

Ethnobotanical Plants Used by the Tribes of R.D.F. Poshina Forest Range of Sabarkantha District, North Gujarat, India

Patel Hitesh R^{*}, Patel R.S^{**}

^{*} Shri JagdishprasadJhabarmaltaibrewala University, Jhunjhunu, Rajasthan, (Research Scholar)

^{**} K. K.S.J., Maninagar Science College, Ahmadabad

Abstract- Ethnobotany is a distinct branch of natural science dealing with various aspects such as medicine, religious, cultural, agriculture instruments, household implements and several other disciplines. The present paper reviews plants used ethnobotanically by the tribal of R.D.F.Poshina forest range of Sabarkantha district, North Gujarat, India.Sabarkantha District having hilly and forest area near the range of Arvalli hills.Sabarkantha district take it name from the river Sabarmati which flows through it. The Sabarkantha district is located in the southern part of Gujarat. This district had a population of 2,082,531 according to the 2001 census. It covers an area of 7,390sq. Km. The Poshina forest range is a tribal area located in Khedbrahmataluka of Sabarkantha district of North Gujarat, India. Poshina range is divided into two sub-ranges, Poshina forest range and R.D.F. (Rehabilitation of degraded forest range) Poshina forest ranges.About 35 plant species belonging to 24 families were observed during the year 2010-2011 of my research work. Plant species of these forest areas are documented here with their botanical names, local names, family and their ethnobotanical uses. The species were arranged family wise according to the flora of Gujarat state.

Index Terms- Ethnobotanical, the tribes, R.D.F.Poshina,Sabarkantha district.

I. INTRODUCTION

The term "Ethnobotany" was coined by J. W. Harshberger in 1895 to indicate plants used by the aboriginals: From "ethno"-study of people and "botany" study of the plants. Ethnobotany is considered as a branch of ethnobiology. It deals with the study and evaluation of plant-human relations in all phases and the effect of plant environment on human society. Ethnobotany is the study of how people of a particular culture and region make of use of indigenous plants. Ethnobotanists explore how plants are used for such things as food, shelter, medicine, clothing, hunting, and religious ceremonies. The administrative headquarters of the district is Himmatnagar, about 80 km from Ahmadabad. Sabarkantha District has a population of 2,427,346 of which 2,064,318 (85.04 %) of rural and 363,028 (14.96 %) of urban as of 2011 census. It covers an area of 7,390 km².Sabarkantha District is bounded by Rajasthan state to the northeast, Banaskantha and Mehsanadistricts to the west, Gandhinagar and Kheda districts to the south and Panchmahal District to the east.Sabarkantha district take it

name from the river Sabarmati which flows through it.Sabarkantha district is located in the southern part of Gujarat.Ninety percent of the population is rural. The main occupations of these people are dairy farming and agriculture. Himmatnagar is the district headquarters and the famous Sabar dairy is situated here. The major crop of this area is cotton and groundnut. Several taxonomists and ethno-botanists continued to survey many areas of North Gujarat in length and breadth such as, plants of North Gujarat (Saxton and Sedgwick, 1918), Addition to Gujarat Flora (Ahuja and Pataskar, 1970), North Gujarat Flora and Ethnobotany (Yogi 1970; Patel 1971 & Reddy1987; Patel, 2002).

Earlier the works were carried out an ethnobotanical , medicinal and floristic aspects of plants by a good number of workers namely Thaker (1910), Saxton and Sedgwick (1918), Santapau (1954), Patel (1971), Shah (1978), Reddy, A. S. (1987), Jain (1991), Shashtri (1996), Punjani (1997), Patel (2001), Bhatt, *et.al.* (2003) and Jangid (2003).

