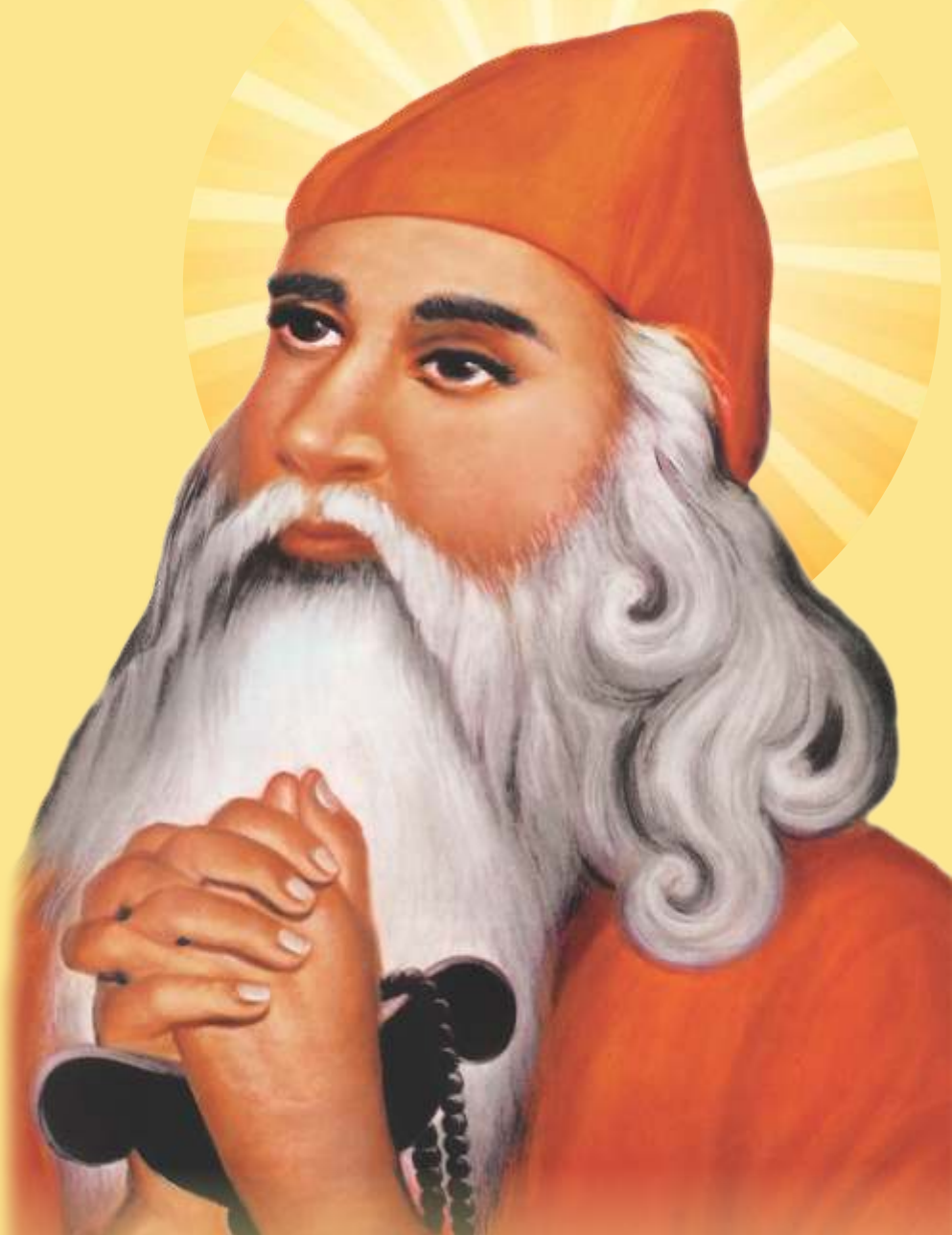


A BLUE PRINT FOR ENVIRONMENT

CONSERVATION AS CREED



Air Commodore Rajendra Singh Bishnoi
A.V.S.M. (Retd.)



GURU JAMBHESHWAR JI MAHARAJ
(1451-1536 A.D.)

A
BLUE PRINT
FOR ENVIRONMENT

CONSERVATION AS CREED

Air Commodore Rajendra Singh Bishnoi
A.V S M. (Retd.)



Jambhani Sahitya Akademi

© **Rajendra Singh Bishnoi**

Publisher :

JAMBHANI SAHITYA AKADEMI

Sector 1, E-134, Jaynarayan Vyas Colony

Bikaner (Raj.)

E-mail : jsakademi@gmail.com

website : www.jambhani.com

First Edition : 1992

Second Edition : 2020

Price : **120/-**

Printed by

TILOK PRINTING PRESS

Bikaner -334001

Mo. 9314962474/75

***DEDICATED
TO THE MEMORY OF***

SHRIMATI AMRITADEVI BISHNOI

AND

**362 MEN, WOMEN & CHILDREN WHO
FOLLOWED HER
AND MADE THE SUPREME SACRIFICE IN THE
DEFENCE
OF GREEN TREES AT KHEJADLI (JODHPUR) IN
1730 A.D.**

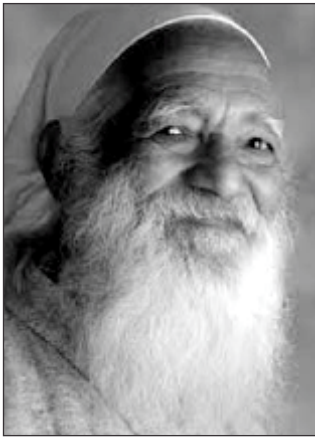
IN THE

**BIGGEST EVER `CHIPKO MOVEMENT'
IN HUMAN HISTORY**

CONTENTS

Preface	(v)
Introduction	(x)
Author's Note	(xii)
1. Jambheshwar - The Saint, His Early Life	15
2. Jambheshwar's Teachings	20
3. The Natural Balance	28
4. Famines	34
5. Trees, Bishnois and Environment	36
6. Environment and Climate	55
7. Prosopis Cineraria	60
8. Khejri and Bishnoi	72
9. Rotu - A Veritable Forest of Khejris	78
10. The Great Sacrifice	84
11. Other Sacrifices for trees	93
12. Wildlife and Man	98
13. Blackbuck and the Indian Gazelle	103
14. A Problem-Real or Imaginary	111
15. Great Indian Bustard	115
16. Supreme Sacrifices for Animals	118
17. All India Jeeva Raksha Bishnoi Sabha	124
18. Some Earlier Cases	131
19. Bishnoi Women and Compassion	133
20. Amar Thaat	138
21. Jambha - Sarovar	146
22. Varingali Sarovar	153
23. Janglu Saathri	156
24. Lohawat Saathri	158
25. Lalasar Saathri	162
26. An Ouran	165
Appendix A	170
Appendix B	171
Appendix C	172
Appendix D	181
Appendix E	183
Conclusion	188

PREFACE



Mr. Sunder Lal Bhauguna
(The World-Renowned
Leader of Ecological
Movement)

Mankind is so much unconscious under the spell of materialistic civilization that in a country like India having spiritual foundations, we have forgotten the origin of our civilization. The Aranya (forest) culture gave birth to our civilization. The sages (Rishis), who lived in their Ashramas in the woods, were the representatives of this culture. They were not only, the seekers of knowledge, but also pondered over the problems facing the society and provided right guidance to the society. The three fundamental elements of the forest culture were:

- a) Life is all pervading; so they could see life in human beings, 'birds and animals, and even in rivers and mountains.
- b) All life is to be worshipped. Lord Krishna in Gita describing his manifestations, said, "Among trees Pam peepul;

among rivers I am Ganga and among steadfast I am Himalaya," and

- c) Austerity and restraint were respected in the society, and as such a loin-cloth hermit was regarded superior than an emperor.

The stream of these cultural values has been flowing underground in our social life since time immemorial. Whenever we were in trouble, the great teachers of the society, unearthed this stream to overcome the crisis according to the needs of the time. In medieval age, this was the basis of the renaissance which was brought by the Saints. Saint Jambhoji was one of such great saints, who traced the root cause of drought and famine to man's cruel behaviors with the Nature. To get rid of these calamities he included "not to fell trees and not to kill birds and animals," in the twenty nine disciplines of life. The saints had been commoners. Their wise sayings have come out from the practical experience of life. One of such saints was Nuruddin Ahmed (Nund Rishi) of Kashmir, who said, "there will be enough food as long as there will be forests." Those sayings were neither covered with intricate scientific theories nor there was any hard mental philosophical exercise behind those. As such their preachiness could be easily digested by the common people. Jambhoji himself was a farmer cowherd. Kabir Das was a weaver and Ravidass a cobbler. They presented science and philosophy in smooth and sweet language, like butter and sugar, before the masses.

Modern man lives in an intellectual society. Intellect always entangles the truth with the pros and cons of logic. The saints gave importance to the heart. Their preachiness reached the hearts of the masses, and so they live in the hearts of the masses even today. Human beings act according to the dictates of the heart. The preachiness of Jambhoji regarding the protection of the trees, birds and animals were so deep in the

hearts of his followers that they sacrificed their lives for this cause. The incident of Khejarli is a part of the history of mankind. This is our misfortune that there is no mention of such a great sacrifice in the history of India.

Though the materialistic civilization has reached its peak, the man on the earth is flying in space to know its secrets; still there has never been the crisis of survival so deep in human history as it is today. The lifegiving air has become poisonous. The water sources are either drying up or have been polluted. Erosion of fertile topsoil, over which man used to grow his food, is taking place at an alarming rate. The presence of Carbon dioxide in the atmosphere is on the rise. The technological methods to overcome this crisis have failed, and so the scientist has now started thinking about biological methods. A new vision towards the trees and forests is developing. "Forests are our life and soul" is no more an emotional slogan, but has become a scientific truth.

I regard it a gift of India's forest culture that the first scientist of the world to prove the existence of life in trees and plants namely Dr. Jagdish Chandra Bose, was born in India. Gurudev Rabindra Nath Tagore, who was a pioneer of Indian renaissance in the Twentieth Century, tried to remind the people about the forest culture of India through his famous essay Tapovana. Mahatma Gandhi made the conservation of nature the basis of his decentralizes economy of village republics. But we remained in a deep slumber. The country fell a prey to ever increasing floods, drought and soil-erosion. This would have continued, had `Chipko' movement not been born in December 1972 in the Uttarakhanda region of the Himalayas. Though to begin with, `Chipko' was an ordinary movement for quick economy, but the illiterate village women converted it into an ecological movement, a unique movement for permanent economy. Their slogan

"What do the forests bear ?
Soil, water and pure air,
Soil, water and pure air,
These are the bases of life"
has spread all over the world.

The 'Chipko' movement of Uttarakhand was not an isolated event, but I view it as the resurgence of the perennial stream of India's forest culture. It is why that the world famous 'Man of the trees' Richard St. Barbe Baker connected it with the martyrdom of Amrita Devi and her fellow Bishnois in Khejarli 250 years ago. When I related to him the story of this great sacrifice, he was filled with emotion. He spread this story all over the world through 108 branches of the organization 'Man of the trees'. Quoting the Holy Bible in his article, Baker writes, "Greater love hath no man than this, that a man lay down his life for his friends. But what kind of love is this ? We learn about the love of God to man, the love of man to God, and we know the great sacrifices often made for each 'other'. The love for trees grows from the realization of our dependence upon them. Trees can survive without man, but man cannot survive without trees".

The only way to overcome the crisis of the pollution of air and water, and soil erosion, is to follow the basic principles of India's Aranya (forest) culture i.e. seeing life everywhere and practicing austerity and restraint. This message has today the support of scientific truth. The dream of Saivodaya (good for all) will be realized by the unity of science and spirituality. Those who want to proceed in this direction will have to swim against the tide. But this has been our experience in the 'Chipko' movement that, if humanitarian activists join hands for the protection of Nature, they will succeed in ushering a new era, an era in which the relationship of Man with Nature

will not be as it is today of a butcher with an animal, but of the natural relationship of a child with the mother.

The book of Air Commodore Rajendra Singhji will be their companion in this great pilgrimage. He has combined the inquisitiveness of a researcher, compassion of humanitarian religious man and the strategy of a soldier, in presenting the story of the great sacrifice of Khejarli. This book will be helpful not only to the Indians, but to the crusaders of Nature Conservation all over the world. The Universities and the research institutes present hundreds of research works every year. Sri Rajendra Singh ji has given a new direction to them.

I wish that this book will be translated into all the regional languages of India and foreign languages so that the message of Jambhoji may reach the mankind striving for its survival.

SUNDERLAL BAHUGUNA

May 25, 1985

Chipko Footmarch*

Camp Baranu

District Shimla (Himachal Pradesh)

* This Preface was written by Mr.Sunder Lal Bahuguna on one of his month-long foot march in the Himalayas to prevent felling of green trees. The address given above does not purport to be his address for communication with him.

INTRODUCTION



Air Chief Marshal
DILBAGH SINGH
(Retd), P.V.S.M.
(Former Chief of the
Indian Air Force)

My dear Rajendra Singh Ji,

I would like to begin by congratulating you for writing a very interesting and badly needed book "Where Conservation is Creed". Obviously a great deal of research and effort has gone in the production of this unique masterpiece with the sole purpose of preserving nature. After reading it, my esteem for the Bishnoi community, which was already very high, has gone up still higher.

In, today's times the teachings of the great Guru Jambheshwar Ji Maharaj are not (only) equally valid but vital for the preservation of the human race. In our country his teachings need to be followed by every man, woman, and child as they are universally applicable irrespective of one's caste, creed and religion. A great deal of ecological damage has already been done in our

country by irresponsible and greedy people through deforestation and indiscriminate and wanton felling of our forests.

Your book brings out with telling effect the relationship and interdependence of the human race and the nature through trees, birds and animals. As an Indian I cannot help but feel proud that our country produced a seer and practical saint who clearly saw the benefits of conservation of nature to man and laid down an ethical code of twenty nine tenets of such farreaching consequences.

I firmly believe that your book or at least the teachings of the Bishnoi faith, should be made compulsory reading in our schools so that the new generation is made aware of the vital necessity of preservation of our environment and ecological balance. The recurring benefits from a single tree as brought out by you are an eyeopener and will convince any skeptic. I have no doubt that the book will find ready acceptance with its readers and if we are able to stem further destruction of our trees, the sacrifices of so many simple and gallant men, women and children, and the effort in writing the book would have been more than justified. Well done.

Yours sincerely

DILBAGH SINGH

AUTHOR'S NOTE

An article by a leading writer-couple, Hugh and Collins Gantzer in the Sunday Edition of an Indian daily newspaper describing their travel through the desert of Rajasthan vividly brought out one salient fact. Such areas, which were inhabited by a class of people known as the Bishnois, abounded with wildlife and green trees, and were rich in agriculture too, in sharp contrast with their surroundings lived by other classes. These places were definitely a kind of oases in the desert, not because Nature had given them any natural water-springs, river-streams or the like, but because the Bishnois lived there in consonance with Nature and conserved it, rather than destroying it. The seed in my mind was sown, and here is the tree in the shape of this book. A book in Hindi on the subject has already been written by me produced by the same publisher.

The effort has been able to take a shape due to the unhesitating support, assistance and goodwill of a very large number of men and women. I feel personally indebted to all of them, but because of their numbers, I find it difficult to mention their names. Suffice it would be to mention the name of Mr. Poonam Chand Vishnoi, then Speaker of the Legislative Assembly of Rajasthan, whom I had contacted first of all in his regard, and who was extremely helpful. As a member of Legislature and a Speaker of the Asssembly, he customarily represented various people and shades of opinion. I take shelter behind that custom to mention his name only.

I have consulted a number of book also in this process, and enlarged my vision, or included their erudite contributions in some cases. I am grateful to their authors and Publishers. These publications are :

- a) "Jambhoji, .Vishnoi Sampradaya Aur Sahitya", In Hindi

by Dr. Hira Lal Maheshwari of the Rajasthan University, Jaipur (Raj.).

- b)& "Jambha Saar" and "Shabd Vaani, Jambha Sagar", both in
- c) Hindi produced by Swami Gyan Prakash ji of Bishnoi Mandir, Rishikesh, District Dehradun.
- d) "Khejarli Key 363 Bishnoi Amar Shaheed" in Hindi produced by Mr. Sant Kumar Rahar, with Mr. Shri Krishna Saharan and Mr. Purkha Ram Bishnoi as Chief Editor and Editor respectively.
- e) "The Chipko Message" by Mr. Sunder Lal Bahuguna of Chipko Information Centre, Silyara (PIN 249 155), District Tehri Garhwal.
- f) "Repurcussions of Deforestation in Precipitation on Western Karnataka", a research paper by Dr. V.M. Meher-Homji of Institute Francais, Pondicherry.
- g) "Ecological Audit of Eucalyptus Cultivation" by Dr. Vandana Shiva and Dr. J. Bandhyopadhyay.
- h) "The Bishnoi Conservationist in India", a paper by Dr. Kailash Sankhla, Chief Wildlife Warden, Rajasthan. read at the International Union for Nature Conservation on November 20, 1982 in Switzerland.
- i) Monograph No. 11 of Central Arid Zone Research Institute, Jodhpur with the research paper by Dr. A.N. Lahiri.
- j) Indian Science Congress 1981, proceedings with the paper by Dr. Tarak Mohan Das.
- k) Yogoda Satsanga Society of India, Book No. 111/1987 with the article "Nature's Pageant of the Ages".
- l) United Nations Environment Programme's journal' "Our Planet" Vol. No. 2 (No. 1/1990)
- m) "Amar Jyoti" of Bishnoi Sabha, Hissar (PIN 125 001)

- n) Bishnoi Sangoshti, Jodhpur's print of Saint Jambheshwar's picture.
- o) "Wildlife Protection in the Desert" of October 7, 1983 by Desert Wildlife Protection Society (Godavan), Jodhpur.
- p) "Prerna Va Atma-Balidaan" by Mr. Pradip Kumar Bishnoi of A.I. Jeeva Raksha Bishnoi Sabha.

I feel much beholden to the All India Bishnoi Mahasabha (its President Ch. Sahi Ramji Dharnia and other office bearers) and Bishnoi Sabha Hissar (its President Ch. Brij Lalji Panwar and other office-bearers) for their unstinted cooperation; Dr. Indra Kumar Sharma of Jodhpur (consultant to the United Nations and other international organizations) for his valuable comments on the botanical species *Maytenus emarginatus*; Mr. Bhagiratha R. Bishnoi former Director General of Police. Rajasthan (since Resting In Peace) for his extreme good will; Mr. Teja Ram Bishnoi for his painting visualizing the great Khejarli sacrifice, and Mr. Pramod Kumar Rastogi for his personal interest in publishing.

I pray to the Lord that the efforts put in by the above mentioned and a host of the not mentioned, will promote the cause of clean environment and conservation of ecological resources in the face of continuing onslaughts by forces of over-population, urbanization and industrialization.

4th March 1992.

Defence Colony
Dehradun (248005)
India.

(RAJENDRA SINGH BISHNOI)

Air Commodore, A.V.S.M. (Retd.)

1

JAMBHESHWAR- THE SAINT, HIS EARLY LIEF

In the year 1451 A.D. Christian Era (A.D. in short) in a village, namely, Pipasar, in the Bikaner-Nagaur area of the northwestern part of the state of Rajasthan (India) was born a great saint who was named Jambhaji or Jambhoji. As a mark of respect, he was subsequently known as Jambheshwar. This village Pipasar lies about 50 kilometers north of its present District Headquarters viz. Nagaur. The date of Jambhoji's birth coincided with the birth anniversary of Lord Krishna, namely, the eighth day of the dark fortnight of the month of Bhadrapada (as per lunar calendar) of the year Samvat 1508 by the Vikrami Era. Jambhoji's father, whose name was Lohatji, belonged to a prosperous Rajput family of the Panwar clan. Jambhoji's mother whose name was Hansa Devi (her alternate name was Kesar) belonged to the Bhati clan of the Rajputs and hailed from a village viz. Chhaapar. Jambhoji



was the only child of his parents, born to them at a very late age in their life.

Tradition has it that one day in the morning, as Lohatji was going somewhere, he perchance came face to face with another farmer, who was carrying seed to sow his fields. Seeing Lohatji he abruptly turned back, muttering that he would not sow that day, because the crop was bound to fail and he would not be able even to recover the cost of the seed. Among the rural folk of Rajasthan those days, sighting of a childless (married) person just before sowing of crops was considered, an illomen; and if someone persisted with his plan of sowing, so was the superstition, his crop was doomed to failure. Lohatji was intensely pained at it, and in a mood of depression, he retired to the forest. He undertook penance there; and one day, a holy man (Sadhu) appeared to him. He blessed Lohatji and asked him to return to his home, where, he was told, a child would be born in due course to them. The middleaged Lohatji returned to his home, and in due time a son was born to them. He was named Jambhoji. Jambhoji in his childhood was not a normal child. According to a poetsaint of the Bishnoi order, Surjanji (1583 - 1691 A.D.), he did. not speak, took little food, did not rest on his back, nor his eyelids closed during his sleep. Jambhoji's father was naturally worried, and when the child was seven years of age, a mystic (tartilik) was summoned for 'treating' him. The people of Rajasthan those days had full belief in the mysterious and the occult. The worried father promised to the mystic that if his son started talking, eating and sleeping normally, he would present a cow and other gifts to him. The mystic tried hard, but his efforts were of no avail. As a part of his rituals, he got a number of small earthen pots, filled them with oil, and placed wicks in

them. He did his best to light the oil wicks, but they would not light. He was completely at a loss. The divine in the child, whom he was trying to 'cure' took pity on the poor man. It is believed that the child Jambhoji, at that stage drew water from the adjacent well, using a thin untwined thread instead of a normal rope. He put the water into those very earthen pots, and behold, the lamps were lit! The divine child made sure with his parents that the mystic did not miss his cow and other gifts.

The first words spoken by the child Jambhoji were in a verse in the Rajasthani language addressed to that mystic in particular, and to the people in general. He asked them to identify the real Guru (i.e. a teacher of spiritual wisdom) from the fake ones, adding that a Guru was one, who was immersed in the practice of Self Realisation and whose all the senses were under perfect discipline. Advising that a Guru was synonymous with God himself, he said that no language could describe him; he was beyond time, he was Truth, Bliss and beyond pale of words. He added that a Guru was one who removed all doubts from his disciples. Thoughts conveying the above and other noble values are beautifully expressed in a piece of 22 lines in the Rajasthani language. This poem is highly adored by the masters of that language. The parents and all others were convinced that the child was endowed with divine powers. All further efforts to make him a normal child ceased.

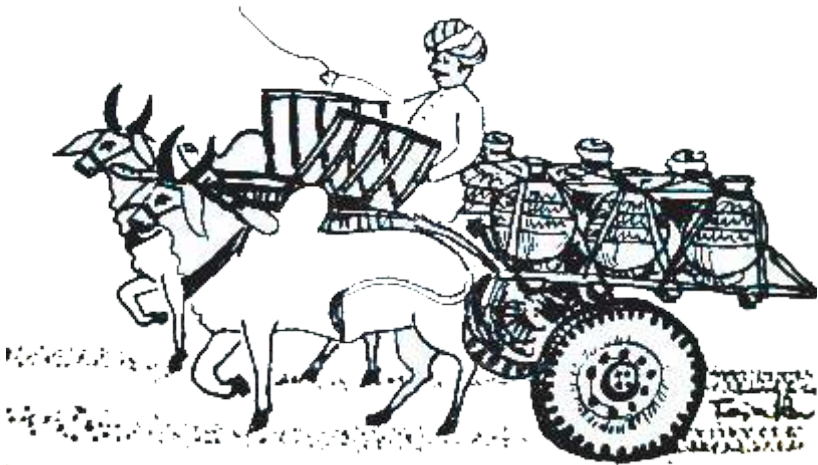
From that point of time, when Jambhoji was seven years old, a new phase of his life, popularly known as his 'cow tending phase' commenced, during which for twenty-seven years, Jambhoji was mainly engaged in the tending of cattle. During this phase, a number of miracles ascribed to him were witnessed.

Rao Doodaji Rathod, prince of the State of Merta had been banished from his state by some of his relatives. Along with his retinue of men and horses, he was camping by the side of the same well in village Pipasar which has been referred to earlier. Sometime while he was there, Jambhoji brought his herd of animals for quenching their thirst. Rao Doodaji was astonished to see that Jambhoji could command the herd by a mere gesture of a finger. At the hint of Jambhoji, only the she-goats got up and drank water from the reservoir which was by the side of the well, while the he-goats remained fast at their places. After the she-goats had finished taking water, they came away from the reservoir, and the he-goats were similarly given direction to take water. It is said that Rao Doodaji was immensely impressed with the mysterious power of the child Jambhoji, who was then eleven years old. Doodaji felt that Jambhoji could help him recover the reign of his state. By this time Jambhoji had moved away from the well, taking the herd back to the pasture for grazing. Rao Doodaji wished to meet Jambhoji, and set after him on his horse. It is said that as he advanced in the direction Jambhoji had taken the herd, the distance between him and Jambhoji seemed to be unending. Rao Doodaji dismounted and approached Jambhoji on foot. Verily, the distance soon decreased and he could meet the divine child. Perhaps it was in the scheme of things to demonstrate that one has to shed all ego to realise God. Rao Doodaji placed his problems before Jambhoji, who blessed him and also gave a branch of a tree as a token sword. Rao Doodaji was asked to start moving towards Merta. On the way itself, Rao Doodaji was asked to start moving towards Merta. On the way itself, Rao Doodaji met a delegation of his subjects; requesting him to return to Merta and resume his throne.

Another incident concerns the releasing of stolen camels

by some camel-robbers and restoring them to their respective owners at the intervention of the child Jambhoji. In those days, robbery and theft of cattle and camels was a very frequent occurrence. A number of camels belonging to the state were forcibly taken away by professional robbers. The boys who were grazing those camels and were dispossessed by the robbers complained to Jambhoji and sought his help to recover them. He advised them- to rush in the direction taken by the thieves and create a lot of noise. The robbers felt that they were being chased by an army, and took to their heels leaving the camels behind. The members of the royal family and other officers of the state, who had also been informed of the robbery and had started for an armed confrontation with the robbers, were astonished to find that their task had already been accomplished before they reached there. Several more miracles are ascribed to Jambhoji.

...



2

JAMBHESHWAR'S TEACHINGS

Jambhoji had told his parents that he would not get married and lead a family life. His parents had to reluctantly agree to it. In the year circa 1483 A.D. Jambhoji's father died, and a few months later, Jambhoji's mother too passed away. Soon thereafter Jambhoji relinquished all claim to his paternal property, and moved to a sandhill at Sambharathal, about ten kilometers from his village Pipasar, and made it his permanent abode. He was then 34 years of age, and he was devoting his entire time to meditation for Self Realisation. The year was circa 1484 - 1485 A.D. That year saw one of the worst famines in the history of Rajasthan. The poor people of the area wanted to move out of their villages to other states in quest of food for themselves and fodder for their livestock. Jambhoji dissuaded them from leaving their hearths and homes, assuring them that their daily needs would be met. They assessed that they required a maund and a quarter (about 50 kilograms) of



cereals everyday, with which Jambhoji provided them (free of cost) throughout the period of famine. While doing so, he had taken a promise from the people that they would not indulge in killing of, or in cruelty to animals. Before the onset of the rainy season, it was decided that the rural folk would bring seed from the adjacent province of Sind (now in Pakistan). Jambhoji gave them cash for the purpose, and a camel (to supplement their own herd) for the transportation of seeds. It is believed that this camel had a mysterious fragrance, and during both outward and return journeys, it was the lead animal. On return from Sind with the seeds, the camel vanished in the fields.

In this manner Jambhoji saved the area from being uprooted and abandoned, while he actively assisted in the people's rehabilitation after the famine also. Not confining himself to the few villages immediately around his abode, Jambhoji organised relief for the famine-stricken in the entire area of Nagaur, which was then under the rule of Muslim kings of Nagauri lineage. Nagaur was a stronghold of Muslims, and Jambhoji's service to all irrespective of religion, caste or creed, endeared him to everyone alike.

Jambhoji realised that if the lot of the people had to be improved, the measures had to be of a permanent nature, rather than recourse being taken merely to adhoc relief during an actual famine. Further, man does not live by bread alone. The whole quality of life needed to be raised. At this stage, it would be necessary to examine the ethos of social, religious and economic life prevailing then. On one end of the, economic spectrum were the extremely rich, the members of the ruling class viz. the Raos and the Jagirdars and on the other were the poor peasants and the artisans. In between were the traders and the shopkeepers. The society was completely feudal in outlook and practice. If at all feudalism could take a living and vibrant shape, it was there for everyone to see. The so-called 'higher'

classes did not socially mingle with the so-called 'lower' classes. So also in religious practices, dogmas, superstitions and false rituals had taken place of the ethical code for living. There was far too much of egoism prevalent all over, and internecine fights and murders even over petty matters was the order of the day. Killing of wildlife was considered a prestigious sport, indulged in by the rich recklessly. Women were treated, in effect, as slaves who did not have respite at any time from their daily duties. Use of intoxicants like alcohol, opium and other drugs was widely prevalent, and there could hardly be found a man, who was not used to one or more of the intoxicants. Unnecessary controversies on the most trivial issues would take place, resulting in violence. The whole web of life in the community was in complete disarray, deviating the man away from right conduct. Green trees used to be indiscriminately felled. This is all the more relevant because if the trees at all grew in the arid conditions of the desert, it was a big feat by itself; and for all the benefits it bestowed on man, the trees deserved to be preserved, nurtured and treated humanely, rather than being axed. Wild animals maintaining a delicate balance in our eco-system also needed conservation rather than destruction. In brief, the whole code of living had to be overhauled if the social, economic and religious quality of life was to be at any reasonable level. The great famine of 1484-85 A.D. came as a grim warning that matters needed to be set right at the very fundamentals.

The level of education and understanding of the people was very low, and Jambhoji felt that they must be given a new religion, shorn of all high flown verbosity of scriptures written in the ancient languages, which they did not understand; and were thus being led away from the right path by the so-called preachers of religion. Using the language of the people living there viz. the unsophisticated Rajasthani language used by the

rural folk, Jambhoji prescribed a set of 29 rules to be followed by those, who accepted his faith. These 29 rules can be, very broadly speaking, grouped under the following six headings:

(a) Religious

- i) To recite the holy name of Vishnu.
- ii) To pray thrice a day.
- iii) To sing the Lord's glory every evening.
- iv) To offer oblations to the holy fire every morning
- v) To fast on the dark night day of the lunar calender
(*amavasya*)

(b) Ethical

- i) To observe sexual morality.
- ii) To practise contentment.
- iii) To think before speaking.

It is relevant that fight used to take place because someone spoke to the other without thinking, which the other would consider offending, although the former may not have meant what he had said.

- iv) To be forgiving and compassionate in nature.
- v) Not to indulge in stealing.
- vi) Not to indulge in falsehood or tell lies.
- vii) To abandon anger, lust and such other evils.
- viii) Not to indulge in unnecessary criticism.
- ix) Not to indulge in opprobrium.
- x) Not to have bullocks castrated.

