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# LAST SURVIVORS

The Natural History of Animals  
in Danger of Extinction

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country, much of which is too arid or rocky, or in some places too swampy, to be used for agricultural purposes. Within this general area, a few tigers are believed to occur on the lower slopes of the Semeru Volcano (to the south of the town of Malang), and along the Glidek River, as well as in the Blambangan Peninsula. Banteng and deer (*Cervus timorensis*) are still relatively plentiful here, especially on the Jang Plateau.

Within this large area the total tiger population probably does not exceed a dozen at most, the majority in the Betiri Forest Reserve (170,000 acres) in the South Djember District of East Java Province.

## BALI TIGER

*P. t. balica*

The Bali tiger is the easternmost representative of the species, and the smallest of all the races. Apart from size, it differs from the Javan race by being even darker in general colour and in having fewer stripes.

## SNOW LEOPARD

*Panthera uncia*

The snow leopard, or ounce,\* is slightly smaller than the common leopard, and among the most attractive of all the great cats. In winter coat the fur, particularly on the lower parts, is unusually long, with thick woolly under-fur. This, in conjunction with the short muzzle, has the effect of making the head appear disproportionately small. The general ground colour is pale charcoal, faintly tinged with cream: the under parts up to the chin are milk white. The black rosettes are large, irregularly shaped, and randomly distributed. The markings on the head, along the spine, and on the upper part of the tail are well defined, but where the fur is

long they are somewhat blurred: the pattern is more distinct in summer coat. The tail is long and densely furred, with large rosettes on the upper surface, white beneath, and black-tipped.

The snow leopard is an inhabitant of the cold highland steppes of Central Asia, bounded by the Hindu Kush in the extreme north-east of Afghanistan; Gilgit, Hunza, Nagar in Pakistan; the Karakoram Range and the southern line of the Himalayas, through the northern parts of Kashmir, Nepal, Sikkim, and Bhutan. Gee reports a skin from Tawang in the north-eastern part of the North-East Frontier Agency, east of Bhutan.

In the west the range extends from the Hindu Kush into the mountains of Tadzhikistan, particularly the Darvaz, Gissar and Zeravshan mountains, and the Pamirs (principally the

\* This name appears to have originated from a drawing of the snow leopard published by Buffon in 1761 and entitled l'Ounce.

western part). In Kirgiziya the animal occurs in the Chatkal Range, the Talass Alatau, and especially the Tien Shan. North of the Ili River, it has been recorded from the Dzungarian Alatau, the Tarbagatay and Saur ranges, and even farther north-eastwards in the Altai and Tuva Autonomous Region (Tuvinskaya).

The Chinese sector of the range includes several points around the mountainous periphery of Sinkiang, notably the northern side of the central Tien Shan in the north; the Pamirs in the west; and the Astin Tagh in the south of the province. From the Astin Tagh the range reaches south across the Tibetan Plateau and east to the north-eastern part of Tsinghai Province as far as the Kilien Shan on the Tsinghai/Kansu border and the mountains of extreme western Szechwan.

There are numerous references in the early literature to the occurrence of the snow leopard in the Caucasus and even in southern Iran, but such reports almost certainly refer to pale-coloured specimens of the common leopard or the cheetah. Lay summarizes the evidence and concludes that "no *bona fide* specimen has ever been reported from any part of Iran. The nearest known localities on record are those from the Turkmen SSR. . . . The possibility that *F. uncia* occurs in the Iranian Kopet Dagh seems much more likely than does finding it in southern Iran."

Shou Chen Huang includes the Yin Shan, in Mongolia, within the range of the species, but it seems improbable that this claim could be substantiated. Similar reports from Manchuria and the Amur region are also of questionable validity.

The snow leopard's seasonal movements, like those of other carnivores, are largely governed by the distribution of prey species. Generally speaking, therefore, the summer is spent at the higher elevations, up to 13,000 feet (of the 23 specimens recorded by Dang, two were observed at 18,000 and 18,500 feet respectively), where the open alpine grasslands, just below the snow line, provide favourable environmental conditions for the herbivores on which it preys. These include the *bharal* (or blue sheep), wild goats, deer, gazelle, boar, serow, goral, takin, as

well as many smaller

As summer advances higher into the mountains retreating snow. With the snow descend to the lower valleys and conform. This procedure however, and in some areas of the Pamir Alatau, the snow leopard is found at low altitude throughout the year, reputed to remain permanent.

As both summer and winter by constantly expanding its range, the snow leopard kills livestock, the snow leopard of man through preying on herds and flocks. Novikov states that the snow leopard it will sometimes take to human habitation, and has been reported to attack cattle in their pastures.

