

Half past eight in the morning, and the air was chilly and wet. Frost covered the grasslands of Jaldapara and the thick morning fog battled for supremacy with the rising sun. The temperature had dropped to less than 8°C the previous night, and dewdrops had drenched the trees, tapping on the tinned roof of my cottage throughout the night. The birds, hog deer, chital and assorted other jungle inhabitants had already commenced their daily chores. Not far from the cottage, tall silk cotton trees with their huge buttress roots provided a perfect perch for winged visitors. The bright red silk cotton flowers are a source of nutrition for many creatures, from

small flowerpeckers to hog deer and chital. The world seemed at peace and I spent a blissful half hour watching hog deer, chital and wild boar feeding together in perfect harmony, under the gaze of rhesus monkeys and a few birds that twittered in the canopy above – a wilderness community foraging session! The bone-chilling early morning cold hardly bothered the creatures of the forest, but I shivered as the freezing wind blew off the snow-clad mountains of Bhutan.

Jaldapara's tall green grass and patches of thick evergreen forest, intersected by tributaries of the Torsa river are special to me. Situated in the *Duars* (or *Doors*) of West Bengal, near the Bhutanese border, the rich

alluvial soil and over 800 mm. of annual rainfall combine to ensure a thick growth of grass, which in turn supports elephants and gaur, as well as less-celebrated mammals such as the hog deer, chital and sambar. But Jaldapara is justifiably famous for its healthy population of the Indian one-horned rhino, which has been well protected in recent years by the forest department. The latest count has turned up more than 80 rhinos, the largest number outside the Protected Areas of Assam.

Jaldapara falls in the *Duars*, an area taken over by the British Government after the Bhutan war of 1865. Prior to that, the Bhutan government divided the area for ease of rent collection into small districts such as Bala *Duar*,

Luckee *Duar*. The term '*Duars*' and especially combinations such as Sikkim *Duars*, Bhutan *Duars*, Buxa *Duars*, Eastern and Western *Duars*, etc., can be confusing. Originally, the entire foothills tract east of the Teesta stretching into Assam was called the *Duars* (including Jaldapara). More recently common usage refers to the *Duars* tea district, which only extends eastwards to the Sankosh (Buxa Tiger Reserve) and is therefore co-terminus with the Jalpaiguri District.

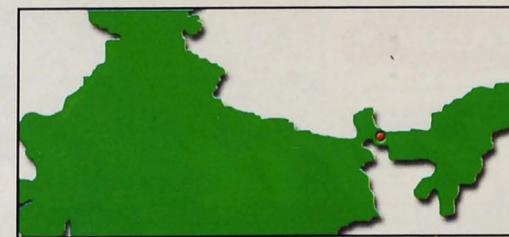
A volatile landscape

Jaldapara's riverine landscape is fragile and volatile, with the fast flowing Torsa river often engulfing large sections of the tall grassland habitat. The Torsa originates in the Chumbi

valley of Tibet, where it is known as Machu. It then flows through Bhutan and enters Indian territory in Baleduar, ultimately draining into the mighty Brahmaputra. Unpredictable in nature, the Machu has followed a different course over a tract of about 20 km. from west to east in the past century-and-a-half. This unpredictable water flow, especially during the monsoons, sometimes traps deer and other small animals such as the endangered hispid hare (*Sanctuary Asia*; Vol. XXII No.6, December 2002) on small islands for days on end, when many drown.

But this is the natural state of the river. Periodic flooding is what delivers fertility to the soil and results in thick abundant grass in these riverine stretches. In recent years, the flow of water in the northwest direction has eroded riverbanks. Joint efforts have been taken by the forest and Public Works departments to build protective walls with loose boulders fastened with mesh wires along the western riverbank. The effort is probably futile since the money and manpower required to build such walls all along the Torsa's course are prohibitive. What is more, it is hard to predict the force of the river during a heavy downpour. While the rivers of this region are traditionally unpredictable, such movements within Jaldapara could mean extinction for species such as the hispid hare and it makes sense therefore to have strong embankments in critical areas.

