



HARTMUT JUNGUIS

Wolf track at 4,600m in Khunjerab National Park, Pakistan.

Dhee Sar — Portrait of a High Alpine Meadow

The author spends most of his year high up on Dhee Sar in the Khunjerab National Park, studying the behavioral ecology of golden marmots; also important habitat for snow leopard, Himalayan ibex and the Marco Polo sheep. Here he reflects on the magic of the changing seasons and how they affect him and the wildlife of the area. A 1992-93 Fullbright Fellow to Pakistan he has been playing with golden marmots since 1989 in Khunjerab National Park.

Daniel T. Blumstein

In the spring of 1991, as I trek to Dhee Sar, my breath comes heavily. Too many months of staring at a computer. Spring is the time of snow, quiet and solitude at Dhee Sar.

Dhee Sar is a special place for me. It's a

4,100-4,300m hanging, high-alpine meadow in Khunjerab National Park. In Wakhi, Dhee Sar means 'above where people live.' To me, Dhee Sar means a place of tranquility, and the spectacular beauty of the Karakoram mountains. I've been studying the marmots

and the ecology of the meadow for about 11 months now — 11 months of springs, summers and early falls. It's a great change from the fast-paced Californian life I lived.

Spring — Spring came slowly this year to the Karakoram. The snow blanketed the north-facing meadow and its moraines until almost June. The south-facing meadow was snow free in late April. A couple of heavy snowfalls tried to reverse the inevitability of spring, but these melted quickly in the south-facing meadow.

Dhee Sar is a special place for me. It's a 4,100-4,300m hanging, high-alpine meadow in Khunjerab National Park. In Wakhi, Dhee Sar means 'above where people live.' To me, Dhee Sar means a place of tranquility, and the spectacular beauty of the Karakoram mountains.

The golden marmots emerged before I arrived on the south-facing meadow. Once they succeeded in tunnelling through the snow, their activity was generally limited to the burrow areas and surrounding patches of snow-free ground. This is in stark contrast to the marmots in the south-facing meadow, where it was business as usual. For marmots, this means eating. Their goal is to re-gain the weight they lost while hibernating the past seven or so months. If they're lucky it might mean being a mother or a father — the stuff of evolution, but not a common event at Dhee Sar.

Last year the snow evaporated in front of our eyes. Ice dams broke on the South Dhee Sar Icefall. The stream was raging. Periodically a wall of black water would rush from the glacier, flooding the floodplains. I warned the porters, still carrying up my

supplies, to be extra careful crossing the normally tranquil stream. In camp, we had to speak above the roaring water. Pani, pani everywhere.

This year, in contrast, spring was much quieter. No snowmelt means silent streams. The silence was broken in the early morning by calling snowcocks, in the afternoon by periodic avalanches and at night by the snoring of an assistant in an adjacent tent.

The Himalayan snowcocks bring humour to Dhee Sar with their morning cacophony. Their call is a sound that must be heard to be appreciated. A loud, ascending, harmonically structured whistle, is their most common contact call. This breaks into a hysterical laugh when they are flushed. At Dhee Sar it's not difficult to hear trumpeting snowcocks — they're everywhere. This year, the area around our camp was snowfree so the snowcocks settled above us, serenading all the region's inhabitants.

The Himalayan snowcocks bring humour to Dhee Sar with their morning cacophony. Their call is a sound that must be heard to be appreciated. A loud, ascending, harmonically structured whistle, is their most common contact call. This breaks into a hysterical laugh when they are flushed. At Dhee Sar it's not difficult to hear trumpeting snowcocks — they're everywhere. This year, the area around our camp was snowfree so the snowcocks settled above us, serenading all the region's inhabitants.

A group of 12 Himalayan ibex fed above and around our camp. A few large males cast a wary eye upon us while the other ibex seemed to become habituated to our presence and could be approached quite closely.

One morning, following a heavy snowfall, I went out tracking. Near camp, I flushed a cape hare which bounded quickly away while I foundered in the heavy snow. The cape hares seem to be coming closer to camp now, invading areas that have traditionally been used by marmots. I've seen some marmots express concern about the 'degeneration' of the neighbourhood, chasing the hares away from their burrow areas. Chase — there really isn't much of a chase! The hares bound away, zigzagging and taunting the now furious marmots who follow with the best of their unequal ability. Maybe it's a game...!

Summer — Summer begins when the snow's gone and Dhee Sar turns green. Local shepherds bring up their yaks to calve, their sheep and goats to graze and visit periodically to tend the yaks or 'yak' with my local assistants.

The weather determines much at Dhee Sar. The number of weeks spent grazing Dhee Sar, is a function of the weather here and at higher pastures: if the weather's poor, the livestock stay here longer. Weather determines marmot activity and therefore my activity. Sometimes it's unbearably hot in the sun. Sometimes it rains. Marmots abhor these sorts of weather, preferring cool, sunny mornings and cool afternoons to graze, groom and gambol with each other. Early summer is the time of marmot play, when, in larger marmot groups, up to 3 individuals may box, tumble, mouth spar and generally have a good time. The good life — eat a few hours, play a bit and sleep — my assistants are envious.