(c) Ecological and conservational

- i) To be compassionate towards all living beings.
- ii) Not to fell green trees.
- iii) Not to keep goats as pets, but to maintain the old and hapless among in well-provided shelters so as to save them from landing in butchereries.

(d) Personal hygiene

- i) To have bath every morning.
- ii) To maintain both external and internal cleanliness.
- iii) To partake food only if it is cooked by someone initiated into the religion.

This rule is one, which in the present context, stands completely out of tune with the times. This, however, is to be appreciated that five hundred years ago when Jambhoji propounded the religion, the standards of cleanliness were low. There was a rampant use of meat, liquor and intoxicants. Hence this emphasis on cooking is understandable in the conditions then prevailing.

- iv) To use fuel, waters milk etc. after due scrutiny that they did not carry any insects.

(e) Health

- i) Not to partake of opium.
- ii) Not to use tobacco in any form.
- iii) Not to partake of cannabis.
- iv) Not to partake of meat or liquor.
- v) Not to wear blue clothes.

This is yet another rule, which too is anomalous in the present times. It is not clear as to why Jambhoji introduced this rule. It is likely that blue dye used those days was produced from indigo and he did not want to promote its cultivation. It is also possible that the word 'blue' (in Rajasthani language) may refer to 'green', which was possibly derived from chlorophyll of green leaves, necessitating cutting of green trees. Such a usage of 'blue' for 'green' appears elsewhere too in Bishnoi literature in Rajasthani language.

(f) For women

- i) To observe segregation of the mother and the newly born infant for 30 days after child-delivery. This was done to prevent infection to the mother and the baby during a stage when they are highly susceptible. This was also to give forced rest to the mother when she is very weak.
- ii) To keep women during their monthly periods away from all activity for five days. This was also to give compulsory rest to the women, who were otherwise working at hearth, homes, fields, tending cattle, milking them and had hardly any rest.

The rules under the six groups constitute a tally of 29. In Rajasthan (and in adjacent states) as was the wont (which continues even now), counting is by lots of 20. If the number is say 23, it is called 'bisy aur teen', corresponding to 'twenty and three'. If it is, say 60, it is called 'three twenties'. Similarly 29 would be called 'bisy aur nau' corresponding to 'twenty and nine'. A religion based on 'bisy aur nau' tenets was thus given the name of 'Bishnoi, and since Lord Vishnu is the God, whose worship is advocated in the religion, the name became 'Bishnoi'. Some even pronounce it as 'Vishnoi.'

A persual of these tenets would convince us that for a rural illiterate society, thoroughly engulfed in several evilsocial, religious, ecological, economic-Jambhoji provided a complete code of living with the necessary 'Dos' and 'Donts', which the people could comprehend and practise easily and raise the quality of their lives.

In addition to these codified rules, Jambhoji conveyed his spiritual and ideological message, as well as gave replies to specific queries of his disciples through the medium of verses in the local language. This phase of preaching continued from

the time he started initiating the people to his religion in the year 1485 A.D., corresponding to the eighth day of the bright fortnight of the lunar month of Kartika of the year Samvat 1542 of the Vikrami Era, till he passed away in the year 1536 A.D., that is to say covering a span of 51 years. He lived for a total of 85 years and 3 months. During this period, Jambhoji composed a large number of verses, but due to meagre writing facilities then (500 years ago), only 123 could be resurrected from the memory of his disciples. These 123 verses are jointly called shabd vani i.e. the holy words. According to authorities of Rajasthani language, Jambhoji's was the starting point of devotional poetry in Rajasthani language. In these verses, great emphasis has been placed on manual work and also on the need to avoid dual standards and hypocrisy. Whatever one preached to others must be practised by one's ownself. Among the Hindus those days, false ritualism was widely prevalent, and among the Muslims slaughter of cows and other animals was rampant; all in the name of religion. Jambhoji did not mince words to condemn both these practices, while showing the highest respect to the basic tenets of both these religions. His was a synthetic approach towards Hinduism and Islam. In brief, Jambhoji's message is one of truth, non-violence, cleanliness, conservation of natural resources so as to maintain the ecological balance, tolerance, simplicity, right action and humanism, which holds good today as much then.

Jambhoji's followers, namely the Bishnois (or Vishnois) are concentrated in pockets, mostly in the districts of Jodhpur, Pali, Bikaner, Jaisalmer, Nagaur, Barmer, Jalaur and Ganga Nagar of Rajasthan, in the districts of Sirsa and Hissar of Haryana, in the district of Ferozepur of Punjab, in the districts of Meerut, Moradabad, Bijnor, Kanpur and Ettawah of Uttar Pradesh and in the districts of Narsinghpur and Hoshangabad of Madhya Pradesh, all forming part of northern and central

India. In addition, there are scatterings of Bishnois elsewhere too. The total number of Bishnois now (i.e. in late 1980's A.D.) would be below half a million. For a very quick view of the Bishnoi way of life, an extract from the 'Rajasthan District Gazetteer 1972 Ganga Nagar' pertaining to Ganga Nagar is given at Appendix 'A'.

. . .

3 THE NATURAL BALANCE

Various estimates have been made to assess as to for how long the universe has been in existence. These have given rise to different theories and hypotheses such as the 'Big Bang Theory' of George Gamow, and in total contradiction to it the 'Steady State Theory' of (Sir Fred) Hoyle Bond and J.V. Narlikar. In fact newer methods of finding the secrets of universe are being employed as newer instruments are available and newer discoveries, such as of the supernovas, black holes and the quasars are made. Placing reliance on the Big Bang Theory, the universe was created between 1200 crore and 1500 crore years ago; whereas according to the Steady State Theory, there is neither any beginning nor any end of the universe, and that the universe has always been in a steady state without a beginning or an end. In respect of the biological species has been the theory of evolution by Sir Charles Darwin which states that all forms of life



emerged from one single life-form. This too has come into severe doubt for several reasons. For example, the dragon fly has not changed for the past 25 crore years, though it ought to have, if Darwin's theory was wholly correct. Also, there are three forms of distinct life on the earth, which do not show their emergence from one common ancestor. Compounding these observations are the revelations made possible due to the advances in genetics, which have all put portions of the hitherto accepted Darwin's theory in jeopardy.

The whole concept of the age of the universe, of the solar system and of life has become very complex and has given rise to a new discipline, namely, the cosmology. However all that goes to prove one point beyond a shade of doubt. That is, the Lord's scheme of things (including Nature) is unfathomable, and man must not arrogate to himself more wisdom than he possesses. This is further explained in the succeeding paragraphs.

Scientists estimate that life has existed in one form or the other on this planet perhaps for about 250 crore years, but the primitive man came into being only about 20 lakh years ago. Expressed on the evolutionary time-scale, it amounts to that perhaps the man has been in existence for only the last one and one by six ($1 \frac{1}{6}$) minutes if the life were in existence for one day of 24 hours. Out of the 20 lakh years of existence of man, only during the last 40,000 years, the modern man has emerged as the dominating species, which is only one fiftieth ($1/50$ th) of the total period of existence of man i.e. to say for the last one and a half ($1 \frac{1}{2}$) seconds in a day of 24 hours.

Ever since man came into being, there has been a close dependence of man on nature. While nature existed without man and can do so in future as well, the converse does not hold good. Man cannot exist without nature, and yet man has been responsible for largescale depredations of nature. The man's

needs, be it of food, clothing, medicine, shelter or of any other material for sustenance, are provided by the Mother Nature. In the Nature itself, there is a close interrelationship between its various constituents. Nothing survives in complete isolation of the other; and it behoves man, the most intelligent of all living beings to preserve the intricate balance that exists, rather than be an instrument of wanton disturbance of the natural balance, which threatens his own survival. It is noteworthy as to how the man's interests are threatened by the disturbance of the balance obtaining in the ecological system.

Broadly speaking, this can be considered by studying the impact of three factors viz. trees, animals and pollution. the first two above being assets, and the third a grave liability. First let us take the trees. Sun is the source of all energy for life on earth. How do the living beings receive this energy? There is just one mode by which that energy can be used for the sustenance of life, namely, by photosynthesis. Plants alone after capturing sunlight turn carbon-dioxide and water into carbohydrates in the green pigments viz. chlorophyll in their leaves. These carbohydrates in turn become a source of energy to the plants, man and such other animals which feed on plants i.e. the herbivores. Carnivores receive this energy by feeding on herbivores (and smaller carnivores). In the process of photosynthesis, carbon-dioxide, which is exhaled by man and other animals and emitted by the stoves of hearth, combustion-cylinders of automobiles and by the furnaces of factories, gets converted into oxygen, the element on which man and other animals depend for their very existence. Trees are also a source of wood, which man requires for making his dwelling and implements, 'for pursuing agriculture and industry and for use as fuel for cooking. Further, trees provide man with fibre for clothing, with medicines, oils, and resins, and scores of other useful materials. Trees prevent erosion of soil, conserve

topsoil and soilmoisture, and produce humus which all collectively are invaluable for the productivity of the soil. According to a paper read at the Indian Science Congress (1981 A.D.) Dr. Tarak Mohan Das of Calcutta University, a medium-size tree in its 50-year life span produced Rs. 15.70 lakh worth of material and services as per details given below :-

- a) Oxygen worth Rs. 2.5 lakhs. A 50-ton medium size tree produced one tonne of oxygen every year, which @ Rs. 5 per Kg. is worth Rs. 5,000/-. In 50 years this aggregates to Rs. 2.5 lakhs.
- b) Tree-leaves, serving as protein to animals, worth Rs. 20,000/-
- c) Production of humus and prevention of soil erosion, aggregating in 50 years to Rs. 2.5 lakhs.
- d) Assisting in the precipitation of rainfall, aggregating in 50 years to Rs. 3.0 lakhs. e) Providing shelter to birds and animals, Rs. 2.5 lakhs.
- f) Checking pollution of air, Rs. 5.0 lakhs.

All these total upto Rs. 15.70 lakhs over a period of 50 years for a single mediumsize tree, a neat sum by all standards.

The animals are a friend of man. While this aspect has been discussed elsewhere in this book, it needs to be stressed here that there are four good reasons as to why we should conserve animals and wildlife. These are:-

a) Moral

Nature has given us a heritage and it is our duty to preserve it and pass it on to our future generations, rather than be content with enjoying it, ourselves without thinking of those who have to come after us.

b) Scientific

Certain species maintain other species, while some keep the numbers of other species, by thriving on them, from growing in an uncontrolled manner.

c) Economic

Can a man with all the science and technology to support him produce milk in the laboratory to feed the population? It is just one of the examples out of a countless number.

d) Aesthetic

A thing of beauty is a joy for ever. Can anyone recall that the sight of a dancing peacock on a cloudy day, or the grazing of a herd of blackbuck did not enthral him? Does not the cow in a pasture present a delightful sight?

It is also to be remembered that while man could successfully reach the moon and return safely too, he cannot create even one species which becomes extinct. At present (in late 1980's A.D.) according to the Wildlife (Protection) Act 1972, there are 122 endangered species (61 of Mammals, 22 of Amphibians and Reptiles, 38 of birds and 1 of Crustacea and insects).

Now let us take pollution. Man's increasing population and opening of industries make heavy demands on land, air and water. A lot of dangerous compounds of carbon, sulphur etc. are produced as waste. Unless these are controlled, the earth can become unfit for human habitation. In this respect too, trees and animals play an extremely beneficial role. More about it later.

Ecology, ecosystem & ecological balance

The science of ecology deals with the inter-relationships between various constituents of nature such as the air, water, rainfall, soil, sunlight, forest, trees and other vegetation,

livestock and other animals, birds, wildlife etc, and all other natural resources. The encroachment of mankind into nature resulting in pollution or a depletion of natural resources cannot also be neglected in any such study. Certain typical climates, soils, vegetation and animal life have distinct ecological systems, which become characteristic to them. These are known as biomes, and some of their examples are those of deserts, polar regions, oceans, grasslands and tropical rain-fed forests.

The ecological system, known in short as the ecosystem, is the aggregate of all the natural resources of a region together with their inter and intra-relationships, in which a sort of natural balance comes to exist till it is disturbed by man, such as by ravages of over-population and industrialization, or by some sudden natural calamity. Maintenance of a proper ecological balance calls for a holistic approach, and not repeat not, for adopting a compartmentalized outlook towards the utilization of nature's gifts to man. Speaking in very simple terms, a patient suffering from some disease, cannot be given a drug, which can lead to a serious imbalance or disorder else where in the body. The proper course is always to treat the whole body as one living entity. This is also the ethos required for the maintenance of a proper ecological balance.

. . .

4 FAMINES

In Bikaner and other adjacent areas in western Rajasthan, where the rainfall is woefully low, visitation by famines has been a very frequent phenomenon. Rainfall is confined only to one season viz. June to September and then too, the quantum of annual rainfall is very little, varying from 15 cm in the north-western Bikaner to about 35 cm in the southeastern and eastern Bikaner. Mean temperature during July is in the region of 30°C and maximum temperature shoots upto 45°C. On several days during summers, Bikaner has the dubious distinction of being the hottest place in India. In the erstwhile state of Bikaner a general famine used to occur once in ten years or so, and lesser cropfailures on a local basis were taking place once in about every four years. Mass exodus etc, the people and cattle used to take place. They would move out to other places, and return to their homes and fields in the following year at the onset of rains in June.



An extract pertaining to Bikaner, from the Imperial

Gazetteer of India Volume VIII reproduced at Appendix 'B' would be of interest for giving an idea of the havoc, which was wrought by the famines in the days of yore.

In the year 1484-85 A.D. too, a severe famine occurred in Bikaner and adjacent areas. It was an extremely hard famine, the rigours of which have been already brought out in Chapter 2.

This is also relevant that the amount of rainfall in the arid Rajasthan varies on a very wide range from year to year; and also from one place to another, only a few kilometers away within the same year. In fact the wide fluctuation of rain has given rise to a local vocabulary for the degree of paucity: 'jalkar' for a scarcity of drinking water, 'tinkal' for a scarcity of fodder, 'trikal' for a scarcity of water, cereals and fodder and 'akal' for a major famine. The return to good times at the end of a famine is called 'sukal'. The place to which the people affected by a famine may migrate for the period of famine is known as govalvas'.

The seer that Jambhoji was, having developed an intuition and insight, which come with years of meditation, realized that let man not cut the very branch of the tree on which he is sitting; and long-term measures to remedy the situation on all fronts were needed for the succour of man.



5 TREES, BISHNOIS AND ENVIRONMENT

Jambhoji, also described as Guru Jambhoji later in this book to denote that he was a spiritual preacher and preceptor, in the course of his discourses to one of his disciples, Nathaji, said the following:

*"Hara vruksha nahin kaatna,
yeh sabka mantavya,
Raksha main tatpar rahey,
jaan yahi kartavya".*

It means, "Do not fell a green tree, this is the charter for everyone; be always ready to save (trees), this is the duty of everyone." This is what the great Guru said at the end of the Fifteenth Century A.D., that is over five hundred years ago. It is only so much later in post-Independence India that emphasis has been laid on the protection of trees in the country. Now afforestation and Social and Farm Forestry, in addition to protection of trees, find a place of honour in our development programmes. An annual tree plantation day, called the Vana Mahotsava is also



observed in August every year since 1950 A.D.

After all, why are the trees so much important? Firstly, it is so for economic reasons on several counts. Forests provide us with valuable wood required for cooking, agriculture, construction works, and industry, while providing a habitat for our rich heritage of fauna. Trees bestow a very distinct benefit on agriculture, inter alia, by conserving the fertile top layer of the soil, and by allowing the water to get absorbed in the earth, charging the natural cycle of water. Further it is well known that at present a vast percentage of our rural population burns dried cowdung for their cooking needs. If there was enough firewood, all the cow dung which is the most important fertiliser of soil under our conditions could be spared from burning in the hearth, and utilised to enrich the soil for crops. Also, trees by serving as windbreakers, particularly in arid areas, prevent erosion of soil. In this way, apart from their direct economic contribution, they also provide check of deserts. In mountainous areas, trees if they also provide a check against spread of deserts. In mountainous areas, trees inhibit the occurrence of land-slides and flash floods. Dry soil with no trees or vegetation cover, is more prone to slide down as compared to wet and greenery covered soil. The displaced earth can block rivers flowing down the hills, causing landslides and flash floods. Instances are not lacking when planting of quick growing trees in mountainous regions resulted in the stoppage of flash floods all together, which could have been otherwise an annual feature, bringing in its wake enormous devastation and misery. While a direct correlation between deforestation and occurrence of flash floods is indisputable, a close nexus between deforestation and floods in general (as distinct from floods without any warning) their severity and frequency - is also generally accepted.

Fodder grows under the trees as grass, while leaves of

certain trees directly provide food to the cattle. The cattle in turn give milk and other dairy products on the one hand, and valuable soil nutrients by their dung and carcass on the other. Trees promote rainfall. On the face of it, it may appear that it is the rainfall which promotes trees. The fact is that each promotes the other. If green trees are cut, air currents rising from the ground to the sky, turn hotter and drier, and disperse the nimbus rain clouds, drastically reducing the rainfall. In a study conducted by the renowned Dr. V.M. Meher Homji of Institute Franca is Pondicherry (1979 A.D.) on 'repercussions of deforestation on precipitation of rainfall in western Karnataka', it was found that greater the area of deforestation, the greater was the decline in rain-fall.

The utility of trees in converting the poisonous carbon dioxide into the life-giving oxygen can hardly be adequately explained by words. It would be of interest to appreciate the gravity of the problem in case carbon dioxide in the atmosphere kept on increasing. It is alarming that since 1960 A.D. the concentration of carbon-dioxide has increased from 293 parts per million (ppm) to 335 ppm now in the 1980's (A.D.) i.e. at the rate of 1.5 ppm per year. The carbon-dioxide acts as a screen against infra-red radiations (heat) escaping from the earth's surface into the sky. This leads to an increase in the temperature of earth known as the 'green house warming effect'. Any rise in average temperature will cause the polar ice caps to begin melting, leading to a climatic catastrophe and rise in ocean levels, inundating the low-lying areas near the seacoasts. Climatologists predict an increase of 2°C or even more, in many areas by the middle of the next Century (viz. 21st Century A.D.).

Pollution bane of urban life

The boon which the trees are to any society can be appreciated when it is seen that industrial establishments,

hearths and homes, and automobiles are making heavy demands on oxygen on the one hand, and go on belching smoke from their chimneys and exhaust pipes on the other. Human beings too breathe in oxygen and breathe out carbon dioxide. In almost all countries, population is also on the increase and new industries are coming up polluting the air. The real solution for checking pollution of air would lie in controlling it at their major sources, namely, the industries, homes and vehicles. In these, the choice of fuel and its proper utilization are very important. Of course the constraints of the cost and the availability of the proper fuel cannot also be ignored.

The proper siting of industrial establishments goes a long way in keeping a check on the pollution of air. This requires that the new industries are to be located away from major concentrations of population, and that the air there has enough capacity for diffusion or dispersal of pollution. This in turn means that there are enough trees around. This is not, to give an impression that chimneys of factories can be allowed to discharge their exhaust gases into the air, without consideration of their content. The contents may be various toxic substances such as compounds of sulphur, arsenic, lead, cadmium, carbon, in addition to dust and smoke, all posing hazards to health. Even at the chimney stage, resort may have to be made to physical processes, so that the suspended particulate matter precipitates and settles down rather than spreading in the air. Excess of sulphur compounds in the air causes the formation of sulphuric acid in the atmosphere, which comes down with rainfall. This is what is known as 'acid rain' and is a source of serious pollution of water, vegetation and air. Even the oxides of nitrogen present in the air contribute to the phenomenon of 'acid rain', which can damage the forests, as well as affect the soil-fertility and the ground water.

As regards hearths and homes, the use of smokeless stoves and the 'cow dung gas' (*gobar gas*) by the rural population would be steps in the proper direction, both for minimizing pollution and conserving trees as well as soil nutrients.

Automobiles are a major source of serious pollution of air in metropolitan cities. Their exhausts emit various pollutants into the air, such as sulphur-dioxide, carbon-monoxide, oxides of nitrogen, particulates, lead and ozone. The gravity of the problem can be appreciated by the fact that according to a governmental survey carried out in 1983-84 A.D., a total of 67,789 tonnes of carbon monoxide and 28,094 tonnes of hydrocarbons were discharged into the air in Delhi during the year by vehicles alone. Other pollutants were in addition to it. In other words, on an average 190 tonnes of carbon monoxide and 90 tonnes of hydrocarbons, in addition to other pollutants were released in Delhi everyday by vehicles alone. Contribution by thermal power plants, other industrial establishments and homes was in addition! Needless to say that exhaust gases from motor cars, motor cycles, scooters and three wheeler scooters would need to be checked so that they are emitting pollutants only within specified limits. It is good that the Motor Vehicles Act has been amended to incorporate this requirement. According to Section 190(2) of the Motor Vehicles Act 1988, driver/owner of a motor vehicle violating the standards in respect of air pollution is liable to a fine of rupees one thousand for the first offence, and rupees two thousand for the second and any subsequent offences. Rule 115(2) of the Central Motor Vehicles Rules 1989 prescribes that the level of exhaust carbon monoxide should not exceed 3 percent by volume in case of 4 wheeler petrol-driven vehicles and 4.5 percent by volume in case of two and three-wheeler petrol-driven vehicles during idling. Smoke density for diesel-

driven vehicle should not exceed 65 Hartridge units during free acceleration.

Green belts

These problems of pollution keep on compounding as the population increases, but what can be done and must be done at the earliest, is to plant as many trees and as much vegetation as possible. Apart from the transformation of carbon-dioxide to oxygen (and carbohydrates), the trees absorb a large amount of impurities on their surface. The hair like structures on the surface of their leaves capture even the smallest breathable particle. The industrial establishments should have 'buffer zones'

1. In the metropolitan city of a certain western country, the quantity of air is monitored by measuring the quantity of following six pollutants, namely, sulphur dioxide, carbon monoxide, nitrogen oxides, particulates (i.e. very small particles), lead and ozone. Pollutant level between 0 and 0.1 parts per million (ppm) indicates the quality of air as 'good', between 0.1 and 0.2 ppm as 'moderate', between 0.2 and 0.4 ppm as 'unhealthful', between 0.4 and 0.6 ppm as 'very unhealthful' and between 0.6 and 1.0 ppm as 'hazardous'. The highest of the pollutant-level of the six pollutants, not their average, determines the quality of air.

in the form of green belts; and concentrations of human habitations should have their 'lungs', again in the form of green belts consisting of trees and more trees.

Scourge of mining

A lot of wastage of soil goes on the name of mining. Mining can be either underground, or it can be opencast mining, depending respectively upon the ore being located below or at the earth's surface. The open-cast mining involves digging or dynamiting the land, which in turn requires felling

of trees both for the mine itself and for the roads which have to be built for transporting the ore. The debris from the mines and the scree rolling down the hillslopes (in the event of mine being located on the hills) pollute the sources of water and block any water channels that may be existing in the area, causing flooding and wide-spread erosion of soil. The hill slope may also get destabilized. Apart from carrying out the mining only in the prescribed manner, which minimizes the damage, and taking such measures as wire-meshing of orestores, and building of stabilization-bunds that may be necessary in the circumstances, the importance of saving the trees from indiscriminate felling, and planting there as many trees as feasible cannot be underestimated. In the matter of reclamation of old and disused mines, which is essential for conservation of land, planting of trees and selected vegetation for binding the soil, has a very useful role.

Pollution of water

Like the pollution of air, pollution of water too poses a serious challenge, since availability of pure drinking water is essential not merely to man but to animal too-both the domestic livestock and the wildlife. The need of pollution-free water for fish and others living beings of the marine world, which have their habitat in the water is also evident, though they have a higher degree of tolerance. Two major producers of pollution in the drinking water are the sewers and drains of residential colonies, and the effluents discharged by the industrial establishments. The water discharged from these heads' of pollution need to be made pollution free before being allowed to mix with the source of drinking water. The seriousness of the problem can be seen by the fact that only 217 out of 3119 towns and cities have arrangements for rendering their sewerage and drainage water pollution free². In the same

² As per figures of 1986 A.D.

manner, a very large number of factories have no proper arrangement for treating their effluents to render them harmless.

In the context of making polluted water free of pollution, it is interesting to note that some of the aquatic creatures, due to their body anatomy and physiology, have the capability to render a number of pollutants harmless. Such a benevolent natural capability can be in a sense compared with that of tree leaves converting carbondioxide into oxygen and capturing particles of dust and other impurities suspended in the air, described earlier. The role of microbes in cleaning dirty water is also very important.

Effluents from industrial establishments are contaminated by a number of dangerous and poisonous chemicals. Such discharge have to be treated by biological, chemical and physical processes, peculiar to the contaminants. Freeing the water of metallic compounds is a difficult process, but some members of the vegetable kingdom have the unique capability of absorbing some metallic compounds. For example, the foulsmelling Jimson's Weed can extract copper and cadmium; and a shrub connected with coffee can take care of aluminium.

Environment (Protection) Act

With a view to check the growing amount of pollution, the Government of India has promulgated with effect from 19th November 1986 the Environment (Protection) Act 1986, according to which minimum national standards (MINAS) have been laid down for various industries. The effluent released from any establishment is not to have a contaminant higher than laid down by law. Pollution has been made a cognizable offence, and any individual or society can lodge a complaint against pollution in a court of law after giving sixty days' notice, and the court shall take cognizance of the same.

It may be understood that freeing the effluents of their

impurities does not necessarily mean a financial loss to the industry concerned. A Government. of India's undertaking engaged in the manufacture of Urea at the rate of 1000 tonnes per day claimed in mid-1980's A.D. that by installing a hydrolytes stripper system so as to bring down the quantity of the pollutants to the minimum national standards, they were recovering 20 tonnes of Ammonia per day. At the prevailing prices, this resulted in a saving of Rs. 80.000/- per day i.e. to say Rs. 24 lakhs per month or Rs. 2.90 crores per annum!

Environmental audit

While the institution of environmental consultants has been in vogue for several years in the United States of America, United Kingdom and Europe (in that chronological order), a new concept, namely of 'environmental audit' companies has come to the fore for the last one to two years of the 1980,s A.D., particularly in the U.S.A. The American factories have to ensure that they are complying with the environmental legislation, hence the need for an environmental audit. Needless to say that such an audit cannot just be confined to a mere measure of greenery, but also relate to a pointed question viz. how far the MINAS are being adhered to. In fact it should cover all the environmental health and safety aspects. Had there been such a system of checks and the disastrous tragedy in Bhopal at the Union Carbide Company in 1984 A.D. could have been avoided.

Clean industry - an organized process

As regards various modes for removing pollutants produced as a result of the industry and their comparative utility, it would depend upon the type of industry and the circumstances of each case. While no rule of thumb can cover all industries, there are some broad principles which must govern any such consideration. In the first instance, there must be a thorough examination of various technologies involved

with the production, in case a new industry is being put up. It is to be remembered here that there may be more than one process for manufacturing the same commodity. Such an investigation would take a view of the technical, commercial and administrative angles, but the environmental aspect, the degree of hazard to the ecology of the area, and the cost of 'depollution' must also be a relevant factor to contend with. This is a requirement not -merely for social good; but the law also makes it mandatory for all industries to comply with the 'minimum national standards' (MINAS) for a pollution-free (or pollution controlled) environment, already referred to.

The production technology which can appear to be the cheapest may not necessarily be the most economic in the long run after the cost of bringing down the pollution of the air, water, land and vegetation to acceptable limits is taken into account. In case of industries with a high potential of pollution, it must also be examined if the effluents from one industry can be used as an input for some other industry by suitably locating the factory/factories. As an example, establishing a type of fertilizer factory close to one discharging certain chemicals can be mutually beneficial by not merely combating pollution, but in financial terms also.

The feasibility of recovery of useful chemicals and other materials/metals from the effluents could be the next stage of the examination of various technologies. Sometimes recovery can be made of fairly expensive materials by chemical or /and physical processes, including electrolysis and hydrolysis. An example of ammonia being recovered from the effluent at a Urea plant has been given in a preceding paragraph.

Among the modes of purifying effluents, a physical method for the removal of polluting material, wherever feasible, would generally provide a more preferable choice. The physical modes may include filtering, decanting and

precipitating. Sometimes addition of even an ordinary material like alum (a mineral salt comprising a double sulphate' of aluminous and potash, commonly used by dyers) can turn impurities in a colloidal state (i.e. in a finely suspended conditions which cannot be filtered away) to coagulate, rendering it possible to filter them away.

As regards a choice between biological and chemical modes³, if both are available, the former is generally preferable to the latter, unless recovery of by-products by chemical methods is more cost-effective

While on the subject of industrial pollution, it may be worthwhile to compare it with the efforts to eradicate malaria and filaria. There are two strategies which can be practiced for the purpose. One which has been used since the late 1950's or early 1960's (A.D.), namely spraying of pesticides indoors and the drenching of sewers with chemicals to kill the mosquito larvae. The other which is strongly advocated now is to combat the problem at the source by preventing the birth of mosquitoes. This can be achieved by better sanitation, environmental control and use of biological methods such as the introduction of frogs and fish in ponds, so that they may eat away the larvae of mosquitoes, and the very birth of the mosquitoes could be stopped. The guiding philosophy for combating pollution due to industry can also be summed up as: prevention is better than cure, but where complete prevention is not possible, cure has to be resorted to.

3. With regard to the control of pollution in industry, it would be of interest to note that Dr. Prakash Mishra of Dehradun (India), working with the General Motors Corporations Detroit, Michigan, U.S.A. has successfully introduced the use of biological methods in preference to other modes, for controlling pollution in paint shops for painting automobiles.

TREES AGAINST POLLUTION

Noise pollution

While pollution of air and water have been described in the foregoing paragraphs and the problem of pollution of the soil runs through the book, there are yet two more kinds of pollution. These are space pollution and noise pollution. Space pollution is caused by nuclear and thermo nuclear explosions as well as by the use of atomic energy. The subject is, however, far too extensive and has far reaching implications; and cannot be done justice to within the limits of this book. It is, therefore, not included within its purview.

Noise pollution is caused by excessive sound produced by any source. Medical research has revealed that continuous exposure to noise above the level of 90 decibels (dB) can cause some biological and psychological effects; the Biological Effects of Noise being known by its acronym BENOX. In metropolitan cities, traffic noise on an average is of the order of 80 dB, increasing to 110 dB at peak hours. While among the psychological effects of noise is the tendency to get easily irritated, the biological effects can include impaired hearing, hypertension (mainly the diastolic) and heart disorders. It is naturally the best to check the noise levels at the source, be it from automobiles or from loud-speakers. However, a certain amount of inevitable noise due to increased industrialization can be effectively buffered by the planting of trees and other green vegetation around the factories.

The efficacy of trees and vegetation in controlling certain aspects of industrial pollution has already been described earlier. A fertilizer factory located in the north-western Uttar Pradesh and established in the cooperative sector proudly published in 1987 A.D. that out of a total 1273 acres in their complex, 336 acres have been earmarked for a green belt. This would constitute 38% of the total. They added that noise level

at the boundary of none of the process plants would exceed 65 decibels.