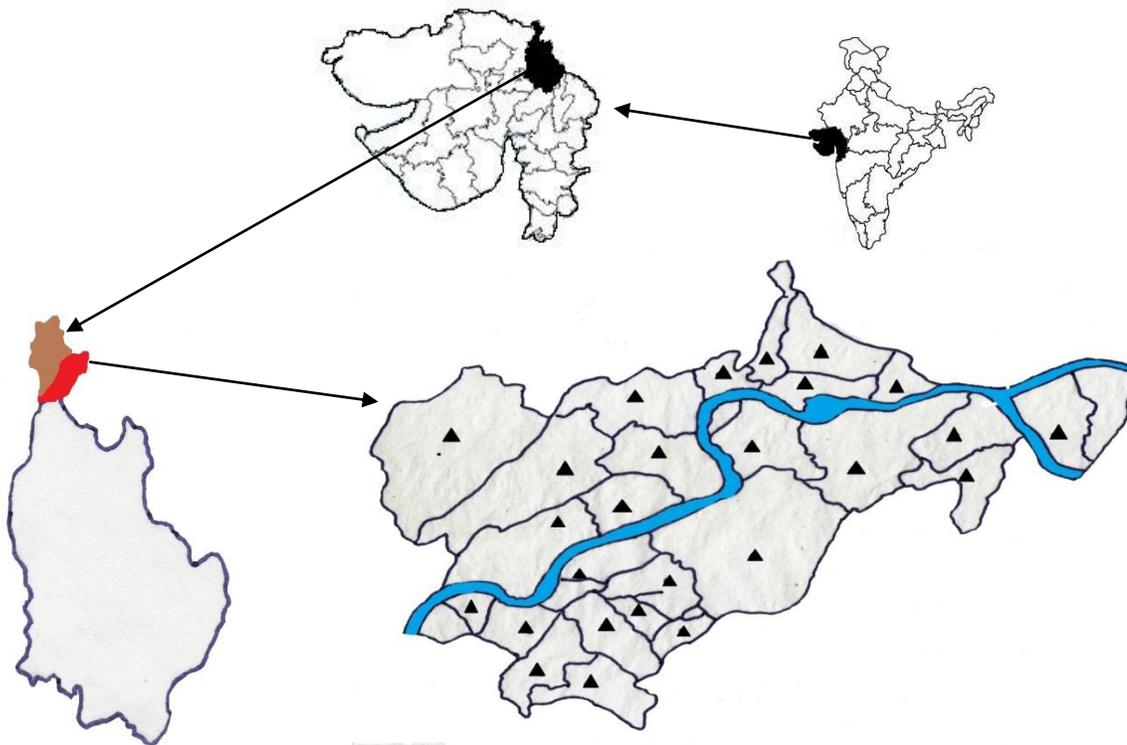
The ethnobotanical and floristic work, were carried out by Saxton, W. T. and Sedgwick, L. J. (1918), Yogi, D. V. (1970), Punjani (1997), Patel, N. K. (2001), Patel, R.S. (2002), Patel, K.C. (2003) in the North Gujarat region.

II. ABOUT THE STUDY AREA

SabarkanthaDistrict having hilly and forest area near the range of Arvalli hills. The district Sabarkantha is situated in the north eastern part of Gujarat state between 23°03' and 24°30' north latitudes and 72°43' and 73°39' east longitudes. The total population according to 2001 census is 1027 million. The rural population is 15, 75,918 (86.48%) and tribal population is 18.41%. The rural commonly are Brahmin, Patel, Vania, Rajput and Muslims etc. The adivasi commonly are Bhils, Parmar, Pardhi, Sarar, Dabhi, Angari, Kher, Kapedia, Rohisa, Bangadia, Lakhumada, chunara, Damors and many more. Their principal means of livelihood is agriculture and live stalk. The main crops raised are maize, whete, chana, peddy, tuvar, bajra, and rajko.

Poshina range is divided into two ranges, Poshina forests range (*Poshina Patti*) and R.D.F. (Rehabilitation of degraded forest) Poshina forest range (*Lambadia Range*). The R.D.F. Poshina forest range is a tribal area located in Khedbrahmataluka of Sabarkantha district of North Gujarat, India. The R.D.F. Poshina forest range belongs to Sabarkantha forest division of Gujarat state. The total area of R.D.F. Poshina forest range is 8156.03 H.A., of which reserve forest under section-20 is 921.43 H.A.

and un-classed forest under section-4 is 7234.60 H.A. The total 25 villages in the study area.



Map of the R. D. F. Poshina Range forest Area

III. MATERIALS AND METHODS

Extensive field trips were organized during the year 2010-2011 in R.D.F. Poshina Forest range area of Sabarkantha district in North Gujarat. Forest areas and villages of such regions were frequently visited, to collect the information about the forest wealth and uses of plant species were noted. Village wise men, experienced informants, elderly people, head man of the hamlets, tribal medicine men, 'vaidya', 'bhagat', 'bhuwa', etc. were contact and by repeat queries data was gathered. These people are the only source of information about the local plant names and their ethnobotanical uses. This is the original and ancient knowledge, which was not documented systematically earlier but from last few decades several ethnobotanical workers have been worked on this subject. The collected plant specimens were identified and arranged according to Bentham and Hooker's system of angiospermic classification described in the Gujarat flora by Shah (1978). Valid scientific name, Local name, Family and ethnomedicinally uses are described.

