

A CRITICAL REVIEW OF *ŚILĀJIT* - ASPHALTUM PUNJABINUM

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ABSTRACT

Rasaśāstra, the Ayurvedic alchemy, is an important branch of Ayurveda. This branch deals with the use of metals, minerals, gemstones and their processing. The minerals and metals are very effective and potent for immunization, rejuvenation and elimination of diseases. The significant one among these is *Śilājī*. *Śilājī* is considered as one of the wonder medicines of Ayurveda. It is found in usage since prehistoric period and there is evidence of usage of *Śilājī* as medicament in the Indus civilization. *Śilājī* has been used traditionally as a panacea and it is a versatile remedy for the rehabilitation of muscles, nerves and bones. It is known as a strong kidney tonic and is said to increase the body's core energy, responsible to sexual and spiritual power. *Śilājī* is truly a remarkable substance with a long history of human usage and should be subjected to further investigations. In this article all possible efforts are made to present the information regarding ancient and modern literature of *Śilājī* in detail.

Śilājī is a pale-brown to blackish brown gummy exudation substance of variable consistency on rock mountain ranges of the world. Researchers have found the degraded components of several different medicinal plants in samples of *Śilājī* including *Euphorbia royleana* and *Trifolium repens*, leading to the idea that *Śilājī* is mainly derived from the humification of a variety of resin or latex containing plants.

Śilājī in Sanskrit means 'conqueror of mountains & destroyer of weakness'. It is the most important drug in Ayurvedic system of medicine. *Caraka* (1st Century A.D.) described as 'There is hardly any curable disease which cannot be controlled or cured with the aid of *Śilājī*.'¹ *Suśruta saṁhitā* describes *Śilājī* as a cure for all diseases as well as able to increase the longevity from 100 to 1000 years of age.² It has been used to treat various clinical conditions ranging from Anemia, Edema, Diabetes, Hormonal imbalances, Kidney disorders, Arthritis, Allergic manifestations, Insanity, Epilepsy and many Geriatric complaints. Recent studies also confirm that the extracts of *Śilājī* contain significant amounts of fulvic acids,

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which is responsible for many therapeutic properties of *Śilājīṭ*. It also contains 84 types of minerals in natural ionic form which are very vital for maintaining the equilibrium of energy metabolism in our body. The minerals in *Śilājīṭ* are not similar to the mineral supplements available in market. These minerals have previously been absorbed in ionic form by rich plant life and returned back to earth by humification and hence are easily absorbed by the body cells.

Though *Śilājīṭ* has a long history of its usage by the Indians from the ancient times, it is not directly mentioned in *vēda* and its contemporary literatures. *Bṛīhat Rasa rāja sundaram* of Dattaram Chowbe, a compilation work on many ancient *Rasaśāstra grantha* explains the mythological origin of *Śilājīṭ* in detail. During the vigorous process of *samudramanthana* (churning of ocean by the deities and demons), sweat was formed due to friction and was spilled out in the ocean from *mandarācala* mountain. Later a shiny substance looked like *moon* emerged and the same was bestowed to all the mountains by the deities for the benefit of human beings. This gifted gummy exudation which comes out from the rocks of mountains due to strong heat of sun was presumed to have equal properties of *amṛt* or *soma* and thus known as *Amṛta Śilājīṭ*.³

Samhitā and Rasagrantha

Cakrapāṇi, while commenting on *pārthiva auśadhi* of *Carakasamhitā sūtrasthāna*, considered the *Iohamala* as *Śilājīṭ*. In this context *Śilājīṭ* exuding from the stones of four types of metals viz., gold, silver, copper and iron were explained.⁴ The authors of *Cakradatta*, *Rasēndra Cintāmaṇi* and *Rasajalanidhi* etc followed the descriptions of *Caraka*.⁵

Suśruta has the same opinion regarding the origin of *Śilājīṭ* and further emphasized the specific season of exudation i.e. *Jyēṣṭha* and *Aṣāḍha* (June and July).⁶ The authors of *Śāringadharasamhitā*, *Bhāvaprakāśa*, *Rasāmṛta* etc. followed the description of *Suśruta*, while specific origin of *Śilājīṭ* was not found in the texts of *Aṣṭāṅgahṛdaya* and *Aṣṭāṅgasaṅgraha*.

