CHAPTER 1

INTRODUCTION

Plants and the various products obtained from them have been used by the mankind from time immemorial for food to stave off hunger and as medicines to fight the various diseases and ailments that pestered them from time to time. This naturally culminated into a wealth of knowledge that the ancient humanity kept to its bosom as the most sacred, since it had the life saving potentialities and if used wrongly life-smothering out potentialities. After the era of industrialization, there seems to be at first a weakening link and subsequently a total loss of this precious knowledge particularly in the developed and industrialized countries. Our country and similar such other developing countries with their cultural heritage should not allow this to happen (Hedberg, 1993).

These medicinal plants need to be investigated for our benefit.

Medicinal plants still represent untapped reservoir of drugs and the structural diversity of their component molecules make them a valuable source of novel compounds against newly discovered therapeutic targets (Farnsworth, 1989). If selection of plants is made on the grounds of their traditional use, the chance for research success is greater (Trotter et al., 1982; Elisabetsky and Wannamacher, 1993). Pharmacological investigations of medicinal plants have provided important advances for different therapeutic approaches to several pathologies. They also formed extremely useful tools for the basic study of the physiology and pharmacology of such ailments (Dohadwalla, 1985).
Already these medicinal plants cognized and used by the various ethnic tribes and other people contributed much to our modern medicine

During the 1800's, the active principles of a number of plants were isolated and it was realized that the clinical effects of drugs such as opium, cinchona and ipecacuanha could be attributed to the chemical compounds morphine, quinine and emetine, respectively. The alkaloid of the plant *Atropa belladonna*, atropine, for example has been much studied because of its ability to block some of the receptors on which acetylcholine acts. Atropine continues to be used as a parasympathetic blocking agent for its spasmodic effects on smooth muscles, particularly those of the viscera. Physostigmine isolated from Calabar Bean, *Physostigma venenosum* was shown to inhibit the enzyme acetylcholine esterase and thus have opposite pharmacological effects to atropine. The South American arrow and dart poison *curare*, which was used to paralyze hunted species, blocks the effects of acetylcholine at neuromuscular junction and in 1930's the active principle tubocurarine was isolated as a crystalline solid. Drugs that were formed using tubocurarine molecule as a template were used as muscle relaxants in clinical practice. Such examples of drug discovery would have not been brought about without a basic knowledge of the pharmacologically active ingredients derived from plants. Many types of natural product molecules have been used clinically in modern scientific medicine and they include alkaloids, anthraquinones, iridoids, lignans, mono-, sesqui-, di- and tri terpenoids derived from plants (Farnsworth and Bingel, 1977; Farnsworth, 1984a, b).

A large number of medicinal plants have been in use in ethno medicine

During the course of history, costly clinical experimentation by the native tribes had succeeded in distinguishing the medicinal plants and those plants, which are toxic or merely non-effective. This process had gradually
evolved throughout the whole world over a period of thousands of years and it was estimated that some 20,000 plant species are used medicinally.

Further the present day world is under greater pressure than ever in history. Especially when we are being tracked down by the most ruthless predators like AIDS (Acquired Immune Deficiency Syndrome), Hepatitis B and a multitude of diseases emanating from ARC (AIDS related Complex) and the escalating cost of modern medicines, the value of the native and tribal medicine which are quite affordable and reachable to the common man especially living in the developing and thickly populated countries could never be underestimated. To this reality WHO finally woke up to, particularly in the context above mentioned. The stated aim of the World Health Organization (WHO) to provide "Health for all by the year 2000" has helped to focus our attention on the systems of traditional medicine, which are used extensively in all the countries in the developing world (Bannerman et al., 1983).

Subjecting these ethno botanicals or phyto traditional medicines under these circumstances to modern scientific investigations especially to that of pharmacology, biochemistry and toxicology becomes more important as the scientific verifications, authentication and chaffing out of useful from useless become all the more obligatory for the benefit of the entire humanity.

*The following is one such venture!*

"The demand on the phyto traditional medicines recently is very great. This particular Medicinal plant has many records on medicinal values and has been practiced in several communities all over the world (as could be seen in the Chapter 2. Pages 9 – 10). The plant has great potential as phytomedicine and scientific validation is required by the modern medicine. Hence, the following studies were carried out."