon dog, fox, badger, sometimes wild boar) and by birds (crows) – for example, up to 80% in the Bol'shekhezhirsky reservation of the Khabarovsk Territory. The species is included into the Red Data Book of the Russian Federation (2001), category 2, the status is a species reducing in its number occurring in Russia on the extreme northern border of its distribution range. For conservation of the species it is necessary to establish a reservation on the Hanka Lake and to join to the Bol'shekhezhirsky reservation adjacent sandy and pebbled shallows of the rivers Chirka and Ussuri where eggs are laid, and also to establish a branch of the reservation on the Gassy Lake. The application is made to include the species into the list of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (Appendix III).

AMERICAN FRESH WATER TURTLES

A group of fresh water turtles of small and medium sizes characterized by a low 12th pair of marginal scutes. The ducts of the musk glands are present and are represented by a single (anterior) pair.

Most American Fresh Water Turtles lead an aquatic mode of life. Most are omnivorous, though there are specialized herbivorous, molluscivorous and piscivorous forms.

The family of American Fresh Water Turtles includes 39 species united into 10–11 genera. The most part of them occur in the New World.

FAMILY EMYDIDAE RAFINESQUE, 1815

The fauna of North Eurasia contains one genus and one species.

EUROPEAN POND TURTLES

Turtles of a medium size leading an aquatic mode of life. The carapace is smooth, oval, slightly convex; rounded and with a medial keel in the posterior portion in young individuals. The carapace is connected with the plastron by a movable ligament.

GENUS *EMYS* DUMERIL, 1806

Axillary and inguinal scales are absent. The posterior portion of the plastron is rounded, without a visible anal notch.

The genus is monotypic.

EUROPEAN POND TURTLE, OR SWAMP TURTLE

EMYS ORBICULARIS (LINNAEUS, 1758)



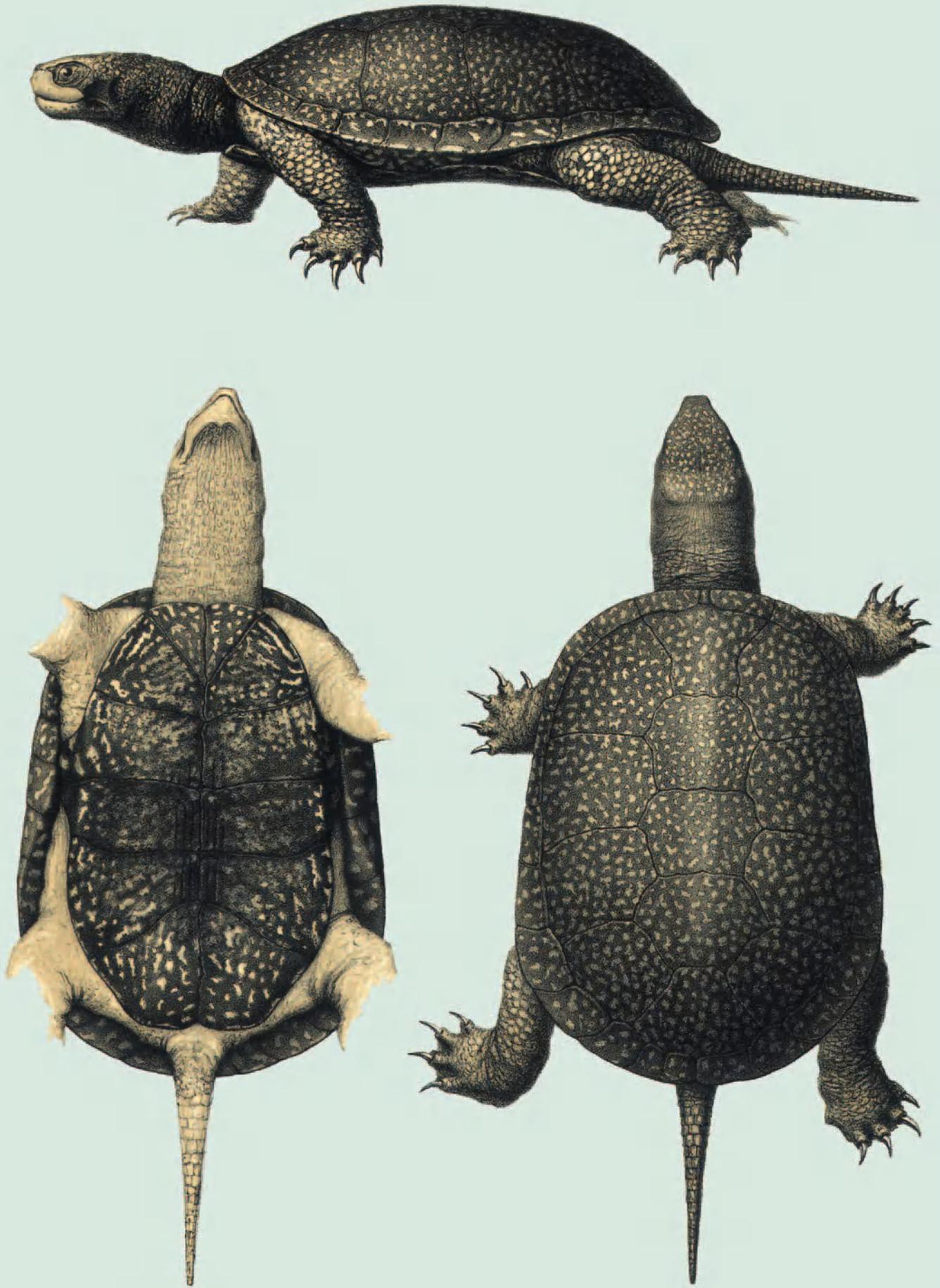
TERRA TYPICA: South Europe.

DISTRIBUTION: A widely distributed Palearctic species; the distribution area covers an extensive territory from Southern, Central and Eastern Europe, Asia Minor and north-western Africa to western Turkmenistan and western Kazakhstan in the east. On the territory of North Eurasia swamp turtle occurs in Lithuania, Latvia, Belarus, the Ukraine (including the Crimea), Moldova, Armenia, Azerbaijan, Georgia, in Kazakhstan in the region adjacent to the Aral Sea towards the east to the town Kzyl-Orda on the Syrdarja River, in the rivers Irgiz and Turgai, in Turkmenistan in bodies of water of the south-western Kopet Dag, of the area of the Atrek River and in the lakes of western Uzboy. It is distributed to the north up to Lithuania, northern Belarus, in Russia – up to Smolensk, Bryansk, Tula, Orel cities regions, in the Republic Mariy-El, Chuvashia, in the middle part of the Volga River (Samara city region), in Bashkiria

and in the left-bank area of the Ural River to the Kustanai region in Kazakhstan. Occasional records of the turtles in more northern latitudes are known what is possibly could be explained by artificial introduction.

At present on the basis of study of the morphological and genetic characters 13 subspecies are distinguished which are united into five groups. On the territory of North Eurasia five subspecies are registered. The nominative subspecies, *E. o. orbicularis* (Linnaeus, 1758) occupies a large part of the distribution area in the north and east, including the north of the Crimea, Middle Asia and Kazakhstan. *E. o. hellenica* (Valenciennes, 1832) inhabits mainly the western coast of the Balkan Peninsula from Albania towards the south and the Peloponnes, relict populations of this subspecies are present in the south of the Crimea. In the Crimea, as well as on the most part of the Balkans and in Anatolia, there is a zone of intergradation with the nominative subspecies. *E. o. iberica* Eichwald, 1831 occurs in the basin of the Kura River in the Transcaucasia, penetrates to the north up to Dagestan and is not found to the south from the Arax River. *E. o. persica* Eichwald, 1831 is distributed along the southern coast of the Caspian Sea in North Iran and in the adjacent regions of Turkmenistan. *E. o. colchica* Fritz, 1994 inhabits Colchis area, in the western Caucasus.

CONSERVATION STATUS. The Swamp Turtle is included into the IUCN Red List of Threatened species (as a species with a low risk, category LR/nt), into the Appendix II of the Bern Convention. The species is included into the Red Data Books of Lithuania (1992), Latvia (1991), Belarus (2002) and Moldova (1978).



Drawing from the book "Herpetologia turanica", A.M. Nikolsky, 1899.

ASIAN FRESH WATER TURTLES

FAMILY GEOEMYDIDAE THEOBALD, 1868

A group of fresh water turtles of small and large sizes close to the American Fresh Water Turtles of the family Emydidae from which it differs by the presence of two pairs of musk glands and their ducts in the peripheral plates and a high 12th pair of marginal scutes.

The family of Asian Fresh Water Turtles includes more than 60 species united into more than 20 genera. They occur predomi-

nantly in the Old World; one – two genera occur in Central and South America.

The fauna of North Eurasia contains one genus and one species.

EURASIAN FRESH WATER TURTLES

GENUS *MAUREMYS* GRAY, 1869

Turtles of small sizes with a flattened carapace immovably connected with the plastron by means of a long suture. Anal notch of the plastron is well developed. The tail is relatively long.

Six–seven species of the genus are distributed in south

Europe, north-western Africa, Asia Minor, Japan, South China and North Vietnam.

The fauna of North Eurasia contains one species.

CASPIAN TURTLE

MAUREMYS CASPICA (GMELIN, 1774)

TERRA TYPICA. Pirsagat, near Shemaha, eastern Transcaucasia.

DISTRIBUTION. In general the distribution range of the species covers south Europe and Asia Minor. On the territory of North Eurasia it occurs in Russia (Dagestan), in the Transcaucasia (eastern Georgia, southern Armenia and Azerbaijan) and in south-western Turkmenistan (rivers Atrek, Chandyr and Sumbar). It includes three subspecies. The nominative subspecies, *M. c. caspica* (Gmelin, 1774) is distributed within the limits of North Eurasia and eastern Turkey. *M. c. siebenrocki* Wischuf et Fritz, 1997, inhabits Iraq, Iran and Saudi Arabia. In Iran one more subspecies, *M. c. ventrimaculata* Wischuf et Fritz, 1996, is distributed.

CONSERVATION STATUS. The species is included into the list of Appendix of the second Bern Convention. In North Eurasia it is not protected by special measures. It occurs on the territories of reservations of Azerbaijan, Armenia, Georgia and Turkmenistan.



LAND TORTOISES

Typically terrestrial slow-moving tortoises mainly with a convex carapace and thick column-shaped hind limbs. The bony shell is covered with thick horny scutes with concentric layers on their surface. The plastron is strongly connected with the carapace by an immovable suture. Musk glands and their ducts are absent.

Each finger has not more than two phalanges. Fingers are fused together, but claws remain free. Swimming membranes are absent. Head is covered with scales of a regular shape. Herbivorous animals.

They are distributed in south Europe, Asia, Africa, in North and South America, on many tropical and subtropical islands.

FAMILY TESTUDINIDAE BATSCH, 1788

More than 40 species are known in the world fauna which are united into 14-15 genera.

The most part of the species and subspecies are included into the lists of Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and a number of species are included into the list of Appendix I, as well as of the IUCN Red List of Threatened species and lists of Appendixes of the Bern Convention.

In North Eurasia occur two genera and two species of Land Tortoises.

MEDITERRANEAN TORTOISES

Small tortoises with a relatively high convex carapace and a hinge developed in the plastron. Musk glands and their ducts are absent.

They are distributed around the Mediterranean Sea, in the Caucasus and in Iran.

GENUS *TESTUDO* LINNAEUS, 1758

Traditionally four species are referred to the genus.

MEDITERRANEAN SPUR-THIGHED TORTOISE



TERRA TYPICA. It was not indicated in the description, later it was specified and indicated as an old Spanish Fort Santa Cruz in the vicinity of Oran, Algeria.

DISTRIBUTION. The species is distributed in North Africa (from Morocco to Libya), in south Europe (Italy, south Spain, the Balkans) and south-west Asia (Turkey, Iran, Syria, Lebanon, Jordan, Israel), as well as on the islands of Majorca, Cyprus, Sardinia, Sicily, on some islands of the Aegean Sea and on the Canary Islands. In North Eurasia the species occurs within the limits of two geographically isolated territories: a small area on the coast of the Black Sea from the town Anapa to the town Sukhumi, and a more

TESTUDO GRAECA (LINNAEUS, 1758)

extensive area covering eastern Georgia, Armenia, Azerbaijan and Dagestan.

The sub-specific structure of the species is rather complicated. At present it is suggested to distinguish four subspecies distributed on the territory of the Caucasus: Nikolsky's Spur-thighed Tortoise – *T. g. nikolskii* Chkhikvadze et Tuniyev, 1986 occurring in the western part of the Caucasus, Iberian Spur-thighed Tortoise – *T. g. iberica* Pallas, 1814 from the valley of the



Testudo graeca graeca



Testudo graeca iberica

Kura River and its tributaries, as well as Lenkoranskaya lowland; Armenian Spur-thighed Tortoise – *T. g. armeniaca* Chkhikvadze et Bakradze, 1991 from Armenia, valley of the Arax River up to Zangezurskie gates (Megri), and Pallas's Spur-thighed Tortoise – *T. g. pallasii* Chkhikvadze et Bakradze, 2002 from Dagestan.

CONSERVATION STATUS. The number is strongly declined. The species occurs in a number of reservations in Russia, Armenia, Georgia and Azerbaijan. It is included into the IUCN Red List (VU A1cd), into the list of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, Appendix II), as well as into the Appendix II of the Bern Convention. It is included into the Red Data Book of the former USSR (1984), Russia (2001), Georgia (1982) and Armenia (1987).

CENTRAL ASIAN TORTOISES

GENUS *AGRIONEMYS* KHOZATSKY et MLYNARSKI, 1966

The carapace is not high and flattened. The posterior segment of the plastron (xiphiplastra) is short and immovable. Forelegs have four claws.

Some authors consider this monotypic genus as a subgenus of the genus *Testudo*.



CENTRAL ASIAN TORTOISE

AGRIONEMYS HORSFIELDII (GRAY, 1844)



TERRA TYPICA. Kabul [Afghanistan]

DISTRIBUTION. A Central Asian species distributed in north and east Iran, Afghanistan, north-western China (Xinjiang Uyghur Autonomous Region) and northern Pakistan. In North Eurasia it inhabits southern Kazakhstan from the eastern coast of the Caspian

Sea in the west, Turgai River in the north, up to Tarbagatai mountain range in the east, and also Turkmenistan, Uzbekistan, valleys and foothills of Tajikistan and Kyrgyzstan (Chuisкая valley, foothills of Talassky Ala Tau, vicinity of Jalalabad town). The northern border attains the Emba River, the lower current of the Irgiz River, Balkhash Lake and Alakol depression.

At present three subspecies are distinguished: the nominative subspecies, *A. h. horsfieldii* (Gray, 1844) inhabits Afghanistan, eastern Turkmenistan, Tajikistan, Kyrgyzstan, north-western China; *A. h. rustamovi* Chkhikvadze, Amiranashvili et Ataev, 1990 occurs in western Kopeth-Dagh. *A. h. kazakhstanica* Chkhikvadze, 1988 – in Kazakhstan.

CONSERVATION STATUS. The species is included into the IUCN Red List of Threatened species (VU A2cd), into the list of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, Appendix II).

SUPERORDER SQUAMATES

SQUAMATA OPEL, 1811

As it follows from the Latin name of these herptiles, their body is covered with horny scales, shields, granules or tubercles.

Usually the quadrate bone is movably articulated with the cranium. Of the temporal arches only the upper one is present. This arch can be absent too. Pterygoids are not articulated with the vomer. Transversum is usually present.

Teeth are attached to the upper or inner surface of the jaws. Vertebrae are amphicoelous or procoelous. There are 2-3 sacral vertebrae (if they are present). Ventral ribs are absent or they are rudimentary.

The parietal opening is present or absent. Jacobson's organ is usually well developed. Hemipenis is paired. Anal cleft is transverse.

The superorder united the orders of lizards (Sauria), snakes (Serpentes) and amphisbaenians (Amphisbaenia). In the fauna of North Eurasia only the two first orders are presented.

LIZARDS

ORDER SAURIA MCCARTHNEY, 1822

The most part of lizard species are four-legged herptiles. Their body is covered with horny shields or scales of various shape and size.

Among the recent species the lizards with well-developed five-fingered limbs, as well as without limbs are widely represented. Between these extreme variants there are more or less gradual transitional forms. The loss of the limbs is usually accompanied by a considerable elongation of the body. In species without limbs the rudiments of the sternum or of other bones of the anterior girdle are remained.

Right and left branches of the lower jaw are immovably connected with each other. Teeth are attached to the external edge of the jaws (acrodont) or are located from their internal

side (pleurodont). Often teeth are also present on the palatine bones, pterygoids and some other bones.

In most groups of lizards eyelids are well developed and movable. More rarely eyelids are grown together into an immovable transparent membrane.

Characters of the scalation have a great importance under identification of lizards. Scales of the body in most of the groups are various in their shape, structure and size. Dorsal scales can be smooth, tubercular, conical, keeled, etc. Very small scales are called granules, large – shields.

Scales on the head are very diverse in shape, size and arrangement. Each shield has its own name. In some species a number of enlarged scales – a collar is separated by suture from



Saur mountain range, eastern Kazakhstan



Eastern Kazakhstan

the body. In front of collar a more or less marked transverse gular fold is developed. In some lizards, beside large shields, small scales are present on the head. For other lizards the head covered with numerous small irregular polygonal scales is typical.

In some lizards dorsal scales are similar in shape and size with ventral scales. However in majority of species the underside of the body is covered with enlarged scales. On the chest the scales are usually arranged in a triangle or in other order. Ventral scales, as a rule, form more or less regular rows, parallel or somewhat oblique towards each other.

Lizards of some families have special structures on the underside of thigh, so called femoral pores. Each pore punctures one scale, and all of them are grouped on the both hind limbs in a row along the thigh. During the breeding period small columns of keratinized cells are excreted from the femoral pores. The role and function of these structures are not completely clear. Assumptions were made that the pores excrete a special secret, which odor permits individual of different sexes recognize each

other. Some lizards have so called anal pores, i.e. a continuation of the femoral pores in the lower part of the venter. In a few species there is only a very short row of anal pores. In geckos post-cloacal pores are developed.

Caudal scales are arranged in more or less irregular oblique rows, or grouped into transverse rows (rings), which in their turn form segments. In some cases the number of the scales around the ninth – tenth ring is used as a character useful for identification. The scales should be counted on the underside of the tail: from the first row of large subcaudal scales located directly posterior to the small scales of the pre-cloacal fold.

Many lizards when captured throw off their tail. Regenerated tail is usually easy to recognize by somewhat different scales, and also often by the coloration of the regenerated part.

The order Sauria is divided approximately into 20 families and 400 genera which unite more than 4300 recent species. On the territory under examination there are 110 species belonging to 7 families and 29 genera.





Saur mountain range, eastern Kazakhstan

EUBLEPHARIDS

FAMILY EUBLEPHARIDAE BOULENGER, 1883

Terrestrial lizards of medium and small size. They differ from species of geckonid family by some morphological characters: movable eyelids, procoelous vertebrae, non-paired parietal bone, absence of calcified endolymphatic sacs, and soft non-calcified egg shell.

Premaxilla is formed of two centers of ossification. Supratemporal bone is often present, angular bone is absent rarely.

On the basis of these, as well as other differences, the genus *Eublepharis* with five other genera is distinguished into a separate family Eublepharidae. It unites more than 25 species distributed in Asia, eastern and western Africa, in the south of North and in Central America. The family Eublepharidae is divided into two sub-families – Aeluroscalabotinae Grismer, 1988 and Eublapharinae Boulenger, 1883. To the latter belongs the genus occurring on the territory of North Eurasia.

FAT-TAILED GECKOS

GENUS *EUBLEPHARIS* GRAY, 1827

Fingers are short, cylindrical, without denticles on the edges, with one transverse row of lamellae on the underside, with claws. Chin shields are large.

Eyelids are well developed, movable. Pupil is vertical. Head is large, clearly set off from the neck. The upper part of the body is covered with small scales among which larger conical tubercles are located; all scales of the body are smooth.

In most species armpits of forelegs are transformed into deep axial pockets.

Males are with well developed pre-anal pores. The tail is considerably shorter than the body with the head (in 1.5–2 times), is swollen in the middle, tapering towards the tip.

Fat-tailed Geckos are distributed in Turkey, Iran, Iraq, Turkmenistan, Afghanistan, Pakistan, and in northern India. The genus includes 5 species. One of them occurs in North Eurasia in Turkmenistan.





TURKMEN FAT-TAILED GECKO

***EUBLEPHARIS TURCMENICUS* DAREVSKY, 1977**



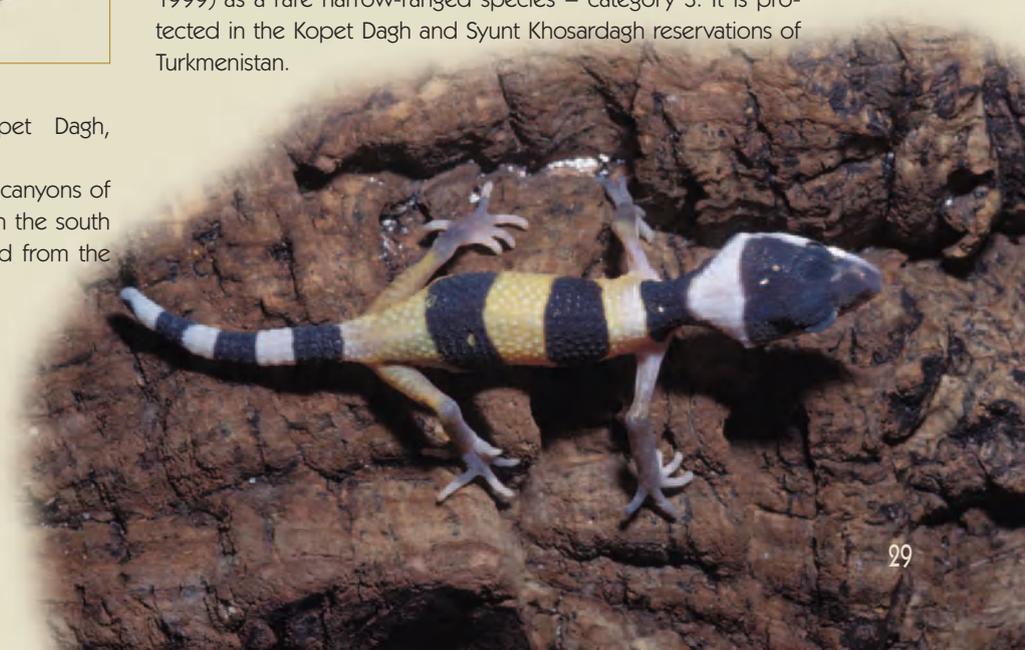
TERRA TYPICA. Vicinity of the town Baharden, Kopet Dag, Turkmenistan.

DISTRIBUTION. The species is known only from the canyons of the mountain ranges Kopet-Dagh and Kyuren-Dagh in the south of Turkmenistan and in northern Iran. It is distributed from the

settlement Danata (Kyuren-Dagh, Turkmenistan) in the west to the vicinity of Meshed city (Iran) in the east. Records from western, central and eastern (Yashlyk settlement) Kopet-Dagh are known. One record was registered when a Fat-tailed Gecko was regurgitated by a cobra which had been caught in the vicinity of Kara – Kala settlement on the colony of gerbils.

CONSERVATION STATUS. A rare narrow-ranged species occurring on the northern border of the distribution range is included into the Red Data Book of the USSR (1984) and Turkmenistan (1985, 1999) as a rare narrow-ranged species – category 3. It is protected in the Kopet Dag and Syunt Khosardagh reservations of Turkmenistan.

Juvenile Eublepharis turcmenicus





GECKOS

FAMILY GEKKONIDAE GRAY, 1825

According to the recent taxonomic ideas the family of geckos unites about 80 genera and more than 900 species of lizards of medium and small sizes. Geckos are widely distributed mainly in tropical and subtropical regions of all the continents, (except for the Antarctic Continent) and including oceanic islands of Old and New World.

Until recently this family of lizards included also an extensive group of geckos of Australia, New Zealand and Oceania. Now they are distinguished into a separate family Diplodactylidae Underwood, 1954.

The head of geckos is covered with numerous granular or small polygonal scales. Large eyes lack separate eyelids and are covered with an immovable transparent membrane. Pupil is more often vertical, sometimes rounded. The tongue is wide, with a small notch in the front. Upper surface of tongue is covered with small papillae.

In many genera toes are widened and are covered on the underside with various systems of adhesive lamellae. Their arrangement and form have an important taxonomic significance. In most species have developed femoral or anal pores (or both). Geckos are characterized by autotomy and regeneration of the tail.

The most species have a nocturnal activity. In contrast to many other lizards, eggs of geckos are covered with hard calcified shell. Geckos are able to produce sounds and to use vocal communications.

The family consists of two subfamilies – Sphaerodactylinae Underwood, 1954 and Gekkoninae Gray, 1825.

The fauna of North Eurasia contains 6 genera and 18 species of Gekkoninae subfamily.

NORTH-ASIAN GECKOS, OR EVEN-FINGERED GECKOS

GENUS *ALSOPHYLAX* FITZINGER, 1843

Small lizards with the body length up to 50 mm. Toes are straight or weakly bent, cylindrical, non-widened. Small dorsal scales are smooth; located among the scales large, more or less convex tubercles are smooth or keeled, going behind the base of the tail on the distance of a half of the tail's length.

The tail is thick, cylindrical, getting thinned in the last quarter. Tail's segments are weakly or not visible at all from above. The underside of the tail is covered with longitudinal rows of lamellae,

usually two rows in one segment. Anal pores are present. Pupil is vertical, with serrated edges.

The genus, divided by the taxonomists into 2 sub-genera (*Alsophylax* and *Altiphylax*) includes 6 species of geckos occurring in the arid landscapes of Central and Middle Asia.

The fauna of North Eurasia contains 5 species. One species (*A. tokobajevi*) belongs to the sub-genus *Altiphylax*.

SMOOTH EVEN-FINGERED GECKO

ALSOPHYLAX LAEVIS NIKOLSKY, 1905



TERRA TYPICA. Takyr station, Tejensky region, Turkmenistan.

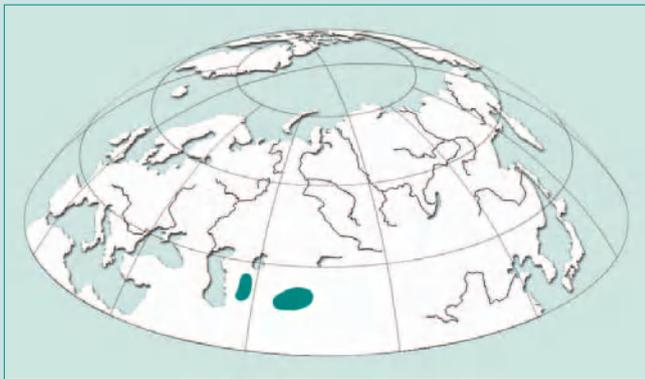
DISTRIBUTION. Endemic species of the Middle Asia, is sporadically distributed on the foothills plains of western and southern

Turkmenistan (foothills regions of Kopet Dagh, between Meshed-Misserian and Smaller Balkhan in the west and the valley of the Tejen River in the east), and in central and southern Uzbekistan (central Kyzyl Kums, south of the Surkhandar'inskaya region). Possibly it occurs in northern Iran and northern Afghanistan, but reliable records are not known.

CONSERVATION STATUS. *Alsophylax laevis* is included into the Red Data Books of the USSR (1984), Turkmenistan (1985, 1999) – category 1 (an endangered species) and Uzbekistan (2003) – category 2/VU:D (vulnerable, declining, mosaically distributed Turanian endemic species). Conservation measures on the territory of a special reservation are required. It is suggested establishing of a reservation in the south-east of the Smaller Balkhan, between the river-beds of Chalsuv and Kuyudzhuk rivers.

LORICATE EVEN-FINGERED GECKO

ALSOPHYLAX LORICATUS STRAUCH, 1887



TERRA TYPICA. Murzarabot settlement, Ferganskaya valley, northern Tajikistan.

DISTRIBUTION. The recent distribution range of the species is disjunct into two parts remotely separated from each other: first is located along the left bank of Amu Darya River in Turkmenistan and second one in the Ferganskaya valley in Uzbekistan and northern Tajikistan. The nominative subspecies *A. l. loricatus* is limited in its distribution range by the Ferganskaya valley, and the Szczerbak's Loricated Even-fingered Gecko, *A. l. szczerbaki* Golubev et Sattorov, 1979, occurs only in north-eastern Turkmenistan. Here this species is known from several places located at a remote distance



from each other: El'dzhik, Koshkala on the right bank and Kabakly, Dargana, Gorelde, Takhta and Kunya-Urgench on the left bank of the Amu Darya River at a distance not less than 560 km.

CONSERVATION STATUS. It is included into the Red Data Books of the USSR (1984), Tajikistan (1997), Turkmenistan (1999): category 1 – a species with reducing its number and of Uzbekistan (2003): category 1/EN – endangered, mosaically distributed, relict endemic Fergana subspecies.

CASPIAN EVEN-FINGERED GECKO

ALSOPHYLAX PIPIENS (PALLAS, [1814])



TERRA TYPICA. Bol'shoi Borgo mountain, Astrakhan region, Russia.

DISTRIBUTION. The Asian part of the distribution range is rather extensive. It covers Middle Asia and Kazakhstan, southern Mongolia and adjacent regions of China. In general, the distribution range of the species coincides with the borders of steppe and desert zones. Data about records in north-east Iran are not confirmed. The western border of the distribution range reaches the lower parts of the Volga River; further to the east this species is widely distributed on Ustyurt plateau, Kazakh Melkosopochnick (Hilly area), in northern Kyzyl Kums, in Bet Pack Dala, Semirech'e, in Jungaria, in southern Gobi and Alashan desert in northern China. In Mongolia it occurs in the south of the country in

Kobdosky, Gobi-Altai, Bayan-Khongor, Uwer-Khangai, Southern-Gobi, Eastern-Gobi and Middle-Gobi aimaks. The type territory is the only territory in Russia and in the same time in Europe where Caspian Even-fingered Gecko occurs.

CONSERVATION STATUS. The Caspian Even-fingered Gecko is included into the Red Data Book of the Russian Federation (2001): category 3 – a rare narrow-ranged species distributed within the limits of Russia on the extreme western border of its distribution range on a limited territory.



TAJIK EVEN-FINGERED GECKO

ALSOPHYLAX TADJIKIENSIS GOLUBEV, 1979



TERRA TYPICA. 7 km from the Kyzyl Kala settlement down the Vakhsh River, Kurtantyubinsky region, Tajikistan.

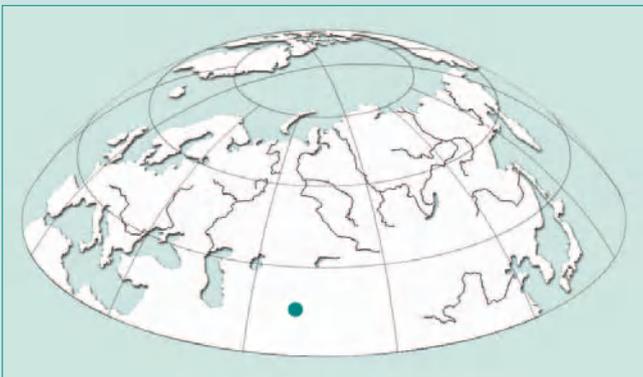
DISTRIBUTION. Occupies an area in the southern Tajikistan (valley of the Vakhsh River).



CONSERVATION STATUS. Rare narrow-ranged species, is included into the Red Data Book of Tadjhikistan (1997) – category 3.

TIEN SHAN EVEN-FINGERED GECKO

ALSOPHYLAX TOKOBAJEVI JERIOMTSCHENKO et SZCZERBAK, 1984



TERRA TYPICA. Vicinity of Baigonchek settlement, spurs of Baibiche–Too mountain range, Narynskaya region, Kyrgyzstan.

DISTRIBUTION. Tien Shan Even-fingered Gecko occurs on a limited distribution area: in the central Tien Shan in Kyrgyzstan, in the basins of the Middle Naryn and Alabuga rivers, on the adyrs of the right-bank area of Alabuga River.

CONSERVATION STATUS. It is included into the Red Data Book of Kirghizia [Kyrgyzstan] (1985): category 3 – rare narrow-ranged endemic species.



Juvenile Tien Shan Even-fingered Gecko



SOUTH-ASIAN GECKOS, OR TUBERCULATED GECKOS

GENUS *BUNOPUS* BLANFORD, 1974

Small lizards with body length up to 60 mm. Toes are straight or weakly bent, cylindrical, with claws, the underside is covered with one row of transversely widened sub-digital lamellae characterized by tuberosity or spinosity along the free edge. Tail's segments are well defined; on the underside of the tail there are three rings of scales. They can be replaced by a separate large shield in the middle of each segment.

Pupil is vertical, with serrated edges. Anal pores are well-developed only in males.

The underside of the toes is covered with one row of transversely widened sub-digital lamellae, tubercular or spinous along the free edge. It is difference from the species of *Alsophylax* genus.

The genus includes 3 species of geckos distributed in Israel, northern and eastern part of the Arabian Peninsula, Iran, Afghanistan and Pakistan up to the Ind River inclusive. To the north the distribution range of South-Asian geckos attains 35° N.

The fauna of North Eurasia contains one species.

SOUTHERN TUBERCULATED GECKO

BUNOPUS TUBERCULATUS BLANFORD, 1874



TERRA TYPICA. Vicinity of Bampur, Baluchistan, Iran.

DISTRIBUTION. Tuberculate South-Asian gecko is distributed in the extreme south of Turkmenistan (Badkhyz), in southern and eastern Afghanistan, Baluchistan and Synd (eastern Pakistan), central and south-eastern Iran, Iraq, Syria and Israel. The only population is known in the southern Turkmenistan on the northern border of the distribution range discovered in 1972 in Badkhyz. This population is limited in its distribution by the Eroylanduz depression.

CONSERVATION STATUS. One of the most rare species of geckos of the fauna of North Eurasia. This species was included into the Red Data Book of the USSR (1984) and Turkmenistan (1999): category 3 – rare species. There is a danger of flooding of habitats in



the result of heavy rainfall, destruction of habitats in the result of grazing and economic development of territories in Turkmenistan. The unique Eroylanduz population requires a strict conservation measures.

FRINGE-TOED GECKOS

GENUS *CROSSOBAMON* BOETTGER, 1888

Geckos of medium sizes with the length of the body and tail up to 150 mm. Head and body are flattened; straight toes tips are not widened.

Toes are gradually getting thinner to their distal parts. The underside is covered with one row of transversely widened, weakly keeled or serrated along the free edge. Lamellae have on the sides a fringe of long conical scales.

Small polygonal scales of dorsal surface of the body have in the middle longitudinal keels. Larger rounded keeled scales are located among them. Mandibular and subcaudal scales are absent. Segmentation of the tail is not defined; the tail is thin and not fragile.

Pupil is vertical with serrated edges.

Anal pores are developed only in males; they form a nearly straight row, partly interrupted in the middle.

From geckos of genera *Cyrtopodion*, *Mediodactylus*, *Alsophylax* and *Bunopus* geckos of the genus *Crossobamon* differ by the structure of the toes with a fringe of horny denticles, as well as by a long not fragile prehensile tail.

The genus includes 3 species distributed in Middle Asia, Kazakhstan, Iran, Afghanistan and Pakistan.

The fauna of North Eurasia contains one species.

EVERSMANN'S FRINGE-TOED GECKO

CROSSOBAMON EVERSMANNI (WIEGMANN, 1834)



and southern Tajikistan. It lives in north-western Afghanistan (north of Central Massif) and Iran, where it is known only from north-east and south of Sistan Province by the findings of the expedition of Zarudny in 1903, and later by the material collected by Anderson in 1975. The northern border of the distribution range extends from the eastern coast of the Caspian Sea (sands of Aktyubë) to the lower reaches of Irgiz River in Kazakhstan.

CONSERVATION STATUS. The recent status of the populations of *C. evermanni* does not require additional measures on their conservation. It is preserved in Repetek, Kaplankyr Nature Reserves and also within Delili site in Khazar Nature Reserve.

TERRA TYPICA. Agitma, Kyzyl Kum.

DISTRIBUTION. Species with a wide distribution range, living in sandy deserts of Turkmenistan, Uzbekistan, southern Kazakhstan

THIN-TOED GECKOS, OR NACKED-FINGERED GECKOS

GENUS CYRTOPODION FITZINGER, 1843

Geckos of small and medium sizes with body length up to 80 mm. Toes are long, with claws, bent, because two or three last phalanges, compressed from the sides, form an angle with the proximal part of toes. Toes from the sides do not have a fringe of horny denticles. The underside of the toes is covered with one row of sub-digital lamellae.

The height of the first supralabial shield is visibly larger than its width, or slightly less than it. The dorsal surface of the body and the sides are covered with uniform, more or less granular small scales. Among them in some species there are large, often convex and keeled scales (tubercles).

Segmentation of the tail is well developed. Not high caudal tubercles widely contact between themselves in semi-rings of one

segment. They are surrounded with one-two smaller tubercles and with even smaller caudal scales.

Pre-anal and femoral pores are developed only in males, not separated by an interval and are located nearly in a straight line.

The main background and pattern are of light- and dark – ochre-brown tones. Pupil is vertical, with serrated edges.

The genus contains 22 species, widely distributed in South-East Asia across the north of Arabia, in Middle and Central Asia up to the Ind River in the east of Pakistan and in northern India up to the foothills of the Himalayas and up to the southern Kazakhstan and Mongolia in the north. The fauna of North Eurasia contains five species.



TERRA TYPICA. The city of Baku, Azerbaijan.

DISTRIBUTION. It has an extensive distribution range in the eastern regions of Caucasus, in Middle Asia (Turkmenistan, Uzbekistan, Tajikistan), in south-western Kazakhstan, as well as in northern and eastern Iran and north-western Afghanistan. An isolated population is found in the Ferganskaya valley. In Iran it is known from the Gorgan region in Mazanderan Province, in the north and east of Khorasan Province, and also southwards up to the Province Sistan. It is possible to mark the northern border of the distribution range on the line from the north-eastern part of the Caspian Sea up to the northern coast of the Aral Sea and Syr-Darya River. Along the western coast of the Caspian Sea there are findings in Kalmykia and in Transcaucasia, Tbilisi (an introduction), in the valley of the Aras River it is sporadically encountered up to the city Yerevan.

The nominative subspecies *C. c. caspius* (Eichwald, 1831) is distributed on the whole extent of the distribution range except for the island Wulf in the Caspian Sea (in Azerbaijan), at the distance of 12 km from the Apsheron Peninsula where the endemic subspecies *C. c. insularis* (Akhmedow et Szczerbak, 1978) is distributed.

CONSERVATION STATUS. The present-day status of the Caspian Thin-toed Gecko does not require additional measures on its protection.



GOBI THIN-TOED GECKO



TERRA TYPICA. Jangigissar (= Yengisar), eastern Turkestan [=Xinjiang Uyghur Autonomous Region, western China].

DISTRIBUTION. It is distributed within quite limited area within the Central-Asian deserts: Trans-Altai Gobi in Southern Mongolia eastwards up to Edzin-Hol River and westwards up to Kashgaria (in Xinjiang-Uyghur Autonomous Region, China), where it is sporadically recorded in the dry canyons and residual-mountains.

CONSERVATION STATUS. Rare, little-known species with a limited distribution range, the most part of which is situated on the territory of Mongolia and is protected in the Gobi Biosphere res-

CYRTOPODION ELONGATUS (BLANFORD, 1875)



ervation. It is included into the Red Data Book of Mongolia (1997), where it is referred to the category of rare species.

TURKESTAN THIN-TOED GECKO



TERRA TYPICA. The town of Samarkand, Uzbekistan.

DISTRIBUTION. It is widely distributed in Tajikistan, in the mountain regions of western Pamir, in Kyrgyzstan, Uzbekistan and south-eastern Turkmenistan. It is registered in southern Kyzyl Kums and eastern Kara Kums where probably it was introduced by humans. The most western localities are the valley of the Tejen River, vicinity of Mari and Chärjew towns and the coast of the Aral Sea. The north-eastern border of the distribution range does not exceed the limits of the valley of Syr-Darya River. Probably, the southern border of the distribution range runs on the rivers Amu-Darya and Pyandzh. There are reports about a record in the northern part of Afghanistan.

CONSERVATION STATUS. The present-day status of the population of the Turkestan Thin-toed Gecko is rather stable and does not require additional measures on their protection.

CYRTOPODION FEDTSCHENKOI (STRAUCH, 1887)



LONG-LEGGED THIN-TOED GECKO, OR NIKOLSKY'S LONG-LEGGED GECKO

CYRTOPODION LONGIPES (NIKOLSKY, 1896)



TERRA TYPICA. The town Nekh (Nekhbandan), Iran.

DISTRIBUTION. It occurs in the extreme south of Turkmenistan, in eastern Iran (the extreme east of the Khorasan and Baluchistan Provinces) and in south-western Afghanistan. To the east from the mountain range Pelangan on the southern foothills of Hindu Kush it attains Kandahar. Only one of three subspecies – *C. l. microlepis* (Lantz, 1918) is distributed in Turkmenistan. It occurs only in the valley of Tejen River in the extreme south of the republic. Its distribution range covers the territory from the western part of the highland Badkhyz (Pulykhatyn, Akarcheshme, Kerleck, Zulfagar, Gyazgadyk, Danagermab) and east-

ern Kopet Dagh (Chaacha, Darabent) across the Cayenne mountains up to the mountain range Pelangan. Besides, three specimens of the nominative subspecies *C. longipes longipes* from the vicinity of Termez town in southern Uzbekistan, collected in 1916, are deposited in the collection of the Zoological Institute of the Russian Academy of Sciences. There were no other records in this region.

CONSERVATION STATUS. As a rare endemic species it was included into the Red Data Book of the USSR (1984). At present as a rare species (category 3) it is included into the Red Data Book of Turkmenistan (1985, 1999). *C. longipes* is protected in the Badkhyz reservation. The population existing in Turkmenistan is located in the northern periphery of the distribution range, its loss will cause a total extinction of the subspecies.



TURKMENIAN THIN-TOED GECKO

CYRTOPODION TURCMENICUS (SZCZERBAK, 1978)



TERRA TYPICA. Badkhyz, vicinity of the town Kushka, Agashly, Turkmenistan.

DISTRIBUTION. It occurs in the extreme south-east of Turkmenistan (canyon Pelengovely, Agashly, Chemenobid settlement) and adjacent regions of northern Afghanistan. The distribution range of the species covers the territory from the Kushka-Murgab rivers interstream area and southern border districts of the plateau Karabil' eastwards and southwards across Parapomiz up to the western spurs of Hindu Kush. The only specimen from Gorgan, Mazanderan Province (Iran) is known.

CONSERVATION STATUS. Rare species with a limited distribution range, it was included into the Red Data Book of the USSR (1984). At present it is included into the Red Data Book of Turkmenistan (1999) as a rare species (category 3), occurring on the periphery of the distribution range. *C. turcmenicus* is represented by three isolated local populations in Agashly on the territory of the Badkhyz reservation.

MEDITERRANEAN THIN-TOED GECKOS

GENUS MEDIODACTYLUS SZCZERBAK et GOLUBEV, «1977» (1978)

Small geckos with body length up to 80 mm. Toes are long, with claws, bent, because two or three last phalanges, compressed from the sides, form an angle with the proximal part of the toes. Toes from the sides do not have a fringe of horny denticles. The underside of the toes is covered with one row of sub-digital lamellae.

Height of the first supralabial shield from the nostril to the edge of the mouth is visibly less than its width along the edge of the mouth. The dorsal surface of the body and the sides are covered with uniform, more or less granular small scales. Among them in some species there are large scales (tubercles).

Segmentation of the tail is very clear. Spinous protruding caudal tubercles in semi-rings on the segment do not contact between themselves; they are surrounded with uniform scales. Pre-anal and femoral pores (not more than ten in number) are developed only in males.

The main background and pattern are of light – and dark-gray tones. Pupil is vertical, with serrated edges.

The genus contains 6–7 species, widely distributed in the Mediterranean region and penetrating into the Middle Asia.

The fauna of North Eurasia contains four species.



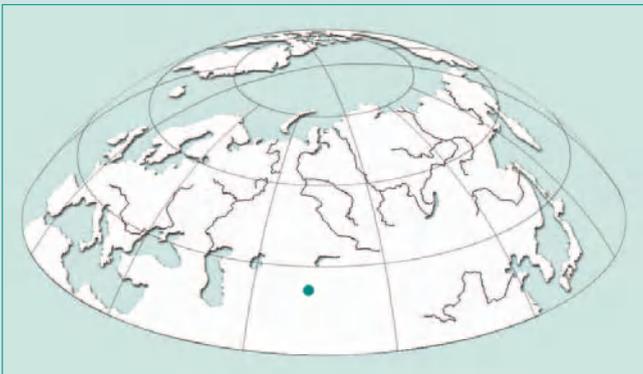
TERRA TYPICA. Island Syros, Kiklads islands, Greece.

DISTRIBUTION. It inhabits southern Italy, the Balkan Peninsula to the north up to central Bulgaria, islands in the southern part of the Aegean Sea, islands of Crete and Cyprus, as well as Asia Minor, south-western Transcaucasia, Syria and Palestine. Of 25 known subspecies *M. k. danilewkii* (Strauch, 1887) occurs in the Crimea. Here its distribution range is limited by southern coast of the Crimea from the town Sevastopol to the town Alushta.

CONSERVATION STATUS. As a rare subspecies with a limited distribution range it is included into the Red Data Books of the USSR (1984) and the Ukraine (1994) – category 3. *M. kotschyi* is protected by the Bern Convention.



NARYN THIN-TOED GECKO

MEDIODACTYLUS NARYNENSIS (EREMCHENKO, TSARINENKO et PANFILOV, 1999)

TERRA TYPICA. Middle-Naryn valley, at the confluence of the rivers Alabuna and Naryn, Narynskaya region, Kyrgyzstan.

DISTRIBUTION. The species is known only from the type locality: the intermountain valley of the Middle Naryn and Alabuga from

the town Naryn in the east up to the Kosh–Dube settlement in the west.

CONSERVATION STATUS. Due to the poor knowledge on the species its status is not determined.



GREY THIN-TOED GECKO

MEDIODACTYLUS RUSSOWII (STRAUCH, 1887)



TERRA TYPICA. The ruins of the old fortification Novo-Alexandrovskoe, western Kazakhstan.

DISTRIBUTION. The Asian part of the distribution range is situated in the Middle Asia and Kazakhstan. It extends to the east up to north-western China. The northern border of the distribution range runs in Kazakhstan from the lower reaches of the Emba River, the northern coast of the Aral Sea to the northern area adjacent to the Balkhash Lake and Alakol depression. The southern border of the distribution of the species passes in north-eastern and eastern Iran (Khorasan and Sistan Provinces) where the subspecies *M. r. zarudnyi* (Nikolsky, 1900) occurs. The distribution of the species is connected with the borders of the desert zone. In the European part of the range on the territory of Russia only one habitat of *M. russowii* was known – it is the stanitsa Starogladkovskaya in Chechnya. In the Middle Asia, Kazakhstan and in eastern part of the North Caucasus one of the two subspecies, the nominative subspecies *M. r. russowii* (Strauch, 1887) is distributed. Re-validi-



zation of the subspecific form *M. r. copalensis* (Shnitnikov, 1928) from Kazakhstan on the basis of biochemical and molecular investigations is possible.

CONSERVATION STATUS. In the lowland regions of Turkmenistan and Middle Asia *M. russowii* in general is a widely distributed species with a stable number. At present it do not require additional measures on their protection. Due to the absence of confirmations of the records of this species in the European part of the range after 1935, it was included into the Red Data Book of the Russian Federation (2001) as an extinct (category 0). The strong anthropogenic changes of the isolated areas of sandy deserts in eastern part of the North Caucasus where the species was distributed could be of serious importance.

SPINE-TAILED THIN-TOED GECKO

MEDIODACTYLUS SPINICAUDUS (STRAUCH, 1887)



TERRA TYPICA. Town Shakhруд, Iran.

DISTRIBUTION. It is distributed in north-eastern Iran (Shakhrud) and western Turkmenistan in the foothills of central and western Kopet Dagh, the mountain range Kyupen Dagh, on the Smaller Balkhan and in western Badkhyz. The endemic of Turkmeno-Khorasan mountains.

CONSERVATION STATUS. As a rare species with a limited distribution area *M. spinicaudus* was included into the Red Data Books of the USSR (1978, 1984) and Turkmenistan (1985) – category 3. At present it is excluded from the list of the Red Book of Turkmenistan (1999) on the basis of the information about a stable number.



PLATE-TAILED GECKOS

GENUS *TERATOSCINCUS* STRAUCH, 1863

Lizards of medium size with a large wide and high head. The tips of the toes are not widened; toes are straight, their underside is covered with very small spinous scales, and on the sides – with fringe of long, conical, bent scales.

The dorsal surface and the underside of the body are covered with uniform juxtaposed scales rounded on the posterior edges, the head is covered with considerably smaller polygonal scales.

On the dorsal surface of the tail there is a longitudinal row of unguiform, large, juxtaposed smooth lamellae. The scales of the body, especially on the venter and the dorsal surface of the tail can be very easily injured.

The tail is round at the base and compressed from the sides towards the tip. The underside is covered with the scales similar to the scales of the body, and its dorsal surface – with wide transverse lamellae. The tail is very fragile, its integuments are easily injured. Femoral and anal pores are absent.

The genus includes six species, the distribution range of which covers the deserts of Middle and Central Asia, including southern Mongolia, northern and north-western China, as well as Iran and Afghanistan, Pakistan and east of United Arab Emirates. Sometimes a distinct sub-family Teratoscincinae Kluge, 1987, is distinguished.

The fauna of North Eurasia contains two species.

PRZHEWALSKY'S PLATE-TAILED GECKO

TERATOSCINCUS PRZEWALSKII STRAUCH, 1887



TERRA TYPICA. The oasis Hami, Xinjiang-Uyghur Autonomous Region, western China.

DISTRIBUTION. It is distributed in the south of Mongolia (Gobi-Altai, Bain-Khongor and South-Gobi aimaks) and in north-western



China – westwards to the desert Takla-Makan (Niya), eastwards to Edzin-Hol River, southwards to the mountain system Nan Shan.

CONSERVATION STATUS. A common species widely distributed in the south of Mongolia, is protected in the Gobi biosphere reservation.

TURKESTAN PLATE-TAILED GECKO

TERATOSCINCUS SCINCUS (SCHLEGEL, 1858)



TERRA TYPICA. River Ily, eastern Turkestan (=Xinjiang-Uyghur Autonomous Region, western China).

DISTRIBUTION. It is widely distributed in the Middle Asia, in the eastern part of the western Asia, including the eastern part of the Arabian Peninsula. It lives in the southern half of Kazakhstan, from the eastern coast of the Caspian Sea up to the Alakol'skaya Hollow. Findings in the western part of Central Asia are known (oasis Sachzhou). On the territory of North Eurasia two subspecies are registered. The nominative subspecies *T. s. scincus* (Schlegel, 1858) is distributed on the most part of Middle Asia and in Kazakhstan. *T. s. rustamowi* Szczerbak, 1979 is known from the Ferganskaya valley. Due to the result of the most recent study status *T. s. keyserlingii* is considered now as a distinct species, *T. keyserlingii* Strauch, 1863.

CONSERVATION STATUS. The Rustamov's Plate-tailed Gecko is included into the Red Data Books of Uzbekistan (2003) and Tadjikistan (1997) as an endangered, mosaically distributed, relict endemic subspecies – category 1, EN.



Teratoscincus scincus keyserlingii



Teratoscincus scincus rustamowi



Teratoscincus scincus scincus









Charyn River valley, eastern Kazakhstan

AGAMAS, OR AGAMIDS

FAMILY AGAMIDAE SPIX, 1825

Very diverse lizard's family (in their morphology, adaptations to different environmental conditions and modes of life) unites about 45 genera and more than 350 species. Agamids are lizards of large, medium or small sizes (the length of body with tail is from 80 mm in small Toad-headed Agamas (*Phrynocephalus*) and more than 1 m in Sail-tailed Water Lizard, (*Hydrosaurus amboinensis*).

The family includes terrestrial, arboreal, fossorial forms, as well as the species capable of a gliding flight (genus *Draco* Linnaeus, 1758) and semi-aquatic mode of life (genera *Hydrosaurus* Kaup, 1828 and *Physignathus* Cuvier, 1829). Activity is mainly diurnal.

The most important character distinguished agamas from most of other lizards is acropleurodont and heterodont condition of their teeth system.