Rasārṇava is a medieval classical text in which the time of origin of *Śilājīṭ* is considered as summer and this exudation is due to the excess heat and melting of mountain. The authors of *Āyurvēdaprakāśa*, *Rasēndrapurāṇa*, *Yogarātnākara* etc. followed the idea of *Rasārṇava*.

Further *Śilājīṭ* has been extensively mentioned in ancient Hindu literature. King *Candra Varma* who is supposed to have ruled much of Northern India had to spend most of his youthful years in governing the vast empire, waging wars and protecting it from enemies. When he wanted to enjoy the pleasure of life he realized that he had lost most of his youthfulness and then he went on penance in the mountains of Himalayas and prayed to Lord *Śiva*. Lord *Śiva* was pleased with his prayer and offered him a substance (*Śilājīṭ*)

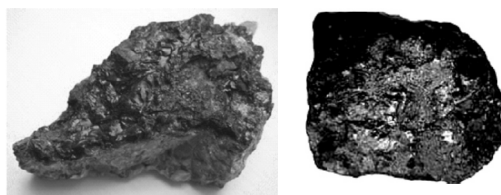
originating from his body, which has restored King *Candra Varma's* youthfulness. There is also extensive mention of *Śilājī* in *Kāmasūtra* and *Kauṭilya Arthaśāstra* as a powerful aphrodisiac and restorer of youthfulness.

Though *Śilājī* was in use from ancient times its authentication and identification on modern grounds was done by British Explorer Sir Martin Edward Stanley, who first discovered *Śilājī* by observing the attitude of monkeys in higher altitude of Himalayas. While reviewing the Modern literature of the *Śilājī*, many viewers catch the attention of controversy regarding its origin. Scientists have held widely varying views on mode of occurrence, nature and composition of *Śilājī*. Stevenson (1833), Campbell and Shermil (1846), Lawder (1871), Oldham and Leigh (1921) have regarded *Śilājī* as alum or impure sulphate of alumina. Later on Campbell Lawder and Trial regarded *Śilājī* as bitumen or mineral resin. Singh & Sharma (1970), Pandey (1973) Lal, Pandey and Kapoor (1988) considered *Śilājī* to be of vegetable origin.⁷ Chopra in 1958 opined it to be of animal product.

Śilājī was rediscovered by a folklore study followed by the observation on large white monkeys on Himalayan region. Himalayan villagers observed large white monkeys migrating to the mountains in the warm summer months. The monkeys were seen to be chewing a semi-soft substance that flowed between layers of the rock. The villagers attributed the monkey's great strength, longevity and wisdom to the substance. They also began to consume it themselves and reported a broad spectrum of improvements in health. It seemed to give them more energy, to relieve digestive problems, increase sex drive, improve memory and cognition, improve in the condition of diabetes, reduce allergies, improve the quality and quantity of life and ultimately seemed to cure all diseases. This rediscovery supports many of already established properties of *Śilājī* mentioned in Ayurvedic literature.

Review

Though *Śilājī* is mainly categorized under the eight *Mahārāsa*, it is also placed in different groups like *Uparāsa*, *Dhātu varga*, *Dhātvādi varga*, *Dhātūpadhātu varga*, *Suvarṇādi varga*, *Candanādi varga*, *ūśakādi gaṇa* by various authors of *Rasa* texts.



Śilājī

Vernacular Names

Sanskrit:	<i>Śilājatu</i>
Hindi, Gujarati and Marathi:	<i>Śilājīt</i> , Ral-yahudi
Bengali:	Silajatu
Tamil:	Uerangyum, Perangyum
Arabic:	Hajar-ul-musa
Persian:	Momiaī Faqurual Yahud
Russian:	Muycommio, Mumie
Malayalam:	Kanmadam
English:	Asphalt, Mineral Pitch, Jew's pitch, Vegetable Asphalt
Latin:	<i>Asphaltum punjabinum</i>

Etymological Derivation

The word *Śilājatu* is derived from *Śilā + jatu*, (शिलातो जायते (वाचस्पत्य); शिलाजातं जतु (वाचस्पत्य); शिलाया जात्वेव । (अमरकोश) which means 'the odorous material which originated from mountain / rock'.

