CHAPTER - 2

LITERATURE REVIEW

Following are the key factors for studying the biodiversity / Angiospermic diversity of the various regions.

- **Threatened and Endemic plant biodiversity of India.**

  M. Daniel and P. S. Nagar.(2009)
  Department of Botany, The M.S. Uni. of Baroda, Vadodara.

  India is one of the most diverse hotspot in the world in terms of floristic diversity. It is largest producer of medicinal herbs and is known as the botanical garden of the world. Gujarat contributes approximately 3000 species of flowering plants. Still in term of floristic diversity of Gujarat state extensive surveys are required.

- **Forests and Biodiversity Conservation A Religious Perspective**

  Prof. S.D. Subnis.(1983), Ex. Pro. Vice Chancellor

  A few Ancient Indian texts equates forests and trees with God and call upon people to venerate them and worship them without realizing the importance of forests or gaining total knowledge about their inhabitants, man has, in his importance of forests or gaining total knowledge about their inhabitants, man has, in his guest for more and more unleashed and undeclared war on them.

- **Concept and Conservation of Biodiversity**

  K.S. Bilgrami(2007), University Department of Botany,TM Bhagalpur University,Bhagalpur - 812007.
Biodiversity is an inherent quality of all the living organisms. Biodiversity is absolutely essential for stability of different and proper factioning of their food chain/web. Historically man has lived with diversity but unfortunately man has been the greatest enemy of diversity even from the prehistoric times.

**Floristics for the 21st Century.** (2004)

K.V. Krishnamurthy, T. Senthilkumar and V. Nandagopalan

Department of Plant Science, School of Life Sciences.

Bharatidasan University,

Tiruchirapalli - 620024.

Botanists have been writing floras since early 1600's. The form of flora has changed very little over the centuries, and has become routine, stereotyped and monotonous creating an aversion to floristic work among younger botanists.

**Diversity of Angiospermic flora of Darjeeling Hills.**

A. P. Das (1998), Department of Botany, North Bengal University,

Siliguri - 734430.

Though the previously existed large tract of natural forests are now in the state of deterioration resulting into small and restricted patches and the considerable increase of human interferences have badly affected these discontinuous tracts, still plants of almost all the habit groups are represented in the flora.

**Angiospermic climbers of Darjeeling hills.** (2000)

A. K. Samanta and A. P. Das, Department of Botany, North Bengal University, Siliguri - 734430.

Twiners constitute a very important of climbers. 64 of the recorded climbers are twiners. They range from annals (Lathyrus aphaco etc.) to shruby climbers (Abrus palchellus,
Thumbergia coccinea etc.). Twiners are very common in all types of vegetations throughout the altitudinal range under study.

- **Traditional medicine, medicinal plants and plant taxonomy.** (1991)

  Department of Botany, University of Calicut, Calicut 673635.

  As in traditional systems, plants have enjoyed a place of pride in the development of modern drugs and they would continue to do so for a foreseeable future because plants are complex chemical storehouse that contain many undiscovered biodynamic compounds with unrealised potential for use in modern medicine (plotkin 1991.) They help us in two ways; by directly providing medicines and by providing 'chemical blueprints'. For their synthesis or their improved versions.

- **Medicinal plants in INDIA and their conservation - An Ethnobotanical approach G. V. Gopal** (2006)

  Regional institute of education - Mysore Karnataka.

  Man's interest in plants primarily goes back to time immemorial of the early civilisations. For basic needs, namely, food, shelter and clothing he was dependent on plants. In the absence of an adequate and IPR system, other means need to be adopted urgently to ensure that traditional ecological knowledge is protected and revitalised.

- **Protection of Indian Traditional knowledge.**


  National Institute of science Communication and Information Resources (NISCAIR), CSIR New Delhi 110012.

  Biological diversity or biodiversity refers to the variety of life forms, the different plants, animals and microorganisms, the genes they contain, and the ecosystem they form,
biological diversity is usually considered at three different levels; genetic diversity, species diversity and ecosystem diversity.

