In ancient India several herbal mixtures were used for the treatment of many diseases. The use of herbal drugs has been noticed in many countries like China, Japan, Egypt etc. plants serve as a vast reservoir of many complex organic compounds. Now a day’s several organic molecules which have natural origin are used as cosmetics, dyes, drugs etc. There is an increasing demand for natural products in food industry, pharmaceuticals, cosmetics and agricultural sectors.

During the Vedic period, the people of our country used various plants for treatment of different kinds of diseases. Similarly in many other countries various plants were used as folk medicines. Based on their medicinal use, a group of scientists tried to isolate the bioactive chemical constituents from these medicinal plants. At one time several herbal drugs namely quinine, morphine, reserpine, LSD, ephedrine were very much popular drugs in global market. Tremendous work on the discovery of herbal drugs by global scientists has resulted in the isolation of thousands of potent herbal drugs. It has been estimated by World Health Organization that approximately 80% of the world’s inhabitants rely on traditional medicines for their primary health care.

For geographical and civilization advantages, India is very much rich in biodiversity and the North-Eastern states of this country are important sources of versatile indigenous plants. Many of these plants are used in traditional medicines by the local people. Most of these plants are not yet properly explored for their pharmacological and other biological activities. This fact encouraged the present investigator to carry out research work on plant based natural products to find out the bioactive principles of some locally used medicinal plants.

The wide variety of compounds such as alkaloids, steroids and terpenoids produced in plants, which are termed as secondary metabolites. These secondary metabolites endow some unique and species-specific characteristics.
to the plants. Many secondary metabolites have well defined biological functions.

In this contest the present investigator investigated three medicinal plants available in Tripura namely *Mussaenda roxburghii* (local name: *Dhobi kath*, fam. Rubiaceae, Hook. F.) *Dillenia pentagyna* (local name: Hargaza, fam. Dilleniaceae, Roxb.) and *Sarcochlamys pulcherrima* (Roxb.) Gaud. (local name: Brihati, fam. Urticaceae) which are used as a traditional herbal medicine by the local tribes and were not yet investigated systematically.

The thesis describes the results of investigations relating to “Isolation and Structural Studies on Chemical Constituents of *Mussaenda roxburghii* and some other Medicinal Plants” and has been presented in four parts.

**Part-1** of the thesis deals with Structural studies of nine isolated Chemical Constituents and different Biological activities of *Mussaenda roxburghii* along with a brief review of phytochemicals and biological studies reported for different *Mussaenda* species.

**Part-2** of the thesis deals with the details of structure elucidation of four isolated Chemical Constituents and different Bio-activities of *Dillenia pentagyna* along with a brief review of phytochemicals and biological studies reported for different *Dillenia* species.

**Part-3** of the thesis describe the phytochemical investigation with structure elucidation of four isolated Chemical Constituents and different biological activity studies of *Sarcochlamys pulcherrima* along with a brief review of isolated compounds and biological studies reported for different *Sarcochlamys* species.

**PART-4** of the thesis deals with Materials and Method details of isolation of all the phytochemicals from *Mussaenda roxburghii, Dillenia pentagyna* and *Sarcochlamys pulcherrima*.

**Ranjit Ghosh**

*Natural Products Chemistry*