IMPORTANCE OF MEDICINAL PLANTS HERBARIUM IT’S PREPARATION AND UTILITY

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ABSTRACT
With increase in life style and intra communicable disorders, like hypertension, diabetes, asthma and many others people inclined towards the Ayurvedic medicine. Many small pharmaceutical companies are growing for the fulfilment of the above demand. It is necessary to manufacture formulation of medicine should be standard and as per described in the classical text. The practitioner of ancient times used to collect medicinal plants from forest themselves, some of them used to grow medicinal plants around their clinic. This practise used to ensure them of the use of right plant. But nowadays vaidyas began to prescribe prescriptions, and they are totally depended on manufacturers. In this situation, it is compulsory to develop the herbarium that helps in the identification of medicinal plants.

KEYWORDS: hypertension, diabetes, asthma.

INTRODUCTION
In our country the knowledge of use of medicinal plants was carried over from one generation to another by way of experience. The practitioner of ancient times used to collect medicinal plants from forest themselves, some of them used to grow medicinal plants around their clinic. This practise used to ensure them of the use of right plant. But with the time the Vaidyas began to write prescriptions which were dispensed by pansari and he being businessman used to give old plant part, and also adulterated the drugs with material which had even no medicinal value. At present many of the drugs used in Ayurveda are not even properly identified. Several different drugs are popular by one common name and by one name several different drugs are available. It is therefore necessary to identify the plant source botanically which may be followed by vernacular names. The plant specimens...
collected should be properly kept for future record and reference. For this purpose it is necessary to maintain a Herbarium and Museum of medicinal plants.

A Herbarium is a collection of dried plants systematically named and arranged for ready reference and protection. In the study of systematic botany such collections have existed for identification of species, the study of plants of any given area and the comparison of the flora of different regions. This is also important for medicinal plants because study on medicinal plants can only be conducted thoroughly only when specimens of the plants under consideration are at hand and can be readily consulted.

The science of Medicinal plants in India its beginnings in a very remote age. Indians of the vedic periods (2000-800 B.C.) already cultivated crops. In Vedic literature there are many terms used in the description of plants and plant parts. Medical science and collection of the medicinal plants also had their beginning in the very ancient times. The ATHARVEDA contain a wealth of details bearing on the subject of medicinal plants and the diseases against which they were applied. One of the earliest works a dealing with plant life from a scientific stand point is the Briksha Ayurveda (Science of plants and plant life).

One of the largest Herbarium with oldest collections from different part of world is at Kew (England). In India Central Herbarium at Sibpur Kolkata and Dehra Dun Herbarium are well known.

**HERBARIUM METHODS**

While collecting medicinal plants for the preparation of Herbarium the following are to be observed:

1. Collecting of plants and plant material
2. Field book for field notes
3. Drying and preserving of specimens
4. Mounting the specimens
5. Arrangements of specimens sheets
6. Museum for display of the unmountable material
7. Periodic care
8. Indexing of preserved plants and preparation of Nomenclature index of Botanical, Sanskrit, Local name of cross indexing.
Collection of Plant and plant material
The field collector must carry the following necessary appliances for collection of plant material.

a) Vasculum (A box with a lid and strap for carrying medicinal plant)

b) Wire press

c) Knife pruning, Secature, Khurpi and Pathal etc.

d) Absorbent sheets and old news paper

e) Field book for field notes

f) Pocket lens

g) Rope and tripal

h) Alpine tent for higher hill

i) Alcohol in polythene bottle for collection of delicate plant specimens and plant parts.

For the medicinal plants the season of collection should be fixed according to the area and flowering fruiting time of the plants. While collecting plant specimens for herbarium it must be kept in mind that these specimens are to be mounted on sheet of 11”×16.5” size and therefore the specimens should be collected accordingly. Small plants should be taken along with roots. From larger plant typical branch should be taken that will show typical leaves, flowers and fruits. **Plant material of medicinal plants e.g. bark, galls etc., must be collected along with the plant specimens, as far as possible at least six specimens of each plant should be collected.** This also enables to note down variation if any. It is desirable that the plant specimens should be put in the absorbent sheets and delicate plants should be kept in alcohol kept in bottle. In field it is not some times possible to put the plant in drying sheets, at such times vasculum should be used. Only loose packed specimens should be stored in vasculum, so that plant part may not damaged. There are certain plants which droop at once as soon as they are plucked, such plants should invariably be pressed at once. The absorbent sheet with plants specimens are kept one on the other and tightened in the wire press.

Field book and field notes
The field book is used to note down the field characters, general description of the plant, their associates, folklore about the local use of the plant and other interesting information. This will help to maintain proper record for each plant. Field usually contain one hundred pages in one book. Each page consists of six equally cut number as given on the main page. The slips are put along with the plant specimens and raw material. The field book number become
stamp mark for plant specimens. Detail regarding content e.g. latex or watery contents etc. Flower colour, fragrance should also be noted. The place of collection its altitude and data of collection should also be entered in the field book.