Siltation is the main factor responsible for alterations in the Torsa's course. Low rainfall over the last few years has favoured the growth of grass along and within the Torsa river. Grassland patches dominated by *Saccharum spontaneum* are expanding. Natural grasslands are good for cover-dependent species such as the hispid hare and hog deer; however, siltation-induced shifts in the riverbed will endanger the adjacent forest by uprooting trees.



Jaldapara's tall grasslands (left) shelter several rare and endangered species, from the endangered rhino and hispid hare to the rarely-sighted Bengal Florican. Erosion caused by the Torsa river is threatening many of these riverine grassland patches.

The Jaldapara Wildlife Sanctuary is completely surrounded by villages, and fuel wood and thatch grass collection is taking a major toll on the forest ecology. There have even been instances of direct contact between villagers when they come to collect the 'rhino's' grass and when rhinos try to lay claim to villagers' crops.

Wild elephants from the mountains of Bhutan migrate into the sanctuary every summer, attracted by Jaldapara's perennial streams, staying for months together and sometimes feeding on banana and other crops in nearby villages. A huge *makhna* that had strayed into Jaldapara several years ago is now seen in the park throughout the year.

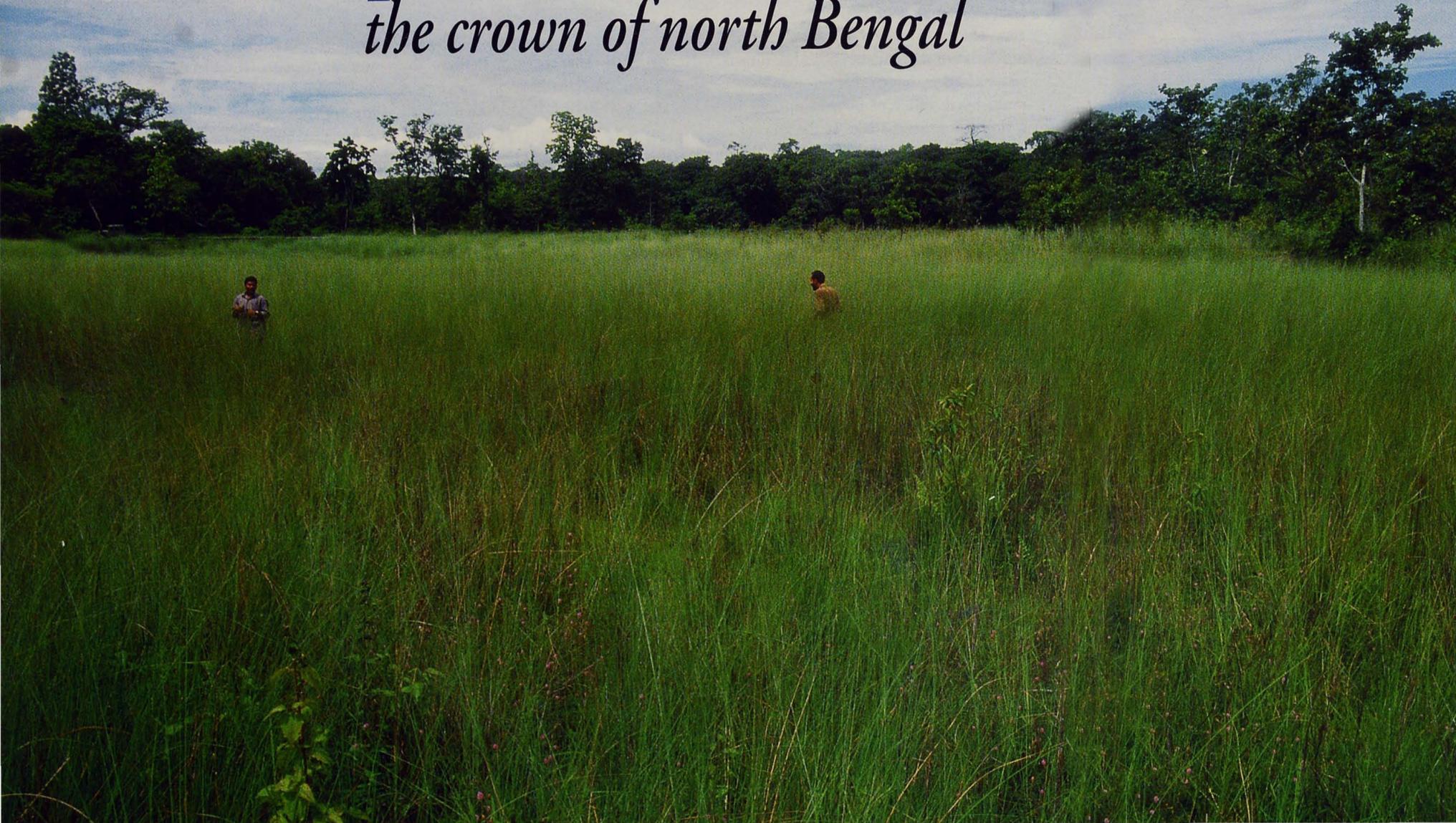
With the onset of summer, the elephants give villagers sleepless nights and those who challenge their crop-raiding antics often have to deal with a damaged house the next day! Wild bulls often mate with the department's camp elephants, of which Jaldapara has an unusually large number, 40 at last count. Mostly used to ferry tourists through tall grassland patches and for patrols, these elephants are left free in the jungle and brought back by *mahouts* in the evening. Considering that the park is only 214 sq. km., these 40 camp elephants in addition to the wild ones, exert severe stress on the ecosystem.



