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PHARMACOGNOSY: ITS ROLE IN SOLVING THE CRISIS OF AYURVEDIC DRUGS OF DOUBTFUL IDENTITY

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ABSTRACT

The Indian system of medicine (Ayurveda) practiced since very early days, was not written but was passed on from generation to generation by recitation and memory. A good deal of Ayurvedic literature was lost after invasion on India by Mohammadan. The Unani and Tibbi system of medicine brought by Mohammadan got intermingled with the Ayurveda and a good deal of Ayurvedic literature was lost. This led to rapid waning of the glory of Indian medicine in as much as a number of effective remedies were lost. In their place a number of worthless drugs of doubtful origin came in, which did not have the curative properties and thus the Indian system of medicine got over shadowed. The main problem confronting our country at present in the prevention of adulteration of crude drug in as much as a large number of them are now adulterated with spurious material. Also a very potent factor of encouraging adulteration is the fact that many of the drugs are sold in the local drug market under various names for the same drug as also the same name for different drugs and in many cases even the learned Hakims and Kavirajas cannot differentiate with certainty as to which is the authentic specimen meant in the old text. Thus it is high time to realize the importance of the use of pharmacognostical investigation to all the crude drugs used in Ayurveda so that one can pinpoint the salient diagnostical characters of the crude drug under question which can differentiate it from its possible substitutes and/or adulterant and this would go a long way in their correct identification.

Keywords: Crude drug, Ayurveda, Pharmacognosy.

INTRODUCTION

India from times immemorial has been blessed by nature, manifesting itself in the form of fascinating and alluring fauna and flora particularly in respect of medicine plants. Perhaps no other country surpasses India in the possession of these natural drug resources and thus the history of the use of medicinal plants as curative agents can be traced to very early times. In Rigveda and Athervaveda two of the oldest repositories of human knowledge [1], plants and plant products have been definitely recognized as helpful agents in the treatment of diseases. Ayurveda, the Indian system of medicine practiced since very early days, was not written but was passed on from teacher to his beloved pupil by recitation and memory and this passed on from generation to generation. But later on the Ayurveda was compiled and it found its rightful place at the end of the fourth Veda, the Athervaveda. From this time down to Mohammadan invasion on India, the Indian medicine flourished but later on the Unani and Tibbi system of medicine brought by Mohammadan got intermingled with the Ayurveda and a good deal of Ayurvedic literature was lost. This led to rapid waning of the glory of Indian medicine in as much as

a number of effective remedies were lost. In their place a number of worthless drugs of doubtful origin came in, which did not have the curative properties and thus the good name of the Indian system of medicine got over shadowed. When Britishers established their rule in India, they brought their own Materia Medica and thus western medicine was introduced in India. With the advent of western medicine, the inquisitive mind of western scholars began to probe into the mysteries of Indian Medicine plants. It is from this time that the scientific study of the Indian medicinal plants began and thereby quite a number of medicinal plants were shown to be effective on scientific and clinical basis. The cascade effect of their study prompted the natural product chemists to carry on phytochemical investigation on medicinal plants with the result, thousands of chemicals constituents have been isolated from them till date and their structure established. Many of the isolated constituents have been tested experimentally and also clinically and proved to be effective thus reestablishing the therapeutic claim of the drugs used in the Ayurvedic system of medicine.

Keeping in view all the above mentioned facts,

The main problem confronting our country at present in the prevention of adulteration of crude drug in as much as a large number of them are now adulterated with spurious material. To prevent this adulteration, knowledge of their morphological description as is embodied in ancient Ayurvedic texts or their later compilation are inadequate and thus this task of prevention of adulteration becomes extremely difficult especially when the adulterant happens to resemble the genuine drug externally as is usual for root and bark drugs. However in the case of leaf drugs, the problem becomes more complicated. A microscopical examination of the drug in such cases, as also the study of its microscopy in powdered state, is the only means to detect the adulterant or the presence of the foreign element in the sample. In the recent years [5], much progress has been made in the field of the microscopical studies which includes the quantitative measurements of adulterants using lycopodium spore analysis. Also physical as well as physico-chemical parameters of many drugs have been worked out [3, 4].

Another source of confusion and hence a very potent factor of encouraging adulteration is the fact that many of the drugs are sold in the local drug market under various names for the same drug as also the same name for different drugs and in many cases even the learned Hakims and Kavirajas cannot say with certainty as to which is the authentic specimen meant in the old text. To take the examples of *Glorisa superba* (fam: *Liliaceae*) which is commonly known as *kalihari* in Hindi. Under this name, another drug *Costus speciosus* (fam: *Zingiberaceae*) is sold in the drug market. Brahmi has been highly extolled in Ayurveda as possessing rejuvenating properties and specific against hysteria and epilepsy *Herpestis monniera* (fam: *Scrophulariaceae*) and *Centella asiatica* (fam: *Umbelliferae*), both are sold under the same name. Likewise *Eclipta alba* and *Wedelia chinensis* are both sold under the same name as *Bhringraj*. *Boerhaavia diffusa* and *Trianthema portulacastrum* are indiscriminately used as

punernava.

