

I returned in November after having discussion with the faculty members for the winter study. In this season, I am concentrating mainly on two problems i.e. the salt production and the crop damage.

With a tremendous hike in salt price all the salt pans which were unused for the last few years are now on. After entering the Rann it looks as if you have entered a colony, with thatched huts all over and the sound of water pumping machines. With the

disturbance in their habitat the wild asses have started raiding the cotton and wheat crop. I am trying to quantify the extent of damage.

We would end our winter session in March when we would return to Dun.

On behalf of Wild Ass Project I invite all the readers to visit such a fascinating area, the land of mirages and watch the "Ponies" (nicknamed by my colleague).

THE BLACKBUCK IN THE RAJASTHAN DESERT

S.P. Goyal

The graceful Blackbuck (Antelope cervicapra) once roamed in their thousands throughout the great Indian plain. Indiscriminate hunting and poaching through the centuries gradually decimated their number almost to the point of extinction throughout their habitats except in some pockets. It must be said to the credit of the Wildlife Preservation Act, and to the eternal vigilance of the people belonging to the Bishnoi Community of north-western India that these have helped the blackbuck to stage a come back. The isolated pockets of survival have indeed served as germ-plasm banks for the posterity to marvel at a wonderful creation of nature.

It is not by chance that the blackbuck's pockets of survival are

mainly clustered around Bishnoi villages in the desert areas of Rajasthan. These sturdy sons of the desert form perhaps the only community of men in the world which is aggressively protective in its attitude towards all Wildlife, and particularly the blackbuck. Even in the feudal days when hunting of game was the prerogative of the princes, the sentiments of the Bishnois was rarely violated by the rulers. In the immediate post-independence era, when the Bishnois were fighting almost a losing battle to save the blackbuck from extinction, the Government of India armed itself with stringent laws to protect all Wildlife, including the blackbuck. This, together with the reasonably high replacement potential of this animal and the generally low

predation pressure on this species from wild carnivores, has aided it in no small measure to repopulate its favoured habitats.

Our surveys of blackbuck pockets around Jodhpur have revealed certain interesting facts of its life in relation to habitat conditions. It is not uncommon to find today blackbuck herds of 20 to 200 at one spot all along the Luni Basin surrounding Jodhpur, and the total blackbuck population in a favourable habitat may be as high as 3 to 4 thousand. According to an estimate made in 1980, the environs of Jodhpur may be harbouring about 12,000 animals of this species, with more than half of these being adult females, about a quarter adult males and the rest composed of sub-adult or juvenile animals of both sexes. Thus, rapid replenishment of stock would appear to be a built-in characteristic of blackbuck populations. A number of villages in this tract, all Bishnoi-dominated, stand out as remarkably high density areas, e.g. Guda Bishnoian, Dhawa, Feench, Khejarli Kalan, Kakelav, Phitkasni and Lamba. Apart from the protective hands of the Bishnois, the other contributory factor for the concentration of blackbucks around these villages would seem to be the availability of foraging resources. The blackbuck is primarily a grazing animal like the sheep, and is unlike the goat and the chinkara gazelle of this desert which thrive mainly by browsing on desert top-feeds.

It is presumably its grazing habit that induces the blackbuck to seek grass-covered open country. In this respect, it is different from the chinkara gazelle. The protection provided to the blackbuck by the Bishnois through the centuries must have also played a major role in developing this animals' instinctive liking for the surroundings of Bishnoi villages. The damages

frequently done by them to the standing crops are generally tolerated by their protectors - a fact which may indeed sound incredible for any other part of the country but it speaks volumes about the sacrifices which are regularly being made by these hardy people inhabiting the drought-ridden, marginally producing tract of western Rajasthan for a cause which they hold dearest to their hearts.



The blackbuck's preferred feeds include grasses like Doob (Cynodon dactylon), Dab (Desmostachya bipinnata) and Manchi (Dactyloctenium aegyptium). During the summer, even dried-up patches of Doob and Dab apparently seem to be much relished by these animals, although the green, protein rich, succulent pods of that 'King of desert trees' - Khejri (Prosopis cineraria) which they avidly consume during this time, must contribute significantly to their survival. Interestingly, the blackbucks show a particular fancy for the bright orange-yellow flowers

of the hardy, indigenous tree - Rohida (Tecomella undulata). These flowers are fairly rich in proteins (about 12% i on dry weight basis), and are a rich source of several important micro-nutrients. The protein and moisturerich pods of the ubiquitous exotic, Prosopis juliflora (Vilayati babool) are also consumed by the antelopes during summer, although to a much less extent than the Khejri pods. A common ground flora of this desert, Molluga cerviana, locally called "Chiriya-Ro-Khet", which sprouts into life with the first shower of the monsoon, is a part of the blackbuck's usual diet. During, winter, the antelope takes to the salt-rich grass-spórobolus marginatus and, occasionally, to Eleusine compressa, a grass species which is locally called Ghora Doob.

The soils of the blackbuck's range in the Luni basin are generally associated with high calcium carbonate, sodium and potassium contents and electrical conductivity values. These animals are also exposed to high mineral contents in the drinking water. Their main water sources are the Nadis or the natural water holes that dot their habitats, albeit sparsely. The intense surface evaporation from these pools during the hotter parts of the year gradually increase the concentrations of nitrogen and total soluble salts in the waters by as much 200 and 400 per cent respectively. The animals frequenting the Nadis are, therefore, subjected to obligatory high intakes of nitrogenous products and many minerals. Thus, even when nutrient availability in nature is extremely poor, the antelopes apparently do not suffer any undue protein or mineral malnutrition, and their condition seldom deteriorates.

The blackbuck in the desert ingest a good deal of soil along with plant materials during grazing. This habit

of soil ingestion is likely to have considerable ecological significance, in that the minerals in the soil help in partially mitigating the animals' "salt hunger". Unlike the chinkara gazelle, the blackbuck is not a shade-seeking animal by nature. Even during the hottest part of a summer day, these animals may be seen sitting scattered in open, scrub grazing lands. They are hardly, if ever, seen to evade the mid-day sun by remaining in the shade below a tree. The radiant and thermal energy loads on their bodies on such occasions must be considerable. This peculiar behaviour of the blackbuck will remain difficult to explain until, and unless, it is experimentally verified that (i) its coat, though black in colour, actually reflects back much of the solar energy impinging on it, (ii) its body water turnover rate is quite low or (iii) it has, like the camel, a labile body temperature.

The above account of the blackbuck in relation to its desert habitation would indicate that:

- (i) the species has become more or less ruderal in its behaviour apparently instinctively,
- (ii) it subsists primarily on grazing and
- (iii) it is highly heat tolerant.

Its widespread distribution in the Luni basin (including its sub-catchments) and in the saline tracts of Khatu, Didwana, Tal, Chhappar etc. would speak of its rather high salt tolerance. This, when considered in the light of the fact of the meagre sweet water resources of its habitats, would point to the Blackbuck as one of the fittest denizens of the Rajasthan desert.