Jaldapara

the crown of north Bengal

*Text and photographs by
Gopinathan Maheswaran*



The Forest Department's policy of planting thatch grass species to increase the rhino habitat is a step in the right direction, but I have my doubts about whether these grassland patches will be a source of fodder for the herbivores. Coarse grasses provide shelter, but are not very palatable, forcing herbivores to raid nearby crop fields.

The hog deer is a fascinating animal, and I am glad to report that its population in Jaldapara seems to have increased in recent years. In December 2002, I saw herds grazing along the roads within the sanctuary. Gentle scenes of hog deer, chital and wild boar foraging in close proximity to each other in the early morning mist are indelibly etched in my memory. Sambar and gaur seem to have increased significantly in the last few years and there have been unconfirmed reports of tiger sightings too. I personally spotted a leopard crossing the road near the west bank of the Torsa.

All in all, the signs are good for Jaldapara. But there are problems too.

The Jalpaiguri district is carpeted with tea gardens, many much too close to wildlife areas. Leopards sometimes give birth in tea gardens and workers invariably pick up the cubs,

“Jaldapara is an ideal birding location, due to its proximity to the Himalaya. I have recorded the Black-backed Forktail *Enicurus immaculatus*, Long-tailed Broadbill *Psarismus dalbousiae*, Black Stork *Ciconia nigra*, Common Merganser *Mergus merganser* and Ruddy Shelduck *Tadorna ferruginea* here. The Lesser Adjutant Stork and rare Bengal Florican are both found here, though sightings are difficult.”

usually while the mother is out hunting. The spread of tea estates into wilderness areas is a serious problem, especially as most or all of them use deadly cocktails of pesticides and fertilisers.

The critically endangered pygmy hog is now extinct in Jaldapara. The habitat, though, can still support a population if a good reintroduction programme is put in place. Goutam Narayan from Guwahati has successfully raised individuals in captivity for reintroduction into PAs in Assam, and perhaps a similar effort could be undertaken here. Efforts are also being made to reintroduce the highly endangered swamp deer *Cervus duvaceli*.

