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Review of *Tuttha* According to Ayurveda

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Abstract: In ancient time medicines (formulation) were mainly prepared by the physicians themselves. Formulations are prepared by changing ingredients as per the need of patients and as per the availability of drugs. Therefore sometimes many references are found for the preparation of same formulation. As per the rule of Drug and cosmetic act related to packaging and labeling of medicine needs reference, because sometimes as per method, medicine changes their action. So here an attempt was made to review all the references of *Tuttha*. *Tuttha* is a mineral and chemically copper sulfate that has been indicated in various diseases from skin diseases to eye diseases. *Tuttha* is one of the oldest materials, know to india, the references of which are available in *Charaka Samhita* and *Susruta Samhita*. *Tuttha* and *Sasyaka* were extensively used in *Rasa granthas*. It origin was Garuda, Consumed Amrta after drinking poison and vomitted on Marakata mountain. This vomitus solidified and turn into *Sasyaka* and Colored has mayuraskantha and it is Very heavy *Rasajalanidhi* describes these synonyms as *Sasyaka* is naturally produced compound while *Tutthaka* is artificially prepared compound, and both can be used in the

unavailability of other. Reviews of classical texts of Ayurveda suggest using more in the form of external use than internal use

Key Words: History, Synonyms, *Shodhan, Maran*.

INTRODUCTION

Rasashastra, an offshoot of Ayurveda popular from medieval period, mostly deals with therapeutic utilization of metals and minerals known as *Rasausadhis* (herbo-mineral- metallic compound). The master drug of this ancient science is *Parad*, while the drugs are used as its subordinate. The internal administration of all *Metals* and *Minerals* became possible because of the invention of pharmaceutical technology of converting Metals and Minerals into *Bhasma*.

Tuttha is mineral containing *Copper* and *Sulphur*, easily available and is well known for its medicinal use since ancient time. In modern medicine the use of *Tuttha* (*Copper Sulphate*) is much used as topical applications where as in Rasashastra *Tuttha* was used internally as well as externally therapeutically, many external applications were told in classical Text. So it is used for medicinal purpose, various *Shodhana processes* are adopted, which render *Tuttha* into the therapeutic form and free from the side effect. Out of various minerals *Tuttha* is an one of the important mineral, which is used for *Parad Sanskar* as well as used as medicine in the form of *Shodhit Tuttha, Vati, Vatika, Gutika, leha, Anjana, Ghrita, Drava, Malahara, Potali and Rasa preparation and in Bhasma forms*.

Tuttha was described in the treatment of various diseases like *kushta, Putigandhit Vrana, Phirangaj vrana, Arsha, Switra, krimiroga...*etc. Its various forms were used as application like, *Drava, vati, bhasma. Rasatarangini* told that external use of *Tuttha* in the form of *Tutthadrava*.

HISTORY

The knowledge of *Tuttha* was known to Indians since early ages for medical practice. Kobel discovered calcanthite (*Tuttha*) in 1853. In ancient times it was being liberally used in many forms. By observing this history it is classified into four periods.

1. Vedic period (2500 BC – 1000 BC)
2. Samhita period (1000 BC – 100 AD)
3. Nighantu period (800 AD – 1700 AD)
4. Rasa Shastra period (8 – 14 cent.)

1. Vedic period – No direct reference are available.

2. Samhita period – In *Charak Samhita, Sushruta Samhita, Astang Sangraha and Sharangdhar Samhita* reference are available for the use of *Tuttha* as medicine.

- **Tuttha in Charaka Samhita (1200 BC):** *Tuttha* is mentioned first of all for treating various types of *kushta roga*. (Ch.su 3/1012) It is mentioned first of all for curing number of diseases.

Ghee and Taila medicated with Tuttha are used for the treatment of *Kustha* (Ch.Chi 7/102,108,114,120).It is indicated in Arsha *as lepa* Ch.Chi25/55), for healing wounds (Ch.Chi 25/117) and *Timira roga* is being treated by *Netravarti* Prepared with Tuttha (Ch.Chi 26/250).