- **Ethno veterinary medicinal plants in North-West part of Udaipur District (RAJ.)**
  G.S. Deora, G.P. Singh, Jhala and M.S. Rathore.(1992)
  
  People's traditional knowledge pertaining to animal healthcare and production is known as ethno-veterinary medicine (FVM) McCorkle (1992). Many of us working for the revival of our ancient glory that ethno veterinary medicine and practices are holistic livestock health care and management methodologies adopted in various part of the world.

- **Floristic diversity of Gujarat**
  
  
  The Maharaja Sayajirao University of Baroda, Vadodara - 390002.
  
  Perhaps the most interesting feature of the vegetation is that it marks the deciding line between the Perso-Arabian flora (to which the flora of sind belongs) and Indo-Malayan flora proper (Saxton and Sadwick 1918). Druce (1890), in the map of HANDBUCH DER PFLANZENGEORGRAPHIE.

- **Flora of Gujarat**
  
  Gujarat for long has been a matter of great curiosity and challenge for the Indian taxonomists and ecologists. However, some attempts were made by the earlier botanists of the nineteenth century. Cooke in his "Flora of the Presidency of Bombay" (1901-1908) has dealt with the flora of Gujarat and neighbouring Sind. He identified around 450 plant species in Gujarat and around 176 species in Sind. However, the plants mentioned as "common throughout the Presidency" do not tally with the figure mentioned.

- **Blatter**
Since Cooke's treatise, the Flora of Kutch and Saurashtra has been extensively explored by Blatter (1908 and 1909) and Thaker (Barda Hilla, s 1910 and Kutch, 1926). Some of the distinguished botanists of this period were: Roxburgh (1832), Graham (1839), Dalzell (1850), Palin (1880), Hooker and Clarke (1885), Gray (1886), Narine (1894), and Woodrow (1897-1901). They have visited small areas and have made occasional collections of plants. But their work seems to have been restricted to flying visits conducted in the better months of the year (cf. Santapau 1958).

 Colorado state university ;(2012) (Taxonomic classification) September 2012 http://www.ext.colostate.edu/mg/gardensnotes/122html. The taxonomic diversity is manifested in about 4320 plants species. 2768 animals species, including 84 mammals, the state has marine rich bio-diversity heat about 52 coral species and extended desert forest area.

 Borgensen, 1929. Notes on vegetation at Dwarka with reference to Raunkiaer's Life forms and Statistical methods. Seasonal plants are mostly grazed before reaching the stage of flowering and fruiting. Composition of seasonal plant communities is very complex which changes greatly with perturbation in the climatic conditions the dominance of therophye indicates life forms.


 Jadeja, a 1999 Ahluwalia, 1964 and 1965. Medicinal plants of Jamnagar. Plants used by the tribe Rabari in Barda Hills of Gujarat. Most of tribal communities are kothi bhojpura rabari and darbar communities are dominant tribal community are saurashtra region.

The floristic documents published in the first half of the 20th century has referred to the plants of Gujarat (Cooke 1901-1908 and Talbot 1902), but as stated earlier most of the studies were done randomly. However, Thaker (1886-1906) the then Curator of Forest and Gardens (Porbandar State) was the first to extensively explore the vegetation around Porbandar (Thaker 1894) and the hilly tracts of the Barda Hills and their surroundings (lying between Porbandar and Jamnagar district). His work is the only total documentation available on medicinal plants and their properties on Saurashtra. His studies also form the landmark for the floristic study and medicinal plants of Saurashtra and to certain extent of Gujarat also. The work taken up by Thaker was initiated by the then Maharaja (Maharana Shri Vikramajit) of Porbandar who was keenly interested in exploring the plants in the Barda Hills for their medicinal efficacy. He consulted his supervisor Mr. F.S.P. Leele and the principal of Rajkumar College Sir Macnaghten, both of them suggested the name of Thaker, who was then called upon and requested to work on the specified area as the curator of the Forest and Gardens in 1886. Thereafter he worked in the Barda Hills for 14 years (1886 to 1904). The result was a methodical account of 613 plant species. However, the journey from the manuscript (1906) to the published book (1910) was a long and a tedious one. Not many were willing to take the risk of publishing a work in Gujarati. But inspite of all odds teh work saw the light of the day and was published as - "Vanaspati Sastra - Barda Dungar ni Jadibuti taeni Pariksha anae Upayog" (BOTANY - A Complete and Comprehensive Account of The Flora of the Barda Mountain) by the Gujarati Printing Press and Nirmaya-Sagar Vardhak Karyalaya, Ahmedabad in 1910. The book received a very favourable response as observed in the remarks made by Fr. Shantapau (1952). The result of this overwhelming response was the next publication titled as "Kutch ni Sawasthani Vanaspatiyo anae tani Upyogita" (Plants of Cutch and Their Utility - An Elaborate Treatise Containing Ten
Chapters and Litho Figures) in 1926. This dissertation gave an insight into the medicinal plants, garden plants, white Mangroves, coconut plantation and the reclamation of saline lands.

