



## FAUNA II, III. FAUNA OF CENTRAL ASIA

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### FAUNA.

ii. AFGHANISTAN. See [AFGHANISTAN iii](#).

### iii. FAUNA OF CENTRAL ASIA

The Central Asian republics of the former Soviet Union (Turkmenia, Uzbekistan, Tajikistan, the southern Kazakhstan) form part of an arid belt stretching from northwestern Africa through southwestern Asia to Mongolia and western China. In this article attention will be focused on the fauna of these republics, with only minor attention to the animals of Mongolia and western China.

In composition, origin, and ecological features the fauna of the Central Asian republics is related to those of Persia (see [i](#)), though there are significant differences. Russian zoologists include both areas in the Irano-Turanian zoogeographical subregion, which includes both plains and mountain areas. The fauna of this subregion is fairly well known. The animal complexes of the Central Asian sand deserts are especially rich and distinctive. Each of the three mountain systems of this region also has a number of unique features: the Turkmeno-Khorasanian system, in particular the Kopet-Dag range in southern Turkmenia; the Gissaro-Darvaz (Ḥeṣār-Darvāz) system, mainly in Tajikistan



and southern Uzbekistan; and the vast and heterogeneous Tian Shan range. The fauna of the western chains of the Tian Shans (the Ugam, Talas, Chatkol, and Farḡāna ranges) are related to Gissaro-Darvazian in some features but differ sharply from animals of the central and northern parts of this system, which are more closely related to those of central Kazakhstan, the southern Altai, and Mongolia, including many steppe and some taiga elements, together with endemics.

The large vertebrates of the entire area have been severely decimated by centuries of human activity, which has intensified during the last decades. For example, the Turanian tiger and the cheetah (*Acinonyx jubatus*) have been totally eradicated. Populations of leopards, onagers, *tugay* deer (*Cervus elaphus bactrianus*), gazelles (*Gazella subgutturosa*), and highland dwellers like the snow leopard (*Panthera uncia*), ibex (*Capra hircus aegagrus* in the Kopet-Dag, *Capra sibirica* in the Tian Shans and the Gissaro-Darvaz system, *Capra falconeri* in the chains of southern Tajikistan), and mountain sheep (*Ovis ammon cycloderus* in the Kopet-Dag, *Ovis ammon bocharensis* in southern Tajikistan, *Ovis ammon poloi* in the Pamirs, etc.) are now very small, most surviving only in preserves and under threat of extinction.

Many birds, especially game species, have suffered a similar fate: the pheasant *Phasianus colchicus*, the partridge *Francolinus caccabis chookar*, and species of such grouse genera as *Tetraogallus* and *Pterocles*. Populations of the large predators, like eagles (*Aquila chrysaetus* and *Halişetus leucoryphus*), falcons (*Falco cherrug* and *F. pelegrinoides*), and vultures (*Gypaetus*; *Gyps himalayensis*), are also seriously diminished, as are those of the desert bustard (*Chlamydotis undulatus*), and the woodpecker (*Picus squamosus*).

Desert reptiles, for example, the lizard *Varanus griseus* and the snakes *Naja oxiana* and *Ptyas mucosus* are also declining.

Especially threatened are animals living in the *tugays* (< Ar. *ṭaḡā* “to flood”), the periodically inundated forests in the great valleys of the [Amu Darya](#) (Oxus), Syr Darya (Jaxartes), Morḡāb, and Zarafšān, which are disappearing rapidly under the pressure of expanded irrigation and other human activities.

Despite these destructive processes, many vertebrates are still common. Particularly numerous among mammals are the wolf (*Canis lupus*), foxes (*Vulpes vulpes* and in the deserts also *Vulpes corsak*), the polecat (*Vormela peregusna*), the desert shrew (*Diplomesodon pulchellus*), the hedgehog



(*Erinaceus* or *Hemiechinus auritus*), the hare (*Lepus tolai*), and many rodents, including ground squirrels (*Citellus fulvus* and in sandy deserts *Spermophilus leptodactylus*), gerbils (*Meriones lybicus* and *meridianus*, *Rhombomys opimus*), and jerboas (*Allactaga elater*, psammophilous *Allactaga bobrinskii*, *Dipus sagitta*, *Eremodipus lichtensteinii*, *Jaculus turcmenicus*, *Paradipus ctenodactylus*). In the mountains there are marmots (*Marmota caudata* and *menzbieri*, the latter endemic to the western Tian Shans), *Citellus relictus*, and several species of pika (*Ochotona*) and vole (*Microtus*) and at high altitudes *Alticola*. The rat *Nesokia indica* inhabits humid environments, *Rattus turkestanicus* the mountain forests; both species are also found in oases and settlements. Several species are found only in the southwestern parts of the region, for example, the endemic genus *Calomyscus*, *Meriones persicus* (also found in Persia), *Microtus afghanus*, and the Indo-African ratel *Mellivora indica*.

