PHARMACOLOGICAL STUDIES

Introduction and Review of the Literature

The modern system of medicine owes a great deal of the vast store of accumulated knowledge of therapeutic agent's which were used in past by people of different civilizations. Most of the present day knowledge of therapeutically active principles has developed from the study of herbal and folk medicine. Many early workers have done considerable investigations on the medicinal flora of India which ultimately contributed a wide variety of active constituents and plant drug to modern therapy Matter (1947). Many plants have been investigated with respect to their active constituents and their pharmacological activities, because some plants are toxic, Khetwal (1983-84). Even then all systems of medical treatments are rapidly increasing during the past seven decades. All this generated a commercial for pharmocopoeial drugs and their products in the country. Allopathic system of medicine is more toxic than other systems of medicines. Due to this the pharmaceutical industries have made massive investment on pharmacological, clinical and chemical researches on plant originated drugs. Infact a few new drugs of herbal origin have successfully passed tests of commercial screening paving way for
the development of pharmaceutical and phytochemical industry.

The high cost of modern drugs and the toxic effects which are associated with these medicines have brought about a revival of the interest in medicinal plants. The World Health Organization (1978) is taking interest in indigenous system of medicinal plants with their pharmacological clinical and chemical researches.

Pharmacologically a drug is defined as an agent which may initiate or alter responses of biological systems in such a way that the disease is eliminated and health is restored Outt (1877) and Warning (1908). Tripathi et al. (1980), gave a scientific appraisal regarding the mode of action of Ayurvedic drugs. Bal (1984), introduced catalogue of Medicinal plants and exhibits their pharmacology. Satyavati (1984) has studied the pharmacology of medicinal plants and other natural product which was followed by Rai (1988), Patil et al. (1989) had studied the effect of hepato-protective ayurvedic drugs. Subrata et al. (1993), studied plants pharmacological action on liver.

Inflammation is a response of the tissues to the infection or irritation caused by the foreign substances. It is a hosts defence mechanism but
when the response becomes too intensive it may become far worse than the diseased state which is contracted and in extreme cases it may be fatal and visible and may be accompanied by other symptoms as swelling (edema), soreness etc. The importance of anti-inflammatory agents cannot be exaggerated because of their utility often used as life saving drugs in many diseases such as arthritis lupus, erythematousus, pemphigus, rheumatisim and fever were suggested by Turner (1965). Inflammation is triggered by cell damage while it is difficult to give an adequate description of the inflammatory phenomenon in terms of underlying cellular event in the injured tissue, but there are certain features of process that are generally agreed to be characteristic. These included.

1. Fenestration of the microvasculature.
2. Increased vascular permeability exudation.
3. Leakage of the elements of blood into the intestinal spaces.
4. Leukocyte enigation chemotaxis of phagocytosis. These steps are followed either by resolution and healing or in case of persistent stimulation chronic and degenerative inflammation.
5. Phagocytic cells migrate into the area and cellular lysosomal membranes may be ruptured releasing lytic enzymes.
Inflammation in patients with rheumatoid arthritis probably involves the combination of an antigen with an antibody and compliments causing the local release of chemotactic factor that attract leucocytes. The leucocytes, phagocytose, the complex of antigen, antibody and complement release many enzymes contained in their lysosomes. These lysosomal enzymes causes injury to cartilage and other tissues, this further increases the degree of inflammation. Cell mediated immune reactions may also be involved, prostaglandis are also released during inflammation process, Goodman et al. (1980).

Present search for anti-inflammatory therapy is to reduce the swelling redness, pain and fever associated with rheumatisim dates back to antiquity. Asprin and sodium salicylate have been widely used as anti-inflammatory agents.

Clinically, inflammation checked by anti-inflammatory drugs are judged by their effects on pain and swelling of the effected part. These drugs modify the antiinflammatory responses to disease but do not cure and do not remove main cause of disease.

Anti-inflammatory agents act on various systems responsible for inflammation such as plasmin clotting, arachidonic acid or complement system. Inflammation
can be reduced by inhibition of oxidative phosphorylation.

Inhibition of protein degeneration and acceleration of sulfahydryl exchange. The agents may also reduce the inflammation by fibrinolysis that is by inhibition of platelets or of mixed lymphocyte reaction or by inhibition of complements, this fact was given by Turner (1965). Anti-inflammatory agents mainly used in rheumatism are connective tissue diseases and belong to the disorder of joints mainly the synovial joints are having rheumatoid arthritis.

The modern scientific research is to discover more effective and better tolerated drugs Winter et al. (1962) started searching anti-inflammatory drugs. Winter (1965) emphasized on non-steroidal anti-inflammatory drugs. Scherrer (1974) proposed the earliest model for the anti-inflammatory receptor site. He also investigated on anti-inflammatory agents. Swingle (1974) gave an account of evolution for anti-inflammatory activity and anti-inflammatory activity and anti-inflammatory agents. Remingtons (1980) definition of inflammation and its antidrugs. After this anti-inflammatory effect of corticosteroids was discovered. This prompted an intensive steroid research during 1950 resulting in many corticosteroid analogues
with increasing diseases. However it was associated with several harmonal and metabolic side effects. Ray et al. (1983) discovered Indian-1 acetic acid, anti-inflammatory drug with low gastric irritation. Singh et al. (1985) gave review on medicinal chemistry researches in India. They told that due to side effects of old anti-inflammatory drugs new drugs are being searched in Indian laboratory. Sadhna et al. (1987) gave comparative biochemical and haematological study of enfenamic acid and some non-steroidal anti-inflammatory drugs. Rao et al. (1988) found late inflammatory swelling by carragennan which reduced security by aspirin or indomethaun. Radha et al. (1988) investigated anti-inflammatory effect of worm such as earthworm reduced edema of tested rats. Poelman et al. (1989) suggested about the topical non-steroidal anti-inflammatory drugs. Ray et al. (1990) studied non-steroidal anti-inflammatory drugs and related biological activities. Gupta (1991) worked on the effects of some non-steroidal anti-inflammatory agents on blood sugar level and on insulin induced hypoglycemia in albino rats. Hosur et al. (1993) synthesized some drugs and observed their anti-inflammatory activities along with the study of their toxicity. Due to the side effects of the synthetic medicine some workers have given emphasis on plant drugs. Muthian et al. (1993)
nilegarica and found anti-malarial and anti-inflammatory activities in these plants.

On the basis of experiences, observations and experiments it has been proved that alchemic or allopathic drugs are content many side effects on our body while traditional indigenous medicines are healing same therapeutic potentiality in the treatment of various diseases and ailments without any side effects. On account of above facts present study was carried out on some ethnomedicinally important plants of Asteraceae. Bidens linternata and Glossoc-rdia bosvallea were observed to be used by tribal & rural people of the considered area against inflammation. So these two plants are examined for their anti-inflammatory activity in present work.