CONTRIBUTIONS OF ŚĀRṅGADHARA IN THE FIELD OF MATERIA MEDICA AND PHARMACY

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Śārṅgadhara's is the popular text of medieval period which deals with medicinal formulations and various pharmaceutical forms used in various disorders. In this process, the author has been able to utilise all possible sources of drugs—new and old, which were in demand at that time. Thus by introducing a number of new drugs with their therapeutic uses and also a variety of pharmaceutical forms, Śārṅgadhara has made a valuable contribution to the field of materia medica and pharmacy which helped enhancing the practical utility and consequent popularity of Indian Medicine.

INTRODUCTION

India has remained in contact with the outer world since pre-vedic era. There are evidences of maritime trade between India and Egypt during Indus Valley civilisation. Later on it came in contact with Persia, Greece, Rome, China, South-east Asia, Middle east and lastly with Europe and America. Due to intense cultural assimilative and metabolic power it absorbed many things from the exotic culture and science into its varied background and made them integral part of its own culture, but at the same time sticking fast to its radical character. This has made Indian culture a queer blending of orthodox and progressive forces. The realm of Medicine is no exception to this. There was always give and take with the new people with whom it came in contact.

During medieval period, India came in close contact with Arab countries. The Caliphs of Arab played a very important role in furthering this process vigorously and sincerely but this was only a beginning. The actual work in this field began to be materialised in twelfth century A.D. and afterwards when Muslims who brought Arabic and Persian knowledge with them settled on this soil with the idea to become permanent member of the Indian Society. On the other hand, within the country there was a cultural upheaval starting from Gupta period and culminating in later medieval period in which ancient aṭhārvans, buddhists, śaivas, sāktas and alchemists all joined together and formed a tántrika culture which brought a revolution not only in religious sphere but also in medical field. A new branch, now known as 'Rasa-śāstra' was developing during this period in
which mercury and its various combinations with other metals began to be used as drugs in various disorders. This completely revolutionised the Indian Medicine during medieval period just as the discovery of antibiotics in the modern age.

Sāṅgadhara standing in the thirteenth century A.D. combines both these aspects and that is why his work the Sāṅgadhara Samhitā may be taken as a representative work of the medieval period in this respect. Though Sūdhala (twelfth century A.D.) who preceded him paved the way for this integration, the major credit goes to Sāṅgadhara who for the first time placed before the Indian medical world many new things in record including the examination of pulse (nādi-parikṣā) for diagnosis of diseases. The contributions of Sāṅgadhara are great many but here, I would limit myself to materia medica and pharmacy.

CONTRIBUTIONS IN MATERIA MEDICA

As regards the contributions of Sāṅgadhara in Indian Materia Medica, this may be placed broadly as follows:

1. Introduction of new indigenous drugs

Sāṅgadhara introduced a number of new plants which though indigenous were not popularly used as drugs. In this group we may put rudanti², babbula³, sthūla babbulikā⁴, mahānimba⁵, jvālāmukhi⁶, kūṭhārācchinna⁷, pāṭālaruvidi⁸, aileya⁹, and suvarṇapuspī¹⁰. Rudanti has been mentioned as rasāyana drug along with guḍūci, gīggulī and hariśaki. Capparis moonii Wight is used as rudanti in many quarters for treatment of tuberculosis but, in my opinion, here this may be taken as Astragalus species which is known as rudanti or rudrawanti¹¹ attributed with miraculous properties and much sought after by the Tāṅtrikas. Babīla (Acacia arabica Willd) and sthūla babbulikā (Acacia sp.) began to be used as astringent during medieval period. Mahānimba, in ancient days, was a synonym of aralu¹² (Ailanthus excelsa Roxb.) but during the medieval period it became the nomenclature for Melia azedarach Linn. popularly known as bakāyana. Aileya (Aloes) is also not found in ancient literature. Pāṭālaruvidi (coccus hirsutus Linn. Diels) is used frequently by Sāṅgadhara in preparation of various formulations. Kūṭhārācchinna, jvālāmukhi and suvarṇapuspī are still not free from controversy.

