1.0 Introduction

The primary needs of every human being are food, clothing, shelter, health and education. Among them, health is of paramount importance because “Health is wealth” and without health man cannot achieve the other requirements.

Health may be defined as a homeostatic condition of physical, mental and social behavior. Any change in the physiology of an individual without the involvement of any infecting organism is known as disorder and involvement of an infecting organism, it is known as disease. A disorder or a disease is as old as the origin of human beings and in the context they can be treated through various remedial measures like Naturopathy, Homeopathy, Ayurveda, Allopathy and Unani. Herbs have been credited with astounding qualities and properties from times immemorial, like pain relieving and healing abilities, and the current knowledge on herbs in serving the lead molecules for various disease treatments (Digoxin, Vinblastin, Vincristin, Pilocarpine, Atropine etc.) is a testimonial for their medicinal use.

Some of these medical practices may seem to be strange or magical; some seen to be rational and sensible. But considering the end product or goal of these medicines, they have been used and are being used to overcome illness, suffering and to enhance the quality of life of an individual. The origin of diseases is multidimensional in nature. Now it is being understood as vitiation in the basic homeostatic balance phenomenon in the body. Human beings constantly struggle against the changing environmental conditions to
maintain optimum health and vigor throughout their life. The human body depends on the harmonious interaction between internal and external factors continuously for its good health. When this balance is disturbed it leads to disharmony and disease. Therefore, it is essential to diagnose the causes of inappropriate imbalance which may be the real factor (Rakesh et al., 2006).

The primitive man gained knowledge of the medicinal importance of herbs by using them for different ailments, since time immemorial and trial and error basis the herbs were used in the art of healing. Nature has provided a complete storehouse of remedies to cure all the ailments of mankind. Since the dawn of civilization, in addition to cultivation of crops for food, man also cultivated herbs for his medicinal needs.

The human beings appear to be afflicted with more diseases than any other animal species. It can be assumed that early humans sought to alleviate their sufferings from injury or disease by taking advantage of plants growing around the surroundings. In the past, almost all medicines used were from plants alone. As the plants being man’s only source for alleviation of different ailments and a vast store of knowledge has been accumulated concerning the therapeutic properties of different plants (Kokate, 2002). Traditional medicine has a long history of serving people all over the world. The use of natural products with therapeutic properties is as ancient as human civilization and for a long time, mineral, plant and animal products were the main source of drugs. There is an evidence of herbs being used in the treatment of diseases and for revitalizing body systems in almost all ancient civilizations which is
evident through Vedas form the earliest literature in India. They are Rigveda, Yajurveda, Samaveda and Atharvanaveda. There is no definite evidence that suggests their exact period of origin. The Vedic period in Indian history goes back to over 5000 years. The history of medicine in India can be traced to such remote past. The earliest mention of the medicinal use of plants was found in the Rigveda, which is recognized as the oldest repository of the human knowledge.

Ayurveda is the term used for the traditional medicine of ancient India. "Ayur" means life and "Veda" means Ancient Science. The Ayurvedic classics include Charak Samhita, which deals with internal medicine and Susruta, Samhita that deals with surgery (Pushpangandan, 1995). Even today Ayurveda dominates the modern system of medicine particularly in the treatment of chronic diseases (Waxler-Morrison, 1988). In practice Ayurveda is a dynamic phenomenon that offers multi-faceted approach for healing and emerges as a plural medical system in itself (Nordstrom, 1988).

It is estimated that, 7500 plants are used in local health traditions mostly in rural and tribal villages of India. Out of these, the real medicinal value of over 4000 plants is either little or not known to the main stream of population (Pushpangandan, 1995). Thus the Ayurvedic database allows a drug researcher to start from a well-tested and safe biological material. Ayurveda appears to be the source for universal planetary principles of healing throughout the ancient world, based on balance and memory with
nature and the utilization of therapeutic diet, herbs, rituals and various phytotherapies.

There has been an increasing awareness in the recent years in Ethno biological studies, both on the traditional medicine and particularly on tribal medicine. The claims of therapeutic efficiency and the lack of toxicity of many plants have been scientifically proved in the recent years. There are, however a large number of plants of questionable value among the vast repertory of indigenous drugs. It will be a worth while exercise if one tries to select the best out of them. There are a large number of plants, which have to be examined thoroughly for useful activity.