IV. RESULT AND DISCUSSION

(A) Ethnomedicinal plants:

(1) *Cassia fistula* L.(Caesalpiniaceae family- Leguminosae) GARMALO

Uses:

- Diluted gum in two tea spoonful water, given it to a child above 5 years of age for getting relief from **diarrhea**.
- Fruits (pods) are boiled in water and taken as vegetable for three days in evening time to cure **hysteria and fever**. (Vastabhai – 42 years, Ganva village)

(2) *Embllica officinalis* Gaertn. Fruct.(Euphorbiaceae) AMLA

Uses:

- Fruits are used as pickles.
- A twigs of this plant is used as toothache to **strong the teeth and gum**. (Minabhai – 69 years, Ganva village)
- The juice is extracted after crushing the piece of fruit with water apply on hair in the morning time to remove **dandruff**, makes the **hair dark** and also clean the **dirt** of the body.(Anubhai-42 years, Tebda village)
- Fruit juice is taken to relief from **sunstroke** to the body.(Maniben- 36years, tebda village)

(3) *Ailanthus excelsa* Roxb. (Simaroubaceae) MOTO
ARDUSO

Uses:

- Leaves are heated on charcoal tied on painful parts of the body with cotton *Gossypium herbaceum* auct. non L. cloth to relief the **pain** of body.
- Stem bark is drown in water in whole night boiled in morning, taken half cup without breakfast to cure **fever and cough**. (Kantibhai - 49 years, Kharaniya village.)
- Stem bark is crushed with goat milk is taken two tea spoonfuls twice in a day to relief from **diarrhea**. (Kimabhai – 33 years, Kharaniya village)
- Leaves are crushed in water and making juice is taken two tea spoonful twice in a day to cure **mouth ulcer**. (Maniben- 36years, tebda village)

(4) *Syzygium cumini* (L.) Skeels (Myrtaceae) JAMBU

Uses:

- Stem bark is crush in water given approximately 500 ml. to animal thrice in a day to cure **animaldiarrhea**.
- Seeds are crush on stone surface and making pest to apply on body, increase the sweet and relief from **skin disease**.
- Stem bark is crushed with goat milk is taken two tea spoonful thrice in a day to cure **diarrhea**. (Kimabhai – 33 years, Kharaniya village)
- Leaves are crushed on stone surface and making pest to apply on **scorpion bite** 3-4 times in a day.
- Ash of dried stem bark with honey is given a tea spoonful twice in a day to relief from **vomiting**.
- A twig of this plant is used as toothache to cure **mouth ulcer**. (Keshabhai – 57 years, Demti-Eran village)

(5) *Moringa concanensis* Nimmo (Moringaceae) JANGLI
SARAGAVO

Uses:

- Half tea cup of juice obtained from the fresh leaves is to be taken for a week in the early morning in an empty stomach to **reduce cholesterol and body weight**.
- Leaves were collected, washed and cooked as a vegetable and taken internally twice in a week will produce **cooling effect of eyes**.
- Approximately 30 gm. of juice of fresh leaves is to be taken internally on empty stomach to **fertility in women**. (Vastabhai – 42 years, Ganva village)
- Leaf is mixed with sugar and taken in the early morning in an empty stomach for a week to cure tiredness.
- Half tea spoonful paste is prepared from the leaves and applied over the surface of body for a week to relief from the disease **jaundice**.

- Seeds were collected, dried and make powder and then half tea spoonful of this powder taken to cure **intestinal worms**. (Keshrasingh – 42 years, Ganva village)

(6) *Echinops echinatus* Roxb. (Asteraceae) UTKANTO

Uses:

- Root is digging from soil on Saturday or Sunday and tide with thread on the neck of the child to cure **UNTATIYU**.
- Root is tide on the combed hair of the pregnant lady to **free delivery**, after delivery immediately remove it.
- Root is crushed on stone surface with water and given a tea spoonful thrice in a day to relief from **cough**. (Kimabhai – 33 years, Kharaniya village)

(B) Agriculture implements:

(1) Sickle and axe:

Handle of the sickle and axe is it is made up of Vans (*Dendrocalamus strictus* (Nees.)- Poaceae.