Trees in wastelands

In India, according to an estimate made in 1981 A.D. 43 million hectares of land is either cultivable waste, downgraded pasture-land or is otherwise a fallow-land. With a view to prevent further erosion and down-grading of soil, as well as to provide for the needs of the rural people in the matter of fuel, fodder and timber while generating fresh avenues for rural employment and for safeguarding the ecosystem it is necessary to bring those areas under cover of trees. These areas lie in regions vastly differing in soil and climatic conditions. It is, therefore, essential that the species of the trees for planting in a particular wasteland are selected with regards to their suitability for the type of soil and the climatic conditions, along with consideration of such factors as their yield of bio-mass, fodder etc. Plantation of trees over such a vast area of wasteland in the country, their aftercare and management is a colossal task, and the Government of India rightly established in late 1980's A.D. a national waste-land development agency for the organization and coordination of all these activities.

Alkaline soils

About 7 million hectares of our country's wastelands are of alkaline or saline soil, and are unfit for cultivation. What is alarming is that this area is increasing at the rate of 10,000 hectares every year. It is necessary that steps are taken to make this area cultivable and also stop its proliferation. Trees and vegetation provide us with the major instrument to overcome these twin problems. Botanical species, which are least affected by the alkalinity or salinity of the soil are carefully selected and planted in such soils. Gradually over the years, other species are also introduced so that with the genetic diversity, the soil regains its strength. The trees may be such as

the neem (*Azadirachta indica*), shishain (*Dalbergia sisso*), babul (*Acacia nilotica*), Kabuli kikar (*Prosopis chilensis*).

Water - logging

As estimated one million hectares of India's land is water logged, either due to it being low-lying (as in West Bengal), or due to canal-irrigation resulting in the rise of water-table (as in Punjab and Haryana). This problem of water-logging seems to have already started raising its dirty head in Rajasthan along the banks of those portions of the Indira Gandhi Rajasthan Canal in which the water has been released, though the entire project is yet to be completed in late 1980's A.D. To combat this problem, planting of trees is again the answer. Selected species of tall trees are planted on artificially created high mounds of soil, so that they do not get submerged under water during the rainy season.

Ravine lands

The problems of law and order posed by the outlaws hiding in the ravines and gullies along the banks of rivers Jamuna, Chambal and Betwa in Uttar Pradesh, Madhya Pradesh and Rajasthan are quite well known. The indiscriminate destruction of trees and vegetation on the river banks has resulted in the erosion of the soil from the lands adjacent to the rivers depriving the people of their means of livelihood. At the same time, the ravines and gullies so formed provide ideal sanctuaries to bands of robbers. The solution to this serious socioeconomic problem lies in the reclamation of land, and ensuring its further erosion. For both these ends, tree plantation is a major step.

Silting of the Rajasthan Canal

There is yet another problem in addition to that of seepage which has arisen with the Indira Gandhi Rajasthan Canal Project. During the summer season, a lot of sand gets blown

due to sandstorms and deposits itself in the canal, resulting in its silting. This is a very major problem, but its solution too lies in raising a wide belt of green forests of the correct species on both the sides of the canal.

The efficacy of the green belt would be vastly enhanced if the agricultural fields within tens of kilometers on both the sides of the canal have an abundance of trees within them.

Sewage

In experiments conducted at a soil research institute in Haryana during 1981 A.D., untreated municipal sewage was pumped into uncultivable wasteland in which trenches had been dug. Eucalyptus saplings were planted on the ridges in between the trenches. In a matter of five to six years, the plants grew into tall trees, at the same time producing valuable fertilizer for crops elsewhere. Certain species other than Eucalyptus could also be perhaps found out, which would grow in similar situations. The utility of the trees in solving this problem of an ever-increasing dimension is evident.

TREE- AN INGREDIENT OF CULTURE

Jagdish Chandra Bose's gift

So much for the trees purely on a physical plane, but we could now switch over to a less mundane sphere. Trees are living entities and for this reason too, they deserve to be treated with compassion. India's great scientist Jagdish Chandra Bose (1858-1937 A.D.) who was world's pioneer biophysicist demonstrated by means of his invention of the Boscrescograph that the plants have a sensitive nervous system as well as an emotional life, comprising love and hate, pain and pleasure, joy and fear, as animals have. This aspect of trees being living entities was no less in the mind of the great Guru, when he laid so much emphasis against cutting of green trees

and made it a part of the ideology he propounded. It is a well known fact that we the Indians are taught from the very childhood not to touch any plants after sunset, lest it disturbs the plants "sleep". An English poet too, namely George Morris, said the following words in the defence of trees :-

"Woodman, spare that tree !
Touch not a single bough !
In youth it sheltered me
And I will protect it now".

Trees in our civilisation

The importance of protecting the trees has a special significance in the Thar desert of Rajasthan, where the Bishnoi faith originated. A plant which may take three to four years to grow in arid Rajasthan could perhaps grow to the same size in just a year or so in an area of high rainfall. Secondly the rate of 'infant mortality' among the plants in desert is excessively high as compared to that in fertile areas. Trees that come up in desert areas, therefore, specially deserve to be given every opportunity to flourish, rather than be subjected to the axe of some greedy man. Hence so much emphasis was laid by the great Guru on it.

With the twin pressures of population and industrialisation, areas exclusively under forests are coming under threat of axe, whether to make a clearing for a cultivation of agricultural crops, or for housing, or for accommodating a factory or an industrial estate. Similarly over-grazing by livestock also causes damage to the trees. Hence there is an imperative need to undertake planting of as many trees as possible in the villages and inside agricultural fields, that is, resorting to what is called Social and Farm Forestry by the modern planner, in addition to undertaking large scale afforestation. Social and Farm Forestry makes tree an integral part of man's environment. While this is a recent development

in our Governmental planning, the great Guru advocated and made people practice it five centuries ago.

Forests and ancient civilization

However, it must be specifically stated that the concept of preservation of forests in India is not new. The Saint revived it. Gautam Buddha had highlighted it in the following words :

"The forest is a peculiar organism of unlimited kindness and benevolence that makes no demands for sustenance and extends generously the products of its life activity, it affords protection to all beings, offering shade even to the axe-man who destroys it".

Going further back, the great Hindu epic Shrimad Bhagavatam has a reference to Lord Krishna having paid glowing tributes to trees quite early in his life. It was while still a child he was living in Vrindavan and used to tend his cows there. One day youngers led by Krishna reached a forest on the slope of Govardhan hill in the course of their play. It was midsummer heat and Lord Krishna pointing to the trees said to his playmates:-

"See how gracious these trees are with their beautiful foliage, they provide us with shade against the scorching sun, while they themselves remain exposed to the burning heat. In rainy season they bear the violence of storms and rains, and of biting frost in winters. No one who approaches a tree ever remains empty handed. The trees provide leaves, flowers, fruits, root bark and even their body after they are dead. Their life is the ideal one should strive for; to do good to others even at the cost of one's own life, as the scriptures teach us. These trees follow this rule much more sincerely than the best among men".

It would be of interest to recall what the English poet Henry Abbey had to say about the trees. His philosophy

regarding the preservation of trees is beautifully conveyed in the following lines :-

"What do we plant, when we plant the tree ?

We plant the ship that will cross the sea

We plant the mast to carry the sails,

We plant the planks to withstand the gales

The keel, the keels on and beam and knee.

We plant the ship when we plant the tree".

"What do we plant when we plant the tree

A thousand things that we daily see

We plant the spire that out-towers the crag

We plant the staff for our countries flag

We plant the shade from the hot sun free

We plant all these when we plant the tree".

FORESTS AND WILDLIFE - INTER RELATIONSHIP

A few lines about the interdependence between plants and wildlife. The lives of birds and other wildlife depend upon protection of their selves and procurement of food. Trees provide haven to the birds to roost and make their nests. Plants and shrubs in addition to trees, provide shade and resting places to other forms of wildlife also, as well as cover and concealment to them when faced with danger. As regards provision of food to wildlife, trees, plants and shrubs do so in two ways, namely, directly and indirectly. The leaves, fruits and/or roots are eaten directly by certain forms of wildlife, while other kinds of wildlife consume those birds, insects and/or animals which live on vegetable kingdom.

The support by plants to animals is not wholly one-sided; the latter also contribute to the former's life. Even apart from the extremely vital role of pollination by bees and other insects, it is noteworthy that the droppings of birds and other wildlife serve the flora by providing manure to the trees etc. Not only that, birds and wild animals also act as carriers of seeds through their droppings, as well as through their hoofs in the process of moving from one place to another. This becomes a valuable service in the desert regions where areas are large but human population is sparse. On the whole, however, it must be conceded that it is the animal kingdom which depends upon plants, and not vice versa, notwithstanding their complementary role. Here it is relevant to point out that the great Indian epic Mahabharat also makes a mention of the close inter dependence of wildlife and forests.

. . .



6 ENVIRONMENT AND CLIMATE

Carbon is the backbone of all biological molecules in sea, air or on land; and the nature by an intricate system has regulated the amount of carbon in various places, maintaining a near constant level. However, the natural regulatory system has been very badly threatened by the scourge of pollution, arising basically due to the population explosion. In 1987 A.D., the earth's population exceeded the 500-crore mark, and this is likely to exceed 1000 crores in the 21st Century A.D.. More population means more mouths to breathe, more industries, more hearths, more vehicles, more burning of fossil fuels, all adding to more and more production of carbon-dioxide.



It has been rightly said that forests precede human civilization, and deforestation follows civilization. In our own country, the per capita forest is a mere 0.5 hectare per person against the world average of 1.9 hectares. At the end of 1980's A.D., the total

area under forest cover is 62.20 million hectares, which is only 19.5 percent of the total geographical area of the country, but what is further alarming, only 10.88 percent is of good quality forest. Deforestation acts in two evil ways. With the burning of more wood, more carbon-dioxide is produced on the one hand; and with the consequent lesser forest cover, less and less carbon dioxide is absorbed by photosynthesis, compounding the 'green-house warming effect' discussed in the previous chapter. Apart from carbon-dioxide, other culprits contributing to the phenomenon of global warming are, inter alia, methane and nitrous oxide, but luckily their quantity is very small.

With seventy percent of the planet's surface being water, melting of ice from polar regions, and expansion of seawater due to its warming would lead to the submergence of low lying and other coastal regions. This could be a precursor to the scenario described in the Hindu epic Bhagavatam Purana under the title 'Pralaya' (the great deluge). The main challenge facing the developed countries is to drastically reduce their carbon emissions.

Ozone-holes

As distinct from the greenhouse effect, there is yet another very serious form of air pollution, which too is a product of modern civilization. That is the depletion of ozone layer in the higher altitudes of atmosphere viz. the stratosphere (about 10 and 60 km above the earth's surface). Some of the inert substances, known as chlorofluorocarbons (CFC's), which are compounds of carbon, fluorine and chlorine atoms in different proportions, are used extensively in air conditioners, refrigerators, aerosols, seat cushions, foam rubbers. The CFC's keep on accumulating and rising high in the sky. The amassed CFC's have started reacting with the layer of ozone naturally present, and have created holes (i.e. areas of reduced quantum) in the ozone-layer. The ozone layer has a

very benign role to play, namely, the blocking of the dangerous ultra-violet (UV) rays of the sun from reaching the earth. The ozone-layer thus depleted no longer acts as a useful shield against these radiations, and the human body's immunization system gets damaged leading to a higher incidence of cancer. It is noteworthy that the consumption of CFC's is far more in developed countries than in underdeveloped or developing countries. However, pollution is no respecter of political boundaries or administrative divisions; and countries suffer alike irrespective of political demarcations between them.

Further, it has been estimated that the depletion of ozone layer adds to the greenhouse warming effect too, by an extent of about 20 percent. This is due to the destruction by UV rays of some beneficent micro organisms such as the plankton, which help in the maintenance of the carbon cycle.

Alarmed by the gravity of the problem, representatives of various countries met at Montreal in September 1987 A.D., and signed a protocol known as the 1987 Montreal Protocol, which enjoins all countries to reduce their consumption of CFC's by 50 percent by the year 1999 A.D.. India is not yet a signatory to the Montreal Protocol, the reason being that in a country like ours, there is very little consumption of CFC's as compared to the developed countries. Hence the two categories should not be treated at par, and also, the onus of finding a substitute for the CFC's should be on developed countries.

Effect on climate

As a result of warming of the planet, the climatic pattern of various regions may change drastically, rainfalls may increase or decrease, directions and speeds of winds may change, and so also the ocean currents. This in turn may affect the agricultural and vegetation patterns, unless action is taken

now to control the growth of population, reduce the emission of carbon-dioxide, ban the use of CFC's and stop all further deforestation, particularly of tropical and other good forests. Climatic change is the greatest threat to mankind, next only to a nuclear catastrophe.

Earth Day 1990

The 'Earth Day 1990' observed on 22nd April 1990 A.D., marks the beginning of a decade of action for environment, so that a sustained campaign to save our planet from environmental crises can be carried on. The report of the World Commission on Environment, headed by the Norwegian Prime Minister Ms Gro Harlem Brundtland, popularly known as the Brundtland Commission, which enquired into the serious problems in the fields of environment and ecological systems facing the world as a whole, forms the basis for this campaign, viz the 'Earth Day 1990'. The earlier Earth Day was observed in 1970 A.D., and the latest is the second, organised by an International Board of Sponsors, with its headquarters at the Stanford University, California

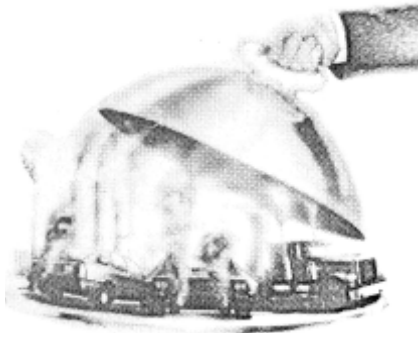
U.S.A..

Among the various problems in these fields, facing the earth, which form the core of the 'Earth Day 1990', in fact of the decade following it, are industrial pollution, shrinking of rain forests, expanding deserts, greenhouse warming effect, ozone holes, toxic wastes, overpopulation, oil spills¹, acid rain, and

-
1. Oil spill: If for any reason such as ship-wreck, fire, explosion, an oil tanker happens to spill crude petroleum or oil on the sea, it would spread on a vast area, as the ship moves from one place to another. Even though the ship may have moved away or capsized, the oil so discharged on the sea stays for a long time and spreads far and wide by the sea-waves, winds and sea-currents. This carries the pollution to a very vast area adversely affecting the marine life. India is a signatory to the International Convention for the Prevention of Pollution of the Sea by oil, of 1973 A.D..

ocean pollution²

While detailed programs to tackle these facets depend upon the circumstances of each case, the general action suggested by the organisers includes the planting of billions of trees ('environmental wonders', as the 'Earth Day 1990 organisers call them), educating the community leaders, students and the people in the problem facing the world by means of lectures, advertisements and the media, and the participation of religious groups in solving the crisis. It is relevant that, while participation of religious leaders in maintaining ecological balance and environmental purity is thought of by the west in the late nineteen hundred eighties A.D., our great Saint Jambheshwar thought of it over five hundred years ago and he introduced conservation as a part of his creed.



An Artist's visualization of the Greenhouse Effect

(Courtesy : United Nations Environment Programme, their Quarterly Journal 'Our Planet' Vol. 2, No. 1/1990.-Editor Mr. Shane Cave; Artist- Mt. Peter Garland, Garden Studios, London U.K) Reprinted with permission.

2. Ocean pollution : Apart from pollution by oil, the sea can be polluted by a number of malpractice. Certain giant industrial companies of developed countries have resorted to dumping the chemical and toxic wastes from their factories on the beaches of developing countries, by either suppressing significant dangers or taking recourse to bribery and corruption of the leaders of those nations. Such a dumping, in addition to the discharges of effluents from industrial factories, results in the pollution of sea and the destruction of marine life there. India is a signatory of the Protocol of 1978 A.D. relating to the international convention of 1973 A.D. for prevention of pollution from ships.

7

PROSOPIS CINERARIA

The abundance of trees particularly the Khejri (*Prosopis cineraria*), and of wild animals like the Chinkara (Indian gazelle or *Gazella gazella bennetti*.) and/or the blackbuck (Indian antelope or *Antelope cervicapra*) will herald to even a casual visitor travelling in western Rajasthan that he has entered the revenue boundary of a Bishnoi village. The presence of these trees and antelopes is not confined merely to the boundaries, but these creations of nature abound all over the territory comprising Bishnoi fields and villages.

In the Bishnoi literature, a special mention has been made of the Khejri tree among trees, giving it a prime place among equals, while emphasizing that all green trees are to be protected. What were the reasons which prompted the great Bishnoi Guru Jambhoji to single out this species ? Since the Bishnoi religion was propounded in a desert, any species justifying special mention has to be such,



which is of particular benefit in the conditions obtaining there.

It is important to note that an overwhelmingly large proportion of the Khejri trees grows inside the agricultural fields, rather than growing only on road-sides or at boundaries of fields. On the roadsides and at boundaries of fields in Bikaner and adjacent districts are found other kinds of trees as well such as Neem' (*Azadi rachta indica*), Peepul' (*Ficus religiosa*), 'Bargad' (*Ficus bengalensis*), 'babul (*Acacia nilotica*), 'vdayati babul/' (*Prosopis juliflora*), 'bordi' (*Ziziphus mauritiana*), 'jall' (*Salvadora oleoides*), 'rohira' (*Tecomella undulata*); the last named i.e. 'rohira' being particularly known for the very high quality of timber it yields. The shrubs and grasses that grow there are 'flak', phog, 'dab', etc. All these trees, bushes etc. grow on the road sides, open spots and the like, but so far as the inside of the fields is concerned, it is the sole preserve of the Khejri, also called Khejra, and Jandi in Haryana and Punjab. Inside the fields, Khejri trees are interspersed with crops, the number of these trees running into hundreds per hectare. What are the particular advantages and disadvantages if any, of this coexistence of trees along with agricultural crop ?

First, the possible disadvantages of the existence of trees inside agriculture fields. Trees within agricultural fields, whether planted by design or growing on their own can be, though not necessarily, of serious detriment to the crops on several counts. In case the species of the tree is such that its roots spread sideways, it would not be possible to take the plough, be it tractor or animal driven, in the entire area

1. The exact sound of the letter 'r' in the word 'Khejri' lies between 'r' and 'd'. In the absence of any standard spelling, both 'lChejri' and 'Khejdi' have been used. The same applies to its derivative 'lthejarli' and 'Khejadi'.
2. Revenue boundary of a village covers all the fields, pastures, fallow lands etc. of a village, and is not merely confined to the habitations. These revenue boundaries of villages in Rajasthan are fairly expansive.

crisscrossed by the root. But for only a very few species, most of the trees have a lateral spread of their roots rendering them unfit for growing inside the fields along with the crops. The foremost requirement to be fulfilled by a species of a tree to be selected for interspersing with crops, therefore, is that its roots should go deep down vertically, and not spread laterally.

Another requirement is that the crown of the tree should not be so dense, as to deprive the crop plants underneath of all sunlight. The photo-period available to the crops should not be significantly diminished, as botanists would say. The mighty banyan with its massive crown would be manifestly unsuitable on this count alone, though it is so for several other reasons too. Leaves of *Prosopis cineraria* are small and thin, gainfully filtering the scorching intensity but not totally cutting the sunlight off.

It may be mentioned here that there is no gainsaying that all the conditions and stipulations for the species of the tree are subject to one basic requirement that it should be able to thrive in the climate and soil of the field. Khejri wholly fulfils this in Bikaner, Jodhpur and other arid areas around there.

Khejri inside fields - a boon?

Now the advantages. Trees act as wind breakers, preventing erosion of soil. This advantage is of special merit in a region like Rajasthan, where high speed winds rage across the land, resulting in the shifting of sand and together with it, displacing any seeds as well, that may have been sown in it! Yet another advantage is that the trees inside fields provide a protective umbrella against the desiccation of the moisture of the soil. Thus a major source of loss of fertility of soil is checked

In addition, these trees growing inside agricultural fields make a positive contribution to the fertility of the soil below. When we are examining this it has to be borne in mind that the

germination of seeds and growth of plants therefrom is a biological (and not a chemical) process, in which living organisms are provided by humus, which is the organic matter formed by the decay of leaves and other vegetable and animal matter, and which becomes a part of the soil. This humus helps in three ways: it provides soilnutrients including organic matter, it preserves soil moisture and conserves the top soil. The top soil i.e the toplayer of the fields (and the earth in general) is the one, which accounts for the soil's fertility, and on which the yield of the crop depends. If it is washed away or blown away, it directly results in loss of productivity of the soil. The saving of top soil by itself is a priceless advantage from the trees.

The utility of humus to agriculture cannot be overestimated. Its advantage is still greater in soils of coarse texture such as the sandy soils. It would therefore be no exaggeration to state that these trees inside agricultural fields in arid and semiarid areas are one of the greatest boons of nature to any farmer, who may choose to tap this priceless resource.

Yet another advantage in places of low rainfall is that there is a far less run-off of rain water from the field; thus there is a far greater percolation of water into the soil, a very positive benefit indeed.

Now some advantages which are evident even to a lay observer. Trees produce bio-thass in their crown, trunk and branches. The leaves of *Prosopis cineraria* make excellent fodder for camel and cattle alike. Milch-cattle fed on these leaves yield 10 to 20 percent more milk. The crown of the *Prosopis cineraria* also produces a legume known as Saangri, rich in proteins, which makes an excellent dish, relished by Rajasthanis and non Rajasthanis alike. The biomass of the trunk yields useful timber for making agricultural implements

and for building purposes.

Birds roost on these trees. Their droppings constitute valuable manure for the fields where these trees are located. The concomitant disadvantage of the birds residing on trees feeding on the crops below is partially off-set by the fact that the area in question is a desert, where only one crop grows in the year. For eight months in a year, the birds only contribute to the productivity of the field without taking any return from it. It would be of interest to know that the Bishnois in their compassion towards all living beings accept the presence of the birds stoically as a part of the system, and do not seriously mind their feeding on the fields. They say that whatever belongs to the birds by their fate is their right, and whatever they (the human beings) are destined to get would in any case do so. It is not an idle passivity but the philosophy of a deeply religious and hardworking people.

The preponderance of these trees in the fields gives the much needed shade from the scorching sun of the Thar desert of Rajasthan, and provides succour both to man and the beast. One has to travel in the midday in summer in these areas to appreciate what boon these trees are. Trees are soothing to the eye, and help in keeping tempers cool in this high temperature zone.

Compatibility between trees and crops

Whatever may happen in a natural forest with its own system of checks and balances, it would not be proper to keep a wolf in the same pen as one's stock of sheep. The same applies to the vegetable kingdom. The tree-species chosen for interspersing should not be so aggressive as to grow at the cost of the crop below, depriving it of its soil-nutrients and the available water-supply. The Central Arid Zone Research Institute Jodhpur (CAZRI) of the Indian Council of Agricultural Research of the Government of India has done

much useful research into *Prosopis cineraria* and has published a monograph on the subject. Referring to this tree and the ground vegetation in its vicinity, the report has the following to say³ :-

"It was found that during the growing period about 162.9 mm of moisture was utilized by the ground vegetation where the rainfall was about 163.8 mm. It seems, therefore, that the moisture received through precipitation was fully utilized by the ground cover and the trees hardly imposed any competition for moisture. The tree thus seems to be ideally suited for silvi-pastoral and farm forestry operations."

The report further adds :

The facts which have emerged suggest that the observed improvement of plant growth beneath this tree may be due to the combined action of a number of factors. The favorable infancies of this tree are clearly discernible in the pearl millet (grown most extensively here under rainfed conditions) fields in sandy plains where these trees are found in abundance, as well as elsewhere, where the natural vegetation exists. Shade effects coupled with microbial influences may hasten fertility build up and minimizes losses, particularly of soil nitrogen. The contribution of bird droppings, leaf/pod, dung and urine of shade seeking livestock in this regard sound rather speculative, in the absence of reliable data. But such possibilities cannot be ruled out"

It is significant to take note of the fact that the Bishnois avail of certain benefits from the *Prosopis cineraria* only in a graduated or regulated manner. These are deriving of fodder

3. "Ithejri in the Indian Desert- Its Role in Agro-forestry", Monograph No 11, edited by Dr. H.S. Mann & Dr. S. K. Saxena issued by CAZRI, Jodhpur. Chapter VIII



Camels munching directly from the trees (8 to 10 km short of Lohawat on the Jodhpur - Osian-Lohawat Road)

for cattle, legume for man, timber for buildings and agricultural implements etc. and firewood for cooking. Timber and fire-wood are taken only when the trees are completely dead and dry or if the whole tree is not completely dead, from such of its branches which are totally dry. Leaves as fodder or legumes as food are taken only to the extent that is possible to do so by bare hands without using axe or any other iron or other sharp-edged tool. Camels are permitted to eat the leaves directly from the trees. This policy of saving the hen laying golden eggs pays them rich dividends in the long run, by a significant improvement in their agricultural yield as compared to the fields in adjacent non-Bishnoi areas. The trees thus saved of the depredation of their leaves provide humus, moisture and natural fertilizer to the soil, while birds roosting there also add their bit. The trees growing in abundance with their foliage in full glory provide a sharp contrast in landscape to that in non-Bishnoi villages, where particularly in months of February and

March, trees are shorn of their leaves, leaving the stumps sticking out from the ground, presenting an ugly sight. No doubt the bio-mass generated by the tree is not thrown away by the non-Bishnois. Leaves are utilised as fodder, branches as fire-wood, and tree trunk as timber. Yet the short-term gains are nowhere near the long-term benefit the tree would have otherwise given. The trees thus bereft do not act as a wind barrier, do not provide nutrients to the soil, do not provide shade to man, beast or bird and do not save earth from scorching.

Prosopis cineraria and Eucalyptus

Now let us consider the controversial Eucalyptus. There are about 600 varieties of the Eucalyptus, but in India, the one more often used is the Eucalyptus hybrid. According to authoritative sources, it is the Eucalyptus tereticornis, which is popularly known as the Eucalyptus hybrid or the Mysore gum. Another source states that the plant popularly known as the Eucalyptus is a hybrid between Eucalyptus camaldulensis and the Eucalyptus tereticornis. However such distinction in nomenclature is merely academic, and does not detract us from the issue under consideration. There is no difficulty in obtaining the Eucalyptus hybrid, without going into its genealogy. Other varieties of Eucalyptus in vogue in India are the Eucalyptus camaldulensis, Eucalyptus grandis and Eucalyptus globulus.

One of the charges against Eucalyptus is that it makes heavy demands on water from the ground, and thus its plantations lower the water-table. Experiments have not been conclusive in this respect. If the observations are made in an area of heavy rain-fall, such changes may not occur at all. Observations have to be made over long periods in rainfed ecosystems having low rainfall. According to reliable sources⁴

a hydrological study was carried out in the years 1974 to 1978 A.D. in Australia, which is actually the home of Eucalyptus, and the study showed that deficiency in ground water and the moisture of the soil was in fact created by Eucalyptus plantations in areas, which were having annual rainfall of 1000mm or less. Eucalyptus has also a high evapo transpiration rate and is a quick-growing species. It would, therefore, be ordinarily natural that its demand for water would be heavy, rendering it unsuitable for cultivation in arid and semi-arid areas. In reply to this, the defenders of Eucalyptus put forward a theory that the Eucalyptus species has a special mechanism in its physiology, which the tree switches on in areas of inadequate water-supply resulting in stomatal closure (i.e. to say that the minute openings in their leaves get closed) which enables it to grow with less water. Validity of this assertion has not gone unchallenged.

Eucalyptus's roots go vertically downwards in areas of heavy rainfall, but it is known to spread its roots laterally in arid and semiarid areas. This further' renders it unsuitable for growing within agricultural fields. Regarding the requirement of the crown of the tree-species for interspersing with agricultural crops, namely, that it should be thin and not block the sunlight completely, Eucalyptus poses no problem, and in this respect it is as good as the *Prosopis cineraia*. It is also effective in preventing soil-erosion by acting as a windbreaker. It also prevents quick runoff of rainwater, and promotes its percolation into the soil, as all trees do.

There is another factor which needs necessarily be considered in any meaningful discussion on Eucalyptus. Does the Eucalyptus produce any toxicity, which is harmful to the crops or vegetation underneath the trees? The answer is that

4. 'Ecological Audit of Eucalyptus Cultivation in India' by Dr. Vandana Shiva & Dr. Jayanta Bandyo-padhyay, 105 Rajpur Road, Dehradun (India).

toxicity is produced by the Eucalyptus which is harmful for any crops under it⁵. However with rains, this gets washed away and the adverse effects soon disappear. But what happens in dry areas, which were essentially the fields of operation of the great Saint Jambhesh-war? In such areas, toxicity builds up and has a deleterious effect on the crop below. This tree is therefore not suitable for inter cropping in dry areas.

It would also be appropriate to mention here that the replacement of indigenous species of trees in a forest by an exotic tree like the Eucalyptus is not conducive to the prospering of wildlife there. An example of this is the Liontailed Macaque (Macaque silence), a kind of monkey which once thrived in the evergreen tropical forests of Western Ghats, Nilgiris, Cardamom Hills, Annamalai Hills and around the Periyar Lake, and is now an endangered species threatened with extinction. Replacement of the natural forests in the habitat of this animal by Eucalyptus plantations (compounded by the clear felling of those forests for making room for tea and coffee plantations) has been disastrous for the conservation of this species.

There is yet another very serious disadvantage in replacing the natural forests by plantation of a single type of tree, which too, like the species of animals becoming extinct, is irreversible in nature. The bio diversity, which means that the various species of flora (and fauna) should survive and thrive, is essential for the conservation of nature in the long term. If this bio diversity is destroyed, that is to say that, if genetic uniformity takes the place of genetic diversity, some of the plant species (and animal species) lose their natural resiliency and can be lost for ever, never to see the light of the day in future. The problem, which is a result of over commercialisation of

5. Ibid.

natural resources as is obtaining by resorting to the plantation of monocultures, say of Eucalyptus and poplar, is grave, and deserves to be taken serious note of by the ecologists, so that the world's heritage is not destroyed for ever.