Small is beautiful

Though Jaldapara might be home to the ‘glam-set’ of endangered large mammals, my last trip to the park was exclusively to document the diversity of small mammals,

especially rodents and insectivores. In 20 days, I was able to trap 30 individuals, comprising three rodent species and three different insectivorous shrews. I used Sherman traps and the insectivorous shrews were readily attracted to the smell of smoked fish. I used a concoction of both groundnut and dry fish in each trap, and this was replaced every two days, as, over time, the smell fades and ants devour the bait.

Choosing a suitable location for the traps, secure from humans and, particularly, wild elephants was vital. The base of a tree surrounded by shrubs or leaf litter is usually the best option, with a few traps set up in the branches for arboreal shrews. Despite such precautions, I lost several traps to wild elephants. One winter evening I returned to a bamboo patch near Siltorsa where I had set

The Jaldapara park management has done an admirable job of protecting the rhino and its habitat and the area now boasts of the largest population of the Indian one-horned rhino outside Assam. The latest census puts the figure at about 80 animals.





The rare hispid hare was the subject of study by the author. The hare inhabits riverine grassland areas, and the volatile Torsa river is eroding large parts of its habitat. The arboreal Belanger's tree shrew *Tupaia belangeri* (below) is one of the smaller mammals also recorded in Jaldapara.

up 10 traps, only to find the area occupied by a herd of 23 wild elephants! Needless to say, I was not able to check the traps. In fact, had two members of the herd not been standing in the middle of the road adjacent to the bamboo patch, I would have entered unaware and found myself in a dangerous situation, particularly as the elephants had several calves with them. I kept a safe distance from the herd, taking pictures of the huge *makhna*, who stood a touch aloof from the main herd, perhaps so he could provide advance warning of any threat.

Small mammals generally avoid the grasslands and are found in higher densities in Jaldapara's semi-evergreen forest patches, where we had set most of our traps. Their most common occupant was the house rat, followed by musk shrews, which are invariably present in areas with scattered trees. The most interesting species to me was the Belanger's tree shrew *Tupaia belangeri*—a largely diurnal creature that is often mistaken for a squirrel. It runs on the ground in a manner reminiscent of a small mongoose, but climbs trees rather like a squirrel. Its bushy tail, slim body and diurnal habit exactly match the traits of a squirrel, though it has a slightly elongated snout. Locals even call it *Khat beralei*, Bengali for squirrel.

The grey musk shrew *Suncus murinus*, Himalayan white-toothed shrew *Crocidura attenuata*, Indian bush rat *Golunda ellioti*, house rat *Rattus rattus* and the fawn-coloured mouse *Mus cervicolor* are some of Jaldapara's other small mammals. Little is known about the habits of these creatures and their role in the ecosystem. I wish some of our mammal biologists devoted their attention here, instead of concentrating only on the larger, charismatic mammals.

Jaldapara's location near the foothills of the Himalaya makes it an ideal location for birds on their migrations to and from the north. The Black-backed Forktail *Enicurus*



immaculatus and Long-tailed Broadbill *Psarisomus dalbousiae* are some of the new additions to my bird list of the area. The Torsa river even attracts the Black Stork *Ciconia nigra* and I saw one individual for four consecutive days, together with the Common Merganser *Mergus merganser* and Ruddy Shelduck *Tadorna ferruginea*, both residents. Peafowl can be seen in abundance and this is a wonderful place to study their behaviour. In December and January, I encountered an average of one peafowl every 150 m. The Lesser Adjutant Stork breeds in Jaldapara and is a common sight, even though its population is sparse. The rare Bengal Florican inhabits the grasslands, but sighting it is extremely difficult.

While Jaldapara is still home to many rare and intriguing species, there is, unfortunately, a long list of animals that once roamed these grasslands and forests but are now locally extinct: the tiger, clouded leopard, Asiatic two-horned rhinoceros and even wild buffalo. The tiger and clouded leopard were once common and Chas M. Inglis reported occasional sightings of the Asiatic two-horned rhinoceros in 1918. It has since vanished, and I can only hope that Jaldapara's hispid hares, one-horned rhinos and elephants do not follow suit. ✱



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