Agamids widely inhabit Old World, including Africa (absent on the Madagascar Island), southern Europe, Asia (approximately up to 47° N), Indo-Australian Archipelago and Australia.

Six sub-families are distinguished: Uromastycinae Theobald, 1868 with one genus *Uromastyx* Merrem, 1820; Leiolepidinae Fitzinger, 1843 with one genus *Leiolepis* Cuvier, 1829; Amphibolurinae Wagler, 1830 with all Australian and New Guinean genera, and also *Physignathus cocincinus* from South-East Asia; Hydrosaurinae Kaup, 1828 with one genus *Hydrosaurus*; the most numerous South-Asian and South-East-Asian subfamily Draconinae Fitzinger, 1826, characterized by the maximal diversity of mainly arboreal forms; and at last Afro-West-Asian subfamily Agaminae Spix, 1825.

Three genera of the lizards of the latter subfamily with 21 species occur in North Eurasia.

ASIAN ROCK AGAMAS

GENUS LAUDAKIA GRAY, 1845

Large diurnal lizards with dorso-ventrally flattened body and open ear aperture. Until recently they were united with African Rock Agamas of the genus *Acanthocercus* Fitzinger, 1845 into the genus *Stellio* Laurenti, 1768, and before that during a long period were included into the genus *Agama* Daudin, 1802.

The head is relatively wide and flat. The nuchal scale is not enlarged. The dorsal crest is not developed. Caudal scales are arranged in regular transverse rows forming two rings and united into segments in two, three or four rings.

The ear opening is of a large size, more or equal to the half of the diameter of the orbit, not deep. The tympanum is located superficially.

Toes are compressed, gular sack is not developed. In contrast to many other agamid all species of rock agamas are able to the autotomy of the tail. Its regeneration is also registered. Pre-anal and ventral callous structures are well developed; they represent epidermal holocrine glands normally better developed in males.

The genus includes 16 species distributed in montane- rocky landscapes of the arid zone from Greece and the delta of the Nile River in the west across Asia Minor, Middle East and Middle Asia up to the Bramaputra (Mazang) River in the east and Gobi Altai in the north-east in Central Asia. Rock agamids inhabit very diverse arid territories, live in the biotopes from foothills and montane gardens to high-mountain rocky biotopes. In case of a danger they use crevices into the rocks as hiding places from where it is very difficult to take them out.

Activity is diurnal. Strictly territorial. They often form "harems" where a male lives in one area with several females. Demonstrative behaviour is very characteristic and is expressed, first of all, in bobbing and nodding of the head of different frequency.

Oviparous lizards. The clutch contains from 2 up to 15 eggs. They feed mainly on invertebrate animals. However flowers, leaves and succulent fruits of plants are of importance in their diet.

Six species occur on the territory of North Eurasia.

Caucasian Agama, *Laudakia caucasia*



CAUCASIAN, OR NORTHERN ROCK AGAMA

LAUDAKIA CAUCASIA (EICHWALD, 1831)



TERRA TYPICA. Cities Tiflis and Baku, the Caucasus.

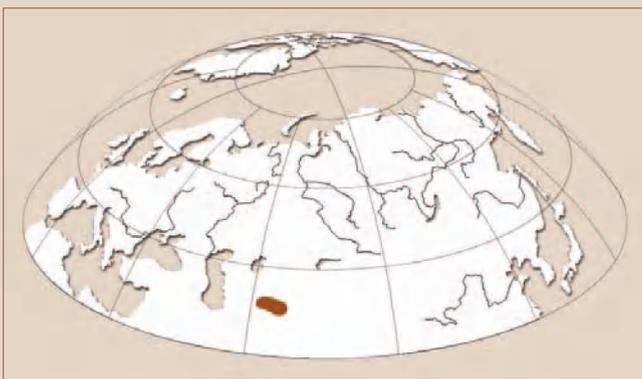
DISTRIBUTION. *Laudakia caucasica* is distributed in the eastern half of the Caucasus, north-eastern Turkey, in northern Iran, Iraq, Afghanistan, north-western Pakistan and in the south of Middle Asia. In the limits of the former USSR – eastern and southern Georgia, Armenia, Azerbaijan; the main distribution range in Middle Asia is Turkmenistan: Krasnovodskoe Plateau, Meshed sands, Lesser and Greater Balkhans, Kopet Dagh and Badkhyz. Further to the east are known records from the vicinity of Chubeck (southern Tajikistan). On the territory of Russia it occurs in Dagestan, in the vicinity of the settlement Kumtor–Kala and near the settlements Akhty and Rutul.

On the territory of North Eurasia two subspecies are registered: *L. c. caucasica* and *L. c. triannulata* (Ananjeva et Atajev, 1984). The second subspecies is known only from Meshed sands near the settlement Madau in Turkmenistan.

CONSERVATION STATUS. Common, in some places numerous species. It does not require special methods of protection. Caucasian agama is protected in some reservations in Georgia, Armenia, Azerbaijan and Turkmenistan.

CHERNOV'S ROCK AGAMA

LAUDAKIA CHERNOVI (ANANJEVA, PETERS et RZEPAKOVSKY, 1981)



TERRA TYPICA. Town Nurek, Tajikistan.

DISTRIBUTION. The species is distributed in south-western Tajikistan and in the adjacent part of Uzbekistan and in south-eastern Turkmenistan in the western parts of Pamir-Altai region (Gissar and Zeravshan mountain ranges and Kugitang-Tau mountains). It is possible that this agama occurs also in the adjacent regions of

north-eastern Afghanistan. The general distribution range of the species requires to be defined more precisely.

CONSERVATION STATUS. Not determined.



KHORASAN, OR REDBELLY ROCK AGAMA

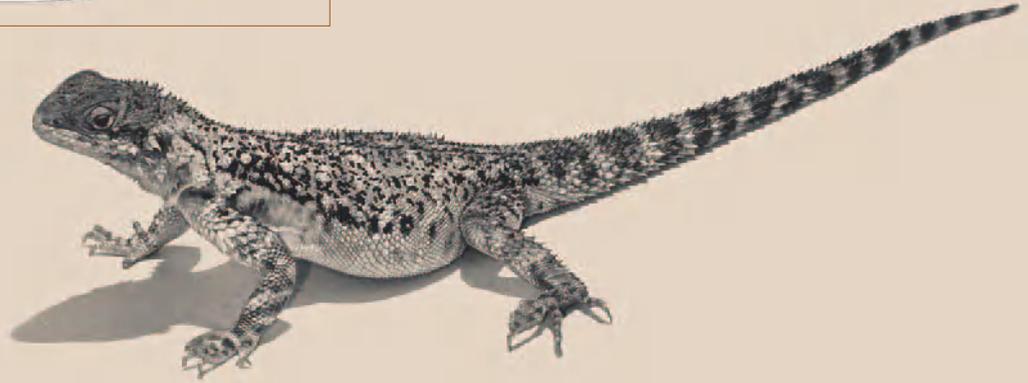
LAUDAKIA ERYTHROGAстра (NIKOLSKY, 1896)



TERRA TYPICA. Towns Kalenderabad and Ferimun, eastern Iran.

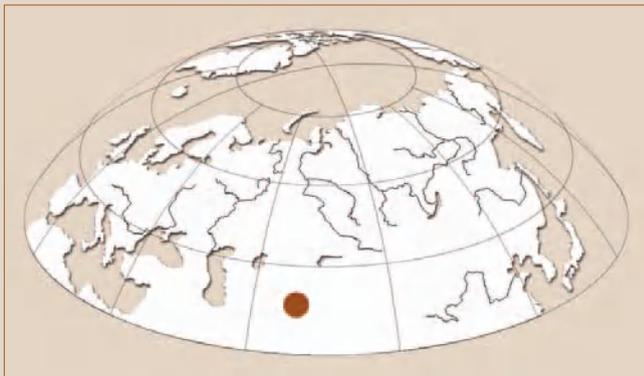
DISTRIBUTION. North-eastern Iran, Afghanistan and south-east Turkmenistan. In Turkmenistan the species is registered in Badkhyz, Karabil in the south of Tejen-Murgab rivers interstream area as well as in eastern Kopet Dagh. The nominative subspecies *L. e. erythrogastra* is distributed in Badkhyz and Karabil, and *L. e. nurgeldievi* (Tuniyev, Atayev et Shammakov, 1991) is known only from eastern Kopetgad.

CONSERVATION STATUS. The stable density does not require any additional conservation measures.



HIMALAYAN ROCK AGAMA

LAUDAKIA HIMALAYANA (STEINDACHNER, 1869)



TERRA TYPICA. Towns Lei (Leh) and Kargit, Ladakh, Kashmir.

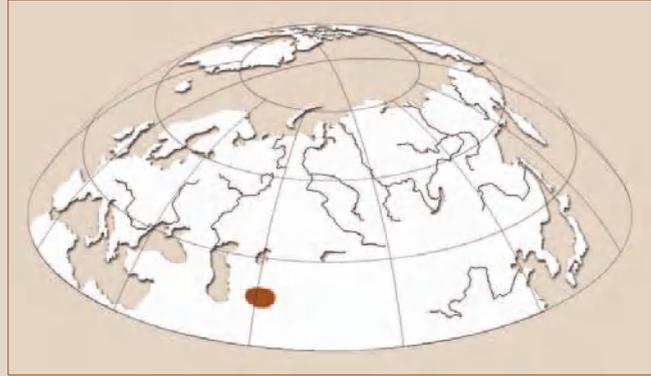
DISTRIBUTION. The distribution range of the species covers mountain systems of the Himalayas and Trans-Himalayas, south-east Tien Shan, western Pamir and southern Karakorum Range within the limits of Nepal, northern India, northern Pakistan, eastern Afghanistan, western half of Tajikistan and western Kyrgyzstan.

CONSERVATION STATUS. The stable density does not require any additional conservation measures.



TURKESTAN ROCK AGAMA

LAUDAKIA LEHMANNI (NIKOLSKY, 1896)



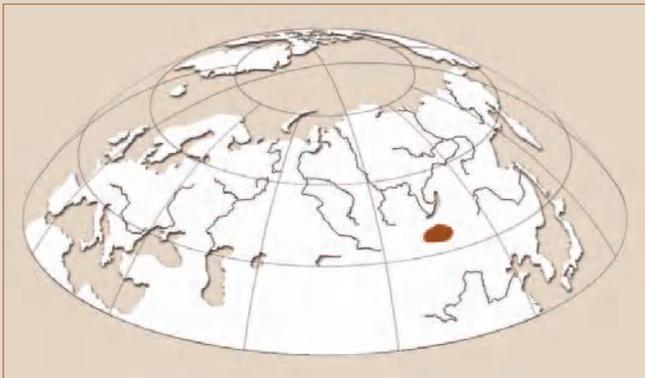
TERRA TYPICA. Fergana and montane Bukhara, Uzbekistan.

DISTRIBUTION. The distribution range of the species is limited by mountain arid regions of northern Afghanistan, mountains and foothills of south-eastern Turkmenistan (Kugitang-Tau), eastern Uzbekistan, south-western Tajikistan and adjacent regions of Kyrgyzstan. The northern border of the distribution range passes along the foothills of the mountain range Mogoltau in the Fergana valley, the western border - along the mountain ranges Nuratau and Kugitang-Tau, and the western border is limited with the Darvaz range.

CONSERVATION STATUS. The stable density does not require any additional conservation measures.

MONGOLIAN ROCK AGAMA

LAUDAKIA STOLICZKANA (BLANFORD, 1875)



TERRA TYPICA. Plains of eastern Turkestan (= Xinjiang-Uyghur Autonomous Region, western China).

DISTRIBUTION. Mongolian Rock Agama lives in the extreme north-eastern part of the distribution range of the genus *Laudakia*. It extends westwards up to 76° E in north-eastern China. Mongolian agama occurs in the Province Hansu and some regions of Kashgaria and eastern Tien Shan in the Xinjiang-Uyghur Autonomous Region. Evidently, the southern and western borders of the distribution range in China pass on the south of central Tien Shan along the northern border of the Takla-Makan desert. In the north and east it is limited with the mountain systems of Mongolian Altai, Eastern (Gobi) Tien Shan, western part of Gobi Altai and the mountain ranges of Baitag mountain chain. Two subspecies are known: *L. s. stoliczkana* and *L. s. altaica* (Monkhubayar, 1971). The latter is

distributed in Mongolia where it is known in the western and south-western part of the country in Kobdo, Gobi-Altai, Bayan-Khongor and South-Gobi aimaks.

CONSERVATION STATUS. The stable density does not require any additional conservation measures.



PLAIN AGAMAS

GENUS *TRAPELUS* CUVIER, 1817

During long period these agamas were included into the combined genus *Agama* Daudin, 1802.

Lizards of medium size with a round weakly dorso-ventrally flattened body and a small open deep ear aperture; its diameter is less than a half of the diameter of the orbit. The head is relatively high and short, nuchal scale is not enlarged. Dorsal and nuchal crests are not developed. Caudal scales do not form rings.

Toes are relatively short, not compressed. Gular sack is developed. Changes of its color and movements play an important role in the territorial and breeding behavior. Capability to autotomy and regeneration of the tail is not developed. Callous glandular pre-anal (but not ventral) scales are well developed in males.

The genus includes 12 species distributed in the arid zone of south-eastern Europe, south-western Asia, Middle and Central

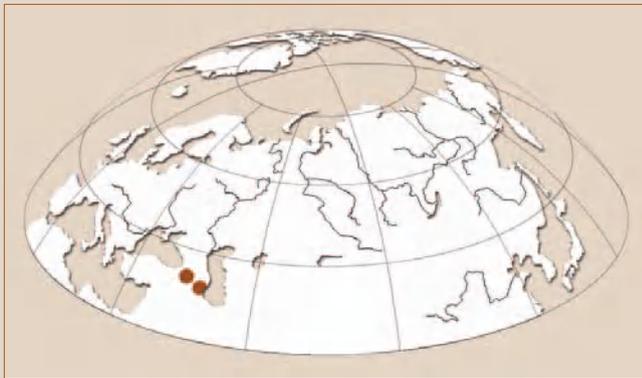
Asia, China, Iran, Afghanistan, northern Africa and Arabian Peninsula.

Agamas inhabit open clayish, sandy and rocky semi-desert and desert areas with shrubby and semi-arboreal vegetation. Lizards are able of climbing on tree trunks and branches, jumping from one branch to another. They use burrows of rodents as hiding places. More rarely they dig holes by themselves. Territorial lizards with diurnal activity. Oviparous agamas; the clutch contains from 3 up to 10 eggs. The diet mainly consists of invertebrate animals, sometimes they feed on vegetable food.

Two species occur in North Eurasia.

HORNY-SCALED AGAMA

TRAPELUS RUDERATUS (OLIVIER, 1804)



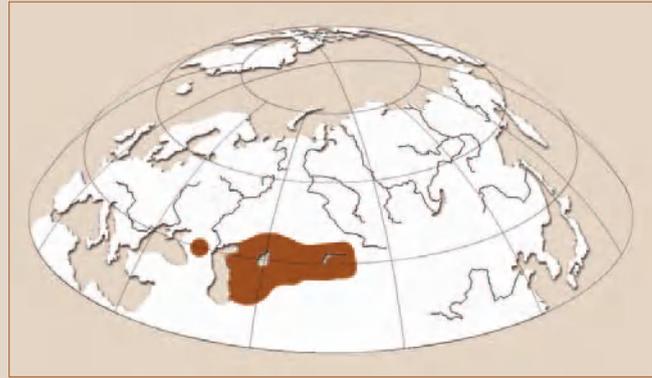
Anatolia (Turkey), Syria, eastern Jordan, the northern part of Saudi Arabia, Iraq, Iran, Afghanistan and Pakistan. It is known from two southern regions of eastern Transcaucasia (Azerbaijan), where it occurs in the valley of the lower reaches of Aras River (Jebrail, Zangelan) and in the montane-steppe region Zuvand in the Talysh mountains. In the Transcaucasia as well as in the limits of the most part of the distribution range, the nominative subspecies *T. r. ruderatus* is distributed. The other subspecies, *T. r. baluchianus* (Smith, 1935) occurs in north-western Pakistan.

CONSERVATION STATUS. As a rare species with a limited distribution range it was included into the Red Data book of the USSR (1984) – category 1.

TERRA TYPICA. Persia and North Arabia.

DISTRIBUTION. The distribution range covers extensive regions of south-west Asia from the north of Arabian Peninsula to Pakistan:





TERRA TYPICA. Kum-Ankatar in the valley of Terek River.

DISTRIBUTION. The species is distributed in deserts and semi-deserts of eastern part of the North Caucasus, Middle Asia and Kazakhstan, as well as in northern and north-east Iran and in northern Afghanistan. The eastern border of distribution covers north-western China in Xinjiang-Uyghur Autonomous Region. In the eastern part of the North Caucasus (Chechnya, Dagestan and Stavropol Territory) the nominative subspecies *T. s. sanguinolentus* is distributed in the isolation from the main distribution range. The rest of the extensive range is occupied by east-Caspian subspecies *T. s. aralensis* (Lichtenstein, 1823). In Middle Asia the northern border of the distribution range passes somewhat to the south of the line of Emba River from the eastern coast of the Caspian Sea, bends round from the south the Mugodzhar mountains and across the lower reaches of Turgai River and the valley of the middle current of Sarysu River goes down to the north coast of Balkhash Lake attaining further the foothills of Tarbagatai. On the valleys of rivers it penetrates into the foothills of Tien Shan and Pamir-Atlai occurring in the vicinity of the towns Osh in Kyrgyzstan and Chubeck in south-west Tajikistan.

CONSERVATION STATUS. The species in its eastern part of distribution range does not require special protection measures. In the North Caucasus the number is declining and conservation measures are necessary.







Charyn River valley, eastern Kazakhstan

Diurnal lizards of medium and small size with a wide strongly flattened body. The length of the body with the tail is up to 25 cm.

Nuchal and dorsal crests are not developed. The head is short, rounded anteriorly. Gular sack is absent. A transverse gular fold crosses the throat. Tail is rounded, slightly flattened at the base; it is able to coil onto the dorsum. Ear opening is hidden under the skin. Pre-anal and femoral pores are absent. All or some toes (one or both sides) have fringes.

In Toad-headed Agamas the part of the top of the head covered with scales which are different in their size. The number of scales across between the nostrils as well as the distances between the nostrils and preocular ridge are of importance under species identification. In this case the scales are counted on the line passing between the centers of the eyes. The temporal scale is easily distinguished by the presence in its middle of a light convex ring (a temporal eye).

The genus includes about 40 species distributed in the arid zone of south-east Europe, Middle Asia, north-western China, Iran, Afghanistan, Pakistan, northern Africa and Arabian Peninsula. Together with the lizards of *Eremias* genus *Phrynocephalus* represent a nucleus of the Palearctic fauna of deserts.

Phrynocephalus genus is a very complicated in its taxonomy group of lizards of Palearctic. One of the founders of the Russian herpetology and research of the fauna of Central Asia Ya.V. Bedriaga called study of taxonomy and phylogeny of this group "the most difficult task with which herpetologists can only deal". The

conceptions about the composition of the genus *Phrynocephalus* and relationships within this genus at present cannot be considered as final due to ambiguous and contradictory results of previous and modern research. As a good example can serve the results of study of "guttatus" group where clearly manifested themselves different tendencies of evaluation of the taxonomic status of distinct forms. During recent years research of the taxonomy and phylogenetic relations using genetic and ethological methods are actively developing.

These lizards are typical for the open desert landscapes. They are able to dig burrows. Some species are characterized by a peculiar "plunging" into the sand in case of danger or at night by rapid lateral movements of the body. Typical tail movements of *Phrynocephalus* have an important significance in the repertoire of their demonstrative behavior.

Territorial lizards with diurnal activity. The most species are oviparous. Distribution of viviparous species is limited by the high-mountain Tibet Plateau in China (*P. forsythii* Anderson, 1872; *P. theobaldi* Blyth, 1863; *P. vlangalii* Strauch, 1876; *P. zetangensis* Wang, Zeng et Wu, 1996). The clutch contains from one up to seven eggs. Insect-eating.

14 species occur in North Eurasia.

GOLUBEV'S TOAD AGAMA

PHRYNOCEPHALUS GOLUBEVII SHENBROT et SEMENOV, 1990

TERRA TYPICA. Bami settlement, Turkmenistan.

DISTRIBUTION. The species is known only from south-western part of Kara Kums, from a solonchak desert in 7 km to the north from Bami station with sparse vegetations. Until its description in 1990 the Turkmenian population was referred to the species *P. maculatus* Anderson, 1872, widely distributed from Arabia in the west to Iran and Pakistan in the east.



CONSERVATION STATUS. Relict isolated population of *P. golubewii* is endangered. It was registered a mass death in the result of a partial flooding of solonchaks soil during spring high waters and when filtering of water from the Kara Kum channel. The species (as *P. maculatus*) was included into the Red Data Book of the USSR (1984) and Turkmenistan (1985, 1999): category I – an endangered species.



TERRA TYPICA. Yaizkaya steppe, lower reaches of Ural River.

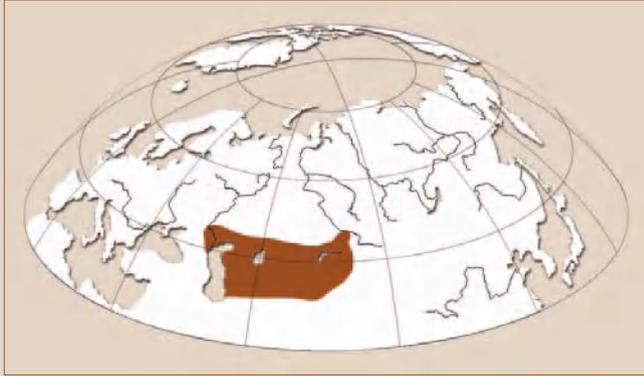
DISTRIBUTION. An extensive distribution range spreads from western borders of China across the whole northern sub-zone of deserts to the western coast of the Caspian Sea. In the Europe the species is distributed in Dagestan, Kalmykia, Stavropol Territory, Astrakhan and Volgograd regions. The main part of the distribution range is situated in Kazakhstan, it occurs also in Uzbekistan (Kara-Kalpakia) and Turkmenistan. Conceptions about the distribution range cannot be considered as final because the taxonomic position of distinct forms of this species requires to be

defined more precisely. The nominative subspecies *P. g. guttatus* occupies the most part of the distribution range within the limits of its European and Asian parts. In the southern area adjacent to the Balkhash Lake occurs the subspecies *P. g. kuschakewitschi* Bedriaga In Nikolsky, 1905, which according to the views of some taxonomists represents a distinct species. Also there is no final clarification concerning validity of the western subspecies *P. g. kalmykus* Badmayeva et Szczerbak, 1983, which by most experts is considered as a junior synonym of the nominative subspecies. The subspecific status of the *P. guttatus* from Jungar Gates and Alakol Hollow, remains questionable. A population of *P. guttatus* belonging to subspecies *P. g. salsatus* Gorelov, Dunayev et Kotenko, 1995, was discovered on the southern coast of the saline soil Kassakhlishor (Turkmenistan) and on its northern coast near the border of Turkmenistan, Kazakhstan and Kara-Kalpakia, situated under the southern chinock of Ustyurt in the eastern part of Tuarkyr.

CONSERVATION STATUS. Kassakhlishor *P. g. salsatus* is included into the Red Data Book of Turkmenistan (1999): category 3 – rare, narrow-ranged species.

Phrynocephalus guttatus kuschakewitschi





TERRA TYPICA. Inderskie mountains, lower reaches of Ural River, Atyrau region, Kazakhstan.

DISTRIBUTION. The species has an extensive distribution range from Astrakhan and southern part of Volgograd regions in the west across the whole Kazakhstan and Middle Asia to south-western Mongolia (right-bank area of Bulgan River, Kobdos aimak, Jungar Gobi) and north-western China in the east. It also occurs in north-eastern Iran and is known from the Fergana valley. The nominative subspecies *P. h. helioscopus* occupies the most part of the distribution range in the European part and in Middle Asia. The subspecies *P. h. saposhnikovi* Kaschtschenko, 1909 is distributed in western China and Mongolia. *P. helioscopus* from the Fergana valley (vicinity of Mogoltau mountain and foothills in the vicinity of the towns Kanibadam, Isfara, Ashta) is described as a distinct subspecies *P. h. saidalievi* Sattorov, 1981. In the eastern part of Fergana valley this subspecies is known from the vicinity of Margelan and Andizhan towns.

CONSERVATION STATUS. *P. h. helioscopus* as a rare species is included into the Red Data Book of Mongolia (1997). Listed into the "Annotated list of taxa and populations required a special attention to their condition in the wildlife" (Appendix to the Red Data Book of the Russian Federation, 2001) due to the reduction of



the number in the lower reaches of Volga River (north-western periphery of the distribution range of the species). The endangered narrow-ranged endemic Fergana subspecies *P. h. saidalievi* is included into the Red Data Books of Uzbekistan (2003) and Tajikistan (1997) and is referred to the category 1, EN.



ROSE-SHOULDERED TOAD AGAMA

PHRYNOCEPHALUS INTERSCAPULARIS LICHTENSTEIN, 1856



TERRA TYPICA. Town Bukhara, Uzbekistan.

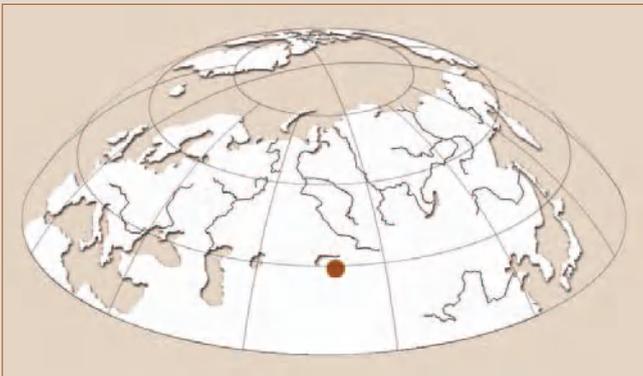
DISTRIBUTION. The distribution range of the species covers sandy deserts of Turkmenistan, southern Kazakhstan and Uzbekistan, and also possibly deserts of north-eastern Iran and north-eastern Afghanistan. In Kazakhstan it inhabits the deserts Prikaspiyskiye Kara Kumi, Priaralskiye Kara Kumi and Kyzyl Kumi, but is absent in the north-west area adjacent to the Aral Sea.



CONSERVATION STATUS. At present the status of the species does not require special conservation measures.

ZAISAN TOAD AGAMA

PHRYNOCEPHALUS MELANURUS EICHWALD, 1831



TERRA TYPICA. Kyzyl Kum sands, near the settlement Kurchum, the left bank of the Bukhtarminskoe reservoir, eastern Kazakhstan.

DISTRIBUTION. It is distributed in the Zaisan Depression, occurs only in south-western, northern and eastern parts of the shore of Zaisan Lake. Isolated populations of this species are known in Bu'konskie sands and the desert Aigyrum.

CONSERVATION STATUS. As a narrow-ranged poorly-known species it is included into the Red Data Book of Kazakhstan (1996) – category 3. It is planned to protect this species in the Zaisan Nature Reserve, which is being established.



MOLCHANOV'S TOAD AGAMA

PHRYNOCEPHALUS MOLTSCHANOVI NIKOLSKY, 1913



TERRA TYPICA. Mountain Bel'tau in the estuary of the Amu Darya River.

DISTRIBUTION. The most part of the distribution range belongs to the clayish areas of one of the ancient deltas of Amu Darya River – northern Akhchadar alluvial-deltoid plain. Records from the south-east part of Bel'tau upland are known. In general the distribution range covers the territory of ancient deltas of Amu Darya and Syr Darya rivers situated in their interstream area in southern region adjacent to the Aral Sea (Karakalpakstan).

CONSERVATION STATUS. Uncertain in its status insufficiently studied species, endemic to the region adjacent to the Aral Sea. It is included into the Red Data Book of Uzbekistan (2003) – category 4, DD.

BEARDED TOAD AGAMA

PHRYNOCEPHALUS MYSTACEUS (PALLAS, 1776)



TERRA TYPICA. Narynskaya steppe, northern coast of the Caspian Sea.

DISTRIBUTION. The distribution range is presented by a number of isolated populations. Their distribution is completely determined by presence of massifs of movable sands. It covers desert and semi-desert zones in the eastern part of the North Caucasus (including foothill Dagestan, Kalmykia and eastern part of Chechnya), in the south of Astrakhan region, in Kazakhstan, Middle Asia, north-western China, in Iran and Afghanistan. The northern border of the distribution range from the vicinity of Makhachkala city (sand dune Sarykum) in Dagestan goes up to north-west to Astrakhan sands inclusive, covers entirely Volga-Ural sands in the east and,

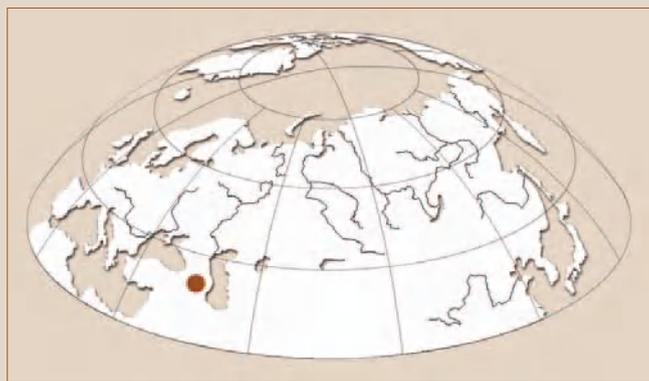
having bent round the Mugodzharskie mountains from the south and goes then into the lower reaches of Irgiz River. To the east it on the northern edge of Muyun-Kum desert goes to the southern shore of Balkhash Lake and further into the Alakol depression. The nominative subspecies *P. m. mystaceus* inhabits the European part of the distribution range up to Volga-Ural sands inclusive. *P. m. galli* Krassowsky, 1932 occurring on the most part of Kazakhstan and in Middle Asia is characterized by larger sizes of the body, tail, limbs and ear fold of skin. According to the other, less widespread, point of view, within the limits of the European-Middle-Asian part of the distribution range it is impossible to distinguish discrete forms. There are two subspecies: the nominative in the European

– Asian part and *P. m. aurantiacaudatus* Semenov et Shenbrot, 1990 – in eastern Kazakhstan (to the east from the Ili River).

CONSERVATION STATUS. In different parts of North Eurasia the number is very different. In Turkmenistan this is a common species in the sandy desert Kara Kum, and populations do not require additional measures on their protection. Populations of this species in the European part have a strong anthropogenic influence. For the unique population, inhabiting the sand dune Sary Kum in the vicinity of Makhachkala city, it is necessary to organize urgent special conservation actions since its number is strongly reduced and declined.

PERSIAN TOAD AGAMA

PHRYNOCEPHALUS PERSICUS DE FILIPPI, 1863



TERRA TYPICA. The road between Armenia and Teheran, Iran.

DISTRIBUTION. The distribution range of the species occupies north-western and western parts of the Central Plateau in Iran and goes to the north across the north-eastern Turkey to the eastern Transcaucasia. Several populations are known in the valley of Aras River in Armenia, Nakhichevan and highland Zuvand in Azerbaijan. Previously it was considered as a subspecies of *P. helioscopus*.

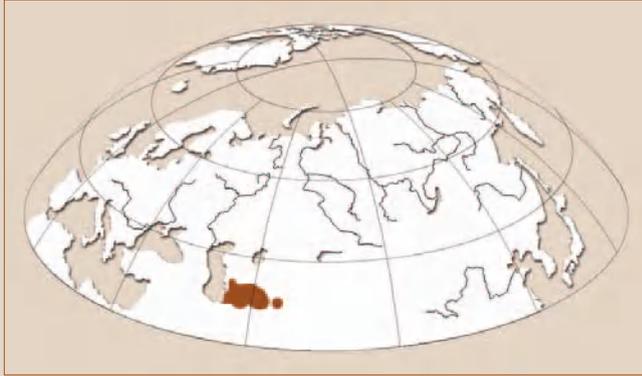


CONSERVATION STATUS. As a narrow-ranged subspecies, *P. h. persicus* was included into the Red Data Book of the USSR (1984) – category I. It is protected in the reservation “Gorovanskies perski” in Armenia. It is included into the Red Data Book of Armenia (1987).



TRANS-CASPIAN OR RADDEI'S TOAD AGAMA

PHRYNOCEPHALUS RADDEI BOETTGER, 1890



TERRA TYPICA. The vicinity of the station Pereval'naya, south-west Turkmenistan.

DISTRIBUTION. The distribution range covers the western and central parts of southern Turkmenistan from Kyzyl-Atrek and Jebel stations in the west and western Uzboi in the north, southern part of Uzbekistan and south-western Tajikistan up to the valley of the Vakhsh River in the east. The western border of the nominative

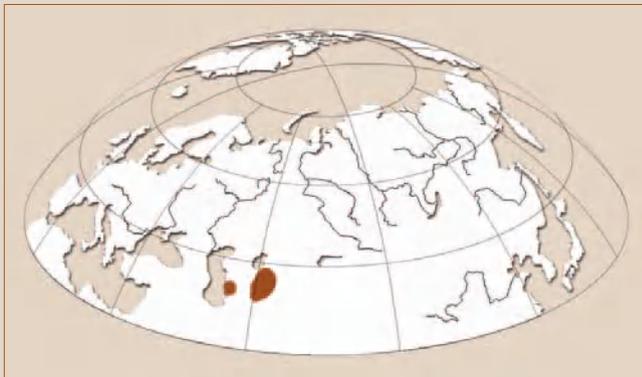
subspecies *P. r. raddei* runs from Kyzyl-Atrek across the lake Maloe Delili and Messerian plain up to the station Jebel. It occurs everywhere on the foothill plain of Kopet Dag. *P. r. boettgeri* Bedriaga In Nikolsky, 1905 distinguished by a longer tail, color pattern and presence of tubercular scales on the dorsum occurs in the east of Turkmenistan, in southern Uzbekistan and south-west Tajikistan.

CONSERVATION STATUS. The status does not require special conservation measures due to extensive distribution range and stable number.



NETTED TOAD AGAMA

PHRYNOCEPHALUS RETICULATUS (EICHWALD, 1831)



TERRA TYPICA. Amu Darya River.

DISTRIBUTION. The distribution range of the species covers clayish, sandy and crushed stony plains in Uzbekistan and Turkmenistan. The nominative subspecies *P. r. reticulatus* occupies the most of its eastern part, and *P. r. bannikovi* Darevsky, Rustamov et Shammakov, 1976 is distributed in the north-west of Turkmenistan. It is distinguished by a longer tail, some characters of pholidosis and a considerably more abrupt upper surface of the snout. In Turkmenistan the nominative subspecies occurs in its north-eastern part, on the right-bank area of Amu Darya River. The distribution range of the western subspecies is



limited with Krasnovodsky Peninsula in the west, southern part of Ustyurt in the north, northern slopes of Bol'shoi Balkhan in the south and the eastern border districts of the natural boundary Janack in the east. The eastern (*P. r. reticulatus*) and western (*P. r. bannikovi*) subspecies are separated by a zone of sands of more than 600 km in the central part of Kara Kums.

CONSERVATION STATUS. The status does not require special conservation measures.

KHENTAU TOAD AGAMA

PHRYNOCEPHALUS ROSSIKOWI NIKOLSKY, 1899

TERRA TYPICA. The mountain Khentau near Nukus, Kara-Kalpakia, Uzbekistan.

DISTRIBUTION. The species is distributed in the valley of the lower reaches of Amu Darya River in Kara-Kalpakia and in the adjacent

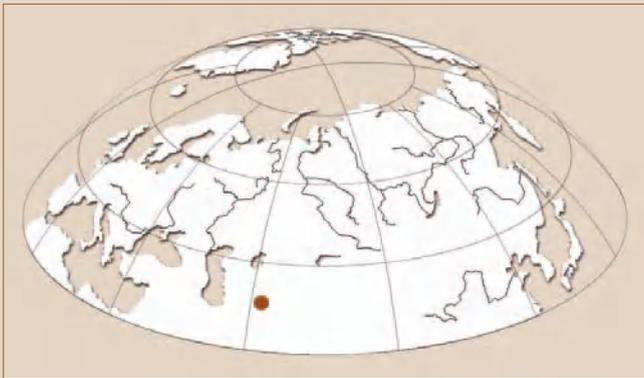


regions of Uzbekistan and Turkmenistan. In Turkmenistan two subspecies occur: the nominative *P. r. rossikowi* – on the left-bank area of the lower reaches of Amu Darya River between the lake Danishor and the settlement Neftezavodsk and *P. r. shammakowi* Szczerbak et Golubev, 1979 from the central Kara Kums, near the chinock of the ancient bed of Unguz River.

CONSERVATION STATUS. Narrow-ranged species. Habitats and number are strongly reduced. It is included into the Red Data Book of the USSR (1984), Turkmenistan (1984, 1999) – category 2 and Uzbekistan (1983, 2003) – status 1, EN. A part of the distribution range of the nominative subspecies is included into the territory of the Amu-Dar'insky Nature Reserve of Turkmenistan.

SOGDIAN TOAD AGAMA

PHRYNOCEPHALUS SOGDIANUS CERNOV, 1948



TERRA TYPICA. Vicinity of the settlement Pyandzh, Tajikistan.

DISTRIBUTION. The distribution range is limited with the sands of south-western Tajikistan and southern part of Uzbekistan from the valley of Surkhan Darya River in the west and the eastern border of the valley of Vakhsh River in the east. Probably, it occurs also in the adjacent regions of northern Afghanistan. Previously this species was considered as a subspecies of *P. interscapularis*.

CONSERVATION STATUS. Uncertain.

STRAUCH'S TOAD AGAMA

PHRYNOCEPHALUS STRAUCHI NIKOLSKY, 1899

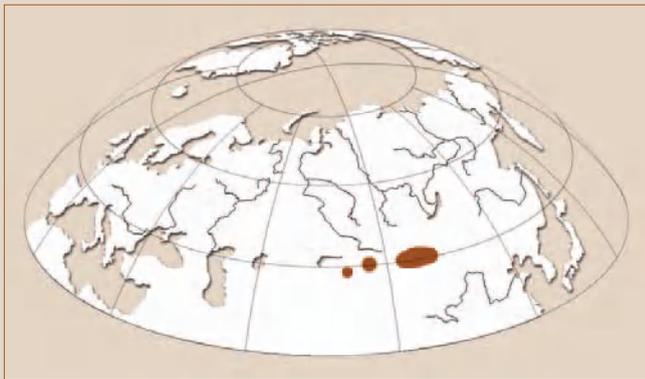


TERRA TYPICA. Khodzhen, Fergana valley, Uzbekistan.

DISTRIBUTION. An endemic of the central part of the Fergana valley. It is distributed in its limits in northern Tajikistan and Uzbekistan. This species during a long time was considered as a subspecific form of *P. reticulatus*.

CONSERVATION STATUS. As a rare endemic species with a reducing number it is included into the Red Data Book of Uzbekistan (1983, 2003): category 1, EN – endangered, locally distributed endemic species of Fergana.





TERRA TYPICA. Desert Alashan' (China).

DISTRIBUTION. The species is distributed on vast territory in Mongolia and in the south of Tuva. It occurs everywhere on the arid plains of Mongolia, is known from the western China. *P. v. kulagini* Bedriaga, 1909, occurs in southern Tuva. It is also known from north-western Mongolia; the natural borders of the subspecies are formed by the mountains of Mongolian Altai in the west and mountain masses of central Mongolia in the east. Earlier records from Buryatija in Kyakhta regional museum are erroneous and in fact are originated from Mongolia. In Tuva *P. v. kulagini* occurs to the east and to the north of the lake Ubsu-Nur, along the southern piedmont train of Tannu-Ola mountain range. The zone of sympatry of nominative subspecies and *P. v. kulagini* is registered only in Beger Hollow. The taxonomic status of *Phrynocephalus versicolor* from Jungaria is not clear. In Mongolia this agama occurs everywhere to the south of the 46th parallel. In the western part of this country on the hollow of the Great Lakes the distribution range reaches to the north the border with Russia.



CONSERVATION STATUS. *P. v. kulagini* from Tuva is included into the "Annotated list of taxa and populations which require a special attention to their condition in the wild" (Appendix to the Red Data Book of the Russian Federation, 2001).

This family includes as completely legless snake-like lizards as well as species having well developed five-toed extremities.

Eyelids are separate and movable. Pupil is round.

Head is covered with large, symmetrically arranged shields. The body is covered with imbricate scales. Bony plates (osteoderms) are located under the scales. Sometimes osteoderms form an entire bony armor and body looks hard and elastic to the touch. Ventral scales slightly differ by their size and shape

from dorsal scales. Tail in many species is fragile. Legless forms can have rudiments of hind-limbs. They always have bony rudiments of their anterior and posterior girdles. This lizard family contains both oviparous and ovoviviparous species.

The family consists of two subfamilies: Anguinae Gray, 1825 (three genera) and Gerrhonotinae Cope, 1864 (six genera); includes approximately 70 species distributed in Europe, northern Africa, Asia and North America. In North Eurasia species of 2 genera (one species in each genus) are distributed.



Sheltopusik Pseudopus apodus

SLOW WORMS

GENUS *ANGUIS* LINNAEUS, 1758

The body is snake-like, without limbs. There is no fold of skin along the flanks of the body. Scales are smooth, with rounded posterior edges; arranged in longitudinal and transverse rows. The tail is very fragile.

Teeth are conical, sharp-pointed, bent backwards. Two species are distributed in the most part of Europe, in western Asia and Algeria.



SLOW WORM, OR BLIND WORM

ANGUIS FRAGILIS LINNAEUS, 1758



former USSR it occurs everywhere in a forest zone, from the Baltic countries, Belarus, the Ukraine and Moldova in the west to the left-bank valley of Tobol River in Western Siberia in the east. Besides, *A. fragilis* inhabits the forests of the North Caucasus and the countries of Transcaucasia. In North Eurasia the subspecies *A. f. colchicus* Nordmann, 1840, is distributed.

CONSERVATION STATUS. The status of the species does not require special conservation measures.

TERRA TYPICA. Sweden.

DISTRIBUTION. It is widely distributed in southern and central Europe, Asia Minor, in the Caucasus and in northern Iran. In the

Newborn Slow Worm



ARMOUR GLASS LIZARDS

GENUS *PSEUDOPUS* MERREM, 1820



Lizards with snake-like body. Limbs are absent. Tail is not fragile, its length considerable exceeds the length of body with head.

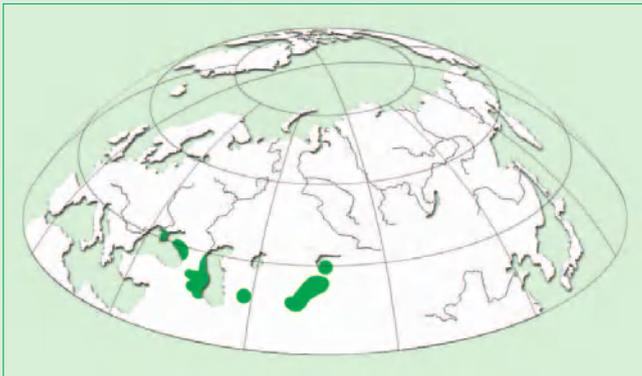
On the flanks of the body there are longitudinal folds of skin covered with small scales. On the sides of the vent in males there are papilliform rudiments of the hind legs.

Until recently the only species of the genus was united with a widely distributed closely related genus *Ophisaurus* Daudin, 1803.

Monotypic genus *Pseudopus* occurs in southern Europe, in the Caucasus, in the Middle East and Middle Asia.

SHELTOPUSIK, OR GLASS LIZARD

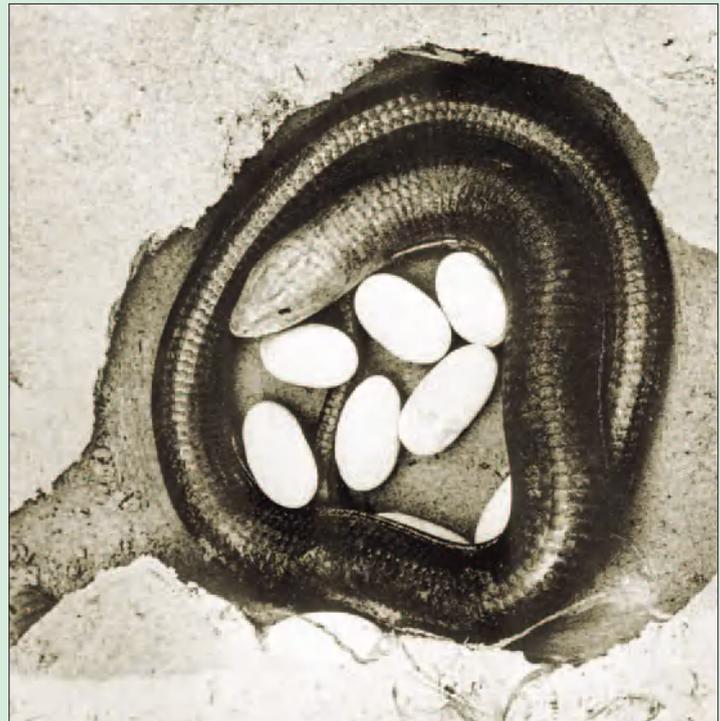
PSEUDOPUS APODUS (PALLAS, 1775)



TERRA TYPICA. Naryn steppe, northern coast of the Caspian Sea.

DISTRIBUTION. It is widely distributed from the Balkan Peninsula, Asia Minor and Middle East in the west to Iraq and Iran in the east. In North Eurasia it occurs on the southern coast of the Crimea, on the coast of the Black Sea of Krasnodar region and Abkhazia, in submontane Dagestan, eastern Chechnya, southern Kalmykia and the countries of Transcaucasia – Azerbaijan, Georgia and Armenia. In Middle Asia it is distributed in Turkmenistan, Uzbekistan, Kyrgyzstan, western Tajikistan and southern Kazakhstan. Glass Lizards from the Balkan Peninsula and southern coast of the Crimea are considered as a subspecies *P. a. thracicus* (Obst, 1978).

CONSERVATION STATUS. It is included into the Red Data Books of the Ukraine (1994) – category 1 and Kazakhstan (1996) – category 2.



Female of Sheltopusik guarding her clutch





Charyn River valley, eastern Kazakhstan

The family includes lizards of small, medium to large size. Their typical character is uniform smooth or keeled fishlike scales covering the body in most species. Under the scaled cover there are bony plates (osteoderms) making the body of skinks

looks solid and elastic to the touch. On the head osteoderms are tightly grown together with bones of the skull.

Members of different genera demonstrate all stages of morphological transformations from species with well developed



Schneider's Long-legged Skink, *Eumeces schneideri*

five-toed limbs to completely legless forms with a snake-like elongated body. On the sub-digital lamellae of some arboreal species there are developed special microstructures allowing these lizards to hold on and to move on completely smooth surfaces.

Eyes in most cases are with movable eyelids. Sometimes they are grown together into an immovable transparent fenestra covered the eye like in snakes. Pupil is round. In some legless species eyes are completely hidden under the scales of the head and visible as dark spots. The external ear opening may be present or absent.

The tail as a rule is fragile. Usually it is equal in length or in 1,5-2 times longer than the body. Only a few forms, mainly fossorial legless skinks, have the tail considerably shorter than the length of the body with the head.

The most skinks have terrestrial mode of life. Often they live near water. Some arboreal species spend nearly all their life on tree trunks or in crowns of trees.

Most of scincid lizards are oviparous, some are ovoviviparous. Some species are characterized by a true ovoviviparity (the devel-

oping embryos receive nourishment through blood vessels in the oviducts of the mother). In some skinks the maternal care of the offspring was noted when females protect their clutch.

Skink lizards are widely distributed in tropical and temperate zones of Old and New World, most part of them inhabit the Eastern Hemisphere. According to the modern phylogenetic and taxonomic ideas, the family includes about 1500 species unified 131 genera.

Four sub-families are distinguished in the family: Acontinae Gray, 1838 (three south-African genera), Feyliniinae Camp, 1923 (one genus), Lygosominae Gray, 1845 (the largest group of skinks which includes 96 genera) and properly Scincinae Opeel, 1811 (31 genera).

In the fauna of North Eurasia 13 species of 8 genera belonging to the sub-families Lygosominae (*Ablepharus*, *Asymblepharus*, *Trachylepis*) and Scincinae (*Chalcides*, *Eumeces*, *Eurylepis*, *Ophiomorus*, *Plestiodon*) are presented.

SNAKE-EYED SKINKS, OR LIDLESS SKINKS

GENUS *ABLEPHARUS* FITZINGER *In* EVERSMANN, 1823

Small lizards with five-toed relatively weakly developed limbs. Usually there are no strongly enlarged scales on the outer side of shins and forearms.

There are no movable eyelids because the lower eyelid is grown together with the upper, forming a transparent membrane which covers the eye. The ear opening is small or hidden under the skin.

The body is covered with smooth rounded scales. The nostril is located in one whole scale. Supranasal scales are absent.

All species are egg-laying.

The genus includes 10 species which distribution range covers southern Europe (the whole Balkan Peninsula and islands of the Aegean Sea), Transcaucasia, Middle East and Middle Asia eastwards to Pakistan and western India inclusive.

Five species occur in North Eurasia.

TWO-STREAKED SNAKE-EYED SKINK

ABLEPHARUS BIVITTATUS (MENETRIES, 1832)



TERRA TYPICA. Vicinity of the settlement Perimbel', Talys mountains, south-east Azerbaijan.

DISTRIBUTION. The species is distributed on the territory of North Eurasia in the Transcaucasia (Armenia, south-east Azerbaijan), south-west Turkmenistan (Kopet Dag), as well as in northern and western (Zagros) Iran.



CONSERVATION STATUS. The status of the populations in the Transcaucasia is relatively stable.

CHERNOV'S SNAKE-EYED SKINK



TERRA TYPICA. Vicinity of the settlement Tkhit, Ashtarak region, middle current of the river Razdan, Armenia.

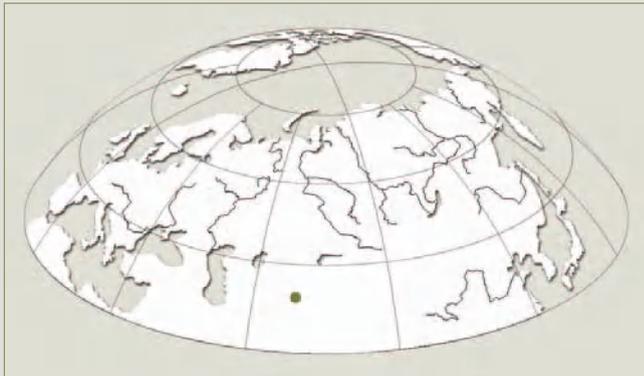
DISTRIBUTION. On the territory of North Eurasia the species occurs only in central Armenia (only right-bank slopes of the canyon of middle current of the river Razdan), in Turkey (southern and central parts of Anatolia) and in northern Syria. Of four described subspecies only *A. c. chernovi* occurs in Armenia.

ABLEPHARUS CHERNOVI DAREVSKY, 1953



CONSERVATION STATUS. Species with a reducing number was included into the Red Data Books of the USSR (1984) – category 3 and Armenia (1987) – narrow-ranged rare species.

DARVAZ SNAKE-EYED SKINK



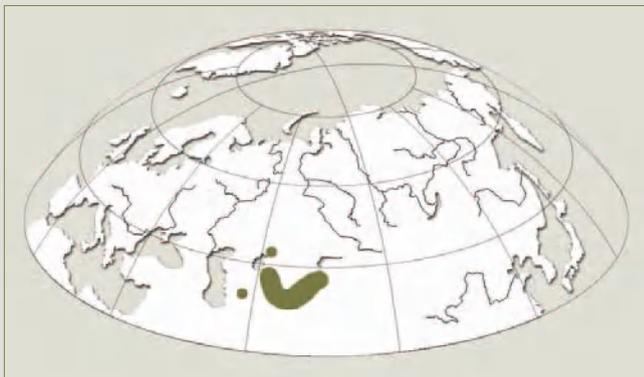
ABLEPHARUS DARVAZI JERIOUMTSCHENKO et PANFILOV, 1990

TERRA TYPICA. The road Lyangaro- the pass Khobu-Robot, Darvaz mountain range, Tadjzhikistan.

DISTRIBUTION. The species is known only from Tajikistan (Darvaz mountain range and mountain range Khozratishoh). Findings in adjacent regions of north-western India, Pakistan and Afghanistan are expectable.

CONSERVATION STATUS. Uncertain due to of a poor knowledge on the species.

DESERT SNAKE-EYED SKINK



ABLEPHARUS DESERTI STRAUCH, 1876

TERRA TYPICA. Settlement Ak-Mechet', Kazakhstan.

