"A sandal tree as it to prove how sweet to
conquer hate by love, perfumes the axe that lays it low"

... RABINDRANATH TAGORE
INTRODUCTION

"Save trees and conserve the forests.
Protect those already existing for a better tomorrow".

Multiple microevolutionary forces are known to contribute to the adaptive radiation and diversification of all the life forms to the desired habitats. The significance of bio-diversity is to exercise relative success in the biological environment with the elementary forces of continuous interactions among the organisms, the plant and animal species diversified so much to interact with the organic and inorganic spheres of the earth. The management of biodiversity and genetic resources is within the carrying capacity of the supporting ecosystem for the survival of man kind.

Of the various forms of life on earth, none are of great importance than are the members of Plant Kingdom. The very existence of human life on earth depends on plants, since they produce carbohydrates and oxygen primarily and sustains the whole Animal Kingdom. Plant resources, including forestry and agriculture, support the life of whole man-kind. Keeping this in view, it is no exaggeration to say that the plant kingdom play a dominant role in the life of man. The Science of Ayurveda clearly shows that the medicines prepared from trees are more effective than artificial medicines.

Trees are the main constituents of forests, which are considered as the most valuable natural resource and are of immense importance both to man and the nation. All the woody plants that reach a height of atleast 3 metres having a single stem with a definite crown shape (Lawrence 1951) come under trees.

Trees serve different purposes for different people. For our ancestors they were a source of shelter and fuel and sometimes an object of worship. Tree wealth play a vital role in the life and economy of the Nation.

Trees are dependent on light to perform fundamental process of photosynthesis by which they synthesize food in their green parts, and as a consequence there is an intense competition to reach the light and avoid shade cast by other vegetation. Most plants therefore grow upwards and trees are the ones that have exploited this feature to the full by growing well above and dominating all other forms of vegetation. Light relations are dependent on the tree canopy. The canopy produces microclimate favourable for optimum growth of many plants. Trees have been able to dominate all other plants by virtue of its height and woody nature. The cell walls in the stem are thickened with lignin, a stiffening material, which provides them with great strength and
durability, both of which are important characteristics. The pressure on the crown of a large tree in a gale, at the top of a long trunk which acts as a lever, is very considerable. The very long life span of trees, which may be cross even hundred years, gives them time to grow to these great heights. This ability is gained not only by upward growth but also by the addition of a new layer of woody tissue under the bark each year, so that the tree is constantly expanding in diameter. The vital ring of living cells that produces this new layer annually is just under the bark, and if this is severely damaged the tree will suffer or die.

Trees comprising the forest cover, serve as substrate for millions of microbes, herbs, shrubs, climbers and diverse fauna. Trees protect life supporting system i.e., soil, and water ensuring cleaner air and water and soil building process, moisture conservation and reduce air and noise pollution. Trees are the sources of biomass, energy and also help in the proper distribution of rainfall.

Trees have played an important role in the economy of the state and are an asset to the nation. Besides meeting human needs like food (for example a variety of fruits, leaves), clothing, fuel, shelter and other basic products, they aid in preventing soil erosion. Trees are the source of raw materials for various industries and provide much needed wood, fuel, timber, paper, rayon, soft wood, tannin, essential oils, perfumes, gums, resins, fibres, wax, coir and drugs. Trees serve as host for many animal products like lac, honey, silk tasar etc. and also act as wind breakers and shelter belts, generate raw material for feeding the small scale industries.

Trees serve as natural land marks and memorials. Because they have more than the expected life span of man, they carry their associations through generations. There are trees with special religious, aesthetic or sentimental associations and have served as a source of inspiration to many Saints, Artists and Poets. (There are age-old trees that are known for their longevity).

Trees are a rich resource base and have to be developed as part of the long term strategy.

Natural resources survey like floristic studies, play an important role in the economic development of developing country like India. The alarming rate at which this natural wealth is vanishing has become the compelling factor for a detailed botanical survey of all the plants, particularly in India. Earlier works do provide valuable floristic information but they are incomplete in many aspects as new information is being added continuously. This demands an immediate action to provide an up-to-date floristic information. Keeping this in view, several
authors like Van Steenis (1968), Santapau (1952, 1962), Janaki Ammal (1954), Hutchinson (1964), Stace (1980), Jain (1978, 1982) have emphasized the importance of preparing Regional Floras. They aid in understanding the factors leading to the establishment of a stable ecosystem and also throw light on processes like isolation, evolution, speciation and endemism (Saldanha, 1980).

Heywood (1980) also emphasized, the indispensability of Plant taxonomy in providing a detailed account on the occurrence, distribution and identification of useful plants. In addition to the above fact, an adequate knowledge of the Floras and their taxonomy is an essential prerequisite for any measure of conservation.

Eventhough, the tropics are known for their rich diversified Flora, there is not any reliable source which provides full fledged information on a particular region of the tropics and also tropics as a whole. Realizing the indispensability of floristic studies, taxonomists have undertaken the great task of preparing regional Floras. As a result many regional Floras have been worked out but all the same much remains to be done. Flora Sylvatica for Andhra Pradesh is one such work. Eventhough district Floras and State Flora do provide information on trees there is no single work which is solely dedicated to the trees of Andhra Pradesh. The present work is taken up to fill this deficiency.

The present research is based on the analytical study of the author’s collections collected over a period of 5 years from different regions of the state and also from the herbarium specimens housed at different Universities of Andhra Pradesh as well as the Regional and National Herbaria.

The main objectives of the present research are:

1. To explore the complete (wild and cultivated) tree wealth of Andhra Pradesh.
2. To provide up-to-date nomenclatural citations, literature, and distributional patterns of tree taxa in Andhra Pradesh, India and World.
3. To synthesize identification keys (Vegetative, Flowering, and Fruiting) and to bringout thorough descriptions accompanied by the illustrations and photographs.
4. To enrich the local and National Herbaria with the specimens of trees collected throughout the State of Andhra Pradesh.
5. To provide information on ecology, phenology, vernacular names and English names as available.
6. To give data for timber and fuel wood taxa with minor forest produce specific to tree taxa.
8. To contribute to the Flora Sylvatica for India in taxonomy and floristics.