2. Introduction of new therapeutic uses of indigenous drugs

Sāṅgadhara introduced several new therapeutic uses of indigenous drugs. For instance, he recorded use of sākhoṭaka (Streblus asper Loud.) in filariasis¹³, mahānimba (Melia azedarach Linn.) in scintiasis¹⁴, Viśṇukrānti (Evolvulus alsinoides Linn.) in peptic ulcer¹⁵, nasal administration of kuṅkuma (Crocus sativus Linn.) in neuralgia, particularly migraine¹⁶, guḍūciśatwa in burning sensation,¹⁷ tilaparni (Gynandropsis pentaphylla DC.) in ear ache¹⁸ etc. It may be noted that Sāṅgadhara was not only a scholar of materia medical and a good pharmacist
but also an expert clinician and has recorded in his text the use of drugs whatever he observed in his practice.\(^{19}\).

3. Propagation of rural medicine

Śāṅgadhara seemingly was a physician of the rural population which is evident from the fact that he has used simple domestic materials as remedies for ailments. For instance, he has mentioned the use of the juice of guḍāci in diabetes\(^{20}\), vāśā in internal haemorrhage\(^{21}\), nimba in jaundice\(^{22}\), dronapuspī and tulasi in malaria\(^{23}\), ārdra in scrotal pain and respiratory disorders\(^{24}\), nimbu in colics and tympanitis\(^{25}\), kūṣmāṇḍa in psychic disorders\(^{26}\) and so on. He also used medicinally the common pulses like masūra and udāda, the former in vomiting\(^{27}\) and diarrhoea\(^{28}\) and the latter as a sexual tonic\(^{29}\).

4. Use of animal products

Among the animal products, apart from kastūri\(^{30}\), the urines of all sorts of animals including frogs have been used in preparation of medicines\(^{31}\). It is interesting to note that even human urine\(^{32}\) is not spared. The powder of animal teeth\(^{33}\) is prescribed for corneal opacity. The bile of goat\(^{34}\) is also used. The use of these substances is seen even in ancient days but was popularised during the medieval period probably by tāntrikas and aghoris.

5. Introduction of new therapeutic techniques

In ancient days too, there was an idea to introduce the drug directly into blood bypassing the gastrointestinal tract to avoid consequent degradation and passage of time particularly in cases of emergency like poisoning. Caraka has prescribed administration of drug in such cases through incised wound in the head of the patient\(^{35}\). Śāṅgadhara has elaborated it further. He has advocated the use of sticikābharaṇa rasa in serious cases of typhoid fever through wounds incised in head. The medicine is to be rubbed there for a while so that it comes in contact with blood sufficiently. He has emphasised particularly on ‘raktabhṛṣaya-samparka’ (contact of blood and drug)\(^{36}\). Similarly he has prescribed the use of guṇjā (Abrus precatorius L.) in sciatica by the similar technique\(^{37}\).

6. Formulation of new groups of drugs

Śāṅgadhara has contributed to Indian materia medica not only by adding single drugs but also by formulating new groups of drugs. Several groups of drugs have been mentioned by Caraka, Suśruta and Vāgbhaṭa according to action and uses but Śāṅgadhara has got some originality in this respect too. Suśruta’s varṇāḍi gana has been modified slightly by dropping darbha and pūṭika and adding kirātaka\(^{38}\). In respect of jivaniya gana, Śāṅgadhara strictly follows Caraka by enumerating only ten drugs\(^{39}\) keeping aṣṭavarga separate, while later authors like Bhāvamiśra have incorporated entire aṣṭavarga under jivaniya gana\(^{40}\). A
specific formulation of five drugs has been named as Pañcakasāya which consists of tīnduka, abhayā, lodhra, samāṅgā and īmalaki\textsuperscript{41} and is prescribed in otorrhoea probably on the basis of Suśruta (VI. 21.46).