DISTRIBUTION. In North Eurasia the species is distributed in southern Kazakhstan, Kyrgyzstan, northern Tajikistan, Uzbekistan and in eastern Turkmenistan. The recent distribution range of desert snake-eyed skink is disjuncted: isolated periphery populations are known at a considerable distance from the main distribution range (in southern Turkmenistan, central Tien Shan and south-eastern Kazakhstan). In particular, in Turkmenistan the distribution range of the species is disjuncted by the valleys of Amu- Darya and Murgab rivers.

CONSERVATION STATUS. The stable number of the species does not require special protection measures.

ASIAN SNAKE-EYED SKINK

ABLEPHARUS PANNONICUS (FITZINGER IN EVERSMAAN, 1823)



TERRA TYPICA. Bukhara city, Uzbekistan.

DISTRIBUTION. The most widely distributed species of the genus. It occurs from Saudi Arabia and Yemen in the west, across Iraq and Syria to Afghanistan, Pakistan and north-western India in the east. It is known from northern and western Iran. In North Eurasia it lives in the south of Tajikistan, in Uzbekistan, southern Turkmenistan and eastern Transcaucasia (south-east Georgia and Azerbaijan). Isolated populations are known in western Azerbaijan (some islands of Bakinsky Archipelago, and in the mainland – in Kobystan). Further to the west isolated populations are known in Vashlovansky reservation and the valley of the middle part of Iory River in eastern Georgia.

CONSERVATION STATUS. The status of the species does not require special protection measures.

FALSE SNAKE-EYED SKINS

GENUS *ASYMBLEPHARUS* JERIOIMTSCHENKO et SZCZERBAK, 1980

Small lizards with five-toed, comparatively well developed limbs. On the outer side of forearms and shanks there is one row of strongly widened scales.

The edges of upper and lower eyelids are not grown together and are hidden under the enlarged scales of the upper eyelid. The external acoustic duct is well developed.

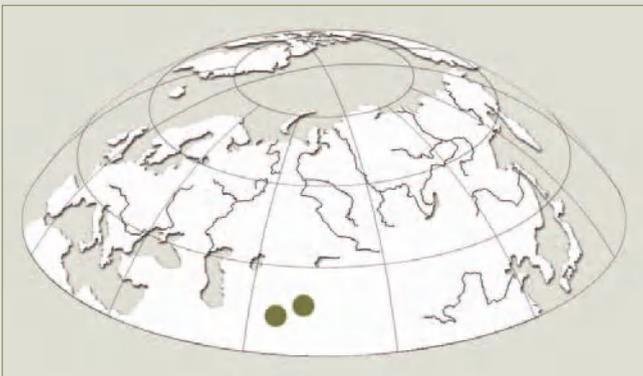
Two large scales lay anterior to the anal cleft. The underside of the tail is covered with one row of widened scales.

In contrast to the representatives of *Ablepharus* genus, they are ovoviviparous.

The genus includes two species distributed in North Eurasia in the mountain systems of Tien Shan and Pamir-Altai.

ALAI FALSE SNAKE-EYED SKINK

ASYMBLEPHARUS ALAICUS (ELPATJEVSKY, 1901)



TERRA TYPICA. Vicinity of the settlement Daraut-Kurgan, southern slope of Alaisky range, Kyrgyzstan.

DISTRIBUTION. It inhabits the mountain systems and submontane plains of Tien Shan and Pamir-Altai in Tajikistan, Kyrgyzstan, north-eastern Uzbekistan and southern Kazakhstan. The species is also known by the only record from northern China. The following sub-species are described: *A. a. alaicus* (Elpatjevsky, 1901) inhabits the mountains of Pamir-Altai in Kyrgyzstan and Tajikistan; *A. a. yakovlevae* Jeriomtschenko, 1983 occurs on the Kirghiz range in the canyon Alamedin; *A. a. kucenkoi* (Nikolsky, 1902) – is distributed

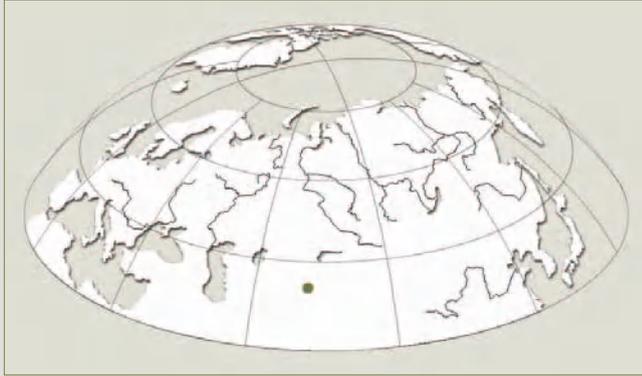
in the basin of Issyk Kul Lake in Kyrgyzstan and in south-eastern Kazakhstan.

CONSERVATION STATUS. The status of the species does not require special protection measures.



EREMCHENKO'S FALSE SNAKE-EYED SKINK

ASYMBLEPHARUS EREMCHENKOI PANFILOV, 1999



TERRA TYPICA. Canyon of the river Chichikan, southern slope of the Talassky mountain range, Kyrgyzstan. Mountain junction of the Talassky, Suusamyrsky and Kirghizsky ranges.

DISTRIBUTION. The mountains of Tien Shan system, on the slopes of the mountains, along the valley of the river in intermontane depressions of the ranges Kirghiz, Talass Alatau, Uzun-Akmat, Suusamyr-Too, Sonkel, Kyzart, Karagatty, Ukek, Kara-Jorgo and Baidulu. The northern border of the distribution range runs on the southern slopes of the Kirghiz range (passing across the saddles to the northern side of the range is possible). Eastern, western and southern borders of the distribution range are not defined precisely.

CONSERVATION STATUS. Uncertain because of a poor knowledge on the species.

CYLINDRICAL SKINKS

GENUS CHALCIDES LAURENTI, 1768

Limbs are short, five-toed, or the number of toes is reduced up to one – three.

Eyelids are developed and movable, the lower one is with a transparent ocular fenestra. Ear aperture is open. The tympanic membrane is submerged and situated on the bottom of a short acoustic duct. Nostril is situated between intermaxillary and small nasal scales.

Supranasal shields are present. Paired prefrontal and frontal-parietal scales are absent.

The genus includes 25 species distributed in southern Europe, northern and north-eastern Africa and south-western Asia to Iran, southern Turkmenistan and Pakistan in the east.

One species occurs on the territory of North Eurasia.

OCELLATED SKINK

CHALCIDES OCELLATUS (FORSSKAL, 1775)



TERRA TYPICA. Egypt.

DISTRIBUTION. It is widely distributed from north Africa, south Europe in the west to south-eastern Turkey, Saudi Arabia, Iraq and Iran in the east, attaining Synd in Pakistan. On the territory of North Eurasia it occurs isolatedly in the south of Turkmenistan. In Turkmenistan it is known by two records in the northern periphery of the distribution range (in central Kopet Dag and in the western part of the highland Badkhyz), remoted from each other for more than 400 km. There as well in the most part of the distribution range the subspecies *C. o. ocellatus* (Forsskal, 1775) is known.



LONG-LEGGED SKINKS

GENUS *EUMECES* WIEGMANN, 1834

The head is somewhat inflated in the temporal region.

Intermaxillary shield turns up onto the upper surface of the snout and contacts both supranasal shields. Each of the two frontal-parietal shields is shorter than the interparietal shield which separates both parietal shields from each other. There are 2-6 pairs of shields situated posteriorly to the parietal shields. There are no postnasal shields.

On the anterior edge of the ear opening there are 4-6 triangular shields, directed backwards. The underside of the tail is with one longitudinal row of strongly transversely widened scales.

According to the present conceptions, the genus includes 4-5 species widely distributed from northern Africa and Middle East in the west to Transcaucasia, southern regions of Middle Asia, Afghanistan, Pakistan and north-western India in the east.

In the fauna of North Eurasia there is one species.



SCINCIDAE

SCHNEIDER'S LONG-LEGGED SKINK

EUMECES SCHNEIDERI (DAUDIN, 1802)



TERRA TYPICA. Cyprus.

DISTRIBUTION. In North Eurasia it occurs in eastern Georgia, southern Armenia and submontane Azerbaijan. From there in the north-east it penetrates into the adjacent regions of southern Dagestan. *Eumeces schneideri* is also widely distributed in the southern regions of Middle Asia and in Turkmenistan, Uzbekistan and Tajikistan. The subspecies *E. s. princeps* Eichwald, 1839 occurs in the Caucasus and in Middle Asia.

CONSERVATION STATUS. It is included into the Red Data Book of Armenia (1987) as a rare species with reducing number and distribution range, and into the Red Data Book of Georgia (1982). In Russia it is included into the Appendix to the Red Data Book of the Russian Federation (2001) – "Annotated list of taxa and populations required a special attention to their condition in the wildlife".



SHIELDED SKINKS

Large skinks with an elongated body and approximately in 1,5 time longer tail thickened at the base. The head is somewhat inflated in the temporal region.

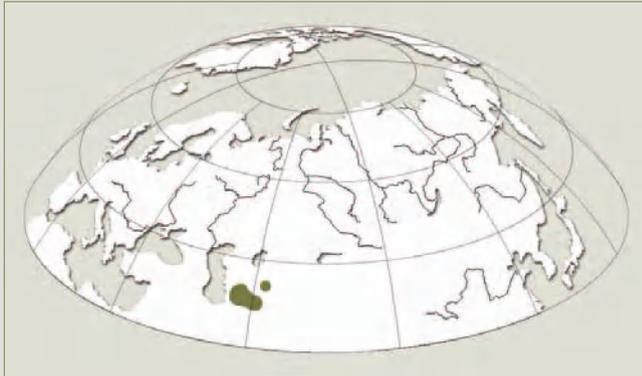
Intermaxillary shield does not contact frontal-nasal shield. It is separated from it by contacting supranasal shields. Small frontal-parietal shields are separated by a large interparietal shield; the latter completely separates parietal shields from each other. There are 3-5 pairs of shields in the back of neck. The ear opening is much larger than the nostril. There are 3-4 scales directed backwards on its anterior edge.

GENUS *EURYLEPIS* BLYTH, 1854

Body scales are smooth. Two medial longitudinal rows of scales on the upper surface of the neck are slightly widened. Along the spine from the level of forelimbs to the level of hind limbs there is one row of strongly transversely widened scales. Two large shields anterior to the anus. The underside of the tail is covered with one longitudinal row of strongly widened scales.

Monotypic genus distributed from Saudi Arabia and Yemen in the west to southern Turkmenistan, Afghanistan, Pakistan and Kashmir in India in the east.

One species occurs in North Eurasia.

SHIELDED SKINK, OR RIBBON-SIDED SKINK***EURYLEPIS TAENIOLATUS* BLYTH, 1854**

TERRA TYPICA. Pendzhab, India.

DISTRIBUTION. Kashmir, Pakistan, Afghanistan, north-eastern Iran and southern Turkmenistan. Isolated populations of this species are known from north-western and western Saudi Arabia. The subspecies *E. t. pathiranicus* (Szczerbak, 1990) is distributed in Turkmenistan.

CONSERVATION STATUS. On the territory of Turkmenistan the species does not require additional measures on its conservation. It occurs on the territory of the Badkhyzsky, Kopetgadsky and Syunt-Khasardagsky reservations.

**SNAKE SKINKS****GENUS *OPHIOMORUS* DUMERIL et BIBRON, 1839**

Small lizards with short limbs reduced to this or that extent.

Eyes are small. Movable lower eyelid has a transparent fenestra. Ear opening is smaller than nostril or it is completely absent.

Mouth opening is slightly covered with more or less developed free edges of supralabial shields. Scales are smooth.

The genus includes 10 species distributed in the south of the Balkan Peninsula and in south-west Asia to Pakistan in the east. The fauna of North Eurasia contains one species.

CHERNOV'S SNAKE SKINK

OPHIOMORUS CHERNOVI ANDERSON et LEVITON, 1966



TERRA TYPICA. Settlement Pul'-i-Khatum, left bank of Tejen River, Iran.

DISTRIBUTION. A rare species, is known by findings on the left bank of Tejen River (Iran) and a single record in the extreme south

of Turkmenistan, 4-5 km above the settlement Pul'-i-Khatum on the right bank of Tejen River.

CONSERVATION STATUS. The species was included into the Red Data Books of the USSR (1984) and Turkmenistan (1985). In the Red Data Book of Turkmenistan (1999) it is referred to the category 3 – a rare, narrow-ranged species.



PLESTIODONS

GENUS *PLESTIODON* DUMERIL et BIBRON, 1839

Intermaxillary shield is separated from frontal-nasal by supra-nasal shields contacting with each other. Prefrontal shields are usually separated from each other by frontal-nasal shield wedging itself between them. Interparietal shield is longer than each frontal-parietal shield. It completely separates parietal shields from each other. Usually 1, more rarely 2–3 pairs of widened shields in the back of neck. Small postnasal shield is usually present.

Ear opening is at least twice larger than nostril opening. On its anterior edge there are 2–3 small scales directed with their

free edges backwards. They are practically not covered ear opening.

Medial dorsal rows of scales are slightly widened. On the underside of the tail there is one longitudinal row of transversely widened scales.

The genus includes 39 species distributed in temporal latitudes of North America southwards to the north of Central America, on the Bermuda islands and in eastern Asia.

One species occurs on the territory of North Eurasia.

FAR EASTERN SKINK

PLESTIODON LATISCUTATUS HALLOWELL, 1860



TERRA TYPICA. Shimoda, Japan.

DISTRIBUTION. It occurs on the islands of Japan. In Russia it occurs only in the most southern island of the Kuril Ridge – Kunashir island. Records of this skink in the Primorsky Territory, in particular within the limits of the Sikhote-Alinsky reservation, require to be defined more precisely.



CONSERVATION STATUS. It is included into the Red Data Book of the Russian Federation (2001) as a rare species known in Russia on the periphery of its distribution range. The species is protected in the Kuril reservation established in 1984. Its habitats are located there in the caldera of the Golovin's volcano in the south of the Kunashir island and in the area of the Cape of Dokuchaev, on the Neskuchinskie springs in the north of the island.

AFRICAN MABUYAS

Lizards of medium and large sizes, having well-developed five-toed limbs.

Eyelids are movable, the lower eyelid is with an entire transparent disk. Ear aperture is open. The tympanic membrane is more or less deeply submerged, the acoustic duct is short. The nostril is cut in one shield.

Supranasal shields are present. Prefrontal and frontal shields are paired in most species. Interparietal shields are usually not fused with parietal. Scales anterior to the anal cleft do not differ by their size and shape from neighbouring scales.

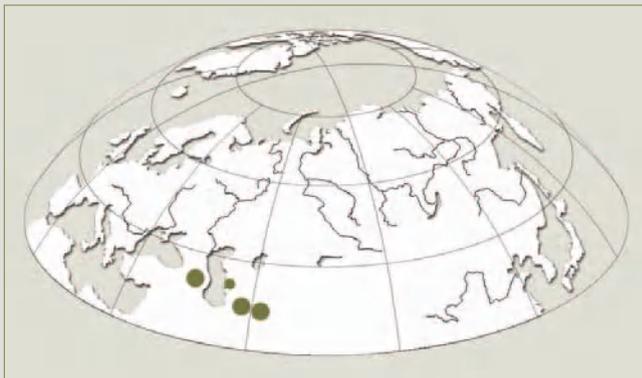
GENUS *TRACHYLEPIS* FITZINGER, 1843

It includes 73 species distributed in Nepal, northern India, Pakistan, eastern Transcaucasia (Armenia and Azerbaijan), south of Turkmenistan and Uzbekistan, Middle East, Middle East, as well as the whole of Africa (except for Sahara) and Madagascar with adjacent islands. Besides, one species (*Trachylepis atlantica*) is known from the island Fernandu-di-Noron'ya situated in the Atlantic Ocean 200 km to the north-east of the coasts of Brazil. The fauna of North Eurasia contains one species.

For a long time this genus was considered in the composition of the combined genus *Mabuza* Fitzinger, 1826.

FRONTAL ASIAN MABUYA

TRACHYLEPIS SEPTENTAENIATA (REUSS, 1834)



TERRA TYPICA. Massava, Erithrea.

DISTRIBUTION. The species is distributed in southern Iran, on the plains of Iraq, in the north-east of Saudi Arabia, in Bahrein, northern Oman, Erithrea. The subspecies *T. s. transcaucasica* (Chernov, 1926) is distributed in the Transcaucasia and Turkmenistan.

CONSERVATION STATUS. It is included into the Red Data Book of Armenia (1987) – an endangered species. In Turkmenistan it is protected in Kopet Dag and Syunt-Khasardag reservations.







Charyn River valley, eastern Kazakhstan

LACERTIDS, OR TYPICAL LIZARDS

FAMILY LACERTIDAE BONAPARTE, 1831

Family of lacertids unifies about 40 genera with more than 180 species of lizards. They are small, of medium size, and more rarely relatively large. Lacertids are widely distributed in Eurasia; some of them reach Far East, Japan and islands of Indonesia. They live everywhere in Africa (except for Madagascar Island).

The head is covered with large, symmetrically arranged scales. The body is covered with granular or imbricate, smooth or keeled scales. Ventral scales or shields are as a rule of a different shape and size in comparison with dorsal scales. Femoral or inguinal pores are present in most species.

Pupil is round. Eyelids are separate and movable in most species. Ear opening is always present. The tongue anteriorly is deeply bifurcated and covered with scale-like papillae or transverse folds.

Limbs are well developed, five-toed. Tail is fragile and capable of comparatively rapid regeneration.

The single parietal bone has foramen parietale. The transversum and the cranial columella are well developed. Single

premaxilla. Clavicles are widened, often with oval fontanels in their widened part.

Teeth are of a pleurodont type, i.e. are attached to the internal edge of the jaws. Pterygoid teeth are present or absent.

Brown, grey, yellow, light-blue or green tones prevail in the coloration. The ventral side of the body is often light-blue, yellow, red, orange or green. Some species have a very bright coloration with clear age and sexual dimorphism.

Most species are oviparous, some of them are ovoviviparous. A number of lacertids do not have males and reproduce by parthenogenesis. This phenomenon in reptiles and higher vertebrates in general was at first discovered by Ilya S. Darevsky.

The family consists of two subfamilies: Gallotinae Boulenger, 1916 and Lacertinae Bonaparte, 1831. In the fauna of North Eurasia there are 54 species belonging to 8 genera of the latter subfamily.

ROCK LIZARDS

GENUS *DAREVSKIA* ARRIBAS, 1997

Small and middle-sized lizards with the body length 55–80 mm. The head is visibly flattened to different extent.

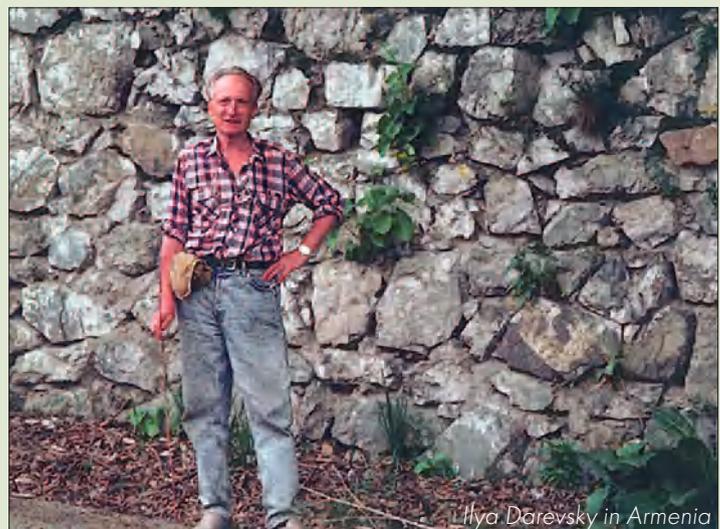
One postnasal shield. Occipital shield is present. Large central temporal and tympanic shields are usually well defined. In more rare cases the first of them is absent. As a rule frontal-nasal shield does not contact the intermaxillary shield. The exception is the species *D. unisexualis*, in which the both shields always more or less tightly adjoin each other.

Between supraocular and supraciliate shields a complete or to different extent interrupted row of ciliate granules is noted. The collar is somewhat serrated. The gular fold is more or less well marked. There are 4, rarely 5 supralabial shields anterior to the subocular shield. Ventral scales are arranged in 6 main longitudinal rows. Dorsal scales are rounded or moderately elongated. They are smooth or with more or less clear longitudinal keels. Scales on the dorsal surface of the tail are keeled or smooth. In most species rows of femoral pores attain or nearly reach the knee.

Green, brown or grayish-brown tones prevail in the coloration of the dorsal surface of the body. A wide occipital stripe is running along the spine, consisting of small spots and speckles of an irregular form. More or less wide temporal stripes of the same type are located on the flanks. This pattern is as a rule always well defined. In the chest there are rounded blue, light-blue or violet ocelli especially bright in males. Spots of the same color of an irregular shape are present on the outer rows of ventral scales. Sometimes they form continuous longitudinal stripes. The coloration of the ventral side varies in different species as pink, red, orange, yellow, green, dull-white or light-blue tones.

From other species previously attributed to *Archaeolacerta* sensu lato Rock Lizards differ by the number of vertebrae: 27–28 in males and 28–29 in females.

The genus includes about 20 bisexual and 7 unisexual (parthenogenetic) species. Their distribution range covers Asia Minor, the southern coast of the Crimea, the whole of the montane Caucasus, north-western and northern Iran to the mountain range Kopet Dagh in the southern Turkmenistan in the north-east. The most part of the species of this genus are represented in North Eurasia – 18 bisexual and 4 parthenogenetic species.



Ilya Darevsky in Armenia

ALPINE LIZARD



TERRA TYPICA. Settlement Terskol on the Baksan River, Kabardino-Balkaria, Russia.

DAREVSKIA ALPINA (DAREVSKY, 1967)

DISTRIBUTION. Endemic of the high-mountainous Caucasus. It occurs in the high-altitude part of the western half of the Great Caucasus Range – from Elbrus in the east to the mountains Fisht and Osten in the west. The eastern border of the distribution range runs in the upper reaches of Baksan River on the south-eastern slopes of Elbrus and mountain Cheget in Kabardino-Balkaria. Further to the west it is widely distributed in the upper reaches of the rivers Kuban', Teberda, Zelenchuck, Laba, Belaya and others flowing down to the north. It inhabits the southern slopes of the Caucasus: in the upper reaches of the Bzyb River and its tributaries in Abkhazia and the upper reaches of Mzymta River in the south-east of the Krasnodar Territory.

CONSERVATION STATUS. The number is rather stable everywhere within of its distribution range. The species is included into the Red Data Book of IUCN with the status DD.

ARMENIAN LIZARD

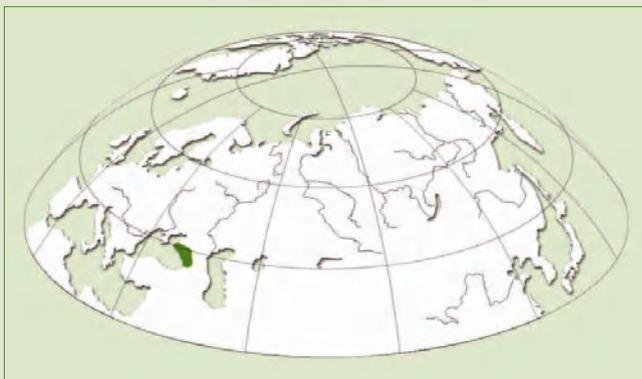
*DAREVSKIA ARMENIACA* (MEHELY, 1909)

TERRA TYPICA. Settlement Yelenovka (= Sevan) on the shore of the Sevan Lake, Armenia.

DISTRIBUTION. It is widely distributed in the mountains of north-western and northern Armenia and adjacent regions of southern Georgia and western Azerbaijan. Outside of the Caucasus it is also known from the north-western Turkey. In 1967 *D. armeniaca* was introduced into the Ukraine. At present this parthenogenetic species forms a stable extensive population in the rock canyon of Teterev River of the Zhitomir region.

CONSERVATION STATUS. The number is high and stable everywhere within the whole distribution range.

BRAUNER'S ROCK LIZARD



TERRA TYPICA. Settlement Krasnaya Polyana in the south of the Krasnodar Territory, Russia.

DAREVSKIA BRAUNERI (MEHELY, 1909)

DISTRIBUTION. Endemic of the montane Caucasus. It is widely distributed in the western part of the Great Caucasus Range, on northern, western and south-western slopes of the Black Sea chain of the Great Range in the Krasnodar Territory, Abkhazia and north-western and south-western Georgia, to the canyons of the rivers Kodory and Ingury in lower and upper Svanetia in the east. The northern border of its distribution passes in the area of the middle current of numerous left tributaries of the Kuban River. The most northern habitats of the species are known in the vicinity of Goryachyi Klyuch on Psekupsa River and the vicinity of the town Maikop. The southern border of the distribution range stretches on the southern slopes of the Great Range and, gradually lowering down, on the western spurs of the Gagra range. It comes out to the sea in the south of the Krasnodar Territory and western Abkhazia, where it is sporadically recorded on the coast from the

town Anapa in the north up to the canyons of the rivers Khoby and Riony in the south-west of Georgia.

The nominative subspecies *D. b. brauneri* occurs in the south of the Krasnodar Territory, in Abkhazia and adjacent regions of Georgia. *D. b. darevskii* (Szczerbak, 1962) inhabits foothills of the western part of the Great Caucasus range, mainly within the Krasnodar Territory. A comparatively small range of the subspe-

cies *D. b. szczerbaki* (Lukina, 1963) occupies a narrow strip of coastal rocky steep, sporadically occurring along the coast of the Black Sea from the town Anapa in the north and for more than 100 km further to the south-east towards Novorossiisk.

CONSERVATION STATUS. On the most part of the distribution range the number of the species is rather high and stable.

CAUCASIAN LIZARD



TERRA TYPICA. Kazbek Mountain, Georgia.

DISTRIBUTION. Endemic of the Great Caucasus. It is widely distributed on the northern and southern slopes of the Great Caucasus Range from the northern foothills of Elbrus in Kabardino-Balkaria in the west up to the south-eastern extreme point of its Caspian chain within Azerbaijan in the east. South-western border of the distribution range passes on the southern foothills of Megrel'sky, Svanetsky and Lekhchumsky mountain ranges in lower Svanetia, and then coming down within South Ossetia approximately up to the latitude of the health-resort Dzhava. Along the southern spurs of Kharul'sky, Kartalinsky and Kakhetinsky mountain ranges it comes

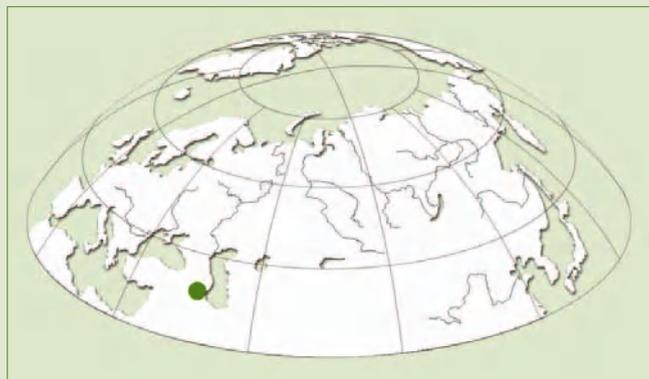
DAREVSKIA CAUCASICA (MEHELY, 1909)

out into the slopes of the Water Dividing (Watershed) Range in the Alazan River valley of Georgia. In Azerbaijan this border continues in the upper reaches of the rivers beginning from the Great Range, and further in the east – from the slopes of the mountains Baba-Dag and Dyubrar, in particular of the rivers Pirsagat and Sumgait. This lizard is also widely distributed on the northern slopes of the Great Caucasus, from the Baksan ravine in Kabardino-Balkaria in the west to Samur range in the South Dagestan in the east.

The north-western border of the distribution area passes here in the Baksan ravine approximately from the town Tegenekly in the south, continuing then to the east on the northern foothills of the Skalisty and Bokovoi ranges. There the most northern habitats are known from the ravine Adyr-su, near the waterfall in the Chegemskaya gorge, from the vicinity of the Blue Lakes in Kabardino-Balkaria and the vicinity of Alagir and the settlement Balta in the lower part of the Dar'yal ravine of North Ossetia. In the foothills and on the northern slopes of the Andiysky mountain range in the south-eastern Chechnya and possibly in the adjacent part of Ingooshetia occurs a narrow-ranged subspecies *D. c. vednica* (Darevsky et Roitberg, 1999).

CONSERVATION STATUS. The number of the species everywhere within its distribution range is high and stable.

GREEN-BELLIED LIZARD



DAREVSKIA CHLOROGASTER (BOULENGER, 1908)

TERRA TYPICA. Town Enzely, Iran, southern coast of the Caspian Sea.

DISTRIBUTION. It inhabits mainly forested northern and north-western foothills of the Elburz range in northern Iran and Lenkoran lowland in the south-eastern foothills of the Talysh range in the south-east of Azerbaijan. There the most northern habitats are known from the valley of Vilyazhchai River.

CONSERVATION STATUS. On the most part of the distribution range the number of the species is high and stable.

CLARK'S LIZARD

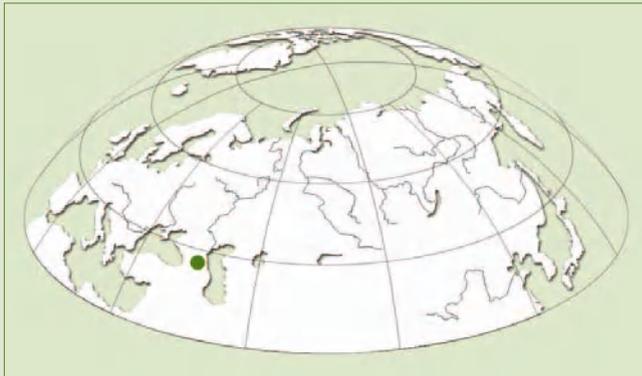
DAREVSKIA CLARKORUM (DAREVSKY et VEDMEDERJA, 1978)

TERRA TYPICA. 20 km to the west from the settlement Borchka, vilajet Artvin, north-eastern Turkey.

DISTRIBUTION. The main distribution range of the species occupies the northern spurs of the East-Pontic mountains in the north-east of Turkey, at least up to the vilajet Giresun in the west. A small isolated area of the distribution range is known on the western slopes of the mountain Mtirala in the vicinity of the town Batumi in the south-west of Ajaria (Georgia).

CONSERVATION STATUS. As a rare species the species was included into the Red Data Book of the USSR (1984) – category 3 and the Red Data Book of IUCN with the status ENC2a.

DAGESTAN LIZARD

DAREVSKIA DAGHESTANICA (DAREVSKY, 1967)

TERRA TYPICA. Settlement Levashi in the region with the same name of central Dagestan.

DISTRIBUTION. It occurs in the montane Dagestan, southern Chechnya, Ingooshetia and south-east of north Ossetia, from the

lower part of the Dar'yal ravine in the west up to Gimrinsky range in the east. The northern border of the distribution area passes in the foothills of the Skalisty range in the upper current of numerous right tributaries of Sunja River. Further on the extreme north-eastern foothills of the frontal ranges of Dagestan it attains the nearest vicinity of Makhachkala city in the east. An isolated population lives also on the southern slope of the Great Caucasus range in the canyon of the river Bol'shaya Liakhvy on the territory of South Ossetia in Georgia.

CONSERVATION STATUS. On the most part of the distribution range the number is stable.

DAHL'S LIZARD

DAREVSKIA DAHLI (DAREVSKY, 1957)

TERRA TYPICA. Settlement Shagaly, Armenia.

DISTRIBUTION. It is comparatively widely distributed in the north Armenia and southern Georgia up to the foothills area in the valley of Kura River in the north. The recent distribution range is divided into some isolated populations.

CONSERVATION STATUS. On the most part of the distribution range the number is stable.

ALBORZ LIZARD



TERRA TYPICA. Valley of Lar, to the north-west of Teheran, northern Iran.

DAREVSKIA DEFILIPPII (CAMERANO, 1877)

DISTRIBUTION. The distribution range of the species covers practically all Alborz range in the north of Iran and adjacent east Kopet Dagh range both in its Iranian part and in the south of the neighbouring Turkmenistan. In Turkmenistan the species is very rare and once it was considered to be extinct. In central Kopet Dagh it is known here from a few points in the ravines Sushanka and Bol'shie Karanki.

CONSERVATION STATUS. In Iran the number of the species is high and stable. In Turkmenistan the number is catastrophically declining. The species is included into the Red Data Book of Turkmenistan (1999): category 3 – a rare species on the periphery of the distribution range.

ARTVIN (DERJUGIN'S) LIZARD



TERRA TYPICA. Vicinity of the town Artvin, north-eastern Turkey.

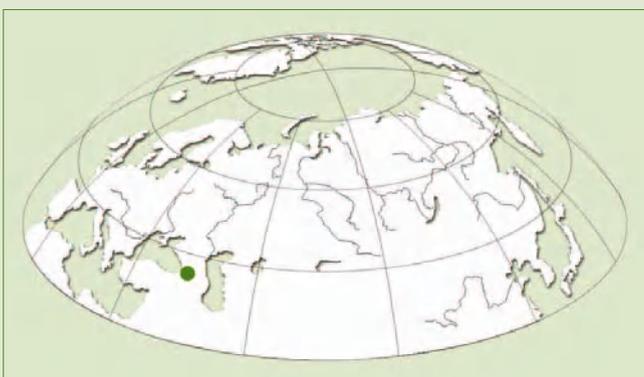
DISTRIBUTION. South-west of the Krasnodar Territory, western and north-eastern Georgia and the extreme north-west of Azerbaijan. Outside of the Caucasus it occurs on the extreme

DAREVSKIA DERJUGINI (NIKOLSKY, 1898)

north-east of Turkey. Of 6 described subspecies 5 are distributed in the Caucasus. *D. d. silvatica* (Bartenjev et Reznikova, 1931) inhabits submontane part of the Krasnodar Territory mainly in the Caucasian Biosphere State Reserve and the adjacent spurs of the Great Caucasus. *D. d. boehmei* (Bischoff, 1982) lives in the western spurs of the Great Caucasus in Krasnodar Territory and adjoining regions of Abkhazia up to the valley of the river Kodor in the south-east. *D. d. abchasica* (Bischoff, 1982) inhabits the coast of the Black Sea of Abkhazia and the adjacent regions of western Georgia, *D. d. barani* (Bischoff, 1982) is known from coastal mountain regions of Ajaria and of neighbouring part of north-eastern Turkey. *D. d. orlowae* (Bischoff, 1984) inhabits southern slopes and foothills of the Great Caucasus in Georgia and north-western Azerbaijan.

CONSERVATION STATUS. The number is rather high and stable.

CHARNALI LIZARD



DAREVSKIA DRYADA (DAREVSKY et TUNIYEV, 1997)

TERRA TYPICA. Ravine of small Charnali River in the lower reaches of the river Chorokh in the extreme south-west of Ajaria (south-western Georgia) and the adjacent part of Turkey.

DISTRIBUTION. It occurs on a limited territory in the north-eastern foothills of the Pontic range, within extreme south-west of Ajaria in Georgia and adjoining regions of north-eastern Turkey. The distribution is not sufficiently studied.

CONSERVATION STATUS. The number is rather high and stable.



Darevskia armeniaca



Darevskia brauneri darevskii



Darevskia chlorogaster

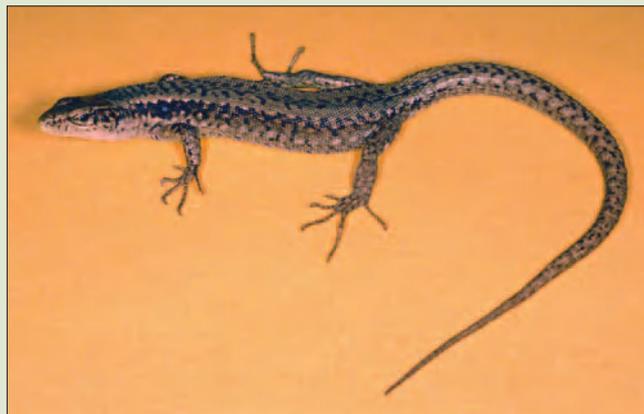


Darevskia daghestanica





Armenia



Darevskia dahli



Darevskia defilippii



Darevskia derjugini



Darevskia dryada

LINDHOLM'S LIZARD

*DAREVSKIA LINDHOLMI* (LANTZ et CYREN, 1936)

TERRA TYPICA. The Crimean Peninsula.

DISTRIBUTION. The distribution range of the species is limited by the mountain Crimea from Sevastopol in the west up to the cape Kiik-Atlam near the town Feodosia in the east. The northern border of the distribution range runs on the northern slopes of the Crimean Mountains through the towns Bakhchisarai, Simferopol and the vicinity of the settlement Vishennoe in the Belgorod region. A small isolated population lives on the rocks Adalary near Gurzuf.

CONSERVATION STATUS. The number is rather high and stable.

AJARIAN LIZARD

*DAREVSKIA MIXTA* (MEHELY, 1909)

TERRA TYPICA. Town Abastumani in south-western Georgia.

DISTRIBUTION. Endemic of Georgia. The recent distribution range forms some more or less extensive isolates mainly situated on the slopes of the Meskhetsky range within Ajaria and western Georgia up to Borzhomi ravine in the valley of Kura River and north-western slopes of Trialetsky range in the east. Isolated populations live on the southern slopes of Lechkhumsky and Rachinsky ranges in the foothills of Great Caucasus, where this lizard is known from the vicinity of the towns Kutaisi, Tkvibuli and the health-resort Labarde. Its distribution in the foothills of the Great Caucasus Range is still not sufficiently studied.

CONSERVATION STATUS. The number in the most of known populations is rather high and stable.

RED-BELLIED LIZARD

*DAREVSKIA PARVULA* (LANTZ et CYREN, 1936)

TERRA TYPICA. Town Artvin, north-eastern Turkey.

DISTRIBUTION. The distribution range of the species covers north-eastern Turkey (approximately from Erzerum in the west and from the valley of the upper current of Aras River in the south) and northern and southern foothills and spurs of the Meskhetsky range within Ajaria and neighbouring regions of Georgia from the coast of the Black Sea in the west up to the middle current of Kura River in the east. There are local isolated populations in the ravines of several lateral tributaries of the river Kura (Akhaldaba, Baniskhevi, Azkuri and others). In Georgia and in the ravine of the lower current of river Chorokh in Turkey occurs subspecies *D. p. adjarica* (Darevsky et Eiselt, 1980). The remaining part of the distribution range is occupied by the nominative subspecies *D. p. parvula*.

CONSERVATION STATUS. On the most part of the distribution range the number of the species is high and stable.

RIVER KURA LIZARD

DAREVSKIA PORTSCHINSKII (KESSLER, 1678)



TERRA TYPICA. City Tiflis (= Tbilisi), Georgia.

DISTRIBUTION. The main distribution range of the species occupies right-bank section of the valley of middle current of Kura River and the ravine of its right tributaries within Georgia, northern Armenia and north-western Azerbaijan. It covers the area from Gori in the west up to northern foothills of the ranges of the Lesser

Caucasus in the lower and middle current of the rivers flowing into Kura River: Algeti, Khrami, Debeta, Akstafa-chai, Gyandzha-chai and others in the south-east. Big population, isolated now from the main distribution range, is known in the valley of middle current of the left tributary of Kura River – river Iori on the southern slopes of the Zivgamborsky range. A great zoogeographical interest represents an isolated population of this species discovered in south-western Azerbaijan, in the ravine of upper current of Akar River, belonging to the basin of Aras River. Presence of *D. portschinskii* in the southern foothills of Lesser Caucasus can be connected with a radical reconstruction of river systems which was taking place on the territory of Transcaucasia in the postglacial period. The nominative subspecies *D. p. portschinskii* occupies the most part of the distribution range. In the ravines of right tributaries of Kura River – the rivers Mashavera in Georgia and Debeta in Armenia – occurs *D. p. nigrita* (Bakradze, 1976).

CONSERVATION STATUS. On the most part of the distribution range the number is high and stable.

MEADOW LIZARD

DAREVSKIA PRATICOLA (EVERSMANN, 1834)



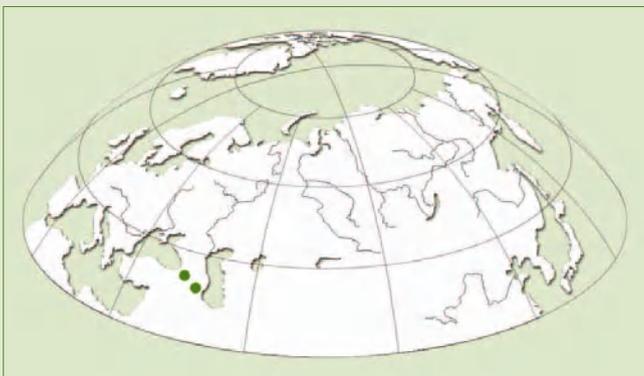
TERRA TYPICA. Settlement Narzan, North Caucasus.

DISTRIBUTION. It occurs in the north-west of the Balkan Peninsula from one side and within the Caucasus and adjacent part of Iran from the other side. It is sporadically distributed on the both sides of the Great Caucasus Range within the limits of the Krasnodar and Stavropol Territories, in Kabardino-Balkaria, North Ossetia, Chechnya, Ingooshetia and Dagestan, and in the Transcaucasia – on the coast of the Black Sea of Abkhazia, in north Georgia, northern Azerbaijan and in the north of Armenia. *D. p. praticola* inhabits the most part of the distribution range. *D. d. pontica* (Lantz et Cyren, 1919) inhabits the coast of the Black Sea and north-western Caucasus.

CONSERVATION STATUS. On the most part of the distribution range the number is high and stable.

AZERBAIJAN LIZARD

DAREVSKIA RADDEI (BOETTGER, 1892)



TERRA TYPICA. Settlement Nyuvadi in the ravine of the Aras River, south-east Armenia.

DISTRIBUTION. It is widely distributed in the mountains of Lesser Caucasus, in the most part of the southern and northern Armenia, southern and southern-east Azerbaijan and the ravine of the upper current of Kura River in western Georgia. In the Transcaucasia the distribution range consists of many isolated populations of different size associated with the ravines of small rivers flowing down to the river Aras in the south, and tributaries of the river Kura in the north. Outside the Caucasus it occurs in eastern Turkey (to the east of the Lake Van) and in the adjacent north-western Iran.

The southern border of its distribution range is not exactly determined. Intraspecific taxonomy is still not clear. Three subspecies are described. The nominative subspecies *D. r. raddei* inhabits the most part of Armenia and Azerbaijan, in the basin of the Lake Sevan in Armenia (mainly in the western part of the republic). In the ravine of the upper current of the river Kura in Georgia occurs

D. r. nairensis, considered by some taxonomists as a distinct species. *D. r. vanensis* (Eiselt, Schmidler et Darevsky, 1993) occurs in the eastern part of the basin of Lake Van in Turkey and in the neighbouring Iran.

CONSERVATION STATUS. In the most part of the distribution range the number of the species is high and stable.

ROSTOMBEKOV'S LIZARD



DAREVSKIA ROSTOMBEKOVI (DAREVSKY, 1957)

TERRA TYPICA. Vicinity of the settlement Ijevan, Armenia.

DISTRIBUTION. It has a comparatively limited distribution range in the northern Armenia and adjacent regions of Azerbaijan. The recent distribution range is divided into several more or less isolated populations. One of them, now extinct, existed on the north-eastern shore of the Lake Sevan in Armenia.

CONSERVATION STATUS. The number is stable.

GEORGIAN, OR SPINY-TAILED LIZARD



TERRA TYPICA. Town Trapezund (Trabzon), north-eastern Turkey.

DISTRIBUTION. The species is widely distributed, mainly in the western Transcaucasia, and in the north – in the montane

DAREVSKIA RUDIS (BEDRIAGA, 1886)

Ingooshetia, Chechnya, neighbouring Dagestan and in northern Ossetiya. Outside of the Caucasus it is widely distributed in the northern half of Turkey. Of eight described subspecies the five occur in the Caucasus. *D. r. bischoffi* (Boehme et Budak, 1977) occurs in Ajaria. *D. r. obscura* (Lantz et Cyren, 1936) inhabits the valley and adjoining slopes of mountains of the upper current of Kura river within Georgia. *D. r. macromaculata* (Darevsky, 1967) is recorded in the ravine of the right tributary of Kura River, river Akhalkalakichai in southern Georgia. *D. r. svanetica* (Darevsky et Eiselt, 1980) occurs in the ravine of the upper current of the river Inguri in Svanetia (western Georgia). *D. r. chechenica* (Eiselt et Darevsky, 1991) is widely distributed on the southern slopes of the Great Caucasus from lower Svanetia in the west up to north-western Azerbaijan in the east, and also isolatedly on the northern slopes within the limits of the montane Chechnya and Dagestan.

CONSERVATION STATUS. The number of the species is high and stable everywhere.

ROCK LIZARD

TERRA TYPICA. Town Kislovodsk, Stavropol Territory.

DISTRIBUTION. The main distribution range of the species covers the northern slopes of the Rocky range within Karachaevo-Cherkesskaya Autonomous Region, south of the Stavropol Territory

DAREVSKIA SAXICOLA (EVERSMANN, 1834)

and Kabardino-Balkaria, from the valley of the upper current of Kuban' River and its tributaries in the west up to the ravine of the middle current of the river Chegem in the east. The most northern isolated population (which was considered as extinct) lives



in the southern foothills of the Stavropol Upland, in the limits of the Alexandrovsky region of the Stavropol Territory. The southern border of the distribution range passes on the north-eastern spurs of the mountain Elbrus in the ravine of the river Kuban, and, crossing the Rocky Range (known from the Mariinsky pass), continues further on its watershed in the upper reaches of the rivers Kuma, Podkumok, Alikanovka, Beryozovaya, Zolka and others. On the ravine of the river Baksan it comes up to the town Tynny-Auza and goes from the Chegem waterfalls up along the Chegem River gorge.

CONSERVATION STATUS. The number is high and stable.

WHITE-BELLIED LIZARD

DAREVSKIA UNISEXUALIS (DAREVSKY, 1966)



TERRA TYPICA. Settlement Akhta, ravine of the river Razdan, northern Armenia.

DISTRIBUTION. The distribution range of the species is divided into several isolated populations within the northern and central high-mountain Armenia and the adjacent regions of eastern Turkey, from where along the valley of Kura River this lizard penetrates into southern Georgia. Outside of the Caucasus it occurs in the valley of the river Aras in eastern Turkey.

CONSERVATION STATUS. The number is high and stable.

VALENTIN'S LIZARD

DAREVSKIA VALENTINI (BOETTGER, 1892)



TERRA TYPICA. Town Bazarchai (Basarkent), Sisiansky region, eastern Armenia.

DISTRIBUTION. The recent distribution range of the species is divided into several of more or less extensive isolates, attributed to the steppe high-mountain regions of the mountain-steppe zone of Armenia, Azerbaijan, southern Georgia and eastern Turkey. The most extensive areas of the distribution range are occupied by the high-mountain zone of the Gegamsky range up to the shores

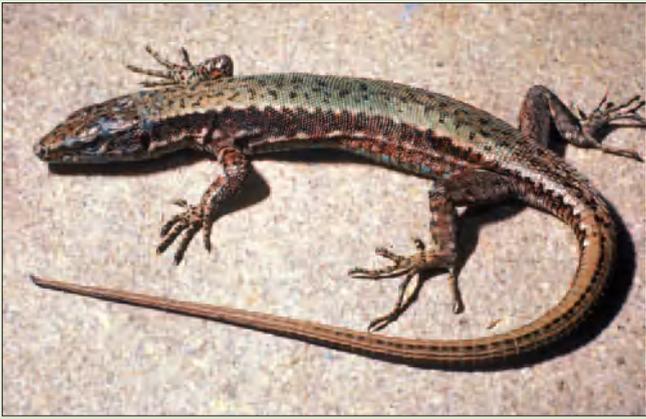
of Sevan Lake in the north, a ring-like high-mountain area of the Aragaz mount and a high-mountain plateau in the foothills of the Childyrsky and Javakhetsky ranges in the extreme north-west of Armenia and adjoining regions of southern Georgia. Besides, it is encountered on the Ardenissky range confining the basin of Sevan Lake from the south. Further to the east it inhabits all high-mountain part of the Karabakh Upland within the limits of Nagorny Karabakh. Outside of the Caucasus, covering the mountains, surrounding the Lake Van, the species is widely distributed in north-eastern, eastern and south-eastern Turkey, at least from the range Palandeken in the vilajet Erzerum in the west. Probably it penetrates into the high-mountain region of extreme west on the territory of the neighbouring Iran.

Three subspecies are described. The nominative subspecies *D. v. valentini* is distributed in the whole Transcaucasia. *D. v. lantzi-cyreni* (Darevsky et Eiselt, 1967) occurs on the most part of Turkey. The third subspecies *D. v. spitzenbergerae* (Eiselt, Darevsky et Schmidtler, 1992) is known only from the type locality in the vilajet Khakyari in the extreme south-east of Turkey.

CONSERVATION STATUS. On the most part of the distribution area the number of the species is high and stable.



Darevskia mixta



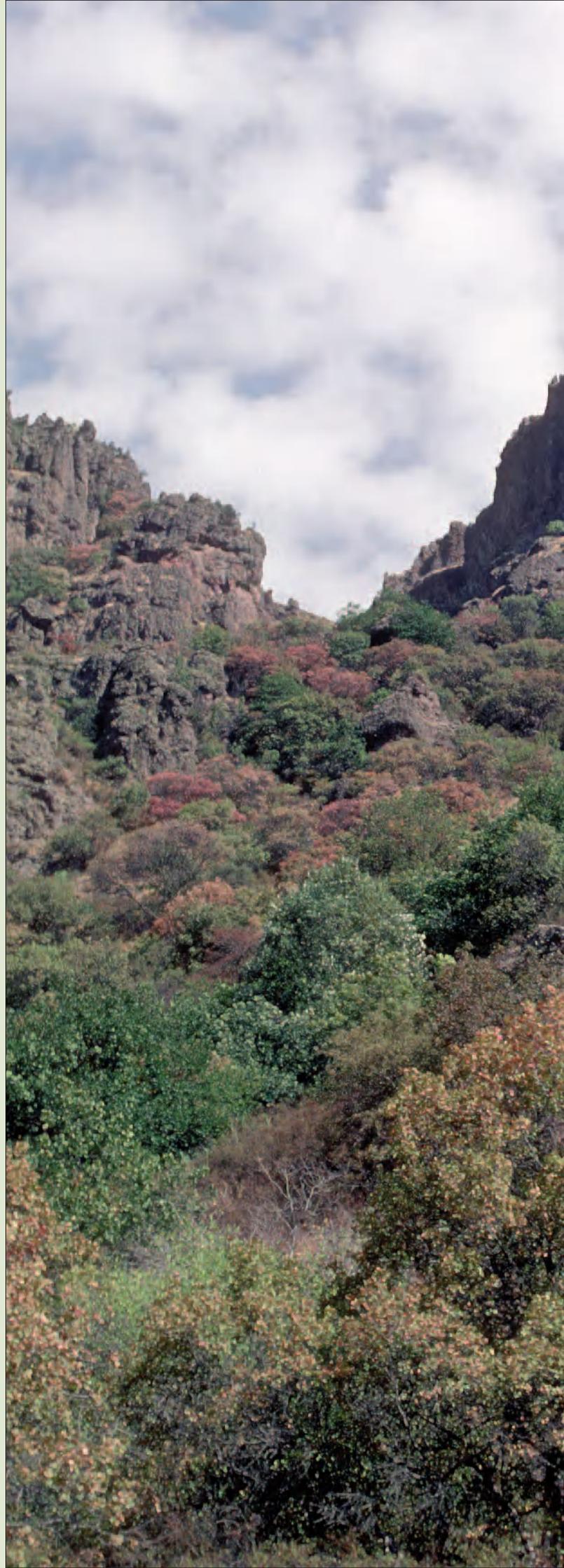
Darevskia parvula



Darevskia portschinskii



Darevskia praticola pontica





Khosrov Nature Reserve



Darevskia raddei



Darevskia rostombekovi



Darevskia rudis bischoffi



Darevskia unisexualis

LACERTIDAE

RACERUNNERS, OR DESERT LACERTAS

GENUS *EREMIAS* FITZINGER *In* WIEGMANN, 1834

Small, medium-sizes and (more rarely) comparatively large lizards.

Ventral scales are arranged in oblique rows towards the middle line of the venter. An enlarged nuchal shield is absent.