(2) Hute:

The vertical support is made up of the stem of Bordi (*Zizyphus nummularia* (Burm.f.) W.&A.)-Rhamnaceae, Baval (*Acacia nilotica* (L.) Del.)-Mimosae the horizontal support is made up of the stem of Dhao (*Anogeissus pendula* (Edgew.)- Combretaceae, covered by leaves of Khajuri (*Phoenix sylvestris* (L.))-Palmae and *Butea monosperma* (Lam.) Taub. (Palmae) and horizontal supports are tided by the fibers of Shan-Jute (*Corchorus capsularis*) – Tiliaceae.

(3) Yak:

The vertical part is made up of the stem of the Sandesro (*Delonix elata* (L.) Gamble.)- Caesalpiniaceae and Dhao (*Anogeissus pendula* (Edgew.)-Combretaceae. The horizontal part is made up of the stem of the Runchalo Dudhalo- *Wrightia tinctoria* (R.Br.) Apocynaceae (Ladubhai-Kharania Village).

(4) Well:

The main support of the wheel is made up of the wood of Charal (*Holoptelea integrifolia* (Roxb.) Planch.)-Ulmaceae, Baval (*Acacia nilotica* (L.) Del.) – Mimosae and the horizontal support is made up of Bordi (*Zizyphus nummularia* (Burm.f.)W.&A.)-Rhamnaceae (Kimabhai-Golvada Village).

The ground roller support is made up of the stem of Mahudo-*Madhuca indica* J.F.Gmel.- Sapotaceae and Bordi (*Zizyphus nummularia* (Burm.f.) W.&A.)-Rhamnaceae.

The rope is made up of the fibers of Shan-Jute (*Corchorus capsularis* L.) – Tiliaceae.

(5) Mask for bullock:

The trips are made from the stem of Vans (*Dendrocalamus strictus* (Nees.)- Poaceae the thread is made from the fibers of Shan-Jute (*Corchorus capsularis* L.) – Tiliaceae.

(6) Fork:

Fork is made from the stem of Baval (*Acacia nilotica* (L.) Del.) – Mimosae and Dhao- *Anogeissus pendula* (Edgew.) - Combretaceae

(C) Sacred groves:

(1) *Polagadawalimata* sacred grove:

Polagadawalimata sacred grove is situated near the entrance of the village Polapan. The grove is approximately more than 70 years old and Shankarbai Parghi is a worshipper.

According to the local prayer, the tribal of the village coming daily for good worship and the deity is represented by milk and coconut fruit. The folk believes that after fulfillment of the wish the deity represented by flag which is made up of Narvans-*Dendrocalamus strictus* Nees (Poaceae), coconut fruit *Cocos nucifera* L. (Palmae) and the cloth of cotton *Gossypium herbaceum* L. (Malvaceae).

The grove is mainly surrounded by few trees of Khakhro - *Butea monosperma* (Lam.) Taub. (Fabaceae), Garmalo - *Cassia fistula* L. (Caesalpiniaceae, family- Leguminosae), Dhao-*Anogeissus latifolia* (Roxb) Wall.ex Bedd. (Combretaceae), Bordi *Zizyphus mauritiana* Lam. (Rhamnaceae), Baval- *Acacia nilotica* (L.) Del. (Mimosaceae, family- Leguminosae), Sag-*Tectona grandis* L.f. (Verbenaceae), Dudhlo- *Wrightia tomentosa* R.& S. (Apocynaceae).

After marriage of the son of deity, they come for good wishes from the God in the month of Gujarati "Vaishakh" and represented flag which is made up of Narvans-*Dendrocalamus strictus* Nees (Poaceae) and the cloth of cotton *Gossypium herbaceum* L. (Malvaceae).

(2) *Devrabavaji* sacred grove:

Devrabavaji sacred grove is situated in Dedka village of R. D. F. Poshina forest. The grove is more than 55 years old. The idols are in sequence like *Thakor bapji*, *Ganpat dada*, *Kunvarka mata*, *Sundevi mata*, *Bhairav dada*, *Khokhar devi*, *Nagfuni mata*, *Dashama* and *Pakhawali mata*.