The birds of the Central Asian republics are extremely diversified. Although they are relatively uncommon in the deserts, there are several characteristic species, including the jay *Podoces panderi*, *Scotocerca inquieta*, the sparrow *Passer hispaniolensis*, and some wheatears of the genus *Oenanthe*. In oases and *tugays* most of the birds have vast ranges, for example, the palm dove *Streptopelia senegalensis*, the starling *Pastor roseus*, the myna *Acridotheres tristis*, and many species of the passerine genera *Emberiza*, *Oenanthe*, and *Passer*. In the mountains there are a few strictly localized forms, as well as many with relations to species of European, Mediterranean, Himalayan, Chinese (the white-winged grosbeak *Mycerobas carnipes*, *Myiophoneus temmincki*, *Terpsiphone paradisca*), and Eurasian highlands (e.g., alpine chough *Pyrrhocorax graculus*, species of finches of the genera *Erythrina* and *Montifringilla*, *Phoenicurus erythrogastra*, and the wall creeper *Tichodroma muraria*) birds.

Reptiles, especially lizards and snakes, are numerous in the plains of the Central Asian republics; some of the same species are also found in the mountains. Among lizards some geckos inhabit the sand deserts (*Teratoscincus scincus*, *Crossobamon evermanni*), others (species of *Alsophylax* and *Cyrtopodion*) the soils of the oases and foothills; the isolated southern Asian genus *Eublepharis* is represented in the Kopet-Dag by the species *turcmenicus*. The second important family of lizards is Agamidae: *Trapelus sanguinolentus* and *Phrynocephalus mystaceus* and *interscapularis* are highly adapted to the sand deserts, whereas other species of *Phrynocephalus* live on soils and species



of *Laudakia* in the mountains. *Laudakia caucasia* and *L. erythrogaster* are also found in Persia and the former in Transcaucasia as well. *Laudakia himalayana* is found in Tajikistan and the northwestern Himalayas, whereas *Laudakia lehmanni* is limited to the Gissaro-Darvaz system. The skink genus *Ablepharus* is represented by several species in the mountains. Species of *Eremias* (of the family Lacertidae) are also numerous.

Snakes abound in this region, particularly species of *Eryx* and *Coluber* (*karelini*, *ravergieri*, *rhodorhachis*, all localized) and especially in sandy deserts *Psammophis lineolata*. Species of *Lytorhynchus*, *Eirenis*, and *Boiga* are found mainly in Turkmenia, as well as in Persia and throughout southwestern Asia. Among poisonous snakes *Naja oxiana* and *Echis multisquamata* are also found in Persia and Afghanistan. The dangerous *Vipera lebetina* is distributed through the eastern Mediterranean region and Central Asia (except for the highlands) as far as northwestern India.

Turtles, on the contrary, are rare; only *Testudo* (or *Agrionemys*) *horsfieldii* occurs commonly in the arid plains and foothills of the Central Asian republics, northeastern Persia, Afghanistan, and Pakistan.

The general aridity of the environment accounts for the small number of amphibians. Only the frog *Rana ridibunda* and the toads *Bufo viridis* and *danatensis* are widely distributed throughout the region. The primitive salamander *Ranodon sibiricus* is localized in the mountain springs of the Dzungarian range in southeastern Kazakhstan.

There are also rather few fishes, though some are endemic. Among the latter the relict genus *Pseudoscaphirhynchus* includes three almost extinct species in the Amu Darya and Syr Darya basins; the single related genus is *Scaphirhynchus*, found in the Mississippi basin in the United States. Several species of Cyprinids, of the genera *Schizothorax* (snow trout) and *Diptychus*, are specific to the mountain rivers from Kopet-Dag to Tibet and the Himalayas. Some fishes that were living in the Aral Sea are probably now extinct there, for example, *Salmo trutta aralensis*. Some widely distributed species have economic importance: the carp *Cyprinus carpio*, the sim *Abramis brama*, the esbele catfish *Silurus glanis*, and in the Tian Shans the trout *Salmo trutta*. The eastern Asian genera *Ctenopharyngodon* and *Hypophthalmichthys* have been introduced into irrigation systems in the Central Asian republics.