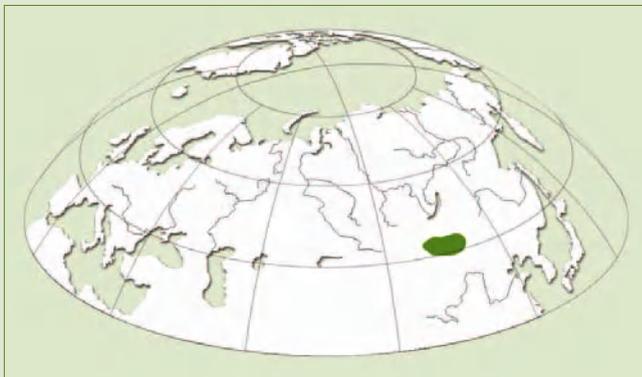
The nostril is located between 3-4 nasal shields and is widely separated from supralabial shields. Large transparent shields on the lower eyelid are absent. Enlarged serrated scales can be present on the edges of the toes.

They are widely distributed from south-eastern Europe and western Asia to Korea and north-eastern China.

Representation of the lizards of this genus in North Eurasia is very high – of approximately 25 known species 20 occur in North Eurasia.

MONGOLIAN RACERUNNER

EREMIAS ARGUS PETERS, 1869



part of Mongolia, in China (from the lake Kukuror up to Shanghai city), in the western part of the Korean Peninsula and in Russia, in the southern Buryatia (to the north approximately up to Ulan-Ude city) and in the extreme south-west of the Chita region. In Mongolia the most part of the findings are attributed to the north and east from the range Khangai in Kobdos, Gobi-Altai, Dzabkhan, Bayan-Khongor, South-Gobi, Middle-Gobi, Central, Bulan, Selenggin, Khentei, East-Gobi, Sukhe-Bator and Eastern aimaks. Of two known subspecies within North Eurasia occurs the western one – *E. a. barbouri* Schmidt, 1925.

TERRA TYPICA. China, Chifu (now Yantai, Shandong Province).

DISTRIBUTION. The species is widely distributed in the eastern

CONSERVATION STATUS. The species (*E. a. barbouri*) is included into the Red Data Book of the Russian Federation (2001): category 4 – species uncertain in its status distributed in Russia on the extreme border of its distribution range.

STEPPE-RUNNER

EREMIAS ARGUTA PALLAS, 1773



TERRA TYPICA. Interstream area of the rivers Ural and Emba.

DISTRIBUTION. The distribution range stretches from north-eastern Romania in the west to south-western Mongolia (Jungar Gobi) and north-western China (Xinjiang-Uyghur Autonomous Region and Inner Mongolia) in the east, Turkey and Iran in the south. Within the limits of North Eurasia it is widely distributed from the steppe zone of Moldova, the Ukraine and the European part of Russia including North Caucasus and the area of the Volga



river in the west, to Kazakhstan, the Republics of Middle Asia and Mongolia in the east. In Mongolia records are known in the southern part of the Kobdos aimak and in the Gobi-Altai aimak. Disjuncted from the main distribution range the species occurs in the eastern Transcaucasia, within the limits of Azerbaijan, eastern Georgia and the basin of the Sevan Lake in Armenia. The most northern, evidently isolated habitats are known in the Volzhsko-Kamsky Territory from the Samara bend and Buzuluksky coniferous forest.

The species is divided into 6 subspecies which are different, in particular, by the above-described types of the coloration of the body and the size proportions. *E. a. arguta* (Pallas, 1773) – is distributed in the western Kazakhstan. *E. a. deserti* (Gmelin, 1789) – occupies the whole western part of the distribution range from the river Ural in the east up to the eastern part of the North Caucasus in the south-west. *E. a. transcaucasica* Darevsky, 1953

inhabits eastern Transcaucasia, *E. a. uzbekistanica* Chernov, 1934 – Uzbekistan and the frontier regions of Turkmenistan, southern Kazakhstan, Kyrgyzstan and Tajikistan. *E. a. darevskii* Tsaruk, 1986 – Issyk Kul hollow in Kyrgyzstan. *E. a. potanini* Bedriaga, 1912 lives in the area adjacent to the Balkhash Lake and Zaisan hollow in Kazakhstan.

CONSERVATION STATUS. The steppe – runner *E. a. potanini* is included into the Red Data Book of Mongolia (1997) as a rare species, it is protected on the territory of the Great Gobi reservation. *E. a. uzbekistanica* is included into the Red Data Book of Turkmenistan (1999) as a species which habitats are destroyed the number of is reducing (category 2). *E. a. transcaucasica* is included into the Red Data Book of Armenia (1987) with the status “species disjuncted from the main distribution range”. *E. a. deserti* is included into the Red Data Book of Moldova (2001): category – Critically Endangered species.

RETICULATE RACERUNNER

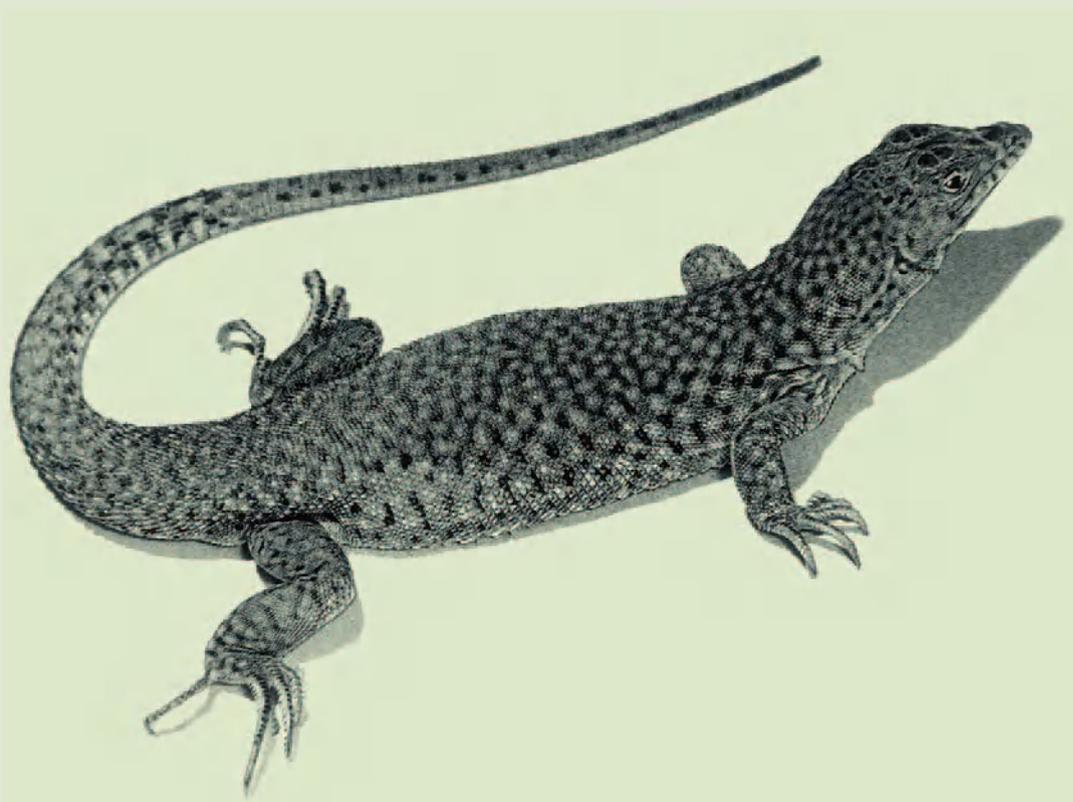
EREMIAS GRAMMICA (LICHTENSTEIN, 1823)



TERRA TYPICA. Karakum, Turkmenistan.

DISTRIBUTION. Middle Asia within the plains of Turkmenistan, Uzbekistan, Tajikistan, middle and southern Kazakhstan. The northern border of the distribution range runs in Kazakhstan, in some places nearly attaining 49°N. Outside of Middle Asia it also occurs in the north-east of Iran (eastern Khorasan), in the adjacent plain regions of Afghanistan to the north of Hindu Kush, as well as in the east up to the western regions of the Xinjiang-Uyghur Autonomous Region, China.

CONSERVATION STATUS. The number is stable and does not require special measures on its maintenance.







ARALO-CASPIAN RACERUNNER



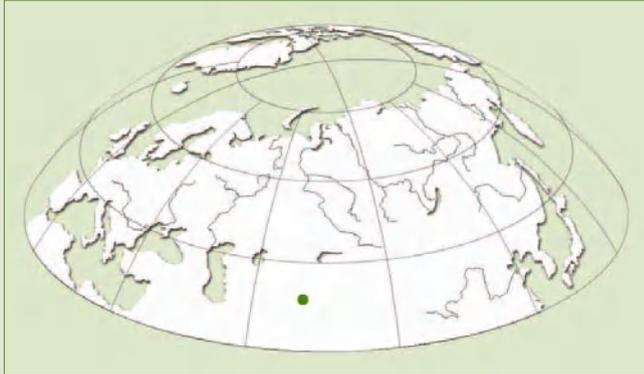
TERRA TYPICA. Kyzyl Kum, region of Aral-Caspian deserts.

DISTRIBUTION. Middle Asia within the limits of Turkmenistan, Uzbekistan, extreme west of Tajikistan and Kazakhstan. The northern border of the distribution range stretches in Kazakhstan from the north-eastern coast of the Caspian Sea and northern coasts of the Aral Sea to the north of the Balkhash Lake across the desert Betpak-Dala up to the basin of the Lake Alakol'.

EREMIAS INTERMEDIA (STRAUCH, 1876)

CONSERVATION STATUS. The number is stable. The species does not require species conservation measures.

KOKSHAAL' RACERUNNER



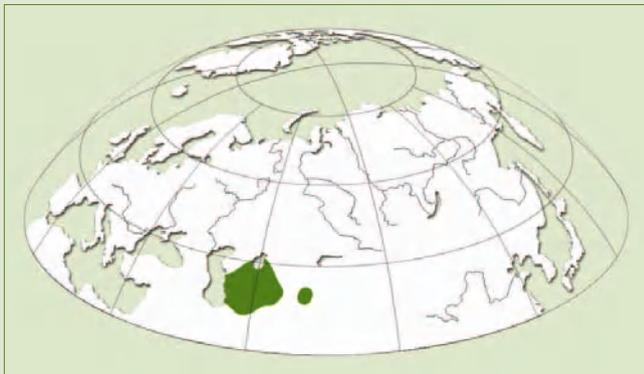
TERRA TYPICA. Settlement Sary-Jaz, ravine Terekty, Kyrgyzstan.

DISTRIBUTION. This form of the complex "*Eremias multiocellata*" is known from the central Tien Shan (basin of the river Sary-Jaz), Kyrgyzstan and China (Xinjiang-Uyghur Autonomous Region, including Kashgaria in the southern Tien Shan). Populations of this species were referred earlier to *Eremias buechneri*.

CONSERVATION STATUS. Undetermined.

EREMIAS KOKSHAALIENSIS EREMCHENKO et PANFILOV, 1999

STRIPED RACERUNNER



TERRA TYPICA. Between Faizabad and Nuzi, eastern Iran.

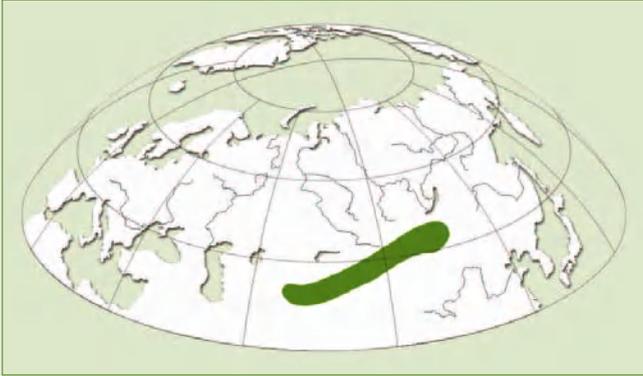
DISTRIBUTION. The republics of the Middle Asia within Turkmenistan, Uzbekistan, southern and south-eastern Tajikistan and south of Kazakhstan, where it occurs isolatedly in the area adjacent to the Balkhash Lake. Besides, it is distributed in the north-eastern Iran (Khorasan) and northern Afghanistan.

CONSERVATION STATUS. The species does not require special conservation measure.

EREMIAS LINEOLATA NIKOLSKY, 1896

MULTIOCELLATED RACERUNNER

EREMIAS MULTIOCELLATA GUNTHER, 1872



TERRA TYPICA. Desert Gobi, the road between Sume and river Tola, Mongolia.

DISTRIBUTION. It inhabits montane and partly submontane regions of Tien Shan and Pamir-Altai in Kyrgyzstan, eastern and south-eastern Kazakhstan and neighbouring Uzbekistan. It is known in Tuva and widely distributed in Mongolia (Bayan Ulug, Kobdo, Ubsunur, Dzabkhan, Gobi-Altai, Bayan-Khongor, Uver-Khangai, South-Gobi, Eastern-Gobi and Middle-Gobi aimaks). It is also known from north-western China southwards to the mountain ranges of Nan Shan and north-eastern Tibet, in the desert Alashan and the southern part of Mongolia in the east. During recent years the taxonomic status of some subspecific forms was revised, they are considered as separate species.

CONSERVATION STATUS. As a narrow-ranged and small in number species it is included into the Red Data Book of Kazakhstan (1996): category 4 – a rare species, known by single specimens.



LACERTIDAE

BLACK-OCCELLATED RACERUNNER

EREMIAS NIGROCELLATA NIKOLSKY, 1896



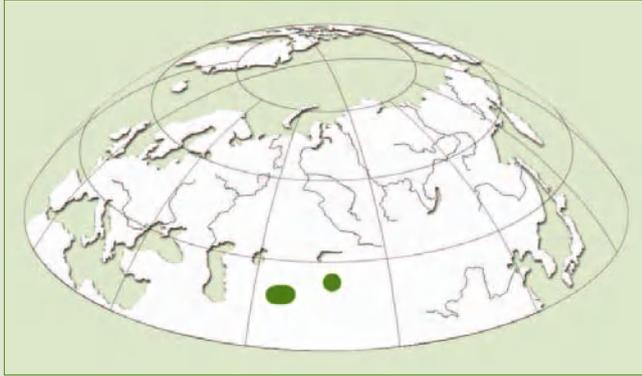
TERRA TYPICA. Sistan, Iran.

DISTRIBUTION. It occurs in the extreme south-east of Turkmenistan, in southern Uzbekistan and in the south-west of Tajikistan up to Kurgan-Tyube and Pyandzh river in the north-east of Iran and in the north of Afghanistan.



CONSERVATION STATUS. The species is included into the Red Data Book of Turkmenistan (1999): category 2 – species, the habitats and number of which are sharply reducing, and into the Red Data Book of Uzbekistan (2003) – vulnerable, reducing, mosaically distributed species (2/VU:D).

KIRGHIZ RACERUNNER, OR NIKOLSKY'S RACERUNNER

EREMIAS NIKOLSKII BEDRIAGA IN NIKOLSKY, 1905

TERRA TYPICA. Settlement Tengizbai, Altai Range.

DISTRIBUTION. It occurs in the mountains of Tien Shan system and northern Pamir-Altai within the limits of Kyrgyzstan, Ferganskaya valley in Uzbekistan and northern Tajikistan. The record of this species in the extreme south-east of Kazakhstan (Terskei-Alatau) needs to be confirmed more precisely.

CONSERVATION STATUS. The species does not require special conservation measures.

PERSIAN RACERUNNER

EREMIAS PERSICA BLANFORD, 1874

TERRA TYPICA. Isfahan city, central Iran.

DISTRIBUTION. It occurs in the south of Turkmenistan where two isolated populations are known – in the valley of the river Kushka and the depression Er-Oilan-Duz in the Badkhyz Nature Reserve. The main distribution is situated within Iran, in the central and eastern parts of the Iran Plateau.



CONSERVATION STATUS. A common species on the territory of Turkmenistan. Species with a stable number lives on the protected territory of the Badkhyz Nature Reserve.

TRANSCAUCASIAN RACERUNNER

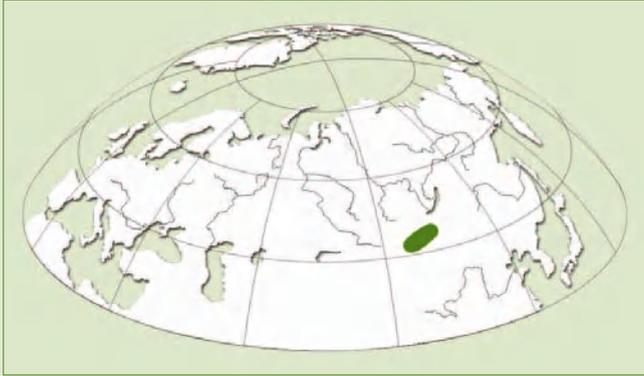
EREMIAS PLESKEI BEDRIAGA, 1907

TERRA TYPICA. Town Nakhichevan, Azerbaijan.

DISTRIBUTION. It occurs in the left-bank valley of the river Aras in Armenia and in Nakhichevan, Azerbaijan, i.e. approximately from the town Echmiadzin in the west up to the southern foothills of the Megrinsky range. Outside of the eastern Transcaucasia it occurs in the extreme east of Turkey and in the north-western Iran.

CONSERVATION STATUS. The species does not require special conservation measures.

GOBI RACERUNNER



TERRA TYPICA. Alashan desert.

DISTRIBUTION. It is distributed mainly in the north China (Inner Mongolia, Xinjiang-Uyghur Autonomous Region) and in Mongolia, from where it penetrates into the territory of the neighbouring Tuva. In North Eurasia the species is widely distributed in the western and southern Mongolia (Ubsunur, Kobdo, Dzabkhan, Gobi-Altai, Bayan-Khongor, Uwer-Khangai, South-Gobi, East-Gobi, Middle-Gobi aimaks) and in Tuva [in Russia]. In the flood-plain of the river Nariin-Gol lives the subspecies *E. p. tuvensis* Szczerbak, 1970.

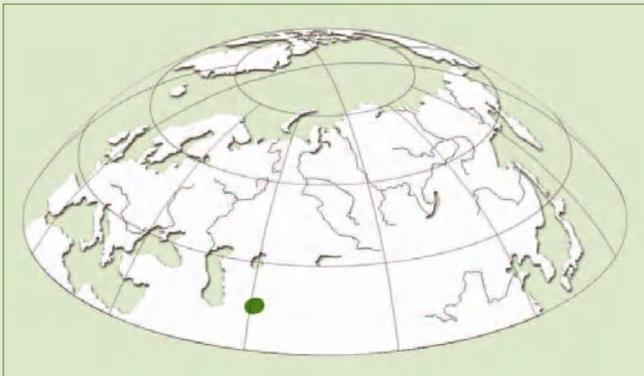
CONSERVATION STATUS. *E. p. tuvensis* is included into the Red Data book of the Russian Federation (2001): category 3 – rare species

EREMIAS PRZEWALSKII STRAUCH, 1876



within the limits of Russia known on the northern periphery of the distribution range.

TAJIK RACERUNNER



EREMIAS REGELI BEDRIAGA IN NIKOLSKY, 1905

TERRA TYPICA. Town Shirabad, Surkhandar'inskaya region, Uzbekistan.

DISTRIBUTION. It occurs in the extreme south-east of Turkmenistan, south of Uzbekistan and in the south-western Tajikistan. Outside of Middle Asia the Tajik Racerunner is known from northern Afghanistan.

CONSERVATION STATUS. The species is included into the Red Data Book of Turkmenistan (1999) as a rare species – category 3.

SAND RACERUNNER

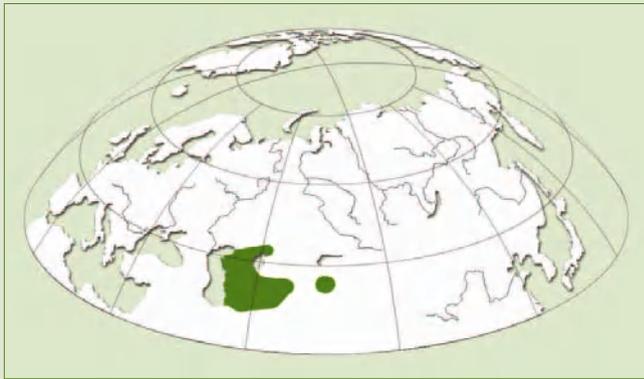
EREMIAS SCRIPTA (STRAUCH, 1867)

TERRA TYPICA. Region between the Aral and Caspian Seas.

DISTRIBUTION. The species is distributed in sandy deserts of Middle Asia, Kazakhstan, eastern Iran, adjacent regions of Afghanistan and northern Belujistan (Pakistan). In North Eurasia it occurs in Turkmenistan, Uzbekistan, western Tajikistan and southern Kazakhstan. The northern border of the distribution range runs in Kazakhstan, from north-western coasts of the Caspian Sea

along the northern area adjacent to the Aral Sea and southern area adjacent to the Balkhash Lake up to the basin of Alakul Lake in the east.

Three subspecies are described, which differ mainly by the color pattern of the dorsal surface of the body. *E. s. scripta* Strauch, 1867 occupies the most part of the distribution range in Turkmenistan and Kazakhstan. *E. s. lasdini* Tzarevsky, 1918 lives

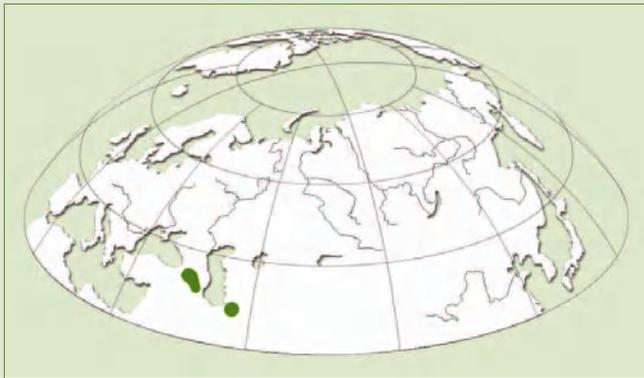


in the south-east of Uzbekistan and south-western Tajikistan. *E. s. pherganensis* Szczerbak et Washetko, 1973 is known from Ferganskaya valley, mainly in the northern Tadjikistan.

CONSERVATION STATUS. Fergana Sand racerunner *E. s. pherganensis* is included into the Red Data Book of Uzbekistan (2003): category 1, EN – endangered, locally distributed endemic subspecies, and of Tajikistan (1997) – the category an endangered subspecies.

STRAUCH'S RACERUNNER

EREMIAS STRAUCHI KESSLER, 1878



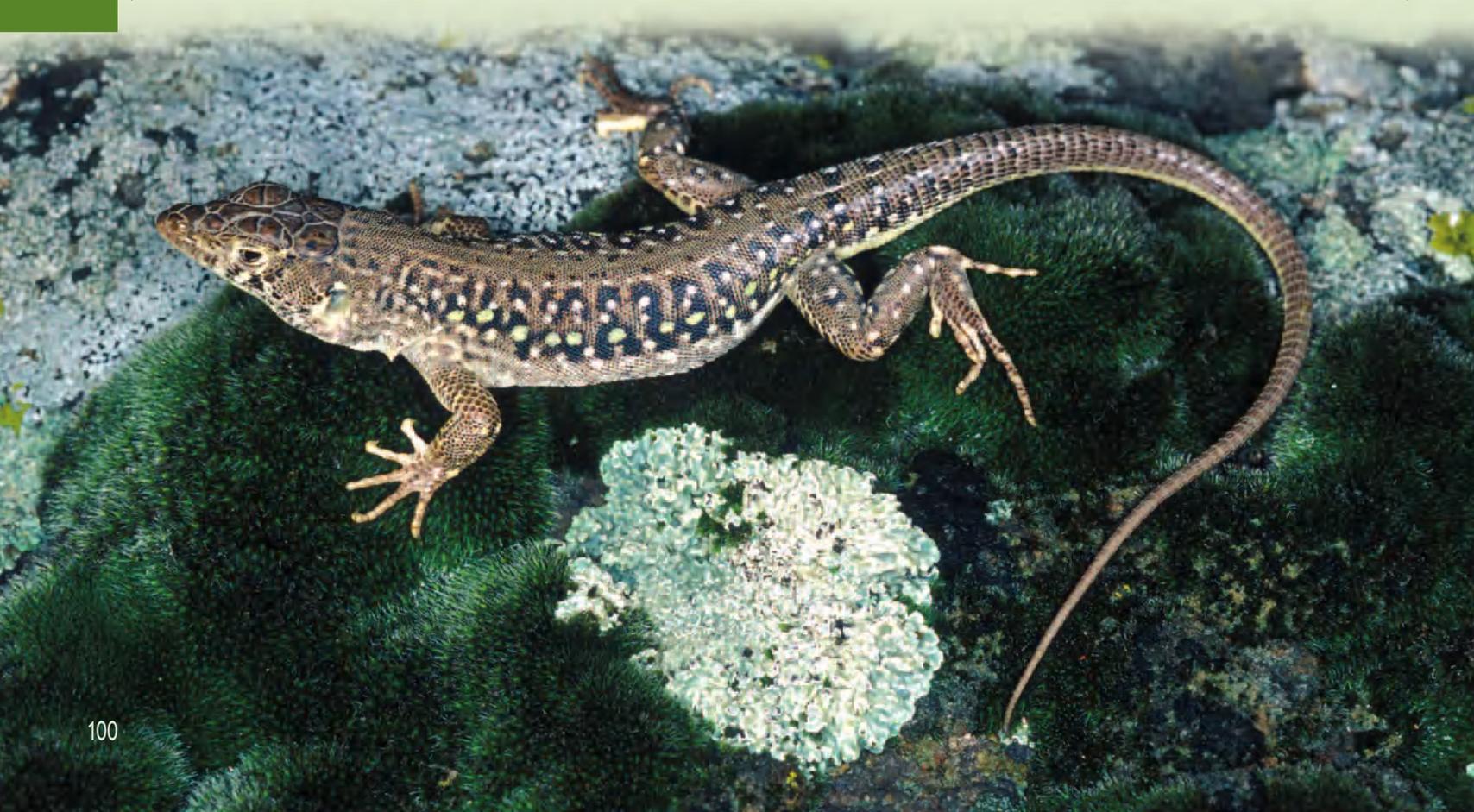
TERRA TYPICA. Town Echmiadzin, Armenia.

DISTRIBUTION. In North Eurasia the species is distributed in the eastern Transcaucasia: the valley of the middle current of Aras river, from the south-eastern foothills of the Karabakh range and the

valley of Bargushat in the south-east up to the southern spurs of the mountain Aragaz and Oktemberyanskaya steppe in the west, in the Karabakh desert and on the plateau Zuvand, as well as in the south-western Turkmenistan (southern slopes of the mountain ranges Kyupendag, Karagez and Kopet Dag). *Eremias strauchi* occurs in eastern Turkey and in the north-west and north-east of Iran, in Iranian Azerbaijan.

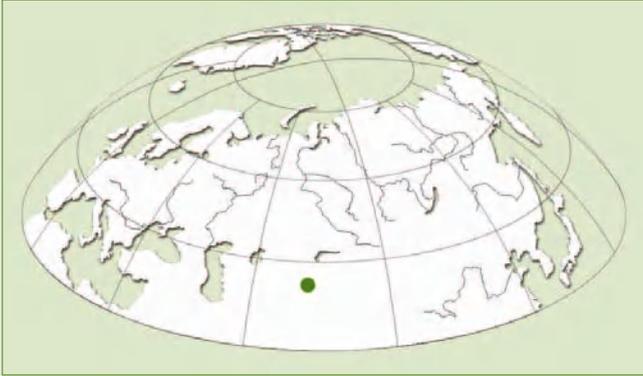
The species is differentiated into two subspecies. The nominative subspecies is distributed in the eastern Transcaucasia, as well as in the eastern Turkey and Azerbaijani provinces of north-western Iran. The second subspecies, *E. s. kopetdaghica* Szczerbak 1972 is distributed in Kopet Dag, northern Khorasan and eastern Mazanderan (Turkmenistan and Iran).

CONSERVATION STATUS. The species does not require special protection measures.



TIEN SHAN RACERUNNER

EREMIAS STUMMERI WETTSTEIN, 1940



TERRA TYPICA. Kyrgyzstan, region of the Lake Issyk Kul, vicinity of the town Przhhevalsk.

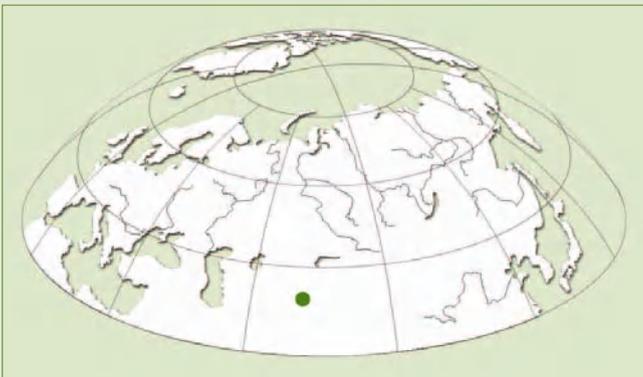
DISTRIBUTION. This form of the complex "*Eremias multiocellata*" is distributed in the basin of the Lake Issyk Kul.

CONSERVATION STATUS. The species does not require special protection measures.



SZCERBAK'S RACERUNNER

EREMIAS SZCZERBAKI JERJOMCHENKO et PANFILOV, 1992



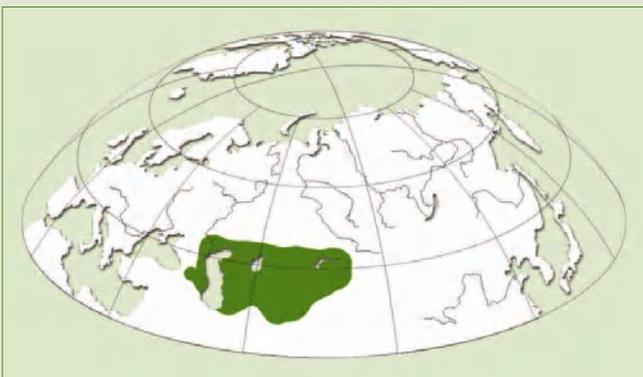
TERRA TYPICA. Kyrgyzstan, valley of Arpa River.

DISTRIBUTION. This form of the complex "*Eremias multiocellata*" is distributed in the basin of the river Naryn in Kyrgyzstan, the valley of the rivers At-Bashi and Arpa. Foothills of Moldo-Too, Baibishe-Too, Yaman-Too, At-Bashi and Naryn-Too.

CONSERVATION STATUS. Not determined.

RAPID RACERUNNER

EREMIAS VELOX (PALLAS, 1771)



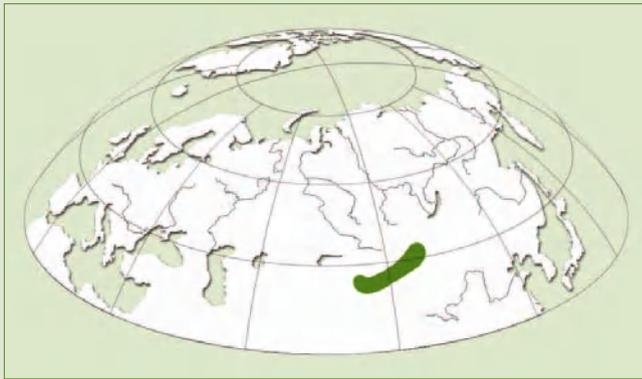
TERRA TYPICA. Inderskie Gory (mountains in the lower current of the Ural River).

DISTRIBUTION. Rapid racerunner is a widely distributed species, occurring from the eastern part of the North Caucasus and lower region of the Volga River to northern Iran, Afghanistan and eastwards up to north-western China (Xinjiang-Uyghur Autonomous Region., Inner Mongolia and Hansu Province). In North Eurasia the distribution range of the species stretches into the eastern Ciscaucasia, lower region of Volga River, eastern Transcaucasia in the lowland Georgia and Azerbaijan, Middle Asia and Kazakhstan. Several subspecies are described, of which three subspecies

occur within the limits of the countries of North Eurasia. *E. v. caucasica* Lantz, 1828 inhabits eastern Ciscaucasia and Transcaucasia. The most part of the distribution range is occupied by the nominate subspecies *E. v. velox*, and in the Issyk Kul hollow occurs the subspecies *E. v. borkini* Eremchenko et Panfilov, 1999, described from the Tien Shan mountains, in Kyrgyzstan (southern shore of the Lake Issyk Kul, from the region between the rivers Ak-Terek and Ak Sai).

CONSERVATION STATUS. The species does not require special protection measures.

CENTRAL ASIAN RACERUNNER



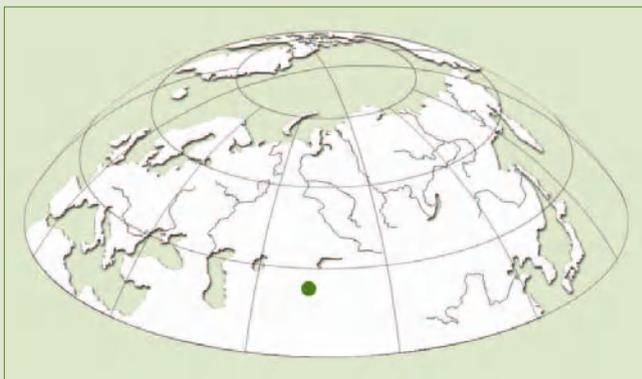
EREMIAS VERMICULATA BLANDFORD, 1875

TERRA TYPICA. Eastern Turkestan, Yarkend, Kashgaria, China (Xinjiang-Uyghur Autonomous Region).

DISTRIBUTION. The main distribution range of the species is situated in north-western China (Xinjiang-Uyghur Autonomous Region, Inner Mongolia) and in Mongolia (Gobi-Altai, Bayan-Khongor, South-Gobi aimaks). An isolated population lives in the Zaissan hollow in the south-east of Kazakhstan.

CONSERVATION STATUS. The species is included into the Red Data Book of Kazakhstan (1996): category 4 – not investigated species with a limited distribution range.

YARKEND RACERUNNER



EREMIAS YARKANDENSIS BLANDFORD, 1874

TERRA TYPICA. Town Yarkend, Kashgaria, China (Xinjiang-Uyghur Autonomous Region).

DISTRIBUTION. The distribution range of this species is marked by the Tarim basin which includes the southern slopes of Tien Shan, piedmont plains and foothills of Kunlun and eastern Pamir (excluding sands Takla-Makan) in China and eastern Alai in Kirghizia. Earlier this form was considered as a subspecies of multiocellated racerunner *E. multiocellata* Gunther, 1872.

CONSERVATION STATUS. Not determined.

GREEN LIZARDS

Large lizards with body sizes 70 – 160 mm.

Skull is not flattened, high, robust; its dorsal surface is convex. Pterygoid teeth are present.

Usually there are two post-nasal shields; dorsal scales are often keeled; serrated gular scales form a “collar”. Ventral scales with visible keels form six-eight parallel rows.

Sexual dimorphism and age variations in dorsal coloration are often clearly defined; young lizards have ocelli or pale narrow

GENUS LACERTA LINNAEUS, 1758

stripes in the coloration. The main background of the dorsum of adults is often bright-green; venter in young specimens is white, in adults – yellowish but always without bright tones.

The genus includes 8 species. The fauna of North Eurasia contains 4 species.

SAND LIZARD



TERRA TYPICA. South Sweden.

DISTRIBUTION. Sand lizard is one of the most widely distributed Eurasian species; its distribution range covers the most part of Europe from western France and north of the Balkan Peninsula to Eastern Siberia, north-western Mongolia and western China in the east (Chinese part of the Mongolian Altai). On the territory of North Eurasia the species occurs from western borders of Moldova, the Ukraine, Belarus, the Baltic States and Russia in the west to the northern area adjacent to Lake Baikal and southern Trans-Baikal area in the east, more or less in parallel with the north border of taiga. It inhabits the Caucasus and Kazakhstan in the south. It is known from Mongolia (Kobdo aimak). In the south-east distribution range covers the eastern Semirechye, north-western Mongolia (Kobdosky aimak) and the western part of Xinjiang-Uyghur Autonomous

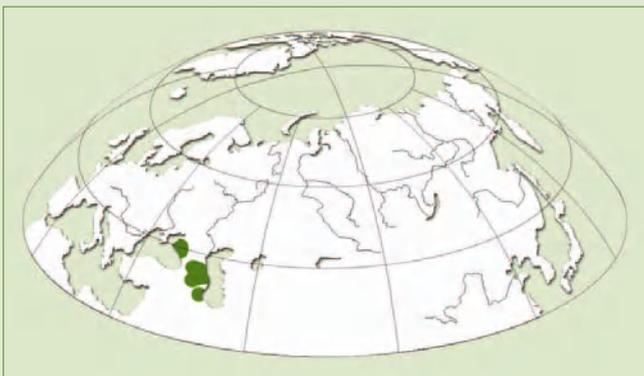
LACERTA AGILIS LINNAEUS, 1758

Region in China. From there it penetrates into Issyk-Kul depression in Kyrgyzstan. Data on the records in piedmonds of Turkestan and Seravshan mountain ranges in eastern Uzbekistan are erroneous

Ten subspecific forms are distinguished, the following seven occur in the former Soviet Union. *L. a. chersonensis* Andrzejowsky, 1832 – Moldova, the right-bank Ukraine, Belarus, the Baltic States, Leningrad region and south of the neighbouring Karelia. In the east, approximately from the left-bank valley of the river Dnieper a narrow area of intergradation with the neighbouring eastern subspecies is noted. *L. a. exigua* Eichwald, 1831 occupies the whole eastern part of the distribution range up to the Crimean Peninsula and Ciscaucasia in the south. *L. a. grusinica* Peters, 1960 inhabits the coast of the Black Sea and submontane regions of the Caucasus in the south-west of the Krasnodar Territory, Abkhazia, in the Colchis lowland and Ajaria. *L. a. brevicaudata* Peters, 1958 occurs in northern and western Armenia, southern Georgia and on the southern slopes of the Great Caucasus range within the North Ossetia. *L. a. ioriensis* Peters et Muskhelischwili, 1968 occurs on the southern slopes of the Caucasian range: in the valley and ravine of the upper current of the river Iori in Georgia. *L. a. boemica* Suchow, 1929 inhabits submontane regions of North Ossetia, Ingooshetia, Chechnya and Dagestan. *L. a. tauridica* Suchow, 1926 inhabits the southern montane Crimea.

CONSERVATION STATUS. The species is included into the Red Data Book of Latvia (2003) and Estonia (1998). Its conservation status (category 2) corresponds to the same status of the Bern convention.

MEDIUM LIZARD



TERRA TYPICA. Tiflis city (=Tbilisi), Georgia.

DISTRIBUTION. The most part of the distribution range in North Eurasia is situated in the Caucasus. There it is noted in the Transcaucasia, in eastern and northern Georgia, submontane and montane regions of Azerbaijan and Armenia, as well as in river valleys in interior Dagestan. Besides, it occurs on the coast of the Black Sea of the Krasnodar Territory, Abkhazia and Ajaria. Outside of the Caucasus it is encountered in the eastern Turkey and north-western Iran. One of the three subspecies, *L. m. media* Lantz et Cyren, 1920, occurs in the Caucasus.

CONSERVATION STATUS. The species is included into the Red Data Book of the Russian Federation (2001): category 3 – a rare species

LACERTA MEDIA LANTZ et CYREN, 1920

within the limits of Russia with distribution on the extreme northern border of its range.

Female (left) and male (right) of Medium Lizard





Male *Lacerta agilis exigua*



Female *Lacerta agilis exigua*



Female *Lacerta agilis exigua*





Eastern Kazakhstan



Male *Lacerta agilis exigua*



Male *Lacerta agilis exigua*



Male *Lacerta agilis exigua*

LACERTIDAE



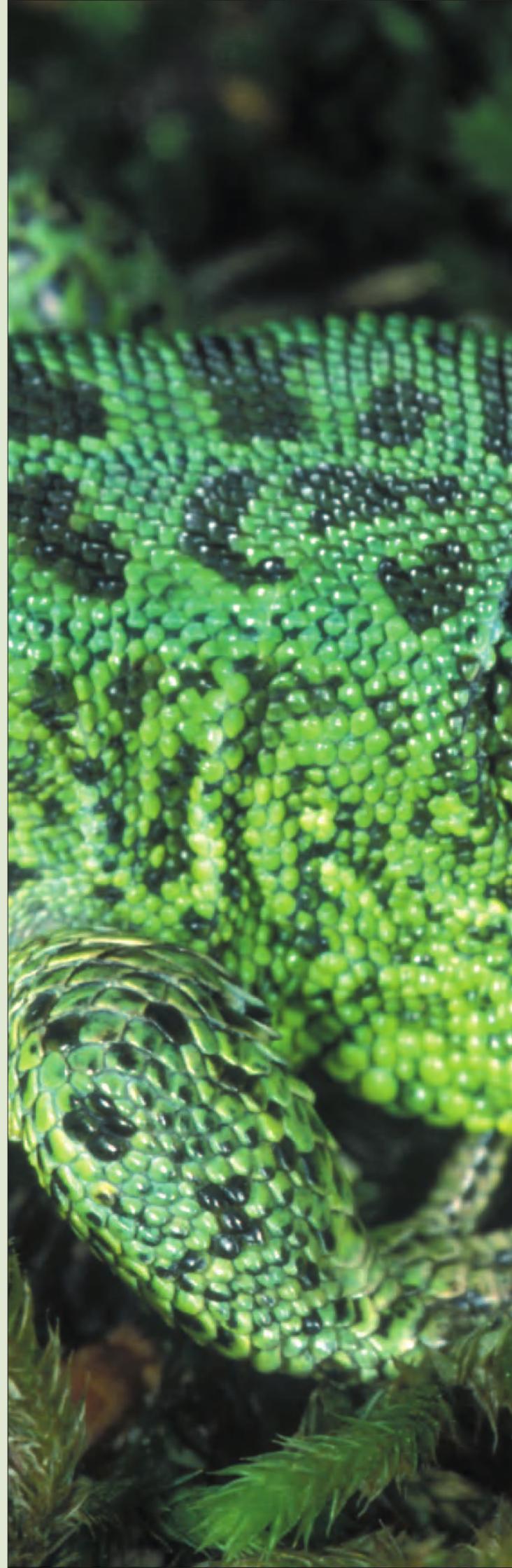
Lacerta agilis brevicaudata



Male *Lacerta agilis chersonensis*



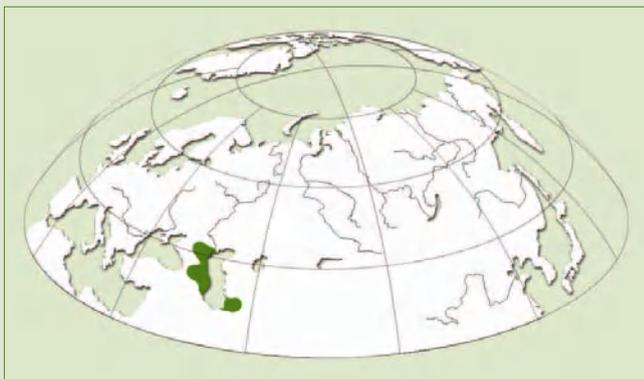
Female *Lacerta agilis chersonensis*





FIVE-STREAKED LIZARD, OR CASPIAN GREEN LIZARD

LACERTA STRIGATA EICHWALD, 1831



TERRA TYPICA. Krasnovodsk, southern Turkmenistan.

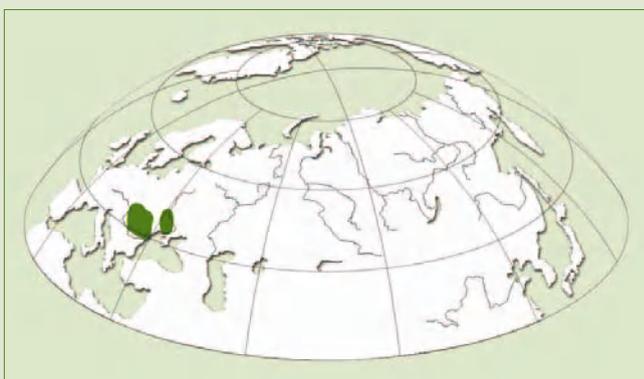
DISTRIBUTION. *L. strigata* is widely distributed in North Eurasia. It lives predominantly in the eastern half of the Caucasus, at least up to the latitude of the towns Armavir and Stavropol in the Stavropol Territory in the north-west and the valley of the river Terek and lower reaches of the river Kuma in Dagestan in the north-east. In the eastern Transcaucasia it mainly occurs in the lowland regions of Azerbaijan, Armenia and Georgia, where it is not known to the west of the Suramsky range. Until recently an isolated population existed in the area of the cape Pizunda in Abkhazia. It also occurs in the south-west of Turkmenistan. Outside of the Caucasus it is known from eastern Turkey and northern Iran.

CONSERVATION STATUS. On the most part of the distribution range the number of the species is stable.



GREEN LIZARD

LACERTA VIRIDIS LAURENTI, 1768



TERRA TYPICA. Vienna, Austria.

DISTRIBUTION. It is distributed in middle and southern Europe, in the north-western part of Asia Minor, on the most part of Moldova and south-west of the right-bank Ukraine. On the valley of the river Dnieper it nearly reaches Kiev. In its middle current it appears in the left-bank area, where on the valley of the river Vorskla reaches the Poltava city in the region with the same name. Of five described subspecies *L. v. viridis* Laurenti, 1768 occurs in the Ukraine and in Moldova.

CONSERVATION STATUS. On the most part of the distribution range the number of the species is stable.

The following two species of lacertid lizards probably belong to distinct genera. Until receiving of new data about their position into the family and phylogenetic relationships with other complexes of species they are retained in the genus *Lacerta*.

IRANIAN LIZARD

LACERTA BRANDTII (DE FILIPPI, 1865)



TERRA TYPICA. Basminsk, between Tebriz and Teheran, northern Iran.

DISTRIBUTION. The species is distributed in the north-western Iran, in the provinces Eastern Azerbaijan and Esfahan. On the territory of North Eurasia the only record is known in 1880 in the south-eastern Azerbaijan (Talysh).

CONSERVATION STATUS. Uncertain due to poor knowledge on the species.

LIZARD OF ASIA MINOR

LACERTA PARVA BOULENGER, 1887



TERRA TYPICA. Kaiseri, Asia Minor (Turkey).

DISTRIBUTION. It is widely distributed in Asia Minor, from where it also penetrates into central and northern Armenia. At present the species is preserved mainly in the Spitak region where it is observed only on areas of difficult access and on unplowed areas.

CONSERVATION STATUS. It is included into the Red Data Books of the USSR (1984) and Armenia (1987) as an endangered species. It is protected by the Bern Convention.



This species was referred to subgenus *Parvilacerta* Harris, Arnold et Thomas, 1998. This subgenus includes 2 species: *Parvilacerta fraasii* (Lehrs, 1910) and *Parvilacerta parva* (Boulenger, 1887).

SAND LIZARDS

GENUS *MESALINA* GRAY, 1838

Small lizards with typical arrangement of ventral scales which form 8–10 longitudinal rows parallel to the medial line of venter.

Nasal shields are somewhat swollen. There is a nuchal shield. Subnasal shield contacts only the first supralabial shield. The nostril does not contact supralabial shields. There are 1–2 transparent scales in the middle of the lower eyelid.

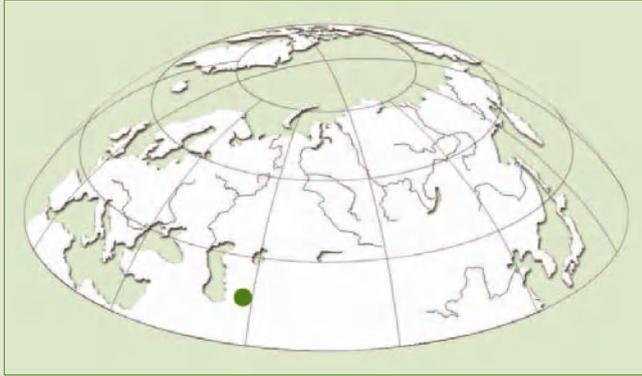
To the genus belong 13 species distributed in North Africa and Middle East to Pakistan in the east.

In North Eurasia one species occurs in Turkmenistan.

From genus *Eremias* (with whom they were earlier combined together), they are easily distinguished by the presence of longitudinal rows of ventral scales arranged parallel to the medial line of the venter.

PERSIAN LONG-TAILED SAND LIZARD

MESALINA WATSONANA (STOLICZKA, 1872)



TERRA TYPICA. Synd, between Karachi and Sukkur.

DISTRIBUTION. The species is widely distributed on the whole Iranian Plateau and in Afghanistan, comes into southern Turkmenistan. In North Eurasia it occurs only in the south of Turkmenistan up to the vicinity of the town Chärjew in the east. Previously this form was considered as a subspecies of *M. guttulata*.

CONSERVATION STATUS. In Turkmenistan the status of the populations is rather stable and does not require special conservation measures. It is protected on the territory of the Badkhyz Nature Reserve.

SNAKE-EYED LIZARDS

GENUS OPHISOPS MENETRIES, 1832

Small slender lizards; one of the characteristic features is the absence of separate eye-lids. The lower one is occupied with a large transparent fenestra covering the eyes like in snakes.

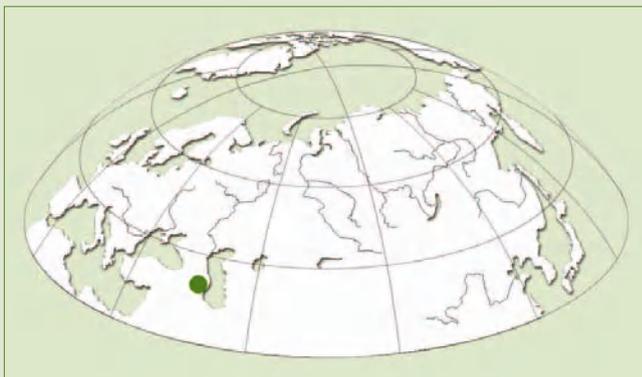
The top and the sides of the head are with distinct longitudinal grooves. Frontal shield is considerably narrowed in its middle part. The opening of the nostril is located between 2-4 shields, contacts supralabial shields and does not rise above the surface of the head.

Dorsal scales have clear longitudinal keels and imbricate. Ventral shields are large, smooth and arranged in regular longitudinal and transverse rows. Sub-digital lamellae are keeled, femoral pores are developed.

The genus unites five species widely distributed from North Africa and south-east Europe in the west to Pakistan and Central India in the east. One species is registered on the territory of North Eurasia in the countries of Transcaucasia.

SNAKE-EYED LIZARD

OPHISOPS ELEGANS MENETRIES, 1832



TERRA TYPICA. Vicinity of Baku city, Azerbaijan.

DISTRIBUTION. The species is widely distributed in the north-east of the Balkan Peninsula, some islands of the Aegean and Mediterranean Seas, Sinai Peninsula, Asia Minor, Middle East and the Caucasus to Pakistan and north-western India in the east. On the territory of North Eurasia it occurs in the Caucasus in Azerbaijan, Armenia and eastern Georgia, approximately to the city Tbilisi in the west. There are data which require confirmation about the occurrence of an isolated population in the North Caucasus in the submontane Chechnya. Of six known subspecies only *O. e. elegans* occurs in the Transcaucasia.

CONSERVATION STATUS. The status of the populations on the whole distribution range is stable and does not require special protection measures.



WALL LIZARDS

GENUS *PODARCIS* WAGLER, 1830

Podarcis are close related to the rock lizards of *Archaeolacerta* group with which they were combined for a long time. From the latter they differ, in particular, by a more high (not flattened) head and some characters of the pholidosis and the skeleton.

Wall lizards are distributed mainly in the Mediterranean countries in the south of Europe. Of 15 known species 1 is known on the territory of North Eurasia.

CRIMEAN LIZARD

PODARCIS TAURICA (PALLAS, [1814])



TERRA TYPICA. North of the Crimean Peninsula.

DISTRIBUTION. The distribution range of the species covers the countries of the Balkan Peninsula, western Turkey, as well as the south of the Ukraine and Moldova. It is widely distributed in the Crimea, in the Kherson, Nikolaev and Odessa regions in the south-west of the Ukraine and in the south of Moldova. Of several known subspecies *P. t. taurica* occurs in the Ukraine and in Moldova.

CONSERVATION STATUS. The species does not require special measures on its protection.

ORIENTAL GRASS LIZARDS

GENUS *TAKYDROMUS* DAUDIN, 1801

Small slender lizards. Many species are characterized by an extremely long tail, sometimes in 3 and more times exceeding the length of the body and head. Frontal shield is wide. There is a nuchal shield. Eyelids are separated and movable. Collar is poorly developed.