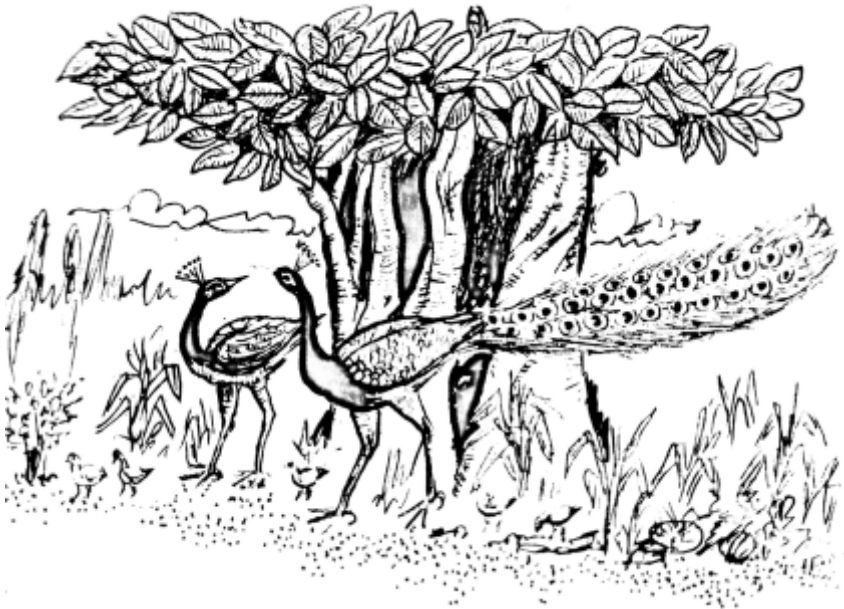
Resuming discussion on Eucalyptus it does not provide leaves, branches, legumes etc. which can be used as cattle fodder (or as human food). In fact this is one of the grounds advanced by the advocates of Eucalyptus in favour of its plantation. It is indeed true, that it is a great advantage that in the early stages, the plants need very little protection from cattle, but it also must be conceded that when these saplings are young, they are equally liable to be trampled upon (though not eaten) by the grazing cattle, as the saplings of other species are. In a desert area this very property of its non-edibility by cows, buffaloes, goats etc. is a distinct disadvantage. The trees should be such as to be able to provide sustenance to the livestock at least during lean years. The advantages of the Khejri tree in this respect have already been mentioned. In this respect let us not forget the camel, the 'ship of the desert' which munches straight from the Khejri tree. Cattle and camel in turn provide organic manure to the soil, apart from serving man in several ways.

It is for these reasons that the indigenous *Prosopis cmeraria* excels the Eucalyptus. Jambhoji lived from 1465 to 1536 A.D. and the Eucalyptus made its debut in this country in circa 1782 A.D.⁶. But even if this species had arrived on the scene, Jambhoji could not have made it the object of his special love. Jambhoji was not interested in merely producing more timber and more pulp for paper, which Eucalyptus does, but in building a healthy economy and congenial environment for our villagefolks, by promoting agricultural productivity with

6. According to knowledge-able sources, Eucalyptus was introduced in India by Tippu Sultan of Mysore in the Nandi Hills during the period 1782 to 1802 A.D.

natural long term means sustaining for a long period of time, by improving the health of the cattle thereby increasing the yield of the milk, by providing shade to the man and the animal to save them from the scorching sun, and above all providing a kind of insurance for years of famine. Beyond a trace of doubt, Khejri's place in the niche of his heart could never have been affected by this species.

. . .



8

KHEJRI AND THE BISHNOIS

The love, which the Bishnois have for the Khejri tree, is because their great Guru Jambheshwar has ordained them do so.

Of the 29 tenets of the Bishnoi faith, the text of two of them is as follows :-

*"leeva daya paalni, roonkh
leela nahin ghaavey"*

It means : "Be compassionate towards all living beings; do not cut any green tree." These edicts do not make any distinction between one green tree and another. However the famous saint-poet of the Bishnoi order Udhoji Nain (1448-1537 A.D.) who often accompanied the Guru on his tours of the country, and who was entrusted by him with the task of codifying the Bishnoi tenets in the form of verses, has singled out the Khejri tree as an object of love in one of his poems. The aim of codifying in verses was to provide the simple folks then and in posterity, with guidance on what to do and what not to do. Although it does not form part of the 29 rules, Udhoji Nain has stated :



"Karaen roonkh pritipal, khejra raakhat rakhen"

In means that all trees should be protected with care, and Khejra (synonymous with Khejri) should be tended with love.

From what has been stated in the preceding chapter, the reasons are evident as to why the propounder and other saints of the Bishnoi faith attached so much importance to the growing of green trees in general and to the Khejri tree in particular. Bishnois are an agricultural village-based community and are deeply committed to the religious teachings of their Guru and other saints. No wonder that 363 of their men, women and children, old and young alike, sacrificed their lives 260 years ago, in the year 1730 A.D. for protecting green trees. This has been described in detail in Chapter Ten. It must however be made clear here that the martyrs were not governed by the economic advantages of the trees, but by the religious merit of upholding the commandment of their scriptures, handed to them by generations.

Supported by the scientific findings of the premier agricultural research body of the country quoted in the preceding chapter, it can be said without any fear of contradiction that the system of agriculture adopted by the Bishnois, namely, growing of Khejti trees within agricultural fields, not permitting the destruction of the trees at any cost, and allowing the grass native to that place to grow in the 'noncrop' season (that is to say, practicing agro-silvi-pastoral operations) is the best strategy to meet their day to day requirements, as well as in the larger interest of water and soil conservation and arresting decertification. It promotes the supply of food and timber for man, and fodder for the livestock. Because of their enthusiasm to protect the trees, the common lands (i.e. to say, the land belonging to the village as a whole) have turned into excellent silvipastures, to the immense advantage of their livestock. No wonder, the Bishnois are very

good breeders of cattle and camel, and excellent producers of milk. There is yet one more tree, which has found specific mention in the Bishnoi literature. That is the Kankeri tree. In the 73rd verse of the Bishnoi epic, namely, Jambh Sagar the Guru has stated :

It means "I live on the sandhill beside a green Kankeri tree" The Kankeri tree is of small height, about two to three metres with a dark evergreen crown about three to four metres in diameter. As to the probable reasons for Saint Jambheshwar to seek this particular species Kankeri i.e. (*Maytenus emarginatus*) under which he carried out his meditation, the opinion of the noted ecologist and conservationist of Thar desert, Mr. Indra Kumar Sharma² is that the extraordinary environmental qualities of this tree must have impressed the Saint to make this choice. In the words of Mr. Sharma, the tree is evergreen, small with a dense compact branching system forming a hollow at the base, which serves as a nice cool solitary hut-like site, suitable for meditation in the hot desert. Such tree-canopy sites are also the favourite resorts of many a wildlife fauna, particularly, the chinkara, blackbuck, hare, jackal and the peafowl. Its compact dense branching system serves as a good and safe night roost, as well as a site for breeding nests, to several species of birds. The aggregate and the arrangement of the tree's flowers on the respective flowerbearing stems, which in the botanical language is called the inflorescence of the tree, attracts a large number of species of insects for its nectar. Its fruitseeds are edible by several species of birds and small mammals. The utility of this tree to desert fauna is exceptional, -a manifestation, in practice of the philosophy of 'live and let live,' which Jambhoji himself

1. Published by Swami Gyan Prakashji, Bishnoi Mandir, Rishikesh, Dish Dehradun U.P.

employed in his personal life and advocated in action.

In the blazing sun and raging sandstorms, it is indeed superhuman to stay by the side of a tree under the open sky, not



The Sambhrathal Sand-hill

for a day or two but for full fiftyone years. This spirit of selfless sacrifice has inculcated in his followers a sense of dedication for a cause. This sacrifice becomes all the more glaring because the Guru had a vast following among the rulers and commoners alike, who constantly entreated him to build a palace, or at least a lowly dwelling unit for his living. Some of the members of the ruling class, who respected him and had personal

1. Mr. Indra Kumar Sharma is currently (i.e. in 1990 A.D.) consultant-expert to many international or-ganisations on environment & wildlife e.g. UNEP (United Nations Environment Program), WWF (World Wide Fund for Nature, the erstwhile World Wildlife Fund), IUCN (International Union for Conservation of Nature and Natural Resources), FAO (Food & Agricultural Organisation).

contact with him, were Sikander Lodi of Delhi, Mohammed Khan Nagauri of Nagaur, Rao Santal of Jodhpur, Rao Bikaji of Bikaner, Rawal Jait Singh of Jaisalmer, Rao Doodaji of Merta and Rana Sanga of Mewar.

It is only a few years ago that a temple has been constructed at the sanctified sand-hill of Sambhrathal, which was the abode of the Guru for over half a century. This construction has been possible due to efforts of a venerable Bishnoi holy man (Sadhu) Swami Chandra Prakashji.

As a measure of reverence in which Jambhoji was held by the royalty and the public alike, a historic incident is mentioned here. The saint Jambheshwar had pre-sented a drum, popularly known among the Bishnois as barisal nagada, to Rao Jodhaji of Jodhpur. Rao Bikaji, a son of Rao Jodhaji had carved a new state for himself. Rao Jodhaji entered into an agreement with Bikaji to the effect that Jodhaji would part with the throne as well as the said drum and certain other revered objects to Bikaji, in lieu of which Bikaji would not lay any claim on the territory of Jodhpur, which would become the sole preserve of the other sons of Jodhaji. The revered drum is now in the possession of Bikaner and is preserved there in the Junagadh fort (not 1 to be confused with an erstwhile state in Saurashtra region of Gujarat). It is respectfully taken out twice a year for worship on Dussehra and Dipawali festivals.

The contribution of rules enunciated as a part of a creed to the conservation of a healthy ecosystem in general, and by the Bishnoi faith in particular has found an echo in the neighbouring Pakistan too, adjacent to the Bishnoi habitations in western Rajasthan. A piece entitled ' The Bishnois of Rajasthan' published in ' People/' Nature' -with WNW Pakistan Newsletter - July 1990 has the following to say :

"....." Amid the desolation in much of Rajasthan today the

Bishnoi lands are like oases, where blackbuck, gazelles and partridges roam with little fear of people, and crops thrive..... The lesson to be learned from the Bishnoi story is that conservation of the natural world can be a successful guiding principle when the hearts and minds of the people are involved. No laws of oppressive measures can do the same without the commitment.”

. . .

9

ROTU - A VERITABLE FOREST OF KHEJRIS

Sixty kilometres northeast of Nagaur lies a small village by name of Rotu in the revenue subdivision Jayal of Na-gaur District. Its total population (in 1987 A.D) is in the region of five thousand, three fourth of them being Bishnois. Practically the whole of the population is of farmers. It is located in the heart of the desert; the rainfall is con-fined from June to September. There is only one well in the village, with its watertable being in the region of approximately 40 meters below the ground level. The water of the well is brackish, and is used only for drinking by cattle and for washing purposes. For the supply of drinking water for human beings, rain water is stored in underground tanks, known as kunds in the local dialect. The rain water falling on roofs and on selected clean ground finds its way into these tanks through small inlets. These kunds vary in size, about 10 to 20 metres in diameter



and about 5 to 10 metres in depth. These are made of masonry construction, with a missionary roof about a metre above ground level. These roofs have an opening through which water can be drawn by a rope and a bucket as from an ordinary well. This opening has an iron lid, which is closed when water is not being drawn. Almost similar kundis serve the villagers all over in the western part of Rajasthan, where canal water-supply had not reached at the time of observation (in 1987 A.D.).

Rotu is a holy place for the Bishnois, because Guru Jambhoji had paid a visit to this village. It is said that a lady devotee of the Guru, by the name of Uma (of Bhadu gotra or clan) was celebrating the marriage of her daughter. Earlier she had obtained a promise from the saint that he would attend the marriage and also officiate as Uma's brother at the auspicious occasion. It is customary that brothers of the bride's mother present gifts at the wedding during what is known as the *bhaat ceremony*.

Accompanied by three or four other saints, Jambhoji arrived at Rotu village in a chariot to attend the marriage. The bullocks of the chariot were unharnessed, and as



The ancient Khejri tree at Rotu

is the usual practice, were tied to a heavy dry log of wood. The following morning, this log of wood, so it is believed, had miraculously turned into a green Khejri tree. This tree exists till this day at the Rotu Saathri in the Bishnoi parlance is the name given to a holy place, which had been visited by the guru sometimes during his sojourns.

Astonished at the dry log turning overnight into a fully developed green tree, the inhabitants of the Rotu village persuaded Uma to request the Guru to grow many many more Khejri trees, so that they could reap their benefits. Those days there were hardly any trees inside the fields in Rotu, and crop productivity was low. The great saint acceded to the request, and it is commonly believed that tens of thousands of Khejri tree grew in the fields of the village overnight. Even to this day five centuries after this miracle is said to have taken place, there are tens of thousands of Khejri trees within the revenue boundary of this village. The village is virtually a forest of Khejri trees, abounding with trees all over. Seeing such a large



number of trees, the villagers grew apprehensive that these trees would attract far too many birds and cause damage to their crops. Those were the early days at the commencement of Bishnoi religion, when the Bishnoi ethos had still to take roots.

They accordingly approached Jambhoji and expressed their fears of the likely damage to their crops. Jambhoji assured them that while the birds would spend the nights on the trees, they would move out in the day and never feed on those fields. This promise remains honoured upto this date. The villagers, collectively and singly (in 1984 and 1987 A.D.) confirmed to the author that there had not been even one instance when a bird had partaken of the crop in the fields. They point out that even if a corn got detached from the stem, the birds would not peck on it. The only way the birds would eat any grain of cereal there is, if cereals are offered to them by throw from fists as is the usual Bishnoi custom, referred to later in Chapter Twenty six of the book.

The very large number of trees in the village and its fields results in a higher amount of rainfall here as compared to its immediate vicinity. The dry leaves falling from the Khejri trees and bird droppings provide nutrient to the soil; top soil is conserved and moisture in the soil is retained. All this naturally results in greater yield per unit area as compared to that in the neighbourhood.

The Bishnoi temple at this village is the repository of a sword said to be associated with Jambhoji. As stated in Chapter Two, Jambhoji had given a branch of a tree to Rao Doodaji of Merta. The Bishnois believe that this branch turned into a sword as it was received by Doodaji in his hands from Jambhoji. It is said that sometimes later Doodaji was taunted by an individual that he was the ruler of Merta not by dint of his valour but by the blessings of a saint . The story goes on to say that, at this Doodaji got into a rage, and drew his sword for

striking. Sooner he did, the blade flew away leaving the hilt in his hand. The belief among the Bishnois is that the blade was subsequently recovered and now the same complete sword is kept in the Bishnoi temple of Rotu. It is held in great reverence. Whatever may be the legends associated with Rotu, the fact is that Rotu is at present a village where the people are simple, content and economically prosperous but completely untouched by the modern day civilization. The benefits of



Khejri trees at Rotu Saathri

Khejri trees are seen to be believed.

The enquiry at Rotu was made in 1984 and 1987 A.D. There is yet one more legend associated with the village Rotu. It is said that an evil person by name of Seeniya, possessing mysterious powers established himself at a sand hillock a couple of kilometres from the village. He started preaching to

the villagers to do wrong things, such as not to recite Lord's name but recite some sound like 'Chhinma Chhinma and to take bath not in the morning but later in the day after meals. The inhabitants approached Jambhoji on this account. Jambhoji tested him and found that he was an evil person. Jambhoji drove him away from the hillock. On the path believed to have been taken by him, not a blade of grass grows even to this day. Lest it may appear that the grass does not grow because a lot of people may be walking on that path, it is clarified that the path is not frequently used by human beings. Even in the rainy season this 'passage' remains totally barren presenting a sharp contrast from its vicinity. Perhaps there is something more than what meets the eye.

. . .

10

THE GREAT SACRIFICE

"Sar saathey roonkh rahey to
bhi sasto jan"

To someone not knowing the Rajasthani language, these words may appear to be from some religious text or uttered by some literary giant. They are neither. These words mean that if head goes but tree remains, it is still a worth while bargain; and these were uttered by an unlettered Bishnoi house-wife, mother of three daughters, in the year 1730 A.D. The State of Jodhpur, a kingdom as it then was, was ruled by Maharaja Abhay Singhji son of Maharaja Ajit Singhji. Abhay Singhji was having constant troubles with the Delhi kings, but at one stage he had some respite. He then wanted to construct a palace for himself. Lime was required for this purpose. Limestone was available but it needed to be burnt before use, for which fuel was required.



One court-official Girdhar Das was entrusted with the responsibility of procuring firewood for burning limestone.

Where could the wood be procured more easily than in a Bishnoi village? By then two centuries since the start of the Bishnoi religion had elapsed, and the Bishnoi villages had already become treasures of huge green trees, having been protected and nourished all this while. They thought of a Bishnoi village Khejarli situated about 20 kilometres south of Jodhpur for felling green trees and bringing them as fire-wood. Their thinking was that if they can manage to collect so much of wood so near, why make an effort to look for dry trees elsewhere in the state! Led by Girdhar Das, the party responsible for collection of wood reached Khejarli armed with axes. It was daytime during the rainy season, when menfolk of the village were away at their fields as is the practice. In the rainy season, the menfolk are necessarily away at fields, unlike during the dry season when they could still be present at their homes. The treefelling party stopped in front of the house of one Ramuji Bishnoi (of the Khod gotra or clan), where there was a huge sprawling Khejri tree. While Ramu was away at his fields his wife Amrita Devi and their three young daughters Asu Bai, Ratni Bai and Bhagu Bai were at the house. Sensing some commotion outside the house, the mother busy at her chores asked the daughters to look outside and find out what was the matter. They came out and saw that the party was preparing to cut the green tree. They informed their mother accordingly who straightway came out. Amrita Devi asked them not to cut the green tree as felling of green trees was prohibited in her religion. The malevolent feudal party told her that if she wanted the tree to be spared, she should give them money as bribe. The gallant Amrita was not to succumb to temptation of offering bribe and told them that she would consider it an act of ignominy and insult to her religious faith if she were to save green trees by bribing. She said that she would rather give away her life to save the (green) tree. It is at that

stage that she spoke these words, " Sar saathay roonkh rahey to bhi sasto jaan". Saying those words she offered her head.

The axes which were brought to cut the trees severed her



The landscape at Khejarli

head from the trunk. The three young girls Asu, Ratni and Bhagu were not daunted, and offered their heads. Those too were separated from their bodies. The news spread like wild fire. Villagers (Bishnois) gathered and sent summons to 84 Bishnoi villages to come and decide on the next course of action, since the supreme sacrifice by those four women and children had not satisfied the royal party, and felling of green trees was continu-ing. It was decided that for every green tree to be cut,. one Bishnoi volunteer would give his life in sacrifice. In the beginning, old men volunteered and started holding the trees to be cut in an embrace as in the Chipko movement (or the Aapiko movement) of the present day. In this way many valiant old men gave away their lives, but it failed to have the desired impact, as the tree-felling party felt that in that

manner unwanted old persons were being got rid of. Soon young men, women, including recently married ones and children were sacrificing themselves in a similar manner.

There was intense pandemonium. It completely shook Girdhar Das and his party, and they left for Jodhpur with their mission un-fulfilled. In the meanwhile a delegation of Bishnois had also reached the Maharaja in Jodhpur to inform him as to what was happenings. As soon as he learnt it, he ordered stopping of the felling of trees there. It is said that he rushed on a bare horseback. By that time, three hundred and sixty three Bishnois young and old, men and women, married and unmarried, rich and poor had already become martyrs. They hailed from a total of 49 villages. Their names, their gotras (i.e. clans, which even in these days constitute a distinct parameter in that region to identify human beings) and their respective villages are given at Appendices C and D.



The water tank at Khejarli

While the broad details of this ghastly incident were available from the verses of a Bishnoi poet: saint Gokul ji (circa 1643- circa 1733 A.D.) who was a contemporary of the event, the identification of all the 363 martyrs has been a difficult job.

Gokul ji's verses contained only some names. The complete identifying has been possible due to the hard work for two years (1976 to 1977 A.D.) of two gentlemen of village Mehлана in district Jodhpur. Neither of them is a Bishnoi and both belong to the Rao class of people who are traditional chroniclers of various communities and families. They are Mangilaji Rao and Bhagirathraiji Rao. The practice of keeping family records and chronicles continues even up to the day. The Raos maintain records of the lineage and descendants of various families; different communities being assigned to different branches of Raos. They visit their client families once every two years, and update their information. In return they are given cereals and other gifts. This re-cord-keeping is an additional vocation of the Raos, the main being agriculture like that of most other villagers. Two enthusiastic Bishnois, Acharya Bhagirathji and Sant Kumarji Rahar Bishnoi also worked hard along with the two simple Raos to examine their records dating back to almost three centuries, and compile a list village-wise, sex-wise, gotra-wise, while giving their father's/husband's names. The information gleaned from the lists is given below :-

- | | | |
|----|---|---------------------|
| a) | Number of villages, residents of which made the supreme sacrifice | - 49 |
| b) | i) Number of males who made the supreme sacrifice. | - 294 |
| | ii) Number of females who made the supreme sacrifice | - 69 |
| | Total | - 363 |
| c) | Number of families from which | |
| | i) Two members made the supreme sacrifice | - 56 i.e. 112 heads |
| | ii) Three members made the | - 19 i.e. 57 heads |

-
- supreme sacrifice
- iii) Four members made the supreme sacrifice - 6 i.e. 24 heads
- iv) Five members made the supreme sacrifice - 6 i.e. 30 heads
- v) One member made the supreme sacrifice - 140 i.e. 140 heads
(or cases of incomplete information) 363 heads
- d) Number of husband and wife pairs, who made the supreme sacrifice - 36 i.e. 72 heads
- e) In one case, members of three generations, viz. a grandfather and a grandmother, their three daughters, their one son and his wife and three grandsons (i.e. sons of the son) made the supreme sacrifice-five from the grandparent's family (excluding the son) and five from the son's family (S. Nos 10 to 19 of Appendix C refer).

Earlier in this chapter, a mention has been made to summons having been sent to 84 villages, when the felling of trees in Khejarli started. 83 villages had responded but one village viz. Lohawat Marwar of Tehsil Phalaudi, District Jodhpur did not. This village was accordingly struck off by the Bishnois from the list of villages to be invited to big celebrations. It is customary among the Bishnois to call residents of eighty-four Bishnoi villages on certain grand celebrations. More about Lohawat Marwar is given later in Chapters 16 and 24.

In this saga of great sacrifice, a particular incident deserves special mention. A young Bishnoi of village Dhawa was passing through the village Khejarli on a camel-back

along with his wife from her village. He was taking his wife to his home for the first time after marriage. Child marriages were customary in those days, but the couple used to start living together only several years later, after a ceremony (known as Muklaon) when they had come to age. The young man dismounted from the camel, and laid down his life like others in defence of the green trees, saying that it was perhaps for that day, Jambhoji had given them the tenets. His wife followed suit; she too similarly gave away her life. Neither he belonged to that village, nor did she. They were merely passing from there, but the cause was not of a passing interest! The cause for which they died was and continues to be of a permanent nature. The hallowed places where the young husband and wife laid their lives in Khejarli are now marked by two stones about three metres apart. All these sacrifices are indeed hairraising, and the king of Jodhpur, Maharaja Abhay Singhji, also did not remain unperturbed by them. He instantaneously intervened and issued a royal decree on a copper-plate (tamrapatra), as was the custom those days, ordering the following:

- a) All cutting of green trees and hunting of animals within the revenue boundaries of Bishnoi villages was strictly prohibited.
- b) Anyone violating the above was punishable by a fine of rupees one hundred, and
- c) Any violation of these orders was to be construed as an offence against the state.

From the above, it is clear that the offence was made cognizable. Also, it is significant that the revenue boundaries of villages in Jodhpur district and other desert districts are very extensive, covering several square kilometers, thus promoting the cause of protection of environment by a degree much more than what appears at the first instance. Further, a fine of rupees



The Martyr Memorial at Khejarli

one hundred by the fiscal value of three centuries ago is a very huge sum. The royal decree has been honored till after our Independence, after which it has been reinforced by other legislation under the forest preservation and wildlife conservation laws.

The commencement of the great sacrifice had taken place on the tenth day (a Tuesday) of the bright fortnight of the month of Bhadrapad

of the lunar calendar of the year Samvat 1787 of Vikrami Era, corresponding to the year 1730 A.D. In the year 1978 A.D. corresponding to that day as per lunar calendar viz. on 12th day of September, a fair was held for the first time at that hallowed village to commemorate the martyrdom of the valiant Amrita and 362 other heroes. The fair was organised due to the active efforts of an organisation, namely, All India Jeeva Raksha Bishnoi Sabha. Since 1978 it is held every year, promoted and attended by dignitaries of the Central and State Governments.

At the site, a memorial in the form of a marble tower has been raised, a marble pond of water constructed and trees

planted all around. A nursery to supply seedlings has also been established there by the Rajasthan Government. Here at this memorial site, there is a spot where a lot of blood is said to have flown. On that exact spot, not a blade of grass grows, and it is a subject of conjecture into mysticism by the people around there.

The site of the memorial at Khejarli has since become an object of international interest. It now attracts nature lovers and environment-minded tourists including foreigners. In the year 1980 A.D., Canadian and British Television teams respectively covered the site. In March 1984 A.D. the television of Federal Republic of Germany made a film of this hallowed spot depicting a unique event of history, the like of which has never taken place on that scale, 'nor will it even happen in future; three hundred and sixty three human beings giving their lives for dumb green trees!! The Indian National Trust for Art and Cultural Heritage 71, Lodi Estate New Delhi-3 and the Indian Television Doordarshan too have not lagged behind and have made in 1988 A.D. a TV film¹, viz. *Secrets of Survival* highlighting this saga.

. . .

1. The live presentation for the film has been given by the author.

11

OTHER SACRIFICES FOR TREES

The supreme sacrifice by the Bishnois for the protection of green trees at Khejarli was no doubt the largest because of the numbers involved, but it was not the first. However, for the protection of the trees, as distinct for the protection of wildlife, it was perhaps the last, since by then the various States had promulgated laws prohibiting felling of green trees in Bishnoi villages; and it would not have been a worthwhile proposition for anyone to come in conflict with the State and with the population living around there i.e. the Bishnois, for mere felling of a tree. Case with hunting (shikar) is different for it gives thrill, howsoever misplaced it may be, to the one indulging in it, and thus he may take a risk of violating law on that score.

Sources of information - Veelhoji

It has also to be borne in mind that in the past, communication facilities were scarce. and many cases of sacrifice could have escaped record. Luckily details of some of the past cases are still



available. The main source of information on them is the poetry known as Saakhi literally means what has been witnessed and these poems provide an authentic account of such incidents which may have come to the notice of the poet. In the Bishnoi dialect, the act of supreme sacrifice is known as a 'Saka' and the incident as a whole is known as *Khadaana*'.

An account of three acts of supreme sacrifice by Bishnois, two for protection of trees and one for stopping an intermecine feud between two sections of people, is available in the Saakhis composed by a poetsaint of the Bishnoi order viz. Veelhoji. Veelhoji lived from the year 1532 to 1616 A.D. There is a legend in respect of him. When Jambhoji was preparing to leave his mortal frame, he appointed three priests and assigned them their duties. In addition, he indicated that there would be a fourth also, for whom too he earmarked a set of holy clothes and beads as he had done for the three in respect of him (i.e. the fourth), he said that he was already born in District Rewari (now in the state of Haryana) a few years earlier in a carpenter's family. His name was Vithal, and that it would be possible to identify him by his capability to recite the verses composed by him (i.e. Jambhoji) correctly and effortlessly, after hearing them only once. This fourth saint, later known as Veelhoji was born in Rewari in 1532 A.D., and eight years after Jambhoji's death i.e. to say in circa 1544 A.D., when Veelhoji was eleven or twelve years old, he showed the signs which Jambhoji had indicated, and was accorded due honour. Veelhoji did a remarkable job in putting the Bishnoi faith in its early days on an organised basis. Veelhoji laid great stress on truthful and precise speaking. Veelhoji has written over 50 verses merely to bring in purity in laymen's colloquial speech. These along with verses for the same purpose by another poet Keshodasji Godara of the Bishnoi order, are unique examples of their efforts to bring in purity into language

used by the common man. To quote an example, Veelhoji has said in a verse that the usual query "where did you make the rain fall" should appropriately be worded as "where were you when the rain fell?" Similarly, the statement "I drove the cart." should aptly be "I drove the bullocks of the cart." Similarly "I ground the flour," should aptly be "I ground the corn". Where there is so much penchant for accuracy, we can be assured of correct reporting, at least of the intention to maintain truth.

Sacrifices or Khadaanas'

The first incident described by Veelhoji in the Saakhis relates to the 'Saka' (supreme sacrifice) at village Tilvasani in Tehsil Bilara of District Jodhpur by three Bishnois, two ladies Khivani Khokhar and Netu Nain, and one man Motoji in defence of green trees. Gopal Das was the jagirdar (chief) of village Khejarla, situated close to village Tilvasani. This village Khejarla is different to the village Khejarli referred to in the earlier Chapter. The villagers of Khejarla started felling green trees of their village. When Bishnois learnt it, they approached Gopal Das and protested against it. Their protest was not accepted. The following morning, they undertook the supreme sacrifice by getting beheaded instead of the green trees being cut. First Khivani Khokhar sacrificed her life followed by Motoji and Netu Nain. A comparatively recent poet-saint of the Bishnoi order namely Sahib Ramji Rahar (1814-1891 A.D.), in his classic book *Jambha Saar* too has described the incident in a very moving language. On the basis of these poems, it is further learnt that in addition to the three martyrs, another one thousand Bishnois were ready to sacrifice their lives for the cause in a similar manner. In its anticipation, they had taken the preparatory ritual bath according to their custom. It is noteworthy that in spite of the large numbers involved, no attempt whatsoever was made at securing their ends by violence. They strictly followed the drill laid down by

their great Guru in dealing with such cases (please see Chapter 16) and the rule of being forgiving and compassionate towards all. It is also on record that as a direct result of having no hatred towards those who were responsible for perpetrating those acts of violence, namely, Girdhar Das in the case at Khejarli and Gopal Das in the case at Tilvasani, they both became wholly transformed beings, establishing in the process the supremacy of the power of persuasion over that of coercion.

The second Khadaana' described by Veelhoji pertains to the incident at village Ramaasari in Jodhpur State, where green trees were being felled. In protest against felling, two Bishnoi ladies, Karma followed by Gora, made the supreme sacrifice by getting beheaded at the cross-roads. This happened on a Saturday on the second day of the dark fortnight of the lunar month Jyestha in year Samvat 1661 of the Vikrami Era, corresponding to the year 1604 A.D. A very touching description has been given by the poet-saint Veelhoji of the entire incident. The third incident is pertaining to an internecine feud, and is outside the purview of this book.

Saint - poet Keshodasji Godara

Keshodasji Godara (1573-1679 A.D.) was a disciple of Veelhoji, and he too was very enthusiastic about truthful language. He also composed verses in the Rajasthani language giving respective examples of incorrect usage and correct language. As an example "Did the bullock drink?" should be correctly worded as "Did the bullock drink water?" For this reason, verses composed by him or by his senior Veelhoji leave no room for doubt about the veracity of incidents described by them.

The first case of Khadaana given by Keshodasji pertains to the sacrifice by Buchaji Bishnoi (of Achra 'gotra') of village

Polavas of Tehsil Merta on the third day of the dark fortnight of the lunar month of Chaitra of the Year Samvat 1700 of Vikrami Era, corresponding to the year 1643 A.D. The Jagirdar (chief) Ratnoji of village Rajaud located about ten kilometres south of Polavas got green Khejri trees felled for burning during celebrations of the Holi festival. Bishnois of adjoining villages assembled, and after informing the jagirdar, Buchaji got himself beheaded.

Another incident of supreme sacrifice is by Ramdinji Bishnoi of village Vanhera in the 17th Century (A.D.) described by a poet Nanig Dasji, of the Bishnoi order. Bishnoi literature is replete with cases of supreme self sacrifice by the Bishnois for other causes too e.g. defending their rights, ending a needless conflict, fighting injustice, but those are outside the scope of this book.