Few people have ever seen the snow leopard in the wild, and even few have actually attacking its prey. Novikov was at a height of 12,000 feet in the Himalayas "lying behind the *thar*, climbing leisurely over the rock overhangs towards the Raj Ramba peak, when the snow leopard grey fur dived into the brush and rolled down some hundred feet hanging on to a young *thar* leopard, of course, vanished to view. . . ."

The normal method of the snow leopard is a gradual stalk, culminating in a pounce to pull down the quarry. The snow leopard's technique is to wait in ambush and spring upon a passing animal. The snow leopard combines great speed and agility. According to Shou Chen Huang, the snow leopard is capable of clearing more than 10 feet bound and of leaping to a height of 12 feet.

It seems probable that the snow leopard family groups, established in the mountains, suggests that, "almost everywhere the snow leopard valley has its pair of snow leopard. As summer advances the theory that the snow leopard working valleys in cooperation with the snow leopard generally *bharal*, being chased out of the valley into the a

animal of the pair hides in waiting...". Very little is known of the snow leopard's life history and habits. Much of our ignorance is attributable to the remoteness and inaccessibility of the habitat and the severe climatic and environmental conditions under which the animal lives. These factors, in combination with the animal's nocturnal disposition, have effectively discouraged observation and study.

Births take place in the spring after a gestation period of about 99 days. The litter normally consists of two or three cubs, which remain with the mother throughout the following winter, hunting together as a group, until the birth of the subsequent litter.

The lair is usually a small cave or rock crevice in a secluded and inaccessible spot. Unless disturbed, an animal may occupy the same place continuously. Novikov makes the interesting observation that in the Kirgizian Alatau snow leopards have been known to utilize the huge nests of griffon vultures. Shou Chen-Huang describes a lair containing a solitary cub, which was discovered in 1955 on Chiu-meng Mountain in Szechwan. This was a cave about 4 feet square, the floor carpeted with moulted fur to a depth of about half an inch, and which through long use had acquired an almost blanket-like consistency.

The pelt of the snow leopard ranks among the most beautiful and valuable of all wild cat furs, for which reason the animal has been hunted assiduously. It is generally taken in winter when it descends to lower levels and can be more easily caught, usually by means of snares, traps and pitfalls. A method of capture recently adopted in China involves a stout net buried under the snow. The release mechanism is triggered by the weight of the animal which becomes entangled in the net, snatched clear of the ground, and thus taken without injury.

Referring to its status in Pakistan, Mountfort and Poore write: "Prices of up to Rs. 600 are currently being offered by fur traders in Rawalpindi and Peshawar for the raw skins of this species. Such a premium is sufficient to guarantee the extermination of the already rare snow leopard within the next few years unless the Government intervenes promptly."

Hunting has been particularly severe in Kashmir where the decline has been actively encouraged by an official policy which designates the species as vermin. A similar situation prevails in Mongolia where, as in other predominantly pastoral countries, there is an understandable lack of sympathy for any predator. Under Mongolian law, the snow leopard is placed in the same category as the wolf, lynx, badger, and various predatory birds which may be freely hunted at all times. Despite this permanent open season and the incentive of the valuable pelt, a revealing indication of the animal's scarcity is given by Hibbert's statement that only about 40 to 50 snow leopards are killed in Mongolia each year.

It is equally rare in the Soviet Union, where Gladkov and Nasimovich state that the total taken annually from 1961 to 1964 was between 24 and 60, and numbers are described as "sharply decreasing". The species is now accorded full legal protection throughout its range in the U.S.S.R., as well as being represented in the Aksu-Dzhabagly Reserve (185,000 acres) in Kazakhstan. This reserve, established in 1926, includes part of the Talass and Ugam ranges, and typifies the vegetation of the western Tien Shan.

In 1952 the Indian Board for Wild Life added the name of the snow leopard to the protected list. It is also included among the fauna of two Indian sanctuaries: Nanda Devi (250 sq. miles), and Tons (368 sq. miles). These are of doubtful value, however, as, in the absence of any attempt at supervision (for which reason neither is included in the U. N. List of National Parks and Equivalent Reserves), both sanctuaries could be more accurately described as poaching preserves.

The main hope for the species lies in stringent enforcement of the game laws, backed by deterrent sentences for infringement. The governments of both India and Pakistan have already prohibited the export of all wild cat skins, but this has not inhibited certain furriers from continuing to offer skins for sale. More effective control of the fur trade within these two countries is of paramount importance to the survival of the snow leopard.