The foxes begin to come up to Dhee Sar around this time. Eating sheep and goats, marmots and voles and scavenging the remains of larger livestock and other forms

of carrion. The Tibetan red foxes are large and wary. They're incredibly difficult to see, apparently choosing paths out of our sight lines. Often marmot behavior tells us where to look. Seldom do we actually see the foxes. Yet we have seen them walking away with marmots in their mouths and many marked marmots disappear each year.

A 2 year old cow was killed recently. For a couple of days we could go to a spot, look down on a carcass and see 1 to 4 foxes feasting on a calf. Our closer investigations of the calf seemed to scare away the foxes. Yet we kept up our vigil, hoping to see the wolves that may have killed it, a snow leopard in search of an easy meal, a bear attracted by its ever growing scent, or a Himalayan griffon or bearded vulture, performing their useful task of cleansing the heights. All of these animals live in the area, yet are seldom seen.

Summer is a time of birth and rebirth at Dhee Sar. Babies of all sorts abound. Baby yaks grunt and gallop. Baby choughs beg persistently (no annoyingly!) to their parents. Royle's high mountain vole pups overrun our hut — crawling over us while we eat. I catch a few with my hands and dye a number on their back for future identification. They don't last long — baby weasels (alpine weasels and ermines) need to be fed.

The ermine babies are unbounded sources of pure energy. I followed 5 or 6 of them one day — I'm still not sure of how many there were! Popping from rocks, squealing, climbing on each other and bounding to another crevasse, the group moved frantically over and through talus and slope. They found me worthy of study and approached to within a few metres. Two, no three, no two again, heads would peer at me from one spot. They would disappear and another head would pop up somewhere else, inquisitively trying to determine whether I was food, a toy or danger!

Marmot pups appear and begin trying to be grown-ups. Alarm-calling in appropriate situations, running ineffectively over rocks

and each other, playing with and on adults, they grow quickly. Foxes and winter will take their toll on the pups. A fraction of those pups who emerged above ground are seen the next spring. Yet, now is the time for exploration and learning and the pups begin to explore their area and interact with adults in the groups.

Sometime in June, pregnant female ibex leave their group and calve alone on higher and more remote cliffs. When they rejoin the group, all members seem a bit more wary. The new ibex calves join each other in chases between the legs of the more sedate adults. The ibex disappear to higher pastures. The snowcock groups re-form and the females appear to be left to rear the kids alone in the higher pastures. When a mother snowcock is surprised, she scatters the chicks and performs a classic 'leading-away' display. She pretends to be injured and tries to attract your attention away from her brood. After some time, the chicks reappear and begin calling for their mother, who may call for the chicks. Eventually everybody's re-united and all go merrily clucking away.

When a mother snowcock is surprised, she scatters the chicks and performs a classic 'leading-away' display. She pretends to be injured and tries to attract your attention away from her brood. After some time, the chicks reappear and begin calling for their mother, who may call for the chicks. Eventually everybody's re-united and all go merrily clucking away.

Smaller birds too have their young. Fledgling Hodgson's and Brandt's mountain finches, redstarts (Black and Guldenstadt's),

brown accentors and great rose finches are seen around camp. Kestrels (both common and lesser) and peregrine falcons seem to enjoy this event, undoubtedly eating their fill.

Summer is a time for rebirth. Dhee Sar blooms. Over 100 different species of plants can be found around Dhee Sar. My favourites are the artemesias, mints and thymes which add a wonderful fragrance to Dhee Sar. Dhee Sar smells good! The herbivores tend to prefer the grasses and legumes. The impact of domestic herbivory seems to vary — some years the sheep and goats seem to eat and cause more damage than other years. The marmots usually seem to get enough to eat. By late August some have almost doubled their body mass in preparation for hibernation. Those that haven't, eat more.

Autumn — One morning we wake up and the water is running no more. The nights get cooler and water doesn't flow from the glaciers. I hear an assistant snoring again. The buckwheat turns red and the other vegetation, brown.

Autumn is the time for migratory birds and larger ibex groups. The 12 ibex and 3 babies turn into a group of 18 ibex. I recheck my calculations and remain confused. Larger raptors as well as clearly non-resident birds — rollers, thrushes, buntings, hoopoes and wagtails — are seen around Dhee Sar. The marmots become less active and snowcocks and ibex are seen more frequently.

Fall is a relaxing and quiet time. Reduced marmot activity means reduced human activity. I read and write more and enjoy the last of my days at Dhee Sar. The snow line descends from the peaks and soon we're stamping our feet to stay warm. The marmots plug their burrows and hibernate. This is the proper time to leave Dhee Sar. Quiet, tranquil and preparing for winter. ■