. . .

12 WILDLIFE AND MAN

The chapter on human environment of the declaration, made in 1972 A.D. at Stockholm, has the following to say:-

"Man has a special responsibility to safeguard and wisely manage wildlife and its habitat, which are now gravely imperilled by a combination of adverse factors. Nature conservation including wildlife must, therefore, receive importance in planning for economic development."

Bishnoi literature, some of which dating back to five centuries ago, lays special emphasis on protection of all animal life. The following ascribed to the great Guru himself would be of interest:

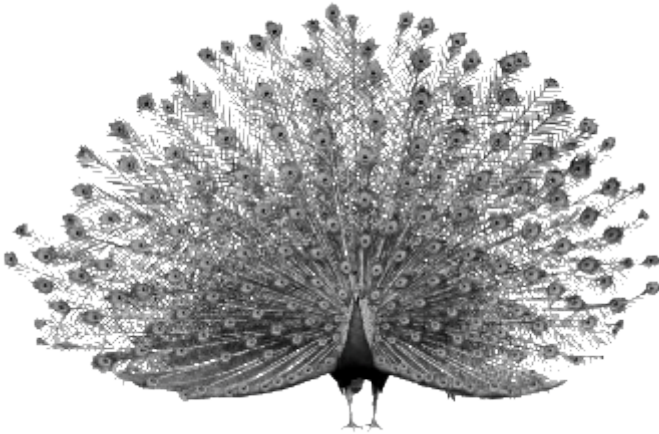
*"Jeeva daya nit paalni,
sadachar yah jaan,
Tan-man aattna vash karay,
pahunchey pad nirvana."*

It means "Have compassion towards all living beings; this is the

right action. Have control on your body and thoughts, and attain the supreme goal of Self Realisation.”

Suppressing though it may seem to some, even a predator like the tiger is one of the most essential links in the conservation of animal life, which in turn is necessary for human existence. This magnificent cat keeps the population of herbivorous animals in check, thus preventing the forests from ravages of over grazing. Also, the stock of these smaller animals is maintained in a healthy condition by these carnivores eating away the old and the infirm. The snake too has a useful role. Only 150 of a total of over 2500 varieties of snakes are poisonous. Snakes feed on rodents, frogs and other animals, which compete with man for food. The despised hyenas and vultures are useful in keeping earth and air clean by acting as natural scavengers. The lowly turtles can similarly act as the scavengers of river beds; and the utility of pigs which feed on organic waste is also well known. Even the ordinary birds have a very vital role for mankind. Birds check the insects, moths and rodents from growing in an uncontrolled manner; their uncontrolled growth can have disastrous consequences for man. Six rats consume the equivalent of one man's diet. Also the potential of their rate of growth is astounding. One pair of rats over a period of five years can multiply to the astronomical number of about one million million (10^{12}), but luckily it does not happen as a number of birds, snakes and other forms of wildlife feed on them. There is yet another example. The locusts lay eggs by trillions, but the birds keep a check on their growth. The owl too feeds on rats and mice (interestingly, at least three mice or rats are consumed by an owl every night!) thus sparing the human food-stocks from their havoc. Lest it may appear that rats and mice are mere parasites without doing useful work in return, it should be understood that the earth would have been extremely hard for

ploughing but for the burrowing by these and other creatures living in holes in the earth. Frogs keep a check on malarial and other mosquitoes, and the World Wide Fund for Nature has already done well to warn those countries, which have been exporting legs of frogs as delicacies of food, that they cannot do so without grave peril to their ecological system.



A dancing peacock - a very common occurrence in Bishnoi villages

Yet another example is of the Wild Ass (*Equus hemionus*). This is now an endangered species in India and faces extinction. This lowly animal, known as 'ghor khar' in its habitat namely Gujarat (India) has something to offer to mankind. It is an extremely small eater, and can survive happily even with the most modest amount of food. At one time it roamed in Bikaner and Jaisalmer in the state of Rajasthan, but now its habitat is confined to the Rann of Kutch in the Gujarat state. It is said that once a wildlife enthusiast came across a herd of this animal grazing. When these animals had run away, he collected every plant in the area. To his amazement, he found that what was available was not enough to satisfy the appetite of even a rabbit. Such minute eaters these big animals of the size of a

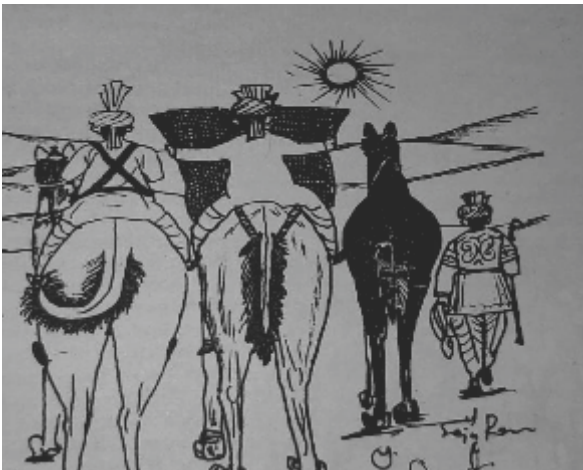
mule or a horse are! Has man been able to unravel the mystery as to what is so peculiar in their digestive system or other metabolism to equip them with this extraordinary faculty? After all it was the bird which gave man the concept and knowledge of basic aerodynamics of flying! Let us not forget that once a species is lost, it is lost for ever. Man has no way to recreate it. This should only heighten our belief in conservation.

Earlier in this chapter, a few examples have been given demonstrating the usefulness of certain forms of wildlife to man. In fact, there is a very interesting branch of science which studies as to how one biological entity affects others. This inter-relationship extends upon a very wide range, covering harmonious and antagonistic relationships - mutual, unilateral and permutational thereof. An example of harmonious relationship is that exists between insects and flowers; insects sucking honey from flowers but also doing good to them in return by pollinating them. Another example of harmonious relationship is that exists between algae and the fungi, the combination of which results in the creation of a new plant. Antagonistic relationship is like the one that exists between carnivorous predators and herbivorous animals.



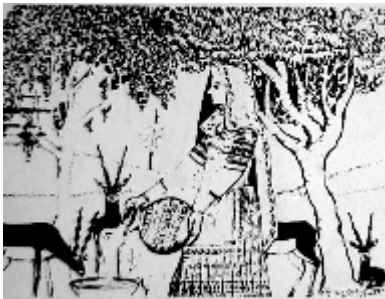
Whether the relationship is friendly or hostile to the two entities, be they trees, plants or animal species, the net result to the environment is beneficial. It is also relevant that in the nature, a number of materials have a lot more consumption than others, and those need to be replenished in a natural way by the nature's own system of checks and balances. Ground water is consumed, as it is drawn from the wells, and it is returned through rains. Rivers flow into the sea, but are also charged by the sea-water returning to them as rainfall and snowfall. Carbon is drawn by the plants and animals but it is given back in several ways with natural processes making them usable. Oxygen is consumed by all animals but the carbon-dioxide exhaled by them is recycled as carbon and oxygen by the vegetable kingdom, explained earlier. Maintenance of the balance that obtains in nature is the need for an orderly society if it wishes to survive in the long run. A perusal of an article full of erudition, entitled 'Nature's Pageant of the Ages', which has been reproduced as Appendix E to this book, bringing out the intra relationship within nature, would be rewarding.

. . .



13 BLACKBUCK AND THE INDIAN GAZELLE

Two species of the antelopes, namely the Blackbuck (*Antilope cervicapra*) and the chinkara or the Indian Gazelle (*Gazella gazella bennetti*) owe their survival in the states of Rajasthan, Haryana and Punjab to the zeal, doggedness and tenacity of the Bishnois. This fact is universally accepted by the conservationists all over. These two species are exceptionally beautiful and graceful animals, but are equally docile. Both these qualities compound with each other to make them extremely vulnerable to poaching by the hunters. The social environment of Rajasthan, Hararyana and Punjab with a propensity of the local populace to keep fire arms and to indulge in the so-called manly 'sport' of nonsporting collection of heads of dead animals, makes these dumb animals all the more insecure. Notwithstanding these factors affecting their very existence, these animals are very much frolicking in the Bishnoi



belts of these states, while they have become extinct elsewhere in India, except in conservation parks and some rare pockets, which only serve as honourable exceptions to the rule. With the zeal of the Bishnois for conservation, these animals have multiplied in numbers.

The situation as it obtains in the rural areas of these states is that among the people living in non-Bishnoi areas, there is a desire to kill these animals but there are no animals; on the other hand there are plenty of these animals in the area habited by the Bishnois, who zealously protect them. Hence there is a perpetual unspoken war between the Bishnois and the potential poachers. The poachers quite often forget that the Bishnois have the law on their side. They had it so in the days of princely states and of the British rule, and they have it now in independent India.

Any traveller on the Jaipur-Jodhpur road, Phalaudi Ram Deora road, Jodhpur-Barmer road (all these three roads are in Rajasthan) and the Abohar-Sirsa road (in Punjab-Haryana states), to name only a few, will invariably find herds of blackbucks and /or the chinkaras moving freely within the revenue boundaries of Bishnoi villages. The converse is also true, namely, if these animals are found moving in an area is these parts of the country, this is bound to be a Bishnoi village. To quote an acknowledged wildlife conservationist Mr. Kailash Shankhla of Rajasthan, "If it is a Bishnoi village, it is sure to be rich in wildlife, and if it is rich in wildlife, it is sure to be a Bishnoi village. Such is the power of this culture and its influence on conservation". The number of blackbucks and chinkara, in Jodhpur district itself in 1983 A.D. were 10,000 and 8000 respectively. There is a famous conservation park between villages Dohli and Dhawa, both being Bishnoi villages in district Jodhpur, 45 kilometre from Jodhpur on the Jodhpur-Banner road.

It may be of interest to note that the time of India's partition and independence in 1947 A.D. the number of blackbucks in both India and Pakistan could be perhaps estimated at 80,000. In India too, they suffered from poaching, but thank to the Bishnoi zeal for protection of wildlife coupled with the advent of legislation in its favour in 1972 A.D., they have multiplied in numbers, and there is absolutely no threat to the survival of these species in India. On the other hand, our neighbouring Pakistan, which also had inherited a few tens of thousands of them, had none left in their country; and in circa 1983/1984 A.D., they had to import from the USA. (State of Texas) ten of them, which were introduced in one of their national wildlife parks:

A question is bound to arise in the minds of any reader. Bishnoi is an agricultural community. Do these animals not destroy their crops? The following factors will enable an answer. Firstly, except in the District of Jalaur in south-west Rajasthan, Bishnois in Rajasthan are concentrated in the desert area, in which only one crop grows, that is to say, their fields are under crop for only four months in a year; and for eight months those are free for any animal to graze. Secondly, a vast majority of the Bishnois is convinced that these animals promote the productivity of their crops. This is over and above their stoicism, that whatever an animal partakes of from their crops, it is its due share as per scheme of the nature. A similar sentiment is held in case of birds also.

A significant factor is that the herds of the antelope remain generally on the move or at least are made to remain so by the farmers guarding their crops during the crop season. In this process of constant move, the animals partake of only the leaves and do not uproot the plants. It is also relevant that in case of certain crops like guvar (*Cyamopsis tetragonoloba*) which is a cattle feed, when there is an overgrowth of leaves,

herds of sheep are let into the fields to eat away the excess leaves, and this produces healthier plants. Hence grazing by blackbuck and gazelles on the move does not call for any alarm. Another advantage of these animals on the move is that in the process of running from one field to another, the hoofs of the herd loosen the soil. Loosening of soil is good for crops and saves the farmers of some energy and expense.

It must be admitted that if herds of blackbuck or the chinkara were given a free play in the fields with standing crops, they would surely do damage, but if they are not allowed to stay at one spot when the crop is standing, they may have sometime to offer to the farmer in return. Being their protectors, the Bishnois have to know these reasons, as farmers of certain communities other than Bishnois do not share their zeal to protect these animals. The division among the non-Bishnois in the matter of killing/protecting these animals is on the lines of their being non-vegetarian / vegetarian. The vegetarian communities in Rajasthan are not in favour of killing them, even if they may not be crusaders against their hunting as the Bishnois are.

While the Bishnois are equal champions, among all other forms of wildlife, of the protection of both the blackbuck (kaliyo in the Rajasthani language) and the chinkara (Chinkolo in the Rajasthani), these two species of antelopes, amidst similarities, have some dissimilarities as well. While the blackbuck is primarily a grazing animal, chinkara mainly likes the top-feeds of plants. The same difference is perceived between sheep and goats; the former preferring grazing and the latter browsing. Blackbuck is not much of a shade-seeking animal, and their herds can be seen standing in the open sun even in scorching heat, while chinkare during the hot sun would be resting in the shade of the trees. It is baffling as to why the blackbuck, in spite of its black coat (black colour

being universally known to be a good absorber of heat) is so much tolerant to sun. Perhaps in terms of some physiological aspects, it may be akin to the camel, the 'ship of the desert', which may be accounting for its heat tolerance. It is also worthwhile clarifying here that as in the case of blue bull (*Boselaphus tragocamelus*, locally known as the neel gai), whose male only is black, only the male of the blackbuck is black, and that too it starts assuming black colour from the age of two years, which grows as it attains maturity.

The intake of salts by the blackbuck through its drinking water is of an extraordinary high degree. For a human being, content of salts in water beyond 600 parts per million (p.p.m.) makes the water unpotable. If it exceeds 2,000 p.p.m., the water becomes harmful even for irrigation. The content of salts in groundwater of the central basin of the Luni river in district Jodhpur, the heart-land of the blackbuck, is estimated at 20,000 p.p.m. Due to solar evaporations, this would be much higher in case of open water sources from which the blackbuck drinks water. Blackbuck's indifference to both sun and excessive salts makes it a model creation for the desert, only to be matched by the camel, and by their botanical counterpart (i.e. model creation), namely the Khejri.

In the course of its grazing, the blackbuck ingests a good deal of soil, which undergoes a transformation into useful soil nutrient. With the very first rainfall of the rainy season in the desert of Rajasthan grows a rich crop of wild ground flora *Moluga cerviana*, locally known as 'the fodder for the birds'. The blackbuck takes to it in a big way, apart from its relishing the protein-rich pods of Khejri, moisture-rich pods of vilayati babul and protein-rich flowers of the rohira tree. Given an opportunity, neither the blackbuck nor the chinkara would shy away from having a good feast on the crops that may have been sown by the farmers.

One fact however remains undisputed. The average yield of crops per unit area of land cultivated by Bishnois is significantly higher than that by others. How far it is due to the comparatively harder work put in by Bishnois, or due to the presence of antelopes in their fields, is difficult to assess. May be its is the cumulative effect of both. The assumption that the Bishnois generally put in harder work than others is a fact for two reasons. First the Bishnois have an early morning bath, as enjoined by one of their 29 rules, which drives away laziness, and secondly they do not waste time on smoking, prohibited by another of their 29 rules.

It is of interest that in the Vedic literature also, great praise has been showered on the blackbuck. In the scriptures it is said that, where-ever blackbucks roam, there would not be any hunger, nor any disease to crops, or strike by lightning, nor curse of poisonous snakes. It is believed that the yield of crops and of fruit trees, where blackbucks roam is higher.

Difference between deer and antelope

By now the readers would have become well acquainted with the nature of the blackbuck, and the Indian gazelle, and would be in a position to appreciate the difference in the terminology used for them in the zoological science. Neither of them is a deer, but as already stated, are antelopes. Deer and antelope are not one and the same. Deers have antlers, and antelopes have horns. There are four points of difference between antlers and horns :-

- (a) Antlers are branched, that is to say, there is one or more branches in their upper portions. Horns have no branches.
- (b) Antlers are shed off once a year, whereas horns are permanent features.
- (c) Antlers are very delicate, and are covered with

velvet like soft skin and very soft hair, while the horns are of robust construction.

- (d) Antlers can be used only for a show of defence i.e. in sparring, where as horns can be used for real protection by the animal.

In accordance with the above classification, both the blackbuck and the Indian gazelle have horns and they fall in the category of antelopes. In addition to the antelopes, milch cattle too have horns. Antlers are sported by deer such as the spotted deer and a cheetal (*Axis axis*) which is perhaps the most handsome of the deer, hog deer (*Axis porcinus*), swamp deer or barasingha (*Cervus duvauei*), and the reindeer. Some other deers are sambar, which is the largest of all Asiatic deer, the barking deer or the Kakar, the Kashmir Stag or the Hangul, and the Brown-antlered deer or thamin. The difference between the deer and antelope is subtle, as both these are gregarious lovable animals, remarkable for their grace, agility and swiftness, Both are extremely vulnerable to attacks by unscrupulous, heartless and insensitive poachers. Incidentally 'musk deer' is a deer, but has no thorns or antlers, but a pair of tusked incisors,.The human greed for the 'musk' which is a base for perfumes, subjects this highly endangered species to torture and an untimely death. Even if the musk deer is bred in conservation-parks, it is still not spared of the most ghastly cruelty, as the musk has to be extracted from it for the insensitive among the rich and the so-called 'elitists'.

Difference between blackbuck and chinkara

concerned there should be no difficulty in identifying the two from each other, in view of the black colour of the former and fawn colour of the latter. Also, the size of the blackbuck, both male and female, is correspondingly much greater than their chinkara counter-parts. While female blackbucks do not

have horns., the female chinkara has them.

Aesthetics

So much has been said of the economics pertaining to the blackbuck; a little of its aesthetics now. In an article¹ entitled "some of the things I love", the late Prime Minister Indira Gandhi had the following to say :-

"I am not mentioning animals and birds, for my liking and concern for them is well known. During World War II in London when much time had to be spent cooped up with a large number of people, most of them strangers, all kinds of silly games came into vogue, mostly to break the ice to enable people to get to know, one another better without probing too deeply into privacy. One such question was, which animal would you like to be - my answer was the Indian blackbuck. Someone remarked that perhaps this was because I also had enormous eyes, thin limbs and was a good runner"!!

. . .

1. Published in the Annual Number of the Bhartiya Vidya Bbavan's Journal dated August 15, 1976, a fortnightly of Bombay.

A PROBLEM-REAL OR IMAGINARY

It would now be proper to consider an important aspect in the context of conservation of wildlife. A number of wildlife national parks, sanctuaries, reserves and deer parks have been established all over the country. According to the figures of late 1980s' A.D., there are sixty three national parks and 358 sanctuaries. Their overall area comprises about one-fourth of the total area under forests in India. In addition, the Wildlife (Protection) Act 1972 and other legislations afford our wildlife safety from illegal hunting. For these reasons, a stage can come when even responsible members of the society may start harbouring a feeling that wild animals are encroaching into a domain which is rightfully that of man. Such situations can come all the more easily in those areas which are habited by the followers of saint Jambheshwar, who in the discharge of their lawful obligations as citizens of the country act as honorary self



appointed sentinels of wildlife, overseeing in the process if the laws for the protection of wildlife (and green trees) are being observed or not.

In the above a specific mention has been made of the responsible members of the society. This is done because as far the other members of the society are concerned, whose motto is to "eat, drink and be merry", as it is they are ever trying to defeat the wildlife protection laws by stealth and other evil modes.

Opposition from responsible members can come, when as a result of the conservation measures, the number of wild animals increases so much that they start overflowing their assigned habitats; and with the increase in human population which is unfortunately, ever taking place, the man animal relationship of coexistence comes into a conflict. It is an accepted fact that as the human population expands, so does the man's encroachment into forests. It is therefore necessary that a solution to the problem is thought out.

It is generally a matter of controversy among experts of animal population dynamic⁴ as to what is the optimum holding capacity of a national park or a wild-life sanctuary. Speaking by and large, the number of a species of a wild animal living in a sanctuary or a national park depends upon, interalia, its rate of reproduction and availability of nutritional food to them. If their number exceeds the optimum, their would be a shortage of nutritional food, and on the basis of experience of other countries, they would also be exposed to a higher incidence of predatory. Thus a natural balance is struck in the process. In addition there are the periodic natural calamities, such as droughts for several years, epidemics among wildlife and the scourge of floods, all of which may reduce their numbers.

The killings of the supposedly excess numbers of animals

is by no means a solution to the problem, if and when it ever arises. However it is to be noted as a forewarning that the hunters and their lobbies in the media and legislatures would make vociferous demands in favour of open licence for engaging in shikar. I dare oppose such a possible move most vehemently not merely because it would be against the Bishnoi ethos of compassion, but also because it can lead to disastrous results to the very existence of the concerned species. A few years ago a certain country in East Africa resorted to it (that is, to 'culling' or the selective killing of the excess numbers), when the number of elephants there had increased too much. After a few years, in the natural course, a spell of continuous drought took place there for three years, which killed a very large proportion of the animals which had survived the earlier culling. The very existence of the elephants in that area was endangered. In India itself, around Lohawat (Please see Chapter 24), a virulent epidemic in 1985-86 A.D. among the chinkara resulted in their mass deaths, involving thousands of them.

It is further anticipated that as against 'open' licence for game-hunting, a concept of 'selective' game-hunting could also be advanced. Reasons such as promotion of wildlife tourism so as to earn foreign exchange, and the establishment of 'wildlife ranches' and 'wildlife farms' for commercial utilisation of land could also be offered as a bait. The sine qua non against all game-hunting is simple. No game hunting, selective or open, provides any solution to the problem of excessive wildlife (if it arises). Even in the princely days of preIndependence India, the rajas and maharajas were quite fastidious as to who would do the game hunting in their 'reserves', but we are all aware as to what damaging effect, their hunting had on the wildlife! As regards promotion of tourism, a certain inherent conflict between the two does exist, and has to

be accepted in favour of conservation of our valuable natural resources. However, by all means, suitably sited observation spots with due regards to their being compatible with the wildlife habitats can be established, and shooting can be done with cameras equipped with as powerful telephoto lenses as the tourist can afford.

In conclusion, all that can be said now is that as and when such a situation arises, the problem should be examined in depth, and a solution, which does not involve culling or killing, found out. It could involve resort to one or more of the following de-vices:-

- (a) Increasing the area of the national park/sanctuary concerned.
- (b) Transferring the excess numbers to other habitats.
- (c) Enclosing the park/sanctuary by trenches.
- (d) Enclosing it by barbed-wire fencing.
- (e) Enclosing it by a fencing carrying mild electric current which should be well within the tolerance-limits of human beings and the wild animal, yet should act as a deterrent to the animals from going close to it.
- (f) Bursting of crackers and using flares and the like outside their protection zone (viz. sanctuary or national park) so that the animals develop a distaste against leaving their habitat.
- (g) Making use of such other measures as the circumstances may demand, without involving killing or culling.

. . .

15

GREAT INDIAN BUSTARD

The Great Indian Bustard (*Choriotis nigriceps*) is a magnificent rare bird, which is safeguarded by the Indian Wildlife (Protection) Act 1972. This bird has now the distinction of being the State Bird of Rajasthan. The bird has been indiscriminately hunted in the past, and its population has been reduced to a dangerously low level. India is one of the few countries where it can be seen in its habitat; and in India it is so in Rajasthan, particularly in the grasslands with shrubs of those districts which are inhabited by the Bishnois who give protection among other forms of wildlife, to this extraordinarily beautiful big bird. The bird is known as Godawan or Sohan Chiri in the local dialect, and as Hoonkan in the Hindi. The cock bird is about a metre in height, and the female about 70 centimetre. Both male and female look alike, and somewhat resemble a crane in general appearance. It has a black crest on its head, and on the top half of its light brown coloured body

are large number of black lines and a beautiful black band, while the lower half is white.

What gives the bird its name Hoonkan, which means an echo-like 'sound' is the sound the cock bird produces towards the end of the summer season and at the beginning of the rainy season to attract a mate for him. This sound resembles the echo of a drum, hence its name. The sound is generated by a sac which protudes from its neck coming almost to its toe. It is the heaviest land bird of India, the male of the species weighing as much as about 15 kilograms, and the female about 8 kilograms. It does not have a hind toe which accounts for its inability to perch on trees.

The Great Indian Bustard is a great friend of the farmers, in that it lives on rats, insects, locusts and such other parasites who are the worst enemies of the farmers. It is said to partake of lizards, scorpions and even snakes. It also ingests small stones and pebbles.

Since a very few members of these unique and beautiful birds are now surviving at least in India, it is exceedingly important that no effort be spared to conserve the species. Not much information is available as to how many eggs it generally lays at a time, at what frequency and between what ages? It is found in India only in five or six districts; elsewhere, perhaps in some hot grasslands of Africa, Australia and some other parts of Asia too. Not with standing the lack of detailed knowledge about the bird, it is quite well known that it has a very poor rate of reproduction, which adds a lot of importance to the task of its conservation.

This species' consumption of locusts, rats and other pests makes it a great favourite of Bishnoi farmers and those of other vegetarian classes. When in 1978 A.D. some foreign princes and their retinue wanted to indulge in the hunting of this

remarkable bird, the Bishnois of Rajasthan and Haryana took a leading part in the movement for having the shikar banned. The Bishnoi Sabha in Hissar (Haryana), a body of the Bishnois, threatened to undertake a non-violent agitation in support of their demand. Fortunately the Government of India took timely action to prohibit the criminal hunting before damage to this endangered species could take place. This species is a legacy handed over to the present generation, which must be protected at costs for the posterity, and the Bishnoi ethos has no mean role to play in.



The Great Indian Bustard

16 SUPREME SACRIFICES FOR ANIMALS

*"Jeeva maranta dekh jai kai
ann divavey,*

*Aan lop jey maar- hey apano
sees divavey."*

The poetsaint Udoji Nain of the Bishnoi order, who was Jambhoji's frequent companion during the latter's tours for propogating the Bishnoi religion, has given us the above verse. It means that a Bishnoi, on seeing someone killing a living being, should in the first instance beseech the perpetrator not to do so, imploring him in the name of whatever is sacred to him; but if this fails, he (i.e. the Bishnoi) should offer his own head in lieu. It was the firm conviction of Jambhoji that neither Hindusim nor Islam permitted slaughter of animals. He has explicitly stated it so in strong language in his poems viz. the Shabd vani. This explains why the Bishnois have a long tradition of facing death, while trying to save animals and green

trees, the latter being also treated as endowed with life.

As stated before, in a countryside with conditions as obtaining in Rajasthan in the olden days, the communication and education have been sparse, and the population too has been not dense. Hence it is most likely that a majority of such self sacrifices, occurring during the past five centuries would have gone unnoticed, or at least not preserved for posterity.

Even at present (i.e. in late 1980's A.D.) in the matter of prevention of hunting, the tradition is that as soon as a gun-shot is heard in a Bishnoi village, the Bishnois, whatever condition they may be in, rush to the spot and chase the offenders. It would be proper to remember here that the law of the land is on their side. While the menfolk look for the offenders to hand them over to police, the women and children look for the injured animals so as to render first aid. Incidentally there are hardly any, ferocious animals left in these desert areas now, so that the possibility of the injured animal being a wild one and consequently posing a danger to the women and children in this venture does not exist; the injured animal is invariably blackbuck or a chinkara. It would be of interest to mention in passing that even in Jodhpur State, the lion was found till about a century ago, when the last four of them were shot near Jaswantpura in the year circa 1872¹ A.D. The Bishnois rushing to the scene of shikar are invariably unarmed, as they run for apprehending the culprits without any loss of time; but the latter, by reason of the very act (viz. hunting) for which they are there, are always armed. In the conflict that ensues, the Bishnois suffer.

1. The source of this information is the 'Imperial Gazetteer Vol XIV Jodhpur, The population of tigers in Wildlife Sanctuaries maintained by the Rajasthan Government was 109 at the beginning of 1988 A.D.

It is also interesting to know that whenever a blackbuck or a chinkara, in a Bishnoi village or in its vicinity in Rajasthan, is chased by a wild animal, or even by man, it runs and seeks safety by being close to Bishnoi men or women, who may be around in the area. These antelopes identify Bishnois by their distinctive dress and by instinct, since over a period of five hundred years, they have developed a sense to distinguish a protector from the rest. The Bishnois in that region put on a distinct dress. Bishnoi men in Rajasthani villages invariably put on a white turban (known as paagri, safa); a white shirt and white loincloth (dhoti). In the olden days they used to put on a long coat (angarakha) also, which is out of vogue now. Putting on a coloured cloth is a taboo to Bishnoi menfolk. Bishnoi women, however, put on, without exception, a red covering (choonn) for the head and shoulders, a coloured blouse (kurti) and a skirt (saara or lehnga). The red head/shoulder covering and the skirt are made of what is known as saara cloth, which has a typical pattern of small white flowers on a red background.

A few instances of supreme self-sacrifice by the Bishnois in the course of saving animal-life are given here. The source of information has been old literature in one case, recently published material in another and oral information in case of others. Though details may be lacking, the information on the crux of the matter i.e. Bishnois giving away their lives while saving animal-life is unimpeachable.

In the year 1857 A.D. a number of stud bulls were slaughtered in village Cheenghad in district Hissar of the state of Haryana. Consequently there was a serious fight between the Bishnois and the culprits. The poetsaint Sahib Raqiji of the Bishnoi order, who has compiled the notable Bishnoi classic Jambha Saar² (distinct from the Jambha Sagar referred to

2. Published by Swami Gyan Prakash Ji Aishnoi Mandir, Rishikesh District Dehradun U.P. A Hindi clas-sic.

earlier), was summoned for help by the Bishnois to the village, where he started a great Yajna (a fire ritual). Those were the days when law and order used to be at a low. Fighting ensued in which Bishnois led by one Sardulji Jaani Bishnoi could defeat the culprits decisively.

Two Bishnoi brothers Chimna Ramji and Partapa Ramji, sons of Gorakha Ramji Manju Bishnoi, residents of village Barasan (near the town of Dhori Minna) of district Barmer in the state of Rajasthan became martyrs while trying to save an antelope. They were bringing water on their camels when they saw a herd of these animals being chased by poachers. The two brothers, both unarmed, followed them and protested against the poaching. The hunters brooking no interference, fired at these two men, on their trail killing them on the spot. This happened on the 12th day of April 1947 A.D.. The poachers fled away leaving the dead, Mr Chimna aged 35, and Mr Partapa aged 29, lying on the ground. The spot, where the two gentlemen had fallen dead, was in an agricultural field belonging to a Rahbari, a scheduled caste. Till the time of observation in 1987 A.D., he had not ploughed that piece of land for sentimental reasons, and had kept it fallow.

Mr Chuna Ramji Bishnoi, son of Mr Hardanji Godara Bishnoi resident of village Rohicha Kallan, Tehsil and District Jodhpur became a martyr in about 1948 A.D., while trying to protect a herd of blackbuck/ chinkara from illegal hunters.

On 3rd February 1948 A.D., Mr Arjun Ramji Bishnoi, 36 years of age, son of Mr Prabhu Ramji Panwar Bishnoi of village Bhaktasani, Tehsil and District Jodhpur, situated close to the famous Khejarli village received bullet injuries in his stomach, when he protested against poaching around the village pond. He died the following day in Jodhpur hospital.

Yet another martyr is Mr Bhinya Ramji Bishnoi, 25 years of age, son of Mr Lala Ramji Godara of village Banaar, Tehsil

and District Jodhpur. He was on his camel's back, when he intercepted poachers who shot him dead. This happened on 17th May 1963 A.D..