Villagers are prey with the flowers of Kesudo-*Butea monosperma* (Lam.) Taub. (Fabaceae), grains of Makai- *Zea mays* L., *Triticum aestivum* L. and other cereals on the Gujarati month of Vaishakh. They strong belief that the forest is protected due to presence of deity.

The grove is surrounded by Rayana- *Manilkara hexandra* (Roxb.) Dub (Sapotaceae), Mendhi- *Lawsonia inermis* L. (Verbenaceae), Kesudo-*Butea monosperma* (Lam.) Taub. (Fabaceae), Bordi *Zizyphus mauritiana* Lam. (Rhamnaceae).

(3) *Chamunda mata* sacred grove:

Chamunda mata sacred grove is situated in Ganer village and Babubhai (45 years old) is an idolatrous. This grove is more than 100 years old. Tribal fair is held on the first new year day of Gujarati month Kartak. On that day tribal praying to god for protect against ghost.

Plants around the groves are Vad- *Ficus benghalensis* L. (Moraceae), Pipli- *Ficus rumphii* Bl. Bijdr. (Moraceae), Goradiyo baval- *Acacia senegal* Willd. (Mimosaceae), Kerdo-*Capparis decidua* (Forsk) Edgew. (Capparaceae), Ram tulsi-*Ocimum gratissimum* L. (Lamiaceae) and Khajuri -*Phoenix sylvestris* (L.)-Palmae.

(4) *Gogabapji maharaj Mahadev* sacred grove:

Gogabapji maharaj Mahadev sacred grove is present in Demti village. Jamkuben Fagnabhai (30 years old) is an idolatrous. The grove is established by their ancestors. Tribal are praying to god with the leaves of Bili- *Aegle marmelos* (L.) Corr. (Rutaceae) and milk of goat on day of Maha Shivratri (a Hindu festival) in winter season. Local people vow for the good health and for the birth of the child.

The grove is surrounded by Bordi *Zizyphus mauritiana* Lam. (Rhamnaceae), Goradio baval- *Acacia senegal* (Willd.) Del. (Mimosaceae, family- Leguminosae), Gorasamli- *Pithecellobium dulce* (Roxb.) Bth. (Mimosaceae, family- Leguminosae), Vad-*Ficus benghalensis* L. (Moraceae), Limdo- *Azadirachta indica* A. Juss. (Meliaceae), Pipli- *Ficus rumphii* Bl. Bijdr. (Moraceae), Sandsro- *Delonix elata* (L.) Gamble (Caesalpiniaceae), Nilgiri-*Eucalyptus globulus* Labill. (Myrtaceae).

(5) *Khedawali mata* sacred grove:

Khedawali mata sacred grove is situated in Cholia Village. Bhulabhai Ramabhai Gamar (60 years old) is an idolatrous. The grove is established by their ancestors.

Annually, the deity is represented by the flag Narvans-*Dendrocalamus strictus* Nees (Poaceae), coconut fruit *Cocos nucifera* L. (Palmae) and the cloth of cotton *Gossypium herbaceum* L. (Malvaceae). Local people believe that, if somebody not represent anything to deity after the completion the wish, he will be definitely face some unseen trouble.

The grove is occupied by the following plant species Bordi - *Zizyphus mauritiana* Lam. (Rhamnaceae), Kher- *Acacia chundra* (Roxb. ex Rottl.) Willd. Mimosaceae, family- Leguminosae, Mor dhundhiyu- *Dichrostachys cinerea* (L.) W. & A. (Mimosaceae, family- Leguminosae), Behda- *Terminalia bellirica* (Gaertn.) Roxb. (Combretaceae).

(6) *Jata matajinu mandir* sacred grove:

Jata matajinu mandir sacred grove is situated in Kotda - Gadhi village near the border of Rajasthan. Ladubhai is an idolatrous. The grove is established by their ancestors.

Peoples of the village pray to god for good health of their child and fair is held on "Diwali". The deity is revered for well-being of cattle, mainly for buffalo and goat. Local people take vow for the good health of their domestic animals. On completion of the wish, the deity is represented by the milk of buffalo and goat.

The grove is occupied by the following plant species Kher- *Acacia chundra* (Roxb. ex Rottl.) Willd. Mimosaceae, family- Leguminosae), Kesudo- *Butea monosperma* (Lam.) Taub. (Fabaceae), Vad- *Ficus benghalensis* L. (Moraceae), Karanj- *Pongamia pinnata* (L.) Pierre. (Fabaceae), Kanjo- *Holoptelea integrifolia* (Roxb.) Planch. (Ulmaceae) Pipli- *Ficus religiosa* L. (Moraceae) and Narvans-*Dendrocalamus strictus* Nees (Poaceae).

