

Chapter 12

My Experiences with Mountain Ungulates in India

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As a boy, I started reading and enjoying Jim Corbett's stories on man-eating tigers and leopards. One of the narrations I particularly liked was an episode in 'The Man-eaters of Kumaon', which describes the hunting of goral, when Corbett was on the trail of the Champawat man-eater. While camping in Pati village (Pali according to Corbett), he asked the villagers whether he could be led to goral, promising to take one for his camp and two for the village. Three men from the village readily agreed and took the hunter to a ridge where goral were said to be plentiful. On reaching the base of the ridge, Corbett and his men sat under a tree, quietly watching the slope. Soon, a movement nearly 200 m up the ridge attracted his attention. It turned out to be a goral watching them. Corbett lay down, held his rifle against the root of an oak tree, took aim at the white throat of the goral, and fired from an uncomfortable angle. The villagers saw no movement on the slope and concluded that Corbett had mistakenly shot at a dry bush. Moments later, a goral materialised from out of the cover and started sliding and rolling downward. This disturbed two more goral, which jumped over the bushes, stood still for a few seconds, sounding their characteristic wheezing alarm, and ran rapidly along the slope. Corbett swiftly shot them down one after the other. All three goral rolled down and reached the tree where the party had been sitting. The villagers were so impressed by this performance that they

later spread the story that Corbett's magic bullet not only killed the hidden goral but also brought them to the place where he was waiting. Instantly, Corbett became a hero and won the confidence of the villagers who thereafter willingly followed him in the man-eater terrain.

Interesting information on the goral emerges from this narration. They live in small groups, rest under cover in the noon heat, and when alarmed, run for a short distance before standing still to sound the alarm. In March 1985, when I joined the Wildlife Institute of India, one of my immediate desires was to see a goral in its natural habitat. The opportunity arose in December 1986, when I was camping in Dholkhand in the Rajaji National Park (NP), very close to the Institute. One morning, I suggested to my colleague Dr. G.S. Rawat, a man with immense experience in the Himalaya, that we should explore the high ridge in front of Dholkhand forest bungalow, which to me looked like a perfect goral habitat. We clambered up the slope, and within two hours saw five goral. Soon we decided to initiate a private study on goral in the Park during weekends and on other holidays. When we explained our ideas to Dr. S.P. Goyal, another colleague, who before joining the Institute had climbed only the sand dunes of Thar desert, willingly decided to join us, and we began working as a team. We named the area 'Goral Ridge'.

The goral is a stocky goat-like animal 65 to 70 cm at the shoulder and 20 to 25 kg in weight. Both sexes have horns and a conspicuous white throat patch. It is difficult to distinguish between the sexes from a distance. There are, however, some differences in their horns. The male's horns are thicker at the base, and when viewed from the front, more divergent than those of females. Taxonomists have placed the goral in a group popularly known as 'goat-antelopes' (Tribe *Rupicaprini*), said to be the common ancestor of both goats and sheep. The tribe seems to have an Asian origin. *Pachygazella grangeri* of the Pliocene, which is about 10 million years old, found in fossil deposits in China, was the probable ancestor of the rupicaprines. The *Rupicaprini* once had an extensive distribution in Eurasia and possibly in Africa. For example, a large goral, *Gallogoral meneghinii*, lived in the past in areas around present day Italy. Living relatives of goral are serow, *Nemorhaedus sumatraensis*, of south-east Asia, Taiwan and Japan; Rocky Mountain goat, *Oreamnos americanus*, of North America; and chamois, *Rupicapra rupicapra*, of Europe.

Goral has a wide distribution, from the Indus Kohistan region in Pakistan in the western Himalaya, across the eastern Himalaya, Myanmar, Thailand, China and in a few scattered areas in South Korea, North Korea, eastern Russia and the adjoining regions of China. Along this arc, which is discontinuous now, there are several species and subspecies. Within the Himalayan region of the Indian subcontinent, there are three species: the Himalayan goral (*Nemorhaedus goral*, with two subspecies: grey goral *N.g.bedfordi* in the western Himalaya, and brown goral *N.g.goral* in the eastern Himalaya), Evan's

long-tailed goral (*N. caudatus evansi* in Nagaland and possibly in Assam) and Burmese red goral (*N. baileyi cranbrookii* in north-east Arunachal Pradesh). Both Evan's long-tailed goral and Burmese red goral are found in Myanmar. Thailand has one species (Evan's long-tailed goral). China has four subspecies: Chinese long-tailed goral (*N.c.caudatus*) Tibetan red goral *N. baileyi baileyi*, Grey long-tailed goral (*N.c.griseus*) and Korean or Amur long-tailed goral (*N. c. raddeanus*). Amur goral occurs in North Korea, South Korea and the Russian montane forests along the border with China and the coastal cliffs overlooking the sea of Japan.

