

LITERARY REVIEW OF SAMUDRAPHENA (CUTTLEFISH BONE)

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ABSTRACT

Samudraphena (Cuttlefish bone) is one of the *Pranija sudhavarga dravya* (animal origin drug) which possess immense medicinal value and used for eye and ear ailments since time immemorial. Since *samhita* period it is being used to treat various ailments and hence, occupied a special place in *Ayurveda*. It contains mainly calcium carbonate including organic and inorganic elements. It is an easily available and cost effective drug which has drawn interest of many researchers and is screened for various bioactive substances and researches are going till today. In this article an effort has been made to highlight *samudraphena* in *samhitakala* (ancient period), *sangraha kala* (medieval period) & *Rasashastra* texts including current researches on it which provides the researcher a valuable information.

Key words: Samdraphena, Sudhavarga, Cuttlebone, Cuttlefish

Introduction:

The oceans are full of living organisms and contain more flora and fauna compared to land. Based on traditional medicine natural products contribute 85% of the treatment regimes. For the drug discovery and drug development the chemical complexity considered as best advantage¹. In the course of evolution, marine organisms have adapted excellently to the marine environment, such as high salt concentration, low temperature, high pressure and low nutrient availability. These extreme conditions require unique adaptation strategies leading to the development of new natural products, which differ from known structures of terrestrial organism². One such natural product is *samudraphena* (cuttlefish bone). In *Rasashastra* literatures it is included in the

Pranija (animal origin) *sudhavarga* (calcium compound) *dravya*. In the classical literatures it has been given great importance because of its therapeutic value. Chemically it is having calcium carbonate, including various organic and inorganic elements. Due to its immense medicinal value *Ayurveda* has utilized it for various ailments.

Samudraphena* in ancient literatures:*In *Samhitakala*:**

Literatures of the *samhita* period have mainly considered its therapeutic importance but not included in any particular groups. Source of origin, different synonyms, availability, are not described in *Samhitas*. But regarding its usage in particular condition has been given in *Brihatrayis*. The following table (Table 1) shows the references of *samudraphena* in *samhitakala*.

Table 1: References of *samudraphena* in *Samhitakala*

Sl. No	Classical text name	Author	Editor	Reference	Edition	Publisher
01	Charaka samhita	Caraka	Vaidya Yadavji Trikamji	Ch. su. 4/20	7 th	Chaukhamba Varanasi
02	Sushruta samhita	Sushruta	Vaidya Yadavji Trikamji	Su.chi. 1/38-40 & 20/33-36	14 th	Chukhambha Varanasi
03	Asthanga hrudaya	Vagbhata	Pandit Hari shastri	A.H.Ut.13/25	1 st	Krishna das academy Varanasi

In *Sangrahakala*:

In the *sangrahakala* many authors have included *samudraphena* (Cuttlefish bone) in different *Vargas* (groups) and mainly concentrated on the clinical usage on

different ailments mainly on eye and ear diseases. The following table (Table 2) describes the references of it during *Sangrahakala*

Table 2: References of *samudraphena* in *Sangrahakala*

S.N o	Classical text name	Author	Editor	Reference	Edition	Publisher
01	Bhaishajya ratnavali	Shri Govindadasa	Rajeshwara dattashastri	41/552-553 & 42/115-119	17 th	Chaukhamba New delhi
02	Bhava prakasha	Bhavamishra	Gangasahoy Pande	Haritakyadi varga / 118-119	9 th	Chaukhamba Varanasi
03	Yogaratnakar	unknown	Sri Bramha Shankar shastri	Purvardha	7 th	Chaukhamba Varanasi
04	Sharngadhar samhita	Sharngadhar	Dayashankar pandey	Ut. Kha. 13/79	4 th	Chaukhamba Varanasi
05	Kaiyadeva nighantu	Kaiyadeva	P. V. Sharma	Dhatuvarga/ 129	1 st	Chaukhamba Varanasi
06	Dhanvantari nighantu	Mahendra bhogika	P. V. Sharma	Chandanadi varga/138	1 st	Chaukhamba Varanasi
07	Vangasena	unknown	R. K. Roy	Marichadich urnanjana/4 53	1 st	Chaukhamba Varanasi
08	Arka Prakasha	Lankapati Ravana	-	3 chapter, 19 th sloka	1 st	Krishnadas academy Mumbai

In Rasa literatures:

Samudraphena (Cuttlefish bone) is described in many Rasa texts regarding its usage in many ailments. Though it is known since *Samhita* period, its process of *shodhana*, method of usage, therapeutic

value is more described in *Rasa* literatures. *Samudraphena* (Cuttlefish bone) is mentioned in different *rasa* literatures for different ailments and the references are as follows (Table 3).