Dorsum is covered with clearly keeled large scales, sides of the body – with small granular scales. Ventral scales are large and arranged in regular longitudinal and transverse rows; all of them or only their outer rows have clear longitudinal keels. Rows of femo-

ral, or, more exactly, inguinal pores from one up to four in number are strongly reduced and far do not attain knee flexures.

They are widely distributed in south-east and East Asia from Myanmar (Burma) in the west and Japan and the Primorsky Territory (Russia) in the north and north-east. Of 12 known species two occur in North Eurasia.

AMUR GRASS LIZARD

TAKYDROMUS AMURENSIS PETERS, 1881



TERRA TYPICA. Amur region.

DISTRIBUTION. It occurs in north-eastern China, Korea and Japan (the island Zussima). In North Eurasia it lives in Russian Far East – in the southern regions of the Primorsky and Khabarovsk Territories.

CONSERVATION STATUS. The species does not require special measures on its protection.

MOUNTAIN GRASS LIZARD

TAKYDROMUS WOLTERI FISCHER, 1885



TERRA TYPICA. Chemul'po, Korea.

DISTRIBUTION. It occurs in Korea, south-east Manchuria and eastern China from where it penetrates into the south of the Primorsky Territory approximately to the valley of the river Iman in Russia.

CONSERVATION STATUS. Not determined.

FOREST LIZARDS

GENUS ZOOTOCA WAGLER, 1830

Small lizards with body sizes 37 – 70 mm, relatively short extremities.

Head is small, relatively high. Skull is thin. Tail is longer than the body. Pterygoid teeth are absent.

Collar is well defined, serrated. Scales of the body are large, rounded-convex on the neck. Femoral pores (from 5 up to 16) attain the knee flexure.

Monotypic genus.

VIVIPAROUS LIZARD

ZOOTOCA VIVIPARA JACQUIN, 1787



TERRA TYPICA. Mountain Schneiberg, to the south-west of Vienna, Austria.

DISTRIBUTION. One of the most widely distributed Eurasian species. A common species in the northern half of Eurasia from Ireland and the Pyrenean Peninsula in the west to the Shantarskie islands, the Sakhalin island and northern Japan in the east. It occurs in Mongolia, in the Mongolian Altai, in Bain-Ulug, Khubsugul and Central aimaks, China (Chinese Altai in the Xinjiang-Uyghur Autonomous Region). In Russia the northern border of the distribution range from the coast of the Kola Peninsula in the north-west continues behind the Polar Circle up to the lower current of Yenisei River. Further to the east it crossed the valleys of Lena River and its tributaries (Vilyui and Aldan). In Far East it comes out to the sea somewhat to the south of the valley of the river Uda. The southern border of the distribution range from the Trans-Carpathians continues to the east between forest-steppe and steppe. In

Ukraine the most southern, evidently isolated habitats are known in the Novomoskovsk district of the Dnepropetrovsk region. It occurs everywhere on the Sakhalin Island. On the whole extensive distribution area of the viviparous lizard four subspecies are distinguished: *Zootoca vivipara carniolica* Mayer, Böhme, Tiedemann & Bischoff, 2000, *Zootoca vivipara pannonica* (Lac & Kluch, 1968), *Zootoca vivipara sachalinensis* (Pereleshin & Terentjev, 1963) and *Zootoca vivipara vivipara* (Jacquin, 1787). In North Eurasia the subspecies *Z. v. vivipara* (Jacquin, 1787) and *Zootoca vivipara sachalinensis* (Pereleshin & Terentjev, 1963) are distributed.

CONSERVATION STATUS. The species does not require special measures on its protection.





MONITOR LIZARDS, OR MONITORS

FAMILY VARANIDAE GRAY, 1827

Lizards of mainly large or medium sizes (up to 3 m in Komodo Monitor Lizard) with well-developed five-toed extremities, slender and robust body, more or less elongated head and long neck. Tail is long, not fragile.

The body is covered with round or oval uniform scales. Ventral scales are relatively small, more or less quadrate and are arranged in regular transverse rows.

Pupil is round. Eyelids are well developed and movable. The tongue is long, deeply bifurcated, very movable.

Teeth are pleurodont, conical, slightly bent backwards and widened at the base. In some species they are serrated on the cutting posterior edge. Palatine and pterygoid bones do not have teeth.

Activity is diurnal. The family includes terrestrial, saxicolous, arboreal and semi-aquatic forms. Monitor-lizards are active pred-

ators inhabiting the very various habitats, from mangrove thickets and tropical forests to open arid areas.

The most part of the recent species are distributed in Australia and New Guinea. They are also widely represented in South and South-East Asia (mainland and insular), on the Philippines and Solomon Islands and in Africa. According to recent research, the family remains monotypic and includes 57 species. It includes 1 genus with several sub-genera: *Varanus*, *Empagusia*, *Euprepiosaurus*, *Odatria*, *Papusaurus*, *Philippinosaurus*, *Polydaedalus*, *Psammosaurus*, *Sotosaurus*.

On the territory of North Eurasia there is one species of monitor lizards belonging to the sub-genus *Psammosaurus*.

MONITOR LIZARDS

GENUS VARANUS MERREM, 1820

Monitor Lizards are the largest of the recent lizards. Among them there are such large animals as Komodo Monitor Lizard, *V. komodoensis* with the length of the body up to 3 m and mass up to 150 kg (the largest lizard of the world fauna). Common Water Monitor *V. salvator* can reach 2.8 m, the Giant Monitor *V. giganteus* has the length of the body up to 2.5 m. The length of the body with the tail of the smallest Monitor Lizards does not exceed 20 cm (*V. brevicauda*).

The head is covered with small polygonal scales. Eyelids are separated and movable. Pupil is round. The tongue is very long, deeply bifurcated at the tip, pulling into the vagina at the base. The head is more or less elongated. Neck is very long. The tail is not fragile.

Nasal bone is not paired. Teeth on the palatine and pterygoid teeth are absent. Teeth are pleurodont, conical, slightly bent backwards, widened at the base.

As a rule, varanids climb well on trees. When they have a case, they eagerly come into water. The majority of these lizards are active predators, but in the diet of some species there is vegetable food (various fruits and fruits of palms). The victim of the Komodo monitor lizard can be a very large prey up to buffaloes with the mass to 750 kg, deer and horses. Monitors also feed on carrion, but usually they prey on crabs, fish, lizards, snakes, turtles, mammals, eat eggs of birds.

Varanids are egg-laying lizards. The size of the clutch varies from seven up to 35 eggs. The eggs are covered with soft pergameneous shell.

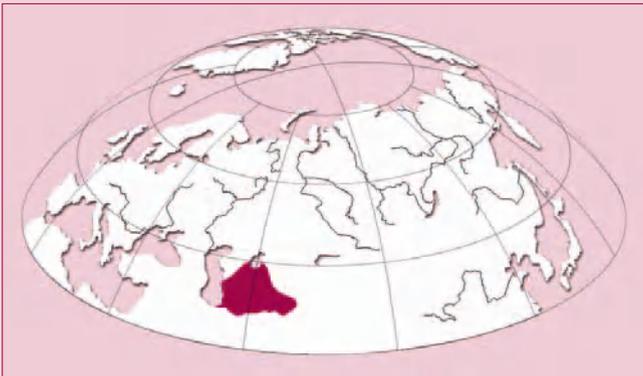
All species and subspecies of the genus are included into Appendix II of the CITES Convention, except for *V. bengalensis*, *V. flavescens*, *V. griseus*, *V. komodoensis*, *V. nebulosis* which are included into the list of Appendix I. Three species (*V. flavescens*, *V. komodoensis*, *V. olivaceus*) are included into the lists of the protected species of IUCN.





DESERT MONITOR

VARANUS GRISEUS (DAUDIN, 1803)



TERRA TYPICA. Egypt.

DISTRIBUTION. Desert Monitor is widely distributed in North Africa, in South-West Asia to Pakistan and throughout Middle Asia. In the north the distribution range attains the southern Ustyurt and the coast of the Aral Sea, in the east – Syr-Darya River and the mountain systems of Tien Shan and Pamir-Altai. In the west it is limited with the eastern coast of the Caspian Sea. In general the northern border of its distribution range coincides with the border of the zone of the southern deserts. The species is divided into three subspecies. The nominative subspecies is found from the southern Morocco and Mauritania in the west across Sahara

up to Egypt and Sudan, in the Arabian Peninsula and in the south-western Asia (south-eastern Turkey, Syria, Lebanon, Israel, Jordan, Iraq). The subspecies *V. g. caspius* (Eichwald, 1831) is distributed to the east of the Caspian Sea in Middle Asia, Iran and Afghanistan. The third subspecies, *V. g. koniecznyi* Mertens, 1954, occurs in the southern Pakistan and north-western India. Thus, the subspecies *V. g. caspius* (Eichwald, 1831) is found on the territory of North Eurasia.

CONSERVATION STATUS. The number of the monitors has strongly declined in the parts of the distribution range (Fergan valley, Golodnaya steppe) which were exposed to a strong economic exploitation. Only in Uzbekistan the area of the land suitable for occurrence of *V. griseus* has reduced for more than 40% during the last 20 years. It is not numerous everywhere. During a day excursion it is possible to observe not more than 2-5 adult specimens. In the 30 – 40-s of the 20th century skin of these large lizards was used in tanning industry. It was led to a strong reduction of their number, and in some places – nearly to a total extinction. This species was included into the Red Data Book of the USSR (1984), Kazakhstan (1996): category 2 – reducing in its number species, Kyrgyzstan (1985) – status VU and Uzbekistan (2003) – status 2, VU:D, as well as of Turkmenistan (1999): category 2 –species, reducing in its number.

The body is elongated, often cylindrical. It can be flattened in lateral or dorso-lateral plane. The tail is always shorter than the body with the head. The limbs are absent. In species of the superfamilies Typhlopoidea Merrem, 1820 and Booidea Gray, 1825 the rudiments of the pelvis and claw-like rudiments of the hind limbs are remaining.

The body is covered with uniform corneous scales. Eyelids are absent. The eyes on the outside are covered with a transparent membrane which comes off together with the upper layers of epidermis at shedding. In snakes of the superfamily Typhlopoidea the eyes are hidden under the skin. The external ear opening and the tympanic membrane are absent.

In most recent snakes occur a reduction of the left lung and a strong development of the right lung. In the primitive groups of the infraorder Henophidia the both lungs are developed (the right lung is of larger sizes).

The vertebrae are procoelous. The anterior edge of the arch of each vertebra has well developed projection (zygosphene). At the articulation of the vertebrae with each other it comes into the corresponding cavity (zygantrum) of the posterior surface of the arch of the previous vertebra.

The skull is ossified anteriorly. Temporal arches and cranial columns are absent. Quadrate, supratemporal, pterygoid, palatine and maxillary bones are connected with the skull by elastic ligaments and preserve high mobility. Tympanic cavity and Eustachian tubes are absent. Lower jaws are also connected by a stretchable elastic ligament what provides, besides with a general high kinetics of the skull, swallowing of a large whole prey.

Well-developed teeth are located on the maxillary, palatine, pterygoid and dentary bones. In some primitive groups of snakes teeth are located also on the premaxilla. The teeth are very sharp, bent backwards, well adapted to holding and swallowing of the whole prey.



Venom apparatus is also associated with swallowing of a large prey (relatively to their own body mass). It consists of temporal salivary glands producing venom, venom conducting canals and special venomous fangs located on the maxillary bones. In some groups of colubrid snakes they look as grooved enlarged fangs located in the posterior part of the maxilla behind the teeth. They are named rear-fanged (i.e with an opisthognathous dentition). These fangs do not have an internal canal and venom flows down into the prey's body on the external groove. In elapid snakes fangs are immovably attached on the maxilla. They have anteriorly a visible groove formed by the edges of as though rolled into a tube tooth under developing of the canal conducting venom. In vipers tubular fangs of enormous sizes are located on the maxilla, which has a high mobility. The principle of action of such fangs resembles the needle of a medical syringe. Both elapid and viperid snakes do not have any other teeth except for fangs on the maxillary bones.

It was generally accepted that different types of the fangs were evolving gradually becoming more complicated from rear-fanged to tubular. The data of paleontology and the recent phyloge-

netic research demonstrate that the development of the venom apparatus in different groups of snakes (families of colubrids, elapids and viperids) was taking place independently about at the same time. All of them belong to one infraorder Caenophidia Hoffstetter, 1946.

Among snakes there are both oviparous and ovoviviparous forms, often with the development of a false placenta.

Snakes inhabit all the continents, except for the Antarctic Region, and most part of the islands of a continental origin. The most part inhabits tropical and subtropical regions. Some species are distributed in the high latitudes penetrating even behind the Polar circle.

The order unites two suborders – fossorial (Scolecophidia Cope, 1864) and typical (Alethinophidia, Hoffstetter, 1955) snakes, represented by 18 families, 450 genera and more than 3000 species. Five families of snakes uniting 30 genera and 74 species are considered in the fauna of North Eurasia.



Saur mountain range, eastern Kazakhstan

WORM, OR BLIND SNAKES

FAMILY TYPHLOPIDAE MERREM, 1820

Small wormlike snakes with a very short thick tail terminating in a sharp small spine. The structure of the body corresponds with the fossorial, underground mode of life. Strongly reduced eyes looking as dark spots are seen from behind through thick corneous scales. In some species the eye is not developed at all. The mouth is located on the lower surface of the head. The snout is clearly projected forward. The body is covered with smooth rounded scales. Ventral and dorsal scales have equal sizes.

The skull is tight, compact, with a less developed kinetics than in evolutionary more advanced groups of snakes. Premaxillary and maxillary bones do not contact. Premaxillary, palatine, pterygoid and inframaxillary bones do not have teeth. Pterygoids are not connected with the quadrate bone and lower jaw. Maxillary bones have several small teeth on their posterior-lower end. Nasal bones are widely connected with frontal and prefrontal bones. Supratemporal bones are absent. Rudiments of the pelvis are

present in the species of all genera. In some blind snakes the rudiments of the hind limbs are presented.

The family unites about 200 species inhabiting tropical and subtropical regions of America, southern Europe, Africa, southern Asia, Indo-Australian Archipelago, Australia, as well as many islands of tropical and subtropical regions of the World Ocean.

Blind Snakes lead a fossorial mode of life. They are nocturnal. These snakes often inhabit termite-mounts. Usually they feed on various invertebrates. Blind Snakes inhabiting termite-mounts feed on termites, their larvae and eggs. They also lay eggs in termite-mounts. All species are oviparous. Cases of parthenogenetic reproduction are known. It leads, for example, to a very wide distribution of *Rhamphotyphlops braminus* (Waite, 1894).

In the fauna of North Eurasia there is one monotypic genus.

WORM, OR BLIND SNAKES

GENUS *TYPHLOPS* SCHNEIDER *in* OPPEL, 1811

Small wormlike snakes with body size from 14 up to 76 cm. The top of the head is covered with large shields; intermaxillary and nasal scales are very large. Eyes are strongly reduced. The diameter of the body fits in its length from 20 up to 90 times. There are from 18 up to 40 scales around the middle of the body. Ventral scales do not differ from dorsal. The tail is very short, with a spinous sharpening at the tip. The coloration can vary from light-brown or flesh-coloured up to dark-gray or brown. The venter is normally light. Often there is a pattern of black speckles.

Blind Snakes live in the ground, under stones, in the burrows of mammals, often they inhabit termite-mounts. They emerge on

the ground only after heavy rainfalls. In the dry period of the year they go deeply up to the moist levels of the ground. They feed on small invertebrates, including termites, their eggs and larvae. They are oviparous. Females lay from 2 up to 10 strongly elongated eggs.

The members of the genus *Typhlops* (about 130 species) are distributed in the tropical and subtropical regions of all continents, except for Australia, where they are replaced by a closely-related genus *Ramphotyphlops* Fitzinger, 1843. They inhabit many islands of tropical and subtropical regions.

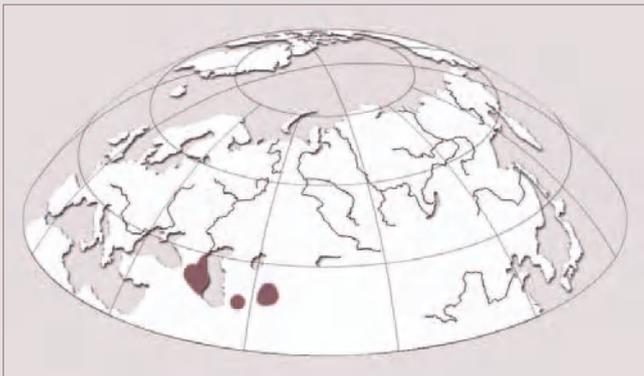
In the fauna of North Eurasia there is one species.





VERMIFORM BLIND SNAKE

TYPHLOPS VERMICULARIS MERREM, 1820



TERRA TYPICA. Greek Islands.

DISTRIBUTION. The distribution range of the species covers the Balkan Peninsula, Asia Minor, Syria, Armenia, Azerbaijan, eastern Georgia, southern Dagestan, as well as Middle Asia in the south

of Turkmenistan, Uzbekistan and Tajikistan. They are also known in Iran and Afghanistan. *Typhlops vermicularis* inhabits arid and semi-arid foothills and mountains with xerophytic vegetation. It prefers open, more or less flattened areas. In north Tajikistan it is registered on moist areas of stony-loessic slopes of the mountains overgrown with rare grassy vegetation. In some places it is found in the juniper open woodlands and foothills brush thickets. In Kopet Dagh Blind Snake is most common in the wide intermountain depressions and on the rocky slopes of the mountains with a sparse grassy vegetation. It goes to the mountains up to 2000 m above sea level. Findings in the mud stream channels and upland steppe are known. Blind Snakes often inhabit termite-mounds and anthills.

CONSERVATION STATUS. A common, numerous species in the Middle Asia and in the east of the Caucasus.





Snakes of medium to large size, the body length is from 350 mm up to 10 m. The largest snakes of the world fauna belong to this family.

The underside of the body is covered with one row of longitudinal scales which are transversely widened. Boids have a strong musculature of the body; rudiments of all three pelvic bones and hind limbs are retained. On each side of the anus there are claw-like rudiments of the hind limbs. They are usually better developed in males. The both lungs are present. The left lung is shorter than the right one and makes up only from 30 up to 80% of its volume.

Eyes are usually well developed. Pupil vertical.

Among the skull bones maxillars, palatins and pterygoids have an active mobility. Premaxillary and maxillary bones do not contact and have no ligament. Teeth are located on the maxillary, dentary, palatine and pterygoid bones. No teeth on the premaxillary bone.

Boids are represented by a wide range of ecological forms, in particular by fossorial, arboreal, terrestrial and semi-aquatic species in the tropics and subtropics of all the continents, except for

Australia and many continental islands. Outside of the subtropics the distribution range of the family comes out in the Palearctics and western Neoarctics.

They feed on various mammals, mainly homoeotherms. A number of the forms are specialized in feeding on amphibians, reptiles and even fish. They breed both by ovoviviparity and oviparity.

The family with 9 genera and more than 30 recent species consists of two subfamilies (Boinae Gray, 1825 and Erycinae Bonaparte, 1831).

The most part of species and subspecies of the family are included into the lists of Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, except for *Acranthophis* spp., *Boa constrictor occidentalis*, *Epicrates inornatus*, *E. monensis*, *E. subflavus*, *Sanzinia madagascariensis* which are included into Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora.

The fauna of North Eurasia contains one genus belonging to the subfamily Erycinae Bonaparte, 1831.



Javelin sand boa, *Eryx jaculus*

SAND BOAS

GENUS *ERYX* DAUDIN, 1803

Snakes of medium sizes with the body length from 60 up to 110 cm. The head is not clearly distinct from the body. The head is covered above with numerous, relatively small scales of an irregular shape; its ventral surface covered with small uniform scales.

Intermaxillary scale is large, strongly turns up on the upper surface of the snout. The subcaudal scales (all or the majority) are arranged in one longitudinal row.

The anterior teeth on both the upper and lower jaws are longer than the posterior teeth.

All species of the genus are ovoviviparous.

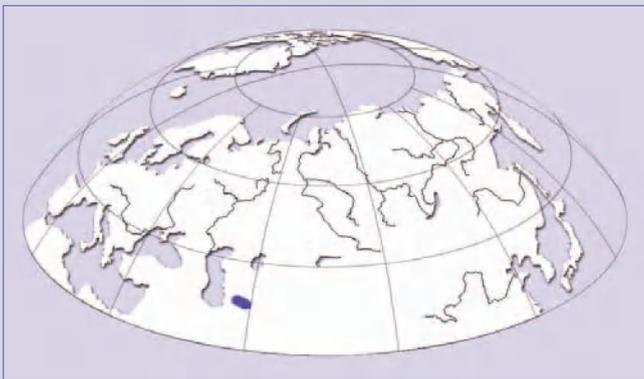
Eryx genus contains 10 species inhabiting the south-eastern Europe, western and southern Asia from the Arabian Peninsula up to India and Pakistan, northern Africa from Morocco up to Egypt.

Two subgenera are distinguished: *Eryx* and *Pseudogonylophis* Tokar, 1989. All species of *Eryx* are included into the Appendix II of the Convention on International Trade in Endangered Species of Wild Flora and Fauna.

The fauna of North Eurasia contains 6 species of the nominative subgenus.

SLENDER SAND BOA

ERYX ELEGANS (GRAY, 1849)

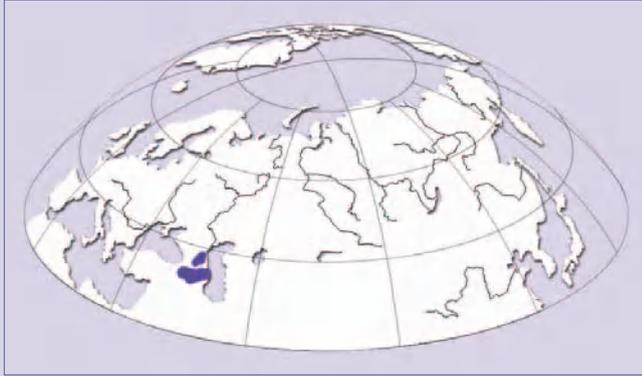


TERRA TYPICA. Afghanistan.

DISTRIBUTION. It inhabits mountainous regions of the southern Turkmenistan, north-eastern Iran and adjacent regions of Afghanistan. In the southern Turkmenistan it is known from western and central Kopet Dagh at the altitudes from 1500 up to 2000 m above sea level. In the juniper zone it inhabits relatively flattened areas of the mountains. It lives on high-mountain plateaus and slanting slopes of the mountains with a xerophytic vegetation, clayish foothills and beds of the ravines. In the ravines Pardere and Aidere (western Kopet Dagh) it prefers relatively moist slopes. Slender sand boa is found in the upland steppe among xerophile ephemeral vegetation near the rodent holes.

CONSERVATION STATUS. As a rare narrow-ranged species it is included into the Red Data Book of the USSR (1984) – category 3 and the Red Data Book of Turkmenistan (1999) – category 3.





TERRA TYPICA. Egypt.

DISTRIBUTION. The species is distributed in northern Africa, in the north of the Arabian Peninsula, in Asia Minor, Syria, Iran, Iraq, Palestine. In southern Europe it is known from the Balkan Peninsula. In the Caucasus it is registered in southern Armenia, eastern Georgia and Azerbaijan. It is found on the island Nargin in the Caspian Sea near the city Baku. Single records in the south of the Stavropol Territory are known; in Chechnya, in the vicinity of the city Grozny, staniitsa Starogladkovskaya; in Karanogai and Malaya Areshvka settlements in Dagestan; in the southern regions of the upland Yergeni in northern Kalmykia, in southern Kalmykia (Mandzhekiny and Dzhedzhekiny). It inhabits open dry steppes and semi-deserts. It prefers clayish and stone soils, more rarely it is encountered on stabilized hillock sands, in vineyards and gardens. In the Caucasus it reaches the altitude from 1500 up to



1700 m above sea level along the river valleys. On the northern border of the distribution range (in southern Russia) it is registered in the sheep's fescue–sagebrush steppe. Habitats everywhere are associated with arid landscapes. There are three subspecies: the nominative, *E. j. jaculus*, *E. j. turcicus* (Olivier, 1801) and *E. j. familiaris* Eichwald, 1831; the latter inhabits North Eurasia.

CONSERVATION STATUS. The number of the species is declining due to strong reduction of its habitats. As a rare species on the periphery of distribution range it is included into the Red Data Book of the Russian Federation (2001) – category 3 and into the Red Data Book of Georgia (1982) – category 2.





TERRA TYPICA. The region of the Caspian Sea.

DISTRIBUTION. It is widely distributed in sandy deserts, in migrating sand dunes and semi-stabilized hillock sands. More often it prefers relatively loose soils of different types in deserts and semi-deserts (sagebrush (*Artemisia*)–glasswort (*Salsola*) desert and glasswort desert). Sometimes it is encountered in the clayish

Eryx miliaris nogaiorum



Eryx miliaris miliaris

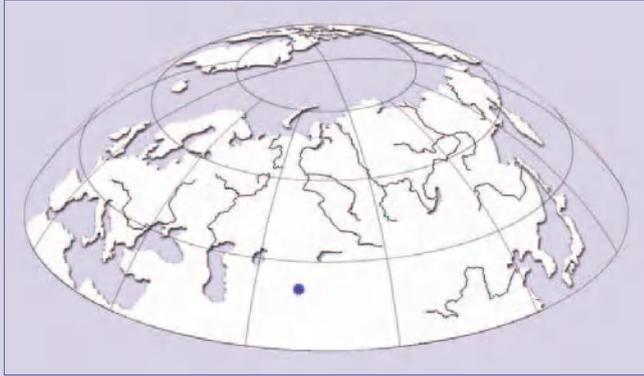
and loessial deserts, on the takyr with patches of vegetation near the sands with saxaul and candym, on the slopes of the ravines and on the margins of irrigated lands, as well as in the dry foothills on the valleys with sandy-clayish soil. It goes into the mountains up to 1000 m above sea level. The distribution range of the species passes in northern Iran, Afghanistan, Middle Asia, Kazakhstan and eastern Ciscaucasia. Descriptions of a large number of forms were suggested. We consider two valid subspecies: the nominative, *E. m. miliaris* on the most part of the distribution range to the east of the Volga River, and *E. m. nogaiorum* Nikolsky, 1910, in the western part of the distribution range – in the Nagaiskaya steppe in Chechnya and Kalmykia. The Nogai Sand boa is distinguished by black or very dark contrasting coloration.

CONSERVATION STATUS. Nogai sand boa is included into the “Annotated list of taxa and populations required a special attention to the status in the wildlife” (Appendix to the Red Data Book of the Russian Federation, 2001) due to reduction of the area of isolated sand deserts in Kalmykia and Ciscaucasia.



WHITE-BELLIED SAND BOA

ERYX SPECIOSUS CAREVSKY, 1916



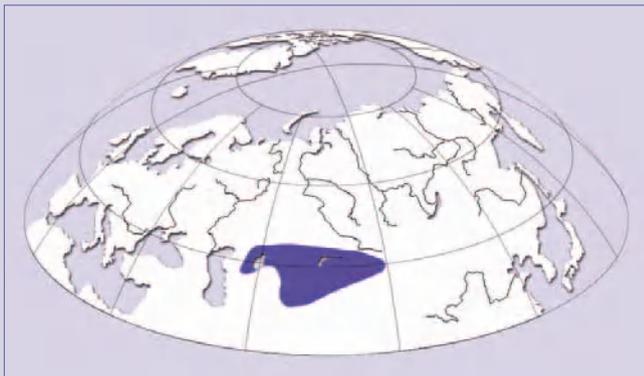
TERRA TYPICA. "Eastern Bukhara" (the valley of the Vakhsh River, Tajikistan).

DISTRIBUTION. Known only in the Vakhsh River valley in Tajikistan. Snakes were recorded in crevices under the steep riverside precipices distanced only in 1–2 meters from the water.

CONSERVATION STATUS. Undetermined. The ecology is not studied.

TATAR SAND BOA

ERYX TATARICUS (LICHTENSTEIN, 1823)



TERRA TYPICA. "Tataria" (vicinity of the Aral Sea).

DISTRIBUTION. It inhabits clayish and loessial deserts, semi-deserts and foothills, not avoiding sand dunes and depressions between them. *E. tataricus* is found in oases, on the slopes of the hills with ephemeral vegetation, in the stony and gravel foothills with bushes, in the open sagebrush-glasswort steppe. It goes into the mountains up to 1500 – 1600 m above sea level. There it is found on the edges of pistachio woods. *E. tataricus* is widely distributed in central and eastern Kazakhstan, in Naryn valley, at the confluence of the rivers Alabuna and Naryn, Narynskaya region, Kyrgyzstan, Tajikistan, Uzbekistan, eastern Turkmenistan



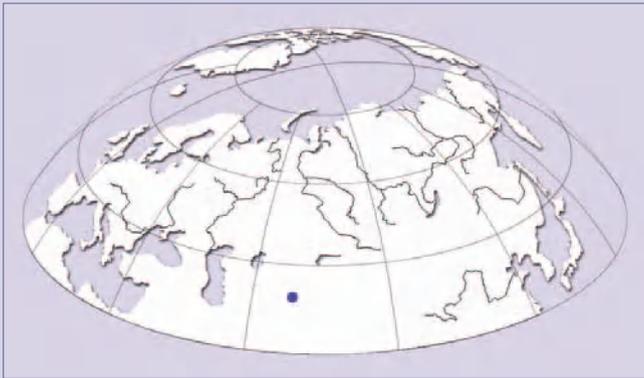
(Kugitangtau and middle current of Amu-Darya River), Iran, Afghanistan, Pakistan, north-western India, western China and in southern Mongolia. The nominative subspecies *E. t. tataricus* inhabits the most part of the distribution range. Taxonomy is very contradictory. Thus, some authors refer the forms from Inner Mongolia (China) and southern Gobi (Mongolia) [*E. miliaris* var. *koslowi* Bedriaga, 1907 and *E. miliaris* var. *roborowskii* Bedriaga, 1907] to *E. miliaris*. We think that the both forms must be attributed to *E. tataricus*, possibly, as distinct subspecies. Two more forms

sometimes are noted as subspecies of *E. tataricus* [*E. speciosus* Carevsky, 1916 and *E. t. vittatus* Chernov, 1959] are considered by us as distinct species. The forms from the south-eastern part of the distribution range remain the least studied.

CONSERVATION STATUS. The species was included to the Red Data Book of Turkmenistan (1985, 1999): category 3 – a rare on the periphery of the distribution range species due to conception about the subspecific status of *E. t. vittatus*.

STRIPED SAND BOA

ERYX VITTATUS CHERNOV, 1959



TERRA TYPICA. Gissarskaya valley, 20 km to the south-west from the town Stalinabad (Dushanbe), Tadjikistan.

DISTRIBUTION. Loessial adyrs limited the Gissar valley from the north and the south, not lower than 700 m above sea level. It is known in the vicinity of the city Dushanbe. It is recorded in the Gissar mountain range up to 1800 m above sea level. There are findings in several localities in the upper part of the Yavan valley and indications to the records in Kugitang (Turkmenistan).

CONSERVATION STATUS. Undetermined. The ecology is not studied.



Lake Markakol, Eastern Kazakhstan

Snakes of small to medium and large size. The ventral side of the body is completely covered with one longitudinal row of scales, strongly widened transversely. The eyes are well developed. Limb's rudiments are absent. Only the right lung is developed. The left lung is absent, or presented in the form of a rudiment.

The majority of the colubrids are non-venomous, but some of them have grooved fangs located in the posterior part of the maxilla.

Dentary, maxillary, pterygoid and palatine bones bear teeth (heterodonty). Maxillary bones are not articulated with the premaxilla.

It is the family of snakes with most high species diversity. There are more than 2000 recent species and about 300 genera of colubrids. This family is divided into 10-12 subfamilies. Some of them are considered as distinct families.

Colubrid snakes are represented by a wide variety of ecological forms, in particular by fossorial, arboreal, terrestrial and semi-aquatic species. They are distributed all over the world. Colubrids inhabit all the continents (except for the Antarctic) and many oceanic islands. In Eurasia they reach the Polar circle; to the south the distribution range reaches the Cape of Good Hope in Africa. In the fauna of North Eurasia there are 21 genera and 45 species.



Red-bellied racer, *Hierophis schmidti*

Snakes of medium size with body length 50-100 cm. The body is slightly flattened; scales are keeled, form 17-21 rows. The head is distinctly separated from the body by a neck. Pupil is round.

There are 20-30 maxillary teeth. Posterior teeth are longer than anterior. Mandibular teeth are of an equal length. Subcaudal scales form two rows. The coloration is very diverse, from red-brown up to black or greenish.

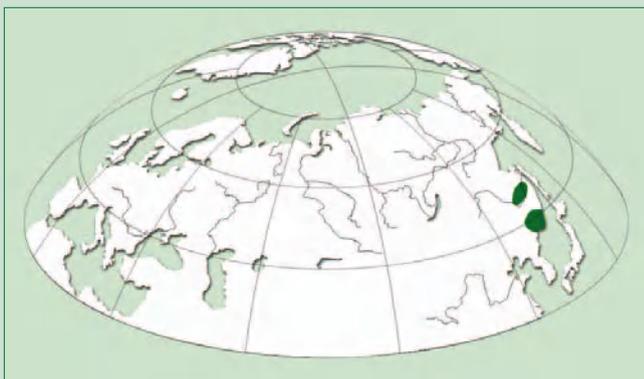
Keeled water snakes live in moist forest biotopes, on the shores of rivers, lakes, swamps and even on the seacoasts. Tropical montane forests are characterized by the greatest diversity of the

forms. They feed mainly on amphibians and their larvae, sometimes on fish. Oviporous, the clutch contains 2-15 eggs.

More than 30 species are widely distributed in the continental and insular eastern, south-eastern and southern Asia, penetrating into the middle mountainous part of the Himalayas, south-eastern Tibet, western Ghats (Sah'yadry), the Malay Archipelago, islands of Japan except for the Ryukyu (Nansei) Archipelago, Indochina, southern and eastern China. A group of closely-related species from New Guinea is separated into a distinct genus *Tropidonophis* Jan, 1863. On the territory of North Eurasia there is one species.

VIBAKARI SNAKE

AMPHIESMA VIBAKARI (BOIE, 1826)



TERRA TYPICA. Japan.

DISTRIBUTION. In eastern Asia Vibakari snake inhabits an extensive territory. The subspecies *A. v. vibakari* lives on the islands of Japan. Another subspecies, *V. v. ruthveni* (Van Denburg, 1923)

[terra typica: Pusan, Korea] has a discontinuous pattern of distribution in Russian Far East, eastern China and Korea. The main part of the distribution range in Russia is located in the south of the Primorski Krai. Records are known in the Khabarovsk Territory in the lower current of Amur River and in the Amur region in the middle current of Amur River. The latter finding belongs to the Khingansky reservation in the vicinity of the settlement Kundur. It is separated in about 500 km from the population of the south of the Primorski Krai and from the northern isolated population in the Khabarovsk Territory. There is a hypothesis that isolated spots on the periphery of the distribution range have a relict character in association with the distribution of cedar-broad-leaved, broad-leaved and secondary small-leaved forests. Sometimes these snakes are observed on the meadows in the forest zone.

CONSERVATION STATUS. Undetermined due to poor knowledge of ecology. There are no data about its number.

Drawing from "A monograph of the snakes of Japan", M.Maki, 1931-1933.



TREE SNAKES, BOIGAS

GENUS *BOIGA* FITZINGER, 1826

Snakes of medium to large size with maximal reported body length of 280 cm. The head is distinctly separated from the strongly compressed body. The snout is shortened. Eyes are large, with a vertical pupil. The nostril is located between two shields.

Scales are smooth, at the top of each scale there are apical pores. There are 17-31 rows of scales around the mid-body, 202-272 ventral scales, 75-156 pairs of subcaudals, and 1 row of strongly widened scales along the spine. Ventral scales form a keel on the sides of the body. Subcaudal scales are arranged in two rows. The tail is long and prehensile.

The maxillary bone has 10-14 teeth of an equal size. On its posterior part there are 2-3 large grooved fangs separated by a toothless interval. All boigas belong to the rear-fanged snakes. They are dangerous for small animals easily reachable with deeply placed venomous fangs. The venom has a neurotoxic effect.

The genus contains more than 30 species distributed in the tropics of the Old World. Two species very closely-related to

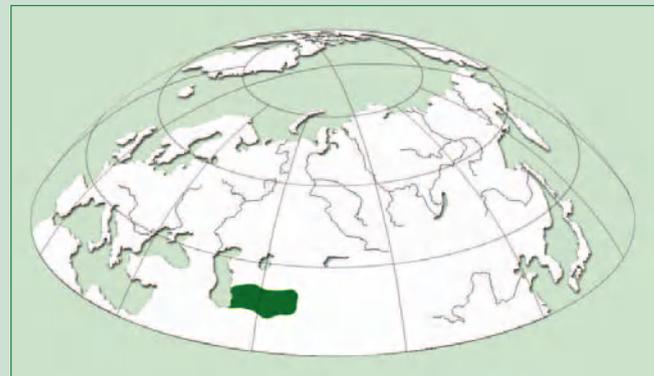
tree snakes occur in Africa (recently they belong to the genus *Toxicodryas* Hallowell, 1857). One species of *Boiga irregularis*-complex is introduced into northern Australia and Oceania. The majority of species are found in South and Southeast continental and insular Asia, including the Indian subcontinent with Andaman and Nicobar Islands and Sri Lanka, Indochina, southern China with the islands Taiwan and Hainan, the Philippines and Indo-Australian Archipelago; in the north-west this group of snakes reaches Iran and Middle Asia.

They inhabit tropical rain forests, mangrove thickets and even sandy deserts and dry foothills. In the tropical mountainous forest they go at the altitude up to 3000 m above sea level. They are nocturnal arboreal snakes. Oviparous, the clutch contains from 5 up to 25 eggs.

In the fauna of North Eurasia there is the only 1 species of the genus adapted to the arid conditions of Middle Asia.

INDIAN TREE SNAKE

BOIGA TRIGONATA (SCHNEIDER, 1802)



TERRA TYPICA. Vizagapatam, India.

DISTRIBUTION. It is distributed from eastern India, Sri Lanka and Nepal to Pakistan, Afghanistan, eastern Iran and south of Middle Asia. In Middle Asia (in southern Turkmenistan, southern Uzbekistan and south-eastern Tajikistan) lives the subspecies *B. t. melanocephala* (Annandale, 1904) [terra typica: "Persian-Belochistan border"]. The most northern record of this subspecies is known from Kyzilkum desert in Uzbekistan. Its distribution range occupies the regions of Iran, Afghanistan and western Pakistan. It prefers sand dunes with bushes of *Calogonum* and sparse grassy vegetation, clayish and sandy deserts. It is registered on the takyrl-like soils overgrown with sagebrush (*Artemisia*) and glasswort (*Salsola*). *B. trigonata* uses burrows in the colonies of rodents as its shelters.

CONSERVATION STATUS. A rare species. There are no reliable data about its number. It was included into the Red Data Books of the USSR (1984) and Turkmenistan (1985) as a species with a poorly studied ecology (category 4). It is included into the Red data book of Uzbekistan (2003) as a vulnerable subspecies rare in the nature, with local distribution (the category and status 2, VU:R).

Slender snakes of medium size (up to 165 cm) with a long tail (up to a half of body length). A head is distinct from the body.

The nostril is cut between two nasal shields. The lateral lines of the frontal shield are usually concave. Scales have relatively slightly developed longitudinal keels. Pupil is round. Subcaudal scales are arranged in two rows.

Maxillary teeth gradually become larger in the direction deeper into the mouth. The posterior maxillary teeth are separated from others by a small toothless interval.

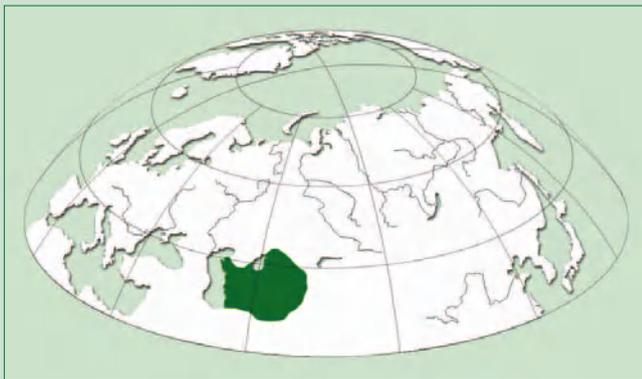
More than 10 species are distributed from northern and north-eastern Africa to western India and Pakistan covering the

countries of Mediterranean region, Arabian Peninsula, Iraq, Iran, Afghanistan; they penetrate into north-western China (Xinjiang-Uyghur Autonomous Region). In North Eurasia there are 5 species.

Some authors recently consider these snakes as the members of five genera and retain the generic name *Coluber* only for North American species. In this book we consider the name *Coluber* in conservative way and refer to this genus the species of recently revalidized genera *Hemorrhois* Boie, 1826 (*H. ravergieri*, *H. nummifer*) and *Platiceps* Blyth, 1860 (*P. najadum*, *P. karelini*, *P. rhodorachis*).

SPOTTED DESERT RACER

COLUBER KARELINII BRANDT, 1838



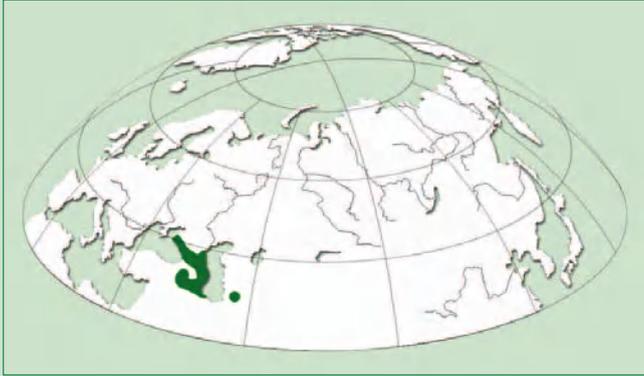
TERRA TYPICA. Lower reaches of the old bed of Uzboi River in western Turkmenistan.

DISTRIBUTION. It is widely distributed in Middle Asia and the extreme southern part of Kazakhstan to the north up to the Aral Sea, from where the border of the distribution range runs on the valley of Syr-Darya River, and on the mountain range Karatau to the south. It is known from the eastern half of Iran, Afghanistan, Pakistan and north-western regions of India. Biotopically it is mainly associated with the plain where it is found in all the types of deserts. In Turkmenistan in the foothills of Kopet Dag, Lesser and Greater Balkhans it occurs on the takyr-like and solid soil with treelike glasswort (*Salsola*), sagebrush (*Artemisia*), locoweed (*Astragalus*) and camel's thorn (*Alhagi camelorum*). In rare cases it comes into low submontane hills. In the Karakums it is noted on different types of sands with a desert vegetation. In the valley of Murgab River snake was found on the dry riverside precipices, as well as on the earthen walls of irrigation canals, among irrigation lands and in the ruins of buildings. In Tajikistan it prefers areas with a semi-desert vegetation in wide valleys in the lower reaches of Kafirnigan and Vakhsh Rivers. In northern Tajikistan and Gissar valley it occurs in clayish and clayish-sandy desert, on the banks of irrigation canals and channels. It lives there and in Uzbekistan on stabilized and semi-stabilized sand dunes and hillocks sands with sparse bushes of camel's thorn, tamarisk, white saxaul, Asiatic poplar and oleaster. It is sporadically recorded in Kyrgyzstan. Findings at the altitude up to 1600-1800 m above sea level are known. The nominative subspecies *C. k. karelinii* Brandt, 1838 is distributed in Middle and Central Asia. There are two color variations: a common banded and red-striped. The lat-



ter was sometimes described as hybrids between *C. karelinii* and *C. rhodorachis*, because the both species occur in this region, and each of them has its own red-striped colour variation. The subspecies *C. k. mintonorum* Mertens, 1969 is found in northern Pakistan, eastern Afghanistan and north-western India.

CONSERVATION STATUS. As a rare species with a limited distribution range it is included into the Red Data Book of Kyrgyzstan (1985) – category 1.



TERRA TYPICA. Baku city, Azerbaijan.

DISTRIBUTION. Eurytopic species which prefers xerophytic landscapes. It is found on the open parts of stony semi-desert and wermuth steppe, among rocky outcrops and stones. Its habitats are the slopes of foothills and mountains covered with bush vegetation and woods, the thickets of xerophilous bushes, the juniper open woodlands, oak groves, the edges of forests in gardens, vineyards, ruins of old buildings. It goes into the mountains up to 2200 m above sea level. On the coast of the Black Sea of the Caucasus it occurs in the moist subtropical forest among ferns and in the tickets of boxtree.

The distribution range covers the Balkan Peninsula in western and south-western regions of the former Yugoslavia, western Albania, Greece and southern Bulgaria, Asia Minor, Syria, Israel, northern Jordan, Iraq, northern Iran, south-western Turkmenistan, the Caucasus and the Transcaucasia (Azerbaijan, Armenia and Georgia including Abkhazia). In the European part of the Caucasus it is found in the mountains of Dagestan, Chechnya, Ingooshetia and the adjacent regions of the Stavropol Territory in the east, as well as along the coast of the Black Sea of the Krasnodar Territory. The latter together with the populations in Abkhazia forms an isolated western part of the distribution range.

Five subspecies have differences in the character of the pholidosis, coloration and color pattern. *C. n. dahlia* Schinz,

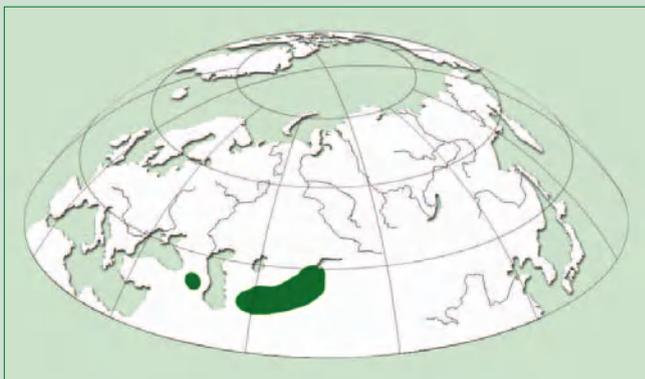


Coluber najadum atayevi

1833 inhabits the Balkans, Cyprus, western Turkey, Syria and Iraq. *C. n. kalyrnensis* Schneider, 1979 – the island Kalimnos in the Aegean Sea. Three subspecies are found on the territory of North Eurasia. The nominative subspecies, *C. n. najadum* is found in the Caucasus and in Asia Minor; the form from south-eastern Azerbaijan belongs to the subspecies *C. n. albitemporalis* Darevsky et Orlov, 1994. Racers from southern Turkmenistan (western and central Kopet Dagh from the vicinity of Karakala in the west up to the spring Sulukli in the east) and northern Iran are attributed to *C. n. atayevi* Tuniyev et Shammakov, 1993. On the coast of the Black Sea of the Caucasus (the towns Pitsunda, Gudauta, Novyi Afon) are known populations with both normal and completely black melanistic specimens.

CONSERVATION STATUS. As a species with a limited distribution range and reducing number it is included into the "Annotated list of taxa and populations required a special attention to their status in the wildlife" (Appendix to the Red Data Book of the Russian Federation 2001).





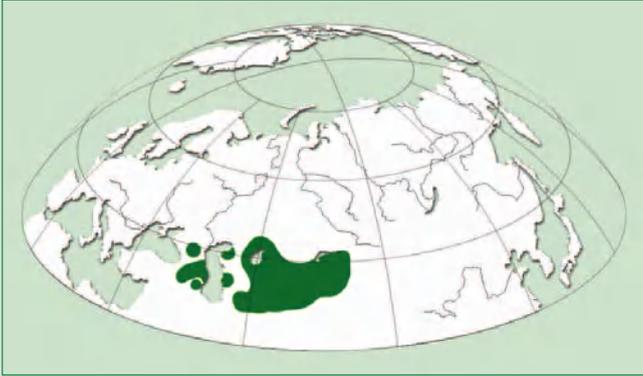
TERRA TYPICA. Egypt.

DISTRIBUTION. It is distributed on the islands Cyprus in the Mediterranean Sea, Rodos and Ksantos in the Aegean Sea, in Anatolia, in the Near East, including the Sinai Peninsula, in north-eastern Egypt, northern Iraq, north-eastern Iran, in Armenia (Ararat valley), in Middle Asia (Turkmenistan, Uzbekistan, Tajikistan) to Kyrgyzstan and eastern Kazakhstan. In the Transcaucasia and in the Middle Asia there are extensive zones of sympatry with *Coluber ravergieri*. As a rule, it is found on the stony slopes and on rocks overgrown with bush vegetation, in thickets along banks of rivers, as well as in the xerophytic habitats in the ravines. It is found in the ruins and gardens in the vicinity of settlements, in human settlements. It is relatively more lowland species in comparison with *Coluber ravergieri*. The elevation of record in the Ararat valley is about 1300 m above sea level.

This racer demonstrates aposematic behavior (flattening of the head) typical for vipers. Such imitation behavior can be especially effective in the combination with mimicry of the coloration of the *C. nummifer* to sympatric venomous snakes-vipers (*Montivipera xanthina*, *M. palaestinae*, *Macrovipera lebetina*).

CONSERVATION STATUS. The ecology, including the status of the number, is poorly studied. A rare species in Turkmenistan.





TERRA TYPICA. Baku city, Azerbaijan.

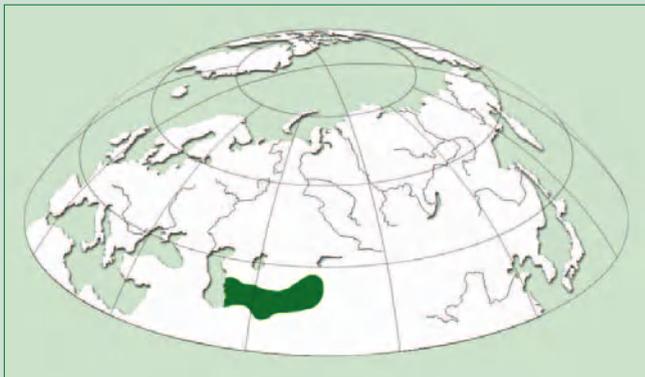
DISTRIBUTION. It is distributed from the eastern Anatolia (Turkey) and Transcaucasia across Middle Asia (Turkmenistan, Uzbekistan, Tajikistan) and Kazakhstan to Afghanistan and north-western China (Xinjiang-Uyghur Autonomous Region). In Anatolia, Transcaucasia and Middle Asia there are zones of sympatry with *Coluber nummifer*. Problematical character of species identification in "*Coluber ravergieri* – *C. nummifer*" complex and mosaic character of their sympatric distribution in the eastern Transcaucasia and Middle Asia are the reasons of the correct evaluation of their species composition. The *C. ravergieri*, as well as the *C. nummifer*, usually lives in the xerophytic biotopes, on the stony slopes and rocks overgrown with bush vegetation, in the thickets on the banks of the rivers and in the dry ravines. It is a more high-mountain species in



comparison with the *C. nummifer*: in Turkey and the Transcaucasia it goes up to 2300 m above sea level. For *C. ravergieri*, as well as for *C. nummifer* the parallel aposematic behavior and mimicry of the coloration with the sympatric vipers is noted. *Zamenis glazunowi* Nikolsky, 1896, described from Tajikistan, at present is considered as a junior synonym of *C. ravergieri*.

CONSERVATION STATUS. Undetermined. Ecology, including the status of the populations and the number, is poorly studied.





TERRA TYPICA. Persia (= Iran).

DISTRIBUTION. It is distributed in south-western Asia and north-eastern Africa from eastern Libya and the Somali Peninsula across Arabia, Syria, Iraq eastwards to the western and north-western India and Pakistan. It was accepted to consider that *C. r. ladacensis* (Anderson, 1871) is distributed in the western India, Pakistan, Afghanistan, eastern Iran, Middle Asia: in Turkmenistan (from the Krasnovodsk plateau and Kyurendag in the west), southern Uzbekistan, northern and western Tajikistan, on the periphery of the distribution range in the western Kyrgyzstan and southern Kazakhstan. The nominative subspecies *C. r. rhodorhachis* (Jan, 1865) was considered as living in the countries of the Arabian Peninsula, western Iran, southern and south-east Turkmenistan in Kopet Dagh and its foothills, in the valleys of Tejen and Murgab rivers, in the hill countries of Badkhyz and Karabil. Thus according to this point of view two subspecies live in sympatry in south Turkmenistan. However we do not sup-



port subspecies rank of these forms and consider them as color morphs of *C. r. rhodorhachis*.