In India, goral is found in the Himalaya and Shivaliks of Kashmir, Himachal Pradesh, Uttaranchal (part of former Uttar Pradesh), Sikkim, West Bengal and Arunachal Pradesh. Goral is also reported to occur in the state of Nagaland and Assam. They prefer varying altitudes, from 200 m in the Uttaranchal Shivaliks, to 4000 m in the Garhwal Himalayas. There could be 100,000 goral in the Indian Himalaya. The action plan for Caprinae, compiled by the World Conservation Union (IUCN), reports that poaching is the single major problem threatening goral throughout its range.

Our research resulted in the collection of much new data on this hitherto little known species. Goral are primarily grazers, although they feed upon tender shoots of certain shrubs and herbs when available. On the Goral Ridge, we observed that when langur (*Semnopithecus entellus*) were feeding up in the trees, the goral tended to group below, feeding on fallen leaves, flowers and fruits. We have also seen sambar (*Cervus unicolor*), chital (*Axis axis*) and barking deer (*Muntiacus muntjak*) join





goral in such situations. On rainy days, goral can be seen throughout the day. In winter, however, there appears to be a morning and evening peak in feeding. The animals tend to rest for the remaining part of the day, and if the weather is cool, they may be seen basking. In summer, goral retreat into cover as early as 0730 hrs, emerging only late in the evening when the heat has died down. When thirsty, they will, nevertheless, visit waterholes even in the heat of the noonday sun, usually choosing a water source close to steep ridges.

Approximately 60% of our goral sightings were of solitary animals, or of females accompanied by a yearling and/or a kid. The largest group comprised seven animals, which rested on a gentle slope after feeding on the lush grass of the monsoon. We frequently came across the pugmarks of leopard and tiger on the Goral Ridge. Analysis of tiger scats (droppings) indicated that the large but agile tiger does occasionally prey on the nimble-footed goral.

From what we gathered, based on walking transects, and wanderings over the hilly tract of Rajaji NP, which is around 300 km², we estimated that there could be about 1,000 goral in the Park. The Ganga River, however, divides the population. West of Ganga River the best concentrations appeared to be in two areas, the Dholkhand and the Bom Dhera ridges. Both areas are free from cattle grazing and lopping, a scourge all through the Park. Both locations also have water in the valley, even in summer, but they suffer the problem of *bhabar* grass (*Eulopsis binata*) cutting by villagers in winter. Fortunately, poaching is not a major problem here, a fact that is reflected in the high density of sambar and barking

deer.

One benefit of cutting the grass in winter is the increased availability of protein-rich tender grasses in summer, a boon to ungulates. Probably the Shivalik habitat could do with some form of resource manipulation, like controlled burning of grasses, in order to provide more nutritious food in summer, leading to a higher density of wild ungulates. Grass cutting by villagers, which seems to be uncontrollable has two conservation problems. One is stealing of predator kills by the grass cutters all through the winter, and the other the erosion caused in the fragile Shivaliks by the rolling of grass bundles from hilltops. Grass cutting, along with other disturbances such as cattle grazing and poaching, can gradually lead to the decline of prey and predators, and therefore should be stopped at any cost. Our studies in Rajaji NP inspired two of our students, Charudutt Mishra and Anand Pendharkar, both nimble-footed like goral, to take up research on this mountain goat for their M.Sc. dissertation. Charu carried out his study in Majahtal Wildlife Sanctuary, and Anand in Simbalbara Wildlife Sanctuary (both in Himachal Pradesh) and the adjacent Darpur Reserved forest in Haryana. Charu found that goral fed almost entirely on grass. In his study area, goral preferred open, steep habitats with good grass cover, and avoided shrub-rich patches, particularly those areas where the shrub height exceeded their shoulder height. Anand observed that goral were not particularly social. Females were comparatively more social, and males associated with female groups only during the breeding period (November).

By now, the interest in the mountain ungulates, that had originated with goral,

had expanded to the entire group of wild sheep and goats – collectively grouped in the sub-family caprinae. This led to further work on these beautiful, nimble footed creatures in the high Himalaya and the cold deserts beyond.

During the years 1989 to 1991, Drs. S.N.Prasad, G.S.Rawat and I were Investigators of the research project 'Habitat ecology of mountain ungulates in Kedarnath Wildlife Sanctuary'. S.Sathyakumar worked as a Research Fellow in this project that involved studying mountain ungulates such as the musk deer, Himalayan tahr, serow and goral. I still remember very vividly the goral sightings we had in the Pine forests near Mandal, the sighting of the elusive serow in Shokharkh, and the trek to Madh Maheshwar during which we sighted several Himalayan tahr. This study developed suitable methods for abundance estimation and monitoring of these mountain ungulates and their habitat ecology.