- SHAH AND VAIDYA : (1969)

With the second half of the century edging ahead, the Botanical Survey of Nawanagar State (BSNS: presently Jamnagar: 1945) carried the work of Thaker (l.c.) a step further. In addition to his findings, the BSNS added 71 new species in the 2nd edition (1952) of *Vanaspati Sastri - Barda Dungar ni Jadibuti taeni Pariksha anaae Upayog"*. Vaidya B.G. Shah revised the book and raised the total number of plant species to 684.


- Maheshwari, J.K. (Ed., 2000). Ethnobotany and Medicinal plants of Indian Subcontinent. Scientific Publishers (India) Jodhpur. Traditional wisdom about herbals healers was always to man, the modern science is started taking it seriously only recently even though a phenomenal growth as taken place in a field of medical science.

- Sapna Malviya, swati rawat, Anil Kharia and verma (2011) (medicinal attributes of acacia nilotica LINN.- a comprehensive review on ethonopharmacological claims) int.j. of pharma. & life sci. (ijpls), vol 2 issue 6; juneL: 2011- 830-837-830. *Acacia nilotica forest* : This type of forest occurs in moist part of forest along with streams. Thick coverage of babool is recorded near main nala.

people because they are natural effective traditional and have minimum side effects some of these organization include national botanical research institute (NBRI), central institute for medicinal and aromatic plants (CIMAP).

- Joshi, P.N. Joshi Ekta B. & Jain B.K. (2012) Ecology and conservation of threatened plants in Tapkeshwari Hill ranges in the Kaccha Island Gujarat India. Journal of threatened taxa 4(2) 2390 – 2397. In the semi-arid and arid region like western India grassland are the most important natural eco-system for the livelihood security of the pastoral communities and also the conserving bio-diversity of region.


- Patel H.R. (2013) Floristic and (Ethnobotanical studies of poshina Rdf forest on North Gujarat) Ph.D thesis submitted to JJT University, Rajasthan. The plants the complete the life cycle during a short duration of favorable condition and become dominant in the form of seeds as a part of drought avoidance strategy. All the individual of the plants species put together is called population.

- Swati limbochiya, Dr. R.S. Patel (year- 2013) (major tree species in urban Ahemdabad, Gujrat India) Published in Abhinav Journal vol.2 ISSUE-3 ISSN : 2320-0073. International monthly reffered journals of research in management and Technology. Occurrence of scattered trees of Terminalia tomentosa, Boswellia serrata, Butea monosprama, Wrightia tinctoria etc. provides evidences that area had different vegetation communities in the past.

- Ashok kumar Tiwari (2014) (Revisiting ‘vegetables to combat modern epidemic of imbalance glucose homeostatis;) vol-10, issue-38, 207, 213 ISSN: 0973-1296. Increasing
demand of herbal product it is necessary the primary production of medicinal plant should be augmented and then the entire process is collection storage trading and marketing should be more efficient in plants and vegetables.


Few publications from Indian Plant taxonomist are as follows:


From the above references it can be well understood that most of the findings that have been made till date on Saurashtra are scattered. There is an urgent need to have more field survey and better understanding of the plant diversity of Gujarat.