The array of insects and arthropods in this region is particularly rich,



including many species of economic and medical importance. To the first groups belong the aggregate of agricultural pests like the Asiatic locust (*Locusta migratoria*), the Moroccan locust (*Dociostaurus maroccanus*), species of *Calliptamus*, bugs (*Eurygaster integriceps*, *Nezara viridula*), aphids (*Aphis gossypii* and *craccivora*, *Brachycaudus hedychrysi*, *Myzodes persicae*), scale insects, moths (*Chloridea obsoleta* and *peltigera*, *Euxoa segetum*, *Spodoptera exigua*, *Loxostege sticticalis*, etc.), and beetles. Most of these species are widely distributed, but some are localized in the Central Asian republics. Among the carriers of diseases dangerous to humans and animals are the mosquitoes (especially several species of *Anopheles*), sand flies (*Phlebotomus*), synantropic flies (of the family Muscidae, etc.), fleas, and ticks (*Ixodes*, *Dermacentor*, *Ornithodoros*). On the other hand, many parasitic insects of the orders Hymenoptera and Diptera and predators (ladybugs, robber flies, etc.) are useful in integrated biological control of pests. Equally important are pollinators (especially bees) of fruit trees, alfalfa, and pasturage. The zoogeographical composition of the Central Asian insects reveals that endemics and species also found on the plains of Persia are particularly concentrated in the sand deserts. Among the endemic genera are the ground beetles *Discoptera*; the scarabs *Thinorycter*, *Chioneosoma* (more than twenty species), *Ochranoxia*, and *Eutyctus*; the darkling beetles *Ammozoum*, *Argyrophana*, *Sternodes*, *Pisterotarsa*, and *Remipedella*; the leaf beetle *Theone*; the weevil *Mesostylus*; and many others. Some species of many beetle genera are also found in Persia; others, like those from *Philothis* of the family Histeridae and species of darkling beetles of *Habrobates* (*vernalis* in the Karakum desert, *agnesae* in Dašt-e Kavīr), also in Central Asia. Insects distributed over these vast areas and as far as North Africa are not uncommon (e.g., the scarabs *Pharaonus*, *Orubesa*, and *Coptognathus* and the locusts *Hyalorhipis* and *Dericorys*).

The insects of the clay and salt deserts are less distinctive, though they also include many endemic species. Particularly characteristic of the Irano-Turanian region are termites of the genus *Anacanthotermes* and ants of *Cataglyphis*, *Camponotus*, *Messor*, *Monomorium*, and others. There are a number of xerophilous insects belonging to mainly tropical groups, including the huge ground beetle *Anthia mannerheimii* (distributed mainly in Africa), the buprestid *Julodis*, darkling beetles (*Zophosis* and *Adesmia*), ants (*Acantholepis*), and so on.

The composition of the array of mountain insects is quite different. It includes



several elements of different origins. First are the endemic species (or species groups) of widely distributed genera (the ground beetles *Carabus*, *Nebria*, *Bembidion*, *Pterostichus*, and *Curtonotus*; the scarabs *Melolontha* and *Netocia*; the leaf beetles *Cryptocephalus* and *Chrysolina*; the longicorns *Prionus* and *Phytoecia*; the grasshoppers *Chorthippus*; etc.). Second are genera inhabiting mountain systems extending from Persia to Kazakhstan, the Himalayas, and western China (e.g., the darkling beetles *Prosodes*, *Bioramix*, and *Solskyia*; phytophagous dung beetles of *Lethrus*; leaf beetles of *Crosita*; and the wingless grasshoppers *Conophyma* and *Gomphomastax*). Some genera and most species of this group are localized in single mountain ranges; for example, the carabid beetles *Bronislavia* and *Petrimagnia*, the chafers *Euranoxia* and *Trochaloschema* in Tajikistan; the carabid *Colpostoma* in the western Tian Shans; and some boreal groups in the central and northern Tian Shans. The characteristic insects of the Kopet-Dag include both inhabitants of southwestern Asia (northern Persia, Transcaucasia, Syria, Turkey) and Central Asian forms. There are many endemic species but only a few localized genera. Among the complexes of mostly endemic insects living in the *tugays* are an element of tropical origin and another related to inhabitants of temperate forests.

The following scheme of zoogeographical division can be proposed for the Irano-Turanian subregion. It includes two desert and three mountain provinces.

*The central Persian province.* This province encompasses most of Persia, with the exception of the mountains along the northern frontier, the humid belt near the Caspian shore, and the hot tropical districts of the extreme south. The deserts of western and southwestern Afghanistan are also included. The fauna consists mainly of desert animals, partly endemic, partly common in eastern Central Asia and North Africa.

*The Turanian province.* This province encompasses the southern part of the Aralo-Caspian lowland: Turkmenia (except for the mountains), Uzbekistan (without the eastern mountains), the low-lying parts of Kirgizia, southern and southwestern Kazakhstan, northern Afghanistan (the Amu Darya depression), and small arid districts of the former Azerbaidzhan S.S.R. (e.g., the Apsheron peninsula and the Kura-Aras lowland). It is characterized by the highly specialized fauna of the sand deserts; less distinctive are the insects of the clay and alkaline deserts, the oases, and the *tugays*.



*The Turkmeno-Khorasan province.* The mountains of southern Turkmenia, northeastern Persia, and northwestern Afghanistan (the Paropamisos) are included here. The fauna consist of Persian, Turkmenian, and eastern Mediterranean elements; there are relatively few, though quite distinct, endemic species.

*The Turkestan province.* This province encompasses the eastern mountains of the Central Asian republics, which can be divided into two subprovinces: the western Tian Shans (mostly the chains of northern Uzbekistan and western and southern Kirgizia) and the Gissaro-Darvazian (the mountains of southern Uzbekistan and Tajikistan). The rich fauna includes many endemic genera, along with Turanian, boreal, Tibetan, and eastern Asian elements.

*The central Afghan province.* This province encompasses most of Afghanistan, except those allotted to the preceding provinces; the valley of the lower Kabul river in the east, where the fauna are of Indian type; and the mountains of Nūrestān, where the fauna are more related to the western Himalayan assemblage. The fauna of this province have, however, been rather poorly investigated.

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