7. Introduction of poisons and psychotropic drugs

Use of poisons like vatsanābha\textsuperscript{42} (aconite) and viṣamūṣṭi\textsuperscript{43} (nux vomica) and psychotropic drugs like vijāyā (cannabis) and dhatūra\textsuperscript{44} is seen frequently in the Śāṅgadhara Saṃhitā. Although the use of poisons is seen first in the work of Vāgbhaṭa\textsuperscript{45}, it has developed fastly under the patronage of alchemists and tāntrikas. Consequently during the medieval period the formulations containing poisons alongwith mercurial compounds became very popular. Linguistically it is interesting to note that the word ‘rasa’ denotes both mercury and poison\textsuperscript{46} and both are dealt with in the texts of Rasa-śāstra. Cannabis became more popular than dhatūra. Cannabis along with opium has been given as examples of vyavāyi (which is absorbed quickly through mucous membrane). Apart from cannabis, narcosis produced by areca nuts, kodo grains, belleric nuts has also been observed\textsuperscript{47}. It shows the popular use of cannabis as psychotropic drug. It is surprising that though bhaṅgā is mentioned in Atharvaveda\textsuperscript{48} and also in Kātyāyana’s Vārttika\textsuperscript{50}, its use as psychotropic or other drug is not seen before twelfth century A.D.\textsuperscript{51}. Śāṅgadhara has mentioned the use of cannabis in insomnia, loss of appetite, diarrhoea and dysentery\textsuperscript{52}. The popular formulation jāтипhabāḍī cūṛṇa\textsuperscript{53} contains 50\% cannabis.

8. Use of Metallic and mercurial preparations

During the medieval period use of metallic and mercurial preparations developed to the maximum and as such it was but natural that Śāṅgadhara quoted a large number of such preparations in his text. His contribution regarding number of dhatuś (metals) is significant. In early days only six metals were recognised\textsuperscript{54} and there was continuing search for the seventh one so that the number becomes parallel to that of the body tissues (dhatuś) on which they have to act. Śāṅgadhara became successful in this effort and made the number as seven including ‘ānā’ or pīṭṭala (brass) an alloy of zinc as the seventh dhatu\textsuperscript{55}. Later on when Zinc as such was recognised in pure form, it replaced pīṭṭala under the name yasāda which is first found in the Bhāvaprakāśa\textsuperscript{56} (sixteenth century A.D.). Thus the credit for initiating the modern concept of seven dhatuś goes mostly to Śāṅgadhara.

9. Use of Unani drugs

The use of Pārasīka yōvani is seen since the ninth century A.D.\textsuperscript{57} but the drugs like ahiphena, akarakarā and utaṅgana are not found before twelfth century A.D.\textsuperscript{58}. It seems that they were adopted from the fellow Unani Physicians who came and settled in this country by that time. Ahiphena is only a sanskritised term for Arabic ‘‘afyun’. Ahiphena is included in the group of upāvīṣas and is
used as sexual retentive and *vātanīśana* (analgesic). It is interesting to note that Śārṅgadhara has mentioned the use of *ahiphena* and *bhaṅgū* as sexual retentive and astringent respectively but later on the position became somewhat reverse and *ahiphena* began to be used as astringent in diarrhoeas and *bhaṅgū* in sexual tonics like *madana modaka*.

10. Sexological Medicine

From the earliest times there is already a section of Ayurveda known as *vājikaraṇa* which is practically sexological medicine. Śārṅgadhara contributed in this field in four ways:

(i) by classifying the drugs acting on *sukra dhūtu* in detail,
(ii) by adding and developing the use of certain useful Unani drugs to this field,
(iii) by prescribing formulations for allied purposes,
(iv) by prescribing treatment for venereal diseases.