- **Tuttha in Sushrut Samhita (1000BC):** In classification of Dravyas, *Tuttha* is classified in “*Ushakadigana*” (Su.Su 38/37) and it pacifies kapha and cures the diseases like *Ashamari*, *Mutrakricha* and *Gulma* (Su.Su 38/38). It is frequently said for the therapeutic purposes. *Tuttha lepa* is mentioned for wound treatment (Su.chi 1/97,2/82), in the form of medicated taila it is mentioned for *Ashmari* (Su.Chi9/10). It is used for *treating kustha*, *Switra* (Su.Chi9/27), *Medaja Galganda* (Su.Chi 18/54), *Updamasha* (Su.Chi 19/45), *Indralupta* (Su.Chi 20/24) Pediatric disease *Ahiputana* also cured with the help of *Tuttha* (Su.chi 20/59)
- In *Varti form Tuttha* is used for treating *Abhishynda*. (Su.UT 11/7,13) As an *anjana* it is used in *Shirotpata* disease (Su.UT 12/116). It is also mentioned for treating *Praklinnavartma*, *Aklinnavartma* (Su.UT 12/153) and *Lagana* (Su.UT 17/140). As *Pathyadi varti* it is mentioned as magic drug for all types of eyes diseases (Su.UT18/105). Medicated taila with *Tuttha* is indicated in *Mutrakricha* (Su. UT 59/23).
- **Tuttha in Astang Sangraha (3-4 Cent.):** The quality of *Tuttha* is mentioned like *katu*, *kshar*, *vishad*, *Laghu*, *Lekhan*, *Bhedana*, *Kandughana*, and *vishaghna* (As. Su 12/22.23). It is classified in *Ushakadigana* having potency to cure the diseases like *Mutrakhricha*, *Ashmari*, *Gulma*, *Meda roga* and *kapha roga* (As.su 16/7). It is mentioned for treating *Arsha* (As. Chi 10/29), *vataja Ashamari*, *kaphaja Ashamari* (As. Chi 13/28). For treating *Kushta* it is used in the form of *Choorna* (As. Chi 21/95). *Taila* (As. Chi 21/115,118), *Ghrita* (As. Chi 21/105) As a *varti* it is mentioned for treating *Kaphaja netra roga* (A.H.U.S 19/45), *Medaja Galagand* (A.H.U.S 39/6).
- **Tuttha in Sharangdhar sanhita (14 cent.):** It is mentioned in the form of medicated Ghee (Sa.S.M.K 9/51). And Taila (Sa.S.M.K 9/68) for treating various skin diseases and Wounds. Sharangdhara has classified *Tuttha* in *Upadhatu varga* (Sa.S.M.K 11/53) *Shodhan* process is explained (Sa.S.M.K 11/58-59) *Tuttha* is mentioned as an ingredient of various *yogas* for the treatment of *Jwara* (Sa.S.M.K 12/45,50). *Vataja vyadhi* (Sa.S.M.K 12/231) and *Netra roga* (Sa.S.M.K 13/87).
- **Tuttha in Bhava Prakash (Cent.):** *Tuttha* is recognized as one of the *upadhatu* (B.p.Gha. Varga/53). The description about various synonyms, qualities and indication of *Tuttha* for treatment of several diseases are also explained (B.P. Gha Varga 66-68).

3. Nighantu Period (800 AD – 1700 AD)

In Raj Nighantu – *Tuttha* is mentioned in *Suwarnadi Varga* (R.N. Su. Varga 14) Along with its various synonyms and qualities (R.N.Su 100-104).

In Madanapala Nighantu- The qualities of *Tuttha* and indication are described along with Its character (M.P.N.P.-76)

In Dhanwantari Nighantu – The synonyms, types of *Tuttha* along with its qualities and Therapeutics indication (Dh. N.P 114)

4. Rasa Shastra Period (8th – 14th AD)

Description of *Tuttha* along with its synonyms, properties, incineration, therapeutic uses etc.. has been described extensively in almost all texts of *Rasashastra* .

Following are the some of the important *Rasa Shastra* texts where *Tuttha* is explained in detail.

