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ON THE COVER

A small resident of Kerzhenski Zapovednik peeks out of his door. Drawing by S. Shustov. Reprinted with permission from Kerzhenski Zapovednik.

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The **Biodiversity Conservation Center** is a Russian non-profit, non-governmental organization aiming to preserve the biological diversity of Northern Eurasia. BCC's programs help to conserve wilderness, endangered species and ecosystems, promote public environmental education, and assist other nature conservation groups to achieve these goals.

The **Center for Russian Nature Conservation**, (a project of the Tides Center), assists nature conservation efforts in Northern Eurasia through information exchange, facilitation of professional exchanges, and assistance with fundraising for partner organizations.

several new nature reserves were created easily, now it is almost impossible to organize new protected areas under the conditions of privatization.

Unfortunately, an incomplete approach to biodiversity conservation is common not only among state funding agencies for environmental research. "Useful" animals and plants — potential targets of fishing, hunting and gathering — along with large, dangerous or beautiful species always attract more attention and therefore funding. Small species insignificant in their appearance but significant in their role in ecosystems are never on the list of priorities for rescue. If we consider conservation of biodiversity in our region, we must understand that conservation of a spider and of an eagle have equal importance, but the reality is far from that. It is easier to find sponsors for introducing a Polar Bear to Moldova than to find support for insect conservation.

Dr. Alexei Andreev *is an entomologist and a board member of the Biotica Ecological Society.*

The Past, Present and Future of the North Persian Leopard

by ***V. S. Lukarevski***

Large cats are one of the prettiest and most unique groups of mammals to stir the human imagination, and at the same time, they are the most threatened.

I was in Turkmenistan at the beginning of the 1980s, and naturally the North Persian Leopard (*Panthera pardus saxicolor*), which makes its home there, couldn't help but attract my attention. From the first days of our expedition, I was astonished by the enormous paw prints of this splendid beast. At first this stirred up a sort of caution. But the turning point in my relationship with this beast occurred half a year later, after a direct encounter with a female Leopard who surprised me with her power, grace and, at the same time, tolerance of humans. After all, if she'd wanted, she could have crushed me merely in passing. This encounter has been engraved in my memory for a long time.

The North Persian Leopard has been entered into the Red Data Book of Rare and Endangered Species of Turkmenistan, the former Soviet Union and the World Conservation Union (IUCN). Jumping ahead, its status needs reviewing.

The North Persian Leopard was found in southern Turkmenistan, in southern Uzbekistan and southwest Tadjikistan. The region considered here lies on the northern border of the North Persian Leopard's range. Until recently, the species' range occupied practically all of the mountainous and hilly parts of Turkmenistan: at its northwest border were the Small and Large Balkhany; in the central part, the whole Kopetdag Ridge, including its eastern part; all of the mountainous and hilly parts of Badkhyz, the Chengurek Mountains and, at its eastern end, the Kugitang-Tau Mountains.

In the 1990s a sharp, overall decline in the animal's numbers has occurred. Towards the end of the 1980s it was 130 to 150 individuals; at present, in the mid-1990s, the number of Leopards in Turkmenistan is estimated at 78 to 90 individuals and has a tendency to decline over most of the territory. In connection with this decline, the northern border of the species' range has shifted southward to the mountainous regions. However, even in the mountainous parts the Leopard's habitat is in question on the Small and Large Balkhany, in the Chengurek Mountains and on Kugitang. Most likely the Leopard's range in Turkmenistan, and possibly in all of Central Asia, has catastrophically decreased towards the mid-1990s and is now limited to just Kopetdag and Badkhyz.

If at the end of the 1980s the Leopard's range in Turkmenistan supported an integral population within whose borders there existed a free exchange of genetic material and its further development, now that population has been torn, as a minimum, into several groups within which a tendency towards division into yet smaller groupings has been noted. In the end, the tendency towards fragmentation in the Western Kopetdag population could lead to its complete extinction, which is apparently what happened with the groups on the Small and Large Balkhany, the Chengurek Mountains and Kugitang.

The situation changed most sharply for the worst between 1991 and 1996, when the strict preservation regime of the «separation» belt (up to 30 or 40 km. wide in places) was liquidated de facto; this belt lay between the national border and engineering-technical obstacles, and for many years it served as a reserve and played a significant role in protecting the entire natural complex, but large mammals most of all. In the last two or three years, the virtual end of this regime along the Turkmen border has led to a reduction,

because of poaching, to one-half or one-third the number of ungulates, the Leopard's primary prey. In places the decline has been even greater. These territories have at present lost almost all of their meaning as land supporting the Leopard's numbers.

The fundamental reasons for the decrease in density over the region's entire expanse is the acute deterioration of the food base, including the nearly complete annihilation of the Wild Boar (*Sus scrofa*) in the Leopard's habitats. Domestic livestock is becoming the Leopard's main prey, which, naturally, provokes the livestock's owners to actions in response, that is, to destruction of the predator. According to data from questionnaires, in the 1980s two to three Leopards were shot yearly in the Western Kopetdag. Today that estimate has doubled, at minimum. Besides annihilating Leopards because of attacks on domestic livestock, hunting solely for pelts — which are sold to Iranians and Turks, as well as to local businessmen who can afford to pay up to $1000 for one pelt, a very large sum by Turkmen standards — is occurring on an ever greater scale.