As if the famous village Rotu is not to lag behind in providing a martyr for the noble cause of protection of wildlife, Mr Dhookal Ramji Bishnoi of that village, sometimes during the period 1950-1960 A.D. caught hold of the loaded gun of a poacher by name of Mangalasar, as the latter was aiming at a chinkara. The gun got fired at him. On his way to the hospital, life ebbed out of his mortal frame, but in the process, he infused new life into the crusade for protection of wild animals. It is gathered that one more person, of village Rotu had become a martyr for the same cause.

A recent incident about which details are available is as follows. In the village of Lohawat Marwar in subdivision Phalaudi, district Jodhpur, Birbal Ramji Kheechad Bishnoi laid down his life on 17th December 1977 A.D. while protecting a chinkara. a party of three hunters (one Kammo and two others) were engaged in poaching. Birbal Ramji and other Bishnois tried to intercept them, in the course of which the valiant Birbal paid the supreme price. The main culprit Kammo was sentenced on 9th January 1979 A.D. by the sessions court to 20 year's Rigorous Imprisonment (R.I.), his one companion to one year's R.I. and one was acquitted. This village Lohawat Marwar had a stigma attached to it since the day of Khejarli episode (please see Chapter 10). With an inhabitant of his village too becoming a martyr, the stigma has since been removed, and the village is no longer excluded from the list of 84 villages.

Having been subjected to so much of suffering due to the vandalism of outsiders indulging in illegal hunting, the Bishnois look with suspicion any outsiders moving in vehicles and armed even with cameras and other accoutrements. Once

they are assured that they are not carrying any arms, Bishnois open up with their traditional hospitality for which they are famous; they are also enjoined by their religion in clear terms to be so. The famous conservationist. Mr. Kailash Sankhla of Rajasthan has described an interesting incident. He had once invited a friend to show the wildlife in Desert National Park in Rajasthan. He was accompanying him in a jeep on the Phalaudi Ram Deora Road in district Jodhpur, and time was mid-day. They spotted some chinkara, and as they photographed them after trying to reach close to them, their jeep was surrounded by Bishnoi men and boys protesting against their following the wild animals. Mr. Kailash Sankhla smiled at them and told them his name. Bishnois knew Mr. Sankhla by name as he had been a fellow `Bishnoi' by conviction if not by birth, and his name had been familiar to them for reasons of Mr. Sankhla's enthusiasm to conserve wildlife. He had also attended Bishnoi fairs in the past. All tension vanished in thin air. They were invited to their hamlet, and their hospitality took over the place of hostility.

. . .

17
ALL INDIA
JEEVA
RAKSHA
BISHNOI SABHA

"Caution - you have entered the sanctuary area. Please pay particular attention to the following-

- a) The area of villages¹ in the map opposite has been declared by the Government of Punjab as a sanctuary. In this area hunting and all kinds of scaring of animals are strictly prohibited.
- b) In this area moving about with a gun or any other weapon is also prohibited.
- c) Violating any of the above will constitute an offence under Wildlife (Protection) Act 1972 and the offender will be liable to imprisonment which may extend upto 6 years and to a fine of Rs. 2,000/-By order Chief Wildlife Warden Punjab".



Words in the Punjabi language to the above effect greet a visitor as he enters the Bishnoi village of Dutaranwali near Abohar in District

1. There are 12 villages, viz. Raipuraa, Sardarpura, Dutaranwali, Maharajpur. Sukchain, Khainpur, Sita Guno, Bishanpur, Flimmatpur, Rampura, Narayanpur & Bajidpur.

Ferozepur in the state of Punjab. The proclamation on the hoarding is accompanied by a sketch map indicating the position of the said villages. Bishnois live in a sizeable majority in these villages. The area so carved out is known as the Abohar Game Sanctuary. It is an open sanctuary, that is to say, not bound by any barbed wire or any other fencing.

This sanction of law against hunting in the area by the post-Independence Government of Punjab has been possible by the untiring efforts of an organisation viz. All India Jeeva Raksha Bishnoi Sabha, the head office of which is located at Abohar. Abohar is a very small town in district Ferozepur, not even the headquarters of a revenue subdivision. However the activities of this organisation are not small, and amply justify it giving it an 'All India' character. The organisation has already won the admiration of national and international bodies such as the World Wide Fund for Nature. The name of the organisation literally means an organization of Bishnois for the protection of all forms of life. Although the name implies that it is an association of Bishnois only, its membership is open to any one who is a vegetarian, irrespective of his caste or religion, if he or she subscribes to the aims of the organization, the main of them being :-

- a) To develop a culture of loving all living beings. Green trees are considered as living beings according to the ethos of the Bishnoi way of life.
- b) To protect wild animals, amphibians and birds and make arrangements for their treatment where necessary.
- c) To promote vegetarianism, since birds and animals are living beings and are friends of mankind.
- d) To make efforts to have the cow and its progeny declared as the national animals, keeping in view that Indian is predominantly an agricultural country.

- e) To make efforts to have hunting prohibited within boundaries of such villages where vegetarians constitute a majority.

The motto of this organization is 'Live and let live'. According to the organization the world 'Bishnoi' has been included in the name in view of the extreme importance given to the protection of living beings in the Bishnoi religion; and so that the sacrifices made by the Bishnois in the past may inspire in the present also. The organization had first come into being (at Abohar) in February 1966 A.D. under the title "Anti hunting Committee " with a dedicated founder - president in Mr Sant Kumar Rahar Bishnoi. However, in 1973 A.D, its name was changed to its present, so as to give it a positive name rather than a name with negative facet. On 15th January 1975 A.D. the organization was registered by the Punjab Government. All these years, the organization has been active in pursuing cases of illegal hunting in courts of law, rendering financial assistance to the families of those who get killed in the process of saving other life, and organizing meeting and processions for promoting the cause of compassion to animals. The organizations had a big hand in getting hunting of the rare bird, the Great Indian Bustard by some foreign princes in District Jaisalmer (Rajasthan) in December 1978 A.D. banned.

It is relevant that in the pursuit of cases of illegal hunting, a lot of difficulty is experienced since vested interests are still entrenched, and persons who engage in hunting are often influential and rich. Any one daring to take cudgels against them is subjected to all sorts of threats and intimidation, besides having to incur a lot of expense in the courts. The cases drag on in law courts sometimes for years. Some times, even false cases are lodged against the complainants with a view to pressurizes them! The Bishnoi community and this organizations have shown doggedness, tenacity and

steadfastness for the upholding of the aim of protection of animals. Some of the cases pursued by the organizations are given below.

On 8th April 1978. A.D. three hunters of a town Fatehabad in the state of Haryana went to a village by name of Muthan and fired at a doe. The animal was injured, and in trying to escape the chasers, came into the fields of one Kehar Singhji (a non-Bishnoi) and fell down badly wounded. The poachers in pursuit tried to pick her away, but the valiant Kehar would not let them. In the process, he himself fell a victim to their bullets. The All India Jeeva Raksha Bishnoi Sabha organised a big public meeting on 20th June 1978 A.D. on the Grand Trunk Road near the place where Kehar had laid down his life, to offer their condolences and to mobilise public opinion against hunting. The Sabha also rendered financial assistance to the bereaved family. The Hindi Journal² of Bishnoi youth entitled 'Sangosthi Vani' issued a special edition to honour the martyr.

Another case in which the All Indian Jeeva Raksha Bishnoi Sabha had been very active is of self immolation by one Hari Narayanji Bajpai (a non-Bishnoi). This 23 year old young man burnt himself on 11th May 1983 A.D. on the bank of river Sangur, near the jungle where the blue bull (neel gai) was getting exterminated by the hunters, in district Kanpur in the state of Uttar Pradesh. The young Hari had given fifteen days' notice before he resorted to this extreme step. The news of this self sacrifice reached the office bearers of the Jeeva Raksha Bishnoi Sabha in Abohar on 15th May 1983 A.D. through the columns of a language newspaper. As soon as the news reached them they got 32 copies of the news report made out, and sent those to Governments of India, Uttar Pradesh and

2. Sangosthi Vani. Bishnoi Dharamshala Ratanada, Jodhpur (332012) India.

of some other states, and also to some prominent persons, demanding that the sacrifice made by the heroic' Hari Narayan did not go in vain. There was no response from the Government for sometime. Then the A.I. Jeeva Raksha Bishnoi Sabha gave an ultimatum if the demand for which Hari had laid down his life was not met within 30 days, there would be one 'Hari Narayan' burning himself at that very site every day!! On 13th August 1983 A.D. within the notice period of the ultimatum, the U.P. Government banned hunting of all animals including the blue bull. The organisation has since constructed a memorial in honour of the young martyr near his village.

The noble activities of the organisation are far too many to be listed here. It has publicly honoured at Bishnoi fairs eminent conservationists in recognition of their efforts for preserving wildlife in India. Two such persons are Mr Inayatullah and Mr Kailash Sankhla, Chief Wildlife Wardens of Jammu & Kashmir, and of Rajasthan respectively. The Mir, asked to give his reactions when he was receiving the award, said that he was reminded of the great Sufi Saint of Kashmir, Sheikh Nooruddin Saheb, who had given an identical message, namely, "Utn poshi taeli van poshi", which means that the production of food depends upon green trees/forests and their magnificent partner viz. wildlife.

Another eminent conservationist to be honoured by the All India Jeeva Raksha Sabha is Doctor Surendra Mohan Mohnot of the Jodhpur University. He (a non-Bishnoi) has been awarded in recognition of his services, the first prize in the year 1986 A.D. Dr Mohnot, a zoologist of distinction, is a keen enthusiast of the conservation of wildlife and green trees, and was responsible for getting a ban imposed on the exports of primates from India. He has also been pioneer in a number of conservation projects, apart from being a recipient of the Vriksha Mitra (A Friend of Trees) award of the Government of

India. On the basis of the recommendation by an eminent jury, he was awarded this prize.

Resuming the subject of the Abohar sanctuary, the area of the twelve villages notified as the Abohar Game Sanctuary is 46,514 acres approximately (one acre equals to 4000 square metres). The proclamation by the Government of Punjab in respect of this sanctuary was made in the year 1975 A.D. Subsequently on 4th November, 1987 A.D., the Punjab Government banned hunting of wildlife in the adjacent village Gumzal, Panniwala and Haripura also. According to a census carried out in June 1989 A.D., the sanctuary had 40(X) blackbucks, 10,0(X) peacocks/peahens, 25(X) hare and 8000 parti ridges. The total Government staff to look after such a big sanctuary was only one inspector and two security guards who were equipped with neither any vehicle nor any fire-arm. In spite of these inadequacies, the wildlife thrives there, which speaks volumes of the vigilance exercised by the local inhabitants.

The organization has its branches in Punjab, Haryana, Rajasthan, Uttar Pradesh, Delhi and Madhya Pradesh. One of the activities of the organization in Abohar area is to sit in ambush on cold nights, waiting to surprise the poachers, should they come for their nefarious purpose. Such enthusiasm acts as a deterrent to potential offenders, and pre-empts killing of blackbucks and other animals. The organisation also extended cooperation in the year 1988 A.D. to the India branch of the famous international organisation viz. Beauty Without Cruelty in the latter's noble task of getting the merciless killing of karakul lambs in government institutes, for the sake of their pelt, banned by the Government. The path followed by the Sabha is tortuous indeed, but it is noble and self-rewarding.

The 'Beauty Without Cruelty' (B.W.C.) is an international charitable organisation, which was founded in Kent, England

in 1959 A.D., with Lord Muriel Dowding G.C.B., G.C.V.O., C.M.G. as its first President. The B.W.C. International's present Chairperson (in 1989 A.D.) is Miss W.M. Austin. The India Branch of B.W.C. was founded by its first Chairperson Ms Diana Ratnagar on 12th September 1974, who is also currently performing those duties from 4 Prince of Wales Drive, Pune (411040). The B.W.C.'s motto is "Beauty Without Cruelty is a way of life, which causes no creature of land, sea or air, terror, torture or death". Although the main thrust of the activities of B.W.C. (India) is against all commercial exploitation of all animals, for evidently, no species can survive for long the selfish, greedy and perverse utilization of its members, the B.W.C.'s domain of work covers a very vast range, flows as it from their total commitment to respect all forms of life. Even the lowliest viz. stray dogs, which are an object of many a gruesome cruelty by the municipalities, are not forgotten. The B.W.C. (India) advocates the use of an animal contraceptive like the TALSUR, developed by the National Institute of Immunology, New Delhi, named after Prof. G.P. Talwar and Dr And K. Suri who formulated this medicine. This injection aims to stop the unwanted growth of the dog population and has been found successful.

. . .

18

SOME EARLIER CASES

A few of the past cases wherein the Bishnois showed their valour in resisting shikar are recounted here. None of these cases pertains to A.I. Jeeva Raksha Bishnoi Sabha, the activities of which have been described in the preceding chapter. In what is now the Punjab province of Pakistan, there used to be a Muslim princely state of Bahawalpur, as a part of the British Empire in India till the year 1947 A.D. That State had a few villages mainly habited by Bishnois, who migrated to India on partition. Sometimes in the early part of the decade of nineteen hundred forties, A.D. a special train carrying foreign troops was passing on the railway line adjacent to the Bishnoi village, by name of Doonga Boonga. The village, as usual with other Bishnoi villages, was abounding with wildlife, and blackbucks were grazing there with impunity. The foreign troops were enthralled, and one of them could not resist the temptation to shoot, not knowing the repurcussions of shooting in a

prohibited area inhabited by Bishnois. As soon as the Bishnois heard the gunfire, they rushed to the scene. In the meantime the troops also had sent one of their retinue to bring the booty. He was held back by the Bishnois. In the din and noise that followed, the troops decided to move their train and to recover their camp follower only afterwards. The troop-train also suffered some damage, broken glasspanes, dented doors etc. On reaching Bahawalpur, a report was lodged with the police. A prosecution was launched against the Bishnois for attacking the foreign troops. The case dragged in the court for a few years, and was ultimately closed.

In another incident also in the Bahawalpur State which took place two or three years after the previous one, some employees of the state, who were jealous of the privilege accorded to the Bishnois, whereby shikar was prohibited in their villages wanted to 'teach them a lesson'. One of the maternal uncles of the Nawab of Bahawalpur wanted to go for a shikar. The jealous employees led him to a Bishnoi village by name of Roomawali without informing him that it was a Bishnoi village. The unsuspecting member of the royal family fired his gun at a herd. As could be expected, the Bishnois rushed and loud protests followed. The employees further exacerbated the feelings of the ruffled uncle of the Nawab saying that as a part of the royal family, he had his privileges, and the Bishnois could not stop him. The matter was reported to the Nawab who upheld the Bishnois' right, and took to task the erring state-employees who had misguided his uncle.

. . .

19

BISHNOI WOMEN AND COMPASSION

Once a ten year old Bishnoi girl was carrying a pitcher of water on her head. She stumbled and the pitcher broke, spilling the water. she started crying. Passers by tried to console the child, telling her that they would get her a new pitcher. That did not make her stop wailing. On further questioning she told that she was weeping at the fate which might have befallen the insects, as the water was unfiltered.

The above is only a story, but conveys the significance attached to compassion towards all kinds of life in the Bishnoi religion. The great poet-saint of the Bishnoi order, Udoji Nain has said, in the Rajasthani language, as follows :

*Jeeva anant jal maihy
paar ginati/nahin pavey
Ann chhano jal pivya,
paap pot sir aavay.*

In plain language, it mean that there may be countless insects in water, hence to avoid committing sin, water should be

partaken of only after filtering. This advice is a part of the 29 tenets of the Bishnoi religion. The need for this rule can be appreciated, when it is realised that in the northern and western Rajasthan even these days in the late nineteenth century (A.D.) it is mostly the rain water stored in underground water tanks, carried over from one rainy season to another spaced over the period of eight months, which is used for drinking purposes. City dwellers getting filtered water through municipalities cannot fully appreciate this precaution, unless they project their mind to the desert conditions.

It is well known that a number of organisms responsible for infectious diseases are spread by water. The slender thread like parasite, namely the guinea worm is carried, among other modes, by the medium of drinking and washing water. Even ordinary filtering of water by a piece of cloth, as is done by the Bishnois, would not permit this parasite to go into the human system from water, thus closing its one of the most important inlets. The importance of filtering of water in Rajasthan can be better assessed if we take note of the fact that as many as one third of those afflicted by this disease in India, live in Rajasthan.

In the story given at the beginning of this chapter, reference to the ten year old girl is incidental, but it serves to highlight that in their zeal for compassion Bishnoi women do not lag behind their menfolk. In the great Khejarli¹ martyrdom, it was four females, one mother and three daughters, who took the lead in sacrificing their lives. Out of 363 killed in at incident 69 were females. In the Ramasari incident² in the 1604. A.D. both the persons who sacrificed themselves were

-
1. Please see Chapter 10
 2. Please see Chapter 11
 3. Please see Chapter 11

Bishnoi women. In the Tilvasni incident³ it was a lady, Khivani Khokhar Bishnoi, who led the sacrifice, and there was one more lady Netu Nain Bishnoi in the team of the three. All these incidents were for protecting green trees. In yet another incident a Bishnoi lady, wife of Chaudhary Lekh Ram nambardar of village Roomawali, rose in protest against the maternal uncle of the Nawab of Bahawalpur sometimes during the decade of nineteen hundred forties A.D..

Another incident which took place in late nineteen hundred seventies or the early eighties A.D. relates to village Mehrana, near Abohar in district Ferozepur (Punjab). A Bishnoi girl Sharda Devi of the that village was cutting grass in her field, when some poachers fired at a blackbuck and killed it. Hearing the gunshot Sharda rushed to the fallen gazelle and lay over it and covered it with her body. The poachers pressed the barrel of their gun against the head of young Sharda and threatened her that she could meet the same fate as the blackbuck, unless she let the buck be taken away by them. Sharda remained undaunted. Seeing her defiance, the poachers got into a suspense. They weighed in their minds that a crime of man slaughter would not go unpunished, and may lead them to gallows. While the poachers were in this dilemma, the valiant girl seized the opportunity, and hit one of them with her sickle. This comely but not too tender a girl then pounced upon him and brought him to the village while others fled. In the village, he was produced before the villagers and the process of law was initiated. For her heroic deed, the All India Jeeva Raksha Bishnoi Sabha honoured her at the mass annual fair held at Mukam in Tehsil Nokha in District Bikaner.

A young fawn is suckled

Yes, a young one of the gazelle is breast-fed, but what makes the news? Do not the does suckle their babes? The fact is

that in the instant case, what makes the news is that the breast-feeding of the fawn was by its human foster-mother! This happened in village Nadhori of Fatehabad sub-division in District Hissar of the state of Haryana.

On the 10th May 1978 A.D. Mrs. Rami Devi wife of Mr Rameshwar Das Darnia Bishnoi (son of Mr. Sheo Nath) of the said village had gone to her agricultural field on routine visit. While she was there, she saw a gazelle (a doe) haltingly running towards her field. The doe would run for a distance and then sit down for a while and again run. Rami Devi saw that the doe was being chased by the hunters. Seeing her, they took to heels. Finally, the doe fell down and could not get up. Rami to her horror found that the doe had delivered a fawn and had run away. Rami Devi waited till the evening for the doe to return, but it did not. Rami then wiped the infant clean with a piece of cloth and brought it to her house.

Cow milk was offered to the infant gazelle in a bowl, but it could not partake of it by that mode. What was to be done then? Rami who was wet-nursing her own baby those days and was therefore, in a position to wet-nurse herself provided the answer. She fed her son with one breast and the infant gazelle with the other. The infant gazelle who had famished after birth, soon gained in strength. At night the infant gazelle slept on the same bed as Rami Devi with the mother in the middle, her natural son on one side, and the foster on the other, and this went on night after night. Both young ones grew without any problems. The young gazelle would frolick in the house following Rami Devi all over, as a human child does to her mother. After a few weeks when the gazelle was tall enough to reach the teats of a goat, he was introduced to a goat who suckled it. Thereafter the inevitable separation came. The young gazelle having been domesticated could not be released to the jungles, as he would have been exposed to the risk of

wild animals, and might not have been able to fend for himself. It was decided to give him to the zoological garden at Hissar. As the parting took place, tears could be seen flowing from two pairs of eyes-the mother's and the gazelle's.

. . .

20 AMAR THAAT

According to the teachings of the great Guru Jambheshwar, Bishnois are prohibited from keeping goats as pets. At the same time, they are enjoined to maintain a (hapless) category of goats in public institutions, known as Amar Thaat where they are fed and looked after till death doth them part. The relevant verse composed by Guru Jambheshwar's disciple Udoji Nain reads:

*"Bakra paaley thaat Kar,
tanni nahin nakho."*

It means that the goat should be looked after in Thaat and that bullocks should not be castrated. These Thaats are centers for keeping and feeding any goats that may be left there, as no longer wanted by their owners. Such a lot could therefore fall upon she goats past their reproductive age, and hegoats of any age. In practice, only the hegoats of all ages are left there, for the owners keep even the non productive she-goats, who may have served them with supply of milk in their prime, for sentimental reasons. All the animals kept in the Amar Thaat are saved of the butchery.

Prima facie, there is incongruity in the two decrees, one against keeping of goats as pets and the other for maintaining them in Thaats. The rationale for these two decrees, which are not contradictory but are complementary, is simple. The intention of keeping the helpless goats in Thaats is to save them from the butcheries as a part of Guru Jambheshwar's edict for compassion for all animals. The Great Guru has said in a verse¹:

"Kinnri tharpi chhali roso kinnri gadar gai

Sool chubliljey'karak duheli to hai jayo jeev na ghai."

By this verse, the Guru ordains against slaughter of goats and sheep. He asks the butchers as to by whose (moral) sanction do they kill sheep and goats? He says that even a prick by a thorn is so extremely painful to human beings, then is it proper to indulge in those killings? He advises that these animals should be treated as own kith and kin, and should not be killed or subjected to any pain. In a subsequent verse, the great Guru has reminded that these and other milch/bovine animals serve the man with supply of milk and in many other ways, and it is sheer ingratitude to subject them to cruelty. Elsewhere as well, the same sentiments have been echoed by the great Guru while preaching to his disciple Nathaji²:

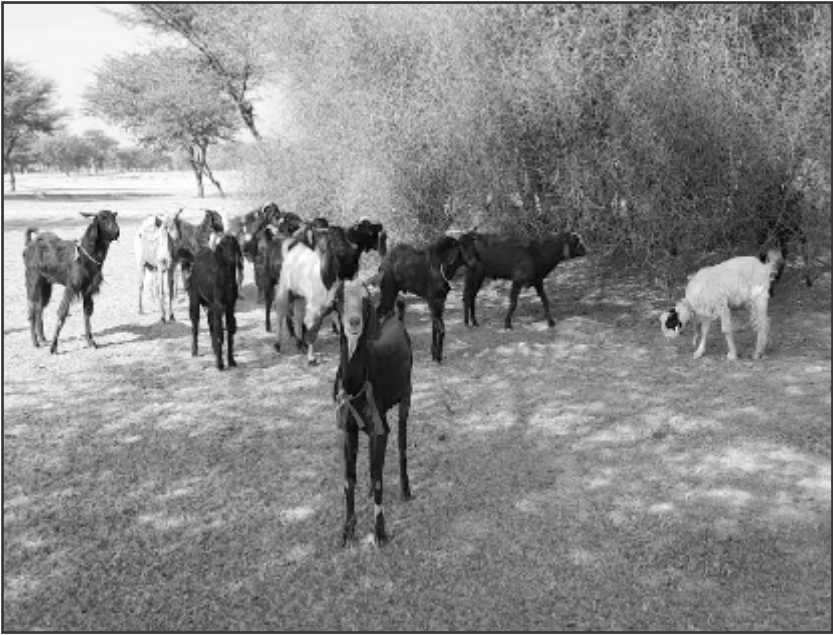
"Chhery bheri aadi ko par upkari mann

Raksha main tatpar rahey so budhiman."

It means that goats, sheep etc. are rendering service to others, and the one who protects them is wise.

Now let us consider the reasons for prohibiting the

-
1. The verse is numbered eight in the famous epic 'Sliabd Vaani, published by Shri Swami Gyan Prakash ji, Shri Bishnoi Mandir, Rishikesh, Dist. Dehradun, UP. India
 2. Jambha Sagar



The Amar Thatat at Village Rotu

Bishnois from keeping of goats as pets. A she-goat delivers one to two litters at a time, and the frequency of delivery is about twice a year. By probability, every she-goat would be delivering one to two he-goats in a year (in addition to one to two she-goats), and these he-goats because of their numbers may land up in butcheries. Even if it is presumed that the Bishnois would not send them to slaughter-houses, their maintenance as dry animals would cause problems. The pragmatic course, therefore, is that the Bishnois be enjoined not to keep them as pets, and the time and energy thus saved, be utilized in keeping other domestic bovine animals.

The second reason against keeping them as pets is on grounds of hygiene. The frequent delivery of litters would create problems to the hygiene-conscious Bishnois, who are enjoined to observe (thirty days') quarantine even in case of human child birth.

Yet there may be a third reason, which would be loved by all conservationists, Bishnois and non-Bishnois alike. Goat is responsible for considerable interference with the ecological system. The thorniest bush provides it most succulent meal and it can reach almost anywhere to get at the shrubs. The ground cover, which ultimately affects the forests, is destroyed. Natural habitat of birds and lizards is also destroyed. According to a reliable news item published in August, 1984 A.D. the U.S. Navy had to employ helicopters for catching goats from the island of San Clemente, off the coast of California, which was being used for conserving certain endangered species there, including certain rare birds and lizards. The goats destroyed the habitats of these rare species, exposing them to mortal dangers, defeating the efforts for their conservation. Since animal lovers in that country would not permit the killing of the goats (a very gratifying thought indeed), helicopters had to be employed for capturing them. They would fly over them and throw a net to hold them under. A party on the ground would then catch them.

Reverting to the title-subject of this Chapter, namely, Amar Thaat, at the time of observation by the author viz., in 1987 A.D. there was only one Amar Thaat in whole of the country. This is in village Rotu already familiar to the readers. Till sometimes during nineteen hundred sixties (A.D.) there were two more Amar Thaats, one at village Mukam in Tehsil Nokha of District Bikaner, and the other at village Polas in Tehsil Degana of District Nagaur both districts being of Rajasthan. The two have since closed down, admittedly a retrograde step from the Bishnoi point of view.

The mode adopted for the maintenance of the Amar Thaat (at Rotu) on a community basis has assumed an interesting pattern. As a rule, on the day following the Holi festival, Bishnois of various villages in Rajasthan, Haryana and Punjab

assemble at their respective Bishnoi temples and observe their fire ritual. Such a congregation takes place at the temple of the Rotu village as well. On that occasion a public auction is carried out there for the annual contract of the Amar Thaat to be let out from the next day till the next corresponding festival. The bidders, who may be Bishnois or non-Bishnois, bid as to how much cereal, they would levy on each Bishnoi family of the village for the maintenance of the Amar. Thaat. Total number of Bishnoi families being known, and question of anyone not honouring the tradition being inconceivable, the bidder is in effect bidding for the total quantity of the cereal in lieu of the upkeep of the Thaat for one year. The lowest bidder gets the contract. It is also a part of the tradition that this levy is made only on the Bishnoi families, although the goats are, as it is evident, from non-Bishnois only.

An interesting incident, which took place in February/March 1983 A.D. would reveal the working of the Amar Thaat at Rotu. A person by name of Ramjas, who was resident of the same village, had successfully bid for the contract of the Amar Thaat at the relevant festival of the year 1982 A.D. The bid was for four kilograms of pearl millet per Bishnoi family. Although Ramjas had bid, he did not have enough members in his family who could perform the duties of the Amar Thaat along with their other chores. Hence he sub-let the contract to another person of the village. This person had a friend, who resided in a neighbouring village. The two friends, neither of them being a Bishnoi, got into a conspiracy to steal two goats from the Amar Thaat, and sneak them into the said neighbouring village as loitering animals. The custom there was that any unclaimed loitering animals were put to auction by the village panchayat (council), after the village headman had certified that the animals were really unclaimed.

At the other village, the sub-contractor's friend who lived

there and had conspired with the sub-contractor of the Amar Thaat, suppressed the fact that those goats in fact belonged to the Thaat and it was he who had brought them. The headman fell a victim to the fraud. A certificate to the effect that the goats were unclaimed was unwittingly rendered by him and the goats were auctioned. At the auction, the same villager purchased the goats at a throwaway price, and subsequently sold them to a butcher at a handsome profit. After sometime, the headman came to know that he had unwittingly become an instrument in that criminal and unholy act. He reported it to the villagers of Rotu and after necessary enquiries, it was confirmed that the conspiracy, theft and fraud were in fact committed, as a result of which the poor goats found their way into a slaughter-house.

In the Bishnoi villages, there is a traditional custom relating to religious offences. If someone is found guilty of a religious offence, he is fined by the village-elders with a levy of what is known as lai, which is of course subject to his willingness to submit to their jurisdiction. The lai is an admixture of coarse cereals such as the pearl millets (baajra), guwar, sorghum (jawar), and a crude pulse such as the moth; and this is customarily used for feeding wild birds and other wildlife every day at Bishnoi temples. The lai collected as a fine is added to the temple's stock of bird-feed for the same purpose. It is optional for the person being imposed the levy of the lai to defray it in cash or kind, as convenient to him.

On the day following the Holi festival of the year 1983 A.D., the usual congregation of the Bishnois took place at the temple in village Rotu. After the fire-ritual, the question of the two goats of the Amar Thaat having been stolen and fraudulently sold to a butchery was raised. It was established that Ramjas, the person who had actually bid at the auction and taken the contract, did not come to know of the incident before it took place. He pleaded 'not guilty' to the charges of theft and

fraud, but accepted his moral responsibility for his failure to have overseen that nothing went wrong at the Amar Thaat. The other two involved in the sordid affair viz. the sub-contractor and his friend of the other village pleaded guilty to all the charges, namely, of conspiracy, theft and fraudulent purchase of the goats. Ramjas and the sub-contractor were each fined by a levy of rupees one thousand worth of lai and the third accused rupees five hundred worth.

Since the amounts were large, those fined could not make immediate arrangements for depositing the lai worth those amounts or for giving cash in lieu. Accordingly the meeting, which had commenced in the morning, carried on till late at night. By about midnight, the two residents of Rotu, namely, the contractor Ramjas and the sub-contractor could arrange to pay cash in lieu of their lai levies, but the third who did not belong to that village was still having difficulty. To find a way out of the impasse, his village headman who was also there, offered to make payment instead of that person. At first it was respectfully declined, as the congregation did not want an innocent person to suffer for someone else's fault. However on his assurance that he would collect the amount from the person fined, and the latter promising to reimburse the amount to his headman at the earliest, the offer was gratefully accepted and the marathon meeting came to an end.

As a result of this incident, an improvement in the working of the Amar Thaat has also come into effect. It was decided that on each Amavasya day (i.e. the no moon day in the middle of the month by the lunar calendar), the contractor of the Amar Thant would report at the village temple regarding additions and subtractions to/from the number of goats held at the Amar Thaat so that the recurrence of such incidents could be prevented.