Of the large number of herbal drugs used in Ayurveda, many have not been identified even upto this date. All such drugs are now placed under the special category of “sandigdha dravya” [2] meaning drugs of doubtful identity. For instance in Ayurveda, “Ashtawarga” constituting a group of eight drugs form an important component of a number of Ayurvedic preparations. Many curative and rejuvenating properties have been attributed to this group but all of them have not been identified correctly so far. Extreme vague description about these are available in the Ayurvedic literature and so far it has not been possible to ascertain the correct botanical species representing these eight drugs, with the result that all sorts of plants are indiscriminately used as “Ashtawargha”. This group of eight drugs consists of *Jivaka*, *Rishbhaka*, *Meda*, *Mahameda*, *Kakoli*, *Kseerkakoli*, *Riddhi* and *Vridhhi*. These drugs have been described for the first time in some mediaeval texts of Ayurveda. Although, the Ashtawarga did not appear in the ancient Ayurvedic texts, yet some of the properties, action and their uses of the component of this group are indicated, which are given in the Table-1.

The aforesaid inadequate description of the drugs coupled with the inaccessibility of the areas of their occurrence and excessive demand by the Ayurvedic drug manufacturers; tubers and rhizomes of a large number of plants resembling in one way or the other with the description of the Ashtawarga group of drugs, started appearing in the drug market in their place. Thus the entry of spurious and worthless drugs on the name of Ashtawarga tarnished the good name of this group for which it was known.

Some work on the pharmacognosy of a few of the Ashtawarga group of drug is on record [3, 4]. But more needs to be done to establish the correct authenticity and identity of the drugs in the way that it meets the requirement of the drugs in terms of the uses mentioned in the original Ayurvedic literature.

Table 1. Ashtavarga group of drugs

| Ancient Ayurvedic Literature | | | | |
|------------------------------|-------------------|--|---|--|
| S.no. | Drugs recorded | Uses | Indicated location and vague characters | Drug currently sold in the market under this name |
| 1 | Jivaka- rishbhaka | In pyrexia and consumption of body tissues, as tonic, blood purifier and spermatogenic | Are found in Himalayan hills, their leaves are small and its tubers appear like garlic; Jivaka having brush like and rishbhaka having bull's horn like appearance; and are devoid of any juice. | <i>Microstylis wallichi</i> (Lahsunia); <i>Puraeria tuberosa</i> (Vidraikand), <i>Centuarea bahen</i> (Bahman safed), other <i>Centaures species</i> (Bahmanlal) |
| 2 | Meda-mahameda | In pyrexia as restorative, galactagogue, blood purifier and spermatogenic | Are located in southeast Himalayas both having ginger like rhizomes but Meda is white in colour and Mahameda is creamish in colour; both exude creamy secretion when punctured. | <i>Polygonatum verticillatum</i> and <i>Ploygonatum cirrifolium</i> (Shakakul Misri); i (Shatavari); <i>Eulophia comprestris</i> (Salain Misri) |

| | | | | |
|---|--------------------|--|---|--|
| 3 | Kakoli-kseerkakoli | In pyrexia, pthisis, burning sensation of the body, restorative, and spermatogenic | Located from south east Himalayas, both appear like Shatavari; roots have pleasant odour giving white exudation when punctured; tubers of Kakoli appear more blackish than that of kseerkakoli | <i>Roseora procera</i> , <i>Roscoea alpine</i> , <i>Lilium polyphyllum</i> ; <i>Withania somnifera</i> (Ashwagandha); <i>Curculigo orchoidis</i> (Krishna Musli); However on the name of Kseerkakoli; <i>Chlorophytum arundinaceum</i> (Sweta Musli) is also sold |
| 4 | Riddi-vridhii | To restore unconsciousness, in cough, consumption of body tissues; as aphrodisiac , promotes vitality and conception, promotes life and is spermatogenic | Are found in Kaushala range of Himalaya, their tubers show hairy and perforated surface and appear like cotten pods. However, Riddhi climbs its support in the clockwise and vridhii in the anticlockwise direction | Various species of <i>Hebneria</i> , <i>Eulophia comprestris</i> (Lahsunia), <i>Dioscorea bulbifera</i> (varaal kand); <i>Asparagus racemosus</i> (Shatavari also called Chirakand); <i>Orchis latifolia</i> (Solampanja). |

CONCLUSION

The search, research and thorough study on the pharmacognostical aspects of Ayurvedic drugs in particular to the frugs belonging to the category of “Sandigdha dravya” is absolutely essential in the Indian context because of the abundance of the medicinal flora and traditional use of herbal medicines in this country. Thus it

is high time to realize the importance of the use of pharmacognostical investigation to all the crude drugs used in Ayurveda so that one can pinpoint the salient diagnostical characters of the crude drug under question which can differentiate it from its possible substitutes and/or adulterant and this would go a long way in their correct identification.

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