C. r. subnigra (Boettger, 1893) is found in north-eastern Africa from Eritrea to Somali. The nominative subspecies is also found in Libya and Egypt. Snake prefers dry mountains and foothills, comes into the real deserts, inhabits lowland areas, in particular the valleys of Tejen and Murgab rivers. In the mountainous regions it inhabits various biotopes: in the hills, in the wide inter-mountain depressions, upland steppes, on the stony slopes and among juniper stands, in the ravines and steep slopes bordering the flood plains of the rivers, on the banks of dry irrigation canals. In Kopet Dagh the vertical border of distribution runs at the altitude 1800-2000 m above sea level.

CONSERVATION STATUS. As a rare species (category 3) it is included into the Red Data Books of Kyrgyzstan (1985) and Kazakhstan (1996).



SMOOTH SNAKES

GENUS *CORONELLA* LAURENTI, 1768

Snakes of medium size. Head is more or less flattened and slightly distinct from the body. Pupil is round.

Scales of the body are smooth. Each scale has two apical pores. Subcaudal scales are arranged in two rows.

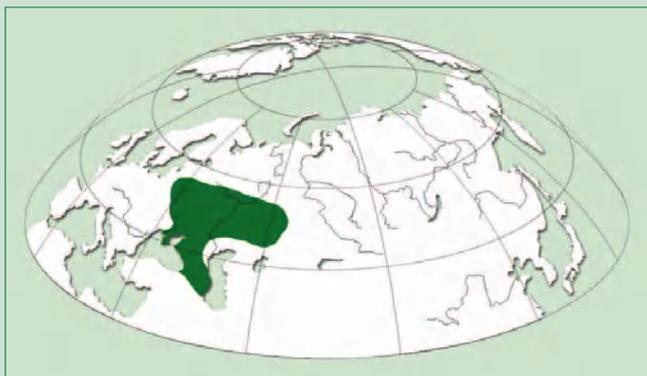
Maxillary teeth gradually increase towards backwards. The last two teeth are not separated from the others by a toothless interval.

The genus includes two species widely distributed in Europe and northern Africa (Morocco, Algiers and Tunisia), as well as in the western (northern Iran and Asia Minor) and Central Asia (western Kazakhstan).

The fauna of North Eurasia contains one species.

SMOOTH SNAKE

CORONELLA AUSTRIACA (LAURENTI, 1768)



TERRA TYPICA. Vienna, Austria.

DISTRIBUTION. It is found in deciduous, coniferous and mixed forests usually preferring peripheral areas warmed up by the sun. In the Caucasus it is known in rocky mountainous-xerophytic steppe and stony slopes with bush vegetation. Smooth snake penetrates into the meadow and subalpine zones up to the elevation 3000 m above sea level. In the eastern Transcaucasia, as a rule, it is found only at the altitude not lower than 1100-1200 m above sea level. The distribution range covers nearly all the territory of Europe, except for Ireland, a part of England and northern Scandinavia, as well as the central and southern parts of the Iberian Peninsula and the islands of the Mediterranean Sea. One of the most northern species of reptiles with the northern border of distribution in Scandinavia at the 62°N. In the east it

reaches the western Kazakhstan, in the south-east – the northern part of Asia Minor and the Caucasus, as well as the northern Iran. In North Eurasia lives the nominative subspecies *C. a. austriaca*. Its distribution range covers all the European part of Russia up to the Tula and Ryazan regions in the north, and also the southern part of Western Siberia, Kazakhstan, the Caucasus and the north of Asia Minor. The second subspecies, *C. a. fitzingeri* (Bonaparte, 1840) inhabits the southern part of the Pyrenean Peninsula and the island Sicily.

CONSERVATION STATUS. As an endangered species with a reducing number it is included into the Red Data Books of Moldova (2001), the Ukraine (1994) – category 2, Belarus (1993), Lithuania (1992) and Latvia (2003).







Selenga River valley, Buryatia, Russia

BIG-TOOTH SNAKES

GENUS *DINODON* DUMERIL, BIBRON et DUMERIL 1854

Snakes of medium size with body length up to 120 cm. The head is flattened and distinct from the body. Eyes are large, with a vertical-elliptical pupil.

There are 17-21 rows of smooth or slightly keeled scales around the body. 185-234 ventral scales, 57-104 pairs of subcaudals.

Maxillary teeth are located in 3 groups separated from each other by rather wide intervals. The teeth of the first group are gradually increased in the direction deeper into the mouth; the teeth of the middle group are small, and the rear teeth are large. The frontal teeth of the lower jaw are considerably larger than the rear teeth.

The coloration is diverse: from red-brown to black, sometimes with red and black transverse bands.

Snakes of *Dinodon* genus prefer tropical and subtropical forests of different types. They are also found on the sea coasts.

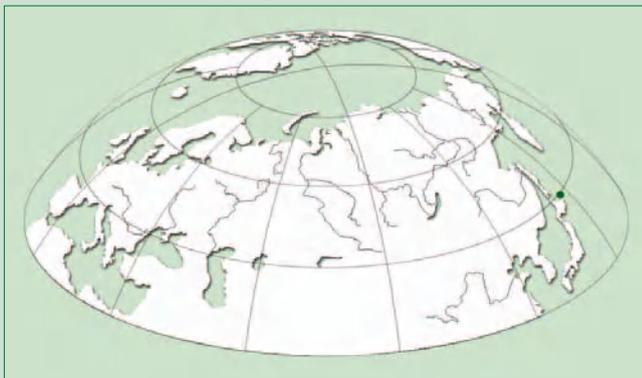
Activity is nocturnal. These snakes feed, as a rule, on various vertebrates, from fish and frogs to birds and mammals. Often they eat snakes and lizards.

The genus includes seven species distributed in Korea, Japan (including the Ryukyu Islands), eastern and southern China (including the islands Hainan and Taiwan), northern and central part of Indochina, the eastern Himalayas.

On the territory of Russia two species are known by the records from the island Shikotan (the Kuril islands) and from the south of the Primorsky Krai.

ORIENTAL BIG-TOOTH SNAKE

DINODON ORIENTALE (HILDENDORF, 1880)

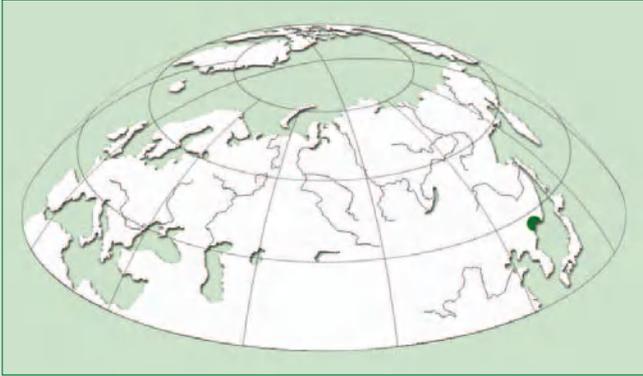


TERRA TYPICA. Tokyo, Honshu island, Japan.

DISTRIBUTION. It is found on the islands of Japan (Honshu, Kyushu and their satellites, penetrates into the Tsushima Archipelago). As a rule, it inhabits the valleys of rivers and streams in the mountainous broad-leaved and coniferous forests. On the territory of Russia it is known by one record from the Shikotan island in the southern part of the Great Kuril Range (the Sakhalin region). This record was not confirmed any more.

CONSERVATION STATUS. It is included into the Red Data Book of the Russian Federation (2001) as a species of category 0 – there are no data on its status in the nature. The occurrence of this species on the territory of Russia is questionable and requires confirmation.





TERRA TYPICA. Archipelago Chusan (= Chkhoushan'), Zhejiang Sheng, China.

DISTRIBUTION. It is found in the forest regions in Korea, Japan (Ryukyu Archipelago), eastern and southern China, including Hainan and Taiwan, northern and central parts of Indochina. On the territory of Russia it is known by a few reliable records from the south of the Primorski Krai, Nadezhdinsky region (settlement Nezhino), Pos'et region and the settlement Chernigovka. It was observed in the black-fir taiga. All continental populations belong to the nominative subspecies *D. r. rufozonatum*. The subspecies *D. r. walli* Stejneger, 1907 is found on the islands Iriomote, Ishigaki and the islands of the Miyako group (Ryukyu Archipelago, Japan).

CONSERVATION STATUS. Inhabiting of this species on the territory of Russia was confirmed by reliable record in 1989. As a rare species



it is included into the Red Data Book of the Russian Federation (2001) into the category 3.



DWARF SNAKES

GENUS *EIRENIS* JAN, 1863

Relatively small terrestrial snakes with the body length up to 70 cm. The head is slightly distinct from the body and covered with large symmetrically arranged scales.

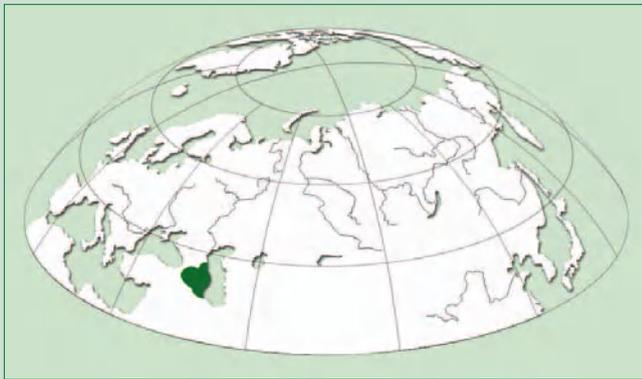
The lateral edges of the frontal shield are straight. The nostril is cut in one entire shield. Pupil is round. The body scales are smooth, with one apical pore, arranged around the mid-body in 15 or 17 longitudinal rows. Subcaudal scales form two longitudinal rows.

The genus unites about 20 species distributed in the north-eastern Africa, south-western Asia from the Arabian Peninsula to Pakistan and north-western India in the east, on a number of islands of the Mediterranean and Aegean Seas, in the Caucasus and in the south of Turkmenistan.

The fauna of North Eurasia contains four species.

COLLARED DWARF SNAKE

EIRENIS COLLARIS (MENETRIES, 1832)



DISTRIBUTION. It inhabits the eastern part of Turkey, adjacent regions of Iran, Iraq and in the east of the Caucasus in south-east of Georgia, southern Armenia, Azerbaijan and foothills of Dagestan. It occurs on both open rocky parts of clayish and sagebrush semi-desert, and on the slanting and of medium steepness slopes with sparse xerophilous vegetation (in particular, on the soft stony and semi-sandy soils). In the mountains it is known up to the elevation 1700 m above sea level. In the east of Mediterranean region collared dwarf snake lives in Turkey, Syria, Lebanon and Israel.

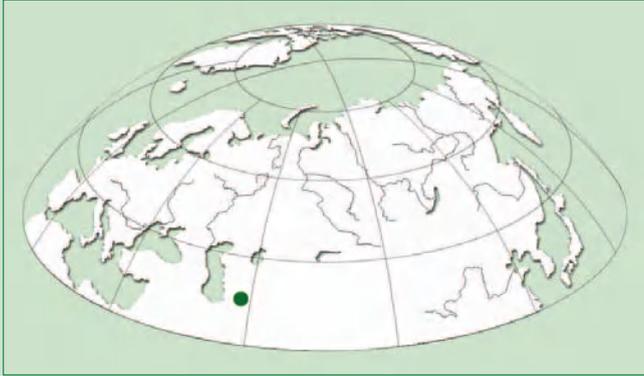
CONSERVATION STATUS. It is included into the "Annotated list of taxa and populations required a special attention to the status in the wildlife" (Appendix to the Red Data Book of the Russian Federation, 2001).

TERRA TYPICA. The mountain Beshbarmak, the Divichinsky region, Azerbaijan.



STRIPED DWARF SNAKE

EIRENIS MEDUS (CHERNOV In TERENTIEV et CHERNOV, 1940)



TERRA TYPICA. Vicinity of the city Ashkhabad, Turkmenistan.

DISTRIBUTION. It is distributed in the southern Turkmenistan in Kopet Dagh, between the settlements Bami and Kaakhka, as well as in the neighboring regions of northern Iran.

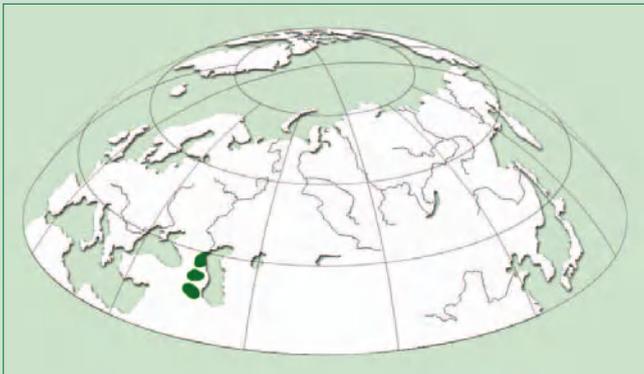
E. medus is found on the rocky slopes. In the intermountain depressions along the clayish-gravel ground, the hills with a xerophilous vegetation, and along the mudflow beds this snake penetrates to the submontane plain. In the mountains it is known at the altitude 1100 – 1600 m above sea level.



CONSERVATION STATUS. Undetermined. The ecology and the number of the populations are poorly studied.

RING-HEADED DWARF SNAKE

EIRENIS MODESTUS (MARTIN, 1838)

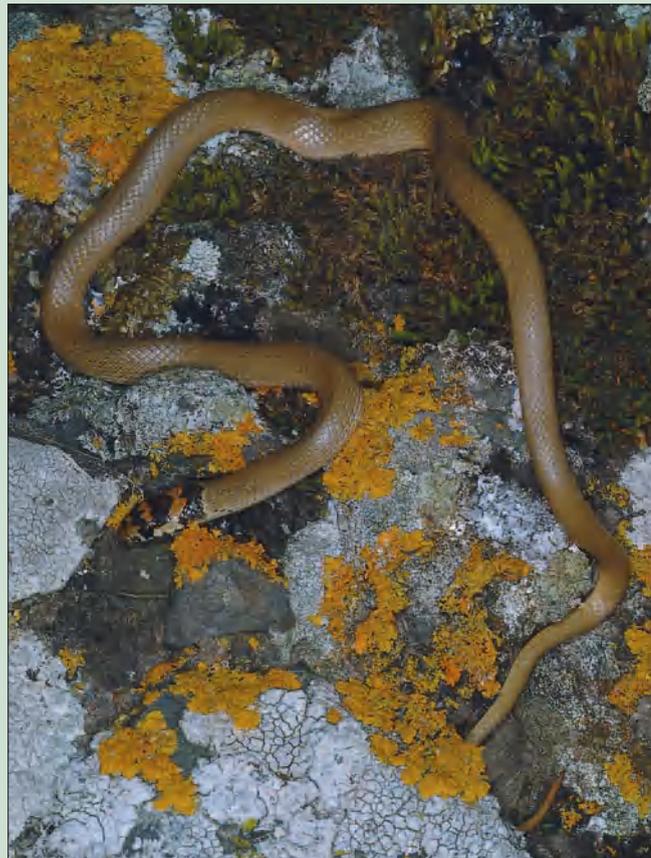


TERRA TYPICA. Town Trabzon, Turkey.

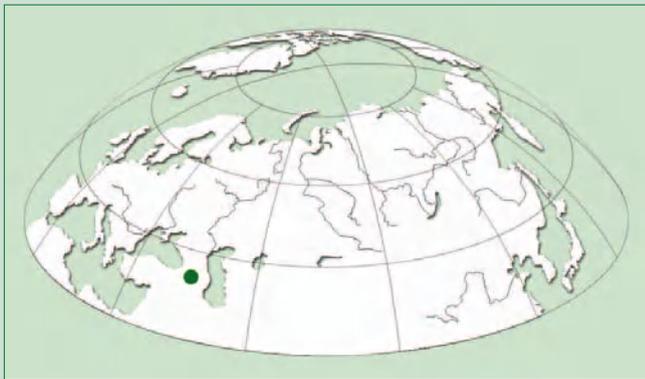
DISTRIBUTION. It is known from the islands of the Aegean and Mediterranean Seas in the west to the eastern Turkey, Syria, Iraq and western Iran in the east. In North Eurasia it is sporadically distributed in the Transcaucasia, in the eastern Georgia, Armenia and Azerbaijan, as well as (in disjunction from the main distribution range) in the North Caucasus in mountainous Dagestan. The subspecies *E. m. modestus* (Martin, 1838) lives in the Caucasus. It is found on slanting and of medium steepness, usually strongly rocky slopes, with sparse xerophilous vegetation (including bush). Not often it is recorded on the open areas of the sagebrush-beard grass steppe.

The subspecies *E. m. wernerii* (Wettstein, 1937) is described from a small island Alazonisi near the island Furni (Turkey) in the Aegean Sea.

CONSERVATION STATUS. The ecology, number and status of the populations are poorly studied. The species is included into the



“Annotated list of taxa and populations required a special attention to the status in the wildlife” (Appendix to the Red Data Book of the Russian Federation, 2001).



TERRA TYPICA. Armenia.

DISTRIBUTION. It is distributed in the eastern Transcaucasia in the south of Armenia and in the south-western and south-eastern Azerbaijan, as well as in the eastern Turkey, the western part of Iran and in the eastern Iraq. Of two known subspecies *E. p. punctatolineatus* (Boettger, 1892) is found in North Eurasia. On the valleys of the tributaries of the Aras River in Armenia it goes into the mountains up to 2000 m above sea level. *E. punctatolineatus* inhabits the slanting, strongly rocky slopes of the mountains and areas of semi-desert with a rare grassy and xerophilous bush vegetation.

The subspecies *E. p. kumerlaevi* Eiselt, 1970 is found on the lake Van in eastern Turkey.

CONSERVATION STATUS. Not determined. The ecology, number and status of the populations are poorly studied.



Snakes of moderate to large in size: from 80 up to more than 280 cm in length.

The head is clearly distinct from the body. Subcaudal scales are arranged in two rows. The scales are smooth or with slightly developed keels. The lateral edges of the frontal shield are straight.

Teeth on the maxilla are arranged in a continuous row and have an equal size. Their number varies from 12 up to 22. The anterior mandibular teeth are longer than the posterior teeth. Ratsnakes kill their prey by constriction of body coils.

They inhabit different biotopes: from arid landscapes to tropical forests; among rat snakes there are many arboreal forms. Oviparous.

The genus *Elaphe* sensu lato includes about 50 species widely distributed in North and Central America, Asia, in southern and central Europe. There is a point of view that *Elaphe* is not a monophyletic group and in reality it represents six-eight genera. 12 species of the fauna of North Eurasia belong to the genus *Elaphe* sensu lato even with taking into account results of the contem-

porary revisions. Recently North Eurasian species of *Elaphe* are referred to genera *Zamenis* Wagler, 1830 (*Z. hohenackeri*, *Z. longissima*, *Z. persicus*, *Z. situla*), *Orthriophis* Utiger, Helfenberger, Schmidt et Ruf, 2002 (*O. taeniurus*) and *Euprepiophis* Fitzinger, 1843 (*E. conspicillatus*). Genus *Elaphe* includes remaining 5 species (*E. climacophora*, *E. dione*, *E. quadrivirgata*, *E. sauromates*, *E. schrenckii*). In present book we consider *Elaphe* genus in conservative way. Just one species (*Oocatochus rufodorsatus*) is ascribed to the genus *Oocatochus* Helfenberger, 2001.



Aesculapian ratsnake, *Elaphe longissima*



TERRA TYPICA. Japan.

DISTRIBUTION. The species is widely distributed on all Japanese islands except for the Ryukyu Archipelago. On the territory of Russia it inhabits the southern island of the Great Kuril Range – Kunashir island. Here it is recorded in various biotopes: on the sea coast among piles of rocks and driftwood debris, in the bamboo thickets, in the litter of spruce-fir tree forest, on the border of vegetation and sulphate fields of the Mendeleev’s and Tyatya volcanoes and the caldera of the Golovin’s volcano.

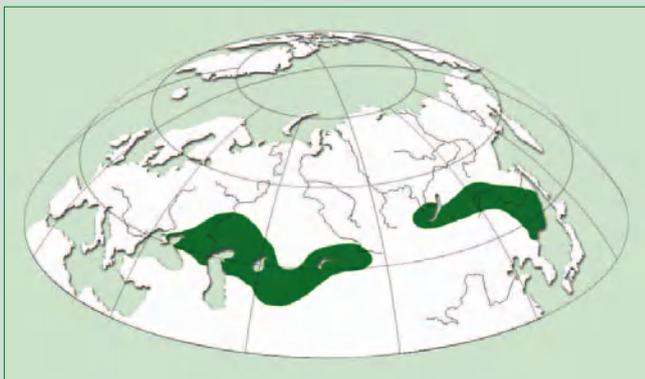
CONSERVATION STATUS. As a species with a declining of population due to strong destruction of habitats, it is included into the “Annotated list of taxa and populations required a special attention to their status in the wildlife” (Appendix to the Red Data Book of the Russian Federation, 2001). A serious threat presents the predator introduced into Kunashir Island in 1985 – the European mink.











TERRA TYPICA. "In the vicinity of Semiyarsk, in the area of the upper Irtysh, in the Semipalatinsk region" (Kazakhstan).

DISTRIBUTION. One of the most widely distributed species in the Palearctic fauna. Its preferred biotopes are extremely diverse: the distribution range covers several landscape zones. It is found in steppes, tugais, flood plains and valleys of rivers, in lighted forests of different types, deciduous and coniferous, in bush and cane thickets, on alpine and subalpine meadows, on the edges of swamps. It inhabits also arid landscapes, solonchaks, rocky and clayish semi-deserts. The distribution range extends from the left-bank Ukraine and the area along the Volga River, the Rostov, Volgograd and Astrakhan regions, the Stavropol Territory and Dagestan in Russia across the Volga-Urals interstream area, Middle Asia (except the areas of sand dune deserts) and Kazakhstan to southern Siberia and the Far East (the Amurskaya region, Khabarovsk Territory and Primorski Krai). It is also found in Mongolia, northern China and Korea. There are data about the records of *E. dione* in the eastern Transcaucasia, mainly in Azerbaijan and the western part of the southern macro-slope of the Great Caucasus in the



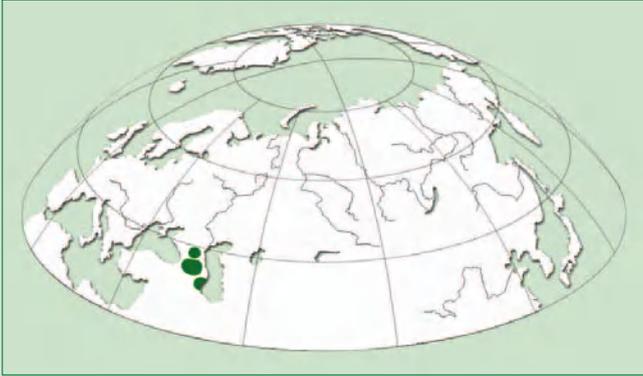
Elaphe dione czerskii

eastern Georgia (Lagodekhi) and northern Iran. Findings of this species on some islands of the Caspian and Aral Seas are known. A number of records in Georgia and Armenia are explained by an erroneous identification and belong to *E. hohenackeri*. In Primorski Territory A.M. Nikolsky described a species, which possibly can be considered as the subspecies *E. d. czerskii* (Nikolsky, 1914). The subspecies described from the Western Siberia and Altai, *E. d. niger* Golubeva, 1923 and *E. d. tenebrosa* Sobolevsky, 1929, at present are considered as not valid.

CONSERVATION STATUS. On the most part of the distribution range there is no threat of extinction.

Female and clutch of dione ratsnake





TERRA TYPICA. The German colony Yelenendorf (= Khanlar) and Yelizavetpol' (= Gyandzha), Azerbaijan; Tiflis (= Tbilisi), Georgia.

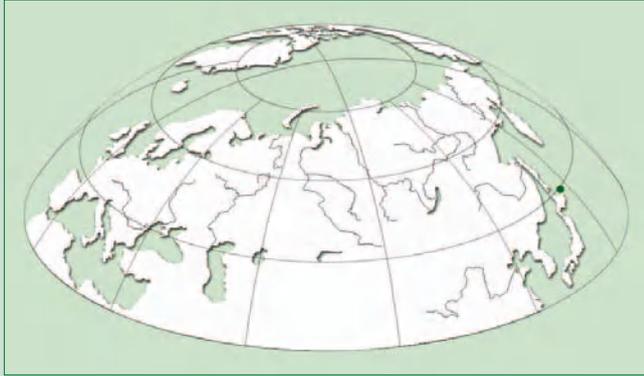
DISTRIBUTION. It is distributed in Asia Minor, north-western Iran, in Georgia, Armenia and Azerbaijan. On the territory of Russia it is sporadically found in North Ossetia, on the territory of Dagestan, Chechnya and Ingooshetia. In this part of the distribution range the nominative subspecies *E. h. hohenackeri* (Strauch, 1873) is found. The habitats are associated with mountainous landscapes. The Transcaucasian ratsnake prefers outcrops of the rocks among vegetation, bank of the rivers, edges of the tugai forests, areas of stony montane-xerophytic steppe. The other subspecies,



E. h. taurica Werner, 1898, is presented in Kiliki Tauri in the south of central Turkey. It is also found in the isolated mountain massif Germon in the southern Lebanon and northern Israel.

CONSERVATION STATUS. An intensive anthroponogenic destruction of the mountainous-arid territories in eastern part of the Caucasian Isthmus and association transformation of the vegetation lead to strong declining of the number. It is protected in the Borzhomsky, Liakhvsky and Saguramsky reservations of Georgia, in the Girkansky, Zakatal'sky, Pirkulinsky and Turianchaisky reservations of Azerbaijan, in the Khosrovsky reservation of Armenia. The species was included into the Red Data Books of the USSR (1984) and Armenia (1987) – an endangered species; of Georgia (1982) – category 2. It is included into the Red Data Book of the Russian Federation (2001): category 3 – a reducing in its number species sporadically occurring in the periphery of its distribution range.



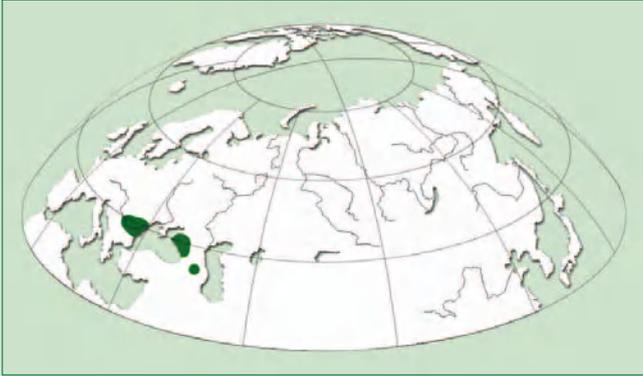


TERRA TYPICA. Shirane-san near Nikko, Honshu island, Japan.

DISTRIBUTION. In North Eurasia it is found only on the Kunashir island. There it is known for certain only in the southern and central parts of the island. Most often it is recorded near geothermal springs on the slopes of volcanoes and on the sea coast of the Sea of Okhotsk. This species was found in the region of Mendeleev's volcano and in the caldera of Golovin's volcano. It is observed on the edges of forests, along banks of streams, on rocky screes and in bamboo thickets, but only in the grassy layer. It is widely distributed on the islands Honshu and Hokkaido in Japan. Some taxonomists consider *E. japonica* as a color variation of species *E. conspicillata* (Boie, 1826).

CONSERVATION STATUS. As a rare species with a low number and limited distribution in Russia by the periphery of range, it was included into the Red Data Books of the USSR (1984) and the Russian Federation (2001) – category 3. It is protected in the Kuril reservation (founded in 1984). The territory of the nature reservation covers habitats of the species in the caldera of the Golovin's volcano, and in the protected zone – in the vicinity of the settlements Aljohino and Tretyakovo and near the cape Stolbchatyi.





TERRA TYPICA. Vienna, Austria.

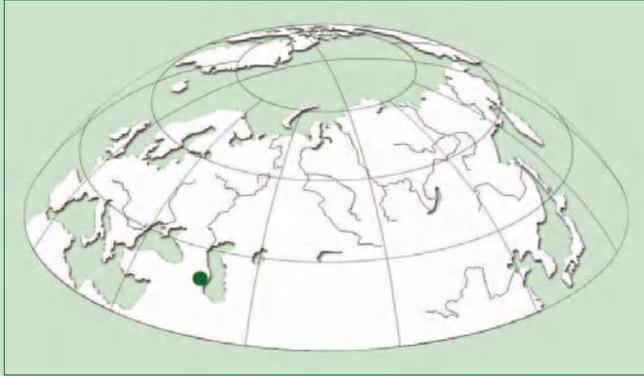
DISTRIBUTION. The distribution range of the species extends from the north-eastern and eastern Spain across the central and southern Europe (including the island Sicily and some islands of the Aegean Sea) to the northern half of Asia Minor and the Caucasus. In North Eurasia the distribution range is separated into two parts and covers the Carpathian mountains, Trans-Carpathian area, southern Moldova and the adjacent regions of the south-western Ukraine. The other part of the distribution range is situated in the submontane regions of the Krasnodar Territory from the Psou River to the vicinity of the city Novorossiysk in the north-west. There it gets over on the northern slope of the Great Caucasus and stretches on the foothills to Adygeya. Evidently, an isolated population is known in the eastern Georgia, in the vicinity of Lagodekhi. The nominative subspecies *E.l.longissima* (Laurenti, 1768) is found on the most part of the distribution range, including North Eurasia. It inhabits wooded foothills in the beechen and (more rarely) coniferous forests, mixed broad-leaved forests with the evergreen underwood, polydominant forests near river beds, hornbeam forests, ecotones of beechen and oak forests, tea plantations, giant filbert gardens, forest clearings, moist meadows, sparse bush



thickets, slopes of forested ravines and outcrops of rocks with vegetation. The subspecies *E.l.romana* (Suckow, 1798) is found in the south of the Apennine Peninsula and on the Sicily island.

CONSERVATION STATUS. The species was included into the list of the species of the Red Data Book of the USSR (1984). As a species with a reducing number and a relict distribution range it is included into the Red Data Books of the Russian Federation (2001) – category 2, Georgia (1982) – category 2 and the Ukraine (1994) – category 3.





TERRA TYPICA. Barferush, Mazanderan province, northern Iran.

DISTRIBUTION. *E. persica* is distributed in the forest zone of the south-eastern Azerbaijan (Lenkoran', settlements Shakhagach and Gyugavar, submontane regions of Talysh) and in the foothills of the Elburz system along the Caspian coast of Iran, in the provinces Gilan and Mazanderan.



For a long time this snake was referred to species *E. longissima*.

CONSERVATION STATUS. Not determined. The ecology, including the status of the populations, is poorly studied.



JAPANESE FOUR-LINED RATSLAKE

ELAPHE QUADRIVIRGATA (BOIE, 1826)



TERRA TYPICA. Japan.

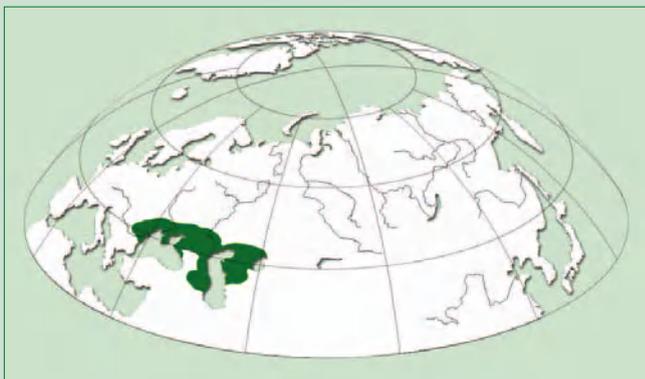
DISTRIBUTION. It is distributed only on the Japanese islands and in Russia on the southern island of the Great Kuril Range (Kunashir island). Here it is registered in the central and southern parts of the island; until now there were no records in its northern part.



The most northern habitat is the stream Dobryi on the coast of the Pacific Ocean. It is found in sparse bamboo, mixed herbs, bush vegetation, on the edges of forests and under forest canopy, on forest slopes, on the sea coast, on the slopes of volcanoes (in the caldera of the Golovin's volcano). A high aggregation of ratsnakes is registered near geothermal springs. It is recorded at the elevation up to 350 m above sea level (north-western solfataric field of the Mendeleev's volcano).

CONSERVATION STATUS. Apparently, the number on Kunashir Island is rather stable. It is protected in the Kunashir reservation where it is common in the caldera of the Golovin's volcano and in the protected zone, in the vicinity of the settlements Aljohino and Tretyakovo and the cape Stolbchatyi. As a species with a limited distribution it is included into the "Annotated list of taxa and populations required a special attention to their status in the wildlife" (Appendix to the Red Data Book of the Russian Federation, 2001). The introduction of the European mink and habitats destruction are of serious threats.





TERRA TYPICA. “The Isthmus near the town Perekop, Tauria” (the Kherson region, the Ukraine).

DISTRIBUTION. The distribution range covers in Europe Bulgaria and Romania (to the east from Danube and Prut rivers), Moldova, the southern Ukraine, steppes of the southern Russia (the Rostov and Astrakhan regions, the vicinity of the town Novorossiysk) and Ciscaucasia (Kalmykia, Chechnya, Stavropol Territory, Ingooshetia and Dagestan). In Asia *E. sauromates* is distributed in eastern Georgia, Armenia, Azerbaijan, the eastern part of Turkey, north-western Iran, the extreme north-west of Turkmenistan and western Kazakhstan eastwards to the Aral Sea. It is normally found in the arid landscapes, in steppes and semi-deserts, as well as in the forest-steppe zone (both on the plain and in the foothills), on the areas of stony and sandy semi-desert, on the slopes with bush vegetation and with rocky outcrops, on forest edges, in open steppe and tugai forests. In the north of the gulf Kara-Bogaz-Gol in Turkmenistan this snake lives on thick loamy soils with thickets of saxaul, saltworts and other xerophytic plants, and in the central



Ustyurt – on solid stabilized sands with saxaul in the clayish desert and on the plump solonchaks. In the Transcaucasia it goes up to 2500 m above sea level. Until recently it was considered as one of the subspecies of the Four-lined Ratsnake *E. quatuorlineata*.

CONSERVATION STATUS. Cultivation of virgin lands led to constant declining of number (especially in the steppe and other plain landscapes). As a species with a reducing number (as *E. quatuorlineata*) it is included into the Red Data Books of the Ukraine (1994) – category 3, Kazakhstan (1996): category 4 – a little-known species and of Turkmenistan (1999): category 3 – a rare species on the periphery of the distribution range. As a species with a reducing number it is included into the “Annotated list of taxa and populations required a special attention to their status in the wildlife” (Appendix to the Red Data Book of the Russian Federation, 2001).

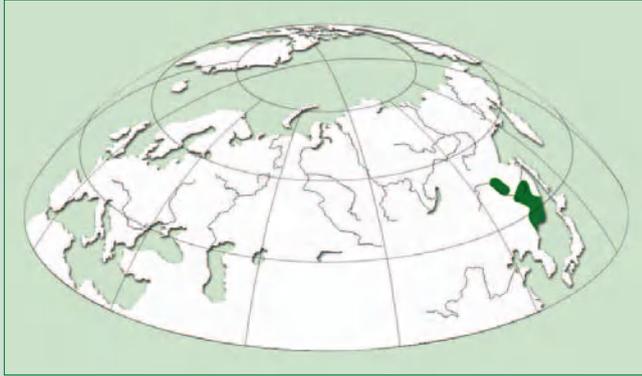






Selenga River valley, Buryatia, Russia

AMUR RATSNAKE

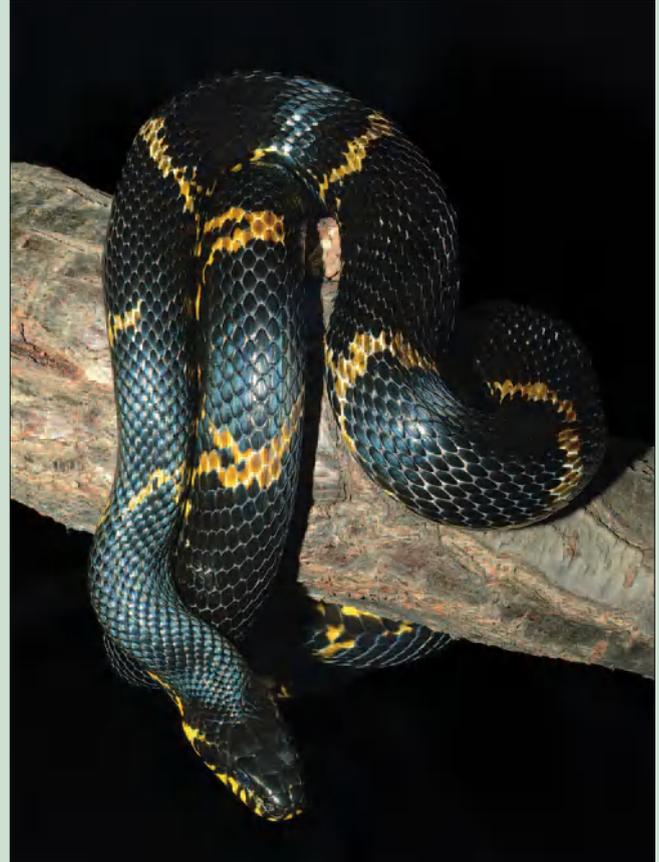


TERRA TYPICA. “Khingang military post” (the mountains Lesser Khingan, the Amur region).

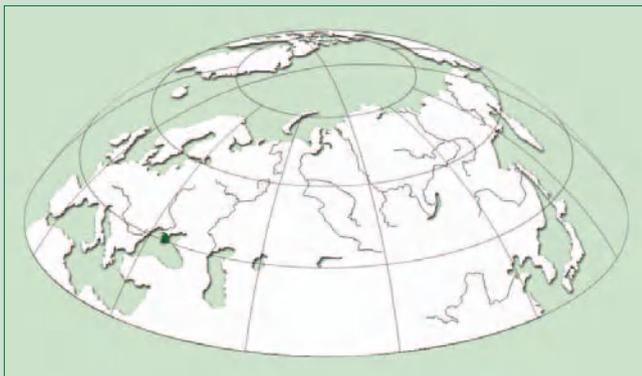
DISTRIBUTION. It is distributed in northern and north-eastern China and Korea. A record from eastern Mongolia is known (western spurs of the Great Khingan). In Russia the distribution range of this species covers the Primorski Krai and the Khabarovsk Territory to the town Komsomol’sk-na-Amure in the north and Lesser Khingan in the west (the Amur region). It is found in the forest biotopes, occurring in the forest edges, clearings, in bush thickets, sometimes it also lives in the heart of the forest. It is considered as a monotypic species, but until recently it included the subspecies *E. s. anomala* (Boulenger, 1916). It is considered now as a distinct species.

CONSERVATION STATUS. There is no serious threat of extinction.

ELAPHE SCHRENCKII (STRAUCH, 1873)



LEOPARD RATSNAKE



TERRA TYPICA. Izmir, western Turkey.

DISTRIBUTION. It is distributed in the eastern Mediterranean region (in the continental part of southern Italy and on the islands Sicily and Malta; in western Turkey, Yugoslavia, Bulgaria and Greece including the islands of the Mediterranean and Aegean Seas). In the Ukraine it is found in the south of the Crimean Peninsula from the town Sevastopol up to Karadag. In the Crimea it is found on the rocky slopes with bushes of Oriental hornbeam and pubescent oak, and in the light oak-beechen woods at the altitude 600 m above sea level. This snake is also found in the open dry valleys with thickets of dog-rose and hawthorn.

ELAPHE SITULA (LINNAEUS, 1758)



CONSERVATION STATUS. It is included into the lists of the species protected by IUCN (status DD). As a rare relict Mediterranean species with a reducing number it was included into the Red Data Books of the USSR (1984) and the Ukraine (1994) – category 1.



TERRA TYPICA. Ninbo (=Ningpo), Zhejiang Sheng, China.

DISTRIBUTION. Stripe-tailed rat snake is widely distributed in East and South-East Asia, including China, Korea, Japan, Indochina, eastern India, Indonesia (islands Sumatra and Borneo). It forms seven-eight subspecies. On the territory of Russia the only finding was ascribed to the Ussuriiski Krai. In the Novgorodskaya haven of the Pos'eta bay in 1862 one specimen of this snake was discovered, possibly, of the subspecies *E. t. taeniura*.

CONSERVATION STATUS. Stripe-tailed rat snake belongs to the category of the species which occurrence in the territory of Russia is doubtful. Further research to confirm this record is required. It is



included into the Red Data Book of the Russian Federation (2001): category and status 0 – there are no data about the status in the wildlife.



Until recently they were considered as species of the genus *Coluber*. Large colubrid snakes with body length sometimes more than 250 cm. The large head is clearly distinct from the body. The body is cylindrical, nearly round in the cross section.

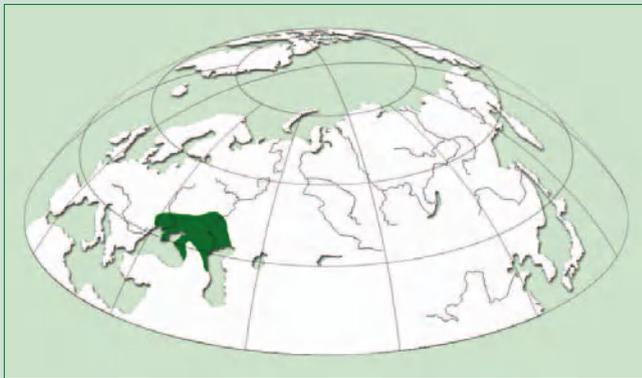
The scales are smooth, 17-19 rows around the mid-body. Each scale has 2 apical pits. Ventral scales form on the sides of the body a longitudinal keel.

Seven species belong to this genus. They inhabit southern Europe (the Mediterranean region including large islands, southwestern part of Europe, the Balkans and the steppe regions of the south of Eastern Europe), Turkey, Iraq, Lebanon, Israel, Jordan, western and northern Iran, eastern Kazakhstan, Mongolia, Russian Far East, China, Korea.

In North Eurasia there are three species.

YELLOW-BELLIED, OR CASPIAN RACER

***HIEROPHIS CASPIUS* (GMELIN, 1779)**



TERRA TYPICA. Lower Volga River.

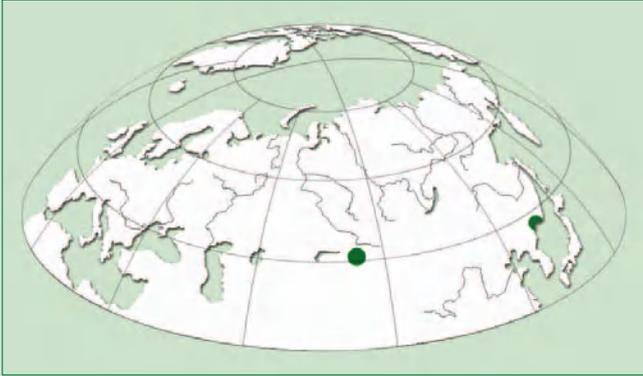
DISTRIBUTION. The distribution range covers a part of Europe from Hungary along the Danube River across the southern Romania, Moldova, the southern Ukraine and the Crimea to the Rostov region, from the Stavropol Territory, the northern foothills of the Great Caucasus (from the Krasnodar region up to the Caspian Sea) and the region of the Volga River (in the Volgograd

and Astrakhan regions) up to 50°N in the north. In the western coast of the Caspian Sea it is found southwards up to the border of Dagestan and Azerbaijan (Khachmas). In the east *H. caspius* penetrates into Asia – into the Volgo-Ural interstream area (western Kazakhstan). Species distributed in the forests, forest-steppe, steppe zone and in the semi-deserts. It prefers solid clayish slopes with trees and bushes, banks of the ravines; in the North Caucasus it comes into sand dunes.

Caspian Racer until recently was considered as a subspecies of *H. jugularis* (Linnaeus, 1758) which is known from southern Turkey, Syria, Lebanon and northern Iraq.

CONSERVATION STATUS. A species with a declining number due to physical elimination and the habitat destruction *H. caspius* is included into the Red Data Book of Kazakhstan (1996) (category 3) (as a subspecies of *H. jugularis*), into the Red Data Books of the Ukraine (1994) – category 2 and Moldova (2001) as an endangered species. It enters into the “Annotated list of taxa and populations required a special attention to their status in the wildlife” (Appendix to the Red Data Book of the Russian Federation, 2001).





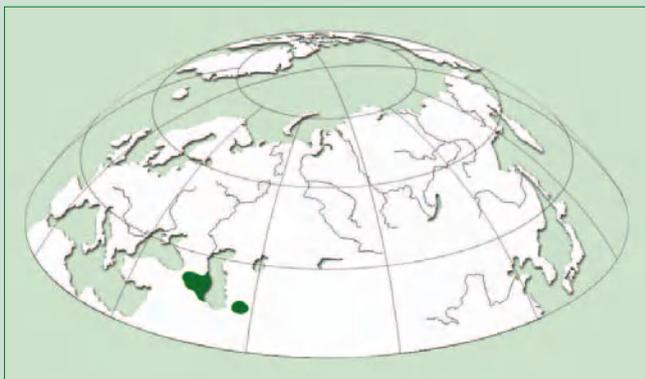
TERRA TYPICA. China (the original erroneous indication – Mexico; then Wilhelm Peters corrected the record in the catalogue of the Berlin Museum to China).

DISTRIBUTION. This species is distributed in northern China and Korea. In North Eurasia it occurs in Mongolia and the Zaisan depression in the south-east of Kazakhstan, as well as in the south of the Ussuriyskiy Krai in the bay Penzovaya (the gulf Pos'et, the territory of the Far Eastern Marine reservation). This is the only reliable habitat of this species in the Russian Far East. The findings in the vicinity of the town Khabarovsk mentioned in the old literature are not confirmed. In the Penzovaya bay *H. spinalis* was discovered in the old ivasi herring containers on the sea coast in the thickets

of dog-roses, not far from a grassy-sedge swamp. In the southern and central Mongolia and in the south-east of Kazakhstan the racer is registered in the arid landscapes, mainly in the gravel deserts, on the rocky steep slopes of the mountains with bush vegetation. Taxonomy and position of this species within *Hierophis* genus still require to be studied more precisely.

CONSERVATION STATUS. It is included into the Red Data Book of Kazakhstan (category 4) as a poorly studied species known by a small number of specimens, with limited distribution range. It is included in the latest edition of the Red Data Book of the Russian Federation (2001) as the species with an undetermined status (category 4), which obviously do not have enough data on their condition in the nature. There is an opinion about the increase of the number that could explain the last records in the south of the Primorski Krai.





TERRA TYPICA. Lenkoran and Salyany, Talysh mountains, Azerbaijan.

DISTRIBUTION. The distribution range covers the territories from central Anatolia to Transcaucasia. It penetrates into southern Dagestan from Azerbaijan. This snake is also found in the northern Iran and south-western Turkmenistan. In Turkmenistan it is sporadically distributed in the valleys of the rivers Sumbar, Chandyr, Atrek and the vicinity of the lake Maloe Delili (the mountain system Kopet Dag). It is found to the south from Bami station, near the settlement Saivan and the spring Sokuli. In Turkmenistan and eastern Transcaucasia it occurs at the elevations up to 1600 m above sea level. It is found in the valleys of the rivers, on the waterless and dry slopes of the mountains overgrown with bush vegetation, in the mountain steppe, among juniper stands, in the fruit gardens. It prefers habitats with dense vegetation, not far from water.

Until recently it was considered as a subspecies of *H. jugularis* (Linnaeus, 1758).

CONSERVATION STATUS. As a species with a limited distribution range previously it was included into the Red Data Book of Turkmenistan (1985). At present (Red Data Book of Turkmenistan, 1999) it is excluded from the list of protected animals.



Juvenile Red-bellied Racer





VIVIPAROUS RATSNAKES

GENUS *OOCATOCHUS* HELFENBERGER, 2001

Snakes of medium size, up to 70 cm in length. The head is slightly distinct from the body.

The nostril is cut in one shield which is semi-divided from below. The scales are smooth. Ventral shields on the sides of the venter do not form an angle.

Lower spinous processes of vertebrae get not further than the

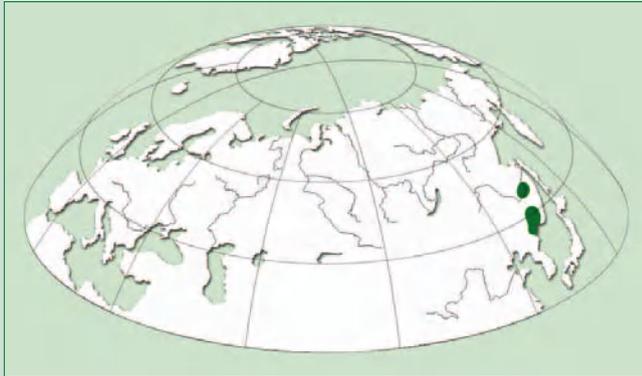
20th row of ventral scales. The heart is located not further than the level of the 20th row of ventral scales from the head.

In contrast to the closely-related genus *Elaphe* they reproduce by ovoviviparity.

Monotypic genus.

RED-BACKED RATSNAKE

OOCATOCHUS RUFODORSATUS (CANTOR, 1842)



TERRA TYPICA. Island Khusan (= Chusan, Chkhoushan' Archipelago), Zhejiang Sheng, China.

DISTRIBUTION. In North Eurasia it is distributed in Russian Far East from the south of the Primorsky Territory to the Khabarovsk Territory in the north and Zeisko-Bureinskoe interstream area in the north-west. Outside of Russia it is distributed in the north-eastern and eastern China and in Korea. It leads a semi-aquatic mode of life. As a rule, it is found on the shores of lakes and banks of rivers, it is a good swimmer and diver.

CONSERVATION STATUS. A common species, there is no threat of extinction.



ASIAN WOLF SNAKES

GENUS *LYCODON* BOIE *In* FITZINGER, 1826

Snakes of small to medium size with body length 40-100 cm. The body is cylindrical or slightly flattened, covered with 17-19 rows of smooth or slightly keeled scales.

The head is not large, flat; the neck girdle is weakly marked. Pupil of the eye is vertical-elliptical.

The maxillary bone is strongly curved and has one pair of large fangs in the front. A group of 10-20 teeth in the posterior part of the bone is separated from the fangs by a diastem. On the mandibular bone one pair of very large teeth is also sepa-

rated by a toothless space from 15-20 small teeth located in its posterior part.

The species includes about 30 species distributed in the continental South and South-East Asia and on the Indo-Australian Archipelago. The most part of the species inhabit tropical and subtropical forests. The activity is nocturnal. In the mountains it goes up to 2500 m above sea level.

In the fauna of North Eurasia there is one species which adapted to the arid landscapes.

NORTHERN WOLF SNAKE

LYCODON STRIATUS SHAW, 1802



TERRA TYPICA. India.

DISTRIBUTION. The species is distributed on the Sri Lanka island, in India, Pakistan, Afghanistan, in eastern and north-eastern Iran and in the Middle Asia (the south of Turkmenistan, Uzbekistan and western Tajikistan). The subspecies *L. s. bicolor* (Nikolsky, 1903) occupies the most part of the distribution range. It prefers dry and open areas of low-mountain and submontane regions. In Uzbekistan it is found on the loessial hills, slopes of dry ravines and in the clayish deserts, in Tajikistan – in the flood plains of the rivers with a high grassy and tugai vegetation on the hilly areas. In Kopet Dagh and in the interstream area Murgab-Tejen (Turkmenistan) it is observed in the intermountain depressions, on



the rocky slopes with sparse ephemeral vegetation, on the submontane hills and in the upland steppe. In the mountains it goes up to the elevation of 1800 m above sea level.

CONSERVATION STATUS. As a species with a poorly studied ecology (category 4) it was included into the Red Data Books of the USSR (1984) and Turkmenistan (1985). It is included into the Red Data Book of Uzbekistan (2003) as a vulnerable, rare species with local distribution – category and status 2, VU:R.

AWL-HEADED SNAKES

GENUS *LYTORHYNCHUS* PETERS, 1862

Small snakes with body length up to 50 cm. The head is slightly distinct from the body. The snout protrudes forward above the mouth opening. The head is covered with large symmetrical scales. The intermaxillary shield is strongly thickened and protrudes forward. Its posterior part of a nail-like shape juts out between the internasal shields. Pupil is vertical-elliptical.

The nostril is located between two shields and has a shape of an oblique slit with a valve. The scales are smooth or with weak keels. 19 scales around the mid-body.

The maxilla has six-nine teeth; the two posterior teeth are strongly enlarged and are separated from the rest by a toothless diastema. The mandibular teeth are of approximately equal length.