- *Rasa Hriday* (10th Cent)
- *Rasarnava* (12 cent)
- *Rasendra Chudamani* (12 cent)
- *Rasaprakash sudhakara* (14 cent)
- *Rasa Ratna samuchay* (14 cent)
- *Rasendra Chintamani* (14 cent)
- *Rasapaddhati* (14 cent)
- *Rasendrasara Sangraha* (14 cent)
- *Rasakamdhenu* (17 cent)
- *Ayurved Prakash* (17 cent.)
- *Rasa Jala Nidhi* (20 cent)
- *Rastarangini* (20 cent)

Nomenclature: Name after the Greek words “*Chalkos*” and “*Anthos*” meaning copper and flower respectively in reference its chemical composition.

Vernacular names of Tuttha: [Ref. BP- Dh/p-649]

| | | |
|-------------|---|---|
| ➤ Arabic | – | <i>Tutiya Akajar</i> |
| ➤ Bengali | – | <i>Tunte, Tuntiya</i> |
| ➤ English | – | <i>Copper Sulfate, Blue Vitriol, Chalcanthite & Peacocock ore</i> |
| ➤ Gujartthi | - | <i>Morathutu, Morathutho</i> |
| ➤ Hindi | - | <i>Nilatotha, Tutiya</i> |
| ➤ Kannada | - | <i>Mayur Tuttha, Maila Tuttha</i> |
| ➤ Latin | – | <i>Cupri Sulphas</i> |
| ➤ Marathi | - | <i>Morchuda</i> |

- Malayalam - *Turi*
- Oriya - *Tutiya*
- Parsi - *Katak tud, Tutiya abza*
- Sanskrit - *Tuttham*

Synonyms of Tuttha: Synonyms have special important in Nomenclature. Sometimes they indicate morphological structure, habitat, pharmacological properties and therapeutic uses of the drug. Synonyms facilitate to identify the drug property.

Following are some of the important synonyms of *Tuttha* collected from different texts.

- | | |
|-----------------------|-------------------------|
| - <i>Amritasang</i> | - <i>Amritodhbhavam</i> |
| - <i>Drishyam</i> | - <i>Haritashama</i> |
| - <i>Haematarakam</i> | - <i>Kitibham</i> |
| - <i>Kharparam</i> | - <i>Mayurkam</i> |
| - <i>MayurTuttham</i> | - <i>Mayurgrivam</i> |
| - <i>Mritak</i> | - <i>Mritabhid</i> |
| - <i>Musha Tuttha</i> | - <i>Neelam</i> |
| - <i>Neelashmajan</i> | - <i>Neelagaj</i> |
| - <i>Sasyka</i> | - <i>Sikhittuttam</i> |
| - <i>Sikhigriva</i> | - <i>Sikhikantham</i> |
| - <i>Sikhitudam</i> | - <i>Sulbasar</i> |
| - <i>Tamragarbha</i> | - <i>Tutthak</i> |
| - <i>Tuttha</i> | - <i>Vitunnaka</i> |

➤ Synonyms as per Modern Chemistry:

1. Blue vitrol
2. Copper vitrol
3. Blue stone
4. Chalcantite

MYTHOLOGICAL ORIGIN OF TUTTHA

The Garuda consumed *Halahala Visha* after drinking the Amrita and then vomited the visha mixed with Amrita on Neelagiri Mountain. Later vomitus solidified and turned into *Tuttha*. (*Rasarnava* 3/29)

Praptistana of Tuttha: Mainly *Tuttha* is obtained from two sources i.e., mineral and artificial. In india Mineral sources are found mainly in Rajasthan, Bihar, Assam, Tamilnadu, Bengal, Andrapradesh...etc.

Now a day's large proportion of *Tuttha* is prepared artificially for commercial use and is widely available. It is prepared at Surat, Calcutta, and Varanasi. etc. places

Placement of Tuttha: In Rasa Classics different opinions are available regarding placement of *Tuttha*.