It is of interest that, while use of iron sickle or any other

device for plucking leaves from green trees is prohibited among the Bishnois, this rule is relaxed if those / leaves are required for feeding the goats in the Amar Thaat. Their 'reason' is that both, namely the Amar Thaat and the trees are of Guru Jambheshwar, and hence a sickle can be used for taking leaves from the trees!

The incident at the Rotu Amar Thaat described earlier demonstrates as to how well knit the Bishnoi community is in their villages. The decree of the elders levying the lai was honoured willingly by all the three persons fined, even though one of them had much difficulty in arranging for it. In his case the village headman came to his rescue. Such respect for village elders is helpful, among other things, in the maintenance of the ecology of the area. Should anyone be tempted to fell green trees, or indulge in the killing of animals or birds, surely he would be socially boycotted. This is how the great ecological code handed over by the great Guru five centuries ago has been preserved over the generations.

. . .

21

JAMBHA SAROVAR

Twenty five kilometres due north-east of the subdivisional town of Phalaudi in the district of Jodhpur, lies a small village bearing the name of the great Guru himself. The village is known as Jambha.

Its population at the time of observation during the mid 1980's (A.D.) was in the region of a couple of thousands, comprising about 600 families. Two-thirds of them were Bishnois, and the rest were Muslims, Meghwals, Rahbars and Raiputs. Here exists a huge tank built by Jambhoji. Its construction commenced in the year circa 1510 A.D. corresponding to the fifth day of the dark fortnight of the lunar month of agahan (which was a Thursday) of the Samvat Year 1566 of the Vikrami Era, and it was completed sometime in the year circa 1514 A.D. This water tank is approximately 2000 metres by 400 metres, and 25 metres deep. The tank is never dry, though its waterlevel keeps changing with

the amount of rainfall in a year. The water is slightly saltish in taste. The famous salt mines of Rajasthan are only about thirty kilometres from here. The water tank is known by several names, viz. lambholay, Jambhsar, Jambhsagar and Jambho Talab. The circumstances leading to the construction of this water tank are quite interesting, and bring out the greatness of the Saint Jambheshwar. Rawal Jait Singhji, ruler of the state of Jaisalmer had constructed a water tank in his state. That tank was known as Jait Samand, and he wanted to have it inaugurated by Saint Jambheshwar. The saint agreed and reached along with his followers, camping enroute at a village by name of vasanpi, which too formed part of the Jaisalmer state.

The Rawal received the Saint at that village with great honour. It is said that he covered the distance from Jaisalmer walking rather than using a vehicle. All of them, the Saint and the Rawal proceeded to the site of the newly constructed water-tank viz. the Jait Samand. The Rawal requested Jambheshwar to make any demands from him. He made the following four demands :-

- (a) The animals brought for slaughter for feasting the congregation on the occasion should be let off.
- (b) Pregnant animals should be protected in the State at all times,
- (c) Hunting in the State by a section of the people particularly notorious for killings viz. the Bawarias, should be banned, and
- (d) All such stolen cattle, which have a proper identification, should be returned to their owners even if they did not reside in the State.

All these demands were accepted by the Rawal, and a royal proclamation was issued to that effect by the beat of



The Jambha Sarovar

drums, as was the practice those days. The ruler, as a further mark of respect for the great Saint, placed a big purse of money at his feet. The Saint declined to accept it, whereas Rawal insisted that he must accept since as he pleaded that, the money had already been withdrawn from the treasury for a noble purpose and could not be returned. It was stressed that Guru Jambheshwar could spend it in any way he desired. The Guru then desired that it should be used for construction of another water tank at a suitable site. He said that 25 kilometers (seven kosas in those days' measures) due northeast of Phalaudi there was a huge barren land, where they should look for yellow and black soil, and a tank should be dug there, so that it might provide succour to the cattle that graze there, and to the men who graze them. He added that in the hoary past also, there used to be a watertank at that site, which was used by the Kapila Rishi and the King Sagar (of the scriptures) for doing penance. With the passage of time, that tank had become extinct.

The digging of the tank soon started thereafter and for the first six months the Saint himself supervised the excavation.

One thousand seven hundred followers of the Saint participated in the digging. The work continued for another three years before the construction was complete. The devotee-king of Jaisalmer though not a Bishnoi by faith, installed a marble throne at the spot which had been sanctified by the Saint's being seated there for six months. This exists even to this day (viz. in mid - 1980's A.D.). About a hundred years ago the Saathri there was enlarged. As has been stated earlier, a Saathri in Bishnoi parlance, is a place which has been visited by Guru Jambheshwar. At such places a temple is constructed to mark the spot.



Bishnoi Men & Women Desilting the Jambha Sarovar Tank

There are two lineages of the priests, who manage the affairs of the Saathri on an annual basis. Those are, namely, the priests living in the western portion of the village Jambha,

known as Aathuni Jagan, and the priests living in the eastern portion known as Aaguni Jagan. Perfect bonhomie prevailed between the two lines. The year for the purposes of this management starts from the annual bigger fair which takes place on the fifteenth day of the dark fortnight of the lunar month of Chaitra (around March / April). The smaller fair at the tank takes place on the full moon day of the lunar month of Bhadrapad (around August/ September) These fairs started in the year 1592 A.D. at the behest of the great poetsaint Veelhojj The bigger fair is generally attended by 30,000 to 40,000 Bishnois, and the smaller by about 10,000 or so, apart from a regular stream of pilgrims visiting round the year.

Great sanctity is attached by the Bishnois to removing earth from the beds of water-tanks, so as to prevent them from silting. Bishnois do so in thousands on these festivals. Both men and women assiduously take earth out from the tank and deposit it away from the shore. Further, there is also a belief among the Bishnois that spending money on the deepening of water-tanks fulfils their wishes. So, many Bishnois declare various amounts of money to be spent by them for deepening of the water-tank if their wishes got fulfilled.

The utility of this huge span of water, namely, the Jambholav water tank in this arid area under extreme desert conditions, is of a very high order. The soil is extraordinarily hard, and has a large proportion of salt in it, rendering it particularly inhospitable for any trees to thrive. Where there are so few trees, the value of a water tank in a hot barren land with a scorching sun at the top, becomes all the more significant.

Constant efforts to prevent damage to the water-tank by soil-erosion, and silting of its bed, have become a part of the Bishnoi culture here.



A Bishnoi Farmer'with his Camel

While removing the earth from the tank in the course of its traditional deepening, great care is taken to the point of attaching religious sanctity, so as to ensure that all the earth so removed is dumped across the bund, which is a kind of embankment which has got formed in the course of removal of earth undertaken for over hundreds of years. This insistence on dumping the earth on the other side of the embankment prevents the soil from being washed back into the tank. At the same time it helps in a larger amount of rain water being conserved in the tank. The height of the boundary of the tank also gets raised in the process, which lessens the damage due to duststorms. Sand-raising storms are a common feature of the climate of the place and the higher boundary results in lesser sand being deposited in the tank by the winds. As the Bishnoi men and women dump the earth, they recite holy invocations, the meaning of which is that they are dedicating the service to Lord Vishnu and the Guru Jambhoji.

Two Committees of the local Bishnois under the title of 'Mela Committee' and 'Shri Jambheshwar Tree Plantation Committee' have also been established here. Apart from managing the affairs of the fairs and the constructions, these are also actively engaged in planting trees and making them sustain the rigours of inhospitable climate and terrain that obtain here. It depends upon the religious sentiments of the Bishnois for its finances.



A Farmer with a Camel-Cart in desert

Selection of the village Jambha and other sites in the most difficult desert conditions for his special attention shows the great Saint's concern and affection for the weak and the poor, man and animal alike.

. . .

22

VRINGALI SAROVAR

As stated in the previous chapter, an essential part of the culture of the followers of Guru Jambheshwar in Rajakthan is to shower all care and love to water tanks. They get new water tanks constructed, and have the existing ones periodically deepened and desilted. They also get their shores cleared of all garbage before the onset of the rains so that the tanks do not get polluted. One such place where this practice is followed with great eclat is the Vringali Sarovar, also known as Vringali Naadi or the Varsing Vaali Naadi. This is located about six kilometres south-west of a village by name of Jaanglu, in Tehsil Nokha of District Bikaner. Jaanglu itself is located 15 kilometres west of Deshnok, a bigger town of Rajasthan.

The great Saint during his tours once halted at about two kilometres from the place where the tank is located now. Inhabitants of the local villages called on him and complained of scarcity of water. The Saint told them that

there was a spot for sweet water in the vicinity, and indicated the site to them. The villagers went there and found to their surprise, sweet water coming out of a small hole in the earth, and the supply of water did not seem to diminish. The Saint advised them to dig a water-tank around there, which they did. He warned the villagers against making any levy, tax, or charge for the supply of water, which should be freely available to everyone. Bishnoi resident of village Jaanglu whose name was Varsingh Baniyal, got the water-tank constructed, and that tank has been named after him. Five centuries have elapsed since then, and the water-tank has proved to be a boon to the inhabitants of the villages around. These are five vilitiges viz Kisanasar, Dhinsri, Bandhaala and Udasar in the vicinity. Of these five, only Jaanglu can be considered as a Bishnoi village, the rest being inhabited by a majority of non-Bishnois. Even Jaanglu had only 50% Bishnois out of its population of 4000 at the time of the observation in 1984 A.D.

*Vringali Sarovar*

The water-tank is about 350 metres in diameter, with its maximum depth said to be about 100 metres. On its south side is a huge mound of earth, which has risen out of the soil removed from the tank in the process of deepening. The process of deepening goes on continuously for six months every year. As in the case of Jambholav tank, here also Bishnois offer amounts for deepening of tank, should their wishes get fulfilled. For hundreds of years, a community of a backward class viz. Oads hailing from a neighbouring village is employed for deepening the tank. The work was given to them on a contract basis. The rate, in 1984 A.D., was rupees 150 for deepening by one yard¹, a patch of ten yards by ten yards. All the money is exclusively contributed by the Bishnois, though among the beneficiaries, they constitute only a small percentage. Water never dries in the tank, though its level goes up and down seasonally. Camelcarts can be seen at various times of the day with their water-tanks being filled. Cattle and other quardttpeck are seen taking rest under the Khepi, peeped and bordi trees growing all around the tank, and protecting themselves from the hot blazing sun. A platformshd with four rooms is located on its northern side, where Bishnoi fire rituals are carried out; and bird-feed is also stored there. The trees around the water tank arc a haven to the birds from the scorching heat, and the tank provides them with sweet water. The birds which frequent the tank arc peacocks, geri, partridges, Great Indian Bustard, Koel and the beautiful acard, which dives on to the surface of water for finding its prey viz. fish. Water supply being naturally available to them, only the birdfeed is provided to them by the Bishnois every morning, in slight modification to their usual custom of providing both feed and Water.

1. A yard is equivalent to 0.9144 metre. The metric system was still to become popular in this region. when observed by the anther in mid -1980's A.D..

23

JAANGLU SAATHRI

Six kilometres due southwest of the village of Jaanglu amidst a jungle of kankeri, kumuth, peepul and bordi trees lies the Jaanglu Saathri, where the Saint Jambheshwar had stayed. About three kilometres from here is a place where utensils were miraculously found for serving the villagers with meals, who had called on the Saint during his visit. A room constructed later at the site marks the place. As is usual with other Bishnoi religious places, birdfeed consisting of pearl millets (baajra,) sorghum (jawar) and moth (vigna aconitifolia) (and optionally guar i.e. *Cyamopsis tetragonoloba*, and melonseeds) is given to the birds, gazelles, hare and other wild animals. Here it is done twice a day. Water is also given to them from earthen crucibles about a metre in diameter, which are permanently placed on the ground and water is filled into them twice or thrice every day.

In addition to the Saathri , there is also another Bishnoi

temple in the Jaanglu village. This temple houses the great Saint's personal dress (a gown), and a receptacle, which he had once used for seeking alms¹. This Bishnoi temple at the time of the observation in April 1984 A.D. was under expansion. A green tree happened to be there. Naturally it is unthinkable for the Bishnois to chop off even its one branch. Accordingly, the construction has been tailored to fit in with this living tree. The tree has been brought into the fold of the enlarged temple by providing the roof with an opening, so that the trunk of the tree emerges into the sky from this opening. To a nonbeliever, it may perhaps look an exaggerated execution of the Bishnoi tenets, but is it really so? It is not. It is the meticulous observance of the faith, which has made the Bishnois the conservators of ecology in their habitations amidst twin pressures of population and industrialisation.

. . .

1. The purpose of seeking alms was to put one of his disciples on the right path. in order that the disciple gave up his false pride while giving alms.

24

LOHAWAT SAATHRI

One hundred nine kilometres north-west of Jodhpur on the Jodhpur-Pokaran-Jaisalmer section of the Northern Railway, lies a railway station by name of Marwar Lohawat, which forms part of the subdivision of Phalaudi of district Jodhpur. It is a small town with a population of a few thousands only. About three kilometres due east of this town is the Lohawat Saathri. This Saathri consists of a room for performing the firerituals, and four rooms for the lodging of the priest and the visitors. Storerooms for the storage of foodgrains for human beings, and equally importantly, for the storage of bird feed for the birds are also existing there. In addition, the water crucibles for providing water to birds, antelopes and other wild animals are also there as permanent fixtures, in accordance with the usual practice that obtains at all Bishnoi Saathris and Bishnoi temples in Rajasthan.

The Saathri was constructed by Maharaja Maldevi of Jodhpur. The Saathri is a repository of a piece of stone with an imprint of a toe, which

is said to be that of the great Saint Jambheshwar. This Saathri is located in a desolate sandy stretch, by the side of a ridge of sand. Antelopes abound in the jungle and so do peafowls, pigeons, partridges, crows and geri. All of them, the birds and quadrupeds alike, share water from the same set of kundis. The refilling of these kundis is done from the underground storage tank of rain-water (viz. kends). The work of refilling these kundis twice a day was strenuous, beyond the physical capability of the old priest Sujaramji incharge of the Saathri at the time of observation (in 1984 A.D.). The work of feeding the birds and wild animals with water and cereals is far too important to be neglected by the Bishnoi ethos. Hence a way out had to be found. A Bishnoi male from an adjacent village voluntarily stayed here to work for four months, followed by



A wild fawn being handfed; and a dancing peacock ,

another and this process goes on for eight months, excluding the rainy season, every year. During the rainy season the kundis are not filled, for there is supply of water naturally available to the birds and the wild animals. Volunteers year after year perform this duty willingly with full conviction that they are earning special merit by serving the creatures of the Lord. The old priest belonging to the lineage of Bhalundia Bishnois saw to it that all this went on without a break. At the Saathri, like at other Saathris, one can see harmonious coexistence of human beings, animals and birds living in unison with nature, trees, shrubs and sand. A very rewarding sight indeed.

On one of his subsequent tours in September 1987 A.D. to Rajasthan, which was then under the grip of one of the most severe droughts in living memory, the author learnt with a feeling of great satisfaction that a volunteer was working at the Lohawat Saathri even during the rainy season to fill the kundis. It was so, since there was little rainfall that year; and in the absence of water, the wildlife there could have perished. This showed the concern and the 'personal relationship' existing between man and animal.

The common belief about the construction of Lohawat Saathri is as follows. Once one Mool Chandji, who was the royal priest of the ruler of Jodhpur State Maharaja Maldevji, happened to visit the village Jambha, where the great Saint Jambheshwar was getting the water-tank constructed (please see Chapter Twenty one). He came back wholly impressed by the greatness of the Saint, and suggested to his ruler Maharaja Maldevji to go and pay obeisance to the Saint. They accordingly started for Jambha, but in the meantime, the great Guru too had started from Jamb-ha, and they met on the way at Lohawat. The Maharaja was given a spiritual discourse to his full satisfaction. The Guru requested the Maharaja to have their

refreshments, but the king was hesitant thinking that the Saint's resources were too meagre to look after the big royal party. The Saint, however, insisted and a sweet pudding was prepared, although in a very small quantity. The preparation was then covered by a sheet of cloth, and later this preparation was found sufficient not only for the large royal party, but also for all the residents of village Lohawat, who were fed after the royal party had been treated.



Fire Rituals - a regular feature at the temple

The king, in token of his reverence for the Saint, got a building constructed at the spot where he had met the Guru, to commemorate his meeting. That construction got demolished due to ravages of time. However, in the year 1794 A.D. the present buildings were raised by the efforts of Mahant Gangaramji, followed by his pupil Mahant Gumani Ramji. Later, Mahatma Vrindavanji and Mahatma Balak Dasji looked after the Saathri.

25
**LALASAR
SAATHRI**

Saint Jambheshwar, on attaining the age of 85, moved to Lalasar (about 54 Km south-east of Bikaner) which was an extremely solitary place then. Even at the time of observation (in 1984 A.D.) about four and a half centuries after the Guru's stay, the place continued to be wholly desolate. In one square kilometre around the spot, there were not more than five to ten persons living. The place where the Saint lived is on about a 80 metre high sand-dune, and a kanketi tree stands there. All around for several kilometres there is a thick forest of desert trees viz kumuth, bordi (i.e. wild berry), kankeri and babul (*Acacia nilotica*). The Kumuth trees are very rich in gum of the highest quality. Here by the side of the kankeri tree, the great Saint spent last few months of his life. A Bishnoi Saathri has since come up with rooms for the fire ritual, residence of the priest and visitors, storage of foodgrains and of course for storing the obligatory bird feed. As is usual at Bishnoi holy places,

the water basins for providing the birds and wild animals with drinking water viz. the kundis are filled twice a day, and a feed is given to the birds and animals e.g. gazelles, hare, once a day. Sixteen Bishnoi villages¹ are within the 'religious jurisdiction' of this Saathri i.e. to say, the Bishnoi inhabitants of these villages come here for their periodic religious meetings and they also contribute for the upkeep of the Saathri.

According to popular belief, the great Saint left his mortal frame and attained salvation at Lalasar on attaining the age of 85 years and three months in the year 1536 A.D., corresponding to the ninth day of the dark fortnight of lunar month of Margshirsha of Vikrami Samvat 1593.

Drinking water supply at the Saathri is from an underground water tank storing rain water (i.e. a kund). There is also an open water-tank about 500 metres away from the Saathri, which is unfortunately in a state of disuse.

An old resident² of an adjacent village by name of Kuchor gave (in April 1984 A.D.) an eye-witness account of a miracle, which he saw about 60 years ago. The priest of the Saathri had invited all the residents of the sixteen villages for a feast and 500 kg. of sugar was used for making the pudding on that occasion. Water was brought from outside in camel carts and bullock carts, yet it fell short. The priest felt frustrated. In a state of despair, he sat down for intensive prayers, so also the rest of the people. About an hour later, a solitary patch of cloud which was far away on the northern side, came overhead and there was a downpour filling the open pond to the brim. It

-
1. These villages are Samthar, Ktiehor, Itania, Sandhu, Gaitu, I lanunda, Madio, Mukam, Nimdasar, Himmalsar, Kankro, Naugaon, Jasarasar, Ootsar, Boo and Raisi Sar.
 1. Shri Bhagirathji, son of Shri Ram Narain Jaani, 76 years old in 1984 A.D..resident of village Kuchor.

rained heavily at the Saathri and in its immediate vicinity. The crisis was averted.

Several hundreds of acres of jungle around the Saathri are attached to it, which are being kept free from any exploitation. Desert flora and fauna are thriving, much in the interest of maintaining ecological balance in this arid area. It is a classic desert biome flourishing in all its glory here.

. . .

26

AN OURAN

A unique place in every Bishnoi village in Rajasthan is what, in their dialect, is called an Ouran. The word is derived from the Sanskrit term Uparanya meaning a mini-forest. Every Bishnoi temple must have one, every Bishnoi Saathri must have one, and every Bishnoi village must have one or more depending upon the size of the village. The Bishnois living in Dhaanis (huts located at their fields) also endeavour to have at least one Ouran for several Dhaanis.

What does this 'miniforest' constitute ? It is an enclosure of length and breadth ranging from some fifty metres to several hundreds of metres. A barricade made of stone pillars or thorny bushes (depending upon local availability) may be put, if the intention is to confine its use merely to the birds, while denying access to it to wild quadrupeds like the hare, jackals and antelopes. But if the latter are also to be let in, no barricade is put up. This has been subsequently explained in this chapter.

The object of the enclosure is to earmark a place where wild birds and/or wild animals can be fed every morning, and water can also be provided to them. The bird feed is known as Choon in the Bishnoi dialect. As has been stated earlier also, it is a mixture of cereals such as the pearl millet or bajra (*Pennisetum americanum*) and a kind of pulse known as moth (*Vigna aconitifolia*), with the optional addition of a cereal used as an animal feed, namely gum, (*Cyamopsis tetragonoloba*). This last named i.e. gum is added only if wild animals are included in the 'clientele' of the Ouran. Seeds of water melon or mung are also added if there are peafowl among the birds that visit the Ouran. These water melon seeds, known as matira ke beej is a delicacy for the peacocks, taken by them with great relish. While the Ourans are always meant for their use by wild birds e.g. peacocks, pigeons, partridges, crows, vultures, ordinary house-sparrows, parrots, geris, krishn-ehiris, souchiris, the discretion to include the wild animals within its scope depends upon easy availability or otherwise of food to them in the normal course. They are included if food is not easily available to them, such as around Lohawat Saathari and Lalasar Saathri; otherwise they are not included. In case they are excluded from the purview of the Ouran, water is still provided to them by filling the permanently fixed earthen basins by the side of village wells. In the Ouran itself, water is provided in earthen basins viz kundis which are filled twice or thrice every day. If water is locally available at the Ouran, it becomes a source of great relief to the Bishnois managing the Ouran, for otherwise they may have to cart it for the birds / animals, along with supply for themselves, even from great distances using their camel - carts or bullock-carts.

A volunteer feeds the birds (and the animals) with the throw of the feed by his fists every morning at a fixed time. The birds and animals recognise him in course of time and



Crows drinking water from a Kundi

fearlessly move close to him. The quantity given every morning depends upon the size of the Bishnoi community 'attached' to an Ouran. At a place like the Ouran attached to the Rotu Saathti, as much as 40 kilograms of feed is offered every morning. Only birds are fed at this Ouran. At the time of observation by this author in the year 1984 A.D, a volunteer, who was deaf and dumb, fed the birds every morning at that Ouran, and two Bishnoi women had, taken the responsibility of keeping the kundis filled up with water.

How is the collection of these feeds made on a community basis ? It is a custom among the Bishnois to congregate at their temple on the day following Holi, offer oblations to the sacred fire and physically deposit their contribution of the feed at the temple godown. This godown is maintained on a community basis. No family's contribution, speaking by and large, is ever less than forty kilograms. A volunteer maintains a list of the contributions so made. It is



Wild birds being fed

significant that no weighing is done at the temple. The concerned family has to bring the quantity declared by him after weighing. As stated earlier in the chapter on 'Amar Thaat', this occasion namely the assembly on the day following the Holi festival is also availed for collecting any fines (i.e. lai in the Bishnoi dialect) in terms of bird feed (i.e. Choon in the Bishnoi dialect) for religious offences, provided that the offender willingly submits himself to the village elders' jurisdiction which is invariably the case. The one who is levied the lai is at liberty to discharge his fine by giving it in kind, or by paying cash in lieu, which is exclusively used for procuring the bird feed. The religious offences for which this fine is imposed may include cutting of green trees, or someone's complicity in hunting. Participation in hunting is intentionally not mentioned here, as it is un-thinkable that any Bishnoi in this region would ever engage himself in hunting, although an

odd person in course of several years may collaborate with someone doing shikar.

It is indeed a very gratifying sight at the Ourans that even the smallest birds drink water, with hardly any timeinterval from the same pot as the bigger birds. There partaking of the bird - feed is all the more interesting since all of them, big and small, partake of the choon offered at the same time by the same fist in the same courtyard. For this period of time, they forget their natural animosity towards each other. Such a metamorphosis in their habits is caused only because the followers of the great Saint Jambheshwar have been rigorously following the path of compassion shown by him, for the past five centuries without a break. The generations of birds one after another have been exposed to the same regimen, viz. of being given bird feed without any exception or discrimination in an atmosphere of goodwill and cordiality, while they do not have to struggle for it. For this reason it becomes a part of the nature of these birds to forget their instinctive enmity with each other for that limit-ed duration of time in that milieu.

All this is a very rare spectacle for the world in general, during the penultimate decade of the Twentieth Century (A.D.), though it is an every day occurrence in the Bishnoi villages. It is fortunate that almost all the places mentioned in the foregoing chapters are located well within hard desert areas, not served by proper roads or conveyances so that access to them is indeed difficult, and those villages have thus been spared of the influence of the ugly aspects of modern civilisation.

. . .

APPENDIX 'A'
(Chapter 1 refers)

**EXTRACT FROM RAJASTHAN DISTRICT
GAZETTEERS (GANGANAGAR) 1972 (A.D.)**

BISHNOIS

Bishnois derive their name from Vishnu as they lay great emphasis on its worship. They embraced 29 articles of their faith at the instance of a Panwar Rajput ascetic of village Pipasar (Nagaur district) named Jambhoji towards the end of the 15th Century.....'.

Their chief occupation is agriculture and they are good at that. They are noted for their strength, hardihood and longevity. A Bishnoi can easily be recognised by his typical features. They are strict vegetarians and will not assist or favour even hunting of wild animals. Bishnois have their own priests, called Thapans, who officiate at their ceremonial functions. There are ten centres in the country, which are considered sacred by them. Mukam, a village in Bikaner district, is one of these sacred places. Jambhoji was buried here and his samadhi was erected at this place. The Bishnois of the district visit the shrine in large numbers twice a year to pay their homage to the saint.

APPENDIX 'B'
(Chapter 4 refers)

**EXTRACT FROM THE IMPERIAL GAZETTEER OF INDIA -
VOL VIII (ORIGINAL PUBLISHED IN THE YEAR 1908 A.D.)**

FAMINE

In a desert country like Bikaner, where the rainfall is precarious, and there is practically no irrigation, famines and scarcities are not uncommon visitors. A general famine is expected once in ten years and local failure once in four; extensive emigration is the accustomed remedy. Since the beginning of the 19th Century famines are known to have occurred in 1834, 1849 and 1860, but the first, of which details are available is that of 1868:69. The Darbar did little or nothing except to distribute cooked food in the city of Bikaner, at a kitchen which had shortly to be moved several miles off, in consequence of the number of dead and dying; and the only relief work was a small tank which was soon closed for want of funds. The price of bajra rose to 5 seers per rupee; and the state is said to have lost one-third of its population and nine-tenths of its cattle. The next famine was in 1891-92 when the area affected was 15,340 square miles, mostly in the north, where the kharif harvest failed for the eighth year in succession. Relief works, chiefly tanks, repairs to wells, and earth work for the railway, were started in September 1891, and closed in August 1892; and during this period, more than 1,51,000 units found employment, while over 4,04,000 were relieved gratuitously. Grass was very scarce, and was selling at 35 seers per rupee, and about half the cattle are said to have died, but of these not more than 10 percent were really valuable. The number of emigrants was estimated at about three times that of ordinary years. Prices rose to 8 seers per rupee for wheat, bajra and moth; but the average about 10, and the facilities afforded by the railway prevented the famine from pressing severely on the people.

(Note. All years are in A.D.)

