

rial has missed to mention. Each one of us is endowed with this spiritualism to various extents. It is this spiritualism which converted dacoit Valmiki into a 'Maharishi'. It is this spiritualism which turned the intense love of Tulsidas for his wife into divine love and he became a saint. It is in this virtue that Bradman

and the scientists can be compared and not in their contributions.

The caption of the cartoon at the end of the editorial does not do justice to the strike-bowlers like Larwood, Jardine, Lillee, Walsh, Kapil Dev, etc. who according to the editorial belonged to the Bradman class and who contributed to

the overall performance of the team as much as Bradman did.

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Fading fragrance of musk

Once well-distributed across the entire Himalayan tract, the musk deer is now facing extinction. In the Himalayan belt, its population is currently believed to be less than 2000. The musk deer is listed as 'endangered' in the *Red Data Book* of IUCN (1974), in Appendix I in Convention on International Trade in Endangered Species (CITES), aiming at prohibiting musk trade at the international level and in Schedule I of the 1972 Wildlife Protection Act of India and 1991 Wildlife Protection (Amendment) Act of India. However, despite adoption of some conservation measures, poaching of musk deer continues virtually unchecked and trading still persists on a large scale.

The musk deer (*Moschus moschiferous* Linnaeus)¹ belonging to class-Mammalia, family Cervidae has been used by humans for various economic, aesthetic and socio-religious purposes since time immemorial. It holds a place between deer and antelopes, and is regarded as an under-developed form of the deer, which has not progressed with the rest of its family. This timid and solitary animal weighs about 9.5–11.5 kg and has a gall bladder, with males having a pair of canines and the musk gland which lies below the umbilicus just in front of the prepuce. The pod attains its full size of about 4 cm, when the deer is 136 weeks old. The weight of the pod varies from 40 to 70 g, containing 10–40 g of fresh musk in solid or semi-solid state.

The musk produced from the age of 2 to 14 years in the male deer, contains an alkaloid—muscone. Musk also contains macrocyclic compounds, steroids, proteins, esters, waxes, urogenic salts² and the male hormone—androsterone³.

The unique flavouring quality of musk is one of the important factors for its high value in the international market. Besides flavouring delicacies, it is also used in costly wines and in perfumes for its fragrance. It is highly revered for its medicinal value in Ayurvedic (Indian), Unani, Tibetan (Amchi) and Chinese systems of medicines. References about curative properties of musk are found in the writings of 11th century Arab physicians⁴. Musk is regarded as a cardiac and general stimulant; it increases blood circulation and raises the arterial tension. It is also used as an aphrodisiac, antispasmodic and in chronic cough. Used in 150 Ayurvedic system of medicines, it is described as a life-saving drug⁵.

The gelatinous brown musk secreted by the deer fetches US \$40,000 to 60,000 per kg in the international market⁶. Available data put the value of global musk trade in the US at \$9 million to \$10 million and it is expected to rise.

The musk deer is victimized due to its own possession—the musk gland. Normally about 150 musk deer are killed for one kg of musk⁷, whereas musk can be easily collected from the animal by the process of milking and other simple means, as the pod has a natural orifice. Once extracted, the musk is formed again within a year.

In the Himalayan region, poaching of musk deer is highly organized and poachers operate in groups. Each hunting trip into the jungle lasts over a week and about 15 animals are killed to get 5 pods. Shooting is the most discriminate method of picking the male. However this method is rarely favoured because of the risk of detection by forest officials. Snares, poisoned spears and tracking dogs are the other means used by poachers to kill the animal.

Habitat destruction is the second important factor responsible for the decline of the species. In the countries of erstwhile USSR (mainly Russia) and China musk deer farms have been established for their rearing and breeding. In these farms, techniques are standardized to collect musk from the gland without killing the animal^{8,9}. In India, sporadic attempts by some ardent wildlife workers paved way for the establishment of three musk deer centres.

Conservation of this rare animal is of utmost importance today, as it is fast heading towards total extinction. Instead of lamenting for the past follies, we should take all necessary steps to conserve the deer in both *in situ* and *ex situ* conditions.

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