Synonyms

atīthi, adrijatu, adrēya, āsmajam, āsmasāra, āsmottha, cakram, dhātu, dhātujam, gairēya, girija, girijatu, jatu, jatvāsmaka, śila, śilābhyam, śilāsvēda, śailēya, śilādhātu, śailēya, śailodbhava, śilāniryāsa.

Synonyms

Adrijatu, adrēya, āsmajam, āsmottha, dhātu, dhātujam, girih, girija, gairēya, śila, śilābhyam śailēya, śaila, śailodbhava. Jatu, Jatvāsmaka, adrijatu, āsmajatu, āsmajātukam, Girijatu, śilājatu, śilāniryāsa, śilāsvēda, śilamahe, śilavyadhi. Śilādhātu, śailadhātu, śailottha, Dhātuja. Uṣṇaja.

Significance

Indicates the origin of *Śilājīt*.

Indicates the state of *Śilājīt*.

Indicating the mineral property of the *Śilājīt*.

Indicates the season in which it occurs.

Availability

'*Śilājīt* is a blackish-brown exudation of variable consistency, obtained from steep rocks of different formations found in the Himalayas at altitudes between 1000-5000 m. *Śilājīt* is also found in other mountain ranges of the world, e.g. Afganistan (Hindukush, Badakh-

Shan), Australia (Northern Pollock Ranges) and in the former USSR (Tien-shan, Pamir, Caucasus, and Ural).⁸

Varieties

Based on origin, *Caraka* classified Śīlājī into 4 types Viz. 1. *Svarṇa* (Gold) 2. *Rajata* (Silver) 3. *Tāmra* (Copper) 4. *Lauha* (Iron); *Suśruta* into 6 types Viz, above 4, *Nāga* and *Vaṅga*; *Rasaratnasamuccaya* has 3 types namely *Svarṇa*, *Rajata* and *Tāmra*; *Rasārṇava* has 2 types i.e *Patita* - originated from *Mṛttikā* (earth) and (2) *Apatita* - originated from mountains.

Based on smell, *Rasaratnasamuccaya* has another classification by separating Śīlājī to *Gomūtragandhi Śīlājī* and *Karpūragandhi Śīlājī*. This *Gomūtragandhi Śīlājī* is further divided to two types namely *Sasatva* and *Niḥsatva*.⁹

According to *Rasendra sārasaṅgraha* Śīlājī is of two types *Girija* and *Uṣaraka*. This *Girija* variety is further divided to 6 types namely (i) *Kāñcana* (ii) *Rajata* (iii) *Tāmra* (iv) *Lauha* (v) *Vaṅga* (vi) *Yaśada*. Based on color *Uṣaraka* is divided to 2 types i) *Kṣāra* or White coloured (ii) Red coloured like fire.¹⁰

Śōdhana of Śīlājī

In order to free Śīlājī from impurities (due to foreign matters and contaminations caused by worms, flies, and poisonous drugs) it needs proper purification. Proper extraction is very much useful to achieve high level of active ingredients and to eliminate inactive substances, harmful free radicals, mycotoxins producing fungi and fungal toxins. Studies reveal approximately 40% of the raw material remains after extraction.

Gomūtragandhi Śīlājī

Dravya

Procedure

- | | |
|---|--|
| 1. Hot decoction of
<i>Triphalā</i> (Three myrobalans) | Immersion for 7 times ¹¹ |
| 2. Decoction of <i>Sālasarādi</i> group of drugs | <i>Bhāvanā</i> (trituration) for 10, 20 and 30 days |
| 3. <i>Kṣāra</i> (alkali), <i>Amlavarga</i> (sour group),
<i>gomūtra</i> (cow's urine) or with <i>ghṛta</i> (ghee) | Boiling ¹² |
| 4. Godugdha (cow milk),
decoction of <i>Triphalā</i> , and juice of <i>Bhṛṅgarāja</i>
(<i>Eclipta alba</i> Hassk) | <i>Bhāvanā</i> for 1 day in each drug in an iron
container followed by drying ^{13,14,15} |
| 5. <i>Triphalā</i> decoction, godugdha, gomūtra | <i>Sūryātāpi</i> ^{16,17} |
| 6. <i>Nimba</i> (<i>Azadirachta indica</i> A. Juss), <i>guḍūcī</i>
(<i>Tinospora cordifolia</i> (willd) Miers), <i>Indrayava</i>
(seeds of <i>Holarrhena antidysenterica</i> Wal l) | <i>Bhāvanā</i> in Iron vessel ¹⁸ |

