MATERIAL AND METHODS
A. BOTANICALLY AUTHENTICATED SAMPLES

Five root samples from following four species have been collected from various Himalayan regions and a small portion of root of *Arnebia nobilis* was taken from the specimen collected by Prof. Bole from Afghanistan for making comparision with the market samples. The voucher specimens of these species are preserved in Medicinal Plant Herbarium of the Institute.

1. *Arnebia benthamii* (Wall. ex G. Don)
   Collection Site - Jaripani, Tehri Garhwal.
   Voucher Specimen No. 11374

2. *Arnebia euchroma* (Royle) Johnston
   Collection Site - Chotadhara, Lahul Valley, Himachal Pradesh.
   Voucher Specimen No. - 6845

3. *Arnebia euchroma* (Royle) Johnston
   Voucher Specimen No. 16322

   Collection Site - Istitalif Afghanistan. On barren hill slopes.
   Voucher Specimen No. - AF 43

5. *Maharanga emodi* (Wall.) DC.
   Collection Site - Chhangu, East Sikkim.
   Voucher Specimen No. - 15807

   Collection Site - Gemeor, Lahul Valley, Himachal Pradesh
   Voucher Specimen No. - 11487
B. **MARKET SAMPLES**

Eight market samples of 'Ratanjot' have been procured from various Indian markets.

Amritsar, Bhopal, Bombay, Calcutta, Delhi, Hyderabad, Jammu and Lucknow.

**METHODOLOGY**

There are several methods available for establishing the identity of herbal drugs. Some of these are Organoloptic, microscopic, physical, chemical and biological. In addition to this some diversified and specialized parameters such as tissue culture techniques, plant hormones, phytopharmacology, scanning electron microscopy and fingerprinting can play a meaningful role in solving out the problem of adulteration and substitution in the marketed crude drugs. Often more than one method have to be employed to detect adulteration and substitution.

The details of the method dealt, are given separately along with their respective chapters such as (i) Pharmacognosy (microscopic, SEM and powder studies) and (ii) Chemotaxonomy (Phytochemical Analysis and chemistry of *Arnebia euchroma*).