Table 3: References of *samudraphena* in *Rasa* texts

Sl. No	Classical text name	Author	Reference	Edition	Publisher
01	Rasachandamshu	Sri Shankar	Purva khanda, 330 th shloka	1 st	Ramesh vittala raghuvamshi, Mumbai
02	Rasatarangini	Sadananda Sharma	12/304-307 & 12/97	11 th	Motilal banarasi das Delhi
03	Rasaratnasamucchaya	Vagbhata	21/66	9 th	Chaukhamba Varanasi
04	Rasendrasarasangraha	Gopal Krishna bhatta	2/3 & 2/65-70, & 2/326	4 th	Chaukhamba Varanasi
05	Rasendrachintamani	Dundhukanath	9/7	1 st	Chaukhamba Varanasi
06	Bhrihatrasarajasundara	Pandit Dattaram chowbe	Pp184	3 rd	Chaukhamba Varanasi
07	Rasayogasagara	Vaidya Hariprapanna sharma	Part 1 st , pp112	1 st	Chaukambha Varanasi

The *samudraphena* (Cuttlefish bone) is having various synonyms and it tabulated in Table 4

Table 4: Synonyms of *Samudraphena*

S.No	Text name	Synonyms
01.	Rasatarangini	Samudraphena, Phena, Saphena, Phenaka, Abdhiphena, Dindeera, Abdhikapha ³
02.	Dhanvantari nighantu	Phena, Shushkashushka, Payodhija, Udadhiphena, Sagaraja mala ⁴
03.	Kaiyadev anighantu	Dindeera, Abdhikapha, Abdhiphena, Phena, Varikapha, Abdhija, Toyamala, Jalaphena, Shushkashushka ⁵
04.	Bhavaprakasha nighantu	Samudraphena, phena, Dindeera, Abdhikapha ⁶

The possible explanations for the synonyms enlisted in table 5.

Table 5: Possible explanations of Synonyms given for Samudraphena

S.No	Synonyms	Possible explanations
01	Samudraphena	froth of the sea
02	Phena	Froth
03	Saphena	Along with froth
04	Phenaka	Like froth
05	Abdhiphena	Froth of sea
06	Dindeera	Ossepieae
07	Abdhikapha	Froth of sea
08	Udadhiphena	Froth of sea
09	Sagarajamala	Impurity of sea
10	Varikapha	Froth of sea
11	Abdhija	Originated from sea
12	Toyamala	Impurity of water
13	Jalaphena	Froth of water

The above all meaning indicates that the synonyms given for *samudraphena* (Cuttlefish bone) are on the basis of its place origin.

Physical properties⁷:

- a. *Samudraphena* (Cuttlefish bone) is white brownish in color having bright white surface.
- b. It is oblong in shape, tapering at the ends.
- c. It is very light and fragile.

Origin, Collection and distribution:

According to the *Rasa* texts the *samudraphena* (Cuttlefish bone) is originated as a separated body part of specific variety of fish having 10 arm lengths, round body, delicate with ugly look. It is having fearful eyes and its back is hard as that of tortoise. When this animal dies, it's all organs get disintegrated and the *Samudraphena* (cuttlefish bone) floats on the surface of the sea like a froth and slowly gets collected on the shore⁸. Though it is commonly translated that *Samudraphena* as cuttlefish, precisely it is cuttlefish bone.

According to the modern science Cuttlefish is a mollusk (soft boneless animal) in the same class as the squid. It is found distributed in most seas except those surrounding the America. It usually lives in deepwater, but it is sometimes found near the shore. It ranges in size from about 3 inches to about 6 feet. The body is brown with cross bands and purple spots. It is brilliantly metallic in sun light and often changes colour. The body of cuttlefish is oval and surrounded with a frilled fin. The cuttlefish has eight short arms and two long tentacles (feelers) that surround the mouth. Both the arms and the tentacles have four rows of hard and rough suckers. The tentacles can be pulled into pockets behind the eyes. The cuttlefish uses its arms to attach itself to objects and to capture marine life for food. The cuttlefish has an internal shell called as the cuttlebone. The broad cuttlebone is spongy and chalky⁹.

Availability in market:

In India generally *samudraphena* (Cuttlefish bone) are obtained from four species of Cephalopods (cuttlefishes) along with their respective code numbers which are as follows¹⁰

- S. aculeate - 5011
- S. elliptica - 5012
- S. pharaonis - 5013
- S. prashadi - 5014

As cuttlefishes having very less life span (1-3 years¹¹); its availability is never a concern. When the fish dies naturally the *samudraphena* is collected near the coast so there is no question for ethical objection and are easily available in the market for less cost.

Methods of *shodhana* of *Samudraphena*:

For internal usage *shodhana* is necessary. The outer surface is scrapped and remaining is powdered in *khalwa yantra* (*Mortar and pestle*). Then, *bhavana* (trituration) is done using *Nimbu swarasa* (juice of *Citrus lemon*) for one day and dried¹². According to other *Rasa* texts the fine powder of it is soaked in lemon juice for its purification¹³.