The ethno-botany and ubiquitous plants provide rich source for natural drug research and development. In recent years, traditional medicinal plant research has again received considerable interest. But it was not until the 19th century that man began to isolate the active principles of medicinal plants. The discovery of quinine from cinchona bark was made by the French scientists Caventou and Pelletier (Kong et al., 2003).

When compared to pure chemicals there is a wide spread belief that the natural products are less toxic and this belief has been reported by number of scientists, that cannot be altogether ruled out. In many cases, it is found that the plant or plant extract has some therapeutic activity which is not seen in the pure components isolated from it. It is possible that some plant constituents contain the toxic effects of others and the whole plant extract becomes less toxic and more useful. Further the drugs of plant origin can be
easily prepared, readily available and hence are cheaper than the synthetic drugs.

There is a wide spread belief that the natural products are less toxic when compared to pure chemicals. In many cases, it is found that the plant or an extract of the plant has some therapeutic activity, which is not seen in the pure components isolated from it. Similarly it is possible that another nullifies the toxic effects of some components of a plant so that the whole extract becomes less toxic and more useful. The herbal drugs are invariably single extract or fractions thereof or mixture of fractions or extracts from different plants. Hence they need to be carefully standardized for their safety, efficacy and cost effectiveness. Recent well documented reviews (Dhanukur et al., 2000) highlighting the importance of herbal drugs substantiates this observation. Given the whole range of chronic modern medical treatment and the difficulty/failure to treat diseases such as cancer, cardiovascular diseases, diabetes, rheumatism and diseases like AIDS, it is clear that new effective drugs are needed to meet these challenges.

The global scale of plant derived drugs stands at around 60 billion dollar mark. It is estimated to reach 5 trillion by 2050 (Rakesh et al., 2006). The World Health Organization has estimated that currently, 80% of the world’s population continues to use traditional therapies, a major part of which are derived from plants.

There has been a global resurgence of interest in plant based drugs probably due to the high cost (upwards of $ 2000 million) of synthetic drugs,
the non-renewable source of basic raw materials of synthetic drugs, the environmental pollution caused by the chemical industry, the long history of use and the better patient tolerance as well as public acceptance of plant based drugs. The renewable sources of plant drugs, the cultivation and processing of plant drugs are environmental friendly. Plants constitute to be a major source of new lead molecules.

Though herbal medicine is effective in the treatment of various ailments, very often these drugs are unscientifically exploited or improperly used. Therefore, plant drugs deserve detailed studies in the light of modern science. A detailed investigation and documentation of plants used in local health traditions and the pharmacological evaluation of these plants and their taxonomical relatives can lead to the development of valuable plant drugs for many dreadful diseases. Hence this project is taken up.

1.1 Natural Products in Drug Discovery

Most of the potent drugs used today are extracted from plants and several synthetic drugs are made from lead molecules which are extracted from plants. Up to 25% of all prescriptions in European and American countries include plant products or plant derivatives (Jaroszewski, 1984). In developing countries, medicinal plants continue to be the main source of medication. In China alone 7295 plant species are utilized as medicinal agents. The World Health Organization estimated that some 3.4 billion people in the developing countries plants represent the primary source of medicine. It is reported that at least 198 compounds isolated from 90 plant
species can be considered as important source of drugs. Among the drugs that are currently used in different countries, 77% of them are being obtained from plants in traditional medicine. The importance of natural products is evidenced by statistical data in 1991 nearly half of the best selling drugs were either from natural products or their derivatives (O’Neill and Lewis, 1993).

Two approaches have been recommended for the exploitation of drugs from medicinal plants. One is to extract the active ingredients from the original traditional medicinal plants. One is to extract the active ingredients from the original traditional medicinal sources and identify their chemical nature and the other is to establish its detailed pharmacology focused on toxicity, dosage, standardization and clinical trials. Further if any of the isolated constituent shows useful activity, then it can be considered for the synthesis of a series of analogous from parent compounds and it is possible to bring out new drugs of therapeutic value.

In view of the potential use of medicinal plants as a source of alternative medicine in many diseases, folklore and claims made by the tribes living in Estern Ghat area of Northern coastal of Andhra Pradesh for the anti-inflammatory, liver protection and antimicrobial activities of Cleome chelidonii roots, whole plant of Gynandrospis gynandra and Heliotropium indicum, the present work has been undertaken with an objective to evaluate Pharmacologically to establish the anti-inflammatory, hepatoproective and antibacterial activity of the selected plants.