In 1991, I initiated a study with Dr Michael Stüwe of the Smithsonian Institution, USA and my colleagues Dr G.S. Rawat and S.N. Prasad on the ecology of the Siberian ibex, a true goat inhabiting the rugged Trans-Himalayan mountains from Himachal Pradesh in India, through Ladakh, PoK, and in the Central Asian mountains. We hired two of our alumni from our Masters programme, Nima Manjrekar and Yash Veer Bhatnagar who studied the species in arduous conditions for over 5 years. We managed to radio-collar seven ibex with the help of our institute veterinarian, Dr. P.K. Malik, and the researchers were able to obtain some hitherto unknown facts about the ranging of the species.

Having read through accounts on goral, I

realized that so far, few good pictures of this species have been taken in the wild. Therefore, I took it as a challenge to take a good photograph of goral using the immensely satisfying traditional method, hiding and waiting in an appropriate location. As a result of my intensive and extensive wanderings and observations, I discovered two places which offered the potential for photography. One is the ridge top opposite the Dholkhand forest bungalow, and the other, two small watering points in a valley, about 8-km from Chilla on the Chilla-Laldhang road east of Ganga River. Over my long years of field research, I have discovered that animals seldom see people if they remain hidden in trees, and to me, waiting in the trees was much more exciting than remaining hidden in a ground hide! Therefore, in the valley habitat, I made a simple hide up in a *Mallotus philippinensis* tree, hardly 15-m from a slushy area near a natural salt lick, which was frequented by goral during the hot hours in summer. I have taken some good pictures sitting in this tree hide, and recorded some interesting observations on the behaviour of goral.

However, I got more pleasure from waiting and photographing goral from two small trees on the top of Goral Ridge. In the course of time, I realized that photography was possible only in summer, late in the evening, when goral left the cool cover of the valley habitat and came to the ridge top to feed. This, however, necessitated a steep climb at around 1400 hrs, when it was exceedingly hot. One *Ougeinia oojeinensis* tree at the edge of the ridge top, and the other a *Grewia elastica* tree about 10 m away, near a trail frequently used by goral, gave me the necessary hideouts on the ridge top. I found it scary to sit on the *O. oojeinensis* tree, as it



swayed even in the light wind. I was afraid that a heavy wind might uproot the tree, and a straight fall of 50 m or so would make my wildlife adventure a fatal accident. Once when I sat on this tree, a female goral came right under me and started feeding on the leaves that I had plucked and thrown down, to have the necessary visibility around (the leaf of *O. oojeinensis*, a leguminous species, is reported to be highly nutritious). I could have easily jumped on to the back of the goral 3 m below! In spite of these close encounters, I eventually gave up sitting on this tree.

One of my visits to the *Grewia elastica* tree is worth recording. It was the time when there were reports of terrorists from Punjab spilling into the confines of Rajaji NP. The temperature soared over 40°C as I made my way up the ridge. The oppressive heat and the steep climb forced me to stop every 50 m or so. On my way up, while passing a dense patch of *Bauhinia vahlii* along the ridge, I flushed two goral resting in the shade. A short while later, a sambar doe with a yearling hind and a fawn, resting in the scanty shade of trees, ran out of the cover and went up the hill. By the time I settled down in my hide amidst the foliage, it was around 1500 hrs. An eerie silence enveloped me. The air was still and not a leaf rustled.

When the sun began to set, I noticed a palpable change in the mood of the jungle. A steady cool breeze made the branches dance. And several animals seemed to waken from their slumber. A group of sambar and even an elephant bull appeared out of nowhere, and began to feed on the valley vegetation. The alarm calls of chital, sambar and barking deer all around the ridge indicated that

the time had come for predators to get on the move. I even heard the distinct footsteps of a goral on the dry leaf litter as it slowly made its way up from its resting site through the forest, towards the grass-covered slope, which I faced. It was a male, and he fed peacefully on the tender shoots of the understorey vegetation. When he reached the grassy strip, he began to gorge on the green leaves of a bamboo-like grass, *Neyraudia arundinacea*, and the sprouting shoots of *bhabar* grass. I sat without any movement amidst the foliage and allowed him to approach within five metres of me, and surprised him by taking a photograph. The sound of the camera startled him, and he ran away from me, leaping effortlessly 20 m down the steep slope. He then stood looking in my direction, stamping his forefoot and whistling his alarm to the jungle at large. I froze till he slowly and nervously resumed feeding.

When the sun touched the horizon, I decided to leave. As I started out, I thought to myself that if there were no elephants on the way, it would take me around 40 minutes to reach the Dholkhand forest bungalow. I did not worry much about elephants, as I was confident of avoiding them if I encountered them on the path. I found it ironical that of all the imagined dangers of the wilds, the ones I feared the most were from my own species, the terrorists from Punjab. I am glad that the terror has now become a bad memory of the past, and I wish Rajaji NP, with its exquisite wildlife and enchanting goral habitats, will remain a safe haven for wildlifers to wander, wait, photograph and enjoy wildlife. For the goral, I wish that a much stricter control on poaching be put in place, and patches of its habitat should be protected from all forms of disturbance to enable this interesting species to survive in its exciting habitats across its distributional range.