Table.1: Placement of *Tuttha* according to various Rasa classics.

| Sr. No. | Rasa granthas | Maharasa | Uparasa | Upadhatu |
|---------|--------------------------------|----------|---------|----------|
| 1 | <i>Rasa Ratna Samuchaya</i> | + | - | - |
| 2 | <i>Rasarnava</i> | + | - | - |
| 3 | <i>Rasendra chudamani</i> | + | - | - |
| 4 | <i>Rasa Paddhathi</i> | + | - | - |
| 5 | <i>Rasa Hridaya Tantra</i> | + | - | - |
| 6 | <i>Rasendara Sara Sangraha</i> | - | + | - |
| 7 | <i>Ananda Kanda</i> | - | + | - |
| 8 | <i>Sharangdhara Samhita</i> | - | - | + |
| 9 | <i>Rasopanishat</i> | - | - | + |
| 10 | <i>Bhawa prakasha</i> | - | - | + |

Out of 10 Rasa classic grantha six have considered *Tuttha* as Maharasa followed by 3 as Upadhatu and 2 as Uparasa.

Grahyalakshnas of *Tuttha*:

1. Sikhikantasamchya : Colour like neck of the Peacock.
2. Guru : Heavy
3. Snigdha : Unctuous
4. Mahaoujjwalam : Brilliantness
5. Shikhikantha samacchaya : colour like neck of peacock

6. Bharadhya : Heavy

Agrahyalakshnas of Tuttha: From above opposite lakshanas are Agrahya *Tuttha*.

Types of Tuttha

1. **Chakrapani** - (Cha.Chi 7/108) *Tuttha* is of two types Mayur *Tuttham* and *kapardik Tuttham*.

2. **Rasaprakash Sudhakar** - (R.P Page 51) Mayur and kharpra are two types of *Tuttha*.

1. Rasajalanidhi

1. Swabhawaj : Sasyaka

2. Kritrim : Tutthaka

2. Damodarshastri Text Book

As per source - 1. Swabhawaj : Sasyaka

2. Kritrim : Tutthaka

As per colour -1. Rakta

. Kalik

Pharmacotherapeutic Properties of Tuttha

Rasa - Katu kashaya

Guna - laghu khar vishad and ushna

Veerya - 1. Ushna (Ra) 2. Sheeta (A.P)

Vipaka - Katu

Karma - Lekhana, Bhedana, Vamaka, Chakshushya, Balya, Rasayana,
Krimighana, Medahara, Twakdoshahara, Ruchika, Nadibalkarak,
Vahinikarana & Vayasthapaka

Doshaprabhava - Kaphapita hara.

Vyadhi prabhava - Kushta, Amlapitta, Switra, Vrana, Arsha,
Prameha, Krimiroga, Vishghna & Shoolahara.

Different opinions regarding pharmacological and therapeutics properties of *Tuttha* as per difference Rasa classics described in tabular form.

Table 2: Rasa of Tuttha according to various classics

| Rasas | R.R.S | Ra | R.J.N | B.R | Y.R | A.P | R.mn | So.n | R.N. | D.N |
|--------|-------|----|-------|-----|-----|-----|------|------|------|-----|
| Katu | + | + | + | + | + | + | + | + | + | + |
| kashay | + | + | + | + | + | + | + | + | + | + |
| kshara | + | + | - | + | + | + | + | + | + | - |

Katu, kashay, Rasa of *Tuttha* is considered by all Rasa classics. Also *kshara* followed by all texts except R.J.N & D.N.

Table3: Guna of Tuttha According to Various Classics

| Gunus | R.R.S | Ra | R.J.N | B.R | Y.R | A.P | R.mn | B.P | B.Y.T | So.N | K.N | D.V |
|---------|-------|----|-------|-----|-----|-----|------|-----|-------|------|-----|-----|
| Laghu | + | + | + | + | + | + | + | + | + | + | + | + |
| Vishada | + | - | - | - | + | + | + | - | + | - | - | + |
| Sheeta | - | - | + | + | - | + | - | + | - | - | + | - |
| Ushna | - | + | - | - | - | - | - | - | - | - | - | - |

Laghu is considered by all texts followed by *Vishada* and *Sheeta* but *Rasamritam* says *Tuttha* as *USHNA*.

Table 4: Veerya of Tuttha According to Various Classics

| Veerya | Ra. | A.P. | B.P. | R.J.N. |
|---------------|-----|------|------|--------|
| <i>Sheeta</i> | - | + | + | + |
| <i>Ushna</i> | + | - | - | - |

Rasamrita considered *Tuttha* as *Ushna veerya Draya* whereas remaining authors said it as *Sheeta veerya*.

