1. INTRODUCTION

Nature has endowed the earth with fascinating array of bioforms, especially, plants, the green gold which exert multifarious influences on the mode of human life in myriad ways. Among them, their medicinal value fetches especially, greater significance in the human life because of the widespread belief that green medicines are healthier and safer than the synthetic products. Medicinal plants, the nature’s hidden and to a large extent unexplored treasure have been used virtually in all human cultures around the world as a source of effective medicine and herbal renaissance is blooming across the world.

Excavations of mankind’s oldest settlement such as Shanidar support the contention that pre-historic people gathered plants for medicinal purposes, suggesting the existence of the art and science of primitive pharmacy. The widespread use of herbal remedies and healthcare preparations from commonly used medicinal plants, as those described in ancient texts such as the Bible, the Vedas and the Quran, have been traced to the occurrence of natural products with medicinal properties. People in every society have used plants for staying healthy and improving their quality of life. According to WHO, 3.5 billion people in developing countries use plant-based medicines for their primary healthcare (Bahadur et al., 2007).

In the modern time, vast medicinal resources of plant kingdom are depleting rapidly with the increase of population, rapid development of industrialization, modernization and excess biotic activities. If this trend of constant depletion of medicinal plants continues, this may cause an acute paucity of the resources of medicinal plants in future and pose a very serious threat to the physical well being of mankind. Hence, the study of plants as a source of medicine has become more important in the context of present global trade scenario where the cost of allopathic medicines are likely to be beyond the reach of common people and simultaneously, they produce undesirable side effects in man.

In such time, it is highly needed that medicinal plants should be explored and the availability of such plants should also be surveyed in each quarter of the state. Hence, the
present study is carried out to investigate the intensity of medicinal plants of Mookanur hill at Semmanalli area of Dharmapuri District, which is moderately rich in diverse herbal medicinal resources. After Gamble and Fischer (1915-36), the flora of Dharmapuri District was studied by Vajravelu and Krishnan (1967).

Glimpses of folk medicine at Dharmapuri forest division were presented by Apparanantham and Chelladurai (1986). The information available on medicinal plants at Semmanalli area is sketchy and hence, it is focussed in the present study. The preliminary survey in the Mookanur hill at Semmanalli area demonstrated that many medicinal plants curing various diseases are available in the hill, especially, *Tarenna asiatica* which is used in skin diseases, particularly, in wounds (Chopra et al., 1956).

Wound is a break in the epithelial integrity of the skin and may result from contusion, haematoma, laceration or an abrasion (Enoch and Leaper, 2005). Chopda and Mahajan (2009) reported the wound healing activity of *Tarenna asiatica*. Hence, in the present study, *Tarenna asiatica* (L.) Kuntze ex K.Schum. belongs to Rubiaceae, a sporadic medicinal plant of Mookanur hill was selected.

*Tarenna asiatica* is a shrub, leaves oblong to oblanceolate, coriaceous, interpetiolar stipules, flowers 3, trichotomous, corymbose, terminal cyme, white, sepals, petals, stamen 5 ovary hemispheric, stigma fusiform, fruit a globose berry, available in hill upto1400msl. Flower fragrant with a peak during December to April (Matthew, 1983). In recent years there has been renewed interest in screening higher plants for phytochemical investigation (Lopes et al., 2004; Heitzman et al., 2005 and karou et al., 2011) and novel biotechnologically active products particularly to combat ailments, which have defined synthetics and antibiotics.

Hence, the leaves of the above mentioned plant are screened qualitatively and quantitatively. A large number of chemical compounds have the ability to inhibit the growth and metabolism of microorganisms or to kill them. It was Osborn who as early as 1943 has screened not less than 300 species for anti *Staphylococcus* and anti *Escherichia coli* activity. Since then there have been explorations in different parts of the world to
identify such plants that can be potential sources for antimicrobial substances. However, the vast majority of the work has not been adequately evaluated.

Intensive search for newer and safer substitution from plant sources is worthwhile, since there have been undesirable side effects of some of the present day antibiotics and resistance developed by some bacteria to modern antibiotic therapy. In view of this, the present work was undertaken on *Tarenna asiatica* which is associated with folk medicine in India particularly in Tamil Nadu with reputations. Therefore, there is a constant need to establish and develop antimicrobial drugs from natural origin that are much safe, reliable and less expensive.

The purpose of this study is to screen for the aqueous and alcoholic of this medicinal plant that could be useful for the development of new tools as antimicrobial agents for the control of infectious diseases. In traditional system there is a claim for the plant in skin diseases. To validate the therapeutic claim of the plant in skin diseases, wound healing activity was studied. Wound healing is a complex multifactorial process that results in the contraction and closure of the wound and restoration of a functional barrier (Chattopadhyay et al., 2002). Repair of injured tissues occurs as a sequence of events, which include inflammation, proliferation and migration of different cell types (Sidhu et al., 1999). In the past our ancestors made new discoveries of the healing power of plants through trial and error. Wound infection is one of the most common diseases in developing countries because of poor hygienic condition and appropriate method for healing of wounds is essential for the restoration of disrupted anatomical continuity and disturbed functional status of the skin (Meenakshi et al., 2006). According to Biswas and Mukherjee (2003), 70% of the wound healing Ayurvedic drugs are of plant origin.

It is consented that reactive oxygen species (ROS) are deleterious to healing process due to the harmful effects on cells and tissues (Aliyeva et al., 2004). Elimination of reactive oxygen species is reported to be an important strategy to improve healing of wounds. Several antioxidants, the free radical scavengers were found to improve wound healing (Rasal et al., 2008). Hence, to reveal the mechanism behind the wound healing activity, the antioxidant activity was studied and other activities such as skeletal muscle
relaxant activity and bronchial antispasmodic activity were investigated to assess the potentiality of leaf of *Tarenna asiatica*. Skeletal muscles are composed of large number of muscle fibers attached to the skeleton. A muscle relaxant is a drug which affects skeletal muscle function and decreases the muscle tone and thought to be useful in musculo skeletal pain and spasms. Spasm of the bronchial smooth muscles is mainly due to the narrowing of bronchi. Bronchial antispasmodics are also muscular relaxants that are used to treat asthma, bronchitis and many lung diseases. They improve breathing by dilating tissues in the bronchial tube (Satoskar et al., 2001). In the present study *Tarenna asiatica* leaf was investigated for the above mentioned pharmacological activities.

Due to its over exploitation and indiscriminate use, *Tarenna asiatica* has become a sporadic plant species facing extinction. Its poor seed germination rate also prevents its multiplication. Such a situation requires the standardization of efficient propagation methods for sustainable utilization and management of this sporadic species. Advances in biotechnology particularly in plant cell tissue culture, have provided new means for conserving and rapidly propagating valuable species (George and Sherrington, 1984). Hence an efficient and cost effective protocol has been established for micro propagation of this sporadic medicinal plant through leaf explants.

A multipronged detailed approach for the elucidation of medicinal plants diversity and associated factors and pharmacognostical, pharmacological studies and conservation strategy of *Tarenna asiatica* is a desideratum. The present investigation is an attempt undertaken to fill up the above lacunae with the following objectives:

- To explore the wilderness for medicinal plants with curative properties in Mookanur Hill
- To screen the leaf histology of the selected medicinal plant.
- To analyse the qualitative and quantitative chemical constituents in the leaf
- To validate the therapeutic claim of the plant to pharmacological findings.
- To regenerate plants through *in vitro* propagation technique.