The genus contains eight species of snakes distributed in northern Africa and from the Arabian Peninsula to Middle East and Middle Asia and to southern Afghanistan and Pakistan.

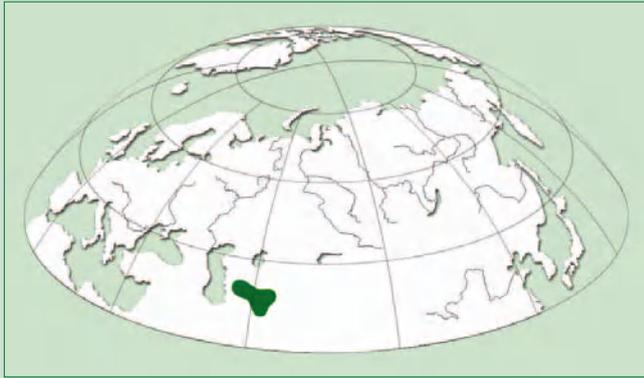
In North Eurasia there is one species.





AFGHAN AWL-HEADED SNAKE

LYTORHYNCHUS RIDGEWAYI BOULENGER, 1887



TERRA TYPICA. Chin-Kilyak (= Chinkilok) [north-western Afghanistan].

DISTRIBUTION. It is found in the eastern Iran, Afghanistan and south-western Pakistan. In Middle Asia it is known from the southern and south-western Turkmenistan. Here it inhabits piedmont plain of Kopet Dagh from the Messerian plateau to Karrybent (penetrating into Karakum desert), to the settlement Kushka and the valley of Amu-Darya River in the east. It is known from the southern Uzbekistan. In Uzbekistan it is recorded on the remnant foothills of the central Kyzylkums (in the low-mountains Bukantau and Aitymtau). It is possible to suppose its distribution on other low-mountain massifs in the interstream area of Syr-Darya–Amu-Darya. The typical biotopes are dry hilly foothills, clayish plains and



flattened sandy areas (sandy semi-deserts and deserts). *L. ridgewayi* prefers the areas bordering with takyr and solid loamy soils with rare tree-like glasswort (*Salsola*) and sagebrush (*Artemisia*).

CONSERVATION STATUS. As a rare species it was included into the Red Data Books of the USSR (1984) and Turkmenistan (1985) – category 3. At present it is included into the Red Data Book of Uzbekistan (2003) as a vulnerable, rare species with local distribution – category and status 2, VU:R.

MONTPELLIER SNAKES

GENUS MALPOLON FITZINGER, 1826

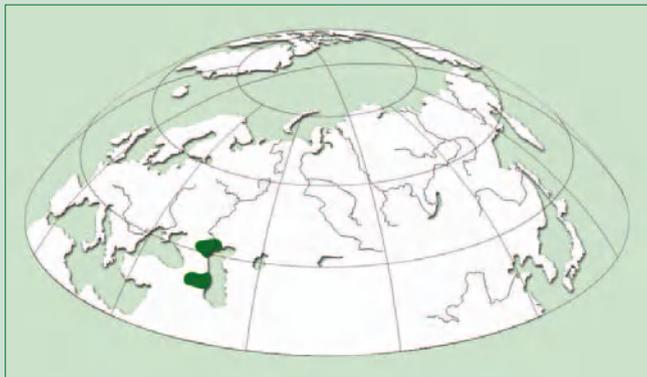
Large snakes with body length up to 180 cm and long tail. The head is elongated, of a pointed shape, is clearly distinct from the body. The top of the snout is visibly concave. Pupil is round.

There are 17-19 rows of scales around the mid-body. Scales are smooth, in adult specimens with rather visible longitudinal keels on the medial line. 155-190 ventral scales, 48-110 pairs of subcaudals. The maxillary bone has 10-17 small teeth of an equal size and one-two large teeth with an external groove, located in the posterior part of the bone. They are separated from the rest by a toothless interval.

Montpellier Snakes inhabit dry steppe and submontane regions. The activity is crepuscular. The genus contains two species distributed in the Mediterranean region of southern Europe, in northern Africa, on the Arabian Peninsula, in Asia Minor and Middle East, in the Caucasus.

One species in North Eurasia.





TERRA TYPICA. Southern France.

DISTRIBUTION. It is distributed in the northern Africa, in the south of the Balkan Peninsula, in Asia Minor, southern Europe, in the Caucasus, in western Iran, Iraq, Syria, Lebanon, Israel, Jordan and western Arabia. In the eastern part of the distribution range, including northern Africa, the south of the Balkan Peninsula, Turkey, Iran, Iraq and the Caucasus (the eastern Transcaucasia) one of two subspecies, *M. m. insignitus* (Geoffroy, 1809) [terra typical: Lower Egypt] is distributed. On the territory of Russia it lives in the eastern part of the Northern Caucasus. There is an extensive geographical isolate there, located in the eastern Kalmykia and the adjacent regions of the Stavropol Territory. Single records are known on the left bank of the Volga River in its lower reaches (the Astrakhan region). In the Transcaucasia it is found in dry rocky semi-deserts, prefers the places with a rough relief and numerous pieces of rocks. It inhabits dry steppes, stabilized sands and arid open woodlands. In the North Caucasus it is found in clayish-sandy,



sagebrush-cereal steppes, on the overgrown sands, sometimes also on the flood plain meadows.

CONSERVATION STATUS. The number is not high, but relatively stable. Habitat destruction due to economic development of the territories presents a serious threat. As a species with a reducing number it is included into the "Annotated list of taxa and populations required a special attention to their status in the wildlife" (Appendix to the Red Data Book of the Russian Federation, 2001).



COMMON WATER SNAKES

GENUS *NATRIX* LAURENTI, 1768

Snakes of medium to large sizes with the length of 80-150 cm. The body is cylindrical. The head is distinct from the body, large, flattened, covered with large symmetrical scales. Eyes are large, with a round pupil.

Scales are keeled, form 19 rows. 153-193 ventral scales, 50-86 pairs of subcaudals. The anal shield is divided.

Maxillary bones have 20-25 teeth which are enlarged in size in the direction deeper into the mouth. Mandibular teeth are of an equal length.

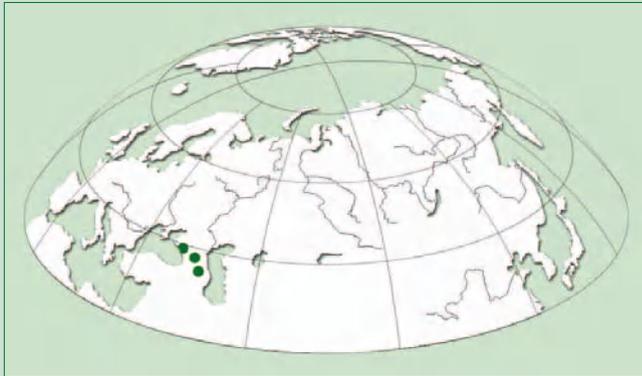
Common Water Snakes are distributed in north-eastern Africa, Europe and Asia southwards to the Persian Gulf, Afghanistan, western Pakistan and north-western India, eastwards to western China and northern Mongolia.

The genus contains 4 species. Until recently to this genus were referred the species of the American genus *Nerodia* Baird, 1853 and of some Asian genera (*Sinonatrix* Rossman et Eberle, 1977; *Rhabdophis* Fitzinger, 1843 and others).

The fauna of North Eurasia contains three species.

COLCHIS WATER SNAKE

NATRIX MEGALOCEPHALA ORLOV et TUNIYEV, 1987



Vartashen, as well as on the eastern slope of the Ajaro-Imeretinsky range in the vicinity of the town Borzhomi (Georgia). Its habitats are presented by the forests of the Colchis type with an evergreen underwood. Colchis Water Snake is found in the beech woods, chestnut groves, as well as in the cherry laurel and azalea groves. These snakes are recorded in the transformed areas: post-forest clearings, tea plantations, secondary hornbeam forests; it is well adapted to living in the mountainous fast-moving streams.

CONSERVATION STATUS. The species is included into the lists of the species protected by IUCN – category VU A1d, C1.

TERRA TYPICA. Pitsunda, Abkhazia, western Caucasus.

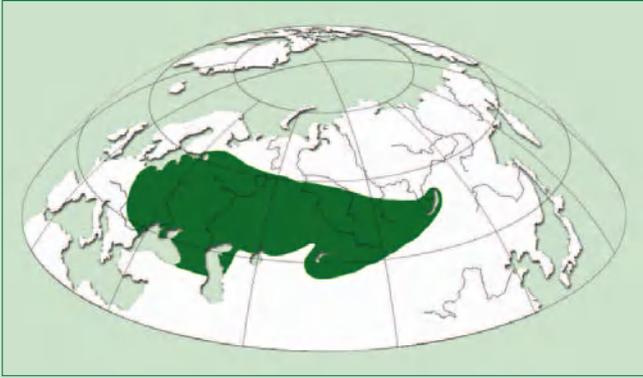
DISTRIBUTION. The distribution range covers the western Transcaucasia from the vicinity of the town Tuapse in the west up to the Chorokh River in the south-east. From Tuapse the distribution range crosses the Great Caucasus Range and stretches on the foothills up to the confluence of the rivers Urushten and Lesser Laba. This species is recorded in Turkey (Çamlıhemşin), south-west from Ajaria. Isolated populations are found on the southern slope of the eastern Caucasus in the regions of Lagodekhi and



GRASS SNAKE

NATRIX NATRIX (LINNAEUS, 1758)





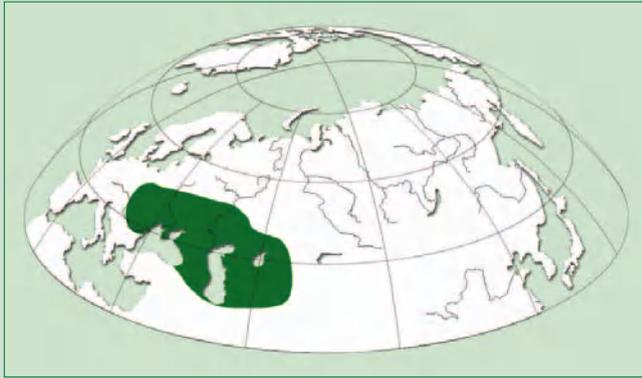
TERRA TYPICA. Sweden.

DISTRIBUTION. It is widely distributed in Europe, except for Ireland, the northern part of Great Britain, the northern part of the Scandinavian Peninsula (up to 67°N), in north-western Africa and from western Asia to north-western Mongolia, south of Eastern Siberia and adjacent regions of northern China in the east and south-western Iran in the south. Of 9 known subspecies 3 are distributed in Russia and adjacent countries: *N. n. natrix* (Linnaeus, 1758) on the most part of the European territory of the former USSR, except for the Trans-Volga territory, the extreme south-eastern regions and eastern Ciscaucasia; *N. n. scutata* (Pallas, 1771) is found in the Trans-Volga area, in the Urals, in Western Siberia, Kazakhstan, in Buryatia and in the south of Eastern Siberia. *N. n. persa* (Pallas, 1814) is known from the eastern Ciscaucasia, Transcaucasia and south-western Turkmenistan, and by single records from the Crimea. In Turkmenistan the Grass Snake is found in the valley of the Atrek River and in the channel connecting the lake Maloe Delili with the Caspian Sea.

CONSERVATION STATUS. The number is relatively stable.



Demonstrative behavior "death imitation"



TERRA TYPICA. Yapidia, Italy.



DISTRIBUTION. The species is widely distributed from south-western France, the valley of the Rhine River and the eastern part of northern Africa in the west across the central and southern Europe, Asia Minor, Middle and Near East and Middle Asia to the Persian Gulf, Afghanistan, Pakistan and north-western India in the south, Central Asia (north-western China) in the east. In the Near East it inhabits Iraq, Syria, Jordan, Israel and the delta of the river Nile in Egypt. An isolated population in Yemen is known. In North Eurasia it lives on the coast of the Black Sea in Russia and in the Ukraine, in the Ciscaucasia and Transcaucasia, and also in the Middle Asia and in Kazakhstan. In Tajikistan it is absent only on the eastern Pamir, Turkmenistan is found on the coast and islands of the Caspian Sea, in the valleys of Sumbar and Atrek rivers, near small rivers and streams of Kopet Dagh and Kugitangtau, in the valleys of the rivers Tejen, Murgab and Amu-Darya. The most northern localities are known from Volga-Kama river region (Bashkirtostan, Ulyanovsk and Samara regions).

CONSERVATION STATUS. The number is relatively stable.

Demonstrative behavior "death imitation"



KUKRI SNAKES

GENUS *OLIGODON* BOIE *In* FITZINGER, 1826

Snakes of small to medium sizes with length 30-100 cm. The body is cylindrical, tail is short. The head is not large, eyes are with a round pupil. The head is slightly distinct from the body.

Scales are smooth, form 15-17 rows around the mid-body. 135-218 ventral scales, 25-56 pairs of subcaudals. The nostril is usually cut between two shields. The intermaxillary shield is large and strongly turned up to the top of the snout.

Maxillary bones have six-eight teeth becoming larger in the direction deeper into the mouth and arranged in continuous rows; larger rear teeth are visibly compressed from the sides. Palatine and pterygoid bones have teeth.

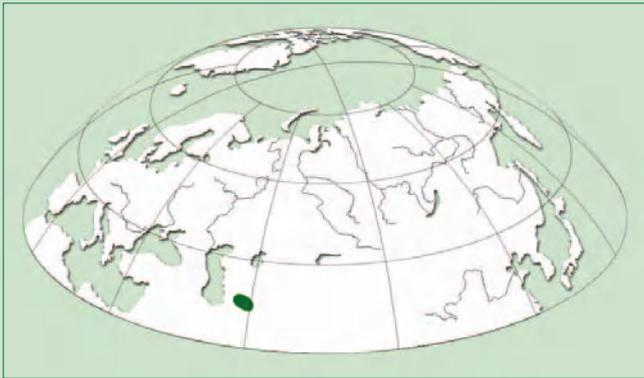
Kukri Snakes are fossorial. They inhabit mainly tropical forests, but also found in various landscapes including upland deserts. The activity is exclusively nocturnal. They feed predominantly on eggs of reptiles and lizards. Oviparous, the clutch contains from three up to 16 eggs.

The genus includes more than 60 species distributed in South, South-East and Middle East to north-western Afghanistan, eastern Iran and southern Turkmenistan in the west. They inhabit the islands of the Sunda Archipelago, live on the Philippines and the island Sri Lanka.

The fauna of North Eurasia contains one species.

VARIEGATED KUKRI SNAKE

OLIGODON TAENIOLATUS (JERDON, 1853)



TERRA TYPICA. Madras, India.

DISTRIBUTION. It is distributed from the Sri Lanka island and India to north-western Afghanistan, Pakistan, eastern Iran and southern Turkmenistan. In Turkmenistan it is known by several dozens of specimens from western and central Kopet Dagh, as well as from the western Badkhyz. It prefers open parts of the mountains in the deeply cut ravines with streams, slanting slopes with rare vegetation or completely without vegetation. It does not go high into the mountains (the altitude 500-700 m above sea level).

CONSERVATION STATUS. As a rare species it was included into the Red Data Books of the USSR (1984) and Turkmenistan (1985) – category 3. At present it is not included into the list of Red Data Book species of Turkmenistan (1999).

SAND SNAKES

GENUS *PSAMMOPHIS* BOIE *In* FITZINGER, 1826

Slender, long, very agile snakes. The body length of some species can attain 220 cm, for the majority it is 100-130 cm. The narrow head is pointed, slightly distinct from the body. Eyes are large, pupil is round.

The frontal shield is long and narrow. The head is covered with large symmetrical scales. Scales are smooth with one apical pore on each scale. Subcaudal scales are arranged in two rows.

Maxillary teeth differ in their length: among 10-13 teeth the middle is the largest. In the posterior part of the maxilla one-two large teeth with a groove, separated from the row of small teeth by a toothless interval. According to this character sand snakes are referred to the rear-fanged venomous snakes.

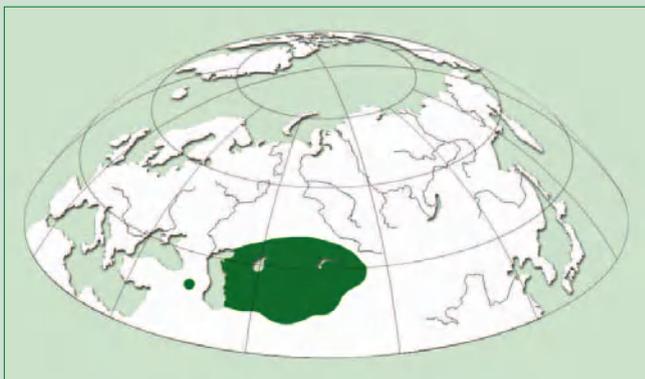
Sand Snakes prefer mainly open arid territories with sparse bush vegetation, including sandy deserts. They actively forage for small mammals, some species – exclusively for lizards. Activity is diurnal. Sand Snakes are oviparous. The clutch contains 3-20 elongated eggs.

The genus contains more than 20 species, widely distributed in Africa, southern and western Asia. One species, *P. condanarus* (Merrem, 1820) penetrates to the east up to Thailand and central Vietnam.

The fauna of North Eurasia contains two species.

STEPPE RIBBON SNAKE

PSAMMOPHIS LINEOLATUS (BRANDT, 1838)



TERRA TYPICA. Eastern coast of the Caspian Sea.

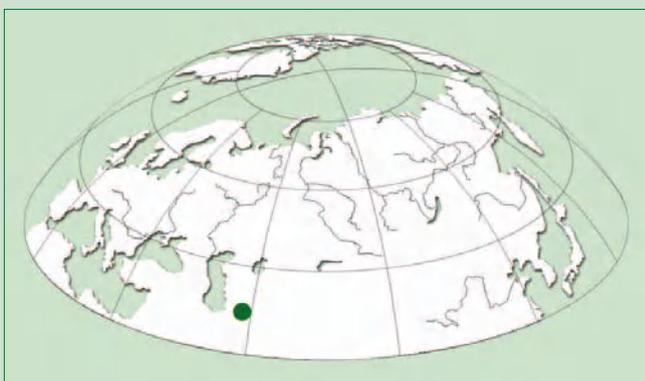
DISTRIBUTION. The species is distributed from southern part of Kazakhstan and Middle Asia to southern Mongolia, north-western China, Pakistan, Afghanistan, Iran and the extreme southern regions of the south-eastern Transcaucasia (Nakhichevan, Azerbaijan). It is an inhabitant of open arid territories, more often found in deserts where it lives on the stabilized and semi-stabilized sands, more rarely – in clayish sagebrush and sagebrush-saltwort semi-desert and on the takyr-like soil. Quite often it goes along the slopes up to the mountains up to the altitude 2600 m above sea level in Afghanistan, 1700 m – in Kirghizia, 1500 m – in Tajikistan. In Kopet Dagh in Turkmenistan it is recorded up to the altitude 1000 m above sea level where it penetrates along the wide inter-mountain depressions.

CONSERVATION STATUS. A common species with a rather stable number.



AFRO-ASIAN SAND SNAKE

PSAMMOPHIS SCHOKARI (FORSSKAL, 1775)



TERRA TYPICA. Yemen.

DISTRIBUTION. It is distributed from northern Africa (southwards to Chad, Ethiopia and Somali) and the Arabian Peninsula across Middle East to the southern Turkmenistan in the north and Pakistan and north-western India in the east. In Turkmenistan in eastern Kopet Dagh it is found on the steep and rocky slopes with a sparse vegetation, and in Badkhyz - on the slopes of hills with grass and

thorns, on the precipices and slopes of ravines, on the rocky tops of remnant coniform hills, more rarely on the plateau and sandy plain. It goes to the mountains up to 1500 m above sea level.

CONSERVATION STATUS. A common species. It is protected in the Badkhyz and Kopet Dagh reservations of Turkmenistan.



FALSE DWARF SNAKES

GENUS *PSEUDOCYCLOPHIS* BOETTGER, 1888

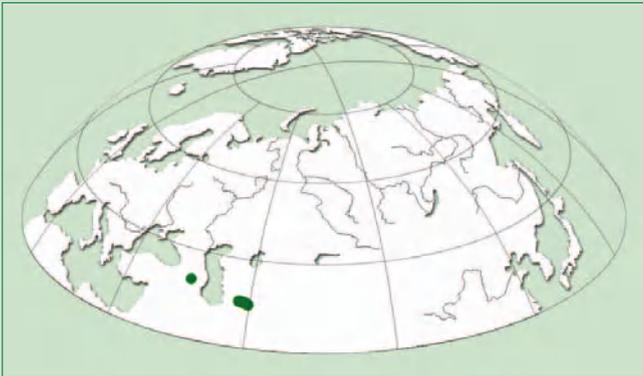
Small snakes with body length up to 37 cm and tail approximately four-five times shorter. They are closely-related to *Eirenis* genus and were referred to it for a long time. From the latter they differ, in particular, by a very thin body. Body diameter can be put 55 and more times in the length of the body with the head.

The scales of the body have one apical pore and are arranged around the mid-body in 15 rows.

The genus includes one species with three subspecies distributed from south-eastern Turkey in the west to Pakistan, Afghanistan and north-western India in the east.

PERSIAN FALSE DWARF SNAKE

PSEUDOCYCLOPHIS PERSICUS (ANDERSON, 1872)



TERRA TYPICA. Bushir, Iran.

DISTRIBUTION. It is widely distributed from south-eastern Turkey and Iraq in the west to Pakistan and north-west of India in the east. It occurs in the southern Turkmenistan (the range Kopet Dagh) and in the Eastern Transcaucasia in the extreme south of Armenia where it is represented by the subspecies *P. p. persicus*. In the mountains of Kopet Dagh it is known up to the elevation about 1000 m above sea level. In Armenia a single record on a steep stony slope of a ravine in the zone of semi-desert is known. Apparently, subspecies *P. p. nigrofasciata* (Nikolsky, 1907) and *P. p. walteri* Boettger, 1888 do not have a taxonomic value.

CONSERVATION STATUS. In Turkmenistan it is a common species in Kopet Dagh and rather rare – in Badkhyz and Karabil.







Saur mountain range, eastern Kazakhstan

ASIAN RAT SNAKES

GENUS *PTYAS* FITZINGER, 1843

Large snakes with the length of the body with the tail up to 360 cm. Eyes are large, pupil is round.

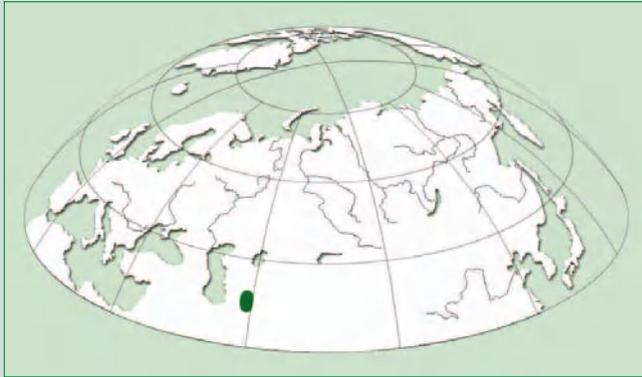
Teeth in the maxilla are arranged in a continuous row and become larger in the direction backwards. The most rear maxillary tooth is strongly bent backwards. Palatine bones are very long and

have a large number of teeth with the middle teeth as the largest. The posterior end of the palatine bones considerably goes behind the anterior end of the transversum.

The genus includes two species distributed in South, East and South-East Asia. The fauna of North Eurasia contains one species.

ORIENTAL RAT SNAKE

PTYAS MUCOSUS (LINNAEUS, 1758)



TERRA TYPICA. India.

DISTRIBUTION. It is widely distributed in South Asia from Afghanistan and Pakistan in the west to southern China in the east, Indochina and Malay Archipelago in the south-east. In Turkmenistan, in the basins of the rivers Murgab and Kushka, up to the Mervsky oasis inclusive, lives oriental rat snake *P. m. nigricens* Chernov *In* Terentiev et Chernov, 1949. In Turkmenistan, as a rule, it is distributed in zone of oases: its life is closely associated with water. In South Asia the nominative subspecies inhabits forests of different type and agricultural territories.

CONSERVATION STATUS. As an endangered species (category 1) it was included into the Red Data Books of the USSR (1984) and Turkmenistan (1985). At present it is included into the Red Data Book of Turkmenistan (1999) as a species of peripheral distribution with declining number— category 2.

KEELBACKS

GENUS *RHABDOPHIS* FITZIGER, 1843

Snakes of medium size with the length up to 150 cm. The body is cylindrical, the tail is of a medium length. The head is large, distinct from the body. Pupil of the eye is round.

Internasal shields have a trapeziform shape. Scales are keeled, form 17-21 rows around the mid-body. Subcaudal scales are arranged in two rows.

The maxillary bone has 18-26 small teeth, as well as two large teeth bent backwards and separated from the rest, the smaller teeth, by a toothless space. Teeth on the mandibular bone are of an equal size. Specialized so called nuchal-dorsal glands are developed in the skin of the back behind the head.

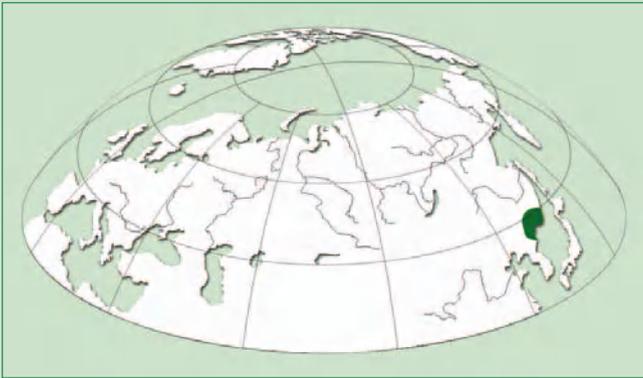
Keelbacks inhabit tropical and subtropical forests; as a rule, they prefer the shores of different bodies of water; they go to the mountains for more than 3000 m above sea level. The activity is mixed: diurnal and nocturnal.

The genus includes about 20 species distributed in East and South-East Asia from the southern part of the Far East (Russia) and Japan across eastern and central China southwards to Indo-Australian Archipelago inclusive and westwards to India, Nepal and Sri Lanka.

The fauna of North Eurasia contains one species.

CHINESE TIGER SNAKE

RHABDOPHIS TIGRINA (BOIE, 1826)



TERRA TYPICA. Japan.

DISTRIBUTION. It is found in Korea and Japan, widely distributed in China, including its western and southern parts. On the territory of Russia subspecies *R. t. lateralis* (Berthold, 1859) is found in the Far East (in the Primorski and Khabarovsk Territories). Usually it prefers the areas near bodies of water or in humid places overgrown with moisture-loving vegetation. However records far of the water are also known, both in mixed and deciduous forests and in woodless places including the sea coast.

CONSERVATION STATUS. The number is relatively stable.



RHYNCHOCALAMUS SNAKES

GENUS *RHYNCHOCALAMUS* GUNTHER, 1864

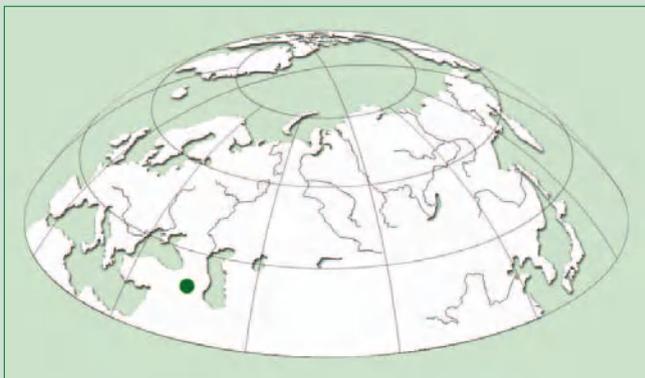
Small snakes, similar in their habitus with some representatives of *Oligodon* genus, with which they were united for a long time.

The intermaxillary shield is large and strongly turned up onto the top of the snout, deeply jutting out between the internasal shields. The width of the frontal shield is equal or somewhat exceeds its length. The nostril is cut in one entire shield. Scales of the body is smooth.

Two species belong to the genus distributed in Middle East to the south-eastern Turkey and eastern Transcaucasia in the north and south-western Arabia in the south. One species occurs in North Eurasia.

BLACK-HEADED RHYNCHOCALAMUS

RHYNCHOCALAMUS MELANOCEPHALUS (JAN, 1862)



TERRA TYPICA. Beirut, Lebanon.

DISTRIBUTION. It is distributed in eastern Turkey, Syria, Israel, Iraq and Iran, penetrating even into the eastern Transcaucasia, from where a few findings are known in the left-bank valley of Aras River in the south of Armenia and Nakhichevan (Azerbaijan). Of two known subspecies in the Caucasus occurs *R. m. satunini* (Nikolsky, 1899) [terra typica: vicinity of Megri, Armenia]. It is found in sagebrush semi-desert on the dry, strongly stony slopes with a sparse grassy and bush vegetation.

CONSERVATION STATUS. As a rare species which can be extinct under habitat destruction (category 3), it is included into the Red Data Books of the USSR (1984) and Armenia (1987).



DIADEM SNAKES

GENUS *SPALEROSOPHIS* JAN In DE FILIPPI, 1843

Snakes of medium and large size with the length up to 180 cm. They are closely-related with the genus *Coluber* and were referred to it during a long time.

As a rule, from one up to seven small scales of an irregular shape are located between pre-frontal and frontal shields, dividing them. Temporal shields of the first and second rows are very small and nearly do not differ from the rest of the scales of the temporal region. Around the eye there are 10-13 scales of different shape, of which the lower ones completely separate it from

the supralabial. The nostril is cut in the middle of two shields. The anal shield is entire or divided.

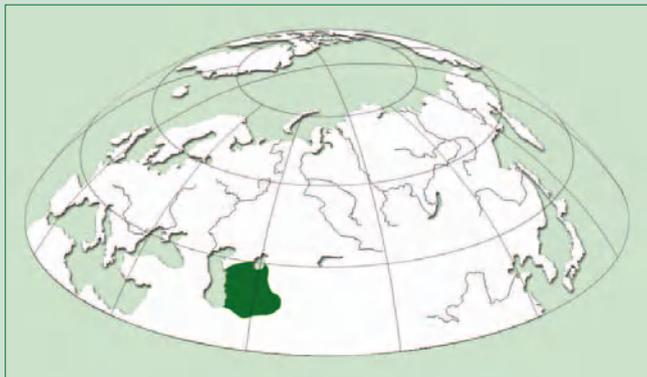
Maxillary teeth gradually increase backwards. Their row is without a diastema.

The genus contains four species distributed in northern and north-east Africa, on the Arabian Peninsula, in Middle East, Middle and South Asia to Afghanistan, Pakistan and northern India in the east.

In North Eurasia one species.

DIADEM SNAKE

SPALEROSOPHIS DIADEMA (SCHLEGEL, 1837)



TERRA TYPICA. Bombay, India.

DISTRIBUTION. It is distributed in northern Africa, Arabia, Syria, Iraq, Iran, in the Middle Asia, Afghanistan, Pakistan, India. The dis-

tribution range widely extends on the territory of Middle Asia and southern Kazakhstan. Here, as well as on the mountain plateaus of Iran, up to the western borders of the Zagros mountains, and also in the western part of Afghanistan and Pakistan, one of the four subspecies is distributed – *S. d. schiraziana* (Jan, 1865) [terra typica: Shiraz, Iran]. In Middle Asia it is found everywhere, except for the upper zone of the mountains. The most preferred biotopes are sandy and clayish deserts. In western Turkmenistan this species is found on the takyr-like and solid soil with sparse vegetation, mainly with sagebrush, and in the Karakum desert – on the stabilized and movable sands.

CONSERVATION STATUS. There are no exact data about the changes of its number. In the Karakums (Turkmenistan) it is common.



CAT SNAKES

GENUS *TELESCOPUS* WAGLER, 1830

Slender snakes of medium sizes with the body length 80-180 cm. The body is cylindrical, slightly flattened. The head is covered with large regular shields and is clearly distinct from the body. The eyes are of a medium size, with a vertical pupil.

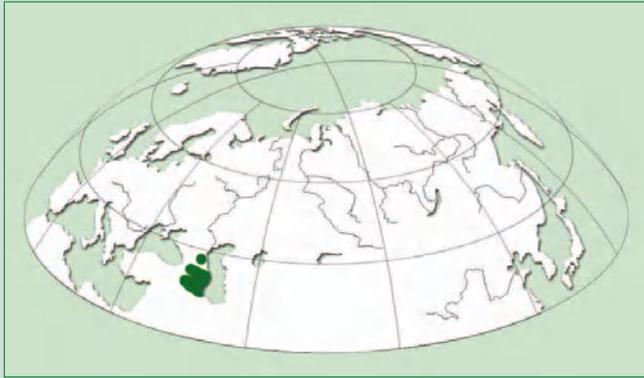
Scales are smooth, form 19-23 rows.

Maxillary bone has 10-12 teeth, which decrease in the direction deeper into the mouth. In the posterior part of the bone there is a pair of large grooved fangs, separated from the rest of the teeth by a toothless space. The anterior teeth on the mandibular bone are longer than the posterior.

Cat Snakes are terrestrial and nocturnal. They prefer upland and plain deserts and semi-deserts. Cat snakes go to the mountains to the altitude more than 2000 m above sea level. Snakes feed mainly on lizards, more rarely on small birds and mammals. They kill their prey by the venom. Oviparous snakes, the clutch contains from five up to 15 eggs.

Cat snakes are distributed in the southern Europe, southwestern Asia and in Africa. The genus contains 11-12 species, two species live in North Eurasia.

CAUCASIAN CAT SNAKE



TERRA TYPICA. Trieste (the coast of the Adriatic Sea), Italy.



TELESCOPUS FALLAX (FLEISCHMANN, 1831)



DISTRIBUTION. It is distributed on the Balkan Peninsula and the islands of the Aegean and Mediterranean Seas, in Iran, Iraq, Syria, Lebanon, Turkey and Israel. The subspecies *T. f. iberus* (Eichwald, 1831) [terra typica: Tiflis (= Tbilisi), Georgia] is found in Dagestan and in the Transcaucasia (Armenia, Azerbaijan and eastern Georgia). On the territory of Russia it is known only by the records from the territory of Dagestan. *T. fallax* is found on the stony slopes with sparse grassy and bush vegetation. It occurs in the montane-xerophytic steppe, in semi-deserts and much more rarely – on the edges of montane forests.

CONSERVATION STATUS. As an endangered rare species, occurring on the territory of Russia and the Transcaucasia on the periphery of its distribution range (category 3). It is included into the Red Data Books of the Russian Federation (2001) and Armenia (1987). Caucasian Cat Snake is protected on the territory of the Vashlovansky and Lagodekhsy reservations in Georgia.

INDIAN DESERT CAT SNAKE



TERRA TYPICA. Kerman, southern Iran.

DISTRIBUTION. It is distributed in Iran, Afghanistan and Pakistan. No more than 20 specimens of this species are known. 3 of them were registered in western and central Kopet Dagh in the south of Turkmenistan. One of the most rare snakes of Asia. The records in Turkmenistan are associated with the stony slopes of Kopet Dagh ravines with a rare tree-bush vegetation, rocky intermountain depressions not higher than 600-700 m above sea level.

CONSERVATION STATUS. As a species with an insufficiently investigated ecology (category 4) it was included into the Red Data

TELESCOPUS RHINOPOMA (BLANFORD, 1874)



Books of the USSR (1984) and Turkmenistan (1985). In the latest edition of the Red Data Book of Turkmenistan (1999) it is referred

to the category 3 – a rare species occurring on the periphery of its distribution range.

CORAL and SEA SNAKES

FAMILY ELAPIDAE BOIE, 1827

The family contains more than 200 species united into 64 genera and 6 sub-families.

They are distributed in tropical and subtropical regions of all the continents, except for Europe, as well as of the World Ocean. Coral and Sea snakes reach a great diversity in Australia, South America, Africa, South and Southeast Asia and the areas of water of the Indo-Pacific.

The fauna of North Eurasia contains 3 genera belonging to 3 sub-families.

The subfamily Bungarinae Fitzinger, 1826 includes 11 genera of oviparous and ovoviviparous species which inhabit forests, savannas, montane territories and deserts in the tropics and subtropics of the continental and insular Asia and Africa. One genus, *Naja* Laurenti, 1768, is represented in the fauna of North Eurasia.

The subfamily Sea Snakes, Hydrophinae Fitzinger, 1843 includes 17 genera which unite more than 50 species and are

distributed in the tropical seas of the Indian and Pacific Oceans. The only record of the monotypic genus *Pelamis* Daudin, 1803 is registered in the fauna of North Eurasia.

The subfamily Sea Kraits, Laticaudinae Cope, 1879 is presented by 2 genera with 5 species inhabiting the coastal zone (not farther than one-three miles from the coast) of the Pacific and Indian Oceans. Some taxonomists consider all 5 species as referred to one genus *Laticauda*. In North Eurasia one record of genus *Pseudolaticauda* Kharin, 1984 is registered in the water area of Russia.

The taxonomic status of the latter two subfamilies is controversial. Previously they were considered in the ranks of distinct families.

TRUE COBRAS

GENUS NAJA LAURENTI, 1768

Large snakes with body length up to 250 cm. The top of the head is covered with large symmetrically arranged scales. Pupil is round.

The nostril occupies nearly all length of the suture between the nasal shields and contacts the internasal shield. The preocular shield, as well as one of the supralabial shields, contacts simultaneously the eye and the postnasal shield. No loreal shield.

The scales are smooth, often convex, without apical pits, not widened along the spine; they are arranged in more or less zig-zag-shaped transverse rows. Subcaudal scales are arranged in two rows.

In the posterior part of the maxillary bone there are 1-3 small teeth, separated from 2 large fangs by a large toothless interval.

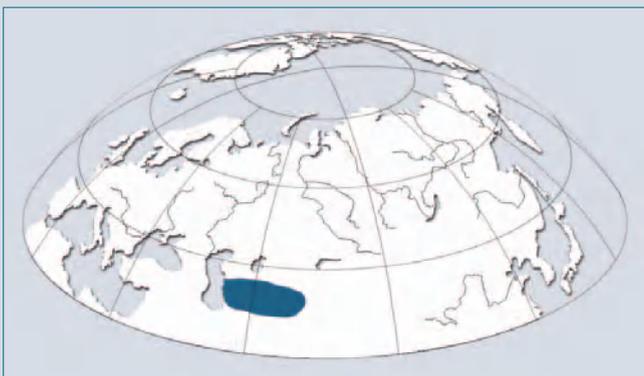
The neck region and the anterior part of the body (the hood) can be considerably widened. It is used as a character of the demonstrative behaviour of these snakes aggressively rising and swinging under the danger.

Oviparous snakes. The clutch contains from 8 up to 25 eggs.

The genus includes 20 species occurring in South and South-East Asia and Africa. In North Eurasia there is one species.

CENTRAL ASIAN COBRA

NAJA OXIANA (EICHWALD, 1831)



TERRA TYPICA. Krasnovodsky gulf of the Caspian Sea, Turkmenistan.

DISTRIBUTION. It is distributed in north-western India, Pakistan, Afghanistan and north-eastern Iran. In Middle Asia it occurs in Turkmenistan (except for the extreme north-western regions), in south-western Tajikistan and Uzbekistan northwards up to the mountain range Nura-Tau, the mountains Bel'-Tau-Ata and the western spurs of the Turkestan range. It inhabits montane ravines, river valleys, rocky slopes overgrown with bush vegetation. It gets into the waterless sandy deserts where this snake prefers the colonies of rodents (gerbils) between sand dunes and on their slopes.

Until recently the Middle Asian Cobra was considered a subspecies of the Common cobra, *Naja naja* (Linnaeus, 1758).

CONSERVATION STATUS. As a rare species (category 3) it was included into the Red Data Books of the USSR (1984), Uzbekistan (1983) and Turkmenistan (1985). At present this species declining in its number (category 2) is included into the Red Data Books of Turkmenistan (1999) and Uzbekistan (2003) – category and status

3, NT. In sandy deserts the situation is more favorable. In other landscapes and biotopes the number is reducing due to destruction of habitats. The populations in river valleys, submontane deserts and foothills where the habitats are being destroyed due to intensive economic development, are especially vulnerable.



PELAGIC SEA SNAKES

GENUS *PELAMIS* DAUDIN, 1803

A genus of sea snakes with a laterally compressed strap-shaped body gradually crossed into an even more flattened paddle-shaped tail. Tail is bluntly rounded at the tip.

The body is covered with small hexagonal or triangular scales. The scales of the head are enlarged, of a regular shape. Ventral scales are small.

One species of highly specialized sea snakes is referred to this genus. It is widely distributed in the Indo-Pacific from the eastern coast of Africa throughout the tropical seas of the Indian and Pacific oceans to the western coasts of America.

PELAGIC YELLOW-BELLIED SEA SNAKE

PELAMIS PLATURUS (LINNAEUS, 1766)



TERRA TYPICA. Not indicated.

DISTRIBUTION. It is distributed in the Pacific and Indian oceans northward up to Japan and southward up to the coast of Australia (except for the most cold waters of the southern coast-line). In Russian Far East it is known by a single dead specimen found on the coast of the Pos'et bay to the south of Vladivostok. A pelagic species encountered at a considerable distance from the coast



in the open sea. It feeds on fish previously killed with the venom. *Pelamis platurus* is a highly specialized sea snake that never passes to land. Females give birth to live babies in the water.

CONSERVATION STATUS. Not determined.

FALSE SEA KRAITS

GENUS *PSEUDOLATICAUDA* KHARIN, 1984

Snakes of moderate sizes with the intermaxillary shield divided into two unequal lobes. The lower larger lobe has a length which is nearly equal to its width. Two pairs of elongated mandibular shields are in contact with each other on the suture between them. 187-207 ventral scales.

The genus contains two species distributed only in the western part of the Pacific Ocean. In the fauna of North Eurasia there is one species known by the only single record.

LARGE SEA KRAIT

PSEUDOLATICAUDA SEMIFASCIATA (REINCHARDT, 1837)



TERRA TYPICA. Moluccas islands.

DISTRIBUTION. It is distributed on the Ryukyu Islands (southern Japan), in the Yellow Sea southward to the island of Taiwan, on the Philippine islands, on the Moluccas, in Indonesia. In Russian Far East one record is known from the water area of the Far Eastern Marine reservation on the Sosnovyi cape (the Peter the Great Bay of the Sea of Japan). Such a finding could be explained by coming of *P. semifasciata* with a shoal of sardines-ivasi. Sea snakes occur not far from the coast. Lay eggs on land. Feeding on fish of Muraenidae and Gobiidae families is registered.

CONSERVATION STATUS. Not determined.







The head of Viper Snakes is usually wide and clearly distinct from the body. It is covered with small scales or large shields. Snakes with thick body and relatively short tail. Eyes with a vertical pupil.

The movable maxillary bone is shortened. In snakes of the Viperinae subfamily there is no notch on anterior-upper edge of this bone, whereas the species of the Crotalinae subfamily are characterized by a deep notch.

The maxillary bone is jointed with the prefrontal bone by its anterior end. It allows this bone to take a vertical position to the axis of the skull when opening the mouth. On the posterior edge of the maxillary bone there are large tubular venom-conducting fangs connected by a duct with the venom glands. Palatine, pterygoid and dentary bones have ordinary teeth.

numerous fatal cases caused by bites are known. Even in the case of recovery strong necrotic effects in muscular and bony tissues are developed, as well as diseases connected with affections of liver and kidneys.

The family is divided into four subfamilies: Azemiopinae Liem, Marx et Rabb, 1971; Crotalinae Opperl, 1811; Causinae Cope, 1860 and Viperinae Laurenti, 1768, uniting about 240 species belonging to 35 genera. They inhabit Europe, Africa, South and North America, continental and insular Asia. Vipers are absent in Australia, Oceania, New Guinea and on Madagascar island.

In the fauna of North Eurasia are represented 4 genera belonging to two subfamilies: Crotalinae (*Gloydius*); and Viperinae [(*Echis*, *Macrovipera* and *Vipera* (with the subgenera *Pelias*, *Montivipera* and *Vipera* s. str)].



Snake bite by *Gloydius halys*

There are no rudiments of the pelvis and hind limbs. The snakes of the Crotalinae subfamily have clearly marked thermolators. They look like deep pits between the nostrils and the eye. It is a base for their common name – pit vipers.

Viperids are presented by terrestrial, fossorial and arboreal forms. The species inhabiting high latitudes and montane regions have as a rule a diurnal activity; the great majority of tropical vipers are nocturnal snakes. The family includes both ovoviviparous and oviparous species.

All Viper Snakes are venomous. The venom has a hemolytic effect (it influences on blood and blood-forming organs). Bitten animals die of incoagulability of blood and numerous haemorrhages of internal organs. Viperids are very dangerous for humans;

The family included many rare and poorly known species. 19 species are included into the IUCN Red list. In the fauna of North Eurasia 3 species were listed into the Red Data Book of the USSR (1984). Many of them are included into the list of animals protected by the Bern Convention, into the regional Red Data Books and protected by the local laws. However, it must be admitted that as the majority of other snakes, vipers suffer at first from the transformation of the territories and total destruction of habitats due to human activity. The realization of the conservation measures is often formal and insufficient.

Snakes of moderate sizes, up to 80 cm in length. The head is covered with 9 large scales forming a flat shield. The pupil of the eye is vertical.

Scales on the body are keeled, with two apical pores. Subcaudal scales form two rows.

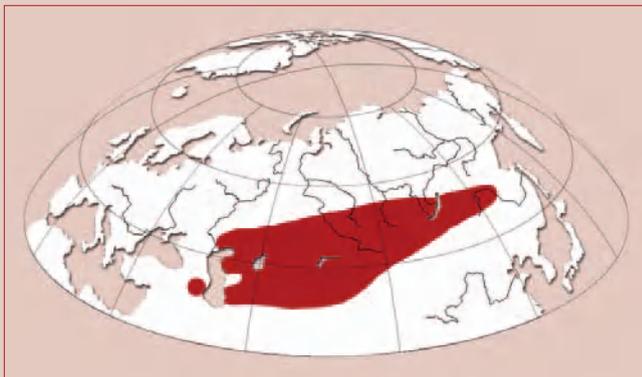
All the species are venomous, have paired tubular venomous fangs on a very movable maxillary bone. As in most of viperids in the venom composition of Copperheads prevail enzymes-hemotoxins influencing the blood-forming system, causing haemorrhages, tromboses, and leading to extensive necroses. However in the venom composition of Copperheads and their closest relatives (rattlesnakes) neurotoxins are also registered. Their influence the nervous system causes paralysis of the respiratory and other nerve centers. Thus in the effect of the venom two stages are registered: the first is neurotoxic and the second one is hemotoxic, typical for true Viper Snakes.

For a long time the species of the genus *Gloydius* were referred to the Asian-American genus *Agkistrodon*. It is now divided into five genera: *Calloselasma* Cope, 1860 – 1 species in Indochina and Indonesia (islands Java and Sumatra); *Deinagkistrodon* Gloyd, 1979 – 1 species in southern China, including the island Taiwan, and northern Indochina; *Hypnale* Fitzinger, 1843 – 3 species on the island Sri Lanka and southern India; *Agkistrodon* Beauvois, 1799 – 3 species in North and Central America (southwards to the north-west of Costa Rica inclusive); *Gloydius* Hoge et Romano-Hoge, 1981 with 10 species inhabiting Central and Eastern Asia, Mongolia, China, Korea, Japan (except for the Ryukyu Archipelago), Pakistan, northern India, Nepal, Iran, Afghanistan, the countries of Middle Asia, Kazakhstan, Southern Transcaucasia.

In North Eurasia three species are distributed.

HALY'S PIT VIPER

GLOYDIUS HALYS (PALLAS, 1776)



TERRA TYPICA. Borgaiskaya steppe, 85 km from the town Kyakhta.

DISTRIBUTION. It inhabits the very diverse biotopes: plain and highland steppes, semi-deserts. It can come into stabilized sands along the colonies of rodents. It is observed in slide-rocks in montane forests, in clayish-sandy shores of steppe and forest rivers and lakes and subalpine meadows where snakes go up to 3000m above sea level. It is widely distributed species known from the Trans-Volga area and the Mangyshlak Peninsula in the west – north-west to Mongolia, upper reaches of the Huang He River and the vicinity of the town Baotou in Inner Mongolia (China) in the east – south-east. The southern border of the distribution range runs on the southern shore of the Issyk Kul Lake (Kyrgyzstan) and the upper reaches of Syr Darya River (in Uzbekistan and Kyrgyzstan). To the north the distribution range extends to the mountains of Kuznetski Alatau (the Kemerovo region) and the western shore of the Baikal Lake in Irkutsk region.

A population from eastern Afghanistan is known as the subspecies *G. halys boehmei* (Nilson, 1983). On the whole 6 subspecies are distinguished, three of which are found on the territory of North Eurasia. *G. h. halys* (Pallas, 1776) in the eastern part of the



Gloydius halys caraganus

range [from the river Zeya and Great Khingan in the east across the Southern Siberia, Mongolia and north-western China westwards to 74°N in the mountains of Kirghiz Tien Shan and Kazakh Hillocky Area (Melkosopochnick); in the south-east it reaches the northern part of the Huang He River. From the south distribution is limited by Alashan' and Takla-Makan deserts. In the north the distribution range runs on the very lower reaches of the Zeya River, on the southern slope of the Vablonovyi mountain range, on the valley

of the Selenga River and the shores of the Baikal Lake up to the Stanovoe highland, across the Eastern Sayan and Altai to Eastern Kazakhstan. *G. h. caraganus* (Eichwald, 1831) lives the western part of the distribution range [terra typica: Mangyshlak Peninsula, the eastern coast of the Caspian Sea, western Kazakhstan]; from the north-eastern coast of the Caspian Sea and the estuary of the Volga River in the west up to the Lake Balkhash and the eastern part of the Kazakh Hillocky Area (Melkosopchnick) in the east. Its distribution range covers the northern Turkmenistan in southern part of Ustyurt plateau, Tajikistan, Uzbekistan, Kazakhstan and Kyrgyzstan. It does not occur in highlands where it is replaced by *G. h. halys*. *G. h. caucasicus* (Nikolsky, 1916) inhabits south-eastern Azerbaijan (Talysh mountains), southern Turkmenistan (Kopet Dag), northern Iran (the mountains Elburz and Kopet Dag) and north-western Afghanistan to the north from Herat (terra typica: Lenkoransky district, Azerbaijan).

CONSERVATION STATUS. The Caucasian subspecies *G. h. caucasicus* was included into the Red Data Book of Turkmenistan (1985) as a rare subspecies on the territory of the republic (category 3). At present it is excluded from the list of protected species (Red Data Book of Turkmenistan, 1999).



Gloydius halys caucasicus

Gloydius halys halys



AMUR PIT VIPER



TERRA TYPICA. Cape Tir, Amur River, Amur region, Russian Far East.

DISTRIBUTION. Russian Far East northwards to the lower reaches of Amur River (up to the town Nikolaevsk-na-Amure), in the southern part of the Khabarovsk territory and in the extreme south of the Amur region westwards up to the Zeisko-Bureinskoe interstream area; in the east the distribution range is limited by the coast of the Sea of Japan and the Tatar Channel. It lives in north-eastern China (Manchuria) and Korean Peninsula. A mesophilic species, inhabiting forest regions of the Far East, it is found even in remote parts of the Ussuri taiga. There is a high density on the forest slide-rocks in the mountains of Sikhote Alin in the Ussuriiski, Lazovski and Sikhote Alinski reservations, on the coast of the Sea of Japan. In this area on the border of forest and beach *G. intermedius* reaches the town Soviet Haven from the south. In general the distribution range is located in the zone of cedar-broad-leaved forests of a Manchurian type. In the mountains of Sikhote Alin it goes to the

GLOYDIUS INTERMEDIUS (STRAUCH, 1868)



upper border of the cedar-broad-leaved forest (up to 1100-1300 m above sea level). This forest in the north consists mainly of Korean cedar, poplar, Amur lime, maples, birch, yew tree, and in the southern part - of needle fir-tree, hornbeam, Japanese alder, Sakhalin cherry-tree.

It was earlier often noted as *Agkistrodon saxatilis* (Emelianov, 1937) which must be considered as a junior synonym of *G. intermedius*.

CONSERVATION STATUS. A common species, the status of the populations does not require special measures on protection.

USSURI PIT VIPER

GLOYDIUS USSURIENSIS (EMELIANOV, 1929)





TERRA TYPICA. Russian Far East, Primorsky Territory, valley of the river Tetyukhe, village Vladimiro-Monomakhovo.