Table 5: Vyadhi Prabhava of Tutth According to Various Classics.

| Sr. no. | Vyadhi Prabhaw | Various Classical Text. |
|---------|------------------|---|
| 1 | <i>Switra</i> | <i>RRS; Ra; Sha.S; BRRS.</i> |
| 2 | <i>kushta</i> | <i>RRS; Ra; RJN; BR; YR; AP; BP; BYT; Sha.S; BRRS; RRS; MN.</i> |
| 3 | <i>Prameha</i> | <i>YR; BYT.</i> |
| 4 | <i>Amlapita</i> | <i>RRS; Sha.S; BRRS.</i> |
| 5 | <i>Hridrog</i> | <i>RRS</i> |
| 6 | <i>Arsha</i> | <i>RRS; Ra.</i> |
| 7 | <i>Vishaghna</i> | <i>RRS; Ra.</i> |
| 8 | <i>vibandha</i> | <i>RRS; Sha.S; BRRS.</i> |
| 9 | <i>Shoola</i> | <i>RRS; Sha.S; BRRS.</i> |
| 10 | <i>Daaha</i> | <i>So.N.</i> |
| 11 | <i>Krimi</i> | <i>RRS;Ra;YR; Rmn; RSS; MN.</i> |
| 12 | <i>Medoroga</i> | <i>YR; BRRS.</i> |

Most of Rasa classics consider vyadhiprabhav of Tuttha as kushta roga, Switraghna, Amlapittahara, vibandha and followed by Prameha, hridroga, Arsha, Vishaghna, Medahara, Daha and shoola hara.

Table 6: karma of Tuttha According to Various Classics.

| Sr. no. | karmas | Various classical text. |
|---------|----------------|---|
| 1 | <i>Lekhana</i> | <i>Ra; RJN; BR; YR; AP; BP; Rmn; BYT; R.Chi; RSS.</i> |
| 2 | <i>Bhedana</i> | <i>Ra; RJN; BR; YR; AP; BP; Rmn; BYT; R.Chi; RSS.</i> |

| | | |
|----|---------------------|---|
| 3 | <i>Vamaka</i> | RRS; Ra; AP; BP; BRRS. |
| 4 | <i>Chakchushya</i> | Ra; RJN; BR; YR; AP; BP; Rmn; BYT; R.Chi; RSS; RPS; BRRS. |
| 5 | <i>Rasayana</i> | RRS; Rv; RKD; RPS; BRRS. |
| 6 | <i>Krimighna</i> | Ra; RJN; YR; Rmn; BYT; RKD. |
| 7 | <i>Vishaghna</i> | RRS; Ra; RJN; YR; AP;BP; Rmn; BYT; RSS; BR. |
| 8 | <i>Rechaka</i> | RRS. |
| 9 | <i>Kshareeya</i> | Ra; BR; YR; AP; BP; BYT; RSS. |
| 10 | <i>Vanhikaran</i> | Rv |
| 11 | <i>Vyasthambaka</i> | Rv |

Chakshushya karama considered by most of Rasa texts followed by *Lekhana, Bhedana, Vishaghana; and kshareeya*. Some texts said as *Vamaka, Rasayana*. Only RRS explained as *Rechaka* and *Rasayana* explained as *vahnikara, Vysthambaka*.

Table 7: Vishishta Yogas of Tuttha (Showing vishishta yogas of Tuttha in various classics)

| Sr.no | Different yogas | Texts | Rogadhikara |
|-------|----------------------------|-------|-------------|
| 1 | Amvatari vatika | B.R | Amavata |
| 2 | Agni kumar lauham | R.S.S | Pleeha roga |
| 3 | Byahkari rasa | B.R | Jwara |
| 4 | Baidya nath rasa | R.R.S | Yakshma |
| 5 | Bhutankush rasa | B.R | Unmada |
| 6 | Brihat Jwar chudamani rasa | R.R.S | Jwara |
| 7 | Brihat sutika vinod rasa | R.R.S | Sutika roga |

