INTRODUCTION

The medicinal plants have their own evolution history being the only unique remedy known in primitive age. Since ancient times, man used plants as a source of food, and shelter. Gradually, the knowledge of drugs developed and as early as the period between 5,000 and 1,500 B. C., Rigveda mentions the use of plants for Medicinal purposes. Later, between 2,500 and 500 B. C., the use of Medicines developed in the Ayurvedic system of Medicines. The Ayurveda dates back around 5,000 years and is widely considered to be the oldest form of health care in the world. It is believed by many scholars that knowledge of Ayurveda spread out from India and influenced the ancient Chinese system of medicine; Ayurveda is often referred to as the “Mother of all healing” Ayurvedic knowledge was thereafter passed down orally through the generation and then written down in the Vedas.

The Ayurvedic system of Medicine traces its roots to over 5,000 years ago in the Himalayan Mountains of India. The word Ayurveda has been derived from two Sanskrit words, Ayurh meaning ‘life’ and Veda meaning ‘knowledge or science’. Thus the literal meaning of Ayurveda is “knowledge or science of life.” In treating human diseases, some time around 100 B. C., herb cures where described in detail into well-known treatises on Indian Medicines by Charka and Susruta. Many authors had left important information’s on the action of the plants which are still found to be valid in our recent times. One example in the 4th century B. C. Hippocrates during the period 460 – 377 B. C. and his disciples 100 years after Aristotle in the 2nd century of our period were Galileo, 800 years much later, Bingen (1098-1179), including Philippi’s Theophrastus (1493-1541) enriching the treatment with medicinal plants, stabling to their colour or other aspects.
Nagarjuna: is the name referring to three great scientists of India. 1) The Buddhist monk Nagarjuna who was also an alchemist; 2) Siddha Nagarjuna, the metallurgist and 3) Bhadanta Nagarjuna, (1st Century A. D.) the author of Rasavaiseshika Sutra, which deals with one of the fundamental theories in Ayurveda,

For millennia man has utilized plants as a source of food, shelter as well as for health and well-being some 80% of the world’s populations still rely upon plants for primary health care; even today in western medicine and despite progress in synthetic chemistry some 25% of prescription medicines are still derived either directly or indirectly from plants. The use of plants in medicine ranges from crude preparation of extract (Maiti R. K. & Singh 2006). The knowledge’s on their effects were increasing from generation to generation. Many authors had left important information on the action of the plants which are still found to be valid in our recent times.

In Ayurveda, plants and their products are used as the source of Medicines. Actually, a plant in itself is a chemical laboratory. It synthesizes biologically active secondary metabolites. Most of modern Medicines have originated from plant metabolites. Herbal Medicines have become more popular in recent years because it is believed that they do not have any side effects or other toxic effects as compared to the modern Medicines.

Ayurvedic practitioners, vaidy as and pharmaceutical companies constantly need raw plant materials for their Ayurvedic preparations. They have to depend on suppliers for supply of raw materials. The raw plant materials needed by the pharmacists are actually collected by poor plant collectors, mostly tribal. There are
many possibilities of adulteration creeping in at any given collection. Such adulteration could be deliberate or it could be unintentional carelessness or it could be due to lack of knowledge of correct identity of the taxon.

The Ayurvedic system of medicine is gaining popularity in India as well as world over, because the preparations are derived from the herbal resources. The herbal preparation, the Ayurvedic drugs are proved to be very effective and don’t produce side effects, hence the demand of Ayurvedic drugs and herbal preparations is continuously increasing. This increasing demand is not met with the herbal material produced from the naturally grown medicinal plants also. The medicinal plants are not cultivated abundantly because it is not possible to cultivate each and every species of medicinal plants.

Pharmacognosy is an applied science that deals with the biologic, biochemical and economic features of natural drugs and their constituents. It is study of drugs that originate in the plant and animal kingdoms. Pharmacognosy forms an important link between pharmacology and medicinal chemistry on one hand and between pharmacy and clinical pharmacy on the other. It is an outgrowth of Materia Medica. Pharmacognosy is primary information on the sources and constituents of natural drugs. Today Pharmacognosy is a highly specialized science that represents one of the major disciplines of pharmaceutic education. Greek pharmacist Galen (131-200 A. D.) described various methods of preparation containing active constituents of crude drugs and even at present the branch dealing with the extraction of plant and animal drugs. Indian history of medicinal plants is dated back to 3500 B. C. The curative properties of plants have been mentioned in the Suktas of Rigveda, and Atharvaveda.
Pharmacognosy is the scientific and systematic study of structural, physical, chemical and biological characters of crude drug along with their history, method of cultivation and preparation for the market.

Ethnobotany came into being when earliest man observed animals eating certain plants and he gathered and hunted for his food and for healing his wounds or sought cover from rain and hailstorms. This knowledge got wider use and success in Hemavati, experiments on humans and led to our recognized foods and medicines. This is on the basis of the uses of plants. First by animals and later by human beings the concept of ethnozoology and ethnobotany emerge, which merged to give birth to ethnobotany. The term ‘Ethnobotany’ literally means the study of botany of the primary human race. The ethnobotany was first applied by Harshberger in (1895) to the study of plants used by primitive and aboriginal people.