ACKNOWLEDGEMENT

Authors are very thankful to resource person of the study area and research guide.

REFERENCES

- [1] Ahuja, K. K. and R. D. Pataskar (1970). *Additions to the Flora of Gujarat*. Indian forester, 96(8): 628-629.
- [2] Bole P. V. & Pathak J. M. (1988). *Flora of Saurashtra*. Part 2 & 3. Director, botanical Survey of India.
- [3] Cooke, Theodore. (1958). *Flora of the Presidency of Bombay*. Vol. 1, 2, & 3. Botanical Survey of India, Calcutta (reprint).
- [4] Harshberger J. W. (1896). *The purpose of Ethnobotany*. Bot. Gaz., 21: 146-158.
- [5] Jangid, M.S. (2003): Ethnomedicinal uses of some selected climbers of Modasataluka in N.G. Adv. Bio. Sci. Vol.2 (39-40).

- [6] **Jain, S.K. (1991)**. Dictionary of Indian Folk Medicine and Ethnobotany, Deep Publication, Delhi.
- [7] **Patel, K.C. (2003)**. *Floristics and Ethnobotanical Studies on Danta Forest of North Gujarat*; Ph.D. thesis submitted to Sardar Patel University, VallabhVidyanagar.
- [8] **Patel, N. K. (2001)**. Study of Angiospermic Plants with relation to Phytosociological and Ethnobotanical Study of DantaTaluka (District Banaskantha); Ph. D. Thesis Submitted to The North Gujarat University, Patan.
- [9] **Patel, R.I. (1971)**. Forest Flora of Gujarat State, Published by Gujarat State Forest Department, Gujarat state, Baroda.
- [10] **Patel, R.S. (2002)**. *Floristics and Ethnobotanical Studies of Ambaji Forest on North Gujarat*; Ph.D. thesis submitted to Sardar Patel University, VallabhVidyanagar.
- [11] **Reddy, A. S. (1987)**. *Flora of Dharampur Forest Part 1 & 2*. PH. D. Thesis, Department of biosciences, S.P.University, VallabhVidyanagar, Gujarat- INDIA.
- [12] **Santapau, H. (1954)**: *Contribution to the botany of Dangs forest in Gujarat*. Guj.Res.Soc. 16:204-320 and 17:1-59.
- [13] **Saxton, W. T. and Sedgwick, L. J. (1918)**. *Plants of Northern Gujarat*. *Rec. Bot. Surv. India*, 6(7): 209-323.
- [14] **Shah, G. L. (1978)**. *Flora of Gujarat State*. Vol.I & II. Sardar Patel University Press, VallabhVidyanagar.
- [15] **Shashtri, S.D. (1996)**: *Aryabhishak- "Hindustan no Vaidraj."* SastuSahityaVardhak Karyalay Ahmedabad and Mumbai.
- [16] **Thaker, J.I. (1910)**. *Vanaspatishastra, (Flora of Bardahill)*; Reprint, PravinPustak, Bhandar, Rajkot.
- [17] **Yogi, D. V. (1970)**. *A contribution to the flora of North Gujarat*. Ph.D. Thesis, S.P. University, Vallabh Vidyanagar.

AUTHORS

First Author – Patel Hitesh R., Shri ,JagdishprasadJhabarmaltaibrewala University, Jhunjhunu, Rajasthan., (Research Scholar), hiteshr6@yahoo.co.in
Second Author – Patel R.S, K. K.S.J., Maninagar Science College, Ahmadabad.



Echinops echinatus Roxb.



Ailanthus excelsa Roxb.



Syzygium cumini (L.) Skeels



Moringa concanensis Nimmo

Plate: 1 Ethnomedicinal plants of R. D. F. Poshina Range Forest



Plate: 2 Agriculture implements of R. D. F. Poshina Range Forest



Polagadawali mata sacred



Devra bavaji sacred grove



Khedawali mata sacred grove



Gogabaji maharaj Mahadev



Chamunda mata sacred grove



Jata mata sacred grove

Plate: 3 Sacred groves of R. D. F. Poshina Range Forest