APPENDIX 'C'
(Chapter 10 refers)

**LIST OF 363 BISHNOI MARTYRS
IN THE FAMOUS AND HISTORIC KHEJARLI EPISODE'**

SI.No.	Name	Relationship of Col.No2 with 4	Father's or husbands Name	Bishnoi Sub caste Sect or gotra	Village	Sex
1	2	3	4	5	6	7
1.	Amrita Devi	W	Ramoji	Beniyal	Khejarli	F
2.	Aasi bai	D	"	Khod	"	F
3.	Ratni bai	D	"	"	"	F
4.	Bhagu bai	D	"	"	"	F
5.	Ramoji	D	"	"	"	M
6.	Girdhariji	S	Simbhuji	Bhadu	"	M
7.	Jeevanji	S	"	"	"	M
8.	Heeyan	W	Girdhariji	Beniyal	"	F
9.	Peethoji	S.	"	Bhadu	"	M
10.	Annloji	S	"	"	"	M
11.	Kaana	W	Anndoji	Kalarani	"	F
12.	Daama	D	"	Bhadu	"	F
13.	Cheema	D	"	"	"	F
14.	Imarati	D	"	"	"	F
15.	Hamathji	S	"	"	"	M
16.	Laadu	W	Harnathji	Isram	"	F
17.	Saanwatji	S	"	Bhadu	"	M
18.	Eidoji	S	"	"	"	M
19.	Kheenvaji	S	"	"	"	M
20.	Menba	W	Kheenvaji	Kasbi	"	F
21.	Barjangji	S	Beenjaji	Beniyal	"	M
22.	Bhagibai	D	Barjangji	"	"	F
23.	Sabianbai	D	"	"	"	F
24.	Chachaji	S	"	"	"	M
25.	Harp	S	"	Mukanaji	"	M
26.	Maeyi	W	Mukanaji	Doodan	Khejarli	F
27.	Akhji	S	Barjangji	Beniyal	"	M
28.	Umoli	S	"	Godara	"	M
29.	Bherji	S	Durgaji	Potaliya	"	M
30.	Kalyanji	S	Motaji	Jawaliya	"	M
31.	Kishanaji	S	Pemji	Potaliya	"	M

1	2	3	4	5	6	7
32.	Shukji	S	"	"	"	M
33.	Isharji	S	Pemji	Baangarwa	"	M
34.	Magji	S	Isharji	"	"	M
35.	Taavoji	S	"	"	"	M
36.	Sunderoji	S	"	"	"	M
37.	Hirabai	D	"	"	"	F
38.	Hardasji	S	Khartoji	Badia	"	M
39.	Kasoobi	W	Hardashji	Khod	"	F
40.	Karamsinghji	S	Hardashji	Badia	"	M
41.	Kisanjoji	S	Ghanji	"	"	M
42.	Dedaramji	S	Bhiniji	"	"	M
43.	Beejoji	S	Heroji	Bhadu	Rasidera	M
44.	Ridamalji	S	Beejoji	"	"	M
45.	Tejoji	S	"	"	"	M
46.	Keshoji	S	Kumbhaji	Janni	"	M
47.	Hariya	W	Keshoji	Godara	"	M
48.	Bhagwanji	S	Jaani	"	"	M
49.	Raasoji	S	Kalooji	Siyak	"	M
50.	Naara	W	Raasoji	Nain	"	F
51.	Keshoji	S	Siyak	"	"	M
52.	Jesoji	S	Akoji	Godara	Hoon	M
53.	Udohi	S	"	"	"	M
54.	Keshoji	S	Hardasji	Benlyal	"	M
55.	Hemoji	S	"	"	"	M
56.	Lunoji	S	Nathoji	"	"	M
57.	Anndoji	S	"	"	"	M
58.	Manroopji	S	Kbetaji	Godara	"	M
59.	Genoji	S	Kherajji	"	"	M
60.	Gokalji	S	"	"	"	M
61.	Pemoji	S	Jesoji	"	"	M
62.	Laibai	D	"	"	"	F
63.	Sunderoji	S	Maalji	Dhaka	Netrat	M
64.	Saajanji	S	"	"	"	M
65.	Beeramji	S	"	"	"	M
66.	Daauji	S	Roopji	Sahu	"	M
67.	Kesoji	S	Ramoji	Bhadu	"	M
68.	Beenji	W	Saamoji	Lol	"	F
69.	Sadaroji	S	Manoharji	Godara	Berani	M
70.	Annadoji	S	"	"	"	M
71.	Jeemabai	D	Sujoji	"	"	F
72.	Annodobai	D	Manoharji	"	"	F
73.	Subhai bai	D	"	"	"	F
74.	Jesaji	S	Dhanoji	Bhadu	"	M

1	2	3	4	5	6	7
75.	Nethoji	S	Jaswantji	"	"	M
76.	Seri	W	Nathoji	Dhattarwal	"	F
77.	Motaji	S	Bhadu	"	"	M
78.	Kacharoji	S	Karamchandji	Lol	Lambey	M
79.	Padamoji	S	"	"	"	M
80.	Bhojaji	S	Sujanji	Jaani	"	M
81.	Paanchoji	S	Baabal	Phitkasni	"	M
82.	Roopoji	S	Pannchoji	"	"	M
83.	Budhoji	S	Aasoji	"	"	M
84.	Roogoji	S	Laadhoji	"	"	M
85.	Bheeyoji	S	Nathoji	"	"	M
86.	Peethoji	S	Jasji	"	"	M
87.	Tejaji	S	"	"	"	M
88.	Laakhoji	S	Ajaji	"	"	M
89.	Raauji	S	"	"	"	M
90.	Sujaani	S	"	"	"	M
91.	Jetaji	S	Gordhanji	"	"	M
92.	Narsinghji	S	"	"	"	M
93.	Bhccyoji	S	Kacheryji	"	"	M
94.	Pecthoji	S	Bheeyoji	"	"	M
95.	Padma	W	Peethoji	Khod	"	F
96.	Nathoji	S	Bheeyoji	Baabal	"	M
97.	Manoharji	S	Annadoji	"	"	M
98.	Roopoji	S	Jeeyoji	"	"	
99.	Sabhoji	S	"	"	"	
100.	Bhanwarji	S	Soojaji	"	"	
101.	Neti Thalod	S	Bhanwarji	"	"	
102.	Manoharji	S	"	"	"	
103.	Nohitasji	S	Jasji	"	"	
104.	Jetaji	S	"	"	"	
105.	Soni	W	Jetaji	Godara	"	
106.	Jagoji	S	Ramoji	Khadi	"	
107.	Daamoji	S	Motalji	Khaava	Guda	
108.	Amaroji	S	Puranji	Khaava	Guda	Bishnoiyar
109.	Bharmalji	S	Hari	Ramji	Khaava	
110.	Javrajaji	S	Hari	Ramji	"	
111.	Paanchoji	S	Hari	Ramji	"	
112.	Laakhoji	S	Bishnoji	Saaran	"	
113.	Ramoji	S	Kesoji'	"	"	
114.	Karamsinghji	S	"	"	"	M
115.	Narbadji	S	Saaluji	"	"	
116.	Hero	S	"	"	"	
117.	Paanchoji	S	Karamoji	Khaava	"	
118.	Keshoji	S	Saaluji	Saaran	"	

1	2	3	4	5	6	7
19.	Saanrdasji	S	Tetoji	"	"	
120.	Dedoji	S	Karamsinghji	Maal	"	
121.	Kuboji	S	Bhagwanji	Khadvasra	"	
122.	Laakhoji	S	Aasivi	"	"	
123.	Raimalji	S	"	"	"	
124.	Hemrajji	S	"	"	"	
125.	Saidasji	S	Sadeyji	Radi	"	
126.	Gangaramji	S	Kharajji	Khhang	"	
127.	Surtannji	S	Champji	Bhhadu	"	
128.	Annadoji	S	"	"	"	
129.	Jasoda	W	Chandji	Godara	"	
130.	Deyraj	S	Amaraji	Siyak	"	
131.	Jwyoji	S	"	"	"	
132.	Keshi	W	"	Degipal	"	
133.	Chanpoji	S	Udoji	Siyak	"	
134.	Achaloji	S	Bhojoji	Burdak	"	
135.	Lunga	W	Achaloji	Siyak	"	
136.	Roopoji	S	Netoji	Jaani	"	
137.	Binji	W	Devarjji	Siyak	"	
138.	Kavaroji	S	Gordhanji	Burdak	"	
139.	Kirabai	D	"	"	"	
140.	Daanoji	S	Roogoji	Godara	Bhagtasni	
141.	Baalwi	S	"	"	"	
142.	HAARKOJI	S	Beeramji	"	"	
143.	Ramji	S	Akhji	Seenwar	Rudkali	
144.	Laakhoji	S	Kanwaroji	panwar	"	
145.	Maanoji	S	Akhji	Scenwar	"	
146.	Jivrajji	S	"	"	"	
147.	Khartoji	S	"	"	"	
148.	Daasoji	S	Jagmaliji	Dhayal	"	
149.	Ramoji	S	Anndoji	"	"	
150.	Sonagji	S	Chirajji	Adeeg	"	
151.	Khumoji	S	"	"	"	
152.	Mukanoji	S	Ratanaji	Bhadu	"	M
153.	Karamoji	S	Aasoji	Dabukia	"	M
154.	Manoharji	S	Khemoji	"	"	M
155.	Devji	S	Aasuji	"	"	M
156.	Jeevanji	S	Seegad	"	"	M
157.	Nagrajji	S	Bhaarmalji	Rinva	"	M
158.	Narsinhji	S	Modhoji	Godara	"	M
159.	Kishanoji	S	Kalji	Kasba	Peetawas	M
160.	Karamsinhji	S	Kaljia	Beniyal	"	M
161.	Damoji	S	Raichandji	"	"	M
162.	Daauji	S	Jesajki	"	"	M

1	2	3	4	5	6	7
163.	Maanoji	S	Keshoji	"	"	M
164.	Kesuji	W	Maanoji	Siyak	Ramravas	F
165.	Devji	S	Ishwarji	Godara	"	M
166.	Jaimalji	S	Harnathji	"	"	M
167.	Karamchanji	S	Surtanji	Jaani	"	M
168.	Surataanji	S	Hemarajji	Dhayal	"	M
169.	Paamchoji	S	Motaji	Beniyal	"	M
170.	Kalji	S	Chhaturajji	Gila	"	M
171.	Gordhanji	S	Chokji	Saaram	"	M
172.	Harkoji	S	Seeyoji	Maanju	"	M
173.	Monoji	S	Rajuji	Bhandu	"	M
174.	Meyoji	S	Hemji	Bhandu	"	M
175.	Chokji	S	Monoharji	Sahu	"	M
176.	Deepa	W	Chokji	Chaahar	"	F
177.	Jodharamji	S	Achra	"	"	M
178.	Dhanrajji	S	Monoharji	Sshu	"	M
179.	Dupoji	S	Gordhanji	Manju	Feench	M
180.	Rami	W	Aasoji	Godara	Feench	F
181.	Sujanji	S	Sirdarji	Panwar	"	M
182.	Jagnathji	S	Shinbhuji	Panwar	"	M
183.	Deudevi	W	Jaganthji	"	"	M
184.	Tejoji	S	Daauji	"	"	M
185.	Ugroji	S	"	Polajji	Godara	M
186.	Seru	W	Jwaran	"	"	F
187.	Panchaanji	S	"	"	Godara	M
188.	Udoji	S	Kesoji	"	"	M
189.	Ganga	W	Udoji	Bhaadu	"	F
190.	Annadoji	S	Khhetogi	Chotiya	"	M
191.	Somi	W	"	Panwar	"	F
192.	Sunderoji	S	Kishanoji	Godara	Mandwat	M
193.	Ida	W	Sunderroji	Kasbi	"	F
194.	Jagmaalji	S	"	Godara	"	M
195.	Hemrajji	S	"	"	"	M
196.	Anndoji	S	"	"	"	M
197.	Jeevarajji	S	Fatehji	Isram	"	M
198.	Saanwalji	S	Bogeyji	Khot	"	M
199.	Sanwatji	S	"	"	"	M
200.	Peethoji	S	Dhaka	Dhawa	"	M
201.	Bali	W	Peethoji	Beniyal	"	F
202.	Raichandji	S	Dhaka	"	"	M
203.	Ropoji	S	Anndoji	"	"	M
204.	Motoji	S	Fateni	"	"	M
205.	Girdharji	S	Jeevanii	Khileri	"	M
206.	Bhaaguji	S	Hemoji	Bhadibyasa	"	M

1	2	3	4	5	6	7
207.	Anndoji	S	Maanji	"	"	M
208.	later	S	Hemji	Godara	Doll	M
209.	Devrajji	S	Anndoji	"	"	M
210.	Jeeyoji	S	Anndoji	Godara	Dolt	M
211.	Deeps	W	Jeeyoji	Khod	"	F
212.	Ratanoji	S	Harji	Daara	"	M
213.	Samelji	S	"	"	"	M
214.	Laado	W	Samelji	Saaran	"	F
215.	Harji	S	"	"	"	M
216.	Divrajji	S	Bhaarmalji	Daara	"	M
217.	Khimvaji	S	Hirji	"	"	M
218.	Kalu	W	Khinvasi	Saaran	"	F
219.	Karmiji	D	Khinvasi	"	Daara	F
220.	Mahesji	S	Harchandji	"	"	M
221.	Laluji	S	Bithalji	Jaangu	"	M
222.	Ratanoji	S	Jetaji	Jaani	"	M
223.	Ratnoji	S	Jeetoji	Kasva	Khadolav	M
224.	Rajuji	S	"	"	"	M
225.	Magoji	S	Bhavad	"	"	M
226.	Sawaiji	S	Maoji	"	"	M
227.	Ajoji	S	Motoji	Bola	"	M
228.	Sunder	W	Ajoji	Godara	"	F
229.	Sunderoji	S	Bola	"	"	M
230.	Harji	S	Chokji	Kasvva	Kosana	M
231.	Bheekhji	S	Chokji	"	"	M
232.	Naathi	W	Bheekhji	Panwar	"	F
233.	Tikuji	S	CHokji	Kasva	"	M
234.	Ghanji	S	Bhagwanji	Jaangu	"	M
235.	Tikuji	S	Bastiji	"	"	M
236.	Narayanji	S	Motaji	Judia	"	M
237.	Hira	W	Narayanji	Rahad	"	F
238.	Kisanoji	S	Saajanji	Siyak	"	M
239.	Saajanji	S	"	"	"	M
240.	Gohadji	S	Nain	"	"	M
241.	Shayamji	S	Shimbhuji	Godara	Dharu	M
242.	Naara	W	Dhayal	"	"	F
243.	Saidas	S	Rosoji	Godara	"	M
244.	Nathojal	S	Simarathji	Doodi	"	M
245.	Redoji	S	"	"	"	M
246.	Durgoji	S	"	"	"	M
247.	Udoji	S	Hirji	Bhaadu	Dohrinyo	M
248.	Jiyaramji	S	"	"	Annoji	M
249.	Laloji	S	"	"	"	M

1	2	3	4	5	6	7
250.	Bhaauji	S	Mangji	Dhukia	Jalimaliya	M
251.	Dedoji	S	Sujanji	Kadvasara	Daavro	M
252.	Bire	W	Rohad	"	"	F
253.	Saajanji	S	Aaasoji	Rohad	"	F
254.	Kisanoji	S	Dariyanji	Saaran	"	M
255.	Bastiji	S	Champeyji	Isram	Naadia	M
256.	Harchandji	S	Maanoji	Puma	"	M
257.	Thakarji	S	Maanoji	Punia	"	M
258.	Ramoji	S	Amaroji	Rahad	Higasia	M
259.	Motoji	S	Aloji	Khokhar	Tilvasni	M
260.	Karanoji	S	Aloji	Khokhar	"	M
261.	Khivani		Mcioji	Nain	"	M
262.	Paanchoji	S	Bijpji	Khokhar	"	M
263.	Damu		Paanchoji	Nain	"	F
264.	Keshoji		Bijaji	Khokkar	"	M
265.	Naathi		Keshoji	Nain	"	F
266.	Khumanji	S	Khokhar	"	"	M
267.	Kirpoji	S	"	"	"	M
268.	Khiwani bai	D	"	"	"	F
269.	Gopaldasji	S	"	"	"	M
270.	Thaanibai	D	"	"	"	F
271.	Tejoji	S	Gohadji	"	"	M
272.	Sajani	W	Tejoji	Thaalod	"	F
273.	Laliji	S	Dedoji	Panwar	"	M
274.	Hardasji	S	Dhanji	Dhukia	"	M
275.	Amaroji	S	Jeevanji	Dudi	Lunvey	M
276.	Dedoji	S	Narsinhji	"	"	M
277.	Naryanji	S	Devrajji	"	"	M
278.	Durgoji	S	Motoji	"	"	M
279.	Ugroji	S	Nagrajji	Saaran	Baavalley	M
280.	Saadulji	S	Saawalji	"	"	M
281.	Devoji	S	Romoji	"	"	M
282.	Bastiji	S	Isharji	Lot	Jud	M
283.	Biramji	S	"	"	"	M
284.	Boroji	S	Kushaloji	"	"	M
285.	Karonji	S	"	"	"	M
286.	Maaho ki	S	"	"	"	M
287.	Rohitasji	S	Jasoji	Jaani	"	M
288.	Siyojji	S	"	"	"	M
289.	Rai Chandji	S	Pithoji	"	"	M
290.	Rupoji	S	"	"	"	M
291.	Daanoji	S	Paramchandji	Chahar	Mavi	
292.	Choodji	S	Pujwanji	"	"	M
293.	Deevrajji	S	Nathoji	"	"	M

1	2	3	4	5	6	7
294.	Harichandji	S	Durgaji	Sahu	balera	M
295.	Narsinhji	S	Kumbhoji	"	"	M
296.	Depa	W	Narsinhji	Ravavi	"	F
297.	Choloji	S	Bhaarmalji	Taadi	Joliyali	M
298.	Rekhi	W	Rajuji	Saaran	"	F
299.	Jagnnathji	S	Ramchandji	Beniyal	"	M
300.	Aasi	W	Ramchandji	Visu	Joliali	F
301.	Paachanaji	S	Beniyal	"	"	M
302.	Khemi	W	Paanchanaji	Saaran	"	F
303.	Hemraji	S	Saanmeyji	Beniyal	Bisalpur	M
304.	Madji	S	Hemrajji	"	"	M
305.	Suvat	W	Dhaka	"	"	F
306.	Saadoji	S	Gopalji	Khileri	Method	M
307.	Bhaarmalji	S	Chaanpoji	"	"	M
308.	Badriji	S	"	"	"	M
309.	Suji	W	Bhaarmalji	Nain	"	F
310.	Jesoji	S	Biramji	Jaani	"	M
311.	Keshoji	S	"	"	"	M
312.	Kishanoji	S	Saajanji	Siyak	Badrey	M
313.	Ratanoji	S	"	"	"	M
314.	Netoji	S	Rajey Ji Sahu	Hingoli	"	M
315.	Aasi	W	Netoji	Badiyani	"	F
316.	Motoji	S	Bhaarmalji	Kupasiya	"	M
317.	Kushaloji	S	Jeeyoji	"	"	M
318.	Dedoji	S	Keshoji	Beniyal	"	M
319.	Naathoji	S	"	"	"	M
320.	Kushaloji	S	Anndoji	Daara	Artiya	M
321.	Baaluji	S	Bhagchandji	"	"	M
322.	Ratanoji	S	Ganeshji	Goyal	"	F
323.	Hira	W	Ratanoji	Panwar	"	F
324.	Lakhoji	S	Harkhoji	Panwar	"	M
325.	Kanwaroji	S	Ganeshji	Saaran	Beru	M
326.	Roopa	W	Kanwarji	Khod	"	F
327.	Laduji	S	Guneyji	Saaran	"	M
328.	Magoji	S	Gohadji	"	"	M
329.	Dhaanrajji	S	Beniyal	Jaanglu	"	M
330.	Hardasji	S	Davadjji	Siyol	"	M
331.	Kishnoji	S	Hardasji	"	"	M
332.	Ramchanji	S	Tejoji	"	"	M
333.	Jati Aggarwal	W	"	Badreri	"	F
334.	Deidasji	S	Nathuji	Dhatarwal	Begadia	M
335.	Akhji	S	"	"	"	M
336.	Nathoji	S	Karamchandji	Kheechad	"	M
337.	Nathoji	S	Godara	Srimandi	"	M

1	2	3	4	5	6	7
338.	Karamsiphja	S	"	"	"	M
339.	Narsinhji	S	Isharwal	Saavarau	"	M
340.	Rupoji	S	Bhagwanji	Panwar	Paanchley	M
341.	Durgoji	S	"	"	"	M
342.	Ropuji	S	Dhanji	Chanty	Burcha	M
343.	Redoji	S	Poloji	Bhawal		M
344.	Bhojoji	S	"	"	"	M
345.	Motoji	S	Dhanrajji	"	"	M
346.	Maheshji	S	Ramchandji	"	"	M
347.	Anndoji	S	Shankarji	Khilery	"	M
348.	Kesoji	S	Jaangu	Kudi	"	M
349.	Tejoji	S	Siyak	Jiltiyasar	"	M
350.	Champoji	S	Barjangji	Siyak	Bhakrasani	M
351.	Motoji		"	"	"	M
352.	Paanchoji		"	"	"	M
353.	Peet hoji		"	"	"	M
354.	Harkobai		"	"	"	F
355.	Sunderbai		"	"	"	F
356.	Karmibai		"	"	"	F
357.	Gorabai		"	"	"	F
358.	Harji		"	"	"	M
359.	Ylaroopji		"	"	"	M
360.	Gugloji		"	"	"	M
361.	Tejoji		"	"	"	M
362.	Udoji		"	"	"	M
363.	Kaanoji		"	"	"	M

LEGEND: (S) denotes 'son of (W) 'wife of (F) 'Female'.

(D) 'daughter of', (M) 'Male',

Note:- Details in respect of some of these martyrs e.g. at S.No. 351 to 363 are not available.

APPENDIX 'D'
Chapter 10 Refers)

**VILLAGE-WISE DETAILS OF
THE BISHNOI MARTYRS
THE FAMOUS AND HISTORIC
'KHEJARLI EPISODE'**

SL. NO.	Village	Male	Female	Total
1	2	3	4	5
1.	Khejarli	28	14	42
2.	Rasidera	7	2	9
3.	Hoon	10	1	11
4.	Netra	5	1	6
5.	Berani	5	4	9
6.	Lambey	3	0	3
7.	Phitkasni	22	4	26
8.	Guda Bishnoiyan	28	5	33
9.	Bhagtasni	3	0	3
10.	Rudkali	16	0	16
11.	Peetawas	4	0	4
12.	Ramrawas	14	2	16
13.	Feench	15	6	21
14.	Dhawa	7	1	8
15.	Dolt	11	4	15
16.	Khadolv	2	0	2
17.	Bhavad	4	1	5
18.	Kosana	9	2	11
19.	Dharu	5	1	6
20.	Dohorinyo	3	0	3
21.	Jalimaliya	1	0	1

1	2	3	4	5
22.	Daavro	3	1	4
23.	Naadia	3	0	3
24.	Higasiya	1	0	1
25.	Tilvasni	10	6	16
26.	Lunvey	4	0	4
27.	Bavalley	3	0	3
28.	Jud	9	0	9
29.	Olavi	3	0	3
30.	Balera	2	1	3
31.	Joliyal	3	3	6
32.	Bisalpur	2	1	3
33.	Matod	5	1	6
34.	Badrey	2	0	2
35.	Hingoli	5	1	6
36.	Artiya	4	1	5
37.	Beru	3	1	4
38.	Jaanglu	4	1	5
39.	Begadia	2	0	2
40.	Hania	1	0	1
41.	Sirmandi	2	0	2
42.	Saavarau	1	0	1
43.	Paanchley	2	0	2
44.	Burcha	1	0	1
45.	Tabadia	3	0	3
46.	Taapu	2	0	2
47.	Kudi	1	0	1
48.	Jatiyasar	1	0	1
49.	Bhakarasn	1	0	1
50.	Incomplete information	9	4	13
Total		294	69	363

APPENDIX 'E'**(Chapter 12 refers)****NATURE'S PAGEANT OF THE AGES**

"You see only the gross material products coming from God's hidden factory behind creation; but if you went into the factory itself, you would behold in what marvelous manner everything in this world has been brought into manifestation...What tremendous intelligence is manifested in creation! The Infinite is working in everything. All the different eddies of motion called life are controlled by that Cosmic Intelligence".

- Sri Sri Paramahansa Yogananda

If we look up from our television sets, our video games, our work desks, our computer terminals, from all the occupations and preoccupations that take up so much of, our time in today's complex technological lifestyle, and consider for a moment this beautiful, fascinating world we live in If we look out space, and observe the balance of force that keeps trillions of stars and planets whirling together in their cosmic waltz-And if we take a more intimate look around us here on earth, at the plants and animals, at some of their intricate dramas and interdependent relationships.

We cannot help but marvel at the awesome intelligence that is working "behind the scenes," within them all and within us, to produce the "grand pageant of the ages".

Many scientists have been doing just that, and with the sophisticated technological equipment available to them today, they have been able to measure more exactly and penetrate more deeply than ever before into the complex mysteries of nature. They are finding, in the words of Walt

Whitman, that "every cubic inch of space is a miracle". Their discoveries have revealed countless examples of precise order and harmony a breathtaking display of power, beauty, and intelligence demonstrated at every level of evolution.

On the macrocosmic level, consider our solar system, and the perfect balance that exists between centrifugal force, produced by the revolution of the planets around the sun, and the counteracting force of the sun's gravitational pull. These two forces must always be precisely matched; if they were the slightest bit out of balance, the brother and sister planets of our solar system would either lose their respectful distances and be drawn into the sun where they would be vaporized or they would part company and be flung out into the farthest reaches of space.

But there is much more to it than that. The farther a planet is from the sun, the less the gravitational pull will be, so the more distant planets must travel more slowly to create the appropriate counterbalancing centrifugal force. To make it more intriguing, the planets' orbits are elliptical, not circular, meaning that at certain points of the orbit a planet will be closer to the sun than at other times. Consequently, each planet has to speed up and slow down at different stages of its orbit, in order to compensate for the varying influence of the sun's gravitational pull. Imagine the chaos that would exist were it not for the Cosmic Traffic Regulator!

The same exacting Intelligence that guides the motion of the stars and planets is also reflected in the individual organisms that constitute life on earth. In a recent (and rather unusual) experiment, biophysicists from Japan and the United States took complete measurements of a particular species of tree the height, the angles and size of their branches, the number of their leaves. All this data was entered into a computer that they had programmed to design the ideal

branching pattern for optimal use of sunlight. The detailed arrangement it produced was not only similar, but nearly identical, to the trees' own pattern.

Biologists have found that the same intelligence that works within individual organisms such as trees also unites different species in intricate and sometimes amusing relationships that enhance the life of each one involved, and are often necessary for their continued existence. These alliances are examples of what scientists call symbiosis, which means literally, "living together".

One fascinating example of symbiotic association exists between the mimosa tree and a certain beetle called the mimosa girdler. When it comes time for the female beetle to lay her eggs, she finds an appropriate spot at the end of one of the tree's branches, gnaws a groove, and lays her eggs there. On her way back down the limb, the beetle stops about half way and cuts another groove this time completely around the branch just deep enough to prevent water and nutrients from reaching the upper half. Eventually the upper part of the limb dies and falls off, dispersing the mimosa girdler's eggs. The eggs hatch and the cycle begins again; the young beetles are drawn to the tree by its attractive fragrance.

Why wouldn't the mimosa exude a scent that repels the beetle and thus avoid the damage to its limbs? The tree thrives on this natural method of pruning. Because of the beetle's actions, the mimosa lives twice as long as it does when it is not pruned-and twice as many generations of mimosa girdlers can be assured of a home.

Certain other species of insects and plants also have an interesting relationship of mutual cooperation, for instance, one type of ant nests in the hollow thorns of the bull hqrn acacia, protecting it not only from herbivorous insects and mammals, but also from vines and other plants competing for

growing space. Because of this protection the bull horn acacia no longer needs the chemical defenses that other acacias emit to ward off herbivores. In return for defense, the acacia produces specialized "food" cells that its guests can detach from the plant and eat. These cells have no apparent function other than to feed the guardian ants.

Algae and fungi also do quite well by one another. Together, their symbiotic association is called "lichen", and the success of their mutual alliance can be seen on trees and rocks from the tropics to Antarctica. In this coalition the algae produce food by photosynthesis, which the fungi ingest through feeding tubes that they send into the individual algae cells. In exchange, the fungi supply the moisture essential for the algae's survival. Working together in this way, they are able to exist in extremely harsh environments where neither could survive alone.

Cooperation between species can also be observed in the undersea world. Certain species of small fish clean larger predatory fish by feeding on parasites and clearing away dead tissue and bacteria not only on the surface of the fish but sometimes within their mouths as well! The predatory fish prize this service so highly that they seek out these cleaning-fish; thus, the smaller fish receive home delivered meals and the protective company for their "big brothers" simultaneously.

Nature even takes into consideration the potential harm that could come to a species if its symbiotic partner becomes unable to fulfill its half of the "deal". The scarlet gilia, a plant growing in the mountains of Arizona, sets out brilliant red blooms to attract its pollinators humming-birds, which feed during the day time. But in mid August many (though not all) humming birds leave for lower warmer elevations. Many of the plants respond to this by changing the color of their blossoms to white or light pink. Why? The lighter shade

attracts a certain nocturnal moth, which is attracted to the lighter color and thus takes up the task of pollination abandoned by the humming birds. This results in 22% more fruit for the plants that change to the lighter color.

But not all of the plants change their blossoms from red to light pink or white, and until recently scientists couldn't understand why. The answer came. in 1984, when an unusually heavy rainfall decimated the moth population. The plants that switched to the lighter color remained unfertilized, while those that kept their red flowers attracted the few humming birds that remained. Those with the red flowers thrived, and thus ensured the continued existence of the scarlet gilia.

The examples we have discussed here are only a tiny sampling of innumerable symbioses, known or unknown, that occur both on land and in the sea. It is no wonder that those who penetrate deeply into the mysteries of nature come to feel a sense of spiritual awe. "Everyone who is seriously involved in the pursuit of science," wrote Albert Einstein, "becomes convinced that a spirit is manifest in the laws of the universe a spirit vastly superior to that of man, and one in face of which we with our modest powers must feel humble' In the words of Ralph Waldo Emerson, "Nature is too thin a screen; the glory of the Omnipresent God bursts through everywhere."

"Reprinted from Yogoda Satsanga Booklet - No. 111-1987 Calcutta by the kind permission of Yogoda Satsan a Society of India [Self - Realisation Fellowship] Li U.N. Mukherjee Road. Dakshi eshwar Calcutta (700076). Copyright for this Appendix is held by them, and no portion of it is to be reproduced in any form or transmitted by any means, without permission from them in writing.(c)1987 Yogoda Satsanga Society of India/ Self Realization Fellowship of India.

CONCLUSION

A BLUEPRINT FOR THE UPGRADATION OF ENVIRONMENT

When I was in the Air Force doing parachuting and skydiving in my younger days, we used to follow what is known as the 'buddy system'. Certain parts of the parachute and personal equipment carried by the parachutist during his parachute-jump are not accessible to the person after he has worn those for his jump. Since a thorough check is essential after the parachute and personal equipment have been put on, the person who has put those on checks it for someone else, and the latter does likewise for him. There thus exists a sort of 'bon homie' and 'quid pro quo' between the two. So has been the case with the Nature, and the Bishnois of Rajasthan, Haryana and Punjab (India). During the past five hundred years that the Bishnois have lived, they have conserved Nature, and the Nature has preserved and prospered them.

One single lesson from their long history needs to be translated into action straightway everywhere in the tropical world, which may be threatened by desertification. By desertification, I refer to the process by which fertile cultivable land is getting converted into a desert, or the existing desert areas have started intruding into adjacent lands or the existing deserts are becoming more severe in intensity.

That lesson is simple. Grow the *Prosopis cineraria* within the agricultural fields alongside with the crops. With the least additional requirements of management and expenses, this species would grow, support the agricultural crop, prevent excessive run-off of water, conserve top-soil and soil-moisture, break the intensity of soil-eroding and scedshifting sand-storms, provide humus, and other nutrients to the soil, while conferring the usual valuable 'F' gifts of the trees e.g. fruit, fodder, fuel fibre, fertilizer, foliage for shade to man,

birds and animals, sustenance to flora and fauna. The same trees would serve man to control rigours of drought and famine as and when comes their scour,!

And let us not forget the role of the lowly wild animals and birds, who provide manure to the soil, and also act as carriers of seeds (which pass out un-digested)-a service which cannot be ignored in an area where human population is sparse, yet natural vegetation must be allowed to grow by natural means.

It would not be correct to carry the impression that the benefits of conservation of trees and protection of wildlife as taught by the great Saint Jambheswar are merely confined to desert areas. The system of agriculture, adopted by his followers, can be practised by farmers of almost the entire world with great advantage. All that needs be done is this : plant as many trees of the correct species as possible, conserve all green trees, protect the wildlife and grow the *Prosopis cineraria* within the agricultural fields as well, wherever feasible. The individual, society and the governments would do well in adopting this programme; and the earlier they do so, better it would be for all concerned. The set of rules given by the great Guru is not a mere grandiose philosophy of a saint, but a pragmatic course of action covering diverse fields such as of dharma (right conduct), of conservation of nature and environment, of agriculture. The mankind has really been blessed due to his teachings, and is fortunate that such a seer lived amongst us not very long ago.

Defence Colony

Dehradun (INDIA)

A BLUE PRINT OF ENVIRONMENT

Conservation as Creed—

The book, while dealing with various factors which go towards the maintenance of ecological balance, effectively demonstrates as to how nature-conservation practised as a creed has actively helped in the process.

About the Author

Rajendra Singh Bishnoi, born in 1927 at Bijnor in western Uttar Pradesh, did his M.Sc. in Mathematics from the University of Lucknow, and followed it up by a course in Statistics at the Indian Statistical Institute, Calcutta, standing first in order of merit. He joined the Indian Air Force in the Administrative Branch in 1950, attaining first rank among all the direct-entry cadet of his course. Not content with remaining on ground duties while being in the air force, he volunteered to parachuting duties, specialising in parachute-jumping, parachute-testing and sky-diving. In recognition of his distinguished services of an exceptional order in the field of trials of new parachutes and parachuting from new aircraft, he was awarded by the President, the high decoration of Ati Vishishta Seva Medal, significantly while he was only a Squadron Leader then. After filling vorious important apponitments in the I.A.F., he retired in the rank of Air Commodore in June 1982. He now takes keen interest in nauture and its conservation.



JAMBHANI SAHITYA AKADEMI
Sector 1, E-134, Jaynarayan Vyas Colony
Bikaner (Raj.)
E-mail : jsakademi@gmail.com
website : www.jambhani.com

₹ 120/-



978-93-83415-96-0