7. *Uṣṇa jala* (hot water), *Triphalā* decoction *Sūryātāpī*, *Agnitāpī*¹⁹
 8. *Kṣāra*, *Amla* & *Guggulu*(*Commiphora mukul*) *Bhāvanā* and *Svēdana*^{20,21}

Karpūragandhi Śilājī

Ancient *Rasācārya* have described the *Śodhana* of *Karpūragandhi Śilājī* by *Bhāvanā* (trituration) with the decoction of *Ēlā* (*Elettaria cardamomurn Maton*) (RRS 2/118, R.Cd 10/109, Ba 25th chapter, RP 45).

Māraṇa:

Though this process is said not applicable, some texts like RRS, stated *Māraṇa of Śilājī* by mixing it with *Gandhaka*, *Manahśilā* and *Haritāla*, triturating with lime juice and finally subjecting for incineration in *Gajapuṭa*.²²

Sattvapātana

This process is also not preferable for *Śilājī* as it is of very soft in nature. But authors of R.R.S, A.P (4/133), R.Cd (10/107), RP (45) are in favour of *Sattvapātana* of *Gomūtra Śilājī* by triturating with *Drāvakaḡaṇa* and *Amlavarga* and subjecting for incineration to get *sattva* (extract) resembling iron. Though *sattvapātana* of *Gomūtragandhi Śilājī* is indicated by R.R.S and R.Cd it is contra indicated for *Karpūragandhi Śilājī*.

Identification and Authentication

The authenticity tests mentioned in Ayurvedic texts are of crude in nature. RSS, RT, R Cd, R.P, *Basavarājīyam* etc. mentioned the testing techniques as follows:

The drug is supposed to be authentic^{23,24}

- If *Śilājī* put on fire erect perpendicularly (*lingōpa*) and burn with out smoke.
- If put in water (in glass container) comes down slowly after spreading like fibre.
- If it burn without emitting any smoke, and appears like *Lōhakīṭṭa* (oxidized iron)-(RP vol-11)
- If it smells like cow urine.

According to the modern literatures, the general appearance of *Śilājī* is that of a compact mass of vegetable organic matter composed of a dark-red gummy matrix interspersed with vegetable fibers, sand and earthy matter. The gummy substance dissolves in water and when washed away leaves an earthy matter, vegetable fibers and a few black round button-like masses (1/8 in. in diameter) resembling peas (Chopra 1958).

Based on Mineralogy, *Śilājī* is oxygenated hydrocarbon of different types, Amorphous in nature G =1-1.8; luster is that of Black Pitch; Melting point 90-1000C. It gives bright flame when burnt. It is soluble in turpentine.

Chemical analysis shows gums, albuminoids, traces of resin and fatty acid, a large quantity of benzoic and hippuric acids and their salts. The chief active substances in it are benzoic acid and benzoates (Chopra 1958). The major amino acid composition in the latex of *E. royleana* was similar to that of *Śilājī* (Ghosal 1976). *Śilājī* is naturally high in iron and other valuable minerals (Tierra 1988).

Śilājī has long been regarded as a bitumen (asphalt) or mineral resin, or as a plant fossil exposed by elevation of the Himalayas, has now been subjected to extensive chemical investigations and it has now been shown to contain significant quantities of organic compounds, including bioactive oxygenated dibeno-alpha-pyrones, tirucallane triterpenes, phenolic lipids and small tannoids. *Śilājī* obtained from different sources, has now been standardized on the basis of its major organic constituents (Ghosal 1991).²⁵

Śilājī is essentially constituted of fresh and modified remnants of humus (10-70% of the water-soluble fraction of *Śilājī*), admixed with plant and microbial metabolites occurring in the rock rhizosphere of its natural habitat (Mukherjee 1992).²⁶

Chemical Composition

Analyzed by Hooper

Water = 08.85%

Organic matter = 56.20%

Mineral matter = 34.95%

Nitrogen = 01.03%

Lime = 07.80%

Potash = 09.07%

Phosphoric acid = 00.16%

Silica = 01.35%

Śilājī mainly contain Hippuric acid (5.5%) and Benzoic acid (6.8%) and also minerals such as Iron, Aluminium, Magnesium, Potassium, Calcium, Chlorides, Sulphate etc. It acts as antiseptic, parasecticial; these are due to free benzoic acid properties.