(i) Śārṅgadhara has classified the drugs acting on *sukra dhūtu* in the following seven groups:

(a) *sukrajanaka (sukrala*)—kapikacchubija
(b) *sadyah sukraranaka (vṛṣya)—dugṣha
(c) *sukrapravartaka—śtri *
(d) *sukrapravartaka—janaka—māṣa *
(e) *sukrarecana—bṛhatiphala*
(f) *sukrastambhana—jātiphala*
(g) *sukrāsoṣana—harītakī*.

Not a single author in Indian Medicine other than Śārṅgadhara has described it in such details which shows his deep study and insight in the subject.

(ii) As said earlier, *ahiphena* and *ākārakarabhā* or *ākallaka (akarakarā)* were used as sexual retentive (*Sukrastambhana*). *Uṣṇīgana* was used as sexual tonic. All these three drugs were incorporated in materia medica earlier by Śodhala but their use was developed by Śārṅgadhara. The *ākārakarabhādi cūrṇa* of Śārṅgadhara is very popular which contains *ahiphena* as well as *ākārakarabhā*.

(iii) Apart from the main sexual performance, some allied problems like contraction of female organ, enlargement of male organ, moistening of female organ, enchantment (*vaśikaraṇa*)*, depilatories* and cosmetics have been dealt with and proper formulations have been suggested.
(iv) For management of the resultant venereal diseases also, various prescriptions have been suggested.\(^6\)

**Contributions in Pharmacy**

The credit for organising the branch of Pharmacetics systematically goes to Śāṅgadhara. In fact, the main subject of the Śāṅgadhara Samhitā is pharmacetics and it has been planned in such a way that all the relevant subjects are covered. In the first section of this text, Anatomy, Physiology and Pathology along with the weights and measures, technical terms and general instructions are given. The second section deals with main pharmaceutical forms with exemplary formulations under each category. The third section deals with accessory forms concerned with pañcakarma and also dhūma, aṅjana, lepa etc.

The main pharmaceutical forms have been grouped in the following categories:

1. swarasa
2. kwātha
3. phṛntā
4. hima
5. kalka
6. cūrṇa
7. vataka (including guggulu and modaka)
8. awaleha
9. ghṛta-taila (fatty preparations).
10. āsava-ariṣṭa
11. dhūtu-ratna
12. rasa.

There is no preparation of arka in the Śāṅgadhara Samhitā, though it is there in Śodhala’s Gadanigrāha\(^8\). It is difficult to say why this topic is left altogether. The apparatus for distillation (hastiśundikā nūḍī\(^7\)) is mentioned and there is no doubt that the process was prevalent. It is interesting to note that because of the use of this śundikā apparatus, the owners of distilleries were known as saundika\(^7\) (persons using śundikā apparatus).

Lastly, it would not be out of place to mention one instance which is enough to show that Śāṅgadhara not only contributed positively to the subject but also to the prevalent confusion regarding identification of plant drugs. Áralu (*Ailanthus excelsa* Roxb.) and śyonāka (*Oroxylum indicum* Vent.) are two different drugs but Śāṅgadhara has put aralu as synonym of śyonāka under dasamūla\(^7\) making the position worse.
CONCLUSION

Sārṅgadhara was a doyen in the field of Indian Medicine during the medieval period and made significant contributions in Materia Medica and Pharmacy by adding many new drugs and therapeutic uses and techniques. He revolutionised the practise of Indian Medicine with these contributions and paved the way for barefoot physicians working among rural population. He established the Āyurvedic Pharmaceutics on sound systematic footing and thus he may be given the honour as ‘Father of Āyurvedic Pharmaceutics’.

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70. S. II I. 2. 19  
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ABBREVIATIONS


R. N. = *Rājanighaṇṭu*, Poona, 1925 (2nd ed)

S. = Śāṅgadhara, *Śāṅgadhara Saṃhitā*, Master Kheladi Lal and Sons, Benaras City, 1933.

S. K. = *Siddhānta Kaumudi* Bombay, 1926