DISTRIBUTION. This snake prefers very humid areas. It inhabits banks of rivers, swamps, does not avoid rice fields. As a rule, it prefers open areas with grass or bushes of hazel, broom. In the forest regions of Sikhote Alin it usually lives in forest edges and warmed up stony screes on the slopes of the mountains. It is common on the coast of the Sea of Japan. In the mountains it goes up to 1300 m above sea level. *G. ussuriensis* is found in the Russian Far East northwards up to the lower Amur River, westwards up to the rivers Argun' and Shilka (Chita region); in the east the distribution is limited by the coast of the Sea of Japan and the Tatar Channel. Outside of Russia it lives in Manchuria and in the north of Korea. Until recently it was referred to *Gloydus blomhoffii* (Boie, 1826), widely distributed in eastern Asia on the mainland and Japanese islands.

CONSERVATION STATUS. A common species, the status of the populations does not require special measures on protection.



SAW-SCALED VIPERS

GENUS *ECHIS* MERREM, 1820

Snakes of medium sizes, up to 90 cm in length. The head is clearly distinct from the body and covered with small keeled scales. The eye is separated with one or several rows of small scales from supralabial shields; the pupil is vertical.

Internasal scales are present. Nostrils are between two or more shields. Dorsal scales are with clearly marked keels. On the sides of the body there are 4-8 rows of oblique scales with strongly serrated keels. Subcaudal scales form one row.

They are distributed in northern Africa, on the Arabian Peninsula, in Middle East, Middle and western Asia, India and Sri Lanka. Traditionally 2 species with a large number of subspecies were considered in the genus. At present specialists distinguish

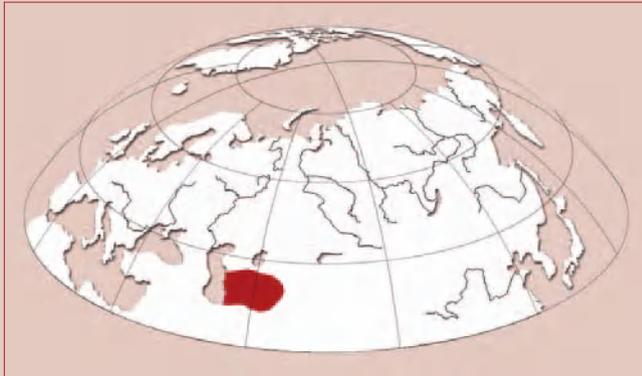
up to 12 species, of which 8 species are distributed in northern Africa, and 4 live in Asia.

Despite of relatively small sizes, *Echis* is known as a very dangerous venomous snake. Among viperids its venom is considered as one of the most toxic, with the most clearly developed haemophilic effect of influence. It sharply reduces the level of fibrinogen in blood, what causes abundant haemorrhages in the area of the bite, from mucous membranes of the eyes, nose and mouth. Haemorrhages of the internal organs also have a clearly marked character.

One species is found in North Eurasia.

MIDDLE-ASIAN SAW-SCALED VIPER

ECHIS MULTISQUAMATUS CHERLIN, 1981



TERRA TYPICA. Bairam-Ali, Maryiskaya region, Turkmenistan.

DISTRIBUTION. Snake inhabits different arid biotopes, from hilly sandy deserts with haloxylon desert woodlands up to loessial and clayish deserts. Often it prefers river steeps, colonies of gerbils, sparse bush thickets. It goes into the mountains up to 1000 m above sea level. It inhabits deserts in Turkmenistan, Uzbekistan, south-western Tadjikistan, Afghanistan and eastern Iran.

CONSERVATION STATUS. A common species, the status of the populations does not require special measures on protection.



Snakes of medium to large sizes with a relatively heavy body, short tail and a large rather wide head. Head is clearly distinct from the body. The pupil is vertical.

The head is covered with small scales. Some species have large frontal and parietal shields. Prefrontal and internasal shields are not developed. The nasal shield is separated from the intermaxillary one by the nasal-intermaxillary shields. The body scales are strongly keeled.

Movable maxillary bones have large tubular venomous fangs. All vipers are venomous. Venom has a strongly marked hemolytic effect. The maxillary bone is short, without a deep notch on the anterior-upper edge; it is jointed with the prefrontal bone with the anterior end. Small teeth are located on the palatine, pterygoid and dentary bones.

The genus unites about 30 species inhabiting northern Africa, Europe and Asia. The fauna of North Eurasia contains 14 species. 3 subgenera are considered in the genus *Vipera* Laurenti, 1768 (sensu lato). Shield-headed vipers – *Pelias* Merrem, 1820 include 14 species inhabiting Europe and northern Asia. Eight species are referred to Asia Minor vipers – *Montivipera* Nilson, Tuniyev, Andren, Orlov, Joger et Herrmann, 1999, distributed in the Transcaucasia, Turkey, Greece, Iran, Syria, Jordan, Israel and Lebanon. Beside *Vipera raddei* Boettger, 1890, distributed in North Eurasia, seven more species are referred to this subgenus: *V. albicornuta* Nilson et Andren, 1985 [north-western Iran]; *V. albizona* Nilson, Andren et Flardh, 1990 [central Turkey]; *V. bornmuelleri* Werner, 1898 [south-

ern Lebanon and Syria]; *V. bulgardaghica* Nilson et Andren, 1985 [Anatolia, Turkey]; *V. latifii* Mertens, Darevsky et Klemmer, 1967 [Lar valley, Elburz, Iran]; *V. wagneri* Nilson et Andren, 1984 [eastern Turkey and north-western Iran]; *V. xanthina* (Gray, 1849) [north-eastern Greece, islands of the Aegean Sea and the European part of Turkey].

The third subgenus, *Vipera* sensu stricto includes six species known from northern Africa and southern Europe. Some more species of *Vipera* sensu lato are distinguished as a distinct genera. Giant vipers – *Macrovipera* Reuss, 1927 (4 species found in north-western Africa, on the islands of the Mediterranean Sea, in the Caucasus, in Turkey, in south-western Asia and Middle Asia, in Iran and Afghanistan) and Chain vipers – *Daboia* Gray, 1842 (one species widely distributed in South and South-East Asia including a number of islands of the Indo-Australian Archipelago and Sri Lanka island and in south-eastern China including Taiwan island) are considered as distinct genera.

The genus includes many rare and narrow-ranged species. 11 species of the genus are included into the IUCN Red list. In the fauna of North Eurasia three species were included into the Red Data Book of the USSR, and numerous species are listed in the regional Red Data Books and lists of protected species. All the species of the genus in the countries of Western and Central Europe are protected by the regional laws, and six species – by the Bern “Convention on Protection of European Species of Wild Fauna and their Habitats”.



Lotiev's Viper, *Vipera (Pelias) lotievi*







TERRA TYPICA. Uppsala, Sweden.

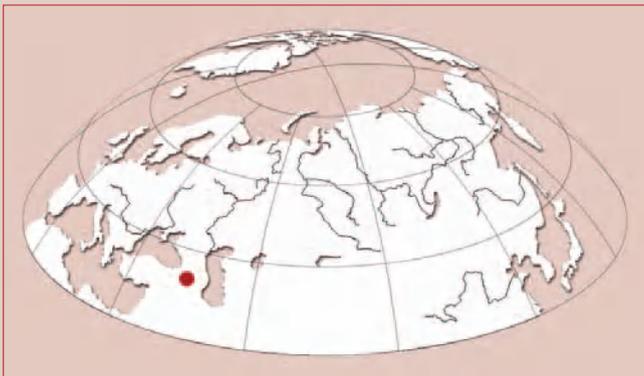
DISTRIBUTION. The species widely inhabits Europe and Asia. It forms three subspecies. In North Eurasia only the nominative subspecies *V. b. berus* is found. It is distributed in the European part to the north to 68°N, to the south – approximately to 45°N. In the north-west of Russia on the Kola Peninsula the viper gets across the Polar Circle. Here it is known from the Lapland reservation and the Lovozerski region (the Kurga River) and from the coast of the Barents Sea. In the east in the Asian part of the distribution range along the valley of the Lena River the northern limit of the distribution reaches 62°N. The eastern border of the distribution range in Russia passes in the east of the Chita region, and outside of Russia – in the north-west of China and Mongolia in the Mongolian Altai. It is also encountered in eastern Kazakhstan. The most dense populations are known in mixed forests with meadows and different types of swamps. In the north and especially in the north-east of the distribution range, the main limiting factor



is the availability of hibernation places. Thus, in the north-east of the zone of permafrost the distribution of vipers is frequently limited by narrow valleys of rivers melting the permafrost layer and forming conditions for hibernation. In the mountains it goes up to 3000 m above sea level.

CONSERVATION STATUS. It is reducing in number due to transformation of habitats and draining of swamps. The sufficiently safe status of populations is registered in well-preserved forest massifs.

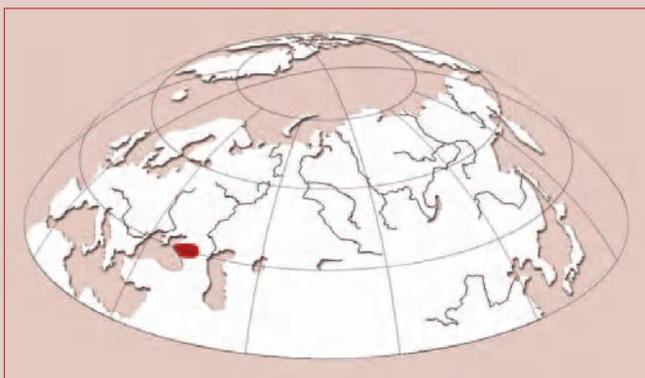




TERRA TYPICA. Mountain Legli, Mokrye (Wet) Mountains, Gukasyanski region, Armenia.

DISTRIBUTION. It was found firstly in the south-eastern part of the Javakhet mountain range in Armenia, named "Mokrye (Wet) Mountains". This population is known in the subalpine and alpine meadows of Legli Mountain at the altitude 2600-3000 m above sea level on the Armenian-Georgian border. A high-mountain snake, it inhabits rocky screes emerging directly from under snow, detrital slopes with a great amount of large-sized detritus of volcanic rocks with a steepness 35-45°. Recently a new locality was reported from north-eastern Turkey.

CONSERVATION STATUS. A very rare narrow-ranged species, it is included into the IUCN Red list (category CR C2b).



TERRA TYPICA. Upper reaches of the river Malaya Laba, northern Caucasus, Krasnodar region, Russia.

DISTRIBUTION. The distribution range of the species covers the Great Caucasus in Russia, Abkhazia, Georgia and, apparently, of Azerbaijan; it extends on the northern and southern slopes of the Great Caucasus range from Fisht-Oshten massif in the west up to the eastern Georgia and north-western Azerbaijan (Lagodekhi and Zakatali reservations) in the east. The continuous distribution range stretches eastwards up to the Bol'shaya Laba River, further a chain



Female, Mzymta river, 1800 m elevation





Male, Mzymta river, 1600 m elevation

of isolated populations is known from Karachaevo-Cherkessia, Kabardino-Balkaria, North Ossetia, Ingooshetia, Chechnya, Dagestan, northern and eastern Georgia. It inhabits the upper-forest zone, subalpine and alpine meadows, rocky screes and montane moraines from 1500 up to 3000 m above sea level. It can go down lower along the valleys of large rivers. It is registered in subalpine birch groves, pine forests, beechen-birchen-mountain ash elfinwoods and in park maple forests. Usually moraines provide also suitable conditions for hibernations.

CONSERVATION STATUS. Degradation of habitats is connected with an intensive grazing of cattle on subalpine pastures. It is included into the IUCN Red list (category VU C1+2a). Caucasian viper – a species to which *Vipera dinniki* was previously referred, was included into the Red Data Books of the USSR (1984) and Georgia (1982). At present this distinct species is included into the Red Data Book of the Russian Federation (2001) with the status and category 2 (as an endemic of high mountains of Great Caucasus, reducing in its number in the west Caucasus).

Male, Lake Kordyvach





Male, Mzymta river, 1200 m elevation



Female, Lake Kordyvach



Female, Fisht mount



Female, Lake Kordyvach



Male, Aishko mount, 1800 m elevation



Male, Fisht mount



Armenia



Female, region of Aishko mount, Mzymta river, 1200 m elevation



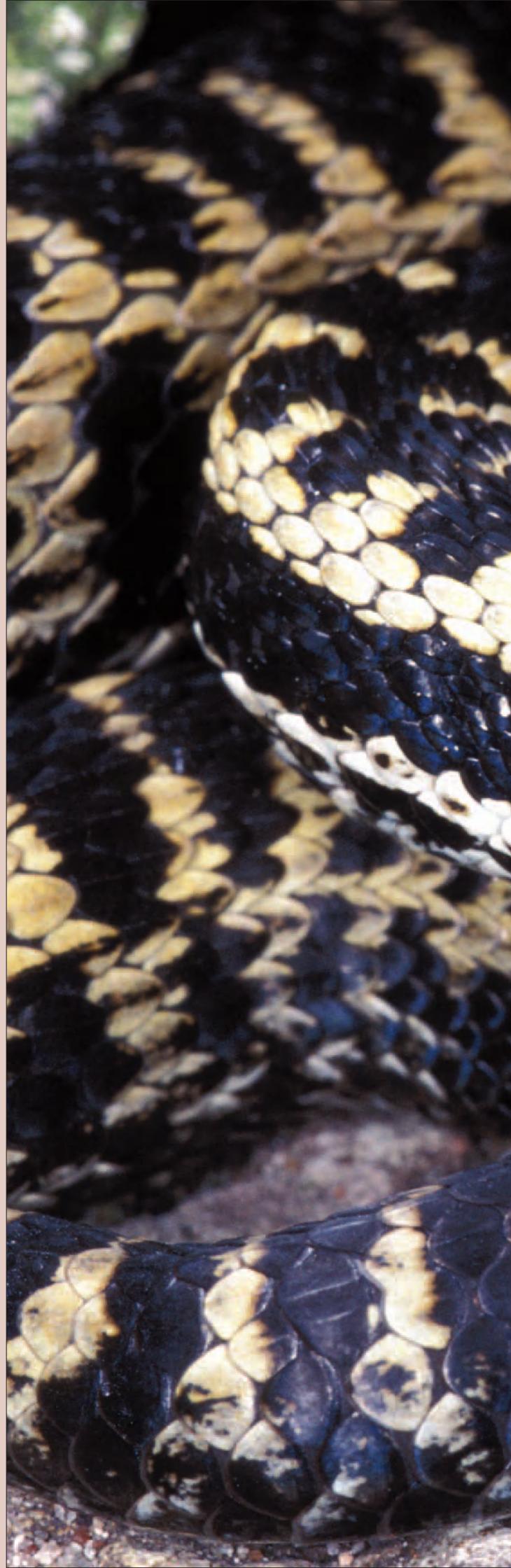
Juvenile male, captive breeding



Juvenile female, captive breeding



Juvenile male, captive breeding

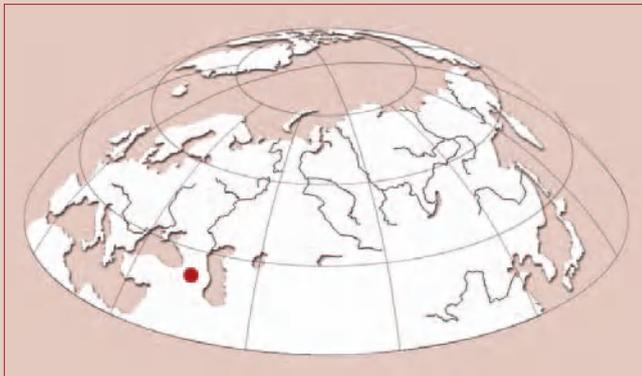








Luga River valley, Leningrad oblast, Russia



TERRA TYPICA. Eriwan' (Yerevan), Armenia.

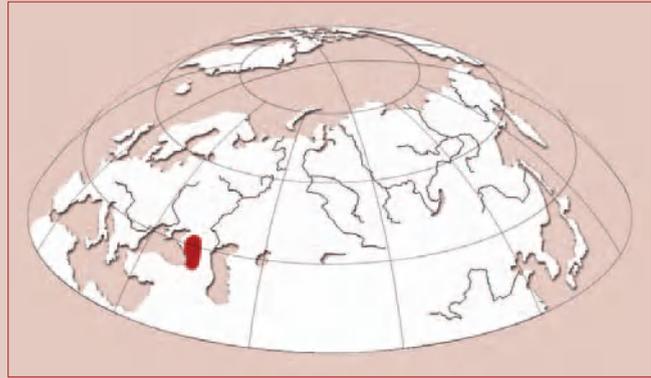
DISTRIBUTION. It is found in the Kars and Erzurum Provinces in north-eastern Turkey and montane-steppe regions of Armenia at the altitude 1000-2200 m above sea level. A montane-steppe species. It inhabits dry slopes of mountain, rocky montane steppes, banks of canyons overgrown with bush vegetation.

CONSERVATION STATUS. Habitats of Armenian steppe viper are being destroyed because of over-grazing of cattle, plowing and putting up buildings. At present the species does not have a special conservation status.



TERRA TYPICA. Tsebelda, vicinity of the town Sukhumi, Abkhazia, the Caucasus.

DISTRIBUTION. The distribution range is stretched along the Black Sea coast, covering the forested foothills of the Caucasus up to 800 m above sea level, from the settlement Khopa in Turkey and the Suramsky pass in the east across Colchis up to Mikhailovsky pass in the west. There distribution gets across to the northern slope of the Great Caucasus. Along the foothills it stretches up to the settlement Ubinskaya in the west, up to the town Maikop in the north and the mouth of the Urushten River in the east. In general



the distribution range is represented by two parts: Ajaro-Lazistan (Turkey, Ajaria) and north-Colchis (western Georgia, Abkhazia and the Krasnodar Territory of Russia). Caucasian Viper inhabits forested slopes of mountains, beds of wet ravines and post-forest clearings. It is observed in azalea and skumpia-Cornelian cherries groves, mixed-subtropical forests with an evergreen underwood, in chestnut groves, beech, willow-and alder-tree woods and polydominant forest near river terraces and on large growing over screes. On the upper limit of its altitudinal distribution this snake reaches the zone of coniferous forests. It is registered in the ecotone of beech-fir forest of motley grass. Caucasian Viper never penetrates deep into the coniferous forest.

CONSERVATION STATUS. On the coast of the Black Sea of the Caucasus it is everywhere rare. In many places it already became completely extinct. Populations with a higher density are preserved on rocky screes of the forest zone in mountains of the Caucasian Nature Reserve. Anthropogenic factors have negative effect on the status of the populations. They are the process of recreation in the zone of health resorts of the coast of the Black Sea, plowing of the submontane areas, haying on the post-forest clearings and forest edges. In some resort areas this snake was completely disappeared. The species is included into the IUCN Red list (category EN A1cd+2cd), into the Red Data Books of the USSR (1984) and the Russian Federation (2001): category 2 – a species reducing in its number living on the northern periphery of the distribution range.





Male, Krasnaya Skala, lower stream of Mzymta River, 400 m elevation



Male, vicinity of Adler city



Female, vicinity of Adler city





Female, vicinity of Adler city



Male, Krasnaya Skala, lower stream of Mzymta river, 400 m elevation



Male, vicinity of Adler city



Female, vicinity of Sochi city



Female, vicinity of Adler city



Subadult male, vicinity of Adler city



Female, vicinity of Adler city





Male, vicinity of Adler city



Male, vicinity of Adler city



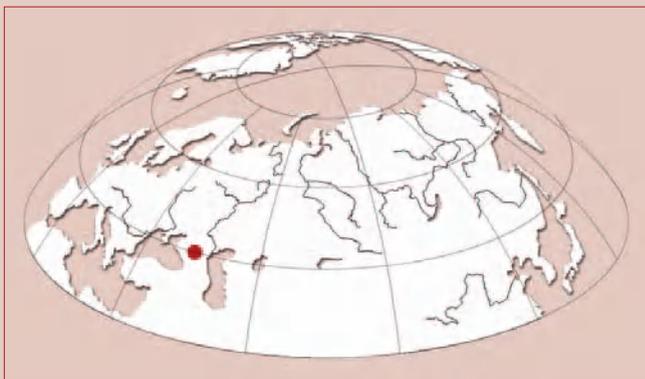
Subadult female, vicinity of Adler city



Armenia



Male, vicinity of Adler city



TERRA TYPICA. Armkhi, Ingooshetia, Russia; foothill of the mountain Stolovaya, 2000 m above sea level (Ingooshetiya, Russia).

DISTRIBUTION. It is found in montane-steppe landscapes of the North Caucasus in Kabardino-Balkaria, North Ossetia, Chechnya, Ingooshetia and adjacent regions of Georgia from 1200 up to 1800 m above sea level. *V. lotievi* inhabits semi-arid slopes of mountains with xerophytic eastern-mediterranean vegetation and mountainous depressions. Most frequently it is found in slide-rocks overgrown with lichens and sparse bush vegetation, as well as in rodent colonies on the slopes. In some zones of sympatry of this species with Dinnik's Viper (mountain range Abishir-Akhuba, upper reaches of the river Tiberda, slopes of the mountain Elbrus,



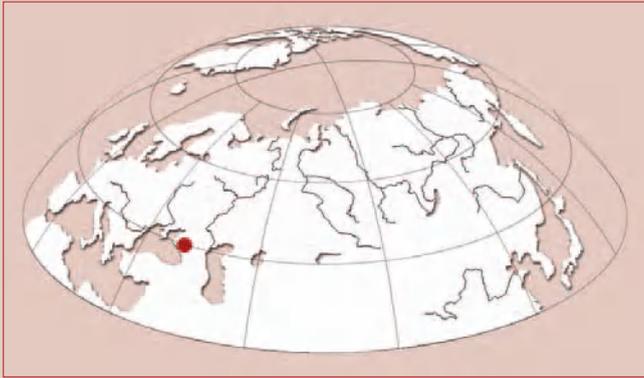
Itum-Kalinskaya hollow) *V. lotievi* inhabits semi-arid hollows, while the more mesophilic *V. dinniki* occupies upper wet zones of the mountains.

CONSERVATION STATUS. Not determined due to a poor study of the species.



MAGNIFICENT VIPER

VIPERA (PELIAS) MAGNIFICA TUNIYEV et OSTROVSKIKH, 2001



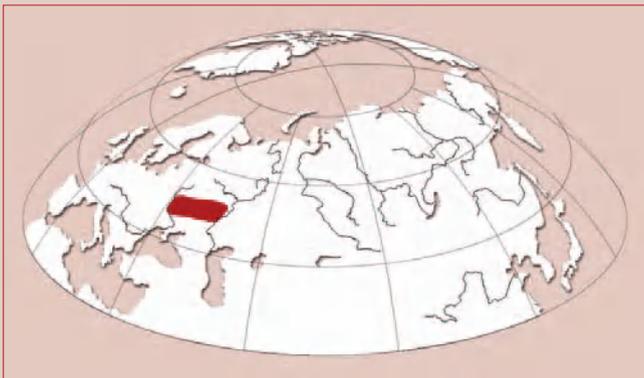
TERRA TYPICA. Shakhgireevskoe ravine, River Malaya Laba, Krasnodar Territory, Russia.

DISTRIBUTION. It is found along the southern slope of the Skalistyi mountain range in the Republic of Adyghea (the mountain Afonka) and the Krasnodar Territory (the mountain range Malyi Bambak). Probably, it is present also in the Karachaevo-Cherkesskaya Republic. Its habitats are light grassy oak woods and areas of dry meadows and bushes on the rocky eaves of limestone massifs on the elevations 700-1000 m above sea level.

CONSERVATION STATUS. Not determined.

NIKOLSKY'S VIPER, OR FOREST-STEPPE VIPER

VIPERA (PELIAS) NIKOLSKII VEDMEDERJA, GRUBANT et RUDAeva, 1986

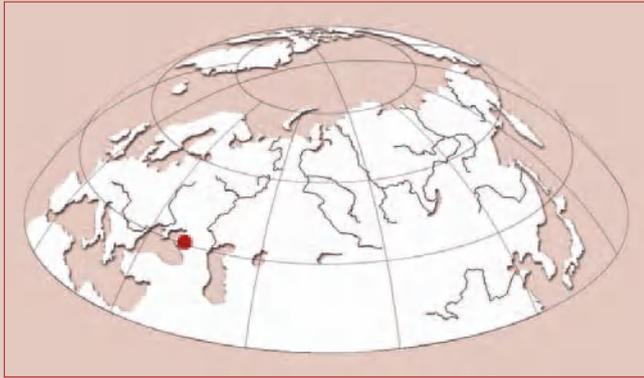


TERRA TYPICA. The bank of the Uda River, between the settlements Bezlyudovka and Vasishchevo, Kharkov region, the Ukraine.

DISTRIBUTION. It inhabits forest and forest-steppe regions of the Ukraine and the European part of Russia to the south from the line Kanev-Kursk-Tambov-Buzuluk. Along the wet meadow and forest valleys of rivers the viper penetrates eastwards into the steppe areas of the Saratov and Samara regions. The borders of the distribution range in the south and the east are not clearly determined up to now. The type series was collected and described from the vicinity of the town Kharkov. For a long time it was considered as a color form of *Vipera berus*, because melanists are noted quite often in majority of populations in the western and central parts of the distribution range of *V. berus*. There is well-reasoned opinion about a subspecific status of Nikolsky's Viper (*Vipera (Peliias) berus nikolskii*).

CONSERVATION STATUS. The species is included into the Red Data Book of the Russian Federation (2001): category and status 4 – undetermined status due to poor study.





TERRA TYPICA. Mountain Papai, Krasnodar Territory, Russia.

DISTRIBUTION. The distribution range of the species is situated in Krasnodar Territory and covers the both slopes of the lowest north-western part of the Great Caucasus from the mountain Papai in the west up to the peak of the mountain Bol'shoj Pseushkho in the east. Viper is found in different Mediterranean and sub-Mediterranean landscapes: from intrazonal clearings near rivers up to meadows transformed into steppes and ecotones of juniper forests at the altitudes 450- 950 m above sea level.

CONSERVATION STATUS. Not determined.





Female, Papai mount, Krasnodar territory



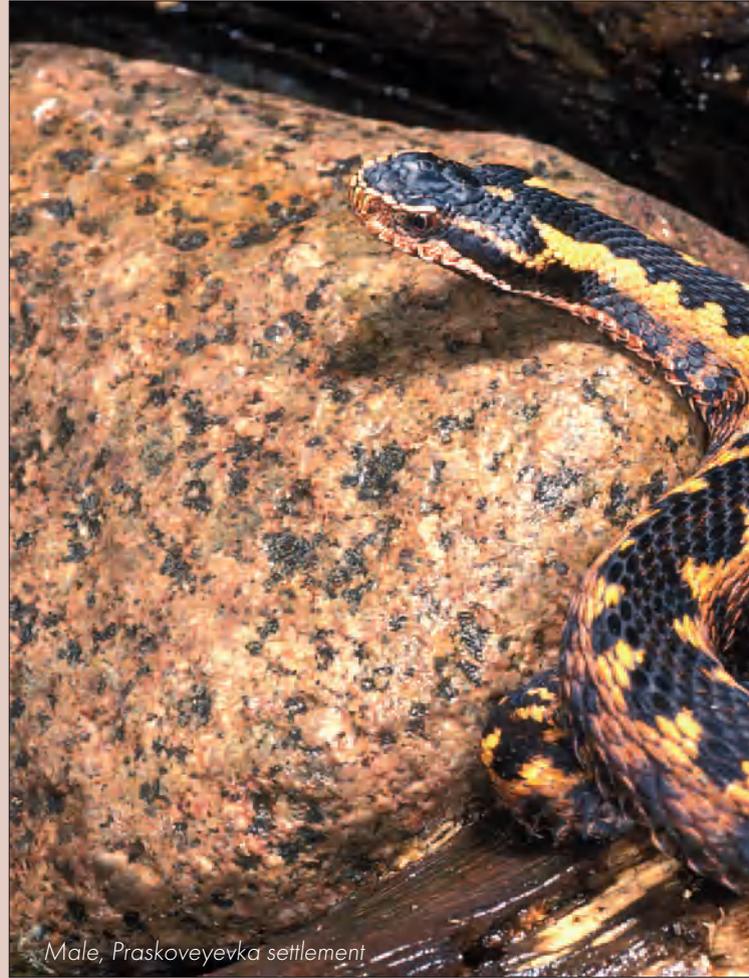
Female, Mikhailovsky pass



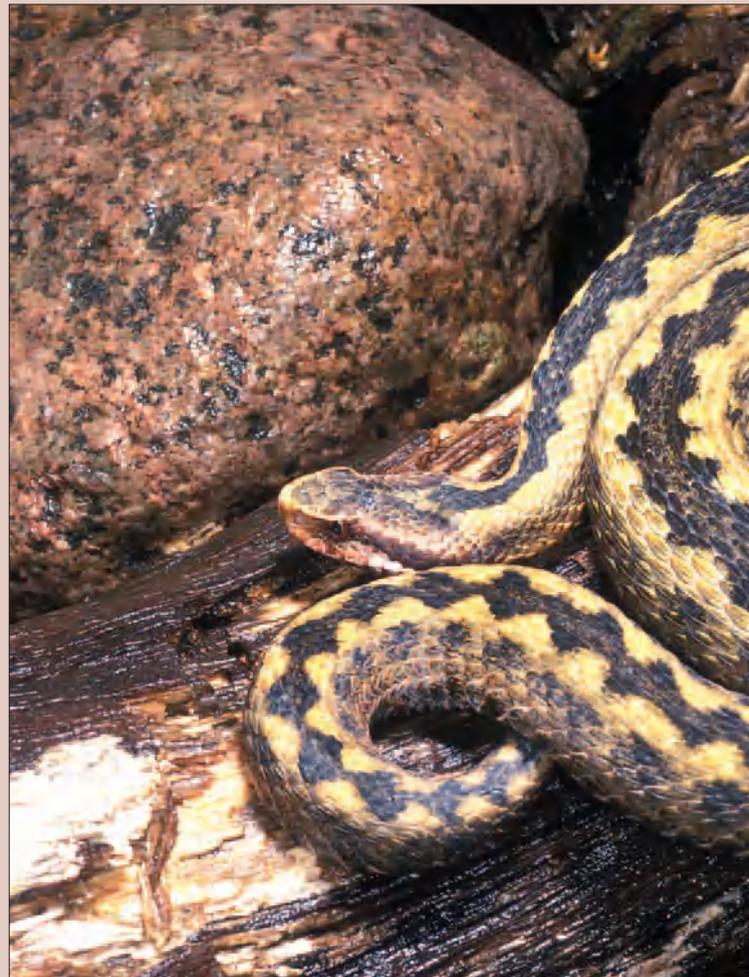
Male, Mikhailovsky pass



Female, Mikhailovsky pass



Male, Praskoveyevka settlement





Male, Mikhailovsky pass



Female, Papai pass



Female, Krasnodar territory



Juvenile snake





Luga River valley, Leningrad oblast, Russia



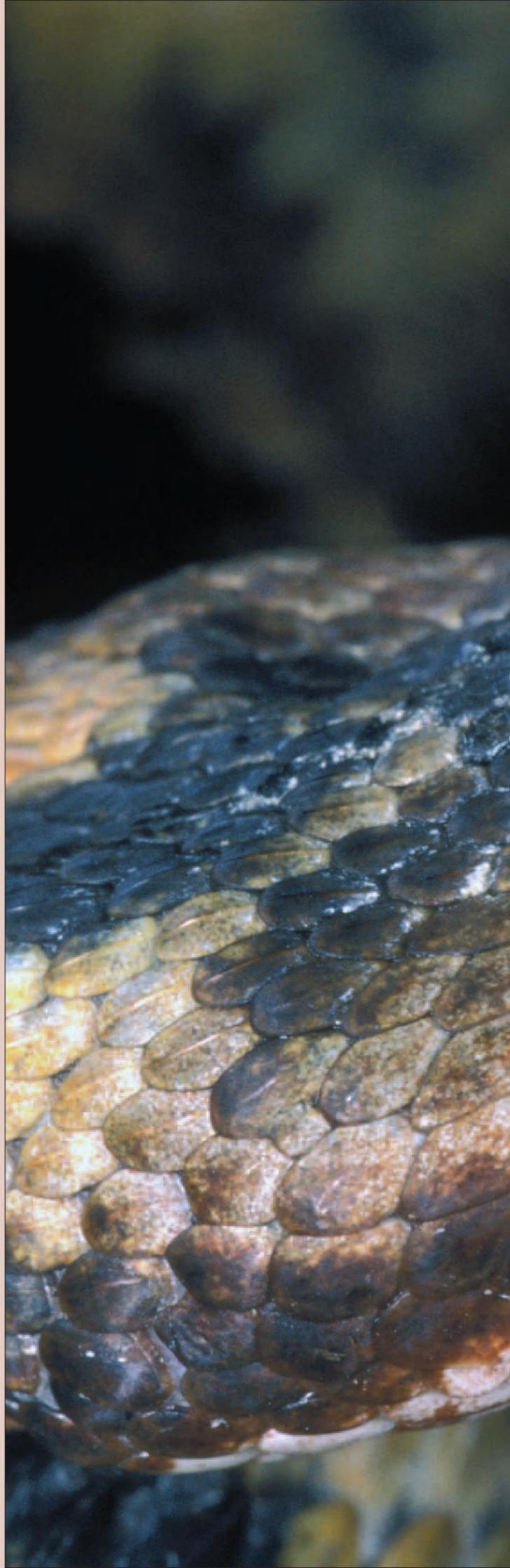
Male, Oblego mount, Krasnodar territory



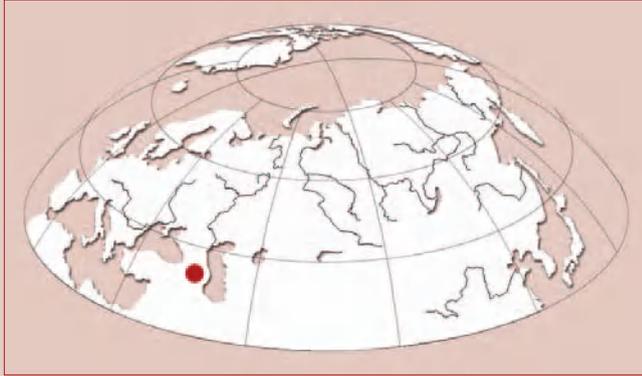
Oblego mount, Krasnodar territory



Female, Oblego mount, Krasnodar territory

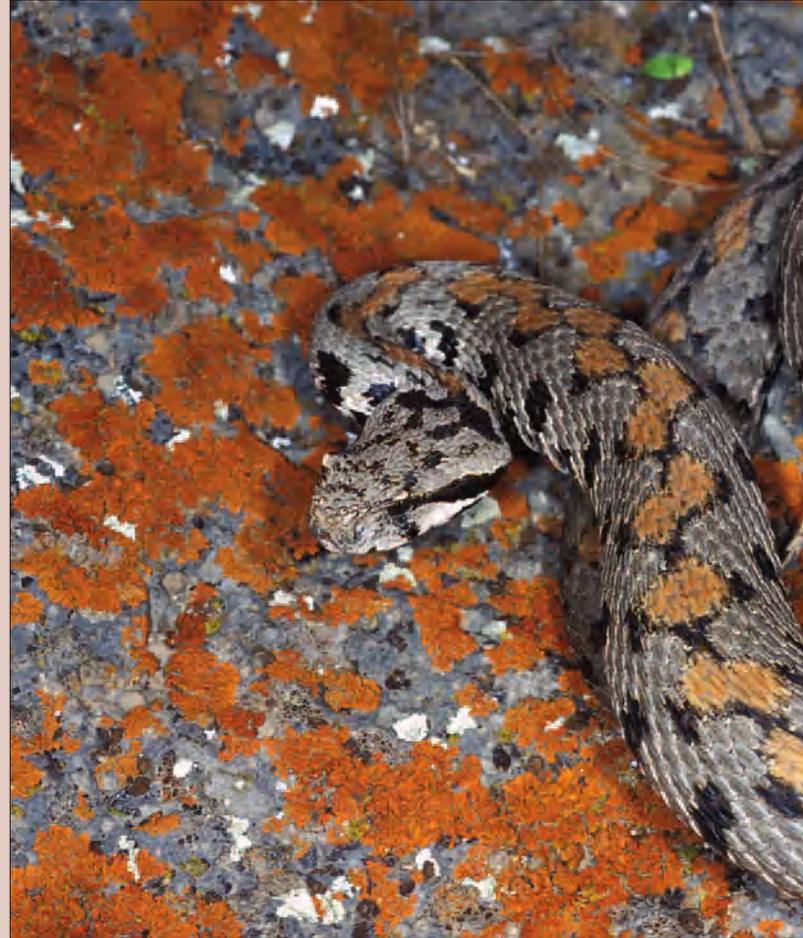






TERRA TYPICA. "Kazikoporan in Armenia", north-eastern Anatolia, Turkey.

DISTRIBUTION. It forms two subspecies: *V. r. raddei* Boettger, 1890, found in the southern regions of Armenia and in Nakhichevan, as well as in the adjacent regions of Turkey and Iran, and *V. r. kurdistanica* Nilson et Andren, 1986, known from the north-eastern Iran to the west from the Lake Urmia. It occurs at the altitude 1000-2700 m above sea level in the montane-xerophytic, in particular oak forests, in the juniper open woodlands, on the rocky slopes of the mountains with sparse bush vegetation, in the montane steppes. The type of biotopic distribution on the southern spurs of the mountain ranges of the Lesser Caucasus is mosaic and strongly corresponds to the mosaic availability of suitable biotopes.





Vipera raddei kurdistanica

CONSERVATION STATUS. The number of the species is rapidly reducing in the result of the economic activity of humans: plowing and putting on buildings of the mountain slopes, destruction of montane forests and over-grazing of cattle. It is protected in the Khosrov Nature Reserve in Armenia. It was included into the Red Data Book of the USSR (1984) and Armenia (1987) as a narrow-endemic depressed species.



EASTERN STEPPE VIPER

VIPERA (PELIAS) RENARDI (CHRISTOPH, 1861)



TERRA TYPICA. Sarepta, the German colony on the lower Volga, Russia.

DISTRIBUTION. It inhabits steppe, forest-steppe and semi-desert zones of south-eastern Europe, Central Asia and north-west of Middle Asia, including the Crimea, the southern Ukraine, steppe regions of Ciscaucasia and the Great Caucasus, of Kazakhstan and southern Siberia. In the north the distribution range attains the Volzhsko-Kamsky Territory, in the east – Altai and Jungaria. It occurs in plain and montane sagebrush steppes, alpine meadows transformed into steppe, solonchak (saline land) semi-deserts





and stabilized sands. Eastern steppe viper is absent in plowing lands and remains only in ravines, roadsides and bank precipices. Thus, for instance, in the lower left bank area of the Dnieper River in the Zaporozhskaya, Dnepropetrovskaya and Khersonskaya regions the viper has preserved only in the narrow strip of a steep bank with bush vegetation in the area between water and arable-land. In the mountains it goes up to 1500 m above sea level.

Three subspecies are distinguished: the nominative *V. r. renardi* (occupies the most part of the distribution range, except for some eastern Central- and Middle Asian populations); *V. r. tienshanica* Nilson et Andren, 2001 (found in Kyrgyzstan, eastern Uzbekistan, northern Tajikistan and south-eastern Kazakhstan); *V. r. parursinii* Nilson et Andren, 2001 (found in northern Xinjiang-Uyghur Autonomous Region in China) and *V. r. bashkirovi* Garanin, Pavlov et Bakiev, 2004 (Volga-Kama rivers region in Tatarstan republic, Samara and Ulyanovsk regions). The taxonomic status of the populations from the Kazakh Altai remains unclear.

CONSERVATION STATUS. Everywhere in Europe and the European part of the former USSR its number is sharply reducing due to plowing of steppe lands. The species is included into the IUCN Red list (category EN A1c+2c), into the Red Data Book of the Ukraine (1994) – category 2 and of Uzbekistan (2003) – status and category 2, VU:D, as well as into the “Annotated List of Taxa and Populations required a Special Attention to their Status in the Wildlife” (Appendix to the Red Data Book of the Russian Federation, 2001).



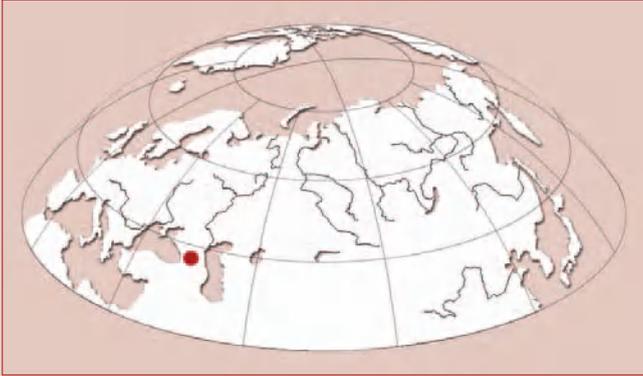
TERRA TYPICA. Sakhalin island, Russia.

DISTRIBUTION. It is found in the Amurskaya region, Khabarovsk and Primorski Territories, on the Sakhalin island, on the Shantarskie Islands, in north-eastern China and in North Korea. Often it prefers banks of rivers and streams. In the area of Soviet Haven city and further northward along the coast of the Tatar Strait it lives on coastal rocky and sandy parts on the border of forest and beach. Frequently it is encountered in the coastal thickets of brier. On the Sakhalin island it inhabits all the types of montane-forest landscapes. It do not live only in the swampy Peninsula of Terpeniya, the regions of the coast to the north of 50°N limited from the north-east by the Sea of Okhotsk as well as in the northernmost tundra region of the island.



CONSERVATION STATUS. The ecology is poorly studied. It is protected in the Komsomol'ski, Khinganski and Sikhote Alinski reservations.





TERRA TYPICA. Town Borzhomi, Georgia.

DISTRIBUTION. In Georgia it inhabits Meskhedsky and Trialetsky mountain ranges and the ravine of the upper current of Kura River up to the vicinity of the town Akhalkalaki in the south-west. In the collection of the Zoological Institute of the Russian Academy of Sciences 3 specimens from the north-western Azerbaijan are known. Besides, this species is registered from northern Turkey and Iran. The characteristic habitats are situated in the zone of xerophytic forests. Vipers prefer rocky slopes overgrown with oaks, pines and hornbeams. They are frequently noted on forest edges, stony screes overgrown with lichens and rocky outcrops in river valleys. In the mountains it goes up to the zone of montane steppes at the altitude 1700 m above sea level.

Until recently this form was referred to the species *Vipera amodytes* (Linnaeus, 1758) represented by five subspecies.

CONSERVATION STATUS. According to the data of the Red Data Book of the USSR (1984) the number of the species was estimated approximately as 10 000 specimens. The main reason of its de-

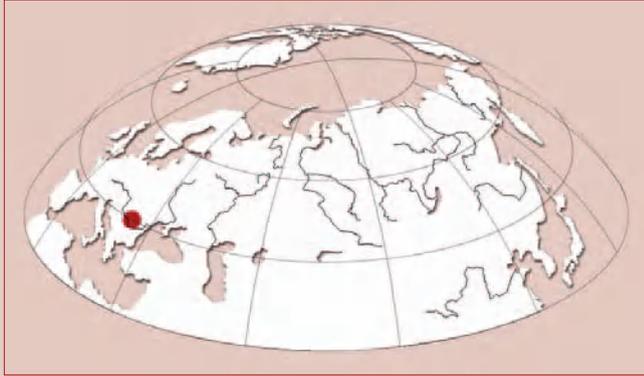


clining is the agricultural development of habitats. The species is preserved in the Borzhomsky reservation. It is supposed to establish specialized protected areas in the places of the highest density on the Meskhetsky and Trialetsky mountain ranges. The species was included into the Red Data Books of the USSR (1984) and Georgia (1982) – category 3.



WESTERN STEPPE VIPER

VIPERA (*PELIAS*) URSINII (BONAPARTE, 1835)



TERRA TYPICA. Abruzz Mountains (the Apennines), Ascoli Province, Italy.

DISTRIBUTION. The distribution range is situated in the south-eastern Europe and covers central Italy, south-eastern France, Austria, the countries of the Balkan Peninsula, Romania, Hungary and Moldova. It is found on montane alpine and subalpine meadows transformed into steppe, relatively dry slopes with bush

vegetation, (in particular with dwarf juniper), on rocky screes. In France it is known up to 2400 m above sea level.

V. ursinii sensu stricto now includes five subspecies: the nominate *V. u. ursinii* (Italy and France); *V. u. macrops* Meheli, 1911 (the territory of the former Yugoslavia and northern Albania); *V. u. graeca* Nilson et Andren, 1988 (southern and central Greece); *V. u. racosiensis* Meheli, 1893 (the valley of the Danube River in eastern Austria, Hungary, southern Romania, northern Yugoslavia, northern Bulgaria) and *V. u. moldavica* Nilson, Andren et Joger, 1993. Within North Eurasia in the western part of Moldova only one subspecies is found – *V. u. moldavica* (terra typica – Valea lu David, Romania).

A number of forms of this complex, represented by small isolated populations, are considered as distinct species: *Vipera anatolica* Eiselt et Baran, 1970 (in north-eastern Turkey); *Vipera ebneri* Knoepffer et Sochurek, 1955 (in north-western Iran). The taxonomic status of these forms up to now remains the subject of continuous discussions.

CONSERVATION STATUS. The species is included into the Red Data Book of Moldova (2001) – category 2, as well as into the IUCN Red list (category EN A1c+2c).

GIANT VIPERS

GENUS MACROVIPERA REUS, 1927

Large snakes attaining 2 meters in length. The head is large, the neck girdle is well marked. The body is massive, slightly flattened in the dorso-ventral plane, covered with keeled scales.

The head is covered with small scales. Large regular shields are absent. Large supraocular shields are absent. There are 23-27 rows around the mid-body. Subcaudal scales are arranged in two rows.

Giant vipers inhabit northern Africa, islands of the Mediterranean Sea, Arabian Peninsula, Lebanon, Syria, Iraq, Turkey,

Iran, Afghanistan, Pakistan, north-western India, the countries of the Middle Asia, southern Kazakhstan and the Caucasus.

Four species are distinguished, one is found in North Eurasia. *M. deserti* (Anderson, 1892) is distributed in Tunisia, Libya and eastern Algeria; *M. mauritanica* (Gray, 1849) is known from Tunisia, Morocco and adjacent regions of Algeria; *M. schweizeri* (Werner, 1935) is described from Kicklada islands in the Aegean Sea.

BLUNT-NOSED VIPER, OR LEBANESE VIPER

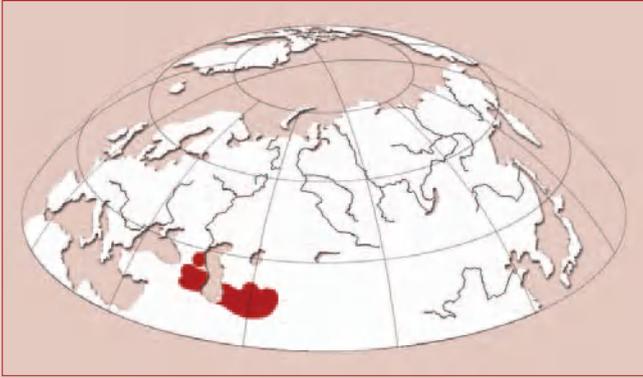
MACROVIPERA LEBETINA (LINNAEUS, 1758)

TERRA TYPICA. Cyprus.

DISTRIBUTION. It inhabits islands of the Mediterranean Sea (the island Cyprus), Arabian Peninsula, Lebanon, Syria, Iraq, Turkey, Iran, Afghanistan, Pakistan, north-western India, the countries of the Middle Asia, southern Kazakhstan and the Caucasus. Six subspecies are distinguished: *M. l. lebetina* (is distributed on the island Cyprus); *M. l. obtusa* (Dwigubsky, 1832) [is found in Turkey, Iraq, western Iran, Syria, Lebanon, in the eastern Transcaucasia, isolated populations in Dagestan are known]; *M. l. euphratica* (Martin, 1838) [is known from Iraq]; *M. l. transmediterranea* (Nilson et Andren, 1988) [are found in the north of Africa: Morocco,

Algeria, Tunisia and Libya]; *M. l. turanica* (Chernov, 1940) [inhabits southern Kazakhstan, Tajikistan and Uzbekistan] and *M. l. cernovi* (Chikin et Szczerbak, 1992) [inhabits Afghanistan, Pakistan, eastern Iran, Turkmenistan and western Uzbekistan].

Thus, in the Transcaucasia, Dagestan and Middle Asia three subspecies are known: *M. l. obtusa*, *M. l. turanica* and *M. l. cernovi*. Blunt-nosed viper is found in the very diverse desert and montane-steppe biotopes. Most frequently it occurs in dry foothills, on mountain slopes with bush vegetation, rocky ravines with small streams and springs, in pistache open woodlands, on precipices in river valleys, on the banks of irrigation channels. It goes



into the mountains up to 2500 m above sea level. Thus, in Armenia on the mountain Dorakh in the Khosrovsky reservation and in Turkmenistan on the mountain Dushack in the central Kopetdag Blunt-nosed vipers are found at the altitude up to 2000 m above sea level. On the Pamir, at the altitude 2500 m above sea level, the most high-mountain populations are known.

The intraspecific structure of the species is very complicated, the opinions about its composition are controversial. Some taxonomists consider up to nine subspecific forms, including all forms of *Macrovipera* genus.

CONSERVATION STATUS. As a species reducing in its number the Blunt-nosed viper (the Caucasian subspecies) is included into the Red Data Book of the Russian Federation (2001) – category and status 2.





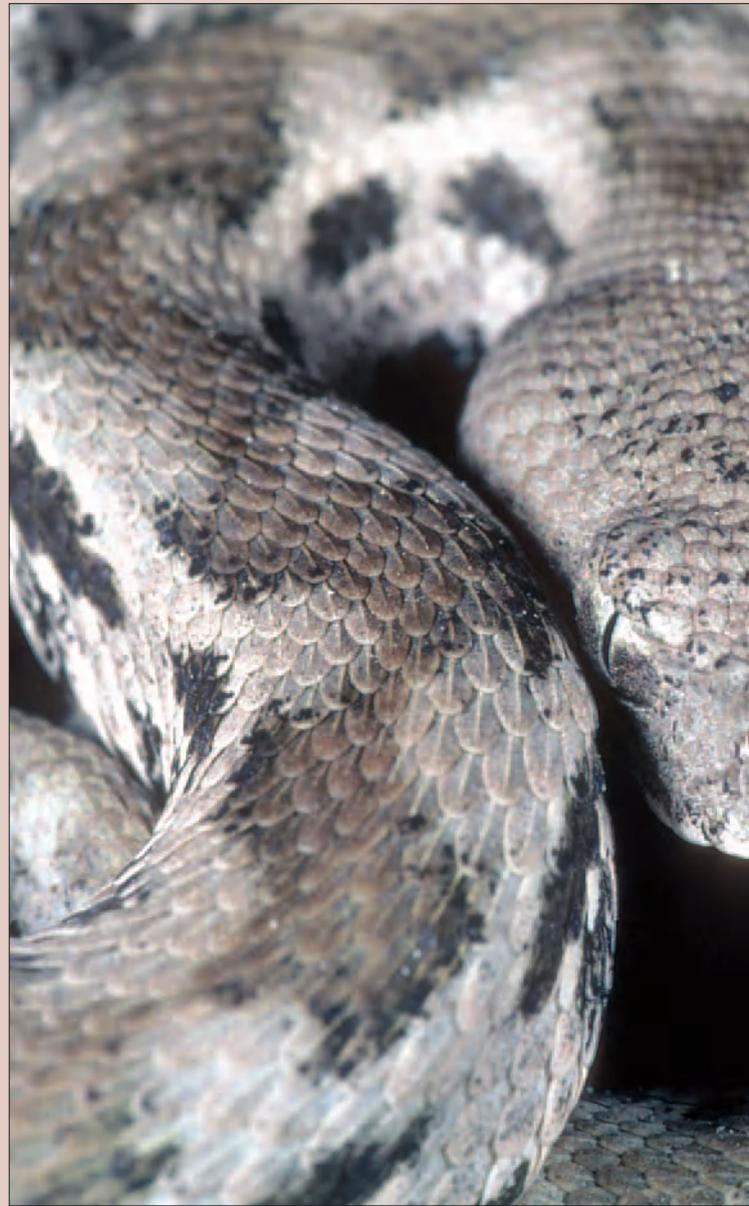
Macrovipera lebetina obtusa



Macrovipera lebetina obtusa



Macrovipera lebetina obtusa





Macrovipera lebetina turanica



Macrovipera lebetina turanica



Macrovipera lebetina cernovi



Macrovipera lebetina obtusa



Macrovipera lebetina cernovi





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