The dynamics of numbers and the factors determining them are easy to trace using the example of a not-so-large, but well-studied territory, the S'unt-Khasardagski Ridge, which occupies an area of no more than 50 thousand ha. and includes agricultural lands and 16 thousand ha. of protected territories. Thus, in 1984 four or five Leopards (two adult females, an adult male and one or two young cats, including kittens aged one to one-and-a-half years) inhabited this territory. At that time the number of Transcaspian Urials (*Ovis orientalis arkal*) was about 100 to 120 individuals, and there were about 150 to 160 Wild Boar. The basic prey for the Leopard then was the Wild Boar, with the Transcaspian Urial and domestic cattle in second place. By the end of the 1980s, the number of Transcaspian Urials doubled, while the Wild Boar declined a bit; in 1991-1993 the number of Leopards also grew, to seven or eight Leopards (3 adult females, one adult male and 3 or 4 young, including kittens of one to one-and-a-half years). These three or four young played a crucial role as a population reserve, settling outward onto territories ill-suited for Leopard habitat. The Leopards settling further out were found at great distances from the basic habitats, where they lived for a long time on land without wild ungulates, attacking domestic livestock and creating the impression of high numbers in the region.

In the 1990s the situation changed in such a way that, by the end of 1993, the decline in numbers of all wild ungulates, without exception, was beginning to be felt on the Central Section of the Zapovednik on S'unt-Khasardagski Ridge. Today [1996] hoofed animals are so rare that they cannot be considered the Leopards' basic food source, and the Leopards themselves have decreased to three individuals. No traces of the presence of kittens were noted here in 1995, nor in 1996; that is, the number of Leopards has declined to what it was in 1979, when the Zapovednik was organized ("Chronicle of Nature, S'unt-Khasardagski Zapovednik," 1979) — a critically low level.

An analogous and perhaps even more tragic situation has come about in the Central Kopetdag. On the one hand, the Leopard here is subject to the powerful pressure of poaching. According to questionnaire data, in the last 5 to 6 months alone, from one to three Leopards were killed in each of the five sections inspected. One taxidermist in Ashkhabad reported preparing five Leopard skins in the last half-year. On the other hand, the reduction in prey here carries an even deeper meaning, since equally valuable substitutes — or anything close — for the quickly declining large ungulates are absent. The numbers of probable substitutes, that is, secondary prey — Wild Boar, Crested Porcupine (*Hystrix cristata*), Badger (*meles meles*), Fox (*Vulpes vulpes*), Hare (*Lepus*) and others — are significantly lower, because of natural conditions, in the Central Kopetdag than in the Southwest Kopetdag. In the winter, therefore, the Leopard is doomed to a hungry existence when the numbers of Bezoar (*Capra aegagrus*) and Transcaspian Urials are low.

All of these factors of anthropogenic pressure on Leopard numbers will only increase in the foreseeable future, threatening the very existence of the species in the region. It's painful to think that towards the end of the twentieth century, yet another species of large cat will disappear from the area's fauna.

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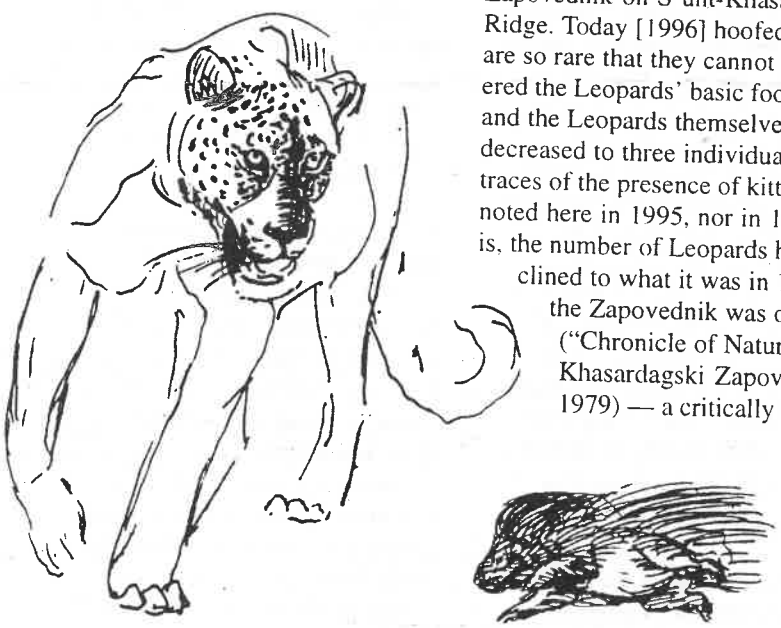

The North Persian Leopard (*Panthera pardus saxicolor*) in action (*drawings by R. Danov*).