Properties

Śuddha Śilājī is *tikta rasa* (bitter in taste) and *kaṭu* in *vipāka* (pungent on post digestive effect). It is neither hot nor very cold in potency.²⁷

It is *Kaphahara* (reduces *Kapha dośa*) [A.S; R.J.N]; *Vātahara* (reduces *Vāta dośa*) (RT)

Properties of various types of *Śilājī*

Śilājī Type (derived from stone containing)	Color	Rasa (taste)	Vīrya (potency)	Vipāka (post digestive effect)	Doṣic action	Bodily actions
<i>Svarṇa</i> (Gold)	like the flower of <i>Japā</i> (hibiscus)	tikta	<i>śīta</i>	<i>kaṭu</i>	<i>VP śāmaka</i>	<i>Rasāyana karma.</i>
<i>Rajata</i> (Silver)	<i>Pāṇḍu</i>	<i>kaṭu</i>	<i>śīta</i>	<i>madhura nāśaka.</i>	<i>KP śāmaka</i>	<i>Pāṇḍuroga</i>
<i>Tāmra</i> (Copper)	<i>Nilābha</i> (peacock throat)	tikta	<i>uṣṇa</i>	<i>kaṭu</i>	<i>Kapha śāmaka</i>	<i>Lēkhana</i>
<i>Lauha</i> (Iron)	Looks like gum of <i>Guggulu</i>	tikta, <i>lavana</i>	<i>śīta</i>	<i>kaṭu</i>	<i>Tridoṣaghna</i>	<i>Rasāyana, Vṛshya</i>

All these types of *Śilājī* have the smell of cow's urine and are useful in all types of therapies. However, for rejuvenation therapy, the variety derived from the stone containing iron is considered more useful.

Dosage

Dosage of *Śilājī* according to *Caraka* is of three types i.e. *Uttama* (Best), *Madhyama* (medium) and *Avara* (inferior). In *Uttama* type the quantity is one *palā* (4 *tolā*) for seven weeks. In *Madhyama* type $\frac{1}{2}$ *palā* (2 *tolā*) for 3 weeks and *Avarā* type 1 *karśa* (1 *tolā*) for one week.

Specific action of *Śilājī*

Chēdana karma (BP, A.S, SN), *Vṛṣya* (P. Sharma), *Balyā* (R.T), *Lēkhaṇa* (*Śāraṅadhara*, P.Sharma), *Yogavāhi* (BP, RJN); *Rasāyana* (RN, RSS).

Therapeutic uses:

Śilājī alleviates all the *Tridōṣā*. It confers Longevity and Happiness. It prevents ageing and diseases. It is an excellent drug for producing sturdiness of the body. It also promotes *mēdha* (intellect) and *smṛti* (memory).^{28,29}

Cardiovascular: Hṛdroga, Hṛtsūla.

Dermatological: *Kuṣṭha*.

Gastrointestinal:	<i>Āmadoṣa, Agnimāndya, Udara, Arśas, Kṛmi, Jvara, Chardi.</i>
Neurology, psychiatry:	<i>Kampa, Apaśmāra, Unmāda.</i>
Respiratory:	<i>Rājayakṣma, Urahkṣata</i>
Urinary tract system (kidney, ureter, bladder):	<i>Pramēha, Madhumēha, Aśmarī, Śarkarā and Mūtrakṛchra.</i>
Miscellaneous:	<i>Plīha, Sthaulya, Śopha, Gulma, Vātarakta.</i>

Though *Saṁhitā* emphasized on the *Rasāyana* property of *Śilājī*, later works on the subject revealed its effects on various diseases like *Kuṣṭha* (skin diseases), *Udara* (ascites), *Jvara* (fever), *Chardi* (anorexia), *Rājayakṣmā* (tuberculosis) etc., The Ayurvedic practitioners are extensively using *Śilājī* for the treatment of Alzheimer's disease, Parkinson's disease and Benign Prostrate Hypertrophy etc.