| | | | |
|----|-------------------------|--------|----------------------|
| 8 | Chandra Surya rasa | R.R.S | Jwara |
| 9 | Gulma Nashak Rasa | R.R.S | Gulma |
| 10 | Gulma nashak Rasa | R.R.S | Netra roga |
| 11 | Jatyadi Ghrita | R.R.S | Shiro roga |
| 12 | Kanaka Sundera rasa | BR. | Yakshma |
| 13 | Kalangni rasa | R.R.S | Bhangandhara |
| 14 | Kanchanadranjana | R.R.S | Netra roga |
| 15 | Lauha Mrityunjaya rasa | B.R | Pleeha/Yakrita roga |
| 16 | Loknathrasa | R.R.S | Yakshma |
| 17 | Maha Jwarankush | B.R | Jwara |
| 18 | Mah Mrutyunjaya lauham | B.R | Pleeha/ Yakrita roga |
| 19 | Mahavira rasa | R.R.S | Yakshma |
| 20 | Mahodadhi rasa | B.R | Pleeha roga |
| 21 | Mahavidya Gutica | R.R.S | Trishana roga |
| 22 | Maha Mrutyunjaya rasa | R.R.S | Prameha |
| 23 | Mutra krichhantaka rasa | R.R.S. | Mtra kricha |
| 24 | Nava graham rasa | B.R. | Vata roga |
| 25 | Nitya nand rasa | B.R. | Shleepada roga |
| 26 | Panchanana rasa | B.R.. | Gulma |
| 27 | Prana Ballabha rasa | R.S.S. | Pandu |
| 28 | Ratna Garbha potalli | B.R. | Yakshma |
| 29 | Raktodar kuthara rasa | R.R.S. | Gulma |

| | | | |
|----|-----------------------|--------|------------|
| 30 | Rasendra Gutica | R.S.S. | Kasa roga |
| 31 | Sutika vinod rasa | B.R. | Stri roga |
| 32 | Mrityunjay rasa | R.R.S | Jwara |
| 33 | Sheet manjari rasa | R.R.S | Jwara |
| 34 | Suchi mukha rasa | R.R.S | Jwara |
| 35 | Sarvamanya Hara rasa | R.R.S | Vidradhi |
| 36 | Shankheswara rasa | R.R.S | Yakshma |
| 37 | Shwitra kushtari rasa | R.R.S | Kushta |
| 38 | Tuttha drava | R.T | Netra roga |
| 39 | Tutthakadya varti | R.T | Vrana |
| 40 | Tutthakadi varti | R.T | Pothaki |
| 41 | Tutthamrita malahara | R.T | Vrana |
| 42 | Tapyadi varti | R.R.S | Mukha roga |
| 43 | Visha vajrapata rasa | B.R | Visha roga |

Table 8: Tuttha vishesh shodhan

| Sr.no. | Drugs | Various classics |
|--------|---------------|--|
| 1 | Gomutra | RT; RRS; RSS; RPS; RJN; BRRS; RChu; RS |
| 2 | Mahisha mutra | RT; RRS; RSS; RPS; RJN; RChu; RS |
| 3 | Aja mutra | RT; RRS; RSS; RPS; RJN; RChu; RS |
| 4 | Nara mutra | RPS; RChu. |

| | | |
|----|----------------------------------|---------------------------------|
| 5 | Jambeera Swarasa | RT; RS. |
| 6 | Raktachandana & manjishta kwatha | RT; Ra. |
| 7 | Rakta varga | RT; RRS; RSS; RPS; RJN; RChu; |
| 8 | Amla varga | RT; BRRS. |
| 9 | Sneha varga | RRS; RSS; RPS; BRRS; BR. |
| 10 | Gandhaka | RSS. |
| 11 | Tankana | RSS; BRRS; YR; AP; BP; SaS. |
| 12 | Madhu | RSS; BRRS; YR; AP; BP; SaS. |
| 13 | Kapota vishta | RSS; BRRS; YR; BR; AP; BP; SaS. |
| 14 | Marjara vishta | RSS; BRRS; YR; AP; BP; SaS. |
| 15 | Triphala | Ra |
| 16 | Dadhi | RSS; BRRS; YR; AP; BP; SaS; RS |
| 17 | Navasagara | RS |
| 18 | Vagi mutra | BRRS |

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