Ashodhita Samudraphena (Cuttlefish bone) **doshas**¹⁴:

If *Samudraphena* is taken internally without purifying then it leads to restlessness.

Properties and usage¹⁵:

Rasa: Kashaya

Guna: Laghu and Rooksha

Veerya: Sheeta

Vipaka: Katu

Karma: Lekhana, Pachaka, Agnideepaka and Antrauttejaka

Doshghnata: Kaphanashaka

Rogaghata: Netraroga, Karnaroga, Vishadoshshamaka and Kustharogahara

Usage:

It is seldom used as single drug but can also be used in combination with other drugs. For example: it is used in following combinations:

- 1) Purified *Samudraphena*+*Mriddarashringa* (equal quantity) + honey, as per requirement. This mixture is used for dressing the wounds.
- 2) Purified *Samudraphena* + Rock candy powder (equal parts) is used in a form of *anjana* to treat corneal opacity.
- 3) *Samudraphena* (Cuttlefish bone) powder is roasted and put into ears to mitigate discharge in otitis. *Samudraphena* (Cuttlefish bone) mitigates *Kaphadosha* as well as toxic metabolites.

Dosage: 2 Ratti (250 mg).

Various yogas containing *samudraphena*:

Different formulations like *Churna* (powder), *Rasayogas* (*mercurial preparations*), *vati* (tablet), *Anjana* (collyrium), *Varti* (suppository), mentioned in classics and are tabulated in Table 5.

Table 5: Yogas of *samudraphena*

Sl. No.	Kalpana (formulation)	Name of the Yoga (formulation)
01	<i>Churna</i>	<i>Samudraphena churna</i> ¹⁶
02	<i>Vati</i>	<i>Takramanduram</i> ¹⁷
03	<i>Rasayogas</i>	<i>Vadavanalarasa</i> ¹⁸ , <i>Dhumaketurasa</i> ^{19, 20} , <i>Bruhatgudapippali rasa</i> ²¹ , <i>Ardhanarinateshwara rasa (saptadasha)</i> ²² , <i>Shankhadravako rasa</i> , <i>Shankhadravakorasa (dwitiya)</i> , <i>Shankhadravako rasa (maha)</i> ²³ , <i>Vatanashano rasa</i> ²⁴ .
04	<i>Anjana</i>	<i>Nayanashanananjanam</i> ²⁵ , <i>Marichadi churnanjanam</i> ²⁶

05	Varti	<i>Samudraphenadi varti</i> ²⁷
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Different Research works on *Samudraphena* (Cuttlefish bone) across the country:

Clinical research:

- Dr. Nagendrakumar: Evaluation of *karnapoorana kriya* in the management of *karnasrava* w.s.r. to *Samudraphena choorna* and *ksharataila*, 2001, Government Ayurvedic medical college, Department of shalakyta tantra, Rajiv Gandhi university of health sciences Bangalore.
- Dr. K. Srinivas: A clinical evaluation of efficacy of *chirakusumohara karanja vartika (chakradatta)* and *samudraphenadi varti (yogaratnakara)* in the management of *netra kusuma* (corneal opacity), 2003, Government Ayurvedic medical college, Department of shalakyta tantra, Rajiv Gandhi university of health sciences Bangalore.
- Dr. K. Vikas: Efficacy of *Samudraphena churnaanjana* in *avrana shukla* (corneal opacity), 2003, Tilak Ayurveda Mahavidyalaya, Department of shalakyta tantra, Pune university, Pune.

Discussion:

Samudraphena (Cuttlefish bone) has a wide range of therapeutic application and has been used since *Samhita* period. Since the medieval period till the modern era literatures are enriched with the different therapeutic usages of it. In contemporary era mostly it is used for medicinal purposes. There is no universal opinion found in ancient literatures regarding its classification and inclusion in different groups. But literatures of *Rasashastra* mostly described it under the *pranija sudha varga*. Therapeutic utility of it are mentioned

clearly in different texts. Too many synonyms of *samudraphena* (Cuttlefish bone) are given in many ancient literatures. Therapeutic uses are found in almost all texts, which indicate its wide use in therapeutics. In today's era researchers have identified its physical and chemical nature in terms of modern language in a great extent. The cuttlebone is chiefly composed of calcium carbonate including some organic and inorganic elements. In different clinical studies the effects of *samudraphena* is evaluated for different diseases like *karnasrava (otitis media)*, *netrakusuma* (corneal opacity), *avrana shukla* (corneal opacity) etc.

Conclusion:

Samudraphena (Cuttlefish bone) is a very important *Pranija sudhavarga dravya* having immense medicinal excellence described in almost all literatures since the period of *Charaka* till date. Chemically it is mainly made up of calcium carbonate including organic and inorganic matter. Its clinical usage has been described not only Ayurveda but also in other system of medicine.

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