Recent Research works support its analgesic activity, anti-alzheimer, anti-inflammatory activity, anti-ulcerogenic activity, anxiolytic activity, morphine-tolerance, nootropic activity and nutritive tonic activity.³⁰

Pathya

Milk, Butter milk, meat soup, vegetable soup and water are wholesome during the intake of *Śilājī* and further it is suggested to continue wholesome food for double the period of intake of *Śilājī* to get better results.³¹

Apathya

Kuluttha (horse gram), *Vidāhi āhāra* (diet which causes burning sensation in the body), *Guru āhāra* (diet which are heavy for digestion), Heavy exercise and exposure to wind and sun light should be avoided.³²

Conclusion

1. Historical background of *Śilājī* enlightens the origin, synonyms and therapeutic importance.
2. By comparison with classical and latest research studies it can be concluded that the origin of *Śilājī* is herbo-mineral.
3. The different processes of *Śōdhana* and *Māraṇa* explained for *Śilājī* enumerates the enriched ancient technology of mineral processing.
4. Its chemical composition and scientific validations authenticates the original product identification and further therapeutic validations.
5. The indications of *Śilājī* in various ailments, explains its therapeutic importance among other metals and minerals.

Ancient *Sarṁhitā* emphasized *Rasāyana* actions of *Śilājīṭ*, but the later works (*Rasa kāla*) on the subject revealed its effects on various diseases. Present study as a whole accentuates the necessity of reviewing the literature, for further continuous growth in the field of awareness, utility and progress of the study of *Śilājīṭ*.

Abbreviations

Carakasamhitā Cikitsāsthāna - Ca.Sa.Ci.; *Suśruta samhitā cikitsāsthāna* - Su.Sa.Ci.; *Aṣṭāṅga Hr̥daya Cikitsāsthāna*- A.H.Ci., *Uttara Tantra*- U.T., *Cakra Datta*- C. D.; *Rasa Ratna Samuccaya*- R.R.S., *Rasa Taraṅgiṇī*- R.T., *Rasēndra Sāra Saṅgraha*- R.S.S., *Bṛhat Rasa Rāja Sundara*- B.R.R.S., *Rasa Paddhati*- R.P., *Rasēndra Cūḍāmaṇi*- R.Cd., *Rasēndra Cintāmaṇi*-R.C., *Rasārṇava*-Rv., *Rasa jala nidhi*- R.J.N., *Āyurvēda Prakāśa*- A.P., *ānandakanda*- Ak., *śāraṅgadhara samhitā Madhyama khaṇḍa*- S.Md.K., *Basavarājīyam*- Ba.

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सारांश

शिलाजित का समीक्षात्मक पुनरवलोकन

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रसशास्त्र आयुर्वेदीय भेषजशास्त्र की एक महत्वपूर्ण शाखा है। इस शास्त्र में धातु, खनिज एवं रत्नों की शुद्धि तथा उनका प्रयोग बताया गया है। धातु और खनिज स्वास्थ्य संरक्षण, व्याधिप्रतिरोध एवं वाईक्यनिवारण (रसायन) में अत्यन्त उपयोगी होते हैं परन्तु इन सभी में शिलाजित का मुख्य स्थान है। आयुर्वेद में शिलाजित को एक आश्चर्यजनक औषध के रूप में माना गया है। प्रागैतिहासिक काल से ही शिलाजित का प्रयोग होने के प्रमाण हैं। हिन्दू नागरिकता में भी इसका औषधि के रूप में प्रयोग हुआ है। शिलाजित को परम्परागत रूप से सर्वरोगनाशक बताया गया है तथा यह मांसपेशियों, अस्थियों और नस-नाडियों के रोगों में बहुतायात से प्रयोग होता है। यह वृक्क के लिए अत्यधिक लाभदायक है तथा शारीरिक-मानसिक शक्ति एवं मैथुनशक्ति को बढ़ाने वाला बताया गया है। शिलाजित मानव जाति द्वारा लम्बे समय से प्रयोग में लिया जाने वाला तत्व है तथा भविष्य में होने वाले अनुसन्धानों के लिये एक महत्वपूर्ण विषय भी है। प्रस्तुत लेख में शिलाजित से सम्बन्धित सभी तथ्यों को प्राचीन एवं आधुनिक साहित्य से प्रस्तुत करने का प्रयास किया गया है।