India is known for Ayurveda and the traditional system of Medicine. India is one of the mega biodiversity countries. Plant diversity has assumed a great significance for its use in crop improvement, herbal formations and alternate medicine systems. Plants diversity offers the great opportunties to Botanist for searching new and new types of bioactive compounds. There are about 17,800 species of flowering plants occur in India, out of which about 7,500 species are known to have Medicinal properties. Most of them are known by their local names. The multitude of local names, imperfect botanical knowledge as well as the intentional adulteration in the raw material available in Indian market has led to controversy in respect of the identity of genuine plant drugs. Obviously, this has resulted into impure and ineffective Ayurvedic medicines, although there is a great demand for these medicines, the pharmaceutical companies are not in a
position to supply good quality material-mainly due to adulterated raw material. Identification of raw material available in the market is difficult as it is supplied in the form of either powder or extract (V. N. Naik, 2000).

Marathwada is one of the five divisions of Maharashtra state, has more than 1,645 species of flowering plants, of which about 345 species are used as Medicinal plants. Marathwada comprises of eight districts i.e. Aurangabad, Beed, Hingoli, Jalna, Latur, Nanded, Osmanabad and Parbhani. It is one of the important agricultural and industrial divisions of Maharashtra state. Maharashtra state is the third largest state in area and population in India. The climate of the region, as stated, supports the vegetation that can be conveniently divided into tropical dry deciduous forests, open scrub jungles and vast tracts of grassland (Naik et. al.1998).

Many medicinal plants with wide distribution have naturally several local names. Some of the well known medicinal plants have more than one Sanskrit name. All these names are either descriptive or derived from some local importance of peculiarities. The description of these plant species is short, imperfect or unscientifically documented. The family names, synonyms, names of authors etc. are not given properly. The information on diagnostic features, availability, phenology etc. is hardly available. And in addition to all these sources the identity of many important plant drugs is purposely kept in dark. This has naturally led to the confusion and/or controversy in their genuinity and correct identity. In other words, these are now taken to be controversial drugs. (V. N. Naik, 2000).
It was revealed that in some drugs, there is contamination of other non-Medicinal plants in the form of small pieces and fine powder in some drugs sold in the local market of Marathwada region, and hence the problem of standardization of some plant drugs of Marathwada was undertaken. Present studies are intended to develop authentic measures for identifying genuine materials of ayurvedic Medicines. Wherever and whenever there is doubt about genuineness or authenticity, then there should be parameters to detect the same.

Following 9 taxa are selected for Pharmacognostic and Phytochemical studies. Due to controversy in their Ayurvedic names for their genuinity and correct identification.

<table>
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<th>Sr No.</th>
<th>Sanskrit or Local Names.</th>
<th>Name of plants</th>
<th>Family</th>
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| 1      | Chakramard or Tarota     | 1. *Cassia obtusifolia* L.  
2. *Cassia tora* L. | Ceasalpinaceae |
| 2      | Maruva or Madurasa  
Hemajivanti or Hirandodi. | 3. *Clematis heynei* M. A. Rao.  
5. *Sansevieria roxburghiana* L.  
Capparidaceae  
Agavaceae  
Asclepiadaceae |
| 3      | Saireyak or Sahachar.    | 7. *Barleria cristata* L.  
8. *Barleria prionitis* L.  
9. *Crossandra infundibuliformis* (L.) Nees. | Acanthaceae  
Acanthaceae  
Acanthaceae |
In the present investigation, the samples of fresh as well as powdered parts studied for the following parameters:

1) **Morphology:** - The gross morphological characters of selected plants parts

2) **Plants powder analysis:** - Physical as well as microscopic analysis of root, stem and leaf, plants parts powder to understand nature of powdered leaf drug available at source. This analysis includes colour, odour, taste, cellular types, trichomes, stomata, crystals etc.

3) **Anatomy of plants:** - Anatomical studies included observations of transverse sections of root, stem, leaves and petiole to understand the nature of different cell arrangements in these plants parts.

4) **Dermatology:** - Dermatological studies include the details of trichomes, stomata and guard cells with their dimensions. The study also includes types of trichomes and stomata, and their occurrence in fresh leaves.

5) In Pharmacognosy and Phytochemistry studies, the investigations were undertaken on powdered drugs which include physical and chemical parameters. Physical parameter carried out were colour, Odour and taste of powder drugs.

6) **Chemical analysis:** -

   **Quantitative:**- Dry matter, nitrogen, water soluble nitrogen, crude protein, crude fat, crude fiber, total ash, acid insoluble ash, acid soluble ash, phosphorus, calcium, gross energy, total sugar, reducing sugar, non-reducing sugar, bulk density, cellulose and extractive
values. Results obtained on these parameters are presented in same chapter.

**Qualitative:** - Saponins, tannins, iridoids, phenolic acids, anthraquinones, steroids and alkaloids.

The above parameters were used to compare samples and to determine authenticity of the material. These combinations are expected to accurately determine purity of drugs and/or percent of adulterants.

The studies are presented in following seven chapters:

I. Introduction

II. Review of Literature

III. Materials and Methods

IV. Morphology of Plants and Medicinal Uses

V. Anatomical Studies of Plants

VI. Dermatological Studies of Plants

VII. Phytochemistry of Plants

VII. Discussion and Summary

IX. Bibliography and References