**Drying and preservation of specimens**

The drying sheets should be blotting paper or old news paper that may attain the size of 12”×18” on folding. The plant specimens should be spared over the paper keeping in view that the leaves may not crumple. Both surface of leaves and complete flower should also visible. One two slice of Transverse section of the bigger sized fruit. 2% solution of Mercuric chloride in methylated spirit should be applied on the plant with camel hair brush or plant should be dipped into the solution. The wire presses are quite useful for field purpose but for bulky bundle wooden presses are used in the herbarium.

**Mounting of the Specimens**

The bundles containing plant specimens when kept in wooden press become dry and acquire a well from shape, when the plants are completely dried they should be mounted on the sheets stiff, white, 11”× 16.5” of size, approx. 9 kg to the ream being standard weight. The common method by gluing them down, fish glue being used. The plant specimen is speared fish glue being used. The plant specimen is speared over a glass sheet and glue (prepared by water bath method) is applied with camel hair brush on one side of the plant. The plant is now artistically arranged on the mounting sheet and extra glue and water removed with hot water sponge. The sheet is numbered with the same number slip which has detached from the field book. Over it is placed the next mounted sheet. The bundle is now kept in wooden press over night. The plant specimen becomes fixed up on the sheet. After proper cleaning, stitching is done with thread on the parts which are likely to be detached in long run. Label of size 3.5”×4” are pasted on right lower corner of the sheet. Information recorded in the field book is noted in this label, giving botanical name of the plant followed vernacular names. The label should bear the abridged medicinal uses of the plant and folklore about its uses if any.

**Arrangement of Specimens Sheets**

The medicinal plant identified botanically will bear botanical name which is of international recognition. But the Sanskrit name, local name and names of various regional languages of such plant may vary. It is therefore necessary that the arrangement of the plants in the herbarium should be based on the Benthaman-Hooker’s classification. And another set of
specimens may be arranged according to the classification given in Nighantus. An index of Botanical, Sanskrit, Unani and other vernacular names may be prepared for locating the specimens arranged according to the above classifications.

There should be kept a literature file for each medicinal plant. Abstracts of information available on various aspects regarding that plant may be recorded in that file.

**Museum for the display of the unmountable Material**

The material of the plant specimens which can not be mounted on the sheet should be displayed in museum. The order of classification followed in the museum. The order of classification followed for the herbarium should also be followed in the museum. The material can be kept in jars and bottle as per size and shape.

Coloured photographs, line sketches of the plants should be displayed in the museum. Maps of the localities which have been surveyed and charts depicting various information regarding medicinal plants should also be displayed.

**Periodic care**

The plant specimens kept in the herbarium and the raw-material displayed in the museum should remain under periodic care. 2% solution of mercuric chloride in methylated spirit should be applied on the specimen sheets. Naphthalene ball powder should be sprinkled over the herbarium sheets. The museum specimens kept in alcohol and formalin should also be looked after and the solution may be changed as and when required. Naphthalene balls may be kept with the dried plant material stored in Jars.

**CONCLUSION**

In India the use of several species of plants as known from the remote vedic period and many treatises are available on their medicinal virtues and therapeutics. Out of about 2000 items recorded in Indian medicinal literature, less than 200 are of animal and mineral origin and rest are derived from vegetable sources. The descriptions of drugs available in the ancient literature are not sufficient to identify many of the drugs being sold in market. This has brought forth adulteration of drugs. Since no proper methods of identification of such drugs have been developed it is therefore difficult to control it. For the standardization and other scientific work on the drug it is necessary to maintain up to date herbarium and museum of medicinal plants. The plant specimen of the drug source to be identified botanically and then
the relevant vernacular names may be retained along with them. The storage of the drug samples shall be very helpful for future consultation available about each specimen may also be recorded and kept in the literature file.

A complete and well established herbarium and museum of medicinal plants can be of great to traders, pharmaceutical concerns, and students and research workers. It can also play an important part in the establishment of various controversial and vernacular names. The collections of plant specimens may be made after doing extensive survey work in all regions of the country.

**Summary**
The indigenous system of medicine is poly-pharmaceutical. The action of preparation depends on individual ingredients. The scientific standards are to be developed to check the uniformity of product and to have some sort of control on the manufacture of spurious drugs. This can achieved by pharmacognostic identification, physical, chemical, biochemical estimation. For purpose the first and foremost problem is the proper identification of the work of the drug. Extensive survey work of the drugs is to be done in the field and market and samples of such drugs are to preserved for future record and reference.

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